CRM Studio

The only software you need to run your entire business... from bricks to clicks

User Guide

Everest Software
YOUR BUSINESS OPERATING SYSTEM

Table of Contents

About the User Guide

This user guide elucidates all the functions, features and capabilities of **Everest CRM Studio**. It is henceforth referred to as **CRM Studio**.

Audience

This guide is designed to help you install, initially configure, and implement **CRM Studio** according to the specific needs of your organization. It is meant to suit the needs of end-users who will be handling automated customer relationship management which includes a variety of functions.

We recommend that you go through the manual before you start using the product, to familiarize yourself with the following:

- Installing and configuring **CRM Studio**
- Creation of queries and events
- Alert Methods
- Subscriber Maintenance
- Visual Basic Scripting
- ERS (E-mail Response System)
- Scheduling of Crystal Reports
- Webcasting
- EventPaks

Assumptions

We assume that the user is conversant with:

- Microsoft Windows
- **Everest**
- Database Administration
- SQL (Structured Query Language)
- Visual Basic and Scripting

Document Conventions

This section details the conventions used in this user guide. These conventions enable you to navigate easily through the information provided and help you accomplish your tasks quickly.

Note

The **Note** icon is used to denote important information.

This icon appears on the left side of a page (aligned with the heading it forms a part of) with the text appearing adjacent to it.

Refer

The **Refer** icon is used to point to related topics within the chapter or across the user guide.

This icon appears on the left side of a page (aligned with the heading it forms a part of) and the text appears adjacent to it.

Example

The **Example** icon is used to depict examples.
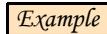
Example This icon appears on the left side of a page (aligned with the heading it forms a part of) and the example appears adjacent to it.

Hint

The **Hint** icon is used to denote useful hints.

This icon appears on the left side of the page (aligned with the heading it forms a part of) and the text appears adjacent to it.

Warning

This icon is used to indicate salient information without which you cannot proceed with your intended operation.

This icon appears on the left side of the page (aligned with the heading it forms a part of) and the text appears adjacent to it.

Step-by-Step

The **Step-by-Step** icon is used to enumerate instructions to carry out a task.

This icon appears on the left side along with the text.

Keywords

- Menu options, Windows/Dialog Boxes, Field names are highlighted in boldface.
- Navigation across menu options is indicated by the symbol ">".
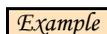
Example To view the **Everest CRM Studio Administrator** dialog box in **CRM Studio**, you must click the **CRM** option from the main menu bar. From the drop-down menu, highlight **CRM Studio** and click **Administrator**. This is illustrated in the document/online help as follows:

From the main menu bar, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.

How this Guide is Organized

The **CRM Studio User Guide** comprises sixteen chapters. The user guide contains an Index and a Table of Contents, which help you look for topics across all chapters.

Chapter Number	Chapter Name	Description
1	Installation and Configuration	Describes installation and initial configuration of **CRM Studio.**
2	Product Tutorial	Brief tutorial on designing queries and events.
3	Administration	Describes the **Everest CRM Studio Administrator**.
4	Query Designing	Describes creation of record-level and aggregate queries.
5	Subscriber Maintenance	Describes the creation and maintenance of subscribers and groups.
6	Event Designing	Describes creation of events.
7	Visual Basic Scripting	Describes creation and use of Visual Basic scripts.
8	Event Monitor	Describes the **Everest CRM Studio Event Monitor**.
9	E-Mail Response System	Describes configuration and use of ERS (E-mail Response System).
10	Event Triggered Reports	Describes generation of Crystal Reports using event triggers.
11	Scheduling Crystal Reports	Describes scheduling and automation of Crystal Report generation.
12	Webcasting	Describes configuration and use of webcasting.
13	EventPaks	Describes creation and use of EventPaks.
14	Worksheets	Contains worksheets to help you collect information required before setting up queries, events and subscribers.

1. Installation and Configuration

Welcome to CRM Studio
Advantages of CRM Studio
CRM Studio Installation
Configuration - CRM Studio

Welcome to CRM Studio

Thank you for your interest in **CRM Studio**, the industry's leading Alert Messaging technology for superior business intelligence.

CRM Studio provides you with advanced features in order to monitor your business activities in terms of administration, managing and monitoring events.

Using **CRM Studio** you can create companies, query definitions, define custom events, report definitions, schedule events, write basic scripts, add e-mail and fax accounts, add subscribers, assign the events to e-mail and fax accounts, assign events to subscribers or users. You can also import existing **Everest** users into **CRM Studio**.

Other activities that you can perform in **CRM Studio** are:

- Configure hardware settings for fax, paging, and printing
- Configure software settings for e-mail, fax, paging, and holiday definitions
- Specify user authorizations for access to different **Everest** modules
- View (and take corrective actions for) any errors that were encountered when the application attempted to either execute an event, or send notifications about an event
- Monitor the status of application servers, events, e-mails, faxes, reports etc.

To use **CRM Studio**, it is necessary that you are aware of SQL and database administration activities. Hence, it is recommended that only trained personnel having proper security rights should be allowed to configure and work with **CRM Studio**. For additional security you need to specify an administrator password in the **Configuration** profile.

We hope that you will enjoy working with **CRM Studio** and we encourage you to send us your feedback.

How does CRM Studio Work?

As said earlier, it is necessary that you are aware of the concepts of database administration activities and SQL to create and handle queries.

In order to work with **CRM Studio**, you need to configure it so that a link is established between the functions provided by the application.

Everest Software gives you an **EventPak** containing 100 odd events and queries which cater to the usual business requirements of an organization. In addition to

this you can create custom events, queries, schedule reports etc. to meet your business needs.

Once these things are in place, it becomes necessary to configure the hardware and software settings in order to monitor the events. Use the **Everest CRM Studio Administrator** for this purpose.

After this, you need to set up **CRM Studio** so that it works in tandem with the events created. Then depending on the settings, the actions and tasks get executed when the events are triggered.

Advantages of CRM Studio

In addition to the system events defined in **Everest**, users can create custom events by defining conditions. In order to create a Custom Event, users must specify a condition using filters. Filters are specific conditions that you give in order to narrow down search and get a consolidated data.

The advantages of **CRM Studio** are:

• You can create and monitor exceptional events

> *Example*   In system events, you can track an event when sales invoice is created. In advanced events, you can track only those events (by specifying conditions) where sales invoices for amount greater than $1,000,000 are created. This is an exceptional event.

• You can attach **Everest** reports to e-mails dynamically

> *Example*   When a sales invoice is created, you can generate the sales invoice report in PDF format and attach the report with the e-mail, and send it to the respective customer.

• In a similar manner, reports that need to be sent on a periodic basis (like Account Receivable Aging, Best Customer report, Commission report etc.) can be sent on a "need to know" basis (i.e., the data in the report will be specific to the user/customer/vendor for whom it is intended for) at a predefined frequency like weekly, monthly, quarterly, etc.

CRM Studio Installation

Use the **CRM Studio Installation CD** to install **CRM Studio**. The **CRM Studio** client cannot be installed unless the **Everest** client has been installed. The **CRM Studio** server cannot be installed until the **Everest** application server has been installed. The versions of **CRM Studio** and **Everest** must be compatible with each other.

> *Example* To install the **Everest Advanced CRM Studio** version 5.0.0 client, the **Everest Advanced Edition** version 5.0.0 client must be installed. You cannot install the **Everest Advanced CRM Studio** version 5.0.0 client with the **Everest Advanced Edition** version 4.0.0 client installed.

By default, **CRM Studio** and the data files install in the **Everest** directory. They must be located on the same drive as **Everest**.

> *Example* If you install **Everest** on the C: drive, **CRM Studio** and the data files must also be located on the C: drive. Similarly, if you install **Everest** on the D: drive, **CRM Studio** and the data files must be located on the D: drive.

It is recommended that you close any other programs running on your workstation before installing **CRM Studio**.

To install CRM Studio, do the following:

- Insert the **CRM Studio CD-ROM** into your computer's CD-ROM tray. The CD automatically runs the setup.exe file which starts the **Everest Advanced CRM Studio Installation Wizard.** You will see the **Preparing to Install** screen and then you will see the **Everest Advanced CRM Studio Installation Wizard - Welcome** dialog box.

Welcome

Figure 1.1: Welcome

The Installation Wizard guides you through the installation process.

- Click **Next**. You will see the **License Agreement** dialog box.

It is important that you read the **License and Services Agreement** displayed in the dialog box and accept the terms to proceed with installation.

License Agreement
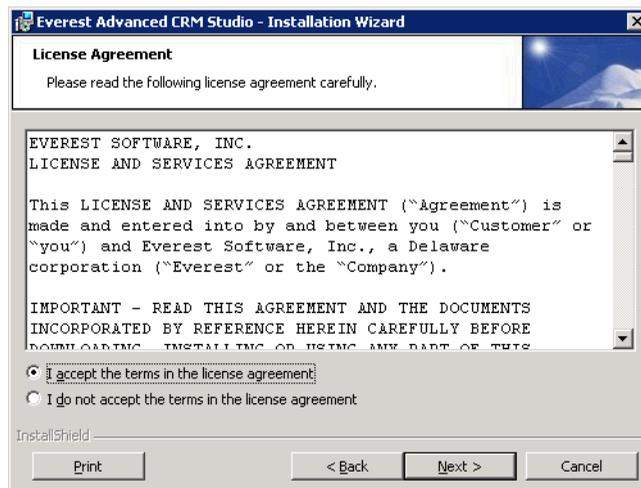
Figure 1.2: License Agreement

- Select the option **I accept the terms in the license agreement** to agree with the terms and conditions.

- To review a hard copy of the license agreement or keep a copy for your records, click the **Print** button.

  If you select the option **I do not accept the terms in the license agreement**, you will not be able to proceed with the installation process. Click **Cancel** to terminate the installation.

- Click **Next**. You will see the **Customer Information** dialog box.

Customer Information
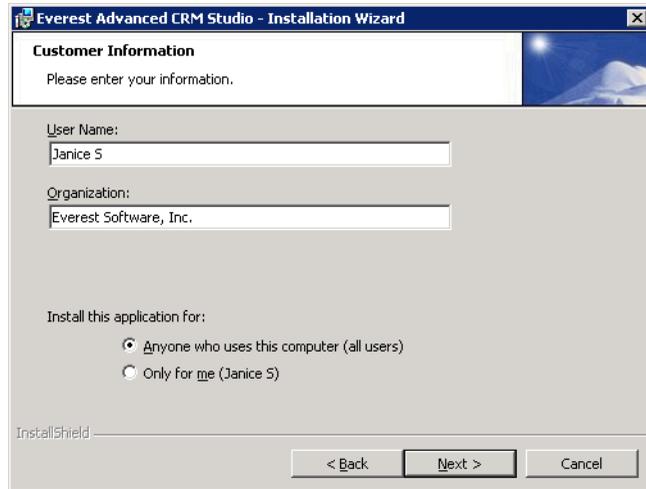
Figure 1.3: Customer Information

User Name
Enter the name of the user.

Organization
Enter the name of the organization.

You can install **CRM Studio** for any of the following users:

Anyone who uses this computer (all users)
Select this option to enable all the users (whose profiles have been defined in the operating system) to use **CRM Studio** on your computer.

Example If your computer is shared between different users, these users will be able to use **CRM Studio**.

Only for me
Select this option to restrict other users from logging into **CRM Studio** installed on your computer. **CRM Studio** will be accessible only to you.

  A user profile is defined in the operating system's environment and is loaded when the user logs on. This profile contains user-specific settings of the operating system's environment such as program items, screen colors, network connections, printer connections, window size and position.

- Click **Next**. You will see the **Setup Type** dialog box.

Setup Type
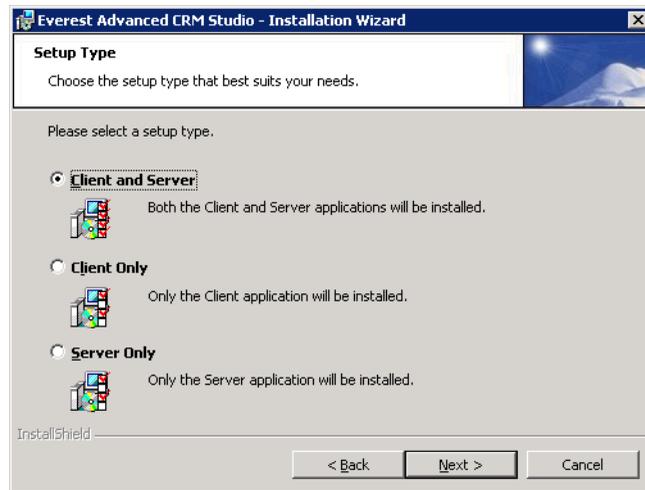
Figure 1.4: Setup Type

Use the **Setup Type** dialog box to specify the type of setup (Server and Client, Client Only or Server Only).

- Select **Server and Client** to install the **CRM Studio** server and client. A compatible **Everest** application server and the **Everest** client must be installed. Click **Next**. You will see the **Everest Advanced Data Server** dialog box.

- Select **Client Only** to install only the **CRM Studio** client. A compatible **Everest** client must be installed. Click **Next**. You will see the **Ready to Install** dialog box.

- Select **Server Only** to install only the **CRM Studio** server. A compatible **Everest** application server must be installed. Click **Next**. You will see the **Everest Advanced Data Server** dialog box.

You will receive an error message if a compatible **Everest** application server and/or **Everest** client is not installed. Click **OK** to exit the installation.

Everest Advanced Data Server

Use the **Everest Advanced Data Server** dialog box to provide information on the **Everest** database.
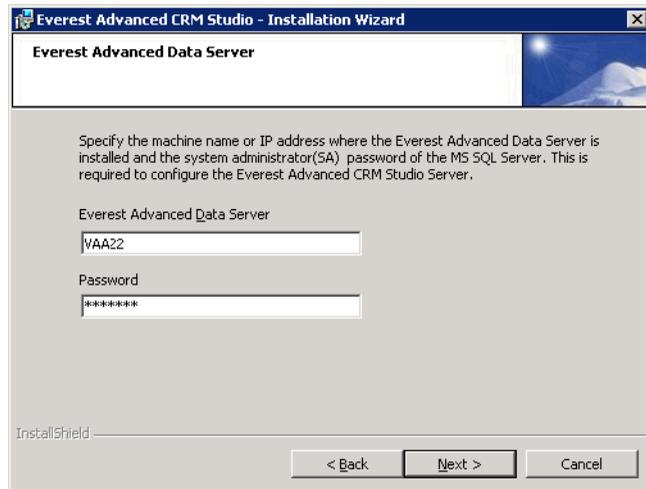
Figure 1.5: Everest Advanced Data Server

- Specify the IP address or the machine name where **Everest** Data Server is installed.

  If the **Everest** Data Server is installed on the same machine where you are installing **CRM Studio**, then you will not see the above dialog box.

- Enter the system administrator password (SA) of the MS SQL Server. This is not the password for **Everest**. This is necessary so that the **Everest Advanced CRM Studio Server** can be configured.

- Click **Next**. You will see the **Ready to Install the Program** dialog box.

Ready to Install the Program
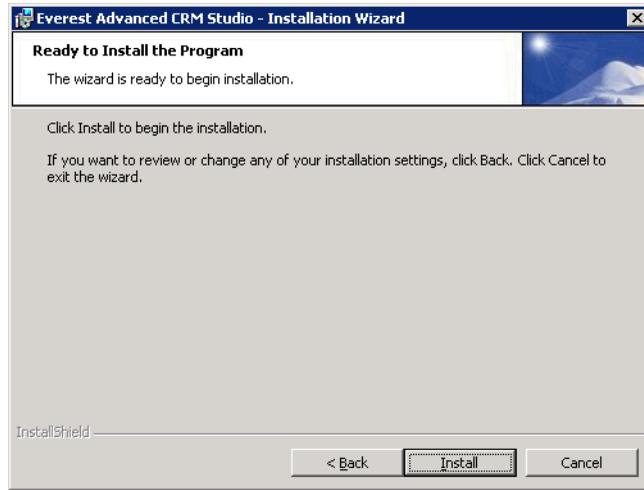
Figure 1.6: Ready to Install the Program

- Click **Install**. You will see the **Installing Everest Advanced CRM Studio** dialog box. The Installation Wizard installs **CRM Studio** on your computer.

Installing Everest Advanced CRM Studio
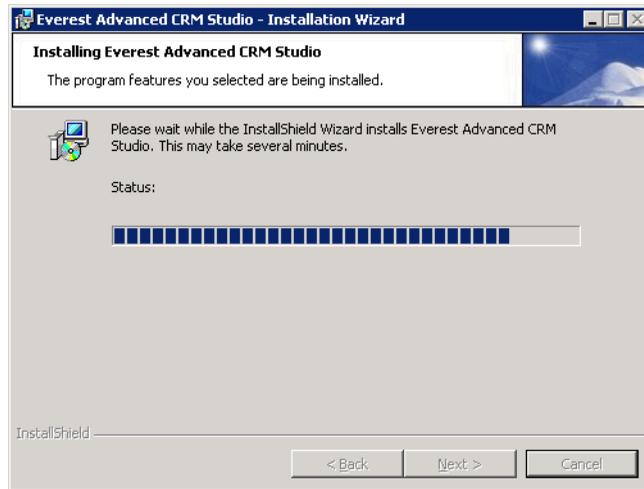
Figure 1.7: Installing Everest Advanced Edition CRM Studio

The Installation Wizard installs **CRM Studio** on your computer.

- During installation, if other programs are running on the workstation, you will see the **Files in Use** dialog box. Shut down the programs and click **Retry** to continue the installation. Alternatively, you can click **Ignore** to continue the installation without shutting down the programs.

- Once installation has been completed, you will see the **Installation Wizard Completed** dialog box.

Installation Wizard Completed
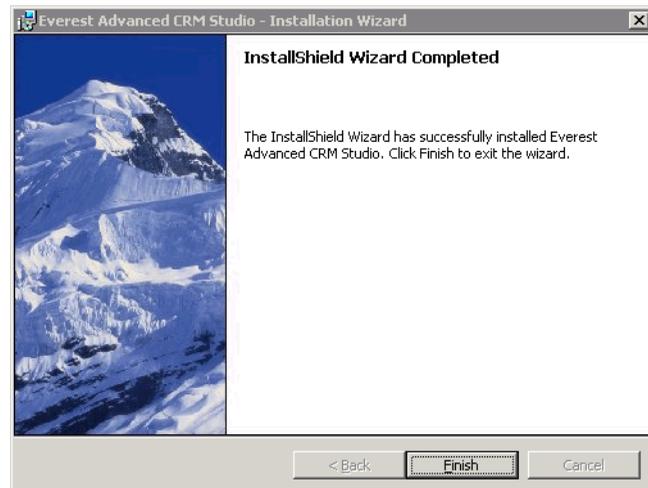
Figure 1.8: Installation Wizard Completed

- Click **Finish** to exit the wizard.

- After installation of **CRM Studio** server, the user should login to ASC company and invoke the **Everest CRM Studio Architect**. This will update the ASC sample company (for reference) with the latest EventPak. Later the user can access architect of his/her working company.

The installation of **CRM Studio** is now complete. Your next steps are the activation and initial configuration of **CRM Studio**.

Activation - CRM Studio

There are two sets of license keys used to activate **CRM Studio**. The first one is entered during the installation of **CRM Studio** and the second one is entered in the **CRM Studio Architect**.

CRM Studio activation codes are bound to the name of the server they are installed on. If you need to re-install **CRM Studio** on a different machine or rename it after the first 30 days, a re-licensing charge will be incurred.

To activate CRM Studio through CRM Studio Architect, do the following:

• From the **Everest** main menu bar, select **CRM > CRM Studio > Architect**. You will see the **Everest CRM Studio Architect** dialog box.

• From the menu, select **Help > About Everest CRM Studio Architect**.
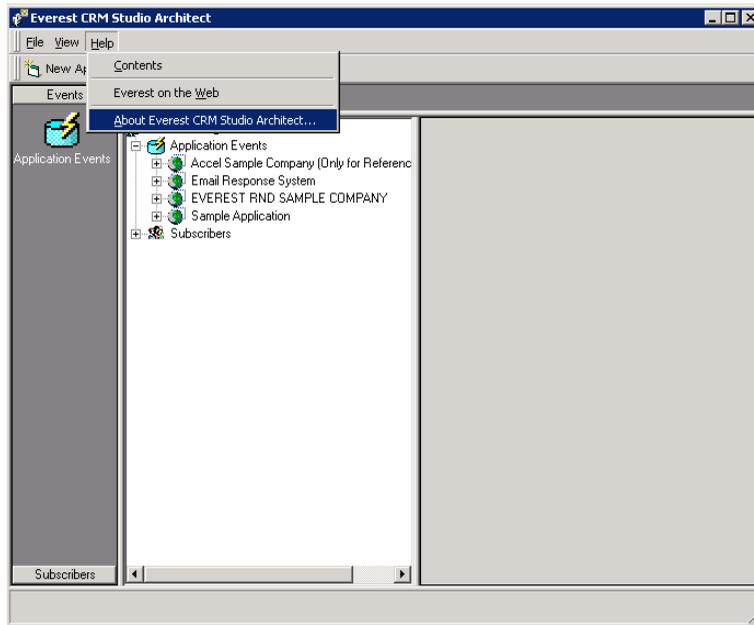
Figure 1.9: Everest CRM Studio Architect

You will see the **About Everest CRM Studio Architect** dialog box.

Figure 1.10: About Everest CRM Studio Architect Dialog Box

- Click the **License** button to view the **License Code Management** dialog box.

Figure 1.11: Everest CRM Studio - License Code Management Dialog Box

- Enter your license information in the following fields:

License Owner
Enter the name of the person or organization that owns the **CRM Studio** license.

License Expiration Date
Enter the date that your license will expire.

License Code
Enter your **CRM Studio** license code.

License Type
Select your license type from the drop-down list.

License Server Name
Enter the name of your **CRM Studio** Server.

Licensed DB Connections
Enter the number of your licensed database connections.

- Click **OK** to complete your **CRM Studio** activation.

For more information on **CRM Studio**, refer to the **CRM Studio Web Help**.

Modify, Repair, and Uninstall CRM Studio

Use the Modify, Repair, and Uninstall **CRM Studio** process to modify, repair, or uninstall **CRM Studio** separately from **Everest**. Access these options from **Add/ Remove Programs** in the **Control Panel.**

It is recommended that you close any other programs running on your workstation before modifying, repairing, or uninstalling **CRM Studio**.

To access the CRM Studio Modify, Repair, and Uninstall options, do the following:

- From the **Control Panel**, double-click **Add or Remove Programs**. You will see the **Add or Remove Programs** dialog box.
- From the **Add or Remove Programs** dialog box, select **Everest Advanced CRM Studio**.
- **Click Change**. You will see the **Welcome** dialog box.
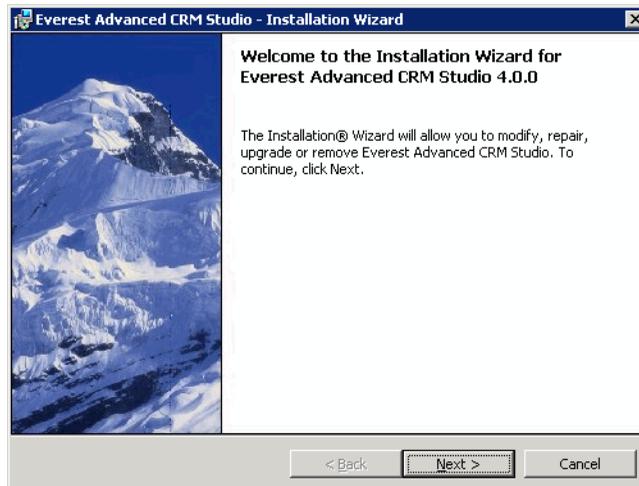
Welcome

Figure 1.12: Welcome

- Click **Next**. You will see the **Program Maintenance** dialog box.

Program Maintenance
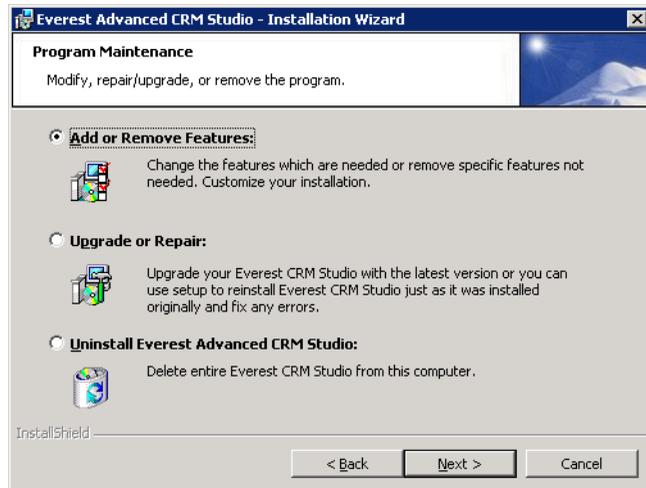
Figure 1.13: Program Maintenance

The **Program Maintenance** dialog box allows you to specify the type of maintenance option (Add, Remove, Upgrade, Repair, or Uninstall).

Add or Remove Features
Select this option to add or remove features of the **Everest Advanced CRM Studio** application.

☞ "Add or Remove Features" on page 15

Upgrade or Repair
Select this option to repair installation errors in the **CRM Studio** program. You can also upgrade a previous version of **CRM Studio** already installed on your system.

☞ "Upgrade or Repair" on page 17

Uninstall Everest Advanced CRM Studio
Select this option to uninstall the **CRM Studio** application from your computer.

☞ "Remove the Program" on page 19

Add or Remove Features

Use this option to add or remove **Everest Advanced CRM Studio** features.

• Select **Add or Remove Features** from the **Program Maintenance** dialog box.

☞ Program Maintenance

• Click **Next**. You will see the **Custom Setup** dialog box.

Custom Setup

To view the description for a feature, click on it. The relevant description is displayed in the **Feature Description** box on the right side of the dialog box.
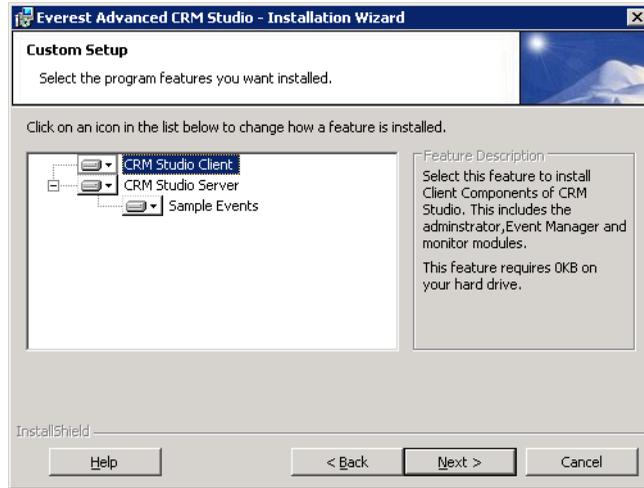
Figure 1.14: Custom Setup

• Select the features/sub-features to add or remove.

• Click **Next**. You will see the **Ready to Modify the Program** dialog box.

Custom Setup Dialog Box Options

The options available in this dialog box are listed below:

• CRM Studio Client

• CRM Studio Server

    - Sample Events

<u>Select/Deselect Components</u>

• To select/deselect components, click ▣▾ displayed beside each component.

You will see the following options:

This feature will be installed on local hard drive
Choose this option to install the selected feature on your hard disk. Only the selected feature/sub-feature will be installed.

This feature will not be available
Select this option to disable the feature (the feature will not be installed).

<u>Space</u>

Click **Space** to view the **Disk Space Requirements** dialog box.

The **Space** button is enabled only if a component is selected for installation.

The **Disk Space Requirements** dialog box displays the hard disk space statistics of your computer.

Ready to Modify the Program
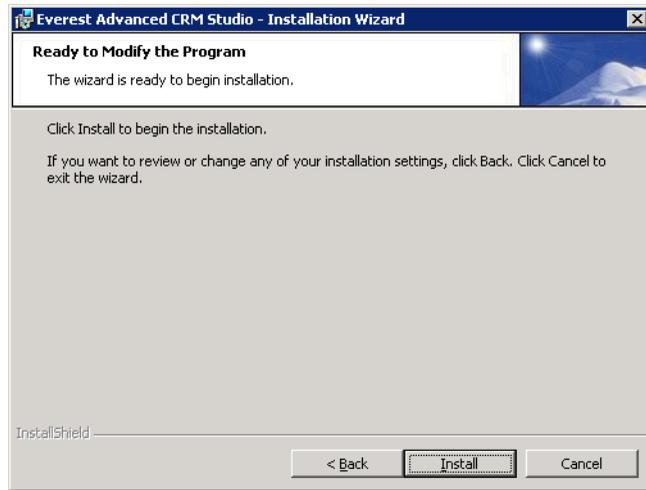
Figure 1.15: Ready to Modify the Program

- Click **Install**. You will see the **Installing Everest Advanced CRM Studio** dialog box. The Installation Wizard installs **CRM Studio** on your computer.

☞ **"Installing Everest Advanced CRM Studio" on page 10**

- Once the installation is complete, you will see the **Installation Wizard Completed** dialog box.

☞ **"Installation Wizard Completed" on page 11**

- Click **Finish** to exit the wizard.

Upgrade or Repair

Use this option to upgrade or repair your **Everest CRM Studio** client or server.

- Select **Upgrade or Repair** from the **Program Maintenance** dialog box. This option upgrades or repairs the **Everest** component(s) that are installed on your computer.

☞ **"Program Maintenance" on page 15**

- You will see the **Ready to Repair the Program** or **Ready to Upgrade the Program** dialog box.

Ready to Repair/Upgrade the Program

This window displays the version of **Everest** that you are ready to repair or upgrade and its corresponding features. You can go back and make any changes, if required.
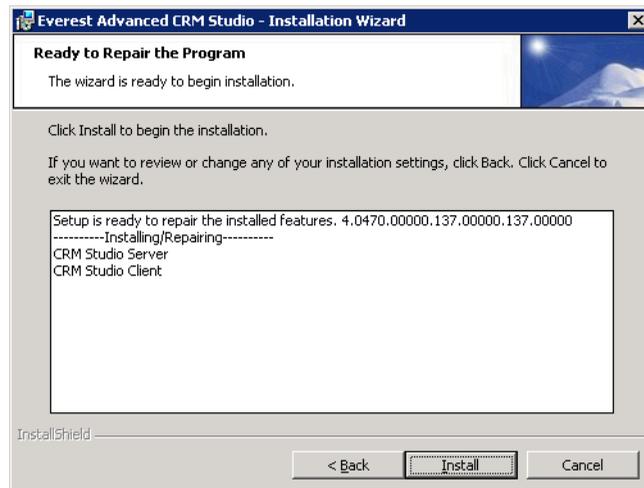
Figure 1.16: Ready to Repair the Program Dialog Box

- Click **Install**. You will see the **Installing Everest Advanced CRM Studio** dialog box.

☞ **"Installing Everest Advanced CRM Studio" on page 10**

- Once the installation is complete, you will see the **Installation Wizard Completed** dialog box.

☞ **"Installation Wizard Completed" on page 11**

- Click **Finish** to exit the wizard.

Uninstall Everest Advanced CRM Studio

Use this option to delete **Everest Advanced CRM Studio** completely from your computer.

- Select **Uninstall Everest Advanced CRM Studio** from the **Program Maintenance** dialog box. Click **Next**. You will see the **Remove the Program** dialog box.

☞ **"Program Maintenance" on page 15**

Remove the Program
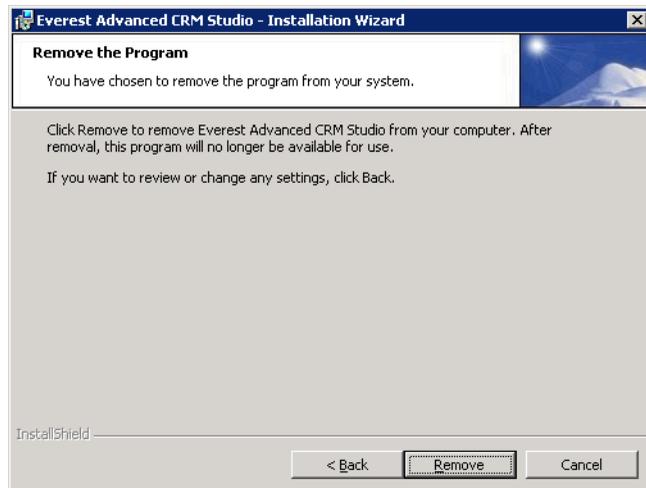
Figure 1.17: Remove the Program

- Click **Remove** to uninstall the application from your computer. You will see the **Uninstalling Everest Advanced CRM Studio** dialog box.

Uninstalling Everest Advanced CRM Studio

Figure 1.18: Uninstalling Everest Advanced CRM Studio

- Once the uninstall process is complete, you will see the **Installation Wizard Completed** dialog box.
- Click **Finish** to exit the wizard.

Configuration - CRM Studio

As a lights-out application, **CRM Studio** uses multiple server processes in its daily processing. These servers do everything from scheduling events for submission, and checking for triggered events, to sending out alerts via e-mail.

For a list of all the individual server processes that **CRM Studio** uses, you can log in to the **Everest CRM Studio Administrator** (path: **CRM > CRM Studio > Administrator**). Select **Activity > Server Status** from the **Administration Folders** panel in the center. The **Server Status** panel on the right displays all of **CRM Studio**'s servers and their current status.

Under Microsoft Windows 2000, all these servers run under an overall **CRM Studio** service, which you can check from the Service Manager.

Each individual **CRM Studio** server process may be enabled or disabled for running from the **Everest CRM Studio Administrator** dialog box. Double-click a server process name and check the option **Allow Server to Process**.

By default, some of **CRM Studio**'s delivery servers (such as the fax, page, and webcast servers) are pre-configured to not start when the **Everest CRM Studio** service (or server manager) is initialized. (The **CRM Studio**, scheduler, application event, and e-mail servers are enabled by default.)

You may wish to review the status of the various **CRM Studio** servers to see which servers are (and are not) configured to run. Please note that if you are using **CRM Studio** to perform a function related to one of the servers on this list, you must be sure that the server is enabled to run.

There are four steps in the initial configuration of **Everest CRM**:

- Connecting **CRM Studio** to an underlying company database and verifying that this connection is valid.

    ☞**"Connect CRM Studio to the ASC Database" on page 22**

- Specifying the e-mail account that **CRM Studio** will use for the sending of e-mail alert messages.

    ☞**"Set Up E-mail Account to send E-mails" on page 28**

- Testing the operation of the e-mail account defined in the previous step.

    ☞**"Test the E-Mail Sending Account" on page 32**

- Creating a 'subscriber' record for yourself to use during initial event testing.

    ☞**"Define a Subscriber" on page 33**

Authentication

You need to provide authentication details in order to access **CRM Studio** after installation.

To provide authentication details, do the following:

- From the main menu bar, select **CRM > CRM Studio > Configuration**. You will see the **Configuration - CRM Studio** dialog box.
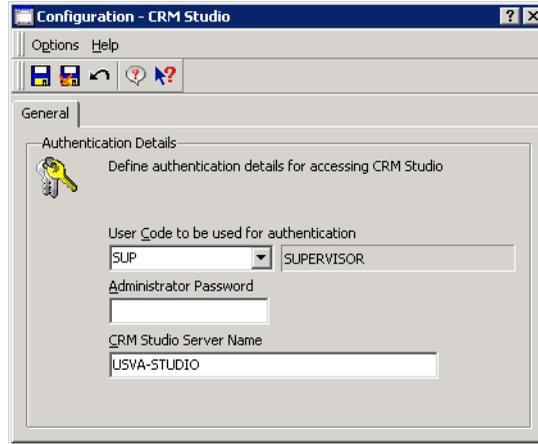
Figure 1.19: Configuration - CRM Studio

*User Code to be Used for Authentication ***
Enter the user code for using **CRM Studio** to access **Everest** database. This is required for security purposes and it prevents any unauthorized updating of the **Everest** database using some of the events available in **CRM Studio**.

*Administrator Password ***
Enter the administrator password for accessing **CRM Studio**. This is required as an additional security right to access related modules in **CRM Studio**.

*CRM Studio Server Name ***
Enter the name of the **CRM Studio** server. This field defaults to the last **CRM Studio** server name. If you uninstall and reinstall **CRM Studio**, you must change the **CRM Studio** name to ensure proper functionality between **Everest** and **CRM Studio**.

Menu Option

Create Application
You can create an application for your registered company by selecting this option.

The **Create Application** option is disabled in the following scenarios:

- The sample company is installed.
- An application is already installed for the logged in company.

To create an application, do the following:

- From the main menu bar of the **Everest** window, select **CRM > CRM Studio >Configuration**. You will see the **Configuration - CRM Studio** dialog box.
- From the **Configuration - CRM Studio** dialog box, select **Options > Create Application**. A **Confirmation** window appears.
- Select one of the options:

- **Create a blank application** - Select this option to create an application without the sample events. This, however, does not affect the other activities of CRM Studio.
- **Create an application and copy sample events** - Select this option to create an application with all the sample events.

Install/Upgrade Reference Events

This option allows you to install sample events or upgrade existing sample events whenever an update is available. You can use this option in the sample company as well as a registered company.

☞ **"Sample Events" on page 355**

To install/upgrade sample events using the Install/Upgrade Sample Events option, do the following:

- From the main menu bar of the **Everest** window, select **CRM > CRM Studio > Configuration**. You will see the **Configuration - CRM Studio** dialog box.
- From the **Configuration - CRM Studio** dialog box, select **Options > Install/ Upgrade Sample Events**. A **Confirmation** window appears.
- Click **Yes** to install/upgrade the sample events.

Whenever you upgrade **Everest**, if you have installed **CRM Studio**, **Everest** will prompt you to install the latest eventpak provided by Everest Software, when you try to access any feature of **CRM Studio**. If you do not opt to install it then you will still access the older version of the eventpak. You can use the **Install/Upgrade Sample Events** option from the menu at any point of time to install the latest upgraded events.

This option will be enabled only when the user does not have the latest sample events. This latest sample events will be installed in the /Everest/ ACRM folder. However, the same will not be updated in **CRM Studio**. Hence, in order to install the latest sample events the user has to either say 'Yes' when prompted or select the menu option manually.

You need to have rights to upgrade the events.

Choose the Everest CRM Studio Server

CRM Studio is designed to be installed on a single machine, a server from which it can access the database(s) of the company(s) to be monitored.

All set-up and maintenance of **CRM Studio** is to be done from this server. However, if your hardware set-up dictates that **CRM Studio** administration and configuration be done from a remote client, contact Everest Software Technical Support for guidance in installing a remote client version of **CRM Studio**.

Connect CRM Studio to the ASC Database

The Accel Sample Company (ASC) is a sample database, shipped with **Everest**. You may use this sample company data to test, and familiarize yourself with the configuration and working of **Everest's** features, such as **CRM Studio**. We recommend that you carry out these procedures on the ASC database to begin with. Later, you may follow the same procedures to configure **CRM Studio** for

use with your actual company's database. Alterations to sample data have no effect whatsoever on your real company's data.

CRM Studio uses Microsoft ODBC (Open Database Connectivity) to integrate with an underlying database. The first step is to check for, and test the ODBC source that allows **CRM Studio** to access the Accel Sample Company database.

The ODBC System DSN for the Accel Sample Company is created by default during the installation of **CRM Studio**. You must verify that the ODBC source is fully operational.

"CRM Studio Installation" on page 5

Verify ASC's ODBC Source

To verify the existence of a System DSN source for the Accel Sample Company, do the following:

• Open the **ODBC Data Source Administrator** (path: **Control Panel > Administrative Tools > Data Sources (ODBC)**).

• Click the **System DSN** tab. Your source will look like the following, depending on the type of database you are working with.
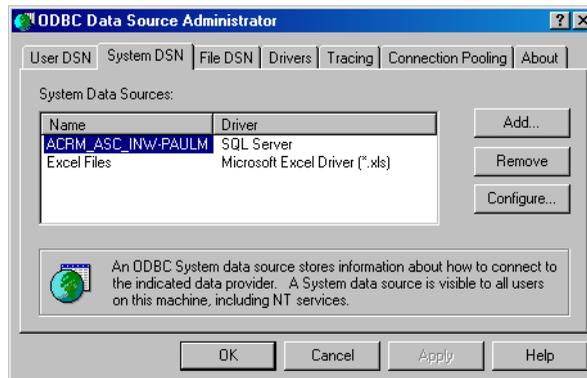
Figure 1.20: ODBC Data Source Administrator - System DSN tab

• In the list of ODBC system data sources, verify that a data source exists for ASC. The name of this source is ACRM_ASC_<name of the SQL server instance on your computer>.

Example If the SQL server component installed on your machine is named comp-shopfloor1 (this is the name used by SQL Server to identify your machine on your network), the ODBC source will be ACRM_ASC_COMP-SHOPFLOOR1.

Test ASC's ODBC Source

To test the ODBC source for the Accel Sample Company, do the following:

• Open the **ODBC Data Source Administrator** (path: **Control Panel > Administrative Tools > Data Sources (ODBC)**).

- Click the **System DSN** tab. Highlight the name of the ODBC source defined for ASC (ACRM_ASC_<name of the SQL server instance on your computer>).
- Click **Configure**. You will see the **Microsoft SQL Server DSN Configuration** dialog box.
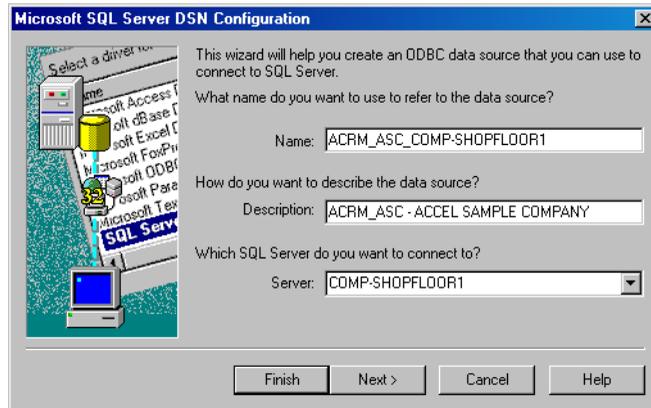
Figure 1.21: Microsoft SQL Server DSN Configuration

- Click **Next** until you get to the final screen. Each screen displays various details about the SQL Server DSN configured on your machine.

> Altering the default configuration (if necessary) is best done by an advanced user or a network/systems administrator.

- Click **Finish** when you get to the final screen. You will see the **ODBC Microsoft SQL Server Setup** dialog box, displaying details of the SQL Server DSN.
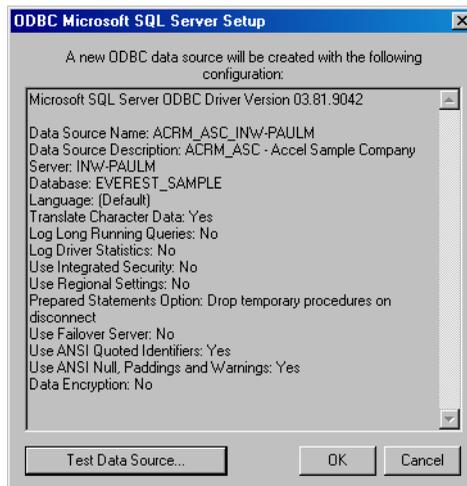
Figure 1.22: ODBC Microsoft SQL Server Setup

- Click **Test Data Source**. You will see the **Test Results** screen. If the data source is configured correctly, the message 'Tests Completed Successfully!' is displayed.
- Click **OK**. You will see the **ODBC Microsoft SQL Server Setup** dialog box again.
- Click **OK**. You will see the **ODBC Data Source Administrator** dialog box again. Click **OK**.

Log In To Everest CRM Studio Architect

To log in to Everest CRM Studio Architect, do the following:

- From the main menu bar, select **CRM > CRM Studio > Architect**. You will see the **Everest CRM Studio Architect** dialog box.

When you log in for the first time, the ASC database is updated with the latest EventPak.
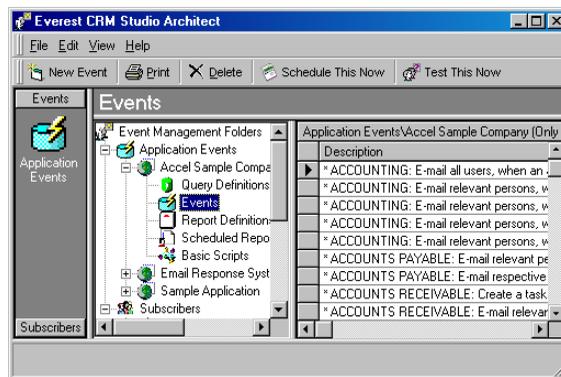
Figure 1.23: Everest CRM Studio Architect

You will see the **Event Management Folders** panel in the center, comprising two branches:
- Application Events
- Subscribers

The branches below Application Events list all the companies that **CRM Studio** is currently configured to integrate with. These branches include:
- **Accel Sample Company:** Sample database provided by Everest Software to familiarize you with the **Everest** application.
- **E-Mail Response System**: Enables **CRM Studio** to monitor, process, and respond to incoming e-mail messages.
- **Sample Application**: CRM database provided for evaluation, learning, and testing purposes.

Add an Everest Company

You may need to configure **CRM Studio** to work with the database of another company (such as your own company's database) created in **Everest**, according to

your requirements.

To configure CRM Studio to work with another company, do the following:

- From the **Everest CRM Studio Architect** dialog box, click **Application Events**.
- Click the **New Application** button at the top-left of the **Everest CRM Studio Architect** dialog box. You will see the **Everest CRM Studio - New Application** dialog box.
- Enter the relevant data in the fields mentioned above. Leave the other fields with their default values, if any.
- Click **Save and Close** at the top-left of the dialog box. You will see the **Everest CRM Studio - New Application** dialog box again.
- Click **OK**.

> If you add to or change the definition of an ODBC source while you are in the **Everest CRM Studio Architect**, you will have to exit it and re-enter for it to recognize the new or modified ODBC sources.

The Everest CRM Studio - New Application Dialog Box

Figure 1.24: Everest CRM Studio - New Application

New Application
Enter the name of the company.

Connection to Use for Database Access
Select a connection from the drop-down list.

Click **New Connection**. You will see the **Everest CRM Studio - Edit Connection** dialog box.

The Everest CRM Studio - Edit Connection Dialog Box
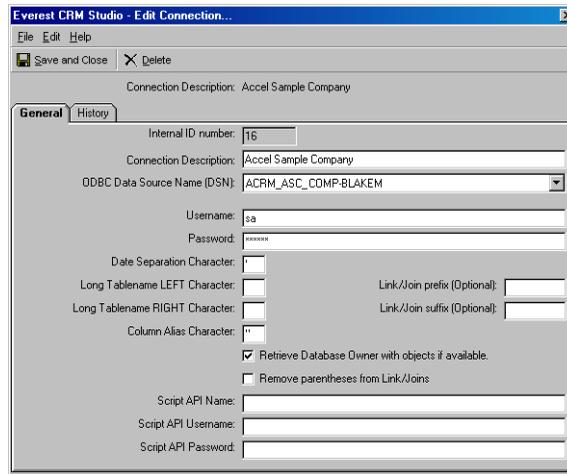
Figure 1.25: Everest CRM Studio - Edit Connection - General

Internal ID Number
This field displays the ID of the connection. You cannot modify it.

Connection Description
Enter a description of the ODBC source you will be using to connect **CRM Studio** to the company database.

ODBC Data Source Name (DSN)
From the drop-down list select the ODBC source that will allow **CRM Studio** to connect to the company database.

User Name and *Password*
Specify the user name and password that will allow **CRM Studio** access to this database.

Test ODBC Connection

To test if your ODBC connection is valid within CRM Studio, do the following:

- From the **Everest CRM Studio Architect** dialog box, double-click Accel Sample Company. Five sub-branches are displayed, the first of which is **Query Definitions**.
- Click **Query Definitions**.
- Click the **New Query Definition** button at the top-left of the dialog box. You will see the **Everest CRM Studio - Application Events** dialog box.

  If you get an error message, the ODBC source is incorrectly defined.

- Click the **Tables** tab. From the **Available Tables** column on the left, highlight a database table that contains records and click the **Add Table** button. It is added to the **Selected Tables** column on the right.

  If no table names appear in the left column, the ODBC source is incorrectly defined.

- Click the **Columns** tab. Check if the columns of the selected table are displayed in the **Available Columns to Query** section.

  If no column names appear in the list, the ODBC source is incorrectly defined.

- Click the **Add All Columns to Query** button.

- Click the **Preview** tab. You will see a list of records from this table.

  If you receive an error message, the ODBC source may be incorrectly defined.

If you execute these steps successfully, the integration test is complete. You can now specify the e-mail account that **CRM Studio** will use for sending e-mail alert messages.

Set Up E-mail Account to send E-mails

CRM Studio sends out alert messages via e-mail (among other methods). The first configuration step is to define the e-mail account that will be used for sending e-mail alert messages. This account is called the "E-mail Sending Account".

To define the e-mail account to be used for sending e-mail alert messages, do the following:

- From the main menu bar, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.

The Everest CRM Studio Administrator Dialog Box

Figure 1.26: Everest CRM Studio Administrator

- From the **Administration Folders** panel in the center, double-click the **Software Setup** folder and click **E-mail Accounts**.

- Click the **New E-mail Account** button at the top-left of the **Studio Administrator** dialog box. You will see the **Everest CRM Studio - E-mail Accounts** dialog box.

   ☞ **"The Everest CRM Studio - E-mail Accounts Dialog Box - General" on page 29**

- Enter relevant data depending on the type of e-mail account.
- Ensure that you check the **Active** box (since only currently available accounts can be used for sending e-mail) and click **Save and Close**.

The Everest CRM Studio - E-mail Accounts Dialog Box - General
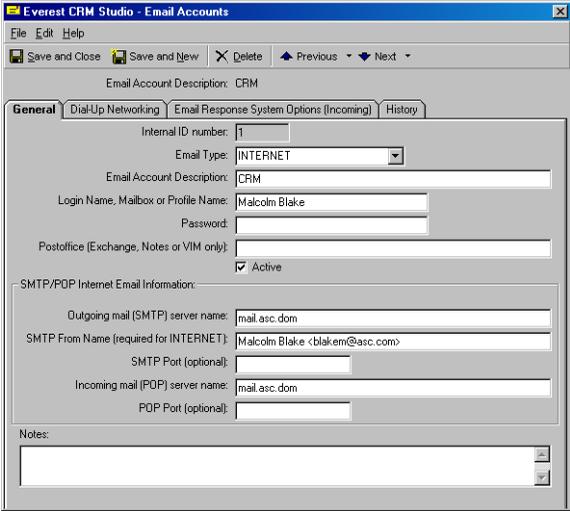
Figure 1.27: Everest CRM Studio - E-mail Accounts

Internal ID number
This field displays the ID of the e-mail account. You cannot modify it.

E-mail Type
Select the type of e-mail account to be set up from the drop-down list.

E-mail Account Description
Enter a description for this e-mail account.

Login Name, Mailbox or Profile Name
Enter your login, mailbox or profile name, depending on the type of e-mail account being defined.

Enter the profile name for Mapi, the mailbox alias name for Exchange, and the login name for Internet.

Password
Enter the password to log in to this account.

Postoffice (Exchange, Notes or VIM only)
Specify the post office, if you are defining an Exchange, Lotus Notes or VIM

compliant e-mail system.

> For Lotus Notes and VIM, fill this in only if the post office you are using is different from the default post office for the Notes or VIM client. For Exchange, enter the exchange server name.

Active

Ensure that this box is checked if you want to use this account for sending e-mails.

SMTP/POP Internet E-mail Information

> Specify relevant details in the following fields, if you are defining an Internet type of e-mail account.

Outgoing Mail (SMTP) Server Name

Enter the SMTP server name.

SMTP From Name (required for Internet)

Enter the name that should appear in the 'From' field of outgoing e-mails.

SMTP Port (optional)

Specify the port for sending e-mails.

> This port is used to accommodate specific firewall security software. Leave this field blank unless otherwise instructed by Everest Software.

Incoming Mail (POP) Server Name

Enter the POP server name.

POP Port (optional)

Specify the port for receiving e-mails.

> This port is used to accommodate specific firewall security software. Leave this field blank unless otherwise instructed by Everest Software.

Notes

Enter any additional information that you want to keep track of.

E-mail Sending Account - Notes

Everest Software recommends using e-mail type Internet with Exchange if the exchange server is configured for SMTP and POP3.

The ability to send HTML e-mail only works with e-mail type Internet. You gain ease-of-use and functionality if the Exchange server is configured for SMTP.

If you use a Microsoft Exchange type of e-mail sending account, you must do the following depending on whether you are running Exchange under SMTP, or in its native environment.

Running Exchange under SMTP

To run Microsoft Exchange with SMTP, do the following:

- Stop the **Everest CRM Studio** service (path: **Control Panel > Administrative Tools > Services**).
- From the main menu bar, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.
- From the **Administration Folders** panel in the center, double-click the **Software Setup** folder and click **E-mail Accounts**.

- The e-mail account you defined is displayed in the **E-mail Accounts** panel on the right. Highlight the account and select **File > Open Selected Item**. You will see the **Everest CRM Studio - E-mail Accounts** dialog box.

- Select **Internet** from the **E-mail Type** drop-down list. Ensure that the **Postoffice (Exchange, Notes or VIM only)** field is blank.

- Enter the default server name(s) of your site.
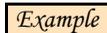
  Example server.[your_company].com.

- Enter a valid e-mail account in the **SMTP From Name (required for Internet)** field.

- Restart the **Everest CRM Studio** service (path: **Control Panel > Administrative Tools > Services**).

  If you have set up SMTP access to your Exchange server using SSL only, these steps will not work with **CRM Studio.** You must therefore execute the steps below.

Running Exchange without SMTP

Identify the user account you will run **CRM Studio** from. This account must be a real user account - not the system account. Microsoft Collaboration Data Objects (CDO) requires a real user context when invoking the CDO components. If you have already set up an account, log in to that account for the next steps.

Otherwise, create an account, log on to it and follow the steps below.

To run Microsoft Exchange without SMTP, do the following:

- Stop the **Everest CRM Studio** service (path: **Control Panel > Administrative Tools > Services**).

- Go to **Control Panel > Add/Remove Programs.** From the list, highlight MS Office or MS Outlook and click the **Change** button. You will see the **Setup** dialog box.

- Select **Add or Remove Features** and click **Next**.

- Double-click **Microsoft Outlook for Windows**, and check if **Collaboration Data Object** has a red 'x' mark across it. If it does, you need to install it. If not, you must re-install/repair it.

- Ensure that, in Exchange Administration, the primary account for the mailbox you are using is configured for the NT user account you will be running **CRM Studio** from. Check the **Primary NT Account** option to verify this.

- Ensure that the **Postoffice (Exchange, Notes or VIM only)** field in the **Everest CRM Studio - E-mail Accounts** dialog box has your Exchange server name.

- Ensure that the **Login Name, Mailbox or Profile Name** field contains the mailbox alias or directory name.

  Sometimes, the mailbox might be 'Bob Jones' but the real name is 'bjones'. You must specify the real name being used which should be devoid of spaces.

- Enter the password (usually the NT account password) to access the mailbox.

- In your NT Services control panel, enter the Log On As information to enable **Everest CRM Studio** service to run from the NT user account you have created.
- Start the **Everest CRM Studio** service (path: **Control Panel > Administrative Tools > Services**).

  > Ensure that MS Outlook and **CRM Studio** are not running simultaneously on the same server. CDO allows only one user context access to the mailbox at a time on one machine.

Test the E-Mail Sending Account

 To test the e-mail account, do the following:

- Ensure that the **Everest CRM Studio** service (path: **Control Panel > Administrative Tools > Services**) is running.
- From the **Everest CRM Studio Administrator** dialog box, click **Software Setup > E-mail Accounts**. The account you just set up is displayed in the right panel. Click this account.
- Click the **Perform E-mail Test** button at the top of the **Everest CRM Studio Administrator** dialog box. You will see the **Everest CRM Studio Administrator - Perform E-mail Test** dialog box.

Figure 1.28: Everest CRM Studio Administrator - Perform E-mail Test

- Enter your own e-mail address and click **OK**.
- From the main menu bar, select **CRM > CRM Studio > Monitor**. You will see the **Everest CRM Studio Event Monitor** dialog box.
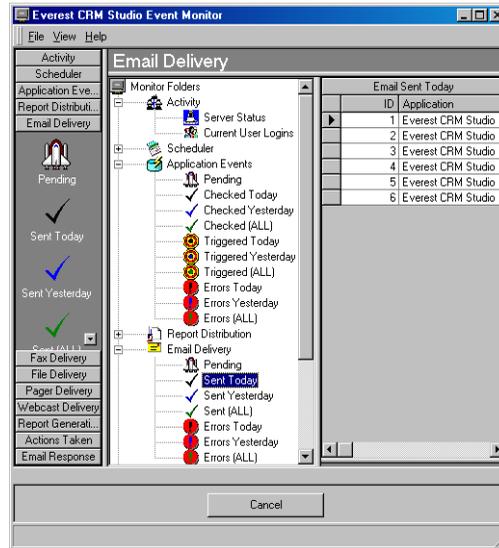
Figure 1.29: Everest CRM Studio Event Monitor

- Verify if the e-mail has been successfully sent by selecting **E-mail Delivery > Sent Today**. If the e-mail appears in the **Errors Today** branch (or never leaves the **Pending** branch), there is an error in the configuration of the e-mail sending account.

- If the e-mail is not sent successfully, stop the **Everest CRM Studio** service and review the e-mail sending account set-up (contact Everest Software Technical Support, if needed). Once you have re-configured the account, you do not need to send another test mail, as the previous one is still pending. Restart the **Everest CRM Studio** service and verify if the pending message is sent.

Define a Subscriber

The final step in the initial configuration of **CRM Studio** is to define yourself as an event subscriber – a person who will receive an alert message.

To define yourself as an event subscriber belonging to the sales team, do the following:

- From the main menu bar, select **CRM > CRM Studio > Architect**. You will see the **Everest CRM Studio Architect** dialog box.

- From the **Event Management Folders** panel in the center, select **Subscribers > Users > Sales Team**.

- Click the **New User** button at the top-left of the **Everest CRM Studio Architect** dialog box. You will see the **Description** tab of the **Everest CRM Studio - Subscribers\Users\Sales Team** dialog box.

"The Everest CRM Studio - Subscribers\Users\(group name) Dialog Box - Description" on page 34

- Enter the relevant details in the first six fields. Ensure that you check the **Active** box. Click the **E-mail** tab.

  ☞ **"The Everest CRM Studio - Subscribers\Users\(group name) Dialog Box - E-mail" on page 38**

- Enter your primary e-mail address in the **E-mail Address 1** field and secondary e-mail address in the **E-mail Address 2** field.
- Click **Save and Close**.

The Everest CRM Studio - Subscribers\Users\(group name) Dialog Box - Description
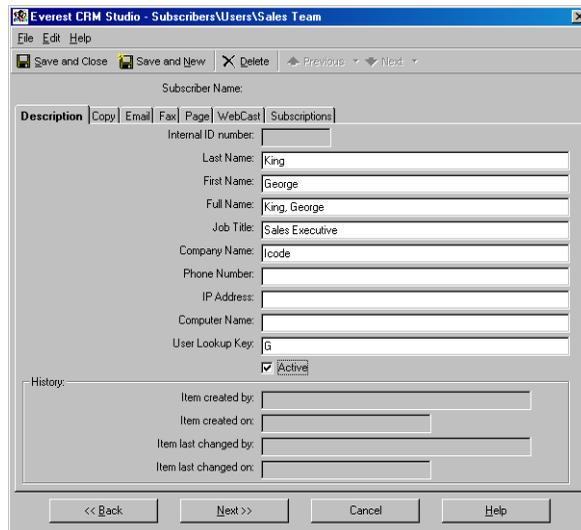
Figure 1.30: Everest CRM Studio - Subscribers\Users\(group name) - Description

Internal ID Number
This field displays the ID of the subscriber. You cannot modify it.

Last Name and *First Name*
Enter the last and first names.

Full Name
The full name is displayed in this field. You can edit this field.

Job Title
Enter the job title of the user.

Company Name
Enter the name of the user's company.

Phone Number
Enter the user's phone number.

IP Address
Enter the IP address of the user's computer.

Computer Name
Enter the name of the user's computer.

User Lookup Key
Specify a unique value/code that identifies this user. This key links the user to a database record.

☞ **"User Lookup Key" on page 35**

Active
Ensure that this box is checked if you want to use this user to receive notifications.

User Lookup Key

Consider the following scenario:

You have a customer support application that tracks the calls assigned to various support representatives. Each support representative is identified by a unique ID as well as a non-unique group code (such as the Frontline group).

The support application does not store the corresponding representative's e-mail and other notification addresses anywhere in the application.

When a support call meets a condition that warrants an alert to the corresponding support representative, the following occurs:

- **CRM Studio** looks at the triggered record and finds the corresponding representative's ID and group name.
- **CRM Studio** looks up the matching **CRM Studio** subscriber record (based on the representative's ID) and the matching subscriber group (based on the representative's group name) in the **CRM Studio** subscriber database.
- **CRM Studio** alerts the corresponding support representative and/or group.

Thus, the **User Lookup Key** field allows you to designate a unique value that identifies and links this user to a database record.

☞ **"Use a Group Lookup Key" on page 163**

The Everest CRM Studio - Subscribers\Users\(group name) Dialog Box - Copy

One of the methods by which you can receive notifications is via copied files. The copy method allows **CRM Studio** to move files and Crystal Reports (both of which may be attached to triggered events, or scheduled on a periodic basis) to specific locations.
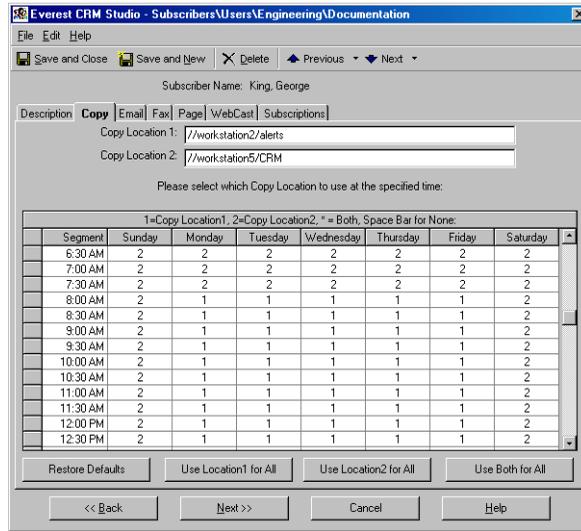
Figure 1.31: Everest CRM Studio - Subscribers\Users\(group name) - Copy

Copy Location 1

Enter the primary copy location of the subscriber in this field.

Copy Location 2

Enter the secondary copy location of the subscriber in this field.

The copy location should be specified using the standard UNC (Universal Naming Convention) format. On a network, the UNC is a method by which you can identify a shared file in a computer, without having to specify the storage device it is on. For Windows, the UNC name format is:

//servername/sharename/path/filename.

You can also specify an FTP address, using the format:

ftp://username:password@ftp.location.net/directory_name.

CRM Studio allows you to specify two locations for copied files. The reason for these two locations is that you might wish to use a different location based on the time of day (and day of the week) when the notification occurs.

Example If a notification occurs during work hours (Monday through Friday, 8:00 am to 5:00 pm), you can have files copied to a location inside your computer's security firewall. However, if a notification occurs outside of work hours, you might have files copied to a location outside your computer's firewall, and thus, have round-the-clock access to that data.

Please select which copy location to use at the specified time
Specify the location of the file to be used at different times of the day (and on different days of the week) in this grid.

The default grid values use **Copy Location 1** for normal work hours (Monday through Friday, 8:00 am to 5:00 pm), and **Copy Location 2** for all other times.

You may also use the grid to specify those times when both copy locations are to be used (place an asterisk in the corresponding time slots) and to specify those times when neither copy location is to be used (use the spacebar to place a blank in the corresponding time slots).

Restore Defaults
Click this button to restore the default settings.

Use Location1 for All
Click this button to use the primary location at all times.

Use Location2 for All
Click this button to use the secondary location at all times.

Use Both for All
Click this button to use the primary and secondary location together, at all times.

Primary and Secondary Copy Locations

The **Please select which Copy Location to use at the specified time** grid allows you to specify which location (primary or secondary) will be used, based upon the time of day and day of the week, when an alert occurs. The grid scrolls down to display the time segments after 6 AM.

The grid is divided into 30 minute segments for each day of the week. Within each segment, you can specify whether you wish to use the primary delivery location ('1'), the secondary location ('2'), both locations ('*'), or neither (blank out the value).

The Everest CRM Studio - Subscribers\Users\(group name) Dialog Box - E-mail
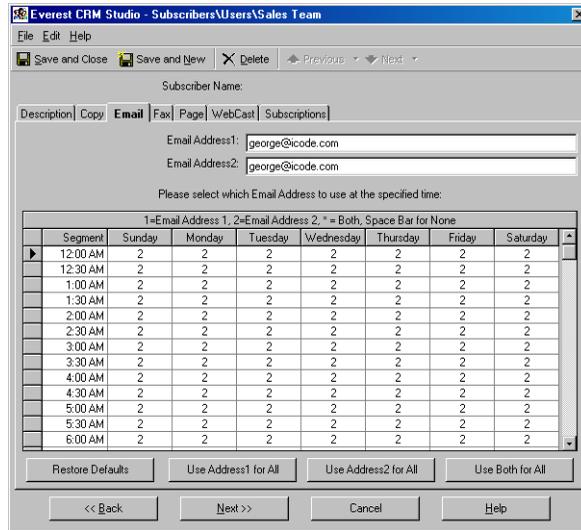
Figure 1.32: Everest CRM Studio - Subscribers\Users\(group name) - E-mail

E-mail Address 1
Enter the primary e-mail address of the subscriber in this field.

E-mail Address 2
Enter the secondary e-mail address of the subscriber in this field.

CRM Studio allows you to specify two addresses for e-mail; the reason for being that you might wish to use a different address based on the time of day (and day of the week) when the notification occurs.

> *Example* If a notification occurs during work hours (Monday through Friday, 8:00 am to 5:00 pm), you might have e-mail sent to your work address. However, if a notification occurs outside of work hours, you might have e-mail sent to your home address, and thus, have round-the-clock access to that data.

Please select which Email Address to use at the specified time
Specify the address to be used at different times of the day (and on different days of the week) in this grid.

> The default grid values use address number one for normal work hours (Monday through Friday, 8:00 am to 5:00 pm), and address number two for all other times.

You may also use the grid to specify those times when both addresses are to be used (place an asterisk in the corresponding time slots) and to specify those times when neither address is to be used (use the spacebar to place a blank in the corresponding time slots).

Restore Defaults
Click this button to restore the default settings.

Use Address1 for All
Click this button to use the primary e-mail address at all times.

Use Address2 for All
Click this button to use the secondary e-mail address at all times.

Use Both for All
Click this button to use the primary and secondary e-mail addresses together, at all times.

Primary and Secondary E-mail Addresses

The **Please select which Email Address to use at the specified time** grid allows you to specify which address (primary or secondary) will be used, based upon the time of day and day of the week, when an alert occurs. The grid scrolls down to display the time segments after 6 AM.

The grid is divided into 30 minute segments for each day of the week. Within each segment, you can specify whether you wish to use the primary delivery address ('1'), the secondary address ('2'), both addresses ('*'), or neither address (blank out the value).

👉 **"Subscriber Alert Methods and Addresses" on page 156**

The Everest CRM Studio - Subscribers\Users\(group name) Dialog Box - Fax

Figure 1.33: Everest CRM Studio - Subscribers\Users\(group name) - Fax

Fax Number 1
Enter the primary fax number of the subscriber in this field.

Fax Number 2

Enter the secondary fax number of the subscriber in this field.

CRM Studio allows you to specify two phone numbers for faxing in case you wish to use a different number based on the time of day (and day of the week) when the notification occurs.

> *Example* If a notification occurs during work hours (Monday through Friday, 8:00 am to 5:00 pm), you might have a fax sent to your work address. However, if a notification occurs outside of work hours, you might have a fax sent to your home address, and thus, have round-the-clock access to that data.

