Digital Taskforce

V8.3

Reference Guide

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Installation & Configuration

Welcome to Digital Taskforce!

Thank you for using Digital Taskforce, the industry's leading Business Activity Monitoring (BAM) technology for superior business intelligence.

This guide helps you install, configure, and implement Digital Taskforce according to the needs of your organization. For quick set-up and configuration instructions, please this installation and configuration chapter in its entirety and then proceed to the following chapter for a brief (20 minute) tutorial of the Digital Taskforce application.

For complete instructions on every Digital Taskforce function, please refer to the corresponding chapters in the remainder of this guide.

We hope that you enjoy working with Digital Taskforce and encourage you to contact us with your feedback (contact information is at the end of this chapter). Now let's get started with Digital Taskforce!

Installation Requirements

One Connection License:

Platform: MS Windows NT, 2000, 2003, XP, Vista, Server 2008 & 2012, and 7 & 8
Memory: 2 GB
Processor: Pentium 290 (or greater)
Hard Drive: 4 GB

	Minimum 2 connection	Recommended 2 Connection	Minimum Unlimited	Recommended Unlimited
CPU	1.0ghz/1	1.2ghz/1	1.2ghz/1	1.8ghz/2
RAM	2 GB	2 GB	2 GB	2 GB
HD	20GB	30GB	30GB	50GB

To use Digital Taskforce with your Microsoft Outlook (Exchange) based email system, you must have either Microsoft Outlook or Microsoft Office Pro installed on the Digital Taskforce server. The Microsoft Outlook installation must include the installation of the Microsoft component called "CDO" (collaboration data objects).

(By default, CDO is not included in installations of Microsoft Office 2007.)

MS Outlook 2010 Compatibility

To use Digital Taskforce with your Microsoft Outlook (Exchange) based email system, you must have either Microsoft Outlook or Microsoft Office Pro installed on the Digital Taskforce server. The Microsoft Outlook installation must include the installation of the Microsoft component called "CDO" (collaboration data objects).

Please note that in MS Outlook 2010, CDO is no longer shipped as an included component. Organizations using MS Outlook 2010 have the following options for configuring Digital Taskforce's email sending & receiving accounts:

- Install an earlier version of MS Outlook (e.g., 2007) on the Digital Taskforce server

- Configure Digital Taskforce to use MS Exchange, but running under SMTP

- Configure Digital Taskforce to use an Internet-based email system (such as Pop, Gmail, Hotmail, Yahoo! Mail, etc.)

If you have any questions about configuring Digital Taskforce under any of these options, please refer to the Digital Taskforce Manual or contact e-automate Customer Care.

Check Your License Code!

Version 8.x of Digital Taskforce requires a new license code – different from version 7.x and all preceding versions.

If you do not currently have a version 8 license code, please do NOT install Digital Taskforce until you have acquired this code. To receive your version 8 license code, please send an email to eacustomercare@ecisolutions.com and include your organization name as well as the name of the server on which you'll be installing version 8.

Download Digital Taskforce

The first step is to download Digital Taskforce from our website. To do so, do the following:

- Go to http://servicetechnology.ecisolutions.com.

- Locate and click on the Customer Login link at the top of the page to login and access the Customer Resource Center.

- On the left side of the Customer Resource Center under the Downloads heading click 'Software Downloads'.

- Click on [**View Downloads>>**].

- In the **Server Downloads** box, click on the **Digital Taskforce** link.

- In the **Digital Taskforce** box, click [**Download**] to download the installer.

Download "EventPaks"

EventPaks are collections of pre-configured alert events for various business applications. ECi Software Solutions offers over 70 pre-configured EventPaks. Download as many as you like. The EventPaks should not be executed for installation until after the initial installation of Digital Taskforce is complete. (See below)

Choose the Digital Taskforce Server

Digital Taskforce is installed on a single machine – a server from which it can access the database(s) of the application(s) you wish it to monitor.

All set-up and maintenance of Digital Taskforce is done from this server or from a remote client machine using a Digital Taskforce Client License.

Install Digital Taskforce

After you download the "IM.msi" and "KS_Setup.exe" files, you may run these files (the IM.msi first) to begin the installation. In the Digital Taskforce Setup file you will be prompted to specify the installation password, which was provided to via email when you downloaded the installation zip file.

You will receive a number of prompts that you need to reply to (such as the acceptance of license agreement, and installation location), and then you will be prompted to specify the Digital Taskforce components that you wish to install.

Windows 2008, Vista & 7

Due to increased security settings under Windows 2008, Vista, & 7, you must override the default installation location for Digital Taskforce. Please install Digital Taskforce either in the "Users/Public" location, or create a Digital Taskforce-specific location under the "Users" folder, such as "Users/Digital Taskforce".

User Account Control (UAC)

If UAC (User Account Control) is turned on, you must turn it off prior to installation. To do so, follow these steps:

- Open the Control Panel.

- Go to "User Accounts and Family Safety".

- Select "Change User Account Control Settings".

- In the option called "Chose when to be notified about changes to your computer', select "Never Notify" and click on "OK".

- Restart the server and proceed with the Digital Taskforce installation.

When the software is completely installed, you may go back into UAC and reset the setting to its original value.

Components to Install

There are three options for the Digital Taskforce components you wish to install:

- Core Components: These components are always installed.

- Server Components: These components are installed on the server only

- Client Components: These components are installed both on the server and for any remote clients from which you wish to access Digital Taskforce.

Digital Taskforce installs all three components on the server. Modify this setting only if you wish to install the Digital Taskforce client.

Note the following:

- To opt that a component **not** be installed, click on the arrow to the left of the component and select "Entire feature will be unavailable".

- Do **not** select "Feature will be installed when required" for any component.

- To install a component, make sure that the option "Will be installed on local hard drive" is selected.

- The machine on which the Digital Taskforce server components are installed must also have the Digital Taskforce client components installed on it.

If you install one or more remote Digital Taskforce clients, you will not need to specify the location of the Digital Taskforce database during the installation process. The first time that a remote client is executed, the user will receive a browse button that allows them to locate the Digital Taskforce database they wish to connect to.

Where You Can Install Digital Taskforce

When you purchase Digital Taskforce, you are provided with a license code that enables you to install and run Digital Taskforce on a single **named** server. Do **not** install Digital Taskforce on any machine other than the one you have a license for.

Digital Taskforce does not need to be installed on the same server as your database(s). As long as Digital Taskforce can access your application's data via ODBC, it can be installed anywhere on your network (local network is preferred).

Client Install

(Note that remote Digital Taskforce clients must be individually **licensed** in order to run the Digital Taskforce application. The client license is per "concurrent user" and is not per "named user".

Since Digital Taskforce is installed on a server, you may wish to install a "client version" of Digital Taskforce on one or more local PCs so that you can perform system maintenance without having to log on to the Digital Taskforce server.

To configure a Digital Taskforce client, follow these steps:

1. On the Digital Taskforce server, create a network share to the location where you installed Digital Taskforce. Grant read and write privileges to the domain/user who will be accessing it.

Note that most default network shares are created with "read" access only.

2. On the client computer, run the Digital Taskforce install, but uncheck the "Server" components.

3. Open the Digital Taskforce Event Manager module on the client computer. You will be prompted to specify the location of the "KS_Object.mdb" database. Choose the network share location, look in the Digital Taskforce "Data" folder, and then select the "KS_Object.mdb" file.

If you take the above steps and are unable to log in on the client, open the registry using REGEDIT (on the client) and go to the following location:

HKEY_LOCAL_MACHINE\SOFTWARE\Vineyardsoft Corporation\KnowledgeSync2000\General

Review the settings for the following three items:

Database
EPAKTemplate
Triggered

Make sure that each of these items has its respective location set like this:

\\yourservername\yoursharename\Data\KS_Object.mdb
\\yourservername\yoursharename\Data\KS_EPAK.mdb
\\yourservername\yoursharename\Data\KS_Triggered.mdb

Digital Taskforce User Account

You need to configure the account that the Digital Taskforce Windows Service will run under.

- This account **must** be a domain user account and a member of the "Power Users" group. (You may wish to create a new user such as "Ksync".)

- If Digital Taskforce will be using an Outlook/Exchange based e-mail system, be sure that the account is also a domain controller authenticated user.

User Account Specifications

The Digital Taskforce account should have local admin rights on the computer on which the Digital Taskforce service will run. If local admin rights are not possible, give the user account the following minimum rights:

Act as part of the operating system
Create a token object
Create global objects
Create permanent shared objects
Lock pages in memory
Log on as a service
Log on locally

Configure Windows Service

Your next step is the configuration of the Digital Taskforce Windows Service.

- Go into the Control Panel, select "Admin Tools" and then "Services".

- Right-click on the Digital Taskforce service, choose "Properties", and click on the "Logon" tab.

- Select the "This Account" option.

- Enter the username and password of the user account you created and select "OK".

- Start the Digital Taskforce Windows Service.

Note: In the Digital Taskforce Program Group you will see an option called "Desktop Service." This option is used for debugging purposes only if the Windows Service cannot be started.

Regional Settings

Because many Digital Taskforce events are triggered by date and/or time values, make sure that the Digital Taskforce service is running from an account that has the correct regional settings.

Licensing

To enter your license code information, follow these steps:

- Open any Digital Taskforce module, click on the "Help" menu and then on the "About" option.

- Click on the "License" button.

- Enter the license details. Note that '0' or blank connections indicates that you have an Unlimited Connection license.

Digital Taskforce's licensing is based on the number of databases being monitored; the number of databases being updated by Digital Taskforce events does not impact the license.

Each database to be monitored counts as a "connection"; monitoring incoming email also counts as a connection and so too does the use of front-end scripting (the use of a script instead of a query).

Upgrading Digital Taskforce

If wish to upgrade Digital Taskforce to the most current version, the first step is to download Digital Taskforce from our website. To do so, do the following:

- Go to http://servicetechnology.ecisolutions.com.

- Locate and click on the Customer Login link at the top of the page to login and access the Customer Resource Center.

- On the left side of the Customer Resource Center under the Downloads heading click 'Software Downloads'.

- Click on [**View Downloads>>**].

- In the **Server Downloads** box, click on the **Digital Taskforce** link.

- In the **Digital Taskforce** box, click [**Download**] to download the installer.

Follow these steps:

- Back-up all contents of the Digital Taskforce folders

- Un-install Digital Taskforce (this will leave your data files intact)

- Install the Instant Messaging component – IM.msi – first.

- Then, install the new version of Digital Taskforce (KS_Setup.exe) in the same location as the previous version.

- Select the Digital Taskforce Programs Group option called "Upgrade Earlier Version Database to V(x)". This option, when complete, will log you into the Digital Taskforce Event Manager module.

- Go into the Digital Taskforce Windows Service and re-specify the name of the account that the Service will run under.

- Go into the Digital Taskforce Administrator, click on the "Server Login Information" button and specify the password that the Digital Taskforce Service will use to log into the Digital Taskforce application.

- If you are upgrading to from version 7.9 or earlier to version 8.0 or later and are running (hosting) Digital Taskforce under a Microsoft SQL Server database, you <u>must</u> select the option to "Reset Database Location" (from the Digital Taskforce Programs group) before the new features such as alerts via Instant Message and Twitter will be available to you.

Checking Your Version

To check what version of Digital Taskforce you have installed, log into any Digital Taskforce module, click on the "Help" menu and then on the "About" option. On the top right-hand section of the window that appears you will be shown the version of Digital Taskforce that you are currently running.

If you are not able to login to Digital Taskforce to check your version number, go to the Digital Taskforce Programs Group and open the Release Notes – you will be shown the version number at the top of this document.

Migrating to SQL Server

(Migration to SQL is supported in version 6.x or higher of Digital Taskforce.)

Digital Taskforce may use either a Microsoft Access or a SQL Server database. If using Access, you do not need to have Access installed on the Digital Taskforce server. If using SQL Server, you need to have

MS SQL Server 2000 (Enterprise or Standard) with Service Pack 4 or above, SQL Server 2005, SQL Server Express 2005 (MSDE), or SQL Server 2008.

If you plan on using SQL Express, you will need to download and install it from the Microsoft website.

(Note that each of Digital Taskforce's servers uses its own SQL Server login, so the SQL Server version is best used by organizations that license SQL Server per server.)

Before migrating SQL Server, make sure that you have the following:

- The SQL Server name (instance) you wish to migrate to.

- A SQL Server username and password with privileges to create and to alter a database

To host Digital Taskforce under SQL Server, follow these steps:

- Install the Digital Taskforce application

- Open the Digital Taskforce Programs group and select the option to "Migrate Database to SQL Server".

Note: The option to migrate the Digital Taskforce database **must** be taken from the Digital Taskforce server; it cannot be run from a remote Digital Taskforce client.

Note that the migration program, once successfully executed, will not be able to be run again on the same Digital Taskforce database.

Migrating the Evaluation Software

If you are using an evaluation version of Digital Taskforce, you may take the "Migrate" option and your version will continue to work under SQL Server.

Do NOT Delete the Access Databases

If you are running Digital Taskforce under SQL Server, please do **not** delete any of the Microsoft Access databases that Digital Taskforce installs by default.

Database Backups

If you are running under SQL Server, make sure that this database is being backed-up as part of your nightly (or periodic) backup of your other SQL databases.

If you are running the MS Access version, Digital Taskforce, automatically creates backups of its own on a nightly basis.

Reset SQL Server Database Location

You may need to "reset" the information about where the Digital Taskforce database is located if:

- Your Digital Taskforce server has gone down and you wish to re-install the Digital Taskforce application on another server

- You rename your Digital Taskforce server

- You change the username or password of the SQL Server account that Digital Taskforce uses to log into SQL Server

Prior to running this option, you must restore the two Digital Taskforce internal databases to the target server that you are resetting the database location to. (If you do not take this step, the Reset Database Location option will fail with the message "Failed to connect to database.")

The two Digital Taskforce databases that you must restore are:

- KS_Object

- KS_Inbox

If you are unable to restore these databases, you may also copy the databases and log files to your target server. You will first need to "detach" these databases from SQL Server, copy the ".mdf" and ".ldf" files to your target server, and then re-attach those two databases to SQL Server.

Thus the four SQL files that must be copied are:

- KS_Object.mdf

- KS_Object.ldf

- KS_Inbox.mdf

- KS_Inbox.ldf

Once you restore (or copy) these files, you may take the "Reset Database Location" option from the Digital Taskforce Programs group. You will be prompted to confirm the new SQL Server instance name along with the username and password of the account that Digital Taskforce will use for accessing its database.

Initial Set-Up

There are three steps in the initial set-up of Digital Taskforce:

1. Connecting Digital Taskforce to an underlying application database.
2. Creating & testing the e-mail account that Digital Taskforce will use for the sending of e-mail alert messages.
3. Creating a "subscriber" record for yourself to use during initial event testing.

A Note About Servers

As a "lights-out" application, Digital Taskforce uses multiple "servers" in its daily processing. These servers do everything from scheduling events for submission to sending out alerts via e-mail, fax, pager, et cetera.

For a list of servers, log into the Administrator module and click on the "Server Status" branch under the "Activity" folder. The window on the right will list all of Digital Taskforce's servers and their current status.

Each Digital Taskforce server may be "enabled" or "disabled" for running. By default, some of Digital Taskforce's servers (such as the fax, page, and webcast) are pre-configured to **not** start when the Digital Taskforce service is begun.

Review the status of the Digital Taskforce servers to see which are (and are not) configured to run. If you will be using Digital Taskforce to perform a function related to one of the servers, you must be sure that the server is enabled to run.

Step #1: Connect Digital Taskforce to a Database

Digital Taskforce uses ODBC to integrate with an underlying database; thus the first step is to check for (or create) an ODBC source for each application database you wish it to monitor.

Add / Verify Application ODBC Source

Digital Taskforce uses the 32bit ODBC Manager regardless of whether you are running Digital Taskforce on a 32bit or 64bit machine. On 64bit machines, the 32bit ODBC device manager is typically located in the "syswow64" directory and can be run by executing ODBCAD32.exe.

Go into ODBC and either add or verify the existence of a "System DSN" source for the applications you are using Digital Taskforce with. Your source will look similar (but not identical) to the following, depending on the type of database you are working with:
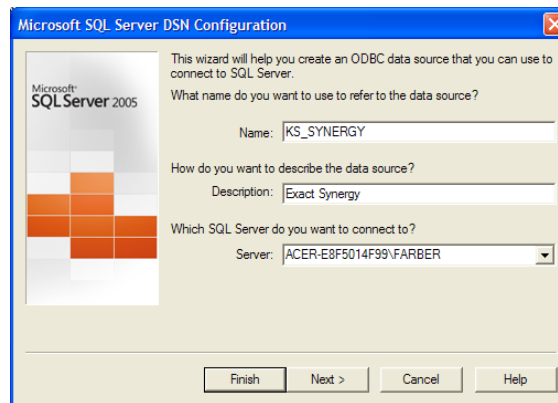
ODBC SOURCE DEFINITION
(OUTSIDE OF DIGITAL TASKFORCE)

If you are working with a Microsoft SQLServer database, the options to "Use ansi quoted identifiers" and to "Use ansi paddings and nulls" **must** be checked on.

Navigator & Event Manager Modules

There are two Digital Taskforce modules used for designing events; the "Event Manager", which presents its data in a menu-driven interface, and the "Navigator" – which presents its data in a graphic, drill-down user interface. ECi Software Solutions recommends using the Navigator module; however you may use either or both.

The remainder of this manual assumes that you will be using the Navigator module.

Log Into Digital Taskforce

Log into the Event Manager (default user "Admin"; no password); you will see the following window.

If you are running Digital Taskforce from a remote client, you will receive a browse button allowing you to locate the Digital Taskforce database before seeing the following window.
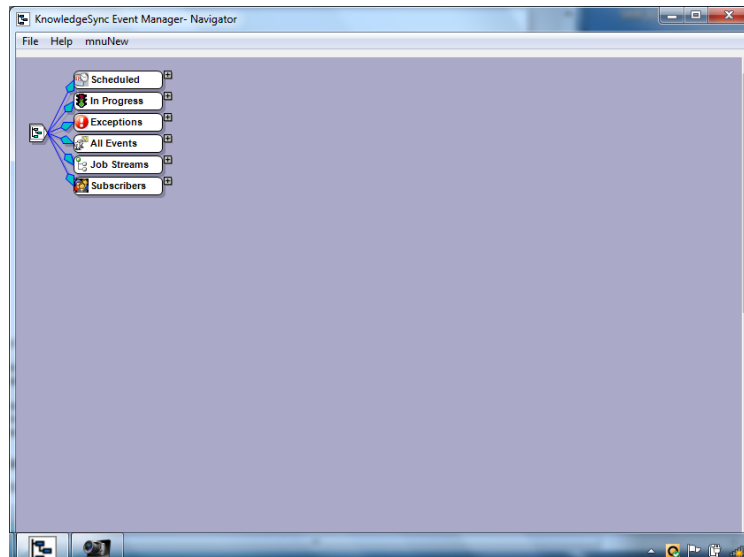
DIGITAL TASKFORCE NAVIGATOR

The applications that Digital Taskforce is configured to monitor appear under the "All Events" branch. The other branches show the following:

- Scheduled: Events that are scheduled to run.

- In Progress: Events that are currently running.

- Exceptions: Events that have encountered an error during their processing.

- Job Streams: Groups of events that are linked together so as to execute in a specific order.

- Subscribers: The people who are recipients of event alerts.

If you have downloaded and installed an EventPak, you will see a branch for that application under "All Events".. If you wish to integrate Digital Taskforce with an application that did not have a EventPak, you can add that application as a branch (see below).

Adding an Application

To use Digital Taskforce with an application for which there was not a pre-defined EventPak, follow these steps:

- Right-click on the "All Events" branch and select "New Application".
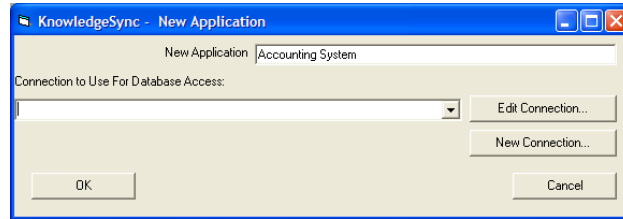
ADD NEW APPLICATION

Key in the application's name and click on the "New Connection" button.

Connecting Digital Taskforce to Your Application

Once you have added your new application, you are ready to connect it to Digital Taskforce using an ODBC source.

Please Note: As of version 8.0 of Digital Taskforce, you must use the 32-bit ODBC Data Source management program. This program, called "ODBCAD32.exe", is typically located in your system's "syswow64" folder.
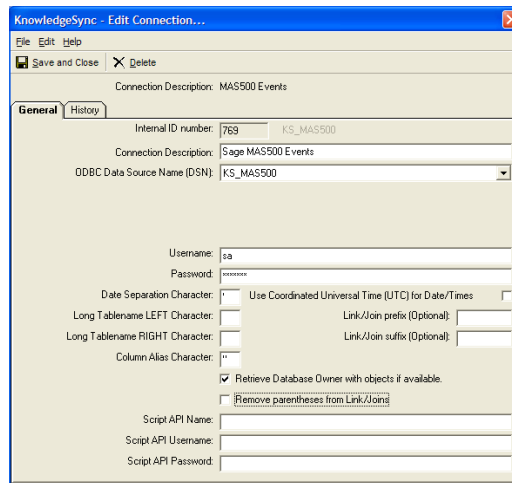
APPLICATION "CONNECTION" WINDOW

- Key in a description of the ODBC connection.

- Choose (from the drop-down list) the appropriate ODBC source.

- (If needed) Specify the username and password.

- The "Use Coordinated Universal Time" checkbox is used only with applications that store their dates & times in GMT format.

    Checking this field enables Digital Taskforce to translate its date variables into GMT format and allow dates & times shown in alert messages to be displayed in local (regional) equivalents.

- Leave the date separation, long tablename, link/join prefix and suffix, and column alias fields with their default values.

- The three "Script API" fields contain login information for Visual Basic scripts that are configured for use with this application. Typically, the "Script Name" contains the name of the server on which the application's database resides, and the "Username" and "Password" fields contain the user ID and password that Digital Taskforce will use when executing the script.

- Click on "Save and Close" at the top-left of your window and then click on "OK" from the previous window.

Note that if you go into ODBC to add or change the definition of an ODBC source, you must exit from Digital Taskforce and re-enter it in order to recognize the new or modified ODBC source.

Connecting an Application Branch to Its Underlying Database

If, under "All Events", there is already a branch for the application which you wish to use Digital Taskforce with, right-click on that branch, click on "Properties" and then click on the "Edit Connection" button.

Follow the same steps as detailed in the previous section regarding the configuration of the ODBC source.

Connecting Digital Taskforce to The "Sample" Application

Digital Taskforce ships with a small sample database that you can use while learning Digital Taskforce. This is a Microsoft Access database and requires you to configure a corresponding ODBC source.

The ODBC source that you define for this database should point to a file called "KS_Sample.mdb" and this file is located in the Digital Taskforce data directory.

Creating Multiple Branches for the Same Application

If you're going to be monitoring multiple "parts" of an application – such as an ERP application, in which you're going to monitor accounts receivable data, accounts payable data, inventory data, and the like, you may find it easiest to organization your Digital Taskforce events into multiple branches or applications – a separate branch for each application "module" you wish to monitor.

Do not create a unique ODBC source for each application module; instead create a single ODBC source and use it in your first (and successive) Digital Taskforce application branches.

Once you create save that first "connection" in Digital Taskforce, you can re-use that same connection record in all your other application branches that point to the same underlying database.

When adding successive application branches in Digital Taskforce, the initial "connection" window that appears contains a field called "Connection to Use for Database Access" and there is a list button next to this field. Click on that list button and you will see a list of all previously-used connections in the Digital Taskforce application.

Select the same connection that was used previously for the database you wish to monitor; this way, a single connection record can be re-used for all the application branches that point to the same underlying database.

Test Your Connection

To test your ODBC connection, take these steps:

- Expand the "All Events" branch, expand the application you are working with, and expand the "Query Definitions" branch.

- Right-click on the "Query Definitions" branch and select "New". (If you get an error message, the ODBC source is incorrectly defined.)

- Go to the "Tables" tab and from the left-hand column, choose (double-click on) a table that you know has some records within it. (If no table names appear, the ODBC source is incorrectly defined.)

- Go to the "Columns" tab and make sure that the table's columns appear in the list titled "Available Columns to Query." Click on the button called "Add All Columns to Query." (If no column names appear in the list, the ODBC source is incorrectly defined.)

- Click on the "Preview" tab – and you should see a list of records from this table. (If you receive an error message, the ODBC source may be incorrectly defined.)

If you are able to take these steps successfully, your integration test is complete.

Step #2: Set Up E-Mail "Sending" Account

Digital Taskforce sends out alert messages via e-mail (among other methods); thus one of the most important configuration steps is to define the e-mail account that Digital Taskforce will use for the sending of these e-mail alert messages.

- Log into the Digital Taskforce Administrator ("admin"/no password).
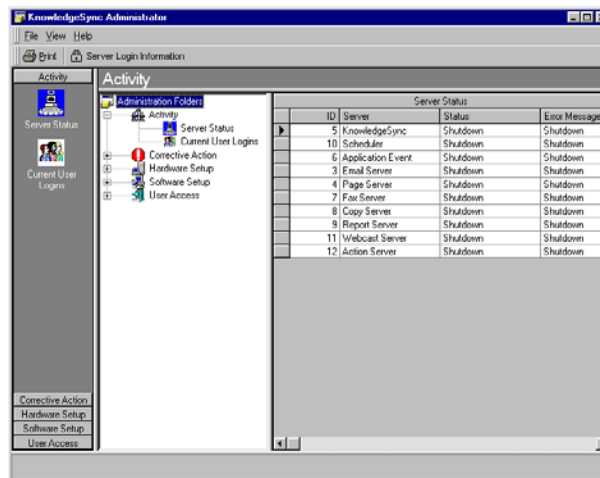
DIGITAL TASKFORCE ADMINISTRATOR

- Expand the "Software Setup" folder and single click on "Email Accounts."

- Click on the "New Email Account" button at the top-left.

- Fill in all of the fields (as detailed in the following sections), make sure the "Active" box is checked, and click on "Save and Close". Note that you can use any of the "Default" buttons at

the bottom of this window:
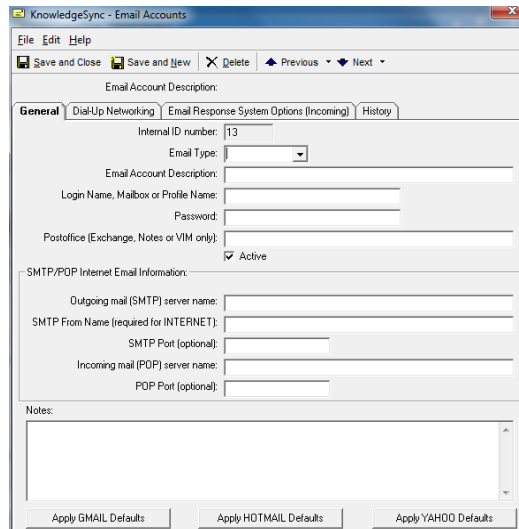
E-MAIL "SENDING" ACCOUNT DEFINITION

Internet-Based Email (SMTP)

If you are using either an Internet-based email system, or are running Microsoft Exchange under SMTP, follow these steps:

- Stop the Digital Taskforce service.

- Choose e-mail type INTERNET.

- Leave the postoffice field is blank.

- Adjust the default server names(s) to your site (such as server.[your_company].com.

- Adjust the SMTP From Name to be a valid e-mail account.

- Restart the Digital Taskforce service.

Note that HTML-formatted e-mail is supported only with e-mail type **Internet**.

Refer to the ECi Software Solutions website's support knowledgebase if you have applied any of the MS Office or MS Outlook email security patches.

Sending Mail Outside of Your Domain

If you are using type "Internet", you may encounter a situation where you can send email within your domain, but not outside of your domain. This is due to your SMTP Server not having "Relay' turned on.

Once you set the server to allow "Relay", you should also verify that no servers other than the servers within your domain can use that SMTP server for relay purposes.

Sending Mail in a Hosted Environment

Digital Taskforce supports sending email alerts from a hosted environment. The only issue that you need to be aware of is that outside providers often require email authentication; see the following section regarding this.

Authentication

Authentication is enabled for Internet-based email systems only. You have four   options for this configuration.

Option #1: Set the Email Account Description to whatever you like (e.g., "Company Alerts") followed by "/AUTH/LOGIN/SSL" as in:

Company Alerts/AUTH/LOGIN/SSL

Set the Login Name to your email address. Set your outgoing SMTP server name accordingly (e.g., smtp.gmail.com), and choose Port 465, which is the normal SMTP SSL port.

Option #2: Configure an IIS email account to use authentication and SSL. This uses the "NTLM" flag to connect to a Microsoft Virtual SMTP server. (NTLM is used throughout Microsoft systems as an integrated, single sign-on mechanism.)

Set the Email Account Description to whatever you like (e.g., "Company Alerts") followed by "/AUTH/NTLM/SSL" as in:

Company Alerts/AUTH/NTLM/SSL

Set the Login Name to your domain username. Set your outgoing SMTP server name accordingly (you can use the IP address), and choose Port 25, which is the normal SSL port.

Option #3: Configure an IIS email account to use authentication but not use SSL. This also uses the "NTLM" flag to connect to a Microsoft Virtual SMTP server as detailed above.

Set the Email Account Description to whatever you like (e.g., "Company Alerts") followed by "/AUTH/NTLM" as in:

Company Alerts/AUTH/NTLM

Set the Login Name to your domain username. Set your outgoing SMTP server name accordingly (you can use the IP address), and choose Port 25.

Option #4: If you're not using any of the preceding methods (not Google, not IIS). This method provides authentication, but does not use SSL.

Set the Email Account Description to whatever you like (e.g., "Company Alerts") followed by "/AUTH/LOGIN" as in:

Company Alerts/AUTH/LOGIN

Set the Login Name and password as needed. Set your outgoing SMTP server name accordingly, and choose Port 25.

Exchange-Based Email (MS Outlook)

To use Digital Taskforce with your Microsoft Outlook (Exchange) based email system, you must have either Microsoft Outlook or Microsoft Office Pro installed on the Digital Taskforce server. The Microsoft Outlook installation must include the installation of the Microsoft component called "CDO" (collaboration data objects).

Please note that in MS Outlook 2010, CDO is no longer shipped as an included component. Organizations using MS Outlook 2010 have the following options for configuring Digital Taskforce's email sending & receiving accounts:

- Install an earlier version of MS Outlook (e.g., 2007) on the Digital Taskforce server

- Configure Digital Taskforce to use MS Exchange, but running under SMTP

- Configure Digital Taskforce to use an Internet-based email system (such as Pop, Gmail, Hotmail, Yahoo! Mail, etc.)

If you have any questions about configuring Digital Taskforce under any of these options, please refer to the Digital Taskforce Manual or contact ECi Software Solutions Technical Support.

To use Microsoft Exchange directly, (without SMTP), you must make sure that CDO ("Collaborative Data Objects" – a component from Microsoft) is installed.

Once you have verified the installation of CDO, follow these steps:

1. Decide which Windows domain account you will run the Digital Taskforce service from. It must be a real user account -- *not the system account*.

2. MS Exchange authenticates access to mailboxes by using your login name. If you have a user account set up already, log into that account. Otherwise, create a new account.

3. Test this account by sending two e-mail messages; one to yourself and one to another person within your organization.

4. Make sure that the Post Office field in the email account setup in Digital Taskforce has your Exchange server name in it.

5. Make sure that the Login name is set to the mailbox alias or directory name. (The real name will never have spaces in it.)

6. Specify the password for this login name.

Make sure on the Digital Taskforce server that MS Outlook is *not* also open at the same time. CDO allows only one user to access the mailbox at a time from one machine. Thus, Digital Taskforce will not be allowed to access the mailbox if Outlook is open on the same machine.

Stand-Alone E-Mail

To run Digital Taskforce stand-alone on a notebook or other system, you must be running MS Outlook on that system. Follow these steps:

- Determine your MS Outlook "Profile Name". (Right-click on your Outlook icon, click on the "Properties" button, and then click on the "Show Profiles" button.)

- Go into the Digital Taskforce "Email Accounts" set-up option.

- Choose an e-mail type of "MAPI".

- Key in an account description.

- Specify your profile name in the "Profile Name" field.

- Leave the other fields blank and click on the "Active" checkbox.

Disable the Digital Taskforce Windows Service and select the option to run Digital Taskforce as a "Desktop Service" .

When Digital Taskforce goes to send an e-mail message, the message will appear in your Outlook "Outbox".

Configuring Multiple E-Mail Accounts

You can configure multiple e-mail sending accounts so that you can have different "send from" names appear on the e-mail messages that Digital Taskforce sends (such as one name used for internal alerts and another for external alerts).

Step #3: Test the E-Mail "Sending" Account

Once you have saved and closed the e-mail account, follow these steps to test it:

- Start the Digital Taskforce service.

- On the main Administrator window, single click the "Email Accounts" branch so that the account you set up is displayed on the right.

- Single-click on (highlight) the account you wish to test.

- Click on the "Perform Email Test" button. Key in your own mail address as the recipient of this test message.

- Log into the Digital Taskforce Monitor and watch the branch called "Email Delivery." You should see your test e-mail go from "Pending" to "Sent Today". If the e-mail appears in "Errors Today" (or never leaves "Pending"), there is an error in the configuration.

- If the e-mail fails, stop the Digital Taskforce service and review the e-mail account set-up. Once you have re-configured the e-mail account, you do not need to re-submit the e-mail test as the previous test is still "pending." Simply re-start the service and see if the pending message gets sent.

Step #4: Define Yourself as a "Subscriber"

The next step is to define yourself as a subscriber – a person who will receive an alert message. To do so, open the Navigator.

Expand the folder called "Subscribers", right-click on the folder called "Sales Team", and choose "New User".
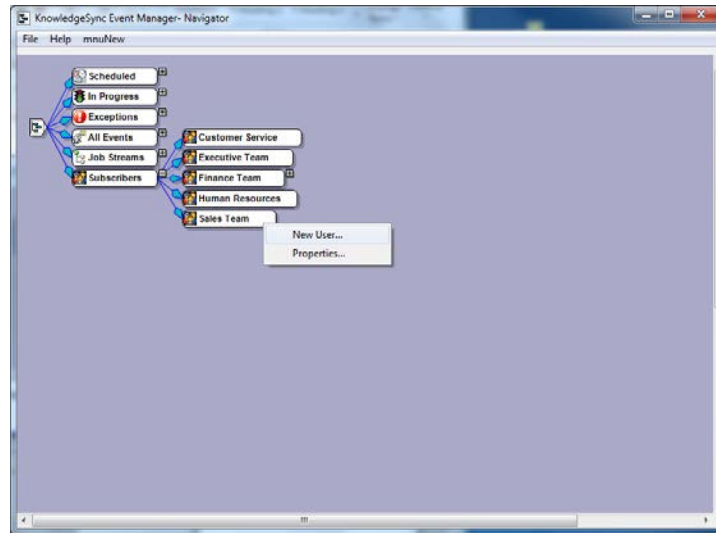
DIGITAL TASKFORCE "SUBSCRIBER" GROUPS

You'll see the following window.
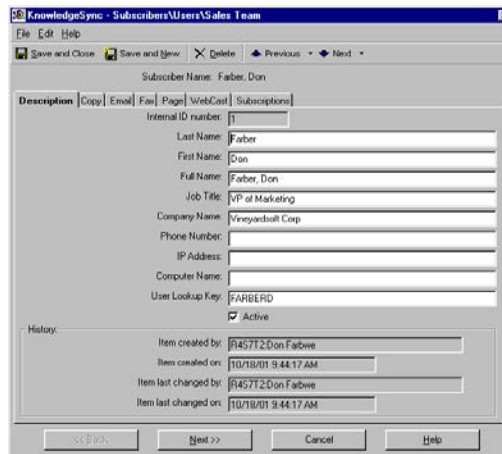
SUBSCRIBER DESCRIPTION

For now, we'll set up a record with an e-mail address only. (You can come back later and specify fax, page, copy, and webcast addresses.)

Fill in the first six fields in the "Description" tab, make sure the "Active" box is checked, and click on the "Email" tab. Enter your e-mail address into the two address fields and click on "Save and Close".
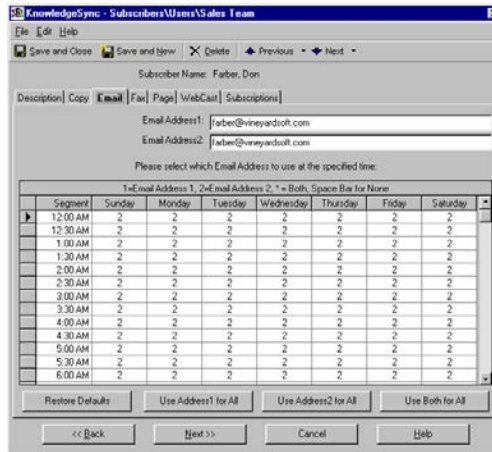
SUBSCRIBER EMAIL ADDRESS DEFINITION

Before You Begin Designing Events . . .

Based upon the steps that you have taken thus far, the only "response" that Digital Taskforce is configured perform is to send out **e-mail** alerts.

Digital Taskforce can send alerts via many other methods (fax, pager, webcast, etc.), as well as trigger the generation and delivery of Forms and Reports, and it can trigger Workflow to update your applications.

ECi Software Solutions suggests that your initial implementation and use of Digital Taskforce not go beyond what has been configured thus far. Once you are able to create queries and events that send alerts – via e-mail – and to yourself – you should consider expanding your use of the application in such areas as:

- Triggering actions and application updates

- Monitoring & processing incoming email messages

- Triggering the generation & delivery of Crystal Reports

Un-Installing Digital Taskforce

To un-install Digital Taskforce, use the Microsoft Windows "Add/Remove Programs" option to remove the Digital Taskforce program files from the Digital Taskforce server. Please note that this option does **not** also remove the Digital Taskforce "data files" – where all of your query, event, and related data is stored. This is intentional, so that clients who are upgrading their Digital Taskforce implementation can remove their current version's programs without losing any of their event configuration data.

So – if you do wish to completely remove Digital Taskforce – programs and data files – from the Digital Taskforce server, simply follow the "Add/Remove Programs" option by opening Windows Explorer and deleting the Digital Taskforce installation folder and all of the sub-folders beneath it.

Tutorials

In the following chapter you may follow a tutorial that is designed for use with the "sample" application that is shipped with Digital Taskforce.

There are additional Training materials that are available. Contact customer care for these materials.

For More Help . . .

Contact ECi Software Solutions e-automate customer care.

The best way to contact ECi Software Solutions's Technical Support Team is at 866-347-6588 or eacustomarecare@ecisolutions.com.

Thank you for your interest in Digital Taskforce and we look forward to helping you with a smooth and successful implementation of the Digital Taskforce Business Activity Monitoring solution.

CHAPTER 2

Product Tutorial

Product Tutorial

Digital Taskforce is a Business Activity Monitoring (BAM) application that lets organizations monitor and respond to critical, time-sensitive conditions of data.

Digital Taskforce can send out alert messages, it can generate forms, documents, and reports, and it take can execute workflow to update one or more underlying applications.

This tutorial provides you with a brief tour of the Digital Taskforce application; those functions not discussed in this chapter are detailed in the chapters that follow.

For the purpose of this tutorial, you will be using a sample application database that was ships as part of the Digital Taskforce solution.

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

- An event that notifies you if there are any orders that have been shipped later than their "required by" date

- An event that notifies you about a specific product that has sold less than 'x' dollars last week

Before You Begin

Before you can proceed with this tutorial, you must have successfully completed all of the installation and configuration steps outlined in chapter one.

The Navigator: Overview

Log into the Digital Taskforce Navigator module (user name "Admin"; no password); you will see the following window:
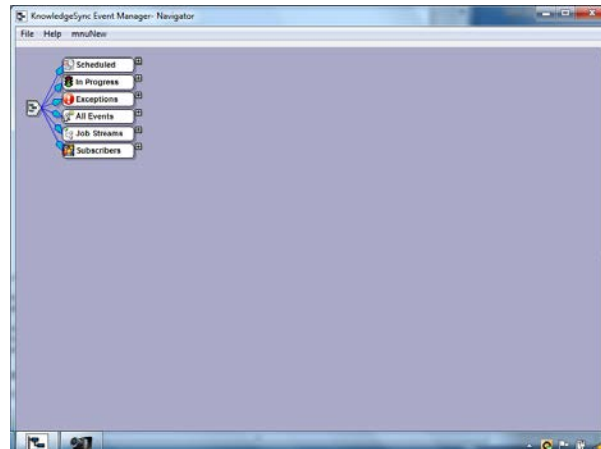
DIGITAL TASKFORCE NAVIGATOR

The Navigator presents you with following event details:

- **Scheduled**: Events currently scheduled to run

- **In Progress**: Events currently being executed

- **Exceptions**: Event errors

- **All Events**: A listing of all events, categorized by application. (Right-click on this branch to display either "all" or "all active" events.)

- **Job Streams**: Events sequentially linked together into logical "streams".

- **Subscribers**: A listing of alert recipients, categorized by recipient group.

Within the "All Events" branch, are sub-branches that list the applications whose data Digital Taskforce is monitoring. Within each of these sub-branches is a list of the events (and their components).

Expand the "All Events" branch, then the "Sample Application" branch, and then the "Events" sub-branch. You will see a window such as the following (if the "Sample Application" does not appear, please skip to the following section):
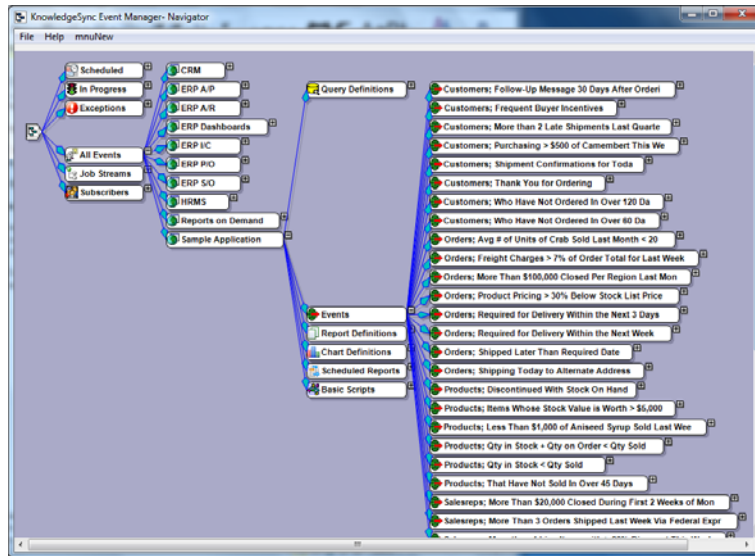
"SAMPLE" APPLICATION EVENTS

Each event consists of multiple components; the first of which is the "triggering condition" that the event is based on. In Digital Taskforce, a triggering condition is known as a "query" and an event can have one or more queries associated with it.

An event not only specifies what query it will use, it also specifies such items as whom you wish to notify if the event is triggered, what message you wish to send to the event's "subscribers", how often you wish to check for the event's conditions, and what kind of workflow the event should execute.

If the "Sample Application" Does Not Exist

This tutorial uses the "Sample Application" If this application is not pre-loaded in Digital Taskforce, follow "Connecting Digital Taskforce to the Sample Application" in the preceding chapter to address this.

Note that the sample application database does **not** allocate a Digital Taskforce connection license.

Create a "Record-Level" Event

The first event that you are going to create is a "record-level" event because it is triggered by the existence of individual data records that meet certain conditions.

We will create an event that is triggered if there are orders that were shipped later than their "required" date.

Since the first component of an event is its query, follow these steps to create this new query:

Beneath the "All Events" branch, expand the "Sample Application" branch, right-click on the "Queries" branch and select "New".

Key in a query description of:

"Orders; Shipped Later Than Required Date"

Press your Tab key so that the query description will be copied into the display description field

Click the "Active" checkbox.
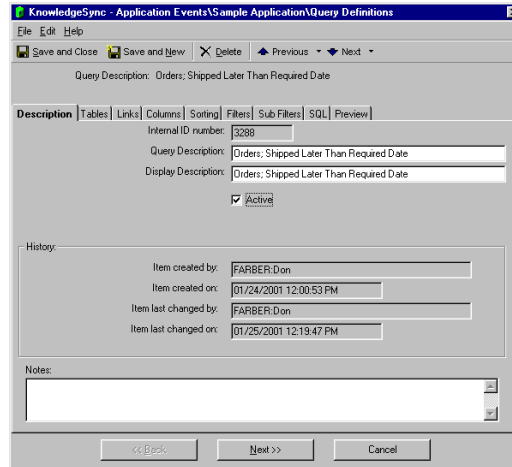
QUERY DESCRIPTION

Specify the Query's Tables

Click on the "Tables" tab

All of the tables (and views) in the associated application's database are displayed for you under "Available Tables". You select which tables contain the data that a query needs to access. For this query, you will choose the tables that contain the data you might wish to include in an outgoing alert message.

Double-click (select) the "Customers", "Orders", and "Salesreps" tables.

You are choosing the "customers" table (because you wish to include the client's name in your alert message), the "orders" table (because it contains order details such as the required date and ship date), and the "salesreps" table (because you wish to include the name of the salesrep associated with each order).

If you wish to include application data in an alert message, you must select the table(s) in which that data resides.
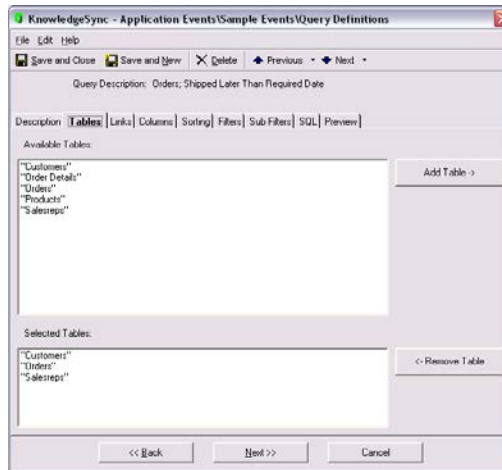
QUERY TABLES

Link the Tables

Since we have selected multiple database tables, we must tell Digital Taskforce how the tables are linked (or joined) together. If you do not know how tables are linked in a database, get a copy of the "database schema", as that will tell you.

Click on the "Links" tab

Click on "Add Table Link" button.
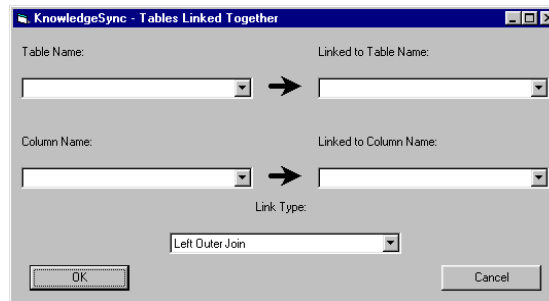
THE "ADD TABLE LINK" WIZARD

Under "Table Name", select "Orders."

For the "Linked to Table Name", select "Salesreps."

In the "Column Name" field, select "EmployeeID." The "Linked To Column Name" will automatically retrieve the "EmployeeID" from the Salesrep table and the link type may be left as "left outer join".

Click on "OK".

You have successfully linked the "Orders" and "Salesreps" tables. Next, you need to bring in the "Customers" table:

Click on "Add Table Link" again.

Under "Table Name", select "Orders."

For the "Linked to Table Name", select "Customers."

In the "Column Name" field, select "CustomerID." The "Linked To Column Name" will automatically retrieve "CustomerID" and the link type may be left as "left outer join".

Click on "OK".

Note that when you link tables together, the first table you select **must** be the query's primary table, (i.e., the table whose records the query reads first).
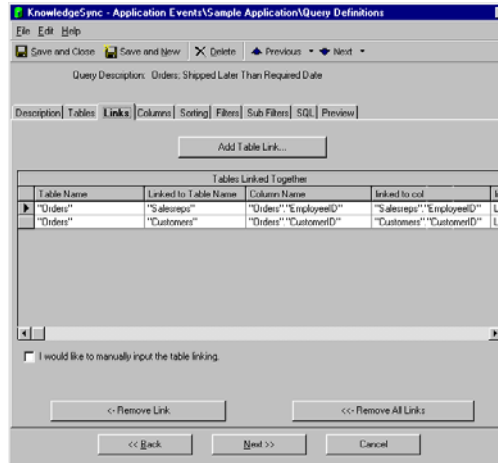
THE RESULTING LINKED TABLES

Select the Query's Columns (Fields)

Part of designing a query is to select those fields of data that you might wish to include in your alert message.

Click on the "Tables" tab

Select (double-click on) the following fields from the window titled "Available Columns to Query:"

[From the "customers" table]

- Company Name

[From the "orders" table]

- Order Date
- Order ID
- Required Date
- Shipped Date
- Total

[From the "salesreps" table]

- First Name
- Last Name

Note the "Unique" column. The unique column tells Digital Taskforce how to remember what records have been triggered for a given event.

If you do **_not_** identify a unique column for a query, a record will trigger an event repeatedly, each time the record meets the query's criteria. If you **_do_** identify a unique column, you will have the **_choice_** (on the event level) whether or not you would like to "repeat notifications".

Place a checkmark in the "Unique" column of the Order ID field.
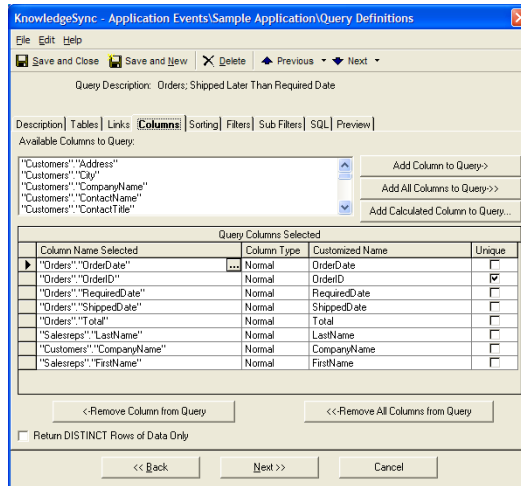
COLUMNS SELECTED FOR THE QUERY

Select the Query's Sorting Order

Click on the "Sorting" tab.

When Digital Taskforce checks for this condition (orders shipped late), it may find one matching order, or it may find two, five, ten, or more. If multiple matching records (i.e., orders) are found, Digital Taskforce will use the "Sorting" tab to determine the order in which retrieved records will be listed.

From the list of "Available Columns for Sorting", double-click on the "Required Date" field.

Choose a sorting order of "ascending" so that the orders will be listed in chronological sequence, starting with the earliest required dates.
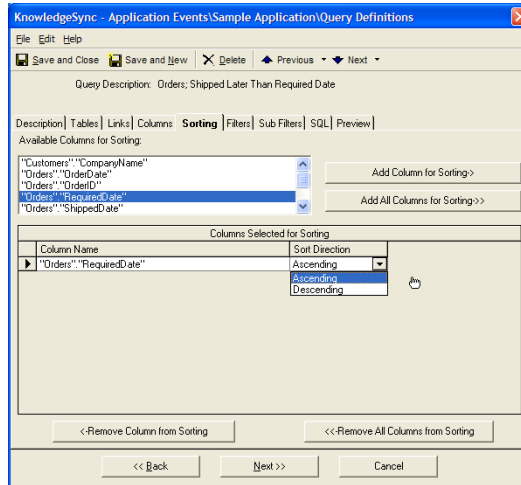
THE QUERY'S SORTING ORDER

Specify the Filter

Click on the "Filters" tab.

The "Filters" tab lets you specify the condition(s) that records must meet to be retrieved by the query. Digital Taskforce 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'

- Date "shipped" is later than the "required" date

For this query, follow these steps:

In the "Available Columns to Filter" list, select (double-click on) the "Orders.ShippedDate" field.

Leave the value of "is or is not" as "is".

Click in the "Operator" field and choose "greater than."

Click in the "Compare Value" field, remove the '?' and type in "Orders.RequiredDate" (without the quotation marks).

Since you are comparing one field against another, you need to tell Digital Taskforce to read the compare value "literally" (i.e., as a database field name). Click in the "Type" field and change "Date" to "Literal."

Leave the rest of the columns with their default values.

Your resulting filter window should look like the following:
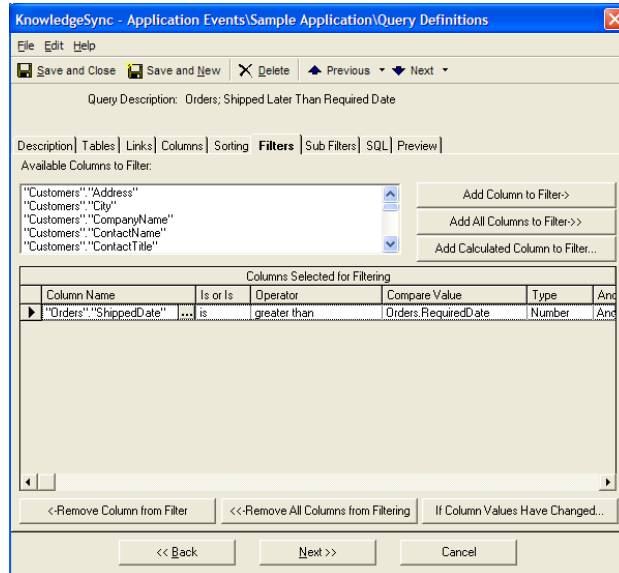
THE QUERY'S FILTER

Skip the Sub-Filter Tab

The "Sub Filters" tab is not used in the design of record-level queries.

Leave the "Sub Filters" tab blank.

Preview the Results of the Query

The "Preview" tab lets you review the results of your query. When you click on this tab, you should see a single record such as in the following illustration:
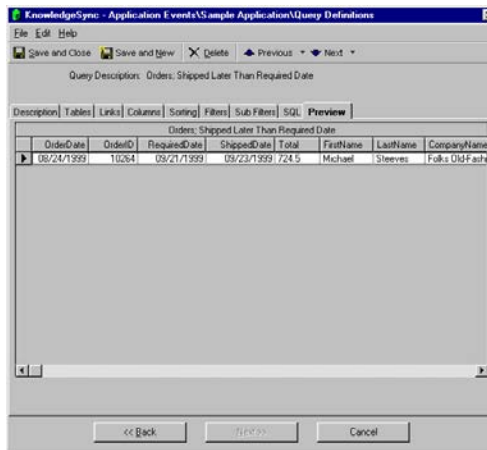
PREVIEW THE RESULTS OF YOUR QUERY

Click on "Save and Close" at the top left of your window to save your query.

If you need to go back and make changes to any of the query design information, simply click on the appropriate tab.

Add the Event

The next step is to configure the event that uses this query.

Digital Taskforce separates queries and events so that a single query can be used in multiple events. For 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

Follow these steps to continue with the creation of your event:

In the "Sample Application" branch, right-click on the "Events" sub-branch and select "New".

Key in a description of "Orders; Shipped Late."

Leave the "Lookup Key" field blank

The "Priority" field controls the submission order of events scheduled at the same time; higher priority events are executed first. Select a priority of "5"

Check the "Active" box.

Do not check the "Repeat" box. (You want to be notified only once for each order that was shipped late.)

Check the "Keep only last checked record in Monitor" box. (This keeps the amount of history that Digital Taskforce retains to a minimum.)
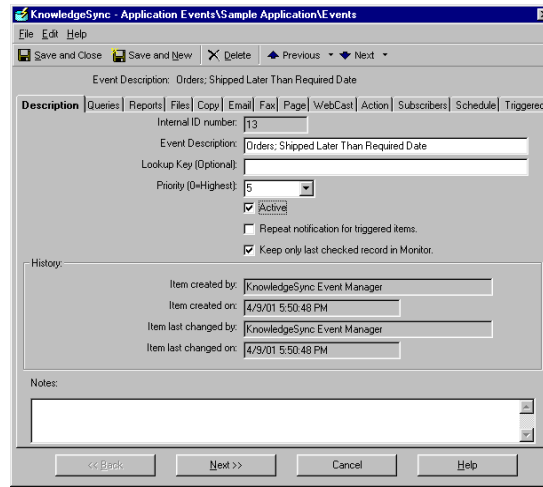
THE EVENT'S DESCRIPTION

Link the Query to the Event

The next step is to link the query that you just designed to this event.

Click on the "Queries" tab

Click on the "Add Query" button.

Select the query you were just working with.

