



Version 1.6.6

# Installation Guide

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## Preface

*enterprise-Q* is a client/server-based queuing application used to store thousands of pending Tivoli distributions. *enterprise-Q* automatically distributes, tracks, reports, and retries any/all Tivoli-related enterprise management activities, including, but not limited to:

- Software Distributions
- Inventory Scans
- Distributed Monitors
- Tivoli Tasks
- Tivoli Product/Patch Installations
- ACP Profiles
- Endpoint Management such as Installation/Upgrades/Migrations/Subscriptions

This guide provides information regarding the installation of *enterprise-Q*.

## Who Should Read This Guide

The target audience includes system administrators performing the installation of the *enterprise-Q* (eQ) software into a lab or production environment.

## Related Documents

Other documents of interest include:

- *enterprise-Q* Technical References
- *enterprise-Q* Release Notes
- *enterprise-Q* Business Case

## What This Guide Contains

This document provides:

- a description of system requirements necessary to facilitate the installation of *enterprise-Q* for both Windows and Solaris versions
- *enterprise-Q* software installation procedures
- RDBMS installation procedures
- software configuration tips

## Typeface Conventions

This guide uses several typeface conventions including:

**Bold** - denotes file names, commands, directories, and accounts.

*Italic* - denotes actual buttons or fields within the eQ GUI.

`Constant Width` - denotes text that the user enters literally.

Underline - is used for emphasis.

## Introduction

Capital Software services the software development and enterprise management needs of Fortune 5000 companies and U.S. Government agencies. A Tivoli Business partner since 1997, Capital has combined knowledge gained from many successful Tivoli implementations with in-house product development expertise. The result is a standard for successfully deploying and maintaining a Tivoli environment using *enterprise-Q®* (eQ) - a product developed independently by Capital Software to maximize the Tivoli investment. Using the *enterprise-Q* methodology, Capital's successful deployments range in architecture from Framework version 3.1 to 4.x in production environments that include both Unix and Windows-based systems, encompassing nodes numbering in the hundreds of thousands. For additional information about how eQ maximized the Tivoli ROI or just more about Capital Software, please visit [www.capitalsoftware.com](http://www.capitalsoftware.com).

Capital Software's *enterprise-Q* version 1.6.6 is the very latest advancement in automated enterprise management for Tivoli environments. Installing in just minutes, the eQ software integrates readily into the Tivoli environment to queue and automate many Tivoli activities currently performed manually. eQ eliminates the need to parse through distribution log files to determine which nodes failed, and manually redistribute the package. Instead, eQ maintains the status of the distribution transaction for failed targets and will automatically redistribute the profile once the target becomes available.

While still grounded in the simple principal that automating labor-intensive enterprise management tasks will increase productivity, reduce operating costs and mitigate turnover, eQ version 1.6.6 takes enterprise management automation to the next level. The eQ GUI has been enhanced to allow even novice engineers to point-and-click their way through software distributions, inventories, remote control, tracking, reporting and troubleshooting in a Tivoli Managed Enterprise.

## Hardware Requirements

This section of the document describes the various environments in which enterprise-Q may be installed. For the very latest information, please visit our web site.

Operating System	Disk Space	Memory
WinNT/2000	45 MB	128 MB
Solaris 7/8	150 MB	128 MB
AIX 4.3.3/51	180 MB	128 MB

- Disk Space Requirement** – This figure does not include space for enterprise-Q daily log files, which can grow to over 1 MB per day if detailed tracing is turned on and significant traffic is achieved. Additionally, temporary space is required to store the installation archive file during *enterprise-Q* installation. The size of each archive is equal to the Disk Space requirements specified above.
- Memory Requirement** – This number is based on Tivoli requirements for a TMR Server/Managed Node. The *enterprise-Q* memory requirement is a function of the number of items in queue, with a linear relationship of roughly 2K per message. So, a queue of 10,000 transactions will require about 20 MB of memory.
- Database Sizing** - The enterprise-Q installation lays down five tables that are used to store the results of all enterprise-Q activities. For sizing purposes, each target activity will require, on average, 250 bytes in the RDBMS. So, for a distribution to 10,000 targets, approximately 2.5 MB will be written to the *enterprise-Q* database tables.

## Software Requirements

This section documents all the prerequisites to installing enterprise-Q.