Please select which Fax Number to use at the specified time

Specify which numbers are to be used at different times of the day (and on different days of the week).

> The default grid values use fax number one for normal work hours (Monday through Friday, 8:00 am to 5:00 pm), and fax number two for all other times.

You may also use the grid to specify those times when both fax numbers are to be used (place an asterisk in the corresponding time slots) and to specify those times when neither fax number is to be used (use the spacebar to place a blank in the corresponding time slots).

Restore Defaults

Click this button to restore the default settings.

Use Fax1 for All

Click this button to use the primary fax number at all times.

Use Fax2 for All

Click this button to use the secondary fax number at all times.

Use Both for All

Click this button to use the primary and secondary fax numbers together, at all times.

Primary and Secondary Fax Addresses

The **Please select which Fax Number to use at the specified time** grid allows you to specify which fax number (primary or secondary) will be used, based upon the time of day and day of the week when an alert occurs. The grid scrolls down to display the time segments after 6 AM.

The grid is divided into 30 minute segments for each day of the week. Within each segment, you can specify whether you wish to use the primary fax number ('1'), the secondary fax number ('2'), both numbers ('*'), or neither address (blank out the value).

The Everest CRM Studio - Subscribers\Users\(group name) Dialog Box - Page

Figure 1.34: Everest CRM Studio - Subscribers\Users\(group name) - Page

Paging Vendor 1
Enter the primary pager number of the subscriber in this field.

Paging PIN 1
Enter the corresponding PIN for the first pager number.

Paging Vendor 2
Enter the secondary pager number of the subscriber in this field.

Paging PIN 2
Enter the corresponding PIN for the secondary pager number.

CRM Studio allows you to specify two phone numbers for paging in case you wish to use a different number based on the time of day (and day of the week) when the notification occurs.

Example If a notification occurs during work hours (Monday through Friday, 8:00 am to 5:00 pm), you might have a page sent to your work pager number. However, if a notification occurs outside of work hours, you might have a page sent to your home pager number, and thus, have round-the-clock access to that data.

Please select which Pager to use at the specified time

Specify the pager number to be used at different times of the day (and on different days of the week) in this grid.

> The default grid values use pager number one for normal work hours (Monday through Friday, 8:00 am to 5:00 pm), and pager number two for all other times.

You may also use the grid to specify those times when both pager numbers are to be used (place an asterisk in the corresponding time slots), and to specify those times when neither address is to be used (use the spacebar to place a blank in the corresponding time slots).

Restore Defaults

Click this button to restore the default settings.

Use Pager1 for All

Click this button to use the primary pager number at all times.

Use Pager2 for All

Click this button to use the secondary pager number at all times.

Use Both for All

Click this button to use the primary and secondary pager numbers together, at all times.

Primary and Secondary Pager Numbers

The **Please select which Pager to use at the specified time** grid allows you to specify which pager number (primary or secondary) will be used, based upon the time of day and day of the week when an alert occurs. The grid scrolls down to display the time segments after 6 AM.

The grid is divided into 30 minute segments for each day of the week. Within each segment, you can specify whether you wish to use the primary pager number ('1'), the secondary pager ('2'), both pagers ('*'), or neither address (blank out the value).

The Everest CRM Studio - Subscribers\Users\(group name) Dialog Box - WebCast

Figure 1.35: Everest CRM Studio - Subscribers\Users\(group name) - WebCast

WebCaster Name 1

Enter the primary webcast server name to which notifications must be sent in this field.

The name you enter here is also used as the directory name to publish this subscriber's alerts. It is very important that a directory for this user or group is created on the webserver or on a computer that the webserver has access to. If the webserver publishing location is \\MYSERVER\USERS\ and the webname is JONES, webcaster html file for user JONES will be created in the location \\MYSERVER\USERS\JONES.

Webcaster Location for Name 1

Enter the location of the webcast server in this field.

WebCaster Name 2

Enter the secondary webcast server name to which notifications must be sent in this field.

Webcaster Location for Name 2

Enter the location of the webcast server in this field.

CRM Studio allows you to specify two webcast server names in case you wish to send messages to a different server based on the time of day (and day of the week) when the notification occurs.

Example If a notification occurs during work hours (Monday through Friday, 8:00 am to 5:00 pm), you might have the webcast message sent to a server that you can access from work. However, if a notification occurs outside of work hours, you can have the webcast message sent to a server that you can access from home, and thus, have round-the-clock access to that data.

Please select which name to use at the specified time
Specify the webcast server to be used at different times of the day (and on different days of the week) in this grid.

The default grid values use webcast server number one for normal work hours (Monday through Friday, 8:00 am to 5:00 pm), and webcast server number two for all other times.

You may also use the grid to specify those times when both servers are to be used (place an asterisk in the corresponding time slots), and to specify those times when neither server is to be used (use the spacebar to place a blank in the corresponding time slots).

Restore Defaults
Click this button to restore the default settings.

Use Name1 for All
Click this button to use the primary server at all times.

Use Name2 for All
Click this button to use the secondary server at all times.

Use Both for All
Click this button to use the primary and secondary servers together, at all times.

Primary and Secondary WebCast Servers
The **Please select which Name to use at the specified time** grid allows you to specify which server (primary or secondary) will be used, based upon the time of day and day of the week when an alert occurs. The grid scrolls down to display the time segments after 6 AM.

The grid is divided into 30 minute segments for each day of the week. Within each segment you can specify whether you wish to use the primary delivery address ('1'), the secondary address ('2'), both addresses ('*'), or neither address (blank out the value).

The Everest CRM Studio - Subscribers\Users\(group name) Dialog Box - Subscriptions
The **Subscriptions** tab displays an informational listing of all the events that this subscriber is currently signed-up to receive alerts about. This list is purely informational; you cannot add or remove events to this list from here, nor can you alter the methods by which the subscriber is to be alerted about a given event.

Figure 1.36: Everest CRM Studio - Subscribers\Users\(group name) - Subscriptions

You have successfully completed the initial configuration of **CRM Studio**.

Before You Begin Designing Events

One of **CRM Studio**'s core capabilities is its ability to create and send alert messages. Based upon the steps that you have executed so far, **CRM Studio** is now configured to send out e-mail alerts only. Although **CRM Studio** can send out alerts via fax, pager, and webcast, we have not configured those components at this point.

Also, although **CRM Studio** can send out alerts to a wide variety of people (employees, clients, business partners, etc.), we have configured only a single subscriber within **CRM Studio** at this point – you.

You can add more subscribers to **CRM Studio** (as well as import or use subscribers from other applications), but this is not yet configured.

Everest Software suggests that your initial implementation and testing of **CRM Studio** not go beyond what has been configured thus far. Once you are able to create queries and events that send alerts – via e-mail – you should consider expanding both the means of alert delivery, and the subscribers who can receive alert messages.

Implementation: How to Proceed

There are many components of the **CRM Studio** application, and the best way to implement it is to approach it by module.

The most basic components of **CRM Studio** are queries and events; their primary use being to identify critical, time-sensitive data in a company database and send out alert messages. In this regard, the best way to begin implementing **CRM Studio** is to create a few queries and events that will trigger alert messages.

Tutorials

In the following chapter you may follow a tutorial that is designed for use with the **Accel Sample Company** data that is shipped with **Everest**.

2. Product Tutorial

The Studio Architect - Overview
Create a Record-Level Query
Create an Event
An Aggregate Query
Create the Aggregate Event

CRM Studio is an Alert Messaging application that enables organizations to monitor one or more company databases (and incoming e-mail messages) for critical, time-sensitive conditions of data.

When these conditions occur, **CRM Studio** can send out alert messages via e-mail, it can generate Crystal Reports, and it can take appropriate response actions such as updating an underlying company database with history details and correction actions to address the situation.

This tutorial is meant to take you on a brief tour of **CRM Studio**. Those options and functions that are not discussed in this chapter will be elaborated in the chapters that follow.

For the purpose of this tutorial, you will be using the Accel Sample Company database provided with **Everest**.

This tutorial will guide you through the creation of two alert events:

- An event that notifies you if any customer's birthday falls on the current date.

- An event that notifies you about 'x' top selling items between 'y' and 'z' dates.

Refer the chapter **Query Designing** for additional information on constructing queries.

The Studio Architect - Overview

To access the Studio Architect, do the following:

- From the main menu bar, select **CRM > CRM Studio > Architect**. You will see the **Everest CRM Studio Architect** dialog box.

When you log in for the first time, the ASC database is updated with the latest EventPak.
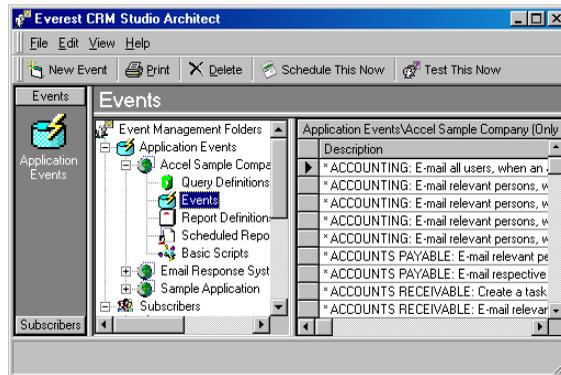
Figure 2.1: Everest CRM Studio Architect

- From the **Event Management Folders** panel in the center, select **Application Events**. You will see all the companies that **CRM Studio** is currently configured to integrate with.

- Double-click **Accel Sample Company**.

Within each company's folder are branches where you can define queries, events, report definitions, scheduled reports, and Visual Basic scripts.

A query identifies the data that will cause an event to be triggered. Once you have designed queries, you may use them in events. An event specifies such items as whom you wish to notify, what message you wish to send, and how often you wish to check for the event.

Create a Record-Level Query

As you proceed, you may either create a query, or simply use an existing query of the same name from the **Accel Sample Company - Queries** branch.

The first query (and event) that you are going to create is referred to as a record-level query because it is triggered by the existence of individual data records that meet certain conditions. (In this example, it is customers whose birthday is today.)

To create a record-level query, do the following:

- From the main menu bar, select **CRM > CRM Studio > Architect**. You will see the **Everest CRM Studio Architect** dialog box.
- From the **Event Manager Folders** panel in the center, select **Application Events > Accel Sample Company > Query Definitions**.
- Click the **New Query Definition** button at the top-left. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Description** tab.

- In the **Query Description** field, enter 'CUSTOMERS: Whose Birthday is on the current date'. Press the **Tab** key to copy this into the **Display Description** field.
- Be sure to check the **Active** checkbox. Click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Tables** tab.

The Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions Dialog Box - Description

Figure 2.2: Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Description

Internal ID Number
This field displays the ID of the query. You cannot modify it.

Query Description
Enter a brief description of the query being defined.

Display Description
Enter a brief description of the query, for display purposes.

Active
Be sure to check this box.

Specify the Query's Tables

To specify the query's tables, do the following:

- After specifying relevant information in the **Description** tab of the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions** dialog box, click **Next**. You will see the **Tables** tab.

- From the **Available Tables** panel on the left, double-click the following tables to add them to the **Selected Tables** panel:
  - dbo.ADDRESS
  - dbo.CUST

- dbo.PERSONAL
- Click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Links** tab.

To include company data in an alert message, you must select the table(s) in which that data resides.

The Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions Dialog Box - Tables
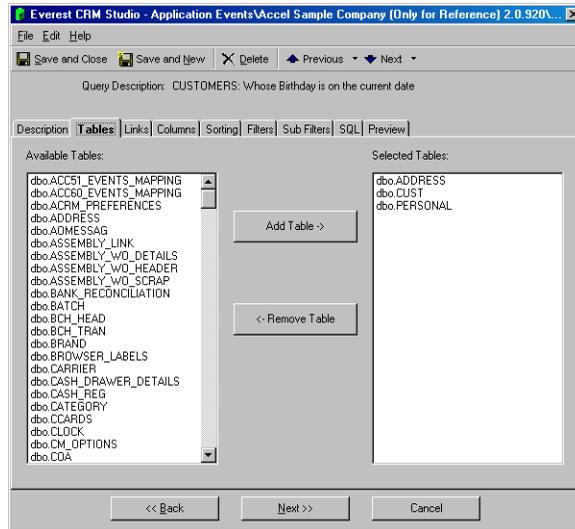
Figure 2.3: Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Tables

Available Tables
This panel lists the available tables in the database you are connected to.

Add Table
Click this button to move a selected table from the **Available Tables** panel to the **Selected Tables** panel.

Remove Table
Click this button to remove a selected table from the **Selected Tables** panel and send it back to the **Available Tables** panel.

Selected Tables
This panel lists the tables in the database that you have selected.

☞ **"Query Tables" on page 118**

Link the Tables

To link the tables, do the following:

- After selecting tables from the **Tables** tab of the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions** dialog box, click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Links** tab.

    "The Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions Dialog Box - Links" on page 54

- Click the **Add Table Link** button. You will see the **Everest CRM Studio - Tables Linked Together** dialog box.

    "The Everest CRM Studio - Tables Linked Together Dialog Box" on page 54

- From the **Table Name** drop-down list, select dbo.CUST. From the **Linked to Table Name** drop-down list, select dbo.ADDRESS.
- From the **Column Name** drop-down list, select CUST_CODE. The **Linked To Column Name** field displays CUST_CODE as well.
- From the **Link Type** drop-down list, select Left Outer Join. Click **OK**.
- You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Links** tab again. Click the **Add Table Link** button. You will see the **Everest CRM Studio - Tables Linked Together** dialog box again.
- From the **Table Name** drop-down list, select dbo.CUST. From the **Linked to Table Name** drop-down list, select dbo.PERSONAL.
- From the **Column Name** drop-down list, select SALESPERSO. From the **Linked To Column Name** select IDNO.
- From the **Link Type** drop-down list, select Left Outer Join. Click **OK**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Links** tab again, with the resulting linked tables displayed.
- Click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Columns** tab.

When you link tables, the first table must be the query's primary table - the table whose records the query reads first.

The Everest CRM Studio - Tables Linked Together Dialog Box
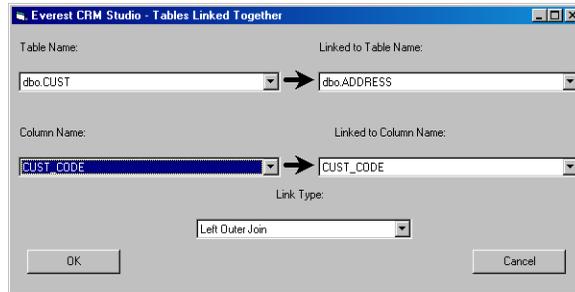
Figure 2.4: Everest CRM Studio - Tables Linked Together

Table Name
Select the table that you want to link to another.

Linked to Table Name
Select the table to link to.

Column Name
Select the column from the selected table (in the **Table Name** field) that you want to link to another.

Linked to Column Name
Select the column from the selected table (in the **Linked to Table Name** field) that you want to link to.

Link Type
Select the type of link to create.

The Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions Dialog Box - Links
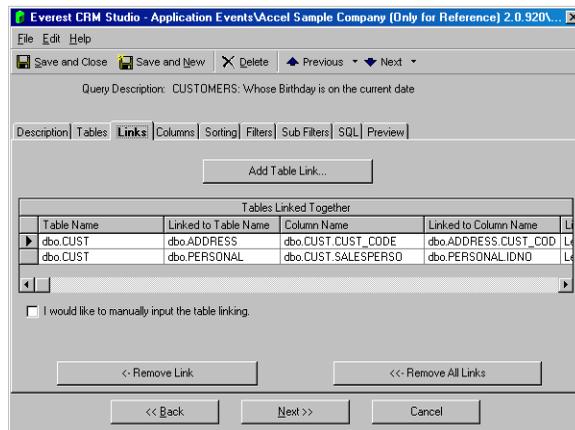
Figure 2.5: Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Links (with resulting linked tables)

Add Table Link
Click this button to display the **Everest CRM Studio - Tables Linked Together** dialog box, which allows you to link tables.

I would like to manually input the table linking
Select this option to link tables manually.

Remove Link
Click this button to remove a selected link.

Remove All Links
Click this button to remove all the links displayed.

☞ **"Query Links" on page 119**

Select the Query's Columns (Fields)

When constructing a query, select the fields you wish to include in your alert messages.

➤ **To select the query's columns (fields), do the following:**

- After linking the selected tables in the **Links** tab of the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions** dialog box, click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Columns** tab.

  ☞ **"The Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions Dialog Box - Columns" on page 56**

- From the **Available Columns to Query** panel, select the following columns by double-clicking them:
  - From the **Address** table: dbo.ADDRESS.ACCT_NAME, dbo.ADDRESS.ADDR_CODE, dbo.ADDRESS.CITY, dbo.ADDRESS.EMAIL, dbo.ADDRESS.DATE_OF_BIRTH, dbo.ADDRESS.CUST_CODE.
  - From the **Personal** table: dbo.PERSONAL.DESIGNATION_CODE, dbo.PERSONAL.EMAIL.
- Place a check mark in the **Unique** column of the dbo.ADDRESS.CUST_CODE row.
- Using a new row, enter ISNULL(dbo.ADDRESS.FIRST_NAME, '') +SPACE(1)+ ISNULL(dbo.ADDRESS.LAST_NAME, '').
- Using a new row, enter ISNULL(dbo.PERSONAL.PFIRST, '') +SPACE(1)+ ISNULL(dbo.PERSONAL.PLAST, '').
- Using a new row, enter ISNULL(dbo.PERSONAL.PHPH,'') + (CASE ISNULL(dbo.PERSONAL.EXTN_TEL1,'') WHEN '' THEN SPACE(1) ELSE ' EXT. '+dbo.PERSONAL.EXTN_TEL1 END).

  The preceding three steps detail the creation of calculated fields. Refer **"Calculated Fields" on page 124** for additional details.

- Click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Sorting** tab.

  If you do not identify a unique column, a single record is triggered over and over each time it meets the query's criteria. If you do identify a unique column, you can opt for the record to trigger over and over or trigger only the first time it meets a query's criteria.

The Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions Dialog Box - Columns
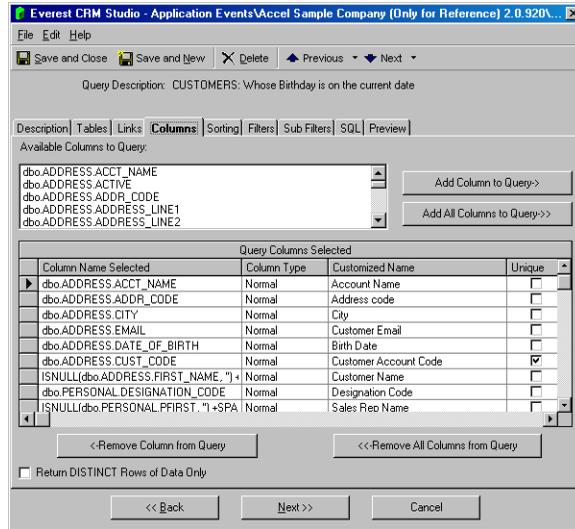
Figure 2.6: Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Columns (with selected columns)

Available Columns to Query
This panel displays all the columns (from the selected tables) available for constructing queries.

Add Column to Query
Click this button to add a selected column to the **Query Columns Selected** field.

Add All Columns to Query
Click this button to add all available columns to the **Query Columns Selected** field.

Query Columns Selected
This grid displays all the columns selected.

"The Query Columns Selected Grid" on page 123

"Calculated Fields" on page 124

Remove Column from Query
Click this button to remove a selected column from the **Query Columns Selected** field.

Remove All Columns from Query
Click this button to remove all the columns displayed in the **Query Columns Selected** field.

Return DISTINCT Rows of Data Only
Select this option to retrieve only unique (or distinct) records.

Select the Query's Sorting Order

To select the query's sorting order, do the following:

- After selecting the query's columns in the **Columns** tab of the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions** dialog box, click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Sorting** tab.

- From the **Available Columns for Sorting** panel, double-click dbo.ADDRESS.ACCT_NAME. The column is added to the **Columns Selected for Sorting** panel.

- Ensure that the **Sort Order** column in the **Columns Selected for Sorting** panel displays Ascending.

  The customers will be listed in alphabetical sequence, based on the customer account codes.

- Click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Filters** tab.

The Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions Dialog Box - Sorting

The **Sorting** tab lets you specify the order in which retrieved records will be displayed.
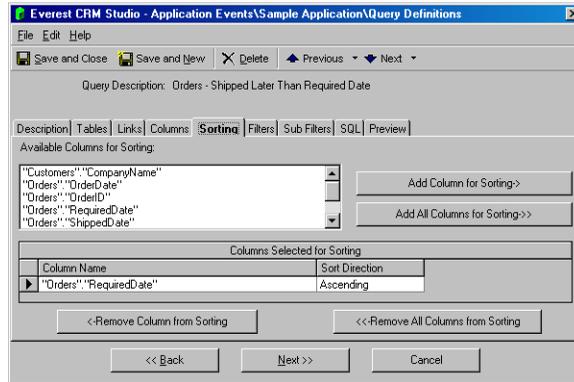
Figure 2.7: Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Sorting

Available Columns for Sorting
This panel displays all the columns (from the selected tables) available for sorting.

Add Column to Sorting
Click this button to add a selected column to the **Columns Selected for Sorting** panel.

Add All Columns to Sorting
Click this button to add all available columns to the **Columns Selected for Sorting** panel.

Columns Selected for Sorting
This panel displays all the columns selected.

Remove Column from Sorting
Click this button to remove a selected column from the **Columns Selected for Sorting** panel.

Remove All Columns from Sorting
Click this button to remove all the columns displayed in the **Columns Selected for Sorting** panel.

☞ **"Query Sorting Order" on page 125**

Specify the Filter

The **Filters** tab lets you specify the condition(s) that records must meet to be retrieved by the query. **CRM Studio** filters can test for such conditions as:

• Sale amount greater than 'x'
• Customers in industry 'y'
• Opportunities forecast to close today, tomorrow, next week, or next month
• Sale amount, multiplied by its probability, greater than 'z'

- Order shipped date is later than the required date

To specify the filter, do the following:

- After selecting the query's sorting order in the **Sorting** tab of the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions** dialog box, click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Filters** tab.

  ☞ **"The Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions Dialog Box - Filters" on page 60**

- From the **Available Columns to Filter** panel, double-click dbo.ADDRESS.DATE_OF_BIRTH. The column is added to the **Columns Selected for Filtering** panel.
- Alter the column name to DATEPART(Month, dbo.ADDRESS.DATE_OF_BIRTH).
- Ensure that the **Is or Is Not** column in the **Columns Selected for Filtering** panel displays Is.
- Click the **Operator** column, click the drop-down arrow that appears, and select 'equal to'.
- Click the **Compare Value** column, delete the '?' and enter DATEPART(Month, getdate()) (without quotation marks).
- From the **Available Columns to Filter** panel, double-click dbo.ADDRESS.DATE_OF_BIRTH again. The column is added to the **Columns Selected for Filtering** panel.
- Alter the column name to DATEPART(DAY,dbo.ADDRESS.DATE_OF_BIRTH).
- Ensure that the **Is or Is Not** column in the **Columns Selected for Filtering** panel displays Is.
- Click the **Operator** column, click the drop-down arrow that appears, and select 'equal to'.
- Click the **Compare Value** column, delete the '?' and enter DATEPART(DAY, getdate()) (without quotation marks).

  The steps that require alteration of the column name are related to calculated fields. Refer **"Calculated Fields" on page 124** and **"Using Calculated Fields in Filters" on page 135** for additional information.

- From the **Available Columns to Filter** panel, double-click dbo.ADDRESS.TYPE. The column is added to the **Columns Selected for Filtering** panel.
- Ensure that the **Is or Is Not** column in the **Columns Selected for Filtering** panel displays Is.
- Click the **Operator** column, click the drop-down arrow that appears, and select 'equal to'.
- Click the **Compare Value** column, delete the '?' and enter 4.

- From the **Available Columns to Filter** panel, double-click dbo.ADDRESS.SUB_TYPE. The column is added to the **Columns Selected for Filtering** panel.

- Ensure that the **Is or Is Not** column in the **Columns Selected for Filtering** panel displays Is.

- Click the **Operator** column, click the drop-down arrow that appears, and select 'equal to'.

- Click the **Compare Value** column, delete the '?' and enter 2.

- For all four rows, click the **Type** column, click the drop-down arrow that appears, and select Number.

- Leave the rest of the columns with their default values, if any.

- Click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Sub Filters** tab.

  The **Sub Filters** tab is not used in the design of record-level queries; it is used only with an aggregate query which we will design a little later. Leave the **Sub Filters** tab blank.

The Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions Dialog Box - Filters
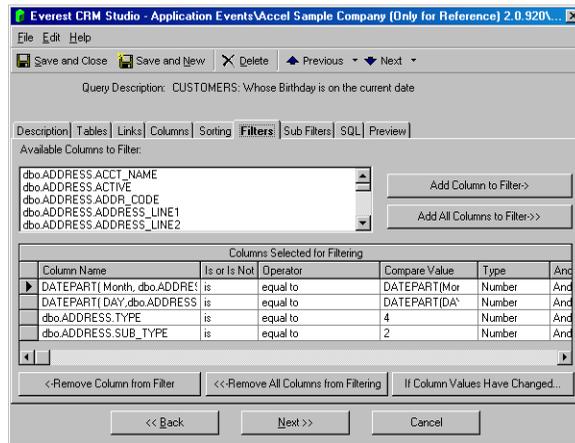
Figure 2.8: Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Filters

Available Columns to Filter
This panel displays all the columns (from the selected tables) available for sorting.

Add Column to Filter
Click this button to add a selected column to the **Columns Selected for Filtering** panel.

Add All Columns to Filter
Click this button to add all available columns to the **Columns Selected for Filtering** panel.

Columns Selected for Filtering
This panel displays all the columns selected.

Remove Column from Filter
Click this button to remove a selected column from the **Columns Selected for Filtering** panel.

Remove All Columns from Filter
Click this button to remove all the columns displayed in the **Columns Selected for Filtering** panel.

☞ **"Query Filter Parameters" on page 127**

     "Compare Values" on page 128

     "Operators - Notes" on page 132

     "And/Or Logic" on page 135

     "Query Filters" on page 126

Preview the Results of the Query

The **Preview** tab displays the results of your query.

To preview the results of the query, do the following:

- After selecting columns for filtering in the **Filters** tab of the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions** dialog box, click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Sub Filters** tab.

- Leave this tab blank and click **Next**. You will see the **SQL** tab displaying the SQL query created. Click **Next**. You will see the **Preview** tab with the results of the query displayed.

☞ **"Query SQL" on page 136**

- Click **Save and Close** at the top left of the dialog box to save the query. You will see the **Everest CRM Studio Architect** dialog box again.

- If you need to go back and make changes to the query information, click the appropriate tab.

The Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions Dialog Box - Preview
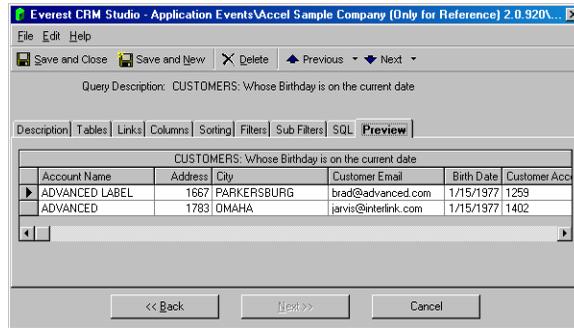
Figure 2.9: Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Preview

☞ **"Query Preview" on page 137**

Create an Event

CRM Studio separates queries and events so that a single query can be used in multiple events.

Example   A single query that identifies sales of greater than 'x' dollars could be used in the following three events:

- Sales of Greater than $10,000
- Sales of Greater than $25,000
- Sales of Greater than $50,000

Refer the chapter **Query Designing** for additional information on constructing queries.

To create an event, do the following:

- From the main menu bar, select **CRM > CRM Studio > Architect**. You will see the **Everest CRM Studio Architect** dialog box.
- From the **Event Manager Folders** panel in the center, select **Application Events > Accel Sample Company > Events**.
- Click the **New Event** button at the top-left. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Events - Description** tab.

  ☞ **"The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Description" on page 179**

- Enter 'CUSTOMERS: Birthday E-mails to customers' in the **Event Description** field.
- Select 1 in the **Priority** field.

- Check the option **Keep only last checked record in Monitor**.

  This ensures that **CRM Studio** retains minimum event history.

- Be sure to check the **Active** check box. Click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Events - Queries** tab.

Select the Event's Query

To link the query to the event, do the following:

- After specifying relevant information in the **Description** tab of the **Everest CRM Studio - Application Events\Accel Sample Company\Events** dialog box, click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Events - Queries** tab.

- Click the **Add Query** button. You will see the **Everest CRM Studio - Add Query** dialog box.

- Select the query 'CUSTOMERS: Whose Birthday is on the current date'. Click **Select**.
- Similarly, select the query 'COMPANY: Current Company Details'.

  - The grid at the bottom of this window remains empty as the query includes only a single filter and its compare values are identified at the query level.
  - You can design queries whose filter values can be identified at the event level as well.

- Click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Events - Reports** tab.

The Everest CRM Studio - Add Query Dialog Box
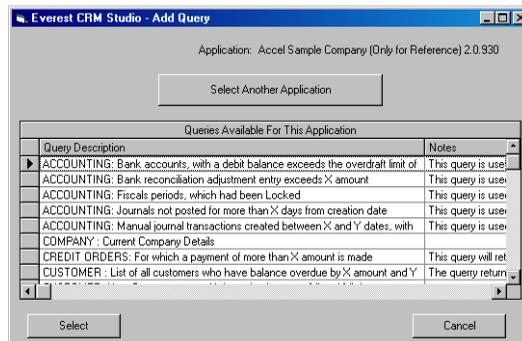
Figure 2.10: Everest CRM Studio - Add Query

Select Another Application

Click this button to display the **Everest CRM Studio - Select Another Application** dialog box, which allows you to change the current company.

👉 **"The Everest CRM Studio - Select Another Application Dialog Box" on page 64**

Select

Click this button to add a selected query to the **Queries Selected** panel in the **Queries** tab of the **Everest CRM Studio - Application Events\(your company)\Events** dialog box.

The Everest CRM Studio - Select Another Application Dialog Box
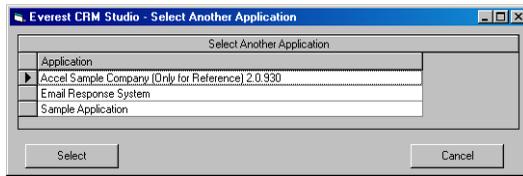
Figure 2.11: Everest CRM Studio - Select Another Application

Select Another Application

This grid displays the companies that **Everest CRM Studio** is currently configured to work with.

Select

Click this button to switch to a selected company, from which you want to add a query.

Specify the E-Mail Alert Message Text

One of the primary ways that **CRM Studio** can respond to a triggered event is to send out alert messages. Other responses include generating Crystal Reports and updating one or more company databases based on the triggered event. For this event, we will skip the **Reports**, **Files**, and **Copy** tabs, and will configure the event to send out e-mail alerts only.

To specify e-mail alert message text, do the following:

• After linking the query to the event in the **Queries** tab of the **Everest CRM Studio - Application Events\Accel Sample Company\Events** dialog box, click **Next** until you see the **Everest CRM Studio - Application Events\Accel Sample Company\Events - E-mail** tab.

👉 **"The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Email" on page 194**

• Select an e-mail account from the **E-mail Account to Send From** drop-down list.

• Enter 'Happy Birthday!!!' in the **Message Subject** field.

• Enter 'Dear' in the first line of the **Message Text** panel.

- From the **Available values for use in message content** field, select {Customer Name}, so that it is added to the **Message Text** panel beside the 'Dear' in your alert message.
- Leave a blank line in the message text. From line 3, enter the following message:
- We wish you a very Happy Birthday!!! Please accept our hearty wishes for a prosperous year ahead. We take this opportunity to thank you for your continued support. We are privileged to have you as our customer.
- Leave a blank line in the message text and enter 'Congratulations again!' in the next line.
- From the **Available values for use in message content** field, select {Sales Rep Name}, so that it is added to the **Message Text** panel after the 'Congratulations again!' in your alert message.
- Similarly, select the {Designation Code} and {Company Name} fields, so that they appear separately in the next two lines.
- In the next two lines, enter the following:
  - E-mail:
  - Tel:
- Leave two spaces after each of these entries.
- From the **Available values for use in message content** field, select {Sales Rep E-mail}, so that it is added to the **Message Text** panel beside 'E-mail:' in your alert message.
- Similarly, from the **Available values for use in message content** field, select {Sales Rep Telephone}, so that it is added to the **Message Text** panel beside the Tel: in your alert message.
- Click **Next** until you see the **Everest CRM Studio - Application Events\Accel Sample Company\Events - Subscribers - Standard** tab.

Event Response Actions

CRM Studio can do much more than just send out alert messages when an event is triggered. It can:

- Generate one or more Crystal Reports and attach those reports to the outgoing alert message.
- Send product brochures, white papers, documentation, or other documents to specific recipients.
- FTP (file transfer protocol) specific files to pre-determined computers.
- Write triggered event data to a flat file for delivery to a specific computer or recipient.
- Create records in any front or back office application (such as creating a support ticket in an underlying help-desk application).
- Update records in any front or back office application (such as updating a contact's record, or scheduling an activity for a sales representative).

- Pass triggered event data to external technologies, such as a digital display board, or to a synthesized voice response unit.

For this event, you will not be configuring any response actions, and so, may move on to identifying the event's subscribers.

Specify the Event's Subscribers

Recipients of **CRM Studio** alerts are referred to as subscribers. For any single event, **CRM Studio** can send alerts to an unlimited number of subscribers. Subscribers may be retrieved from any number of external application databases.

To configure the current event to send alerts to yourself, do the following:

- After specifying e-mail alert message text in the **Email** tab of the **Everest CRM Studio - Application Events\Accel Sample Company\Events** dialog box, and select the **Subscribers - Standard** tab.

  "The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Subscribers - Standard" on page 226

- Click the **Add Subscriber** button. You will see the **Everest CRM Studio - Add Subscriber** dialog box.
- Click the plus sign beside Sales Team. Check the box beside your name.
- Click the **Add Subscriber** button. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Events - Subscribers - Standard** tab again.
- Check the **E-mail** box beside your name to indicate that you wish to receive notifications via electronic mail.
- Click **Next**. You will see the **Schedule** tab of the **Everest CRM Studio - Application Events\Accel Sample Company\Events** dialog box.

The Everest CRM Studio - Add Subscriber Dialog Box
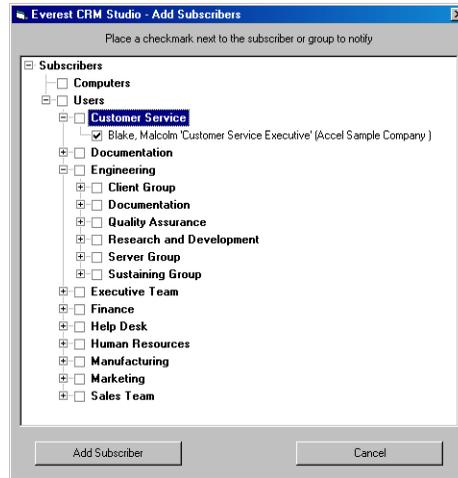
Figure 2.12: Everest CRM Studio - Add Subscriber

Add Subscriber
Click this button to add a selected user as a recipient of alerts.

Specify the Event's Schedule

The final step in the configuration of a **CRM Studio** event is to specify how often **CRM Studio** must check if that event has been triggered.

To configure CRM Studio to check for events everyday at 9:00 am, do the following:

• After specifying yourself as a recipient in the **Subscribers** tab of the **Everest CRM Studio - Application Events\Accel Sample Company\Events** dialog box, click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Events - Schedule** tab.

"The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Schedule" on page 234

• From the **Choose a schedule to use** drop-down list, select Daily at 09:00 AM.

CRM Studio is pre-configured with approximately a dozen schedules; you can create additional schedules of your own.

• Leave the rest of the fields with their default values, if any.

• Click the **Save and Close** button at the top left of the dialog box to save the event you created.

An Aggregate Query

The first event you created used a query with just a single filter (condition) whose compare value was specified at the query level.

The next event will use a query with three conditions and will allow the answers to two of these conditions to be specified at the event level.

In addition, this query will use a **CRM Studio** aggregate function. Aggregate functions allow **CRM Studio** to trigger an event based on the condition of a group of records. The following are examples of aggregate events:

- More than 10 orders in the evaluation stage of the sales pipeline.
- Fewer than 12 activities scheduled for any sales representative this week.
- Support reps whose average call length last week was greater than 30 minutes.
- More than $25,000 dollars lost to a specific competitor this month.

Refer the chapter **Query Designing** for additional information on constructing queries.

Create the Aggregate Query

To create an aggregate query, do the following:

- From the main menu bar, select **CRM > CRM Studio > Architect**. You will see the **Everest CRM Studio Architect** dialog box.
- From the **Event Manager Folders** panel in the center, select **Accel Sample Company > Query Definitions**.
- Click the **New Query Definition** button at the top-left. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Description** tab.

- In the **Query Description** field, enter INVENTORY: Top X fast moving items between Y and Z dates. Press the **Tab** key to copy the same description into the **Display Description** field.
- Be sure to check the **Active** checkbox. Click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Tables** tab.

Specify the Query's Tables

To specify the query's tables, do the following:

- After specifying relevant information in the **Description** tab of the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions** dialog box, click **Next**. You will see the **Everest CRM Studio -**

Application Events\Accel Sample Company\Query Definitions - Tables tab.

- From the **Available Tables** panel on the left, double-click the tables dbo.INVOICES, dbo.ITEMS and dbo.X_INVOIC to add them to the **Selected Tables** panel. Click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Links** tab.

Link the Query's Tables

To link the tables, do the following:

- After selecting tables from the **Tables** tab of the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions** dialog box, click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Links** tab.

- Click the **Add Table Link** button. You will see the **Everest CRM Studio - Tables Linked Together** dialog box.

- From the **Table Name** drop-down list, select dbo.X_INVOIC. From the **Linked to Table Name** drop-down list, select dbo.ITEMS.
- From the **Column Name** drop-down list, select dbo.X_INVOIC.ITEM_CODE. From the **Linked To Column Name** field, select dbo.ITEMS.ITEMNO.
- From the **Link Type** drop-down list, select Left Outer Join. Click **OK**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Links** tab again, with the resulting linked tables displayed.
- Click the **Add Table Link** button again. You will see the **Everest CRM Studio - Tables Linked Together** dialog box. From the **Table Name** drop-down list, select dbo.X_INVOIC. From the **Linked to Table Name** drop-down list, select dbo.INVOICES.
- From the **Column Name** drop-down list, select dbo.X_INVOIC.ORDER_NO. From the **Linked To Column Name** field, select dbo.INVOICES.DOC_NO.
- From the **Link Type** drop-down list, select Left Outer Join. Click **OK**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Links** tab again, with the resulting linked tables displayed.

- Click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Columns** tab.

Select the Query's Columns (Fields)

Aggregate queries are different from record-level queries in that they perform one of five arithmetic functions (summarize, count, average, minimum, or maximum) on a specific database field.

As a result, aggregate queries do not require access to many of the detail fields that are commonly found in a record-level query. Since this query summarizes (totals) the sales for specific regions, first you need to select the column that contains the sales total for a specific order.

To select the query's columns (fields), do the following:

- After linking the selected tables in the **Links** tab of the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions** dialog box, click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Columns** tab.

- From the **Available Columns to Query** panel, select the following columns by double-clicking them:
  - From the **dbo.ITEMS** table: dbo.ITEMS.DESCRIPT, dbo.ITEMS.CATEGORY, dbo.ITEMS.QTY_STK, dbo.ITEMS.PURC_MEAS.
  - From the **dbo.X_INVOIC** table: dbo.X_INVOIC.ITEM_CODE, dbo.X_INVOIC.QTY_SHIP, dbo.X_INVOIC.ITEM_CODE, dbo.X_INVOIC.AMOUNT.

- From the **Query Columns Selected** panel, click in the **Column Type** field for the dbo.X_INVOIC.QTY_SHIP row. From the drop-down list, select Summarize.

- Repeat the previous step for the dbo.X_INVOIC.AMOUNT row.

- Check the Unique column for the row containing dbo.X_INVOIC.ITEM_CODE.

- From the **dbo.X_INVOIC** table, select dbo.X_INVOIC.ITEM_CODE again.

- From the **Query Columns Selected** panel, click in the **Column Type** field for the dbo.X_INVOIC.ITEM_CODE row. From the drop-down list, select Count.

- Click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Sorting** tab.

Sorting Order

To select the query's sorting order, do the following:

- After selecting the query's columns in the **Columns** tab of the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions** dialog box, click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Sorting** tab.

  "The Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions Dialog Box - Sorting" on page 58

- From the **Available Columns for Sorting** panel, double-click COUNT(dbo.X_INVOIC.ITEM_CODE). The column is added to the **Columns Selected for Sorting** panel.

- Ensure that the **Sort Order** column in the **Columns Selected for Sorting** panel displays Descending.

- Click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Filters** tab.

"Aggregate Query Sorting Order" on page 145

Specify the Filter

Similar to the first query, this query uses filters to restrict the records that are eligible to be retrieved. Unlike the first query, however, you need not hard-code the compare values in these filters to retrieve records with specific values.

Instead, you can design these two filters so that their compare values are filled in at the event level. This enables the query to be used in many different events.

To specify the filter, do the following:

- After selecting the query's sorting order in the **Sorting** tab of the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions** dialog box, click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Filters** tab.

  "The Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions Dialog Box - Filters" on page 60

- From the **Available Columns to Filter** panel, double-click dbo.INVOICES.ORDER_DATE. The column is added to the **Columns Selected for Filtering** panel.

- Ensure that the **Is or Is Not** column in the **Columns Selected for Filtering** panel displays Is.

- Click the **Operator** column, click the drop-down arrow that appears, and select 'greater than or equal to'.

- Leave the **Compare Value** field as it is.

The question mark in the **Compare Value** field allows the value of this filter to be specified at the event level.

- Click the **Type** column, click the drop-down arrow that appears, and select Date.
- Click the **And/Or** column, click the drop-down arrow that appears, and select And.
- Scroll the **Columns Selected for Filtering** panel to the right. In the **Optional Prompt** column, enter 'Enter From Date'.
- From the **Available Columns to Filter** panel, double-click dbo.INVOICES.ORDER_DATE again. The column is added to the **Columns Selected for Filtering** panel.
- Ensure that the **Is or Is Not** column in the **Columns Selected for Filtering** panel displays Is.
- Click the **Operator** column, click the drop-down arrow that appears, and select 'less than or equal to'.
- Leave the **Compare Value** field as it is.

    The question mark in the **Compare Value** field allows the value of this filter to be specified at the event level.

- Click the **Type** column, click the drop-down arrow that appears, and select Date.
- Click the **And/Or** column, click the drop-down arrow that appears, and select And.
- Scroll the **Columns Selected for Filtering** panel to the right. In the **Optional Prompt** column, enter 'Enter To Date'.
- From the **Available Columns to Filter** panel, double-click dbo.INVOICES.STATUS. The column is added to the **Columns Selected for Filtering** panel.
- Ensure that the **Is or Is Not** column in the **Columns Selected for Filtering** panel displays Is.
- Click the **Operator** column, click the drop-down arrow that appears, and select 'equal to'.
- Enter 9 in the **Compare Value** field.
- Click the **Type** column, click the drop-down arrow that appears, and select Number.
- Click the **And/Or** column, click the drop-down arrow that appears, and select And.
- Leave the **Optional Prompt** field as it is.
- Click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Sub Filters** tab.

Specify the Sub-Filter

Only aggregate events use sub-filters. A sub-filter is what allows you to perform a test against the aggregate value.

To configure the aggregate sub-filter for this query, do the following:

- After selecting the query's filters in the **Filters** tab of the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions** dialog box, click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Sub Filters** tab.

  ☞ **"The Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions Dialog Box - Sub Filters" on page 74**

- From the **Available Columns to Filter** panel, double-click SUM(dbo.X_INVOIC.QTY_SHIP). The column is added to the **Columns Selected for Sub-Filtering** panel.

- Ensure that the **Is or Is Not** column in the **Columns Selected for Sub-Filtering** panel displays Is.

- Click the **Operator** column, click the drop-down arrow that appears, and select 'greater than'.

- Leave the **Compare Value** field as it is.

  The question mark in the **Compare Value** field allows the value of this filter to be specified at the event level.

- In the **Type** field, select Number.

- In the **And/Or** field, select And.

- Scroll the **Columns Selected for Sub-Filtering** panel to the right. In the **Optional Prompt** field, enter 'Enter Item Count Exceeding X times'.

- Click the **Save and Close** button at the top left to save the query you created.

  ☞ **"Aggregate Query Sub-Filters" on page 146**

The Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions Dialog Box - Sub Filters
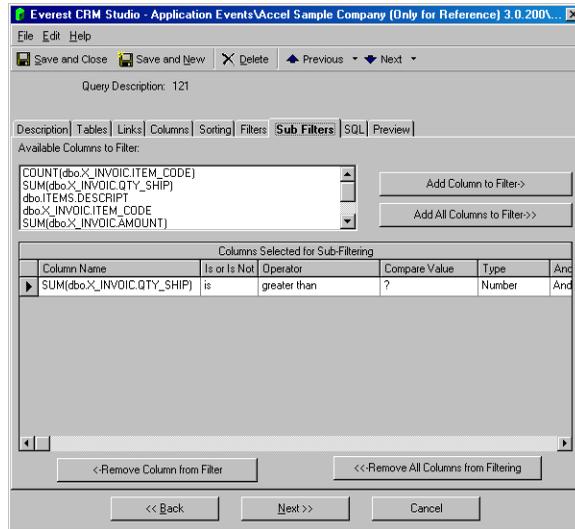
Figure 2.13: Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions - Sub Filters

Available Columns to Filter
This panel displays all the columns (from the selected tables) available for sub-filtering.

Add Column to Filter
Click this button to add a selected column to the **Columns Selected for Sub-Filtering** panel.

Add All Columns to Filter
Click this button to add all available columns to the **Columns Selected for Sub-Filtering** panel.

Columns Selected for Sub-Filtering
This panel displays all the columns selected.

Remove Column from Filter
Click this button to remove a selected column from the **Columns Selected for Sub-Filtering** panel.

Remove All Columns from Filtering
Click this button to remove all the columns displayed in the **Columns Selected for Sub-Filtering** panel.

Create the Aggregate Event

To create an aggregate event, do the following:

• From the main menu bar, select **CRM > CRM Studio > Architect**. You will see the **Everest CRM Studio Architect** dialog box.

- From the **Event Manager Folders** panel in the center, select **Application Events > Accel Sample Company > Events**.

- Click the **New Event** button at the top-left. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Events - Description** tab.

- In the **Event Description** field, enter 'INVENTORY: E-mail relevant persons, list of items appearing more than X times in final documents, between Y and Z dates'.

- In the **Priority** field, select 5.

- Check the option **Keep only last checked record in Monitor**.

  This ensures that **CRM Studio** retains minimum event history.

  To be notified only once when this event is triggered, do not check the **Repeat notification for triggered items** box.

- Be sure to check the **Active** check box.

- Click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Events - Queries** tab.

Select the Event's Query

To link the query to the event, do the following:

- After specifying relevant information in the **Description** tab of the **Everest CRM Studio - Application Events\Accel Sample Company\Events** dialog box, click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Events - Queries** tab.

- Click the **Add Query** button. You will see the **Everest CRM Studio - Add Query** dialog box.

- Select the query INVENTORY: Top X fast moving items between Y and Z. Click **Select**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Events - Queries** tab again.

- The **Event Trigger Parameters** panel at the bottom prompts you to specify a value for the query's filters that have a '?' in their compare values. Fill in the answers to these questions as follows:

  - Enter From Date: Click the **Answer** field. The **Everest CRM Studio - Please supply a value** dialog box is displayed. Select {%Last Month Start Date MM/DD/YYYY%} from the **Available Substitution Variables** drop-down list.

  - Enter To Date: Click the **Answer** field, and similarly select {%Last Month End Date MM/DD/YYYY%} from the list of **Available Substitution Variables**.

- Click **Next** until you see the **Everest CRM Studio - Application Events\Accel Sample Company\Events - E-mail** tab.

Specify the E-Mail Message Text

To specify e-mail alert message text, do the following:

- After linking the query to the event in the **Queries** tab of the **Everest CRM Studio - Application Events\Accel Sample Company\Events** dialog box, click **Next** until you see the **Everest CRM Studio - Application Events\Accel Sample Company\Events - E-mail** tab.

   "The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Email" on page 194

- Select the e-mail account from the **E-mail Account to Send From** drop-down list.
- In the **Message Subject** field, enter 'List of fast moving items for the month of {%Last Month%}, {%Current Year%}'.
- In the first line of the **Message Text** panel, enter 'The fast moving items, based on number of times they appear in final documents, are as follows:'. Leave a blank line in the message text.
- In line three of your alert message, enter Item Code:
- In line four, enter Description:
- In line five, enter Number of Movements:
- In line six, enter Quantity:
- In line seven, enter Category:
- In line eight, enter Total Stock:
- In line nine, enter UOM:
- Leave two spaces after each of the entries above.
- From the **Available values for use in message content** field, select {Item Code}, so that it is added to the **Message Text** panel beside the Item Code: in your alert message.
- Repeat these steps for the other fields in the alert message.

   In lines four to nine, select the following from the **Available values for use in message content** field:

   - {Item Description}
   - {Item Count Sold}
   - {Item Qty Sold}
   - {Category}
   - {Total Stock}
   - {UOM}

- Leave a blank line in the message text. Click the second line of your alert message text (the blank line).
- From the **Available values for use in message content** field, scroll to the very end of the list, and double-click {BEGIN*REPEAT}.

- Click the last line of your message text (the blank line after UOM:).
- From the **Available values for use in message content** field, scroll to the very end of the list, and double-click {END*REPEAT}.
- Click **Next** until you see the **Everest CRM Studio - Application Events\Accel Sample Company\Events - Subscribers** tab.

Specify the Event's Subscribers

To specify the event's subscribers, do the following:

- After specifying e-mail alert message text in the **E-mail** tab of the **Everest CRM Studio - Application Events\Accel Sample Company\Events** dialog box, click **Next** until you see the **Everest CRM Studio - Application Events\Accel Sample Company\Events - Subscribers - Standard** tab.

  "The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Subscribers - Standard" on page 226

- Click the **Add Subscriber** button. You will see the **Everest CRM Studio - Add Subscriber** dialog box.

  "The Everest CRM Studio - Add Subscriber Dialog Box" on page 67

- Click the plus sign beside Sales Team. Check the box beside your name.
- Click the **Add Subscriber** button. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Events - Subscribers - Standard** tab again.
- Check the **E-mail** box beside your name to indicate that you wish to receive notifications via electronic mail.
- Click **Next**. You will see the **Schedule** tab of the **Everest CRM Studio - Application Events\Accel Sample Company\Events** dialog box.

Specify the Event's Schedule

To specify the event's schedule, do the following:

- After specifying yourself as a recipient in the **Subscribers** tab of the **Everest CRM Studio - Application Events\Accel Sample Company\Events** dialog box, click **Next**. You will see the **Everest CRM Studio - Application Events\Accel Sample Company\Events - Schedule** tab.
- From the **Choose a schedule to use** drop-down list, select The 1st of the Month; 9:00 AM.
- Leave the rest of the fields with their default values, if any.
- Click the **Save and Close** button at the top left of the dialog box to save the event you created.

Verify Everest CRM Studio Server Status

The **Everest CRM Studio** service (or server manager) must be running for **CRM Studio** to check events.

To verify the server status, do the following:

- Verify that the **Everest CRM Studio** service (path: **Control Panel > Administrative Tools > Services**) is running. If not, start the service.
- Log in to the **Everest CRM Studio Administrator** (path: **CRM > CRM Studio > Administrator**).
- Select **Activity > Server Status** from the **Administration Folders** panel in the center. The **Server Status** panel on the right displays all of **CRM Studio**'s servers and their current status. The first four servers should be running.

Submit Your Two Events

Since your two events are scheduled to run at different times (one at 9:00 AM daily, and one at 9:00 AM on the first day of a month), you might wish to submit them to run right now, so that you can track their progress.

To submit the two events to run right now, do the following:

- From the main menu bar, select **CRM > CRM Studio > Architect**. You will see the **Everest CRM Studio Architect** dialog box.
- From the **Event Manager Folders** panel in the center, select **Application Events > Accel Sample Company > Events**.
- The **Application Events\Accel Sample Company\Events** panel on the right displays all the events. Highlight the first event you created: CUSTOMERS: Birthday E-mails to customers.
- Click the **Schedule This Now** button at the top of the **Studio Architect** dialog box.
- You will be asked to confirm the submission of your selected event. Click **Yes**.
- The event will be scheduled for immediate execution, and may be tracked in the **Everest CRM Studio Event Monitor**.
- Repeat these steps for the second event.

Track Events in the Everest CRM Studio Event Monitor

The **Everest CRM Studio Event Monitor** is an excellent place from which to track the status of your events.

To track the progress of the events, do the following:

- From the main menu bar, select **CRM > CRM Studio > Monitor**. You will see the **Everest CRM Studio Event Monitor** dialog box.
- Double-click the **Scheduler** folder and click the **Next Run Date/Times** branch. You will see the events that are due to be submitted in the right panel.

- Once an event's submission time arrives, you can track it from the
  Application Events folder.

An event progresses from a pending state to a checked state, and then (if the
event's conditions are met), to a triggered state. If there is an error in an event's
configuration, the event appears in the Errors Today branch, and also remains in
the Pending branch.

Depending on the number of records that trigger an event, you will see one or
more triggered event records. To view the text of alert messages associated with
the event, point your cursor at the columns that contain the e-mail, fax, pager, or
webcast text.

**To view the text of alert messages associated with the event, do the
following:**

- From the right panel of the **Everest CRM Studio Event Monitor** dialog box,
  position the cursor in the **Message Text** column of the message being
  monitored.

- **CRM Studio** automatically expands the contents of these fields to display the
  full contents of the outgoing alert message.
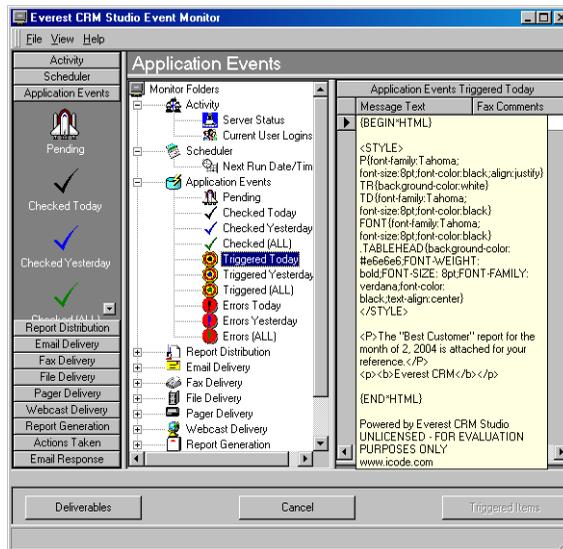
Everest CRM Studio Event Monitor - Contents of Outgoing Alert Message

**To see details about the delivery of alert messages for an event, do the
following:**

- From the right panel of the **Everest CRM Studio Event Monitor** dialog box,
  highlight (click) a specific triggered record.

- Click the **Deliverables** button at the bottom of the dialog box.

The **Deliverables** button shows you who was notified about the event, and how and when they were notified.
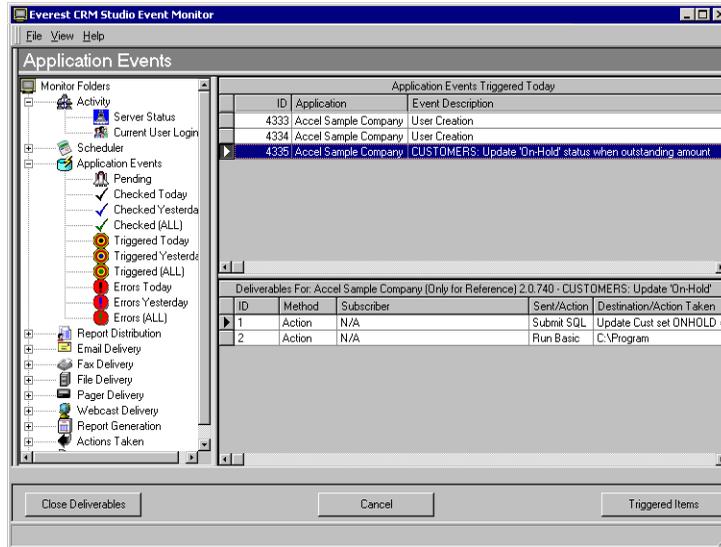
Figure 2.14: Everest CRM Studio Event Monitor - Deliverables

Remove History

After you have triggered some events, you might wish to clear the **Everest CRM Studio Event Monitor** of its history and start again.

To clear Everest CRM Studio Event Monitor history, do the following:

- Stop the **Everest CRM Studio** service (path: **Control Panel > Administrative Tools > Services**). Ensure that no users are logged in to **CRM Studio.**
- From the main menu bar, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.
- Select **File > Database Tools > Remove Completed Items**. You will see the **Everest CRM Studio - Remove Completed Items from Database** dialog box.
- In the **Remove items dated before date:** field, specify the date before which all items are to be deleted from the database.
- Click the **Remove** button. The items are deleted from the database.
- Click **Close**.
- Restart the **Everest CRM Studio** service.

You should always select the option **Compact Database** after you have removed completed items.

You're On Your Way!

Congratulations on completing the **CRM Studio** tutorial. There are lots of other functions that you can try in **CRM Studio**, including report distribution (via Crystal Reports), processing incoming e-mail messages, and cross-company alerts (events that are based on conditions that exist in multiple company databases).

3. Administration

The Everest CRM Studio Administrator
Activity
Corrective Actions
Hardware Setup
Software Setup
User Access - Logins
Database Tools

The **Everest CRM Studio Administrator** allows you to perform seven functions:

- View the status of application servers.
- View the names of all users logged in to **CRM Studio** modules.
- View (and take corrective actions for) any errors encountered when the **CRM Studio** attempted to either execute an event, or send notifications about an event.
- Configure hardware settings for printing.
- Configure software settings for e-mail, and holiday definitions.
- Specify user authorizations for access to different **CRM Studio** modules.
- Maintain and optimize the **CRM Studio** database.

The Everest CRM Studio Administrator

When you log in to the **Everest CRM Studio Administrator** (path: **CRM > CRM Studio > Administrator**), you will see the **Administration Folders** panel in the center, containing a branch titled **Activity**.

Everest CRM Studio Administrator - Navigation

To select a folder, do the following:

- From the **Administration Folders** panel in the center, double-click the folder you wish to work in.

OR

- From the **Outlook Bar** on the left, click the folder you wish to work with.
- To select a specific option, select the folder first, and then click the option you wish to work with.

Once you select a specific option, the right panel displays the records associated with that option.

To add a new record under a specific option, do the following:

- Click the **New** button that appears on the top-left, under the **Everest CRM Studio Administrator** menu bar.

- The **New** button is displayed as **New [xxx]** where xxx refers to the type of record you can add.
- You can also select **File > New** from the menu bar, and select the type of record you wish to add.

To view or update an existing record, do the following:

- From the right panel, double-click the record you wish to view or modify.

To delete a record, do the following:

- Select the record in the right panel.

- Click the **Delete** button displayed under the **Everest CRM Studio Administrator** menu bar.

> You can also delete a record after opening it for viewing or modification.

Activity

The **Everest CRM Studio Administrator - Activity** folder tells you about the current processing and user activity occurring within **CRM Studio**.

Server Status

This option displays the current status of all the servers used by **CRM Studio**. The possible server statuses are:

- **Shutdown**: The server is not running at this time.

> Among the possible reasons for this are:
>
> The **Everest CRM Studio** service (path: **Control Panel > Administrative Tools > Services**) is not running.
>
> The server is disabled. This is done by double-clicking the specific server and clearing the **Allow Server to Process** option in the **Server Status** dialog box that is displayed.
>
> You can also specify which servers are allowed to run. If you do not require the delivery of notifications by a certain mode, you can disable the corresponding server to conserve system resources.
>
> By default, **CRM Studio** is shipped with all servers enabled except the Paging, Faxing, Reporting, Copying, Webcasting and Action servers.

- **Idle**: The server is running, and is in memory, but is not processing any data. The server is in this state if there is no data to process.
- **Processing**: The server has been initialized and is processing.
- **Startup**: The server is in initialization and startup mode.
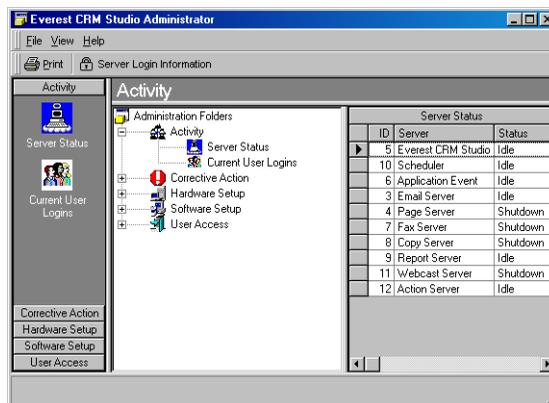
Figure 3.1: Everest CRM Studio Administrator - Server Status

Everest CRM Studio - Server Descriptions

CRM Studio uses the following server manager and servers:

- **Everest CRM Studio**: Initiates all the other servers.

  If running under Windows 95 or 98, this is a server manager. If running under Windows NT or 2000, this is a service under **Control Panel > Administrative Tools > Services**.

- **Scheduler**: Keeps track of when events are scheduled to be executed. When an event is due for execution, this server sends the corresponding task to the relevant event server.
- **Application Event**: Executes application events.
- **Report**: Generates Crystal reports.
- **E-mail**: Delivers e-mail messages.
- **Fax**: Delivers fax messages.
- **Page**: Delivers pager messages.
- **Webcast**: Delivers webcast messages.
- **Copy**: Copies and sends files and reports, using FTP (File Transfer Protocol).
- **Action**: Executes event response actions.

  If any of the first three servers are shut down or paused, **CRM Studio** cannot check for events and/or send notifications about triggered events.

  If any of the notification servers (e-mail or copy) are shut down or paused, **CRM Studio** cannot send notifications via that particular delivery mode.

  For each server, you can view its status, the error message (if any) that prevents the server from running, the name of the computer and user account from which the server is running, the server computer's operating system and version, and the date and time the server was last started.

Enabling/Disabling a Server

To enable or disable a server, do the following:

- From the main menu bar, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.
- From the **Administration Folders** panel in the center, double-click the **Activity** folder and click **Server Status**.
- From the right panel, double-click the server you wish to enable/disable. You will see the **Everest CRM Studio - Server Status** dialog box.
- To enable the server, check the option **Allow Server to Process**. To disable the server, clear this check box.
- Click **Save and Close**.

Starting/Stopping a Server

To start or stop a server, do the following:

- To start a server that is shut down, you must first enable the server.

  "Enabling/Disabling a Server" on page 87

- If the **Everest CRM Studio** service (path: **Control Panel > Administrative Tools > Services**) is running, pause (or stop) the service and subsequently restart it. This will start the server that was previously shut down. If the **Everest CRM Studio** service is not running, start the service.

- To stop a server that is currently running, clear the check box **Allow Server to Process**, in the relevant **Server Status** dialog box. The server displays the status 'Paused'.

- To start a server that is paused, check the option **Allow Server to Process**, in the relevant **Server Status** dialog box.

- To stop all **CRM Studio** servers, stop the **Everest CRM Studio** service.

CRM Studio Servers - Login Information

By default, all **CRM Studio** servers log into the database without using a password. If you want to use Microsoft Access security to secure the database from unauthorized access, you must specify the user name and password when accessing the database.

To specify the user name and password that enables a server to connect to the database (if utilizing Microsoft Access security), do the following:

- From the main menu bar, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.

- From the **Administration Folders** panel in the center, double-click the **Activity** folder and click **Server Status**.

- Click the **Server Login Information** button under the **Everest CRM Studio Administrator** menu bar. You will see the **Everest CRM Studio Administrator - Server Login Information** dialog box.

- Enter the user name and password for the **CRM Studio** servers.

- Click **OK**.

We recommend that you change this setting only if you are using Microsoft Access security, or want the servers to use a name other than Admin.

The server will not start properly if you are using Microsoft Access security and do not specify a user name and password in the **Server Login Information** dialog box.

You must perform the **Everest CRM Studio** server login administration on the computer where the servers are installed. When saved, this information is recorded in the local system's registry.

Current User Logins

The Current User Logins option tells you who is currently logged in to **CRM Studio**. When an individual user is selected, you can view the following information:

- The **CRM Studio** module the user is logged in to. This displays the Administrator, Event Monitor, or Studio Architect.
- The user's computer and user names.
- The user's operating system and platform.
- The date and time that the user last logged in to the company.
- The date and time of the user's last activity.

Corrective Actions

When **CRM Studio** executes a specific function (such as checking for an event, sending an alert message, executing a response action), an error in configuration or a system-related error may prevent the function from executing successfully.

If such an error in execution does occur, **CRM Studio** not only tracks the type of error, it also allows you to take corrective action to rectify it. The type of corrective action will depend on the type of error that occurred.

CRM Studio lets you take corrective actions in response to the following error conditions:

- Application event errors (Errors when checking for triggered events)
- E-Mail delivery errors
- Fax delivery errors
- File copy (ftp) delivery errors
- Pager delivery errors
- Webcast delivery errors
- Report generation errors
- Action errors

When an error occurs, **CRM Studio** automatically places the error-causing record in a pending state (in the **Everest CRM Studio Event Monitor**). The error is also listed in the **Everest CRM Studio Administrator**, in the corresponding **Errors** sub-branch under **Corrective Actions**.

For every error record that appears in the corrective action branch, you can view:

- Error: The internal application database error number
- Error Message: The error message text
- Application: The name of the company to which the error-causing record belongs
- Description: The description of the record that caused the error

> You will also see additional data specific to the record that caused the error, such as an error-causing mail message recipient's address, subject and message text.

CRM Studio attempts to re-submit the error-causing record every minute until the record is either successfully processed, or is manually deleted or marked as completed by an authorized user.

Application Event Errors

Application event errors are the most common type of error. These are usually caused by an application event that has a configuration error, such as an invalid query, but can also be caused by system problems, such as **CRM Studio**'s inability to access a database on a server.

Application event errors that are due to a configuration error within **CRM Studio** may be addressed simply by correcting the associated error (such as re-configuring the related query). Once this condition is addressed, the error-causing event executes successfully the next time **CRM Studio** attempts to re-submit the error-causing record.

Message Delivery Errors

Delivery errors (such as e-mail, copy, fax, pager and webcast errors) often result from one of the three causes:

- **CRM Studio** is not configured properly to send out the corresponding alert.

  Example The e-mail sending account is incorrectly configured.

- There is a system problem (such as your e-mail server being shut down) that prevents **CRM Studio** from sending a message.

- The recipient's address contains invalid information (such as an invalid pager PIN number).

Like application event errors, **CRM Studio** attempts to re-send the error-causing delivery record every minute until the record is either successfully delivered, or is manually deleted or marked as completed by an authorized user.

Unlike application event errors, the **Corrective Actions** option allows you to update (correct) the delivery address information for a delivery error that occurred.

Example If a pager alert has an invalid PIN, or if an e-mail address has an invalid character within it, **CRM Studio** allows you to use the corresponding corrective actions option to modify the recipient's delivery address, thus enabling you to successfully deliver the message.

Report Generation Errors

Report generation errors are similar to application event errors because they are most often caused by an invalid report design, or by a system problem (such as a database server being unavailable).

If you correct the problem (such as correcting the report design), **CRM Studio** will successfully execute the report the next time it is submitted.

Note that if you have an event that generates a report, it is possible to have many notifications (e-mail messages) that are dependent on the successful generation of that report. If the report generation is unsuccessful, the resulting notification records do not appear in either a pending or error state since the report itself is never completed.

Action Errors

Action errors are due to problems that **CRM Studio** encountered when trying to submit a response action such as executing Visual Basic scripts, executing SQL statements, running a program, or writing event data out to an external file.

Example An incorrect program file name or directory name.