The grid at the bottom of this window will remain empty since the query included only a single filter and its "compare values" were identified on the query level. (You can design queries whose filter values can be identified on the event level as well.)
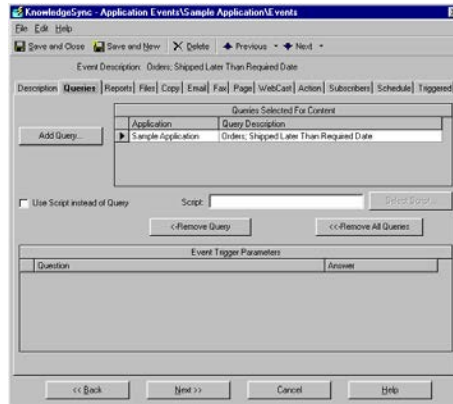
THE EVENT'S QUERY

Specify the E-Mail Alert Message Text

One of the ways that Digital Taskforce can respond to a "triggered" event is to send out alert messages. Digital Taskforce can send out alert messages to any number of people (employees, clients, prospects, and business partners) via the following methods:

- E-Mail
- Fax
- Pager / PDA / Cellular Phone
- Screen Pop / IM / Skype
- Copy / FTP
- Web Dashboard (webcast)
- Social Network (Twitter)

For the purpose of this event, you will be skipping over the "Reports", "Files", and "Copy" tabs, and will be configuring the event to send out e-mail alerts only.

Click on the "E-mail" tab.

Enter (or verify) the value in the "E-mail Account to Send From" field. (Digital Taskforce's e-mail sending account was defined in chapter one.)

Leave the Email Reply Address field blank.

Key in a message subject of:

Order Shipped Later Than Required Date

In the top line of the e-mail "Message Text," key in:

The following order was shipped later than the customer's required date:

Press your Enter key to leave a blank line in the message text.

In lines three through seven of the message text, type in:

Order ID:
Company:
Required Date:
Shipped Date:
Salesperson:

Position the cursor to the right of the words "Order ID:" in your message text. Use your spacebar to leave some room after "ID:"

Go up to the list of "Available values for use in message content" and select the field called "{OrderID}". Notice how this field now appears next to "Order ID:" in your alert message.

Position the cursor to the right of the words "Company:" in your message text and choose the field called "{CompanyName}" for next to it.

Repeat these steps for the remaining three fields in your alert message. When you get to the "Salesperson" field, put in the "{FirstName}" field, enter a space or two, and then put in the "{LastName}" field.

When finished, your E-Mail tab should look like the following window:
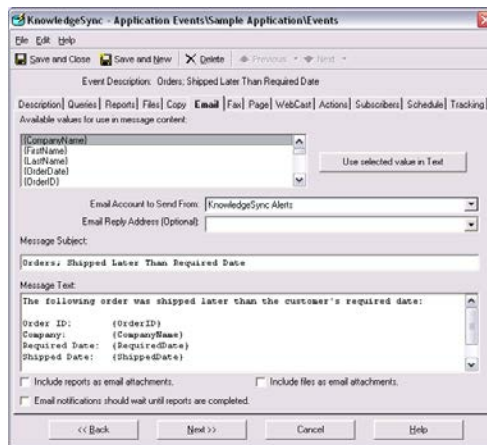
THE EVENT'S E-MAIL ALERT MESSAGE

For this event, you can skip the process of specifying the alert message text for the other notification methods (fax, page, and webcast).

Event "Response Actions"

Digital Taskforce can do much more than just send out alert messages when an event is triggered. Digital Taskforce can:

- Generate & deliver Forms, Documents, or Crystal Reports

- Send the contents of files, such as product brochures or spreadsheets

- FTP files to pre-determined locations

- Write "triggered event data" to a external file (such as a CSV)

- Create records in underlying applications

- Update records in underlying applications

- Pass triggered event data to external programs

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

Specify the Event's Subscribers

The people who receive Digital Taskforce alerts are referred to as "subscribers." Digital Taskforce can send alerts to an unlimited number of recipients. These subscribers may be configured within Digital Taskforce, and subscribers may be retrieved from external databases.

For the current event, you will configure it to send alerts to yourself.

Click on the "Subscribers" tab.

Click on the "Add Subscriber" button.

Click on the plus sign next to the "Sales Team" group.

Click on the box that appears to the left of your name.

Click on the "Add Subscriber" button again.

Choose (or verify) "Email" as the method by which you wish to receive notifications. The completed subscribers window will look like the following:
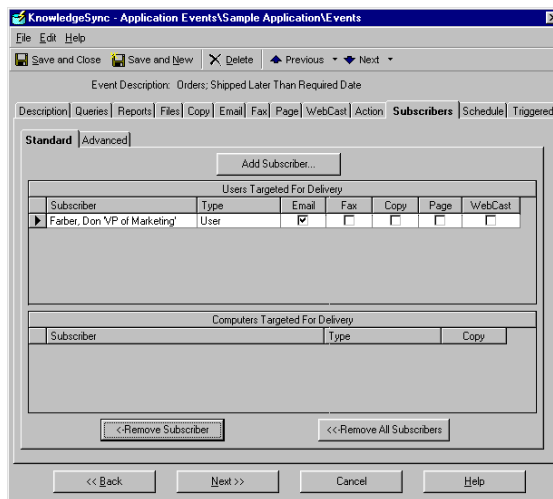
THE EVENT'S SUBSCRIBERS

The Event's Schedule

The final step is how often Digital Taskforce checks to see if an event's conditions are met. For this event, set Digital Taskforce to check everyday at 9:00 AM.

Follow these steps:

Click on the "Schedule" tab.

Click in the "Choose a schedule to use" field and select the schedule called "Daily at 9:00 AM." (Digital Taskforce is pre-configured with approximately a dozen schedules, and you can create additional schedules of your own.)

Leave the rest of the fields on this tab with their default values.
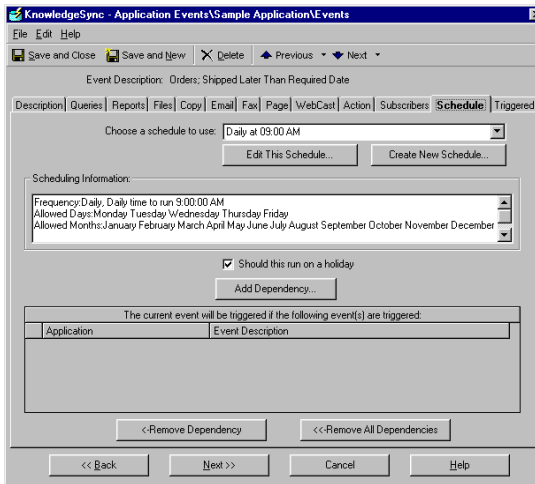
THE EVENT'S SCHEDULE

Save & Close the Event

You do not need to access the "Triggered" tab; this tab shows you the details of when this event was last run and whether any records were triggered. This option also lets you "un-trigger" (or clear) records that had previously been triggered. Since your event has not run yet, this tab will appear empty.

Click on the "Save and Close" button at the top-left of your window.

Create an "Aggregate" Event

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

In addition, this query will use an "aggregate" function. Aggregate functions allow Digital Taskforce to trigger an event based on the condition of a "group" of records. The following are all examples of aggregate conditions:

- More than 10 orders in the "evaluation" stage of the sales pipeline

- Fewer than 12 activities scheduled for any sales rep this week

- Support reps whose average call length last week is greater than 30 minutes

- More than $25,000 dollars lost to a specific competitor this month

Create the Aggregate Query

In the "Sample Application" branch, right-click on the "Queries" sub-branch and select "New".

Key in a query description of:

Orders; More Than 'x' Dollars from Any Region

Press "Tab" to copy the query description to the Display Description and then click on the "Active" checkbox.

Specify the Query's Tables

Click on the "Tables" tab.

Select (double-click on) the "Customers" and "Orders" tables.

Link the Query's Tables

Since this query uses two tables, you need to link them together.

Click on the "Add Table Link" button.

In the "Table Name" field, select "Orders."

In the "Linked to Table Name" field select "Customers."

In the "Column Name" field, select "Orders.CustomerID." ("Customers.CustomerID" will automatically appear in the "Linked to Column Name" field.)

Leave the "Link Type" as Left Outer Join".

Click on "OK" to save your link.

Select the Query's Columns (Fields)

Aggregate queries perform one of five arithmetic functions (summarize, count, average, minimum, or maximum) on a specified database field.

As a result, aggregate queries do not require access to many of the detail fields that are used in a record-level query. Since this query will be summarizing (totaling) the sales for specific regions over a specific time range, the first column you need to select is the one you want Digital Taskforce to perform the aggregate function on.

In this query, this field will be the "sales total" for each order.

Select **Orders.Total** as the first column in your query.

Since this query needs to <u>total</u> the sales for each region, we need to tell Digital Taskforce that it has to total (or "summarize") the values in this field.

Click in the "Column Type" field for the "Orders.Total" field.

Click on the drop-down list and select **Summarize**.

And since the goal of this query is to total the orders <u>per region</u>, you need to tell Digital Taskforce that it will "group" (or total) the accumulated order totals ***by region***.

Select **Customers.Region** as the second column in your query. The "Column Type" for this field remains as "Normal".

When designing aggregate queries, the first column selected should be the field that you are performing the aggregate on, and the second (and ensuing) columns represent how that total is to be grouped.

Sorting Order

You may either leave this tab blank, or (to sort matching regions in alphabetic order of region name), select the "Region" field and choose a sorting order of "ascending."

Specify the Filter

This query uses filters to restrict which records are eligible to be retrieved. The first filter excludes any orders that are not associated with a specific region.

Follow these steps:

Select **Customers.Region** from the list of "Available Columns to Filter."

Change the value of "is or is not" to "**is not**".

Choose an operator of "null". (This will exclude any orders for customers that have a blank value in their "region" field.)

Remove the "?" from the Compare Value field. Since this filter is checking for a "null" value, there is no other compare value.

Leave the rest of the fields with their default values.

The next two filters will enable this query to retrieve order records that fall within a specific date range. However, these filters will be configured so that their compare values will be filled in on the **event** level (as opposed to on the query level).

This will enable this one query to be used in many different events, each event having its own unique date range that it is selecting records for.

Select **Orders.OrderDate** from the list of "Available Columns to Filter."

Leave the value of "is or is not" as "is".

Choose an operator of "greater than or equal to".

Leave the Compare Value as a "?". The question mark is what will allow the value of this filter to be specified on the event level.

Use your "Tab" key to move beyond the "Type" and "And/Or" fields. You may leave them with their default values.

In the "Optional Prompt" field (you may need to scroll the Filter window to the right), key in the words "**Order Date Range Begins:**".

And then follow these steps for the third filter:

Select **Orders.OrderDate** a *second time* from the list of "Available Columns to Filter."

Leave the value of "is or is not" as "is".

Choose an operator of "less than or equal to".

Leave the Compare Value as a "?".

Leave the "Type" and "And/Or" fields with their default values.

Scroll the Filter listing window to the right, and in the Optional Prompt field, key in the words "**Order Date Range Ends:**".

Notice how the "order date" field was chosen twice (as two filters) so that an event can retrieve only those orders that fall within a certain date range.

Note also that this query uses two filters on the "order date" field as opposed to using one filter and the "between" operator. This is because the use of two filters is more efficient than a single filter using the "between" operator.

Specify the Sub-Filter

Only aggregate events use sub-filters. A sub-filter allows you to perform a test against the aggregate result. In the current query, a sub-filter is what allows you to retrieve only those regions whose total sales are greater than 'x' dollars.

To configure the aggregate sub-filter for this query, follow these steps:

Select **SUM(Orders.Total)** from the list of "Available Columns to Filter."

Leave the value of "is or is not" as "is".

Choose an operator of "greater than".

Leave the Compare Value as a "?".

Leave the "Type" and "And/Or" fields with their default values.

Scroll the Filter listing window to the right, and in the Optional Prompt field, key in the words "**Regional Total is Greater Than:**".

Preview the Results of the Query

Click on the "Preview" tab to review the results of your query. Since this query includes filters whose "compare value" are not defined within the query, you will be prompted to specify the corresponding values.

For the date range prompts, specify a beginning date of "01/01/1990" (do not include the quotation marks), and an ending date of the current date (you can also use the date substitution variable "%Current Date%" from the list shown).

For the regional total threshold, specify "1000" (without the quotations). Your results should yield approximately 16 records.

Save & Close the Query

Click on the "Save and Close" button at the top-left of your window.

Add the Event

From the "Sample Application" branch, right-click on the "Events" sub-branch and select "New".

Key in a description of:

Orders; More Than $100,000 Closed Per Region Last Month

Leave the "Lookup Key" field blank.

Select a priority of "5".

Place a checkmark in the "Active" box.

Since you want to be notified only once when this event is triggered, do not place a check in the "Repeat" box.

Place a checkmark in the "Keep only last checked record in Monitor" option.

Select the Event's Query

Click on the "Queries" tab.

Click on the "Add Query" button.

Select the query you were just working with.

The grid at the bottom prompts you to specify a value for the query's filters that have a '?' in their compare values. Fill these in as follows:

- **Order Date Range Begins:** Click in the "Answer" field, and from the list of "Available Substitution Variables" select **{%Last Month Start Date%}**.

- **Order Date Range Ends**: Click in the "Answer" field, and from the list of "Available Substitution Variables" select **{%Last Month End Date%}**

- **Regional Total is Greater Than**: Click in the "Answer" field and type in **100000.**

Note that an event <u>must</u> have valid values specified for any event trigger parameters. Since Digital Taskforce runs as a service, any event with blank trigger parameters will fail to run successfully.

Specify the E-Mail Message Text

Click on the "E-mail" tab.

Enter (or verify) the value in the "E-mail Account to Send From" field.

Leave the E-Mail Reply Address field blank.

Key in a message subject of:

Orders; More Than $100,000 Closed Per Region Last Month

For the first line of your e-mail message text, type in the following:

The following regions yielded more than $100,000 in sales last month:

Press your Enter key to insert a blank line of text.

In line three of your alert message, type in "Region:"

In line four of your alert message, type in "Sales Total:"

Position the cursor to the right of the word "Region:" in your message text.

In the "Available values for use in message content", select"{Region}".

Position the cursor to the right of the words "Sales Total:".

In the "Available values for use in message content", select "{Total}".

Position your cursor after the word "{Total}" and press your Enter key to insert a final blank line.

Message "Repeat"

When an event is triggered by multiple matching records, you have a choice as to how many alert messages Digital Taskforce will send:

Option #1: One alert message for each matching record

Option #2: One alert message for ALL matching records

Option #3: One alert message per "group" of matching records (e.g., one message per sales region).

We're going to configure this event to send a single e-mail message with details of all of the regions that exceeded $100,000 in sales.

This is referred to as "repeat-enabling" an event.

To repeat enable an event, you need to tell Digital Taskforce which part of the alert message should be "repeated" for each matching record. For this event, we wish to "repeat" the last two lines of your alert message (the lines that contain the region name and sales total) for each region that meets the event's criteria.

Click in the second line of your alert message text (the blank line).

Scroll the list of "Available values for use in message content," to the very end of the list, and select "{BEGIN*REPEAT}".

Click in the last line of your message (the blank line after "Sales Total").

Scroll the list of "Available values for use in message content," to the very end of the list, and select "{END*REPEAT}".

You are finished designing the outgoing alert message.

Specify the Event's Subscribers

Click on the "Subscribers" tab.

Click on the "Add Subscriber" button.

Click on the plus sign next to "Sales Team".

Click on the box that appears to the left of your name.

Click on "Add Subscriber."

Click on the "Email" box to the right of your name.

Specify the Event's Schedule

Click on the "Schedule" tab.

Choose the schedule called "The 1st of the Month; 9:00 AM."

Save & Close the Event

Click on the "Save and Close" button at the top-left of your window to save the event you have just created.

Verify Digital Taskforce Server Status

You're now ready to run those two events and see if they get triggered.

In order for Digital Taskforce to check events, the Digital Taskforce Windows Service (or Desktop Service) must be running. If this service is not currently, running, go to your system's "Services" option and start it.

You can check the Digital Taskforce Service by logging into the Monitor, clicking on the "Activity" folder, and then on the "Server Status" folder.

(At minimum, the first four servers should be running.)

Submit Your Two Events

Since your events are scheduled to run at different times (daily at 9:00 AM, and one at 9:00 AM on the first day of a month), let's submit these events to run "right now".

To submit your two events to run "right now", follow these steps:

In the "Sample Application" "Events" branch, right-click on your first event and choose "Schedule This Event Now".

Confirm the submission of your selected event.

The event's progress may be tracked in the Monitor.

Repeat these steps for your second event.

Track Events in the Digital Taskforce Monitor

The Digital Taskforce Monitor tracks the status of your events. Follow these steps:

Double-click on the "Scheduler" folder and then single-click on "Next Run Date/Times". You will see the events that are due to be submitted.

Once an event is submitted, proceed to the "Application Events" folder.

An event will go from "pending" to "checked" state, and then (if the event's conditions are met), to "triggered". If there is an error, the event will appear in "Errors Today", and will also remain in "Pending".

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

Digital Taskforce will automatically expand the contents of these fields to display the full contents of the outgoing alert message.

To see details about the delivery of alert messages for an event, highlight a specific triggered record and click on the "Deliverables" button.

When you are satisfied that your events have executed successfully, you may shutdown the Digital Taskforce Service.

A "Getting Started" Hint

After you have triggered some events, you might wish to "clear" the Digital Taskforce monitor of its history and "start again." To do so, follow these steps:

Shut down the Digital Taskforce service.

Go to the Digital Taskforce Administrator.

Go to the "File" menu and select "Database Tools" and then "Remove Completed Items".

Specify that you wish to remove all items dated before a certain date. If you wish to remove all history, key in any date in the future.

You're On Your Way!

Congratulations on completing the Digital Taskforce tutorial. There are lots of other functions that you can try in Digital Taskforce, including alternate alert methods (page, fax, file copy, and webcasting), triggering application updates and/or workflow, report distribution, processing incoming e-mail messages, and cross-application monitoring.

If you have any questions while using Digital Taskforce, contact our technical support department via email at eacustomercare@ecisolutions.com, or via phone at 866-347-8776.

And thank you for using Digital Taskforce!

CHAPTER 3

Administration

Digital Taskforce Administration

The Digital Taskforce Administration Module lets you perform seven functions:

- View the status of Digital Taskforce's servers
- View the names of users logged into Digital Taskforce
- View (and correct) any errors that were encountered by Digital Taskforce
- Configure hardware settings for faxing & paging
- Configure software settings for e-mail, faxing, paging, and holidays
- Specify user authorizations for access to Digital Taskforce
- Maintain and optimize the Digital Taskforce database

The Administrator: Logging In

Log into the Digital Taskforce Administrator ("Admin"; no password); you will see "Administration Folders" as below:
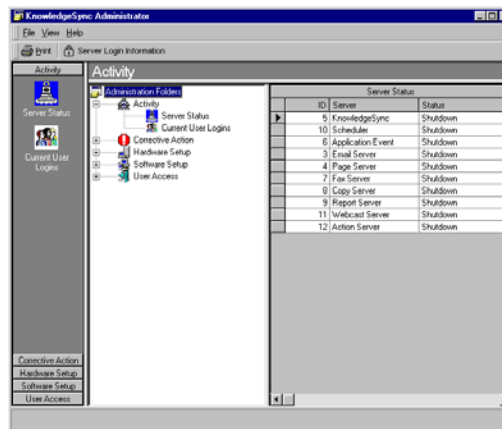
DIGITAL TASKFORCE ADMINISTRATOR

How to Navigate

To *select a folder*, do either of the following:

In the middle column, double-click on the folder you wish to work in.

In the left-most column, single-click on the button (e.g., "Software Setup") whose folder you wish to work in.

To *select a specific option*, select a folder first, and then single-click on the item you wish to select. (E.g., select the "Hardware Setup" folder, and then the "Fax Serial Ports" option.)

Note that once you select a specific option, the right-most window changes to display the records associated with that option.

To *add a new record* under a specific option (e.g., to add a new fax port), click on the "New" button at the top-left of the window.

You may also select "New" under the Digital Taskforce Administrator File menu and select the object you wish to add.

To *view or update an existing record* under a specific option (e.g., to review the set-up of an existing fax port), double-click on the record in the right-most window.

To *delete a record*, single-click on the record in the right-most window and click on the "Delete" button that appears under the Digital Taskforce Administrator menu bar. (You may also delete a record after having selected it for viewing or updating.)

Activity Folder

The Digital Taskforce Activity folder tells you about the current processing and user activity occurring within the application.

Server Status

This displays the current status of the servers used by Digital Taskforce. The possible status states are as follows:

- **Shutdown**: The server is not running. Possible reasons are:

- The service is shutdown.

- The server is set <u>not to run</u>. (Double-click on the server and review the "active" status of the server.)

    (If you know that your site will not be using certain functions (e.g., faxing), you can disable the corresponding server to conserve resources.)

    Digital Taskforce is shipped with all servers enabled except for the Paging, Faxing, Reporting, Copying, Webcasting & Action servers.

- **Idle**: The server is running but is not processing any data.

- **Processing**: The server is processing data.

- **Linking**: (For the application event server only) Digital Taskforce is retrieving alert recipient ("subscriber") data from an external database.

- **Startup**: The server is starting up. (A server should never be in startup mode for more than a few seconds; if it is, it typically means that the server has encountered an error while trying to start up. Please contact ECi Software Solutions Tech Support if this occurs.
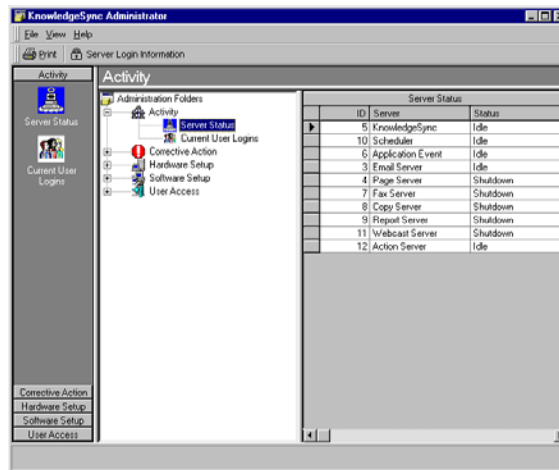
DIGITAL TASKFORCE SERVER STATUS WINDOW

Server Descriptions

- **Digital Taskforce Server**: This server initiates all of the other servers. Note that this is a *Windows Service*.

- **Scheduler**: This server schedules events for execution

- **Application Event**: This server executes application events.

- **Report**: This server generates Crystal reports as well as charts and graphs.

- **E-Mail**: This server delivers e-mail messages.

- **Fax**: This server delivers fax messages.

- **Page**: This server delivers pager messages.

- **Webcast**: This server delivers webcast (dashboard alert) messages.

- **Copy**: This server copies and ftp's files and reports.

- **Action**: This server executes event workflow.

- **IM**: This server delivers instant (pop-up) messages.

Server Notes

- If any of the first three servers are shutdown or paused, Digital Taskforce will not be able to check for events, send notifications or execute workflow.

- If any of the notification servers are shutdown or paused, Digital Taskforce will not be able to send alerts via the corresponding methods.

- When data is being processed, the server will show a status of "processing." When there is no data to be processed, the server will show a status of "idle."

- Under the "Unlimited Connection" license only, the Application Event server is multi-threaded.

Enabling / Disabling a Server

You may either **enable** a server to run, or **disable** a server from running.

To enable a server, select the server record from the Server Status window and place a check in the field titled "Allow Server to Process."

To disable a server, select the server record from the Server Status window and make sure that there is no checkmark in the field titled "Allow Server to Process."

It is suggested that after you enable or disable a server, you should restart the Digital Taskforce Windows Service.

Starting / Stopping Servers

To *start* a server that is shutdown, first put a checkmark in the corresponding server's "Allow Server to Process" field.

If the Service **is running**, stop the Service and restart it. If the Service is **not running**, start it.

To *stop* a server that is running, remove the checkmark in the server's "Allow Server to Process" field.

To *start* a server that is paused, place a checkmark in the corresponding server's "Allow Server to Process" field and stop and restart the Service.

To *stop all Digital Taskforce servers*, stop the Windows Service.

Digital Taskforce Server Login Information

By default, all servers log into Digital Taskforce using user "Admin" with a blank password. However, if you change or delete this default setting for "Admin", you must tell Digital Taskforce what username and password to use for its servers.

To access the username and password for the Digital Taskforce servers, follow these steps:

Highlight (single-click on) the "Server Status" branch.

Click on the "Server Login Information" button at the top of the Administration window.

Fill in the username and password for the Digital Taskforce servers.

Click on OK.

Modify this setting only if you have changed the login properties for user "Admin".

You must re-specify the Digital Taskforce server login information whenever the application is upgraded. (This information is stored the local system's registry.)

Current User Logins

The **Current User Logins** option tells you the following about each user logged into the Digital Taskforce application:

- The module they are logged into – either the "Administrator", "Event Monitor", "Navigator", or "Event Manager."

- The user's computer and user names

- The user's operating system and platform

- The date and time that the user last logged into the application

- The date and time of the user's last activity

Corrective Actions

When Digital Taskforce executes a function (such as checking an event or sending an alert), it is possible that an error may occur. If so, Digital Taskforce tracks what the error was and allows you to take a "corrective action" to address the error.

"Pending" tasks (such as pending events) will also appear within Corrective Actions and you may use this option to remove or "complete" those tasks.

Digital Taskforce lets you take corrective actions in response to:

- Application event errors (Errors when checking for triggered events)

- E-Mail delivery errors

- Fax delivery errors

- File copy (ftp) delivery errors

- Pager delivery errors

- Web Dashboard (webcast) delivery errors

- Report, chart, & graph generation errors

- Workflow action errors

- Instant Message (IM) delivery errors

When an error occurs, Digital Taskforce places the record in an "error" state as well as in a "pending" state. The error will be listed within the corresponding "Errors" sub-branch under the "Corrective Actions" branch.

For every error record you will be shown:

- *Error*: The internal application error number

- *Error Message*: The error message text

- *Application*: The name of the application to which the record belongs

- *Description*: The description of the event that errored

Digital Taskforce will re-submit any error record every minute until the record is: 1) successfully processed, 2) manually deleted, or, 3) marked as "complete".

Application Event Errors

Application event errors are usually caused by an event that has a configuration error, such as an invalid query, but can also be caused by system problems, such as no access to a database on a server that is currently down.

Application event errors that are due to a configuration error may be addressed by correcting the associated error (such as re-configuring the related query). Once this error has been fixed, the erroring event will execute successfully the next time Digital Taskforce re-submits the erroring record.

Message Delivery Errors

"Delivery" errors often result from one of three causes:

- Improper configuration to send out the corresponding alert (e.g., the email sending account is improperly configured)

- System problem (e.g., your e-mail server is down)

- An invalid recipient's address (e.g., an invalid pager PIN number)

Digital Taskforce will attempt to re-send the erroring record every minute until it is successfully delivered, manually deleted, or marked as complete.

Unlike application event errors, delivery errors allow you to correct the delivery address. For example, if a pager alert has an invalid PIN, you can use a corrective action to modify the recipient's delivery address.

Report / Chart / Graph Generation Errors

Report generation errors are most often caused by an invalid report, chart, or graph design, or by a system problem (such as a report server being unavailable).

If you correct the problem that is causing the error (such as correcting the report/chart design), Digital Taskforce will successfully execute the report the next time it runs.

If you have an event that generates a report or chart, all notifications (e.g., e-mail, faxes, etc.) are dependent on the successful generation of that report. If the report is unsuccessful, the resulting notifications will **not** appear as "pending" or "errors" because the report itself never completed.

Response Action Errors

Action errors occur when an event submits a workflow action (such as a Visual Basic script or SQL statement), and that action encounters an error.

Action errors are re-submitted every minute until successfully completed, manually deleted, or marked as complete. Like application events, you can correct an action and the action will execute successfully the next time Digital Taskforce runs it.

Taking a Corrective Action

The first step is to click on the corresponding corrective action option (such as E-Mail Delivery Errors" and check to see if there are any current error records.

If an error does exist, select the record. You will see a window like the following:
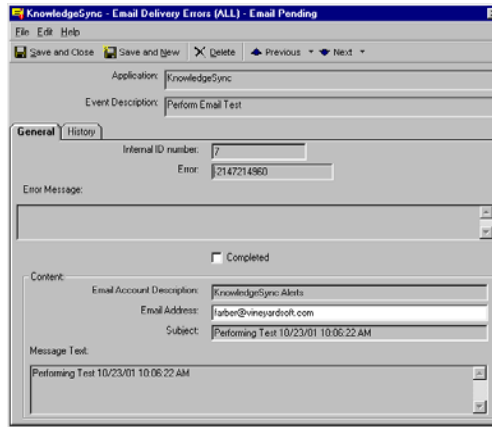
CORRECTIVE ACTION WINDOW

You have three options from this window:

1. **Complete** the record manually. Marking the record as "complete" retains it in Digital Taskforce's history as successfully (manually) completed.

2. **Delete** the record. Clicking on the "Delete" button removes it from the database.

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

Note that e-mail messages sent to "undeliverable" addresses are **not** flagged as errors. (Digital Taskforce's E-Mail Response System can identify undeliverable messages.)

Hardware Set-Up

There are two components to configuring hardware:

- Defining Fax Ports

- Defining Pager Ports & Options for Text Messaging

If you will be sending out alerts via modem-driven fax or pager, you must take these options; if not, you may skip this option.

Note that many faxing and paging utilities allow messages to be sent to a fax or pager number through e-mail (i.e., you send a message to an e-mail address which is the pager's phone number.) If you will be using this method, you do not need to configure modem ports.

Configuring Digital Taskforce for Faxing

Digital Taskforce supports any class 1 or class 2 modems installed on (or reachable from) the Digital Taskforce server.

Digital Taskforce offers two faxing interfaces; an embedded faxing technology and Microsoft Fax.

For details on the Microsoft Fax interface, contact customer care at eacustomercare@ecisolutions.com.

To send out messages via a modem-driven fax, Digital Taskforce requires the use of a modem reachable from the Digital Taskforce server. This modem may be shared by other applications and devices.

To configure Digital Taskforce for non-MS Fax usage, follow these steps:

Click on the "Fax Serial Ports" branch within the "Hardware Setup" branch.

Up at the top-left of the Administrator window, click on the button called "New Fax Communication Port." The following window will appear:
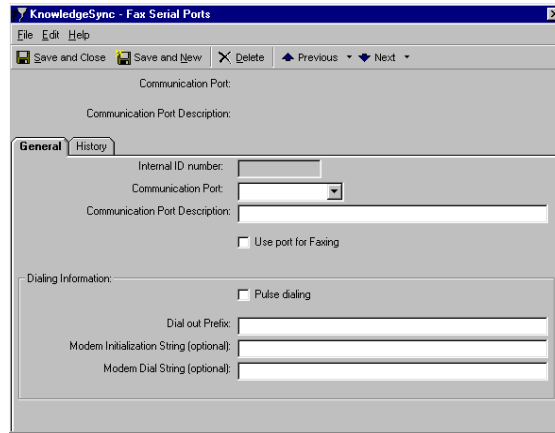
FAX PORT CONFIGURATION WINDOW

COM Port Number: The port to use for sending faxes.

COM Port Description. Description of this port.

Use Port for Faxing. Whether this port is available for faxing. (You can configure a COM port for availability without enabling it for immediate use.)

Pulse Dialing. Whether you use pulse dialing.

Dial Out Prefix. The prefix (if any) to reach an outside line (e.g., "9")

Modem Initialization String. The command to initialize the modem.

Modem Dial String. The command to precede your dial-out number.

If you configure multiple fax ports, Digital Taskforce will automatically scan the list of ports for the first available modem when a fax message needs to be sent.

Configuring Digital Taskforce for Internet Faxing

In addition to faxing through regular analog modems/phone lines, you can use Internet Faxing through email. This requires that you have an account with an Internet Fax Service Provider (ISFP) such as efax.com. (Make sure your fax service supports "email to fax".)

With such a service, you can create an email to an address like faxnumber@efaxsend.com. The text in the body of the email becomes the fax cover page; any specified attachments to the email become the body of the fax message.

This approach simplifies faxing as it requires no hardware, no phone lines, faster throughput, and a higher fax delivery success rate.

To configure Internet Faxing, an event would use the "Email" tab to contain the fax's contents. The body of the email would be the cover page and any files associated with the event would be included as the fax's main contents.

If an event will be sending a report as the fax's contents, make sure to check the option on the "Email" tab to "wait until reports are completed".

If "dynamic" (advanced) subscribers are going to be used in a fax event, you would typically have a value such as {faxnumber}@efaxsend.com as the recipient's address.

So – if you needed an event that faxed an invoice to a customer, the cover page (the Email body text) could say *"Thank you for your order {ordernumber}."* The following page(s) could be the actual invoice content that was created by a report linked to the event.

The advanced subscriber (the fax number of the client receiving the fax) would use the fax number from the order (or client) record and would be in a field called something like "{faxnumber}". The value of this field would look like 7075551212@efaxsend.com.

For "static" fax subscribers who will be sent their faxes via email, we suggest that you create a second subscriber record for each of these people – that second record would store their fax numbers in the "email" fields.

Many customers do this by creating a new group of subscribers called "Internet Fax". Each potential fax recipient would have a subscriber record in this group and their email addresses would be something like faxnumber@ifspservice.com.

When an Event needs to deliver an alert via Internet fax, the message to be delivered via fax would be put in the "Email" tab (along with any files and reports), and the Standard Subscriber would be the selected person from the "Internet Fax" subscriber group.

Please note that Internet Fax Services Providers such as efax do charge for their services. We suggest researching which service best fits your needs and make sure they offer email to fax capabilities.

Configuring Digital Taskforce for Paging

Digital Taskforce supports any class 1 or class 2 modems installed on (or reachable from) the Digital Taskforce server. Digital Taskforce also supports SMS (short message syntax) paging.

To send out messages via modem-driven pager, Digital Taskforce uses a modem reachable from the Digital Taskforce server. This modem may be shared by other applications and devices.

To configure Digital Taskforce for paging, follow these steps:

Click on "Pager Serial Ports" within the "Hardware Setup" branch.

Click on the button called "New Page Communication Port."
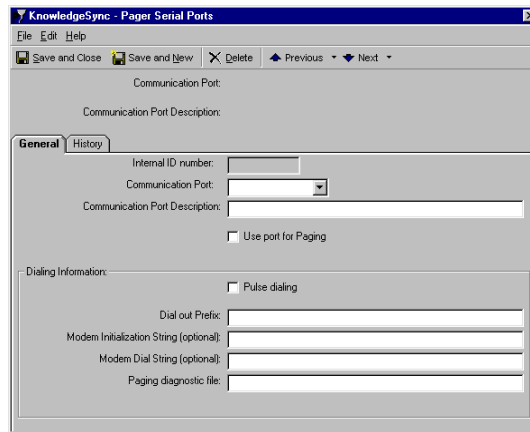
PAGER PORT CONFIGURATION WINDOW

COM Port Number: The port to use for sending pages.

COM Port Description. Description of this port.

Use Port for Paging. Whether this port is available for paging. (You can configure a COM port for availability without enabling it for immediate use.)

Pulse Dialing. Whether you use pulse dialing.

Dial Out Prefix. The prefix you use to reach an outside line (e.g., "9")

Modem Initialization String. The command to initialize this modem.

Modem Dial String. The command to precede your dial-out number.

Paging Diagnostic File. Leave blank. This file stores historic and diagnostic data from page messages that are sent.

If you configure multiple pager ports, Digital Taskforce will automatically scan the list of ports for the first available modem when a pager message needs to be sent.

Configuring Digital Taskforce for Text Messaging

Text messaging can be accomplished two ways with Digital Taskforce. We recommend method #2, but will list both options.

Option #1

Using the "Page" tab of an event, text messages can be delivered over the phone lines to cell phones as an SMS message. This requires an analog modem and phone line.

You will need to find (e.g., via Google search) the individual SMSC numbers for all of the wireless carriers your recipients use (AT&T, Verizon etc.).

Once you have the hardware set up and the SMSC numbers, you will use the Administrator detailed previously to configure the "Pager Serial Ports". Once that is complete you can then set up new "Paging Services" under the Administrator "Software Setup" option, one "service" for each wireless provider and the appropriate SMSC number.

Option #2

Text messages can also be delivered via email, which means you can use an Email Alert to deliver a text message. No modem, phone lines, or SMSC numbers are required.

You can test this method with your regular email by sending an email text message to yourself. The "to" address of such an email would be something like "7075551212@txt.att.net". This address would represent your cell phone number at your phone's wireless provider.

At the end of this section you will find the domains for other wireless carriers. We recommend verifying these before putting into practice as they do periodically change.

Sending text messages to "dynamic" subscribers (e.g., send a text to the support rep assigned to a ticket), while possible, isn't highly recommended unless all your text messaging recipients are using the same wireless provider.

An advanced subscriber would have an address such as {mobilenumber}@txt.att.net and would dynamically enter the cell number from the corresponding database field (such as cell number for the support rep assigned to a call).

The challenge with this is if your potential text message recipients are using other (in the above example, non-AT&T) carriers. If your recipients do use various carriers, we recommend you restrict text messaging to Standard Subscribers and that you create two subscriber records for each person who will be eligible to receive alerts via text message. The first record contains a recipient's "normal" email addresses, and the second record (perhaps in a group called "Mobile") contains a recipient's text messaging email addresses.

Thus you could have a "John Doe Mobile" subscriber record and the email address would be cellnumber@wirelesscarrier.com. An Event would have the text message itself specified in the "Email" tab of the event, the Standard Subscriber would be "John Doe Mobile" and the alert delivery method would be "email" – sent to John Doe's text messaging address.

Wireless Carrier Domains

The following is a list of some of the more widely-used wireless carrier domains; we suggest verifying these domains on-line before using them in Digital Taskforce:

AT&T – cellnumber@txt.att.net

Verizon – cellnumber@vtext.com

T-Mobile – cellnumber@tmomail.net

Sprint PCS - cellnumber@messaging.sprintpcs.com

Virgin Mobile – cellnumber@vmobl.com

US Cellular – cellnumber@email.uscc.net

Nextel - cellnumber@messaging.nextel.com

Boost - cellnumber@myboostmobile.com

Alltel – cellnumber@message.alltel.com

Software Set-Up

These options include the configuration of the following:

- E-Mail Sending Account
- E-Mail Response System*
- Fax Sending Account
- Fax Cover Page Design
- Holiday Calendar
- IM (Instant Message) Accounts
- Paging Services
- Twitter Accounts
- Webcast (Dashboard Alerts) Template Locations**

* Configuration of the E-Mail account that the E-Mail Response System (ERS) will use is located within the option for "E-Mail Account" set-up. The use and configuration of entire ERS system are detailed in the chapter titled "E-Mail Response System."

** Configuration of the Webcast (Dashboard Alerts) module is detailed in the chapter titled "Dashboard Alerts".

E-Mail "Sending" Account

(Please refer to the additional notes on email configuration – including a special note on Outlook 2010 – in chapter 1 of this manual.)

Within the "Software Setup" folder is the option to configure "Email Accounts."

Click on this branch and then on the "New Email Account" button. (To modify an existing e-mail account, double-click on the account on the right.)

Fill in the fields as follows:

E-Mail Type: Select from "Exchange", "Mapi", "Vim", "Internet", or "Unknown". HTML-formatted e-mail is supported only with type **Internet**.

("Mapi" should be used only for stand-alone alerts.)

> **Important**: If you have applied any MS Office or MS Outlook email security patches, please review the Digital Taskforce on-line knowledgebase.

E-Mail Account Description: E.g., "Ksync Alerts".

Login Name: The login user name for this account. Use the profile name for Mapi, and use the mailbox alias name for Exchange.

Password

Postoffice: For use with Exchange, Lotus Notes e-mail and Vim-compliant e-mail systems.

For Notes and Vim, fill this in only if the postoffice you will be using is different from the default postoffice you defined when you set up the Notes or Vim client. For Exchange, this value is the exchange server name.

Active: Whether this account is currently available for sending e-mail.

Outgoing mail SMTP Server Name: For Internet e-mail systems (SMTP). The name of the server that will be used when sending e-mail notifications.

SMTP From Name: Required for Internet e-mail systems. The name that will appear as the "sender" of the e-mail message. This <u>must</u> be a valid e-mail address with a valid domain name, such as:

e-automate Customer Care <eacustomercare@ecisolutions.com>

SMTP Port: The port that will be used to accommodate firewall security software. Leave this field blank unless otherwise instructed by ECi Software Solutions.

Incoming mail POP Server Name: If incoming email is to be monitored, key in the name of the incoming email server.

POP Port: The port that will be used to accommodate firewall security software. Leave this field blank unless otherwise instructed by ECi Software Solutions.
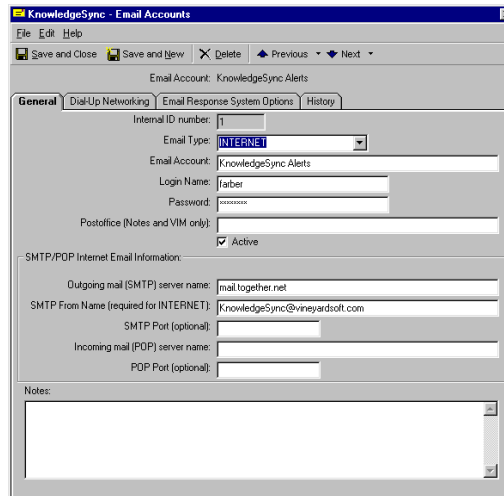
E-MAIL "SENDING" ACCOUNT DEFINITION

GroupWise Integration

Digital Taskforce supports connectivity with GroupWise via SMTP. When configuring the "Email Account" record, specify the email type of "INTERNET". You must have both SMTP and POP3 enabled in GroupWise.

Microsoft Exchange (Requirements)

You will gain ease-of-use and functionality if Exchange is configured for SMTP (see "Exchange Under SMTP" in a following section.

Microsoft CDO (Collaboration Data Objects) must be installed to use native Exchange email; install it if it's not already there. You can check this by:

- ➢ Going to your Control Panel

- ➢ Select "Add/Remove Programs"

- ➢ Look for Microsoft Office or Microsoft Outlook

- ➢ Click on "Add or Remove Features"

- ➢ Expand the branch for Microsoft Outlook

- ➢ Look for a branch called "Collaboration Data Objects".

Verify that the Digital Taskforce Service is running under an account that has authenticated access to your Exchange mailbox (i.e., is a domain controller authenticated user).

By default, the Digital Taskforce service is installed to run under the Local System account. This is **not** a valid account and will **not** work with Exchange. Go into Services and ensure that an authenticated username and password have been selected.

Make sure that no other user is logged into Microsoft Outlook on the Digital Taskforce server. (You will receive a "login failure" message if this condition exists when Digital Taskforce goes to send email.)

Microsoft Exchange (Native)

Please log in under the user account that the Digital Taskforce service will run under.

To configure this email account, follow these steps:

1. Stop the Digital Taskforce service.
2. Select e-mail type "Exchange".
3. Key in the e-mail account name/description.
4. Create (or determine) the account that will send out the e-mail alerts.
5. Go into Exchange Administration and (using the "Primary Account" option), make sure that the primary account for this mailbox is configured to use the same account that the Digital Taskforce Service runs from.
6. Set the Mailbox login name to the mailbox alias or directory name. (Sometimes the mailbox might be 'Bob Jones' but the real name is 'bjones'.) (The real name will never have spaces in it.)
7. Specify the password (the logon user password) to access the mailbox.
8. In the Post Office field, place your Exchange server name.
9. Restart the Digital Taskforce Service.
   .

Microsoft Exchange (Under SMTP)

If you are running Exchange under SMTP, follow these steps:

1. Stop the Digital Taskforce service.
2. Select e-mail type "Internet".

3. Key in the e-mail account name/description.

4. Specify the login name and password.

5. Leave the postoffice field blank.

6. Adjust the default server names to your site (such as server.[your_company].com.

7. Adjust the SMTP From Name to be a valid e-mail account.

8. Restart the Digital Taskforce service.

Lotus Notes Mail

Digital Taskforce supports Lotus Notes Mail only if POP is <u>not</u> enabled.

Here are the steps to configure Digital Taskforce to send email via Lotus Notes:

- Install the Lotus Notes Client components on the Digital Taskforce server. (Decide which account will be used by Digital Taskforce and install the Lotus Notes client components for that user.)

- Log on to Lotus Notes (for the specified user) and send a test email.

- Configure the Digital Taskforce Service to run under the same user as the Lotus Notes email user specified in the previous steps.

- In the "Email Accounts" option, set the email type to "VIM".

- Leave the post office field blank. This field is used only if you want to connect to a post office other than the default one.

- Specify the Username / mailbox. Do not use the "short name";, use the full specification. A typical Lotus Notes username looks like this:

    Robert Williams/Faculty/Atlanta

    Or like this:

    Robert Williams/Faculty

    (Using just a name value (such as "Robert Williams") will not work)

- Make sure that the installed Lotus Notes folder is included in the "PATH" variable (usually C:\Lotus or c:\Notes)

If the logon to Notes fails with a bad username or bad password, Notes will typically pop up an error message and prompt for the correct username and password.

It is suggested that you initially run the Digital Taskforce "Desktop Service" to confirm whether your Notes mail settings are correct. With the Desktop Service, any error messages will appear on the desktop of the user who started the service.

If you are unsure of the username of the Notes user mailbox, scan your system for the file called "Lotus.ini" and review the contents of the file. You should see information within it naming the Lotus Notes user account.

Email Authentication

Email authentication is enabled for **Internet**-based email systems only.

To configure an email account for authentication and secure sockets (such as with gmail), set the Email Account Description to whatever you like (e.g., "Company Alerts") followed by "/AUTH/LOGIN/SSL" as in:

Company Alerts/AUTH/LOGIN/SSL

Set the Login Name to your email address. Set your outgoing SMTP server name accordingly (e.g., smtp.gmail.com), and choose Port 465.

To configure an IIS email account for authentication and secure sockets, follow the email account description with "/AUTH/NTLM/SSL" as in:

Company Alerts/AUTH/NTLM/SSL

Set the Login Name to your domain username. Set your outgoing SMTP server name accordingly (you can use the IP address), and choose Port 25.

To configure an IIS email account for authentication but not secure sockets, follow the account description with "/AUTH/NTLM" as in:

Company Alerts/AUTH/NTLM

Set the Login Name to your domain username. Set your outgoing SMTP server name accordingly (you can use the IP address), and choose Port 25.

To configure an email account that uses authentication but not secure sockets, follow the Email Account Description with "/AUTH/LOGIN" as in:

Company Alerts/AUTH/LOGIN

Set the Login Name and password as needed. Set your outgoing SMTP server name accordingly, and choose Port 25.

Test Your E-Mail Account (Part I)

Test your e-mail sending account by sending an e-mail message from outside of the Digital Taskforce application.

Log on to the account which Digital Taskforce will use to send e-mail alert and then send a message to yourself and to someone else. Once you have successfully completed this test, move on to part II of the test (below).

Test Your E-Mail Account (Part II)

Start the Digital Taskforce service.

In the Administrator, single click on the "Email Accounts" branch.

Single-click on the e-mail account you just set up.

Click on the "Perform Email Test" button. Key in an mail address (you might wish to test sending to both yourself and someone else).

Log into the Digital Taskforce Monitor and watch the branch called "Email Delivery." You should see your email go from "Pending" to "Sent Today". If the e-mail appears in "Errors Today" (or never leaves "Pending"), there is an error in the configuration of the e-mail sending account.

If the e-mail fails, stop the Digital Taskforce service and review the e-mail account set-up and contact E-automate Customer Care support if needed. Once you have re-configured the e-mail account, you do not need to re-submit the test as the previous test will still be "pending."

Using Dial-Up Networking

If your organization does not maintain a permanent connection to the Internet, you may use Digital Taskforce's "Dial-Up Networking" option to automatically dial a modem and connect to the Internet when event e-mail needs to be sent.

To use this function, click on the "Dial-Up Networking" tab, select the field titled "Use Dial-Up Networking for Email," and fill out the following three fields:

Dial-Up Networking Profile Name to Use: The name of the Dial-Up Networking connection profile that you wish to use

User Name: The login user name for this account

Password: The password of this user.

Note that Digital Taskforce will use dial-up networking only if it detects that an Internet connection is not currently present.

Using Multiple E-Mail Accounts

You may wish to use multiple e-mail sending accounts if:

- You wish to distribute the workload of sending many e-mail messages.

- You wish to have different "sending" names associated with different outgoing messages. (E.g., "Employee Alerts," and "Customer Alerts.")

- To have different "reply to" addresses associated with an e-mail message (e.g., some events should be replied to at alerts@yourcompany.com, whereas other events should be replied to at offers@yourcompany.com.

Fax "Sending" Accounts

To configure Digital Taskforce to send faxes, you must set up one or more faxing accounts. Expand the "Software Setup" folder and select "Fax Accounts."

Click on the "New Fax Account" button. This is where you set up the accounts that Digital Taskforce will use when sending fax alerts. (To modify the details of an existing fax account, double-click on the account on the right side of your window.)

Fill in the fields as follows:

Fax Account Name: A description of the account

Coverpage Filename: The name of the cover page to be used with this fax. (Cover pages are defined separately within the "Fax Cover Pages" option.)

Maximum Retry Attempts: The number of retries attempted for a single fax when a "No Answer" or "Busy" signal is received. Once the "Maximum # of Retries" is reached the Fax will report an error.

Active: Whether this account is available for sending faxes.

Fax Machine Identification: The name of the fax machine

Banner: The heading that appears on all sent fax pages

Sending Company Name

Sending Department/User

Sending Fax Number: The number from which the fax is sent.

Voice Number: The voice telephone number associated with the fax.

Notes about this account

Your completed fax account window will look similar to the following:
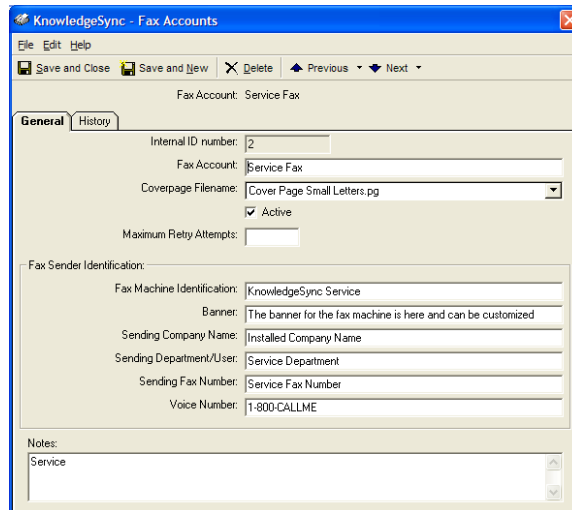
FAX "SENDING" ACCOUNT DEFINITION

Multiple Fax "Sending" Accounts

You may wish to configure multiple fax sending accounts if:

- You wish to have different fax machine names associated with different outgoing messages, such as "Sales Fax" or "Support Fax."

- You wish to have different company, department, or voice numbers associated with a fax message.

Fax Cover Pages

This option refers to the cover pages for Digital Taskforce's embedded faxing technology and does not currently offer customization. To customize your own fax cover pages, please use Digital Taskforce's integration with Microsoft Fax.

Holiday Schedule

You have the option to specify whether or not an event will be submitted if it falls on a holiday. To define a holiday, click on the "Holiday Schedule" branch and then click on the "New Holiday" button. To edit the configuration of an existing holiday, double-click on the holiday in the window on the right.

For each holiday, you have access to the following fields of information:

- The holiday name (e.g., "Christmas Day")

- The holiday date (entered in the format "XX/XX/YYYY")

- Whether the holiday falls on the same numeric date every year (e.g., Christmas always falls on December 25th)

- Whether the holiday is currently active, thus enabling an event to be configured to observe that holiday and not be submitted.

Note that each event may be configured to either run or not run on a holiday.
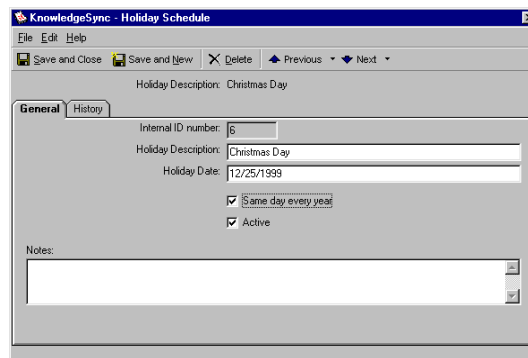
HOLIDAY DEFINITION

IM Accounts

The IM Accounts option enables you to configure and maintain the Instant Message accounts from which you will have Digital Taskforce send notifications. Note that you can configure multiple IM accounts using multiple IM methods, such as Windows Live Messenger, Google Talk, and ICQ so that you can receive IM alerts via one method while at work and via a different method while at home.

By defining multiple IM accounts, you can create different origins (e.g., Internal Alerts vs Customer Messages) for the variety of IM messages you wish to send.

It is suggested that before you configure IM alert accounts in this option that you first go into the IM system that you wish to use in Digital Taskforce and create the IM account that Digital Taskforce will be using (e.g., "Digital Taskforce Instant Alerts").

It is also suggested that prior to setting up this account that you send IM "invitations" to all the prospective recipients of Digital Taskforce IM alerts. Note that some IM providers (e.g., Windows Live Messenger) require an IM recipient to "accept" invitations from an account before the messages can be successfully delivered, whereas other IM providers (e.g., ICQ) require "invitations" but do not require recipient acceptance.

To define a new IM account, click on the "New IM Account" button.

To modify or delete an IM account, select the account you wish to work with.

To delete the selected IM account, click on the "Delete" button.

The information that you can specify for each IM account is:

Service Provider: Select from Windows Live Messenger, Google Talk, Yahoo! Messenger, and ICQ.

Account Description: A description of the account that will be used for sending IM notifications

Username: The user name for this IM account. Note that different IM methods (such as Windows Live Messenger and ICQ) require different types of login information. Typically, Windows Live Messenger uses an email address whereas ICQ uses a unique numeric identifier. Please refer to the documentation/help text for your preferred IM provider for details.

Password: The password of this IM account.

Active: Whether this account is currently available for sending IM alerts (you can configure an account without enabling it for immediate use)

Note: Each IM alert message may not exceed 1,500 characters (including spaces) in length.
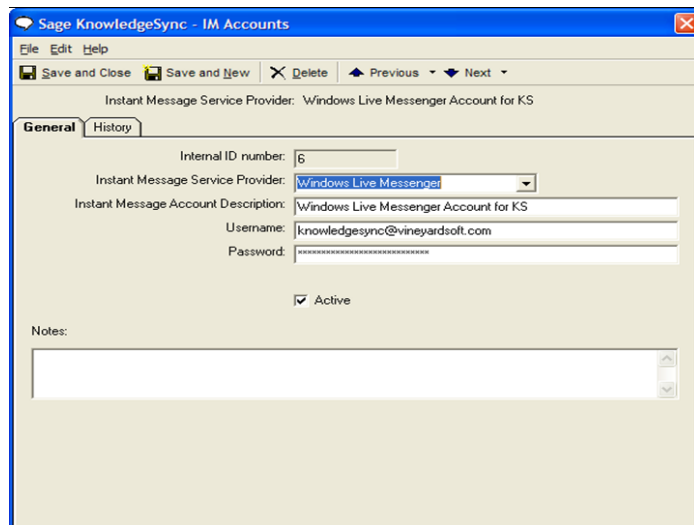
IM ACCOUNT DEFINITION

Paging Services

(Digital Taskforce supports SMS paging and text messaging.)

To send alerts via pager, you need to identify the paging services that Digital Taskforce will use. Digital Taskforce's paging function requires only a modem reachable from the server on which Digital Taskforce is installed.

(Digital Taskforce may also be configured to send pager messages using e-mail, as most paging services allow mail to be sent to a specific pager number @ the pager service. Contact the pager service provider for details.)

Expand the "Software Setup" folder, click on the branch called "Paging Services" and click on the "New Paging Service" button. (To modify the details of an existing pager service, double-click on the account on the right.)

Fill in the fields as follows:

Paging Vendor: E.g., "Skytel"

Service Description: E.g., "Skytel Pager Service"

Paging Station TAP Phone Number: The access number for this service

Password: The password (if any) required to access this service

Baud Rate: (Contact your paging service.)

Parity: (Contact your paging service.)

Data Bits: (Contact your paging service.)

Stop Bit: (Contact your paging service.)

Characters Per Block: (Contact your paging service.)

Customer Support Number: The support number of your paging service.

Active: Whether this paging service is available for use.

Notes about this paging service

PAGING SERVICE DEFINITION

Twitter Accounts

The Twitter Accounts option enables you to configure and maintain the Twitter accounts from which you will be sending notifications.

By defining multiple Twitter accounts, you can create different origins (e.g., Tweets from your service department versus sales alert Tweets) for the variety of Twitter messages you wish to send.

To define a new Twitter account, click on the "New Twitter Account" button.

To modify or delete a Twitter account, select the account you wish to work with.

To delete the selected Twitter account, click on the "Delete" button.

The information that you can specify for each Twitter account is:

Twitter Account Description: A description of the Twitter account that will be used for sending notifications ("Tweets")

Twitter Username: The user name for this Twitter account.

SuperTweet.net Password: The password for the above user.