1. **Operating System** – *enterprise-Q* can be installed on Windows NT/2000, Solaris 7/8, or AIX 4.3.3/5.1L. Although *enterprise-Q* can be installed on Windows NT 4.0 Workstation or Windows 2000 Professional, this type of installation is not recommended for production environments. Because the *enterprise-Q* must be installed on a Managed Node (which may be a TMR Server), as long as you meet the IBM criteria for making the system a Managed Node with respect to OS patches, you'll meet the *enterprise-Q* criteria.
2. **Local Administrator or root Account** – For Windows, the installation must be executed as **Administrator** (or equivalent) in order to install enterprise-Q services. For Unix, the **root** account is required for starting Apache, creating subdirectories, and perhaps creating a new **eq** account
3. **Local Account** – A local system account is required to complete the installation. enterprise-Q Unix daemon processes and Windows services will assume the identity of the local account when they start. For Unix installations, the account should *not* be **root**. For Windows, the account *may* be **Administrator**, and *must* have the right to **Logon as a service**.
4. **Tivoli Administrator** – The **local account** described above *must* be associated with a Tivoli Administrator that possesses at least **Senior** role. **Super** role is *required* if distribution logfiles are located on a remote host.
5. **TMR Server/ManagedNode** – The local host must be the TMR Server or a Tivoli ManagedNode with the appropriate Tivoli software components. The system does *not* have to be a Gateway nor a Repeater.
6. **Perl 5.005\_03** – Starting with enterprise-Q 1.6.5, Perl 5.005\_03 is included as a subdirectory in the enterprise-Q directory tree, thus eliminating the need to pre-install this software.
7. **Apache Web Server 1.3.20 or greater** – Starting with enterprise-Q 1.6.5, Apache is included as a subdirectory in the enterprise-Q directory tree, thus eliminating the need to pre-install this software. If Apache is already installed and configured, the installer may choose not to install Apache.
8. **RDBMS Client/Server and Account** – Starting with enterprise-Q 1.6.5, an RDBMS is no longer required, thus eliminating the need to pre-install this software. In such an installation, the results of enterprise-Q initiated transactions are not stored, so historical reporting is effectively disabled. All other aspects of enterprise-Q will perform as documented.

If historical reported is desired, please install a supported RDBMS Server or Client on the eQ Server system. See table below for a list of supported RDBMS products for your platform.

Operating System	RDBMS Support
------------------	---------------

WinNT/2000	<ul style="list-style-type: none"> <li>• Oracle 7/8/9</li> <li>• DB2 7.2</li> <li>• MySQL 3.23</li> </ul>
Solaris 7/8	<ul style="list-style-type: none"> <li>• Oracle 7/8/9</li> <li>• DB2 7.2</li> </ul>
AIX 4.3.3/51	<ul style="list-style-type: none"> <li>• Oracle 7/8/9</li> <li>• DB2 7.2</li> </ul>

**Note:** Both 32-bit and 64-bit versions of Oracle 9i have been tested with enterprise-Q version 1.6.

From the eQ Server, please verify connectivity to the database. During the enterprise-Q installation process, you will be prompted for an RDBMS account. This account will be used to create the enterprise-Q database schema in the users default tablespace. As such, we recommend that you use an account other than the system account, and specify a default tablespace for the account. Most customers use the Tivoli Inventory account, but some like to keep the enterprise-Q tables separate. The account used must have the authority to create tables in the default tablespace.

The following five (5) tables comprise the enterprise-Q database schema:

- **EQ\_NODES** – Stores one record for each node name for which an EQ activity has been initiated.
- **EQ\_ACTIONS** – Stores one record for each EQ action type that has been attempted.
- **EQ\_ACTION\_STATUS** - Stores the result for each node/action pair initiated via enterprise-Q.
- **EQ\_ACTION\_PARMS** – Stores transaction distribution parameters.
- **EQ\_DOMAIN\_LOGIN** – Stores the information passed from 'eqtivchk.exe'.

9. **Firewall Considerations** - The EQServer daemon process utilizes TCP port 2345 for all client/server communications. Since socket I/O occurs between the EQServer host and each Tivoli Gateway (through Endpoint Login Policy), TCP port 2345 must be opened between the eQ server and all the Tivoli Gateways in the managed environment. Note that, if need be, the TCP port number can be modified.