Like all other types of errors, action errors are re-submitted every minute until they are either successfully completed, or are manually deleted or completed by an authorized user. Like application events, you can correct the associated error (such as modifying the related VB script) and once this condition is addressed, the error-causing action executes successfully the next time **CRM Studio** attempts to re-submit the error-causing record.

Taking a Corrective Action

To execute a corrective action, do the following:

- From the **Everest CRM Studio Administrator** dialog box, double-click the **Corrective Action** folder, from the **Administration Folders** panel in the center.
- Click the corresponding corrective action option, and verify if there are any errors displayed in the right panel.
- If an error record does exist, double-click the record. You will see the **Everest CRM Studio - Delivery Errors** dialog box.
- Choose one of the options detailed below to rectify the error.

The Everest CRM Studio - Delivery Errors Dialog Box
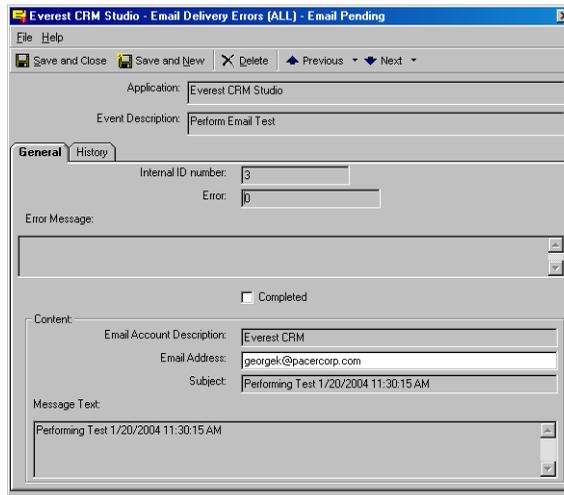
Figure 3.2: Everest CRM Studio - Delivery Errors

Three possible corrective actions are available:

Complete the Record Manually

Although the record is in error, you can flag the record as complete, and it will be retained in **CRM Studio**'s history as successfully completed.

To manually mark a record as completed, do the following:

- From the **Everest CRM Studio Administrator** dialog box, double-click the **Corrective Action** folder from the **Administration Folders** panel in the center.
- Click the corresponding corrective action option. The erroneous record is displayed in the right panel.
- Double-click the record. You will see the **Everest CRM Studio - Delivery Errors** dialog box.
- Select the **Completed** option. Click **Save and Close**.

Delete the Record

You can remove the record from the **CRM Studio** database.

To delete an error-causing record, do the following:

- From the **Everest CRM Studio Administrator** dialog box, double-click the **Corrective Action** folder from the **Administration Folders** panel in the center.
- Click the corresponding corrective action option. The erroneous record is displayed in the right panel.
- Double-click the record. You will see the **Everest CRM Studio - Delivery Errors** dialog box.
- Click the **Delete** button at the top of the dialog box. You will be prompted for confirmation. Click **Yes** to delete the record.

Correct the Record

Not all records may be corrected; this depends on the type of error that occurred.

Example   Invalid pager PIN numbers can be corrected.

E-mail messages that are sent to undeliverable addresses are not recorded within **CRM Studio** as errors.

You may wish to use **CRM Studio**'s E-mail Response System to monitor undeliverable messages.

Hardware Setup

You must configure two hardware components for use with **CRM Studio**:

- Defining Fax Ports
- Defining Pager Ports

If you use **CRM Studio** for sending messages via fax or pager, you must set up these options; otherwise, you may skip them.

Fax Serial Ports

To send messages via fax, **CRM Studio** requires the use of a modem that is reachable from the server on which it is installed. This modem may be shared by other applications and devices.

To configure CRM Studio for faxing, do the following:

- From the main menu, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.
- From the **Administration Folders** panel in the center, double-click the **Hardware Setup** folder and click **Fax Serial Ports**.
- Click the **New Fax Communication Port** button at the top-left corner of the dialog box. You will see the **Everest CRM Studio - Fax Serial Ports** dialog box.

The Everest CRM Studio - Fax Serial Ports Dialog Box
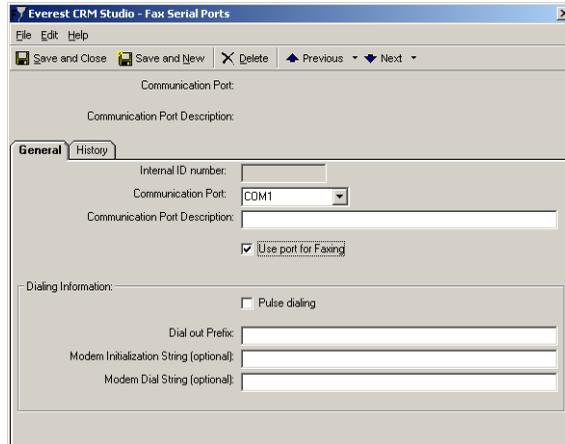
Figure 3.3: Everest CRM Studio - Fax Serial Ports

Internal ID Number
This field displays the ID of the fax serial port. You cannot modify it.

COM Port Number
Select the port to use for sending faxes.

COM Port Description
Enter a description of this port.

Use Port for Faxing
Specify whether this port is currently available for faxing. You can configure a COM port for availability without enabling it for immediate use.

Pulse Dialing
Check this box if you use pulse dialing.

Dial Out Prefix

Enter the prefix, if any, that you use to reach an outside line (e.g., '9').

Modem Initialization String

Enter the command that you use to initialize this modem (e.g., 'at').

Modem Dial String

Enter the command that you use to precede your dial-out number (e.g., 'atdt').

If you configure multiple fax communications ports, **CRM Studio** automatically scans the list of ports for the first available modem, when a fax message needs to be sent.

Pager Serial Ports

To send messages via pager, **CRM Studio** requires the use of a modem that is reachable from the server on which it is installed. This modem may be shared by other applications and devices.

To configure CRM Studio for paging, do the following:

- From the main menu, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.
- From the **Administration Folders** panel in the center, double-click the **Hardware Setup** folder and click **Pager Serial Ports**.
- Click the **New Page Communication Port** button from the top-left corner of the dialog box. You will see the **Everest CRM Studio - Pager Serial Ports** dialog box.

The Everest CRM Studio - Pager Serial Ports Dialog Box
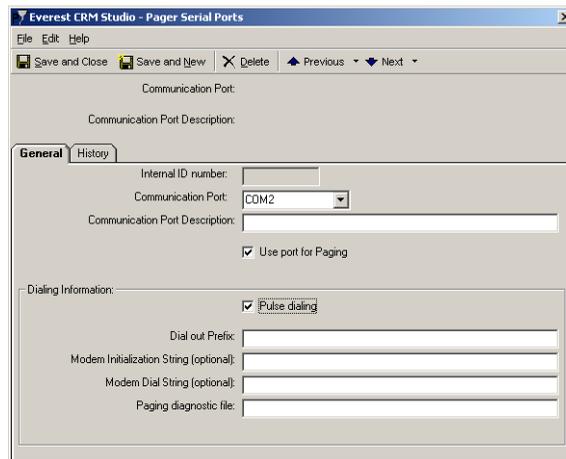
Figure 3.4: Everest CRM Studio - Pager Serial Ports

COM Port Number

Select the port to use for sending pages.

COM Port Description
Enter a description of this port.

Use Port for Paging
Specify whether this port is currently available for paging. You can configure a COM port for availability without enabling it for immediate use.

Pulse Dialing
Check this box if you use pulse dialing.

Dial Out Prefix
Enter a prefix, if any, that you use to reach an outside line (e.g., '9').

Modem Initialization String
Enter the command that you use to initialize this modem (e.g., 'at').

Modem Dial String
Enter the command that you use to precede your dial-out number (e.g., 'atdt').

Paging Diagnostic File
This file is used to store diagnostic data from pages that are sent and can be used to track down the problems of any pages that are unsuccessfully executed. Leave this field blank unless otherwise instructed by Everest Software.

If you configure multiple pager communication ports, **CRM Studio** automatically scans the list of ports for the first available modem, when a pager message needs to be sent.

Software Setup

There are seven components in the configuration of **CRM Studio** before you can begin defining events:

- E-mail Sending Account Definition
- E-mail Response System Configuration*
- Fax Sending Account Definition
- Fax Cover Page Design
- Holiday Calendar Definition
- Paging Services Definition
- Webcast Location Definition**

* The configuration of the E-mail Response System (ERS) is located within the option for E-mail Account set up. As the E-mail Response System is a separate **CRM Studio** module, its configuration and use are detailed in the chapter titled E-mail Response System.

** Note that the configuration of the **CRM Studio** Webcasting module is detailed in the chapter on the set up and use of the webcast module; thus it is not covered in this chapter.

E-mail Accounts

Since **CRM Studio** sends out alert messages via e-mail, one of the most important configuration steps is to define the e-mail account that will be used for this purpose.

Using Dial-up Networking to Send E-mail

If your organization does not maintain a permanent connection to the Internet, you may use **CRM Studio**'s Dial-up Networking option to automatically dial a modem and connect to the Internet, when an event e-mail needs to be sent.

To configure CRM Studio to use Dial-up Networking for sending e-mail, do the following:

- From the main menu bar, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.
- From the **Administration Folders** panel in the center, double-click the **Software Setup** folder and click **E-mail Accounts**.
- The right panel displays the e-mail accounts that you have set up. To modify an existing account to use Dial-up Networking, double-click that account. To set up a new account, click the **New E-mail Account** button at the top-left of the **Everest CRM Studio Administrator** dialog box.
- You will see the **Everest CRM Studio - E-mail Accounts** dialog box. If you are setting up a new account, you must first specify the relevant details in the **General** tab of the **E-mail Accounts** dialog box.

  "The Everest CRM Studio - E-mail Accounts Dialog Box - General" on page 29

- After specifying these details, click the **Dial-up Networking** tab.
- Specify relevant details in the fields in this tab and ensure that the **Use Dial-up Networking for E-mail** option is checked.
- Click **Save and Close**.

The Everest CRM Studio - E-mail Accounts Dialog Box - Dial-up Networking
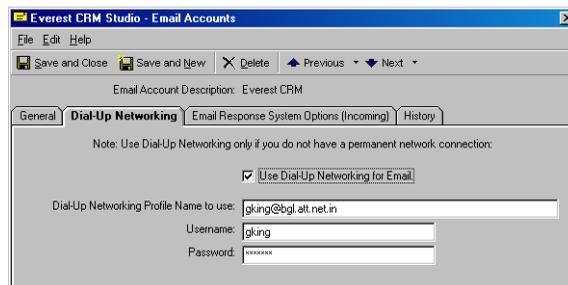
Figure 3.5: Everest CRM Studio - Email Accounts - Dial-up Networking

Dial-up Networking Profile Name to Use
Enter the name of the Dial-up Networking connection profile for **CRM Studio** to use when connecting to the Internet.

Username and *Password*
Enter the login user name and password for this account.

CRM Studio uses dial-up networking only if it detects that an Internet connection is not currently present.

After specifying these details, you must test the e-mail sending account.

☞ **"Test the E-Mail Sending Account" on page 32**

Using Multiple E-mail Sending Accounts

You may wish to configure multiple e-mail sending accounts. The primary reasons for this are:

• To distribute the workload of sending many e-mail messages. Instead of sending all e-mail messages out via a single account, you can distribute this workload by configuring different events to use different e-mail sending accounts.

• To have different sending address names associated with different outgoing messages. Depending on the type of event that is triggering an event and the type of alert recipient, you may want some e-mail messages to come from an account called Employee Alerts, and other messages to come from an account called Customer Alerts.

• To send different replies to addresses associated with an e-mail message (some events should be replied to at alerts@yourcompany.com, whereas other events should be replied to at offers@yourcompany.com).

Fax Accounts

In addition to e-mail, paging, and webcasting, **CRM Studio** can send out messages via facsimile (fax).

To configure CRM Studio to send faxes, do the following:

• From the main menu bar, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.

• From the **Administration Folders** panel in the center, double-click the **Software Setup** folder and click **Fax Accounts**.

• Click the **New Fax Account** button at the top-left of the window.

(To modify the details of an existing fax account, simply double-click the account in the right panel.)

• You will see the **Everest CRM Studio - Fax Accounts** dialog box.

The Everest CRM Studio - Fax Accounts Dialog Box - General

Figure 3.6: Everest CRM Studio - Fax Accounts

Internal ID Number
This field displays the ID of the fax account. You cannot modify it.

Fax Account Name
Enter a description of the account to be used for sending fax notifications.

Cover Page File Name
Enter the name of the cover page to be used with this fax. (Fax cover pages are defined separately under the "Fax Cover Pages" option.)

Active
Specify whether this account is currently available for sending faxes.

Fax Machine Identification
Enter the name of the fax machine from which the notifications are sent

Banner
Enter the heading that appears (typically with the date and time) on all pages that are faxed.

Sending Company Name
Enter your company's name.

Sending Department/User
Enter the name of your department name or a user.

Sending Fax Number
Enter the number from which the fax is sent.

Voice Number
Enter the voice telephone number associated with the fax.

Notes about this account
Enter additional information about the fax account.

Using Multiple Fax Sending Accounts

You may wish to configure multiple fax sending accounts. The primary reasons for this are:

- To have different fax machine identification names associated with different outgoing messages. Depending on the type of event that is triggering an event and the type of alert recipient, you may want some fax messages to come from an account called "Sales Fax," and others from an account called "Support Fax."

- To have different company, department, or voice numbers associated with a fax message.

Fax Cover Pages

Although CRM Studio has an option to create and design fax cover pages, this option is currently hard-coded with two types of cover page designs: one that uses a small font, and the other that uses a large font on the cover page.

In the current version of **CRM Studio**, you can neither edit these cover pages nor create additional cover pages of your own. The current extent of this option is your ability to "activate" or "deactivate" either of the two pre-configured cover pages for use with specific fax accounts.

Use the "Active" check box to activate or de-activate a fax cover page design.

Holiday Schedule

When **CRM Studio** events are configured, you have the option to specify whether or not the event will be submitted if its scheduled execution date falls on a holiday.

To define a holiday, do the following:

- From the main menu bar, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.

- From the **Administration Folders** panel in the center, double-click the **Software Setup** folder and click **Holiday Schedule**.

- The right panel displays the holidays defined so far. To modify an existing holiday, double-click that record. To define a new holiday, click the **New Holiday** button at the top-left of the **Everest CRM Studio Administrator** dialog box.

- You will see the **Everest CRM Studio - Holiday Schedule** dialog box.

- After specifying the details, click **Save and Close**.

The Everest CRM Studio - Holiday Schedule Dialog Box - General
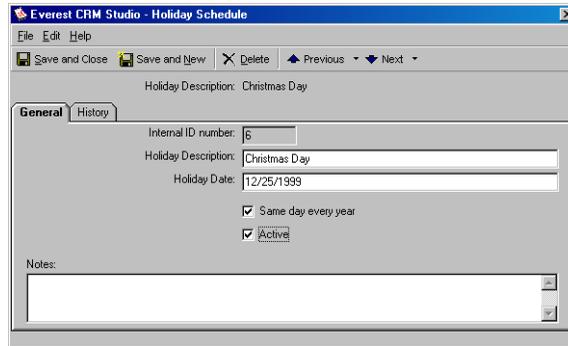
Figure 3.7: Everest CRM Studio - Holiday Schedule

Internal ID number

This field displays the ID of the holiday. You cannot modify it.

Holiday Description

Enter a description for the holiday.

| Example | New Year's Day

Holiday Date

Specify the date on which the holiday falls, in the format MM/DD/YYYY.

Same Day Every Year

Check this option to specify that the holiday falls on the same numeric date of every year.

Active

Check this option to indicate whether this holiday is currently available for observance by defined events.

Each event may be configured to either run or not run on a holiday.

Paging Services

If you use **CRM Studio** to send alerts via pager, you must identify the paging services that **CRM Studio** will need to communicate with, and, if needed, the site-specific connection data that each service requires.

To configure paging services, do the following:

- From the main menu bar, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.
- From the **Administration Folders** panel in the center, double-click the **Software Setup** folder and click **Paging Services**.
- The right panel displays the paging services set up so far. To modify an existing paging service, double-click that record. To add a paging service, click the **New Paging Service** button at the top-left of the **Everest CRM Studio Administrator** dialog box.

• You will see the **Everest CRM Studio - Paging Services** dialog box.

The Everest CRM Studio - Paging Services Dialog Box - General

Figure 3.8: Everest CRM Studio - Paging Services Dialog Box

Internal ID Number
This field displays the ID of the paging service. You cannot modify it.

Paging Vendor
Enter the name of the paging vendor (e.g., Skytel).

Service Description
Enter a description of the paging service (e.g., Skytel Pager Service).

Paging Station TAP Phone Number
Enter the number required to access this paging service

Password
Enter the password, if any, required to access this paging service.

Baud Rate, Parity, Data Bits, Stop Bit and *Characters Per Block*
Contact your paging service for details on these fields.

Customer Support Number
Enter the support number of your paging service vendor. This number is for information purposes only.

Active
Check this box to indicate that this paging service is currently available for use in pager notifications.

Notes
Enter any additional information about this paging service.

Webcast Locations

Refer to the chapter '**Webcasting'** for complete details on the configuration and use of the webcasting module.

User Access - Logins

The last branch in the list of Administrative functions is titled User Access and contains a sub-branch called Logins. This is where you control the access privileges of the users who access **CRM Studio**.

To configure user access, do the following:

- From the main menu bar, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.
- From the **Administration Folders** panel in the center, double-click the **User Access** folder and click **Logins**.
- The right panel displays the users set up so far. To modify an existing user's access, double-click that record. To add a new user, click the **New User Name** button at the top-left of the **Everest CRM Studio Administrator** dialog box.
- You will see the **Everest CRM Studio - Logins** dialog box.
- If you are adding a new user, specify relevant details in the **General** tab of the **Logins** dialog box.
- Select the access rights allowed to this user by checking the required options in the **User Access** tab. If you are modifying an existing user's access rights, you can do so from this tab.
- Click **Save and Close**.

The Everest CRM Studio - Logins Dialog Box - General
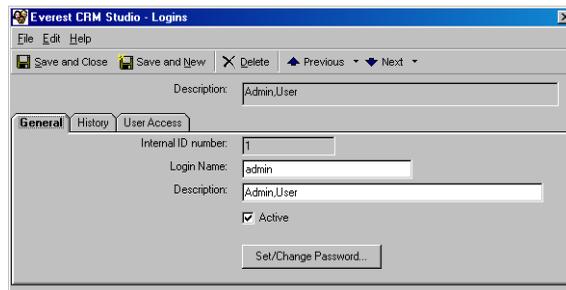
Figure 3.9: Everest CRM Studio - Logins - General

Internal ID number
This field displays the ID of the user. You cannot modify it.

Login Name
Enter the name that the user will log in to **CRM Studio** with.

Description
Enter the user's full name.

Active
Check this box to specify that this user is granted immediate access to the modules selected in the **User Access** tab.

Set/Change Password...
Click this button to enable password protection for this user. Passwords may be up to 14 characters in length and are case sensitive.

You cannot specify a password for the user name 'Admin'.

Set/Change User Password

You can specify or change the password for an existing user to guard against unauthorized access.

To set or change a user's password, do the following:

• From the main menu bar, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.

• From the **Administration Folders** panel in the center, double-click the **User Access** folder and click **Logins**.

• The right panel displays the users that have been set up so far. To specify or modify an existing user's password, double-click that record.

• You will see the **General** tab of the **Everest CRM Studio - Logins** dialog box.

• Click the **Set/Change Password...** button. You will see the **Set/Change Password** dialog box.

• Specify the old password (if one has been defined previously) and the new password.

• Click **OK**.

The Set/Change Password Dialog Box

Figure 3.10: Set/Change Password Dialog Box

User Name
This field displays the user name for which the password is being specified/modified. You cannot edit this field.

Old Password

Specify the old password for the user name (if it was specified previously)

New Password

Specify a new password for the user name.

Verify Password

Enter the new password again.

The Everest CRM Studio - Logins Dialog Box - User Access

The **User Access** tab allows you to specify the modules and functions a specific user has access to. These options are divided by module into:

- Administrator
- Event Monitor
- Event Manager
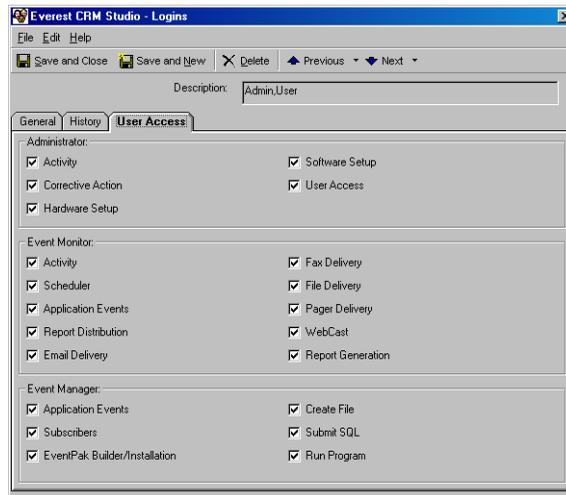
Figure 3.11: Everest CRM Studio - Logins - User Access

- If you give a user access to the **User Access** option under the **Administrator** section, that user can modify the authorization settings for himself/herself and for any other users.

- It is strongly suggested that you limit the number of users who have access to the **Event Manager**, as this is where events are configured.

- Exercise extreme caution in allowing access to the **Submit SQL** and **Run Program** options as these functions allow **CRM Studio** to add, update, or delete data from other company databases.

Database Tools

The final administrative functions in **CRM Studio** can be accessed from the **Everest CRM Studio Administrator** dialog box **> File** > **Database Tools** menu. The options are:

- Remove Completed Items

- Remove Pending Items
- Compact Database

Remove Completed Items

Depending on how many events you have configured **CRM Studio** to check, how often you are checking them, and how many alerts you are sending out, the amount of history that **CRM Studio** retains can grow to a large degree.

This option allows you to remove (delete) the history of completed items (events are checked, alerts that are sent, reports that are generated) from the **CRM Studio** database.

This removal process may be done on either an ad hoc manual basis, or you may schedule it to occur automatically within the **CRM Studio** database.

To manually remove completed items from the database, do the following:

- Stop the **Everest CRM Studio** service (path: **Control Panel > Administrative Tools > Services**). Ensure that no users are logged in to **CRM Studio.**
- From the main menu bar, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.
- Select **File > Database Tools > Remove Completed Items**. You will see the **Everest CRM Studio - Remove Completed Items from Database** dialog box.
- In the **Remove items dated before date:** field, specify the date prior to which all items are to be deleted from the database.
- Click the **Remove** button. The items are deleted from the database.
- Click **Close**.
- Restart the **Everest CRM Studio** service.

You should always select the option **Compact Database** after you have removed completed items.

"Compact Database" on page 107

Automating the Removal of Completed Items

To automate the removal of completed items, do the following:

- From the main menu bar, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.
- Select **File > Database Tools > Remove Completed Items**. You will see the **Everest CRM Studio - Remove Completed Items from Database** dialog box.
- Click the **Automate This Task...** button. You will see the **Everest CRM Studio - Automatically remove completed items** dialog box.
- Specify a schedule for this task and click **OK**.

The Everest CRM Studio - Automatically remove completed items Dialog Box
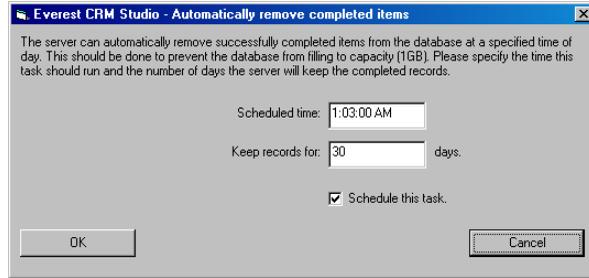
Figure 3.12: Everest CRM Studio - Automatically remove completed items

Scheduled Time
Specify the time at which this procedure should run.

> **CRM Studio** will run this process daily.

Keep Records For
Specify how many days worth of history **CRM Studio** should retain in its database.

Schedule this Task
Ensure that this box is checked to enable automation of the task.

Remove Pending Items

This option allows you to remove (delete) selected items (such as pending e-mail messages, reports, actions) from the **CRM Studio** database.

This option is particularly useful if you have a large number of items that are pending because of an error, and you simply wish to delete the error-causing records.

However, you must use this option carefully, as once you remove a pending item, it cannot be executed by **CRM Studio** and there is no undo function for this option.

To remove pending items from the database, do the following:

- Stop the **Everest CRM Studio** service (path: **Control Panel > Administrative Tools > Services**). Ensure that no users are logged in to **CRM Studio.**
- From the main menu bar, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.
- Select **File > Database Tools > Remove Pending Items**. You will see the **Everest CRM Studio - Remove Pending Items from Database** dialog box.
- Select the types of items you wish to remove and click the **Remove** button.
- You will be prompted for confirmation. Click **Yes**. The items are deleted from the database.
- Click **OK**.

• Restart the **Everest CRM Studio** service.

You should always select the option **Compact Database** after you remove completed items.

The Everest CRM Studio - Remove Pending Items from Database Dialog Box
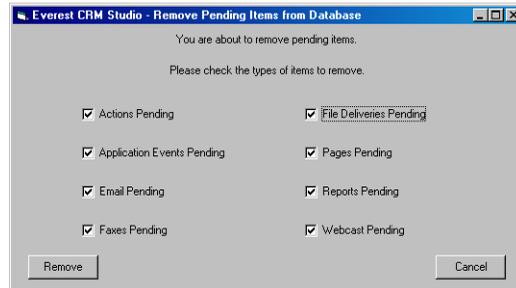
Figure 3.13: Everest CRM Studio - Remove Pending Items from Database

You can remove the following pending items:

• Actions
• Application events
• E-Mail, fax, pager, and webcast messages
• Report generation requests
• File delivery requests

Compact Database

Compacting the **CRM Studio** database is always advised after you delete records from the database as the compact function removes any unnecessary space from the **CRM Studio** database.

To compact your database, do the following:

• Stop the **Everest CRM Studio** service (path: **Control Panel > Administrative Tools > Services**). Ensure that no users are logged in to **CRM Studio.**
• From the main menu bar, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.
• Select **File > Database Tools > Compact Database**. You will see the **Everest CRM Studio - Compact Database** dialog box.
• Click the **Compact** button. Click **OK**.

The Everest CRM Studio - Compact Database Dialog Box
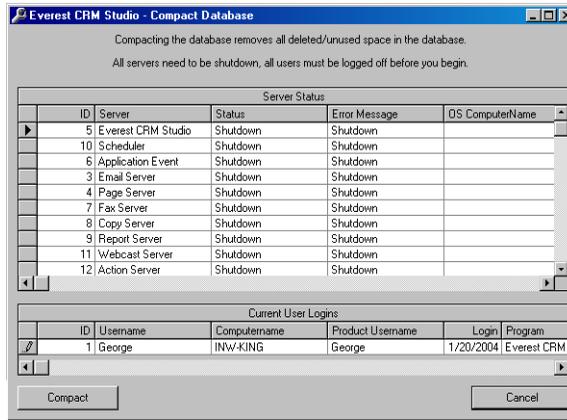
Figure 3.14: Everest CRM Studio - Compact Database

4. Query Designing

Queries
The Query Designer
Aggregate Queries

Queries

A **CRM Studio** query is an object that retrieves specific information from an **Everest** company's database. In **CRM Studio**, an event uses one or more queries to identify a condition that specific people need to know about. If the conditions of a query (or queries) that an event uses are met, the event is triggered and the resulting alerts and actions are executed.

The majority of events require only a single query, but some events require multiple queries; specifically, those events whose triggering is based on a combination of conditions that exist across multiple company databases. (Each query is associated with a single database.)

There are two types of queries. The first type is a record level query, and it checks for one or more records that meet certain conditions.

Example

- Open service calls with 'critical' as priority.
- Activities that are overdue for completion.
- Opportunities for more than $25,000 due to close within the next 30 days.

The second type of query is an aggregate query, and it checks to see if a group of records collectively meet a certain condition.

Example

- More than 10 open service calls with 'critical' as priority.
- Fewer than 5 scheduled activities per sales representative next week.
- Sales representatives with more than $500,000 in their pipeline.

Designing a Query for Many Events

Consider an organization that wishes to receive the following alerts:

- Clients who have pending sales of more than $25,000
- Clients who have pending sales of more than $50,000
- Clients who have pending sales of more than $100,000

Each of these three events could be designed to use its own query, with each query checking for the corresponding dollar threshold. Or, all the three events could use the same query - one in which the dollar threshold is designed as a parameter, which is specified at the event level. The use of query parameters is very important, as it allows a single query to be re-used in multiple events.

Keep in mind that a query may require a parameter value only at the time of creating an event. **CRM Studio** does not prompt for the parameter value when the event is executed.

Query Designing - Preparation

Although **CRM Studio** requires you to define queries before you design events, you will find the query design process easier if you begin by identifying the events that you wish to be notified about.

Unless you know the events that you wish to be alerted about, it can be somewhat challenging to define the queries that need to be designed in support of those

events. To create queries corresponding to each condition (or scenario) that you wish **CRM Studio** to check for, you should take the following steps:

These steps are slightly different for record-level queries and aggregate queries.

Record-Level Query Designing: Preparation

The steps preceding the creation of a record-level query are:

1. **Identify Purpose**: The first step is to identify the overall purpose of an event.

   Example   Send an alert to an account manager when a 'critical' service call is logged for one of the customers.

   When you identify an event, you should be sure to include the condition that you wish **CRM Studio** to check for (the receipt of a critical service call) as well as the person(s) who will receive an ensuing alert.

2. **Consider Alert Message Content**: The next step to consider is what you would like an alert message to look like. The best way to do this is to sketch out what you would like the actual alert message to say.

   Example   In the case of the event we've been working with thus far, you might wish to have a corresponding alert message that looks like the following:

   Hello, Don Farber:

   The following critical support call was just logged for Acme Incorporated:

   Contact: Tom Jones

   Call Received: 09/14/2001 1:35 PM

   Type of Problem: Fatal error message

   Status: Open

   Assigned to: Lisa MacKinnon

   Description: Whenever the client tries to log in to the application, a fatal error message appears that says that an error has been encountered in module <module name>.

3. **Identify Alert Message Data Fields**: If you look at the preceding alert message, you immediately notice that some of the fields in the message need to be filled in from one or more fields from the underlying database.

Example The third preparatory step is to identify all the data fields that you wish to put into the message text:

Hello, [salesrep_name]:

The following critical support call was just logged for [customer_company]:

Contact: [customer_name]

Call Received: [ticket_log_date] [ticket_log_time]

Type of Problem: [ticket_type]

Status: [ticket_status]

Assigned to: [ticket_rep_name]

Description: [ticket_description]

4. **Identify Database Tables**: By virtue of looking at the data fields in the previous message, you will have a very good idea of the database tables that the query will need to retrieve information from.

Example This query will have to retrieve information from three database tables: the ticket table (for call details), the customer table (for the customer and contact name), and the sales representative table (for the name of the account manager).

5. **Identify the Condition**: The next preparatory step is to identify the condition of the records (in this case, the call tickets) for them to cause the sending of alert messages.

Example If we look back upon the description of the event (Send an alert to an account manager when a 'critical' service call is logged for one of the customers) we can easily identify two key conditions:

- The call must have a priority of 'critical'
- The call must have been received today

6. **Identify Who's to be Notified**: The final step is to identify who will be notified about the event. In some cases, an event's alert recipients (called subscribers in **CRM Studio**) are hard-coded; you might always want to send an alert to the CEO, CFO, or sales or support manager.

In other cases, however, you might want **CRM Studio** to send an alert to a person who is associated with a record that is causing an event to trigger.

Example Send an alert to an account manager when a 'critical' service call is logged for one of the customers.

In this scenario, the recipient of the alert (the account manager) depends on the client for whom the critical call was logged. **Everest CRM Studio** has the ability to send an alert to a person associated with a triggered record.

If we look back on the alert message (the version where we have identified the data fields), we can see that the person who should actually receive the alert message is [salesrep_name]. However, [salesrep_name] is not an e-mail address; it is simply someone's name. If we look further into the sales representative table, we can find a field like [salesrep_mail_address] – this field contains the address we wish to send the alert to.

If you are designing a query for an event that will send an alert to an address derived from a triggered record, the query must include the recipient's delivery address (mail address, pager number, etc).

Aggregate Query Designing - Preparation

Aggregate events are ones that are triggered by a group of records meeting certain conditions. **CRM Studio** supports five aggregate functions (the first three of which are most frequently used):

- Count (as in more than 'x' activities or fewer than 'y' leads)
- Summarize (as in more than 'x' dollars or less than 'y' minutes)
- Average (as in an average sale amount that drops below 'x')
- Minimum (as in the minimum days to delivery)
- Maximum (as in the maximum freight charge this week)

Follow the steps below in preparation for creating an aggregate query:

1. **Identify Purpose**: Like a record-level query, the first step in working with an aggregate event is to identify the overall purpose of the event.

   Example Send an alert to a sales manager if any sales representative has fewer than 10 scheduled activities this week.

2. **Consider Alert Message Content**: The next step to consider is what you would like an alert message about this event to look like.

   Example In the case of this aggregate event, you might wish the corresponding alert message to look like the following:

   The following sales representatives have fewer than 10 scheduled activities this week:

   Salesrep: Jim Ramey

   Number of Scheduled Activities This Week: 7

3. **Identify Alert Message Data Fields**: With this message, you can identify the two data fields that you wish to put into the message text.

   Example The following salesreps have fewer than 10 scheduled activities this week:

   Salesrep: [salesrep_name]

   Number of Scheduled Activities This Week: [activity_count]

4. **Identify Aggregate Field and Function**: Looking at your aggregate event's alert message, it is easy to tell that the aggregate function you are performing is: counting the number of activities. Whenever you have **CRM Studio** count the number of records in a table, you always use the table's unique key as the field that counts the number of records (because this field is never blank). In

this example, **CRM Studio** would count records using the activity ID field. The aggregate function for this query would be 'count'.

5. **Identify Aggregate Grouping Field**: It is apparent from your aggregate event's alert message that you are counting the number of activities per sales representative.

   When you create an aggregate event (and query), you have the option to group the aggregate function by one or more fields.

   | Example | You could count the number of activities per salesrep and (within each salesrep) per activity type.

   In this particular query, our aggregate grouping field would be [salesrep_name].

6. **Identify Database Tables**: Aggregate events (by their nature) often contain fewer fields of extensive information in an alert message and thus, require that fewer database tables be involved in the creation of the aggregate query.

   | Example | This query will have to retrieve information from two database tables: the activity table (to count the number of activities per salesrep) and the salesrep table (to retrieve the name of each salesrep with fewer than 10 activities).

7. **Identify the Record-Level Condition**: This is a key point where record-level queries and aggregates differ. In a record-level query, you need to include selection criteria that will enable **CRM Studio** to determine whether a record will trigger the event.

   In an aggregate query, you need to include selection criteria that will enable **CRM Studio** to determine whether an underlying record is eligible to be included in the aggregate.

   | Example | For an activity to be counted as one that is assigned to a salesrep for this week, it must meet the following criteria:

   • It must be open (not completed).
   • It must be scheduled for completion this week.

   In an aggregate query, these conditions are referred to as the record-level conditions that must be met for those records to be included in the aggregate function. (The aggregate function in this example is the counting of eligible activities per salesrep.)

8. **Identify the Aggregate Condition**: In the previous step, we identified the conditions that would determine whether a record was eligible to be included in the aggregate function. Having done that, we need to identify the condition that the aggregate itself must be tested against.

   If we consider the results of this aggregate query after step #7, we have a query that shows us how many activities are scheduled for each sales representative this week. The aggregate condition is where we can instruct **CRM Studio** to identify only those salesreps with fewer than 10 scheduled activities.

   Thus, the aggregate condition for this query is:

   Fewer than 10 scheduled activities

9. **Identify Who's to be Notified**: As with record-level queries, the final step is to identify who will be notified about the event. An aggregate query can notify a specific individual, or an individual associated with a triggered record.

> *Example* In the case of the current aggregate event, you could notify each sales representative who has fewer than 10 scheduled activities this week, by including the representative's e-mail address as one of the fields in the underlying aggregate query.

Query Design Worksheets

As illustrated in the preceding steps, the best way to approach designing queries is to identify the query elements you require before you log in to **CRM Studio**. In this regard, you can use the worksheets provided in the chapter '**Worksheets**' to help you identify the necessary elements and thus, streamline the creation of queries within **CRM Studio**.

Before you begin designing queries within **CRM Studio**, you must successfully install **Everest CRM Studio**.

The remainder of this user guide assumes that you have successfully integrated **CRM Studio** with your companies of choice (via ODBC) and have verified this connectivity. If you have not taken these steps, please refer to the **CRM Studio** Installation Guide for assistance, and/or contact the Everest Software Technical Support department for assistance.

The Query Designer

Once you have completed one or more worksheets for the design of record-level queries, you are ready to log in to the **Everest CRM Studio Architect** and create such a query.

To access the Query Designer in CRM Studio, do the following:

*   From the main menu bar, select **CRM > CRM Studio > Architect**. You will see the **Everest CRM Studio Architect** dialog box.

> When you log in for the first time, the ASC database is updated with the latest EventPak.
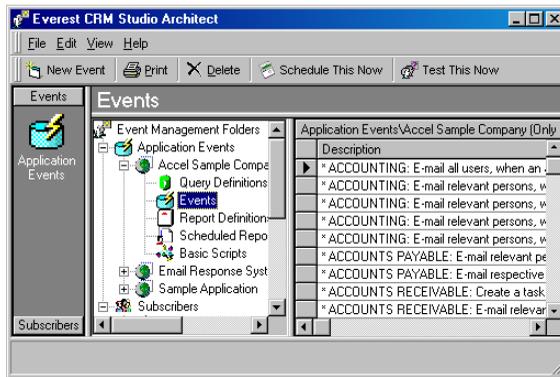
Figure 4.1: Everest CRM Studio Architect

- From the **Event Management Folders** panel in the center, select **Application Events**. You will see all the companies that **CRM Studio** is currently configured to integrate with.

- Select the company for which you want to design queries and click **Query Definitions**. You will see a list of queries (if any have been created) in the right panel.

- Click the **New Query Definition** button at the top-left. You will see the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions** dialog box, using which you can design queries for the selected company.

Record-Level Queries

The following sections outline the creation of record-level and aggregate queries.

- The Aggregate Queries section goes over only the differences between designing record-level and aggregate queries; hence, it is necessary to review the record-level query section to become familiar with the basics of query designing.

- The following section assumes that you have successfully connected **CRM Studio** to the company database for which you are designing queries. This database is referred to as (your company).

Query Description

Since most organizations using **CRM Studio** have a minimum of 25 to 30 queries, it is important to name your queries logically so that they can be easily located later. For example, consider the following query conditions:

- Overdue activities
- Fewer than 12 activities per salesrep next week
- Activities that are due for completion in the next 3 days

Such queries will be very hard to locate later on. It would be much easier to find them, if they were named in the following manner:

- Activities; Overdue for Completion

- Activities; Fewer than 12 per salesrep next week
- Activities; Due for Completion Within 3 days

As one possible naming convention, Everest Software suggests listing a query's primary data object as the first word in a query's description (e.g. Activities). You can then follow that with the appropriate condition being applied to that object.

To create a query, do the following:

- From the main menu bar, select **CRM > CRM Studio > Architect**. You will see the **Everest CRM Studio Architect** dialog box.
- From the **Event Manager Folders** panel in the center, select **Application Events > (your company) > Query Definitions**.
- Click the **New Query Definition** button at the top-left. You will see the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions - Description** tab.
- In the **Query Description** field, enter a description of the query you are creating. Press the **Tab** key to copy the same into the **Display Description** field.
- Ensure that you select the **Active** check box. Click **Next**. You will see the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions - Tables** tab.

Query Tables

From the **Tables** tab, you can choose what database tables this query will retrieve information from. There are three items you need to consider when identifying a query's tables:

- What data do you wish to put into an alert message that results from this query's condition being met?

  As we discussed earlier (in the preparation steps), a query that retrieves something as straightforward as overdue activities usually needs to retrieve data from more than just the activity table. If you desire information about the account for whom the activity was created, you also need the account table. And if you desire information about the sales representative to whom the activity is assigned, you would also need the sales representative table.

- Do you need to include the table that contains the e-mail address of the person you wish to alert?

  In many alert scenarios, you might wish to send an alert to a person who is associated with the record causing the event to trigger. (e.g., you might wish to send an alert to the sales representative to whom an overdue activity is assigned.) In this instance, you must include the table that contains the e-mail addresses of the desired alert recipients.

- Will an event that uses this query need to execute some sort of response action such as executing a VB script, a SQL statement, or an executable program?

Since an event can execute a response action in addition to sending an alert message, you need to consider what data you wish to make available for transferring a corresponding program. For example, if you wish to allow an event using an Overdue Activities query to update contact data, you might wish to include the contact table as one of the tables for this query.

To specify the query's tables, do the following:

- After specifying relevant information in the **Description** tab of the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions** dialog box, click **Next**. You will see the **Tables** tab.

- From the **Available Tables** panel on the left, double-click the required tables, to add them to the **Selected Tables** panel.

- Click **Next**. You will see the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions - Links** tab.

Choosing the Same Table Multiple Times

You want to send an alert about activities that are overdue for completion. Each activity record contains the ID of the salesrep who is assigned to the activity (a field called activity.assignee_id), as well as the ID of the account manager who is responsible for the client for whom the activity was scheduled (a field called activity.acctmgr_id).

Since an employee's ID [is simply a numeric field], you wish to put the name of the sales representative as well as the name of the account manager in a corresponding alert message. The names of these individuals reside in the employee table, in a field called employee.name.

To design this query so that it can retrieve the sales representative's name, you would join the activity table activity.assignee_id field to the employee table employee.id field. However, to retrieve the account manager's name, you would also need to join the activity table activity.acctmgr_id field to the employee table employee.id field. **CRM Studio** does not permit you to join one table to the same column in another table multiple times.

Instead, you must choose (or join to) the target table multiple times in the **Columns** tab.

When you select the same table two (or more) times in the **Tables** tab, you are presented with a pop-up window that informs you that you have already chosen this table and that you must specify an alias to select the table again.

Once you key in an alias (and press the return key), you will see the table's alias, followed by an exclamation mark, and the table's original name, in the list of selected tables.

Query Links

You must be familiar with an **Everest** company's database schema to link tables together in **CRM Studio**.

If you have chosen more than one table for a query, you must tell **CRM Studio** how those tables are linked (or joined) together.

It is very important that you identify a query's primary database table before starting the linking process.

In the example of an Overdue Activities query that uses the activity, account, and sales representative tables, you would first identify that this query's primary database table is the activity table.

To link the tables, do the following:

- After selecting tables from the **Tables** tab of the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions** dialog box, click **Next**. You will see the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions - Links** tab.

- Click the **Add Table Link** button. You will see the **Everest CRM Studio - Tables Linked Together** dialog box.

  "The Everest CRM Studio - Tables Linked Together Dialog Box" on page 54

- From the **Table Name** drop-down list, select the query's primary database table. From the **Linked to Table Name** drop-down list, select any of the query's other tables.

- From the **Column Name** drop-down list, select the field that allows the tables to be linked together.

    - If **CRM Studio** is able to find a column in the **Linked to Column Name** field with the same name as the selected column in the **Column Name** field, that field name is automatically loaded in the **Linked to Column Name** field.

    - If **CRM Studio** is not able to find a column in the **Linked to Column Name** field with the same name as the selected column in the **Column Name** field, the **Linked to Column Name** field is left blank and you may select the appropriate column from the drop-down list.

- The **Link Type** field defaults to Left Outer Join. You may leave it as is, unless your database schema specifically requires a different type of link.

- Click **OK**.

- If you have more than two tables that require linking, click the **Add Table Link** button again and repeat this process until all tables are linked. Click **OK**.

- You will see the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions - Links** tab again, with the resulting linked tables displayed.

- Click **Next**. You will see the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions - Columns** tab.

  "The Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions Dialog Box - Links" on page 54

Depending on the companies, databases, and ODBC drivers you are using with **CRM Studio**, you may come across an instance where **CRM Studio**'s default linking syntax is not sufficient for the type of link you wish to create.

Example Some companies require you to join two tables together by taking the first (or left) 'x' characters of a field in one table, and linking them to the first 'x' characters of another field in the second table. **CRM Studio**'s default linking syntax does not allow you to link using only 'x' characters of a specific field. To create a link such as this, you need to override **CRM Studio**'s default linking syntax.

To override the default linking syntax, do the following:

- From the **Everest CRM Studio - Tables Linked Together** dialog box, join the two tables together as detailed in the previous section.

- Click the **SQL** tab. Copy the join syntax (the part of the query that follows the word 'From', up to the word 'Where').

  Do not include the words 'From' and 'Where' in the copy, and the parentheses that begin and end the join syntax.

- Click the **Links** tab and select the option **I would like to manually input the table linking**. A blank line appears beneath this check box.

- Paste the join syntax that you copied from the **SQL** tab into this line. Edit this syntax to perform the join exactly as you require.

- Click **Next**. You will see the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions - Columns** tab.

Query Columns

The next step in designing a record-level query is identifying the fields of data (columns) that this query should have access to. There are three items you need to consider when identifying a query's tables:

- What data do you wish to put into an alert message that results from this query's condition being met?

  If, for example, you are designing a query that will identify activities that are overdue for completion, you might wish to include fields such as the activity description, the due date and time, the account name, and the name of the person to whom the activity is assigned.

- Do you need to include the field that contains the e-mail address(es) of the person you wish to alert?

  This would require you to include the field that contains the e-mail address of the person to whom an activity is assigned.

- Will an event that uses this query need to execute some sort of response action such as executing a VB script, a SQL statement, or an executable program? If so, what fields of data might that response action require?

If this query is used in a response action that automatically updates the contact record of the client for whom the activity is overdue, you might also wish to include the contact's name as one of the query's columns.

• If the results of this query are presented in a list, what order do you want these records listed in?

You may want the overdue activities listed first in the order of activity priority, and then (within each priority) in the chronological order of the activity's due date. Be sure to include the activity priority field as one of the columns for this query.

To select the query's columns (fields), do the following:

• After linking the selected tables in the **Links** tab of the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions** dialog box, click **Next**. You will see the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions - Columns** tab.

• From the **Available Columns to Query** field, double-click the fields you wish to include in the query.

OR

• Select the field you wish to include and click the **Add Column to Query** button. The selected fields are displayed in the **Query Columns Selected** grid.

• Repeat this process for each column you wish to select.

> If you wish to include all the available columns within a query, you can click the button **Add All Columns to Query**.
>
> Although this is an excellent technique for ensuring that you can retrieve data from all columns (as well as for verifying the data within each of these columns), this option is not suggested for normal query building as it makes it difficult for the person(s) designing alert messages to quickly and easily locate the specific fields whose values they wish to include in an outgoing alert message.

• Click **Next**. You will see the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions - Sorting** tab.

"The Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions Dialog Box - Columns" on page 56

To remove a column from a query, do the following:

• In the **Query Columns Selected** grid, go to the extreme left column of the row that contains the field you wish to remove. The cursor changes into a right-pointing arrow.

• Click the left mouse button.

• Click the **Remove Column from Query** button. The column is removed from the query.

> You may also click the button **Remove All Columns from Query** to delete all the columns selected for this query.

The Query Columns Selected Grid

Column Type

When designing a record-level query, this field should always be set to Normal for every column selected within a query.

Customized Name

When a query is used within an event, you can use the query's columns in a number of ways, such as in the design of alert message text, and event response actions. Whenever you need to reference a query's column, you can do so from the column's Customized Name.

This is necessary, as some databases have rather cryptic names for their columns.

> Example A sales application may have an activity table with a column that stores the activity's due date, called ddate.

You might know that a column called 'ddate' actually stores the activity's due date, but the person designing an event's alert message might not. Therefore, you can modify a column's Customized Name so that when a person is designing an alert message for this query, a field called Due_Date rather than ddate is displayed.

By default, when you select a column for a query, **CRM Studio** automatically places the column name in the Customized Name field. You can then modify that field's customized name.

- Do not include blank spaces in a column's customized name. Some databases and/or ODBC drivers accept blank spaces, others do not. Instead of using blank spaces (Due Date), use underscores (Due_Date).
- Try to keep your customized names under 20 – 25 characters. Some databases and/or ODBC drivers accept customized names of only up to 'x' characters.
- Do not begin a customized name with SQL reserved words, such as sum, sub, add, avg, min, max, trim, format, and so on.
- Make sure you do not have multiple fields with the same customized names. (e.g., a contact name column and a sales representative name column may both show up with a customized value of 'name', so change the first value to contact_name and the second value to rep_name.)
- Use only letters and numbers in a customized name; do not use symbols.

Unique Field

In **CRM Studio**, you have two choices as to how often you wish to be notified about an individual record that meets a query's criteria (such as an overdue activity). You can:

- Be notified once about each record.
- Be notified over and over about a record until it no longer meets the query's criteria.

Although this option is specified at the event level, if you do not tell **CRM Studio** how to uniquely remember each record that it has sent an alert about, it automatically uses the second option.

To indicate to **CRM Studio** how it can uniquely remember a record, you need to identify the column within a query that uniquely identifies each record.

Example For a query that sends alerts about overdue activities, this would be a column such as the activity ID.

If this column has not already been selected as one of this query's columns, check the **Unique** check box for that column.

- It is recommended that you specify a unique field since you have the option to repeat (or not repeat) alerts on the event level.
- Every record-level event should have a unique column identified.
- Only a single column may be checked as a query's unique column.
- If a query's unique value is based on a combination of two or more fields, you can create a concatenated field that combines the values of multiple columns and then identify that column as unique.

Calculated Fields

One of the most important aspects of query designing is that you can create calculated fields.

Example
- A field that calculates the number of days that an activity is overdue for completion.
- A field that calculates the weighted value of an opportunity by multiplying the opportunity amount by the forecast probability of its closing.
- A field that calculates the percentage of stock in-hand that is in excess of its desired maximum level.

Calculated fields may be placed in alert messages, used as selection criteria to determine whether a record should be triggered, and used in an event's response actions.

Example The steps detailed below outline the creation of a field that stores an opportunity's weighted value.

To create a calculated field, do the following:

- Select the field that contains the opportunity's forecast amount (a field called opportunity.amount). This field appears as a row in the **Query Columns Selected** grid.
- Position the cursor in the row containing opportunity.amount in the **Column Name Selected** column, and single-click at the end of the word amount.
- In this row, enter an asterisk (*) after the word amount. This denotes the multiplication symbol.
- Type in the name of the field that contains the opportunity's probability of closing (such as, opportunity.probability). The **Column Name Selected** field now displays: opportunity.amount*opportunity.probability.
- Change the column's customized name from amount to weighted_amt.

There's no limit to the types of calculations that you can include in a column. You can include: any accepted arithmetic functions, parentheses to control the order of

arithmetic operations, and database (and driver) specific functions for even more advanced calculations. Here are a few guidelines on creating and using calculated fields:

- Use a query's Preview mode to ensure that your calculation syntax is acceptable to the database, the ODBC driver, and to **CRM Studio**.
- Most databases (and drivers) support functions that allow you to calculate the difference between two dates. The syntax of these functions is very much dependent on the database (and driver) you are working with. Please see your database administrator (and/or SQL documentation) for details on how to use these functions.
- Be sure to change the Customized Name of a calculated field; since most calculated fields begin by identifying a single column, the customized name usually defaults to that column's name.
- A single query can have multiple calculated fields within it.
- You can copy and paste the content of a grid's **Column Name Selected** cell.

Return Distinct Rows of Data Only

By design, record-level queries return a list of all records that meet a query's criteria.

Example   A query that scans orders placed last month generates a list of all of those orders.

You may, however, wish to receive only a list of all customers who placed those orders. If your query retrieves data from the orders table, you will see one record for every order in that table, including multiple orders for the same customer.

However, based upon the columns that you select for a query, you can instruct **CRM Studio** to retrieve only unique (or distinct) records.

Thus if you design your query to contain only the name of customers who made purchases last month, and you select the **Return Distinct Rows of Data Only** option, **CRM Studio** provides you with a list that shows a customer's name only once, regardless of how many matching orders were retrieved.

Be careful when using this option as the definition of what is (and is not) distinct is governed strictly by the columns you have chosen for your query.

Example   If the preceding query has just the customer name column, it returns one record per customer. But if you select customer name and order date as columns, the query returns one record daily per order per customer.

Query Sorting Order

When a record-level query is executed, it retrieves matching data records. An event that uses this query can either send one alert message per matching record, or it can send a single alert message that contains all the corresponding records.

A single alert message can roll up these records and display them all together. So you have the option to specify the order in which these records are to be listed in the associated alert messages. This is referred to as the query's sorting order.

Any field that you select in the **Columns** tab is available for use in the sorting order.

To select the query's sorting order, do the following:

- After selecting the query's columns in the **Columns** tab of the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions** dialog box, click **Next**. You will see the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions - Sorting** tab.
- From the **Available Columns for Sorting** panel, double-click the field you wish to sort. The column is added to the **Columns Selected for Sorting** panel.
- Click in the **Sort Direction** column in the **Columns Selected for Sorting** panel, and select Ascending or Descending, according to your requirements.
- Click **Next**. You will see the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions - Filters** tab.

> You can specify multiple levels of sorting (also called nested sorting). Once you have chosen your first sorting field you can simply repeat the preceding three steps to create an additional level of sorting.

> *Example* To sort overdue activities first by priority and then by activity due date, you would select the activity priority column as your first sort field and the activity due date column as the second field.

Query Filters

The most important part of designing a query is the identification of the conditions that will cause the query to trigger an event. These conditions are referred to as a query's filters. There are three general concepts of query filter design that you should review before starting to create filters:

- What operators you can use in a query filter?
- What kinds of comparisons can a filter execute?
- Will any of your filters use parameters?

The following sections address each of these concepts.

Query Filter Operators

A filter can use all the standard operators that you are familiar with, such as Equal to, Not equal to, Greater than, Less than, Greater than or equal to, Less than or equal to, Between, Starting with, One of.

Query Filter Compare Values

A filter can do much more than simply compare the value in one field against a pre-determined value. Here is a list of the types of tests that can be executed by a query filter:

- Test a field against a constant value (Priority equals High).
- Test a field against another field (Sale price is less than the cost of goods sold).

- Test a calculated field against a constant value (Weighted value is greater than 10,000).
- Test a calculated field against another calculated field (Percentage of damaged items is greater than percentage of undamaged items).
- Test a date field against a date or numeric range (Due date is between this Monday and this Friday; probability is between 60% and 90%).
- Test a date field against a date variable (Forecast close date is less than today).

Query Filter Parameters

Your organization wishes to receive alerts about pending sales opportunities. Your sales manager wishes to be alerted about any pending sales that are greater than $25,000. Your CFO wishes to be alerted about any pending sales that are greater than $50,000. And your CEO wishes to be alerted about any pending sales that are greater than $100,000. You could design three queries as follows:

Pending Sales > $25,000

Pending Sales > $50,000

Pending Sales > $100,000

You could also design a single query called Pending Sales > 'x' Dollars.

This is where a filter's ability to accept a parameter is invaluable. You can create a filter that tests to see if a sales amount is greater than 'x' – and the value of 'x' is specified on the event level – at the time when this query is linked to an event.

An individual filter can consist of up to seven components. Although not all filters utilize all seven components, it is important to understand how they all function. The **Columns Selected for Filtering** grid displays each filter component as a row in the grid.

Column Name: The first part of a filter is the selection of the column whose value you wish to test.

Is or Is Not: By default, **CRM Studio** checks a column to see if it meets a certain condition. By choosing the 'Is Not' function, you can instruct **CRM Studio** to check a column to see if it does not meet a certain condition. To change the 'Is' function to 'Is Not', click beside the word 'Is' and choose 'Is Not' from the drop-down list.

Operator: **CRM Studio** provides 10 operators that you can choose from, when testing a field for a certain value. By default, the operator 'Equal To' is selected for you, but you can choose a different operator by clicking this field and selecting an option from the drop-down list.

Compare Value: This column is where you place the value against which **CRM Studio** will compare the selected column's value. The compare value field may contain a constant value, the value from another database field, a date substitution value, or the question mark.

Type: The type field identifies the type of data that this filter is processing; this can include character based data (i.e., alphanumeric data), numeric data, or date-formatted data. **CRM Studio** automatically fills in the value of this field for you. The literal data type is used only if you compare the value in one column with the value in another, or with an SQL function.

And/Or: Since a single query can include multiple filters, **CRM Studio** gives you the ability to specify the and/or logic in the sequence of those filters, as in "look for condition 'a' or condition 'c'").

- And/Or logic is sequential. The and/or that you select applies to the current filter in relation to the next filter. (e.g., if filter #1 has an 'or' in it, you are creating a query that will retrieve records if filter #1 or filter #2 prove true. If filter #1 has an 'and' in it and filter #2 has an 'or' in it, the query will retrieve records if both, filters #1 and #2 prove true, or if filter #3 proves true.)

- Although this option does not allow for grouped or parenthetical expressions, this is also possible.

Optional Prompt: The optional prompt field is used only with query filters that are parameter driven (have a '?' in the Compare Value column).

Compare Values

As mentioned previously, you can compare the value of a column with a constant value, the value from another database field, a date or numeric range, a date substitution value, or the parameter indicator (the question mark). These are detailed in the following sections:

Comparing a Column with a Constant Value

Example   Activity priority is equal to 'high'.

You have two ways to choose a constant as the compare value for a column:

- Manually type in the value, or
- Choose that value from a database list

To manually type in a value, delete the default question mark that appears in the **Compare Value** column, and type in the value you wish to compare the column to.

The comparison that **CRM Studio** performs is case-sensitive, so a compare value 'high' will not retrieve those records that have a value 'High'.

CRM Studio also allows you to directly query the database to retrieve potential values for a field.

To directly query the database to retrieve potential values for a field, do the following:

- From the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions - Filters** tab, click in the **Compare Value** column and click the list ⬚ button. You will see the **Everest CRM Studio - Filters** dialog box.

- Click the drop down button beside the field **Type in a value or choose from drop-down list**. You will see a list of possible entries for this field.

- Choose the value that you wish to compare the column to and click **OK**.

The drop-down list displays all the values that appear in this field, in the underlying database. It does not display every possible value that could appear in this field.

Comparing a Column with Another Database Field

Example   Cost of goods sold is greater than the sale price.

In this example, the **Compare Value** column contains the name of another database field.

To compare a column with another database field, do the following:

- From the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions - Filters** tab, click in the **Compare Value** column and delete the '?'.
- Type in the full name (table.column) of the field you wish to compare the selected column to (such as, opportunity.costofgoods).
- Click in the **Type** field and select **Literal** from the drop-down list.

Comparing a Column with a Date or Numeric Range

Example
- Due date is between 10/15/2001 and 10/31/2001.
- Probability is between 60 and 90 percent.

One of the most common **CRM Studio** query scenarios is to test to see if records fall within a date range. This is most typically used for identifying records whose dates or numeric values fall within a certain range.

CRM Studio has two ways of creating filters that let you identify records whose values fall within a range. The first is with the use of the 'between' operator, as in:

Due date is between 'x' and 'y', or probability is between 'a' and 'b'.

The second (and recommended) way is with the use of the 'greater than or equal to' and 'less than or equal to' operators, as in:

Due date is greater than or equal to 'x', and due date is less than or equal to 'y',

Or,

Probability is greater than or equal to 'a' and less than or equal to 'b'.

Everest Software suggests the second approach (the use of 'greater than or equal to' and 'less than or equal to') for two reasons:

- Not all databases and/or ODBC drivers support the 'between' operator. 'Greater than or equal to' and 'less than or equal to' are universally supported.
- The 'between' operator cannot be used with parameters, whereas 'greater than or equal to' and 'less than or equal to' can. (This allows you to create one query that can be used in multiple events with differing date or numeric ranges.)

To create a date or numeric range filter, you have to use two filters – a beginning range filter and an ending range filter.

To create the beginning range filter, do the following:

- From the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions - Tables** tab, choose the table that contains the date or numeric field that you wish to create a range filter for.
- In the **Links** tab, carry out the process of linking tables.

- In the **Columns** tab, select the date or numeric field that you wish to create a range filter for (such as, opportunity.probability).
- Specify the required sorting option in the **Sorting** tab.
- In the **Filters** tab, click the **Operator** field for the row that contains the selected date or numeric field (opportunity.probability). From the drop-down list, select the operator 'greater than or equal to'.
- Click the **Compare Value** column for the row that contains the selected date or numeric field, and do one of the following:
  - Enter a specific beginning date.

  - Click the list ![...] button to display the **Everest CRM Studio - Filters** dialog box. You can use a date substitution variable from the **Available Substitution Variables** field.

  - Enter a '?' to indicate that this filter will be parameter-driven.

👉 **"The Everest CRM Studio - Application Events\Accel Sample Company\Query Definitions Dialog Box - Filters" on page 60**

To create the ending range filter, do the following:

- Select the same field again in the **Filters** tab (opportunity.probability).
- Click the **Operator** field for the row that contains the selected date or numeric field. From the drop-down list, select the operator 'less than or equal to'.
- Click the **Compare Value** column for the row that contains the selected date or numeric field, and do one of the following:
  - Enter a specific ending date.

  - Click the list ![...] button to display the **Everest CRM Studio - Filters** dialog box. You can use a date substitution variable from the **Available Substitution Variables** field.

  - Enter a '?' to indicate that this filter will be parameter-driven

Comparing a Column with a Date Substitution Variable

Example Due date is less than today.

In many **CRM Studio** queries, you will want to test the value of a date field against a value such as today, tomorrow, last week, or next month. To facilitate this, **CRM Studio** provides a wide variety of date substitution variables that can be used in the **Compare Value** column of a filter.

To use a date substitution variable as a compare value, do the following:

- From the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions - Filters** tab, click the **Compare Value** column

  for the row that contains the selected date field, and click the list ![...] button. You will see the **Everest CRM Studio - Filters** dialog box.

- You can use a date substitution variable from the **Available Substitution Variables** field.

  There is a wide variety of variables to choose from. For many variables (such as %Current Date%), you see multiple formats for the same value. The format without any suffix (as in %Current Date%) uses your system's date format. The other formats contain a suffix (such as YYYY-MM-DD) that indicates the format in which the corresponding date is returned.

- Select the value that you wish to compare the column to and click the **Select this item to compare** button.
- Click **OK**.

  Be careful when using the current date substitution variable, particularly if you are comparing a field that contains both the date and time to the current date variable.

  Example You create a filter that retrieves any activities whose creation datetime field is equal to the current date. You will not get any records because a field that contains today's date plus a time will automatically be greater than a field that contains just today's date. You can address this issue in two different ways:

  - Make your filter check to see if the creation date time is greater than or equal to today's date.
  - Make your filter check to see if the creation date time is greater than {%Current Date%} 00:01 and less than {%Current Date%} 23:59.

Creating a Parameter-Driven Filter

Example Priority is equal to?.

As was discussed in **"Query Filter Parameters" on page 127**, you can design a query so that its filters allow the query to be used in multiple events, as in a query that uses three events that check for sales greater than $25,000, $50,000, and $100,000 respectively.

The way to accomplish this is through the use of filter parameters.

A filter parameter – represented by the '?' symbol – indicates that the compare value of a particular query filter is specified on the event level. This is what enables a single query to be used in multiple events, each with a different filter parameter value.

It is important to note that any filter that is parameter-driven requires a compare value to be specified when that the query is linked to an event. This is typically done by the person who is configuring the **CRM Studio** event.

Once the event is fully configured and activated, the parameter value has a specific value that is used every time the event is executed.

The following operators may not be used with parameters:

- One of
- Between
- Null

To set up a filter to be parameter-driven, do the following:

- From the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions - Filters** tab, click the **Compare Value** column, for the row that contains the filter which is to be parameter-driven.
- Ensure that a '?' is displayed in the **Compare Value** column.
- In the **Optional Prompt** column of the **Filters** grid, delete the default text and enter your own text.

The optional prompt is the text that appears (on the event level) when you select this query for use with an event. When a query that has one or more parameter-driven filters is selected for an event, the person configuring the event receives a prompt informing that a compare value needs to be supplied for this filter. The text of this prompt is defined here. Typical optional prompts include:

- Select a Priority:
- Status is:
- Forecast Date Range Begins:
- Sales of Greater than How Much?

Operators - Notes

Of **CRM Studio**'s ten operators, additional details are provided for the following five:

One Of

This operator allows you to test a column for any one of multiple values. 'One of' tends to be most useful in 'and/or' situations such as: Send an alert for any calls that are open and have 'A' or 'B, or 'C' priority.

The corresponding event would have one filter that checks to see if a call is open and a second filter (using the one of operator) that checks for any one of the three different priority codes.

To use the 'one of' operator, do the following:

- From the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions - Filters** tab, click the **Operator** field and select 'one of' from the drop-down list.
- Click the **Compare Value** column and delete the '?'.
- Click the list button. You will see the **Everest CRM Studio - Filters** dialog box.

- In the **One of the Following Values** panel, click the '?' and then click the **Remove Compare** button.
- You are now ready to enter your selected compare values. You may either type in the individual compare values (pressing 'Enter' after each entry), or you can select them from the **Type in a value or choose from dropdown list** field.
- Click **OK**.

The 'one of' operator may not be parameter-driven; you must specify the compare values for a filter using this operator on the query level.

Between

Not all databases and/or ODBC drivers support the 'between' operator. Everest Software suggests that you use the combination of the 'greater than or equal to' and 'less than or equal to' operators instead, wherever possible.

To use the between operator, do the following:

- From the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions - Filters** tab, click the **Operator** field and select 'between' from the drop-down list.
- Click the **Compare Value** column and click the list █ button. You will see the **Everest CRM Studio - Filters** dialog box.
- You will see an additional drop-down list under the **Type in a value or choose from dropdown list** field.
- Enter or select the first compare value from the first drop-down list.
- Enter or select the second compare value from the second drop-down list.
- Click **OK**.

The 'between' operator may not be parameter-driven; you must specify the compare values for a filter using this operator on the query level.

Starting With

The 'starting with' operator enables you to locate any database records that have a field whose value starts with a certain string of letters, numbers, and/or symbols.

Example You can create a query to retrieve any clients whose mailing address postal code begins with 070. Or, you can create a query to retrieve any clients who purchased any products beginning with the characters Epak.

To use the starting with operator, follow these steps:

- From the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions - Filters** tab, click the **Operator** field and select 'starting with' from the drop-down list.

- Click the **Compare Value** column and enter the first few characters of the string that you wish to use for matching purposes.

> The 'starting with' operator may be parameter-driven simply by leaving the '?' in the compare value field. If you do make this filter parameter-driven, be sure to specify a helpful optional prompt, such as 'Part Numbers Starting With:'.

Like

The 'like' operator is similar to the 'starting with' operator except that it enables you to locate any database records that have a field whose value contains a certain string of letters, numbers, and/or symbols.

> *Example*
> - Starting with 'brit' retrieves Britain and Britannia, but not New Britain.
> - Like 'brit' retrieves all three values.

To use the like operator, do the following:

- From the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions - Filters** tab, click the **Operator** field and select 'like' from the drop-down list.
- In the **Compare Value** column, enter the compare value using this format: %compare value%.

> - When you use the like operator you need to enclose the string of text that you are searching for within percent signs, as in %brit%.
> - The 'like' operator may also be made parameter-driven simply by leaving the '?' in the compare value field. If you do make this filter parameter-driven, be sure to specify a helpful optional prompt, such as 'Part Numbers that Contain the Letters:'.

Null

When designing **CRM Studio** queries, you might find the need to check if a specific field value is blank. A blank value in a database field can often be interpreted in two ways: as blank, and as null.

To test a field for a blank value, do the following:

- From the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions - Filters** tab, click the **Compare Value** column and delete the '?'. In other words, leave this field blank.

To test a field for a null value, do the following:

- From the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions - Filters** tab, click the **Operator** field and select 'null' from the drop-down list.
- Delete the '?' and leave the **Compare Value** column blank.

> If you are not sure how a specific company database identifies an empty field, you might want to create a query with two filters – one filter that tests the field for a blank value, and another that tests it for a null value.

Using Calculated Fields in Filters

Using a calculated field in a filter is done in the same manner as creating a calculated field in a query column.