Active: Whether this account is currently available for sending Twitter alerts (you can configure an account without enabling it for immediate use)
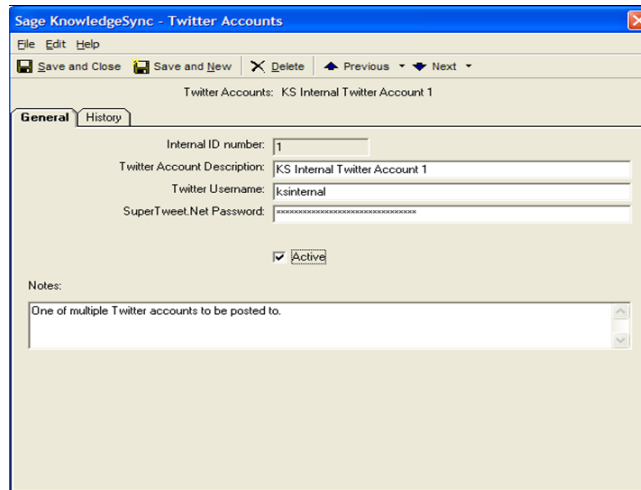
TWITTER ACCOUNT DEFINITION

Webcast (Dashboard Alert) Locations

Please refer to the chapter titled "Dashboard Alerts" for complete details on the configuration and use of this module.

User Access: Logins

Under the branch titled "User Access" click on the sub-branch called "Logins." This is where you control Digital Taskforce user access privileges.

Click on the "New Digital Taskforce Username" button or to modify the details of an existing user authorization record, double-click on the corresponding record.

The "General" Tab

The "General" tab is where you can define the username and password that a user will use to log into the Digital Taskforce application. Specify the following:

Login Name: The name the user will log into Digital Taskforce with.

Description: The user's full name.

Active: Whether this user is granted access to the selected modules.

Set/Change Password...: Click this button to password protect this username. Passwords may be 1-14 characters in length and are case sensitive.
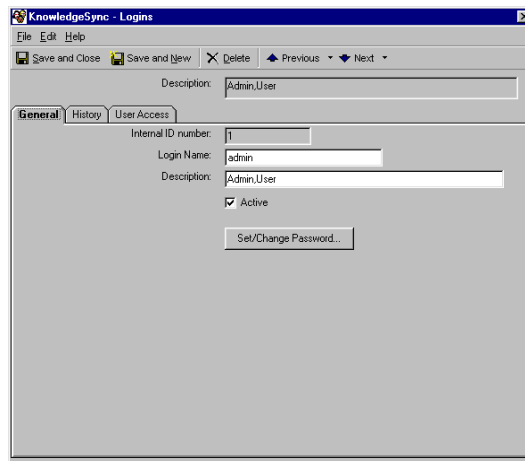
USER LOGIN AUTHORIZATION: GENERAL INFO

If you accidentally change authorizations so that no one can access Digital Taskforce, contact e-automate Customer Care for assistance.

The "User Access" Tab

The "User Access" tab controls what Digital Taskforce modules and functions a user has access to. The options are divided by application module (the Administrator, Event Manager, and Monitor). Note the following:

- If you give someone access to the "User Access" option, they can modify the authorization settings for himself/herself and for any other users.

- It is **strongly suggested** that you limit who has access to Digital Taskforce.

- Exercise **extreme caution** in allowing access to "Submit SQL" and "Run Program" as these options can add, update, or delete data from applications.
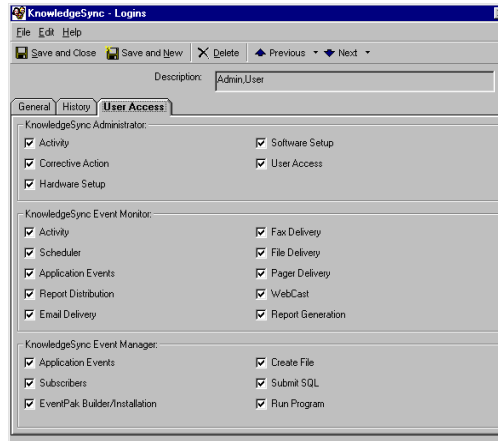
USER LOGIN AUTHORIZATION: ACCESS INFO

The "Multi-Tenancy Access Rights" Tab

"Multi-tenancy" means that a single installation of Digital Taskforce (typically a "hosted" version) can be used by multiple clients with each client's data separate and secure from any other clients' data.

This configuration is used most frequency in a hosted or cloud-based environment, where one organization hosts Digital Taskforce for use by a multitude of customers. Please note that Digital Taskforce may not be used/licensed in this manner without express written permission from ECi Software Solutions, and without a special "Hosted Licensing & Royalties" agreement in place between the hosting organization and ECi Software Solutions.

Using this option, you can specify exactly which components of data in Digital Taskforce a specific user has access to. This includes:

- The application branches (containing queries, events, reports, graphs/charts, and visual basic scripts)

- Subscriber groups

- Email sending accounts

- Fax & pager accounts

- Webcast (dashboard alert) accounts

- Instant Message (IM) accounts

- Twitter accounts

- The location of any Crystal reports and Visual Basic scripts

Place a checkmark in those components that you wish to give this user access to. In the report and script location fields, specify this location and be sure to not use mapped drives (use UNC locations instead).

The multi-tenancy access rights window looks like the following:
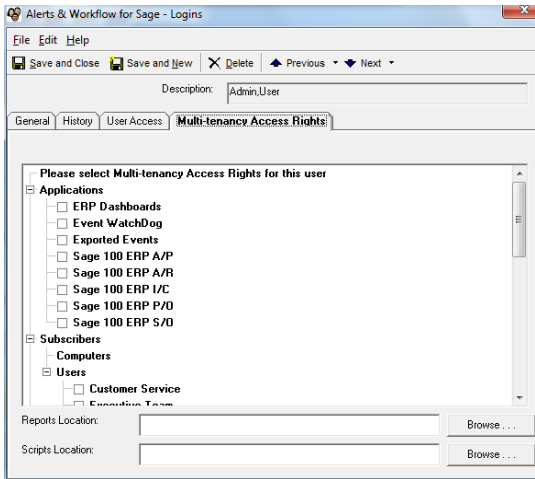
MULTI-TENANCY ACCESS RIGHTS

Note that the multi-tenancy access rights option may also be used to apply security to the various events that are configured (e.g., only give certain users access to the "HR events").

The need to "secure" certain information is most evident when Digital Taskforce is used to monitor areas such as ERP (e.g., receivables and payables) and HR (salaries, social security numbers,). Without multi-tenancy access rights, Digital Taskforce could not restrict which users were able see and/or modify certain groups of events.

With multi-tenancy, you can "divide up" events by "business area". That is, instead of an "ERP Application" branch, it may make more sense to have separate branches for "A/R Events", "A/P Events", "Purchasing Events", "Inventory Events", and so on. Keep in mind that breaking up applications in such a way will not affect licensing, since all those "business-specific" branches all use the same ODBC source.

Database Tools

The final administrative functions are located under the "File" menu and are:

- Remove Completed Items

- Remove Pending Items

- Compact Database

Remove Completed Items

Depending on how you have configured Digital Taskforce, the amount of history that the system retains can grow quite large. The option to "Remove Completed Items" allows you to manually remove select history from the database.

(This option must be enabled if you are running the MS Access version of Digital Taskforce; it is optional (and not required) if you are running the MS SQL Server version.)

The removal process may be done on either an ad-hoc manual basis, and/or you may schedule it to occur automatically on a periodic basis.

To manually remove completed items from the database, follow these steps:

Shut down the Digital Taskforce service.

Make sure that no other users are logged onto the application.

Click on the Administrator "File" menu.

Select "Database Tools".

Select "Remove Completed Items" and the following window will appear:
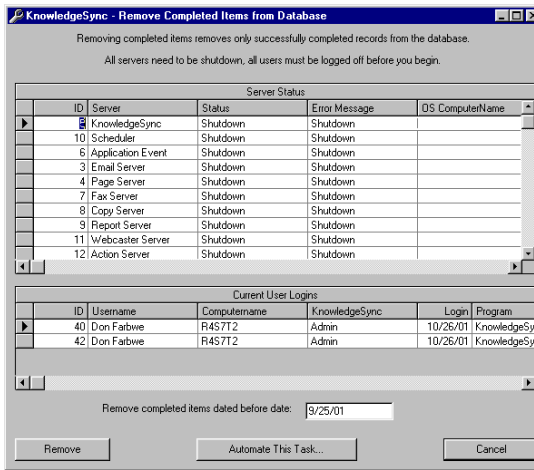
REMOVE COMPLETED ITEMS WINDOW

Type in the date prior to which you wish to remove all Digital Taskforce history of completed items. (This information will be removed from the database and cannot be restored.)

Click on the "Remove" button.

If one or more Digital Taskforce servers are not shut down, you will receive the message, "3356 You attempted to open a database that is already open".

Digital Taskforce Backup

The option to "automatically remove completed items" from Digital Taskforce not only is a way to automate this process, it also is an automated backup of the Digital Taskforce Access database files.

(Note that if running Digital Taskforce under SQL Server, you still need to configure your SQL backup to capture the Digital Taskforce SQL data files.)

Important: By default, this function is **turned on**, with this process running every night at 1:03 AM and removing all history that is more than 90 days old. You may disable this function if you are running Digital Taskforce under SQL Server and wish to retain more history on-line.

To automate the removal of completed items, follow these steps:

Click on the Administrator "File" menu.

Select "Database Tools".

Select "Remove Completed Items".

Click on "Automate This Task" and the following window will appear:
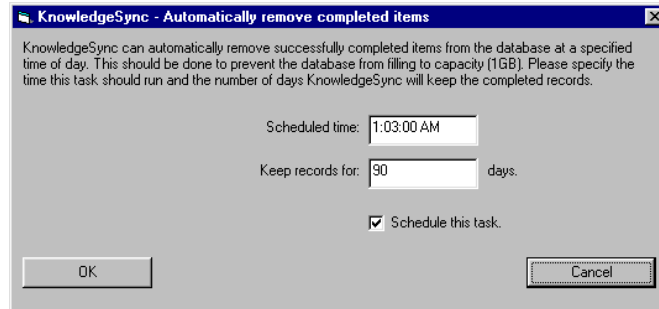
AUTOMATIC REMOVAL OF COMPLETED ITEMS SET-UP

Specify the daily time of day that this procedure will run.

Indicate how many days worth of history to retain.

Click on "OK".

If you are running Digital Taskforce under an extremely heavy load (e.g., 50 or more events running every few minutes, sending alerts to 100+ subscribers and executing very sophisticated workflow), you may wish to decrease the number of days of retained history to ten (or so), to optimize system performance.

Likewise, if you wish to retain a few months worth of history on-line, you may wish to increase the number of days of retained history to sixty or ninety days.

Backed Up Files

Digital Taskforce's back-up procedure makes copies of the following files:

➢ "KS_Inbox" (a "KS_Inbox_Backup" is created)

➢ "KS_Triggered" (a "KS_Triggered_Backup" is created)

➢ "KS_Object" (a "KS_Object_Backup" is created)

➢ "KS_Changed" (a "KS_Changed_Backup" is created)

ECi Software Solutions suggests a nightly job that either makes copies of these files, writes them out to a tape back-up, or otherwise safeguards them for later use, if necessary.

Remove Pending Items

The option to "Remove Pending Items" allows you to remove items (such as pending e-mail messages, faxes, pages, reports, actions, et cetera) from Digital Taskforce. This option is particularly useful if you wish to delete pending error records.

This option must be used **carefully**, as once you remove a pending item, it will not be executed by Digital Taskforce and there is no "undo" function for this option.

To remove pending items, follow these steps:

Shut down the Digital Taskforce service.

Make sure that no other users are logged onto the application.

Click on the Administrator "File" menu.

Select "Database Tools".

Select "Remove Pending Items" and the following window will appear:
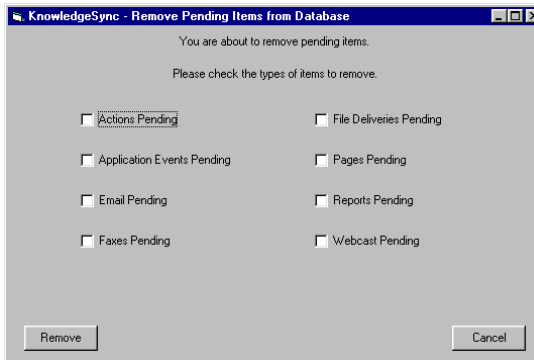
REMOVE PENDING ITEMS

Select the types of items you wish to remove. Choose from:

- Actions
- Application events
- E-Mail, fax, pager, and webcast messages
- Report generation requests
- File delivery requests

Click on the "Remove" button.

Click on "Yes" to confirm the removal.

Select the option to "Compact Database" after removing pending items.

If this option is unable to remove certain pending events, try stopping the Digital Taskforce Windows Service (and even stopping any remaining Digital Taskforce processes – anything that starts with "KS_") before again trying to remove the pending items.

Compact Database

(Note that this option is not needed if running Digital Taskforce under SQL Server.)

Compacting the database is advised after you delete records from the database as this option will remove any unnecessary space from the database. Note that you'll need 3 times the size of the database in free disk space to compact the database.

To compact your database, follow these steps:

Click on the Administrator "File" menu.

Select "Database Tools".

Select "Compact Database".

Click on the "Compact" button.

Note that you can delete the KS_*_[previous_year].mdb databases from your system

Moving Digital Taskforce to a New Server

Note: There is NO CHARGE for re-licensing Digital Taskforce on a new server, but you must confirm (via email) that Digital Taskforce will be un-installed from the old server.

To move Digital Taskforce from one server to another, follow these steps:

➢ Download KS_Setup_V80.zip onto the new server. If possible, choose the **same disk and directory** for the installation on the new server as on the old server because all your VB script and Crystal report definitions each refer to the Digital Taskforce disk and directory location.

(If Digital Taskforce is installed on drive C: and you then re-install it on drive D:, all of your Crystal reports will fail with the error message "Unable to locate C:your_report_file.rpt".

➢ If you cannot install Digital Taskforce in the same disk and directory, you will have to change your VB script and Crystal report definitions manually.

➢ Copy all the folders from old server to the new one. Make sure to get the files from the following folders located within your "Digital Taskforce" folder:

\Attachments
\Data
\Reports
\Scripts

Enabling Diagnostics

Digital Taskforce has the ability to record the steps that it takes when running events in a diagnostic file so that you can track down the cause of any errors or problems. Furthermore, you can turn "on" of "off" different aspects of diagnostic tracking.

To enable diagnostic tracking, stop the Digital Taskforce service and edit the registry on the Digital Taskforce server by running the following program:

REGEDIT

This will display the registry; navigate to:

My Computer\HKEY_Local_Machine\Software\Vineyardsoft Corporation\KnowledgeSync 2000\General\Diagnostics

You may set the diagnostic value to the following possible settings:

0   No diagnostics
-1   All Servers in diagnostics
1   Main Server diagnostics

2   Schedule Server diagnostics
3   Application Server diagnostics
4   Email Server diagnostics
5   Page Server diagnostics
6   Fax Server diagnostics
7   Copy Server diagnostics
8   Report Server diagnostics
9   Webcast Server diagnostics
10   Action Server diagnostics

When done setting the diagnostic value, exit from the registry and restart the Digital Taskforce service.

The Digital Taskforce Diagnostics Log file will be written to the location where you installed Digital Taskforce. The default location is:

C:\Program Files (x86)\Digital Gateway\Digital Taskforce\Data

Unable to Start Server (Error 1053)

One of the most common error messages in Digital Taskforce is error number 1053 – "The service did not respond to the start or control request in a timely fashion".

The first thing to do is to check the Event Viewer to review the Application Log. This should show you what occurred in the Digital Taskforce Service ("KS_SERV.exe").

One of the typical causes of this error is if someone changes the Digital Taskforce "Admin" password but has not changed the Server logon information. To address this, do the following:

- Log into the "Administrator"

- Click on the "Server Logon Information" button.

- Confirm (or modify) the Admin username and password.

To Change the Password for the "Admin" user:

- Log into the Administrator

- Select the option for User Access

- Select "Logins"

- Double Click on Admin

- Choose the "General" tab

- Choose "Set /Change Password"

You should also verify that the "Admin" user has the appropriate access options checked under the "User Access" tab.

ACTVMSG_ERR_NOT_FOUND (Error 8139)

This Digital Taskforce error is typically due to one of five things:

- You are using "mapped drives" in the specifying the location of a file.

- You are specifying an attachment file that Digital Taskforce cannot locate.

- Digital Taskforce cannot find your Exchange server.

- Digital Taskforce cannot find the Exchange mailbox you have specified.

- Digital Taskforce cannot find the Outlook profile you have specified.

ACTVMSG_ERR_FAILURE (Error 8002)

This Digital Taskforce error is typically due to one of the following:

- CDO (Collaboration Data Objects) is not installed.

- The Digital Taskforce service is not running from a valid domain/username

- The Digital Taskforce service user has insufficient privileges to access email

- You have an open MS Outlook session on the Digital Taskforce server while Digital Taskforce is trying to send/receive email.

- A Microsoft Outlook security patch is installed (requiring you to hit OK every time Digital Taskforce tries to send email).

If you are not able to figure out the cause of this error, stop the Digital Taskforce Windows service and instead run the Digital Taskforce Desktop Service as this will re-direct all error messages to your interactive session.

Server Stays in "Startup" Mode

If, when you try to start the Digital Taskforce Service, a server does not get past the "startup" mode, do the following:

1) Stop the Digital Taskforce service

2) Run "dcomcnfg.exe"

3) Click on the "Default Security" tab

4) Check the "Default Launch" button as well as the other two buttons on this tab.

5) If one user is listed for a category, all other users are denied access unless they are also entered in the corresponding category. If no users are listed, then all users have access.

Add the Digital Taskforce user if other users are listed. You may also need to run the Digital Taskforce service from a domain user account with local admin rights.

Query Designing

Query Designing

A Digital Taskforce query is the first component of an event; the query determines whether specific conditions exist within an application's database. Each event uses one (or more) queries and if the conditions of a query are met, the event is "triggered" and the resulting alerts, reports, and workflow actions are executed.

Digital Taskforce can also use SQL Triggers to detect data conditions; please refer to the Digital Taskforce knowledgebase for details & examples of database triggers.

The majority of events use a single query; some events use multiple queries, especially events whose triggering is based on a combination of conditions that exist across multiple application databases.

There are three types of queries. The first is a **record level** query which checks for records that meet certain conditions. For example:

- Open service calls with a priority of "critical"
- Activities that are overdue for completion
- Opportunities for more than $25,000 due to close within the next 7 days

The second is an **aggregate** query, and it checks to see if a group of records collectively meet a certain condition. For example:

- More than 10 open service calls with a priority of "critical"
- Fewer than 5 scheduled activities per salesrep next week
- Salesreps with more than $500,000 in their pipeline

The third is a **field-level change** query, and it checks to see if one or more fields have had their value changed. For example:

- Customers whose credit status has changed
- A support call whose priority has changed to "Urgent"
- A pending sale whose amount or forecast close date has changed

Queries, VB Scripts, & SQL Triggers

Digital Taskforce has three ways to identify data conditions:

1. Queries. Queries extract data from any ODBC-compliant database.

2. SQL Triggers. Triggers are built right into SQL databases and are particularly useful for identifying deleted records, but can also be used to identify "new" or "changed" records.

3. Visual Basic scripts. VB scripts may be used to monitor data that is not stored within a database, such as O/S conditions (e.g., low disk space, the arrival of a file, etc). See "Visual Basic Scripting" chapter for details.

4. Email. Digital Taskforce can parse through and detect conditions of data within incoming email messages. See the chapter titled "Email Response System" for details.

This chapter will focus on the design and use of queries to identify data conditions.

One Query in Multiple Events

Consider an organization that wishes to receive the following alerts:

- Clients with pending sales > $25,000

- Clients with pending sales > $50,000

- Clients with pending sales > $100,000

These three alerts could each use their own query; each query checking for the corresponding dollar threshold.

But Digital Taskforce allows one query to be used in multiple events; a query in which the dollar threshold is specified on the event level.

Preparation

You'll find query design easier if you begin by identifying the **event conditions** that you wish to monitor.

Unless you know the **event conditions** that you wish to monitor, it can be somewhat challenging to define the queries that need to be designed in support of those events. For each condition to check for, take the following steps in preparation.

Identifying Needed Database Fields

A query serves two purposes; it identifies what conditions have to be met for an event to be triggered, and it identifies which database fields may be used within an event. You need to consider:

- If an event sends alerts, the query needs to include those database fields that you might wish to include in the outgoing messages.

- If an event sends alerts to recipients whose address is located in a database field (e.g., sending an alert to a support rep assigned to a call), the query needs to include the field(s) that contains the related notification address(es).

- If an event triggers one or more Crystal Reports, the query needs to include any fields used as selection criteria ("report parameters").

- If an event executes workflow, the query needs to include fields whose values will be used in the workflow procedures.

Record-Level Queries

The first step is to identify the overall purpose of an event. For example:

"When a 'critical' service call is logged, send an e-mail alert to the customer's account manager."

If the event will send an alert message, consider what you'd like the alert messages about this event to look like. For example:

Hello, Don Farber:

The following critical support call was just logged for you client 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: Error 1094 during login.

Next, identify the data fields that you wish to put into the message:

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]

By identifying the data fields, you'll know what fields the query will need to retrieve data from.

By reviewing the event's description (". . . *when a 'critical' service call is logged*") we can easily identify the conditions that the query needs to check for:

- Calls with a priority of 'critical'
- Calls that are received today

Next is the determination of whom will be notified. In some cases, alert recipients are hard-coded; e.g., notifying the CEO or CFO. In other cases, you might wish to notify a person who is **associated** with a record being triggered as in the following:

"Send an alert to an account manager when a 'critical' service call is logged."

In this scenario, the alert recipient will depend on the client for whom the critical call was logged. If you look back on the alert message, you can see that the person who should receive the alert message is "[salesrep_name]".

However, "[salesrep_name]" is not an e-mail address; if you look further into the salesrep data, you can find a field called something like "[salesrep_mail_address]" – and this is the field that contains the address that you wish to send the alert to.

If an event will send alert to address(es) derived from the triggered record, the query must include the field(s) that contains those address(es).

Digital Taskforce events can also optionally generate & deliver forms & documents (such as invoices or statements) as well as Crystal Reports.

If an event will trigger the generation of a report, review the report to see if it uses parameters (selection criteria). If it does, the fields containing the section criteria must be included in the query.

The last preparatory step is to identify whether an event will execute workflow to add or update records in an application database. If so, your query must include the fields required for use by the workflow update procedure.

Aggregate Queries

Aggregate queries are designed much in the same way as record-level queries except that aggregate queries will use one of the following 5 options:

- Count (e.g., fewer than 5 assigned leads)

- Summarize (e.g., less than $10,000 in sales)

- Average (e.g., average response time over 60 minutes)

- Minimum (e.g., lowest order placed by a client)

- Maximum (e.g., longest delivery lead time)

Aggregate queries should be designed with the same considerations as record-level queries except for the fact that an aggregate query is going to be triggered by a condition related to a "group" of matching records. For example:

"If a client has more than 3 overdue invoices, send an e-mail alert to the client's account manager, attach an "Open Receivables" report, and schedule a phone call for the account manager to contact the client."

And – correspondingly – the alert message might look like this:

The following client has more than 3 overdue invoices:

Client: Jim Ramey
Number of Overdue Invoices: 5
Total Value of Overdue Invoices: $27,960.28

Design Basics

For every query you should identify the following:

- Purpose of query
- Alert message
- Application tables which contain the data to be retrieved
- Fields of data required by the query
- Triggering conditions
- Alert recipients

Add/Edit a Query

To add a new query, open the Navigator module, expand the All Events branch and click on the Application you wish to add the query to. Then, right-click on the Application name and choose "New Query".

To add a new query, open the Navigator, expand the All Events branch, expand the Application you're working with, right-click on the Queries branch and select "New".

To view or edit an existing query, open the Navigator, expand the All Events branch, expand the Application you're working with, expand the Queries branch and double-click on the query you wish to view or edit. (You can also right-click on the query and select "Edit".)

The following sections guide you through record-level queries as well as field-level change queries. Following these instructions is a separate section on the creation of aggregate queries. This section goes over only the _differences_ between record-level and aggregate queries, so please review the record-level query section to become familiar with the basics of designing all queries.

Query Description

The "Query Description" field contains a description of your query. Make your descriptions short, consistent, and descriptive.

Click "Active" to enable this query to be used in an event.
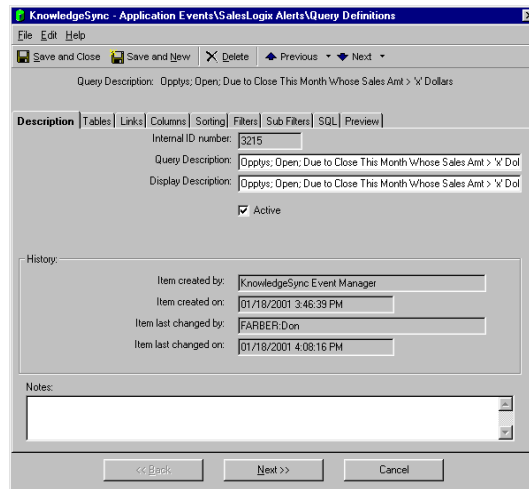
QUERY "DESCRIPTION" TAB

Query Naming

Name your queries logically so that they can be easily located. And keep your query names short so they're easy to read in the Navigator. For example:

- Activities; Overdue

- Activities; Too Few Per Rep

- Activities; Due in 3 Days

ECi Software Solutions suggests using a query's "primary data" as the first word of the description (e.g., "Activities;") and then follow that with the query's condition.

Tables

The **Tables** tab is where you choose what database tables a query will retrieve data from. There are three items you need to consider:

What data might you wish to put into an alert message?

Even a query as simple as "overdue activities" usually needs to retrieve data from more than just the "activity" table. The corresponding "client" data is probably stored in the "account" table, and salesrep details are probably stored in the "salesrep" table.

Where is the alert address of the person you wish to notify stored?

If you wish to notify a person who is "associated" with a triggered record, you need to include the table(s) that contain these addresses.

Will an event that uses this query execute workflow?

Since an event can execute workflow to add or update database records, you need to consider what data the workflow needs access to.

To select fields for a query, you first need to select the table(s) that contain these fields. Go to the list of **Available Tables** and double-click on the desired tables.
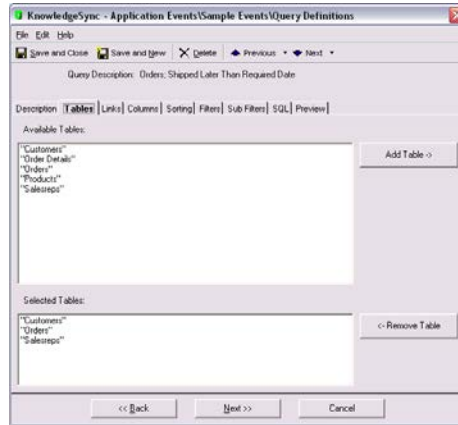
QUERY "TABLES" TAB

Choosing the Same Table Multiple Times (Table Alias)

Consider the following alert scenario:

You want an alert about invoices that are overdue. Each invoice contains the ID of the salesrep ("invoice.salesrep_id"), and the ID of the customer "invoice.client_id"). An additional table called "email" stores the email addresses of both the client and of the salesrep.

In order to get both email addresses, Digital Taskforce needs to access the "email" table twice – once for the salesrep's address, and once for the client's address. But you cannot choose the same table name twice, so Digital Taskforce lets you create a "table alias" for just such occasions.

When you select the same table multiple times in the Tables tab, you are given the ability to specify an **alias name** for that same table.

Once you enter an alias name, you will see the table's alias followed by an exclamation mark and then the table's original name.

Links

If you have chosen more than one table, you must tell Digital Taskforce how those tables are linked (or "joined") together. It is essential that you choose the query's primary table first in your series of links.

In the example of an "Overdue Activities" query that uses the "activity", "account", and "salesrep" tables, this query's primary database table is the "activity" table.

Link your tables by doing the following:

Click on the "Links" tab. You will see the following:
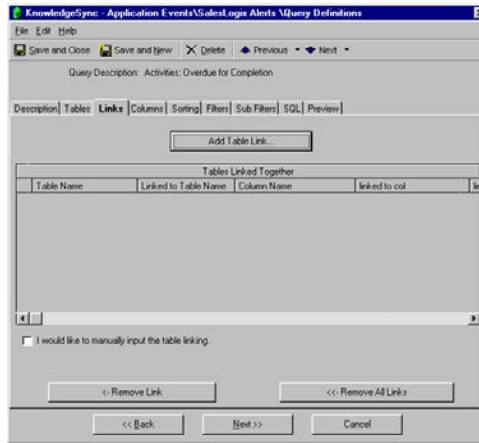
QUERY "LINKS" TAB

Click on "Add Table Link". The following will appear:
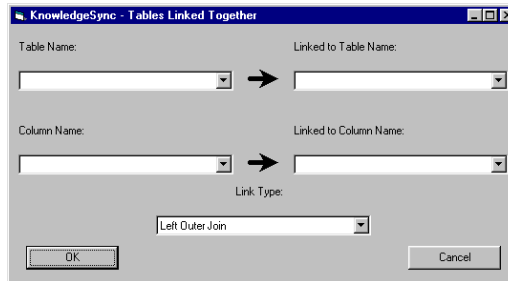
THE "ADD TABLE LINK" WIZARD

In "Table Name," select the query's <u>primary database table</u>.

In "Linked to Table Name," select a corresponding table.

In "Column Name," select the "link from" field.

If a column in the "Link to Table" is found with the same name as the "Link from Table," that field will be loaded into the "Linked to Column Name".

(If not) The "Linked to Column Name" field will be left blank and you may select the appropriate column from the drop-down list.

The link type will default to "left outer join"; leave this unless your database schema specifically requires a different type of join.

Click on OK.

If you have more than two tables that require linking, click on the "Add Table Link" button again and repeat this process until all tables are linked.

Overriding the Default Linking Syntax

Depending on the applications, databases, and ODBC drivers you are using, you may come across an instance where Digital Taskforce's default linking syntax is not sufficient for the type of "join" you wish to create.

To do so, follow these steps:

Join the two tables together using the table linking wizard.

Click on the SQL tab.

Copy the "join" syntax (everything after the word "from"). Do not include the parentheses that begin and end the join syntax.

Click back on the Links tab, click on the checkbox titled "I would like to manually input the table linking." A blank line will appear.

Paste the "join" syntax that you copied from the SQL tab into this line.

Edit this syntax to perform the join as you require.

You may also directly edit the field names in the Links grid, as detailed below.

Modifying Your Links

Once you have chosen your links, you can modify them as follows:

➢ Do not select "I would like to manually input the table linking".

➢ Go to the link line you wish to modify.

➢ Click your cursor in any of the 5 fields linking fields.

➢ Edit the value of the field you clicked in. Any valid SQL syntax is supported in these fields.

Multi-Field Links

To link one table to another using more than one field, follow these steps.

➢ Create a link using the first of the two fields you need to link with.

➢ Click in the "Linked to Column Name" field so that your cursor is flashing at the end of the column name in this field.

➢ Add a blank space after the column name.

➢ Type in "and table1.2nd_link_field = table2.2nd_link_field"

In place of "table1.2nd_link_field", key in the secondary linking field in the first table, and in place of "table2.2nd_link_field", key in the secondary linking field in the second table. Do not include the quotation marks in your syntax.
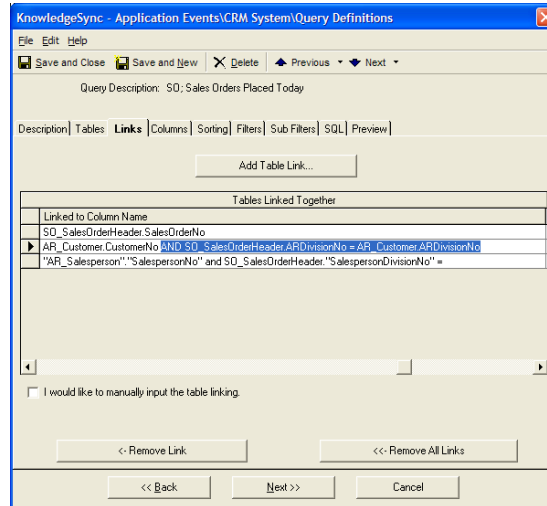
A MULTI-FIELD LINK

Columns

There are four items to remember when choosing a query's columns:

1. What data do you wish to put into an alert message?

2. Do you need to include fields that contains the alert address(es) of person(s) you wish to notify?

3. Will an event that uses this query execute some sort of workflow?

4. What order do you want matching records listed in?

If No Columns Are Displayed

If Digital Taskforce does not display any columns, it may be because your tables have embedded blanks within the table names. If this is the case, follow these steps:

- From the Navigator, right-click on the branch that contains the of the name of the application you are working in and choose "Properties".

- Click on the "Edit connection" button.

- Change the value for the "Long Tablename Left" and "Long Tablename Right" characters to the double quote (") symbol.

- Save and Close your work.

- Go back to the "Columns" tab and check to see if the column names appear.

If the column names still do not appear, please contact e-automate Customer Care for further assistance.

How to Select Columns

Follow these steps:

Click on the "Columns" tab. You will see the following:
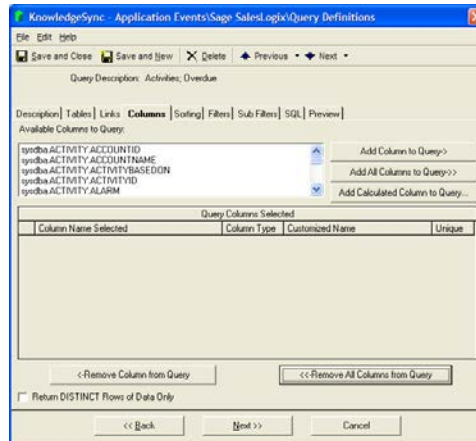
QUERY "COLUMNS" TAB

Go to the list titled "Available Columns to Query"

Double-click on the field you wish to include, OR, single-click on the field you wish to include and click on the "Add Column to Query" button.

Repeat this process for each column you wish to select. When done, your window will look like the following:
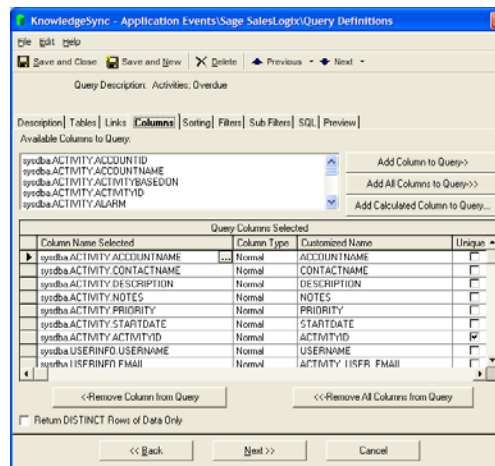
"COLUMNS" TAB – WITH COLUMNS SELECTED

Selecting "All" Columns

To include all columns, click on the button called "Add All Columns to Query."

Although this is an excellent way to see all data from all columns, this is **not** suggested for normal query building as it puts a higher burden on system resources.

Editing a Selected Column

To edit a column (to include calculations, change its format, etc.), click on the "Column Name Selected" field within the grid and an "Edit" button (a button with three dots in it) will appear. Click on this button and you will be taken into a full-screen editor, complete with advanced calculation functions to choose from.

Column "Type"

Record-level or field-level change queries always use a column type of "Normal".

"Customized Name"

When an event's alert message is designed, you refer to the query's columns by using the columns' "Customized Name." This is important, as some applications have cryptic names for their columns. For example, an "activity" table may have a column called "ddate" -- that stores the activity's due date.

Using a column's "Customized Name", you can create your own "label" for a field, for example "due_date" for the scenario above.

When you select a column for a query, Digital Taskforce will take the column's name and place it in the "Customized Name" field. You can then modify that value.

Here are some notes about using customized names:

- Do not include blank spaces. (use "due_date" and not "due date").

- Keep customized names under 25 characters.

- Do not begin a customized name with SQL reserved words, such as "sum", "sub", "add", "avg", "min", "max", "total", "trim", and "format".

- Do not have multiple fields with the same customized names; you won't be able to tell them apart.

- Use only letters and numbers in a customized name; do not use symbols.

- Do <u>not</u> change the default Customized Name of a query's "unique" column if the query track <u>**changes**</u> to the value of one or more database fields.

The "Unique"

Digital Taskforce events can trigger "once" or "repeatedly". Consider an event that checks hourly for overdue activities:

- Once: At 9 AM, activity #123 is overdue and triggers. At 10 AM the activity is still overdue, but since it already triggered, it does not trigger again.

- Repeat: At 9 AM, activity #123 is overdue and triggers. At 10 AM – and every hour after, until it's no longer overdue, it triggers again.

One time versus repeat alerts is specified on the <u>event</u> level. However, to enable a query for one-time alerts, you must tell Digital Taskforce how it can remember a record that has been triggered. This is done on the <u>query</u> level.

If you do **not** specify how a query remembers a triggered record, any event that uses this query will automatically be in "repeat" mode. If you **do** specify how a query remembers a triggered record, you will have the option (on the event level) to specify one-time or repeat.

To specify how a query remembers a triggered record, you specify the **one column** that uniquely identifies a matching record, such as a "client ID" or "order number".

Place a checkmark in the "Unique" column of your query.

Note the following:

1. Always specify a unique field for all non-aggregate queries.

2. Only a <u>one</u> column may be checked as unique. If a unique is based on the combined values of two or more fields (e.g., "order number" and "line number"), create a multi-field unique (see "Multi-Field Unique").

3. Do **not** change the default Customized Name of a query's unique column if the query tracks **changes** to one or more database fields.

How a Record Gets "Triggered" (& Un-Triggered)

Consider an event that runs daily and sends a non-repeating alert about customers placed on credit hold.

On Monday, Acme Corp is placed on credit hold and an alert is sent. On Tuesday, Acme Corp is still on hold. The event (set to "not repeat") runs but does not trigger another alert about Acme.

On Wednesday, Acme is taken off of hold. The event runs, sees that Acme no longer meets the event's criteria, and "clears" ("un-triggers") the Acme record. On Thursday, Acme is once again placed on credit hold. The event runs, is triggered again, and another alert is sent.

Multi-Field Unique

To create a multi-field unique, you'll need to concatenate (combine) the values from the two (or more) fields. Note the following about concatenation:

➢ The "type" of fields you concatenate must be "character" or "string" type fields. To concatenate fields of other types (e.g., numeric or date), you must **convert** the fields into character format first. (See "Field Editing Notes".)

➢ The maximum length of a unique column for a query is 64 characters

To concatenate fields (for SQLServer), follow these steps:

➢ Click on the button called "Add Calculated Column to Query".

➢ Choose the first database column that you wish to comprise your concatenated unique.

Click in the Calculated Column Workbox and enter a plus sign (+) after the column name you have selected.

Choose the second database column that you wish to comprise your concatenated unique.

The concatenated column now looks like the following:

sysdba.orders.order_number+sysbda.orders.order_lineno

The concatenation symbol for an Oracle database is two vertical bars (||).

Please note that you cannot use a concatenated unique if your query is checking for a "change" to the value of one or more fields in a database.

Order Line Item Unique

In most ERP systems, an order's info consists of a "header" and "details". Because of this, every order detail line for an order has the same order number associated with it.

Thus – if you specify the order number as "unique", an alert message will show only the FIRST detail line – as all other lines for that order have the same order number.

In such cases, make sure that the query's unique is both the order number AND the line number. That way, each detail line has its own unique value.

Calculated Fields

Examples of calculated fields are:

- A field that calculates the number of days that until an invoice is due
- A field that multiplies the sales amount times the its probability of closing
- A field that calculates when a client is within 10% of their credit limit.

Calculated fields may be used as selection criteria, in an event's alert messages, and within an event's workflow response actions.

To create a new calculated field, click on the "Add Calculated Column to Query" button. To add a calculation to a selected column, just click in that column and then click on the Edit button that appears there.

The Calculated Column Editor provides you with a list of some frequently-used arithmetic calculations at the top of the window; you may use any valid arithmetic symbols and functions (such as '+', '-', '/', and '*') as well as any valid SQL functions that are approved for use with the database and ODBC driver you are using.

The editor also provides you with a list of all columns from your selected tables, as well as Digital Taskforce's complete list of date substitution variables. The "workbox" at the bottom of this window is where your calculation syntax is formatted.
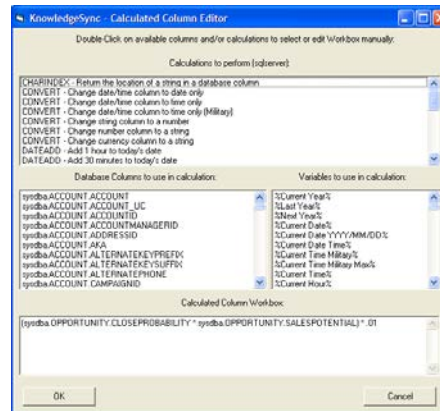
A "CALCULATED" COLUMN

If you select any of the functions from the list of calculations, Digital Taskforce will automatically format that function for you, and all you need to do is select any remaining elements for that function.

Example #1: a calculated field that computes the gross margin percent of an item.

The gross margin is calculated by determining the difference between an item's price and cost, multiplying that total by one hundred, and then dividing that total by the item's cost. Thus you would do the following in the Calculated Column editor:

- Click on the "Add Calculated Column to Query" button.

- Select the column that contains an item's price.

- In the workbox area, add a minus sign after that field

- Select the column that contains the item's cost.

- Add "*100" to your calculation

- Add the division symbol "/" to your calculation

- Select the item's "price" field again

- Insert parentheses to ensure the order of execution.

Your end result would look like the following:

((INVENTORY.ITEMPRICE-INVENTORY.ITEMCOST)*100)/INVENTORY.ITEMCOST

Example #2: A field that determines the number of days until an invoice is due .

In Microsoft SQL Server, this calculation uses of a function called "DATEDIFF" – which calculates the number of days between two dates. Thus you would:

- Click on the "Add Calculated Column to Query" button.

- Choose the function "DATEDIFF – Difference in Days between two dates". The following will appear in the workbox area:

DATEDIFF(DAY,$Column$,$Column$)

- Since you want to calculate the number of days between "today" and an invoice's due date, select the "%Current Date%" variable.

- Select the column that contains an invoice's due date.

- Your end result will look like the following:

DATEDIFF(DAY,'{%Current Date%}',dbo.tarInvoice.DueDate)

Calculated Field Notes

Use a query's "Preview" to ensure that your calculation syntax is acceptable to the database, the ODBC driver, and to Digital Taskforce.

Be sure to modify the "Customized Name" of a calculated field.

A single query can have multiple calculated fields within it.

You can copy and paste the content of a calculated field by using CTRL/C to copy the contents and CTRL/V to paste them.

Verify the format in which an application stores its "date" or "date/time" values. Even thought the values might (for example) be displayed as mm/dd/yyyy, your application might store them in a different format.

Date-Related Functions

Most databases (and drivers) allow you to calculate the difference between two dates. The syntax of these functions is dependent on the database (and driver) you are using.

Here are a couple of examples:

1. Invoices Due Within 'x' Days (MS SQLServer)

   datediff(Day,'{%Current Date%}',ARinvoice.DueDate)

2. Client Whose Last Order Was More Than 'x' Days Ago (MS Access)

   datediff('d',"Invoice"."DateCreated",'{%Current Date%}')

3. Quotes Due to Expire Within 'x' Days (Pervasive SQL)

   datediff(Day,oehdr.CancelDate,'{%Current Date%}')

4. The number of hours between a date/time field and the current date/time

   datediff(hour,table.column,'{%Current Date%}'

5. Add 3 hours to the current date/time

    dateadd(hour,3,'{%Current Date%}')

6. Add 3 hours to the value in a database field:

    dateadd(hour,3,table.column)

Column Editing Options

Sending to Multiple Dynamic Addresses

Concatenation takes the values from two (or more) character fields and combine them so that their values resides in a single field.

A common use for concatenation is when you wish to send alerts to multiple addresses that are drawn from database values. For example, an event monitoring open support tickets might need to notify both the rep whom the ticket is assigned to, and the salesperson who is assigned to that client's account.

In Digital Taskforce, you would combine both those addresses into a single field:

sysdba.ACCOUNT.EMAIL+','+sysdba.USERINFO.EMAIL

 (Multiple e-mail addresses are separated with commas.)

Be aware that only character fields can be concatenated; to concatenate date or numeric fields, you will need to convert them into a character format.

For example, if both "order.number" and "order.lineno" are numeric fields, your concatenation syntax (under SQLServer) would appear as follows:

➢ *convert(char(10),order.number)+convert(char(10),order.lineno)*

Trimming "Padded Spaces" from a Value

Sometimes fields contain "leading" or "following" spaces and you may not want Digital Taskforce to include these spaces when it retrieves the value.

Depending on the database being monitored, you can use the following functions. (The following are for SQLServer databases.)

➢ **rtrim**: Remove all following spaces from the right side of the field value

➢ **ltrim**: Remove all leading spaces from the left side of the field value

➢ **trim**: Remove all surrounding spaces from both sides of the field value

The format for using these functions is:

➢ *trim(table.column)   (SQLServer)*

Retrieving 'x' Characters of a Value

Sometimes you might not want to retrieve the entire contents of a field; you may (for example) wish to retrieve only the day of a person's birthday (as opposed to the day, month, and year).

To do this, you would use the "substring" function as follows

Substring(table.column,starting position,length)

For example:

➢ *Substring(account.name,1,20)   (SQL Server)*

This would retrieve the first 20 characters of an account's name.

Converting a Field's Type

If you find the need to convert a field from one type (such as numeric) into another type (such as character) you would use the "convert" function as shown below:

➢ *Convert(char(20),account.createdate,0)   (SQLServer)*

(This converts a date field into a string field.)

For an Oracle database, the command is:

➢ *TO_CHAR(TABLE.NUMBER,'9999999')*
   (This turns a numeric field into a string)

For a Pervasive SQL database, the command is:

➢ *convert(ARTRAN.OrderNumber,sql_char)*
   (This turns a numeric field into a string)

Retrieving the "Top x" Number of Records

Another useful function is the ability to retrieve only the top 'x' number of records that meet your criteria. (For example, the top five sales this week.) The syntax for doing so (under SQLServer) is:

➢ *Top x table.column*

As in:

➢ *Top 10 sales.amount   (SQLServer)*

Creating a Column that is a Label + Field Value

In some cases, you may wish to create a column that contains both a field "label" as well as the field's value. This is useful if you have a field whose label you do not wish to appear in an alert message if the value of the field itself is blank (or null).

For example, let's say that you have an ERP system in which you have four types of line items: inventory, non-inventory, miscellaneous charges, and comment lines. Only inventory items contain a warehouse code, and for those lines you wish to include a section in your alert message that says

WHSE: Boston

(where "Boston" is the name of the corresponding warehouse)

Since the three other line types do not use a warehouse, you do not want the label "WHSE:" to appear in the alert message for those lines.

The answer is to <u>combine</u> the label ('WHSE:') with the value from the warehouse field. Thus your query column would look like the following:

'WHSE:'+' '+InvDetail.Whse

And – as you'll learn in the "Event Designing" chapter, you can tell Digital Taskforce <u>not to include</u> (or allocate space to) any field whose value is null.

You can add a labels to only <u>character-based</u> fields.

Creating a Column that Contains a Dynamic Date Value

Digital Taskforce includes many date substitution values, such as "current date", "last Monday date", "next Friday date", and so on. To use one of these fields as a column within a query, format it as follows:

'{%Last Friday Date%}'

Retrieving Just the Month or Day from a Date Field

To retrieve just the month or day from a date field, use the following syntax:

month(hrpersnl.p_birth)
day(hrpersnl.p_birth)

Creating a Column that Contains a Hard-Coded Value

To create a column that contains a hard-coded value, such as a standard email address, as in <u>smith@ecisolutions.com</u>, follow these steps:

- Add any column to a query

- Click your mouse in the "Column Name Selected" field of the column you just added and delete the existing column name

- Type in a single quote ('), followed by the hard-coded value, followed by another single quote (as in 'smith@ecisolutions.com')

- Go to the "Customized Name" and enter an appropriate name for this field

Creating a Column Pointing to a File Spec

One of Digital Taskforce's special functions is to create a column that refers the name and location of one or more files that you wish Digital Taskforce to deliver. Multiple files must be separated from each other with commas.

The file spec referred to within this column must either use the actual server, disk, and directory spec, or must use UNC format; do not refer to mapped drives.

When you add such a column to a query, the Customized Name of that column **must be** "attachment_files" (case sensitive).

When an event use a query that contains such a column, you'll have the option to instruct Digital Taskforce to deliver the corresponding file(s) via e-mail, web, or FTP.

"If – then – else" Logic

Consider the following logic:

"if the contact's email address is blank, use the default account email address"
"if the contact's email address is blank, use the salesrep's email address"
"if the value of the field is "H", I want the alert message to read "Hold"

To check the value of a field and then modify that value (or use a different value) is very useful. The SQL syntax for doing so is:

CASE table.column when 'value' then table.column+'value' else table.column END

If, for example, you have a column in a table that has values of I, C, or D and you want to display them as IN, CM, and DM in your alert message, you'd create three columns in your query as follows:

CASE table.column when 'I' then table.column+'N' else table.column END
CASE table.column when 'C' then table.column+'M' else table.column END
CASE table.column when 'D' then table.column+'M' else table.column END

Note that the preceding syntax is for SQL Server.

Removing Columns from a Query

To remove a column from a query, follow these steps:

In the Columns grid, point your cursor at the left-most column of the row that contains the field you wish to remove. The cursor will change into a right-pointing arrow.

Click your left mouse button.

Click on the "Remove Column from Query" button.

You may use the Shift/Click function to select multiple columns, and you may use CTRL/Click to select "blocks" of records.

Return Distinct Rows of Data Only

What if you wished to receive a list of all customers who placed orders last week – but didn't care if a client purchased multiple times? This is referred to as "returning distinct records only" (eliminating any duplicate records) and is available via a checkbox at the bottom of the Columns tab.

"Return distinct" is based on the columns chosen for a query, so if you chose just the client's name, your results would show one record per company. But if you chose client name and order number, your result set would show one record per order.

Sub-Queries (Embedded Selects)

One of the more advanced query design functions is the ability to create a column whose value is the result of another query. This is referred to as "sub-queries" or "embedded selects".

Embedded selects require advanced SQL syntax knowledge, as each column name would be edited to include a SQL select statement. Note that embedded selects must use the same ODBC connection as the query in which they are embedded.

To create, view, or modify embedded selects, use the Calculated Column Editor, as it gives you a full-screen editor in which to create your embedded select statement.

ECi Software Solutions has an EventPak that illustrates the use of embedded selects. To receive this Pak, please contact Customer Care at eacustomarecare@ecisolutions.com.

Sorting Order

When a query runs, it retrieves matching data records. You can specify the order in which these records will be listed and processed. This is the query's "sorting order."

Any fields that were selected on the query's "Columns" tab are available for use in its sorting order. To select your sorting order, follow these steps:

Click on the "Sorting" tab. The following window will appear:
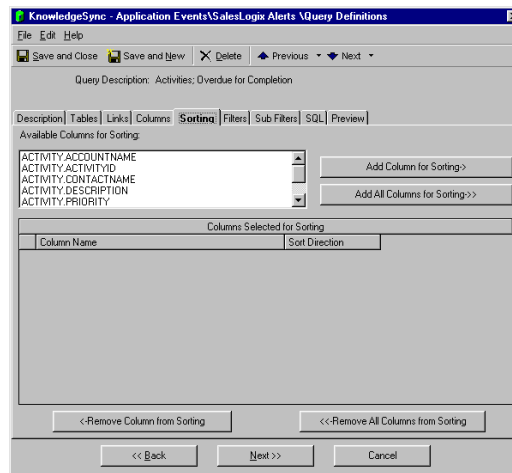
QUERY "SORTING" TAB

Go to the list titled "Available Columns for Sorting"

Double-click on the field you wish to sort on.

The "Sort Direction" field will default to "ascending" but may be changed to "descending" from the drop-down list.

You can specify multiple levels of sorting. Once you have chosen your first sorting field, simply repeat the preceding three steps to create an additional level of sorting.

The Effect of Sorting on "Record Breaks"

When you configure a Digital Taskforce event to send alerts, you can have it send one alert message per "group" of triggered records. (E.g., send one message to each sales rep showing him/her a list of all of their clients' overdue invoices.)

Here are some other examples of "grouped" alerts:

> ➢ Send each rep one message that lists all their overdue activities

> ➢ Send a client one message that lists all lines on an order

> ➢ Send one message that lists all open support calls per call priority

In each of these examples you must tell Digital Taskforce how to group (or sort) the matching records so that all "similar" records are grouped together and can thus be put into a single alert message.

The first example would sort by rep, the second would sort by invoice number, and the third would sort by call priority.

Filters

The most important part of query designing a query is the "conditions" that will cause the query to trigger an event. These conditions are referred to as "filters."

There are three general concepts of filter design. They are:

- What field values do you need to test
- What "operator" will a filter use
- What will the field value be compared against
- Should a filter be parameter driven

The following sections address each of these concepts.

Available Field Values

Filters can check the value of any fields within a database. They can identify newly-created records, records that meet specific criteria or thresholds, and can also check to see if the value of a field has changed.

Operators

A filter can use all standard operators, including:

- Equal to (priority is equal to "high")
- Not equal to (priority is not equal to blank)
- Greater than (amount is greater than 100)
- Less than (amount is less than 100)
- Greater than or equal to
- Less than or equal to

- Between (amount is between 100 and 200)

- Starting with (part number starts with "Epak")

- One of (priority is one of "Critical", "High", or "Medium")

A filter can also use one other operator:

- Value has **changed** since the last time Digital Taskforce checked it

Compare Values

A filter can do much more than compare the value in one field against a value. Here are some of the kinds 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
  (Sales amount times sales probability is greater than 10,000)
  (Invoice is due within 7 days)

- Test a calculated field against another calculated field
  (percentage of damaged items > percentage of undamaged items)

- Test a date or numeric 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 equal to "today")

Parameter-Driven Filters

Consider this scenario:

Your sales manager wishes to be alerted about pending sales greater than $25k. Your CFO wants to know about sales greater than $50k. And your CEO wants to know about sales greater than $100k.

Do you need three different queries? The answer is no.

You can design one query called "**Sales > 'x' Dollars**".

This is a "parameter-driven" filter. Three different events can each use this same query but specify a different triggering threshold (sales amount) on the event level.

Filter Components

When you click on the "Filters" tab you will see the following window:
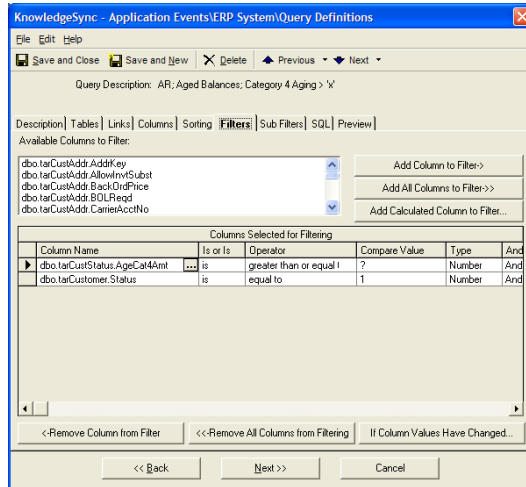
QUERY "FILTERS" TAB

- **Column Name**. The name of the field you wish to filter on. Choose from the list of "Available Columns to Filter". To create a filter on a calculated column, click on the "Add Calculated Column to Filter" button.

- **"Is" or "Is Not"**. Defaults to "is". Click next to this word and choose "is not" if applicable.

- **Operator**. Defaults to "equal to". Click next to this word and choose any other operator if applicable. See "Operator Notes" for details.

- **Compare Value**. The value to compare the selected column's value against. This may contain a constant value, a value from another database field, a calculation, a date substitution, or a question mark. (See following section.)

- **Type**. The type of data the selected column contains. Leave with its default unless doing a date calculation (use 'number') or comparing against another database field or calculated value (use 'literal').

- **"And / Or"**. The ability to specify "Boolean" logic, e.g., ("look for condition 'a' or condition 'b'"). The default "and/or" logic is sequential and a filter's "and/or" applies to the current filter *in relation to the next filter*.

  Parenthetical or "grouped" and/or logic is supported. See "And/Or Logic".

- **Optional Prompt**. (Scroll right to see this field) The optional prompt is used only with parameter driven filters; see "Parameter-Driven Filters" .)