10. **Tivoli Products** – The following is a table of Tivoli products with which *enterprise-Q* version 1.6.6 was tested:

- Framework 3.7 through 4.1.1 – TMR Server or ManagedNode.
- Software Distribution Source Host 3.6 through 4.2.2
- Inventory Server 3.7 through 4.2.2
- Configuration Manager 4.2.1
- Remote Control Server 3.7 through 3.8.1
- Distributed Monitoring Server 3.7 through 5.1.2 (ITM)

*enterprise-Q* version 1.6.6 will most likely operate without incident with earlier version of Tivoli products since *enterprise-Q* has been compatible with the core Tivoli applications since its inception in 1998.

## Windows Installation

### *Pre-Installation*

1. Verify all hardware and software requirements are met, as defined in sections 2 and 3 of this document.
2. Create a local or domain user account with Administrator rights on the eQ Server system, or use the built in **Administrator** account. For the purposes of this document, it is assumed that the **eq** account is being used.
3. Grant the **eq** account the right to "Log on as a Service". See the appropriate section below for instructions on granting this user right.
4. Add the **eq** account as a valid logon for a Tivoli Administrator.
5. Verify the corresponding Tivoli Administrator has at least the Senior Role across the TMR. Super role is required if another Managed Node is used as the loghost.
6. From the eQ Server, login as the **eq** user and verify that Tivoli commands are operational by issuing the following command:

```
odadmin odlist
```

7. If enterprise-Q historical reporting is required, verify RDBMS connectivity using either the Tivoli Inventory account or a new RDBMS account capable of creating tables in the default user's tablespace. Please see your database administrator for more details.

For **DB2** database, use the following command to verify connectivity:

```
db2cmd connect to <dbname> user <user> using <password>  
db2cmd disconnect current
```

For **Oracle** database, use the following command to verify connectivity:

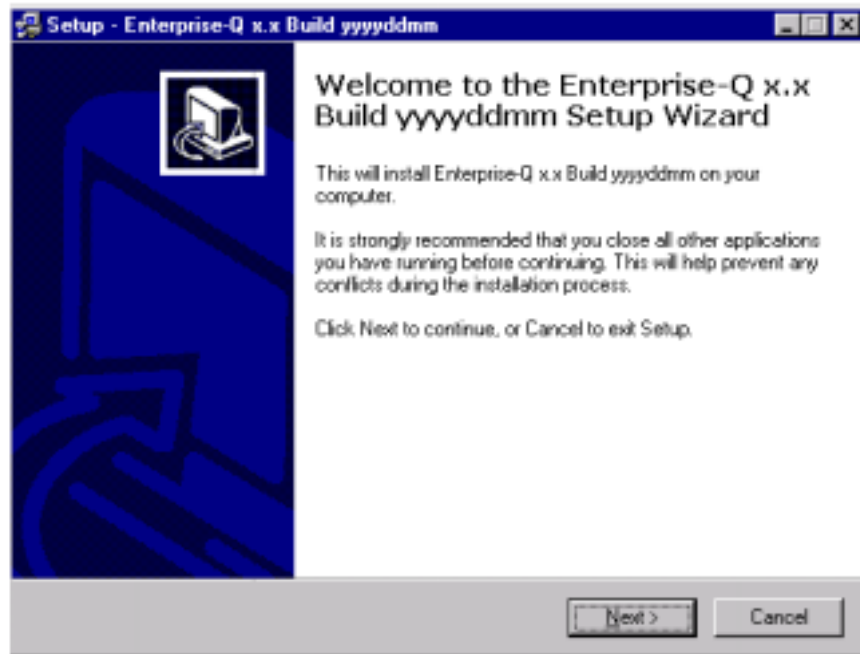
```
sqlplus <username>/<password>@<tnsnames.ora entry>
```

Please see RDBMS Notes section on page 20 for more information on RDBMS installation and configuration.