☞ **"Calculated Fields" on page 124**

Example The steps detailed below outline the creation of a field that tests an opportunity's weighted value.

To create a calculated field, do the following:

• From the **Available Columns to Filter** field of the **Filters** tab, select the column that contains the opportunity's forecast amount (a field called opportunity.amount). This field appears as a row in the **Columns Selected for Filtering** grid.

• In this row, enter an asterisk (*) after the word 'amount'. This denotes the multiplication symbol.

• Enter the name of the field that contains the opportunity's probability of closing (such as, opportunity.probability). The **Column Name** field now displays: opportunity.amount*opportunity.probability.

• You can now continue to specify the operator and compare value just like any other filter.

> Calculated fields can be used in both, the column name and compare value columns. Calculated fields may be parameter-driven (i.e., you can use them in conjunction with the '?' in the compare value column).

And/Or Logic

The combination of the 'and/or' selection in the **Filters** tab, plus the use of the 'one of' operator in the same tab, covers most of the 'and/or' logic that you might require in your query. In some instances, however, you might need to specify more complex 'and/or' conditions such as:

Retrieve orders greater than $99 with freight charges less than $5,

Or,

Orders with freight charges less than $5 shipping via Fedex

This type of and/or logic requires the ability to group filters together, using parenthetical expressions. This function is supported within the **Filters** tab, but requires a few extra steps.

To create this query, do the following:

• Create the four filters that the query will need:

1. Orders greater than $99

2. Freight charges less than $5

and:

3. Freight charges less than $5

4. Orders shipping via Fedex

• Filter 1 should have an 'and' (to link the first two conditions).

- Filter 2 should have an 'or' (to separate the first two conditions from the last two conditions).
- Filter 3 should have an 'and' (to link the last two conditions).
- Click the **Column Name** of filter 1 and enter a left parenthesis in front of the column name.
- Click the **Compare Value** of filter 2 and enter a right parenthesis after the compare value.
- Click the **Column Name** field of filter 3 and enter a left parentheses in front of the column name.
- Click the **Compare Value** of filter 4 and place the compare value within single quotation marks, only if the compare value is a character or date.

> If the compare value is a number, you do not need the quotation marks.

- Enter a right parenthesis at the end of the compare value.
- If the compare value is a character or date, click the **Type** field for the fourth filter and select Literal from the drop-down list.

> If the data type is a number, do not change anything.

The most important thing to remember about grouping filters for the 'and/or' logic is that if the last filter in a parenthetical group is testing the value of a character or date field, you must be sure to enclose the compare value in single quotation marks and to change the data type to Literal.

If the last filter in a parenthetical group is testing the value of a numeric field, (if in the previous example the ship via is identified by a numeric code instead of a name), the **Type** field for that filter should display Number.

Query Sub-Filters

Sub-filters are not used with record-level queries; they are used only with aggregate queries and thus, will be discussed in the section on aggregate queries.

Query SQL

The **SQL** tab allows you to review the SQL syntax that a query is executing. There is rarely the need to make any changes to a query's SQL, and Everest Software recommends not using this tab to enter or modify a query's SQL.

If you wish to manually edit the SQL syntax, you must select the **I would like to manually edit the SQL for this query** option.

Once you activate the manual editing of SQL syntax, any modifications that you make to any of the other query definition tabs (Tables, Links, Columns, Sorting, Filters, and Sub Filters tabs) will not be retained.

If you do edit a query's SQL syntax and then deselect the **I would like to manually edit the SQL for this query** option, **CRM Studio** automatically re-

constitutes the SQL syntax based on the content from the other query definition tabs.

You will need to remove the check mark, select another tab, and then re-enter the **SQL** tab to see the re-constituted SQL syntax.

If you need to manually edit a query's SQL, here are a couple of suggestions about modifying the SQL syntax:

- Go through all the tabs in the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions** dialog box before you begin editing the SQL syntax. This way, you have a pre-built foundation of the SQL statement that you can edit, instead of having to build it from scratch.
- You can include database (and ODBC driver) specific functions in your SQL syntax.

Once you are done modifying the SQL syntax, be sure to select the **Preview** option to verify the successful execution of your query.

Query Preview

This tab helps you verify that the query you are designing will actually retrieve the required records.

Preview mode can be used as many times as you wish when building a query. Once you have selected some tables and columns, the preview mode will be available to you.

Do not wait until you have built every aspect of a query to preview it; use the preview function repeatedly as you add more and more elements to a query and begin to refine its selection criteria.

When you click the Preview tab, **CRM Studio** automatically returns any records that meet your query's filters criteria. If the preview tab is blank (containing no records), it means that **CRM Studio** was not able to locate any records that meet your query's criteria.

It is advisable to go into your underlying database and add a record (or two) that meets a query's criteria, so that you can be sure that the query is working as required.

If you receive an error message when previewing a query, it means that **CRM Studio** was not able to successfully execute your query. The most common reasons for this are:

- The ODBC source for this company database was not correctly configured.
- Multiple tables for this query were not correctly linked.
- Your query includes one or more calculated fields that contain invalid SQL syntax.
- You have specified an invalid customized name for a query column.
- You have specified an invalid filter (such as trying to compare the value in an alphanumeric field to a date).
- You have edited the underlying SQL and introduced a syntax error.

Most of the error messages that the preview mode returns give you a clue as to where the error exists. To help pinpoint the error you can remove individual

query elements and try to preview the query after each removal. You will know exactly which component is causing the error.

If your query includes parameter-driven filters, you will be prompted to enter corresponding values for those filters. The **Everest CRM Studio - Please supply a value** dialog box is displayed in such a case. You can manually enter a value for such a filter, or you can choose a value from the drop-down list, or (if the filter requires a date value) you can choose any one of **CRM Studio**'s date substitution variables.

The Everest CRM Studio - Please supply a value Dialog Box
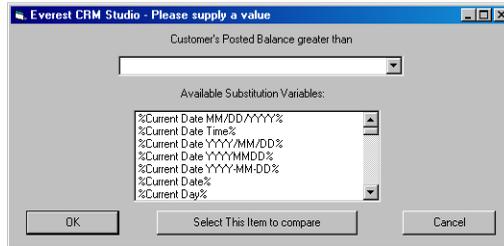
Figure 4.2: Everest CRM Studio - Please supply a value

Value
The top-most field displays a question/prompt, where you must supply the relevant value, by entering or selecting it from the **Available Substitution Variables** list.

Available Substitution Variables
This list displays the variables available for use.

Select This Item to compare
Click this button to add a selected variable from the **Available Substitution Variables** field to the **Value** (top-most) field.

Save a Query

To save your query, click the **Save and Close** button at the top of the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions** dialog box. To save this query and begin working on the next one, click the **Save and New** button.

Copy a Query

Many queries can be similar in design, so you must know how to copy one query to another.

To copy one query to another, do the following:

• From the **Event Manager Folders** panel of the **Everest CRM Studio Architect** dialog box, select **Application Events > (your company) > Query Definitions**. You will see all the queries displayed in the panel on the right.

- Highlight the query you wish to copy and select **Edit > Copy**.
- Select **Edit > Paste.** A duplicate of the query appears in the right panel.
- Open either of the two (identical) queries and modify it as needed. Ensure that you change the query's description.

Delete a Query

Before deleting a query, make sure there are no events that use the query you are about to delete. If you delete a query that is linked to an event, the event will fail to execute successfully the next time it is scheduled to run.

To delete a query, do the following:

- From the **Event Manager Folders** panel of the **Everest CRM Studio Architect** dialog box, select **Application Events > (your company) > Query Definitions**. You will see all the queries displayed in the panel on the right.
- Highlight the query you wish to delete and click the **Delete** button at the top of the **Everest CRM Studio Architect** dialog box.

Or

- Open the query you wish to delete and click the **Delete** button at the top of the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions** dialog box.

There is no Undo option to re-activate a deleted query.

Scroll Quickly Through The List of Queries

You might need to scroll sequentially through a list of queries (to activate or de-activate a series of queries). Although you could select each query individually, edit it, save it, and then select the next query, there is a faster way to do this.

To quickly scroll through queries, do the following:

- Once you have selected and edited your first query, click the **Previous** or **Next** buttons at the top of the **Query Definitions** dialog box.
- If you have made changes to the current query, you will be prompted to save (or abandon) your changes before proceeding.

Aggregate Queries

As discussed at the start of this document, aggregate queries are queries that are triggered by a group of records that collectively meet a certain condition.

Example
- More than 10 open service calls with 'critical' as priority.
- Fewer than 5 scheduled activities per sales representative next week.
- Sales representatives with more than $500,000 in their pipeline.

Unlike record-level queries, aggregate queries do not retrieve details about individual records that are triggered; instead, they are triggered by the aggregate condition being met.

Example
- An aggregate query that is designed to be triggered only if there are more than 10 open service calls with 'critical' as priority might retrieve simply the number 12 as its result. (The query shows the number of critical, open support calls.)
- An aggregate query that is designed to be triggered only if there are any sales representatives with fewer than five scheduled activities next week might retrieve Smith 4, Jones 1, and Davidson 3 as its results. (The query shows the names and number of activities for each sales representative who has fewer than five scheduled activities.)

The Results of an Aggregate Query

The results of an aggregate query look quite different from the results of a record-level query for the simple reason that an aggregate query does not display record-level details. Here are some samples of output that you might see from an aggregate query.

Query	Result
More Than 5 Orders Over $10,000 Today	"17" (the number of orders over $10,000 today)
More Than 5 Orders Over $10,000 Per Region Today	"6 Northwest" "7 Southeast" "26 Southwest" (the number of orders over $10,000 today from each region)
More Than 5 Orders Over $10,000 Per Region and Representative Today	"7 Southwest Karen Chavez" "11 Southwest Mark Davidson" "8 Southwest John Langley" (the number of orders over $10,000 today from each region and each sales representative)

- Read the process of record-level query designing before proceeding with the following sections. The instructions on aggregate query configuration assume that you are familiar with record-level query design.
- Many of the steps involved in setting up an aggregate query are identical to those required for record-level queries. In such cases, you will need to refer to the corresponding section under record-level queries, where indicated.

Aggregate Query Description

Specifying the description for an aggregate query is done in the same manner as for a record-level query.

☞ **"Query Description" on page 117**

Aggregate Query Naming Conventions

Just as with record-level queries, it is important to choose logical, easy-to-locate names for your aggregate queries. One standard approach is to follow the format: Data Object; Aggregate Function; Description.

Example
- Opportunities; More Than 10; Overdue
- Opportunities; Average Price; Less Than $10,000
- Opportunities; Total Forecast This Month; More Than $250,000

You may also choose to use the actual aggregate function names such as count, summarize, average, minimum, and maximum in your query description.

Aggregate Query Tables

Unlike a record-level query, an aggregate query often requires fewer tables of information since its results do not include record-level details. There are, however, a few items you need to consider when identifying the tables for an aggregate query:

- What data will be evaluated by the aggregate function?

  Example You will need the call table to count support calls and the opportunity table to summarize (or accumulate) sales figures. Identify the value that the aggregate will be performed on, and be sure to select the table that contains that value.

- Will the aggregate value be grouped by another field?

  In many aggregate queries, the aggregate value is grouped by another field, such as sales per region or calls per product. If this type of grouping is to occur, be sure to identify the grouping field and to include its table in the query.

- Do you need to include the table that contains the e-mail address of the person you wish to alert?

Just like a record-level query, an aggregate query can also be designed to send an alert to a person who is associated with the triggered record.

Example You might wish to have an aggregate query such as 'totals sales per region' and 'send an alert to the regional sales manager'.

If this is the case, be sure to include the table that contains the delivery address(es) of the person(s) who is/are to be notified when this query is triggered.

Selecting tables for an aggregate query is done in the same manner as for a record-level query.

☞ **"Query Tables" on page 118**

Aggregate Query Links

Linking (or joining) tables together for an aggregate query is done in the same manner as for a record-level query.

☞ **"Query Links" on page 119**

Aggregate Query Columns

Unlike a record-level query where you choose columns based primarily on the fields of data that you wish to put in an outgoing alert message, an aggregate query's columns are selected based primarily on the following two criteria:

• The field that the aggregate function will be performed on
• The group by field(s)

Aggregate Functions

CRM Studio supports five aggregate functions:

• Summarize
• Average
• Count
• Maximum
• Minimum

With the exception of the count function, all the aggregate functions must be applied to numeric fields only.

Summarize

This function lets you accumulate (or total) the record amounts for a numeric field. It can be used for such queries as:

• Sales representatives with less than $50,000 in their pipeline
• More than 1,000 minutes of support calls this week
• Less than 500 widgets sold last month

Average

This function lets you derive the numeric average for a numeric field from multiple records. It can be used for such queries as:

• Sales representatives whose average sale price is less than $5,000
• Clients whose average support call is over 30 minutes long
• Suppliers who average more than 5% damaged goods

Count

This function lets you count the number of records that meet certain conditions. It can be used for such queries as:

• Salesreps with fewer than 10 scheduled activities this week
• Clients with more than 3 late payments this year
• More than 5 sales opportunities that are overdue for closing

The count function is handled a little differently from the other aggregate functions as you must always apply the count function to the field that uniquely identifies the records to be counted. Using the preceding three examples, this means that:

- For activities, you can apply the count function to the activity ID field
- For payments, you can apply the count function to the payment no field
- For sales, you can apply the count function to the sale ID field

Maximum and Minimum

The maximum and minimum functions let you identify the maximum or minimum record values for a numeric field. This function is for such queries as:

- The maximum sale closed last week
- The minimum order quantity this week

The following procedures outline the choosing of columns for a few different types of aggregate queries:

Summarize and Average

To select columns for an aggregate summarize or average query, do the following:

- After linking the selected tables in the **Links** tab of the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions** dialog box, click **Next**. You will see the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions - Columns** tab.
- From the **Available Columns to Query** field, double-click the numeric field whose value you wish to total or whose average you wish to derive.

OR

- Select the field you wish to include and click the **Add Column to Query** button. The selected field is displayed in the **Query Columns Selected** grid.

    The aggregate column should always be the first column selected.

- Click in the **Column Type** column, for the selected row, beside the word 'Normal'. From the drop-down list, select either Summarize or Average.
- In the **Customized Name** column for the selected row, alter the name to reflect that this field contains an aggregate total (such as, amount_total or amount_avg).

    Do not put the name of the aggregate function at the start of a customized name (such as, total_amount or avg_amount), as many ODBC drivers identify aggregate functions as reserved words and do not permit them to appear at the start of a customized name.

- From the **Available Columns to Query** field, double-click the first group by field (such as, sales representative). This query will now total (or derive the average for) the amount in the first column (sales amount) and group it by the value in the second column (sales representative).
- If required, add more group by columns to this query.

Count

To select columns for an aggregate count query, do the following:

- From the **Available Columns to Query** field, double-click the unique or record-identifying column for the table whose records you wish to count.

    The aggregate column should always be the first column selected.

- Click in the **Column Type** column, for the selected row, beside the word 'Normal'. From the drop-down list, select Count.
- In the **Customized Name** column for the selected row, alter the name to reflect that this field contains an aggregate count.
- From the **Available Columns to Query** field, double-click the other group by fields you wish to include.

Minimum and Maximum

The aggregate functions minimum and maximum are configured in the same manner as both summarize and average.

Additional Column Selections

Here are a few hints for choosing additional columns in your aggregate query:

Try to make your group by field as informative as possible.

Example To display total sales per sales representative, you should not make your group by field the sales representative's ID (which is probably some cryptic code), but rather the sales representative's full name. This might require you to add another table to this query (such as the salesperson table), but it is well worth it as it will make the query's output much more usable.

You may wish to send the results of this query to the individuals that are identified within the query (i.e., if the query identifies Paul as a salesrep with a lower-than-expected pipeline, you may want to send an alert to Paul). To do so, you need to include the columns that contain the delivery address(es) that the alert will be sent to. (The fields that contain Paul's e-mail address)

You can create a query with multiple aggregate fields.

Example If you want to create a query to count the number of orders last month, and show the total of all those orders and the average order price, you can create a single query that uses the count, summarize, and average functions.

Another such example is to create a query that counts the number of regions whose total forecast sales for next month is below quota.

Aggregate Grouping

Consider this scenario:

You want to trigger an event if next week's forecast sales is greater than $100,000.

Solution: Create an aggregate that summarizes all sales due to close next week.

But now consider this:

You want to trigger an event if any sales representatives have forecast sales of greater than $100,000.

Solution: Create an aggregate that summarizes sales and groups them by sales representative.

The ability to create aggregates that group (or sort) resulting records by one or more specific fields is one of the most powerful aspects of aggregate queries. Consider how you can take an ordinary aggregate query such as total sales for next week and create the following just by adding one or more group by fields:

- Total sales by sales representative
- Total sales by region
- Total sales by product line
- Total sales by region and (within region) by product line
- Total sales by regional sales manager

All of **CRM Studio**'s aggregate functions support grouping, but grouping is most commonly used in summarize, average, and count aggregates.

Aggregates and Calculated Fields

Calculated fields may be used with aggregate queries in the same manner that they are used with record-level queries.

Example
- You could create a query that uses a calculated field to identify activities that are overdue by more than seven days, and then use the count function to identify the number of such activities.
- You could create a query that uses a calculated field to identify the weighted value of an opportunity and then use the summarize function to identify the total weighted forecast for a sales representative.

For details on creating a calculated field, refer to the section **"Calculated Fields" on page 124**. Once you have created such a field, you may apply the appropriate aggregate function to it.

Aggregate Query Sorting Order

Sorting the order of an aggregate query's matching records is done in the same manner as for a record-level query.

☞ **"Query Sorting Order" on page 125**

Aggregate Query Filters

Consider the following condition:

Send an alert if there are more than six open, high priority support calls.

There are two levels of testing (or filtering) that need to occur in the underlying query. First, you need to make sure that only open and high priority calls are eligible to be considered by the query. This is referred to as testing the record-level conditions and can be done by defining the query's filters.

Second, you need to check if there are more than six open, high priority support calls. This is referred to as testing the aggregate condition, and is done by defining the query's sub-filter.

Creating record-level filters for an aggregate query is done in the same manner as for a record-level query.

☞ **"Query Filters" on page 126**

Aggregate Query Sub-Filters

Sub-filters are used only with aggregate queries; they allow you to test the value of the aggregate condition.

Example By using a sub-filter, you can transform the following informational queries:

- Total forecast sales per sales representative next month
- Average sale price for widgets
- The number of open support calls per call agent

Into the following queries that pinpoint critical conditions:

- Total forecast sales of less than $10,000 per sales representative next month
- Average sale price of more than $25 for widgets
- More than 10 open support calls per call agent

To create a sub-filter for an aggregate query, do the following:

- From the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions - Sub Filters** tab, double-click the aggregate column you created earlier, from the list of **Available Columns to Filter**. The aggregate column is added to the **Columns Selected for Sub Filtering** grid.
- In the **Is or Is Not** column for the selected row, select the required function.
- In the **Operator** column for the selected row, select the required operator.

   ☞ **"Operators - Notes" on page 132**

- In the **Compare Value** column for the selected row, select or enter the required value. The compare value field may contain a constant value, the value from another database field, a date substitution value, or the question mark.

   ☞ **"Compare Values" on page 128**

- **CRM Studio** automatically populates the **Type** field. This field identifies the type of data that this filter is processing; this can include character based (i.e., alphanumeric), numeric, or date-formatted data.

   The Literal data type is used only if you are comparing the value of one column to the value of another column, or to an SQL function.

   ☞ **"Comparing a Column with Another Database Field" on page 129**

- Specify the required and/or logic in the sequence of your sub-filters in the **And/Or** field.

- Specify an Optional Prompt if the query is parameter driven.

Aggregate Query SQL

Reviewing and/or modifying an aggregate query's SQL syntax is done in the same manner as for a record-level query.

Aggregate Query Preview

Previewing an aggregate query is done in the same manner as for a record-level query.

Multi-Query Events

The use of filter parameters allows a single query to be used with various parameter thresholds in different events.

It is also possible, for a single event to use multiple queries.

Example
- An event is triggered if the total forecast sales for the next quarter are more than $300,000 and the count of pending sales valued at least $20,000 is more than 10.
- An event is triggered if a client has purchased less than $5,000 worth of products over the last six months and has sought support more than 25 times.
- An event is triggered if a client has open sales opportunities in a CRM application and is also on credit hold in a financial application.

Each of these events requires two queries.

- The first event requires an initial query that totals the forecast sales for the next quarter (to see if they are greater than $300,000), and a subsequent query that counts the number of sales over $20,000 (to see if there are more than 10).
- The second event requires an initial query to total a client's pending sales (and see if they are less than $5,000), and a subsequent query to see if any of those customers have recorded more than 25 support calls.
- The third event requires an initial query to identify which clients have pending sales opportunities, and a subsequent query to see if any of those clients are also on credit hold.

The first example requires no linking between the queries; both queries merely need to prove true for the event to trigger.

In the second and third examples, however, it is imperative that the queries talk to each other; that is, data from the first query must be passed into the second query to determine whether there are any records that meet the conditions of both queries.

Unlinked Multi-Query Events

To design more than one query to be used in a single event, you must determine whether the queries need to pass data between them. Consider the example given earlier:

- An event is triggered if the total forecast sales for next quarter are more than $300,000 and the count of pending sales of at least $20,000 is more than 10.

  This event requires two queries, but they do not need to be linked to each other in any manner. Quite simply, both queries have to prove true (be triggered) for the event as a whole to be triggered.

  An event of this nature would require you to create two aggregate queries. Once the queries are created, you could create the corresponding event and associate both queries with that event.

  > When multiple queries are associated with an event, both queries must prove true (i.e., be triggered) for the event as a whole to be triggered. You cannot specify and/or logic for multiple queries chosen for an event.

Linking Queries from the Same Company

When designing queries that identify more complex conditions of data, you will occasionally notice that you cannot configure a single query to handle every condition that you need it to check for.

Sometimes, this can result from a need to check for a combination of multiple aggregate conditions, such as:

- An event that is triggered if a client has purchased less than $5,000 worth of products over the last six months, and has also sought support more than 25 times.

  In this scenario, you would require one query that performs a summarize aggregate on a client's sales and a second query that performs a count aggregate on the client's number of support calls.

  What differentiates this example from the one in the preceding section is that you need to take the records that result from the first query (clients who have purchased less than $5,000 worth of products) and 'feed' them into the second query to see if any of those clients have also called for support more than 25 times.

  This is what is meant by linking queries together; it is the process of ensuring that the records that are retrieved from query 1 are fed into query 2. Without this link, your queries would retrieve different sets of matching clients, and you would not be able to ascertain which clients met both conditions.

How To Link Queries from the Same Company

The first step required in linking queries from the same company is to identify the field of data that links records from both queries. Consider the following example again:

- An event that is triggered if a client has purchased less than $5,000 worth of products over the last six months, and has also called for support more than 25 times.

Clearly, it is the client field that links both the queries. In this case, **CRM Studio** will:

- Retrieve clients who have purchased less than $5,000 worth of products over the past six months.
- See if any of them have also called for support more than 25 times.
- Generate a set of clients who meet both conditions.

How To Design Linked Queries

Designing linked queries requires a couple of extra steps when creating the initial query (sometimes called the Link from query), and the secondary query (sometimes called the Link to query).

We will use the scenario detailed in the preceding section as our example in designing a linked query.

Design The Initial Query.

To design the first query in the linked set, do the following:

- The first query (such as Clients Who Have Purchased Less Than $5,000 worth of goods Over the Past Six Months) is designed just like any normal, aggregate query.

  "Aggregate Queries" on page 139

- When you complete designing the query, click the **Columns** tab of the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions** dialog box.
- Ensure that you include the linking field as one of the columns for this query (the client ID column).
- Make a note of the Customized Name of the linking field (such as, CLIENTID).
- Click **Save and Close**.

Design The Link To Query

To design the query that will receive information from the first query, do the following:

- The second query (such as Clients Who Have Called For Support More Than 25 Times) is also designed just like any normal, aggregate query.

  "Aggregate Queries" on page 139

- This query, however, requires an additional filter to restrict it to those records that are retrieved by the initial query. When you complete designing the query, click the **Filters** tab of the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions** dialog box.
- Select the linking field (i.e., for the Client ID field) from the **Available Columns to Filter** field.
- Click the **Operator** column for the row that contains the selected field, and select 'equal to' from the drop-down list.

- In the **Compare Value** column, enter the customized name of the linking field from the initial query, enclosed in curly brackets (such as, {CLIENTID}).
- Click **Save and Close**.

By designing the link to query in this manner, it automatically uses the results of query 1 as part of its selection criteria.

Query Linking - Notes

- If you design your link to query in this manner, it executes successfully only if it follows a preceding query containing the appropriate customized name. Do not use this query alone in an event; it will not execute successfully.
- Make it a point to give your link to queries clearly identifiable names. In the preceding example, you might wish to call this query Clients Who Have Called For Support More Than 25 Times: Link To.
- In the **Compare Value** column, where we entered the customized name of the link to field, you might wish to enter a '?' and make the value parameter-driven. This allows you to test this query (by choosing a valid client ID) with greater ease, and you can always specify the link to field {CLIENTID} on the event level, when you are prompted to supply a value.
- You are not limited to just two levels of linking; you could, for example, have an event that checks for clients who have purchased less than $5,000 worth of products, have called for support more than 25 times, and whose average support call length is greater than 10 minutes. (This would require an event using three queries; you would have to link query 1 to query 2, and then query 2 to query 3.)

Linking Queries from Different Companies

Linking queries from different company databases is one of **CRM Studio**'s unique strengths, as it enables you to check for a combination of conditions across multiple company databases that may have little (or no) integration between them.

> *Example* An event is triggered if a client has open sales opportunities in a CRM application and is also on credit hold in a financial application.

This scenario requires one query to check for a client's open sales, and a second query to see if that client is on credit hold.

How To Link Queries from Different Companies

Linking queries across companies is no different from linking queries within the same company. You still need to identify the common field that enables **CRM Studio** to take records from the first query and feed them into the second query.

Consider the example we are working with:

- An event is triggered if a client has open sales opportunities in a CRM application, and is also on credit hold in a financial application.

Clearly, it is the client field that links both queries.

> Unlike two queries that retrieve information from the same company, you might have to do a little research to find a field from both companies that contain the same value.

Using the previous example, you would need to locate a field containing the same value in both companies that uniquely identifies each client. This might be:

- The client's account number
- The client's phone number
- The client's name

If the companies that you wish to link queries from, do not contain a common field of data, you should consider adding a field (such as an account number) to one or the other company.

> The fields with common data need not have the same name; i.e., a field could be called client ID in one company and account number in another. As long as they contain the same value, **CRM Studio** can successfully link the queries.

Design The Initial Query

The first step in linking queries across companies is to design the first query in the linked set.

To design the first query in the linked set, do the following:

- The first query (such as Clients With Pending Sales) is designed just like any normal, record-level query.

  "Aggregate Queries" on page 139

- When you complete designing the query, click the **Columns** tab of the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions** dialog box.
- Ensure that you include the linking field as one of the columns for this query (such as, Account Number).
- Make a note of the Customized Name of the linking field (such as, ACCOUNTNO).
- Click **Save and Close**.

Design The Link To Query

The second step in linking queries across companies is to design the query that will receive information from the first query.

To design the query that will receive information from the first query, do the following:

- The second query (such as Clients On Credit Hold) is also designed just like any normal, record-level query.

  "Aggregate Queries" on page 139

- This query, however, requires an additional filter to restrict it to only those records that are retrieved from the initial query. When you complete designing the query, click the **Filters** tab of the **Everest CRM Studio Architect - Application Events\(your company)\Query Definitions** dialog box.
- Select the linking field (i.e., for the Client ID field) from the **Available Columns to Filter** field.

- Click the **Operator** field for the row that contains the selected field, and select 'equal to' from the drop-down list.
- In the **Compare Value** column, enter the customized name of the linking field from the initial query, enclosed in curly brackets (such as, {ACCOUNTNO}).
- Click **Save and Close**.

By designing the link to query in this manner, it automatically uses the results of query 1 as part of its selection criteria.

5. Subscriber Maintenance

Who is a CRM Studio Subscriber ?
Subscriber Entry Methods - Overview
Subscriber Definition - Preparation
Subscriber Maintenance

Who is a CRM Studio Subscriber ?

A **CRM Studio** subscriber is a person who is eligible to receive notifications about triggered events. Another word for a subscriber would be alert recipient. Subscribers may receive notifications via e-mail, fax, page, webcast and FTP (copied files).

Eligible Subscriber

Although most organizations think of using **CRM Studio** to send alerts to members of their own organization (employees), **CRM Studio**'s ability to send alerts surpasses that, to include such people as business partners, vendors and/or suppliers, customers, and prospects.

As you configure **CRM Studio** subscribers it is important to consider the types of events that you will be configuring and who the potential recipients of those events will include.

Using CRM Studio for Target Marketing

Since **CRM Studio** has this remarkable ability to reach out to a wide range of people in the business populace, it is well worth considering it as an aid in your direct marketing strategies.

Consider the following scenarios:

- Notify a client who is 'x' dollars away from being eligible for a bonus program.
- Notify a prospect of a limited-time offer about to expire.
- Notify all clients using product 'x' about a new add-on module 'y'.

These are examples of events whose purpose is to keep clients and prospects better informed about marketing-related activities that are occurring within your organization.

As you go through the configuration of subscribers, think upon how **CRM Studio**'s ability to intelligently (and selectively) contact customers and prospects alike can impact the success of your organization.

Designating a Computer as a Subscriber

In addition to setting up people as subscribers, **CRM Studio** also allows you to designate one or more computers as the recipients of information when an event is triggered.

Using **CRM Studio**'s FTP (copy) delivery method, you can instruct **CRM Studio** to move certain files and/or reports to specific disk and directory specifications on one or more computers when an event is triggered.

How Are Subscribers Categorized

You can categorize subscribers according to similar areas of work by creating subscriber groups.

Example You might wish to create the following subscriber groups:

- Engineering
- Customer Service
- Executives
- Sales
- Clients in the State of California
- Prospects

There is no limit to the number of subscriber groups that can be configured within **CRM Studio**; so too can you create nested groups of subscribers, such as:

- Engineering
- Development
  - New Products
  - Maintenance
- Quality Assurance
- Documentation

One of the benefits of subscriber groups is that instead of configuring an event to send an alert to a multitude of users (each of whom you select manually), you can do so for all the members of one or more groups.

A single event can send alerts to any combination of individual subscribers and groups of subscribers.

Subscriber Alert Methods and Addresses

Each subscriber can be configured to receive alerts via:

- E-mail
- Fax
- Pager
- FTP (called Copy)
- Webcast

Additionally, each subscriber may have up to two delivery addresses per delivery method. The reason for this is to allow a subscriber to have different delivery addresses based on the time of day and day of the week.

Example An employee named John Smith of Acme Incorporated may wish to receive e-mail alerts occurring between 8 AM and 5 PM, Monday through Friday at smith@acme.com. But outside of those hours and days, he may wish to receive e-mail alerts at jwsmith@hotmail.net.

Within **CRM Studio**, these two delivery addresses (per delivery method) are referred to as the primary and secondary addresses. If a subscriber does not have a secondary address for a given delivery method, you may wish to use the primary value in both the primary and secondary fields.

A Note About Webcasting

CRM Studio contains an alert method called "webcasting" – this is the ability for **CRM Studio** to generate alert messages and post them to a web page as opposed to (or in addition to) sending the messages via e-mail, fax, or pager.

The webcasting component of **CRM Studio** requires its own configuration and set-up for each recipient (or group of recipients) who will be receiving alerts via the web. The following pages will not discuss webcasting, as it is detailed in a separate chapter, '**Webcasting**'.

Subscriber Entry Methods - Overview

There are three ways to configure subscribers within **CRM Studio**. You may choose to use one or any combination of these methods:

- Manual entry
- Subscriber import
- Subscriber linking

Manual Entry

CRM Studio contains a Subscriber Maintenance option which allows an authorized user to manually add, change, and delete subscriber profiles.

☞ **"Manually Entering Subscribers" on page 161**

Subscriber Import

If you have a subscriber data that resides in one or more tables (within one or more ODBC-compliant databases), you can import that data into the **CRM Studio** subscriber database. Here are a few important notes about importing subscriber data:

- Data can be imported from multiple sources.

  Example You might wish to import data from a users' table within a sales application, from an employees' table within a financial application, and from a suppliers' table within a manufacturing application.

- The table whose data you wish to import must itself reside within an ODBC-compliant database.
- You can import data as often as you wish, but the import process is done manually (you cannot schedule it).
- Imported data should include a subscriber's name and some information about the delivery addresses (such as the e-mail address).

  ☞ **"Importing / Linking Subscribers" on page 165**

Subscriber Linking

Linking to a subscriber database is very similar to importing subscriber data, except that instead of transferring data from an external application into **CRM**

Studio, the linking function allows **CRM Studio** to directly read subscriber details from a table in another database.

Subscriber linking is very powerful as it rules out the need to maintain subscriber data within **CRM Studio**; subscriber data maintained in external applications (such as in sales, finance, or manufacturing applications) is available for use within **CRM Studio**.

This function is referred to as a dynamic link because **CRM Studio** retrieves the appropriate subscriber information (from the corresponding database(s)) at the precise moment when an event is triggered, and an alert message needs to be delivered to that subscriber. This ensures that **CRM Studio** always has the most up-to-date subscriber data to use with triggered events.

Linking subscriber data from an external database follows much the same guidelines as importing subscriber data.

Subscriber Definition - Preparation

The following steps should be followed in preparation for creating subscriber records.

Identify Means of Entry

The first step is to identify the means by which subscriber data will be entered into **CRM Studio**. As previously outlined, your choices are:

- Manual entry
- Import
- Link

Depending on the method you choose, you will need to follow the instructions in the following sections.

• Manual Entry

If you enter subscriber records via manual entry, you need to gather the following information for each subscriber:

- Subscriber's name, company name, and title
- Subscriber's primary and secondary e-mail, fax, pager, and FTP addresses
- The days of the week (and hours of the day) when the subscriber will receive alerts via the primary or the secondary method.

> A subscriber can have different days and hours for the primary and secondary addresses of each delivery method.

• Imported / Linked Entry

If you enter subscriber records via the Import or Link methods, you need to do the following:

- Make sure the database that includes the external subscriber data is defined as a company within the **Everest CRM Studio Architect.**

- Identify the fields within the external subscriber table that contain the subscriber's name, company name, title, and primary and secondary e-mail and FTP addresses.
- Identify the days of the week (and hours of the day) when the subscriber will receive alerts via the primary or the secondary method.

Subscriber Entry Worksheets

You can use the worksheets provided in the chapter '**Worksheets**' to help you identify the necessary elements required for the creation of **CRM Studio** subscribers.

Subscriber Maintenance

Once you compile the subscriber data (in the worksheets), you are ready to go into the **Everest CRM Studio Architect** and configure subscriber data.

Log in to the **Everest CRM Studio Architect** (path: **CRM > CRM Studio > Architect**). You will see the **Everest CRM Studio Architect** dialog box. The **Event Management Folders** panel in the center, comprises two branches:

- Application Events
- Subscribers

Double-click **Subscribers** to display the list of pre-configured subscriber groups.
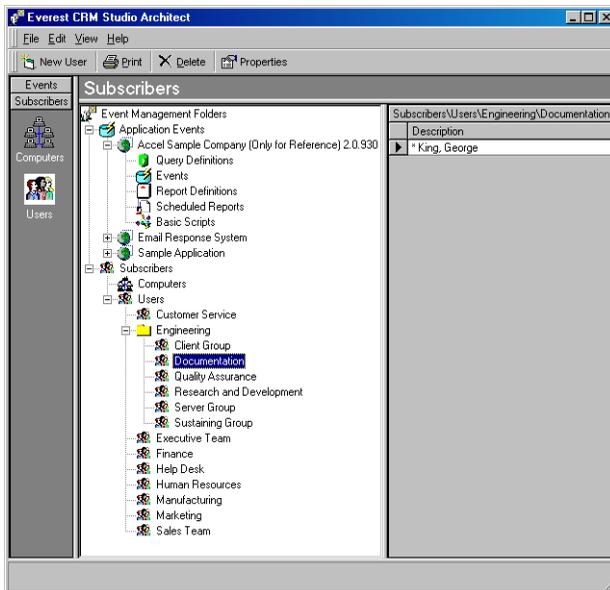
Figure 5.1: Everest CRM Studio - Subscriber Branches

Subscriber Group Maintenance

You can organize your subscribers into logical groups; each group can contain individual subscribers, or one or more other groups.

Although you can add subscribers to the pre-configured groups defined within **CRM Studio**, you can also create and modify additional groups of your own.

If you plan to import and/or link to subscriber data, you should create additional subscriber groups for each link or import.

Adding a Subscriber Group

To add a subscriber group, do the following:

• From the main menu bar, select **CRM > CRM Studio > Architect**. You will see the **Everest CRM Studio Architect** dialog box.

• Click the **Event Management Folders** panel in the center and click **Subscribers**. Under **Subscribers**, you will see two branches: **Computers** and **Users**.

• To add a new group of computers (that will be eligible to receive alert content), click **Computers**. To add a new group of users (who will be eligible to receive alert messages), click **Users**.

• To add a group within a group, click the name of the group within which you wish to add a new group.

> *Example* Add a group called West Coast Team under the Sales Team group.

• Click the **New Group** button at the top-left of the **Everest CRM Studio Architect** dialog box. You will see the **Everest CRM Studio - Properties** dialog box.

• In the **Description** field, enter a name or description of the new group and click **OK**.

Changing a Group's Name

To change the name of a subscriber group, do the following:

• From the **Everest CRM Studio Architect** dialog box, select **Event Management Folders > Subscribers.**

• Click the group whose name you wish to change.

• Click the **Properties** button at the top-left of the **Everest CRM Studio Architect** dialog box. You will see the **Everest CRM Studio - <branch name> Properties** dialog box.

• In the **Description** field, enter a new name or description for the group and click **OK**.

Deleting a Subscriber Group

⚠️ Before deleting a subscriber group, make sure no events are configured to send alerts to anyone within that group, or to the group as a whole. Also be certain to check if the subscriber group is either linking or importing subscribers, and remove the import or link before deleting the subscriber group.

To delete a subscriber group, do the following:

- From the **Everest CRM Studio Architect** dialog box, select **Event Management Folders > Subscribers.**
- Click the group which you wish to delete.
- Click the **Delete** button at the top-left of the **Everest CRM Studio Architect** dialog box.
- You will be prompted for confirmation. Click **Yes**.

Adding and Updating Subscribers

Even if you do not intend to enter subscribers manually into the **CRM Studio** database, it is recommended that you review the following sections.

Manually Entering Subscribers

The first method of adding and maintaining subscribers in the **CRM Studio** database is through manual entry. You can configure the **CRM Studio** subscriber database to include a combination of manually-entered subscribers, imported subscribers, and linked subscribers.

Add a Subscriber (Computer)

To add a computer as a subscriber, do the following:

- From the **Everest CRM Studio Architect** dialog box, select **Event Management Folders > Subscribers.**
- To add a new computer subscriber (that will be eligible to receive alert content), click **Computers**, or the appropriate group within that branch.
- Click the **New Computer** button at the top-left. You will see the **Everest CRM Studio - Subscribers\Computers\(group name)** dialog box.

- Enter the relevant details for the computer, and click **Save and Close**.

Add a Subscriber (User)

To add an user as a subscriber, do the following:

- From the **Everest CRM Studio Architect** dialog box, select **Event Management Folders > Subscribers.**

- To add a new user subscriber (who will be eligible to receive alert messages), click **Users,** or the appropriate group within that branch.
- Click the **New User** button at the top-left. You will see the **Everest CRM Studio - Subscribers\Users\(group name)** dialog box.

- Enter the relevant details for the user, and click **Save and Close**.

The Everest CRM Studio - Subscribers\Computers\(group name) Dialog Box - Description
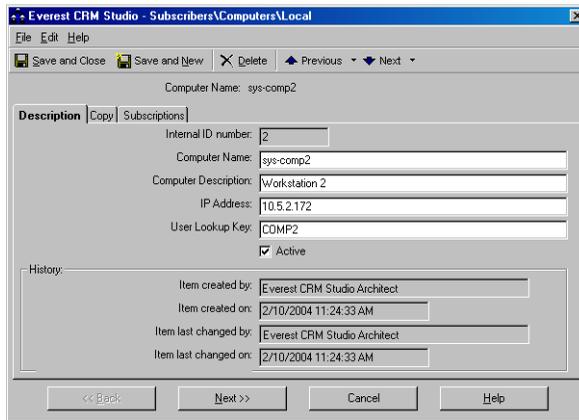
Figure 5.2: Everest CRM Studio - Subscribers\Computers\(group name) - Description

Internal ID Number
This field displays the ID of the computer subscriber. You cannot modify it.

Computer Name
Enter the name of the computer.

Computer Description
Enter a description for the computer.

IP Address
Specify the IP address of the computer.

User Lookup Key
Specify a unique value/code that identifies this computer for the purpose of linking it to a database record.

Active
Be sure to check this box.

Use a Group Lookup Key

CRM Studio can also look at a field within a database record and identify the value of that field as equating to a **CRM Studio** subscriber group.

Example An organization might have four support groups and an event that identifies any group that has more than 20 open calls. If a group has more than 20 calls, you can send an alert to all the members of the corresponding **CRM Studio** subscriber group.

To do so, you simply have to make sure that the group names that exist in your support application are reflected (exactly) in the names of **CRM Studio** subscriber groups. (**CRM Studio** is case-sensitive.)

Thus, if an event detects that two out of the four support groups have more than 20 open calls, **CRM Studio** attempts to search for the two groups in the subscriber group names. On finding a match, it sends alerts to every member of those groups.

Copy Method - Notes

The "copy" method allows **CRM Studio** to move files and Crystal Reports (both of which may be attached to triggered events, or scheduled on a periodic basis) to specific locations. The copy location should be specified using standard UNC format (as in "//computername/sharename"). You may also specify an FTP address, using the format "ftp://username:password@ftp.location.net/directory_name."

Paging Method - Notes

Before you can configure a subscriber to receive alerts via pager, you must configure **CRM Studio** to integrate with the various paging services that your organization uses. The configuration of these paging services consists of defining such information as the paging service vendor name, the access (or TAP) phone number for the paging service, an optional access password, and other modem configuration settings.

Once you have defined these services, you may then go into a subscriber record and select a valid paging service, as well as that subscriber's individual personal identification (or PIN) number.

Webcasting Method - Notes

The "webcasting" alert message delivery method requires a separate set of steps that you need to take in order to configure the webcasting module.

Create a Template Subscriber Record

For organizations that manually enter subscriber records, it is evident that there are certain fields of data that remain the same from one subscriber to the next – fields such as company, active, and (most importantly) the grid that lists the delivery address to use for different dates and times.

Instead of editing each record you create, you can establish (one or more) subscriber templates and then use those templates each time you add a subscriber.

To create a subscriber template, do the following:

- From the **Everest CRM Studio Architect** dialog box, select **Event Management Folders > Subscribers.**
- Click **Users**, or the appropriate group within that branch.
- Click the **New User** button at the top-left. You will see the **Description** tab of the **Everest CRM Studio - Subscribers\Users\(group name)** dialog box.
- Enter 'Template' in the **Last Name** field and 'User' in the **First Name** field.
- Modify the fields in the **Copy** and **E-mail** tabs to reflect the common values that should be used in all new users.
- Click **Save and Close**.

The next time you create a subscriber and wish to use that template, simply copy that template instead of creating a user from scratch.

Copy Subscribers

Since many subscribers can be similar in design, it becomes important to know how to copy a subscriber record into another.

 To copy one subscriber to another, do the following:

- From the **Everest CRM Studio Architect** dialog box, select **Event Management Folders > Subscribers.**
- Click **Users** (or the appropriate group within that branch). You will see all the subscribers displayed in the panel on the right.
- Highlight the subscriber you wish to copy and select **Edit > Copy**.
- Select **Edit > Paste.** A duplicate of the subscriber appears in the right panel.
- Open either of the two (identical) subscribers and modify it as needed. Ensure that you change the subscriber's first and last names.

Delete Subscribers

Before deleting a subscriber, you should make sure that there are no events that send alerts to the subscriber.

 To delete a subscriber, do the following:

- From the **Everest CRM Studio Architect** dialog box, select **Event Management Folders > Subscribers.**
- Click **Users** (or the appropriate group within that branch). You will see all the subscribers displayed in the panel on the right.
- Highlight the subscriber you wish to delete, and click the **Delete** button at the top of the **Everest CRM Studio Architect** dialog box.

Or

- Open the subscriber you wish to delete, and click the **Delete** button at the top of the **Everest CRM Studio - Subscribers\Users\(group name)** dialog box.

 There is no Undo option once you have deleted a subscriber.

Scroll Quickly Through the List of Subscribers

In some instances, you might need to scroll sequentially through a list of subscribers (to activate/de-activate a series of subscribers by selecting/deselecting the **Active** check box in the **Description** tab of the **Everest CRM Studio - Subscribers\Users**\(group name)\ dialog box). Although you could select each subscriber individually, edit it, save it, and then select the next subscriber, there is a faster way to achieve this.

To quickly scroll through subscribers, do the following:

- Once you have selected and edited your first subscriber, click the **Previous** or **Next** buttons at the top of the **Everest CRM Studio - Subscribers\Users\(group name)** dialog box.
- If you have made changes to the current subscriber, you will be prompted to save (or abandon) your changes before proceeding.

Importing / Linking Subscribers

The second and third methods of adding and maintaining subscribers is by importing or linking the subscribers from an external database to the **CRM Studio** database.

The configuration for importing versus linking subscribers in **CRM Studio** is almost identical; the only difference is that the import function actually transfers the data from an external application into **CRM Studio**, and the link function maintains a live link between the subscriber fields in the external application and the corresponding fields within **CRM Studio**. Follow the steps listed below to import or link subscribers:

- Create the import or link query
- Create the import or link group
- Activate the import link function
- Choose the import or link query
- Map the subscriber fields
- Choose either to link or import the subscriber records

These steps are detailed in the following sections.

Create the Import / Link Query

To import subscribers from (or link **CRM Studio** to) subscriber data in an external database, you need to have a means of retrieving the necessary data. This is done via a **CRM Studio** query.

You must design a **CRM Studio** query that retrieves the subscriber-related fields of data from your external application. The fields of data that you will need to retrieve (if available) are:

- Subscriber full name, last name, and first name.
- Subscriber title, company name, and phone number.
- Subscriber's primary and secondary e-mail address(es), fax number(s), preferred copy locations, pager service TAP number and PIN, and (if applicable) preferred webcast locations.

The corresponding query should be designed like any normal, record-level query. Typically the query includes just the one table that contains subscriber data, and the fields shown in the previous list. It may or may not contain filters.

☞ **"Record-Level Queries" on page 117**

To import or link to only those users with an active status, you could add a filter that performs this restriction.

It is important to preview this query to be sure that it retrieves the precise records you wish, along with the specific fields of subscriber data that you require.

Create the Import / Link Group

For each group of subscribers that you are importing or linking to, you should create a separate subscriber group.

Example If you are importing user data from an application called Sales First, you might wish to create a group called Sales First Users into which those subscribers will be placed.

A subscriber group that does a link or import also allows you to manually add additional subscribers to that group. Thus, you could have a Sales First Users group that imports 100 subscriber records from the Sales First application and yet, include six manually-entered subscriber records.

Activate the Import Link Function

Once you create the query that will retrieve the external subscriber data as well as the subscriber group that will contain the individual imported or linked subscriber records, you are ready to begin the import or link process.

To import or link subscribers, do the following:

• Highlight the name of the group that will contain the imported or linked subscribers.
• Click the **Properties** button at the top of the **Everest CRM Studio Architect** dialog box. You will see the **Everest CRM Studio - (group name) Properties** dialog box.
• Click the **Subscriber Linking** button. You will see the **(group name) Subscriber Linking** dialog box.

The Everest CRM Studio - (group name) Properties Dialog Box
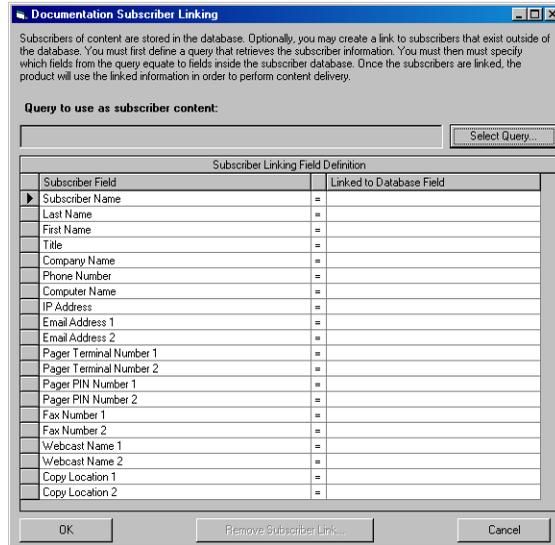
Figure 5.3: Everest CRM Studio - (group name) Properties

Select Query
Click this button to select the query that will allow you to import/link subscribers.

Subscriber Linking Field Definition

Subscriber Field
This (left) panel displays a list of all of **CRM Studio**'s subscriber data fields.

Linked to Database Field
This (right) panel enables you to choose the field to be mapped from the related query to an individual field within **CRM Studio**.

Choose the Import or Link Query

The next step is the selection of the query that you designed earlier to retrieve the subscriber data from an external database.

To select the import or link query, do the following:

- From the **(group name) Subscriber Linking** dialog box, click the **Select Query** button. You will see the **Everest CRM Studio - Select Another Application** dialog box, displaying all the companies that are currently defined within the **Everest CRM Studio Architect**.

- Since you can import or link to subscribers from any company or application that is defined in **CRM Studio**, you first need to choose which application your query is associated with. Select the appropriate application and click **Select**. You will see the **Everest CRM Studio - Add Query** dialog box, displaying a list of queries for that application.

- Select the query designed to retrieve subscriber data.

Your next step is to map fields from your query to the corresponding fields in the **CRM Studio** subscriber database.

Map the Subscriber Fields

Now that you have chosen your query, you have to specify which fields in your query equate to specific fields in the **CRM Studio** subscriber database, using the **Everest CRM Studio - (group name) Properties** dialog box**.**

☞ **"The Everest CRM Studio - (group name) Properties Dialog Box" on page 167**

To map a specific query field to a subscriber data field, do the following:

- From the row that contains the **Subscriber Field** you wish to map data to, move to the corresponding row in the **Linked to Database Field** panel.
- Click in this row, and from the drop-down list choose the query field whose value you wish to map.

    The same query field may be mapped to multiple fields within the **CRM Studio** subscriber database. If your query contains only a single E-mail Address field, you should map it to both the **CRM Studio** subscriber E-mail Address 1 and E-mail Address 2 fields.

Choose to Link or Import

Once you finish the mapping process as detailed in the previous step, **CRM Studio** assumes that you wish to link subscriber records; that is, it will maintain a live link between this group of subscribers and the external database from which they were retrieved, so that any changes made to those subscribers in the external database will automatically be reflected within **CRM Studio**.

This also means that anytime **CRM Studio** needs to send an alert to one of these individuals, it will perform a link to the external database to retrieve that person's most up-to-date address information.

If you do not wish CRM Studio to maintain such a link, but want records to be imported into the subscriber database, do the following:

- From the **(group name) Subscriber Linking** dialog box, click the **Remove Subscriber Link** button. You will see the **(group name) Remove Subscriber Link** dialog box.
- Select the second option (I would like to remove the subscriber link but leave the subscribers for this group in the database).
- Click **OK**. The live link is removed, but the subscribers whom you imported remain for you to send alerts to, and to maintain within **CRM Studio**.

    You must save your subscriber link data before removing the link. This enables **CRM Studio** to import the corresponding subscriber records (executed by the save function). Thereafter, you may go back into the subscriber linking option and remove the link.

Save the Link

When you save a subscriber link, **CRM Studio** automatically executes the link and retrieves the corresponding subscriber records from your external database. These records are displayed in the right panel of the **Everest CRM Studio Architect** dialog box.

The linking or importing process may take a few seconds to execute. You will see an informational message at the bottom left-hand corner of your window telling you that the linking is in process, after which the corresponding subscriber records will appear.

Removing a Subscriber Link

When you remove a subscriber link, you have the option to retain the details of the individual subscribers, or remove both the link and the details of all corresponding subscribers.

To remove both the link and the related subscriber data, do the following:

- From the **Everest CRM Studio Architect** dialog box, select **Event Management Folders > Subscribers.**
- Click **Users**. Highlight the subscriber group you wish to delete and click the **Properties** button at the top of the **Everest CRM Studio Architect** dialog box. You will see the **Everest CRM Studio - (group name) Properties** dialog box.
- Click the **Subscriber Linking** button. You will see the **(group name) Subscriber Linking** dialog box.
- Click the **Remove Subscriber Link** button. You will see the **(group name) Remove Subscriber Link** dialog box.
- Select the first option (I would like to remove the subscriber link and all subscribers in this group from the database.).
- Click **OK**.

Editing Imported or Linked Subscribers

If you create a group of imported subscribers (i.e., you create the link, retrieve the subscribers, and then remove the link but retain the subscribers), you can edit and modify those subscriber records just like any manually-entered subscriber record.

If you create a group of linked subscribers, however, only the grids of alert hours and days are available for editing. All the other fields of subscriber data appear gray, indicating that their values are being retrieved from an external database and thus, are unavailable for editing from within **CRM Studio**.

Creating Intelligent Subscriber Groups

Using **CRM Studio** queries you can create intelligent groups of subscribers.

Example
- Clients in the state of California
- Prospects in the banking industry
- Suppliers who have pending back orders

All these groups simply utilize queries that are designed to retrieve a specific subset of records. Be careful about creating overly-complex subscriber groups, as **CRM Studio** evaluates the members of a group when an event is executed. An overly-complex subscriber query that runs through a database of thousands (or millions) of records could significantly slow down the execution time of that event.

6. Event Designing

What is a CRM Studio Event?

A **CRM Studio** event is an object that uses one or more queries to test if certain conditions exist in an underlying database, and (if the test proves true) it executes corresponding alerts and other actions in response to the triggered condition. Events can generally be divided into the following five components:

- **Query(ies):** The condition that must occur for the event to be triggered.
- **Alert Message Text:** The messages that will be sent if the event is triggered.
- **Actions:** The actions (such as updating data within a company database) that will be executed if the event is triggered.
- **Subscribers:** The people who will be notified about a triggered event, and the method(s) by which they will be notified.
- **Schedule:** When (and how often) **CRM Studio** will check for the event's specified conditions.

The following sections provide an overview of each of these components.

An Event's Query(ies)

The means by which an event determines whether a specific condition has been met is through the use of one or more queries. A single event may use a single query or multiple queries, depending on the complexity of the condition that it has to check for.

Additionally, a single query may be used in one or more events. Depending on how a query is designed (if the query uses parameter-driven filters), the person configuring the event may be prompted to specify certain threshold values (such as a date range or minimum numeric value) for the query, relative to the specific event that is being configured.

An Event's Alert Message Text

Once you specify the query(ies) that an event will use to identify whether a specific condition has occurred, you may begin to design the text and format of the alert messages that **CRM Studio** will send when that event is triggered.

CRM Studio allows you to specify the alert message text and format for messages sent via:

- E-Mail
- Fax
- Pager
- Webcast

Additionally, it lets you specify that the contents of one or more files and Crystal Reports will also be sent along with an alert message.

All the fields of data that were selected as columns in an event's associated query(ies) are made available for placement within the text of an alert message.

An Event's Actions

In addition to sending alert messages, **CRM Studio** can also execute one of five actions when an event is triggered. These actions are:

- Write triggered event data to an external (flat) file.
- Use triggered event data within one or more SQL statements.
- Use triggered event data within one or more executable programs.
- Use triggered event data within one or more Visual Basic (VB) scripts.

These actions are most typically used when an organization wishes to add or update records within a database as the result of an event being triggered.

An Event's Subscribers

If an event will be sending alert messages to one or more people, you need to tell **CRM Studio** who those people are, and via what method they will be receiving their notifications. In **CRM Studio**, an alert recipient is referred to as a subscriber, who may receive alerts via any one – or any combination – of the following methods:

- E-Mail
- Fax
- Page
- Webcast
- Copy (FTP)

As detailed in the chapter **Subscriber Maintenance**, each event may be configured to send alerts to individual users, groups of users, and one or more computers (for the purpose of transferring files).

Additionally, events may be configured so that they automatically notify pre-defined subscribers, or one or more people based on information in the database record that is causing the event to trigger.

Example Notify the support representative to whom an overdue call is assigned.

An Event's Schedule

The final component of an event is its schedule; this lets you determine how often **CRM Studio** must check to see if the event is triggered. Each event has its own schedule. Some very critical events may have a very frequent schedule (such as 'every five minutes'), whereas, less critical events may be checked less frequently (such as once a day, week, or month).

CRM Studio can check for events as frequently as every minute. If an organization needs **CRM Studio** to trigger an event just when it occurs, it can use any of the two APIs (VB scripting and Microsoft COM) to accommodate this.

Checked Versus Triggered Events

As you begin to work with events, you will come across frequent references to an event being checked or triggered. It is, therefore, imperative that you understand the difference between these two functions.

- An event that is checked simply indicates that **CRM Studio** has successfully executed the event and has 'checked' to see if the corresponding condition proves true. The condition may or may not have proven true.
- An event that is triggered is one that has been checked and whose condition has proven true.

Monitoring the Status of Events

When an event is triggered, you can use the **Everest CRM Studio Event Monitor** (path: **CRM > CRM Studio > Monitor**) to track the status of the event's execution.
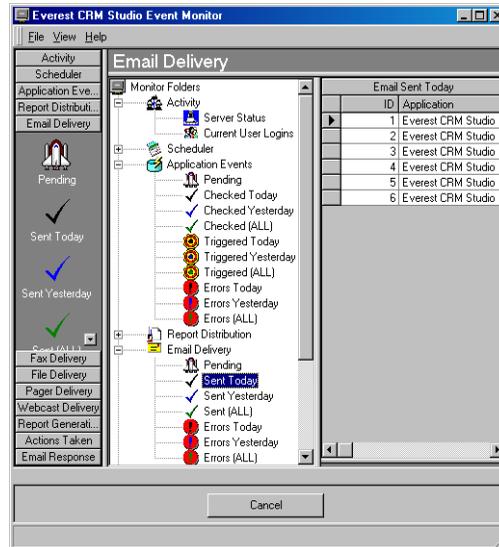
Figure 6.1: Everest CRM Studio Event Monitor

From the far left panel, select **Application Events**. Alternatively, you can also select it from the tree view under **Monitor Folders**. From here, you can track:

- Events for which execution is pending.
- Events that have been Checked but not triggered.
- Events that have been checked and Triggered.
- Events with Errors that have failed to complete successfully.

If an event fails to complete successfully because of an error, you can correct the event, mark it as complete, or manually delete this run of the event.

> If an error in event is due to error in its configuration, you can modify the event and/or corresponding query(ies), and **CRM Studio** automatically uses the modified version the next time it runs that event. **CRM Studio** automatically attempts to re-submit an erroneous event every minute.

An Event Without a Query

Consider the following scenarios:

- Every day at 2:00 PM you want to send an e-mail reminder to your VP of Marketing to look at your company's newsgroup.

- Every Monday at 8:55 AM you want to send a mail message to all managers to attend the 9:00 AM staff meeting.
- Every day at 5:00 PM you want to transfer an orders file to a specific database server.
- Every Friday at 6:00 PM you want to send an alert that the system backup will start at 6:30 and so people must have logged off.

These scenarios represent a special kind of event – an event without a query.

CRM Studio lets you create such events - events that send messages, execute programs or scripts, or procedures that simply must occur at a specific time. The only difference between an event such as this and a normal event is that there is no query associated with these events.

Before You Begin

Before you begin designing events, you should take the following preparatory steps:

Query Design: Since an event uses one or more queries to identify underlying database conditions, you must create your queries prior to creating events.

Subscriber Maintenance: Since an event also allows you to specify whom the alerts should be sent to, you should have (at least) one subscriber defined within your subscriber database.

E-Mail Sending Account: For sending e-mail alerts from an event, you must define (in the **Everest CRM Studio Administrator**) the e-mail account that **CRM Studio** should use when sending these messages.

Ensure that you have completed these steps prior to designing events.

Event Designing: Preparation

We recommend that you read through the entire chapter on **Query Designing** before proceeding any further.

 Some of the steps listed in the following sections refer to information already identified on your query-level worksheets.

Identify Purpose of Event

The first step is to identify the overall purpose of an event.

 To send an alert to the account manager when a 'critical' service call is logged for one of the customers.

Identify Related Query(ies)

Since every event uses one (or more) queries to identify a specific condition of data, you need to specify the name(s) of the query(ies) that this event should use.

 To accommodate an event such as the one described above, you might select a query called:

Support Calls; Open; Priority 'x'

Identify Content of Alert Message(s)

This step was completed when designing the query. If not, you must now design the corresponding message for e-mail, fax, pager and webcast alerts.

Identify Alert Action(s)

In addition to sending alert messages, **CRM Studio** events can execute actions that include (but are not limited to) adding or updating data within a company's database.

Although these actions require some additional event configuration, it is important to identify the action(s) you wish the event to execute so that you can see which of **CRM Studio**'s action options you need to invoke.

Identify Subscribers

If an event is to send out alert messages, you should be able to identify the individuals (or groups) who will be the recipients of those messages. There are three items to keep in mind when considering subscribers:

• A subscriber can be an individual or a group of individuals.

• A subscriber can be a computer (if it is to receive a file or report).

• A subscriber can be a specific person (John Smith), or it can be a person related to a database record (the representative assigned to the overdue call).

For each subscriber or group of subscribers that you identify, you need to indicate whether they will receive notifications via e-mail, fax, pager, webcast, or copy/ftp. Remember that a subscriber may be alerted via any one, or both of these methods.

Identify the Schedule

The final step in preparation to creating an event is the identification of the frequency with which **CRM Studio** will check if the event's conditions are met. Schedules can be as often as every minute, or as infrequently as once a year.

An event without an associated query is executed (and triggered) every time the event is run.

Event Design Worksheets

You can use the worksheets provided in the chapter '**Worksheets**' to help you make the event set-up process quick and smooth. Once you become familiar with the event creation process, you can probably forego the use of these worksheets, and design the events directly in the **Everest CRM Studio Architect**.

Accessing the Event Designer in CRM Studio

Once you have the information that you need to begin designing events, you are ready to go into the **Everest CRM Studio Architect** and create such an event.

To access the Event Designer in CRM Studio, do the following:

• From the main menu bar, select **CRM > CRM Studio > Architect**. You will see the **Everest CRM Studio Architect** dialog box.

When you log in for the first time, the ASC database is updated with the latest EventPak.

- Select **Application Events** from the tree view under **Event Management Folders**. You will see all the companies that **CRM Studio** is currently configured to integrate with.
- Select the company for which you want to design events and click **Events** under it. You will see a list of events (if already created) in the right panel.
- Click the **New Event** button at the top-left. You will see the **Everest CRM Studio - Application Events\(your company)\Events** dialog box, using which you can design events for the selected company.

Record-Level Versus Aggregate Events

As was detailed in the chapter '**Query Designing**', there are two basic types of queries; record-level queries and aggregate queries. Although the design of these two types of queries differs significantly, they are both utilized in the same manner within events. The following pages detail the creation of an event using either a record-level or an aggregate query.

Creating an Event

To create an event, do the following:

- From the main menu bar, select **CRM > CRM Studio > Architect**. You will see the **Everest CRM Studio Architect** dialog box.
- From the **Event Management Folders** panel, select **Application Events > (your company) > Events**.
- Click the **New Event** button at the top-left. You will see the **Everest CRM Studio - Application Events\(your company)\Events - Description** tab.
- In the **Event Description** field, enter a description of the event you are creating.
- If this event is meant to be dynamically triggered from within an external company (using one of **CRM Studio**'s APIs [VB script or Microsoft COM object]), enter a unique identifying value in the **Lookup Key** field.

- Select a value from the **Priority** drop-down list, depending on the importance of the event.
- Ensure that the **Active** check box is selected.

The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Description

Figure 6.2: Everest CRM Studio - Application Events\(your company)\Events - Description

Internal ID Number
This field displays the ID of the event. You cannot modify it.

Event Description
Enter a brief description of the event being defined.

Lookup Key (Optional)
If this event is meant to be called from within an external company, enter a unique identifying value in this field.

Priority
This field is used to set the priority for events when multiple events are scheduled to be submitted at the same time. The event with the highest ranking priority (priority '0' being the highest) will be submitted first.

Active
Ensure that this box is checked.

If you leave this field blank, **CRM Studio** configures the event but will not submit it.

Repeat notification for triggered items
Select this option to send repeated alerts until the condition that triggers the sending of notifications no longer exists.

"Repeat Notification for Triggered Items" on page 180

Keep only last checked record in Monitor
Select this option to retain the history of an event the last time it was checked, and

each time it was triggered.

Repeat Notification for Triggered Items

As an alert messaging application, **CRM Studio** identifies conditions that trigger the sending of notifications. Depending on the condition, however, an alert recipient might wish to receive just one alert about the related condition, or repeated alerts until the condition no longer exists.

Consider the following two examples:

A sales representative is notified at the end of every day about activities that are overdue for completion. If an activity due on Monday is still open on Tuesday, the representative is alerted. If it is still open on Wednesday (or beyond), the representative continues to receive an alert every day until the activity is closed (or is otherwise modified to be no longer overdue).

A **CRM Studio** event runs every hour to check if any clients with pending sales opportunities are also on credit hold. If such a condition exists, the corresponding account manager is notified. Account managers needs to be notified only once for each client who meets these conditions (i.e., don't send alerts every hour about the same clients).

Select this option if the recipients of an event wish to be notified repeatedly about an individual record until that record no longer meets the event's criteria.

> This option is enabled only if a query for this event has a Unique field identified within it. If no Unique field is identified, **CRM Studio** has no way of remembering the records that have previously been triggered, and thus, it continues to send out alerts until a record no longer meets that event's criteria.

Keep Only Last Checked Record in Monitor

As **CRM Studio** submits an event, the **Everest CRM Studio Event Monitor** keeps track of when the event was submitted, and whether it was successfully executed and triggered.

In many cases, an event is checked many times before it is triggered. For example, an event that performs an hourly check for clients who not only have pending sales opportunities but are also on credit hold, may run for many hours, days, or even weeks before it is triggered.

In the **Everest CRM Studio Event Monitor**, you will automatically see the history of an event every time it was triggered. Additionally, you can retain (and view) the history of an event every time it was checked – regardless of whether it was triggered as well.

Especially in the case of frequently-checked events (such as those that run every few minutes), the history that can pile up in the **Everest CRM Studio Event Monitor** can be quite extensive.

Although there is no limit to the amount of history that you can retain, the process of scrolling through a list of each submission of a given event can be tedious.

Select this option to avoid retaining the history for every submission of an event. As a result, **CRM Studio** retains the history of an event the last time it was checked, and every time it was triggered.

If you do not select this option, **CRM Studio** will retain the history of every time that an event was submitted, plus the history of every time that the event was triggered.

We recommend that you select this option.

Select the Event's Query

The most important part of designing an event is the identification of the query (or queries) that the event will use to determine whether a specific condition has occurred.

As was detailed in the chapter '**Query Designing**', a single event can use one or more queries (most commonly seen in cross-company events).

Depending on the filters that are configured within a query, you may be prompted to fill in some threshold values (also called event trigger parameters) when you select a specific query for an event.

To select a query for an event, do the following:

- After specifying relevant information in the **Description** tab of the **Everest CRM Studio - Application Events\(your company)\Events** dialog box, click **Next**. You will see the **Everest CRM Studio - Application Events\(your company)\Events - Queries** tab.

- Click the **Add Query** button at the top-left of the **Queries** tab. You will see the **Everest CRM Studio - Add Query** dialog box.

- Select the query to be used with this event and click **Select**. The query is displayed in the **Queries Selected For Content** grid.