Comparing a Column Against a Constant Value

Example: "activity priority is equal to 'high'"
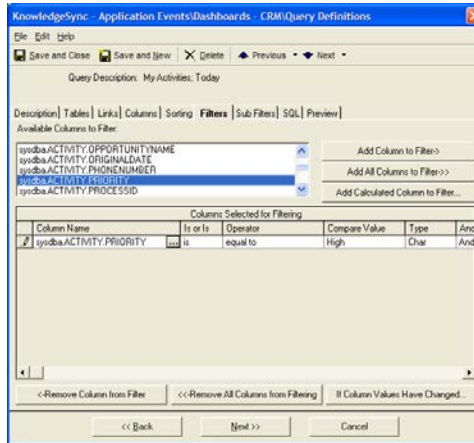
COMPARING A COLUMN TO A CONSTANT VALUE

You can manually enter the compare value, or you can choose it from a drop-down list. To key it in manually, delete the question mark and type in your value. Digital Taskforce **is** case-sensitive. To select the value from a list, follow these steps:

- Click in "Compare Value" and click on the list button that appears there.

- Click on the list button under the heading "Type in a Value or Choose from dropdown List". This will display a list of possible entries for this field.

- Choose the value that you wish to compare the column to and click on "OK".

Note: The dropdown list shows values that <u>have appeared</u> in this field in the underlying database. It does not display all possible values that _could appear_ there.

Comparing a Column Against Another Database Field

Example: **"cost of goods sold is greater than the sale price"**
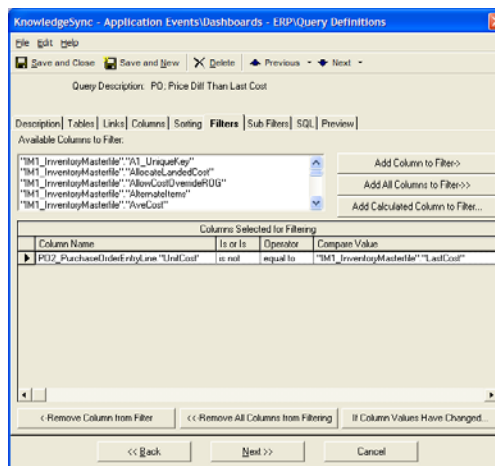
COMPARING ONE FIELD VALUE TO ANOTHER FIELD VALUE

In this example, the "Compare Value" contains the name of another database field:

In the "Compare Value" field, delete the '?'.

Type in the full name ("table.column") of the field you wish to compare the selected column to (e.g., "opportunity.costofgoods").

Go to the "Type" field and select "Literal".

Comparing a Column Against a Date or Numeric Range

Example: "due date between 10/15/2010 and 10/31/2010"

Example: "probability is between 60 and 90 percent"
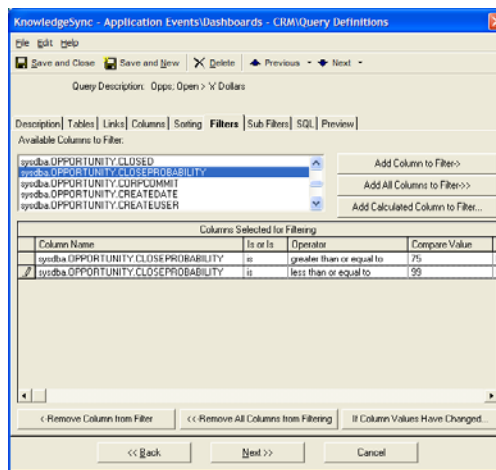
**COMPARING A FIELD AGAINST A DATE RANGE
OR A NUMERIC RANGE**

One common request is to see if records fall within a date or numeric range. Although you can use the "between" operator, it is **not suggested**, as this operator tends to execute less efficiently than using a combination of "greater than or equal to" and "less than or equal to". Additionally, not all ODBC drivers support "between" and this operator cannot be used in parameter-driven filters.

To create a range filter, follow these steps:

- Choose the field that you wish to filter on.

- Choose the operator "greater than or equal to"

- In "Compare Value", key in a "beginning" range (such as a "start date" or lowest allowable threshold). Enter a '?' to make this parameter-driven.

- Make sure the "And/Or" option reads "And".

- Add another filter on the same field.

- Choose the operator "less than or equal to"

- In "Compare Value", key in an "ending" range (such as a "end date" or highest allowable threshold). Enter a '?' to make this parameter-driven.

Comparing a Column Against a Date Substitution Variable

Example: "due date is less than today"
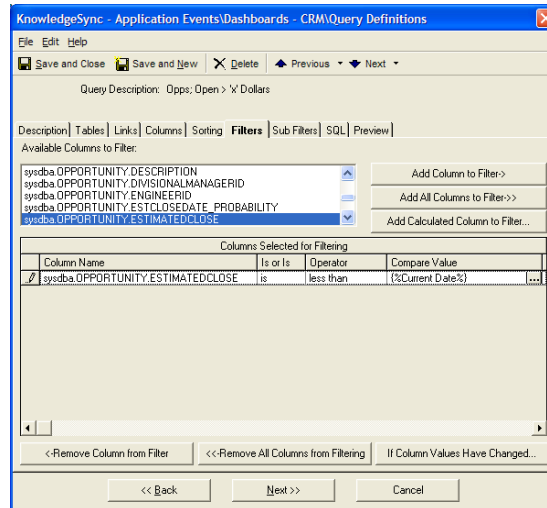
COMPARING A FIELD AGAINST A
DATE SUBSTITUTION VARIABLE

Many queries test the value of a date field against a value such as "today", "tomorrow", "last week", or "next month". Digital Taskforce provides a wide variety of "date substitution variables" that can be used as the "Compare Value".

To use a date substitution variable as a compare value, follow these steps:

- Click in "Compare Value" and click on the list button that appears there.

- Review the list of "Available Substitution Variables." There is a wide variety of variables to choose from. You will see multiple formats for the same value. The format without any suffix will use your system's date format.

- Choose the value that you wish to compare the column to, click on the "Select this Item to Compare" button, and then click on "OK".

Be careful when using the "current date" variable if you are comparing a field that contains both the date and time to the "current date" variable. 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 either by configuring your filter see if the date/time field is greater than or equal to today's date, or by configuring your filter to see if the date/time field is greater than "{%Current Date%} 00:01" and less than "{%Current Date%} 23:59".

Identifying "New" Records

You can configure a filter to retrieve records with a create date of "today", and since Digital Taskforce remembers what records have already been triggered, it will not notify you repeatedly about the same records.

But Digital Taskforce has a special date variable that makes this process more efficient – it's a variable called "Last Date/Time Event Checked". This variable allows a query to retrieve only records that have been added to your database since the last time Digital Taskforce ran the event.

This is particularly useful if your database is quite large or you are running an event very frequently (e.g., every hour or less).

Note that this variable will be formatted according to the Digital Taskforce server's regional settings for date format.

Pervasive & Providex Date Formatting

PSQL and Providex databases typically store their dates in "YYYY-MM-DD" format. Thus to compare a date value from one of these databases to a date variable, you would typically use a variable such as:

{%Current Date YYYY-MM-DD%}

Parameter-Driven Filters

Example: "priority is equal to ?"
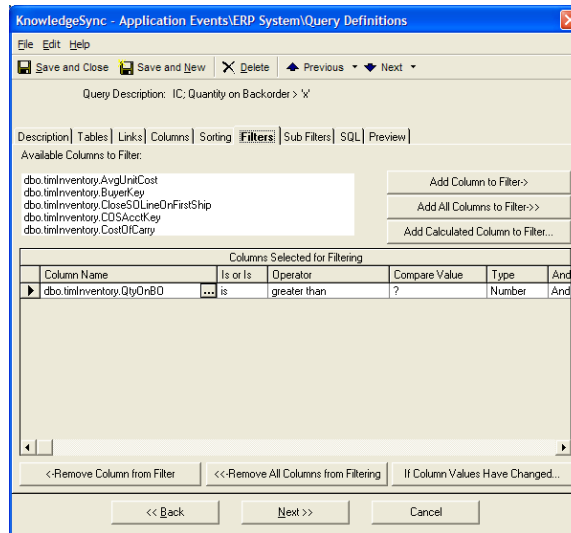
MAKING A FILTER "PARAMETER-DRIVEN"

You can design a query to be used in multiple events -- using filter "parameters." A parameter – represented by the '?' symbol in the Compare Value field– indicates that the compare value will be specified on the event level. This enables a single query to be used in multiple events, each event with a different parameter value.

Events using parameter-driven filters will require that a compare value be specified at the time that the event is configured. Once the event is configured, the parameter will have a specific value which is used every time that the event is executed.

The operators "one of", "between", and "null" may **not** be used with parameters.

To set up a filter to be parameter-driven, follow these steps:

- Make sure that a '?' appears in the "Compare Value" field.

- Move to the column in the grid, titled "Optional Prompt." The optional prompt is the text that will appear (on the event level) when this query is selected for use with an event.

  When such a query is selected for an event, the person configuring the event will receive the "optional prompt" informing them that they need to supply a compare value for this filter. The text of this prompt is defined here.

- Delete the default optional prompt text and key in your own text, such as:

  - "Select a Priority:"
  - "Status is:"
  - "Forecast Date Range Begins:"
  - "Sales of Greater than How Much?"

Checking a Column Against a "Changed" Value

Example: "credit status has changed"

➢ When a "data change" event is first run, Digital Taskforce stores the current value of the field(s) you wish to monitor for a change.

➢ The next time the event runs, it compares the "current value" of the field(s) to the "old values" from the previous check. If the two values are different, the event is triggered. And Digital Taskforce replaces the "old value" that it had stored with the "new current value". And so the cycle begins again.

Note the following about using "Change-Based" queries:

1. A query may check for changes to any fields within the query's primary database table. The primary table is the first table listed in the "Links" tab.

2. A query **must** have a unique column, its unique column cannot be a calculated or otherwise edited field, and the unique column's "Customized Name" must **not** be changed from its default value.

3. If the database you are monitoring already supports "auditing", build queries to monitor that database's audit table rather than using changed-based queries. This is more efficient, and will eliminate audit data redundancy.

4. If the database you are monitoring can execute stored procedures when a field is changed, it may be more efficient to use this function to populate an audit table which Digital Taskforce can then monitor.

5. If you have multiple events checking for a change in the same field, these events **must** be scheduled to run at the same time (e.g., daily at 9:00 AM).

6. A query can check to see if a field value **has changed**, or if it **has changed to a specific value**.

7. If you select multiple "change" fields for a query, Digital Taskforce assumes an "OR" relationship between them.

8. If a query includes "change-based" filters and standard filters, Digital Taskforce assumes an "AND" relationship between them.

9. Any events using a change-based query <u>must</u> have the "repeat" function ("Repeat Notification for Triggered Items") turned <u>on</u>.

10. When you **Preview** a query, the "change" logic is ignored.

11. If a query uses "If Column Value Has Changed", the corresponding button at the bottom of the Filters tab will appear <u>underlined</u>.

12. The ability to identify when a field has had its value changed is possible only for tables that have single-field unique values. If a table uses a multi-field unique, please use the Digital Taskforce Linking Function (KLF) to concatenate those values to create a single field unique.

Selecting a "Changed" Field

To create a filter that checks to see if a value has changed, go to the Filters tab and click on "**If Column Values Have Changed . . .** ". You'll see the following:
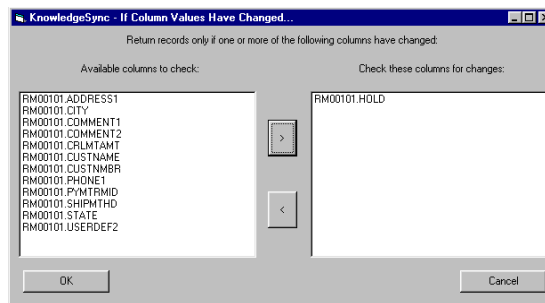
**CHECKING A FIELD TO SEE IF ITS
VALUE HAS CHANGED**

Only the columns from the query's primary database table are displayed. To select a field(s), highlight the field from the column on the left and click on the right-arrow button to move it to the column on the right.

Once you are done selecting "change" fields, click on **OK**.

You may add additional filters, including a filter on the <u>current</u> value of your "change field" to check for records whose content has changed <u>to</u> a specific value.

Storing & Reporting On "Changed" Values

To store the history of when a "changed value" event has been triggered, it is suggested that you use the "Create File" action to create an audit trail. This lets you store the details of what records were changed, when they were changed, and what the old and new values for the change are.

Operator Notes

Of Digital Taskforce's 10 operators, five require a few additional notes.

Operator: "One Of"

The "one of" operator lets you 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 priority of 'A' **or** 'B, **or** 'C'.*

The corresponding query would have one filter that checks if a call is "open" and a second filter (using "one of") that checks for any one of the three priority codes.

To use the "one of" operator:

- Select "one of" from the operator list.

- Click in the "Compare Value" field and click on the list button.

- Remove the '?' as a compare value.

- Either type in the individual compare values (pressing 'Enter' after each entry), or choose the compare values from the drop-down list.

- Click on "OK" when complete

The "one of" operator may not be parameter-driven.

Operator: "Between"

ECi Software Solutions suggests that you use the combination of the "greater than or equal to" and "less than or equal to" operators in place of the "between" operator wherever possible.

The "between" operator may **not** be parameter-driven.

Operator: "Starting With"

The "starting with" operator lets you locate any database records that have a field whose value **starts with** a certain string of letters, numbers, and/or symbols.

To use the "starting with" operator, follow these steps:

- Select "starting with" from the operator list.

- Click in the "Compare Value" field and type in the first few characters of the string that you wish to use for matching purposes.

The "starting with" operator may be parameter-driven.

Operator: "Like"

"Like" is similar to "starting with" except that it lets you locate records that have a field whose value **contains** a certain string of letters, numbers, and/or symbols.

 "*Starting with '*brit*'*" will retrieve "Britain" and "Britannia" but not "New Britain".
"*Like '*brit*'*" will retrieve all three values.

To use the "like" operator, follow these steps:

- Select "like" from the operator list.

- Enclose the text you are searching for within percent signs, as in "%brit%".

The "like" operator may be parameter-driven.

Operator: "Null"

You might find the need to check to see if a field's value is blank. But remember that a blank value in a database field can be either **blank** or **null**.

To test a field for a blank value, leave the compare value field blank. To test a field for a null value, follow these steps:

- Select "null" from the operator list.

- Blank out any value in the compare value field.

If you are not sure how an application identifies an "empty" field, you might want to create a query with two filters – one that tests for blank, and one that tests for "null".

Using Calculated Fields in Filters

To create a filter that tests the value of a calculated field, click on "Add Calculated Column to Filter". For example, to create a filter that tests an opportunity's weighted value, you would:

- Click on the "Add Calculated Column to Filter" button.

- Select the column that contains the opportunity's forecast amount.

- In the workbox area, type in an asterisk (*) after your selected field name.

- Select the field that contains the opportunity's probability of closing.

- Click on OK to return to the main Filters tab and you can continue to specify the operator and compare value just like any other filter.

The following is an example of the Calculated Column Editor window:
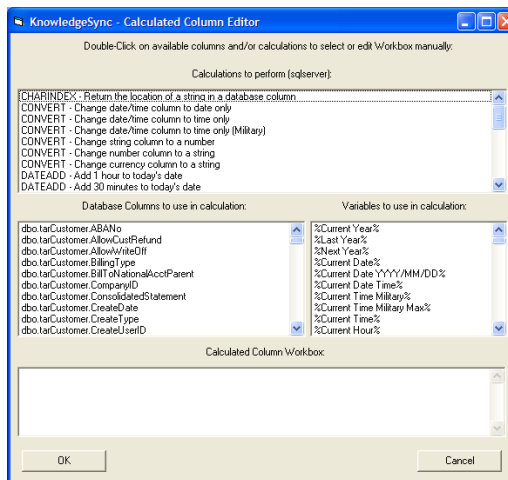
CALCULATED COLUMN EDITOR

And the following is how a calculated field appears in the Filters tab:
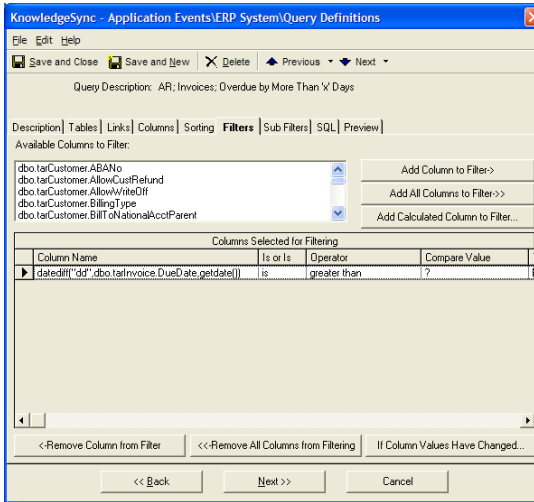
USING A CALCULATED FIELD IN A FILTER

Calculated fields can be used in **both** the <u>column name</u> field and in the <u>compare value</u> field. Calculated fields may also be parameter-driven.

You can access the Calculated Column Editor for an existing filter by clicking in the "Column Name" field and clicking on the Edit Button that appears there.

And/Or ("Boolean") Logic

Consider the following:

Retrieve orders for 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. Here are the steps required to create this:

- Create the four filters that the query will need:

- Orders greater than $99

- Freight charges less than $5

- Freight charges less than $5

- Orders shipping via Fedex

- Filter #1 has an "and" (to link the first two conditions).

- Filter #2 has an "or" (to separate the first two conditions from the last two)

- Filter #3 has an "and" (to link the last two conditions)

- Click in the "Column Name" field of filter #1 and place a left parentheses in front of the column name.

- Click in the "Compare Value of filter #2 and place a right parentheses after the compare value.

- Click in the "Column Name" field of filter #3 and place a left parentheses in front of the column name.

- **If the compare value is a character or date,** click in the "Compare Value of filter #4, place single quotation marks around the compare value, and change the "Data Type" value for the fourth filter to "Literal.".

  (If the compare value is numeric, you do not need to do this step.)

- Place a right parentheses at the end of the compare value

Your filters tab will look like the following:
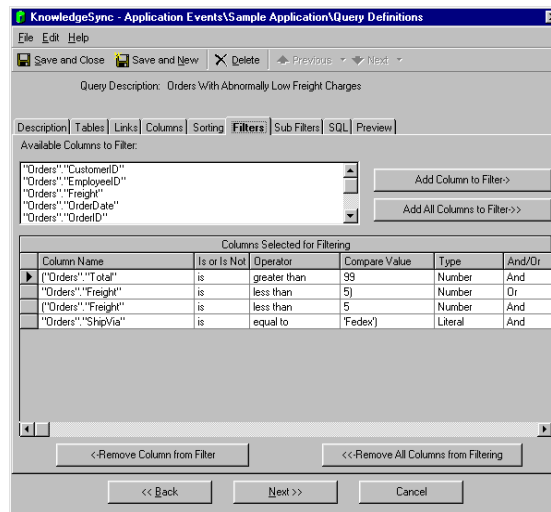
A QUERY WITH "GROUPED" FILTERS

If the last filter in a group is testing the value of a character or date field, you must enclose the compare value in single quotes change the data type to "Literal."

If the last filter is testing the value of a numeric field, your tab would look like this:
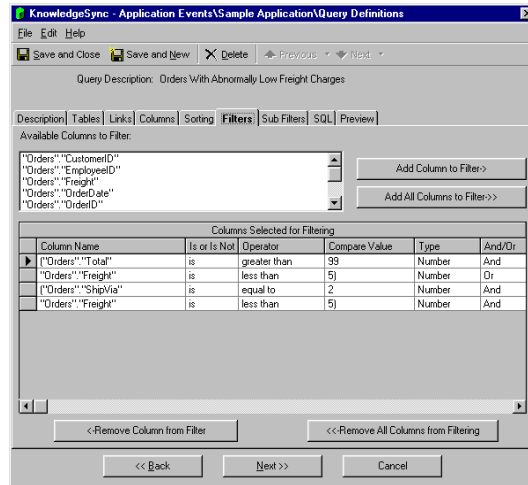
"GROUPED" FILTERS II

Sub-Filters

Sub-filters are not used with record-level or data-change queries; they are used only with aggregate queries and will be discussed in the section on aggregates.

Query SQL

Digital Taskforce Technical Support **does not** support manually-edited SQL.

The "SQL" tab lets you review the SQL syntax that a query is executing. There is rarely (if ever) the need to make direct changes to a query's SQL. Once you start manually editing query SQL, all subsequent changes to the query must be done through the SQL tab.

If you wish to manually edit the SQL, place a checkmark in "I would like to manually edit the SQL for this query" box. It is essential that you select all needed columns for a query and identify the query's unique column before you edit the SQL.
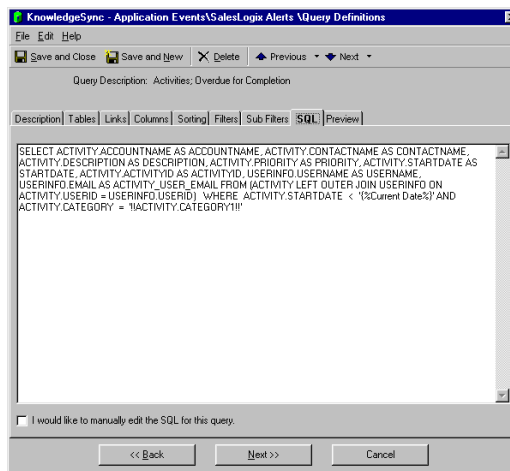
QUERY "SQL" TAB

Once you manually edit the SQL syntax, any modifications that you make to any of the other query definitions tabs will **not** be retained.

If you edit a query's SQL and then de-select the manual editing option, the query will re-constitute the SQL syntax based on the content from the other query tabs.

Using a Stored Procedure in a Query

To use a stored procedure instead of a Digital Taskforce query, follow these steps:

➢   Place a checkmark in the "I would like to manually edit the SQL for this query" box.

➢   Type in the procedure name, as in "dbo.myprocedurename"

➢   To pass parameters into your procedure, use the following syntax:

"dbo.myprocedurename param1,param2,param3"

(Parameters that are string values must be enclosed by apostrophe symbols.)

Digital Taskforce Technical Support is not responsible for debugging problems in custom stored procedures used in this manner.

Preview

The Preview tab lets you verify that your query is running as you wish it to.

Hint: Don't 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 criteria.

When you click on "Preview", Digital Taskforce will return any records that meet your query's criteria. If the preview tab is blank (containing no records), it means that no records met your criteria. When Preview mode returns matching records, it will appear similar to the following:

QUERY "PREVIEW" TAB

If you receive an error message when previewing, it means that Digital Taskforce was not able to successfully execute your query. The most common reasons for this are:

- The ODBC source for this application was not correctly configured

- Multiple tables for this query were not correctly linked

- Your query includes calculated fields that contain invalid SQL syntax

- You have specified an invalid customized name for a query column

- You have specified an invalid filter

- You have edited the underlying SQL and introduced a syntax error

- You have referenced a SQL function not supported by your ODBC driver

If your query includes parameter-driven filters, you will be prompted to enter corresponding values; if the filter requires date values, you will be able to choose from Digital Taskforce's date substitution variables.

Saving a Query

To save your query, click on the "Save and Close" button. To save a query and begin immediately working on a new query, click on the "Save and New" button.

Copying a Query

To copy one query to another, follow these steps:

- Open the Event Manager module (not Navigator), expand the application that contains the query you wish to copy, locate the query and highlight it.

- Go to the "Edit" menu and select "Copy."

- Go to the "Edit" menu again and select "Paste."

- A duplicate of the query will now appear in the query list. Go into either of the two (identical) queries and modify it as needed – and don't forget to change the query's description!

Deleting a Query

Before deleting a query, make sure that no events use it. If you delete a query that is linked to an event, the event will fail to execute successfully. To delete a query:

- Open the Event Manager module (not the Navigator), expand the application that contains the query you wish to delete, locate the query and highlight it.

- Click on the "Delete" button at the top of your window.

- (You may also delete a query by going into the query you wish to delete and clicking on the "Delete" button at the top of your window.)

Note that there is no "Undo" option once you have deleted a query.

Scrolling Through Your List of Queries

In some instances, you might need to scroll sequentially through a list of queries. Once you have selected and worked with your first query, click on the "Previous" or "Next" buttons to view another query.

Aggregate Queries

Aggregate queries are queries that are triggered by a group of records that collectively meet a certain condition. For example:

- More than 10 open service calls with a priority of "critical"

- Fewer than 5 scheduled activities per salesrep next week

- Clients who have purchased more than $50,000

Aggregate queries do not retrieve "details" about individual records; instead, aggregates are triggered by the aggregate condition being met. For example:

- An aggregate query that triggers if there are more than 10 open service calls would trigger and retrieve the number "12" if there were 12 open support calls.

- An aggregate query that triggers if there are any salesreps with fewer than five scheduled activities next week would trigger and retrieve "Smith 4", "Jones 1", and "Davidson 3" if those reps had that number of activities.

Aggregate queries can not use "change-based" filtering.

The Results of an Aggregate Query

The results of an aggregate query look different from the results of a record-level query because an aggregate query does not display record-level details.

Here are some samples of output that you might see from an aggregate query.

- **Query**: "More Than 5 Orders Today Over $10,000"

    Result: "**17**" (the number of orders today over $10,000)

- **Query**: "More Than 5 Orders Per Region Today Over $10,000"

    Result: "**6   Northwest**"

                     "**7   Southeast**"

                     "**26   Southwest**"

- **Query**: "More Than 5 Orders Per Region & Rep Today Over $10,000"

    Result: "**7   Southwest"   Karen Chavez**"

                     "**11   Southwest"   Mark Davidson**"

                     "**8   Southwest"   John Langley**"

Aggregate Query Configuration

Please read through 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.

Aggregate Query Naming

(See "Query Naming", earlier.)

Aggregate Query Tables

(See "Tables", earlier.)

Links

(See "Links", earlier.)

Aggregate Query Columns

An aggregate query's columns are selected based on the following three criteria:

- The field that the aggregate function will be performed on
- The "group by" field(s)
- Other fields to appear in the alert message, fields that contain an alert recipient's address, or fields that will be used in workflow

Aggregate Functions

There are five aggregate functions:

- Summarize
- Average
- Count
- Maximum
- Minimum

Summarize

The "summarize" function lets you accumulate (or total) the amounts in a numeric field, for example:

- The sum of sales received today
- The sum of minutes spent on high priority support calls
- The sum of a particular item sold this month

Average

The "average" function lets you derive the numeric average for a field, such as:

- The average sale price this week

- The average length of a support call in minutes

- The average percent of damaged received goods

Count

The "count" function lets you count the number of records that meet certain conditions, such as:

- The count of overdue invoices per client

- The count of activities scheduled per rep today

- The count of current backorders for a specific stock item

Maximum & Minimum

The "maximum" and "minimum" functions let you identify the maximum or minimum values for a field. This function is for such things as:

- The maximum sale closed last week

- The minimum order quantity this week

- The most recent contact date for a client

Aggregate Grouping

When you consider an aggregate query, you need to consider not only what you want to perform the aggregate upon (e.g., total all sales) but whether you wish to "group" the results of that aggregate (e.g., total all sales, grouped by salesrep).

The ability to create aggregates that group is one of the most powerful aspects of aggregate queries. Consider how you can take an ordinary aggregate query such as "total sales" and create the following by adding one or more "group by" fields:

- Total sales by salesrep

- 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 aggregate functions support grouping, but grouping is most commonly used in "summarize", "average", and "count" aggregate queries.

How to Configure

To select columns for a "summarize", "average", or "min/max" query, follow these steps:

- Go to the list titled "Available Columns to Query"

- Select the field you wish to perform the aggregate function upon. The aggregate column should always be the first column selected.

- Click next to the word "Normal" in the Column Type field. Display the drop-down list and select "Summarize", "Average", "Maximum", or "Minimum".

- Change the customized name to reflect that this field contains an aggregate total (e.g., "amount_total" or "amount_avg").

  (Do **not** put the aggregate function name at the start of a customized name (e.g., "total_amount", "avg_amount") as many databases do not allow this.)

- Go back to the list of available columns and select your "group by" fields.

Your finished result may look similar to the following examples:
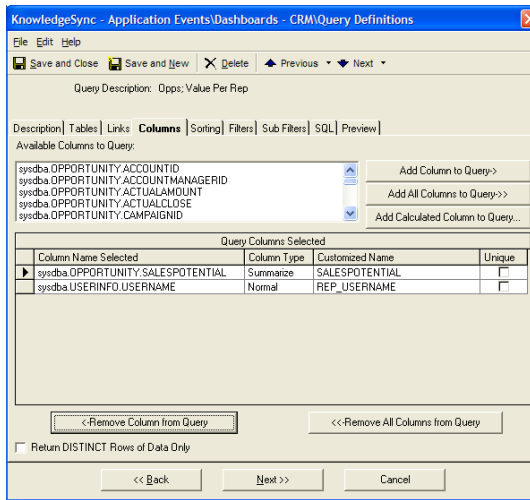
AGGREGATE "SUMMARIZE" FUNCTION:
TOTAL SALES PER SALESPERSON
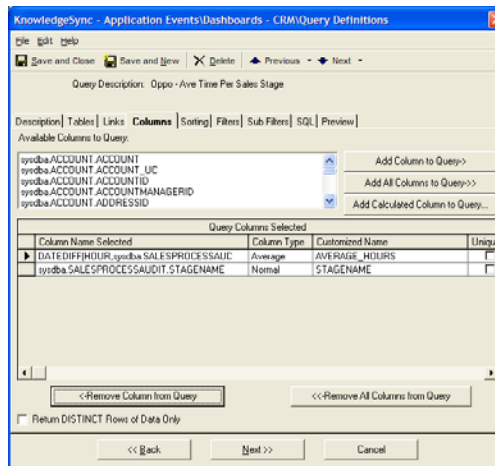
AGGREGATE "AVERAGE" FUNCTION:
AVERAGE TIME PER SALES STAGE

The "Count" Function

To create an aggregate "count" query, do the following:

- Choose the unique column for the table whose records you wish to count

- Click next to the word "Normal" in the Column Type field and select "Count."

- Change the "Customized Name" as appropriate

- Select your "group by" fields

Your result will look similar to the following:
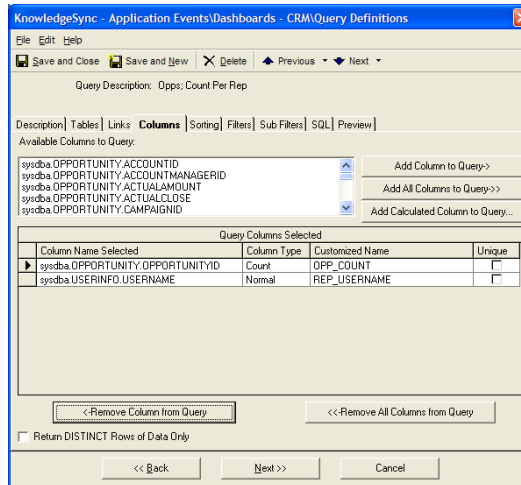
AGGREGATE "COUNT" FUNCTION:
NUMBER OF SALES PER SALESREP

Additional Column Selections

Here are a few hints for choosing additional columns in your aggregate query:

- Make your "group by" field as informative as possible. For example, to display total sales per salesrep, do not make your "group by" field the salesrep's ID, but rather the salesrep's full name.

- To _send_ the results of a query to the individuals that are identified _within_ the query, include the column that contains the delivery address that the alert will be sent to (e.g., a salesrep's e-mail address).

- A query can have multiple aggregate fields. E.g., a query could count the number of orders last month and show the total of those orders by using both the "count" and "summarize" functions.

The "Unique" Field

The "Unique" field does not apply to aggregate queries; you may skip specifying a unique column for an aggregate query.

Aggregates and Calculated Fields

Calculated fields may be used with aggregate queries in the same manner that they are used with record-level queries. For example you could create a column that uses a calculation to identify the weighted value of sales opportunities and then use the "summarize" function total that value.

Sorting

(See "Sorting", earlier.)

Filters

Aggregate queries use filters to determine which records are to be included in the aggregate calculation. For example, a query that checks to see if there are more than 6 open, high-priority support calls uses filters to limit the potential records to only those calls that are open and have a high priority.

In this regard, filters for aggregate queries are handled in the same manner as filters for record-level queries.

Aggregate queries cannot use the "If Column Values Have Changed" function.

Sub-Filters

In an aggregate query that checks to see if there are more than 6 open, high-priority support calls, the sub-filter is what checks to see if the number of matching records exceeds 6 (open calls).

In other words, a sub-filter is what lets you perform a test on the aggregate result. The following queries have their sub-filters highlighted:

- Total sales of _less than $10,000_ per region

- Average discount percent of _more than 15%_

- _More than 10_ open support calls per agent

Sub-filters are used only in aggregate queries and are configured as follows:

- Click on the "Sub-Filters" tab.

- **Column Name**. From the list of "Available Columns to Filter" select the aggregate column you created earlier.

- **"Is" or "Is Not"**. Defaults to "is"; click and choose "is not" to change.

- **Operator**. See "Operator Notes" earlier for details.

- **Compare Value**. Specify a constant value, a database field name, a date substitution value, or the question mark. (See earlier in chapter for details.)

- **Type**. The type of data the aggregate column contains. Leave with its default unless comparing against another database field or calculated value (use 'literal'

- **"And / Or"**. Since a query can include multiple sub-filters, this gives you the ability to specify "and/or" logic in the sequence of your sub-filters.

- **Optional Prompt**. Used only with a sub-filter that is parameter driven (has a '?' in the Compare Value field). See the section titled "Parameter-Driven Filters" for details.)
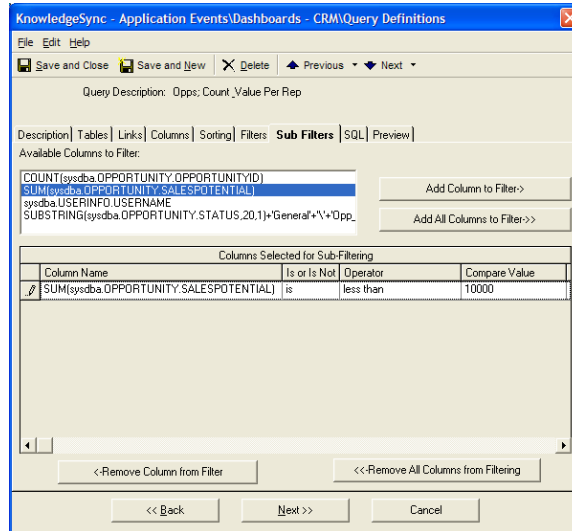
AGGREGATE QUERY SUB-FILTERS

Aggregate SQL

(See "Query SQL", earlier.)

Preview (for Aggregate Queries)

Previewing an aggregate query is the same manner as for a record-level query. This Preview shows results from a query that counts the number of open support calls:

AGGREGATE QUERY PREVIEW MODE

Linked Queries

A single event can use multiple queries. Consider the following three examples:

- Check to see if the forecast sales for next quarter is more than $300,000 **_and_** if the count of pending sales of at least $20,000 is more than 10.
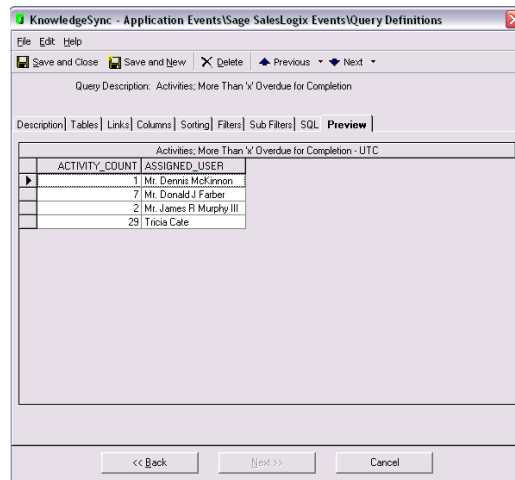
- Check to see if a client has purchased less than $5,000 over the last six months, and has also called into support more than 25 times.

- Check to see 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 each.

The first example requires no "linking" between the queries, because the result sets have no data in common with each other. In such cases, you simply create each query independently and associate both queries with a single event.

(When multiple queries are associated with an event, Digital Taskforce automatically assumes an "and" correlation between them.)

In the second and third examples, however, the queries must be **linked** to each other because the result sets do have data in common – the "client". This requires additional query design considerations.

Note that data-change queries cannot be linked to any other queries.

How Queries are Linked

If you determine that you need two queries to identify whether a business condition exists, the first thing to decide is whether the queries will have some data in common with each other. Consider an example given previously:

Check to see if a client has purchased less than $5,000 over the last six months, and has also called into support more than 25 times.

This scenario requires one aggregate query to "sum" a client's sales, and a second aggregate query to "count" the client's number of support calls.

What makes this scenario unique is that both queries need to retrieve their results for the same client – and the "client" is referred to as the "linking field". Here's how to "link" these queries:

- Decide which query will go first and which will go second.

- Design query #1 (e.g., "Clients Purchasing > $5k")

- Go to the "Columns" tab of query #1 and make sure that you include the linking field that is "in common" with query #2. (E.g., the "client ID" field)

- Modify the **Customized Name** of the linking field (e.g., "client_link").

- That is all you need to do on query #1.

Design the "Link to" Query

The second query should have a name that states that it is a "link to" query, such as "Clients with > 25 Support Calls (Link To)". Design this query as per its requirements and then (to create the link with query #1) follow these steps:

- Go to the "Filters" tab of query #2

- Add a filter on the linking field (e.g., the "Client ID" field).

- Select an operator of "is equal to".

- In the Compare Value field, key in (within curly braces) the customized name of the linking field from query #1 --{client_link}.

- That's all there is to it.

By designing your "link to" query in this manner, it will automatically retrieve records for the same client as query #1. The following is an example of this:
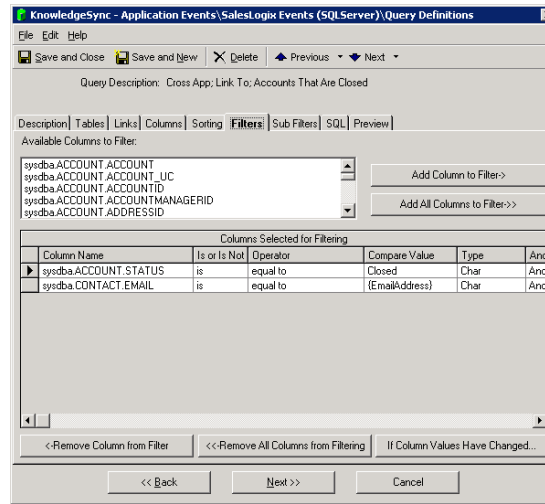
"LINK TO" QUERY FILTER SYNTAX

Query Linking Notes

Please make note of the following:

- A "link to" query will execute successfully **only** if it follows a preceding query containing the appropriate customized name. Do **not** use this query stand-alone in an event; it will not execute successfully.

- You can have up to 99 linked queries in a single event.

- A link-to query should not use a "group by" value. For example, if the link-to query "counts" the number of activities for a specific client, the query should have only a single column (the field to be counted) and the filter will perform the linking function.

- The link-to query cannot be used to retrieve "advanced" subscriber information. This information must be retrieved by the initial query.

- You can link queries from the same application or from different applications; the technique is the same (identify a "linking field".)
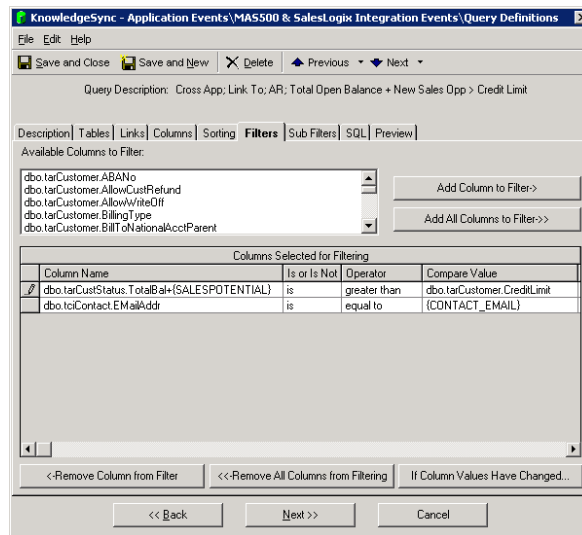
Data Manipulation Between Linked Queries

One of the special benefits of linking queries is that it enables you to use data from query #1 in query #2. Consider the following example:

When a new sales opportunity is placed in a CRM application, you want to take the value of that opportunity, add it to the client's current balance in a Financial application, and then see if that total is greater than the client's credit limit.

When you link queries together, data from the first query can be used in the second query in the following places:

➢ In the "Columns" tab. You can create calculated columns in your second query that utilize data from the first query.

➢ In the "Filters" and "Sub-Filters" tabs. You can create filters and sub-filters in your second query in which the filter column or the filter "compare value" utilize data from the first query.

The following is an illustration of the example detailed above:

DATA MANIPULATION BETWEEN LINKED QUERIES

The only rule you need to obey is that in order to refer to a field from a previous query, it needs to be referred using its customized name enclosed with curly braces.

Note also that when an event uses multiple queries, all of the data fields (from all the queries) are available to be used in the event's alert messages, as report selection criteria, and is available to be used in the event's workflow.

Database Triggers

In addition to using queries to identify database conditions, Digital Taskforce supports the use of database triggers (which are embedded within external applications) as a means to know when records are added, changed, or (in particular) deleted.

To get examples of database triggers and their integration with queries and events contact e-automate Customer Care at eaCustomerCare@ecisolutions.com.

CHAPTER 5

Subscriber Maintenance

Event Subscribers

A subscriber is a person who is eligible to receive information and/or alerts from Digital Taskforce. Subscribers may receive notifications via e-mail, fax, page, PDA, phone, web browser, screen pop, FTP (copied files), Instant Message, and Twitter (Tweet).

Subscribers can be set-up within Digital Taskforce, they can be imported from external applications, or they can be linked from any external applications to Digital Taskforce.

Who Can Be a Subscriber?

Although alerts are most typically sent to internal employees, Digital Taskforce can send alerts beyond the borders of a single organization, to include such people as business partners, vendors and/or suppliers, customers, and prospects.

It is important as you configure Digital Taskforce subscribers that you consider the types of events that you will be configuring within Digital Taskforce and who the potential recipients of those events will include.

Using Digital Taskforce for Target Marketing

Since Digital Taskforce sends alerts to customers and prospects just as it can notify employees, consider using Digital Taskforce for direct marketing efforts.

Consider the following scenarios:

- Notify a client when they are within 'x' dollars of a bonus program

- Notify a prospect about a limited-time offer about to expire

- Notify all clients using product 'x' about a new add-on module 'y'

These are all examples of events whose purpose is to keep clients and prospects better informed about marketing-related activities within your organization.

Designating a Computer as a Subscriber

In addition to setting up people as subscribers, Digital Taskforce also allows you to designate that computers as recipients of information when an event is triggered.

Using the FTP ("copy") delivery method, you can instruct Digital Taskforce 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 may wish to categorize subscribers according to similar areas of work. This is done through "subscriber groups." For example, you might create such groups as:

- Engineering
- Customer Service
- Executives
- Sales
- Clients in the State of California
- Prospects

There is no limit to the number of subscriber groups; so you can you create "nested" groups of subscribers such as:

- Engineering
- Development
- New Products
- Maintenance
- Quality Assurance
- Documentation

Using subscriber groups, you can configure an event to alert all the members of one or more groups. Note that a single event can send alerts to any combination of individual subscribers and groups of subscribers.

Alert Methods & Addresses

Each subscriber can be configured to receive alerts via up to five different methods:

- E-Mail
- Fax
- Pager
- FTP (called "Copy")
- Web Dashboard (called "webcast")
- Instant Message

Alerts may also be sent via PDAs, cellular phones, "screen pop", and Twitter.

Each subscriber may have up to two (2) delivery addresses per delivery method:

The reason for the two addresses per method is to allow a subscriber to have different delivery addresses _based on the time of day and day of the week_.

For example, an employee named John Smith of "Acme Inc" may wish to receive e-mail alerts at smith@acme.com if an alert happens between 8 AM and 5 PM on Monday through Friday, but he may wish to receive e-mail alerts at jwsmith@hotmail.net if an alert happens outside of those days and hours.

Dashboard Alerts (Webcasting)

Dashboard alerts (or "webcasting") is the ability to generate web pages containing alert information. This component requires its own configuration and set-up and is detailed in a separate chapter.

Twitter Alerts (Tweets)

Twitter alerts (tweets) are not associated with specific users, and thus do not have a specific subscription tab associated to it. Tweets are instead configured from the "Actions" tab of an event.

Subscriber Entry Methods: Overview

There are three ways that subscribers can be configured:

- Manual entry
- Subscriber import
- Subscriber linking

If an organization already has subscriber data residing in one or more ODBC-compliant database tables, you can import that data into the subscriber database. Imported data typically includes a subscriber's name and "delivery addresses". Data can be imported from the Active Directory; see the section of this chapter titled "Connecting to the Active Directory"..

Subscriber "Linking" is similar to importing, except that instead of transferring the data from an external application into Digital Taskforce, "linking" allows Digital Taskforce to directly read subscriber details from a table in another database.

Subscriber linking ensures that Digital Taskforce will always has the most up-to-date subscriber data.

Preparation

If you are entering some (or all) subscribers manually, gather the following information for each subscriber you wish to set up:

- Subscriber's name, company name, and title
- Subscriber's primary and secondary e-mail, fax, pager, instant message and FTP addresses
- The days of the week (and hours of the day) when the subscriber will receive alerts via their primary and secondary addresses.

If you are configuring subscriber records via Import/Link, to do the following:

- Make sure that the database that includes the subscriber data is defined as an "application" within Digital Taskforce.
- Identify the fields in the external table containing the subscriber's name, company, title, and primary and secondary e-mail, fax, pager, FTP addresses
- Identify the days of the week (and hours of the day) when the subscriber will receive alerts via their primary and secondary addresses
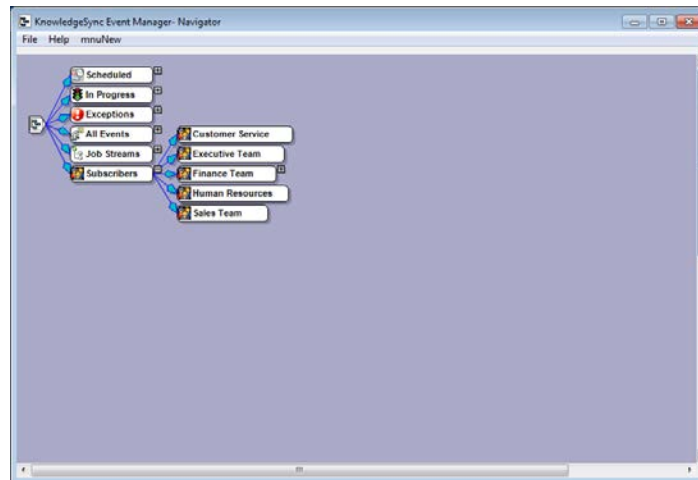
Subscriber Maintenance

Log into the Navigator and expand the branch called "Subscribers" to display the list of pre-configured subscriber groups.

"SUBSCRIBERS" BRANCHES

Group Maintenance

If you are importing and/or linking subscribers, please note that each "import" or "link" must be associated with a unique group.

To add a subscriber group, follow these steps:

- ➢ Right-click on the "Subscribers" branch.

- ➢ Select "New User Subscriber Group".

- ➢ Key in a description of the new group you are creating and click on "OK".

Changing a Group's Name

To change the name of a subscriber group, follow these steps:

- ➢ Display the subscriber group branch whose name you wish to change.

- ➢ Right-click on that group and select "Properties".

- ➢ Change the group's name and click on "OK".

Deleting a Group

Before deleting a group, make sure that no events are configured to send alerts to anyone within that group, or to the group as a whole.

To delete a subscriber group, follow these steps:

- ➢ Open the Event Manager (not Navigator) module.

> ➢ Single-click on the subscriber group branch which you wish to delete.

> ➢ At the top of the Event Manager window, click on the "Delete" button.

Note that if a group is using subscriber linking, you must remove the link before you can delete the corresponding group.

Manually Entering Subscribers

To add a subscriber, follow these steps:

> ➢ In the Navigator, expand the "Subscribers" branch and navigate to the group to which you wish to add the subscriber.

> ➢ Right-click on that group and select "New User".

SUBSCRIBER DESCRIPTION

Fill in the user's name, company, title, and related info. If this user is able to be selected as an alert recipient, click on the "Active" checkbox. **Make sure that the "<u>Full Name</u>" has a value, as this is displayed elsewhere in the application.**

If the subscriber is a computer, fill in the name, description, and IP address.

See the following section for details on the use of the "User Lookup Key" field.

Key in the address information (e-mail, fax, pager, copy, and webcast) for the subscriber. Note that if you enter a primary delivery address and press your tab key, the primary address will automatically be copied into the secondary address field.
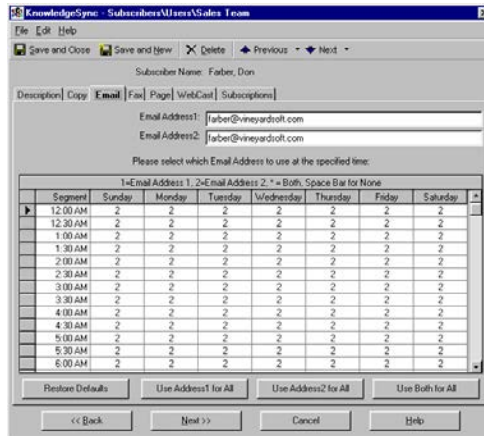
SUBSCRIBER "E-MAIL" TAB

Note the grid in each of the "address" tabs; this is where you specify which address (primary, secondary, both, or none) will be used based upon the time of day and day of the week when an alert occurs. Notice that the grid **scrolls down**.

The grid is in 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).

Click on the "Save and Close" button at the top-left of your window.

The "User Lookup Key" Field

Consider the following scenario:

You have a help desk application that tracks calls assigned to reps. Each rep is identified by a unique ID; however the help desk application does not store the rep's e-mail address.

When an alert is triggered, Digital Taskforce needs to look at the triggered record, use the rep's ID to look up the corresponding subscriber record, and then send the alert to the address specified in that record.

Thus the "User Lookup Key" can be used as a way to link a user's "ID" in an application with a specific subscriber record in Digital Taskforce.

Copy/FTP Notes

The "copy" method (FTP) method lets Digital Taskforce move files and Crystal Reports to specific locations (disks and directories).
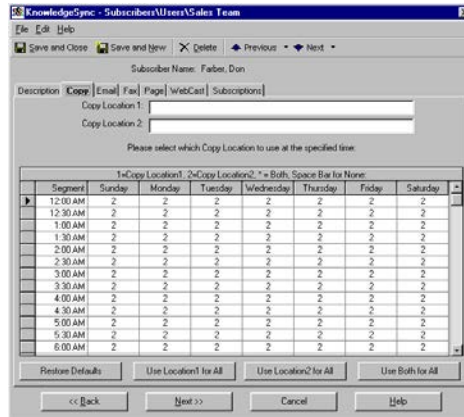
SUBSCRIBER "COPY" TAB

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. Do not reference any mapped drives in
your location specifications.

Paging Notes

Digital Taskforce also supports SMS paging and text messaging; see chapter 3 for more details.

Before you configure a subscriber to receive alerts via pager, configure Digital Taskforce's integration
with the various paging services that your organization uses. This information is defined in the
Administration module, under the option for "Software Setup → Paging Services."

Note that many paging vendors allow messages to be sent via e-mail. Digital Taskforce supports both
methods for sending alerts via pager.

Once you have defined your paging services, you may then configure a subscriber's paging record as
shown below:
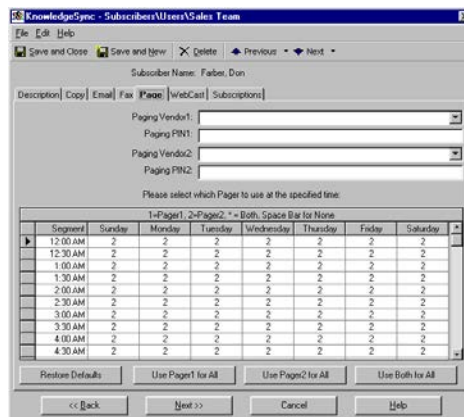
SUBSCRIBER "PAGE" TAB

Instant Message Notes

Before you configure a subscriber to receive alerts via instant message, configure Digital Taskforce's integration with the various instant messaging services that your organization uses. This information is defined in the Administration module, under the option for "Software Setup → IM Accounts."

Once you have defined your instant messaging services, you may then configure a subscriber's Instant Message record as shown below:

SUBSCRIBER "INSTANT MESSAGE" TAB

The "Subscriptions" Tab

The "Subscriptions" tab is an read-only listing of all the events that a subscriber is currently signed-up to receive alerts about.

Creating a Template Subscriber Record

When manually entering subscriber records, it is suggested that you create a subscriber template and then copy that template for each user you wish to add.

To create a template, simply add a new subscriber and give it a name such as "User Template." Modify the fields to reflect the common values that should be used in all new users, and then save that record.

The next time you need to create a new subscriber, simply **copy** that template instead of clicking on the "New User" button. (See "Copying Subscribers".)

Copying Subscribers

To copy a subscriber record, follow these steps:

➢ Open the Event Manager (not Navigator) module.

➢ Expand the group that contains the subscriber you wish to copy.

➢ Highlight (single-click on) the subscriber you wish to copy.

> ➢ Go to the "Edit" menu and select "Copy."

> ➢ Go to the "Edit" menu again and select "Paste."

> ➢ A duplicate of the subscriber will now appear. Go into either of the two subscribers and modify it as needed.

Deleting Subscribers

Before deleting a subscriber, make sure there are no events that send alerts to them. To delete a subscriber:

- ■ Select the subscriber you wish to delete and click on the "Delete" button.

Note that there is no "Undo" option once you have deleted a subscriber.

Importing / Linking Subscribers

The configurations for importing or linking subscribers in Digital Taskforce are very similar; the only difference is that the import option transfers data from an external application into Digital Taskforce, and the link option creates a "live link" between subscriber data in an external application and Digital Taskforce.

If you have the option to choose one method versus the other, choose the "linking" option, as it is dynamic, and does not store the same data in two locations.

Create the Import/Link Query

In order to import/link subscriber data, you need to first create a Digital Taskforce query to retrieve that data. The data that you should retrieve (if available) includes:

- 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, and pager service TAP number and PIN. And instant message provider and addresses.

Your query should be designed just like any normal, record-level query; typically it retrieves data from just one table that contains subscriber data. It may (or may not) include filters, and it must have a "unique" column identified.

Create the Import/Link Group

For each group of subscribers that you will be importing or linking to, you should create a subscriber group (e.g., "ERP Users").

Note that an import/link subscriber may also contain manually added subscribers.

Access the Import/Link Function

Follow these steps:

➢ Locate the group that will contain the imported/linked subscribers.

➢ Right-click on the group and select "Properties".

➢ Click on the "Subscriber Linking" button.
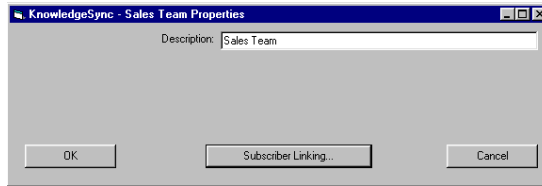
SUBSCRIBER "LINKING" OPTION

Choose the Import/Link Query

➢ Click on the "Select Query" button. You are shown a list of applications in Digital Taskforce; choose the one that contains the query you designed earlier.

➢ Select the query you designed to retrieve subscriber data.

➢ The left side of the window displays the subscriber data fields. The right side lets you choose which fields will be mapped from the related query to fields within Digital Taskforce.

Go to the row that contains the field you wish to map data to, click in "Linked to Database Field", and use the down-arrow to list the fields from the associated query. Choose the query field whose value you wish to map. Click on OK when done.

Note that the same query field may be mapped to multiple fields within the subscriber database.
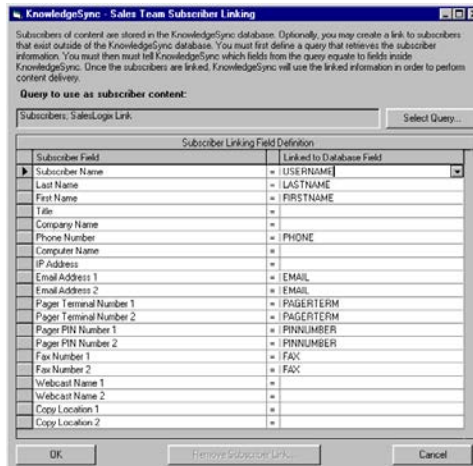
SUBSCRIBER "LINKING" FIELD MAPPING

The "<u>Full Name</u>" field must have a value mapped to it.

When you save this information, Digital Taskforce executes the import/link and retrieves the corresponding subscriber records from your external database. These records are displayed on the list on the right-side of your window.