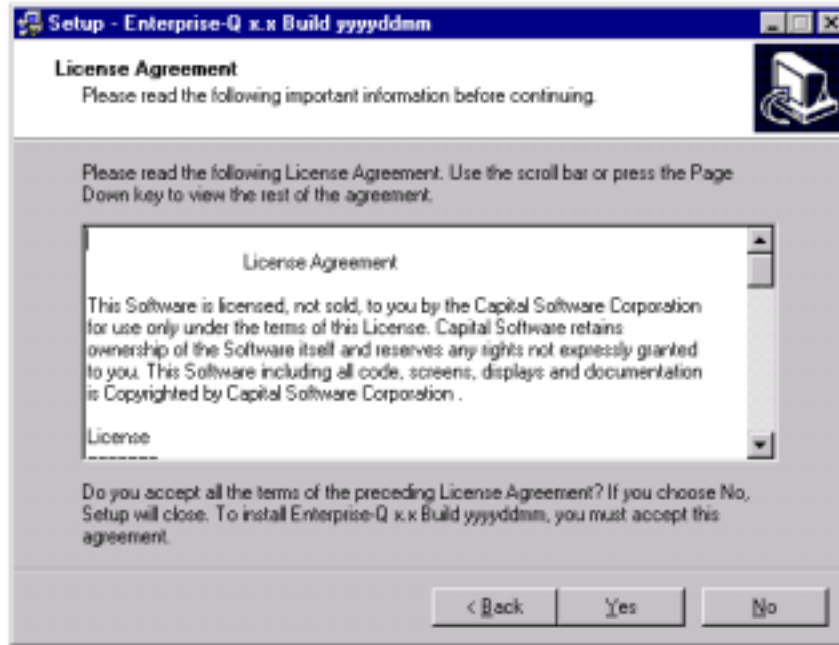
8. Run **eq1.6.5\_win.exe** to install the software and follow the prompts as depicted in the next section of this document.

### **Installation Procedures**

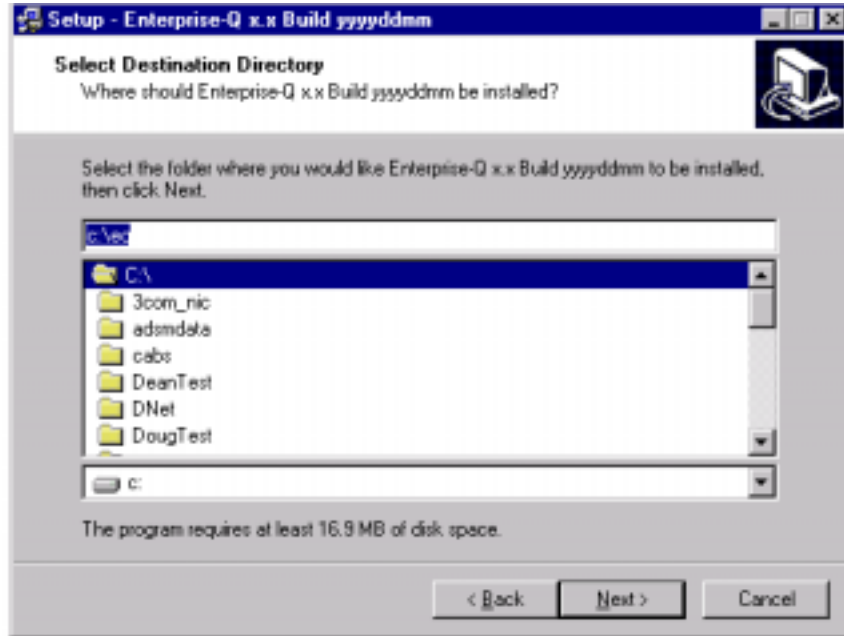
After executing the steps in the pre-Installation section above, you should be running the *enterprise-Q* installation script. When *enterprise-Q* is started it will present the following screen:



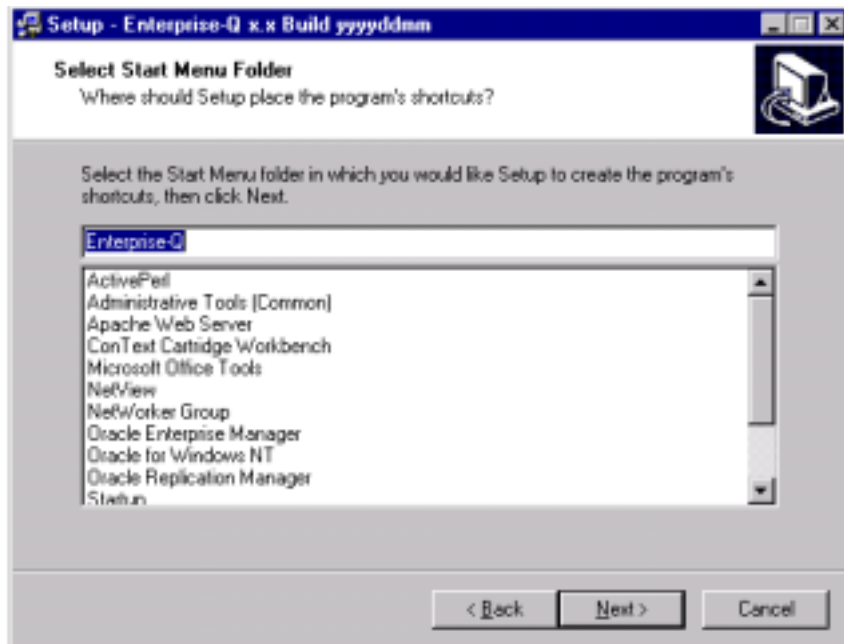
This is *enterprise-Q* introduction screen. Please read then press the "Next" button. To cancel the installation on this or any further screen press the "Cancel" button.