The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Queries
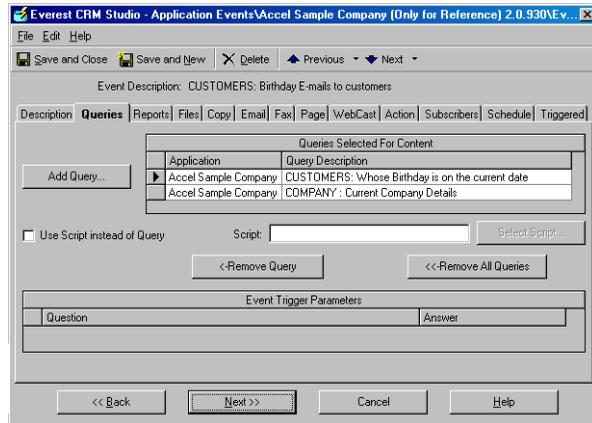
Figure 6.3: Everest CRM Studio - Application Events\(your company)\Events - Queries

Add Query
Click this button to display the **Everest CRM Studio - Add Query** dialog box, which enables you to select and add queries to the **Queries Selected For Content** grid.

☞ **"The Everest CRM Studio - Add Query Dialog Box" on page 63**

Queries Selected for Content
This grid displays the selected queries.

Use Script instead of Query
Select this option if you intend to use a Visual Basic script instead of a query.

☞ **"Using a VB Script Instead of a Query" on page 184**

Script
This field displays the name of the selected Visual Basic script.

Select Script
Click this button to display the **Everest CRM Studio - Select Basic Script** dialog box, which enables you to select a Visual Basic script. This dialog box is similar to the **Everest CRM Studio - Add Query** dialog box.

This button is disabled until you select the **Use Script instead of Query** option*.*

☞ **"The Everest CRM Studio - Add Query Dialog Box" on page 63**

Remove Query
Click this button to remove a selected query from the **Queries Selected for Content** grid.

Remove All Queries
Click this button to remove all queries from the **Queries Selected for Content**

grid.

Event Trigger Parameters

If the event uses one or more queries that include parameter-driven filters, you must specify the threshold values for those filters.

Selecting Multiple Queries

Since a single event can use more than one query, you can select multiple queries for a given event. Multiple query events are typically required when you wish to check either for a sophisticated set of conditions or for conditions across multiple companies.

> When you select multiple queries, **CRM Studio** automatically assumes an 'and' condition between them; thus, the conditions of all selected queries must be met to trigger the related event.

Selecting Queries from Other Companies

As was detailed in the chapter '**Query Designing**', **CRM Studio** allows you to create events that check for conditions across multiple companies.

> *Example*   Check for clients who have pending sales in a CRM database, and who are also on credit hold within a financial database.

This kind of event requires two queries: one from the CRM database and one from the financial database. The order in which these queries must be selected is determined by the configuration of the queries themselves; one of the queries will have been designed as a 'link from' query, and the other will have been designed as a 'link to' query.

If you are creating an event that uses multiple queries from different databases, you must ensure that you select the queries in the appropriate order; the second query must be designed to include (filter) records only from the first; the third query (if there is one) must be designed to include records only from the second, and so on.

Once you know the order in which the queries are to be selected, you may proceed with selecting them for the corresponding event.

To select a query from a company other than the one you are currently working in, do the following:

- After specifying relevant information in the **Description** tab of the **Everest CRM Studio - Application Events\(your company)\Events** dialog box, click **Next**. You will see the **Everest CRM Studio - Application Events\(your company)\Events - Queries** tab.

- Click the **Add Query** button at the top-left of the **Queries** tab. You will see the **Everest CRM Studio - Add Query** dialog box.

- From the **Everest CRM Studio - Add Query** dialog box, click **Select Another Application**. You will see the **Everest CRM Studio - Select Another Application** dialog box.

- Highlight the company from which you want to select queries and click **Select**. You will again see the **Everest CRM Studio - Add Query** dialog box, displaying the queries associated with the selected company.
- Highlight the required query and click **Select**. The query is displayed in the **Queries Selected For Content** grid.

Using a VB Script Instead of a Query

Although the vast majority of **CRM Studio** events use one or more queries to identify conditions in an underlying database, there might be some conditions that cannot be accomplished via a **CRM Studio** query.

As **CRM Studio** queries rely upon Microsoft ODBC drivers for accessing data and determining whether a condition has been met, it is possible that certain sources of data are not accessible via an ODBC source. You would, nevertheless, like **CRM Studio** to check these data/conditions.

Prime examples of conditions that cannot be checked via an ODBC driver include:

- Low disk space or programs that are not running.
- Files that have been updated.
- Non ODBC-compliant application databases.

If you wish to utilize **CRM Studio** to check for such conditions, you will need to configure the corresponding events to use a Visual Basic (VB) script instead of a **CRM Studio** query to determine whether the corresponding condition has occurred.

This capability, referred to as Front-End Scripting, requires you to first create the VB scripts used to check for the related conditions.

To link a Visual Basic Script to an event, do the following:

- After specifying relevant information in the **Description** tab of the **Everest CRM Studio - Application Events\(your company)\Events** dialog box, click **Next**. You will see the **Everest CRM Studio - Application Events\(your company)\Events - Queries** tab.
- Select the **Use Script instead of Query** option. Click the **Select Script** button. You will see the **Everest CRM Studio - Select Basic Script** dialog box.

- Select the script to be used with this event and click **Select**. The script is displayed in the **Script** field.

An event cannot use a combination of scripts and queries.

Event Trigger Parameters

As was detailed in the chapter '**Query Designing**', a query may be constructed to have one or more filters that are parameter-driven – a filter whose 'compare value' is specified on the event level.

Example A query called Forecast Sales > 'x' Due to Close Between 'y' and 'z' would have three parameter-driven filters:

- The amount of the sale (Greater than How Much?)
- The starting date range (Sales Due to Close Starting On?)
- The ending date range (Sales Due to Close Ending On?)

Whenever an event uses one or more queries that include parameter-driven filters, you will be prompted (in the **Event Trigger Parameter** grid in the lower half of the **Queries** tab) to specify the threshold values for those filters.

These parameters cannot be left blank on the event level; you must specify a valid response for each when the event is configured and subsequently maintained. If a parameter is left blank and the event is submitted by **CRM Studio**, the event will not execute successfully.

If no Event Trigger Parameters appear after you have selected your queries, it simply indicates that your selected queries do not include any parameter-driven filters. If the Event Trigger Parameters grid includes one or more records, each record begins with a question or prompt that instructs you on the type of answer required.

You must supply an answer to each event trigger parameter using the options detailed in the following sections.

Parameter Answer

Most parameters can be answered by entering (or selecting) a specific value.

Example Question: Activity priority is:

Answer: High

You have two ways to select such an answer - either manually type in the value or choose the value by querying the underlying database.

To insert a specific value for an event trigger parameter, do the following:

- From the **Event Trigger Parameters** grid, click the **Answer** field and enter the value.

CRM Studio is case-sensitive, so a compare value of "high" will not retrieve those records that have a value of "High".

OR

- Click the **Answer** field and then the list ![...] button. You will see the **Everest CRM Studio - Please supply a value** dialog box.

- Choose the value that you wish to compare the column to, in the **Available Substitution Variables** list and click **OK**.

> - The drop-down list displays all the values that have appeared in this field in the underlying database. This list does not display every possible value that could appear in this field.
> - If you are entering dates as answers to one or more trigger parameters, make sure that you use the correct format (an application whose dates are stored in mm-dd-yyyy format will not recognize a trigger parameter date that is formatted as mm/dd/yyyy.).

Using Date Substitution Variables

One of the most powerful aspects of designing date-driven events is the use of date substitution variables. Consider the following event:

- Send an alert if any sales greater than $20,000 are due to close next week.

This event most likely has event trigger parameters such as:

- Question: Sales Due to Close Starting on?
- Question: Sales Due to Close Ending on?

Although you could go into this event on a weekly basis and manually enter next week's starting and ending dates, there is a simpler way to achieve this.

Using **CRM Studio**'s date substitution variables, you can instruct it to substitute next week's starting and ending date whenever this event is run. This eliminates the need to manually update the date answers.

To use a date substitution variable as an answer to a trigger parameter, do the following:

- From the **Event Trigger Parameters** grid, click the **Answer** field and then the list ⬚ button. You will see the **Everest CRM Studio - Please supply a value** dialog box.

- From the list of **Available Substitution Variables**, choose the value that you wish to use and click **OK**.

> - For many variables (such as %Current Date%), you will see multiple formats for the same value. The format without any suffix (as in %Current Date%) uses your system's date format. The other formats each contain a suffix (such as YYYY-MM-DD) that indicates the format in which the corresponding date is returned.
> - Once you select a date substitution variable as an answer, you can edit that value to append specific values to that variable. For example, to include a specific time of day in the date variable, you could edit it to {%Current Date%} 00:01 (for one minute past midnight) or {%Current Date%} 23:59 (for 11:59 PM).

Removing a Query from an Event

 To remove a query from an event, do the following:

- From the **Queries Selected for Content** grid in the **Everest CRM Studio - Application Events\(your company)\Events - Queries** tab, select the query you wish to remove by clicking on the row header.
- Click the **Remove Query** button.

 You can also click the button **Remove All Queries** to delete all of the queries that have been selected for this event.

Schedule Crystal Reports

CRM Studio integrates with Crystal Reports in three ways:

- **CRM Studio** can generate one or more Crystal Reports at the time an event is triggered and e-mail, fax, copy/ftp, or webcast the report contents.

 When designing an event, the **Reports** tab is used in this manner.

- **CRM Studio** can generate one or more Crystal Reports on a pre-defined schedule (e.g., every day at 9 AM), and e-mail, fax, copy/ftp, or webcast the report contents.
- **CRM Studio** can scan the contents of an incoming e-mail message and reply to that message by generating one or more Crystal Reports, and e-mail, fax, copy/ftp, or webcast the report contents back to the originator of the message.

 You must be familiar with Crystal Reports (and basic report design principles) in order to utilize this function.

As the process of integrating Crystal Reports with **CRM Studio** requires a few steps of preparation and (in some cases) modifications to an event's queries, the details on this process are explained in the chapter '**Event Triggered Reports**'. Please refer to that chapter for details.

The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Reports
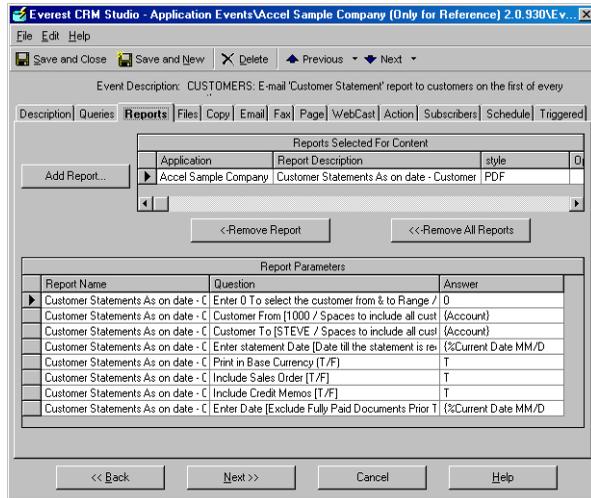
Figure 6.4: Everest CRM Studio - Application Events\(your company)\Events - Reports

Add Report
Click this button to display the **Everest CRM Studio - Add Report** dialog box, which enables you to select and add reports to the **Reports Selected For Content** grid.

Reports Selected For Content
This grid displays the selected reports.

Remove Report
Click this button to remove a selected report from the **Reports Selected For Content** grid.

Remove All Reports
Click this button to remove all reports from the **Reports Selected For Content** grid.

Report Parameters
This grid displays the parameters of the selected reports. Specify parameters in the Answer column.

Enabling the Report Server

You must enable the reports server if you plan to use **CRM Studio** to generate reports for triggered events.

To enable the report server, do the following:

- From the main menu bar, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.

- From the tree view select **Activity > Server Status** under **Administration Folders**. You will see the **CRM Studio** servers and their respective status in the right panel.
- Double-click the Report Server. You will see the **Everest CRM Studio - Server Status** dialog box.
- Select the **Allow Server to process** option and click **Save and Close**.

   - To disable **CRM Studio** from generating Crystal reports, uncheck the **Allow Server to process** option.
   - If you disable the report server and trigger events that are configured to generate reports, **CRM Studio** will pile up the pending reports (which you can review in the **Everest CRM Studio Event Monitor**). These pending reports may subsequently be deleted, or (if you enable the report server) they may be generated at a later time.

File Attachments

In the same manner that **CRM Studio** allows you to associate one or more Crystal reports to an event, you can associate one or more files to a triggered event. Files that are associated with an event may be distributed by:

- E-mail (as attached files)
- Fax (file content embedded within the fax)
- Webcast (as a URL link)
- Copy / FTP

Typical uses of attached files include:

- Attaching a Policies and Procedures document to an alert message
- Attaching a product brochure to an alert message
- Attaching a newsletter to an alert message
- Attaching a spreadsheet to an alert message
- Attaching an HTML document to an alert message

To attach one or more files to a specific event, do the following:

- After specifying relevant information in the **Reports** tab of the **Everest CRM Studio - Application Events\(your company)\Events** dialog box, click **Next**. You will see the **Everest CRM Studio - Application Events\(your company)\Events - Files** tab.
- Click the **Add File** button. You will see the **Everest CRM Studio - Add File** dialog box, using which you can browse for and locate the required file(s).
- Enter a description of the file you are adding to this event, in the **Files Selected For Content** grid.
- Select the **Ascii Text** option if the associated file is in ASCII format.

   Only ASCII formatted files can be delivered via fax.

- Repeat these steps for each file you wish to add.

The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Files

Figure 6.5: Everest CRM Studio - Application Events\(your company)\Events - Files

Add File
Click this button to display the **Everest CRM Studio - Add File** dialog box, which enables you to select and add files to the **Files Selected For Content** grid.

Files Selected For Content
This grid displays the selected files.

Remove File
Click this button to remove a selected file from the **Files Selected For Content** grid.

Remove All Files
Click this button to remove all files from the **Files Selected For Content** grid.

File Alternative Text Options

This option is available only if **CRM Studio** is sending e-mail alerts via Internet mail.

If the event you are working with will be sending out e-mail alerts via an Internet e-mail based system (such as SMTP), you can specify that the text in an associated file will be used as the alternative text for an e-mail message.

One of the benefits of the alternative text option is that it allows you to create an event that sends an e-mail message that can be received by both HTML and non-HTML based e-mail systems.

You can send both formatted text and a plain (unformatted) text version of the same message. In this way, the mail message can be read by all recipients.

Additionally, this function is useful if you use **CRM Studio** to periodically distribute an HTML file (such as a newsletter). In a scenario such as this, the alternative text option allows the HTML source file to be created outside **CRM Studio** and simply linked to an event.

To send an alternative message (as the message text), do the following:

- From the **Files Selected For Content** grid, click the **Description** column, for the row containing the file requiring a description.
- Click the drop-down arrow and select HTML, rich text or enriched, as the format of the alternative file.

    You can specify more than one alternative message file. The recipient's e-mail client will decide which one to use. Multiple alternative message files increase the overall size of the **CRM Studio** message being sent.

File Transfers

The copy tab is where you specify whether the reports and/or files that are associated with this event will be copied (or sent through FTP) to the event subscribers' desired locations.

Files and reports may be distributed via four methods:

- Attached to e-mail messages
- Embedded within a fax message (as long as the file or report content is formatted as ASCII)
- Linked to a webcast page (via an URL link)
- Copied/sent through FTP to a recipient's desired location

The first three options are controlled using the option boxes on the corresponding e-mail, fax, and webcast tabs; the fourth option is controlled using the two check boxes on the **Copy** tab.

To copy/ftp files and/or reports to a recipient's desired location, do the following:

- After specifying relevant information in the **Files** tab of the **Everest CRM Studio - Application Events\(your company)\Events** dialog box, click **Next**. You will see the **Everest CRM Studio - Application Events\(your company)\Events - Copy** tab.
- Select the required option(s).

The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Copy
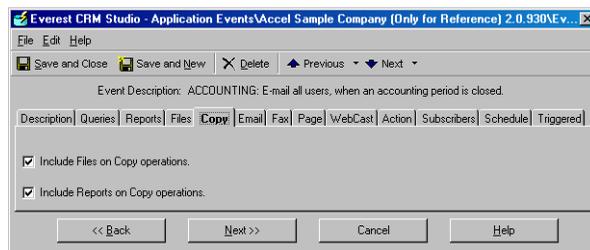
Figure 6.6: Everest CRM Studio - Application Events\(your company)\Events - Copy

Include Files on Copy operations
Select this option to enable transfer of files through FTP.

Include Reports on Copy operations
Select this option to enable transfer of reports through FTP.

> To allow for the files and/or reports to be attached to outgoing e-mails, faxes, and webcasts (but not allow them to be copied or sent by FTP), do not select the corresponding option.

Enabling the Copy Server

The Copy server must be enabled to process if you plan on using **CRM Studio** to copy or FTP files when an event is triggered.

To enable the copy server, do the following:

- From the main menu bar, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.
- From the tree view select **Activity > Server Status** under **Administration Folders**. You will see the **CRM Studio** servers and their respective status in the right panel.
- Double-click the Copy Server. You will see the **Everest CRM Studio - Server Status** dialog box.
- Select the **Allow Server to process** option and click **Save and Close**.

> - To disable any files or reports from being copied/sent by FTP, uncheck the **Allow Server to Process** option.
> - If you disable the copy server and trigger events that are configured to copy reports or files, **CRM Studio** will pile up the pending copy requests (which you can review in the **Everest CRM Studio Event Monitor**). These pending copy requests may subsequently be deleted, or (if you enable the copy server) they may copied to the appropriate locations at a later time.

Monitoring the Status of Copied Files

When an event triggers the copying of files and/or reports, you can use the **Everest CRM Studio Event Monitor** to track the status of the copying function.

In the **Everest CRM Studio Event Monitor** (path: **CRM > CRM Studio > Monitor**), select **File Delivery**. From here, you can track:

- Files whose status is Pending (via the copy method).
- Files that have been Sent successfully via the copy method.
- Files with Errors that are not delivered successfully via the copy method.

If any of your copied report and/or file deliveries have failed to complete successfully because of an error condition, you may attempt to correct the delivery, mark the delivery as complete, or manually delete the erroneous delivery.

CRM Studio will attempt to re-deliver an erroneous file delivery every minute.

Formatting Your Alert Message

The methods by which you design message text for alerts sent via e-mail, fax, pager, and webcast are almost identical, with only a few minor differences specific to each method.

The following sections will discuss how to create an alert message for each delivery method. Within each section you will see items that addresses the unique components of each of those methods.

As the process of designing an alert message is identical for all delivery methods, we will detail the specific steps that you need to take to format your message only in the E-mail section. Please be certain to read this section carefully, as it applies equally to the formatting of fax, pager, and webcast alert messages.

If you already have an idea of what the various alert messages should look like (using the worksheets from this and the previous chapter), you are ready to continue. If not, take a few minutes to write down the exact text and format of each alert message for each delivery method.

Sending E-mail

The most common method by which **CRM Studio** can send alert messages is electronic mail.

CRM Studio can send e-mail alerts to virtually every type of e-mail system (such as those that rely on Microsoft Exchange, SMTP, and Lotus Notes), and the outgoing alert messages can contain an unlimited amount of information about the triggered event.

Before you begin designing e-mail alert messages, however, you need to be sure that **CRM Studio** is enabled to send out alerts via electronic mail.

The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Email
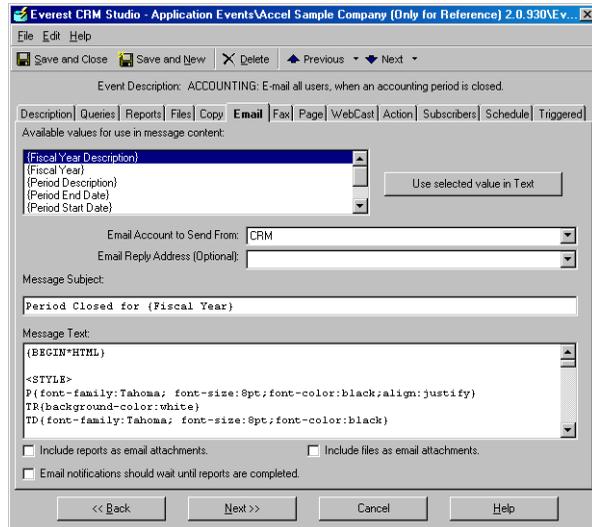
Figure 6.7: Everest CRM Studio - Application Events\(your company)\Events - Email

Available values for use in message content
This field displays the available fields from the queries that are linked to the event, and can be used in the **Message Subject** and **Message Text** fields.

Use selected value in Text
Click this button to use a highlighted value from the **Available values for use in message content** field, in the **Message Subject** and/or **Message Text** fields.

Email Account to Send From
Select the e-mail account to be used for sending mail from the drop-down list.

☞ **"E-Mail Sending Account" on page 195**

Email Reply Address (Optional)
Specify a reply address to use a different address from that defined in the **Email Account to Send From** field.

Message Subject
Specify the subject of the e-mail alert.

☞ **"E-Mail Subject Text" on page 195**

Message Text
Specify the text of the e-mail alert.

☞ **"E-Mail Message Text" on page 196**

Include reports as e-mail attachments
Specify whether the associated reports are to be attached to the outgoing e-mail message.

Include files as e-mail attachments
Specify whether the associated files are to be attached to the outgoing e-mail message.

E-mail notifications should wait until reports are completed
If an event has associated reports which are not attached to the outgoing e-mail, you can use this option to control the timing between the generation of reports and sending of e-mail.

☞ **"E-mail Message Handling Options" on page 201**

Enabling the E-Mail Server

The E-mail server must be enabled to process if you plan on using **CRM Studio** to send out alerts via e-mail when an event is triggered.

To enable the e-mail server, do the following:

- From the main menu bar, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.
- From the tree view select **Activity > Server Status** under **Administration Folders**. You will see the **CRM Studio** servers and their respective status in the right panel.
- Double-click the E-mail Server. You will see the **Everest CRM Studio - Server Status** dialog box.
- Select the **Allow Server to process** option and click **Save and Close**.
  - To disable any alerts from being sent via e-mail, uncheck the **Allow Server to Process** option.
  - If you disable the e-mail server and trigger events that are configured to send e-mail alerts, **CRM Studio** will pile up the pending e-mail alerts (which you can review in the **Everest CRM Studio Event Monitor**). These pending alerts may subsequently be deleted, or (if you enable the e-mail server) sent to the appropriate recipients at a later time.

E-Mail Sending Account

Before you can begin defining this text, you need to identify which e-mail account **CRM Studio** will send this e-mail message from.

☞ **"Set Up E-mail Account to send E-mails" on page 28**

CRM Studio will not be able to send alerts via e-mail unless you have correctly configured (and selected) an e-mail sending account. Select an account from the **E-Mail Account to Send From** drop-down list.

The next step is to specify the subject of your outgoing alert message.

E-Mail Subject Text

In the **Message Subject** field, specify the subject of the outgoing alert message. Using an event that is triggered by late orders as an example, you could enter 'Orders Shipped Later Than Required Date' as the message subject.

But you can also include data fields in the subject of an e-mail alert. For example,

you want your subject field to read as follows:

Order # {OrderID} Shipped Later Than Required Date

To specify the above message subject, do the following:

- Type 'Order #' in the **Message Subject** field.
- From the **Available values for use in message content** list, select the order ID field. Your message subject now reads: Order # {OrderID}.
- Enter the rest of the subject (Shipped Later Than Required Date).

Now consider an event with an e-mail subject such as the following:

Sales for Next Month < $100,000

The problem with a subject like this is that after a few months go by, you might have a few e-mail messages which all read:

- Sales for Next Month < $100,000
- Sales for Next Month < $100,000
- Sales for Next Month < $100,000

And to figure out exactly which next month each mail message is referring to would be a trying task.

The solution? Add a **CRM Studio** date substitution variable to the subject of your message and make it read as follows:

Sales for {%Next Month%} < $100,000

To specify the above message subject, do the following:

- Type 'Sales for' in the **Message Subject** field.
- From the **Available values for use in message content** list, scroll to the bottom and select %Next Month% from the date substitution variables. Your message subject now reads: Sales for {%Next Month%}
- Enter the rest of the subject (< $100,000).

You can use any combination of hard-coded text, field values, and date substitution variables in your e-mail subject.

E-Mail Message Text

In the **Message Text** field, specify the body text of an outgoing alert message. Since the text of an e-mail alert typically contains combination of hard-coded text and database field values, one approach for designing the text is to type all the

hard-coded text and then fill the database field values.

Example To send an alert message about orders that were shipped later than their required date, you can begin by typing the following in the **Message Text** field:

The following order was shipped later than the customer's required date:

Order ID:

Company:

Required Date:

Shipped Date:

Salesperson:

You could then do the following:

• Position your cursor next to the 'Order ID:' text, in the message body and leave a blank space.
• From the list of **Available values for use in message content,** select the {OrderID} field. Your text will now look like:
  'Order ID:' {OrderID}
• Repeat this process for the remaining data field values you wish to include in your message.

When you are finished, your completed message text will look like:

The following order was shipped later than the customer's required date:

Order ID: {OrderID}

Company: {CompanyName}

Required Date: {RequiredDate}

Shipped Date: {ShippedDate}

Salesperson: {FirstName} {LastName}

Text Formatting - Notes and Hints

Here are a few suggestions regarding the formatting of your message text:

• Do not try to line things up in a columnar format; the **CRM Studio** editor is not designed for that purpose. If you wish to receive the output in a columnar format, use an attached report to generate that output.
• Likewise, if you wish your e-mail to include sub-totals, totals, line and page breaks, headers, footers, etc., design this output using a Crystal Report and attach the report to the event.
• If you wish your e-mail message to include a blank line, be sure to enter that line in the message text.

- If you are placing multiple field values next to each other (as in the previous example of {FirstName}{LastName}, you might wish to separate them with a single blank character.
- In addition to selecting field values from the list of available values, you can also manually type them.
- You can include **CRM Studio** date substitution variables within the body of an alert message.

Sample Alert Messages

Here are a few sample alert messages that show a variety of information in e-mail message text:

Event: Customers; More than 2 Late Shipments Last Quarter

The following customer had more than 2 shipments arrive late last quarter:

Company: {CompanyName}

Number of Late Orders: {Late_Order_Count}

Event: Customers; Shipment Confirmations for Today

Dear {ContactName}:

This message is to confirm that the following order has been shipped to you today:

Order Number: {OrderID}

Order Date: {OrderDate}

Company: {CompanyName}

Total Amount: {Total}

Salesperson: {Salesrep_FirstName}{Salesrep_LastName}

Event: Customers; Frequent Buyer Incentives

The following customer has placed more than four orders of at least $5,000 over the last quarter and is eligible for our frequent buyer incentive program:

Company: {CompanyName}

Number of Matching Orders Over the Last Quarter: {Sales_Count}

Repeat Message Text

Consider the following alert message:

The following orders were shipped later than the customer's required date:

Order ID: {OrderID}

Company: {CompanyName}

Required Date: {RequiredDate}

Shipped Date: {ShippedDate}

Salesperson: {FirstName} {LastName}

If the corresponding event is triggered by multiple matching records, you need to ask yourself the following question:

What part of the alert message do I want to repeat for each matching record?

In reviewing the message text, it is fairly clear that you do not need to repeat the opening line of the message – The following orders were shipped later than the customer's required date – but you do need to repeat the following five lines for

each matching order.

To do this, you must specify the following:

The following order was shipped later than the customer's required date:

{BEGIN*REPEAT}

Order ID: {OrderID}

Company: {CompanyName}

Required Date: {RequiredDate}

Shipped Date: {ShippedDate}

Salesperson: {FirstName} {LastName}

{END*REPEAT}

To configure an event to use the repeat labels, do the following:

- In the **Message Text** field, position the cursor immediately before the text that you wish to repeat.

- From the **Available values for use in message content** field, select {BEGIN*REPEAT}.

  - {BEGIN*REPEAT} does not need to be on a line by itself; it may be on the same line as hard-coded text or a field value.
  - If {BEGIN*REPEAT} is on a line by itself, **CRM Studio** will insert a blank line before every repeated group of records.

- Position your cursor right after the end of text that you wish to repeat.

  - {END*REPEAT} does not need to be on a line by itself; it may be at the end of the same line as hard-coded text and/or a field value.
  - {END*REPEAT} is on a line by itself, **CRM Studio** will insert a blank line after every repeated group of records.

The configuration of a rolled-up alert message is now complete.

Begin and End Repeat - Notes

There are some important notes regarding the use of the begin repeat and end repeat functions:

- The {BEGIN*REPEAT} and {END*REPEAT} labels may appear only once in an event's message text.

- You can use the begin and end repeat functions for only one of an event's delivery methods.

  Example If you use this function in an event's e-mail message text, you cannot use it in the fax, page, or webcast text for the same event.

If you do wish to use this function in more than one delivery method, you must make multiple copies of the same event and configure each copy to send out an alert via a single method that uses the begin and end repeat function.

- If the {BEGIN*REPEAT} and {END*REPEAT} labels do not appear in an event that is configured to roll up messages, **CRM Studio** will not perform the roll-up function.

- Do not use the repeat function if an event is configured to send individual alert messages to different recipients, based on information in each triggered record.

  | Example | Do not use it in an event that will notify the account manager of each order that is shipped later than its required date.

The reason for this is that when the repeat function is turned on, **CRM Studio** processes the data from all triggered records in one unified group. This disables **CRM Studio**'s ability to evaluate each record independently and send out an alert to the recipient based on data in an individual triggered record.

> In an event that rolls up all the overdue activities for individual sales representatives and sends a single e-mail (with those activities) to each representative, use a Crystal report to generate the rolled-up activities, and then use **CRM Studio**'s event subscriber function to determine which sales representative each report must be sent to.

- {BEGIN*REPEAT} must always precede {END*REPEAT}.

Use HTML E-Mail Message Text

Although **CRM Studio**'s default e-mail editor assumes that you wish to send alerts using an ASCII-formatted message text, you may also choose to send your alert message in an HTML format.

Just like using the {BEGIN*REPEAT} and {END*REPEAT} labels, **CRM Studio** provides you with two labels that indicate where your HTML text begins and ends.

These labels are {BEGIN*HTML} and {END*HTML}, and you may select them in the list of "Available values for use in message content".

By embedding these tags within a mail message, you can define which part of an e-mail message should be sent as ASCII text, and which part should be sent as HTML.

It is important to remember that not all e-mail clients support HTML text. Hence, it is suggested that you define your message text to include both HTML and non-HTML text.

Thus you can create a single e-mail message that contains both HTML and non-HTML text as in the following example:

The following customer had more than 2 shipments arrive late last quarter:

Company: {CompanyName}

Number of Late Orders:{Late_Order_Count}

At the same time, you can follow this text with the same content, formatted in HTML, and placed between the {BEGIN*HTML} and {END*HTML} labels.

So your message text would appear as follows:

The following customer had more than 2 shipments arrive late last quarter:

Company: {CompanyName}

Number of Late Orders:{Late_Order_Count}

{BEGIN*HTML} *HTML content goes here* {END*HTML}

If the alert recipients' e-mail client does not support HTML, they will see only what is in the top section of this message, and the content of HTML section will

appear as an e-mail attachment.

Conversely, if the alert recipients' e-mail client does support HTML, they will not see the content of the top section and will see only what is between the {BEGIN*HTML} and {END*HTML} labels.

> You are limited to 30 kilobytes of data in the e-mail message text.

HTML Message Editing

To create your HTML text for a **CRM Studio** e-mail alert message, you need to use a standard HTML editing tool, such as FrontPage or Microsoft Word.

Using a tool such as these, type in your message text along with the names of any field values (such as {OrderID}) and date substitution values (such as {%Current Date%}) that you wish to embed within your message text. For a list of the values that you can embed within your HTML message text, refer to the **Available values for use in message content** field in the **Email** tab.

Once you have created your HTML message text, you must copy the HTML source code from the HTML editor you are using and paste it between the {BEGIN*HTML} and {END*HTML} labels in the e-mail message text.

> You may embed the {BEGIN*REPEAT} and {END*REPEAT} labels within your HTML text; be sure to include these labels in your source HTML text, and place each of these labels on a line by themselves.

E-mail Message Handling Options

At the bottom of the **E-Mail** tab are three check boxes that allow you to further control the content of an outgoing alert message.

Include Reports as E-Mail Attachments

If an event has one or more Crystal reports associated with it, check this option to specify whether the associated reports must be attached to the outgoing e-mail message.

Include Files as E-Mail Attachments

If an event has one or more files associated with it, check this option to specify whether the associated files must be attached to the outgoing e-mail message.

> There might be situations when you want to distribute one or more reports/files via an event, but you rather distribute them via the web or FTP. In such cases, you might just use the outgoing e-mail alert message to notify recipients of the webcast or FTP location that the reports/files were sent, without actually attaching them to the mail message.
>
> This is a very efficient way to distribute vast numbers of reports without dramatically impacting the load on your e-mail servers.

E-Mail Notifications Should Wait Until Reports Are Completed

If an event has associated reports which are not attached to the outgoing e-mail, you can control the timing between the report generation and sending of e-mails.

> If an event has associated reports that are attached to an e-mail alert, **CRM Studio** will automatically wait for the reports to successfully complete before the e-mail message is sent.

If the associated reports are not attached to the outgoing e-mail, delivery of e-mail

alert can depend on two things:

- The e-mail notification should wait until the reports are successfully generated before the e-mail is sent out (Option checked).
- The e-mail notification should NOT wait for the reports to successfully generate before the e-mail is sent out. (Option unchecked).

- If this option is not checked, the e-mail message will be sent immediately, and the recipient of the message may not be able to access the associated report(s) if it takes a while to generate.
  - If this option is checked and any of the associated report(s) fail to be completed successfully, the e-mail message will not be sent out.
  - If associated reports are attached to the message and the reports fail to complete successfully, the e-mail message will not be sent out.

Monitoring the Status of E-Mail Alerts

When an event triggers the sending of an e-mail alert, you can use the **Everest CRM Studio Event Monitor** to track the status of delivery of those alerts.

☞ **"Monitoring the Status of Events" on page 175**

In the **Everest CRM Studio Event Monitor** (path: **CRM > CRM Studio > Monitor**), select **Email Delivery**. From here, you can track:

- Mail messages whose status are Pending.
- Mail messages that have been Sent successfully.
- Mail messages with Errors that have failed to be delivered successfully.

If any of your e-mail alerts have failed to complete successfully because of an error condition, you may attempt to correct the message delivery, mark the delivery as complete, or manually delete the erroneous delivery.

☞ **"Message Delivery Errors" on page 90**
   "Taking a Corrective Action" on page 91

CRM Studio will attempt to re-deliver an erroneous e-mail message every minute.

Sending Faxes

The configuration of a fax alert message is almost identical to that of an e-mail message, and so the following sections will address only those aspects that are different from that of an e-mail message configuration.

No additional hardware or software is required to enable **CRM Studio**'s faxing technology; your server simply needs the ability to dial out via a modem.

Since you might have multiple accounts defined from which you can send fax alerts, the first step in configuring a fax alert message is to select which **CRM Studio** faxing account will be used for the sending this fax message.

CRM Studio will not be able to send alerts via fax unless you have correctly configured (and selected) a fax account.

The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Fax
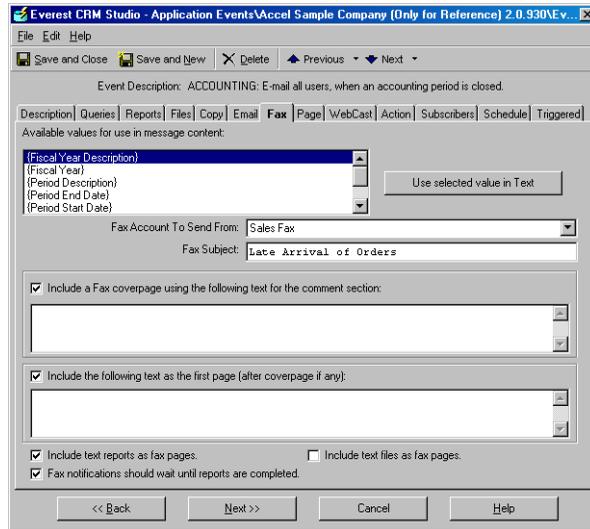
Figure 6.8: Everest CRM Studio - Application Events\(your company)\Events - Fax

Available values for use in message content
This field displays the available fields from the queries that are linked to the event, and can be used in the fax message content.

Use selected value in Text
Click this button to use a highlighted value from the **Available values for use in message content** field, in the **Message Text** fields.

Fax Account to Send From
Select the fax account to be used for sending faxes from the drop-down list.

Fax Subject
Specify the subject of the fax alert.

☞ **"E-Mail Subject Text" on page 195**

Include text reports as fax pages
Specify whether associated text-based reports must be included in the outgoing fax message.

Include text files as fax pages
Specify whether the associated text files must be included in the outgoing fax message.

Fax notification should wait until reports are completed
If an event has associated reports which are not attached to the outgoing fax, you can use this option to control the timing between the report generation and sending of fax.

Enabling the Fax Server

The Fax server must be enabled to process if you plan on using **CRM Studio** to send out alerts via fax when an event is triggered.

To enable the fax server, do the following:

- From the main menu bar, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.
- From the tree view select **Activity > Server Status** under **Administration Folders**. You will see the **CRM Studio** servers and their respective status in the right panel.
- Double-click the Fax Server. You will see the **Everest CRM Studio - Server Status** dialog box.
- Select the **Allow Server to process** option and click **Save and Close**.

  - To disable any alerts from being sent via fax, uncheck the **Allow Server to Process** field.
  - If you disable the fax server and trigger events that are configured to send fax alerts, **CRM Studio** will pile up the pending fax alerts (which you can review in the **Everest CRM Studio Event Monitor**). These pending alerts may subsequently be deleted, or (if you enable the fax server) they may be sent to the appropriate recipients at a later time.

Fax Cover Page, Subject and Message Text

When designing a fax alert message, you can choose to specify content for the fax's cover page, the fax subject field, and the body of your fax message.

Just as in the design of an e-mail alert message, you can include hard-coded text, database field values, and date substitution variables in the fax's cover page, subject field, and body text.

You can also use the {BEGIN*REPEAT} and {END*REPEAT} functions. Remember, however, that you cannot use the repeat function in the **Fax** tab of an event if you have already used it within any of the other delivery method tabs.

Fax Message Handling Options

At the bottom of the **Fax** tab there are three check boxes that allow you to further control the content of an outgoing alert message.

Include Text Reports as Fax Pages

If an event has one or more Crystal reports that are output to an ASCII format associated with it, check this option to specify whether the associated text-based reports must be included in the outgoing fax message.

Include Text Files as Fax Pages

If an event has one or more text files associated with it, check this option to

specify whether the associated files must be included in the outgoing fax message.

> There might be situations when you want to distribute one or more reports/files via an event, but you rather distribute them via the web or FTP. In such cases, you might just use the outgoing fax alert message to notify recipients of the webcast or FTP location that the reports/files were sent, without actually attaching them in the fax message.

Fax Notifications Should Wait Until Reports Are Completed

If an event has associated reports which are not included in the outgoing fax, you can control the timing between report generation and sending of fax.

> If an event has associated reports that are included in a fax alert, **CRM Studio** will automatically wait for the reports to successfully complete before the fax message is sent.

If the associated reports are not included in the outgoing fax, delivery of fax alert can depend on two things:

• The fax notification should wait until the reports are successfully generated before the fax alert is sent out (Option checked).

• The fax notification should not wait for the reports to successfully generate before being sent out (Option unchecked).

> • If this option is not checked, the fax message will be sent immediately, and the recipient of the message may not be able to access the associated report(s) if it takes a while to generate.
>
> • If this option is checked and any of the associated report(s) fail to be completed successfully, the fax message will not be sent out.
>
> • If associated reports are included in the fax message and the reports fail to complete successfully, the fax message will not be sent out.

Monitoring the Status of Fax Alerts

When an event triggers the sending of a fax alert, you can use the **Everest CRM Studio Event Monitor** to track the status of the delivery of those alerts.

In the **Everest CRM Studio Event Monitor** (path: **CRM > CRM Studio > Monitor**), select **Fax Delivery**. From here, you can track:

• Fax messages whose status are pending

• Fax messages that have been Sent successfully

• Fax messages with Errors that have failed to be delivered successfully

If any of your fax alerts have failed to complete successfully because of an error condition, you may attempt to correct the message delivery, mark the delivery as complete, or manually delete the erroneous delivery.

> **CRM Studio** will attempt to re-deliver an erroneous fax message every minute.

Sending Pager Messages

The configuration of a pager alert message is very similar to that of a fax message, with the definition of the pager message text being identical to that of an e-mail message.

☞ **"E-Mail Message Text" on page 196**

- No additional hardware or software is required to enable **CRM Studio**'s paging technology; your server simply needs the ability to dial via a modem.
- **CRM Studio**'s paging technology supports SMS (Short Messaging Service).

The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Page
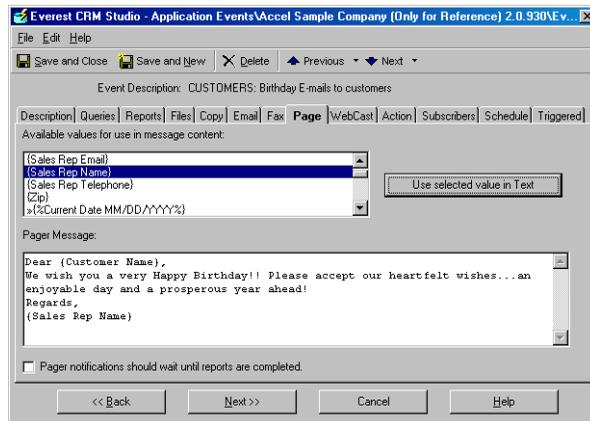
Figure 6.9: Everest CRM Studio - Application Events\(your company)\Events - Page

Available values for use in message content
This field displays the available fields from the queries that are linked to the event, and can be used in the **Pager Message** field.

Use selected value in Text
Click this button to use a selected value from the **Available values for use in message content** field, in the **Pager Message** field.

Pager Message
Specify the content of the pager alert/message.

Pager notification should wait until reports are completed
If an event has associated reports which are not attached to the outgoing pager message, you can use this option to control the timing between the report generation and sending of pager message.

Enabling the Page Server

The Page server must be enabled to process if you plan on using **CRM Studio** to

send out alerts via pager when an event is triggered.

To enable the page server, do the following:

- From the main menu bar, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.
- From the tree view select **Activity > Server Status** under **Administration Folders**. You will see the **CRM Studio** servers and their respective status in the right panel.
- Double-click the Page Server. You will see the **Everest CRM Studio - Server Status** dialog box.
- Select the **Allow Server to process** option and click **Save and Close**.

> - To disable any alerts from being sent via pager, uncheck the **Allow Server to Process** field.
> - If you disable the page server and trigger events that are configured to send pager alerts, **CRM Studio** will pile up the pending pager alerts (which you can review in the **Everest CRM Studio Event Monitor**). These pending alerts may subsequently be deleted, or (if you enable the page server) sent to the appropriate recipients at a later time.

Pager Message Text

When designing the content of a pager alert message, you can place as much or as little text as you wish in the body of your pager message.

Just as in the design of an e-mail alert message, you can include hard-coded text, database field values, and date substitution variables in the pager message text.

> You can also use the {BEGIN*REPEAT} and {END*REPEAT} functions. Remember, however, that you cannot use the repeat function in the **Page** tab of an event if you have already used it in any of the other delivery method tabs.

Pager Message Handling Options

At the bottom of the **Page** tab there is one check box that allows you to further control the content of an outgoing alert message.

Pager Notifications Should Wait Until Reports Are Completed

If an event that is sending a pager alert has associated reports, you can control the timing between the report generation and sending of pager message.

There are two things that the delivery of pager message depends on:

- The pager notification should wait until the reports are successfully generated before the pager alert is sent out (Option checked).

- The pager notification should NOT wait for the reports to successfully generate before being sent out (Option unchecked).

  - If this option is not checked, the pager message is sent immediately, and the recipient of the message may not be able to access the associated report(s) if it takes awhile to generate.
  - If this option is checked and any of the associated report(s) fail to be completed successfully, the pager message will not be sent out.

Monitoring the Status of Pager Alerts

When an event triggers the sending of a pager alert, you can use the **Everest CRM Studio Event Monitor** to track the status of delivery of those alerts.

"Monitoring the Status of Events" on page 175

In the **Everest CRM Studio Event Monitor** (path: **CRM > CRM Studio > Monitor**), select **Pager Delivery**. From here, you can track:

- Pager messages whose status are Pending
- Pager messages that have been Sent successfully
- Pager messages with Errors that have failed to be delivered successfully

If any of your pager alerts have failed to complete successfully because of an error condition, you may attempt to correct the message delivery, mark the delivery as complete, or manually delete the erroneous delivery.

"Message Delivery Errors" on page 90

"Taking a Corrective Action" on page 91

CRM Studio will attempt to re-deliver an erroneous pager message every minute.

Webcasting

CRM Studio's webcasting module requires a few additional steps for initial configuration.

The configuration of a webcast alert message is almost identical to that of an e-mail message, and so the following sections will address only those aspects of webcast alert message configuration that are different from e-mail message configuration.

"E-Mail Subject Text" on page 195

"E-Mail Message Text" on page 196

No additional hardware or software is required for the webcasting technology.

The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Webcast
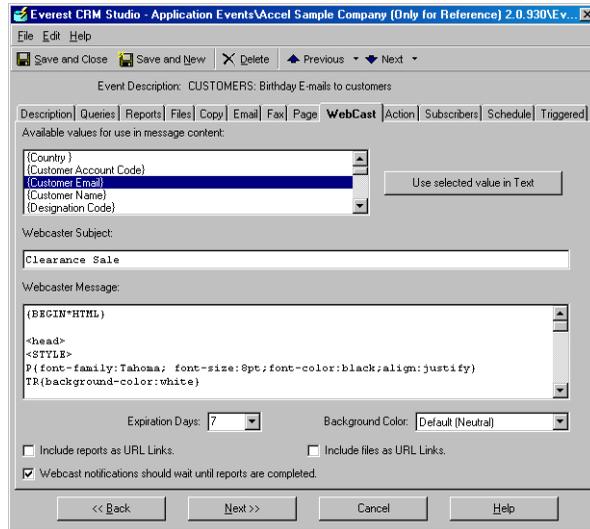
Figure 6.10: Everest CRM Studio - Application Events\(your company)\Events - Webcast

Available values for use in message content

This field displays the available fields from the queries that are linked to the event, and can be used in the **Webcaster Subject** and **Webcaster Message** fields.

Use selected value in Text

Click this button to use a highlighted value from the **Available values for use in message content** field, in the **Webcaster Subject** and/or **Webcaster Message** fields.

Webcaster Subject

Specify the subject of the webcast.

Webcaster Message
Specify the content of the webcast.

Expiration Days
Specify the number of days that the alert message for a triggered event should remain on the webcast window.

Background Color
The subject of a triggered event alert message can appear in one of four colors to indicate the nature (or criticality) of the event. Your choices are:

- Default (Indicative of an event that is neither good nor bad)
- Green (Indicative of an event that conveys good news)
- Yellow (Indicative of an event that conveys a warning)
- Red (Indicative of an event that conveys bad news)

Include reports as URL Links

Specify whether the associated reports must be attached to the webcast alert window via a URL link icon.

Include files as URL Links

Specify whether the associated files must be attached to the webcast alert window via a URL link icon.

Webcast notifications should wait until reports are completed

If an event has associated reports which are not linked to the corresponding webcast window, use this option to control the timing between the report generation and the publishing of webcast.

Sample Webcast Output

Since webcasting is a message delivery method that is unique to **CRM Studio**, you may find it helpful to see what a sample webcast output window looks like.

The following illustration is of a webcast screen.
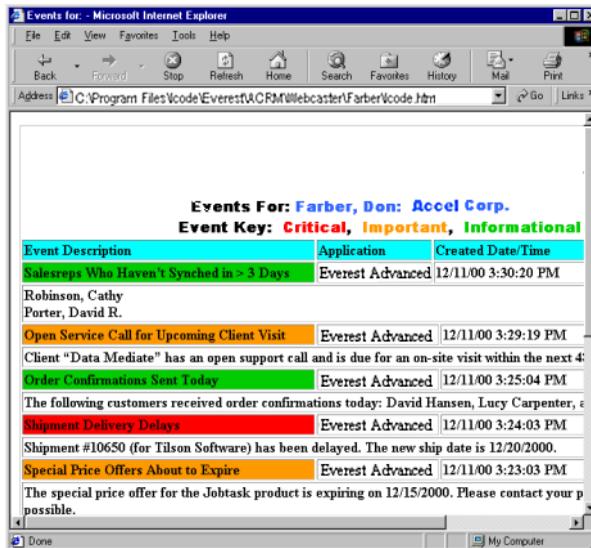
Figure 6.11: Sample Webcast Screen

The template for this window can be customized, so you can include your organization's logos, graphics, etc.

Each triggered event shows up as a separate line item in this window, and displays a brief description (or subject) as well as a detailed description of the event that was triggered.

Enabling the Webcast Server

The Webcast server must be enabled to process if you plan on using **CRM Studio** to send out alerts via webcast when an event is triggered.

To enable the webcast server, do the following:

- From the main menu bar, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.
- From the tree view select **Activity > Server Status** under **Administration Folders**. You will see the **CRM Studio** servers and their respective status in the right panel.
- Double-click the Webcast Server. You will see the **Everest CRM Studio - Server Status** dialog box.
- Select the **Allow Server to process** option and click **Save and Close**.

  - To disable any alerts from being sent via webcast, uncheck the **Allow Server to Process** field.
  - If you disable the webcast server and trigger events that are configured to send webcast alerts, **CRM Studio** will pile up the pending webcast alerts (which you can review in the **Everest CRM Studio Event Monitor**). These pending alerts may subsequently be deleted, or (if you enable the webcast server) sent to the appropriate recipients at a later time.

Webcast Subject and Message Text

When designing a webcast alert message, you can choose to specify content for the webcast subject field and for the body of your webcast message.

Do keep in mind that unlike an e-mail message, multiple webcast alert messages appear in a single browser window; thus, it is suggested that you keep the amount of webcast message text for a single event to a few lines (typically less than four), so that you can easily review all the triggered events on a single webcast window without excessive scrolling.

Just as in the design of an e-mail alert message, you can include hard-coded text, database field values, and date substitution variables in the webcast's subject field and body text.

You can also use the {BEGIN*REPEAT} and {END*REPEAT} functions. Remember, however, that you cannot use the repeat function in the **Webcast** tab of an event if you have already used it in any of the other delivery method tabs.

Webcast Message Handling Options

At the bottom of the **Webcast** tab there are five options that allow you to further control the content of an outgoing alert message.

Expiration Days

This number represents the number of days that the alert message for a triggered event should remain on the webcast window. The maximum number of days is '9' and the minimum is end of today as indicated by the value '0'.

Background Color

The subject of a triggered event alert message may appear in one of four colors to indicate the nature (or criticality) of the event. Your choices are:

- Default (Indicative of an event that is neither good nor bad)

- Green (Indicative of an event that conveys good news)
- Yellow (Indicative of an event that conveys a warning)
- Red (Indicative of an event that conveys bad news)

Include Reports as URL Links

If an event has one or more Crystal reports associated with it, check this option to specify whether the associated reports must be attached to the webcast alert window via a URL link icon.

Include Files as URL Links

If an event has one or more files associated with it, check this option to specify whether the associated files must be attached to the webcast alert window via a URL link icon.

> **CRM Studio**'s webcast message delivery option is an excellent way to distribute reports and files to a large number of people, as they can all visit one webcast page and retrieve the desired reports.

Webcast Notifications Should Wait Until Reports are Completed

If an event has associated reports which are not linked to the corresponding webcast window, you can control the timing between the report generation and the publishing of webcast.

> If an event has associated reports that are linked to the webcast alert, **CRM Studio** will automatically wait for the reports to successfully complete before the webcast message is posted.

If the associated reports are not included to the webcast message, the appearance of the webcast alert can depend on two things:

- The webcast notification should wait until the reports are successfully generated before being published (Option checked).
- The webcast notification should not wait for the reports to successfully generate before being published (Option unchecked).

> - If this option is not checked, the webcast message is sent immediately, and the recipient of the message may not be able to access the associated report(s) if it takes a while to generate.
> - If this option is checked and any of the associated report(s) fail to be completed successfully, the webcast message will not be posted.
> - If associated reports are linked to the webcast message and the reports fail to complete successfully, the webcast message will not be posted.

Monitoring the Status of Webcast Alerts

When an event triggers the sending of a webcast alert, you can use the **Everest CRM Studio Event Monitor** to track the status of the delivery of those alerts.

In the **Everest CRM Studio Event Monitor** (path: **CRM > CRM Studio > Monitor**), select **Webcast Delivery**. From here, you can track:

- Webcast messages whose status are Pending.
- Webcast messages that have been Sent successfully.

- Webcast messages with Errors that have failed to be delivered successfully.

If any of your webcast alerts have failed to complete successfully because of an error condition, you may attempt to correct the message delivery, mark the delivery as complete, or manually delete the erroneous delivery.

"Message Delivery Errors" on page 90

"Taking a Corrective Action" on page 91

CRM Studio will attempt to re-deliver an erroneous webcast message every minute.

Response Actions

The **Action** tab allows you to respond to a triggered event and take any one (or a combination) of a variety of actions. These actions may include updating a company database as a result of (and with information from) a triggered event.

Different databases have different requirements with respect to the means of upgradation. Exercise extreme caution in using any of these functions to update a database. Be certain that you are familiar with the database(s) you are updating, and make sure that actions you are executing are approved and supported by the databases you are integrating with.

It is suggested that you configure the **User Access** tab settings in the **Everest CRM Studio - Logins** dialog box (path: **CRM > CRM Studio > Administrator > User Access > Logins**) to disable the **Action** tab for any users who do not have the knowledge and permission to utilize such functions.

Enabling the Action Server

The Action server must be enabled to process if you plan on using any of the action functions.

To enable the action server, do the following:

- From the main menu bar, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.
- From the tree view select **Activity > Server Status** under **Administration Folders**. You will see the **CRM Studio** servers and their respective status in the right panel.
- Double-click the Action Server. You will see the **Everest CRM Studio - Server Status** dialog box.
- Select the **Allow Server to process** option and click **Save and Close**.

To disable any actions from being executed, uncheck the **Allow Server to Process** field.

The Five Types of Actions

When an event is triggered, **CRM Studio** may execute any one or any combination of the following five types of actions:

- Create a file that contains content from a triggered event.

- Submit one or more SQL (structured query language) statements that add, update, or delete records from one or more underlying database(s).
- Run an executable program.
- Run a VB (Visual Basic) script.

All these actions may incorporate data from the corresponding triggered event.

The Order of Action Execution

The order in which **CRM Studio** actions will be executed is as follows:

- File creations
- SQL statements
- Programs
- VB scripts

Monitoring the Status of Actions

When an action is triggered by an event, you can use the **Everest CRM Studio Event Monitor** to track its status.

In the **Everest CRM Studio Event Monitor** (path: **CRM > CRM Studio > Monitor**), select **Actions Taken**. From here, you can track:

- Actions whose status are Pending
- Action that are Completed successfully
- Actions with Errors that have failed to complete successfully

If any of your actions have failed to complete successfully because of an error condition, you may mark the action as complete, or manually delete it.

CRM Studio will attempt to execute the erroneous action every minute.

Create a File Containing Event Data

The first type of action that **CRM Studio** can execute is to take information from a triggered event and write it into a file. You can use this action for the following:

- To create one or more files of data that will be imported into another company (such as files with today's invoices).
- To create log files of triggered event data.
- To create a file that will be sent (e.g., e-mailed) to a business partner or mailing house for future processing.

Similar to designing an event's alert message, the file that you create can contain hard-coded text, database field values (triggered event data), and even **CRM Studio** date substitution variables.

Before you can create the format of a file that will contain triggered event data, you need to fill in the following fields:

File Specification

Enter the location and name of the file you wish **CRM Studio** to create.

A file name may:

- Be hard-coded (e.g., orders.txt)
- Include field values (e.g., {OrderID}.dat)
- Include date substitution variables (e.g., orders_{%Current_Date%})

Append content to file specification, if it already exists

Select this check box to indicate **CRM Studio** to append content to the above specified file, if it already exists on disk.

Overwrite file specification, if it already exists

Select this check box to indicate **CRM Studio** to overwrite the above specified file, if it already exists.

Once you have responded to these fields, you are ready to begin formatting the file containing triggered event data.

To format the file that will contain triggered event data, do the following:

- After specifying relevant information in the **Webcast** tab of the **Everest CRM Studio - Application Events\(your company)\Events** dialog box, click **Next**. You will see the **Everest CRM Studio - Application Events\(your company)\Events - Action** tab - **Create File** tab.

- Place the cursor in the first row first column of the **Contents of the File that will be Created** field.

- If the file begins with hard-coded text (such as OrderID), enter that text directly into the file formatting box.

- If the file begins with a database field value or with a date substitution variable, select the appropriate value from the list of **Available values for use as file content**.

- You can continue to add hard-coded text, field values, and date substitution variables until your file format is complete.

The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Action - Create File
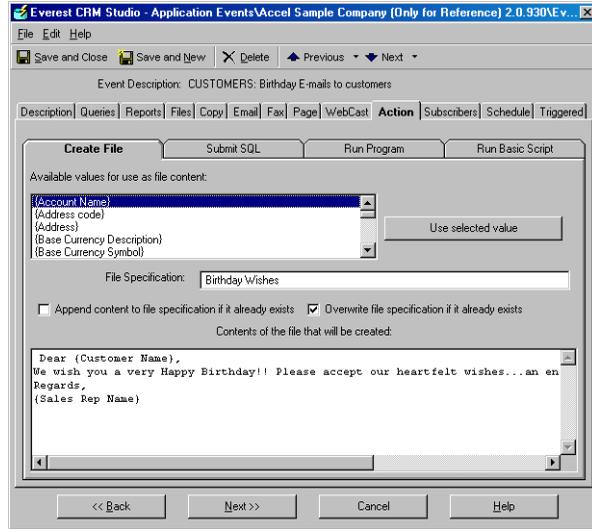
Figure 6.12: Everest CRM Studio - Application Events\(your company)\Events - Action - Create File

Available values for use as file content
This field displays the available fields from the queries that are linked to the event, and can be used in the **File Specification** and **Contents of the file that will be created** fields.

Use selected value
Click this button to use a highlighted value from the **Available values for use in file content** field, in the **Contents of the file that will be created** field.

File Specification
Enter the location and name of the file.

Append content to file specification if it already exists
Select this option to append the contents to the above mentioned file if it already exists on disk.

Overwrite file specification if it already exists
Select this option to overwrite the file, even if it already exists.

Contents of the file that will be created
Specify the file's content.

File Creation - Notes

- You can use the {BEGIN*REPEAT} and {END*REPEAT} labels in your file. This will allow you to create a file that contains multiple records from a single triggered event.

  You can use the repeat function in the creation of a file only if it is not being used in any of the corresponding alert messages.

- You can create a comma separated file by manually entering a comma after each selected database field value.
- You can create a tab-delimited file by pressing the CTRL+Tab key after each selected database field value.

Execute a SQL Statement

Issuing SQL statements against a database can be extremely dangerous if they are not correctly formatted. Please verify the syntax of your SQL statement before submitting it against a live database.

Many databases depend on data synchronization to update both local and remote users. It is not advisable for an organization to use SQL statements to update such a database, as it may disrupt the synchronization process.

Depending on the type of databases you are working with, the ability to issue SQL statements as the result of a triggered event can be one of the quickest and easiest ways to add or update a company database. SQL statements can be used to perform such actions as:

- To add order records to a financial database when an opportunity is closed in a sales database.
- To update a record in one database when the corresponding record is changed in another database.

It is very important to understand that the SQL statement(s) that you specify in this option will be executed once for every triggered record in the event.

Example If an event runs and is triggered by 10 orders that were shipped later than their required date, each SQL statement that is associated with this event will be executed 10 times – once for each triggered record.

A single event may trigger the execution of one or multiple SQL statements. These statements may perform actions against the database in which the triggered event occurred, and/or against any other SQL-compliant databases.

All standard SQL commands (such as insert, update and delete) are supported in the **Submit SQL** tab.

The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Action - Submit SQL
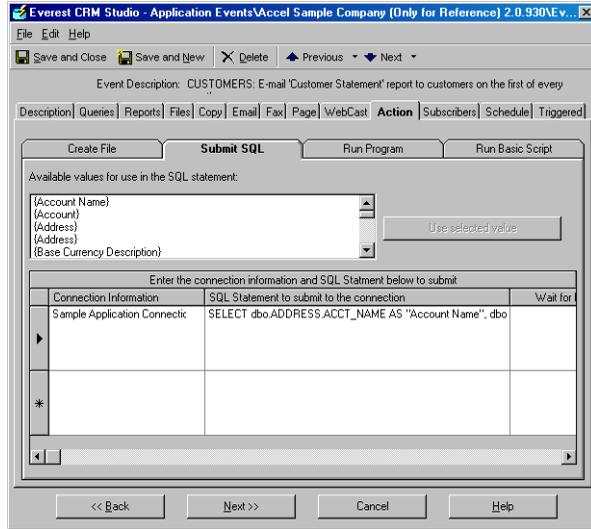
Figure 6.13: Everest CRM Studio - Application Events\(your company)\Events - Action - Submit SQL

Available values for use in the SQL Statement
This field displays the available fields from the queries that are linked to the event, and can be used in the **SQL Statement to submit to the connection** field.

Use selected value

Click this button to use a highlighted value from the **Available values for use in the SQL Statement** field, in the **SQL Statement to submit to the connection** field.

Enter the connection information and SQL Statement below to submit

Connection Information

Click this field and select a database to connect to, using the [...] button.

SQL Statement to submit to the connection
Specify the SQL statement to submit.

Wait for Reports to Complete
Specify if the SQL statement should be executed after or before the report generation.

SQL 'Where' Clause

It is important to note that the SQL statements that **CRM Studio** executes from the **Action** tab have no implied 'where' clause.

Thus, even though an event's query(ies) may restrict the records that are retrieved to a specific set, the conditions that the query(ies) have applied are not automatically applied to the SQL statements that are executed.

Therefore, to make sure that your SQL statement(s) act on the same record (or

records) that an event's query(ies) retrieves, you must include a 'where' clause in your SQL that identifies precisely which records will be affected.

Specifying the SQL ODBC Connection

The first step in defining a SQL statement that will be executed when an event is triggered is the specification of the ODBC connection that will be used when this statement is executed.

☞ **"Connect CRM Studio to the ASC Database" on page 22**

If you wish to use a SQL statement to update a database that is not currently defined within **CRM Studio**, you can configure a connection record for that database directly from the **Submit SQL** tab.

To select a CRM Studio ODBC connection record that is already defined, do the following:

- Click the **Connection Information** column and click the list ⋯ button that is displayed. You will see the **Everest CRM Studio - Select the Application Connection** dialog box.

- Click the **Please select the connection information for submitting SQL** drop-down list to display the existing connections.

- Choose the appropriate connection and click **OK**.

To create a CRM Studio ODBC connection, do the following:

- Click the **Connection Information** column and click the list ⋯ button that is displayed. You will see the **Everest CRM Studio - Select the Application Connection** dialog box.

- Click the **New Connection** button. You will see the **Everest CRM Studio - Edit Connection** dialog box.

☞ **"The Everest CRM Studio - Edit Connection Dialog Box" on page 27**

- Enter the relevant information required to set up an ODBC source for the execution of the SQL statement.

- Click **Save and Close**. You will again see the **Everest CRM Studio - Select the Application Connection** dialog box.

- Click **OK**.

> If you add to or change the definition of an ODBC source while you are in the **Everest CRM Studio Architect**, you will have to exit the **Studio Architect** and re-enter for it to recognize the new or modified ODBC sources.

Entering the SQL Syntax

Once you have specified the ODBC connection that you will be using, you are ready to enter the syntax of the SQL statement. Here are some guidelines regarding the creation of SQL statements:

- You can use any of the data fields from the triggered event.

- You can use any of **CRM Studio**'s date substitution variables.

- Do not forget to include a 'where' clause at the end of the SQL statement so that **CRM Studio** knows exactly which records to act on.
- You cannot use {BEGIN*REPEAT} or {END*REPEAT} in a SQL statement.
- Keep in mind that a SQL statement will execute once for each record that is triggered by an event.

Delaying SQL Execution Until Reports Are Complete

The last item you need to specify when configuring SQL statement actions pertains to whether the corresponding event has any Crystal reports associated with it.

If the corresponding event has no associated reports, you may leave the **Wait for Reports to Complete** check box blank, in the **Enter the connection information and SQL Statement below to submit** section of the **Submit SQL** tab.

If the corresponding event does have associated reports, you may wait for the reports to be generated before the execution of SQL statement, by checking the above option.

Example   You may wish to run a report on triggered event data, and then modify that data using your SQL statement.

If this field is left blank, the SQL will be executed immediately.

If this option is checked and any of the associated report(s) fail to be completed successfully, the corresponding SQL statement will not be executed.

Run a Program

The third action that **CRM Studio** can perform as a result of a triggered event is to run one or more executable programs. These programs, like SQL statement or VB script, are executed once for each triggered record in an event. By executing a program as a result of a triggered event, you can:

- Use the program to add or update data in an underlying database.
- Call an external company and pass the appropriate data to its database.
- Call an external utility (such as a synthesized voice unit) and pass the triggered event data it.

The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Action - Run Program
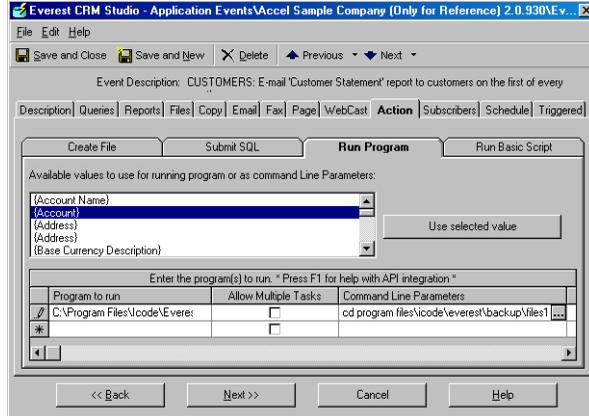
Figure 6.14: Everest CRM Studio - Application Events\(your company)\Events - Action - Run Program

Available values to use for running program or as command line parameters
This field displays the available fields from the queries that are linked to the event, and can be used in the **Command Line Parameters** field.

Use selected value

Click this button to use a highlighted value from the **Available values to use for running program or as command line parameters** field, in the **Command Line Parameters** field.

<u>Enter the program(s) to run</u>

Program to run
Select the program to be executed.

☞ **"Selecting a Program to Run" on page 222**

Allow Multiple Tasks
Check this option to allow multiple copies of this task to run simultaneously. If this option is not checked, then the server will allow only a single copy of this task to run at one time.

☞ **"Allow Multiple Tasks" on page 222**

Command Line Parameters
Specify the command line parameters to run the selected program.

☞ **"Command Line Parameters" on page 222**

Wait for Reports to Complete
Specify if the program should be executed after or before the report generation.

Selecting a Program to Run

To choose a program that CRM Studio should run when the corresponding event is triggered, do the following:

- From the **Enter the program(s) to run** grid, click the **Program to Run** field and

  click the list ⬚ button that is displayed. You will see the **Everest CRM Studio - Program to Run** dialog box from which you can select the program you wish **CRM Studio** to execute.

  CRM Studio can run multiple programs in response to the triggering of a single event.

Allow Multiple Tasks

The **Allow Multiple Tasks** option allows you to run multiple copies of this task to run simultaneously. If this option is not checked, then the server will allow only a single copy of this task to run at one time.

This option should never be checked if there is a possibility of many external programs running at the same time. The primary concern here is system performance.

Example You have an event that is triggered by closed sales and you have an action that ran a program for each of those sales.

If the **Allow Multiple Tasks** option is enabled and the event is triggered by the presence of 10 matching sales, you will have 10 copies of the same program running in your system's memory at the same time, thus, decreasing your server's performance.

If, however, you have an event that will never return more than a couple of triggered records, and the program that you wish to run is relatively lightweight, you may choose to allow multiple instances of that program to run at the same time.

We recommend that you do not allow multiple tasks.

Command Line Parameters

The manner in which data from a triggered event can be passed to an executable program is via command line parameters.