Choose "Link" or "Import"

Once you finish mapping your fields and save your work, Digital Taskforce assumes that these subscribers will continue to be retrieved via a dynamic link.

This means that Digital Taskforce has not (as yet) imported this data, but rather is reading it dynamically out of an external database. You may leave this link intact or you may change it to an "import" where this subscriber data is actually written into the Digital Taskforce database.

Note that imported subscriber data may be maintained within Digital Taskforce; linked subscriber data may <u>not</u> be maintained within Digital Taskforce.

To change it into an import, take the following steps:

➢ Locate the subscriber group for which you wish to disable linking.

➢ Right-click on the group and select "Properties".

➢ Click on the "Subscriber Linking" button.

➢ Click on the "Remove Subscriber Link" button.
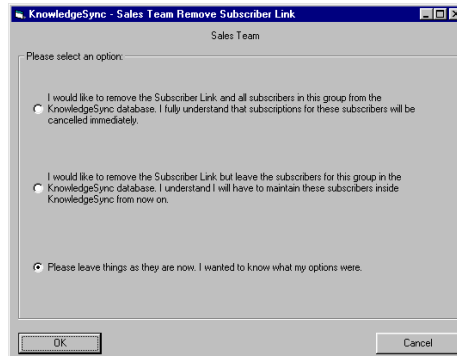
SUBSCRIBER "LINKING" OPTIONS

Click on the **second** option ("I would like to remove the subscriber link but leave the subscribers for this group in the Digital Taskforce database.")

Click on "OK". The "link" will be removed and the subscriber data retained.

You must **save** your subscriber link before removing it.

Removing a Subscriber Link

When you remove a subscriber link, you may retain the details of individual subscribers, or you may remove both the link and subscriber details. To remove both the link and the related subscriber data, follow these steps:

➢ Right-click on the linked subscriber group and select "Properties".

- ➢ Click on the "Subscriber Linking" button.

- ➢ Click on the "Remove Subscriber Link" button.

- ➢ Click on the **first** option ("*I would like to remove the subscriber link and all subscribers in this group from the Digital Taskforce database.*")

Editing Imported/Linked Subscribers

If you import subscribers (i.e., remove the link but retain the subscribers), you will be able to edit and modify those subscriber records. If you create a group of linked subscribers, however, only the grids of alert hours and days will be available for editing.

Intelligent Subscriber Groups

One of the benefits of creating subscriber groups using queries is that you can create "intelligent" groups of subscribers. For example:

- Clients in the state of California

- Prospects in the banking industry

- Suppliers who have pending backorders

All of these groups utilize queries that retrieve a specific sub-set of records.

Connecting to the Active Directory

It's possible to have Digital Taskforce read users from the Active Directory. If you are interested in doing this, you will need an extra "connection license" to make use of this option; please contact your account manager.

To connect a Digital Taskforce subscriber group to the Active Directory, please follow these steps:

- ■ Create a Microsoft Access database that links to a Microsoft Outlook folder which contains all recipients on an Exchange server in a domain.

- ■ Create an ODBC "system" source that points at the above database.

- ■ Create an application in Digital Taskforce called "Exchange Users". Use the MS Access ODBC source created in the previous step as the "properties" for this application.

- ■ Create a query that retrieves the Active Directory user information from this database.

- ■ Create a subscriber group called "Exchange Users".

- ■ Configure this group to use the "Subscriber Linking" function detailed earlier in this chapter to retrieve and display the list of Active Directory users from within Digital Taskforce.

CHAPTER 6

Event Designing

An event checks to see if certain conditions exist and (if so), the event executes one or more "response actions", such as sending alerts, generating and delivering forms, documents, and reports, and executing application workflow.

What Triggers an Event?

An event can be triggered by:

1. Conditions within an application database
2. The content of incoming e-mail messages
3. Conditions within the operating system
4. A daily schedule
5. Database triggers

The first two of these items utilize a Digital Taskforce query to determine if the corresponding conditions have been met; item #3 utilizes a Visual Basic script to determine the O/S conditions, item #4 utilizes a re-occurring schedule (and no other conditions) and item #5 uses "triggers" embedded within a database.

Event Queries

Queries enable an event to determine whether specific conditions have been met. Queries are used to identify conditions within application databases, or within incoming e-mail messages.

A single event may use one or multiple queries.

A single query may be used in one or more events. Depending on how a query is designed, an event may be able to specify particular "trigger thresholds".

Event Alerts

Each event may have its own alert message content. An event's message content may include data from the corresponding conditions that have caused the event to trigger.

Digital Taskforce's alert delivery methods include:

- E-Mail
- Fax
- Pager/Text Message
- Web Browser (aka "dashboard alerts)
- Screen Pop
- FTP

- Instant Message
- Twitter (tweet)

Event Files, Forms, Reports, & Charts

As part of the message content, an event may generate and deliver forms and documents (such as invoices or statements), the contents of files (such as Excel files) the contents of one or more Crystal Reports, and graphic displays (pie charts, bar charts, line charts, et cetera).

Event Actions (Workflow)

An event can execute workflow to:

- Add or update application database records

- Move data from one application to another

- Trigger site-specific programs or procedures

Event Subscribers

The recipients of an event's alerts are referred to as subscribers. Each event may send alerts to individuals, to groups of people, or to one or more computers.

Additionally, events may be configured to notify one or more people who are "related" to the triggering condition (e.g., notify the rep to whom a call is assigned).

Event Schedule

An event's schedule determines how often you Digital Taskforce checks to see if the corresponding conditions have been met.

Each event has its own schedule; very time-sensitive events may have a very frequent schedule (e.g., every five minutes), whereas less critical events may be checked on a less frequent basis.

"Checked" Vs. "Triggered"

A "checked" event indicates that Digital Taskforce has successfully run the event. The conditions may have proven true, or they may not. An event that is "triggered" is one that has been checked and whose conditions have proven true.

Monitoring the Status of Events

The Digital Taskforce Monitor tracks the status of the event's execution:
- Events that are pending submission.

- Events that have been checked but not triggered
- Events that have been triggered
- Events with errors and have failed to run successfully.

If an event errors because of an error in its configuration, you can modify the event (or query) and Digital Taskforce will automatically re-run the event and use the modified version of it.

An Event Without a Query

Consider the following scenarios:

- Every Monday at 8:55 AM you want to remind managers to attend the 9:00 AM staff meeting
- Daily at 5:00 PM you want to transfer an "orders" file to a database server

These scenarios are events without a query; they are simply scheduled to run on a re-occurring basis.

Before You Design Events

Make sure you have done the following:

- **Reviewed query design**
- **Added yourself as a subscriber**
- **Defined your e-mail sending account** (in the Admin module)

Accessing Event Design

Log into the Navigator, expand the branch titled "All Events", expand the application you wish to work with, and then expand the sub-branch called "Events".

You will see a window like the following:
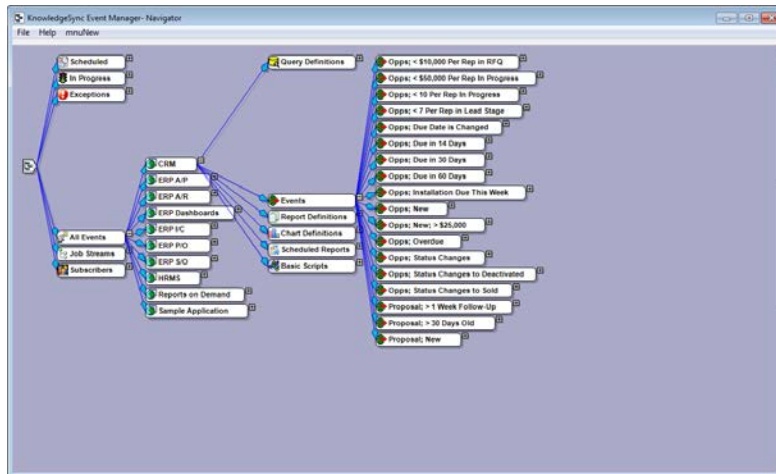
EVENT LISTING FOR AN APPLICATION

You may right-click on the "All Events" branch to show either "all" events or only those events that are currently "active".

View/Edit an Event

To view or modify an event or its components, either right-click or double-click on the branch you are interested in.

Copy an Event

To copy an event, follow these steps:

- Open the Event Manager (not Navigator), expand the application that contains the event you wish to copy, locate the event and highlight it.

- Go to the "Edit" menu and select "Copy."

- Go to the "Edit" menu again and select "Paste."

- A duplicate of the event will now appear in the event list. Go into either of the two (identical) events and modify it as needed – and don't forget to change the event's description!

Create a New Event

To create a new event:

➢ Right-click on the "Events" branch and select "New"..

Go through the tabs in the Event Designer from left-to-right; when done, click on "Save and Close" at the top-left of your window.

Description, Priority, & Repeat Notifications

From the Navigator, double-click on the event name.
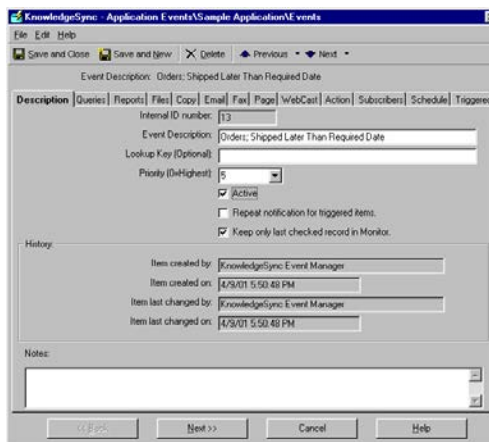
EVENT "DESCRIPTION" TAB

Event Description: Use a standard naming convention, such as "Data Object; Condition", as in "Accounts; Overdue".

Lookup Key: Leave blank, unless an event's execution is to be "called" from an external application. (See "Utilities" chapter for details.)

Priority: The order in which events with identical schedules (e.g., daily at 9 AM) will be submitted. Higher priorities ('0' being the highest) will be submitted first.

Active: Whether an event is eligible to be scheduled (run) by Digital Taskforce.

Repeat Notification for Triggered Items

Events run on a re-occurring schedule (such as every hour); thus it is possible that a record that causes an event to trigger at 9 AM might still meet the criteria at 10 AM. You need to decide:

Whether the record that triggered at 9 AM should again trigger it at 10 AM

For some events, you might want a record to trigger the event repeatedly, as long as the record meets the event's criteria. For other events, you might want a record to trigger an event just once. Consider the following two examples:

- A salesrep is notified every day about overdue activities. If an overdue activity remains open, you want to alert the salesrep each day.

- Every hour, you check for new orders and send customers an order confirmation. Once a confirmation has been sent about a particular order, you do not want to send another confirmation about that same order.

  If you want an event to trigger **once** for a record meeting an event's criteria, **do not** place a checkmark in "Repeat notification for triggered items."

If you want an event to trigger **repeatedly** about a record until that record no longer meets the event's criteria, **do** place a checkmark in this field.

Enabling an Event to "Not Repeat" Notifications

To configure an event to **not repeat** notifications, the event's query **must** have a "unique" column identified.

If the query has no "unique" column, the event will be in "repeat" mode.

How "Triggered" Records Work

(If "repeat notifications" is not selected)

When a record meets an event's criteria, that record is "triggered" and will show up in the "Tracking" tab of an event. If, the next time the event runs, the same record no longer meets the event's criteria, the triggered record will be removed.

You may manually clear a triggered record for an event using the "Tracking" tab.

Using "Repeat" in a Field-Level Change Event

If an event is checking for a "change" to the value of one or more database fields, the "Repeat notifications" field must be checked **on**.

Keep Only Last Checked Record in Monitor

Digital Taskforce keeps track of when an event was submitted, whether it was successfully executed, and whether the event was triggered.

In many cases, an event will check many times without being triggered. And the Digital Taskforce Monitor shows the history of every time an event was **checked** – regardless of whether the event was triggered or not. This can accumulate a lot of un-needed history in the Monitor.

To avoid retaining all this history, you can choose to keep the details of only the last time an event was checked. Note, however, that even if you do opt for this, the system will always store the details of every time an event was triggered.

The suggested setting for this field is **checked on**.

Queries

To view, modify, or remove a query associated with an event, double-click on the Query branch. If a query has "event trigger parameters", they are indicated by a plus sign after the query name.

If an event has no query and you wish to add one, double-click on the event name and click on the "Queries" tab.

To view or modify the configuration of a query associated with an event, right-click on the query name and select "Edit Query". Refer to the chapter on Query Designing for details on query components and configuration.

When you display a query associated with an event, a window like this will appear:
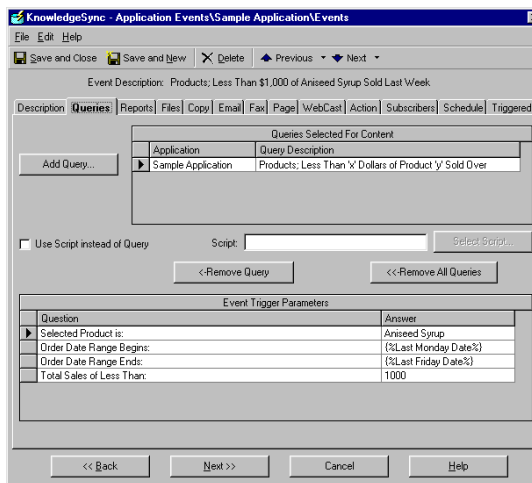
<div align="center">EVENT "QUERIES" TAB</div>

Adding/Removing an Event's Query

To add a query to an event, click on the "Add Query" button and you will be shown a list of all the queries for the current application. Select the query you wish to use, answer any Event Trigger Parameters, and click on "Save and Close" to return to the Navigator window.

To add a query from another application to an event, click on the "Add Query" button and then on the "Select Another Application" button. Choose an application, select the appropriate query, answer any Event Trigger Parameters, and click on "Save and Close".

To remove a query from an event, click on the query you wish to remove and then click on the "Remove Query" button. Click on "Remove All Queries" to remove all queries associated with an event.

If you select multiple queries for an event, an "and" condition is automatically assumed between them. Note that an event that uses a query which looks for a change to a database value cannot use multiple queries.

Event Trigger Parameters

As detailed in Query Designing, a query may have filters that are "parameter-driven"; those whose 'compare value' is specified on the event level.

Whenever an event uses a query that has parameter-driven filters, you will be prompted (at the bottom of the Queries tab) to specify the values for those filters.

These parameters cannot be left blank.

If an Event Trigger Parameter appears, the parameter will begin with a "Question" that instructs you on the type of answer required.

Parameter Answer

Most parameters can be answered by keying in (or selecting) a specific value. You can manually type in the value, or you can choose that value from a list. Digital Taskforce **is** case-sensitive, so a compare value of "high" will not retrieve those records that have a value of "High".

To select a value from a list, follow these steps:

➢ Click in the "Answer" field and click on the list button appearing there.

➢ Click on the list button under the heading "Type in a Value or Choose from dropdown List". This will display a list of entries for this field.

➢ Choose the value and click on "OK".

Note that the dropdown list shows values that have appeared in this field. This list does not display every possible value that *can appear* in this field.

Date Substitution Variables

Consider the following event:

Send an alert if there are any sales of greater than $20,000 due to close next week.

This event would use event trigger parameters such as:

Question: Sales Due to Close Starting on?
Question: Sales Due to Close Ending on?

Using "date substitution variables," Digital Taskforce can substitute in "next week's starting date" and "next week's ending date" whenever the event is run. To use a date substitution variable in answer to a trigger parameter:

➢ Click in the "Answer" field and click on the list button there.

➢ Review the list of "Available Substitution Variables." The variables are available in multiple formats; variables without any format use your system's date format.

➢ Choose the value that you wish to use and then click on "OK".

Once you select a variable as an answer, you can edit it to append specific values. For example, {%Current Date%} **23:59** means today at 11:59 PM.

Using a VB Script Instead of a Query

You may have data outside of ODBC-compliant databases that you would like to monitor. For example:

- Low disk space, full mailboxes, or application errors

- Files that have arrived or grown too large

To check for such conditions, you will need to use a Visual Basic (VB) script instead of a query to determine whether the corresponding condition has occurred. This requires that you create the VB scripts that will be used; please see the chapter titled "Visual Basic Scripting" for details on the configuration of these scripts.

Once you have created a script for an event to use in this manner, follow these steps:

➢ Place a checkmark in the field called "Use Script instead of Query".

➢ Click on the "Select Script" button and choose the appropriate script.

An event cannot use a combination of scripts and queries.

Using Database Triggers

For information on how to use Database Triggers instead of a query, contact e-automate Customer Care for samples and instructions.

Reports & Charts

Reports and/or charts are associated with events for three reasons:

o To generate a form (such as an invoice or statement) that is to be delivered as part of the alert.

o To generate an analytical report associated with the event being triggered.

o To generate a chart or graph that contains useful information.

To view, modify, or remove a report and/or chart associated with an event, expand the Deliverables branch and then click on any of the reports or charts associated with the event. If a report or chart has "parameters", they are indicated by a plus sign after the report/chart name.

(If an event has no reports/charts and you wish to add one, double-click on the event name and then click on the Reports tab. Both reports and charts may be added from this tab.)

To view or modify the definition of a report or chart associated with an event, right-click on the report/chart name and select "Edit".

Please refer to the chapters on "Reports" and "Charts" for more details on these options.
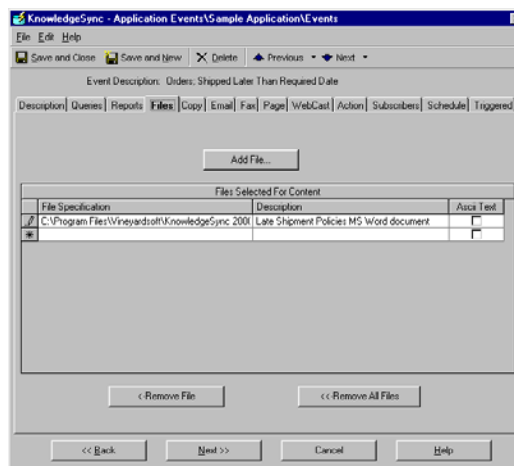
Files

You may associate static files to an event, such as MS Word or MS Excel files. Associated files may be delivered via email, fax, FTP, or webcast. Typical uses of static attached files include:

- To send a "Policies and Procedures" document along with a message

- To attach a product brochure to an e-mail going to a prospect

- To send an HTML newsletter to recipients

- To send an MS Excel spreadsheet to specific recipients

To view, modify, or remove a file associated with an event, expand the Deliverables branch and then double-click on the File branch. If an event has no files and you wish to add one, double-click on the event name and click on the Files tab.

Once on the Files tab, follow these steps:

➢ Click on the "Add File" button.

➢ Locate and select the file you wish to add.

➢ Enter a description of the file.

➢ Click on "Ascii Text" if the file is in ascii format. (Only ascii files may be faxed.)

EVENT "FILES" TAB

File "Alternative Text" Option

(Available only if sending email via Internet/SMTP method.)

Digital Taskforce gives you an easy way to deliver HTML documents without having to manually enter their contents into the Email tab of an event. This uses the "alternative text" option from the Files tab.

By specifying a file that is in HTML format and then clicking on the List button in the Description field of an associated file, you can choose "alternative text/html". When you do so, the associated file will appear within the body of the email message sent by an event (the file will not be delivered as an attachment).

If an event delivers content to some users whose mail system can display HTML and other users whose mail system cannot display HTML, you can both associate the HTML document as "alternative text" and also specify the same text (in ascii or plain text format) within the Email tab of an event.

Note that no query data fields may be included within the alternative HTML file and that you may also choose formats of "richtext" and "enriched" (and may in fact have multiple alternative files of various formats).

Copy (FTP)

If an event has associated reports or files, you may deliver these files to their intended location via FTP – referred to in Digital Taskforce as the "copy" method.

To specify whether an event will copy its reports or files to a desired location, expand the Deliverables branch, double-click on either a Report or File branch, and then click on the Copy tab.

Note that the Copy tab lets you specify whether the reports and files associated with an event will be **eligible** to be delivered via FTP. You will still need to specify (on the "Subscribers" tab) which recipients will receive the related reports/files.

If an event's query includes the column called "attachment_files", those files will be delivered along with any other reports/files.

To specify that an event's reports and/or files will be eligible to be copied to a desired location, click on either (or both) of the checkboxes on this tab.
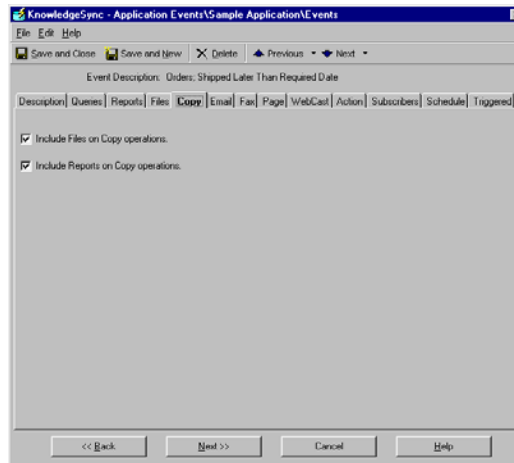
EVENT "COPY" TAB

Digital Taskforce's Copy server must be enabled to process if you are using this option. To view the status of (or start) the Copy server, do the following:

- ➢ Log into the Digital Taskforce Administrator.

- ➢ Click on the Activity folder and then on Server Status.

- ➢ If the Copy server is not running, double-click on it and place a checkmark in the field called "Allow Server to Process."

- ➢ Click on "Save and Close".

Monitoring the Status of Copied Files

To track the status of copied files, open the Monitor module and click on the File Delivery branch. You can then see what files are waiting to be copied (pending), have been copied (Sent), or have encountered problems (errors).

You may use the "Corrective Actions" option in the Administrator to address "File Delivery Errors". The system will re-try file delivery failures every minute.

Transferring Files to an AS/400

To transfer files to an AS/400 machine, make sure that the following are all true:

- On the AS/400, verify that you have a userid and a password that are the same as the account running the Digital Taskforce Service.

- On the AS/400, verify that the userid has "objauth" to the Library or IFS Directory you are transferring the files to. (Run "dspobjaut" to verify.)

Alert Message Design

The method by which you design alert messages is identical regardless of the type of alert (email, fax, etc.) that you are sending. Thus all design options are detailed in the "Email" section of this chapter; the other delivery methods will address only the unique aspects of each.

E-Mail Message

To view or modify the email alert message associated with an event, expand the Deliverables branch and then double-click on the Email branch. If an event has no email alert message and you wish to add it, double-click on the event name and click on the Email tab.

Once on the Email tab, you will see the following:

Available Values for Use in Message Content. This is a list of all the fields from the event's queries. These fields may be used anywhere in your alert message.

Also in this list are date variables (such as "today" and "tomorrow"), as well as some special formatting controls at the end of the list (detailed later on).

Email Account to Send from. This refers to the e-mail account (configured in the Administrator) that Digital Taskforce will send the e-mail alerts from. Click on the list button and choose a corresponding account. An event will not be able to send an email alert if this field is left blank.

Email Reply Address. (Usable only if sending email via an Internet/SMTP method.) You have three choices for this field:

1. Leave blank. The default "from" and "reply" name configured in the setup of the e-mail sending account will be used.

2. Hard-code, e. g., *Tech Support <support@yourcompany.com>*

3. Use a database value (the e-mail address of the salesrep associated with an order). To do this, the value must be selected in the event's query.

The address used **must** be a valid email address. If not, the e-mail alert will fail to be sent.

Message Subject. Enter the subject of the outgoing alert message. You can use any "available values" in the subject field (position your cursor in the subject and then double-click on the value you wish to appear there). This includes date variables.

Message Text. Enter the content of the alert message; typically a combination of hard-coded text and field values. The message text may be formatted in either plain text or HTML, and there is a limit of 32k for the size of the message text.

You may select database fields for your message by positioning your cursor where you want the field to appear and double-clicking on the field from the list of "Available values". (You may also highlight the field and click on "Use selected value in Text".)

A completed email alert message configuration will look similar to the following:
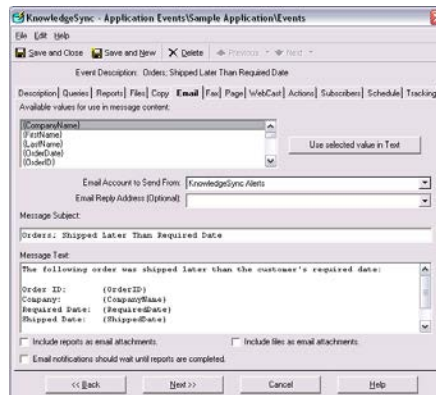
EVENT "E-MAIL" TAB

Digital Taskforce's Email server must be enabled to process if you will be sending email alerts. To view the status of (or start) the Email server, do the following:

➢ Log into the Digital Taskforce Administrator.

➢ Click on the Activity folder and then on Server Status.

➢ If the Email server is not running, double-click on it and place a checkmark in the field called "Allow Server to Process."

➢ Click on "Save and Close".

You may delete pending email messages. Open the Administrator, click on the File menu, choose Database Tools, and Remove Pending Items.

HTML Format

HTML is available only if you are using an Internet/SMTP mail sending account.

You may enter HTML syntax directly into the Message Text field or you may create your HTML content outside of Digital Taskforce and then cut-and-paste it into the Message Text field.

Once you have your HTML done and in the Message Text field, do the following:

➢ Insert a blank line above the start of your HTML syntax.

➢ Scroll the list of Available Values to the very end of the list and select the command {BEGIN*HTML} so that it appears before the start of your HTML syntax.

➢ Insert a blank line after the end of your HTML syntax, and select the command {END*HTML} so that it appears right after your HTML syntax.

That's all you need to do to create email alert messages in HTML format.

Controlling the Display Length of a Text Field

You can control the display length of a text field in an alert message. To specify the maximum display length, add a colon followed by the maximum display length, followed by the plus sign ('+') as in:

{Item_Description:25+}

Depending on the email font that an alert recipient uses, this function may also be used to line fields up in a columnar format, as in:

{Item_Description:20+} {Item_Type:6+} {Item_Class:10+}

This method will work if a recipient is not using a proportional spacing font; if they are using proportional spacing, it is suggested that you use an HTML table instead.

Currency Formats

Currency values are formatted according to the regional currency settings for the server on which Digital Taskforce is installed. If a currency field's length is shortened, Digital Taskforce will allocate the indicated number of characters when the field is placed in an alert message.

{sales_amount$}	$1250.00 (right-justified)
{sales_amount:10$}	$1250.00 (right-justified; allocate 10 spaces)
{sales_amount&}	$1250.00 (left-justified)
{sales_amount:10&}	$1250.00 (left-justified; allocate 10 spaces)

Numeric Formats

Numeric values are formatted according to the settings for the server on which Digital Taskforce is installed. If a numeric field's length is shortened, controlled Digital Taskforce will allocate the indicated number of characters when the field is placed in an alert message.

{sales_units#}	85.50 (right-justified; 2 decimal places)
{sales_units:10#}	85.50 (right-justified; 2 decimals; 10 spaces)

{sales_units%}	85.50	(left-justified; 2 decimal places)
{sales_units:10%}	85.50	(left-justified; 2 decimals 10 spaces)
{sales_units!}	85	(right-justified; no decimal places)
{sales_units:10!}	85	(right-justified; no decimal; 10 spaces)
{sales_units*}	85	(left-justified; no decimal places)
{sales_units:10*}	85	(left-justified; no decimal; 10 spaces)

Skipping Fields With Null Values

When formatting an alert message, you may wish to "skip" (and allocate no space to it) if its value is null. (This function checks for "null" only; not for blanks.)

Here's an example:

```
{BEGIN*REPEAT}
{ItemNo:15+~}{NonInvNo:15+~}{MiscChgCode:15+~}{CommentCode:15+~}
{END*REPEAT}
```

The tilde (~) indicates that if a field's value is null, no space will be allocated to it. Note that this tilde must be the final formatting command in a field.

Including Both HTML & Plain Text

You can create a single e-mail message that contains both HTML and plain text. For example:

The following customer had more than 2 shipments arrive late last quarter:

Company: {CompanyName}
Number of Late Orders:{Late_Order_Count}

*{BEGIN*HTML}*
Your HTML content would go here
*{END*HTML}*

If the recipient's e-mail system does not support HTML, they will see only the top section of the message; the content of the HTML will appear as an attachment. If the recipient's e-mail system does support HTML, they will not see only what is between the {BEGIN*HTML} and {END*HTML} labels.

Embedding URL Links in Message

You can send an email with a URL link in it (such as a link to track a shipment). Make sure that any information required within the URL link (such as the tracking number) is one of the chosen columns in the underlying query.

Then, you could embed a link such as the following (a FedEx example):

http://www.fedex.com/cgi-bin/tracking?action=track&tracknumbers={fedexnumber}

{fedexnumber} is the value from the underlying query.

Advanced Formatting – Crystal Reports

If you need more sophisticated formatting that what is available natively out of Digital Taskforce (e.g., headers/footers, page breaks, sub-totaling, etc.), it is suggested that you use Crystal Reports, as a

Digital Taskforce event can populate and generate Crystal Reports and deliver them to their intended recipients.

Begin & End "Repeat"

The commands {BEGIN*REPEAT} and {END*REPEAT} control three things in an event:

- ➢ Whether you send one alert per triggered record, or repeat the details of multiple triggered records in a single alert
- ➢ Whether you generate one report per triggered record, or generate one report for a group of matching records
- ➢ Whether you execute event workflow actions once per triggered record, or once per group of matching records

If you do not use {BEGIN*REPEAT} and {END*REPEAT} in an event, the event will execute its alerts, its reports, and its workflow actions once for each record that matches the event's criteria.

If you do use {BEGIN*REPEAT} and {END*REPEAT} anywhere within an event, the event will execute its alerts, its reports, and its workflow once per group of matching records.

The {BEGIN*REPEAT} and {END*REPEAT} commands can appear in any one of the following tabs within an event: Email, Fax, Page, Webcast, or Create File (within the Actions tab). But regardless of what tab these commands appear in, their rules apply to all components of the event.

Be careful when using {BEGIN*REPEAT} and {END*REPEAT}, as it must not be used if an event needs to trigger its alerts, its reports, or its actions once for each record that matches the event's criteria.

Repeating Text in an Alert Message

{BEGIN*REPEAT} and {END*REPEAT} let you configure an alert message that contains the details of multiple triggered records. Consider the following alert:

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 you leave the message like this, Digital Taskforce will send out one alert message per triggered record. But if you wanted to send out one alert message with the details of all matching records in it, you would use the "repeat" command as follows:

The following orders were 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}

One Message for All Matching Records

If you wish to generate one alert message for all matching records, use {BEGIN*REPEAT} and {END*REPEAT} in the event. These commands do not need to be on a line by itself; it may be on the same line as text or a field value.

Position your cursor in your alert message where you wish to begin the "repeating" of message details; scroll to the end of the list of available values and select {BEGIN*REPEAT}.

Next, position your cursor after the end of text that you wish to be repeated and select {END*REPEAT} from the list of available values.

One Message Per Recipient

To can configure an event to send one alert message per recipient, such as sending each salesrep a list of their clients' overdue invoices, you would:

Open the event's query, go to the "Columns" tab, and make sure the field that contains the recipient's delivery address is included as a column.

Go to the "Sorting" tab, and sort the query according to the recipient's name (or delivery address)

Include {BEGIN*REPEAT} and {END*REPEAT} in the alert message.

Go to the "Subscribers" tab and click on the "Advanced" sub-tab.

In the grid in the lower half of this window, select the field that contains the recipient's delivery address. (Once you click in a field, a drop-down list displays all of the associated query's data fields.

Note that event could send each alert to a salesrep **and** to the Support Manager. You would follow the steps listed above and also specify the Support Manager as a "standard" subscriber.

One Message Per Recipient and Per Break Field

Configuring an event to send one alert message per recipient using a secondary break field would, for example, send each salesrep a separate alert for each region in which they have clients with overdue invoices. To configure this, you would:

Open the event's query, go to the "Columns" tab, and make sure the field that contains the recipient's delivery address is included as a column. Select the "break field" (e.g., 'region') also selected as a column.

Go to the "Sorting" tab, and sort the query first according to the recipient's name (or delivery address) and second by the break field.

Include {BEGIN*REPEAT} and {END*REPEAT} in the alert message.

Go to the "Subscribers" tab and click on the "Advanced" sub-tab.

In the grid in the lower half of this window, select the field that contains the recipient's delivery address. (Once you click in a field, a drop-down list displays all of the associated query's data fields.

In the grid in the <u>upper</u> half of this window, click on the <u>first</u> field and select your break field. (Once you click in this field, a drop-down list of query data fields is displayed.) Do not select any delivery method.

This method is very useful in "order confirmation" events, where you want Digital Taskforce to create a separate message for each order ("order number" is your break field), but at the same time you need to deliver that message to the customer associated with that order (the recipient).

One Message Per Break Field

Configuring an event to send one alert message per break field would, for example, let you send a CFO separate alerts listing each salesrep's open sales opportunities. To configure this, you would:

Open the event's query, go to the "Columns" tab, and make sure the field that contains the break field (e.g., 'salesrep') is selected as a column.

Go to the "Sorting" tab, and sort the query by the break field.

Include {BEGIN*REPEAT} and {END*REPEAT} in the alert message.

Go to the "Subscribers" tab, click on the "Standard" sub-tab, and select the subscriber.

Click on the "Advanced" sub-tab and in the grid in the <u>upper</u> half of this window, click on the first field and select your break field. (Once you click in this field, a drop-down list of query data fields is displayed.) Do not select any delivery method.

"Repeat" Notes

➢ The "repeat" function can appear only once within a single event.

➢ If you are using "repeat" in your email message, you can use that same alert text in the fax, page, or webcast tabs by typing in "=email_message_text" in the message text fields of those other delivery methods.

➢ If your event uses multiple queries, the "recipient address" and "break" fields can refer only to fields from the <u>first</u> query in the event's list of queries.

HTML Table Syntax

If you are not familiar with HTML syntax and wish to use an HTML table within your alert message, ECi Software Solutions suggests the following free, non-technical HTML Table Design tool available on the Internet:

http://www.spectrum-research.com/V2/generators/tableframe.asp

Or just cut-and-paste the following HTML table syntax and fill in the header and data field sections accordingly:

```
{BEGIN*HTML}
<table class='mytable'>
        <thead>
                <tr class='mytable'>
                        <th class='mytable'>Column 1 Heading</th>
                        <th class='mytable'>Column 2 Heading </th>
                        <th class='mytable'>Column 3 Heading </th>
```

```
                              <th class='mytable'>Column 4 Heading </th>
                              <th class='mytable'>Column 5 Heading </th>
                    </tr>
          </thead>
          <tbody>
                    {BEGIN*REPEAT}
                    <tr class='mytable'>
                              <td class='mytable'>{Data Field 1}</td>
                              <td class='mytable'>{Data Field 2}</td>
                              <td class='mytable'>{Data Field 3}</td>
                              <td class='mytable'>{Data Field 4}</td>
                              <td class='mytable'>{Data Field 5}</td>
                    </tr>
                    {END*REPEAT}
          </tbody>
</table>
{END*HTML}
```

This HTML syntax creates a table with five headings (the lines that begin with "<th"). The "repeat" function repeats the details lines (the lines that begin with "<td>") so that multiple records can be grouped together in a single table.

E-Mail Attachment Handling

- **Include Reports as E-Mail Attachments**. If an event has associated reports, you may specify whether the reports will be attached to the outgoing e-mail.

  If using Digital Taskforce to generate and distribute a large number of reports, it's more efficient to distribute the reports via FTP or the web and use email to notify people that those reports are available.

- **Include Files as E-Mail Attachments**. If an event has associated files, you may specify whether the files will be attached to the outgoing e-mail.

  If the event's query includes a column called "attachment_files", the files referenced in that field will also be attached.

- **E-Mail Notifications Should Wait Until Reports Are Completed**. If an event has associated reports which are not going to be attached, you should have the alert wait to be sent until the reports are finished generating.

What Needs to Happen to Send E-Mail Alerts

In order to send e-mail alerts, **all** of the following need to be true:

➢ The event must have an e-mail subject, message text, and a valid e-mail sending account

➢ There must be at least one subscriber selected to receive alerts via e-mail who is "active" with valid e-mail addresses, and their "delivery times" must allow message receipt.

➢ The Windows or Desktop service and e-mail server must be running.

➢ The event's query must retrieve matching records and f the event has been triggered (and no new matching records exist), you must either remove triggered items or the event must "repeat notifications for triggered items".

Monitoring Email Alerts

The Digital Taskforce Monitor tracks the status of email alerts, including those that are "pending", have been "sent", and those that are in an "error" state.

If email alerts fail to complete successfully because of errors, you may try to correct the error, mark the delivery as "complete", or manually delete the erroring delivery. (See "Corrective Actions" in the Administrator module.) Digital Taskforce will attempt to re-deliver an erroring e-mail message every minute.

Fax Message

Digital Taskforce includes both an internal faxing solution and integration with Microsoft Fax (recommended).

If you are using MS Fax, you do not need to enter any information on the Fax tab, as the integration utilizes a VB script. For details, contact Customer Care at eacustomercare@ecisolutions.com. MS Fax supports plain-text and rich-text faxing; Digital Taskforce's embedded fax technology supports only plain-text documents.

To view or modify the (embedded-technology) fax alert message associated with an event, expand the Deliverables branch and then double-click on the Fax branch. If an event has no fax alert message and you wish to add it, double-click on the event name and click on the Fax tab. You will see the following:
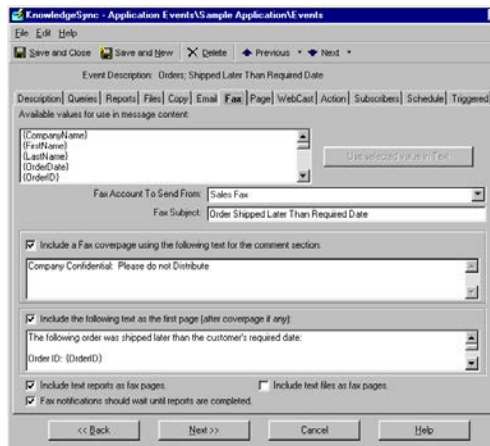
EVENT "FAX" TAB

Fax Account to Send From. The name of the account that the fax will be sent from (configured in the Administrator module).

Fax Subject. A short description of the purpose of the fax.

Digital Taskforce's Fax server must be enabled to process if you will be sending faxes using the embedded faxing technology; the "Action" server must be enabled to send faxes via MS Fax. To view the status of (or start) these servers, do the following:

➢ Log into the Digital Taskforce Administrator.

> ➤ Click on the Activity folder and then on Server Status.

> ➤ If the Fax or Action servers are not running, double-click on either and place a checkmark in the field called "Allow Server to Process."

> ➤ Click on "Save and Close".

You may delete pending faxes. Open the Administrator, click on the File menu, choose Database Tools, and Remove Pending Items.

Fax Cover Page, Subject, & Message Text

Include a Fax Coverpage. Check this box if you wish to include a cover page for the fax. The cover page can include hard-coded text, database fields, and date variables. This field is limited to 230 characters.

Include the following text. The contents of the fax. They can include hard-coded text, field values, and date variables and can also include the {BEGIN*REPEAT} and {END*REPEAT} functions.

Fax Text = E-Mail Text

Digital Taskforce gives you a shortcut to re-use your email message configuration as the contents for the fax message. To do so, type in "=email_message_text" (without the quotations) in the fax text field as follows:
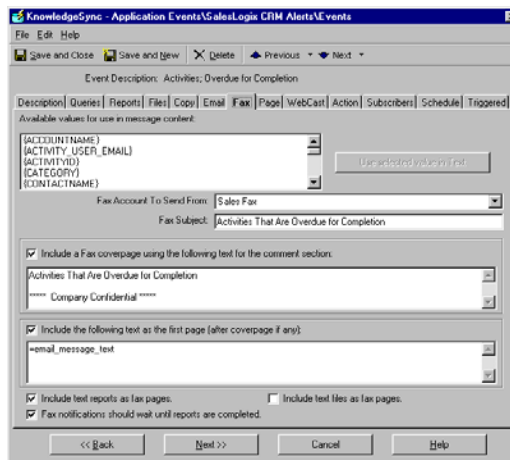
FAX TEXT = EMAIL TEXT

Fax Message Handling

Include Text Reports as Fax Pages. If an event has associated reports (in ascii), you may specify whether the reports will be included in the outgoing fax message.

Include Text Files as Fax Pages. If an event has associated plain text files, you may specify whether the files will be included in the outgoing fax message.

If the event's query includes a column called "attachment_files", Digital Taskforce will fax those (ascii) files along with any other files specified on the "Files" tab

Fax Notifications Should Wait Until Reports Are Completed. If an event has associated reports which are not included in the outgoing fax, you should have the event wait until the reports are generated before sending the fax message.

What Needs to Happen to Send Fax Alerts

To use the embedded fax technology, __all__ of the following need to be true:

➢ The event must have either a header page or message text, a valid fax sending account, and a valid fax port defined in the Administrator

➢ There must be at least one subscriber selected to receive alerts via fax who is "active" with valid fax addresses, and their "delivery times" must allow message receipt.

➢ The Windows or Desktop service and fax server must be running.

➢ The event's query must retrieve matching records and f the event has been triggered (and no new matching records exist), you must either remove triggered items or the event must "repeat notifications for triggered items".

Monitoring Fax Alerts

The Digital Taskforce Monitor tracks the status of fax alerts, including those that are "pending", have been "sent", and those that are in an "error" state.

If fax alerts fail to complete successfully because of errors, you may try to correct the error, mark the delivery as "complete", or manually delete the erroring delivery. (See "Corrective Actions" in the Administrator module.) Digital Taskforce will attempt to re-deliver an erroring fax message every minute.

Pager/SMS/Text Messaging

Digital Taskforce supports SMS (short message syntax) paging as well as text messaging.See chapter 3 for more details.

By default Digital Taskforce uses a modem to send pager messages; however most paging vendors support the use of email to send pager messages as in:

yourphonenumber@page.nextel.com
yourphonenumber@vtext.com

Please contact your paging vendors to learn the appropriate paging address format.

To view or modify the pager alert message associated with an event, expand the Deliverables branch and then double-click on the Page branch. If an event has no pager alert message and you wish to add it, double-click on the event name and click on the Page tab. You will see the following:
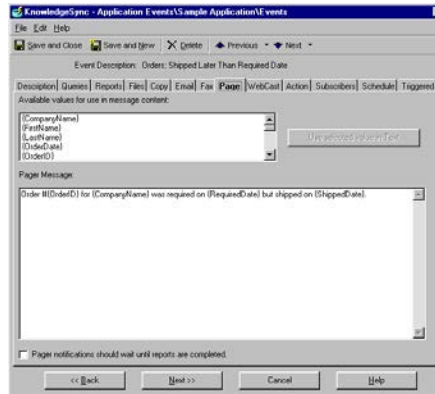
EVENT "PAGE" TAB

Pager Message. You can place as much or as little text as you wish in the body of a pager message; you can include hard-coded text, database field values, and date variables in the pager message text.

You can also use {BEGIN*REPEAT} and {END*REPEAT} as detailed in the "Email Tab" section.

Digital Taskforce's Page server must be enabled to process if you will be sending pager messages. To view the status of (or start) these servers, do the following:

➢ Log into the Digital Taskforce Administrator.

➢ Click on the Activity folder and then on Server Status.

➢ If the Page server is not running, double-click on it and place a checkmark in the field called "Allow Server to Process."

➢ Click on "Save and Close".

You may delete pending pages. Open the Administrator, click on the File menu, choose Database Tools, and Remove Pending Items.

Pager Notifications Should Wait Until Reports Are Completed. If an event has associated reports, you should have the event wait until the reports are generated before sending the pager message.

What Needs to Happen to Send Pager Alerts

In order to send pager messages, **all** of the following need to be true:

➢ The event must have pager message text and you must have a valid pager port and pager service(s) defined in the Administration module.

➢ There must be at least one subscriber selected to receive alerts via pager who is "active" with valid pager addresses, and their "delivery times" must allow message receipt.

➢ The Windows or Desktop service and pager server must be running.

➢ The event's query must retrieve matching records and f the event has been triggered (and no new matching records exist), you must either remove triggered items or the event must "repeat notifications for triggered items".

Monitoring Pager Alerts

The Digital Taskforce Monitor tracks the status of pager alerts, including those that are "pending", have been "sent", and those that are in an "error" state.

If pager alerts fail to complete successfully because of errors, you may try to correct the error, mark the delivery as "complete", or manually delete the erroring delivery. (See "Corrective Actions" in the Administrator module.) Digital Taskforce will attempt to re-deliver an erroring pager message every minute.

Webcast (Dashboard Alerts) Tab

The webcasting ("dashboard alerts") module requires a few additional steps for configuration; please refer to the chapter titled "Dashboard Alerts" for details.

Instant Message Alerts

To view or modify the instant message notification test associated with an event, expand the Deliverables branch and then double-click on the Instant Messages branch. If an event has no IM alert message and you wish to add it, double-click on the event name and click on the IM tab. You will see the following:
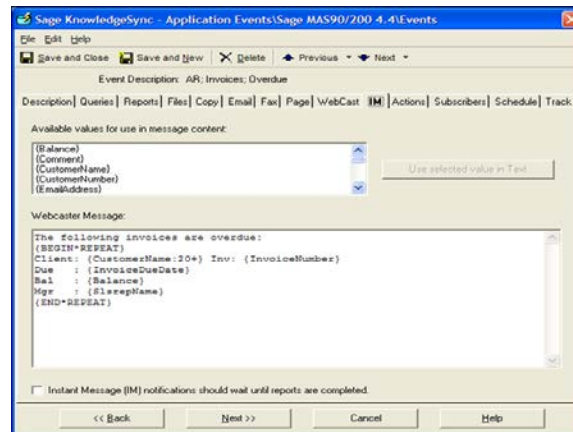
EVENT "INSTANT MESSAGE" TAB

IM Message. You can place as much as 1,500 characters of text in the body of an IM message; you can include hard-coded text, database field values, and date variables in the pager message text.

You can also use {BEGIN*REPEAT} and {END*REPEAT} as detailed in the "Email Tab" section.

Digital Taskforce's IM server must be enabled to process if you will be sending Instant Message alerts. To view the status of (or start) these servers, do the following:

➢ Log into the Digital Taskforce Administrator.

➢ Click on the Activity folder and then on Server Status.

➢ If the IM server is not running, double-click on it and place a checkmark in the field called "Allow Server to Process."

> ➤ Click on "Save and Close".

You may delete pending instant messages. Open the Administrator, click on the File menu, choose Database Tools, and Remove Pending Items.

Instant Messages Should Wait Until Reports Are Completed. If an event has associated reports, you can opt to have the event wait until the reports are generated before sending the instant message.

What Needs to Happen to Send IM Alerts

In order to send instant messages, **all** of the following need to be true:

> ➤ The event must have instant message text and you must have one or more valid Instant Message service(s) defined in the Administration module.

> ➤ There must be at least one subscriber selected to receive alerts via IM who is "active" with valid IM addresses, and their "delivery times" must allow message receipt.

> ➤ The Windows or Desktop service and IM server must be running.

> ➤ The event's query must retrieve matching records and f the event has been triggered (and no new matching records exist), you must either remove triggered items or the event must "repeat notifications for triggered items".

Monitoring Instant Message Alerts

The Digital Taskforce Monitor tracks the status of instant message alerts, including those that are "pending", have been "sent", and those that are in an "error" state.

If IM alerts fail to complete successfully because of errors, you may try to correct the error, mark the delivery as "complete", or manually delete the erroring delivery. (See "Corrective Actions" in the Administrator module.) Digital Taskforce will attempt to re-deliver an erroring IM message every minute.

Actions (Workflow) Tab (Including "Tweeting")

To view, modify, or remove an action associated with an event, expand the "Actions" branch beneath an event and double-click on the corresponding action you wish to view, modify, or delete.

If an event has no actions and you wish to add one, double-click on the event name and click on the "Actions" tab.

To view or modify the configuration of a Visual Basic script associated with an event, right-click on the script name and select "Edit". Refer to the chapter on VB Scripting for details on script components and configuration.

When you display an action associated with an event, a window like this will appear:
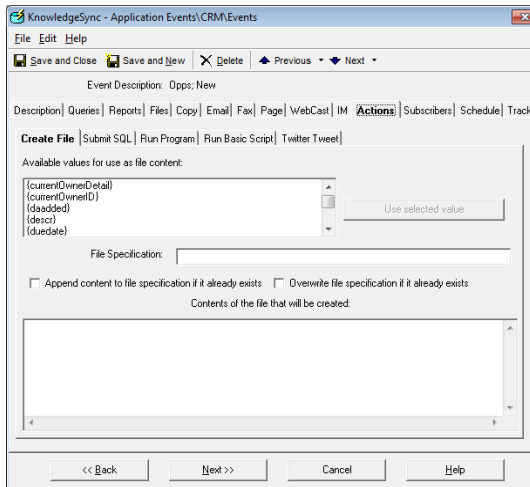
EVENT "ACTIONS" TAB

If an event is configured to execute one action for each record that meets the event's criteria, the event must <u>not</u> use {BEGIN*REPEAT} and {END*REPEAT}.

To enable the "Action" server, follow these steps:

- o   Log into the Administrator click on the Activity folder and then on the Server Status folder.

- o   Double-click on the "Action Server" and check the field called "Allow Server to Process."

- o   Click on "Save and Close" at the top-left of your window.

The Seven Types of Workflow

An event may execute any combination of the following actions:

- Create a file containing content from a triggered event.

- Execute SQL (structured query language) statements

- Run stored procedures

- Run executable programs.

- Run VB (visual basic) scripts.

- Run the Sage SalesLogix™ integration wizard

- Post a Twitter "tweet" message

All of these may incorporate data from the corresponding triggered event and the order in which they are executed is: create file, execute SQL, run stored procedures, run programs, execute the SalesLogix wizard, and run VB scripts.

Create File

An event can take its "triggered" data and write it out to a file as shown:
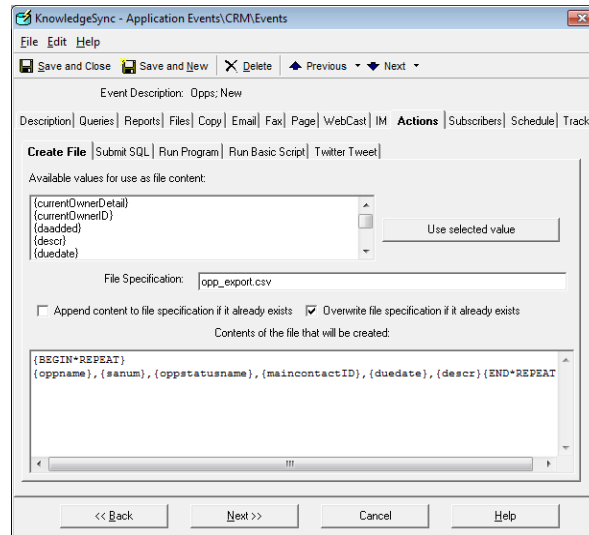
"CREATE FILE" TAB

Files created in this manner can be used for import into another application, to create log files of triggered event data, or to create a file for a mailing or fulfillment house. The file can contain hard-coded text, field values, and date variables. For each file you need to specify:

File Specification. The name of the file to be created. This name may be hard-coded or it may include field and date variables.

Append content to file. If the named file already exists, checking this box will cause the event to add its data to the existing file.

Overwrite file specification. If the named file exists, checking this box will cause the event to delete the existing file and overwrite it with new contents.

Click in the box beneath "Contents of the file" and begin entering any combination of hard-coded test and field (and date) variables. You may separate fields by using a comma, semi-colon, or any other valid punctuation. Use Ctrl/Tab to create tab-based separations. If the event's query uses the {attachment_files} function, you may reference this field as a data field variable.

You can use {BEGIN*REPEAT} and {END*REPEAT} in your file as well as the field formatting commands (detailed earlier in this chapter).

Submit SQL / Stored Procedure

SQL statements (& stored procedures) can be used to add, update, or delete records from an application database. Note the following:

1. If performing a database update, your SQL must include a "where clause" to ensure that it updates only the appropriate records.

2. If using SQL or a stored procedure, an event must not use the {BEGIN*REPEAT} and {END*REPEAT} commands. (This ensures that your SQL will be executed once per triggered record that meets the event's criteria.)

3. All standard SQL syntax (for the database & driver selected) is supported

The Submit SQL tab looks like the following, but there is a SQL "Wizard" that you can also utilize:
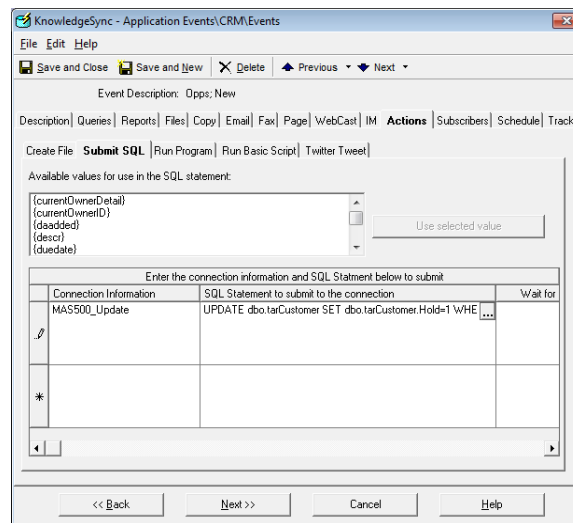
"SUBMIT SQL" TAB

Connection Information. Click in this field, click on the list button that appears there, and then choose the ODBC connection that will be used by the SQL statement or stored procedure. If the ODBC connection does not exist, click on the "New Connection" button to create the source.

SQL Statement. Enter the SQL syntax that will be executed by this event, such as:

update sysdba.ACCOUNT set sysdba.ACCOUNT.TYPE = 'Inactive'
where sysdba.ACCOUNT.ACCOUNTID = '{ACCOUNTID}'

You may use any combination of SQL syntax and data field (& date) variables in your SQL syntax; be sure to enclose all date and text-based data field variables within single quotes as in '{ACCOUNT_ID}' (not necessary with numeric fields). If the event's query uses the {attachment_files} function, you may reference this field as a data field variable.

All standard SQL commands (such as "insert", "update" and "delete") are supported in the SQL action tab. You cannot use {BEGIN*REPEAT} and {END*REPEAT} in your SQL, but you may use the field formatting controls details earlier in this chapter.

The "where clause" in your SQL tells Digital Taskforce which records to update.

For assistance with your SQL statement, click in the "SQL Statement" field and then click on the "More" button (the one with three periods in it) to access the SQL Design Wizard. Note that the two primary types of SQL commands are "insert" (to add a record to a database) and "update" (to update the content of an existing record in a database).

Although you can use this wizard to help you with the design of these statements, it is strongly advised that you be familiar with SQL syntax before attempting to create these statements from within Digital Taskforce. More details on the wizard follows this section.

Wait for Reports to Complete. If the corresponding event has associated reports, you may wish for the reports to generate before your SQL is executed. (E.g., you may wish to run a report on data that is subsequently modified by your SQL.)

If you have an event which needs to execute SQL once per triggered record, and also needs to generated a summarized alert message (using {BEGIN*REPEAT} and {END*REPEAT}), you'll need to configure two events – one to do the summarized alert, and another to do the triggered SQL workflow.

If an event has associated files – either from the "Files" tab, or if the event's query uses the "attachment_files" column -- those files will be stored in a variable called "attachment_files" which may be used in your SQL or stored procedure.

To run a stored procedure instead of a SQL statement, choose the ODBC connection and then specify the procedure name, as in "dbo.myprocedurename". To pass parameters into your stored procedure, use the syntax:

dbo.myprocedurename '{account}','{rep}',{amount}

Submit SQL "Wizard Designer"

If you would like some assistance in the design of your SQL "insert" or "update" statements, select your ODBC connection and then click in the "SQL Statement to Submit" box and click on the List button that appears there. You will be presented with the following window:
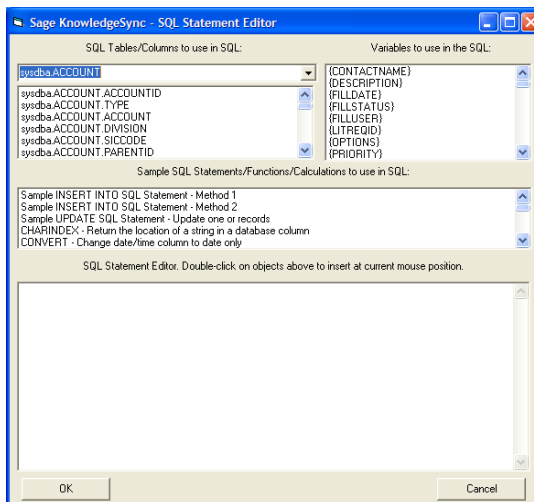
"SUBMIT SQL" – WIZARD DESIGNER

From this window you have access to:

- List of the tables in the database you wish to update; each table can be selected and Digital Taskforce will automatically show you a list of fields in that table.