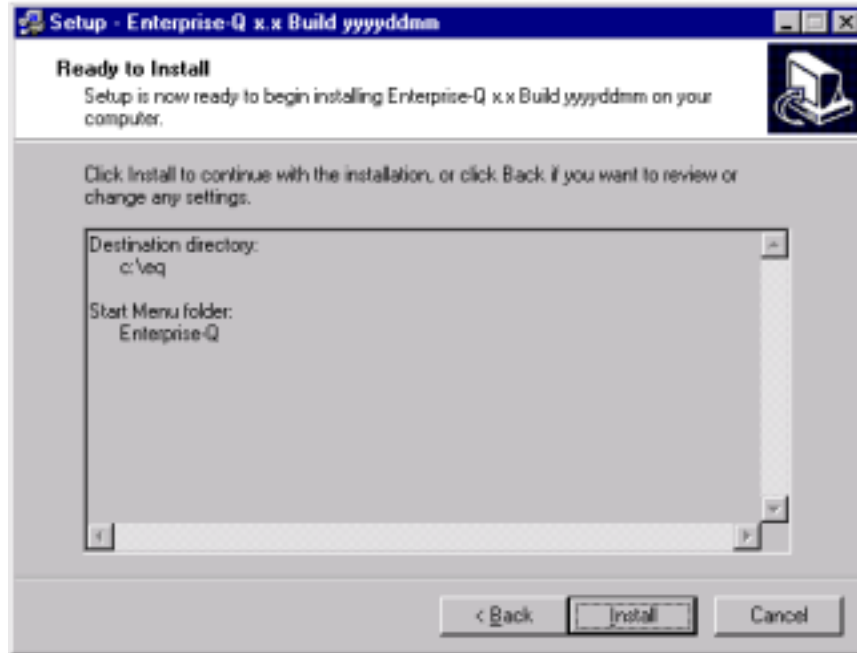
Please review the license agreement and contact Capital Software Corporation if you have any questions about this agreement. Once you have read the license agreement and wish to continue, select the button that matches your answer to the question on the screen. To install *enterprise-Q* you must accept the license agreement. If you do not accept the license agreement the setup program will close and *enterprise-Q* will not be installed.



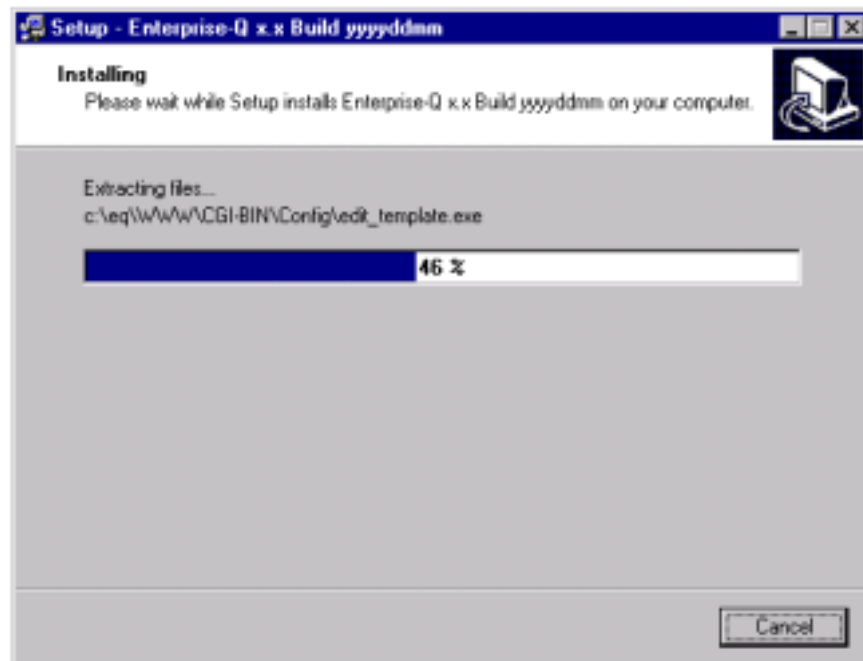
*enterprise-Q* (eQ) will create its own folder on the server. By default, the “C” drive is selected, and the folder will be called “eQ”. You have the option to change either or both of these defaults now, but will be unable to make changes after the software has been installed. You may change the drive on which eQ will install by selecting from the drop-down list. Once the drive has been selected, you can change the folder from the appropriate drop-down list.