All the fields of data from a triggered event, plus all of **CRM Studio**'s date substitution variables, are available for use as command line parameters.

To add (or edit) command line parameters, do the following:

- From the **Enter the program(s) to run** grid, click the **Command Line**

  Parameters field and click the list ⬚ button that is displayed. You will see the **Action - Edit Command Line Parameters** dialog box.
- Enter or modify the parameters, based on your requirements.
- Click **OK**.

Delaying Program Execution Until Reports Are Complete

The last item you need to specify when configuring executable program actions pertains to whether the corresponding event has any Crystal reports associated

with it.

If the corresponding event has no associated reports, you may leave the **Wait for Reports to Complete** check box blank, in the **Enter the program(s) to run** grid of the **Run Program** tab.

If the corresponding event does have associated reports, you may wait for the reports to be generated before the execution of SQL statement, by checking the above option.

Example You may wish to run a report on triggered event data, and then modify that data using the selected program.

If you want the selected program to wait for the report generation, check the **Wait for Reports to Complete** option. If you wish to execute the program immediately, leave this field blank.

If this option is checked and any of the associated report(s) fail to be completed successfully, the corresponding program will not be executed.

Program Execution - Notes

It is suggested that you run program(s) that do not need any user intervention to complete.

If you are running **CRM Studio** under Windows NT or 2000 and want an event to run a program that requires desktop interaction, you must modify the **Everest CRM Studio** service to meet your requirements.

To modify the Everest CRM Studio service to run a program that requires desktop interaction, do the following:

- From the **Control Panel**, select **Administrative Tools > Services.**
- From the Services console, right-click **Everest CRM Studio** and select **Properties**. You will see the **Everest CRM Studio Properties** dialog box.
- From the **Log On** tab, select the option **Allow service to interact with desktop** and Click **OK**.

Run a VB Script

Of all **CRM Studio** actions, the most powerful (and most-often used for updating databases) is the ability to execute Visual Basic (VB) scripts as the result of a triggered event.

VB scripts in **CRM Studio** are similar (in concept) to programs in that the scripts can use any data from a triggered event in the script's execution.

Due to its sophistication, **CRM Studio**'s VB Scripting Module requires its own option where you can configure and test the scripts that you would execute from a triggered event.

Please refer to the chapter '**Visual Basic Scripting'** for complete details on how to configure these scripts.

The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Action - Run Basic Script
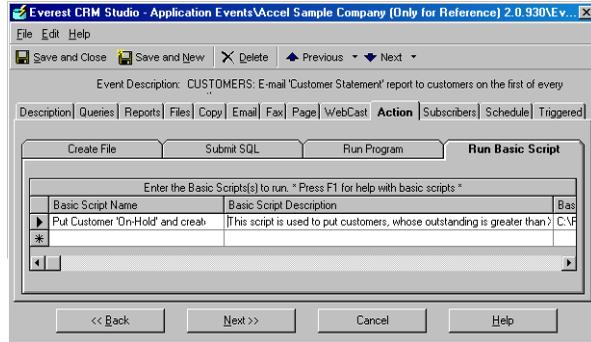
Figure 6.15: Everest CRM Studio - Application Events\(your company)\Events - Action - Run Basic Script

Link a Script to the Event

Once your scripts are defined you can link one or more of those scripts to a **CRM Studio** event.

To link a script to an event, do the following:

- From the **Enter the Basic Script(s) to run** grid, click the **Basic Script Name**

  field and then the list ![button] button that is displayed. You will see the **Everest CRM Studio - Select Basic Script** dialog box, displaying all the scripts that are currently available for use as a response to a triggered event.

- Highlight the script you wish to use and click **Select**. The script gets added to the **Enter the Basic Script(s) to run** grid.

  CRM Studio supports both front-end scripts (those that are used instead of a query) and back-end scripts (those that are used as an action in response to a triggered event). The list that you see includes only front-end scripts.

- Once selected, **CRM Studio** displays the name and file specification of the selected script.

- Repeat these steps for each script you wish to associate with an event.

  Like SQL statements and executable programs, a **CRM Studio** script will be submitted once for each record that is retrieved by a triggered event.

VB Script - Notes

It is suggested that you run script(s) that do not need any user intervention to complete.

If you are running **CRM Studio** under Windows NT or 2000 and want an event to run a script that requires desktop interaction, you must modify the **Everest CRM Studio** service to meet your requirements. Refer to for this procedure.

The **CRM Studio** Action Server will be held in a waiting state until the required interaction with the desktop is complete.

Add Subscribers

The **Subscribers** tab allows you to specify who will receive alerts about a triggered event and via what means (e-mail, fax, pager, copy, or webcast). The **Subscribers** tab comprises two tabs:

- Standard (which is the default)
- Advanced

Standard Subscribers

Before you select subscribers for an event, you must define them within the **CRM Studio** database.

There are four types of standard subscribers:

- Individuals
- Groups of people
- Individual computers
- Groups of computers

People can be notified via e-mail, fax, copy/ftp, pager, and webcast.

Computers can be notified via copy/ftp only.

Copy/ftp notifications refer to **CRM Studio**'s ability to copy (or ftp) reports and/or files that are associated with a triggered event.

Adding a Standard Subscriber

To add a standard subscriber, do the following:

- From the **Everest CRM Studio - Application Events\(your company)\Events - Subscribers - Standard** tab, click the **Add Subscriber** button. You will see the **Everest CRM Studio - Add Subscriber** dialog box.

- If you wish to send alerts to all the members of a specific group, select the check box to the left of the group's name.

If you select a group, all the members of the group will be notified via the same delivery method.

- If you wish to send alerts to specific subscribers, expand the group to which that subscriber belongs, and locate the subscriber's name. Select the check box to the left of the subscriber's name.

- Repeat this process for each group or subscriber you wish to notify.

  - A single event can notify any combination of groups and individual subscribers.
  - If **CRM Studio** is configured to perform subscriber linking, you may have to wait a few seconds to display the members of a linked group, as **CRM Studio** must dynamically retrieve this information from an external database.

- When you have selected the required subscribers, click the **Add Subscriber** button in the **Everest CRM Studio - Add Subscriber** dialog box. You will see the **Everest CRM Studio - Application Events\(your company)\Events - Subscribers - Standard** tab again.

The selected users are displayed in the **Users Targeted For Delivery** grid and computers in the **Computers Targeted For Delivery** grid.

Choosing a Subscriber's Delivery Methods

Once you select your subscribers, choose the method(s) by which each subscriber will be alerted about the corresponding event.

By default, E-mail is selected as the only alert message delivery method for each subscriber. You can retain (or remove) this method, and you can add any of the other four methods for each subscriber.

Computers may be notified only via the copy/ftp method.

Be careful to select only those delivery methods that have alert message text associated with them. Also, be sure that the selected subscribers have a valid delivery address for the methods chosen for them.

Removing an Event's Subscribers

To remove a subscriber from an event, do the following:

- From the **Users Targeted for Delivery** (or **Computers Targeted for Delivery**) grid in the **Everest CRM Studio - Application Events\(your company)\Events - Subscribers** tab - **Standard** tab, select the row you wish to remove by clicking on the row header.
- Click the **Remove Subscriber** button.

You can also click the button **Remove All Subscriber**s to delete all the subscribers that have been selected for this event.

The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Subscribers - Standard

This tab is used by an event to notify a pre-defined group of subscribers, such as John Smith, Mary Reynolds, and Pat Crowley.
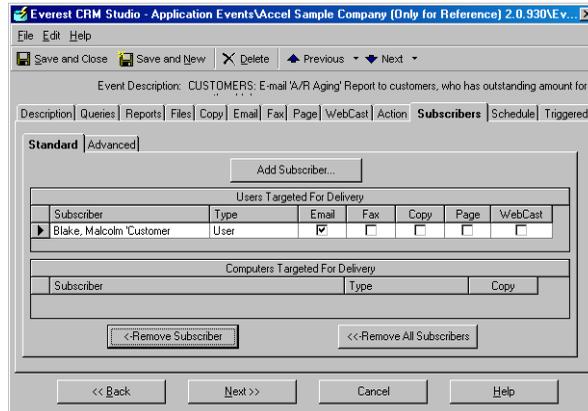
Figure 6.16: Everest CRM Studio - Application Events\(your company)\Events - Subscribers - Standard

Add Subscribers

Click this button to display the **Everest CRM Studio - Add Subscribers** dialog box, which allows you to add users to the **Users Targeted For Delivery** grid, and computers to the **Computers Targeted For Delivery** grid.

☞ **"The Everest CRM Studio - Add Subscriber Dialog Box" on page 67**

Users Targeted For Delivery

This grid displays the selected subscribers (users) and the alert modes they are subscribed to.

Computers Targeted For Delivery

This grid displays the selected subscribers (computers) and whether they are eligible to receive files by the Copy (FTP) mode.

Remove Subscriber

Click this button to remove a selected user from the **Users Targeted For Delivery** grid, or a selected computer from the **Computers Targeted For Delivery** grid.

Remove All Subscribers

Click this button to remove all users from the **Users Targeted For Delivery** grid, or all computers from the **Computers Targeted For Delivery** grid.

A single event may send alerts to a combination of standard and advanced subscribers.

Advanced Subscribers

Advanced subscribers are divided into two groups:

• Subscribers who are identified through the presence of a unique database value within a triggered record.

• Subscribers whose address is contained in a field within a triggered record.

Delivering to Subscribers Using a Database Lookup Value

Consider the following scenario:

You have a customer support database that tracks calls assigned to various

support representatives. Each support representative is identified by a unique ID as well as a non-unique group code (such as the Frontline group).

The support database does not store the corresponding representative's e-mail and other notification addresses anywhere in the database.

When a support call meets a condition that warrants an alert to the corresponding support representative, you need the following to occur:

- **CRM Studio** looks at the triggered record and finds the corresponding representative's ID and group name.
- **CRM Studio** looks up the matching subscriber record (based on the representative's ID) and the matching subscriber's group (based on the representative's group name) in the subscriber database.
- **CRM Studio** alerts the corresponding support representative and/or group.

If the database(s) that an event is linked to requires this look-up ability, you can specify the fields (in each triggered event record) that contain the subscriber's ID and their group name in the **Deliver to user or group in subscriber folder using database lookup value** grid.

> The database fields that contain the subscriber's ID (also called user lookup key) and the subscriber's group name must be included as one of the fields in an event's associated query(ies).

> *Example* If the field that contains a support representative's ID is called Rep ID, and the field that contains the representative's group name is called Rep Group, you need to make sure that {Rep_ID} and {Rep_Group} are both selected as columns in the associated query.

As long as these fields are present in the event's associated query(ies), you can instruct **CRM Studio** to use these values.

To deliver an alert to an individual subscriber based on the subscriber's unique ID, do the following:

- From the **Deliver to user or group in subscriber folder using database lookup value** grid in the **Everest CRM Studio - Application Events\(your company)\Events - Subscribers - Advanced** tab, click the first row of the

  Database Field column and click the list ⊡ button that is displayed.
- Choose the database field that contains a subscriber's unique ID (the same value as present in the **User Lookup Key** field within the subscriber's record in the **CRM Studio** database).

☞ **"User Lookup Key" on page 35**

- Specify whether subscribers will be notified via one or any combination of e-mail, fax, copy, page, or webcast, by selecting the appropriate options.

To deliver an alert to all subscribers in a CRM Studio subscriber group based on the group value in a triggered record, do the following:

- From the **Deliver to user or group in subscriber folder using database lookup value** grid in the **Everest CRM Studio - Application Events\(your company)\Events - Subscribers - Advanced** tab, click the second row in the

  Database Field column and click the list ⊡ button that is displayed.

- Choose the database field that contains the subscriber group's name.

- Specify whether subscribers will be notified via one or any combination of e-mail, fax, copy, page, or webcast, by selecting the appropriate options.

  The value must exactly match (including case) the name of a subscriber group in the **CRM Studio** database for all members of that group to be notified.

- Choose whether the subscribers in a group will be notified via one or any combination of e-mail, fax, copy, page, or webcast, by selecting the appropriate options.

Delivering to Subscribers Using an Address in the Triggered Event

One of the most common **CRM Studio** alert scenarios is one where an alert message needs to be delivered to a person associated with a triggered event record.

Example
- Notify the support representative to whom an escalated call is assigned.
- Notify the sales representative who has an overdue activity.
- Notify the manager of a person who has not responded to a customer call.

In all these cases, you cannot hard-code the alert recipient because the recipient will vary based on the records that are causing the event to trigger.

As long as the records that are causing the event to trigger contain the address (e-mail address, fax number, pager number, etc.) of the person who should receive the notification, **CRM Studio** can send the alert accordingly.

To make this function work, you must be sure to include the field(s) that contain a recipient's delivery address(es) within the query(ies) associated with the event.

In other words, if you wish to send e-mail alerts to a support representative, the first thing you need to do is identify what field contains the representative's e-mail address. As long as you include this field in the query for an event, the event can send the alert to that address.

The delivery of an alert to an address that is contained within a triggered event is done from the **Deliver to specific e-mail, pager, fax or webcast name using database value** grid of the **Advanced** tab.

Depending on which method (or methods) you wish to send alerts by, you will need to map fields from your event's query to supply each recipient's e-mail address, fax number, pager number, pager PIN, and webcast name.

To map fields from your event's query to supply each recipient's contact details, do the following:

- From the **Deliver to specific e-mail, pager, fax or webcast name using database value** grid in the **Everest CRM Studio - Application Events\(your**

company)\Events - Subscribers - Advanced tab, click the first row of the

Database Field column and click the list ... button that is displayed.

- Choose the field(s) that contain the corresponding subscriber's delivery addresses.

For every address mapping field that you fill in, the corresponding subscribers (as determined by the triggered event) will get notified via those methods.

The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Subscribers - Advanced

This tab is used by an event to notify people based on the records that are triggered.

Example An event that identifies all opportunities that are due to close this week and needs to send a separate alert to each sales representative associated with these events.
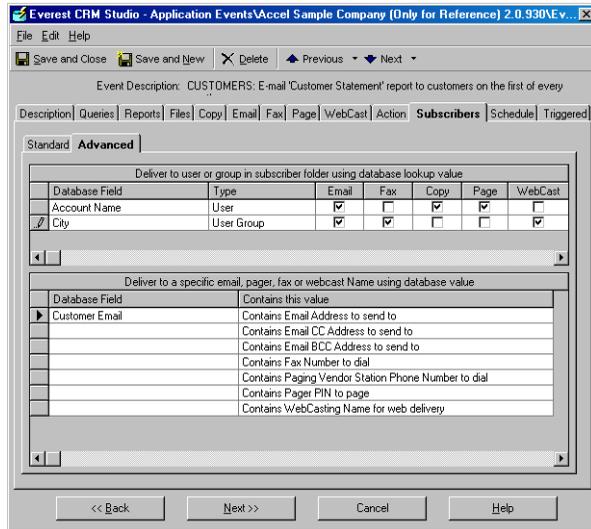
Figure 6.17: Everest CRM Studio - Application Events\(your company)\Events - Subscribers - Advanced

Deliver to user or group in subscriber folder using database lookup value
This grid allows you to specify users or groups eligible to receive alerts, based on a database lookup value.

Deliver to specific e-mail, pager, fax or webcast name using database value
This grid allows you to specify which e-mail address, pager number, fax number or webcast location to send alerts to, based on a database lookup value.

A single event may send alerts to a combination of standard and advanced subscribers.

Monitoring the Status of Alert Messages

When an alert message is triggered by an event, you can use the **Everest CRM**

Studio Event Monitor to track the status of the message's delivery.

☞ **"Monitoring the Status of Events" on page 175**

➤ **To track the status of the message's delivery, do the following:**

- In the **Everest CRM Studio Event Monitor** (path: **CRM > CRM Studio > Monitor**), select **Application Events**.
- Click any of the **Triggered** branches and locate the triggered event whose alert messages you wish to track.
- Highlight (click) the triggered event.
- Click the **Deliverables** button at the bottom-left of the dialog box. You will see a list of all the subscribers for that event in the right panel.
- Review the details of each subscriber; the person who was supposed to be notified, the method of notification and the time of delivery of the message. You will also see if the delivery was successful.
- Click the **Close Deliverables** button.

    You can also view the details (text) of the actual outgoing alert message by simply going up to the triggered event record and pointing your cursor at the appropriate column (in the grid) that contains the e-mail, fax, pager, or webcast text. The grid automatically expands to display the full text of the alert message.

☞ **"Action Errors" on page 91**

    "Taking a Corrective Action" on page 91

Specify a Schedule

The last step in the configuration of a **CRM Studio** event is the specification of the schedule (or frequency) that determines how often you wish to check if the event is triggered.

Every event has its own schedule; it can be triggered as often as every minute, and as infrequently as once a day, week, month, or year.

CRM Studio includes approximately a dozen pre-configured schedules. You may edit these schedules as well as create additional schedules of your own.

Choosing a Schedule

➤ **To select a schedule that will control how often CRM Studio checks if an event is triggered, do the following:**

- From the **Choose a schedule to use** field in the **Everest CRM Studio - Application Events\(your company)\Events - Schedule** tab, click the drop-down button to display pre-configured schedules.

- If you see a schedule that fits your requirements, select it; if not, you can create it.
    - The schedule called **When E-mail Arrives** is reserved for use only with the **CRM Studio** E-Mail Response System.
    - You can choose 'None' as a schedule if you wish to configure an event but do not want **CRM Studio** to actively schedule it. This is particularly useful for events that you wish to run on an ad-hoc or on-demand basis.

Schedule Holiday Handling

In the **Everest CRM Studio Administrator** module you can identify those dates that are designated as holidays for your organization and specify (on an event-by-event basis) whether or not an event should be submitted on a date identified as a holiday.

In the **Schedule** tab, select the option **Should this run on a holiday** if you want an event scheduled on a holiday to run.

Event Dependencies

When configuring **CRM Studio** events, you may come across a situation such as the following:

- If event 'a' is triggered, submit event 'b' immediately to see if it is also triggered.

In this example, event 'b' is referred to as dependent on event 'a'.

CRM Studio has two ways to accommodate this scenario; one is through the use of the **Dependency** function on the **Schedule** tab, and the other is by using a Visual Basic script to submit the execution of one or more subsequent events.

The following sections will address how to use the **Dependency** function within the **Schedule** tab.

How to Configure a Dependent Event

By definition, a dependent event (such as event 'b' in the preceding example) is one which you want to execute only if the event on which it is dependent (event 'a') is triggered.

Consequently, event 'b' should not have its own schedule; Schedule event 'b' (the dependent event) as 'None' so that it will be submitted only if its dependency is met.

It is also important to note that a single event (such as event 'b') can be dependent on any one of a number of other events, but not on a combination of other events (e.g., event 'c' cannot be dependent on triggering of both events 'a' and 'b').

To specify that an event's submission is dependent on triggering of another event, do the following:

- From the **Everest CRM Studio Architect** dialog box, select **Event Management Folders > Application Events > (your company) > Events**. You will see all the events in the right panel.

- Select and open the dependent event. You will see the **Everest CRM Studio - Application Events\(your company)\Events** dialog box. Click the **Schedule** tab.

- From the **Choose a schedule to use** drop-down list, select **None**. Click the **Add Dependency** button. You will see the **Everest CRM Studio - Add Dependency** dialog box. This dialog box is similar to the **Everest CRM Studio - Add Query** dialog box.

  ☞ **"The Everest CRM Studio - Add Query Dialog Box" on page 63**

- If you wish to make the current event dependent on another event within this database, select the event that the current event will be dependent on.

- If you wish to make the current event dependent on an event within a different database, click the **Select Another Application** button and select the database that contains the event you wish to make the current event dependent on.

  ☞ **"The Everest CRM Studio - Select Another Application Dialog Box" on page 64**

- Select the event that the current event will be dependent on. The selected event is displayed in the **The current event will be triggered if the following event(s) are triggered** grid.

- Repeat the above steps if you wish to add other events that the current event is dependent on.

  You cannot make a single event dependent on multiple others.

Removing an Event's Dependencies

To remove a dependency from an event, do the following:

- From the **The current event will be triggered if the following event(s) are triggered** grid in the **Everest CRM Studio - Application Events\(your company)\Events - Schedule** tab, select the dependency you wish to remove by clicking on the row header.

- Click the **Remove Dependency** button.

  You can also click the **Remove All Dependencies** button to delete all of the dependencies that have been selected for this event.

The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Schedule
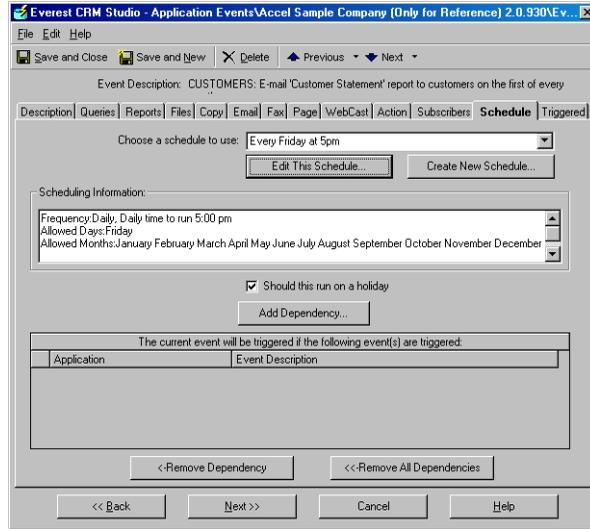
Figure 6.18: Everest CRM Studio - Application Events\(your company)\Events - Schedule

Choose a schedule to use
Select a pre-configured schedule from the drop-down list.

Edit This Schedule
Click this button to edit a schedule displayed in the **Choose a schedule to use** field. The **Everest CRM Studio - Scheduled Report** dialog box is displayed.

Create New Schedule
Click this button to configure a new schedule. The **Everest CRM Studio - Scheduled Report** dialog box is displayed.

Scheduling Information
Enter relevant information about the schedule, for the reference of other users.

Should this run on a holiday
Select this option if the schedule should be executed even on holidays.

☞ **"Schedule Holiday Handling" on page 232**

    "Holiday Schedule" on page 99

Add Dependency
Click this button to display the **Everest CRM Studio - Add Dependency** dialog box, which allows you to specify the event(s) on which this event is dependent.

☞ **"Event Dependencies" on page 232**

The current event will be triggered if the following event(s) are triggered
This grid displays the other events that this event is dependent on.

Remove Dependency
Click this button to remove a selected event from the **The current event will be**

triggered if the following event(s) are triggered grid.

Remove All Dependencies
Click this button to remove all events from the **The current event will be triggered if the following event(s) are triggered** grid.

Creating/Editing a Schedule

To create a schedule or edit an existing schedule, do the following:

- From the **Everest CRM Studio - Application Events\(your company)\Events - Schedule** tab, click the **Create New Schedule** or **Edit This Schedule** button. You will see the **Everest CRM Studio - Scheduled Report** dialog box.
- Type in a description of the schedule you are creating or editing (e.g., Everyday at 3 PM)
- If you are creating a schedule for events that should not be submitted until after a specific date, enter the appropriate date (in the format XX/XX/YYYY HH:MM) in the field **Should not run until after date/time**. If events using this schedule are eligible to be submitted immediately (when this schedule is due to run next), leave this field blank.

Example A schedule for events that should not be submitted until January 2nd of the following year.

- From the **Frequency** drop-down list, choose a recurring frequency for this schedule. Your choices are:
    - Every 'n' minutes
    - Hourly
    - Daily
    - Weekly
    - Monthly
    - Annually
    - None (used only for events that have no schedule)

The frequency called When E-mail Arrives is reserved for use only with the **CRM Studio** E-Mail Response System.

- Based on the frequency you choose, you will be prompted to supply additional scheduling details, such as the time of day to run, the day of the week, etc.

The Everest CRM Studio - Scheduled Report Dialog Box - Description
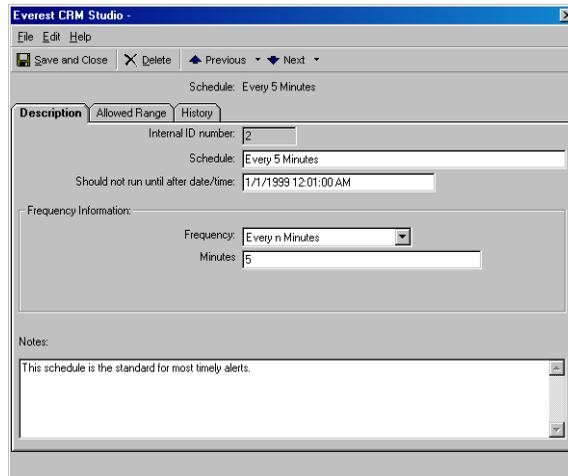
Figure 6.19: Everest CRM Studio - Scheduled Report - Description

ID Number

This field displays the ID of the schedule. You cannot modify it.

Schedule

Specify a name for the schedule.

Should not run until after date/time

Enter the appropriate date (in the format XX/XX/YYYY HH:MM) if you are creating a schedule for events that should not be submitted until after a specific date.

Frequency Information

Frequency

Select a recurring frequency for this schedule from the drop-down list. Based on the selected option, additional fields are displayed, prompting you for additional information.

Notes

Enter any relevant notes about this schedule.

Configuring a Schedule's Allowed Range

There are three components to the configuration of a schedule's allowed range:

- The months of the year during which the schedule is eligible to be submitted (select the eligible months).
- The days of the week during which the schedule is eligible to be submitted (select the eligible days).
- The hours of the day during which the schedule is eligible to be submitted (specify the beginning and ending times between which the schedule may be submitted). These times are inclusive.

The Everest CRM Studio - Scheduled Report Dialog Box - Allowed Range

The options in this tab allow you to define when the schedule will run.
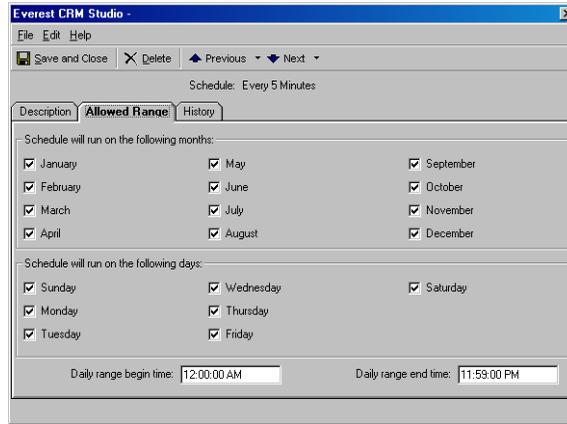
Figure 6.20: Everest CRM Studio - Scheduled Report - Allowed Range

Monitoring the Status of Scheduled Events

When an event is scheduled to be checked by **CRM Studio**, you can use the **Everest CRM Studio Event Monitor** to track the status of its submission.

"Monitoring the Status of Events" on page 175

To track the status of the message's delivery, do the following:

• In the **Everest CRM Studio Event Monitor** (path: **CRM > CRM Studio > Monitor**), select **Scheduler > Next Run Date/Times**. You will see a list of all scheduled events that are pending for execution in the right panel.

• Once an event is submitted by the **CRM Studio Scheduler**, click the **Application Events** branches and locate the event. Monitor whether the event has been successfully checked and/or triggered, and whether any error has occurred.

Triggered Items

This tab lets you see whether the current event has been checked and triggered. You can also view the unique IDs of all the triggered records.

The primary use of this tab is to enable you to clear the triggered records for an event and thus enable it to be triggered again. You can clear all the triggered records or only selected records for an event.

The **Triggered** tab displays the date and time when the event was last checked, the date and time when the event was last triggered, and the value of the unique field (as defined in the event's query) for each record that was triggered.

Clearing Triggered Records

To remove a triggered record, do the following:

- From the **Items triggered by this event** grid in the **Everest CRM Studio - Application Events\(your company)\Events - Triggered** tab, select the row you wish to remove by clicking on the row header.
- Click the **Remove Triggered Item** button.

> - You can also click the **Remove All Triggered Items** button to delete all of the items that are triggered by this event.
> - You may need to exit the **Triggered** tab and re-enter, to verify that all triggered items have been removed.

If Your Event Isn't Triggering . . .

The most common call that comes to Everest Software support is that an event is not getting triggered or the e-mail message is not getting sent.

If this happens, the first thing to do is to check the **Everest CRM Studio Event Monitor** and locate the event – see if it appears under **Application Events** that are pending, checked, triggered, or have recorded errors.

The most typical scenario is that an event is being checked, but it is not being triggered. Here is a list of most likely reasons:

- The 'e-mail sending' account is not correctly configured. Perform an e-mail test to see if this account is successfully sending an e-mail message.
- The event is already triggered. Many events are configured to send only one alert per triggered record. Go into the **Triggered** tab for the event and see if any triggered records are listed. If so, this may be why the event is not triggering again.
- The method by which the alert is being sent (e.g., e-mail) does not have any corresponding alert message text. If there is no text, no message can be sent.
- The subscriber (recipient) who is to receive the alert message does not have an address defined for the corresponding method (i.e., an event that sends an alert via e-mail requires that the subscriber not have a blank e-mail address)
- The event is not active (check the **Description** tab of the event).
- The event that is being triggered does not have a valid E-Mail Sending Account specified.
- There is no query specified for the event, or the query has some parameters associated with it that have been left blank.
- No delivery method (e.g., e-mail) has been specified for the subscribers selected for the event.

If Your Event Is Triggering Over and Over . . .

Check out the event query's Unique value. If a query does not have a unique value, the corresponding event triggers over and over again, until the query's condition is no longer met.

You might also look at the setting of the event's **Repeat Notification for Triggered Items** option (in the event's **Description** tab). If this box is checked, the

event continues to be triggered (and send alerts) over and over.

Schedule an Event to Run Right Now

As you configure **CRM Studio** events, one of the most frequently-used functions in the **Studio Architect** is the ability to run a specific event right now.

This is particularly useful, as you can configure an event to use a specific schedule (such as hourly, daily, or weekly), but still have the ability to submit the event right away to confirm that it will execute successfully.

The **Schedule This Now** function is also useful as it enables you to submit ad-hoc executions of a specific event.

Example You may have an event that runs once a week (on Mondays), but your server might have been shut down (for maintenance) on that day. Using the **Schedule This Now** function, you could manually submit specific events to run on Tuesday that were originally scheduled to run on Monday.

To schedule an event to run right now, do the following:

- Ensure that the **Everest CRM Studio** service (path: **Control Panel > Administrative Tools > Services**) is running.
- From the **Everest CRM Studio Architect** dialog box, select **Event Management Folders > Application Events > (your company) > Events**. You will see all the events in the right panel.
- Click (highlight) the event you wish to run right now.
- Click the **Schedule This Now** button at the top of the **Everest CRM Studio Architect** dialog box.
- You will be asked to confirm the submission of your selected event. Click **Yes**.

The event will be scheduled for immediate execution, and may be tracked in the **Everest CRM Studio Event Monitor**.

7. Visual Basic Scripting

Back-End Scripting Set-Up
Front-End Scripting Set-Up

The key to the alerting process is the ability to not just notify people about events that require their attention, but to update the business databases that these people use with the details of the event that took place, and the follow-up actions that need to be executed.

To facilitate the process whereby a time-critical event can not only trigger an alert, but also dynamically update one or more business databases, **CRM Studio** includes a VB (Visual Basic) and VBA (Visual Basic for Applications) scripting module. This module provides the ability to acquire information pertaining to a **CRM Studio** triggered event and use it to update data in one or more databases.

This chapter outlines the manner in which the VB/VBA scripting module is designed within the **CRM Studio** solution, and enunciates the benefits of this module to **CRM Studio** users.

Requirements

Although **CRM Studio** includes a number of sample scripts that an organization can use, the requirements of most companies necessitate the creation of one or more site-specific scripts.

CRM Studio includes a very robust VB script designing tool, complete with pre-defined script templates, on-line documentation and help text, and script syntax testing facilities.

> The scripting module should be reserved for use only by those individuals who are familiar with the Visual Basic language, and have some experience in writing VB scripts.

Front-End Versus Back-End Scripts

CRM Studio scripts can be designed to be utilized in two ways:

- As an action that is executed after an event is triggered. Once an event is triggered, all the data related to the triggered event (including the field-level details of individual records) is made available to one or more scripts that you wish to execute.

This is referred to as a back-end script because it executes after an event is triggered.

> A single event may trigger the execution of one or more back-end scripts.

- As the means to check for a condition that is not related to information in an ODBC-compliant database or in an incoming e-mail message.

Although **CRM Studio** typically uses queries to identify an event's trigger criteria, queries cannot identify data that resides outside an ODBC-compliant database, or outside an incoming e-mail message. To identify conditions such as low disk space, a process that is not running, or a file that has been updated, **CRM Studio** enables a VB script to be used in lieu of a query.

This is referred to as a front-end script because it determines whether or not an event will be triggered.

> A single event that uses a front-end script can also use one (or more) back-end scripts to respond to the triggered event.

Sample Back-End Scripting Scenarios

Here are ten scenarios where **CRM Studio**'s back-end scripting functions could be used:

Condition	Script
A client places more than two orders with you this month.	Update the client's status to Active
A client has more than $50,000 in 90 Days receivables	Change the client's credit status to On Hold
A client requests support more than 10 times in a month	Create a support call to offer the client training services
A client closes an opportunity in a CRM database	Create a sales order in a financial database
A client updates a contact in a financial database	Update the corresponding client in a CRM database
A client is placed on credit hold in a financial database	Update all of the client's opportunities in a sales database
An account is de-activated	Close all the open activities for that account
A client sends in a tech support e-mail	Create the corresponding ticket in a support database
A client sends in an e-mail unsubscribe request	Remove the client from your mailing list
A new prospect sends e-mail requesting product information	Add the prospect to your CRM and financial databases

Sample Front-End Scripting Scenarios

Here are six scenarios where **CRM Studio**'s front-end scripting functions could check for conditions outside the ODBC-compliant databases, and to send alerts and take appropriate response actions:

- Check if available disk space on your database server drops below 55 MB.
- Check if SQL Server is still running.
- Check if critical files have been updated.
- Check if a Sync Server is still running.
- Check the NT Event Log for potential security breaches.
- Check for data conditions in a non-ODBC compliant database.

Back-End Scripting Set-Up

The subsequent pages will guide you through the process of setting up a back-end script and linking it to an event. This will be followed by a brief discussion on how you can configure front-end scripting within **CRM Studio**.

Prepare Queries

To begin using back-end scripts in **CRM Studio** you must decide what you want the scripts to do. The best way to approach this is to look at your events and figure out which events need to write data back into one or more databases.

Once you identify such an event, you are ready to begin thinking about the corresponding query(ies) and script(s) you will require.

The very first thing you should do is go to the query(ies) that the event uses and ensure that all fields (columns) that you might wish to use in your script are retrieved by the query.

This is a very important step – just as you must be careful (when designing queries) to choose those fields that you wish to place in an outgoing alert message, you must likewise be careful to choose those fields whose values you wish to pass into the script(s) that an event will trigger.

If you wish to have access to a field within an event's script, you must be sure to select that field as a column for the queries that are associated to that event.

Create the Back-End Script

Once you have ensured that the query(ies) that an event uses will make available the necessary information to the event's script, you are ready to begin designing your script.

Each company that is defined within the **Everest CRM Studio Architect** has a separate branch called Basic Scripts to store the scripts that are associated with that database.
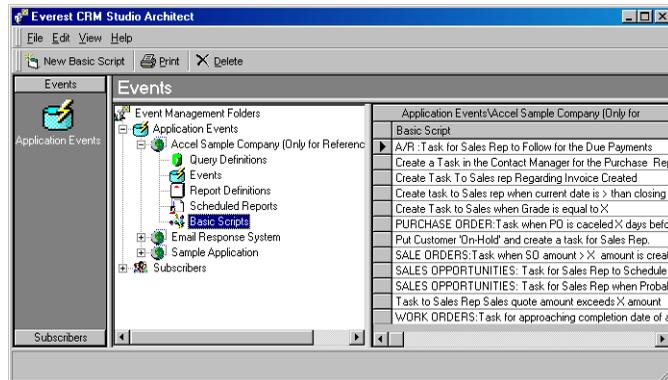
Figure 7.1: Everest CRM Studio - Basic Scripts

Adding a New Back-End Script

To add a new back-end script, do the following:

- From the main menu bar, select **CRM > CRM Studio > Architect**. You will see the **Everest CRM Studio Architect** dialog box.

- From the **Event Management Folders** panel in the center, select **Application Events**. You will see all the companies that **CRM Studio** is currently configured to integrate with.

- Select the company for which you want to design events and click **Basic Scripts**. You will see a list of scripts (if any have been created) in the right panel.

- Click the **New Basic Script** button at the top-left. You will see the **Everest CRM Studio - Application Events\(your company)\Basic Scripts** dialog box, using which you can design basic scripts for the selected company.

By default, **CRM Studio** automatically stores your scripts in a special directory where the company is installed, but you may override this location according to your needs.

The Everest CRM Studio - Basic Scripts Dialog Box
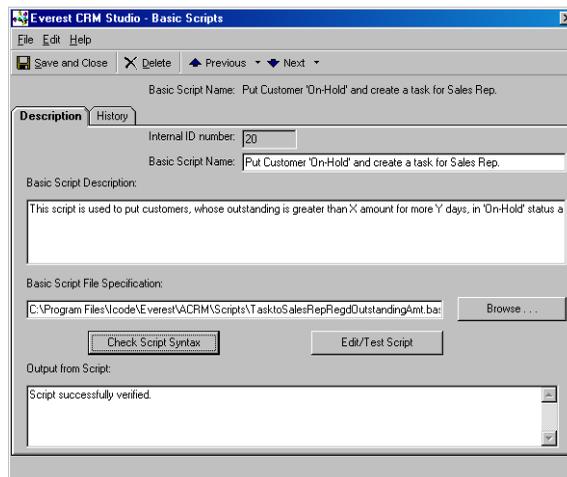
Figure 7.2: Everest CRM Studio - Basic Scripts

Internal ID Number
This field displays the ID of the script. You cannot modify it.

Basic Script Name
Enter a name for this script.

Basic Script Description
Enter a description of this script.

Basic Script File Specification
Specify the location and name of the script file.

Browse
Click this button to display the **Everest CRM Studio - Select a Basic Script File** dialog box, which allows you to browse for, and select script files**.**

Check Script Syntax
Click this button to check your script for syntax errors. When you click this button, you will be informed of any script syntax errors that exist, or that your script's syntax has been successfully verified.

Edit/Test Script

Click this button to edit and modify the script's contents as well as test the script from the **Cypress Enable Script Editor** dialog box.

Output from Script

This section is automatically updated when you check the script syntax. You cannot modify it.

Editing a Script

Once you fill in the general information about the script you are creating, click the **Edit/Test Script** button to begin editing the content of your script. It is advised that you have a list of the customized names of all the fields of data that you wish to pass from the corresponding event into this script.

When you click the **Edit/Test Script** button, you will see the **Cypress Enable Script Editor** dialog box that begins with an area for script author details and general overview.

The script is described in the following sections, which are detailed below:

- General Information
- Retrieve General Event Data
- Retrieve Alert Message Text
- Retrieve Query SQL Syntax
- Retrieve Event Data Fields
- Run Subsequent Events
- Specify Return Status Codes
- Enter Your Script Syntax

General Information

The first part of a script is where you can specify the purpose of the script, your name (as the script author), the date when the script was created and the date when it was last modified. This part of the script will look like the following:

```
' Script Name        : Template.bas
' Script Author       : Development
' Script Purpose      : This script serves as a template
' Script Creation Date : 2/5/2001
' Script Modified by   :
' Script Modified Date :
' Script Modifications :
'
'
' The following declared functions are available
' to the script author in order to interact
' more closely with Everest CRM Studio. All are optional
'
' Scripts may be executed by Everest CRM Studio in two ways.
'
' 1) As an action to a triggered event.
'
' 2) In place of a query in order to have the script
'    trigger events.
'
' Please note, a script used as an action cannot trigger events.
```

Retrieve General Event Data

The second section of a script instructs you on how you can retrieve general information about the triggered event such as the event's description and the name of the database to which the event is associated. This part of the script will look like the following:

```
' The following functions are used when a script is executed
' as an action.
'
Declare Function KSGetEvent App ( ByVal s As String ) As String
'
' This function retrieves specific data about the event that
' has triggered.
'
' The available values that can be passed to KSGetEvent in
' order to retrieve data are as follows:
'
' lookup          Returns the Lookup key as defined in
'                 the Event Manager
' application      The application that the event belongs to
' description      The description of the event
' id              The id of the event
' dns             The ODBC datasource name of the application
' username          The username for the connection of the application
' password        The password used for the connection
' apiname           The optional API name set in the connection properties
' apiusername      The optional API username for the connection of the
'                 application
' apipassword      The optional API password used for the connection
```

Retrieve Alert Message Text

The third section of a script details how you can retrieve the texts contained in the various alert messages that are associated with the triggered event. This part of the script will look like the following:

```
'
Declare Function KSGetPackage App ( ByVal s As String ) As String
'
' This function retrieves data about the package that was
' created for delivery by KnowledgeSync. The values that
' can be passed to KSGetEvent in order to
' retrieve data are as follows:
'
' e-mail subject       The subject of the e-mail for delivery
' e-mail message       The e-mail message text for delivery
' page message         The pager message text for delivery
' fax subject          The fax subject text created for delivery
' fax message          The fax message text create for delivery
' fax comments         The fax comments text created for delivery
' webcast subject      The webcast subject text for delivery
' webcast message      The webcast message text for delivery
```

Retrieve Query SQL Syntax

The fourth section of a script details how you can retrieve the SQL syntax from the queries that are associated with the triggered event. If an event uses multiple queries, you can retrieve the SQL syntax from any one or all of the corresponding queries. This part of the script will look like the following:

```
Declare Function KSGetSQL App ( ByVal l As Long ) As String
'
' This function retrieves the SQL from the query that was used
' to trigger the event.
' You pass a number of the query used.
' For example if the event has only one (1)
' query, then you would pass the number 1
' Example: mysql=ksgetsql(1)
' retrieves the sql from the first query
'
```

Retrieve Event Data Fields

The fifth section of a script describes the method by which you can retrieve the values from individual fields (columns) that were specified within the query(ies) associated with the triggered event. This part of the script will look like the following:

```
Declare Function KSGetData App ( ByVal s As String ) As String
'
' This function retrieves columns of data from the queries
' that triggered the event. You pass the customized
' column name as defined in the query builder to
' retrieve that information.
' Example: print ksgetdata(companyname) ' prints
' company name from the query data
'
```

Run Subsequent Events

The section that refers to using a script to trigger an event is not applicable to back-end scripting.

The sixth section of a script allows you to call other events for execution. This is very useful, as it enables you to immediately run one or more other events upon conclusion of this script. This part of the script will look like the following:

```
Declare Function KSScheduleEvent App ( ByVal lookup As String) As String
'
' This function immediately schedules the event matching the
'lookup string on the description Tab of the Event Manager.
'
' The parameters are as follows:
'
' lookup   The lookup string that uniquely identifies the Event in the '
'          Event Manager.
'          Returns a string error message if unable to schedule
'          event. Returns empty string if Event is scheduled.
'
```

Specify Return Status Codes

The seventh section of a script contains details on how you can specify what information the script will return to **CRM Studio** if the script fails to complete successfully. This part of the script will look like the following:

```
Global KSReturnStatus As Long
'
' Set this value if you want to return an error status number.
' If you don't set this value, then the script is assumed to
' have worked successfully and is stamped completed by KS.
'
Global KSReturnMessage As String
```

```
'
' Set this value if you want to return an error message
'
Global KSReturnComplete as long
'
' Set this value to -1 if you want the script to complete even
' if there's an error. Normally, when scripts error, the
' Action server will attempt to execute them again in 1 minute
' until they complete without error.
'
On Error Resume Next
'
' Tell KS how things went by setting the return status
' Set this to a non-zero if there was an error. This will be
' Seen in the monitor in the errors section or corrective
' actions in the administrator

KSReturnStatus = 0

' Set return message string. Place error message in this
' variable if there was one, This will show up in the monitor

KSReturnMessage = Success
```

Enter Your Script Syntax

The final section of a script is where you can actually type in the syntax of the
script you wish to execute. This part of your script will fall between the lines
"Begin your script here" and "End your script here" as is shown below:

```
' Begin your script here


' End your script here
End
```

Link the Script to an Event

When you finish editing your script (and checking the script syntax for any
errors), you are ready to link the script to one or more events.

A carefully constructed script can be used with multiple events, as long as
the events make the necessary columns of data available to the script.

To link a script to an event, follow these steps:

- From the main menu bar, select **CRM > CRM Studio > Architect**. You will see
  the **Everest CRM Studio Architect** dialog box.
- From the **Event Management Folders** panel in the center, select **Application
  Events**. You will see all the companies that **CRM Studio** is currently
  configured to integrate with.
- Select the company for which you want to design scripts and click **Events**. You
  will see a list of events (if any have been created) in the right panel.
- Edit/Create (if necessary) the event you wish to link the script to.
- From the **Action** tab, select the **Run Basic Script** tab.

- From the **Enter the Basic Script(s) to Run** grid, click the **Basic Script Name** column and click the list ... button. You will see the **Everest CRM Studio - Select Basic Script** dialog box, displaying all the scripts that are currently available for use as a response to a triggered event.
- Highlight the script you wish to use and click **Select**. The script is added to the **Enter the Basic Script(s) to Run** grid.

CRM Studio displays the name and file specification of the selected script.

Repeat these steps for each script you wish to associate with an event.

Front-End Scripting Set-Up

Front-end scripting is handled through the same Script Maintenance option as back-end scripting; the primary difference is that instead of passing information from an event's query to a script, a front-end script contains the instructions to check for a specific condition of data and then identify those elements of data that need to be passed back into the event.

A single script cannot be used in both front-end scripting and back-end scripting. A script must be designed either for front-end or back-end use.

Identify the Script's Database

When designing a front-end script, you must first decide which database you wish to associate the script to. If the script is associated with a specific database, you might wish to create that script within the Basic Scripts branch of that particular company.

However, if that script is not related to a database currently in the **Everest CRM Studio Architect**, you might wish to create an entirely new company and store the script there.

Design the Front-End Script

As mentioned previously, a front-end script can perform multifarious functions like monitoring the status of hardware devices (such as disks that are low on free space), checking the revision dates of files, scanning for critical processes that must be running, or retrieving data from a database that is not ODBC-compliant.

So, the first step in using the front-end scripting module is to create the script that **CRM Studio** can use to check for a certain condition of data.

☞ **"The Everest CRM Studio - Basic Scripts Dialog Box" on page 246**

When you click the **Edit/Test Script** button, you will see the **Cypress Enable Script Editor** dialog box that begins with an area for script author details and general overview.

The script is described in the following sections, which are detailed below:

- General Information
- Use the Script to Trigger an Event
- Specify Return Status Codes
- Enter Your Script Syntax

General Information

The first part of a script is where you can specify the purpose of the script, your name (as the script author), the date when the script was created, and the date when it was last modified. This part of the script will look like the following:

```
' Script Name         : vs_sample_diskspace.bas
' Script Author        : Development
' Script Purpose       : Check available disk space
' Script Creation Date : 2/20/2001
' Script Modified by   :
' Script Modified Date :
' Script Modifications :
'
'
' The following declared functions are available
' to the script author in order to interact
' more closely with Everest CRM. All are optional
'
' Scripts may be executed by Everest CRM in two ways.
'
' 1) As an action to a triggered event.
'
' 2) In place of a query in order to have the script
'    trigger events.
'
' A script used as an action cannot trigger events.
'
```

Use the Script to Trigger an Event

Since some of the following sections in the template script contain information on designing a back-end script, they can be skipped during the creation of a front-end script. The front-end scripting instructions begin in the following section:

```
' The following function is used to trigger events
'
' Scripts used to take action cannot trigger events.
' Only scripts used instead of queries can trigger events.
' Please see the Event Manager
' help file while on the QUERIES tab.
'
Declare Function KSTrigger( ByVal ukey As String) As Boolean
'
' This function triggers the event in the Application Server.
' This function is called when the script is used instead of a
' query and you want to trigger an event.
'
' The parameters are as follows:
'
' ukey  The data that uniquely identifies this triggered item.
'       Passed as a string. You may pass an empty string if
'       you do not want KS to track triggered items.
'
```

Specify Return Status Codes

The sixth section of a script contains details on how you can specify what information the script will return to **CRM Studio** if the script fails to complete successfully. This part of the script will look like the following:

```
Global KSReturnStatus As Long
'
' Set this value if you want to return an error status number.
' If you don't set this value, the script is assumed to have
' worked successfully and is stamped completed by KS.
'
Global KSReturnMessage As String
'
' Set this value if you want to return an error message
'
Global KSReturnComplete as long
'
' Set this to -1 if you want the script to complete even if
' there is an error. Normally, when scripts error, the Action '
' server will attempt to execute them again in 1 minute until
' they complete without error.
'
On Error Resume Next
'
' Tell KS how things went by setting the return status
' Set this to a non-zero if there was an error. This will be
' seen in the monitor in the errors section or corrective
' actions in the administrator

KSReturnStatus = 0

' Set return message string. Place error message in this
' variable if there was one, This will show up in the monitor

KSReturnMessage = Success
```

Enter Your Script Syntax

The final section of a script is where you can actually type in the syntax of the script you wish to execute. This part of your script will fall between the lines "Begin your script here" and "End your script here" as is shown below:

```
' Begin your script here


' End of your script is here

End
```

Sample Front-End Script

The following is an example of a script that checks for low disk space.

About this front-end script:

- It identifies specific fields that contain information about the disks that are checked, and their available space.
- It does not check the CD-ROM drive (an organization might need to edit this script and specify the appropriate CD-ROM drive letter).
- It lets you assign script variables that contain information about the triggered event and thus, can be used both in the outgoing alert messages about this event and (if needed) can be passed into one or more back-end scripts that this event executes.
- It lets a script editor specify the disk space threshold (500 MB in this example).
- It loops through multiple disk drives.
- It sets a successful return status message if no errors are encountered.

Check for Low Disk Space

```
Declare Function GetDiskFreeSpace Lib kernel32 Alias GetDiskFreeSpaceA _
(ByVal lpRootPathName As String, lpSectorsPerCluster As Long,
lpBytesPerSector As Long, lpNumberOfFreeClusters As Long,
lpTtoalNumberOfClusters As Long) As Long


Dim strDrive As String
Dim lngSectorsPerCluster As Long
Dim lngBytesPerSector As Long
Dim lngNumberOfFreeClusters As Long
Dim lngTotalClusters As Long
Dim lngSts As Long
Dim DS
Dim IntLoop As Integer
Dim dblSpace As Double
```

'These variables can be 'seen' from the event e-mail message screen because they are global. By declaring these, they can be used as content when we send e-mail, faxes or pages...

```
Global DiskDrive As String
Global FreeSpaceBytes As Double
Global FreeSpaceMegs As Double
Global FreeSpaceFormatted As String
Global FreeSpaceMessage As String
Global MinMegs As Long

MinMegs=50000'This is our threshold. Less than 500 MB

For IntLoop = 67 To 90
    strDrive = Chr$(IntLoop) & :\     ' Ensure path is at the root.
    lngSectorsPerCluster=0
    lngBytesPerSector=0
    lngNumberOfFreeClusters=0
    lngTotalClusters=0
    lngSts = GetDiskFreeSpace(strDrive, lngSectorsPerCluster,
lngBytesPerSector,
```

```
                                              lngNumberOfFreeClusters,
lngTotalClusters)
    If lngSts <> 0 Then
        FreeSpaceBytes = CDbl(lngSectorsPerCluster) * CDbl(lngBytesPerSector)
* CDbl(lngNumberOfFreeClusters)
        FreeSpaceFormatted = Format$(FreeSpaceBytes, ###,###0)
            FreeSpaceFormatted = FreeSpaceFormatted &  bytes are free.
            FreeSpaceMegs = FreeSpaceBytes / 1000000
            If FreeSpaceMegs < MinMegs Then'Less than MinMegs is BAD
                DiskDrive=chr$(intloop) & :
                If DiskDrive <> D: Then        'Don't check the cdrom drive.
                 FreeSpaceMessage = Disk  & DiskDrive &  has less than  &
MinMegs & mb free.
                                 x= KSTrigger(DiskDrive)        'Low
space on this drive
                End If
          End If
    End If
Next IntLoop
'Tell Everest CRM no errors happened
KSReturnMessage=0    'Clean as a whistle.
End    'End of Script
```

Link the Script to an Event

Just as a back-end script, a front-end script must also be linked to an event. In the case of a front-end script, however, you need to indicate that the script will replace one or more queries that would normally be used to trigger an event.

To link the script to an event, follow these steps:

• From the main menu bar, select **CRM > CRM Studio > Architect**. You will see the **Everest CRM Studio Architect** dialog box.

• From the **Event Management Folders** panel in the center, select **Application Events**. You will see all the companies that **CRM Studio** is currently configured to integrate with.

• Select the company for which you want to design scripts and click **Events**. You will see a list of events (if any have been created) in the right panel.

• Edit/Create (if necessary) the event you wish to link the script to.

• From the **Queries** tab, select the option **Use Script Instead of Query**.

• Click the **Select Script** button. You will see the **Everest CRM Studio - Select Basic Script** dialog box, displaying all the scripts that are currently available for use as a response to a triggered event.

• Highlight the script you wish to use and click **Select**. The script is added to the **Script** field.

CRM Studio displays the name and file specification of the selected script.

Repeat these steps for each script you wish to associate with an event.

Ensure that you choose a front-end script and not a back-end script.

With this step you are finished with the set-up of a **CRM Studio** event that uses a front-end script.

8. Event Monitor

You can use the **Everest CRM Studio Event Monitor** to track the status of events and alerts that have been (or need to be) delivered.

Use the Monitor to keep track of:

- Status of the application servers that **CRM Studio** uses to check for events and send alerts.
- Events that are scheduled to be checked and those that are triggered.
- Alerts that are sent out (or are about to be sent out), including whom they are sent to, via what means, and whether they were successfully delivered.
- The full text of the outgoing alert messages.
- Status of reports that are scheduled for distribution.
- Status of updates to underlying databases.
- Occurrence of any kind of errors that will prevent **CRM Studio** from either checking for events or responding to them.

The Event Monitor is for informational display only. You cannot modify any information that appears within it.

The Event Monitor

To log in to the Event Monitor, do the following:

- From the main menu bar, select **CRM > CRM Studio > Monitor**. You will see the **Everest CRM Studio Event Monitor** dialog box.

Everest CRM Studio Event Monitor
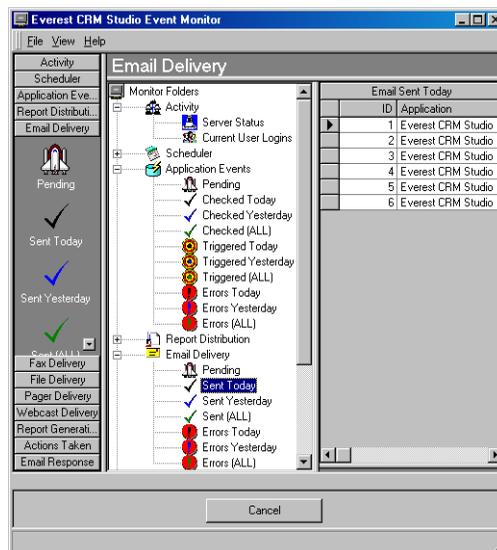
Figure 8.1: Everest CRM Studio Event Monitor

Use the **Event Monitor** to:

- View the status of application servers.
- View users logged in to **CRM Studio** modules.
- View the next scheduled times when the events will be run.
- View the status of events.
- View the status of e-mails, faxes, copied files, pages, webcasts, and generated reports.

The Monitor displays both report distribution data and generated report data. The report distribution option displays events that submit one or more reports for execution. The generated reports option displays the status of individual reports that are generated by both report, distribution events and triggered application events.

The different branches of the **Event Monitor** are detailed in the following sections.

Resizing the Display Grid

The grid displayed in the right panel of the Event Monitor is a standard **CRM Studio** component. You can expand or contract the width of specific columns within this grid.

To expand or contract the width of specific columns within the grid, do the following

- In the column header of the grid (the line with the column titles in it), position the cursor at the vertical line dividing the columns whose width you wish to adjust.
- The cursor will change into a two-headed arrow.
- Click the left mouse button and hold.
- Drag the mouse to the right or to the left to enlarge or reduce the width of the corresponding columns. Release the mouse button when the desired size is obtained.

The re-sized grids remain in effect as long as you are in a specific branch in the Monitor.

Activity Folder

The **Activity** folder informs you about the current processing and user activity occurring within **CRM Studio**.

Server Status

This folder displays the current status of all the servers used by **CRM Studio**. You can indicate which servers will be allowed to run.

Example If you know that your site will not perform certain types of notifications (e.g., faxing), you can disable the corresponding server to conserve system resources.

By default, **CRM Studio** is shipped with all servers enabled except those for Paging, Faxing, Copying, Reporting, Webcasting and Action.

A server's status may be any of the following:

- **Shutdown** - This indicates that the server is not running at this time. The possible reasons for this are:
  - The **Everest CRM Studio** service (path: **Control Panel > Administrative Tools > Services**) is not running.
  - The server is disabled. (path: **CRM > CRM Studio > Administrator > Administration Folders > Activity > Server Status >** double-click a server record in the right panel > **Server Status** dialog box > Deselect **Allow Server to process**).
- **Idle** - The server is running in the background but is not currently processing any data. The server becomes idle when there is no data to process.
- **Processing** - The server is currently processing data.
- **Startup** - The server is in initialization and startup mode.

Current User Logins

The **Current User Logins** branch displays who is currently logged in to **CRM Studio**. Select an individual user in the right panel to view the following information:

- The **CRM Studio** module that the user is logged in to. This will display either the Administrator, Event Monitor, or Studio Architect.
- The computer and name of the user.
- The user's operating system and platform.
- The date and time when the user last logged in.
- The date and time of the user's last activity.

Scheduler Folder

The **Scheduler** informs you about the events that are next in line for submission. These include both unscheduled (or triggered) events and report distribution events.

To view details of individual records that are due for submission, select the **Next Run Date/Time** option.

For each event that is shown, you can view:

- Event ID (internally-assigned by **CRM Studio**)
- Database to which the event belongs
- Name of the event
- Date and time when the event is next scheduled
- Frequency of submission of the event (such as Monthly)
- Description of the frequency (such as the First of the Month)

Application Events Folder

An application event is any event with the exception of reports that are scheduled for distribution. These reports are listed under the **Report Distribution** branch.

The **Application Events** folder enables you to track the status of application events that are due to run, have already run, or have failed to run successfully because of an error.

Application events are divided into four categories

Pending

Application Events in a 'pending' state are those that are about to be executed. Events appear in this state due to one of the three reasons:

- The Everest Application Event Server is not running.
- The Everest Application Event Server is currently processing data. The number and complexity of submitted events may cause the subsequent events to be in a 'pending' state until their execution.
- The event failed to execute successfully (see **"How to Handle Event Errors" on page 265**.)

An event becomes 'pending' as soon as it is due to be submitted, and thus does not remain in a pending state for very long (unless an error occurs).

Everest automatically attempts to re-submit pending application events every minute.

Once an event successfully executes, it is removed from the Pending list. Only one iteration of an event will ever appear in the Pending list, regardless of the number of errors that have occurred, or the period for which the application event server has been shut down. This is to avoid having multiple copies of the same event execute simultaneously when the error or server condition is rectified.

Checked

When an application event is executed by **CRM Studio**, one of the three things may happen:

- The event fails to execute successfully (i.e., it is in error).
- The event executes successfully, but is not triggered (i.e., the condition that it was testing for, was not met).
- The event executes successfully, and is triggered (i.e., the condition that it was testing for, was met).

Application events in a 'checked' state are those that are successfully executed and may (or may not) have been triggered. This option is useful for verifying that events you set up for execution are, in fact, successfully running.

Checked events include every iteration of a successfully executed event.

Example An event that executes every 15 minutes will (over a two-hour time span) display eight (8) records in the checked events lists.

☞ **"Keeping Last Checked Record" on page 267**

Triggered

Application Events that are 'Triggered' have met the condition(s) they were checking for.

Example An event that finds 'more than 10 high priority service calls' or an event that finds 'an order placed for a customer whose credit status is on hold.'

Once an event is triggered, the corresponding alerts are initiated.

Triggering an event does not ensure that the corresponding alert(s) have been successfully executed, but rather that the resulting alert(s) have been initiated. To

ascertain whether the alert(s) have been successfully executed, review the corresponding 'Deliverables' for that event.

👉 **"Deliverables Button" on page 263**

For each event that is triggered, the number of records that you will see in the 'triggered events' folder depends on whether:

- You are sending one alert for each record that meets the event's criteria, or
- You are sending one alert for all records that meet the event's criteria. If an event sends one alert per triggered record, you will see multiple triggered event records within this folder. The number of triggered event records displayed will correspond to the number of database records that met the event's trigger criteria.

Example You define the following event:

Send an alert to each support representative about any high priority call that has been open for longer than four hours.

When this event runs, it may identify multiple call records that meet this event's criteria.

If the event is configured to trigger once for each record that meets its criteria (and there are multiple records that meet those criteria), you will see multiple **Triggered** records in the **Event Monitor** for a single event.

Deliverables Button

When an event is triggered, it often results in alerts being sent to one or more individuals. The **Deliverables** button allows you to view:

- The person to be notified about a triggered event.
- The method(s) by which each person is to be notified.
- The address to which the alert is sent.
- Attached files or reports (and their names), if any, included in the alert.
- Whether the message is successfully delivered to the recipient.
- The date and time when the message is delivered (if successful) or (if unsuccessful) when it was supposed to be delivered.

To use the Deliverables function, do the following:

- From the **Everest CRM Studio Event Monitor** dialog box, select **Application Events > Triggered** (any one).
- Click the event whose deliverables you would like to see.
- Click the **Deliverables** button.
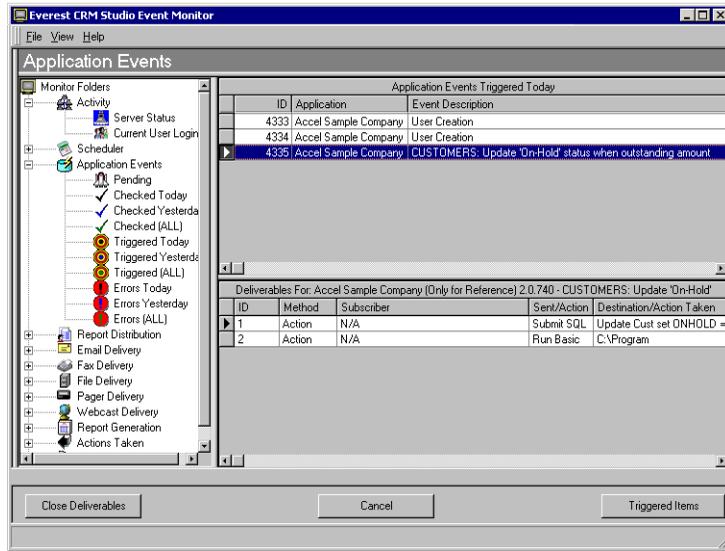
Figure 8.2: Event Deliverables

You can adjust the height of the deliverables window by clicking and dragging the horizontal line that separates the deliverables window from the triggered event listing.

Triggered Items Button

When an event is configured in **CRM Studio**, you can identify a single field of data that uniquely identifies each triggered record.

Example For an event that is triggered by orders meeting certain criteria, this would most likely be the order number.

For an event that is triggered by support calls meeting certain criteria, this would probably be the call ticket ID.

If an event is configured to store this unique identifying value, you can view this value for a triggered event from the **Event Monitor**. This value is referred to as an event's triggered item.

A triggered event may have only a single triggered item (if the event is triggered once for all matching records), or multiple triggered items (if the event is triggered once for each matching record).

If an event is not configured to store a triggered event's unique identifying value, the **Triggered Items** button is disabled.

To use the Triggered Items function, do the following:

- From the **Everest CRM Studio Event Monitor** dialog box, select **Application Events > Triggered** (any one).
- Click the event whose triggered items you would like to see.
- Click the **Triggered Items** button.
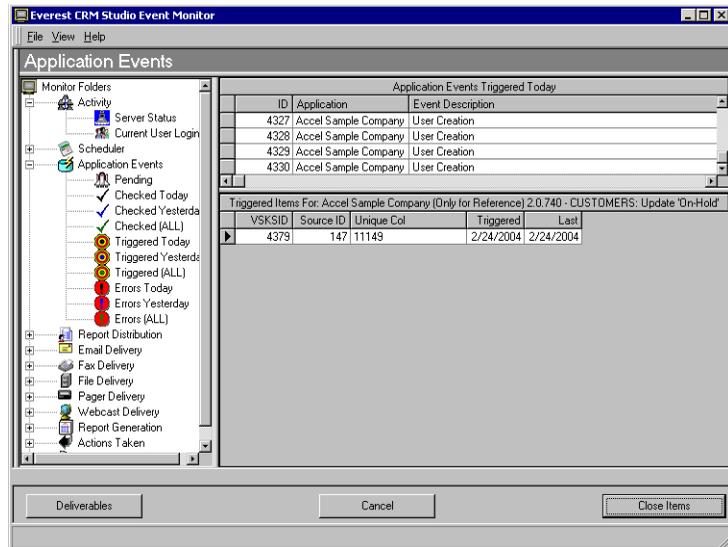
Figure 8.3: Event Triggered Items

For each event you will see the triggered items (such as an order number), along with the date when the event was last checked and triggered.

Errors

Application Events that appear under 'Errors' are those that have failed to execute successfully. Possible reasons for errors include the inability of **Everest** to reach a database (or server), or an event whose query contains incorrect syntax.

If an event encounters an error, it is placed in both the **Errors** and **Pending** folder. **Everest** continues to automatically submit the pending event until one of the two things happens:

- The event successfully executes (i.e., the condition that caused the error, is corrected).
- The error record is deleted or marked as 'complete' from the **Administrator** module.

Once an event executes successfully, or is deleted or completed via a corrective action, it is removed from both, the **Pending** and the **Errors** folders.

How to Handle Event Errors

Event errors can occur for a number of reasons, such as an error in the configuration of the event, or **CRM Studio**'s inability to access a database.

When an application event fails to complete successfully because of an error, three things happen:

- The event appears in the **Errors** branch under **Application Events**.
- The event appears in the **Pending** branch under **Application Events**.
- **Everest** re-submits the event every minute until:
  - The event successfully executes.

- The event error is corrected.
- This run of the event is deleted.

> **CRM Studio** retains only one (1) iteration of an event that is in error. Thus, even if you have an event that runs every five minutes and it fails to run successfully for 30 minutes, **CRM Studio** retains only one copy of that event in the **Pending** and **Error** branches.

The possible errors and their solutions are given below:

Cause of Error	Solution
A condition that will correct itself (such as an application database server being shut down)	Leave the pending event until the condition is corrected, at which time the event will successfully execute.
An incorrect configuration in the event and/or its queries	Log into the **Everest CRM Studio Architect** and manually correct the corresponding error. Once you fix this error, **CRM Studio** will automatically use the updated version the next time it submits the event.

If you simply wish to remove a particular run of the event, log in to the **Everest CRM Studio Administrator** (path: **CRM > CRM Studio > Administrator**), and remove the event in any of the following ways:

- Select **Corrective Actions > Application Event Errors** and manually delete (or mark as complete) this particular run of the event.
- Select **File > Database Tools > Remove Pending Items**. You will see the **Everest CRM Studio - Remove Pending Items from Database** dialog box. Select the **Application Events Pending** check box, and click **Remove**.

> This will remove ALL pending application events including those that do not have any errors.

Application Event Data

For each application event that appears in the **Application Event** branches of the Monitor, you will see the following:

- Event ID (internally-assigned by **CRM Studio**)
- The database to which the event belongs
- The name of the event
- Event priority
- When the event was checked, triggered, or failed due to an error

For triggered events:

- The pager alert message
- The e-mail alert message subject
- The e-mail alert message text
- The fax comments

For events in error:

- The error number

• The error message

Keeping Last Checked Record

When configuring an event, you can indicate whether the **Event Monitor** should display details of all checks or only the last check on an event (path: **Everest CRM Studio Architect** dialog box **> Event Management Folders** panel **> Application Events > Events >** double-click an event in the right panel **> Everest CRM Studio - Application Events\(your company)\Events** dialog box **>** select/deselect **Keep only last checked record in Monitor**).