- Values from the query the event is using; these variables may have their values passed into the records being created or updated.

- Sample SQL syntax for adding or updating information within the underlying database.

Please note that it is advisable to have a person familiar with SQL syntax to review any SQL you design for an event before the event is run in a production environment.

Run Program

The "Run Program" tab looks like the following:
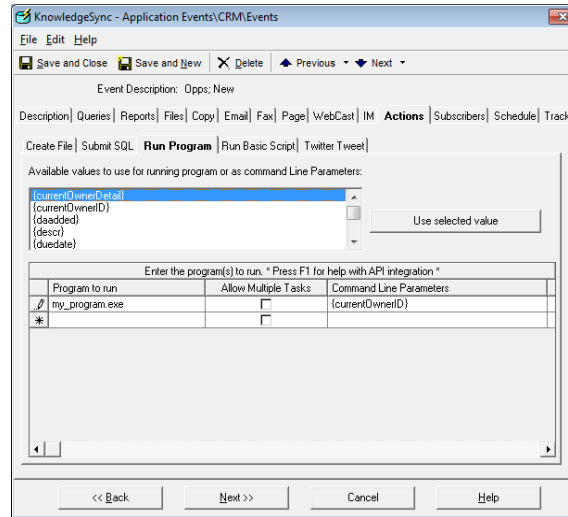
"RUN PROGRAM" TAB

Program to run. Click in this field, click on the list button that appears there, and select the executable program you wish the event to execute.

Allow Multiple Tasks. This lets you specify whether the event will run only a single copy of this task at any one time, allows multiple copies to run simultaneously. (The primary consideration here is system performance. Suggested setting is unchecked.)

Command Line Parameters. Events use command line parameters to pass data from triggered records into an executable program. Parameters may include hard-coded values and data field (& date) variables; be sure to enclose all date and text-based data field variables within single quotes as in '{ACCOUNT_ID}' (not necessary with numeric fields). Data fields may also use any of the formatting controls detailed earlier in this chapter.

If the event's query uses the {attachment_files} function, you may reference this field as a data field variable.

To add parameters, click in the "Command Line Parameters" field and then click on the value you wish to use from the "Available values" list.

Wait for Reports to Complete. If the corresponding event has associated reports, you may wish for the reports to generate before your SQL is executed. (E.g., you may wish to run a report on data that is subsequently modified by your SQL.)

Any program an event runs must not prompt for any user input. Also, if a program calls any "dll" files, put these files in the "windows/system" directory.

Run Basic Script

The most powerful event action is to run a Visual Basic ("VB") script:
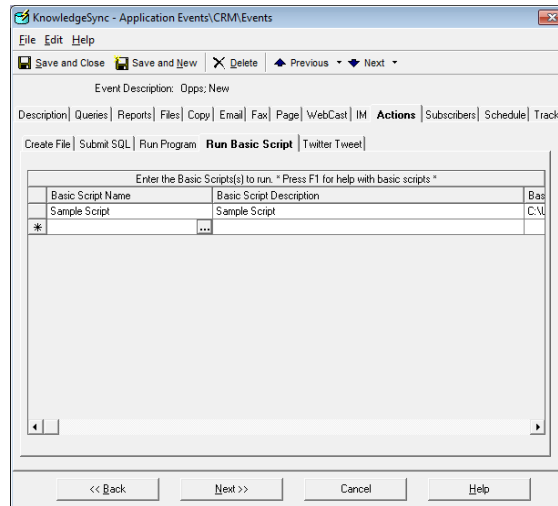
"RUN BASIC SCRIPT" TAB

VB scripts are designed within Digital Taskforce (see "VB Scripting" chapter) and require expertise in Visual Basic syntax. Sample scripts are available from e-automate Customer Care by submitting a request to:

eacustomercare@ecisolutions.com

To view or change a script associated with an event, double-click on the script name. To add a script to an event, double-click on the event name, click on the Actions tab, then on the Run Basic Script tab, click in the field called "Basic Script Name" and click on the List button.

To view the programming code behind a script, right-click on the script name and select "Edit". You will be brought to a window from which you can view (and test) the corresponding script.

Any script an event runs must not prompt for any user input.

SalesLogix Update Wizard

Digital Taskforce includes a custom integration to the SalesLogix customer relationship management (CRM) application. This integration allows an event to create history entries for a contact in SalesLogix, as well as to create scheduled activities in SalesLogix. (A single event may do both.)

(Digital Taskforce can update other tables in SalesLogix, using VB scripts. Please contact e-automate Customer Care for copies of these scripts.)

A typical use of this wizard would be to identify prospects who have not been contacted within the last week and (in response) schedule a phone call in SalesLogix and update the contact's history within SalesLogix. Note that these wizards can be executed by events that are triggered by conditions outside of the SalesLogix system.

To view or modify an event's SalesLogix wizard action, double-click on the "SalesLogix Wizard" branch. To add a SalesLogix wizard action to an event:

➢ Double-click on the event name, click on the Run a Program tab within the Actions tab, and then type in the name and location of the SalesLogix file "slgxapi.dll". This file must reside in

the Windows System32 folder and you must not reference mapped drives in your file specification.

➢ Press your tab key twice to move to "Command Line Parameters" and click on the List button that appears there. You will be shown the SalesLogix "Create Activity" wizard as shown below:
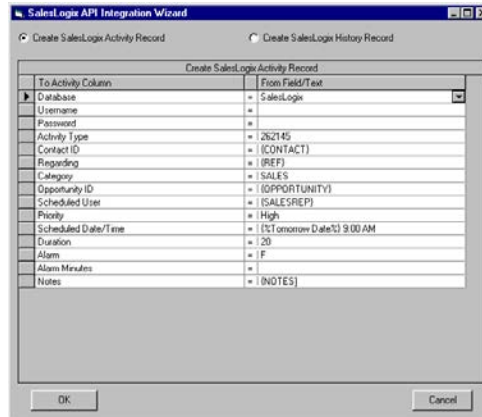
"SALESLOGIX API WIZARD"

Create Activity / Create History. A single event may call the SalesLogix wizard twice, if both an activity and history record are to be created.

Database / Username / Password. You must provide the login information for Digital Taskforce to access the SalesLogix application. You can specify this information here in the wizard, or you can pre-set it within the "connection" (ODBC) record in Digital Taskforce.

Please note that the "database" name refers to the SalesLogix data source link name.

Contact ID. In order for SalesLogix to know what contact record you wish to update, an event needs to pass the "contact ID" value into the activity or history record being created. If the event's query retrieves this value from the SalesLogix database, click in the "From Field/Text" area to the right of the "Contact ID" field, click on the List button that appears there, and choose the contact ID field from your list of query fields.

Field Value Mapping. For the remainder of the fields in either the activity or history record wizard, fill in the "From Field/Text" areas with any combination of hard-coded values, data field names, or date substitution variables. (You may use any of the field formatting controls detailed earlier in this chapter.)

If an event will trigger the SalesLogix wizard based on conditions in a non-SalesLogix database, the event will require two queries; one to identify the triggering conditions, and a second query to retrieve the "contact ID" from SalesLogix.

You can map multiple database fields to a single activity or history field (select the first field from the drop-down list; successive fields must be manually entered) and you can map the same data field to multiple fields in the activity or history record.

You will also see both "T" and "F" listed as potential values for fields that need to be responded to with a "true" or "false" answer. Note that SalesLogix activity and history "types" are numeric codes that you can learn about from your SalesLogix business partner.

If an event has any associated reports, you may specify whether those reports need to complete successfully before the wizards are executed.

Post Twitter "Tweet" Message

An event can also be configured to post a Twitter "tweet" message as shown below:
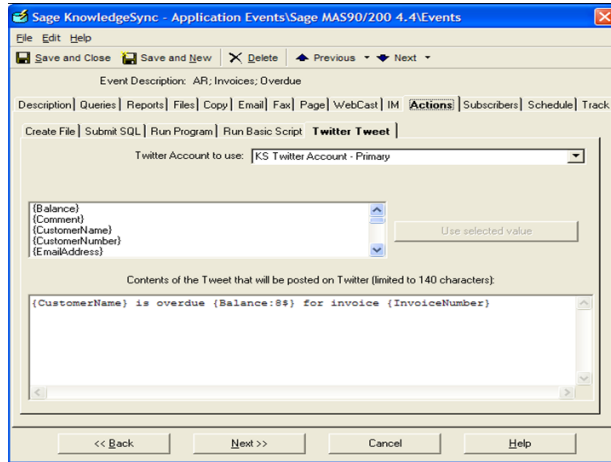
POST TWITTER "TWEET" MESSAGE

Unlike the other alert delivery methods in Digital Taskforce, the ability to send "Tweet" alerts is configured in the "Actions" tab. Please note that before you can configure Digital Taskforce to send out a tweet, you must have first created the Twitter account (outside of Digital Taskforce) and, secondly, configured Digital Taskforce to be aware of that account. The second part of this is done in the Digital Taskforce Administrator module, under the branch for "Software Setup".

Once you have completed the above steps, you may use the "Twitter Tweet" tab to specify the following details of the tweet message to be sent:

Twitter Account to Use. This refers to the Twitter account that was configured in the Digital Taskforce Administrator module "Software Setup" branch. Click on the drop-down list button to see a list of currently configured Twitter accounts.

Contents of the Twitter Tweet that will be Posted. This refers to the tweet message content; you may use any combination of hard-coded text and event data variables in your message. Note that the maximum length of a Twitter tweet is 140 characters, including blanks.

Note that it is suggested that you NOT use the "{BEGIN*REPEAT}" and "{END*REPEAT}" commands within the created file, as this will typically cause the content of the tweet to exceed 140 characters and thus cause the tweet not be successfully delivered.

Monitoring the Status of Workflow Actions

The Digital Taskforce Monitor tracks the status of workflow actions, including those that are "pending", have been "completed", and those that are in an "error" state.

If workflow actions fail to complete successfully because of errors, you may try to correct the error, mark the action as "complete", or manually delete the erroring action. (See "Corrective Actions" in the

Administrator module.) Digital Taskforce will attempt to re-deliver an erroring workflow action every minute.

Subscribers Tab

The "Subscribers" tab lets you to specify who will receive alerts about a triggered event and via what method (e-mail, fax, pager, copy (FTP), webcast, or Instant Message).

To view, modify, or remove a subscriber associated with an event, expand the Subscribers branch and then double-click on the subscriber you wish to access.

To add a subscriber to an event, double-click on the event name and click on the "Subscribers" tab.

To view or modify the configuration of a subscriber associated with an event (e.g., their delivery addresses, etc.), right-click on the subscriber name and select "Edit". Refer to the chapter on Subscribers for details on their configuration.

When you select a subscriber associated with an event, a window like the following will appear:
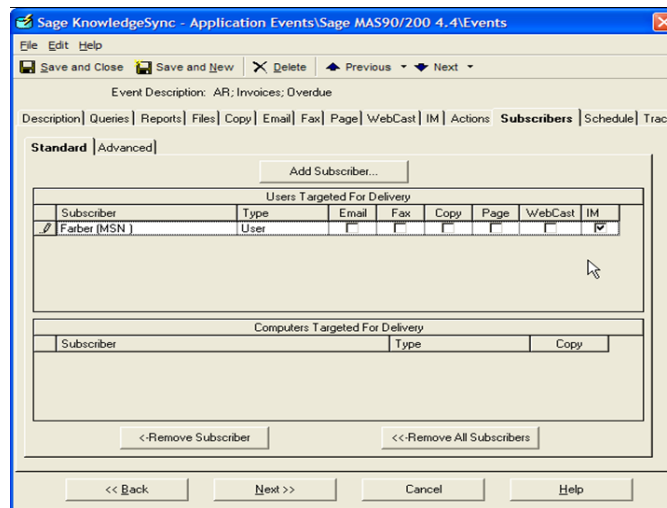
EVENT "SUBSCRIBERS"

The subscribers tab is divided into "Standard" and "Advanced"; standard subscribers are pre-determined groups or individuals such as "John Smith", "Mary Reynolds", and "Finance Team".

"Advanced" subscribers are people who are related to the event that has been triggered. E.g., send an invoice to the "customer" and the "salesrep" associated with a new order that has been placed. An event may send alerts to a combination of "standard" and "advanced" subscribers.

Monitoring the Status of Alerts

The Digital Taskforce Monitor tracks the status of all triggered alerts for an event's subscribers, including those alerts that are "pending", have been "completed", and those that are in an "error" state.

If alerts fail to complete successfully because of errors, you may try to correct the error, mark the action as "complete", or manually delete the erroring alert. (See "Corrective Actions" in the Administrator module.) Digital Taskforce will attempt to re-deliver an erroring alert action every minute.

To see the alerts queued-up for subscribers, follow these steps:

➢ Open the Monitor, expand the "Application Events" branch and then click on the "Triggered Today" branch.

➢ Single-click on the triggered event whose alerts you wish to track.

➢ Click on the "Deliverables" button to see the subscribers for the event.

To view the text of an alert message, point your cursor at the column (in the Monitor grid) that contains the e-mail, fax, pager, or webcast text and a pop-up window containing the alert message text will appear.

Standard Subscribers

You can send alerts to people (individually or in groups) or to computers (individually or in groups). People can be notified via e-mail, fax, copy/ftp, pager, and webcast; computers can be notified via copy/ftp. Only an event's associated reports or files may be copied using the ftp delivery method.

To add a standard subscriber to an event, navigate to the "Subscribers" tab and click on the "Add Subscriber" button. You will be shown a list of subscriber groups:
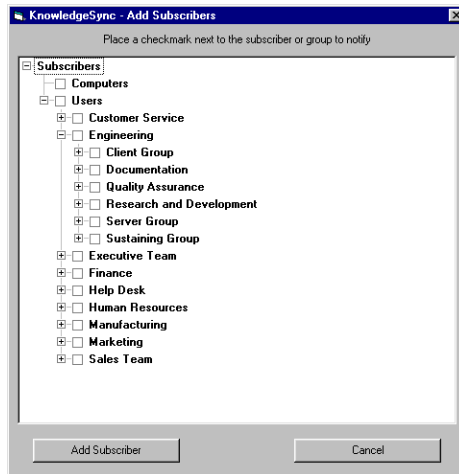
SUBSCRIBER GROUPS

To send alerts to all the members of a group, click the checkbox to the left of the group's name. If you select a group, all members will be notified via the same delivery method(s). To alert specific subscribers, expand the group to which they belong and place a checkmark in the box to the left of the subscriber's name.

An event can notify any combination of groups and individuals. When done, click on the "Add Subscriber" button and select the methods by which the selected groups or individuals will be notified.

To remove a subscriber from an event, highlight the subscriber record you wish to remove, and click on the "Remove Subscriber" button.

Advanced Subscribers

The Advanced subscribers tab is where you can specify that you wish an event to deliver its alerts to one or more people who are associated with the record being triggered (such as notifying the customer and salesrep when a new order is placed).

(The upper Advanced Subscriber grid is also used to control message "breaking"; please refer to the section of this chapter titled "Begin & End Repeat" for details.)

Subscribers Using the Lookup Key

The upper grid in Advanced subscribers is used if you are working with an application that does not store peoples' delivery (such as email) addresses. In such a case, Digital Taskforce stores the email addresses, and each address is linked to a database record via a "lookup key".

For example, a help desk application might store support reps identified by a unique ID. Each rep has a subscriber record in Digital Taskforce and within each of these records is a "lookup key" field which contains a rep's ID. Thus when an event is triggered, Digital Taskforce can retrieve the ID of the rep to be notified, locate that ID in the subscriber database, and then send the alert to that subscriber's address.

To use the lookup key function, follow these steps:

➢ Click on the Subscribers "Advanced" tab; the following will appear:
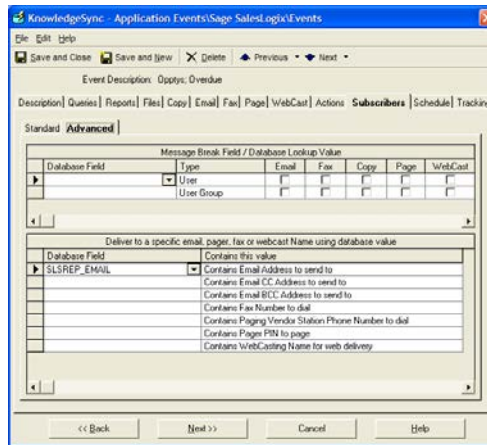
EVENT SUBSCRIBERS "ADVANCED" TAB

➢ Click in "Database Field" for the first line in the top grid. Click on the List button, and select the database field that contains the "lookup value" that will be used to locate the corresponding subscriber in Digital Taskforce.

➢ Click on the delivery methods that the subscribers will be notified by.

Note that you can also use groups for subscribers using the "lookup value". Identify the names of groups that are used in the application being monitored, and create identically-named groups (case-sensitive!) in Digital Taskforce. Then, for an event that will notify a group of users, use the second line in the top grid to refer to the database field that contains the group name to be notified. All members in the correspondingly-named subscriber group in Digital Taskforce will be notified.

Subscribers Using Field-Based Addresses

As long as an event's query retrieves the field that contains a person's delivery address (such as the email addresses of the customer and salesrep associated with an order), Digital Taskforce can deliver the alerts to those subscribers.

When you click on the "Advanced" tab, you will see the following:
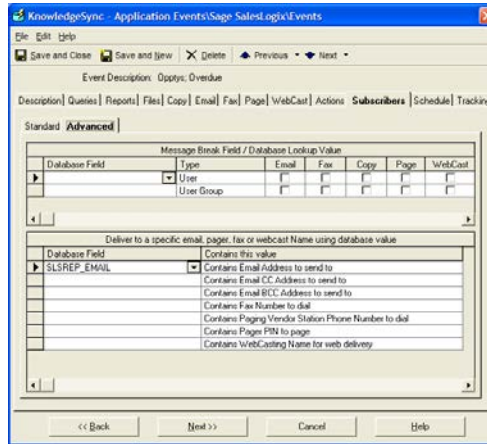
EVENT SUBSCRIBERS "ADVANCED" TAB

Follow these steps to select subscribers whose addresses are contained with one or more database fields:

➢ Click in the first field in the lower grid on the Advanced tab and click on the List button that appears there.

➢ Select the database field that contains the address you wish the alert sent to.

➢ Use the second and third fields in this grid to select "cc" and/or "bcc" addresses; note that you cannot have a "cc" or "bcc" address unless you have also chosen a primary delivery address (in the first field in this grid).

➢ Use the remaining grid fields to refer to additional database fields containing a subscribers' fax, page, or webcast (dashboard) addresses.

If an event needs to send alerts to <u>multiple</u> addresses, you'll need to concatenate the address fields (in the underlying query) into a single database field. Separate each email address from the next with a comma and limit the total length of all email address to no more than 255 characters.

Schedule Tab

To have an event run, it must be "active" and it must have a schedule. Expand an event's components, and the first component will show whether the event is active or inactive. If inactive (and you wish to activate), double-click on the event name and place a checkmark in the "Active" field.

(To inactivate an event, double-click on the event name and remove this checkmark.)

If the event is active, you may view or modify its schedule by right-clicking on the schedule branch and choosing "Edit". You will see the following window:
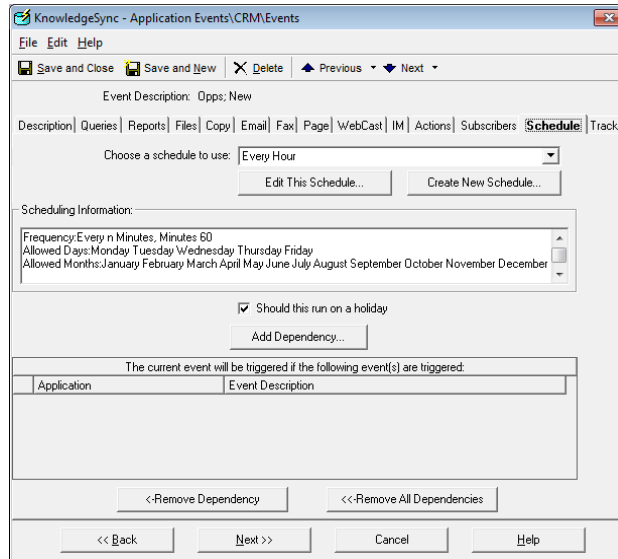
EVENT "SCHEDULE" TAB

Choose a schedule to use. Select the recurring schedule that represents how often you want Digital Taskforce to check to see if this event's conditions exist. The system comes pre-configured with about 10 schedules; you may add to or modify these.

o   If you wish to test an event, do <u>not</u> give it a very frequent schedule (such as every 5 minutes). Instead, give the event a schedule of "none" and then use the option to "Schedule This Now" for on-demand submission of an event.

o   The schedule called "When email arrives" is for use only with events that are monitoring the content of incoming email messages.

o   If an event needs to execute in real-time, use a database trigger instead of scheduling the event for periodic submission.

o   For frequencies not available via the scheduling options, use the event's query to restrict when the event can run. For example, to run an event on "the first Monday of a month", use a schedule of "every Monday" but then use your query to check for a "day number" that falls between one and seven.

Creating/Editing a Schedule

To create or edit a schedule, click on the "Create New Schedule" or "Edit This Schedule" buttons:
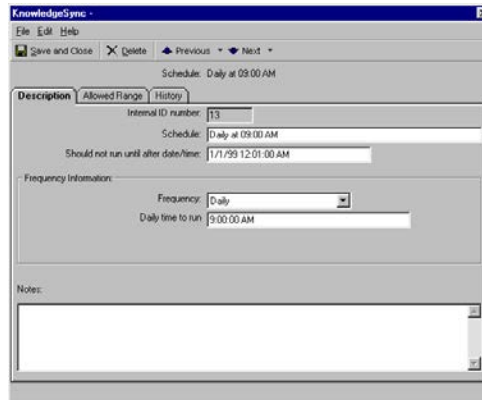
SCHEDULE DEFINITION WINDOW

(You can also create a new schedule by right-clicking on the "Scheduled" tab in the Navigator and choosing "Create New Schedule".)

Schedule. Type in a description of the schedule (e.g., "Everyday at 3 PM")

Should not run until. Enter a date in the future when events using this schedule will begin to be submitted. Leave blank if this schedule is to be activated immediately.

Frequency. Choose from:

- Every 'n' minutes
- Hourly
- Daily
- Weekly
- Monthly
- Annually
- When email arrives
- None (used only for events that have no schedule)

Based on the chosen frequency enter the additional scheduling details, such as the time of day to run, the day of the week, et cetera.

Allowed Range. Specify the months of the year, the days of the week, and the hours of the day when this schedule is eligible to run events. Times are inclusive.
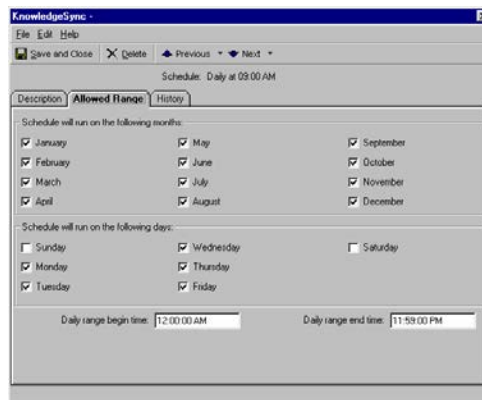
Should run on holiday. Place a checkmark in this field if you **do** want an event to run on a holiday (defined in the Administrator module).

Monitoring Scheduled Events

When an event is scheduled, you can use the Monitor to track the status of the event's scheduled submission. In the Monitor, go to the "Scheduler" branch and then click on "Next Run Date/Times". You will see a list of events pending execution.

Once an event is submitted, proceed to "Application Events" and monitor whether the event has been successfully checked and/or triggered.

Event Dependencies

This function has been replaced with "Job Streams". Please refer to that section below.

Job Streams

A job stream is a series of events that need to run in a sequential fashion, one after another. Job streams have the following unique characteristics:

- There is a single schedule for all events in a stream. That schedule indicates when the first job in the stream will be submitted.

- Each event in a stream **completes** before the next event in the stream begins.

- The "completion" of a event is defined as its successful execution -- regardless of whether the event is triggered or not.

This last point is very important; if a job stream has 3 events within it, all 3 events will always execute whenever the stream is run. Whether any one of those events is *triggered* is based on the query associated with the event.

Job streams are very useful in situations where you need precise control over the order of execution of multiple events; for example, when you need to have an event trigger workflow to update an application and then wish to have a report run on that updated data. (Two events; one job stream)

And remember -- regardless of how many components an event has – alerts, reports, and/or workflow -- the next job in a stream will not execute until all the components of the preceding event are complete.

Job Streams are valuable when:

- You have a series of events that need to be submitted in a specific order, such as an initial event that logs a support ticket from an incoming email, and then a subsequent event that triggers alerts about that ticket.

- You have a group of events related to the same business condition, such as a "new hire". Job streams are an excellent way to group related events together, and easily manage them.

- You have a business process with decision branching, e.g., a stream that triggers alerts based on either high or low priority support tickets.

In this example, a stream would contain two events; one event that triggers alerts for 'high' priority tickets, and another event that triggers (different) alerts for 'low' priority tickets. For any ticket **both** events will always run, but only **one** event will ever trigger.

The following illustration is an example of how job streams are represented in Digital Taskforce:
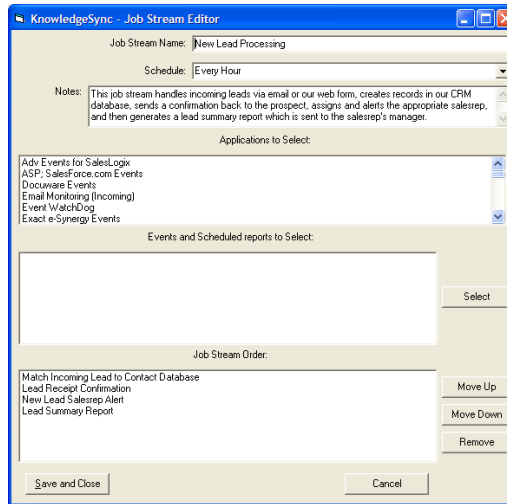
JOB STREAM EXAMPLE

Add/Edit a Job Stream

To create a job stream, open the Navigator, right-click on the "Job Streams" branch and select "New Job Stream". To edit an existing job stream, expand the job streams branch and double-click on the stream you wish to edit.

You may view/edit individual events in a job stream using the same functions as were detailed earlier in this chapter. The following options are available to you:

Job Stream Name. The name that uniquely identifies the job stream.

Schedule. Click on the List button and choose a schedule. It is suggested that events used within a stream have a schedule of **none**.

Selecting Events for a Job Stream

To add an event to a job stream, follow these steps:

1. In "Applications to Select", single-click on the application that contains the event you wish to add to the stream and you will see a list of all active events for that application.

2. Double-click on the event you wish to add.

3. Repeat steps #1 and #2 for each event you wish to add to the stream.

4. Click on "Save and Close" when done.

Re-Ordering/ Removing Events in a Job Stream

To change the order of (or remove) events in a stream:

1. Open the job stream to edit its configuration.

2. Highlight the event whose order of execution you wish to modify (or wish to delete from the stream).

3. Use the "Move Up" and "Move Down" buttons to change the order; use the "Remove" button to delete the corresponding event.

4. Click on "Save and Close" when done.

Delete a Job Stream

Expand the "Job Streams" branch and locate the job stream you wish to remove. Right-click on that job stream and select the option called "Delete Job Stream".

Run a Stream Right Now

Expand the "Job Streams" branch, locate the stream you wish to run, right-click on that job stream and select the option called "Schedule This Job Stream Now".

The "Tracking" Tab

The "Tracking" tab shows you whether an event has been checked, has been triggered, and the "unique" IDs of the triggered records. This tab also lets you "un-trigger" (or "remove tracked items") for an event.

To access the Tracking tab, double-click on the event name and click on the "Tracking" tab.
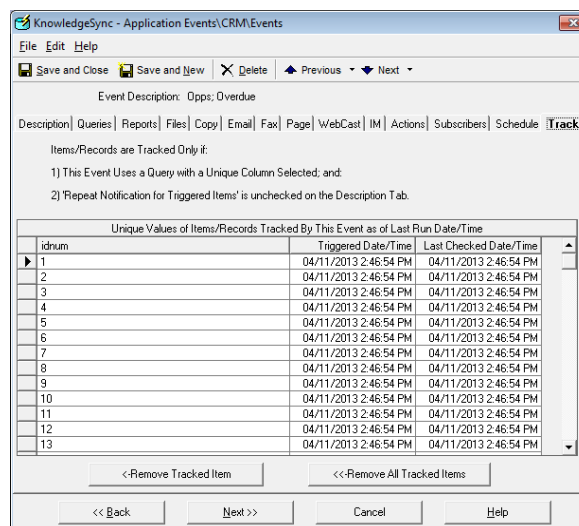
EVENT TRACKING

From this tab you can "un-trigger" (or clear out) the triggered records for an event and thus enable it to be triggered again. You can clear out some or all triggered records for an event.

Clearing Triggered Records

To un-trigger a specific record for an event, highlight the record and click on the "Remove Tracked Item" button. To clear all triggered records for an event, click on the "Remove All Tracked Items" button.

(You may need to click off and back onto the "Triggered" tab to see that triggered items have been removed.)

If Your Event Isn't Triggering . . .

. . . check the Monitor and see if the event appears under "Application Events" that are "pending", "checked", "triggered", or have recorded "errors".

Here are the top reasons why an event may run but not trigger:

The event's conditions are not met. Preview the query to ensure that there are matching records (and note that if the query checks for "changed records", preview will show all records, regardless of a change to their value).

The event is already triggered. Go into the "Triggered" tab and see if any triggered records are listed.

The e-mail sending account is blank. Go to the "Email" tab and make sure that the "account to send from" has a valid value.

There is no alert message text. If you've chosen to send alerts via email but have not specified any message text, no alert will be sent out.

The subscriber does not have a valid delivery address. Review the subscriber's profile to see they have a valid address for the chosen method.

The subscriber is disabled to receive alerts at that day or time. Review their profile to see if their "work hours" exclude certain days or times.

The corresponding delivery server is disabled. If an event is configured to send fax alerts but the fax server is disabled, no alerts will go out.

The event is waiting for its report to finish. If an event has an associated report, it may be configured to "wait" until the report is done before sending its alert.

If Your Event Triggers Over and Over . . .

. . . check out the event query's "unique" value. If a query doesn't have a unique, the event will trigger repeatedly for the same record, until that record no longer meets the query's criteria.

Also check the setting of the event's "Repeat Notification for Triggered Items" checkbox and make sure it is not checked.

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Run an Event Right Now

To run an event once – right now – right-click on the event and choose "Schedule This Event Now". The Digital Taskforce Windows Service or Desktop Service must be running to use this option – but do not run <u>both</u> services simultaneously.

Test an Event

To test an event – that is, <u>not run</u> the event but rather get an informational display of what would happen when the event runs – right-click on the event and choose "Test This Event Now". The Digital Taskforce Windows Service or Desktop Service must be running to use this option – but do not run <u>both</u> services simultaneously.

CHAPTER 7

Visual Basic Scripting

Among Digital Taskforce's workflow functions is its ability to use Visual Basic (VB) scripts to add or update information within application databases.

This module should be reserved for use only by those individuals who are familiar with VB syntax and have expertise in writing VB scripts.

Please note that e-automate Customer Care will answer questions about how the VB Scripting works, and will also provide VB script templates. However, Digital Taskforce Support does not provide custom script design support or debugging services.

The Two Types of Scripts

Digital Taskforce supports two types of scripts; "back end" and "front end":

- **Back-end** scripts are those that execute as a result of an event being triggered.

- **Front-end** scripts are those that are used instead of a query as a means to check for a business condition (e.g., such as for monitoring the event log).

Back-End Scripting Scenarios

Here are two scenarios where back-end scripting would be used:

Condition: A client places more than two orders with you this month.
Script: Update the client's status to "Very Active"

Condition: A client has more than $50,000 in their 90 Days receivables
Script: Change the client's credit status to "On Hold"

Front-End Scripting Scenarios

Here are two scenarios where front-end scripting functions would be used:

1. Check if available disk space on your database server drops below 200mb.

2. Check to see if EFT files have been received

Sample Scripts

ECi Software Solutions has sample scripts for your review and use; please contact e-automate Customer Care for assistance.

Create a Script

Before you create a script, go to the event that will be using the script and review its query to make sure that the query retrieves all of the data fields your script requires. If a column does not appear in the event's query, you will not have access to that column within the event's script.

To create a script, expand the "All Events" branch, expand the application you're working with, and right-click on the "Basic Scripts" sub-branch and select "New":
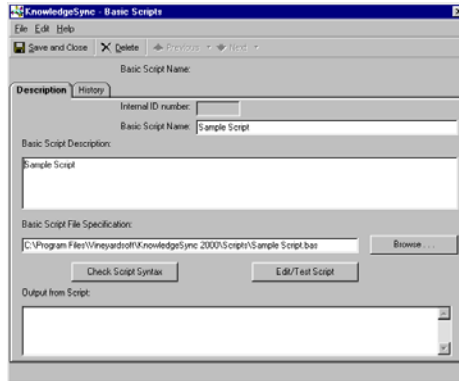
VB SCRIPT DEFINITION

Basic Script Name. Specify a brief descriptive name for the script. That name is copied into the **Basic Script Description** field, in which you may enter a more detailed description.

Basic Script File Definition. By default, scripts are stored in the "Scripts" directory where the application is installed, but you may override this location.

The "Edit/Test Script" button lets you edit and modify the script's contents as well as run the script from the edit window. The "Check Script Syntax" button lets you run a process that checks your script for any syntax errors. When you run this, you will be informed whether your script has any errors.

Back-End Script

When you edit a script, have a list of the **customized names** of the fields of data from the query the event is using.

Once you click on "Edit/Test Script", you will be presented with a script template that begins with an area for script author details and general purpose overview as shown in the following example:

```
' Script Name        : ERP_Update.bas
' Script Author      : John Smith
' Script Purpose     : Client update in ERP
' Script Creation Date : 2/5/2009
'
'
' The following declared functions are available
' to the script author in order to interact
' more closely with Digital Taskforce. All are optional
'
' Scripts may be executed by Digital Taskforce 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.
```

Using General Event Data in a Script

Beyond the initial comments, the first important part of a script details the VB functions that you can use to retrieve such information as the name of the event, its application, ODBC source name, API connection information, and the names of any reports or files associated with the event. This information is contained in the following section:

```
' 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      The event's lookup key
'
' application     The event's application
' description     The description of the event
' id              The id of the event
' dns             The ODBC data source for the application
' username        The ODBC username
' password        The ODBC password
' apiname         The API name as set in the connection
' apiusername     The API username set in the connection
' apipassword     The API password set in the connection
' report pending  The number of reports for the event
' report files    Comma separated list of report output files
' existing files  Comma separated list of files (Files tab)
```

Using Alert Message Text in a Script

The next part of a script details the VB functions that you can use to retrieve the alert message texts that are associated with the event.

This information is contained in the following section:

```
'
Declare Function KSGetPackage App ( ByVal s As String ) As String
'
' This function retrieves data about the package that was
' created for delivery by Digital Taskforce. The values that
' can be passed to KSGetEvent in order to
' retrieve data are as follows:
'
' email subject      The email subject
' email message      The email message text
' page message       The pager message text
' fax subject        The fax subject
' fax message        The fax message text
' fax comments       The fax comments
' webcast subject    The webcast subject
' webcast message    The webcast message text
```

Using Query SQL in a Script

The next section of a script details how to retrieve the SQL syntax of the query associated with the event. This information is contained in the following section:

```
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
'
```

Accessing Data Field Values in a Script

The next section of a script details how to access the values of data fields retrieved by the event's query. This information is contained in the following section:

```
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
'
```

Running Events from a Script

The next section details how a script can call for the execution of one or more other events. This information is contained in the following section:

```
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.
'
```

Set Script Return Status Code

The next section of a script details how to set the completion ("return") status code of an event that fails to run successfully.

```
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"
```

Specifying Your Script Syntax

Enter the syntax of your script between the lines that read:

```
' Begin your script here



' End of your script is here

End
```

Link Script to an Event

To link a script to an event, follow these steps:

- In the Navigator, locate the event you wish to link the script to.

- Double-click on the event name and then click on the "Actions" tab.

- Click on the "Run Basic Script" tab.

- Click in the "Basic Script Name" field.

- Click on the List button and choose the script you wish to link to the event

The resulting event should appear like the following:
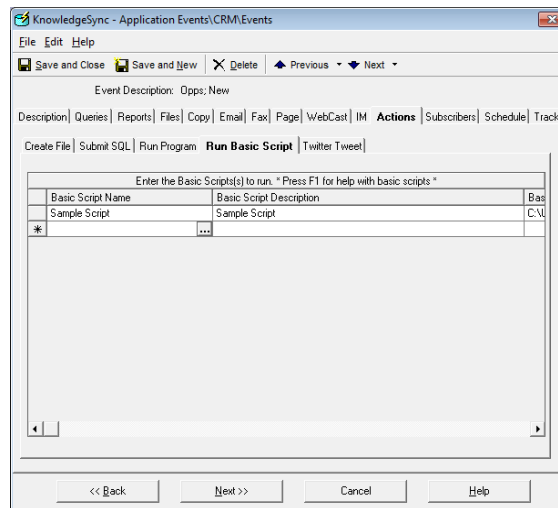
LINKING A BACK-END SCRIPT TO AN EVENT

Editing/Removing an Event's Script

To edit or remove a script from an event, follow these steps:

- Locate the event with the script you wish to work with.

- To edit the script's contents, right-click on the script and choose "Edit".

- To remove the script, double-click on the script, click on the arrow to the left of the script name (to highlight the selected script) and press your "Delete" key. Confirm your deletion and press the "Save" button.

Front-End Script

A front-end script contains instructions to check for a specific condition of data and then identify those elements of data that need to be passed into an event. (A single script can **not** be used in both front-end and back-end scripting.)

When designing a front-end script, identify how the script will be used. If the script is associated with an application (e.g., Sage 500 or Microsoft CRM), create that script within the "Basic Scripts" branch of that application.

However, if a script is not related to an application (e.g., if it monitors the operating system), you might create an entirely new application and store that script there.
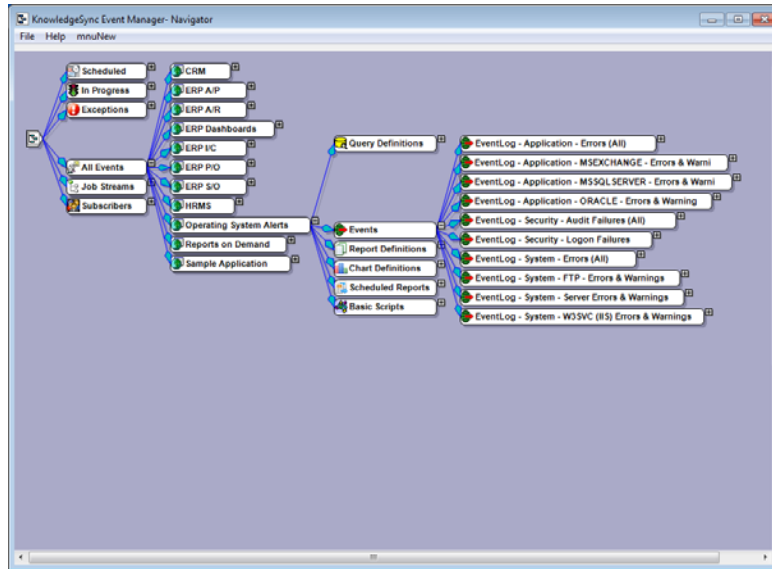
AN "APPLICATION" FOR FRONT-END SCRIPTS

A front-end script can perform whatever sort of checking you need it to – monitoring the status of hardware devices, 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.

Script Description

The first part of a front-end script is where you specify the purpose of the script and other general information:

```
' Script Name         : vs_sample_diskspace.bas
' Script Author       : John Smith
' Script Purpose      : Check available disk space
' Script Creation Date : 2/20/2009
'
'
' The following declared functions are available
' to the script author in order to interact
' more closely with Digital Taskforce. All are optional
'
' Scripts may be executed by Digital Taskforce 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.
'
```

Designing a Script to Trigger an Event

The next part of a front-end script is where you indicate that the script will be used to trigger an event, and where you can store the "triggered items" for the event:

```
' 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.
'
```

Front-End Script Completion Status Codes

The next part of a front-end script is where you set the "return" status code that indicates whether the script completed successfully:

```
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"
```

Script Syntax

The final part of a front-end script is where you specify the syntax of the script itself. (Have a look at ECi Software Solutions's Operating System events to see examples of this.)

```
' Begin your script here



' End of your script is here

End
```

Link the Script to an Event

To link a front-end script to an event, open the corresponding event and navigate to the "Queries" tab. In the middle of this tab is a check box called "Use Script Instead of Query." Place a checkmark in this box and then click on "Select Script" to display a list of scripts that you can choose from.

(Be certain to choose a front-end script and not a back-end script.)
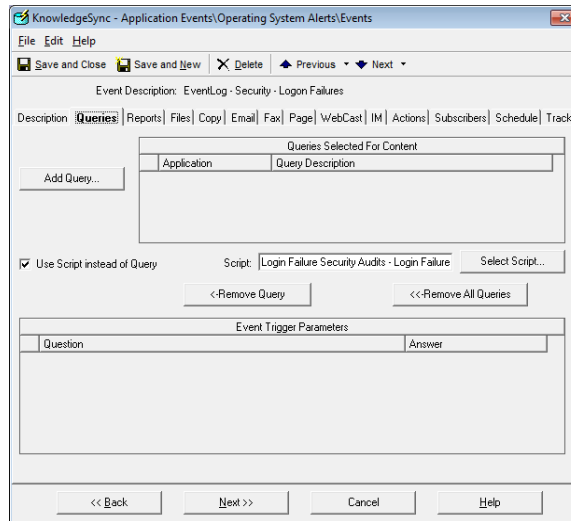
LINKING A FRONT-END SCRIPT TO AN EVENT

With this step you are finished with the set-up of an event that uses a front-end script.

Monitoring Events

Two modules in Digital Taskforce let you track the status of events; the Navigator and the Monitor. The Navigator gives you a quick overview of what events are scheduled to run, are running, and whether any errors have been encountered; the Monitor provides a comprehensive audit trail of everything that's going on in the Digital Taskforce application.

Using the Monitor, you can keep track of:

- The status of the application's servers

- Events that are scheduled to be checked and have been triggered

- Alerts that are queued to be delivered, and have been delivered

- The text of the outgoing alert messages

- The status of forms, documents, and reports queued for delivery

- The status of workflow actions queued for execution

- The status of any system errors

The Monitor is an informational display; you cannot use it to modify the information that appears within it.

Monitoring in the Navigator

Scheduled Events

The "Scheduled" branch shows the next scheduled times that events are due to run; this is the same information as the Monitor "Scheduler / Next Run Dates/Times". The Navigator displays events first according to their schedule and then by application, whereas the Monitor lists them in chronological order.

In Progress Events

The "In Progress" branch shows those events that are currently being executed; this is the same information as the Monitor "Pending" options, such as pending application events, email messages, reports, and so on.

The Navigator provides you with a count of the number of items that are pending in each category and displays matching records sorted by the application to which the pending items belong. Note that the Navigator will not show any pending items for servers that are not currently running.

Event Exceptions

The "Exceptions" branch shows those events that have experienced errors; this is the same information as the Monitor "Errors" options, such as application event errors, email errors, report errors, and so on.

When you expand an Exception branch, you will see a list of exception (error) types, followed by the names of the applications in which the errors occurred. Expanding the application branches show you the specific errors that happened. You will not see any exceptions for servers that are not currently running.

To view, correct, delete, or manually "complete" an event error, please refer to the option called "Corrective Actions", located in the Administrator module.

Digital Taskforce Event "WatchDog"

Digital Taskforce contains the ability to monitor itself. This is referred to as the "Event WatchDog EventPak", is free, and does not use a license "connection". The WatchDog monitors for such items as:

- Event errors
- Alert delivery errors (e.g., an invalid pager PIN)
- Too many alerts
- Too many alerts to one person
- Form, document, or report generation errors
- Workflow errors
- Alerts or actions pending for more than 'x' minutes

Please contact Customer Support department to receive this EventPak.

The Monitor

When you log into the Monitor module, the following window appears:

DIGITAL TASKFORCE MONITOR

You can control the order in which records are displayed by clicking in the heading for any field in the Monitor window.

Activity Folder

The Activity folder tells you about current processing and user activity occurring within the application.

Server Status

This displays the current status of the application's servers. Possible statuses are:

- **Shutdown**: The server is not running at this time. This could be due to the application service not running, the individual server being disabled (in the Administrator), or an error that caused the shutdown of the server.

- By default, all servers are enabled except for the Paging, Faxing, Reporting, Copying, Webcasting & Action servers.

- **Idle**: The server is running but is not processing any data.

- **Processing**: The server is processing data.

- **Startup**: The server is starting up. Startup mode should not last for more than a few seconds; if it does, try re-starting the application's service.

- **Linking**: Subscriber linking (see "Subscribers" chapter) is in progress.

Server Descriptions

Digital Taskforce uses the following servers:

- **Digital Taskforce**: This server initiates all of the other servers.

- **Scheduler**: This server schedules events, alerts, reports, and workflow.

- **Application Event**: This server executes events.

- **Report**: This server generates Crystal reports, forms, and documents.

- **Email**: This server delivers e-mail messages.

- **Fax**: This server delivers fax messages.

- **Page**: This server delivers pager messages.

- **IM**: This server delivers Instant Message alerts.

- **Webcast**: This server delivers dashboard (webcast) messages.

- **Copy**: This server copies and delivers files and reports via FTP.

- **Action**: This server executes workflow.

Server Notes

- If any of the first three servers are shutdown or paused, you will not be able to check for events, send alerts, generate reports, or execute workflow.

- If any of the notification servers (i.e., e-mail, fax, pager, copy, or webcast) are shutdown or paused, you will not be able to send alerts via that means.

- If the "Action" server is shutdown, you will not be able to execute workflow.

Current User Logins

This option tells you who is logged into Digital Taskforce, including the module they are logged into as well as their name and date/time of most recent activity.

Scheduler

The "Scheduler" folder has one branch within it – "Next Run Date/Times" – and this shows you what events are due to be submitted next.
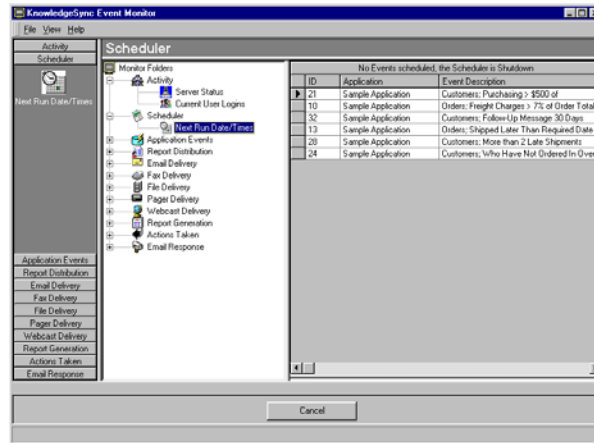
NEXT SCHEDULED RUN DATE/TIMES

For each event you will see its name and application, next scheduled run date/time, and the event's schedule frequency.

Application Events

The "Application Events" folder lets you to track the status of events that are due to run, have already run, or have failed to run successfully because of an error.

APPLICATION EVENTS: CHECKED TODAY

Application events are divided into four categories:

- **Pending**. An event is pending because it either has not been submitted, or is in an error state.

- **Checked**. A checked event is one that was successfully executed. It may or may not be "triggered", depending on whether its conditions were met.

- **Triggered**. A triggered event is one that was successfully executed and whose conditions were met. An single run of an event may result in multiple triggered records.

- **Errors**. An event shows up under "errors" if it was unable to be successfully checked. Such an event automatically is re-queued under "Pending".

Triggered Records

When an event successfully runs, it will appear once in the "Checked" branch but may appear multiple times in the "Triggered" branch. Consider the following event:

*Send an alert to each support rep about any high priority call
that has been open for longer than four hours.*

There may be multiple call records that meet this event's criteria and the event may trigger once for each record, once for all records, or once per rep who has high priority calls.

Event Details

For each checked event, you will see the event's application, name, date/time of execution, and processor seconds that the event took to complete.

For each triggered event, you will see the above details plus the alert message text and the value of the unique ID of the triggered record.

For an event that ends in error, you will see the event's application, name, date/time of execution, as well as the number and description of the error that occurred.

Displaying Alert Message Text

The columns that contain alert message text may be expanded to display the full text of the message. To do so, point your cursor at that field and the Monitor will automatically pop-up a window that shows you this content.

DISPLAYING ALERT MESSAGE TEXT

Displaying the Status of Alerts, Reports, & Workflow

When an event triggers, it can cause any combination of alerts, reports, and workflow to be executed. The "Deliverables" button shows you the status of these items.

To use the this function, click on any of the Application Events "Triggered" branches, select the event you are interested in, and click on the Deliverables button. The following window will appear:

AN EVENT'S "DELIVERABLES"

You are shown the status of any alerts, reports, or workflow associated with the event that was triggered, including the completion status of these items, the delivery addresses, and the date/time each deliverable was completed.

Listing an Event's Triggered Records

If an event is configured to track the unique ID of records that meet the event's criteria, the Monitor can be used to display these values. This is referred to as an event's "triggered items".

Note that a triggered event may have either one or multiple triggered items, based on how the event is configured.

To use the this function, click on any of the Application Events "Triggered" branches, select the event you are interested in, and click on the Triggered Items button. The following window will appear:
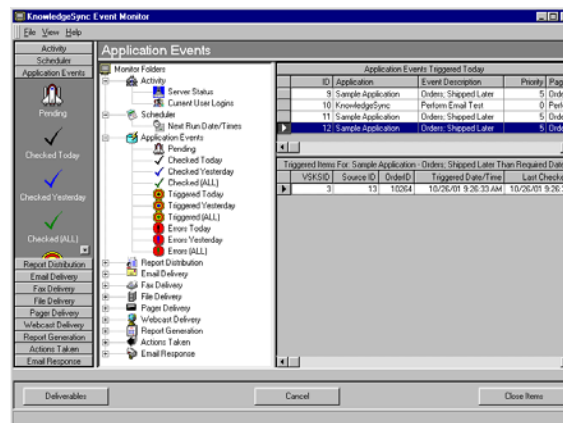
You will not have access to an event's triggered items if:

➢ The event's query does not have a "unique" column identified, or;

➢ The event is configured to "repeat notifications for triggered events"

How to Handle Event Errors

When an event fails because of an error, three things happen:

• The event will appear in the "Errors" branch.

• The event will appear in the "Pending" branch.

• Digital Taskforce will **re-submit** the event every minute until it either runs successfully, or is deleted or manually completed (via the Administrator).

Digital Taskforce retains only one iteration of an event that errors. If an event errors due to a condition that corrects itself (such as a server down), you can leave the event alone as once the condition is corrected, the event will successfully execute.

If the event errors because of an incorrect configuration, you can edit the event, correct it, and your "fixed" version will be used the next time the event runs.If the event errors and you wish to remove that run of the event, go to the Administrator and either delete or manually complete the record.

You may also use the Administrator option to remove "pending" items from the Digital Taskforce database. Go to the "File" menu, select "Database Tools," and then "Remove Pending Items."

Report Distribution

Report Distribution pertains to reports that are scheduled for periodic generation and distribution. This does not include to reports that are associated with application events (see "Report Generation").

There are two sub-branches of this folder ("Pending" and "Submitted"); you will see the name of scheduled report events (e.g., "Weekly Management Reports") and the date and time the events are to be submitted.

To track the completion status of the individual reports within a distribution event, go to the "Report Generation" branch.

E-Mail, Fax, Pager, Webcast, & IM Delivery

The "Delivery" folders for email, fax, pager, webcast (dashboard), and Instant Message are divided into three branches:

• **Pending**. A pending message is one that has not been sent either because of system processing or because of an error.

• **Sent**. A "sent" message is one that was successfully delivered. An "undeliverable" email message may be considered successful because the delivery did succeed (even though the recipient was invalid).

• **Errors**. A message will show up under "errors" if it could not be sent. An erroring alert will automatically be placed back into the "Pending" branch.
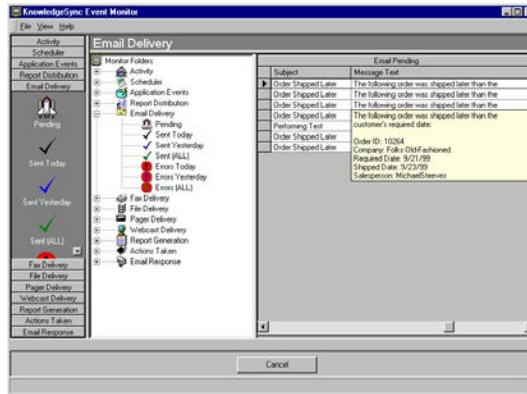
E-MAIL DELIVERY FOLDER

How to Handle Delivery Errors

When an message fails to be delivered successfully, three things happen:

- The message will appear in the "Errors" branch

- The message will appear in the "Pending" branch

- Digital Taskforce will attempt to re-send the message every minute until it is either successfully delivered or is deleted or manually completed (in the Administrator).

- To remove all pending items for a delivery method, open the Administrator, go to the "File" menu, select "Database Tools," and select "Remove Pending Items." You may then select the option to remove all messages that are pending.

Report Generation

The "Report Generation" folder lets you track the status of forms, documents, and reports that an event is generating. This folder is divided into three branches:

- **Pending**. A pending report is one that has not been generated either because of system processing, or because of an error.

- **Generated**. A "generated" report is one that was successfully produced. Just because a report was "generated", it does not mean it was successfully delivered. Review the appropriate delivery method (such as email) to see if the report was delivered to its intended recipients.

- **Errors**. A report will show up under the "errors" branch if it failed to be generated successfully. A report that fails will automatically be placed back into the "Pending" branch.
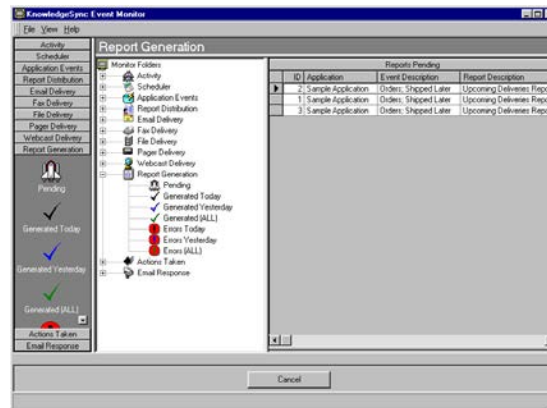
REPORT GENERATION

How to Handle Report Generation Errors

Report generation errors can occur for a number of reasons, typically an error in the report's design. When a report fails to be generated successfully, three things happen:

- The report will appear in the "Errors" branch

- The report will be re-queued under the "Pending" branch.

- Digital Taskforce will attempt to re-generate the report every minute until it either succeeds or the report is deleted or manually completed (in the Administrator).

To delete or manually complete a report, open the Administrator, go to the "File" menu, select "Database Tools," and then "Remove Pending Items." You may then select the option to remove all pending report generation requests.

Actions Taken (Workflow)

"Actions Taken" refers to events that execute workflow actions in response to a triggered event. This folder is divided into three branches:

- **Pending**. A pending action is one that has not been completed either because of system processing, or because the action failed.

- **Completed**. A "completed" action successfully executed.

- **Errors**. An action will show up under "errors" if it was unable to successfully execute. An action that fails will automatically be placed back into the "Pending" branch.

How to Handle Workflow Action Errors

Action errors occur for a number of reasons, such as a syntactical error in a Visual Basic script. Note that action errors are **not** recorded in if an action executes successfully but returns an error status code.

When a workflow action fails, three things happen:

- The action will appear in the "Errors" branch

- The action will appear in the "Pending" branch

- Digital Taskforce will attempt to re-execute the action every minute until it either succeeds or is manually deleted or completed (in the Administrator)

To delete or complete a pending action, open the Administrator, go to the "File" menu, select "Database Tools," and select "Remove Pending Items." You may then select the option to remove all actions that are pending.

Email Response

(See chapter titled "Email Response System" for more details.)

The "Email Response" folder lets you see what e-mail accounts are being checked for incoming messages, how many messages have been received and loaded into Digital Taskforce, and if any errors were encountered.

Once email message are loaded into Digital Taskforce, the corresponding events are treated just like any other application event, and thus can be tracked using the "Application Events" folder.

The "Email Response" folder is divided into three branches:

- **Checked**. Incoming email messages that have been checked by Digital Taskforce.

- **Received**. Incoming messages that have been loaded into the Digital Taskforce email response system database.

- **Errors**. Errors that Digital Taskforce encountered while trying to check for messages sent to one or more email accounts.