By default *enterprise-Q* program shortcut will be placed under **enterprise-Q** program group. To change program group name, type in new name or select a name from the list of existing program groups. Click on the “Next” button to continue.

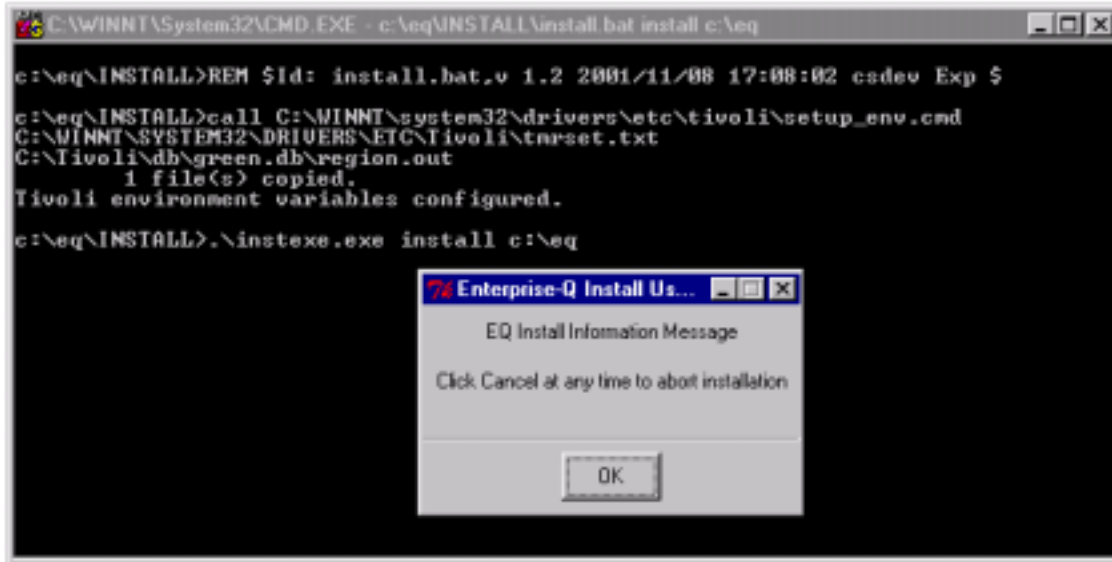


Once the Program Group has been established, eQ will begin the file transfer process, click on "Install" to continue with the setup program.

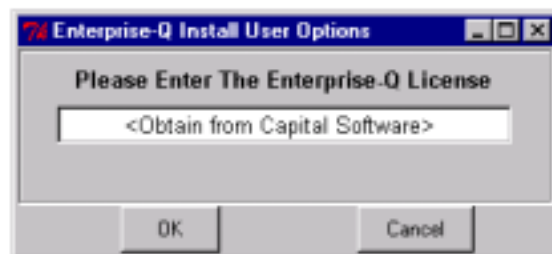


The *enterprise-Q* files will be copied to the drive and folder identified earlier in the install process.

Next, a Command Prompt window will appear with prompts for the following additional information. Note: To accept the value in [brackets] for a given prompt, press the <ENTER> key:

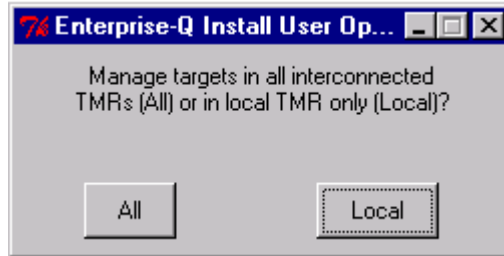


The install software will now maintain the Command Line Interface (CLI) in the background. The foreground will contain the interactive dialog boxes that will allow you to further customize the eQ installation. Please read each box carefully. Click “OK” when ready.