This option is only for records with the "Checked" status. Everest automatically retains the details every time an event is "Triggered".

Example You define an event called 'High Priority Support Calls' that is checked every hour. If this event is configured to retain every checked record, you would see the following listing:

```
Help Desk Application   High Priority Support Calls  05/03/01 8:00:00 AM
Help Desk Application   High Priority Support Calls  05/03/01 9:00:00 AM
Help Desk Application   High Priority Support Calls  05/03/01 10:00:00 AM
Help Desk Application   High Priority Support Calls  05/03/01 11:00:00 AM
```

If this event is configured to retain only the last checked record, you will see the following:

```
Help Desk Application   High Priority Support Calls  05/03/01 11:00:00 AM
```

If you retain only the last checked record, and a scheduled run of an event enters a 'pending' state, the last checked record is automatically removed from the pending list.

Thus, it is possible (if the current run of an event ends in error) that you will see no record of the last time that event was checked; you will see it listed only in the **Pending** and **Error** branches.

Displaying Full Message Text

Any column of information within the display grid (such as the e-mail alert message text) may be expanded to display the full text that it contains.

To display the full text of a field within the grid, point your cursor at that field. The **Event Monitor** automatically pops up a window that shows you the full content.
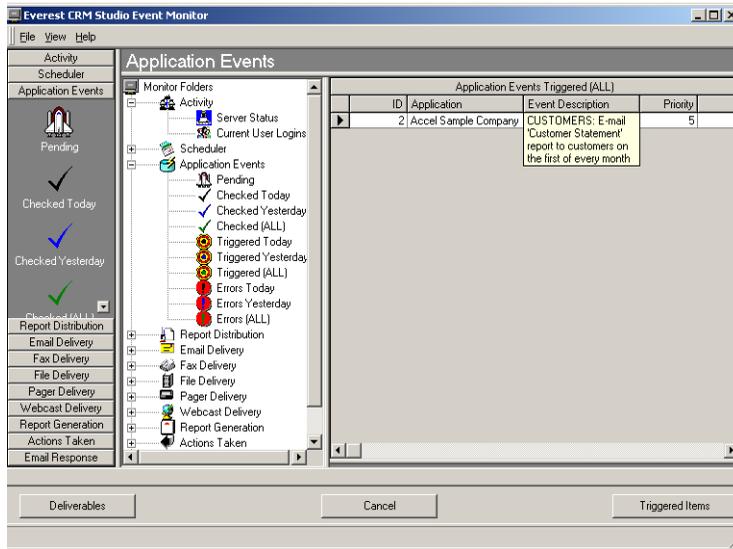
Figure 8.4: Displaying Alert Message Details

You can test your event alert messages by using this method. Instead of actually sending the messages via e-mail, fax, pager, etc., you can trigger the corresponding event and view the alert message details in the **Event Monitor**. You can use the **Everest CRM Studio Administrator** to delete pending items (path: **File > Database Tools > Remove Pending Items**) if you choose not to send them.

Report Distribution Folder

The **Report Distribution** folder pertains exclusively to reports that are scheduled for periodic generation and distribution in **CRM Studio**. It does not relate to reports that are linked to application events (see **"Report Generation Folder" on page 278**).

A Report Distribution event is an event that schedules the generation and distribution of one or more reports. Within the two sub-branches of this folder (Pending and Submitted), you can view the names of scheduled report events (such as Weekly Management Reports) and the date and time when they are to be submitted.

Pending

'Pending' Report distributions are those that are about to be executed. Report distributions appear in this state due to one of the two reasons:

• The Everest Report Server is not running.

• The Everest Report Server is currently processing data. The number and complexity of submitted report distributions may cause the subsequent records to be in a 'pending' state until their execution.

Once an event executes successfully, it is removed from the pending list.

Submitted

When a report distribution is executed, **Everest** generates the individual report(s) associated with the distribution record.

Report distributions in a 'submitted' state are those that are passed on to the report generation component of **Everest**. In other words, a submitted report distribution event indicates that the reports associated with this event are submitted for execution. After the reports are generated (see **"Report Generation Folder" on page 278**), they are delivered to the appropriate subscribers via e-mail, fax, file copy, and webcast.

This folder includes every iteration of a successfully executed distribution.

Example | A report distribution record that executes every hour (over a four-hour time span) displays four records in the 'Submitted' folder.

Use the **Report Generation** branch to track the progress of the individual reports associated with the scheduled report event.

E-Mail Delivery Folder

Once an event is triggered or a report is generated, one of the ways in which the corresponding information can be delivered is via electronic mail. The **E-mail Delivery** options are useful for reviewing the status of these e-mail messages.

- E-mail deliveries for triggered events without attached reports, appear directly in the 'E-Mail Delivery' branch.
- E-mail deliveries for triggered events with attached reports, generate the reports (see the **Generated Reports** branch) first, and then appear in this folder. The e-mail delivery is initiated after the attached reports are successfully generated.
- E-mail deliveries for report distributions generate the reports (see the **Generated Reports** branch) first, and then appear in this folder. The e-mail delivery is initiated after the reports are successfully generated.

An e-mail message can also reference a related report without actually having the report attached. You can use this feature to notify users about a report that is generated in a central location. In such a case, you can specify (in the event) whether the e-mail delivery should wait until the related reports are produced. If you select the wait option, and the reports fail to generate, the error record appears under 'Generated Reports', and not under 'E-Mail Delivery.'

The **E-mail Delivery** folder is divided into three branches:

Pending

E-mail deliveries in a 'pending' state are those that are about to be sent. E-mails appear in this state for one of the four reasons:

- The **Everest** E-Mail Delivery Server is not running.
- The **Everest** E-Mail Delivery Server is currently processing data. The number and complexity of e-mails may cause subsequent messages to be in a 'pending' state until their execution.
- **Everest** encountered an error while attempting to send the e-mail (see **"How to Handle E-Mail Delivery Errors" on page 270**).

- **Everest** is unable to access the e-mail attachment(s) (attachments other than reports).

Everest automatically attempts to re-send 'pending' e-mails. When these e-mails are successfully sent, they are removed from the pending list.

If an e-mail is in a pending state and the same event occurs again, **Everest** tries to send the second e-mail as well. If this also fails, you will see two pending records.

Sent

A sent mail message is one that is successfully delivered to its recipient.

> A mail message that results in an undeliverable reply message is still considered as successful by **CRM Studio** because the initial delivery of the message did succeed.

Errors

A mail message is displayed under the Errors branch if **CRM Studio** is unable to successfully send the message.

An error would appear here if, for example, the e-mail account used for sending the notifications is set up with the wrong user name or password, or the recipient's ISP is shut down.

> A recipient's incorrect address would not result in an e-mail error; rather the e-mail message would be sent back to the sender of the notifications with information of the invalid address.

If an e-mail delivery fails due to an error, it is placed in both, the **Errors** and **Pending** folders. **Everest** continues to automatically submit the pending e-mail until one of two things happens:

- The e-mail is successfully delivered (the condition that caused the error is corrected).
- The error record is deleted or marked as 'complete' from the **Administrator** module.

Once an e-mail is delivered successfully, or is deleted or completed via a corrective action, it is removed from both the **Pending** and **Errors** folders.

> If the report attached to an e-mail is not generated successfully, the error is listed under 'Report Generation' errors.
>
> However, if **Everest** is unable to locate the file to be attached to an e-mail, the error is listed under 'E-mail Delivery Errors.'

How to Handle E-Mail Delivery Errors

E-mail errors can occur for a number of reasons, such as an error in the recipient's address, or **CRM Studio**'s inability to access the mail server.

When an e-mail message fails to be delivered successfully because of an error, three things happen:

- The message appears in the **Errors** branch under E-mail Delivery.
- The message appears in the **Pending** branch under E-mail Delivery.
- **CRM Studio** attempts to re-send the message every minute until:
  - The message is successfully sent.
  - The mail address error is corrected.

- The mail message is deleted.

If you wish to either correct an invalid address or delete the pending message, log in to the **Everest CRM Studio Administrator** (path: **CRM > CRM Studio > Administrator**). You have three further choices:

- Select **Corrective Action > E-mail Delivery Errors** and correct the invalid address.
- Select **Corrective Action > E-mail Delivery Errors** and manually delete (or mark as 'successfully delivered') this e-mail message.
- Select **File > Database Tools > Remove Pending Items**. You will see the **Everest CRM Studio - Remove Pending Items from Database** dialog box. Select the **E-mail Pending** check box and click **Remove**.

This will remove ALL pending e-mail messages including those that do not have any errors.

Fax Delivery Folder

Once an event is triggered or a report is generated, one of the ways in which you can send the corresponding information is through fax. The **Fax Delivery** branch is useful for reviewing the status of these fax messages.

Everest uses fax deliveries for three types of events:

- Triggered events without attached reports
- Triggered events with attached reports
- Report distributions

- Fax deliveries for triggered events without attached reports appear directly in the 'Fax Delivery' branch.
- Fax deliveries for triggered events with attached reports generate the reports (see the 'Generated Reports' branch) first, and then appear in this folder. The fax delivery is initiated after the attached reports are successfully generated.
- Fax deliveries for report distributions generate the reports (see the 'Generated Reports' branch) first, and then appear in this branch. The fax delivery is initiated after the reports are successfully generated.

A fax message may reference a related report without actually attaching the report. You can use this feature to notify users about a report that is generated in a central location. In this case, you can specify (in the event) whether the fax delivery should wait until the related reports are produced. If you select the wait option, and the reports fail to generate, the error record appears under 'Generated Reports', and not under 'Fax Delivery.'

The **Fax Delivery** folder is divided into three branches:

Pending

Fax deliveries in a 'pending' state are those that are about to be sent. They appear in this state for one of the four reasons:

- The Everest Fax Delivery Server is not running.
- The Everest Fax Delivery Server is currently processing data. The number and complexity of faxes may cause subsequent messages to be in a 'pending' state until their execution.

- **Everest** encounters an error while attempting to send the fax (see **"How to Handle Fax Delivery Errors" on page 272**).
- **Everest** is unable to access the fax attachment(s) (attachments other than reports).

If a fax is placed in a pending state, **Everest** automatically attempts to re-send it. When this fax is sent successfully, it is removed from the pending list.

If a fax is in a pending state and the same event occurs again, **Everest** tries to send the second fax as well. If this also fails, you will see two pending records.

Sent

A sent fax message is one that is successfully delivered to its recipient.

Errors

A fax message shows up under the errors branch if **CRM Studio** is unable to successfully send the message. An error appears here if, for example, the fax phone number is invalid or the fax port is busy when accessed by **Everest**.

If a fax delivery fails due to an error, it is placed in both, the **Errors** and the **Pending** folders. **Everest** continues to automatically submit the pending fax until either of the following happens:

- The fax is delivered successfully (i.e., the condition that caused the error is corrected).
- The error record is deleted or marked as 'complete' from the **Administrator** module.

Once a fax is delivered successfully, or is deleted or completed via a corrective action, it is removed from both, the **Pending** and the **Errors** folders.

 If the reports attached to a fax are not generated successfully, the error is listed under 'Report Generation' errors.

However, if **Everest** fails to locate the files to be attached to a fax, the error is listed under 'Fax Delivery Errors.'

How to Handle Fax Delivery Errors

Fax errors can occur for a number of reasons, such as an error in the recipient's address, or **CRM Studio**'s inability to access a fax modem. The most common reason why fax alerts do not get sent is because the fax server is not currently running.

When a fax message is not delivered successfully because of an error, three things happen:

- The message appears in the **Errors** branch under Fax Delivery.
- The message appears in the **Pending** branch under Fax Delivery.
- **CRM Studio** attempts to re-send the message every minute until:
    - The message is successfully sent.
    - The fax phone number error is corrected.
    - The fax message is deleted.

To either correct an invalid address or delete the pending message, log in to the **Everest CRM Studio Administrator** (path: **CRM > CRM Studio > Administrator**). You have three further choices:

- Select **Corrective Action > Fax Delivery Errors** and correct the invalid fax number.
- Select **Corrective Actions > Fax Delivery Errors** and manually delete (or mark as 'successfully delivered') this fax message.
- Select **File > Database Tools > Remove Pending Items**. You will see the **Everest CRM Studio - Remove Pending Items from Database** dialog box. Select the **Faxes Pending** check box, and click **Remove**.

> This will remove ALL pending fax messages including those that do not have any errors.

File Delivery Folder

Once an event is triggered or a report is generated, one of the ways in which you can send the corresponding information is by copying a file from one location (disk and directory) to another. The **File Delivery** folder is useful for reviewing the status of these copied files.

Everest uses the file copy delivery method for four types of events:

- Events that copy files.
- Events that copy reports.
- Report distributions that copy files.
- Report distributions that copy reports.

> - File deliveries for events, and report distributions that copy files appear directly in the 'File Delivery' branch.
> - File deliveries for events that copy reports generate the reports (see the 'Generated Reports' branch) first, and then appear in this folder. The file delivery is initiated after the attached reports are successfully generated.
> - File deliveries for report distributions that copy reports generate the reports (see the 'Generated Reports' branch) first, and then appear in this folder. The file delivery is initiated after the reports are successfully generated.

This folder is divided into three branches:

Pending

File deliveries in a 'pending' state are those that are about to be sent. Deliveries appear in this state for one of the four reasons:

- The Everest File Delivery Server is not running.
- The Everest File Delivery Server is currently processing data. The number and complexity of files may cause subsequent files to be in a 'pending' state until their execution.
- **Everest** encounters an error while attempting to send the file (see **"How to Handle File Delivery Errors" on page 274**).
- **Everest** is unable to access the file(s).

Everest automatically attempts to re-send 'pending' file deliveries. When files are sent successfully, they are removed from the pending list.

If a file delivery is in a pending state and the same event occurs again, **Everest** tries to send the second file as well. If this also fails, you will see *two* pending records.

Sent

A sent file is one that is successfully delivered to its recipient.

Errors

A file is displayed in the errors branch if **CRM Studio** is unable to successfully send the corresponding file. An error appears here if, for example, **Everest** is unable to access the destination for the copied file.

If a file delivery fails due to an error, it is placed in both, the **Errors** and the **Pending** folders. **Everest** continues to automatically submit the pending file delivery until one of the two things happens:

- The file is successfully delivered (the condition that caused the error is corrected)
- The error record is deleted or marked as 'complete' from the **Administrator** module.

Once a file is delivered successfully, or is deleted or completed via a corrective action, it is removed from both, the **Pending** and the **Errors** folders.

> If the report attached to a file delivery is not generated successfully, the error is listed under 'Report Generation' errors.
>
> However, if **Everest** is unable to locate the file to be attached, the error is listed under 'File Delivery Errors.'

How to Handle File Delivery Errors

File delivery errors can occur for a number of reasons, such as an error in the file's delivery address, or **CRM Studio**'s inability to access the file's location. The most common reason why files do not get sent is because the server onto which it must be copied is not running currently.

When a file message is not delivered successfully because of an error, three things happen:

- The file appears in the **Errors** branch under File Delivery.
- The file appears in the **Pending** branch under File Delivery.
- **CRM Studio** attempts to re-send the file every minute until:
    - The file is successfully sent.
    - The file delivery request is deleted.

To delete the corresponding delivery, log in to the **Everest CRM Studio Administrator** (path: **CRM > CRM Studio > Administrator**). You have two further choices:

- Select **Corrective Actions > File Delivery Errors** and manually delete (or mark as 'successfully delivered') this file delivery request.

- Select **File > Database Tools > Remove Pending Items**. You will see the **Everest CRM Studio - Remove Pending Items from Database** dialog box. Select the **File Deliveries Pending** check box, and click **Remove**.

This will remove ALL pending file delivery requests including those that do not have any errors.

Pager Delivery Folder

Once an event is triggered or a report is generated, one of the ways in which you can send the corresponding messages is via pager. The **Pager Delivery** folder is useful for reviewing the status of your pages.

The **Pager Delivery** folder informs you about pager alerts that:

- Are pending (about to be sent).
- Were sent today, yesterday, or since auditing began ('all').
- Were in error today, yesterday, or since auditing began ('all').

A pager message may reference a related report. You can use this feature to notify users about a report that is generated in a central location. In this case, you can specify (in the event) whether the page delivery should wait until the related reports are produced. If you select the wait option, and the reports fail to generate, the error record appears under 'Generated Reports', and not under 'Pager Delivery.'

The **Pager Delivery** folder is divided into three branches:

Pending

Pager deliveries in a 'pending' state are those that are about to be sent. Pager deliveries appear in this state for one of the three reasons:

- The **Everest** Pager Delivery Server is not running.
- The **Everest** Pager Delivery Server is currently processing data. The number and complexity of pages may cause subsequent alerts to be in a 'pending' state until their execution.
- **Everest** encounters an error while attempting to send the page (see **"How to Handle Pager Delivery Errors" on page 276**).

Everest automatically attempts to re-send 'pending' pager alerts. When these alerts are sent successfully, they are removed from the pending list.

If a page is in a pending state and the same event occurs again, **Everest** tries to send the second page as well. If this also fails, you will see *two* pending records.

Sent

A sent pager message is one that is successfully delivered.

Errors

A pager message shows up under the errors branch if **CRM Studio** is unable to successfully send the message. An error appears here if, for example, the pager PIN number is invalid or the pager port is busy when accessed by **Everest**.

If a pager delivery fails due to an error, it is placed in both, the **Errors** and the **Pending** folders. **Everest** continues to automatically submit the pending page until one of the two things happens:

- The alert is successfully delivered (the condition that caused the error is corrected)
- The error record is deleted, or marked as 'complete' from the **Administrator** module.

Once a page is delivered successfully, or is deleted or completed via a corrective action, it is removed from both, the **Pending** and the **Errors** folders.

How to Handle Pager Delivery Errors

Pager errors can occur for a number of reasons, such as an error in the recipient's PIN number, or **CRM Studio**'s inability to access a modem from which to send the page. The most common reason why pager alerts do not get sent is because the pager server is not currently running.

When a pager alert fails due to an error, three things happen:

- The message appears in the **Errors** branch under Pager Delivery.
- The message appears in the **Pending** branch under Pager Delivery.
- **CRM Studio** attempts to re-send the message every minute until:
    - The message is successfully sent.
    - The pager PIN number is corrected.
    - The pager message is deleted.

To either correct an invalid PIN number or delete the pending message, log in to the **Everest CRM Studio Administrator** (path: **CRM > CRM Studio > Administrator**). You have three further choices:

- Select **Corrective Actions > Pager Delivery Errors** and correct the invalid PIN number.
- Select **Corrective Actions > Pager Delivery Errors** and manually delete (or mark as 'successfully delivered') this pager message.
- Select **File > Database Tools > Remove Pending Items**. You will see the **Everest CRM Studio - Remove Pending Items from Database** dialog box. Select the **Pages Pending** check box, and click **Remove**.

This will remove ALL pending pager messages including those that do not have any errors.

Webcast Delivery Folder

Once an event is triggered or a report is generated, one of the ways in which you can send the corresponding information is via webcast. The **Webcast Delivery** folder allows you to review the status of your webcasts.

Everest uses webcast deliveries for three types of events:

- Triggered events without attached reports
- Triggered events with attached reports

- Report distributions

- Webcast deliveries for triggered events without attached reports appear directly in the 'Webcast Delivery' branch.
- Webcast deliveries for triggered events with attached reports generate the reports (see the 'Generated Reports' branch) first, and then appear in this folder. The webcast delivery is initiated after the attached reports are successfully generated.
- Webcast deliveries for report distributions generate the reports (see the 'Generated Reports' branch) first, and then appear in this folder. The webcast delivery is initiated after the reports are successfully generated.

A webcast message may reference a related report without actually attaching the report. You can use this feature to notify users about a report that is generated in a central location. In this case, you can specify (in the event) whether the webcast delivery should wait until the related reports are produced. If you select the wait option, and the reports fail to generate, the error record appears under 'Generated Reports', and not under 'Webcast Delivery.'

The **Webcast Delivery** folder is divided into three branches:

Pending

Webcast deliveries in a 'pending' state are those that are about to be sent. Deliveries will appear in this state for one of the four reasons:

- The **Everest** Webcast Delivery Server is not running.
- The **Everest** Webcast Delivery Server is currently processing data. The number and complexity of webcasts may cause subsequent messages to be in a 'pending' state until their execution.
- **Everest** encounters an error while attempting to send the webcast (see **"How to Handle Webcast Delivery Errors" on page 278**).
- **Everest** is unable to access the webcast attachment(s) (attachments other than reports).

Everest automatically attempts to re-send 'pending' webcast deliveries. When the webcast is successfully sent, it is removed from the pending list.

If a webcast is in a pending state and the same event occurs again, **Everest** tries to send the second webcast as well. If this also fails, you will see *two* pending records.

Sent

A sent webcast message is one that is successfully delivered to its recipient.

Errors

A webcast message is displayed under the errors branch if **CRM Studio** is unable to successfully send the message. An error appears here if, for example, **Everest** is unable to access the web server.

If a webcast delivery fails due to an error, it is placed in both, the **Errors** and the **Pending** folders. **Everest** continues to automatically submit the pending webcast until one of the two things happens:

- The webcast is successful (the condition that caused the error is corrected).

- The error record is deleted, or marked as 'complete' from the **Administrator** module.

Once a webcast is delivered successfully, or is deleted or completed via a corrective action, it is removed from both, the **Pending** and the **Errors** folders.

> If the report to be attached to a webcast is not generated, the error is listed under 'Report Generation' errors.
>
> However, if **Everest** is unable to locate the file to be attached to the webcast, the error is listed under 'Webcast Delivery Errors.'

How to Handle Webcast Delivery Errors

Webcast errors can occur for a number of reasons, such as an error in the recipient's webcast name, or **CRM Studio**'s inability to access the server on which the webcast will be posted. The most common reason why webcast alerts do not get sent is because the webcast server is not currently running.

When a webcast message fails to be delivered successfully because of an error, three things happen:

- The message appears in the **Errors** branch under Webcast Delivery.
- The message appears in the **Pending** branch under Webcast Delivery.
- **CRM Studio** attempts to re-send the message every minute until:
  - The message is successfully sent.
  - The webcast name is corrected.
  - The webcast message is deleted.

To either correct an invalid webcast name or delete the pending message, log in to the **Everest CRM Studio Administrator** (path: **CRM > CRM Studio > Administrator**). You have three further choices:

- Select **Corrective Actions > Webcast Delivery Errors** and correct the invalid webcast name.
- Select **Corrective Actions > Webcast Delivery Errors** and manually delete (or mark as successfully delivered) this webcast message.
- Select **File > Database Tools > Remove Pending Items**. You will see the **Everest CRM Studio - Remove Pending Items from Database** dialog box. Select the **Webcast Pending** check box, and click **Remove**.

> This will remove ALL pending webcast messages including those that do not have any errors.

Report Generation Folder

Reports may be generated under one of two circumstances:

- As part of a scheduled report distribution
- As content for a triggered application event

Regardless of which of these two options initiates the generation of a report, the Report Generation option allows you to monitor the status of the creation of individual reports.

If a report is generated, it does follow that the report is also successfully delivered. Once the generation is complete, the report must still be handed over to the appropriate delivery medium for distribution (such as E-mail, Fax, File, or Webcast).

You must thus, review the appropriate delivery record to check if the report is delivered to its intended recipients.

Report generation occurs after either a triggered event or a report distribution, but before the actual delivery of the related report(s).

The **Report Generation** folder is divided into three branches:

Pending

Report generations in a 'pending' state are those that are about to be created. Records appear in this state for one of the three reasons:

• The **Everest** Report Generation Server is not running.

• The **Everest** Report Generation Server is currently processing data. The number and complexity of reports may cause subsequent records to be in a 'pending' state until their generation.

• **Everest** encounters an error while attempting to generate the report (see **"How to Handle Report Generation Errors" on page 280**).

Everest automatically attempts to resubmit 'pending' report generations. When the report is successfully generated, it is removed from the pending list.

If a report is in a pending state and the same event occurs again, **Everest** tries to submit the second report as well. If this also fails, you will see two pending records.

Generated

A generated report is one that is successfully produced.

Errors

A report is displayed under the errors branch if **CRM Studio** is unable to successfully generate the report. An error appears here if, for example, the report source file cannot be found or the selection parameters being passed to the report are invalid.

If a report fails due to an error, it is placed in both, the **Errors** and the **Pending** folders. **Everest** continues to automatically submit the pending report until one of the two things happens:

• The report is successfully generated (the condition that caused the error is corrected)

• The error record is deleted, or marked as 'complete' from the **Administrator** module.

Once a report is generated successfully, or is deleted or completed via a corrective action, it is removed from both, the **Pending** and the **Errors** folders.

How to Handle Report Generation Errors

Report generation errors can occur for a number of reasons, typically an error in the report's design. The most common reason why reports do not get generated is because the report server is not currently running.

When a report is not generated because of an error, three things happen:

- The report appears in the **Errors** branch under Report Generation.
- The message appears in the **Pending** branch under Report Generation.
- **CRM Studio** attempts to re-generate the report every minute until:
  - The report is successfully generated.
  - The report generation request is deleted.

To delete the pending report, log in to the **Everest CRM Studio Administrator** (path: **CRM > CRM Studio > Administrator**). You have two further choices:

- Select **Corrective Actions > Report Generation Errors** and manually delete (or mark as 'successfully delivered') this report generation request.
- Select **File > Database Tools > Remove Pending Items**. You will see the **Everest CRM Studio - Remove Pending Items from Database** dialog box. Select the **Reports Pending** check box, and click **Remove**.

This will remove ALL pending report generation requests including those that do not have any errors.

Actions Taken Folder

The **Actions Taken** folder contains events that execute one or more response actions (such as updating a database) as a result of a triggered event. This folder is divided into three branches:

- **Pending** - A pending action is one that is not completed either because **CRM Studio** is busy executing other actions, or because the action failed to be executed successfully (see **"How to Handle Action Errors" on page 280**).
- **Completed** - A completed action is one that is successfully executed.
- **Errors** - An action shows up under the errors branch if **CRM Studio** is unable to successfully execute it. If an action fails due to an error, it is placed in both, the **Errors** and the **Pending** folders.

How to Handle Action Errors

Action errors refer to **CRM Studio**'s inability to submit (or execute) the action.

Action errors can occur for a number of reasons, including an error in the corresponding action file specification. The most common reason why actions do not get executed is because the action server is not currently running.

Action errors are not recorded in the Monitor if an action (such as a program or VB script) executes successfully, and returns an error status code.

When an action fails to be executed successfully because of an error, three things happen:

- The action appears in the **Errors** branch under Actions Taken.
- The action appears in the **Pending** branch under Actions Taken.
- **CRM Studio** attempts to re-execute the action every minute until:
  - The action is successfully executed.

- This run of the action is deleted.

To delete the action, log in to the **Everest CRM Studio Administrator** (path: **CRM > CRM Studio > Administrator**). You have two further choices:

- Select **Corrective Actions > Action Errors** and manually delete (or mark as 'successfully delivered') this action request.
- Select **File > Database Tools > Remove Pending Items**. You will see the **Everest CRM Studio - Remove Pending Items from Database** dialog box. Select the **Actions Pending** check box, and click **Remove**.

 This will remove ALL actions that are pending including those that do not have any errors.

E-Mail Response Folder

The **E-mail Response** folder is designed exclusively for use with the **CRM Studio** E-Mail Response System (ERS). This folder allows you to see:

- The e-mail accounts being checked for new messages.
- The number of messages received, if any, and loaded into **CRM Studio.**
- Errors, if any, encountered during this process.

Since ERS loads incoming mail messages into the internal **CRM Studio** ERS database, the **E-mail Response** branch monitors messages only until they are loaded into the ERS database.

Once loaded, ERS events are treated just like any other application event, and thus you need to look at the **Application Events** folder to monitor the status of these events.

The **E-mail Response** folder is divided into three branches:

- **Checked** - A checked mail account is one that is not successfully monitored for incoming mail messages.
- **Received** - A received mail message is one that is successfully loaded into the **CRM Studio** ERS database.
- **Errors** - ERS records an error if **CRM Studio** is unable to successfully check one or more e-mail accounts for incoming mail messages.

9. E-Mail Response System

ERS Configuration
ERS Queries and Events

CRM Studio's E-Mail Response System (abbreviated to ERS) lets you define events that monitor incoming e-mail messages in much the same way that you can monitor database records. If an e-mail message meets certain criteria, you can:

- Re-route the mail message to specific recipients.
- Use **CRM Studio**'s pager, fax, copy/ftp, and webcast alerts to notify people about the receipt of the message.
- Auto-reply to the sender of the e-mail message.
- Use the contents of the e-mail message to add or update records in an underlying database.

In addition, **CRM Studio** allows you to trigger events based on groups of e-mail messages, such as:

- More than 10 mail messages sent to support today
- Fewer than 25 responses to an e-mail marketing blast
- More than 100 units of product 'x' ordered by e-mail this week
- The average price of e-mail orders drops below $500 last week

> ERS refers specifically to **CRM Studio**'s ability to monitor incoming e-mail messages and respond to them. If your interest is strictly in **CRM Studio**'s ability to send outgoing alert messages via e-mail, you do not need to use the ERS.

Web Form Support

It is very important to note that the ERS can monitor e-mail messages that come from any source including e-mail messages that are generated as a result of data entered on a web form.

If you use web forms to capture data such as on-line orders, requests for information, support questions, et cetera, these forms can output the content entered into them in the form of an e-mail message.

Employing the ERS, you can use the contents of these mail messages to send alerts, auto-respond to the person who filled out the web form, and update underlying databases.

Supported E-Mail Systems

The E-Mail Response System supports all major e-mail systems, including those that are Internet, Mapi, Exchange, and Vim compliant.

How It Works

Here is an overview of how the E-Mail Response System works:

- Instruct **CRM Studio** which e-mail accounts to monitor for incoming messages.
- When a new message arrives in one of these accounts, **CRM Studio** loads all the data associated with that message into a record in an underlying (**CRM Studio**-internal) database.

During this loading process, **CRM Studio** parses data from specific parts of the incoming mail message to specific fields in the database record that is created.

- Create **CRM Studio** queries to evaluate the e-mail records (in the same way you use queries to evaluate database records).
- Create events with these queries. These events send out alerts, auto-respond to the e-mail sender, and (if appropriate), update underlying databases with the necessary data.

The key to this whole process is that **CRM Studio** takes each incoming e-mail message and creates a database record out of it. As a result, you can use the standard **CRM Studio** query and event design functions to process and respond to the incoming message.

Additionally, because **CRM Studio** stores e-mail messages in an internal database, you can run multiple events off the incoming messages. This allows you to create events that check for such things as more than 'x' mail messages received from an organization, or fewer than 'y' messages received in response to a marketing campaign.

What This Chapter Covers

Once **CRM Studio** loads incoming mail messages into individual records within its underlying database, the method of identifying the content of those mail messages (via queries) and the method of responding to those mail messages (via events) is the same as if you were working with any other kind of database records.

As a result, this chapter will detail the set-up of the e-mail response system and the method by which you can parse data from an incoming mail message into **CRM Studio**'s underlying mail message database.

Once the messages are successfully loaded into the underlying database, you should refer to the chapters '**Query Designing**' and '**Event Designing**' for details on how to identify and respond to those messages.

ERS Configuration

Before you begin using the E-Mail Response System, make sure you complete the following steps:

- Add ODBC Source for ERS Database
- Identify E-mail Accounts to Monitor
- Specify ODBC Source for ERS Application

Add ODBC Source for ERS Database

As was detailed previously, **CRM Studio** processes incoming e-mail messages by loading them into an internal database.

This internal database is a Microsoft Access database and is located in the **CRM Studio** data directory. It is called KS_INBOX.

Since **CRM Studio** needs to read the records in this database (just like it reads the records in any other database), you must first define an ODBC source for the Inbox database.

To define an ODBC source for the Inbox database, do the following:

- Open the **ODBC Data Source Administrator** (path: **Control Panel > Administrative Tools > Data Sources (ODBC)**).
- Click the **System DSN** tab. Your source will look like the following, depending on the type of database you are working with.
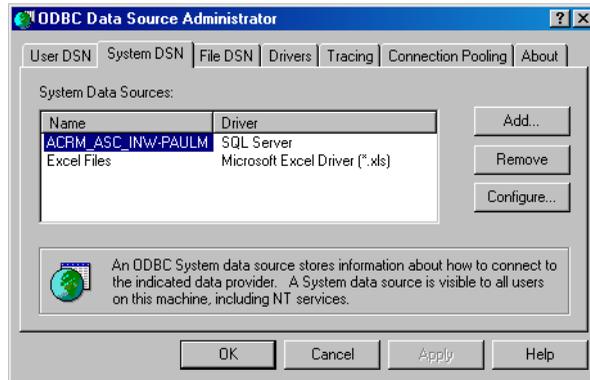
Figure 9.1: ODBC Data Source Administrator - System DSN Tab

- Click **Add**. You will see the **Create New Data Source** dialog box.
- Select Microsoft Access Driver and click **Finish**. You will see the **ODBC Microsoft Access Setup** dialog box.

Figure 9.2: ODBC Microsoft Access Setup

- Enter KS_INBOX in the **Data Source Name** field. Enter E-mail Response System in the **Description** field. Click the **Select** button. You will see the **Select Database** dialog box.
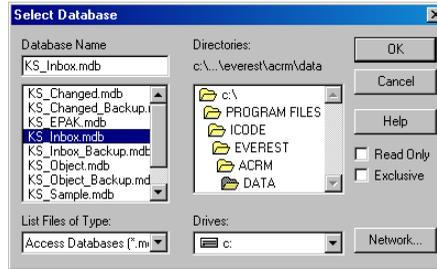
Figure 9.3: Select Database

- Locate and select KS_Inbox.mdb (path: **Icode\Everest\ACRM\Data**).
- Click **OK** to save the source. You will see the **ODBC Microsoft Access Setup** dialog box again.
- Click **OK**. You will see the **System DSN** tab of the **ODBC Data Source Administrator**, with the newly created ODBC source.
- Click **OK**.

Identify E-mail Accounts to Monitor

The second step in the configuration of the ERS is the definition of the e-mail accounts that you wish **CRM Studio** to monitor. This is done in the **Everest CRM Studio Administrator**.

To define the e-mail accounts that CRM Studio should monitor, do the following:

- From the main menu bar, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.
- From the **Administration Folders** panel in the center, double-click the **Software Setup** folder and click **E-mail Accounts**.

  - This is where you define the e-mail accounts that **CRM Studio** will use when sending alert messages via e-mail.
  - This is also where you define the ERS e-mail accounts that **CRM Studio** will monitor for incoming mail messages.

- If you wish **CRM Studio** to monitor messages that are sent to an account that is already defined in this option, double-click that account in the right panel. You will see the **Everest CRM Studio - E-mail Accounts** dialog box.
- If you wish to specify a new account that **CRM Studio** will monitor for incoming mail messages, click the **New E-Mail Account** button at the top-left of the **Everest CRM Studio Administrator** dialog box. You will see the **Everest CRM Studio - E-mail Accounts** dialog box.

  "Set Up E-mail Account to send E-mails" on page 28

  You may ignore the **Dial-Up Networking** tab for ERS.

- After creating (if necessary) the e-mail account by specifying relevant information in the **General** tab, click the **E-mail Response Options (Incoming)** tab.

- Specify relevant information and click **Save and Close**.

The Everest CRM Studio - E-mail Accounts Dialog Box - E-mail Response Options (Incoming)
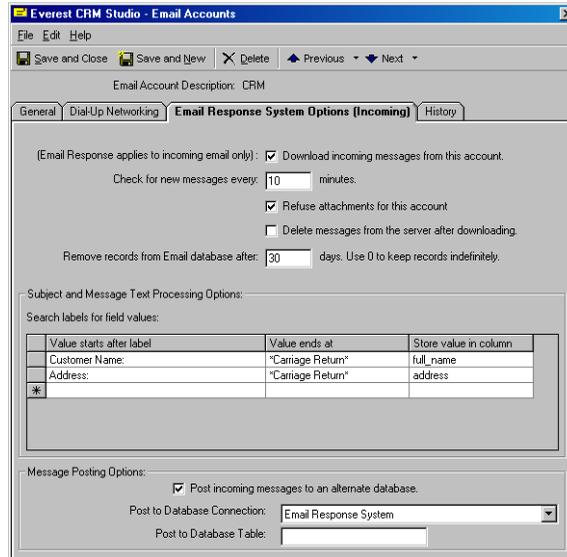
Figure 9.4: Everest CRM Studio - E-mail Accounts - E-mail Response Options (Incoming)

Download incoming messages from this account
Check this box to download messages from this account. If this e-mail account is used only for the sending **CRM Studio** alert messages, make sure this option is deselected.

The account is checked at specific times for new e-mail. If messages exist, they are downloaded to the **CRM Studio** ERS database.

Check for new messages every n minutes
Specify (in minutes) how often you would like **CRM Studio** to check for new messages sent to this account.

Refuse attachments for this account
Check this box if you do not want **CRM Studio** to download e-mail attachments.

- This option works with Internet mail systems only.
- ERS cannot scan the contents of attached files.

Example You do not want to allow any attachments for mail messages sent to info@yourcompany.com, but you want to allow attachments for mail messages sent to support@yourcompany.com, since they contain valuable support information.

Delete messages from the server after downloading
Check this box to remove downloaded messages from the e-mail server after they are stored in the **CRM Studio** ERS database.

Everest Software suggests that you do not check this option unless you are absolutely sure that no other companies or e-mail clients need to download these mail messages.

Remove records from the e-mail database after n days
Specify the number of days that **CRM Studio** will keep e-mail records in the ERS database. Enter '0' to retain e-mail records indefinitely.

Everest Software recommends 120 days for this field.

Subject and Message Text Processing Options

Search labels for field values
Use this grid to specify the values from incoming e-mails that you want to store in specific fields of the inbox database.

☞ **"E-Mail Message Text Parsing Options" on page 291**

Message Posting Options

Post incoming messages to an alternative database
Select this option to specify an alternative database to transfer the mail message data to.

Post to Database Connection
Select the ODBC source that **CRM Studio** will use to access this alternative database

Post to Database Table
Enter the name of the table (within that database) to which the mail message data will be posted.

ERS and Attached Files

Although the ERS cannot scan the contents of attached files, it can identify whether or not a mail message has attachments, and it can reference the attachment name(s) in corresponding alerts and response actions.

Additionally, **CRM Studio** automatically places the attached files in the **Everest CRM - Attachments** folder (path: **Icode\Everest\ACRM**), and you may thus configure an ERS event to copy or move the attached file(s) to a location of your choice.

E-Mail Message Text Parsing Options

One of the strengths of **CRM Studio**'s E-Mail Response System is that it can parse the content of an incoming message and load individual elements of message data to specific fields in the underlying ERS database.

Example   An organization uses e-mail (or a web form) to collect information from users. When this information appears in a mail message, it looks like the following:

Company Name: Acme Corporation

Address: 1 Main Street

Contact Name: Robert Smith

Phone: 800-555-1212

Request: Please send me information regarding your product.

You could define **CRM Studio**'s message text parsing to do the following:

- Store the value that starts after the label 'Company Name:' and ends at the first carriage return in the ERS data field called Account.
- Store the value that starts after the label 'Address:' and ends at the first carriage return in the ERS data field called Address.
- Store the value that starts after the label 'Contact Name:' and ends at the first carriage return in the ERS data field called Full Name.
- Store the value that starts after the label 'Phone:' and ends at the first carriage return in the ERS data field called Phone Work.
- Store the value that starts after the label 'Request:' and ends at the end of the message text in the ERS data field called Request.

How To Specify ERS Parsing

To specify which fields from your incoming mail messages should be mapped to corresponding fields in the ERS database, follow these steps:

- From the **Search labels for field values** grid in the **E-mail Response Options (Incoming)** tab of the **Everest CRM Studio - E-mail Accounts** dialog box, click the **Value Starts After Label** column.
- Enter the text that will precede the value in the mail message you wish to load into a specific ERS field (e.g., Contact Name:).
- Click the **Value Ends At** column and from the drop-down list, select the indicator that signifies the end of the value to be loaded. The options are:
  - A carriage return
  - A line feed
  - A blank space
  - The end of the subject field
  - The end of the message field
  - The end of the subject or message field
- Click the **Store Value in Column** column and from the drop-down list, select the ERS database field that you wish to load this e-mail text into. For the list of available database fields and their description, refer **"ERS Loadable Database Fields" on page 292.**

- Repeat these steps for each field from an incoming e-mail message that you wish to pass into a corresponding field in the ERS database.

ERS Loadable Database Fields

Since **CRM Studio** processes incoming e-mail messages by loading them into the ERS database, it is important to know in which fields you can load data.

All the following fields may contain data you wish to place in them from the corresponding incoming mail messages. The descriptions listed in the Purpose column are suggested by Everest Software.

You may use Microsoft Access 97 to rename any of the following ERS data fields. Please do not rename any fields other than the ones in the following list, and note that you cannot add more fields to the ERS database.

ERS Inbox Field (Column) Name	Purpose
Account	The sender's account name
Account_no	The sender's account number
Address	The sender's address
Application	The name of the application that the sender is writing about
Case_no	The case number referenced in the message
City	The sender's city
Country	The sender's country
E-mail	The sender's preferred e-mail address for response messages (may be different than the sender's address on the incoming message)
Fax	The sender's fax number
First_Name	The sender's first name
Full_Name	The sender's full name
Incident_No	The incident number referenced in the message
Last_Name	The sender's last name
License_No	The license number of the product referenced in the message
Mobile	The sender's mobile phone number
Notes	Message notes
Order_No	The order number referenced in the message
Pager	The sender's pager number
Phone_Home	The sender's home phone number

ERS Inbox Field (Column) Name	Purpose
Phone_Work	The sender's work phone number
Postal	The sender's postal (zip) code
Problem	The problem text (if the message contains a support problem)
Product	The name of the product that the sender is writing about
Question	The question text (if the message contains a question)
Request	The request details
Serial_No	The product's serial number
Service	The description of the service required
Service_No	The service number referenced in the message
Solution	The solution text for a problem or question
State	The sender's state
Ticket_No	The ticket number referenced in the message
Title	The sender's title
Tracking_No	The tracking number referenced in the message
Ufld_Flag	Integer-based user-definable field.
Ufld_Memo	Memo-based (long text) user-definable field.
Ufld1 – Ufld5	Five user-definable ERS data fields
User_Name	The sender's user name.
Version	The version of the product referenced in the message
Web_Site	The sender's web site address

E-Mail Message Posting Options

Finally, you need to specify whether you would like to post the downloaded e-mail message records to another database for storage and/or historical reporting.

This option is useful in some cases (such as a high volume of e-mail being processed, or other databases that need access to incoming mail message data), where you may need to transfer the mail message data to an alternative database, such as a Microsoft SQL Server database.

To specify an alternative database to transfer the mail message data to, do the following:

- From the **Message Posting Options** section in the **E-mail Response Options (Incoming)** tab of the **Everest CRM Studio - E-mail Accounts** dialog box, select the option **Post incoming messages to an alternative database**.
- Select the ODBC source that **CRM Studio** will use to access this alternative database from the **Post to Database Connection** drop-down list.
- In the **Post to Database Connection** field, enter the name of the table (within that database) to which the mail message data will be posted.

  - The alternative database table must be configured to include the same column names as the KS_Inbox table. If there are some fields within this table that you do not utilize (such as application, case_no, or serial_no), you do not need to replicate them.
  - The alternative database table must have a unique (or primary) key specified. It is suggested that you create a column like 'mail_datetime', which uses a data type of timestamp in which the current date and time will be uniquely stamped into each posted record.

Specify ODBC Source for ERS

Once you create the ODBC source for the ERS database, you must associate it with the E-mail Response System in the **Everest CRM Studio Architect**.

To associate the ODBC source for the ERS database with the E-mail Response System do the following:

- From the main menu bar, select **CRM > CRM Studio > Architect**. You will see the **Everest CRM Studio Architect** dialog box.
- From the **Event Management Folders** panel in the center, highlight (click) the **E-mail Response System** branch and click the **Properties** button at the top of the **Everest CRM Studio Architect** dialog box. You will see the **Everest CRM Studio - E-mail Response System Properties** dialog box**.**
- Click the **Edit Connection** button. You will see the **Everest CRM Studio - Edit Connection** dialog box**.**
- From the **ODBC Data Source Name** drop-down list, select the ODBC source that you created for the ERS database.
- Click **Save and Close**. You will again see the **Everest CRM Studio - E-mail Response System Properties** dialog box**.**
- Click **OK**.

ERS Queries and Events

Once you have completed the preceding steps, you are ready to begin designing events for the E-Mail Response System. Since ERS records are stored in a database, you can follow the instructions in the chapters '**Query Designing**' and '**Event Designing**' for details on creating ERS queries and events.

There are, however, a few ERS-specific fields and functions that you should be aware of as you begin creating queries and events. These are detailed in the following sections.

ERS Query Tables

The **CRM Studio** E-Mail Response System uses only two tables:

- Inbox
- Status

For the purpose of designing queries, all the data from the incoming e-mail message is stored in the Inbox table, and thus, that is the only table you need to select when creating an ERS query.

ERS Query Columns

The columns that you can choose from an ERS query fall into two categories:

ERS Loadable Database Fields

These fields are shown in a table earlier in this chapter and represent all the fields that you can load data into from an incoming mail message.

☞ **"ERS Loadable Database Fields" on page 292**

ERS Pre-Loaded Fields

These are fields whose values are pre-loaded by **CRM Studio** with values from the incoming e-mail message. This includes such fields as the e-mail address of the sender and recipient, the subject of the message, the date and time that the message was sent, and the names of any attached files.

The following list describes all the ERS pre-loaded fields. Remember that a query may use any combination of ERS loadable and pre-loaded database fields.

ERS Inbox Field (Column) Name	Purpose
Attachment_Count	Number of attachments downloaded
Attachment_Files	Comma separated list of attachments file specifications. All attachments are stored in the attachments folder where CRM Studio was installed.
Attachment_Names	The names of the attachments.
Attachment_Start	Position of the first real attachment. Some e-mail clients send html message text as an alternative attachment. Such files are not considered real attachments.
CC_Names	The carbon copy send to list of names.
Certified	Whether the message was certified. Note, not all e-mail systems support this feature.
Created_dt	The date when the mail record was created in the ERS database.

ERS Inbox Field (Column) Name	Purpose
E-mail_Account	The name of the CRM Studio e-mail account (as defined in the Administrator module) that this message came in to.
E-mail_Account_Id	The ID of the CRM Studio e-mail account (as defined in the Administrator module) that this message came in to.
From_Name	The e-mail from name (if defined), such as 'John Smith'.
From_Path	The full path of the sender's name, such as 'John Smith <smith@mycompany.com>'.
From_Root	The e-mail address of the sender, such as 'smith@mycompany.com'.
ID	ERS-assigned unique column.
Inet_Alt_Count	The number of alternate attachments (for Internet type mail systems only).
Inet_Mail_Program	The name of the e-mail client used to send the e-mail (for Internet type mail systems only).
Inet_Message_Length	The length of the message (in bytes) (for Internet type mail systems only).
Inet_Priority	The priority of the message (for Internet type mail systems only).
Inet_Raw_Header	The full header of the e-mail message (for Internet type mail systems only).
Inet_UIDL	Internal Internet mail identifier (for Internet type mail systems only).
Inet_Webform	Values are '0' (message was not from a web form) or '-1-' (message was from a web form) (for Internet type mail systems only).
Inet_Webform_Fields	The names of the web form's fields (for Internet type mail systems only).
Inet_Webform_Values	The values of the web form's fields (for Internet type mail systems only).
Login_Name	The login name of the account that this mail message was downloaded from.

ERS Inbox Field (Column) Name	Purpose
Message	The mail message text.
Message_Id	The unique message id (for Internet type mail systems only).
Received	The date the message was received.
Received_dt	The date and time the message was received.
Sent_dt	The date and time the message was sent.
Subject	The subject of the message.
To_Names	Who the e-mail was sent to.

ERS Query Filters

Creating filters for ERS queries is done in the same manner as creating filters for application events. You must consider the following when you create a filter for messages sent from a specific company or to a specific e-mail address.

- When a message is sent from a specific company, it could be sent from any one of a number of people at a specific company. Therefore, your filter needs to use the 'like' operator.
  - Filter Column: Inbox.from_path
  - Operator: like
  - Compare Value: %yourcompany.com%
- To send mail messages to a specific account (such as a support mailbox):
  - Filter Column: Inbox.to_names
  - Operator: like
  - Compare Value: %support@mycompany.com%

Do not forget that since the e-mail messages are stored in the underlying ERS database, you may also wish to include a filter in both these cases that restricts the results to only those messages that were received today:

- Filter Column: Inbox.received
- Operator: is equal to
- Compare Value: {Current Date%}

ERS Query Sub-Filters

Since the mail messages are stored as records in the ERS database, one of the most important benefits of the **CRM Studio** E-Mail Response System is that you can create aggregate queries (and events) that are triggered by groups of messages.

Example
- More than 'x' messages received from a certain company over a certain period of time
- Fewer than 'x' messages received in response to a specific marketing campaign
- More than 'x' messages received about product 'y'
- More than 'x' dollars ordered for product 'y' via the web
- The average sales price for products ordered via the web drops below 'x'

ERS Events

E-Mail Response System events are created just like a standard application event, with one exception: you typically want to link an incoming e-mail message to the corresponding contact record within a customer database. The reasons why you would want to do this are:

- To identify who the corresponding account manager is, and to send alerts to that person.
- To update the corresponding customer record with the details of the incoming mail message.
- To create a database record (such as a support ticket) and link that ticket back to the customer record.
- To identify if the sender of the e-mail is not already defined within your customer database.

To link an ERS record to a customer record in an underlying database, you need to use two queries in your ERS event: one query that retrieves the e-mail records, and a second one that links those records to your customer database.

Your first requirement would be to identify a field in the ERS record that would allow it to uniquely identify the corresponding record in your customer database. This is often the sender's e-mail address (ERS field from_root), but could also be any other field in the incoming message that uniquely maps to a matching field in your customer database.

Using such a field (as the sender's address), your two queries would be as follows:

- A first query which retrieves the ERS records. Make sure you include the linking field (i.e., the sender's address, from_root) as one of the fields in this query.
- A second query which retrieves customer information. This query would have a filter in it that compares the e-mail address in the customer database (e.g., customer.mail) to the customized name of the ERS sender address field (e.g., {From_Root}).

With a query configuration such as this, an event is triggered only if the sender of the e-mail address is also found to exist in the customer database. Once **CRM**

Studio makes this match, all the fields of data associated with this event (both, data from the incoming message and from the customer database record) would be eligible to be used in alert messages and in response actions.

This link allows you to know which database records to update and/or create using a **CRM Studio** event response action such as executing a VB script.

ERS Event Alerts and Actions

The first capability you need to consider as a response to an ERS event is the alert messages that **CRM Studio** can send out. It can send out messages to:

- The salesperson and/or support person associated with an account
- The sender of the incoming mail message
- Managers, partners, et cetera

These messages can include reports and/or files along with their traditional message content.

Example Here is a simple message that **CRM Studio** could send back to a person who logged a support question via e-mail:

Hello {from_name},

This is to confirm our receipt of your e-mail sent on {sent_dt} to {to_names}.

We will contact you shortly when we have an answer for you.

Thank You,

Support Team

As a result of a triggered ERS event, **CRM Studio** can also execute response actions such as executing VB scripts, running programs, writing triggered event data to an external file, and submitting SQL statements.

ERS Events That Generate Reports

One particularly interesting use of **CRM Studio**'s E-Mail Response System is that it can generate one or more reports as a result of an incoming message. Consider this scenario:

You have customers who frequently ask for a report of their open support calls. Employing the ERS, you can use a web form to allow clients to enter a report request in which they fill out their customer ID and selection criteria for the report they wish to run.

This web form generates an e-mail message, which, in turn, generates a record in the ERS database. This record is then queried and identified as one that needs to generate an Open Call report. **CRM Studio** generates the report for the corresponding client and e-mails it back to them.

This is often referred to as a Report Auto-Request System.

All you need to do is to configure an ERS query to identify which report is being requested, and which selection criteria need to be passed to the corresponding report. **CRM Studio** then generates the report and (using the sender's e-mail address from the original request) sends it right back to them.

ERS Subscribers

Like a standard application event, an ERS event can send alerts to any recipient.

To send a message back to the person from whom the original message was received, do the following:

- From the main menu bar, select **CRM > CRM Studio > Architect**. You will see the **Everest CRM Studio Architect** dialog box.
- From the **Event Management Folders** panel in the center, select **Application Events > (your company) > Events**. You will see a list of events in the right panel**.**
- Open the event for which you want to specify recipients eligible to receive replies, and select the **Subscribers > Advanced** tab.
- From the **Deliver to a specific email, pager, fax or webcast name using database value** grid, click the **Database Field** column beside the row **Contains Email Address to send to.**
- From the drop-down list, select the {From_Root} field.

ERS Event Schedule

Since you want **CRM Studio** to respond to incoming mail messages as soon as they are received, all ERS events must use a suitable schedule.

To define a suitable schedule for ERS events, do the following:

- After configuring ERS to send a message back to the person from whom it was received (in the preceding steps), click the **Schedule** tab.
- From the **Choose a schedule to use** drop-down list, select **When E-mail Arrives**.
- Click **Save and Close**.

ERS in the Everest CRM Studio Event Monitor

To monitor the status of ERS events, you can use the **Everest CRM Studio Event Monitor** (path: **CRM > CRM Studio > Monitor**). ERS events are converted to standard application events and can be tracked from the **Standard Applications** branch.

The **E-mail Response** branch allows you to view the ERS events that have been successfully checked by **CRM Studio**, and it also displays the individual e-mail messages that are received (and logged) into the ERS database.

If the ERS module is unable to read the incoming messages or is unable to load the messages into the ERS database, an error appears in the **E-mail Response** error branches.

Once an incoming message is successfully received and loaded into the ERS database, you can use the **Application Event** and **E-mail Delivery** branches to check if the ERS event was triggered, who was notified, and so on.

10. Event Triggered Reports

Define Reports in CRM Studio
Event-Triggered Reports
Report Delivery Methods

CRM Studio integrates with Crystal Reports in two ways:

Event-Triggered Reports

CRM Studio can generate one or more Crystal Reports when an event is triggered and e-mail, fax, copy/ftp, or webcast the report contents.

Example   When more than 'x' units of product 'y' are sold over a specific time frame, **CRM Studio** automatically generates a sales history report and sends it to a sales manager.

Scheduled Reports

CRM Studio can generate one or more Crystal Reports on a pre-defined schedule (e.g., every day at 9 AM), and e-mail, fax, copy/ftp, or webcast the report contents.

Example   Every Monday at 8 AM, **CRM Studio** automatically generates and distributes this week's sales forecast reports and last week's service statistics reports.

This chapter addresses the configuration and use of event-triggered reports.

Define Reports in CRM Studio

The first step in enabling event-triggered reports is to instruct **CRM Studio** which Crystal Reports you wish to generate, and the location of the corresponding source (*.rpt) files.

Just like traditional queries and events, Crystal Reports are organized according to the database they correspond with. Thus, you can segregate Crystal Reports for different **Everest** companies for easier organization and maintenance.

To define your Crystal Report sources, do the following:

• From the main menu bar, select **CRM > CRM Studio > Architect**. You will see the **Everest CRM Studio Architect** dialog box.

• From the **Event Management Folders** panel in the center, select **Application Events > (your company) > Report Definitions**. You will see a list of reports in the right panel**.**
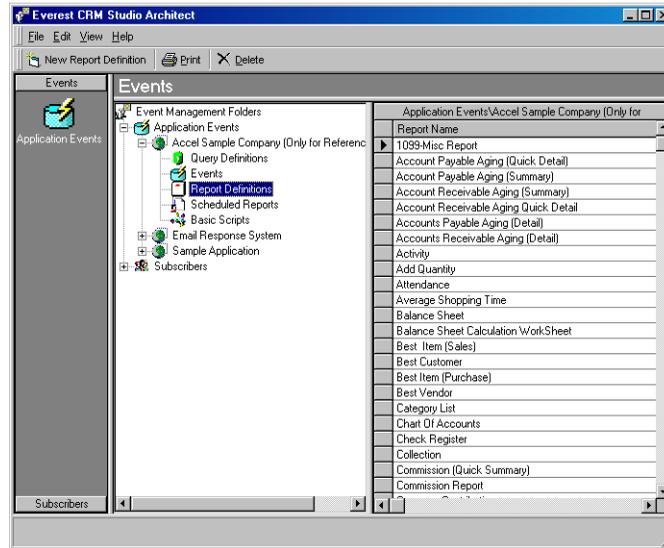
Figure 10.1: Everest CRM Studio - Report Definitions

Add a New Report Definition

The reports you use in **CRM Studio** must already have been created (designed) using Crystal Reports.

To add a new report definition to CRM Studio, do the following:

- From the **Event Management Folders** panel in the center of the **Everest CRM Studio Architect** dialog box, select **Application Events > (your company) > Report Definitions**.
- Click the **New Report Definition** button at the top-left. You will see the **Everest CRM Studio - Report Definitions** dialog box.

Repeat this process for each report that you generate for the corresponding database.

The Everest CRM Studio - Report Definitions Dialog Box
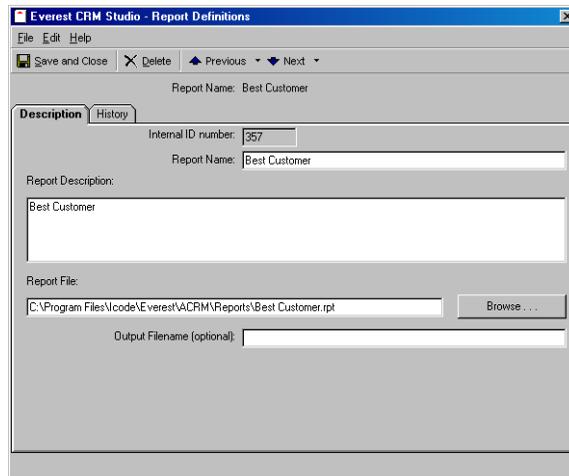
Figure 10.2: Everest CRM Studio - Report Definitions

Internal ID Number
This field displays the ID of the report. You cannot modify it.

Report Name
Enter the name of the report.

Report Description
Enter an informational description of the contents and use of the report.

Report File
Specify the location and source (*.rpt) file that corresponds to this Crystal report.

Browse
Click this button to display the **Everest CRM Studio - Select a Report File** dialog box, which you can use to locate and select reports.

Output File Name
Enter the name to be given to the output file that contains this report. If you leave this field blank, the report name will be randomly generated by **CRM Studio**.

If this report is to be generated multiple times by a single event (such as an event that generates separate Overdue Activities reports for multiple salesreps), you must leave this field blank.

Event-Triggered Reports

When an event is triggered, you can choose to have **CRM Studio** generate one or more Crystal Reports (typically containing information related to the event), and send those reports either with or without an associated alert message. Reports that are generated as a result of a triggered event fall into three categories:

- Reports that have no dynamic selection criteria
- Reports that have event-independent selection criteria
- Reports that have event-dependent selection criteria

The following sections detail each of these reports, and how to associate them to a **CRM Studio** event.

The Event -> Report Correlation

One of the most important concepts in configuring event-triggered reports is that **CRM Studio** generates one report for each event record that is triggered.

> *Example* You have an event that runs every Monday at 9 AM and sends you a separate e-mail message for each opportunity that is due to close this week.

If the event runs and finds 10 matching opportunities, you will receive 10 alert messages, each with an attached Crystal Report. (The event is considered to have been triggered 10 times.)

> *Example* You have an event that runs every Monday at 9 AM and sends you a single e-mail message with the details of all opportunities that are due to close this week.

Regardless of the number of matching opportunities the event finds, you will receive one alert message, with a single attached Crystal Report. (The event is considered to have been triggered once.)

> *Example* You have an event that runs everyday at 5 PM and generates a list of sales representatives who have overdue activities. You want each sales representative to receive a report of only the overdue activities.

Since **CRM Studio** runs one report for each triggered record, this event will run one report for each sales representative with overdue activities. The only special characteristic of this event is that **CRM Studio** passes the name of each corresponding sales representative to Crystal so that the reports can be generated appropriately.

The important thing to remember in all cases is that **CRM Studio** generates one Crystal Report each time an event is triggered, so be careful to evaluate the event you are working with to ensure that you are not unnecessarily sending the same report over and over to the alert recipients.

Reports With No Dynamic Selection Criteria

In Crystal Reports, you can design a report that includes or excludes specific records. The selection criteria that you choose can either be hard-coded into the report, or it can be created as report parameters that will accept input each time the report is run.

The simplest type of report that you can link to a **CRM Studio** event is one that is designed without any parameters that require input each time the report is run. In such a scenario, **CRM Studio** automatically generates the associated report each time the related event is triggered.

To link such a report to an event, do the following:

• From the **Event Management Folders** panel in the center of the **Everest CRM Studio Architect** dialog box, select **Application Events > (your company) > Events**. You will see a list of events in the right panel.

- Open the event you wish to associate the report to. You will see the **Everest CRM Studio - Application Events\(your company)\Events** dialog box.
- Click the **Reports** tab and click the **Add Report** button. You will see the **Everest CRM Studio - Add Report** dialog box, using which you can select reports.
- Select the report you wish to associate with this event and click **Select**. You will again see the **Everest CRM Studio - Application Events\(your company)\Events** dialog box, with the selected report displayed in the **Reports Selected For Content** grid.
- From the **Reports Selected For Content** grid, click the Style column of the report just selected. Choose the output format of the report. Your choices are:
    - ASCII
    - HTML
    - Rich Text
    - Microsoft Excel
    - Lotus
    - Comma Delimited
    - Tab Delimited
- Click **Save and Close**.

You may continue to select additional reports you wish to associate with this event.

The report(s) you select for an event may be delivered to the alert subscribers via the following methods:

- E-mail (attached to the message)
- Fax (the report must be output in ASCII format)
- Copy/FTP
- Webcast

Reports With Event-Independent Selection Criteria

The second type of Crystal Report that you may wish to link to an event requires the entry of some selection criteria, but these criteria are not generated from within the corresponding event.

Example You may have an event that retrieves opportunities worth more than $20,000 and are due to close this week.

The corresponding Crystal Report may have been designed with three parameter-driven selection criteria: the opportunity amount, the beginning forecast close date, and the ending forecast close date.

Assuming that your event is designed to limit its retrieved records to only those opportunities that are for more than $20,000 and are due to close this week, you need to make sure that the corresponding report will retrieve the same records.

Fortunately, **CRM Studio** allows you to enter the values of these selection criteria when a report is linked to an event.

To enter the values of selection criteria when a report is linked to an event, do the following:

- After linking the report to an event as detailed in **"Reports With No Dynamic Selection Criteria" on page 306,** notice how the Report Parameters grid in the **Reports** tab of the **Everest CRM Studio - Application Events\(your company)\Events** dialog box is populated with the selection criteria previously configured for this report within Crystal Reports.

- For each parameter (or Question) that appears in this grid, you can supply a corresponding value to be used whenever **CRM Studio** generates this report.

- For a report with event-independent selection criteria (i.e., selection criteria that does not vary based on the results of the event's query), you can answer each question in two ways:

  - You can manually enter a value in the **Answer** column.

    Example For a parameter that asks you to choose Opportunities that are Greater than How Much?, you could manually type in 20000.

  - You can click the **Answer** column, and click the list ▣ button that is displayed. From the drop-down list, select any one of **CRM Studio**'s date substitution variables.

    Example For parameters that ask for a forecast for start and end dates, you could choose current date and next Friday's date as the related values

You may continue to select additional reports you wish to associate with this event.

📝 The report(s) you select for an event may be delivered to the alert subscribers via the following methods:

- E-mail (attached to the message)
- Fax (the report must be output in ASCII format)
- Copy/FTP
- Webcast

Reports With Event-Dependent Selection Criteria

The final type of Crystal Report that you can link to an event is dependent on the results of an event's query(ies) to derive its selection criteria.

Example An event that generates an Overdue Activities report for each sales representative who has overdue activities. The report would have a selection parameter that accepts the names (or IDs) of only those sales representatives who have overdue activities. The query for the corresponding **CRM Studio** event would be designed to retrieve those same sales representatives.

To make this scenario work, **CRM Studio** must pass the names of these sales representatives to the corresponding Crystal Report. Thus, the report is dependent on the data that an event retrieves.

This is explained in more detail in the following sections.

Preparing for an Event-Dependent Report

As was detailed in the preceding sections, **CRM Studio** does not feed detailed information into a Crystal Report, but directly generates a Crystal Report with the appropriate selection criteria that the report needs to generate the desired output.

The key concept is that **CRM Studio** uses selection criteria to instruct Crystal which records to retrieve for a report. As mentioned in the Overdue Activities report, **CRM Studio** simply identifies which users have overdue activities, and then instructs Crystal to produce reports for each of these users.

This process entails two important design components:

- First, in **CRM Studio**, you must carefully design a query so that it produces the appropriate selection criteria to be fed into the Crystal Report.
- Second, in Crystal, you must carefully design the corresponding report to accept selection criteria (called Report Parameters in Crystal) so that the appropriate output may be obtained.

Query Design for Event-Dependent Reports

The first part of creating an event that will feed information to a Crystal Report is the design of the underlying query.

Most queries are suitable when sending information in an e-mail (or similar) format, but may not be appropriate for generating a Crystal Report.

The problem with this format is that when a result set such as this one is passed to an event, **CRM Studio** generates one Crystal Report for each overdue activity in this result set – certainly not what you want.

Instead, what you want is a list of overdue activities grouped by each sales representative.

This type of query most typically makes use of an aggregate function as the means to generate a list of records that can correctly feed a Crystal Report's selection criteria.

Query Design - Notes

Consider the following items when designing a query for use with an event-dependent report:

Table/Column Selection

Choose tables and columns that contain the information you wish to feed into the report, and information about the recipient's alert delivery address.

Aggregate Selection

The easiest way to design a query that yields report selection criteria such as the names of users, products, regions, et cetera is through the use of the aggregate count function. You simply count the number of records per user, product, or region, and you end up with one record per selection criteria.

Report Design for Event-Dependent Reports

The design of a Crystal Report to be used in **CRM Studio** requires no unique configuration. Your first step is to design the report to produce the desired data,

and the second step is to ensure that the report is set up with selection parameters that allow **CRM Studio** to pass data from a triggered event into the report.

Thus, using the overdue activities report as an example, you would be sure to include the following selection parameters:

- A parameter that restricts the report to retrieving only those activities that are overdue.

- A parameter that prompts for the names (or IDs) of the sales representatives whose overdue activities you wish to report on.

In this example, the report automatically retrieves only overdue activities, and then (using information from the **CRM Studio** query) the report generates once for each sales representative who has overdue activities.

Once you have created the appropriate parameters for the Crystal Report to be generated by **CRM Studio**, you are ready to connect the report to the corresponding event.

Configure the Event-Dependent Report

To link an event-dependent report to an event, follow these steps:

- From the **Event Management Folders** panel in the center of the **Everest CRM Studio Architect** dialog box, select **Application Events > (your company) > Events**. You will see a list of events in the right panel.

- Open the event you wish to associate the report to. You will see the **Everest CRM Studio - Application Events\(your company)\Events** dialog box.

- Click the **Reports** tab and click the **Add Report** button. You will see the **Everest CRM Studio - Add Report** dialog box.

- Select the report you wish to associate with this event and click **Select**. You will see the **Everest CRM Studio - Application Events\(your company)\Events** dialog box again with the selected report displayed in the **Reports Selected For Content** grid.

- From the **Reports Selected For Content** grid, click the Style column of the report just selected. Choose the output format of the report. Your choices are:
  - ASCII
  - HTML
  - Rich Text
  - Microsoft Excel
  - Lotus
  - Comma Delimited
  - Tab Delimited

- Notice how the Report Parameters grid in the **Reports** tab of the **Everest CRM Studio - Application Events\(your company)\Events** dialog box is populated with the selection criteria previously configured for this report within Crystal Reports.

- For each parameter (or Question) that appears in this grid, you can supply a corresponding value to be used whenever **CRM Studio** generates this report.

- Just like a report with event-independent selection criteria, you can:

- Manually enter a value in the **Answer** column.