E-MAIL RESPONSE

CHAPTER 10

Email Response System

The Email Response System ("ERS") lets you monitor incoming email messages in much the same way that you can monitor application database records.

If an email message meets certain criteria, you can:

- Re-route the message to specific recipients
- Notify people about the message
- Auto-reply to the sender
- Use the contents of the message to add or update information in an underlying database

ERS refers specifically to the ability to monitor **incoming** messages and respond to them; if your interest is only in sending **outgoing** alert messages via e-mail, you do not need to use the ERS.

As of version 7.9 of Digital Taskforce, authentication and secure sockets (SSL) **is** supported in ERS.

If you have been using Digital Taskforce under Microsoft Access, you do **not** have to reconfigure any ERS events to work under SQL Server.

ERS and Web Forms

ERS can monitor email messages coming from any source; this includes messages generated from data entered on a web form. Using the ERS, you can take the contents of messages created from a web form and use it to update applications, send alerts, auto-respond to the person who filled out the form.

Supported E-Mail Systems

ERS supports all major email systems, including those that are "Internet", "Mapi", "Exchange", and "Vim" compliant.

How ERS Works

Here is an overview of how ERS works:

- You identify what email accounts to monitor for incoming messages.
- When a new message arrives, Digital Taskforce loads its data into a table called "Inbox".
- Queries check the content of the message to see if it meets certain criteria.

- Events that use these queries send out alerts, auto-respond to the sender, and (if appropriate), update application databases with the message data.

The key to this process is that Digital Taskforce takes each incoming message and creates a database record out of it. As a result, standard query and event design functions are used to process and respond to that message.

What This Chapter Covers

This chapter covers the steps to configure Digital Taskforce to monitor incoming email and load those messages into a table called Inbox.

Once the messages are loaded, refer to the chapters on "Query Designing" and "Event Designing" for details on how to identify and respond to those messages.

Add ODBC Source for ERS Database

Digital Taskforce processes incoming email messages by loading them into a table called "Inbox". Regardless of your Digital Taskforce database (SQL or Access), ERS uses an MS Access data source (which acts as a "linked table" under the SQL version of Digital Taskforce).

To define an ODBC source for ERS. follow these steps:

➢ Go into Data Source (ODBC) configuration on the Digital Taskforce server.

➢ Click on the System DSN option and then on "Add."

➢ Select the Microsoft Access driver and click on "Finish."

➢ Enter "ks_inbox" as the data source name.

➢ Enter "ERS" as the description.

➢ Define the location to "ks_inbox.mdb" in the Digital Taskforce "data" folder.

➢ Save the source.

Identify Email Accounts to Monitor

To identify the email accounts that will be monitored for incoming messages, follow these steps:

➢ Log into the Administrator and double-click on the "Software Setup" branch.

➢ Single-click on the "E-Mail Accounts" branch.

➢ If the account you wish to monitor is listed on the right, double-click on it; if not, click on the "New Email Account" button at the top-left.

E-Mail Account Properties

Fill in the following fields as detailed:

- **Email Type:** Select Exchange, Mapi, Vim, Internet, or Unknown.

- **Account Description**

- **Login Name:** The login user name for the account. Use the profile name for Mapi, and use the mailbox name for Exchange.

- **Password**

- **Postoffice:** For Exchange, this is the Exchange server name; for Lotus Notes and Vim, fill this in only if the postoffice you are using is different from the default postoffice.

- **Active:** Whether messages sent to this account should be monitored.

- **Incoming mail POP Server Name:** For Internet only; the name of the POP server.

The completed "General" tab will look like the following:
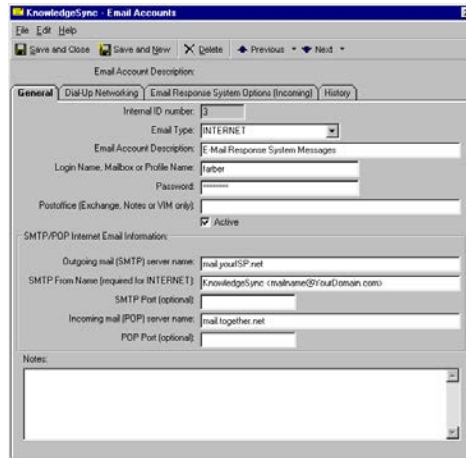
ERS ACCOUNT "GENERAL" INFO

E-Mail Response System Options

Fill in the fields as follows:

Download incoming messages. Check this box if Digital Taskforce should download messages sent to this account.

Check for new messages every n minutes: Specify how often (in minutes) Digital Taskforce will check for new messages sent to this account.

Refuse attachments for this account: (For Internet mail only) Check this box if you do not want to download email attachments. (ERS cannot scan the contents of attached files, but can scan the names of attachments.)

Delete messages after downloading: Check this box to delete downloaded messages from the email server after they are stored in the ERS database.

Check this option **only** if there are no other applications or email clients that need these messages.

Remove records from database after n days.: Specify the number of days that email records will be kept in the ERS database. ECi Software Solutions recommends 120 days; specify a value of '0' to

keep email records indefinitely.
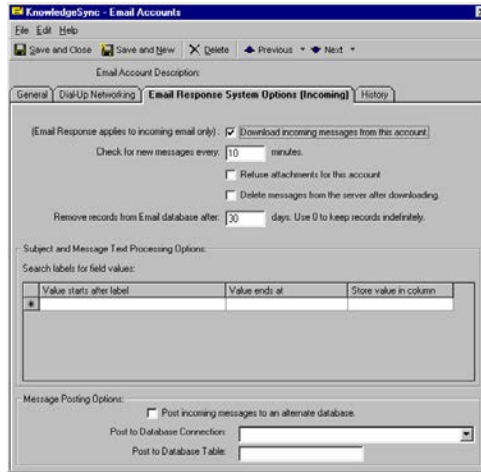
ERS Message Processing Options

ERS & Attached Files

Although the ERS cannot scan the **contents** of attached files, it can identify whether a message has attachments, and the names of them. Additionally, attachments are automatically stored in the Digital Taskforce "Attachments" folder, and an ERS event may copy or move the attached files to a location of your choice.

Attachment files are always created with unique names. And note that HTML emails always include one attachment that contains the HTML message text.

Message Text Parsing

Digital Taskforce can parse through the contents of incoming messages and can load individual elements of message data into specific fields in the ERS inbox table.

For example, consider mail message text like the following:

Company Name: Acme Corporation
Address: 1 Main Street
Contact Name: Robert Smith
Phone: 800-555-1212
Request: Please send me information you have regarding your product.

You can tell Digital Taskforce to take the value after "Company Name:" and store it in the inbox field called "account". Likewise, the value after "Address:" could be stored in an Inbox field called "address", and so on.

This is referred to as "parsing" the data in an incoming message and mapping to a corresponding field in the inbox table. The inbox table comes pre-configured with a number of fields that can have data parsed into them from an incoming message; you may also modify the inbox table to include additional fields that you'd like to map data to.

Modifying the Inbox Table

You can modify the Inbox table to add columns or modify the names of existing columns. You must stop the Digital Taskforce service before making changes and re-start the Service when done.

If you wish to modify the inbox table and are running Digital Taskforce in a SQL environment, please follow these steps:

1) Stop the Digital Taskforce service

2) Modify the inbox table

3) Run the "Reset Database Location" utility from the Digital Taskforce Programs Group.

4) Re-start the Digital Taskforce service..

Pre-Defined Loadable Inbox Fields

The following fields in the inbox table may be loaded with data from incoming messages.

Inbox Field Name	Default Purpose
Account	The sender's account name
Account_no	The sender's account number
Address	The sender's address
Application	The application the sender is writing about
Case_no	The case number referenced in the message
City	The sender's city
Country	The sender's country
Email	The sender's preferred reply-to email address
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 referenced in the message
Mobile	The sender's cell phone number
Notes	Message notes
Order_No	The order number referenced in the message
Pager	The sender's pager number

Inbox Field Name	Purpose
Phone_Home	The sender's home phone number
Phone_Work	The sender's work phone number
Postal	The sender's postal (zip) code
Problem	The description of the problem/issue
Product	The product that the sender is writing about
Question	The question text
Request	The request details
Serial_No	The 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

How To Specify Inbox Parsing

The order in which you specify the parsing fields must be the same as the order that the fields will appear in within incoming email messages. To configure mail message parsing, follow these steps:

➢ Click in the "Value Starts After Label" field.

➢ Key in the text that will precede the value (e.g., "Contact Name:").

➢ Click in "Value Ends at" and choose from:

- o Carriage return
- o Line feed
- o Blank space
- o End of message subject
- o End of message body
- o End of subject or message

• Click in "Store Value in Column" and select (from the drop-down list) the inbox field to load this value into.

• Repeat for each field you wish to map.
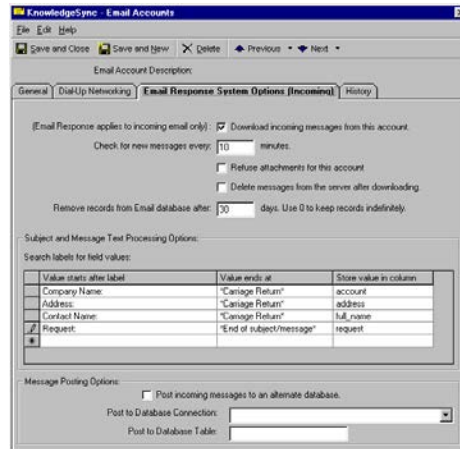
INBOX MESSAGE TEXT PARSING

Message Posting Options

You have the option to specify whether you would like to post (store) downloaded mail messages to another database for storage and/or historical reporting. To use this function, follow these steps:

➢ Check the option to "Post incoming messages to an alternate database".

➢ Choose the ODBC source that connects to this database.

➢ Enter the name of the table (within the alternate database) to which the inbox records will be posted.

The alternate database table must be configured to exactly mirror the column names that exist within the inbox table, and the alternate database table must have a unique primary key.

Create ERS Application

ERS queries and events must be stored within their own application in Digital Taskforce. To configure this, follow these steps:

➢ Log into the Navigator and expand the All Events branch; if a sub-branch for the Email Response System exists, right-click on it and choose "Properties".

   If an ERS branch does not exist, right-click on All Events and choose "New Application".

➢ Click on either "New Connection" or "Edit Connection".

➢ Enter "ERS" as the connection description and then select the ODBC source that points at the inbox database.

➢ Save and close your work.

Inbox Queries

ERS queries retrieve data from only a single table – the inbox table. This table contains both "loadable" fields (detailed earlier in this chapter) as well as pre-loaded fields that Digital Taskforce populates with details from incoming messages.

The following list describes all of the inbox pre-loaded fields. A query may retrieve and use data from any combination of loadable and pre-loaded data fields.

Inbox Field Name	Purpose
Attachment_Count	Number of attachments including alternate HTML text
Attachment_Files	Comma separated list of attachment file specifications. Attachments are stored in the attachments folder.
Attachment_Names	Comma separated names of the attachments
Attachment_Start	(0, 1, or 2) '0' indicates no attachments, '1' indicates one or more attachments, '2' indicates attachments beyond alternate HTML text.
CC_Names	The "cc" names from an incoming message
Certified	Whether the message was sent certified.
Created_dt	The date/time the mail message was created in the inbox
Email_Account	The name of the email account the message came in to.
Email_Account_Id	The ID email account this message came in to.
From_Name	The email "from name", such as 'John Smith'
From_Path	The full path of the sender's name, such as 'John Smith <smith@mycompany.com>'
From_Root	The email 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 email client used to send the email (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 header of the email message (for Internet type mail systems only)
Inet_UIDL	Internal Internet mail identifier (for Internet type mail systems only)
Inet_Webform	'0' (not from web form) or '-1-' (from 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 for this message
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	Whom the email was sent to.

Inbox Query Filters

Creating filters for inbox queries is done in the same manner as creating filters for application events. (See chapter on Query Designing)

Specific to querying incoming email records, however, is the need to test for messages that are sent from specific people or to specific email addresses.

The following filter identifies any messages sent from a person at ECi Software Solutions:

- Inbox.from_path   like   %ecisolutions.com%

And this next filter identifies any messages sent to ECi Software Solutions' support mailbox:

- Inbox.to_names   like   %support@ecisolutions.com%

You should also limit query results to only those messages received today:

- Inbox.received   is equal to   {%Current Date%}

Inbox Events

Inbox events are created just like standard application events. However, you might decide that you'd like to link an incoming mail message to a corresponding contact record within a customer database. This would let you:

- Identify the corresponding account manager and alerts them

- Update the customer's record with the details of the incoming message

- Create a record (such as a support ticket) and link that ticket to the customer

- Identify if the sender is **not** already in your customer database

Linking Mail Messages to Client Records

You can link an inbox record to a customer record in two ways:

o Using two queries in one event
o Using a Visual Basic script

Although a VB script gives you more flexibility in terms of creating database records based on receipt of an incoming email, it does require VB expertise. The use of two queries requires no programming knowledge.

When you use two queries in an inbox event, the first query retrieves the email records, and the second query links those records to your customer database.

This requires identifying a field in the inbox record that would allow it to link to a customer record. This might be the sender's email address ("from_root"), but could also be any other field in the message that corresponds to a matching field in your customer database.

Using a field such as the sender's address, your two queries would work as follows:

- Query #1 (retrieving inbox records) would include the linking field (i.e., the sender's address, "from_root") as one of the fields in the query.

- Query #2 (retrieving customer info) would have a filter that compares the email address in the customer application (e.g., "customer.mail") to the customized name of the inbox sender address field (e.g., "{from_root}").

This is illustrated in the following:
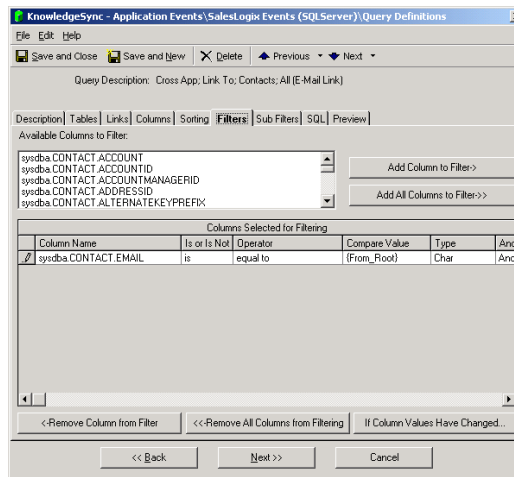
MATCHING EMAIL ADDRESS TO DATABASE RECORD

An event that uses two queries in this manner will trigger only if the sender's address is also found in the customer database. Once a match is found, all of the fields of data from both queries may be used in alert messages and in workflow actions.

(And, although the above scenario identifies message senders who exist in a customer database, you could construct a similar event where your second query looks for <u>no matches</u> to your customer database. This would identify a new client or prospect.)

Alerts & Actions

In terms of responding to an inbox event, Digital Taskforce can send 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 all standard content associated with a database event. Here is an example of a message that 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 email sent on {sent_dt} to {to_names}.
We will contact you shortly when we have an answer for you.

Thank You,
Support Team

Digital Taskforce can also execute workflow actions as a result of a triggered inbox event. One common use of an inbox action is to have an event take information from an incoming email and pass that into a VB script or other Digital Taskforce API to create or update records within an underlying application database.

Using Email for Report Requests

You can use ERS as a way to allow users, partners, or clients to request and receive forms, documents, or even reports. Consider the scenario where an organization has staff who need to need to run reports, but have to ask their IT department to do so.

Using the ERS module, the organization could configure a mailbox called "report_requests" and whenever a staff member needs a report, they send a message to that account. The message includes the name of the report to run.

When this message is emailed in, Digital Taskforce receives it, uses a query to determine which report is being requested, and then runs the report and emails it back to the requester. All done automatically, without human intervention.

(And the report request can even include selection parameters.)

Inbox Event Schedule

Since you want Digital Taskforce to respond to incoming mail messages as soon as they are received, all inbox events should use a frequency of "When Email Arrives."

Inbox Events in the Monitor

To monitor the status of inbox events, use the Monitor. Although inbox events turn into standard application events, there is an additional branch called Email Response.

The Email Response branch lets you check to see what mail messages have been received (and logged) into the inbox database.

Once an incoming message has been received and loaded into the inbox database, you may use the standard application event and delivery branches of the Monitor to check to see if the inbox event was triggered, whom was notified, what applications were updated, and so on.

CHAPTER 11

Reports

Digital Taskforce embeds the Crystal Reports runtime engine; this supports any reports written in Crystal versions 8.5 to 12.

Digital Taskforce can automatically generate reports, documents, and forms (collectively referred to as "reports") and deliver them to one or more recipients. Digital Taskforce can generate and deliver reports:

- On a scheduled basis, such as daily at 9 AM or every Friday at 5 PM.

- When an event's conditions are met, such as generating an A/R aging report for a client when that client gets to within 10% of their credit limit, or generating an invoice when a new order is placed.

You do not need to install Crystal Reports on the Digital Taskforce server, but do check to see if the Digital Taskforce server already contains a version of Crystal Reports on it. You can have only a single version of Crystal Reports on a server and the most recent installation of Crystal will overwrite any previous installations.

Reports Vs Forms & Documents

Digital Taskforce is very frequently used to create and deliver forms and documents, such as order confirmations, invoices, statements, dunning notices, picking lists, quotes, and other similar materials.

All of these are created using Crystal Reports, as that application includes the formatting capabilities to create a document or form exactly as you need it to appear.

This chapter makes frequent reference to "reports". Please note that this reference includes the ability to generate forms and documents such as those listed previously.

Report Definition

The first step in enabling reports is to tell Digital Taskforce which Crystal Reports you wish to generate. Reports are organized according to the application they work with, and the reports must already have been created in Crystal in order to define them within Digital Taskforce.

In the design of your report, the option to "Save Data With Report" must not selected from the "File" menu within Crystal and the reports defined in Digital Taskforce must (in Crystal) be configured to use the same ODBC source as the corresponding application in Digital Taskforce.

To define your reports, log into the Navigator, expand the Application you are working with, right-click on the "Report Definitions" branch and select "New". Fill in the fields as follows:

➢ **Report Name**. A short description of the report.

➢ **Report Desc**ription. The report name is copied to this field; use the description field to contain a more detailed description of the report.

➢ **Report File**. This is where you specify the source (*.rpt) file that corresponds to this Crystal report. Use the "Browse" button to help you locate the corresponding file.

  Do not reference mapped drives; specify the location using UNC format. If you refer to a destination on another computer, make sure the user account running the Digital Taskforce service has read rights on the other computer.

➢ **Report Output Filename**. The name that will be given to the output of this report. Do not specify a disk or directory; the file will be created in the Digital Taskforce "Reports" directory.

  If blank, the name will be generated by Digital Taskforce. The name must not contain any non-standard characters, such as @,#,$,%,^,&,*,(,),_,+.

If the report is generated multiple times by the same event, do **not** hardcode the output name as this will cause each generation to overwrite the last.

Dynamically Naming the Report Output File

You can have Digital Taskforce **dynamically** name the report output file, based on data from the triggered records. For example, an event that triggers an invoice report could name each invoice according to the client name and order number.

To do this, you would specify the customized name of the query fields you wish to use in your report output files, Thus – using the preceding scenario – as long as you had selected the client name and order number in the query that is used by the event generating the report, you could specify an output file name of:

{cus_name}_{ord_no)

Do not specify the file suffix (e.g., .pdf, .html, etc.). Digital Taskforce will append that automatically, based on the selected output format of the report.
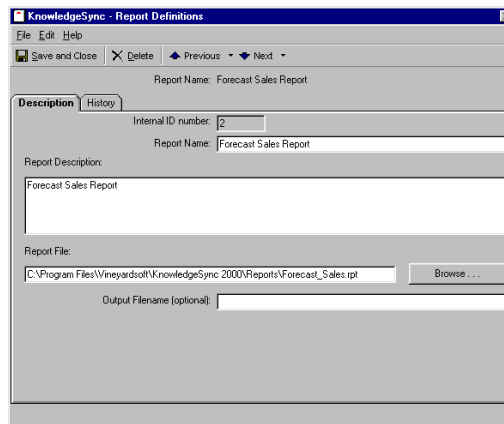
REPORT DEFINITION

Repeat this process for each report you wish Digital Taskforce to generate.

Scheduled Report Events

A scheduled report event is an event that has no associated queries, and whose purpose is to generate and distribute reports. A single scheduled report event may generate and distribute multiple Crystal reports.

For example, every Friday at 5:00 PM, an organization might need to distribute the following five reports to all the members of an executive team:
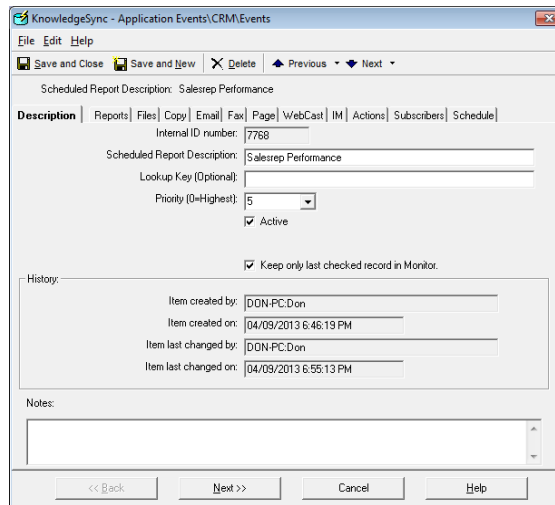
- Weekly sales report
- Next week's forecasted sales
- Weekly receivables report
- Weekly payables report
- Salesrep commission report

You can create a single scheduled report event (e.g., "End of Week Reports"), and associate all five reports to that one event.

Create a Scheduled Report Event

To create a scheduled report event, follow these steps:

➢ To create a scheduled report event, expand the Application you are working with, right-click on the "Scheduled Reports" branch and select "New". Fill in the fields as follows:.

➢ Key in a description of your scheduled report event.

➢ Select a priority. This controls the order of submission for multiple scheduled report events that run at the same time. The event with the highest priority ('0' being the highest) will be submitted first.

➢ Place a checkmark in the "Active" box.

➢ To retain the history of **every time** this event runs, leave the "Keep only last checked record in Monitor" blank. To retain the history of only the **last time** this event runs, place a checkmark in this field.

SCHEDULED REPORT DESCRIPTION

Link the Report(s) to the Event

Follow these steps:

➢ Click on the "Reports" tab.

➢ Click on the "Add Report" button. You will be shown a list of the reports that are defined for the current application.

➢ Select the first report you wish this event to generate.

> ➤ Back on the "Reports" tab, go to the grid titled "Reports Selected for Content" and click in the "Style" column to choose the report output format:
>
> - o ascii
> - o HTML
> - o Rich Text
> - o Microsoft Excel
> - o Comma Delimited
> - o Tab Delimited
> - o PDF
> - o Microsoft Word
> - o Crystal
> - o XML
>
> ➤ The output option of "Crystal" creates a ".rpt" file that may be viewed only by users who have the Crystal client installed on their desktop.

Optional Where Clause

If you scroll the grid past the "Style" column, the "Optional Where Clause" appears. This may be used if your report does not use report parameters, but does require the use of a "where clause" to restrict which database records the report will retrieve.

Enter your "where clause" starting after the word "where" (do not include the word "where") but if your report already has a where clause and you wish to append additional selection criteria, place a plus sign at the start of your where clause. You may use any of the query's data values and date substitution variables.

If a report event will run multiple reports, continue to click on "Add Report" and specify additional reports. (A single scheduled report event may generate reports from multiple applications; click on "Select Another Application" after clicking on "Add Report".)

Report Parameter Values

Crystal report parameters let a report restrict the records that it retrieves to only those records that meet specific criteria. When a report includes parameters, they appear at the bottom of the "Reports" tab as in the following illustration:
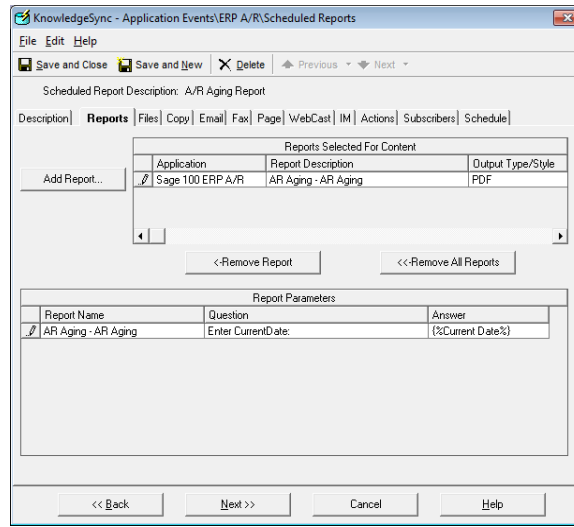
REPORT PARAMETERS

For each parameter you can supply a corresponding value that will be used whenever the report is generated. You may answer each parameter in two ways:

■ By manually filling in its value in the "Answer" field.

■ By selecting a date substitution variable, such as "today", "tomorrow", or "last Monday". Click in the "Answer" field, click on the List button that appears there, and choose the variable you wish to use.

Delivery Method, Subscribers, & Schedule

Once you have selected the reports for a scheduled report event, you need only to select the delivery methods, subscribers, and schedule for the event.

Delivery methods. Reports can be emailed, faxed (ascii or RTF format only), FTP'd (using the "Copy" tab) or linked to a webcast (dashboard) page. See "Report Delivery Methods" later in this chapter for details.

Subscribers. Reports can be delivered to any combination of individual subscribers and subscriber groups.

Schedule. Reports may use any of the schedules available from the "Schedule" tab of an event.

Event-Triggered Reports

When an event is triggered, it can 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.

When a report is linked to an event that does <u>not</u> use {BEGIN*REPEAT} and {END*REPEAT}, the event will generate one report for each record that meets the event's criteria. For example, a report linked to an event that monitors customers over their credit limit will generate one report per customer that meets this condition.

However, if this same event uses {BEGIN*REPEAT} and {END*REPEAT} to send just one alert message for all matching customers, the event will generate just one report as well.

Triggering a Report on True/False Results

For many organizations there is the need to generate a report if a situation proves true or false. For example, you might want to run a report if there were any sales of over $10,000 last week, or if there were no sales of over $5,000 last week.

To configure either of these conditions, you would design a query that uses the "count" function to count the number of records that meet the query's criteria. In the first scenario, the report would trigger if the count of sales is greater than zero; in the second scenario, the report would trigger if the count of sales was equal to zero.

Linking a Report to an Event

Similar to configuring a scheduled report, a report that is linked to an event may include report parameters. Where an event-triggered report differs from a scheduled report, however, is in the following three areas:

➢ The report will be generated only if the event is triggered.

➢ The report will generated once for each triggered record, unless the event is using the {BEGIN*REPEAT} and {END*REPEAT} commands.

➢ The report's parameters may be filled in with values from the triggered records.

It is the last of these items which is most important. Consider an event that triggers an overdue activity report for each salesrep in your organization. Your report would have a parameter that prompts for the rep's ID. Your query would generate a list of reps with overdue activities (using the "count" function). When you link the report to this event you will have the ability to pass the ID of the rep with overdue activities from the query into the report as a parameter.

This way the event will generate one report per rep who has overdue activities.

Another common example is an event that generates client invoices for newly-placed orders. Your report is an invoice form, and it has a parameter that prompts for the sales order number. Your query retrieves a list of all newly-placed orders (one matching record per order). When you link the report to the event you will pass the sales order number from the query into the report as a parameter.

Query Design for Event-Dependent Reports

When configuring an event-triggered report, keep in mind that the system will default to generating one report per record that matches the query's criteria. Thus an event that sends each salesrep a report of their overdue activities should not use a query that retrieves all overdue activities, but rather a query that counts the number of overdue activities per salesrep and generates a result set of only those reps where the count of activities is greater than '1', as follows:
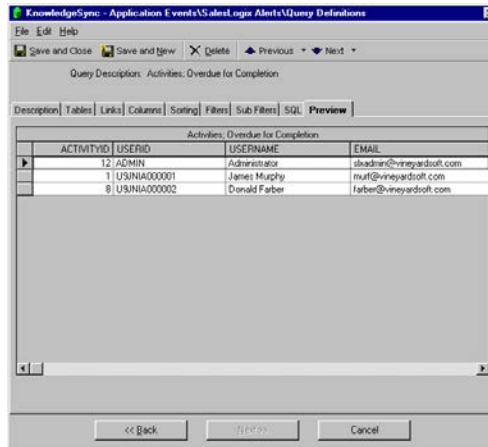
A QUERY THAT GENERATES ONE REPORT PER USER

This type of query most typically makes use of an aggregate function such as the "count" function – as the means to generate a list of records that can correctly "feed" a report's selection criteria.

Also – to ensure that each report gets delivered to the corresponding person, make sure that the event's query also includes the column that contains the delivery address (e.g., email address) of the person for whom the report is being run.

Report Selection

To link an event-dependent report to an event, follow these steps:

➢ Open the event you wish to associate the report to.

➢ Go to the "Reports" tab.

➢ Click on "Add Report" and choose the appropriate report.

➢ Click in the "Style" column of the report you just selected and choose a report output format from the following:

- o ASCII
- o HTML
- o Rich Text
- o Microsoft Excel
- o Comma Delimited
- o Tab Delimited
- o PDF
- o Microsoft Word
- o Crystal
- o XML

• (The output choice of "Crystal" is usable only by users who have the Crystal Reports "viewer" installed on their client workstation.)

➢ Fill in the answers of any report parameters that appear.

For each parameter you can choose to manually fill in the answer, or click in this field and then on the List button to choose either a date substitution variable or a field value from the event's query as in the following:
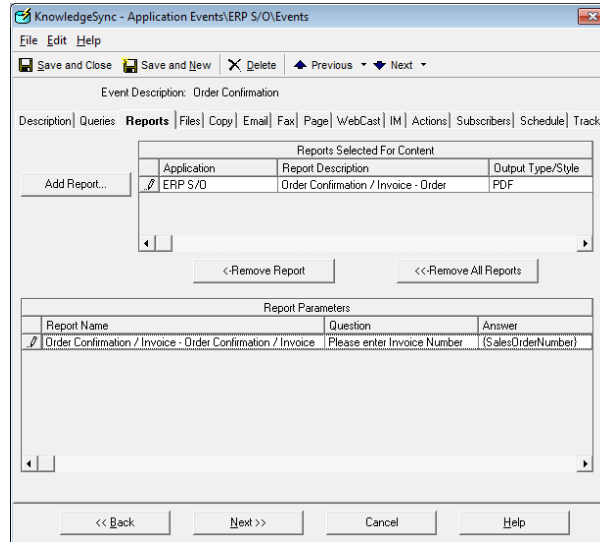
A REPORT WITH EVENT-DEPENDENT PARAMETERS

You may continue to select additional reports you wish to associate with this event.

For details on the use of the optional where clause for a report, please refer to the earlier section of this chapter titled "Optional Where Clause".

Report Delivery Methods

Reports may be delivered to recipients via e-mail, fax (ascii or rtf), webcast, and copy/ftp. You may wish to use one delivery method as a means to alert a recipient to the availability to a report, while delivering the report via another method.

Copy/FTP

Copy/ftp is very useful as a report delivery method, as it allows you to move a report's output to a location that is easily accessible by multiple recipients.

To deliver a report via this method, click on the "Copy" tab and select the option to deliver the reports via this method. Note that the copy/ftp destination is determined within each subscriber's profile in Digital Taskforce. Specify this location in UNC format' do not reference mapped drives.

Email

The first two checkboxes at the bottom of the Email tab allow you to specify whether to attach the selected reports to the outgoing e-mail message.

If you attach reports to an email message, Digital Taskforce will wait until the reports are successfully completed before sending the mail message. If a report fails to complete successfully, the message will not be sent.

If you choose to not attach the reports, you can specify whether the e-mail message should wait until all the associated reports are successfully generated. (Place a checkmark in "E-Mail notifications should wait until reports are generated.")

Embedding the Report Within the Email

If you are sending mail in HTML format, the event may be configured to send the report's contents within the body of the email message itself.

This function is available only if you have Digital Taskforce configured to send out mail via SMTP or any other INTERNET-based mail system.

To configure this, follow these steps:

➢ Choose the Crystal Report whose content you wish to appear within the body of the email message. (You can specify only a single report.)

➢ Choose a report "Style" of "HTML".

➢ Go to the "Email" tab and leave the "Message Text" field blank (empty).

When the event is triggered, Digital Taskforce will generate the corresponding report in HTML and will embed this HTML within the body of the e-mail message that is sent to the event's subscribers.

If a subscriber of such an event is using an email system that does not support HTML, the report will appear as an attachment. Note also that such an event cannot have any other attachments (i.e., no other reports and no attached files).

Fax

Only ascii and rtf formatted reports may be faxed.

If you wish to send a report via fax, fill in the fax sending account, subject, cover page text, and message text as you require. The first two checkboxes at the bottom of the Fax tab allow you to specify whether or not you wish to attach the selected reports to the outgoing fax message.

If you choose to include reports with the fax message, Digital Taskforce will wait until the reports are successfully completed before sending the fax. If an associated report fails to complete successfully, the fax will not be sent.

If you choose to not include the reports with the fax, you can specify whether the fax should wait until all the associated reports are successfully generated. If you do wish Digital Taskforce to wait, place a checkmark in the field called "Fax notifications should wait until reports are generated."

Pager

When you have a report configured for delivery, you may wish send a pager alert to notify the recipients that the reports are ready.

If you are sending pager notifications, you can specify whether the pager message should wait until all the associated reports are successfully generated. If you do wish Digital Taskforce to wait, place a checkmark in the field called "Pager notifications should wait until reports are generated."

Checking this option ensures that the recipient of the pager message will be able to access the referenced report at the time the message is received. Note, however, that if this option is checked and the report(s) fail to be completed successfully, the pager message will not be sent at all.

Webcast (Dashboard)

When a report is configured for delivery, Digital Taskforce enables you to specify whether the report will appear as a URL link in a webcast (dashboard) alert message. (Please see the chapter on "Webcasting / Dashboard Alerts" for more details.)

The first two checkboxes at the bottom of the Webcast tab allow you to specify whether you wish to link the selected reports to the webcast alert message.

If you choose to link reports to a webcast message, Digital Taskforce will wait until the reports are successfully completed before linking them to the webcast message. If a report fails to complete successfully, the webcast message will not be sent.

If you choose to not link the reports to your webcast message, you can specify whether the message should wait until all the associated reports are successfully generated. If you do wish Digital Taskforce to wait, place a checkmark in the field called "Webcast notifications should wait until reports are generated."

How Reports Appear in the Monitor

Scheduled report events initially show up in the branch called "Report Distribution" and then move to "Report Generation" and then finally move to the branch that represents how the reports are to be delivered to their intended recipients.

Event-triggered reports begin by appearing in "Application Events", from where you can track their status as "checked" and (if appropriate), "triggered." Only if an event is triggered will its associated report(s) be generated.

Once an event with associated reports has been triggered, it will proceed to the "Report Generation" 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 will appear under "Errors" in the "Report Generation" branch.)

Once a report generates successfully, you may click on the corresponding "Delivery" branches within the Monitor and check to see that the message (and report) was successfully delivered.

You may also click on the "Triggered Events" branch and the "Deliverables" button to see whether the notifications included the corresponding reports.

Report Error 541: Error in File

Error 541 typically means that the Digital Taskforce service is trying to create a temporary file for the report and it doesn't have the available room. To correct this problem, log on to the server as the user under which the Digital Taskforce service is running. Follow these steps:

- Go to your Start menu.
- Choose "Settings"
- Go to your Control Panel
- Go to the "System" option
- Click on the "Advanced" option
- Choose "Environment Variables"

The "User Variables" for the Digital Taskforce service user will be displayed at the top. Make a note of the directories that are storing the TEMP and TMP files.

- Go to "System Variables"
- Make a note of the directories storing the TEMP and TMP files.
- Go to those directories noted above clear out all unnecessary files.

If you are running FAT32 file System, the maximum number of files or folders allowed in any folder is 65,534 regardless of the file size. The maximum folder size allowed is 4GB.

"Not Enough Memory" Error

The "Not Enough Memory" error is often not caused by a memory problem, and as such you should check the following:

- If the report is calling external dlls, make sure that the dlls are registered and are installed on the server

- If the report is passing parameters, make sure they are all answered completely and are of the correct data type.

- If the parameters are prompting for "true" or "false" values, use "1" for true and '0' for false. Do not use TRUE or FALSE.

- If the parameters are using ranges, use the following format with the hyphen as the separator:

  value1-value2

- If a parameter accepts multiple values, use the following format with the comma as the separator:

  value1,value2,value3

- If formulas exist in the report, make sure that the fields they refer to also exist in the corresponding query and that the formulas themselves are valid (e.g., don't try to perform formulas using "string" fields).

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CHAPTER 12

Charts & Graphs

Starting in version 8.2 of Digital Taskforce, an embedded chart & graph design module has been included with the product. This module is available to anyone who has purchased either the "Reports" module, or has purchased a "full-function" license (the license type called "enterprise-webcaster).

Reports and charts can be used to add detail to an alert, or may be generated by Digital Taskforce as a quick and easy way to create dynamic "dashboards" in a graphic format.

Like Reports, charts can simply be scheduled, generated, and delivered (such as a "Daily Open Tickets" chart) or they can be associated with events (such as an event that checks to see if any support reps have more than 10 tickets assigned to them and – if so – generate and deliver a "Rep Ticket Load" chart.

How to Access the Charting Module

In Digital Taskforce, charts are considered a kind of "report" – a graphic one. As such, the option to define a chart is the same as to define a report – the option called "Report Definitions".

Likewise, the option to create a "scheduled chart" – that is, an event that generates and delivers a chart on a periodic schedule – is done via the option called "Scheduled Reports".

Lastly, the option to associate a chart with an event is done from the "Reports" tab of an event. When the option to "Add Report" is selected, the user will be presented with a list of both the defined Crystal reports in Digital Taskforce and the list of all defined charts for that Digital Taskforce application.

Charts, Events, & Queries

It is very important to understand that a chart uses a query to generate its content. Do not confuse a chart's query with an event's query – charts and events rarely (if ever) use the same query, and it is not recommended that they use the same query.

As such, it is suggested that any queries that you design for use with charts be given a unique naming convention, such as starting the query name with "Chart; . . . " as in "Chart; Calls Per Rep".

How Charts Are Generated

As mentioned previously, charts have their content driven off of the results of one or more queries. For example, a chart that shows "current month total sales by salesrep" would use a query that totals sales by salesrep and then has a filter to retrieve only those orders that have been placed during the current month.

Likewise, a chart that shows how many support calls are currently assigned to each support rep would count the number of open tickets per rep and would use a filter to retrieve only those tickets that were currently open.

Typically, charts and graphs use aggregate queries (queries that either sum a numeric field or count the number of records meeting certain criteria), but charts can use non-aggregate queries as well (such as a query that shows all currently backordered line items and their backorder total).

Please note that regardless of whether a chart is using an aggregate query or a not, a chart's query should always retrieve just two fields (or columns) of data; one column's results are shown in the vertical (or 'y') axis of the chart; the second column are shown in a chart's horizontal (or 'x') axis.

How Charts & Graphs Are Delivered

Charts and graphs can be delivered in the following manners:

- Attached to an email (you can attached multiple charts to a single email)

- Embedded within the body of an email (only one chart may be embedded within a single email message)

- Posted to a webcast page

- FTP'd to a destination folder

Chart Design: The Role of "Parameters"

Before you begin designing a chart, you should decide what information you want in the chart. Typically a chart is going to show you the "total" or the "count" of something – revenues per salesrep, open calls per support rep, and so on.

As mentioned previously, a chart is driven off of a query. Like any Digital Taskforce query, a chart's query can use filters to precisely identify the data that is going to appear in a chart, such as selecting specific status codes, product names, or even a date range.

Most importantly, a chart can be made to use "parameters" in the same way a Crystal Report uses parameters.

For example, consider a Crystal "Sales Report". The report has a "parameter" that prompts for the salesrep ID to report on. If you were to manually run that report, you'd specify that ID in order for the report to run.

A Digital Taskforce event can run that report. But if you had 30 salesreps, you wouldn't want to set up 30 Digital Taskforce events (one for each rep). So Digital Taskforce allows you to configure an event to use a query to retrieve those 30 salesrep IDs; those IDs are then passed one-at-a-time into the associated Crystal report and thus the one Digital Taskforce event generates 30 reports.

Digital Taskforce charts work the same way. When you design a chart, you can create "parameters" that work exactly like Crystal report parameters. And, when you configure an event that generates a chart, you can have the event's query pass its resulting data (one record at-a-time) into the chart – thus enabling you to have a single event that generates multiple charts.

For example, you might have a "Calls Per Priority" chart. The purpose of this chart is to show – for each support rep – how many calls they have assigned to them, with the chart showing the number of calls per priority. If you have 10 support reps, you'd want to generate 10 charts.

Instead of setting up a separate chart for each rep, you could build a parameter into the chart – a parameter that prompts for the "rep ID". Like the report example previously, you'd create a query that retrieves a list of all your support reps. You'd create an event that uses this query along with the chart that has a parameter on the "rep ID" field. And so, this one event would dynamically generate a separate chart for each support rep.

Chart Design: Scheduled & Triggered

Like Crystal reports, charts can be scheduled (such as a "daily sales chart"), or charts can be triggered (such as a "tickets per rep" chart if any rep has more than 10 tickets assigned to them).

A scheduled chart event is configured just like a scheduled report event; the event itself has no query associated with it.

A triggered chart event is an event that uses a query to determine if certain conditions are met; if so, the associated chart is generated. Please note that just like when a Crystal report is associated to an event that uses a query, if a chart is associated with an event that uses a query the chart will be generated once for each record that meets the event query's criteria.

(You may override this default setting by using "{BEGIN*REPEAT}" and "{END*REPEAT}" in the event's alert message. If only one alert message is sent out, only one chart will be associated with that alert message.)

A Chart's Query

Let's consider the following desired chart:

- This month's sales per salesrep

This chart will total the current month's sales per salesrep; this chart (as with most) will make use of an aggregate query.

The query for this chart will retrieve data from the "sales history" table (to get the sales numbers) and also the "salesperson" table (to get the salesperson's name). The chart will have only two columns (again, this is typical for most charts), the "sales amount" column and the "salesrep name" column. To "total" the amount for each salesrep, the "amount" field will have its column type changed from "Normal" to "Summarize".

The query will have a filter to retrieve only those sales that were placed during the current month. This filter could be parameter-driven (question marks in the "Compare Value" field) and other filters could be added.

Note that based on the chart "type" (bar, pie, cone, etc.) that you chose, you may want the data to appear in the chart in a specific order, such as showing the greatest amount at either the top or bottom of the chart. To accomplish this you will need to specify the "Sorting" order for the chart's query.

And that's all this query needs to do.

Chart Design: Create The Chart

Select the option to create a new Report Definition and in response to the prompt that reads "Would you like to define a chart style report?", click on the "Yes" button. The following window will appear:
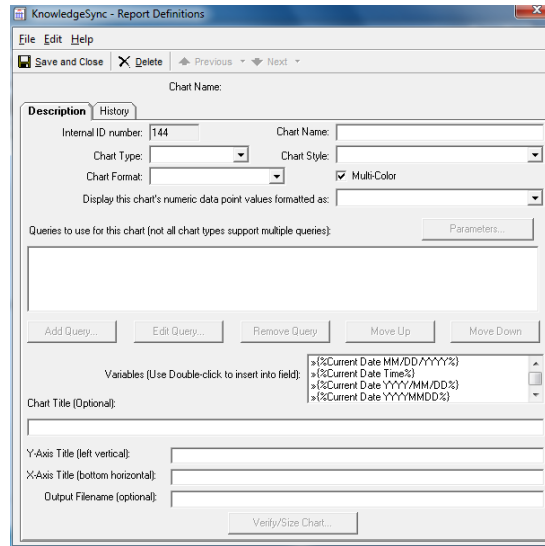
CHART DESIGN WINDOW

Make your selections based on the options detailed in the following section.

Chart Design: Chart Design Options

The chart design options that you'll need to specify are:

Chart Name: Give the chart a name that describes its contents, such as "Sales; Current Month Per Rep".

Chart Type: Select from the following:

- **Area**. This is a line chart in which the space below the line is filled-in with a solid color.

- **Bar**. Each data element from the horizontal ('x') axis is represented by a vertical bar.

- **Cone**. This chart displays as a vertical cone.

- **Donut**. This chart type is very similar to a pie-chart, except that there's a hole in the middle.

- **Funnel**. This chart is shaped like a funnel, with the widest part at the top.

- **Line**. This chart is a line that moves from one data element to the next for the 'x' axis elements.

- **Pie**. This chart type displays as a circle with each 'x' axis element shown as a segment of the pie.

■ **Pyramid**. This chart is shaped like a pyramid, with the narrowest part at the top.

There are also three types of charts that are designed for situations where you wish to compare the resulting values from multiple queries. One example of this would be a chart that compares this month's sales per salesperson to last month's sales per salesperson.

There are three types of charts that provide this comparative capability, and they are called "multi-line", "multi-area", and "multi-bar". More details about these types of charts is contained a little later on in this chapter.

Chart Style: The "style" options for a chart will vary based on the "type" of chart selected. For example, a "bar" chart can be configured so that its bars appear "flat" or in "3D", or so that its bars are shaped like crosses, cylinders, or stars.

You can see what the various chart styles look like (after you have chosen the query for the chart) by using the "Verify/Size Chart" button at the bottom of the window.

Chart Format: The "format" of a chart refers to where the descriptions of the chart's various 'x' axis data elements will appear. For example, if a bar or line chart is showing sales figures per sales rep, the descriptions of the 'x' axis data elements (e.g., "Salesrep Name") will appear just below the 'x' axis , so there are no formatting options for these chart types.

However – cone, pie, donut, and funnel charts do not use either an 'x' or 'y' axis lines, so the descriptions of the data elements been shown can appear as follows:

■ **Circular Labels**. Data element names (e.g., the sales rep names) appear outside the corresponding chart section.

■ **Circular Labels with Lines**: Data element names (e.g., the sales rep names) appear outside the chart but with lines leading to the corresponding chart section.

■ **Inside Labels**: Data element names appear inside the corresponding chart section.

■ **Side Labels**: Data element names appear outside the chart lined up on the left and right sides of the chart.

■ **Legend Left**: Data element names appear in a "legend box" that is displayed to the left of the chart.

■ **Legend Right**: Data element names appear in a "legend box" that is displayed to the right of the chart.

Multi-Color: This option (checked on or off) lets you specify whether the data sections in the chart should each appear in different colors or should all appear in the same color. If you do not select "Multi-Color", you have the option to specify the color to be used for all the chart data elements.

Numeric Data Point Values Formatted As: This gives you the option to have the chart display its totals either in local currency format (e.g., if you were totaling sales amounts per rep), or in numeric (non-currency) format (such as if you were counting the number of orders per rep). Note that Digital Taskforce will use the currency settings from the server on which Digital Taskforce is installed.

Query to be Used: Click on the "Add Query" button and select the query that will drive the contents of the chart. You may select a query from a Digital Taskforce application other than the one you are currently working in, and you may use the "New Query" button to create a new query, if no existing query meets this chart's needs.

Please also note that only the three "Multi" chart types allow you to select multiple queries, as these chart types are designed to compare the results of one query with the results from one or more other queries.

Query Parameters: If the chart's query includes "parameters" (filters or sub-filters where the "compare value" is a question mark), you will be prompted to select values for these parameters when the query is selected. Once a query with parameters has been associated with a chart, you can view and change the selected parameters by clicking on the "Parameters" button. See the following section for more details on the use of chart parameters.

Chart Title: This is the title that will appear across the top of the chart. By default, the description of the chart's query will appear in this field – followed by a date variable that displays the current date and time. You may modify this title as well as use any of the variables listed in the scrolling window directly above this field.

Y-Axis Title: This is the title that will appear along the left (vertical) side of the chart. Typically this would have a title such as "Total Sales This Month". You may leave this field blank.

X-Axis Title: This is the title that will appear across the bottom of the chart. Typically this would have a title such as "Salesperson Name". You may leave this field blank.

Output Filename: This is the name that the chart file (once generated) will be saved to. Note that all generated charts will (by default) be saved to the Digital Taskforce "attachments" folder; once in that folder, Digital Taskforce can move (or "copy") the chart file to any destination location.

When choosing an output filename, you may hard-code the name or you may use any of the variable values (date variables & query variables) that appear in the scrolling window. Do not specify an output filename extension, such as "jpeg" or "bmp", as Digital Taskforce will automatically append that extension based upon the selected output format of the chart.

Chart Design: Preview (View/Size) Chart

When you are ready to test or preview your chart based on the configuration selections you have made, click on the button called "View/Size Chart".

A window like the following will appear (using your selected chart type, style, and content):
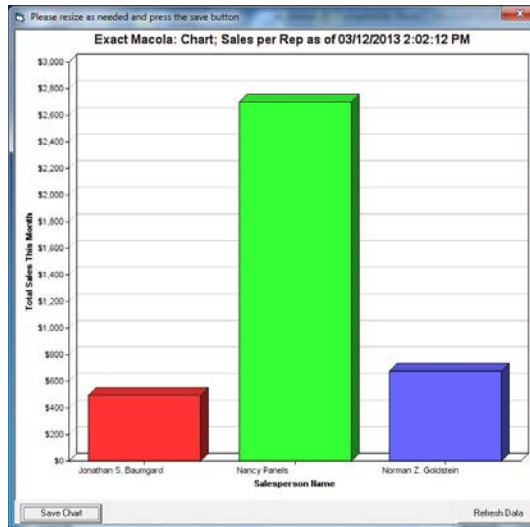
VERIFY/SIZE CHART WINDOW

If you have already previewed this chart at least once without exiting from the chart design option and you have made changes to the chart's configuration, you will need to click on the "Refresh Data" button in the preview window to re-display the chart based on your new selections.

While viewing the chart, you may wish to re-size its window to give all chart content and labels enough available space to be clearly displayed. Once you are satisfied with the chart, click on the "Save Chart" button to return to the previous window.

Click on the "Save and Close" button at the top-left of your chart design window to save your work.

Chart Parameters

Consider a chart called "Items; > 'x' On Order". The query that provides the content for this chart would retrieve each inventory item and show its current "on order" total. This query would include a filter that checks to see if the "on order" quantity is greater than 'x' – and that 'x' is represented by a question mark in the query's filter's "compare value" field. A '?' in a query's filter (or sub-filter) is referred to as a query's "parameter".

The "answer" to this parameter can be specified in three different ways:

1. You can hard-code the answer in the chart itself. When you select a chart's query and that query includes a filter where the compare value is a question mark, you will be prompted to supply an answer to that parameter. In the above example of a chart showing items that are on order, you could specify '100' as the answer to this query's parameter.

2. You can specify the answer when the chart is used in an event. Instead of supplying an actual value for the parameter, you can configure the chart so that the value is specified within the event(s) using the chart. By entering the '?' as the answer to a parameter, event #1 could create a chart that shows only those items that have an on-order quantity of greater than 100, event #2 could create a chart based on a quantity of greater than 500, and event #3 trigger could create a chart based on an on-order quantity of greater than 1000 units.

3. You can have an event's **query** pass its values into a chart's parameters. Let's say that your chart showed items on order for a particular vendor – and the chart's query had a filter/parameter on the Vendor ID. And, let's say that you wanted to see such a chart for only those vendors whose status is "on hold".

Your event would use a query that identifies those vendors on hold. The event would also have a chart whose parameter prompts for the vendor ID. In the "Answer" field to that parameter, you have access to all of the fields from the event's query, and you would select the field that contains the vendor's ID -- the field would look like '{Vendor_ID}'.

This way, if there were 5 vendors who met this event's criteria, the event would auto-generate 5 charts; one for each vendor.

"Multi" Charts

One popular use of charts is to compare the performance of one set of numbers against another set of numbers – and represent that difference graphically. For example:

- Compare salesreps' current month-to-date sales with their sales from last month through the same date.

- Compare the number of high-priority support calls logged this year versus last year.

- Compare the sales of different product lines over a specified time period.

As you can see, the most common use of multi-charts is to compare numbers for different members of the same group (salesreps, support calls, products) over a specified time period.

Multi-charts are enabled through your ability to associate multiple queries to the same chart. Most commonly this entails the use of the same query multiple times – and such a query typically has parameter-driven filters to allow for the comparison.

For example, you could compare sales totals per item between two (or more) salesreps. To do this, you would construct a query that has a filter on the "salesrep" field. That way, when you initially select this query for your chart, you will be prompted to select salesrep #1.Then, when you select this same query a second time for this chart, you would select salesrep #2.

So – the steps required to create a multi-chart are as follows:

1. Create a query that has a parameter-driven filter on the data element to be compared – such as the "salesrep" if you wished to compare results across two or more salespeople.

2. Create a new chart and select one of the "multi" chart options.

3. Select the query you created in step #1. You will be prompted to select the first record whose results you wish to compare (in the above example, this would be the first salesrep whose performance you wish to compare to other salesreps).

4. After you select this record, you will be prompted to review, modify, and confirm how you want that first record to be identified in the chart's legend (referred to as the "legend's title"). For example, if you chose a salesperson whose name is "Mary Shelley", the legend would default to identifying her as "Mary Shelley" but you could

modify that to show only her last name, only her first name, et cetera.

Note that you can make the legend value a <u>variable</u> – which means that regardless what value (e.g., salesperson) is chosen, the legend would always show the actual value of variable field (e.g., the salesperson's name). See the following section for more details.

5. Notice that the "Add Query" button is NOT disabled after selecting your first query; this is because with a "multi" query you need to <u>select the same query again</u> to choose the a different record whose performance you wish to compare to the first record you chose in step #3.

    For example, if you wanted to compare Mary Shelley's performance to that of Jim Kently, you would select Jim's record and also confirm or modify the display of his name in the chart's legend.

6. Verify & (if necessary) re-size the chart. You will now see your chart comparing the results for the two records you chose previously. You may continue to choose the same query (with different parameter selections) if you wish to compare more than just two records.

You would then select the same query a second time for this chart – but this time you would select a date range of "last month". The corresponding multi-chart would look like the following:
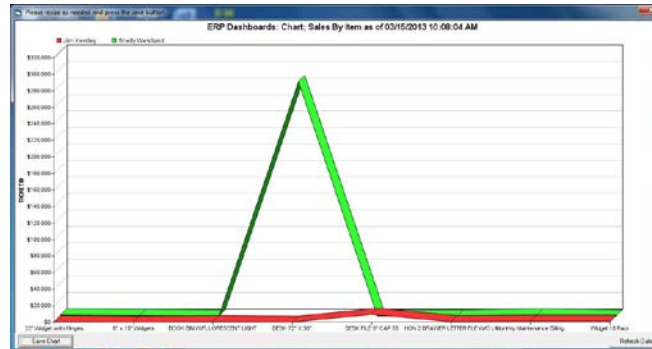
"MULTI" - CHART EXAMPLE

Note that you may wish to re-size this window to give all chart labels enough available space to be clearly displayed. Once you are satisfied with the chart, click on the "Save Chart" button to return to the previous window, which appears as follows:
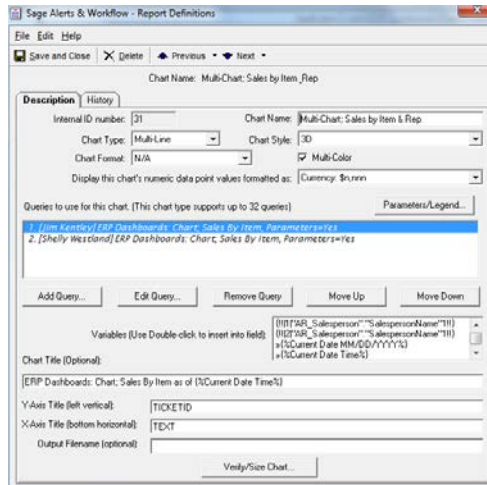
"MULTI" - CHART CONFIGURATION

Multi-Chart "Variable" Legend Title Values

Let's say that you have a chart whose purpose is to display the purchase orders that are coming due over the next few months – and you'd like to see the total due per vendor, per month. Since you're looking at multiple vendors, you need each selected vendor name to appear in the chart. Each selected vendor value is referred to as a "legend title".

You can hard-code the legend title – but that would be appropriate ONLY if every time the chart is run, you want to display the same data elements (i.e., the same vendors) within the chart. If the chart is going to be run for differing values, you should make your chart's legend titles be <u>dynamic</u> – so they always show the values of whatever records are being selected for analysis.

(Thus if you have a chart that allows for the selection of three vendors, you can configure the chart so that it always shows the names of whatever three vendors are selected.)

The variable name for a legend title will look something like this:

"{!!|1|dbo.POPORH1.VDNAME3!!}"

(The above is going to show the name of the vendor selected for a chart.)

Note that you can "read" a variable: the '1' at the beginning of the variable name means that this variable is associated with the first query used by the chart. The '3' near the end of the variable name tells you that this is the third parameter/filter associated with this query.