- Click the **Answer** column, and click the list [...] button that is displayed. From the drop-down list, select the name of the associated query's data field that contains the selection criteria you wish to pass to the report. In the example of the Overdue Activities event, your query might have a field called User ID, which contains the names of the sales representatives who have overdue activities. By selecting this field as the answer to a report's parameter, **CRM Studio** feeds the ID of an individual sales representative who has overdue activities for each iteration of the report that is generated.

> If the query lists five sales representatives with overdue activities, **CRM Studio** triggers the corresponding event five times and generates five corresponding reports.

• Click **Save and Close**.

You may continue to select additional reports you wish to associate with this event.

> The report(s) you select for an event may be delivered to the alert subscribers via the following methods:

- • E-mail (attached to the message)
- • Fax (the report must be output in ASCII format)
- • Copy/FTP
- • Webcast

Report Delivery Methods

Reports may be delivered to recipients via e-mail (as attached files), fax (ascii-styled reports are embedded within the fax message), webcast (reports are linked to a web page via a URL link), and copy/ftp (report files are sent to a specific disk and directory).

You may wish to use one or more delivery methods to alert a recipient of the availability of a report, while delivering the actual report via another method.

> *Example* You may wish to use an e-mail or pager message to alert a person of a report's availability, but actually make the report available only from a webcast site.

Delivering a File Via Copy/FTP

One of the methods by which a report (and/or file) can be delivered to a recipient is via the copy/ftp method. This method is quite useful, as it allows you to move a report's output to one or more locations that are easily accessible by the recipients.

To deliver a report (or file) via this method, do the following:

• From the main menu bar, select **CRM > CRM Studio > Architect**. You will see the **Everest CRM Studio Architect** dialog box.

- From the **Event Management Folders** panel in the center, select **Application Events > (your company) > Events**. You will see a list of events in the right panel.
- Open the event for which you want to deliver files/reports via copy/ftp.
- Click the **Copy** tab. Select either (or both) options to deliver the reports and/or files to the appropriate recipients.

☞ **"The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Copy" on page 191**

- Click **Save and Close**.

The destination (or copy to) location of reports and files is determined within each subscriber's profile in **CRM Studio**.

E-Mail Delivery Options

When a report or file is configured for delivery, **CRM Studio** enables you to specify whether it will be accompanied by an e-mail message. The mail message can be used in two ways:

- As a delivery method for the report/file. **CRM Studio** can automatically attach the selected reports/files to an outgoing e-mail message.
- As a notification message that informs the recipients that the corresponding reports/files are available to them. In this instance, the reports/files are not attached to the mail message. (The reports/files may have been sent by fax or ftp, or posted to a website.)

If you do not wish to use e-mail for either of these two purposes, you may leave blank the **E-mail** tab of the **Everest CRM Studio - Application Events\(your company)\Events** dialog box.

If you do wish to utilize either of the previous uses for an e-mail message, fill in the e-mail sending account, message subject, and text as you require. Pay special attention to the three check boxes at the bottom of this window.

☞ **"The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Email" on page 194**

Attaching Reports to an E-Mail Message

The first two check boxes at the bottom of the **E-mail** tab of the **Everest CRM Studio - Application Events\(your company)\Events** dialog box allow you to specify whether or not you wish to attach the selected reports/files to the outgoing e-mail message.

If you choose to attach reports to an e-mail message, **CRM Studio** automatically waits until the reports are successfully completed before sending the mail message. If an attached report fails to complete successfully, the e-mail message is not sent.

If you choose not to attach the reports to your mail message, you can specify that the e-mail message should wait (i.e., delay being sent) until all the associated reports are successfully generated. You can do so by selecting the option **E-Mail notifications should wait until reports are generated**.

Checking this option ensures that the recipient of the mail message is able to access the referenced report when the message is received. If, however, the reports fail to be completed successfully, the e-mail message is not sent at all.

If this field is not checked, the e-mail message is sent immediately, and, depending on the amount of time required to generate the report(s), the recipient of the message may not be able to access them immediately.

Fax Delivery Options

When a report or file is configured for delivery, **CRM Studio** also enables you to specify whether it will be accompanied by a fax message. The fax message can be used in two ways:

- As a delivery method for the report/file. **CRM Studio** can automatically attach text-based reports/files to an outgoing fax message.
- As a notification message that informs the recipients that the corresponding reports/files are available to them. In this instance the reports/files are not attached to the fax message.

If you do not wish to use faxing for either of these two purposes, you may leave blank the **Fax** tab of the **Everest CRM Studio - Application Events\(your company)\Events** dialog box.

If you do wish to utilize either of the two previous uses for a fax message, fill in the fax sending account, subject, cover page text, and message text as you require. Pay special attention to the three check boxes at the bottom of this window.

☞ **"The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Fax" on page 203**

Attaching Reports to a Fax Message

The first two check boxes at the bottom of the **Fax** tab of the **Everest CRM Studio - Application Events\(your company)\Events** dialog box allow you to specify whether or not you wish to attach the selected reports/files to the outgoing fax message.

Only text-based reports and files can be attached to a fax message.

If you choose to attach reports to the fax message, **CRM Studio** automatically waits until the reports are successfully completed before sending the fax. If an attached report fails to complete successfully, the fax is not sent.

If you choose not to attach the reports to your fax, you can specify that the fax should wait (i.e., delay being sent) until all the associated reports are successfully generated. You can do so by selecting the option **Fax notifications should wait until reports are generated**.

Checking this option ensures that the recipient of the fax is able to access the referenced report when the fax is received. If, however, the reports fail to be completed successfully, the fax is not sent at all.

If this field is not checked, the fax is sent immediately, and, depending on the amount of time required to generate the report(s), the recipient of the fax may not be able to access them immediately.

Pager Delivery Options

When you have a report or file configured for delivery, **CRM Studio** enables you to send a pager alert to the recipients as means to notify them that the reports/files are ready.

If you do not wish to send pager alerts about distributed reports/files, you may leave blank the **Page** tab of the **Everest CRM Studio - Application Events\(your company)\Events** dialog box.

If you send pager notifications, you can specify whether the pager message should wait (i.e., delay being sent) until all the associated reports are successfully generated. If you do wish **CRM Studio** to wait, select the option **Pager notifications should wait until reports are generated**.

Checking this option ensures that the recipient of the pager message is able to access the referenced report when the message is received. If, however, the report(s) fail to be completed successfully, the pager message is not sent at all.

If this field is not checked, the pager message is sent immediately, and, depending on the amount of time required to generate the reports, the recipient of the message may not be able to access them immediately.

☞ **"The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Page" on page 206**

Webcast Delivery Options

When a report or file is configured for delivery, **CRM Studio** enables you to specify whether it will be accompanied by a web (HTML) alert message. The web message can be used in two ways:

- As a delivery method for the report/file. **CRM Studio** can automatically attach (as URL links) the selected reports/files to the posted web message.
- As a notification message that informs the recipients that the corresponding reports/files are available to them. In this instance, the reports/files are not posted to the web message. (The reports/files may have been sent by fax, ftp, or e-mail.)

If you do not wish to use web alerts for either of these two purposes, you may leave blank the **Webcast** tab of the **Everest CRM Studio - Application Events\(your company)\Events** dialog box.

If you do wish to utilize either of the two previous uses for a web alert message, fill in the webcast message subject and text as you require. Pay special attention to the three check boxes at the bottom of this window.

☞ **"The Everest CRM Studio - Application Events\(your company)\Events Dialog Box - Webcast" on page 209**

Posting Reports to a Webcast Message

The first two check boxes at the bottom of the **Webcast** tab of the **Everest CRM Studio - Application Events\(your company)\Events** dialog box allow you to specify whether or not you wish to attach the selected reports/files to the posted web alert message.

If you choose to attach reports to a webcast message, **CRM Studio** automatically waits until the reports are successfully completed before posting the webcast message. If an associated report fails to complete successfully, the webcast message is not sent.

If you choose not to attach the reports to your webcast message, you can specify whether the webcast message should wait (i.e., delay being sent) until all the associated reports are successfully generated. If you do wish **CRM Studio** to wait, select the option **Webcast notifications should wait until reports are generated**.

Checking this option ensures that the recipient of the webcast alert message is able to access the referenced report(s) when the message is received. If, however, the report(s) fail to be completed successfully, the webcast message is not sent at all.

If this field is not checked, the webcast message is sent immediately, and, depending on the amount of time required to generate the reports, the recipient of the message may not be able to access them immediately.

How Reports Appear in the Monitor

It is important to understand the sequence by which event-triggered reports appear in the **Everest CRM Studio Event Monitor**.

Like any other application event, an event with an associated report begins by appearing in the **Application Events** branch, from where you can track its status as checked and (if appropriate), triggered. It is only if an event is triggered that its associated report(s) is generated.

Once an event with associated reports is triggered, you may proceed to the **Report Generation** (and not the Report Distribution) branch. From this branch, you may track the progress of the event's associated reports as they go from a pending to a generated state.

If a report fails to generate successfully, it appears under **Errors** in the **Report Generation** branch.

Assuming that the report generated successfully, the last step is for the report (and any associated alert messages) to be delivered. Depending on the method(s) by which the event is configured to deliver the report (e-mail, fax, copy, or webcast), you may click the corresponding Delivery branches within the **Everest CRM Studio Event Monitor** and check if the message and report are successfully delivered.

You may also click the relevant **Triggered** branch in the **Application Events** folder of the **Everest CRM Studio Event Monitor** and use the **Deliverables** button to see who was notified, and whether the alert message included the appropriate attached reports.

☞ **"Monitoring the Status of Alert Messages" on page 230**

11. Scheduling Crystal Reports

Define Reports in Everest CRM
Add a New Report Definition
Definition - Scheduled Report Event

In addition to generating Crystal Reports as the result of a triggered event, **CRM Studio** can also generate and distribute Crystal Reports based on a pre-defined schedule.

This is a very important function within **CRM Studio**, as it allows you to automate report distribution – the process of generating reports and using e-mail, fax, ftp, and the web to automatically deliver them.

Although this chapter is titled Scheduling Crystal Reports, the distribution capabilities detailed in this chapter apply equally to the distribution of files, such as weekly product updates, company newsletters, financial spreadsheets, and other important documents that need to be delivered to employees, business partners, and clients.

Define Reports in CRM Studio

☞ **"Define Reports in CRM Studio" on page 303**

Add a New Report Definition

☞ **"Add a New Report Definition" on page 304**

The reports you define here for the purpose of scheduled report distribution may or may not include selection criteria (such as date range selections), as **CRM Studio** can pass values to these criteria when the report is generated.

Scheduled Report Examples

Examples of scheduled report events would be:

• A daily Activities report
• A weekly Forecast Sales report
• A monthly High Priority Support Calls report

These scheduled reports are automatically generated by **CRM Studio** at a specific date and time, and then are distributed to the appropriate recipients via any combination of e-mail, fax, copy/ftp, and webcast.

Definition - Scheduled Report Event

A scheduled report event has no associated queries, and its purpose is to generate and distribute one or more reports (and/or files).

A single scheduled report event may, in fact, generate and distribute multiple Crystal reports.

Example Every Friday at 5:00 PM, your organization might need to distribute the following five reports to all the members of your executive team:

• Weekly sales report
• Next week's forecasted sales
• Weekly receivables report
• Weekly payables report
• Sales representative commission report

Although you could create a separate scheduled report event for each report, it is much easier to create a single report event (like End of Week Reports), and simply associate all five reports to that one event.

Thus, when the event is run, the recipients receive all the reports they require simultaneously, whether via e-mail, fax, copy, or webcast.

Create a Scheduled Report Event

To create a scheduled report event, do the following:

- From the **Event Management Folders** panel in the center of the **Everest CRM Studio Architect** dialog box, select **Application Events > (your company) > Scheduled Reports**.
- Click the **New Scheduled Report** button at the top-left. You will see the **Description** tab of the **Everest CRM Studio - Application Events\(your company)\Scheduled Report** dialog box.
- Enter a description of your scheduled report event in the **Scheduled Report Description** field.
- Select a value from the **Priority** drop-down list, depending on the importance of the event.
- Be sure to check the **Active** check box.
- To retain the history of only the last time this event runs, check the **Keep only last checked record in Monitor** option.
- Click **Next**. You will see the **Reports** tab of the **Everest CRM Studio - Application Events\(your company)\Scheduled Report** dialog box.

The Everest CRM Studio - Application Events\(your company)\Scheduled Report Dialog Box - Description

Figure 11.1: Everest CRM Studio - Application Events\(your company)\Scheduled Report - Description

Internal ID Number

This field displays the ID of the scheduled report event. You cannot modify it.

Scheduled Report Description

Enter a brief description of the report event being defined.

Lookup Key (Optional)

If this report event is meant to be called from within an external database, enter a unique identifying value in this field.

Priority

This field is used to determine the order in which multiple scheduled report events will be submitted. The event with the highest ranking priority (priority '0' being the highest) will be submitted first.

Active

Be sure to check this box.

Keep only last checked record in Monitor

Select this option to retain the history of the last time a scheduled report event was checked, and every time it was triggered.

☞ **"Keep Only Last Checked Record in Monitor" on page 180**

Link the Report(s) to the Event

Once you have specified a scheduled report event's description, the next step is to link the corresponding report(s) to the event.

The process of configuring a scheduled report event is similar to designing an application event; the exception being that a scheduled report event has no associated queries.

To link the corresponding scheduled report to the event, do the following:

- After specifying relevant information in the **Description** tab of the **Everest CRM Studio - Application Events\(your company)\Scheduled Report** dialog box, click **Next**. You will see the **Reports** tab.

- Click the **Add Report** button. You will see the **Everest CRM Studio - Add Report** dialog box.

- Highlight the first report you wish this event to generate and click **Select**. The selected report is displayed in the **Reports Selected For Content** grid.

- From the **Reports Selected For Content** grid, click the **Style** column of the report just selected. Choose the output format of the report. Your choices are:
  - ASCII
  - HTML
  - Rich Text
  - Microsoft Excel
  - Lotus
  - Comma Delimited
  - Tab Delimited

If you want this event to generate multiple reports, continue to click **Add Report** and specify additional reports.

A single scheduled report event may generate reports that are associated with multiple **CRM Studio** databases.

To select a report that is associated with another database, do the following:

- After specifying relevant information in the **Description** tab of the **Everest CRM Studio - Application Events\(your company)\Scheduled Report** dialog box, click **Next**. You will see the **Reports** tab.

- Click the **Add Report** button. You will see the **Everest CRM Studio - Add Report** dialog box.

- Click the **Select Another Application** button. You will see the **Everest CRM Studio - Select Another Application** dialog box.

- Highlight the database that contains the report you wish to select and click **Select**. You will again see the **Everest CRM Studio - Add Report** dialog box.

- Select the report you wish this event to generate and click **Select**.

The Everest CRM Studio - Application Events\(your company)\Scheduled Report Dialog Box - Reports
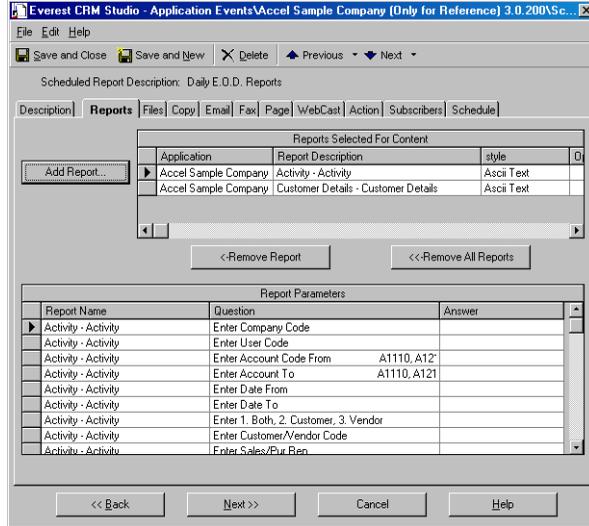
Figure 11.2: Everest CRM Studio - Application Events\(your company)\Scheduled Report - Reports

Add Report
Click this button to display the **Everest CRM Studio - Add Report** dialog box, which enables you to select and add reports to the **Reports Selected For Content** grid.

Reports Selected For Content
This grid displays the selected reports.

Remove Report
Click this button to remove a selected report from the **Reports Selected For Content** grid.

Remove All Reports
Click this button to remove all reports from the **Reports Selected For Content** grid.

Report Parameters
The parameters for the selected reports are displayed in this section. Specify the report parameter values in the Answer column.

Specifying Report Parameter Values

Crystal Reports include parameters that accept selection criteria. These parameters enable the report to restrict the records that it retrieves to only those that meet specific criteria. Some of the output are:

• Only high priority support calls
• Sales forecast for next week
• Quotes for more than $25,000

The parameters appear at the bottom of the **Reports** tab of the **Everest CRM Studio - Application Events\(your company)\Scheduled Report** dialog box.

To enter the values of selection criteria when a scheduled report is linked to an event, do the following:

- After linking the report to an event as detailed in **"Link the Report(s) to the Event" on page 322,** notice how the Report Parameters grid in the **Reports** tab of the **Everest CRM Studio - Application Events\(your company)\Scheduled Report** dialog box is populated with the selection criteria previously configured for this report within Crystal Reports.

- For each parameter (or Question) that appears in this grid, you can supply a corresponding value to be used whenever **CRM Studio** generates this report.

- For a report with event-independent selection criteria (i.e., selection criteria that does not vary based on the results of the event's query), you can answer each question in two ways:

  - You can manually enter a value in the **Answer** column. To generate a sales forecast report for the following week, you could type in specific dates in the beginning and ending order date parameters.

  - You can click the **Answer** column, and then the list [...] button that is displayed. From the drop-down list, select any one of **CRM Studio**'s date substitution variables. You could choose {%Next Monday Date%} and {%Next Friday Date%} for the beginning and ending order dates.

- You may continue to select additional reports you wish to associate with this event.

Link File(s) to the Event

Besides reports, you can also link one or more files to a scheduled report event.

This is an excellent method for distributing needed files (such as weekly schedules, product brochures, newsletters, and spreadsheets) on a periodic basis.

To attach one or more files to a scheduled report event, do the following:

- After specifying relevant information in the **Description** tab of the **Everest CRM Studio - Application Events\(your company)\Scheduled Report** dialog box, select the **Files** tab.

- Click the **Add File** button. You will see the **Everest CRM Studio - Add File** dialog box, using which you can browse for and locate the required file(s).

- Enter a description of the file you are adding to this event, in the **Files Selected For Content** grid.

- Select the **Ascii Text** option if the associated file is in ASCII format.

  Only ascii formatted files can be delivered via fax.

- Repeat these steps for each file you wish to add.

The Everest CRM Studio - Application Events\(your company)\Scheduled Report Dialog Box - Files
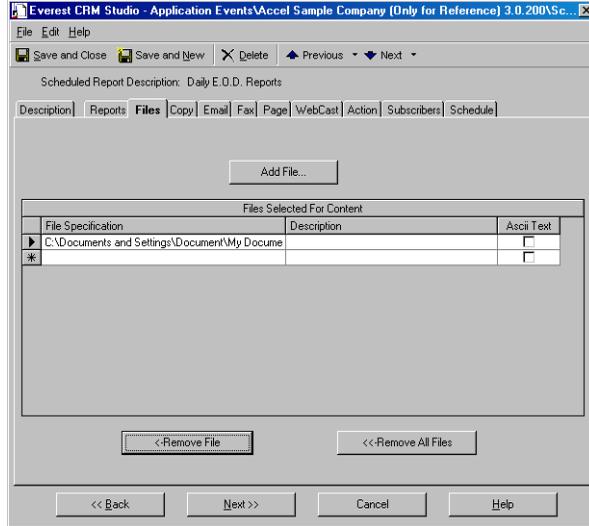
Figure 11.3: Everest CRM Studio - Application Events\(your company)\Scheduled Report - Files

Add File

Click this button to display the **Everest CRM Studio - Add File** dialog box, which enables you to select and add files to the **Files Selected For Content** grid.

Files Selected For Content

This grid displays the selected files.

Remove File

Click this button to remove a selected file from the **Files Selected For Content** grid.

Remove All Files

Click this button to remove all files from the **Files Selected For Content** grid.

Choose Report Delivery Methods

You may deliver Reports to recipients via e-mail (as attached files), fax (ascii-styled reports are embedded within the fax message), webcast (reports are linked to a web page via a URL link), and copy/ftp (report files are sent to a specific disk and directory).

You may use one or more delivery methods to alert a recipient of the availability of a report, and deliver the actual report via another method.

Example   You may use an e-mail or pager message to alert a person of a report's availability, but actually make the report available from a webcast site.

Delivering a File Via Copy/FTP

One of the methods by which a report (and/or file) can be delivered to a recipient is via the copy/ftp method.

To deliver a report (or file) via copy/ftp, do the following:

- After specifying relevant information in the **Description** and **Reports/Files** tab of the **Everest CRM Studio - Application Events\(your company)\Scheduled Report** dialog box, select the **Copy** tab.
- Select either (or both) options to deliver the reports and/or files to the appropriate recipients via this method.
- Click **Next**. You will see the **Everest CRM Studio - Application Events\(your company)\Scheduled Report - E-mail** tab.

   The destination (or copy to) location of reports and files is determined within each subscriber's profile in **CRM Studio**.

The Everest CRM Studio - Application Events\(your company)\Scheduled Report Dialog Box - Copy
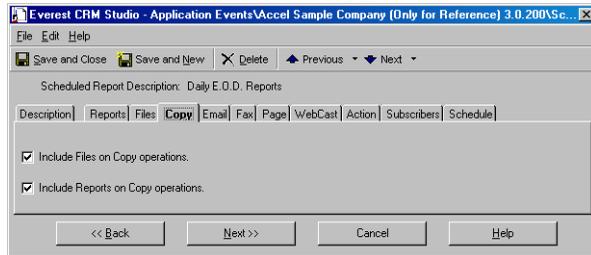
Figure 11.4: Everest CRM Studio - Application Events\(your company)\Scheduled Report - Copy

Include Files on Copy operations
Select this option to enable transfer of files through FTP.

Include Reports on Copy operations
Select this option to enable transfer of reports through FTP.

E-Mail Delivery Options

When a report or file is configured for delivery, you can specify whether it will be accompanied by an e-mail message. The mail message can be used in two ways:

- As a delivery method for the report/file. **CRM Studio** can automatically attach the selected reports/files to an outgoing e-mail message.
- As a notification message that informs the recipients that the corresponding reports/files are available to them. In this instance, the reports/files are not attached to the mail message. (The reports/files may have been sent by fax or ftp, or posted to a website.)

If you do not wish to use e-mail for either of these two purposes, you may leave blank the **E-mail** tab of the **Everest CRM Studio - Application Events\(your company)\Scheduled Report** dialog box.

The Everest CRM Studio - Application Events\(your company)\Scheduled Report Dialog Box - E-mail

Figure 11.5: Everest CRM Studio - Application Events\(your company)\Scheduled Report - E-mail

Available values for use in message content
This section displays the available fields from the queries that are linked to the event, and can be used in the **Message Subject** and **Message Text** fields.

Use selected value in Text
Click this button to use a highlighted value from the **Available values for use in message content** field, in the **Message Subject** and/or **Message Text** fields.

E-mail Account to Send From
From the drop-down list, select the e-mail account to be used for sending mail.

☞ **"Set Up E-mail Account to send E-mails" on page 28**

E-mail Reply Address (Optional)
Specify a reply address to use one that is different from the address in the **E-mail Account to Send From** field.

Message Subject
Specify the subject of the e-mail alert.

☞ **"E-Mail Subject Text" on page 195**

Message Text
Specify the text of the e-mail alert.

☞ **"E-Mail Message Text" on page 196**

Include reports as e-mail attachments
Specify whether the associated reports are to be attached to the outgoing e-mail message.

Include files as e-mail attachments
Specify whether the associated files are to be attached to the outgoing e-mail message.

E-mail notifications should wait until reports are completed
If an event has associated reports which are not attached to the outgoing e-mail, you can use this option to control the timing between the generation of the reports and the sending of the e-mail.

If you choose to attach reports to an e-mail message, **CRM Studio** automatically waits until the reports are successfully completed before sending the mail message. If an attached report fails to complete successfully, the e-mail message is not sent.

If you choose not to attach the reports to your mail message, you can specify whether the e-mail message should wait (i.e., delay being sent) until all the associated reports are successfully generated by selecting the option **E-Mail notifications should wait until reports are completed**.

Checking this option ensures that the recipient of the mail message can access the referenced report when the message is received.

 If you check this option and the report(s) fail to be completed successfully, the e-mail message is not sent at all.

If this field is not checked, the e-mail message is sent immediately, and, depending on the amount of time required to generate the reports, the recipient of the message may not be able to access them immediately.

Fax Delivery Options

When a report or file is configured for delivery, **CRM Studio** also enables you to specify whether it will be accompanied by a fax message. The fax message can be used in two ways:

- As a delivery method for the report/file. **CRM Studio** can automatically attach text-based reports/files to an outgoing fax message.
- As a notification message that informs the recipient that the corresponding reports/files are available to them. In this instance, the reports/files are not attached to the fax message.

If you do not wish to use faxing for either of these two purposes, you may leave blank the **Fax** tab of the **Everest CRM Studio - Application Events\(your company)\Scheduled Report** dialog box.

The Everest CRM Studio - Application Events\(your company)\Scheduled Report Dialog Box - Fax

Figure 11.6: Everest CRM Studio - Application Events\(your company)\Scheduled Report - Fax

Available values for use in message content
This field displays the available fields from the queries that are linked to the event, and can be used in the **Fax Subject** and **Message Text** fields.

Use selected value in text
Click this button to use a highlighted value from the **Available values for use in message content** field, in the **Message Subject** and/or **Message Text** fields.

Fax Account to Send From
Select the fax account to be used for sending faxes from the drop-down list.

Fax Subject
Specify the subject of the fax alert.

☞ **"E-Mail Subject Text" on page 195**

Include a fax coverpage using the following text for the comment section
Specify whether the fax must have a coverpage and text must be included in it.

Include the following text as the first page (after coverpage if any)
Specify whether the fax must have an additional page after the first page and if text must be included in it.

Include text reports as fax pages
Specify whether associated text-based reports will be included in the outgoing fax message.

Include text files as fax pages
Specify whether the associated files will be included in the outgoing fax message.

Fax notification should wait until reports are completed

If an event has associated reports which are not attached to the outgoing fax, you can use this option to control the timing between the generation of the reports and the sending of the fax.

> Only text-based reports and files can be attached to a fax message.

If you choose to attach reports to the fax message, **CRM Studio** automatically waits until the reports are successfully completed before sending the fax. If an attached report fails to complete successfully, the fax is not sent.

If you choose not to attach the reports to your fax, you can specify whether the fax should wait (i.e., delay being sent) until all the associated reports are successfully generated by selecting the option **Fax notifications should wait until reports are completed**.

Checking this option ensures that the recipient of the fax can access the referenced report when the fax is received.

> If you check this option and the report(s) fail to be completed successfully, the fax is not sent at all.

If this field is not checked, the fax is sent immediately, and, depending on the amount of time required to generate the reports, the recipient of the fax may not be able to access them immediately.

Pager Delivery Options

When you have a report or file configured for delivery, **CRM Studio** enables you to send a pager alert to the recipient(s) to notify them that the reports/files are ready.

If you do not wish to send pager alerts about distributed reports/files, you may leave blank the **Page** tab of the **Everest CRM Studio - Application Events\(your company)\Scheduled Report** dialog box.

If you are sending pager notifications, you can specify whether the pager message should wait (i.e., delay being sent) until all the associated reports are successfully generated by selecting the option **Pager notifications should wait until reports are generated**.

Checking this option ensures that the recipient of the pager message can access the referenced report when the message is received.

> If you check this option and the report(s) fail to be completed successfully, the pager message is not sent at all.

If this field is not checked, the pager message is sent immediately, and, depending on the amount of time required to generate the reports, the recipient of the message may not be able to access them immediately.

The Everest CRM Studio - Application Events\(your company)\Scheduled Report Dialog Box - Page
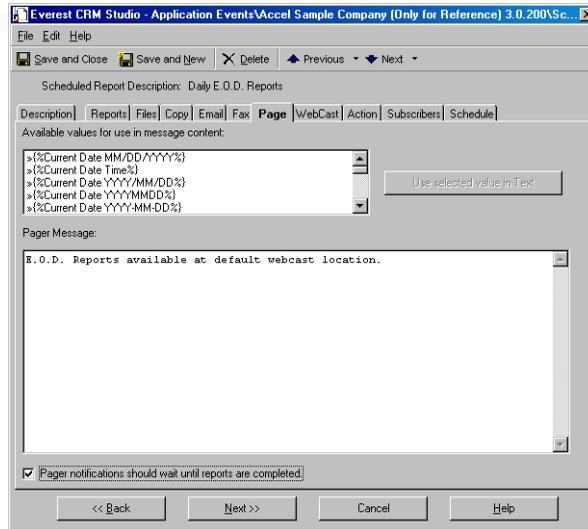
Figure 11.7: Everest CRM Studio - Application Events\(your company)\Scheduled Report - Page

Available values for use in message content
This field displays the available fields from the queries that are linked to the event, and can be used in the **Pager Message** field.

Use selected value in Text
Click this button to use a highlighted value from the **Available values for use in message content** field, in the **Pager Message** field.

Pager Message
Specify the content of the pager alert/message.

Pager notification should wait until reports are completed
If an event has associated reports, which are not attached to the outgoing pager message, you can use this option to control the timing between the generation of the reports and the sending of the pager message.

Webcast Delivery Options

When a report or file is configured for delivery, **CRM Studio** enables you to specify whether it will be accompanied by a web (HTML) alert message. The web message can be used in two ways:

- As a delivery method for the report/file. **CRM Studio** can automatically attach (as URL links) the selected reports/files to the web message.

- As a notification message that informs the recipient that the corresponding reports/files are available to them. In this instance, the reports/files are not posted to the web message. (They may have been sent by fax, ftp, or e-mail.)

If you do not wish to use web alerts for either of these two purposes, you may leave blank the **Webcast** tab of the **Everest CRM Studio - Application Events\(your company)\Scheduled Report** dialog box.

The Everest CRM Studio - Application Events\(your company)\Scheduled Report Dialog Box - Webcast
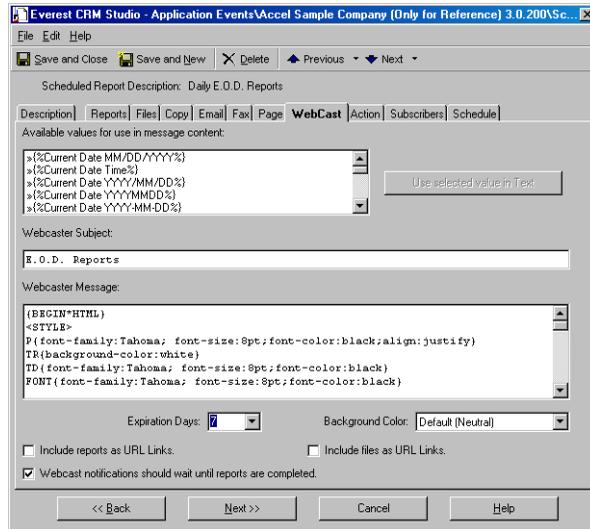
Figure 11.8: Everest CRM Studio - Application Events\(your company)\Scheduled Report - Webcast

Available values for use in message content

This field displays the available fields from the queries that are linked to the event, and can be used in the **Webcaster Subject** and **Webcaster Message** fields.

Use selected value in Text

Click this button to use a highlighted value from the **Available values for use in message content** field, in the **Webcaster Subject** and/or **Webcaster Message** fields.

Webcaster Subject

Specify the subject of the webcast.

Webcaster Message
Specify the content of the webcast.

Expiration Days
Specify the number of days that the alert message for a triggered event should remain on the webcast window.

Background Color
The subject of a triggered event alert message can appear in one of four colors to indicate the nature (or criticality) of the event. Your choices are:

• Neutral (Indicative of an event that is neither good nor bad)
• Green (Indicative of an event that conveys good news)
• Yellow (Indicative of an event that conveys a warning)
• Red (Indicative of an event that conveys bad news)

Include reports as URL Links

Specify whether the associated reports will be attached to the webcast alert window via a URL link icon.

Include files as URL Links

Specify whether the associated files will be attached to the webcast alert window via a URL link icon.

Webcast notifications should wait until reports are completed

If an event has associated reports, which are not linked to the corresponding webcast window, use this option to control the timing between the generation of the reports and the publishing of the webcast.

If you choose to attach reports to a webcast message, **CRM Studio** automatically waits until the reports are successfully completed before posting the webcast message. If an associated report fails to complete successfully, the webcast message is not sent.

If you choose not to attach the reports to your webcast message, you can specify whether the webcast message should wait (i.e., delay being sent) until all the associated reports are successfully generated by selecting the option **Webcast notifications should wait until reports are completed**.

Checking this option ensures that the recipient of the webcast alert message can access the referenced report(s) when the message is received.

> If you check this option and the reports fail to be completed successfully, the webcast message is not sent at all.

If this field is not checked, the webcast message is sent immediately, and, depending on the amount of time required to generate the reports, the recipient of the message may not be able to access them immediately.

Report Subscribers

The **Subscribers** tab allows you to specify the names of the recipients of the corresponding report(s), and the means of delivery and the means of notifying each subscriber (e-mail, fax, pager, copy, or webcast).

> Before you select subscribers for a scheduled report event, you must define your subscribers within the **CRM Studio** database.

There are four types of subscribers:

*   Individual people
*   Groups of people
*   Individual computers
*   Groups of computers

Whereas people can be notified via e-mail, fax, copy/ftp, pager, and webcast, computers can be notified via copy/ftp only.

Adding a Report Subscriber

To add a report subscriber, do the following:

*   From the **Everest CRM Studio - Application Events\(your company)\Scheduled Report - Subscribers - Standard** tab, click the **Add**

Subscriber button. You will see the **Everest CRM Studio - Add Subscriber** dialog box.

- To send alerts to all the members of a specific group, select the check box to the left of the group's name.

  All the members of the group are notified via the same delivery method.

- To send alerts to specific subscribers, expand the group to which that subscriber belongs, and locate the subscriber's name. Select the check box to the left of the subscriber's name.
- Repeat this process for each group or subscriber you wish to notify.
- When you have selected the required subscribers, click the **Add Subscriber** button in the **Everest CRM Studio - Add Subscriber** dialog box.

The selected users are displayed in the **Users Targeted For Delivery** grid and computers are displayed in the **Computers Targeted For Delivery** grid.

- A single scheduled report event can notify any combination of groups and individual subscribers.
- If **CRM Studio** is configured to perform subscriber linking, you may have to wait a few seconds to display the members of a linked group, as **CRM Studio** must dynamically retrieve this information from an external database.

Choosing a Subscriber's Delivery Methods

Once you have selected your subscribers, you may proceed with choosing the method(s) by which each subscriber will receive the corresponding report(s).

By default, each selected subscriber has **E-mail** selected as the only delivery method. You can retain (or remove) e-mail as one of the selected methods as well as add any of the other four methods for each subscriber.

Computers may be notified only via the copy/ftp method.

Be careful to select only those delivery methods that have message text associated with them. Also, be sure that the subscribers you have selected have a valid delivery address for the methods you have chosen for them.

Removing a Report Event's Subscribers

To remove subscribers from an event, do the following:

- From the **Users Targeted for Delivery** (or **Computers Targeted for Delivery**) grid in the **Everest CRM Studio - Application Events\(your company)\Scheduled Report - Subscribers** tab - **Standard** tab, go to the extreme left column of the row that contains the subscriber you wish to remove.

- The cursor changes into a right-pointing arrow. Click once to highlight the row.
- Click the **Remove Subscriber** button.

> Click the **Remove All Subscriber**s button to delete all the subscribers selected for this event.

Report Schedule

The last step in the configuration of a scheduled report event is the specification of the schedule (or frequency) that determines how often you wish to generate and distribute the corresponding reports.

Every report event has its own schedule; you can schedule reports for generation as often or as infrequently as you need. **CRM Studio** includes approximately a dozen pre-configured schedules; you may edit these schedules as well as create additional schedules of your own.

To select a schedule that will control how often CRM Studio generates scheduled reports, do the following:

- From the **Choose a schedule to use** field in the **Everest CRM Studio - Application Events\(your company)\Scheduled Report - Schedule** tab, click the drop-down button to display pre-configured schedules.
- If you see a schedule that fits your requirements, select it. If not, you must create it.

> - The schedule called **When E-mail Arrives** is reserved for use only with the **CRM Studio** E-Mail Response System.
> - You can choose None as a schedule if you wish to configure an event, but do not want **CRM Studio** to actively schedule it. This is particularly useful for events that you wish to run on an ad hoc or on-demand basis.

Creating/Editing a Schedule

To create a schedule or edit an existing schedule, do the following:

- From the **Everest CRM Studio - Application Events\(your company)\Scheduled Report - Schedule** tab, click the **Create New Schedule** or **Edit This Schedule** buttons. You will see the **Everest CRM Studio - Scheduled Report** dialog box.
- Type in a description of the schedule you are creating or editing (e.g., Everyday at 3 PM)
- If you are creating a schedule for events that should not be submitted until after a specific date, enter the appropriate date (in the format XX/XX/YYYY HH:MM) in the field **Should not run until after date/time**. If events using this schedule is eligible to be submitted immediately (when this schedule is next due to run), leave this field blank.

> *Example* A schedule for events that should not be submitted until January 2nd of the following year.

- From the **Frequency** drop-down list, choose a recurring frequency for this schedule. Your choices are:

- Every 'n' minutes
- Hourly
- Daily
- Weekly
- Monthly
- Annually
- None (used only for events that have no schedule)

> The frequency called When E-mail Arrives is reserved for use only with the **CRM Studio** E-Mail Response System.

- Based on the frequency you choose, you is prompted to supply additional scheduling details, such as the time of day to run, the day of the week, et cetera.
- After specifying this information, click the **Allowed Range** tab.

Configuring a Schedule's Allowed Range

There are three components to the configuration of a schedule's allowed range:

- The months of the year during which the schedule is eligible to be submitted (place check marks in eligible months).
- The days of the week during which the schedule is eligible to be submitted (place check marks in eligible days).
- The hours of the day during which the schedule is eligible to be submitted (specify the beginning and ending times between which the schedule may be submitted). Note that these times are inclusive.

Schedule Holiday Handling

In the **Everest CRM Studio Administrator** module, you have the option to identify those dates that are designated as holidays for your organization. As a result, you can specify (on an event-by-event basis) whether or not a scheduled report event should be submitted on a date that is identified as a holiday.

In the **Schedule** tab, select the option **Should this run on a holiday** to run a scheduled report event if it is scheduled on a holiday.

How Reports Appear in the Monitor

It is important to understand the sequence in which scheduled report events appear in the **Everest CRM Studio Events Monitor**.

Since a scheduled report event is not associated to an application event, it first appears under the branch **Report Distribution**. Here you will see your scheduled report event (such as Weekly Management Reports) submitted at the appropriate date and time.

Once a scheduled report event is submitted, you may track the progress of the individual reports associated with it from the **Report Generation** branch. These reports go from a pending to a generated state.

If a report fails to generate successfully, it appears under **Errors** in the **Report Generation** branch.

Assuming that the report is generated successfully, the last step is to deliver the report (and any associated alert messages). Depending on the method(s) by which the scheduled report event is configured to deliver the report (e-mail, fax, copy, or webcast), you may click the corresponding **Delivery** branches within the **Everest CRM Studio Events Monitor** and check if the message (and report) was successfully delivered.

12. Webcasting

The webcasting alert messaging technology enables you to execute notifications that are critical and time-sensitive to one or more HTML pages. The webcast alert delivery method is particularly useful for:

- Organizations whose employees wish to have a dynamic, self-updating, personalized monitor of triggered events.
- Organizations that wish to post alert information for partners and clients.
- Remote sales and/or service personnel who do not have the time (or means) to download numerous e-mails, but can quickly and easily access a web browser.
- Organizations that wish to distribute reports or other documents via the Web.

The following instructions detail how to set up and use the webcasting alert delivery module.

How Does Webcasting Work

CRM Studio's webcasting module delivers alert messages by creating and publishing HTML pages that contain the requisite data. A sample webcast is given below:

Figure 12.1: Sample Webcast Output

The webcasting module does not require any specific web server technology or integration requirements. As long as you have the means to display an HTML page (e.g., via a web browser), you are fully prepared to use the webcasting module.

To set up and use the webcasting module, do the following:

1. Create the master and recipient directories.

   "Create Webcast Publishing Directories" on page 342

2.   Identify the webcast template and publishing locations.

☞ **"Webcast Template and Publishing Locations" on page 342**

3.   Specify the subscriber's webcast address.

☞ **"Specify Subscribers' Webcast Addresses" on page 344**

Create Webcast Publishing Directories

Since the webcast module dynamically creates and publishes HTML pages with triggered event data, you need to set up one or multiple locations (disks and directories) where the webcast HTML output files are published.

Create Master Directory

Typically, you will create a webcast publishing directory on your web server. Wherever you decide to create this directory, it should be easily accessible by anyone using a web browser.

You can call this directory "CRMStudio_Webcaster", so you can easily identify it in the future.

Create Recipient Directories

Webcasting alerts may be correlated with e-mail alerts. Just as every alert recipient has an e-mail address, each webcasting alert recipient should have a webcasting recipient directory; just as events send e-mail alerts to different recipients, the same events must send webcast alerts to different recipients. To ensure that each recipient receives only applicable alerts, create a separate webcasting directory for each recipient.

Thus, the second step is to create sub-directories (within the webcast master directory) for each recipient who receives webcast alerts.

Example | You have created a master webcast directory called 'Ev_Webcaster' and you want to send webcast alerts to three users named Smith, Jones, and Ford.

Within the Ev_Webcaster directory, you must create three sub-directories named Smith, Jones, and Ford.

Webcast Template and Publishing Locations

Once you define the webcasting directories, the next step is to indicate the webcast template file and master publishing location to **CRM Studio**.

The webcasting location refers to a master directory (configured previously). Under normal circumstances, you can set up only a single webcasting location. But if you have set up multiple webcast master directories (such as one directory inside your firewall for employee alerts, and another outside your firewall for partner alerts), you must set up one webcast location record for each master directory.

To specify the webcast template and publishing locations, do the following:

- From the main menu, select **CRM > CRM Studio > Administrator**. You will see the **Everest CRM Studio Administrator** dialog box.
- Select **Administration Folders > Software Setup > Webcast Locations**.
- Click the **New Webcasting Location** button in the top-left corner of the dialog box. You will see the **Everest CRM Studio - Webcasting Locations** dialog box.
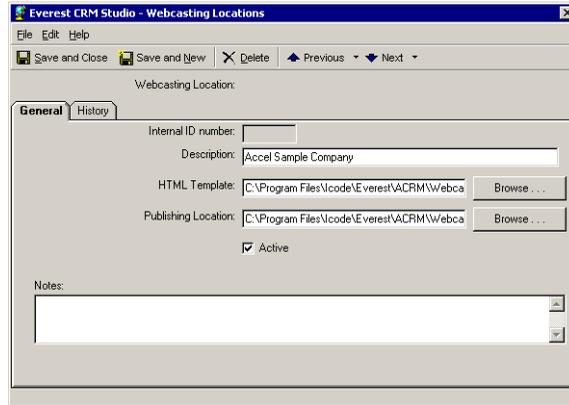
Figure 12.2: Webcasting Locations Dialog Box

Internal ID Number
This field displays the ID automatically generated by **Everest** for the location. You cannot modify it.

Description
Enter a description of the webcasting location.

HTML Template
Specify the location and name of the HTML template in this field. The HTML Template is the design file used when formatting the resulting webcast file. **CRM Studio** includes a default HTML template called KS_webcaster.htm, located in the webcaster directory (path: **Program Files > Icode > Everest > ACRM > Webcaster**).

Publishing Location
Specify the publishing location in this field. The Publishing Location is the webcaster master directory you created previously.

You must include a forward slash \ at the end of the publishing location directory specification.

Active
Click this checkbox to indicate that **CRM Studio** can publish HTML files to this location.

Notes
Enter any additional information you want to keep track of.

Publishing Location - Notes

Note the following about the webcast publishing location:

- Ensure that the computer you are running **CRM Studio** on, has write capability to the publishing location; if not, **CRM Studio** will be unable to create the webcast output files and links.
- You may specify a FTP address as the publishing location using the format ftp://username:password@ftp.location.net/directory_name.

Editing the HTML Template

All the fields that you can use in your webcast file are included in the template. You may modify the default design or wording associated with this template.

To edit the default HTML template, do the following:

- Make a copy of the existing template file (KS_webcaster.htm)
- In the copied file, modify the text, add your organization's logos, etc.

The name of the output files created for webcast recipients is based on the name of the template.

Example If you create a template called mytemplate.htm, the files copied to the publishing location are also called mytemplate.htm.

You may use a WML file as a template to support WAP access for handheld devices.

Specify Subscribers' Webcast Addresses

After creating the webcast directories and publishing location(s), you must define the webcasting address for each subscriber who receives alerts via webcast.

To specify the subscribers' webcast addresses, do the following:

- From the main menu, select **CRM > CRM Studio > Architect**. You will see the **Everest CRM Studio Architect** dialog box.
- From the **Event Management Folders** panel in the center, double-click **Subscribers**.
- Click the branch that contains a subscriber for whom you wish to set up a webcast address.
- Double-click the subscriber record in the right panel. You will see the **Everest CRM Studio - Subscribers\Users\(group name)** dialog box.
- Click the **Webcast** tab.

Figure 12.3: Subscribers\Users\(group name) Dialog Box - Webcast Tab

Webcaster Name1

Enter the name of the webcast sub-directory that equates to this subscriber.

> *Example* If you create a webcast sub-directory for a subscriber called Jones, enter Jones in this field.

Webcaster Location for Name1

Specify a valid webcast location.

Webcaster Name2

Enter the name of the secondary webcast sub-directory that equates to this subscriber.

Webcaster Location for Name2

Specify a valid webcast location for the secondary webcaster.

The primary and secondary webcast locations can be the same. You may, however, have different locations based on whether a subscriber is accessing this data from inside or outside your organization.

When an Event is Triggered

When one or more events that send webcast alerts are triggered, **CRM Studio** automatically creates the corresponding webcast HTML file and publishes it to the corresponding location of each subscriber.

When additional events that send webcast alerts are triggered, **CRM Studio** automatically re-creates the webcast HTML file, including the existing alerts and the details of any newly triggered events. Existing alerts continue to be listed on a subscriber's webcast window until the alert expires.

One of the most powerful aspects of webcast technology is that unlike e-mail, subscribers may keep a window (such as a web browser) open in their specific webcast location, and receive real-time updates about newly-triggered events.

To automatically update the webcast window contents when new events are triggered, you can either manually refresh the webcast window, or use Microsoft Active Desktop technology.

Webcasting for Report Distribution

In addition to using the webcast alert messaging component to send out alerts about triggered events, the webcast interface is also a unique and powerful tool for an organization to distribute reports and files to large numbers of recipients.

Example You use electronic mail to send 100 copies of a report to selected recipients. With **CRM Studio**, you could attach the report (as a URL link) to one or more webcast files.

Additionally, you could use **CRM Studio**'s e-mail alerts to notify each recipient of the availability of the reports, and include the appropriate URL link.

You can apply this same technique to the distribution of files, product data sheets, newsletters, spreadsheets, etc.

To use the webcasting module in this manner, specify one or more reports and/or files for an event you are working with.

Then, on the event **Webcast** tab, check the box titled **Include Reports as URL Links**.

Once you do so, the corresponding reports and/or files are automatically generated and posted to the resulting webcast window.

13. EventPaks

Purpose of an EventPak
EventPak Functions
Define EventPak Vendor Identification
Building an EventPak
Installing an EventPak
Sample Events
Upgrading Events

EventPaks are a collection (or bundle) of **CRM Studio** queries, events, report definitions, scheduled report events, and Visual Basic scripts.

EventPaks enable you to compile event-related data and ship it to another person or organization.

EventPaks have the following primary uses:

- You can easily distribute events to other members of your organization, move events from one system to another, and create back-ups of your configured events.

- You can pack up or compile events that you need assistance with, and send them to Everest Software for assistance.

This chapter details how to build, distribute, and install **CRM Studio** EventPaks.

Purpose of an EventPak

You must first decide the contents to be included in an EventPak. You should also decide the purpose of the EventPak. The most important consideration here is whether you wish to distribute the contents of an EventPak to other people and (if so) the degree of control you wish to retain over that EventPak.

CRM Studio provides three features that enable you to control the distribution of an EventPak:

- **Branding** - When an EventPak is created, you can include your organization's name and contact information in it. This allows the people to whom you send the EventPak to know who created it, and whom to contact for questions or assistance.

- **Encryption** - You can also encrypt the queries that are included with an EventPak. Query encryption prohibits an EventPak recipient from viewing or modifying the design of the queries in the EventPak. The recipient can however, view and edit all other EventPak data, and can also create additional queries.

EventPak Functions

Define EventPak Vendor Identification

Regardless of whether or not you wish to resell EventPaks, it is a good idea to brand your EventPaks with your identification, so that users will know who created it, and whom to contact for assistance. You can brand the EventPak by using the **Vendor Identification** option.

To enter the vendor identification, do the following:

- From the main menu bar, select **CRM > CRM Studio > Architect**. You will see the **Everest CRM Studio Architect** dialog box.

- Select **File > EventPak > Vendor Identification**. You will see the **Everest CRM Studio - EventPak Vendor Information** dialog box.

Figure 13.1: EventPak Vendor Identification Dialog Box - General Tab

The **General** tab lets you specify the overall name and address information of your organization (along with notes about installing the EventPak). The other tabs allow you to specify the phone, fax, and e-mail contact information for the various departments of your organization.

Building an EventPak

Before you create an EventPak, you must identify the data to be included in the EventPak.

EventPaks are built by database. When you select a database defined in the **Everest CRM Studio Architect** (such as the Accel Sample Company database), **CRM Studio** automatically adds the queries, events, report definitions, scheduled reports, and Visual Basic scripts from that database to the EventPak you are building.

CRM Studio does not allow you to pick and choose queries, events, report definitions, scheduled reports, and scripts from a specific database; you must either select all or none.

This, however, does not mean that you cannot create an EventPak with only one or two queries and/or events within it.

To copy selected queries, events, etc., from different databases into an EventPak, do the following:

• Create a company in the **Everest CRM Studio Architect**. This folder will store the queries, events, etc., that you wish to include in the EventPak.

☞ **"Add an Everest Company" on page 25**

• Using the **Studio Architect**'s Edit menu functions for cut-and-paste, copy the desired queries, events, etc. from the database in which they currently reside to the company you just created.

- Use the contents of your new company as the base for your EventPak.

To build an EventPak, do the following:

- From the main menu bar, select **CRM > CRM Studio > Architect**. You will see the **Everest CRM Studio Architect** dialog box.
- Select **File > EventPak > Builder**. You will see the **Everest CRM Studio - EventPak Builder** dialog box.
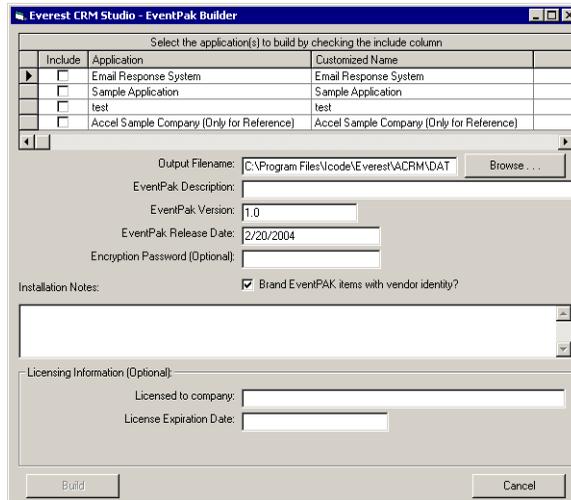
Figure 13.2: EventPak Builder Dialog Box

Select the applications to build
Select the databases (and corresponding components of data) to include in your EventPak by clicking the **Include** check box.

The grid displays a list of all of the databases that are currently defined in the **Studio Architect**.

For each database that you select, scroll to the right and select the elements of **CRM Studio** data you wish to include in the EventPak. You can choose the queries, events, report definitions, scheduled report events, and Visual Basic scripts of any database, in any combination.

Output File Name
Specify the name and location of the EventPak output file. By default, all EventPaks require a file suffix of .kse.

EventPak Description
Enter the name of the EventPak.

EventPak Version
Enter the EventPak's version number. This information is useful to segregate EventPaks when you update them.

EventPak Release Date
Enter the date that the EventPak was created/released.

Encryption Password (Optional)
Enter the EventPak encryption password.

The encryption password should be unique for every EventPak.

"Encrypt EventPaks" on page 353

Brand EventPak items with vendor identity
Check this box to include your vendor identity in the EventPak. This vendor information is displayed on all profiles (related to queries, events, report definitions, scheduled reports, and scripts) in the database in which you install the EventPak when you select **Help > About EventPak Vendor**.

Installation Notes
Enter installation and configuration details about this EventPak. This information is displayed when a recipient executes the EventPak in preparation for its installation.

Licensing Information (Optional)

You can enter data in this section only if you enter an encryption password.

Licensed to Company
Enter the name of the company to whom you license the EventPak.

License Expiration Date
Enter the date on which the license for the EventPak expires. **CRM Studio** assumes that an encrypted EventPak will be resold, and by default, displays an evaluation license that expires in 30 days.

If you re-sell the EventPak, Everest Software recommends that you specify a license expiration date (in the format xx/xx/yyyy) that will allow a client to try out your EventPak for a certain amount of time (e.g., 30 or 60 days) before deciding to buy it.

If you do not re-sell the EventPak (but have chosen to encrypt it), you can specify a license expiration date sufficiently in the future (such as 01/01/9999), to provide a recipient with perpetual access to the EventPak.

If you assign a limited-time license code to an EventPak, you can use the **EventPak License Generator** dialog box to generate an extended or perpetual license code for that EventPak when a recipient requests it (or purchases the EventPak).

If an EventPak's license expires, the EventPak recipient can still add and modify the data in that EventPak. The recipient however, cannot successfully submit any of the events or reports in that EventPak and receives a message (in the **Everest CRM Studio Event Monitor**) stating that the license code has expired.

To view the EventPak license (and update it, if necessary), do the following:

- From the **Everest CRM Studio Architect** dialog box, select a company that contains events from the EventPak.
- Double-click an Event and select **Help > About EventPak Vendor**. You will see the **Everest CRM Studio - EventPak Vendor Identification** dialog box.

- Click the **License** button. You will see the **Everest CRM Studio - EventPak License Code Management** dialog box.

A grayed out **License** button indicates that there is no license code associated with the corresponding EventPak.

Build

Click the **Build** button after specifying the required details to create the EventPak.

CRM Studio creates the .kse file in the specified location and indicates the completion of the process at the bottom of this window.

The EventPak files tend to be quite small, and thus, are ideal for distributing via e-mail.

Encrypt EventPaks

You can optionally encrypt an EventPak in order to prevent recipients from viewing or modifying the contents of the queries in the EventPak.

Encrypt an EventPak to prevent a recipient from double-clicking a query definition and:

- discovering how the query was created,
- modifying the query,

thereby, safeguarding your intellectual property.

Encrypting requires you to specify a license expiration date for the EventPak.

You can use the encryption password to access the query designer and view the encrypted data. This comes in handy when you need to do work on an encrypted EventPak at a client's site.

Encrypting an EventPak does not, however, prevent a recipient from:

- using the included queries in one or more events.
- viewing the details of (and modifying) the events, report definitions, scheduled reports, and scripts that are included in the EventPak.
- designing new queries.

Installing an EventPak

To install an EventPak, do the following:

- From the main menu bar, select **CRM > CRM Studio > Architect**. You will see the **Everest CRM Studio Architect** dialog box.
- Select **File > EventPak > Install**.
- Specify the location of the EventPak file (.kse). You will see the **EventPak Installation** dialog box.
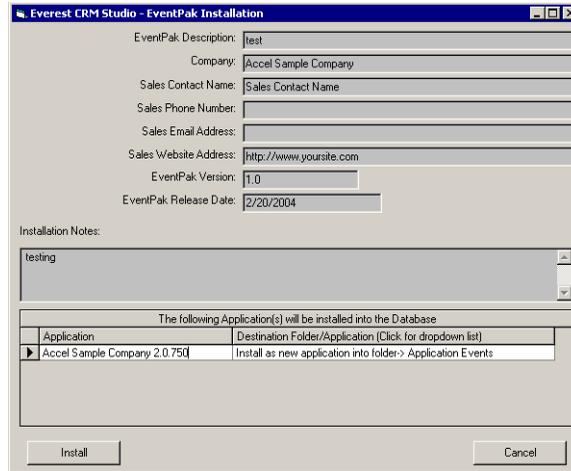
Figure 13.3: EventPak Installation Dialog Box

EventPak Description, EventPak Version, EventPak Release Date, Installation Notes
These fields display the EventPak details as specified in the **Everest CRM Studio - EventPak Builder** dialog box. You cannot edit these fields.

Company, Sales Contact Name, Sales Phone Number, Sales E-mail Address, Sales Website Address
These fields display your company details as specified in the **Everest CRM Studio - EventPak Vendor Identification** dialog box. You cannot edit these fields.

Applications installed in the Database
The grid at the bottom of this window displays a list of the databases that are included in this EventPak. You can either install the EventPak as a new database or add the EventPak application data to an existing database. Click the **Destination Folder/Application** column to select the installation type.

> **CRM Studio** does not overwrite any existing query, event, report definition, scheduled report, or VB script records.

Thus, if you add the contents of an EventPak to a database that already has queries, events, etc., with names that are the same as those in the EventPak, you will end up with two sets of queries, events, etc., with the same name.

Click the **Install** button when you are ready to install the EventPak.

Installation - Notes

An EventPak does not include ODBC driver (or application properties) data within it. This means that after you install an EventPak, you must specify the ODBC connection data for each database from the **Everest CRM Studio - Edit Connection** dialog box.

Sample Events

Everest Software provides you with sample events containing 100 odd events and queries which cater to the usual business requirements of an organization. In addition, CRM Studio allows you to create custom events, queries, schedule reports etc. to meet your business needs.

In order to use the sample events, create a new company and link the ODBC database to this database. This will allow you to access events from the database. You can customize the sample events according your business requirements.

When CRM Studio is installed, the sample events get installed for the Accel Sample Company. This database is named as **Accel Sample Company (Only for Reference) 5.0.XXX**, where 'XXX' is the version number of the EventPak. This version number may not be the same as the **Everest** client version number. You can use this as a reference and events can be copied into new companies created in CRM Studio.

> During a custom installation of **Everest**, you can install the sample events by selecting the option **Sample Events**. Even if you did not install the sample events while installing **Everest**, **Everest** verifies the existence of sample events when you select any of the CRM Studio menu options. You can choose to install the sample events at this stage also. It is then validated if the sample company is installed. If the sample company exists, the sample company database and the CRM Studio Application properties are automatically updated by **Everest**.

The events supported in the EventPak provided by **Everest** can be grouped as:

*   Accounting events
*   Customer/Vendor related events
*   Document related events
*   Sales opportunity related events
*   Events pertaining to Point of Sale
*   Events related to Inventory and work orders
*   Events related to time clocking system
*   E-commerce related events

In order to use the reference events for the working application, please note the following points:

*   Create a new working application.
*   Copy the required events from the sample events to the working application.
*   Copy the related query definitions, report definitions, scheduled reports and basic scripts (if any) associated with the event, to the working application.
*   Existing queries, report definitions, basic scripts should be removed from the copied event and the same should be attached from the working application.
*   After copying an event, select the **Active** check box in the **Description** tab of the event; otherwise, the event will not be active and cannot be used.

Creating an Application

CRM Studio options are not available if your company is in the evaluation mode.

For a registered company, you can create a CRM Studio Application. All the queries and events are copied from the sample events to the new application. It is advisable to create an application and copy the sample events into it so as not to lose any data when the sample company is upgraded to its newest version.

When you attempt to access any feature of the CRM Studio, you are informed that an application is required for the company. You can opt to do one of the following:

Create a blank application

Select this option to create an application without the sample events. This, however, does not affect the other activities of CRM Studio.

Create an application and copy sample events

Select this option to create an application with all the sample events.

Copying Events from the Sample Events Pack

Once you have created the new company, copy the required sample events from the reference EventPak.

To copy the events from the sample events pack into the new company, do the following:

- Open the **Everest CRM Studio Architect** window and select **Application Events**.
- Select the sample company database and click on **Events**. You will see the list of existing sample events on the right panel.
- Select the event in the right panel and choose **Edit > Copy** from the menu.
- Now select **Events** under the new company you have created. Choose **Edit > Paste**. The event gets copied into the new company.
- Similarly, copy the required events one by one from the reference pack and paste them into the new database.

It is not enough if you copy only the event from the reference pack into another database. Copy the related query definitions, report definitions, scheduled reports and basic scripts (if any) associated with the event, in a similar way as said above.

All the associated queries, reports etc. should be referring to the new company that you created and not the sample company database. Hence, if a query is copied it has to be removed and again added using the new company.

For example, you have created a new company APP1. You copy an event X and a query Y (associated with event X) from the sample events into APP1. Now double-click on the event X in APP1. In the **Queries** tab it is to be noted that the query selected for content is referring to the APP1 company. If not, select and

remove the query (use **Remove Query**) and add the query again (use **Add Query**) ensuring that you are adding it from the company APP1.
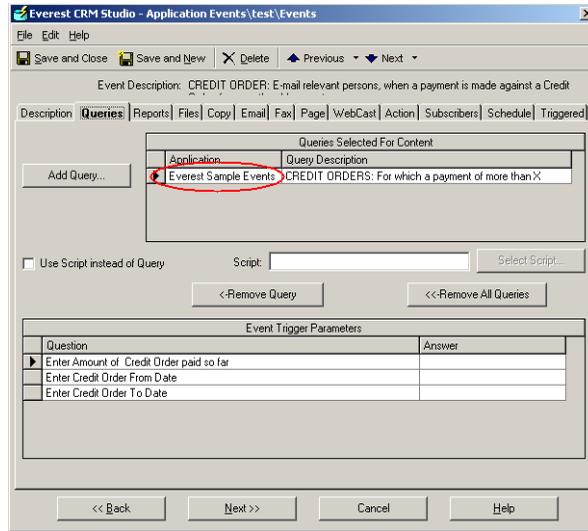
Figure 13.4: Everest CRM Studio - Application Events - Queries Tab

Upgrading Events

When you upgrade **Everest**, the sample events installed previously are not automatically replaced by the latest sample events available. You are prompted to upgrade them when accessing any of the CRM Studio menu options.

You should verify the Release Notes for changes related to the events used. If any of the events used has been mentioned in the Product Release Notes, then you should manually delete the respective events in the 'Company' database and copy the events again from the reference database (ASC).

Example You copy an event E1 from the reference pack (ASC) and use it in the company you created. During the next **Everest** upgrade if event E1 is modified in the reference pack (ASC), a mention will be made in the release notes. The user should verify this and copy E1 again into his company from the upgraded reference pack.

14. Worksheets

Query Design Worksheets
Record-Level Query Design Worksheet
Aggregate Query Design Worksheet
Subscriber Entry Worksheets
Subscriber Data Worksheet
Subscriber Importing / Linking Worksheet
Event Design Worksheets
Event Design Worksheet
E-mail Message Design Worksheet
Fax Message Design Worksheet
Pager Message Design Worksheet
Webcast Message Design Worksheet

Query Design Worksheets

The following two pages contain Query Design Worksheets; the first worksheet is designed for use with record-level queries, and the second worksheet is designed to assist in the definition of aggregate queries. Feel free to make copies of these worksheets.

Record-Level Query Design Worksheet

Purpose of Query:

_____

_____

E-Mail Alert Message Text to Send When Query Condition Occurs:

_____

_____

_____

_____

_____

_____

Data Fields Required for E-Mail Message:

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Database Tables Needed:

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Query Conditions:

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Alert Recipients:

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Aggregate Query Design Worksheet

Purpose of Query:

_____

_____

E-Mail Alert Message Text to Send When Query Condition Occurs:

_____

_____

_____

_____

Data Fields Required for E-Mail Message:

_____

_____

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Aggregate Field:

_____

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_____

_____

Aggregate Function:

_____

Aggregate Grouping Field(s):

_____

Database Tables Needed:

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Record-Level Conditions:

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Aggregate Condition:

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Alert Recipients:

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Subscriber Entry Worksheets

The following two worksheets are designed to help you identify the necessary elements that are required for the creation of **CRM Studio** subscribers. The first worksheet is designed for the manual entry of subscribers; the second is designed to help you identify the needed components for subscriber importing and/or linking. Feel free to make copies of these worksheets.

Subscriber Data Worksheet

Subscriber Name:

Company Name:

Title:

Phone:

E-Mail Address (Primary):

Days and Hours to Use Primary:

E-Mail Address (Secondary):

Days and Hours to Use Secondary:

Fax Number (Primary):

Days and Hours to Use Primary:

Fax Number (Secondary):

Days and Hours to Use Secondary:

Pager Vendor (Primary):

Pager PIN (Primary):

Days and Hours to Use Primary:

Pager Vendor (Secondary):

Pager PIN (Secondary):

Days & Hours to Use Secondary:

Copy/FTP Location: (Primary):

_____

Days and Hours to Use Primary:

_____

Copy/FTP Location: (Secondary):

_____

Days and Hours to Use Secondary:

_____

Subscriber Importing / Linking Worksheet

Database That Contains Subscriber Data:
_____

Table That Contains Subscriber Data:
_____

<div align="center">

Field That Contains:
</div>

Subscriber Name:
_____

Company Name:
_____

_____

Title:
_____

Phone:
_____

_____

_____

E-Mail Address (Primary):
_____

E-Mail Address (Secondary):
_____

Fax Number (Primary):
_____

Fax Number (Secondary):
_____

_____

Pager Vendor (Primary):
_____

Pager PIN (Primary):
_____

Pager Vendor (Secondary):
_____

Pager PIN (Secondary):
_____

_____

Copy/FTP Location: (Primary):
_____

Copy/FTP Location: (Secondary):
_____

Event Design Worksheets

If you take the time to fill out the information on the following worksheet for each event you are creating, the event set-up process will be quick and smooth.

Once you become familiar with the event creation process, you can probably forego the use of these worksheets, and design the events directly in the **Everest CRM Studio Architect**.

 The worksheets have a series of questions for you to specify whether the associated event will be configured to send alerts via e-mail, and if the alerts include Crystal Reports or files attached to them.

Please take the time to design each corresponding alert message and attach it to the event worksheet. Feel free to make copies of the following worksheets.

Event Design Worksheet

Name of Event:

_____

_____

Query #1:

_____

Query #2 (If Needed):

_____

Query #3 (If Needed):

_____

Alerts to be Sent Via

E-mail: Yes / No

Fax: Yes / No

Pager: Yes / No

Webcast: Yes / No

Alerts to Include:

Crystal Reports: Yes / No

If 'Yes', List Reports:

_____

Attached Files: Yes / No

If 'Yes', List Files:

_____

Will Event Trigger Action: Yes / No

If 'Yes', Describe Action:

_____

_____

_____

Subscribers and Delivery Methods:

Name   Mail(Y/N) Send File/Report(Y/N) Fax(Y/N) Pager(Y/N) Webcast (Y/N)

_____

_____

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_____

_____

_____

_____

Schedule:

_____

E-mail Message Design Worksheet

Name of Event:

_____

_____

E-mail Alert Message Subject:

_____

_____

E-mail Alert Message Text:

_____

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Attach Related Files and/or Reports to E-mail:
Yes / No

Fax Message Design Worksheet

Name of Event:

_____

_____

Fax Alert Message Coverpage Text:

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Fax Alert Message Text:

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Include Related Files and/or Reports In Fax:

Yes /   No

Pager Message Design Worksheet

Name of Event:

_____

_____

Pager Alert Message Text:

_____

_____

_____

_____

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Webcast Message Design Worksheet

Name of Event:

_____

_____

Webcast Alert Message Subject Text:

_____

_____

_____

_____

Webcast Alert Message Text:

_____

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Provide a Link to Related Files and/or Reports:

Yes /   No

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