Thus the following list of legend title variables tells us that we have two queries for this chart (the same query 2 times), and each of those queries has three variables associated with it – a beginning date range, and ending date range, and a selected vendor:

{!!|1|dbo.POPORH1.EXPARRIVAL1!!}
{!!|1|dbo.POPORH1.EXPARRIVAL2!!}
{!!|1|dbo.POPORH1.VDNAME3!!}
{!!|2|dbo.POPORH1.EXPARRIVAL1!!}
{!!|2|dbo.POPORH1.EXPARRIVAL2!!}
{!!|2|dbo.POPORH1.VDNAME3!!}

In order to select a variable legend title for a multi-chart, follow these steps:

- Select a multi-chart and add your first query. You will be prompted to provide responses to each of the query's filter parameters. To leave these parameters open to receive any entry, enter the question mark (?) as the answer to each parameter.

  (Remember – you will always receive a number of prompts that is equal to one <u>more</u> than the number of filters your query has. For example, if you have filters on "begin date", "end date", and "vendor name", you will receive prompts for each of these <u>plus</u> a prompt asking you to specify the "legend title".)

- Assuming that you are entering the question mark for the legend value (e.g., thus prompting for the vendor name, using the current example), be sure to enter the question mark again when you are prompted to supply the legend title.

  Repeat the preceding two steps for each query associated with the current multi-chart.

- When done selecting queries for the multi-chart, go to the list of queries for this chart and single-click on (highlight) the first query and then click on the "Parameters/Legend" button. This will bring up the list of parameters for this query.

- When you get to the "Legend Title" prompt, look at the list of "Available Substitution Variables". You will see a list of variables similar in format to the six examples shown previously. Select the variable that refers to the field whose name you wish to identify in your chart.

  (In the above example where we have parameters/filters on the begin date, end date, and vendor name, we would select the variable called {!!|1|dbo.POPORH1.VDNAME3!!} because it contains the name of the vendor selected for the first query in this chart.)

- Repeat the preceding step for each query associated with the current chart.

  An example of a multi-chart where the legend title appears at the top of the chart is shown in the following illustration.

  ("Chloride Systems" and "Hart Batteries" appear by virtue of having selected {!!|1|dbo.POPORH1.VDNAME3!!} and {!!|2|dbo.POPORH1.VDNAME3!!} as the legend titles for this chart.)

MULTI-CHART "LEGEND TITLE" AT TOP

A "Scheduled" Chart Event

Once you have created a chart, you need to decide whether the chart will simply be delivered on a recurring, periodic basis ("scheduled"), or whether the chart will be generated and delivered only when certain business conditions warrant it ("triggered").

If the chart is to be "scheduled", you can use the option to create a "scheduled report". Creating a scheduled chart event is identical to creating a scheduled report event; follow these steps:

- Select the option to create a scheduled report.

- Fill in the "Description" tab of the event.

- Click on the "Reports" tab and click on the "Add Report" button to choose from a list of defined charts as well as reports. Select the chart you wish the event to generate. (You can select multiple charts, or even a combination of charts and reports.)

- Select the "Output Style" of the chart being generated. The default style is "png", which is optimized for delivery via email. You may also choose from output styles including "jpeg", "gif", "bmp", "wbmp", "svg", and "svgz".

- If the chart has any "parameters" (selection criteria) that need to have answers chosen for them, they will appear at the bottom of the "Reports" window. Note that you can select date substitution variables (such as "current date") as answers to date-related parameters.

Charts may be delivered to recipients as email attachments, embedded within an email (select output style "png" for the most size-optimized display), via FTP, and via web dashboard (webcasts) – in which the charts show up as URL links. Please note that all references to "reports" within an event's tabs apply equally to an event's charts.

(You can attach as many charts to an event's email message as you like; however only one chart may be embedded within the body of an email and the email body must not have any other content within it.)

Once you have selected how the chart is to be delivered, you may proceed with selecting the event's subscribers (alert recipients), and then move on lastly to the "schedule" tab in which you are able to specify either the frequency of generation (for a scheduled chart) or the frequency of checking (for a triggered chart).

When a chart is generated, the chart's file is automatically generated in the Digital Taskforce "attachments" folder. Once there you may use a subsequent event (optionally in a job stream) to move the chart file to a destination folder of your choice.

A "Triggered" Chart Event

The only difference between a scheduled chart event and a triggered chart event is that a triggered chart event makes use of a query to determine if certain business conditions exist – and if so, generate the chart.

A triggered chart event can be based on any condition (just like any other Digital Taskforce event). You might want to generate a sales chart only if certain salesreps have less than 'x' dollars within their sales pipeline; you might want to generate a customer service chart only of any support reps have more than 10 tickets currently assigned to them.

There is only one special consideration that you need to be aware of. Like associating a Crystal Report to an event, a chart that is associated with an event will generate once for each record that meets the event's query's criteria. Here is an example:

- You want to generate a sales chart if any salesrep has less than $5,000 in their pipeline. You would **not** create an event query that listed any reps whose pipeline is less than $5,000 – because if you had 4 reps who were beneath that number, you'd generate 4 identical charts. Instead, you'd create a query that counted the number of reps whose pipeline is less than $5,000 and you'd have a sub-filter that checks for a count of "greater than zero".

  That way, regardless of whether 1, 11, or 21 reps have pipelines below that number, the chart will generate only once.

If a chart is to be "triggered", it is part of a standard Digital Taskforce event. Follow these steps:

- Select the option to create a new event.

- Fill in the "Description" tab of the event.

- Select a query for the event. If the query has any parameters (selection criteria), they will appear at the bottom of the Queries tab.

- Click on the "Reports" tab and click on the "Add Report" button to choose from a list of defined charts as well as reports. Select the chart you wish the event to generate. (You can select multiple charts, or even a combination of charts and reports.)

- Select the "Output Style" of the chart being generated. The default style is "png", which is optimized for delivery via email. You may also choose from output styles including "jpeg", "gif", "bmp", "wbmp", "svg", and "svgz".

- If the chart has any "parameters" (selection criteria) that need to have answers chosen for them, they will appear at the bottom of the "Reports" window. Note that you can select date substitution variables as well as results from the event's query as answers to date-related parameters (see following section).

Charts may be delivered to recipients as email attachments, embedded within an email (select output style "png"), via FTP, and via web dashboard (webcasts) – in which the charts show up as URL links. Please note that all references to "reports" within an event's tabs apply equally to an event's charts.

Once you have selected how the chart is to be delivered, you may proceed with selecting the event's subscribers (alert recipients), and then move on lastly to the "schedule" tab in which you are able to specify either the frequency of generation (for a scheduled chart) or the frequency of checking (for a triggered chart).

When a chart is generated, the chart's file is automatically generated in the Digital Taskforce "attachments" folder. Once there you may use a subsequent event (optionally in a job stream) to move the chart file to a destination folder of your choice.

Parameter-Driven Chart Events

There are circumstances where you want a chart event to generate one chart for each matching record that the event's query retrieves. For example:

- You have an event that checks to see if any support reps have more than 10 calls assigned to them. For any reps who do meet this condition, you want to generate a chart for each of them – each chart showing the number of calls per "urgency code" assigned to each rep.

The above scenario would use a query that counts the number of calls assigned to each rep and has a sub-filter that retrieves all reps with more than 10 calls. Thus if there were seven reps with more than 10 calls assigned to each of them, your query result set would be seven records long – and you'd want Digital Taskforce to generate a separate chart for each of them.

This is where parameter-driven charts are essential.

Passing Query Values Into a Chart's Parameters

A parameter-driven chart event is an event that uses the results from its query to "feed" values into the associated chart and thus dynamically create a unique chart for each record that meets the event query's criteria..

For example, you may have a query that identifies salesreps whose current month's sales pipeline is below $5,000. If any rep's pipeline meets that criteria, you want to generate a separate chart for each salesrep showing their current month's pipeline totals by product line.

The event's query (containing the IDs of the reps who meet the above criteria) need to pass its results into the event's chart, so that the chart can be generated once for each salesrep.

Here's what you'd need to do:

1) Create the event's query. It would look for the above criteria and return a list of matching reps and their IDs. If you wanted to send each chart to the corresponding

rep, you'd make sure that this query also includes the rep's "delivery address", such as their email address.

2) Create the chart's query. This query would contain two columns; the forecast sales amount of each opportunity (summarized), and the product line. This query would also have a filter on the "salesrep ID" field. If you previewed the query you would select a specific rep and then see their current month's forecast sales totaled by product line.

3) Create the chart itself. When you select the query (from step #2) for this chart, a "Parameter Window" will appear. Enter a single question mark in this parameter so it looks like the following:
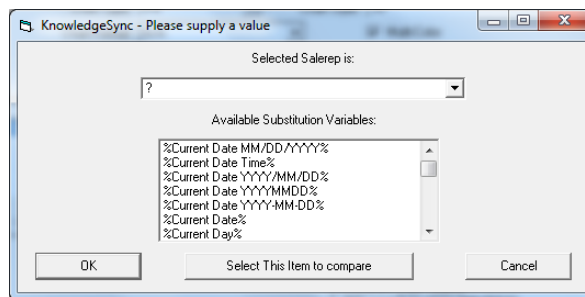
VERIFY/SIZE CHART WINDOW

The question mark in this field is what will enable the event to "pass" parameter values from the event's query into the event's chart.

4) Create the event. Select the query created in step #1. On the "Reports" tab of the event, select the chart created in step #3. When you select the chart, the chart parameter field that you created in step #3 will appear as follows:
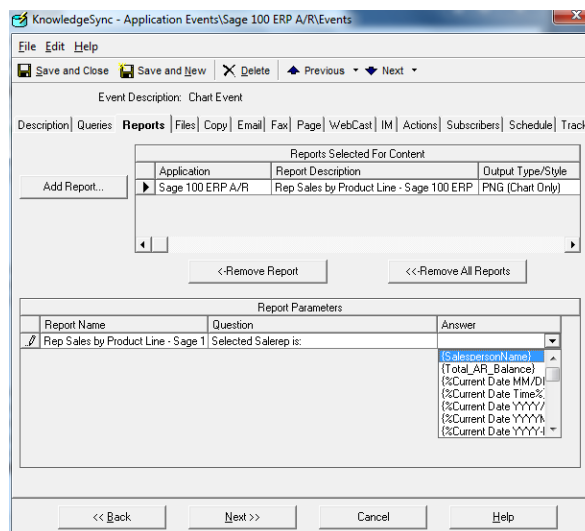
CHART PARAMETER ANSWER

Click in the "Answer" field and a list of fields from the event's query will appear; select the field that contains the value you want passed into the chart.

Finish selecting the event's delivery methods, subscribers, and schedule, and you've got a triggered chart event, complete with parameters passed from the query into the chart, ready to go.

Date-Sensitive Charts

One of the most powerful uses of charts is to display "performance over time" graphs. For example:

- Sales this month versus last

- Number of support calls logged daily this week

- Scheduled phone calls per hour

For charts such as these, the corresponding queries are typically going to start out with a column that either "sums" a value (such as the amount of a sale) or a column that "counts" the number of records (such as the number of support calls) over a specific time range and – most importantly – "broken" by a specific date or time segment, such as yearly, monthly, daily, or hourly.

There is a very handy SQL command that lets you retrieve only the "year" or "month", or "day" (number; from 1 - 31) from a date field in a database. These functions look like this:

day(sysdba.ACCOUNT.CREATEDATE)
month(sysdba.ACCOUNT.CREATEDATE)
year(sysdba.ACCOUNT.CREATEDATE)

In addition to the above commands, the below SQL command enables you to retrieve the "day number of week"; from 1 (Sunday) – 7 (Saturday):

datepart(weekday,sysdba.ACCOUNT.CREATEDATE)

Whereas the following SQL command will show you the "name" of the day of the week:

datename(weekday,sysdba.ACCOUNT.CREATEDATE)

Note that you can combine (concatenate) the preceding two commands together so that you can have both the day number and the day name in a single field in your query:

convert(char(1),datepart(weekday,sysdba.TICKET.CREATEDATE)) + '-'
+datename(weekday,sysdba.TICKET.CREATEDATE)

(The "convert" function is also used in the above command because the "combined" field has to be an alphanumeric field in order to contain both the day number and day name.)

Here is the SQL command for retrieving the "hour" from a date/time field:

datepart(hour,sysdba.ACCOUNT.CREATEDATE)

The above command will show the hour in 24-hour (military) time.

Note that all of the preceding commands are for use when monitoring a Microsoft SQL Server database; if monitoring a database other than SQL Server, please refer to your database documentation on the use of date-related "scalar functions".

Chapter 13

Dashboard Alerts (Webcasting)

Dashboard alerts are dynamically-created (and updated) web (HTML) pages that contain triggered event details as shown below:

DASHBOARD (WEBCAST) ALERT

How Dashboard Alerts Are Used

Dashboard alerts have three distinct uses:

- **Business Area Dashboards**. This is a display of information that pertains to a specific business area – such as "overdue invoices" "sales pipeline status", "unassigned leads", or "support calls open for more than 3 days".

- **User-Specific Dashboards**. This is a display of information pertaining to a specific user – such as "my clients' overdue opportunities", or "my activities for today".

- **User Alert Listings**. This is a display of all alerts – for all business conditions – that apply to a specific user.

What a Dashboard Consists Of

A dashboard consists of the following components:

- A template which controls the overall design of a dashboard window

■ An event which controls the data within a dashboard

■ Subscribers which specify where dashboard output is to be stored.

Dashboard Set-Up

The following steps will walk you through the creation of a single dashboard; one that displays a list of sales opportunities that are currently overdue for closing.

Enable Dashboard Creation

Since dashboard alerts are a more advanced alert delivery method, the default configuration has dashboards disabled. To enable dashboards, follow these steps:

➤ Open the Administrator and click on the "Server Status" branch.

➤ Double-click on the "Webcaster Server" (webcaster = dashboards).

➤ Place a checkmark in "Allow Server to Process" and click on "Save and Close".

➤ Restart the Digital Taskforce Windows service.

Create Template

All dashboards have a general layout and design that is controlled by an HTML template. We suggest that you use the standard dashboard template found within the "Dashboard Set-Up Kit". This template looks like the following:

```
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=windows-1252">
</head>
<body>
<table border="0" id="table1">
        <tr>
                <td colspan="4">{EVENT_MESSAGE}</td>
        </tr>
</table>
</body>
</html>
```

If you wish to edit this template (to include your company name, logo, etc), you must use an HTML editor to do so. (Do not edit this in MS Word, as it will lose its formatting.) You may edit a template using "Notepad" if you have no HTML editor available.

The only "variable" field in this template is called {EVENT_MESSAGE}. This field contains the contents of the "Webcast" tab of the event which generates a Dashboard.

Storing the Template

ECi Software Solutions suggests storing templates in the Digital Taskforce "**Webcaster**" folder:
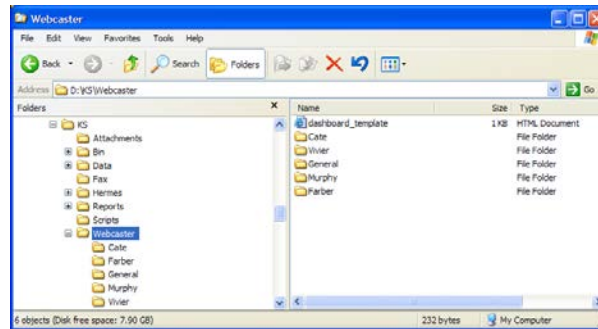
DASHBOARD TEMPLATES

Creating Multiple Templates

You may create multiple templates for the following reasons:

- To have different dashboard layouts for different recipients. E.g., you might have one template that is used for your internal dashboards, but a different template for dashboards that are going to be seen by customers or suppliers.

- To be able to create dashboards that reside in different locations – because each template has its own "root publishing location". This might be needed where the security and sensitivity of dashboard data is critical; e.g., internal dashboards might be stored inside the firewall, whereas customer dashboards might be stored outside it.

To create multiple templates, make a copy of the original template, make any necessary changes to the new one, and then save the new template with its own unique name.

Create Publishing Location

You must specify where (system folders) dashboard output is to be stored. This is referred to as a dashboards "publishing location".

Dashboard output may be stored in one location or multiple locations, such as storing each person's dashboards in a distinct folder. For example, you might wish to store dashboards for Don Farber in a folder called "Farber".

And if you were creating dashboards for use by a number of people, you might create folders called "Sales" and "General".

ECi Software Solutions suggests that published dashboards be stored in sub-folders beneath the Digital Taskforce "webcaster" folder, but additional locations may be specified if needed.

Add Publishing Location Folder(s)

The steps below show the creation of a publishing location beneath the Digital Taskforce "webcaster" folder. Follow these steps:

- o   Open Windows Explorer and navigate to the folder where you installed Digital Taskforce.

- o   Navigate to the "Webcaster" folder.

o Create a new folder (beneath the Webcaster folder) and give it a name according to the person or group who will be receiving dashboard alerts.
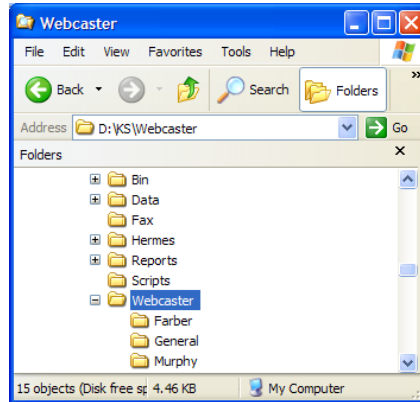
3 PUBLISHING LOCATIONS
("FARBER", "GENERAL", & "MURPHY")

Define "Default" Template & Publishing Location

Although you may define multiple templates and publishing locations, the dashboard alerts module requires that you create a "default" template and publishing location record. This becomes the template that Digital Taskforce uses for every event if no other specific template is defined.

Follow these steps to define the default template and publishing location:

➢ Open the Administrator and expand the "Software Setup" branch.

➢ Click on the option called "Webcast Locations" and then click on the button called "New Webcast Location". The following window will appear:
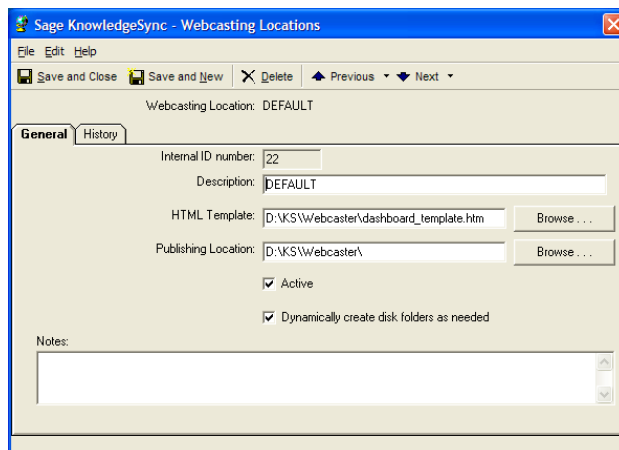
TEMPLATE & PUBLISHING LOCATION DEFINITION

o Give this template a name of "**DEFAULT**" (all uppercase). Note – you MUST have at least one template with a description of **DEFAULT**.

o Specify the name and location of the default template that will be used. Do not reference mapped drives; use UNC specifications instead.

o The "Publishing Location" is the name of the folder <u>beneath which</u> you have defined individual publishing locations (sub-folders).

For example, if you created publishing locations (folders) beneath the "Webcaster" folder called "General", "Murphy", and "Farber", your selection for the publishing location would be:

D:\Program Files\Digital Taskforce\Webcaster\

(Do not use mapped drives and make sure you place a backwards slash at the end of the publishing location. This tells Digital Taskforce to put the dashboard output into the appropriate sub-folders beneath this location.)

o Make the default template and publishing location "active".

o Decide whether you want Digital Taskforce to dynamically create folders in which dashboards are created if those folders do not already exist. Note that the Digital Taskforce Windows Service must have the required privileges to create folders beneath the "master" publishing location you specified above.

Note the following about publishing locations:

- The computer running Digital Taskforce must have write capability to the publishing location.
- You may specify an FTP address as the publishing location using the format "ftp://username:password@ftp.location.net/directory_name".
- You may use a WML file as a template to support WAP access for handheld devices.

Dashboard Subscribers

Dashboard subscribers are most often controlled via the event's query; no other subscriber set-up is required.

Only when a dashboard is used as a "User Alert Listing" are traditional subscribers used. Please see the section of this chapter titled "Creating User Alert Listings" for details.

Query Design

Before you design a query for use with a dashboard, you need to ask the following:

Will the event using this query create a single dashboard (e.g., All Overdue Invoices) or multiple (personalized) dashboards (e.g., My Clients' Overdue Invoices) where the query will create a separate dashboard for each person?

One Event – One Dashboard

If an event is going to generate a single dashboard, you should hard-code the location and name of that dashboard within the query itself.

Take an example of an "Overdue Activities" dashboard that displays a list of all overdue activities. You might decide that the folder called "General" is where you wish to store this dashboard file and

that you wish to call that output file "overdue_activities". Here's how you would design the corresponding query:

- Create a query that retrieves overdue activities.

- In the "Columns" tab, click on the button called "Add Calculated Column to Query".

- In the "Calculated Column Workbox, type in the following

'(name_of_publishing_folder)'+'\'+'(name_of_output_file).htm'

As in:

'General'+'\'+'overdue_activities.htm'

The above command tells Digital Taskforce to create the dashboard file in the "General" folder, and to give it a name of "overdue_activities".

- Click on "OK" to return to the "Columns" tab.

- Go to the "Customized Name" of the column you just added and change the customized name to "dashboard_address".

- Preview the query to make sure that the "dashboard address" field shows up as:

General\overdue_activities.htm

- Save and close the query.
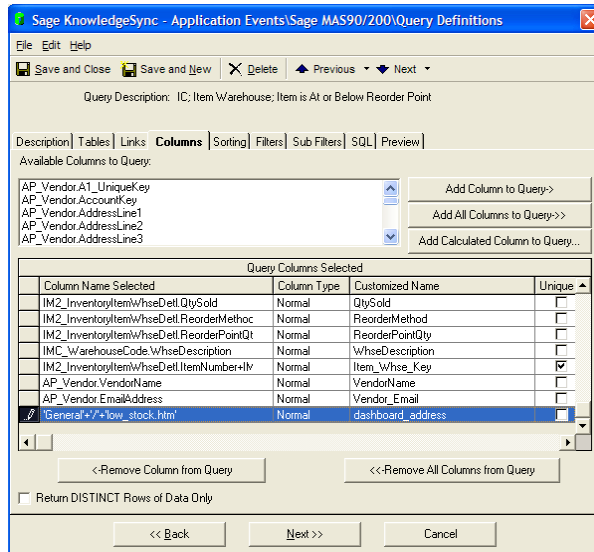
DESIGN FOR A SINGLE DASHBOARD

One Event – Multiple Dashboards

If an event is going to generate multiple dashboards (user-specific, region-specific, etc.), you will need to embed <u>variables</u> within the query's dashboard address column.

Using the example of the "Overdue Activities" dashboard, let's say you want to create one dashboard for each user who has overdue activities and you have users named Farber, Smith, and Jones. You've already created a publishing location folder for each of them.

Now consider the query; each activity is associated with a user (the three mentioned above) and each user's last name corresponds to a publishing location. So – all you need to do is to tell Digital Taskforce to create a separate dashboard for each user who has overdue activities.

You would create a calculated column, and its format would again be as follows:

'(name_of_publishing_folder)'+'\'+'(name_of_output_file).htm'

But instead of hard-coding the name of the publishing folder (as previously detailed), you would use a query database field to control the name of the folder in which the dashboards will be created, as in:

sysdba.users.lastname+'\'+'overdue_activities.htm'

"sysdba.users.lastname" is the field that contains the last name of the user to whom an activity is assigned – and also the name of the folder in which you want each dashboard to be created. Digital Taskforce will automatically create the appropriate dashboards in the appropriate locations based on the records retrieved by a query.

(And so, if 3 users had overdue activities, Digital Taskforce would create three dashboard output files, one in each of the 3 corresponding publishing location folders, and each file would be called "overdue_activities".)

Queries that create multiple dashboards <u>must</u> include a "Sorting" field that groups the matching records by dashboard recipient. Thus in the above example, the query also includes a sorting field on the user's last name.
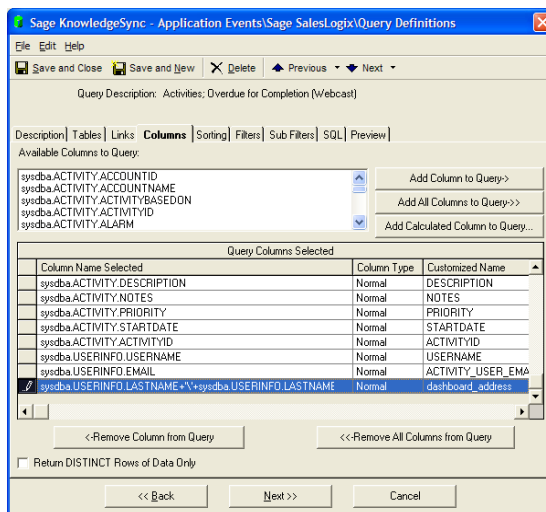
DESIGN FOR MULTIPLE DASHBOARDS

Dynamically Naming the Dashboard Output File

In addition to dynamically determining the publishing location of dashboard output files, Digital Taskforce also lets you dynamically name the dashboard output file itself.

In the example from the preceding section, 3 users named Farber, Smith, and Jones would each have a dashboard file called "overdue_activities" in their corresponding folder. But what if you wished to precede the name of each dashboard output file with the name of the salesrep?

Easy – just modify the dashboard address column as follows:

(database_field)+'\'+(database_field)+'(name_of_output_file).htm'

As in:

sysdba.users.lastname+'\'+sysdba.users.lastname+'_overdue_activities.htm'

Now the user named Farber will have a file called "farber_overdue_activities" in his folder, and the other users will have correspondingly-named dashboards as well.

Choosing a Specific Dashboard Template

(You may skip this section if you are using a single dashboard template.)

Earlier in this chapter it was mentioned that you can create multiple dashboard templates. If you do have multiple templates, you can control which template the query's resulting dashboard will use by modifying the dashboard address column as follows:

'(template_location_name):'+'(publishing_folder)'+'\'+'(name_of_output_file).htm'

As in:

Dash_ext:General\overdue_activities.htm

This syntax will create a dashboard called "overdue_activities" in the "General" folder beneath the publishing location of the dashboard template (webcast location) record called "dash_ext".

Other Query Design Considerations

Consider the elements of data you wish to display within a dashboard. For example:

DASHBOARD WITH 5 DATA ELEMENTS

This dashboard shows 5 data elements – the item's name, location, quantity on-hand, quantity on order, and reorder level.

Dashboards display their data in this kind of columnar format, and the number of data elements you can include in such a table is limited only by the size of the fields and the display capabilities of your monitor. (You can also adjust the font size of the data in the dashboard table.)

Regardless of how many data elements you wish to display, make sure your query has selected each of those data elements as "Columns" for the query. Only those columns that are selected for a query can be later put into a dashboard.

Dashboards can also contain calculated data such as is shown in the following:

DASHBOARD WITH CALCULATED VALUES

A Dashboard That Uses an Aggregate Query

If you are creating a dashboard query that uses an aggregate function – such as the "summarize" or "count" functions, the query column that contains the dashboard address must include a database field name (due to SQL syntax restrictions).

The best way to handle this is to choose a one-character field from your database (such as a "status" field) and use the "substring" command to retrieve a value from that field that will always be blank. For example:

SUBSTRING(sysdba.CLIENT.STATUS,20,1)+'General'+'\'+'Opp_Count_Value.htm'

In this example, no data is being retrieved from the "client status" field, but without a field reference, the dashboard address value (by itself) would not be accepted by the query.

Configure Dashboard Event

To specify the content of a dashboard, create an event that uses the query you designed, and then click on the "Webcast" tab in the Event Designer.

The **Webcaster Subject** will typically be a description of the overall event – such as "Overdue Opportunities".

The Webcaster Message is where you specify the contents of your dashboard. Dashboards are typically formatted to display their data in a table (columnar) manner; since this data will be shown in an HTML page, the webcaster message must be defined using HTML syntax.

A standard webcaster message template is provided with the Dashboard Set-Up Kit from ECi Software Solutions. We encourage you to use this template.

You may use any HTML editor to create or customize the webcaster content; if you do not have an HTML Editor (or are not HTML-savvy), ECi Software Solutions suggests that you use the following free, non-technical HTML Table Design tool available on the Internet:

http://www.spectrum-research.com/V2/generators/tableframe.asp

The standard webcaster message content template provided by ECi Software Solutions is shown on the following page:

```
<style type='text/css'>
        caption.mytable
        {
                background-color:99CCFF;
                color:black;
                border-style:solid;
                border-width:1px;
                border-color:336699;
                text-align:center;
        }

        table.mytable
                {
                font-family:Tahoma;
                border-collapse:collapse;
                font-size:10pt;
                background-color:white;
                width:100%;
                border-style:solid;
                border-color:336699;
                border-width:1px;
        }

        th.mytable
        {
                font-size:8pt;
                color:black;
                text-align:center;
                font-weight:bold;
        }

        tr.mytable
        {
        }

        td.mytable
        {
                font-size:8pt;
                background-color:white;
                color:black;
                border-style:solid;
                border-width:1px;
                border-color:cccccc;
                text-align:left;
                padding:3px;
        }
</style>

<table class='mytable'>
        <caption class="mytable">{EVENT_DESCRIPTION_COLOR} as of {EVENT_DATE}</caption>
        <thead>
                <tr class='mytable'>
                        <th class='mytable'>Heading 1</th>
                        <th class='mytable'>Heading 2</th>
                        <th class='mytable'>Heading 3</th>
                        <th class='mytable'>Heading 4</th>
                </tr>
        </thead>
        <tbody>
                {BEGIN*REPEAT}
                <tr class='mytable'>
                        <td class='mytable'>{Data Field 1}</td>
                        <td class='mytable'>{Data Field 2}</td>
                        <td class='mytable'>{Data Field 3}</td>
                        <td class='mytable'>{Data Field 4}</td>
```

```
                        </tr>
                        {END*REPEAT}
                </tbody>
        </table>
```

The variable {EVENT_DESCRIPTION_COLOR} contains the name of the dashboard event and {EVENT_DATE} contains the date and time the event was last run.

Note that the details section of the HTML uses {BEGIN*REPEAT} and {END*REPEAT} so that all matching records will be displayed within the dashboard that is created. (Remember that the "repeat" commands may appear on only one tab within an event.)

Expiration Days

The field called "Expiration Days" controls the number of days that information will remain in the Dashboard. Typically users do not want dashboard information to remain in the display unless the corresponding business conditions remain in existence.

An expiration days setting of minus one (the suggested setting) tells Digital Taskforce that each time the dashboard event runs, its contents will be refreshed with only those records that meet the event's criteria.

Linking a Report and/or Chart to a Dashboard

Dashboards may be created to include URL links to reports and/or charts. For example, you might have a dashboard that shows overdue opportunities and you might wish to include a report or chart that details the opportunities and/or displays the sales forecast in bar chart, pie chart, or other such format.

To link a report and/or chart to a dashboard event, follow these steps:

1. Create the report or chart.

2. Add a "Report Definition" (for the report) or a "Chart Definition" (for the chart).

3. Open the dashboard event, go to the "Reports" tab and add the corresponding reports/charts. Select the output format and fill in any required parameters.

4. Go to the "Webcast" tab and place a checkmark in the option boxes titled "Include reports as URL links" and "Webcast notifications should wait until reports are completed". (These two check boxes apply to both reports and charts.)

The last step in linking a report or chart to a dashboard is the process of specifying where – in the dashboard – you want the link to the report/chart (referred to as the "report reference field") to appear. One option is to have the reference field appear as a link in the title (or "caption") of the dashboard:
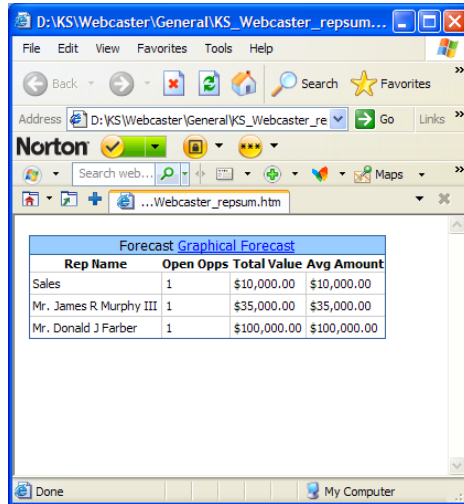
DASHBOARD WITH A LINKED REPORT/CHART

The report reference field is called {EVENT_URL}. Do <u>not</u> put it anywhere between your "repeat" commands.

"Repeat-Enable" the Dashboard Event

Since you want to make sure that every time a dashboard runs, Digital Taskforce will show **all** matching records make sure that the event is repeat-enabled by clicking on the "Description" tab of the event and checking to the option to "repeat notifications".

Dashboard Subscribers

With the exception of user alert listings, dashboard events do **NOT** use "Standard Subscribers". This is because the queries that power a dashboard event already contain the location and name of the dashboard output files; all you need to do is to specify the name of the query field that contains the dashboard location and name information.

(In the example from earlier in this chapter, the query column where this was stored was called "dashboard_address".)

Thus you would do the following to select the dashboard subscriber:

- o Click on the "Subscribers" tab and then on the "Advanced" tab.

- o Go down to the last field in the lower grid ("Contains webcasting name") and click in this field. A list button will appear.

- o Click on this button and choose the field called "dashboard_address".

Schedule the Event

Similar to any other event, go to the "Schedule" tab to specify how often a dashboard event runs. Note that the frequency of running will determine how often this event updates its display with new or changed data.

Run a Dashboard Event

To run a Dashboard event once – right now – follow these steps:

- o In the Navigator, locate and right-click on the dashboard event.

- o Choose the option called "Schedule This Now".

Once the event has been submitted, open the Monitor to track its status. Begin in the "Application Events" branch to see that the event has gone from "Checked Today" to "Triggered Today" (assuming that the event's conditions have been met.)

Once triggered, you can highlight the event and click on the "Deliverables" button to see that the event has triggered the creation of a webcast dashboard. You can then go to the "Webcast Delivery" branch and look at the "Pending", "Sent Today", or "Errors" branches to see the status of the generation of your dashboard.

A Portal for Reports & Charts

A second use for dashboards is as a "portal" where generated charts and/or reports can be published and then easily accessed by users.

Portals can be created per user, per department, or even company-wide.

A sample template for the Reports Portal shown below is available from ECi Software Solutions; please contact e-automate Customer Care if you would like to receive it.

On the "Webcast" tab, be sure to check the box titled "Include Reports as URL Links." Once you do so, the corresponding reports/charts will automatically be generated and posted to the resulting dashboard window

A simple reports & charts portal would look like the following:

SAMPLE REPORTS & CHARTS PORTAL

User Alert Listings

A third use for dashboards is as a display of all of the alerts sent to a user.

In this configuration, a user would typically have a single dashboard window which would list all of the alerts from the events that the user wishes to be informed about. This window contains information about sales, invoices, open support tickets, and so on.

Because such a window could contain a wide variety of event data, the design of such a window is typically very generic. A sample template (called "KS_Webcaster.html") is included in the "webcaster" folder. Typically this same template would be used for any users who wish to have access to this display of their own triggered alerts.

Like all Dashboards, User Alert Listings are self-updating so newly-triggered events will automatically be added to the displays. User Alert Listings are also an excellent way to deliver Forms, Documents, and Reports to the users viewing these listings.

User Alert Listings typically look like the following:

SAMPLE USER ALERT LISTING

Subscribers

Once you have created the publishing locations, you can define the address for each subscriber who will receive a user alert listing dashboard.

In the Navigator, expand the "Subscribers" branch, and locate the subscriber whose address for their user alert listing you wish to define. Go to the "Webcast" tab for the selected subscriber.

In the "Webcaster Name" field, type the name of the webcast folder in which the alert listing will be created. (Do not entire the entire path; just the publishing folder name.)

In the "Webcaster Location" fields, click on the drop-down arrow and select a the dashboard template (here referred to as the "webcast location").

Save and Close your entry when done:

SUBSCRIBER WEBCAST ADDRESS DEFINITION

For any event you wish to update a subscriber's User Alert Listing, go to the Subscribers tab of the corresponding event, choose the "standard" subscriber whose listing you wish to update, and place a checkmark in the "Webcast" delivery option.

How User Alert Listings are Populated

When an events that updates a User Alert Listings is triggered, Digital Taskforce automatically creates or updates the corresponding dashboard file and publishes it to the corresponding location of each subscriber.

When additional events are triggered, Digital Taskforce automatically re-creates the user alert list dashboard file, including both the existing alerts and the details of any newly triggered events. (Existing alerts will continue to be listed on a subscriber's alert listing dashboard until the alert's expiration date and time has arrived.)

One of the most powerful aspects of user alert listings is that unlike e-mail, a subscriber may keep a window (web browser) open to their specific alert listing location and receive real-time updates about newly-triggered events.

CHAPTER 14

EventPaks

EventPaks are collections of Digital Taskforce events and may include queries, events, report definitions, scheduled report events, and VB scripts. By building an eventpak you can "pack up" event-related data and send that data to another person or organization.

EventPaks have three primary uses:

- To package custom events that you wish to resell

- To distribute events to other members of your organization, to move events from one system to another, and to create back-ups of configured events

- To send events that you need help with to your business partner or ECi Software Solutions

The Contents of an EventPak

Eventpaks contain event data that is associated with one or more applications within Digital Taskforce. You cannot choose which queries, events, report definitions, scheduled reports, and scripts you wish to include from a specific application; it is either all or none.

However you can create an EventPak with only one or two queries and/or events within it. To do this, you would:

➢ Open the Event Manager module and create a new application. This will store the queries, events, etc., that you wish to put into the eventpak.

➢ Using the Event Manager's "Edit" menu copy and paste functions, copy the desired queries, events, et cetera from the application in which they currently reside to the application you just created.

➢ Use the contents of your new application for your EventPak.

Reselling an EventPak

Digital Taskforce provides three functions that enable you to control the distribution of an EventPak:

- **Branding**. You may "brand" an eventpak with your organization's name and contact information. This allows the people to whom you send the pak to know who created it and who to contact for questions or assistance.

- **Encryption**. You may "encrypt" the queries included with an eventpak to prohibit a recipient from viewing or modifying their design.

- **Licensing**. EventPak licensing enables you to distribute a trial version of the pak and generate a "perpetual" licenses for clients who wish to purchase that pak from you.

Accessing EventPak Functions

Eventpak functions are located in both the Navigator and Event Manager modules, from the "File" menu.

Vendor Identification

Branding an eventpak with your identification allows the recipients to know from whom they came and whom to contact for assistance.

To enter your vendor identification, follow these steps:

➤ Click on the Event Manager "File" menu.

➤ Select "EventPak" and then the "Vendor Identification" option:
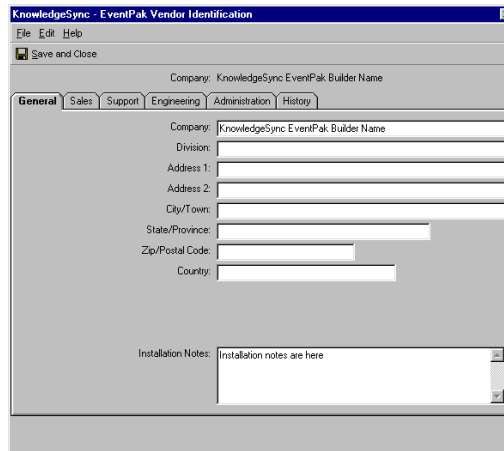
EVENTPAK VENDOR IDENTIFICATION

Fill in as many of these tabs as appropriate; the "General" tab lets you specify overall name and address information (along with notes about installing the EventPak), and the other tabs allow you to specify phone, fax, and e-mail contact information for the various departments of your organization.

When finished entering this information, click on the "Save and Close".

Building an EventPak

To build an eventpak, follow these steps:

➤ In the Navigator or Event Manager, click on the "File" menu.

➤ Select "EventPak" and then the "Builder" option:
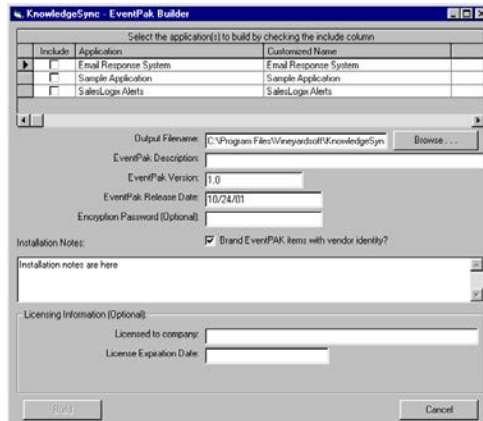
EVENTPAK "BUILDER" WINDOW

The grid that displays the application names scrolls to the <u>right</u>.

The grid at the top of the EventPak Builder window displays a list of all of the applications that are currently defined in Digital Taskforce.

Place a checkmark in the "Include" box for any applications whose queries, events, report definitions, scheduled reports, or VB scripts you wish to include.

For each application you have selected, scroll the grid to the right and place a checkmark in the columns that indicate which elements of event data you wish to include in the eventpak. You may choose from queries, events, Crystal Report definitions (*.rpt files), scheduled report events, and VB scripts.

Once you have selected the applications, fill in the following fields:

- The name and location of the eventpak output file. Eventpaks require a file suffix of ".kse".

- The name of the eventpak.

- The eventpak version number. This is very useful if you create updates to an eventpak, as it allows a recipient to tell the versions apart.

- The date that the eventpak was created/released.

EventPak Encryption

You can encrypt an eventpak to prevent recipients from viewing or modifying the contents of the queries in the pak. Encrypting an pak:

- Prevents a recipient from viewing the configuration of a query or modifying that configuration (protects your intellectual property)

- Enables you to specify a license expiration date for the pak. This date may be whatever you require, but defaults to 30 days.

- Allows a person who knows the encryption password to use it to access the query designer for the encrypted data..

- Encrypting a pak does not:

- Prevent a recipient from using the included queries

- Prevent a recipient from viewing and modifying the events, report definitions, scheduled reports, and scripts included in the pak.

- Prevent a recipient from designing new queries.

The encryption password should **always be unique** per EventPak.

Branding an EventPak

Use the checkbox titled "Brand EventPak Items with Vendor Identity" to control whether or not your vendor identity will be included in the pak.

If you do choose to brand the EventPak, your vendor identity information will appear in the "Help" menu under the heading "About EventPak Vendor."

Installation Notes

The multi-line text box in the middle of the Builder window allows you to enter installation and configuration details about the pak. This information will be displayed when a recipient executes a pak in preparation for its installation.

EventPak Licensing

If you have encrypted an eventpak, you can specify a license name and expiration date. If you will be re-selling a pak, it is suggested that you specify a license expiration date (in the format "xx/xx/yyyy") that will allow a client to "try out" your pak for a certain amount of time (e.g., 30 days) before deciding whether to buy it.

If you will not be re-selling a pak (but have chosen to encrypt it), it is suggested that you specify a license expiration date that is far in the future (e.g., "01/01/9999") and thus provide a recipient with "perpetual" access to the pak.

If you do assign a limited-time license code to a pak, you can use the eventpak license manager to generate an extended or perpetual license code for a client to use a specific pak.

If an eventpak's license expires, the recipient will be able to add and modify data in the pak but will not be able to submit any of the events to run and will receive a message informing them that their license code has expired.

A client may view and/or update their EventPak license by:

➢ Opening the Event Manager and selecting an event in the pak.

➢ Clicking on the "Help" menu and selecting "About EventPak Vendor".

➢ Clicking on the "License" button.

If the "License" button is grayed out, there is no license code associated with the pak.

Creating the EventPak File

When you have filled in all of the information for a pak, click on the "Build" button.

Digital Taskforce will create the ".kse" file in the location you specified. A "Finished!" message will appear at the bottom of the Builder window when this process is complete.

EventPak files tend to be quite small and are ideal for distributing via e-mail.

Installing an EventPak

To install an eventpak, follow these steps:

➢ Open the Navigator or Event Manager and click on the "File" menu.

➢ Select "EventPak"

➢ Select the "Install" option. You will be prompted to specify an eventpak file (one that ends in ".kse").

Once you have selected the corresponding file, you will see the following window:
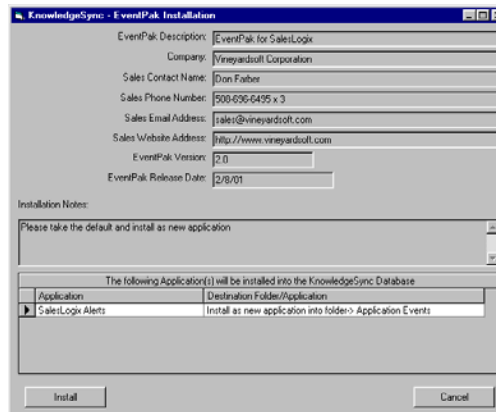
EVENTPAK INSTALLATION WINDOW

The top two-thirds of this window contains information about the pak, who created it, when it was created, and any specific installation notes.

The grid at the bottom of this window shows you a list of the applications that are included in the pak. The column titled "Destination Folder/Application" controls how and where the pak will be installed:

- Install it as a **new** application in Digital Taskforce.

- **Add** its data to an existing application in Digital Taskforce

Note that Digital Taskforce will not overwrite existing queries or events, but will prompt you regarding duplicate report definitions and VB scripts.

(If you add the contents of an EventPak to an application that already has queries or events of that name, you will end up with **two** queries or events with the same name.)

Click on the "Install" button when you are ready to install the EventPak.

Installation Note

Eventpaks do not include ODBC details within it; thus after you install a pak you should go into the "Properties" option for that pak and specify the connection data.

License Generator

You can generate license codes for the recipients of eventpaks:

EVENTPAK LICENSE GENERATOR

Each license code is linked to a pak (via the encryption password) and to a specific client. When you are ready to generate a license code for a client, follow these steps:

➢ Open the Navigator or Event Manager and select "EventPak" from the File menu.

➢ Select "License Generator".

➢ Specify the encryption password associated with the pak.

➢ Enter the name of the license's owner. A client will have to type in this name exactly as you have it in order for their license code to work.

➢ Enter the license expiration date. Use "9999" for the year of a license that will be good forever.

➢ Click on the "Generate" button. The corresponding license code will appear in the last field on this window. Provide this value, along with the value of the license owner field, to the eventpak recipient.

CHAPTER 15

Digital Taskforce Utilities

Digital Taskforce includes a number of utilities that can be used to help with a variety of system functions. Please refer to the introduction of each of the following sections for an overview of each utility's function.

Digital Taskforce Linking Function (KLF)

The Digital Taskforce Linking Function (KLF) optimizes data retrieval and analysis for databases that do not have exceedingly strong ODBC drivers. The KLF function does this by using Microsoft Access "Linked Tables".

KLF enables quicker, more flexible access to data that is stored in a database (or uses an ODBC driver) whose flexibility and/or response time is not adequate for an organization's requirements.

KLF is ideal for applications where:

➢   It takes an unusually long amount of time for a query to retrieve data

➢   More sophisticated query functions (such as totaling overdue invoices per client) are not supported by the database's native ODBC driver

➢   An application has tables with multi-field unique values and you wish to create queries that determine if fields within these tables have had their value changed.

    (The ability to identify when a field has had its value changed is possible only for tables that have single-field unique values. If a table uses a multi-field unique, KLF will concatenate those values to create a single field unique.)

Using KLF, Digital Taskforce queries that would previously have been required to run against an application's native database (using that database's ODBC driver) are now able to leverage Microsoft Access query capabilities and speed.

Digital Taskforce Extract Function (KEF)

Digital Taskforce also includes a utility (called KEF) which extracts data from a target database and replicates in Microsoft Access format. Although a useful utility, this function has in most cases been replaced with KLF, as KLF provides real-time access to the target data and does not require that this data be extracted and replicated.

(The KEF function is still provided in Digital Taskforce and runs under the same method as KLF, so you may refer to the KLF documentation for details on both utilities.)

Real-Time Data Access

Unlike an extraction of data from a source database, KLF accesses a database's information in its native format and in real-time. The only difference is that instead of using the source database's

native ODBC driver to filter the target data, KLF uses the Microsoft Access ODBC driver to perform this data selection.

How Linking Works

Before you start configuring the Linking Utility, it's important to understand the sequence of events in Digital Taskforce when using KLF:

➢ You run KLF in order to create a "linked database." Note that this database will not actually contain any data; it will simply link to the source database.

➢ In Digital Taskforce, you have an application branch which contains the events that are configured to query the data using the linked database.

➢ The events that are designed to work against the linked database run and execute any of the standard Digital Taskforce response actions, including the delivery of alert messages, the generation of Crystal reports, and the execution of application updates and/or workflow.

Licensing

Digital Taskforce is licensed per "connection"; each connection equates to a single ODBC-compliant database that Digital Taskforce can monitor. Since the Linking Utility uses a Microsoft Access database that will be monitored by Digital Taskforce, it requires a Digital Taskforce license connection to monitor that "linked" database.

(If you are going to use KLF, your license code needs to be "synonym enabled" – this requires that the "Company Name" in your Digital Taskforce license code end with the value "/synonym". If this is not the case, please contact your account manager.)

Requirements

To run the Linking Utility, please ensure that the following are true:

➢ The Digital Taskforce service is running.

➢ (If you are interactively running the KLF) The Digital Taskforce Event Manager module is open on the Digital Taskforce server.

➢ The Linked File does **not** refer to a file spec on a mapped drive.

Running KLF

Before running KLF, create a system ODBC source that points to your source database. This is the "native" ODBC source that is for the database you will be linking to.

After creating this ODBC source, you are ready to run KLF. Follow these steps:

➢ Using Windows Explorer, navigate to the directory in which you installed Digital Taskforce and navigate to the "Bin" directory.

➢ Execute the program called KLF.

➢ **Link Output File Spec**. Key in the name of the linked database you want KLF to create. Do not use mapped drives in your file specification.

- **ODBC Data Source**. Choose the ODBC source that connects to the source database. If the source database requires username and password security, key in those values.

- Click on the "Log On" button to load all of the tables (and views) in the corresponding source database.

- KLF gives you the option to link selected (or all) tables from the source database. To select an individual table for linking, place a checkmark to the left of the table name. To select all tables, click on the "Select All" button.

- When done selecting tables/views, click on the "Link" button. KLF will proceed with creating the appropriate links, showing you its progress as well as the name of each linked table at the bottom of the KLF window. When all selected tables are linked, you may exit from the KLF module.

Create ODBC Source for the Linked DB

The next step in KLF is to create an ODBC source that points to the linked database. Follow these steps:

- Go into the option for "Data Sources (ODBC)".
- Select the "System DSN" tab.
- Click on the "Add" button.
- Select the "Microsoft Access Driver" and click on "Finish".
- Give the data source a name (such as "KS_Linked_App") and description.
- Click on the "Select" button and choose the linked database you created.
- Click on "OK" twice to save the source.

You are now ready to go into Digital Taskforce and start creating queries and events using the linked data.

Create Application Branch

The next step is to create a new application branch that points to the linked database. Follow these steps:

- Log into the Navigator.
- Right-click on the "All Events" branch and select "New Application"..
- Key in the application name (e.g., "Linked Accounting Data") and click on the "New Connection" button.
- From the "ODBC Data Source Name" field, click on the list button and select the ODBC source you created in the previous section.
- Click on the "Save and Close" button and then on "OK".

Create Queries & Events

Once you have created an application branch for your linked database, you are ready to begin creating queries and events using the data in the linked database. Please be sure to use the Query "Preview" function to visually verify the data that the query is retrieving.

If, during the process of query or event designing, you notice that you need access to some tables of data that you did not include in the KLF, you must re-run KLF (to include the additional tables) and then proceed with your query and event design.

External Message Editing

Digital Taskforce includes a way to enable users to edit and modify an event's alert message content without accessing the Digital Taskforce application. This function is referred to as "External Message Editing".

Instead of storing an event's alert message content within the "Email", "Fax", "Page", or "Webcast" tab of an event, you may store the event's message content within a field of a database table. After you do this, you, go into an event's "Email", "Fax", "Page", or "Webcast" tabs, and refer to the name of the database field that contains the message content.

When the corresponding event is triggered, Digital Taskforce will notice that the contents of the alert message refers to a database field name. And, when Digital Taskforce goes to translate that field, it will see that this field's contents consist not of hard-coded text, but rather a combination of hard-coded text and other database field variables.

Digital Taskforce will then translate those contents into the corresponding alert message text.

Create External Message Table

To use External Message Editing, you first need to create a table that will house the editable message format.

It does not matter what this table is called, or where it is stored, but it is suggested that if a client is using Digital Taskforce to monitor an application called "Target" that you create a new table in the "Target" database and call that table something like "KS Message".

(You may use multiple tables that contain editable message formats for events.)

Create Field(s) for Message Formats

Since the new table will store the editable message format for an event, you need to create one or more data fields (columns) within the table that are going to hold the message content.

For example, if you wish to allow users to externally edit the email message text for a Digital Taskforce event, you might wish to create a field called something like "Email_Data" in the table you have created.

The columns that will hold the message formatting instructions must be "character" or "memo" type, and must be capable of storing a large amount of alphanumeric data.

Create Access for Editing the Table

The next step is to identify the means by which users will edit and/or customize the contents of the table created in the previous steps.

The method by which you allow users to edit this content is up to you; if you wish to allow non-technical users to perform External Message Editing, it is suggested that you create a friendly user interface that allows users to easily do this.

If, on the other hand, only programmers are going to be editing Digital Taskforce's messages externally, you can let programmers use any number of database access tools to edit the table's contents.

What Should the Table's Contents Look Like?

Consider the scenario where you've created a table called "KS Message" and you have a field within it called "Email_Data".

The contents of the "Email_Data" field would be the same as the contents of the "Email" tab for an event. For example, if you wished to create a message that sends a "thank you for ordering" message, the contents of the "Email_Data" field might look like the following:

Hello, {FIRSTNAME}:

Thank you very much for doing business with ECi Software Solutions. We have processed the following order for you:

Description: {DESCRIPTION}
Order Amount: {ACTUALAMOUNT}

Should you have any questions about this order, please feel free to contact your salesperson, {ACCT_MGR} via phone at 800-850-8055, or via electronic mail at {ACCT_MGR_EMAIL}.

Thank you again for doing business with us.

e-automate
ECi Software Solutions, Inc.
4626 North 300 West
Suite 200
Provo, UT 84604

Note the following about the contents of this column:

- Any of the database fields referred to in this column must also exist within the query that is used by the corresponding event.

- You may include both hard-coded text and database field values

- You may include date substitution variables

- You may include {BEGIN*REPEAT} and {END*REPEAT}.

- You may include {BEGIN*HTML} and {END*HTML}.

- You may include any of Digital Taskforce's field formatting commands.

Modify Query to Retrieve External Data

To configure an event to send an alert using data defined within an external table, you must ensure that the event's query retrieves not only all the necessary message data that is referenced within the external table, but that it retrieves data from the external table as well. Follow these steps:

- Open the event's query, go to the "Tables" tab, and add the table that contains the external message data. (You do not need to link the external message data table to the existing table for the query.)

- On the "Columns" tab, add the column from the external message data table that contains the alert message text.

If your external message data table contains more than one record (e.g., if it contains multiple alert message formats), you must include filtering in your query to ensure that only a single record from that table is selected.

Query "Preview" mode will display the actual contents of the selected column; it will not show you the translated values of the database field values that are referenced within that external message table field.

Edit the Event to Reference the External Data

The final step in configuring an event to retrieve message data from the external table is to modify the event to refer to the data field in the external data table. Follow these steps:

- Open the Event you wish to use the external message data.

- Go to the appropriate message delivery tab (i.e., "Email").

- In the "Message Body", go to the list of "Available Values for Use in Message Content" and select the field containing the external message data.

Note that an event may refer to multiple external data fields in its alert configuration. For example, your email message body could appear as follows:

{EMAIL_INTRO}
{EMAIL_BODY}
{EMAIL_CLOSING}

Calling a Digital Taskforce Event

Digital Taskforce lets you "call" the execution of an event from outside the Digital Taskforce application.

The command for submitting an event is:
Run "disk:\KS directory\KS_Event.exe" @Admin; /schedule=[Lookup ID]

As in:
Run C:\Program Files (x86)\Digital Gateway\Digital Taskforce\Bin

Note the following about submitting an event from the command line:

- An event's "Lookup Key" is located on the event's "Description" tab below the "Event Description" field. Do not embed blanks in the Lookup Key value.
- The event that you are calling must be flagged as "Active".
- The submission must use a valid Digital Taskforce login username to execute successfully.
- Any events that you will be calling via external submission should be configured in Digital Taskforce to have no schedule. That way, the only time will be triggered is when it is called via an external submission.

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