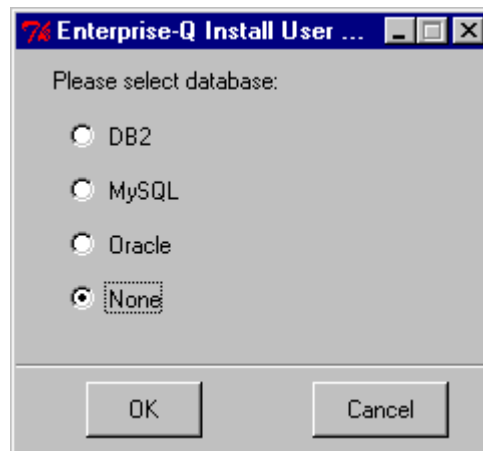


Type the *enterprise-Q* key *exactly* as provided by Capital Software Corporation. If you have any problems, please contact us for assistance. Note: License keys are case sensitive.

The enterprise-Q key will be validated using the results of the **hostname** command. Please ensure the enterprise-Q key was generated using the *exact* string returned from this command. If the key is invalid, you will be re-prompted to re-enter it.



If you have interconnected TMRs you have the option to manage targets from the local TMR only or all interconnected TMRs. Selecting the 'All' option will allow you to manage all targets in all interconnected TMRs. If you select the 'Local' option none of the targets from remote TMR servers will be displayed by *enterprise-Q*.



Choose the RDBMS used for storing the enterprise-Q database and click 'OK'. Please see the appropriate section below based on your RDBMS selection. Select 'None' if you do not have a supported RDBMS client/server installed on the enterprise-Q server host

**DB2 INSTALLATION PROMPT**

The screenshot shows a dialog box titled "Enterprise-Q Install User Options". The text inside the dialog box reads "Please enter DB2 database parameters:". Below this text are five input fields:

- Database binaries directory: D:/Program Files/SQLLIB
- Database user name: tivol
- Database password: \*\*\*\*\*
- Confirm database password: \*\*\*\*\*
- DB2 database name: DB2

At the bottom of the dialog box are two buttons: "OK" and "Cancel".

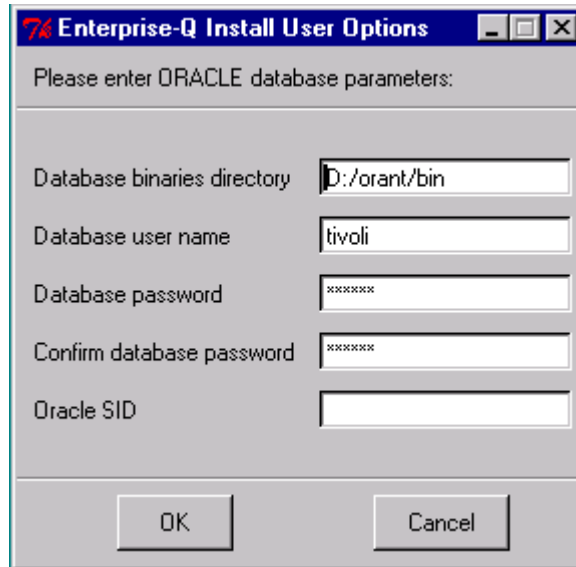
**Database binaries directory** – Enter the fully qualified path to the binary files for your RDBMS. For DB2, the default location is **c:\Program Files\SQLLIB**.

**Database user name** – The account that will be used to access the database. This account must have permission to create tables in the default user's tablespace.

**Database password** – The corresponding account password. The Password will not be displayed in clear text.

**Confirm database password** – Enter the database password. *enterprise-Q* installation script will use this password to confirm that the password in the **Database password** field was entered correctly.

**DB2 Database Name** – Name of the database as defined on your client/server.

**ORACLE INSTALLATION PROMPT**

Enterprise-Q Install User Options

Please enter ORACLE database parameters:

Database binaries directory: D:/orant/bin

Database user name: tivoli

Database password: \*\*\*\*\*

Confirm database password: \*\*\*\*\*

Oracle SID:

OK Cancel

**Database binaries directory** – Enter the fully qualified path to the binary files for your RDBMS. For Oracle, the default location is **c:\ORANT\bin**.

**Database user name** – The account that will be used to access the database. This account must have permission to create tables in the default user's tablespace.

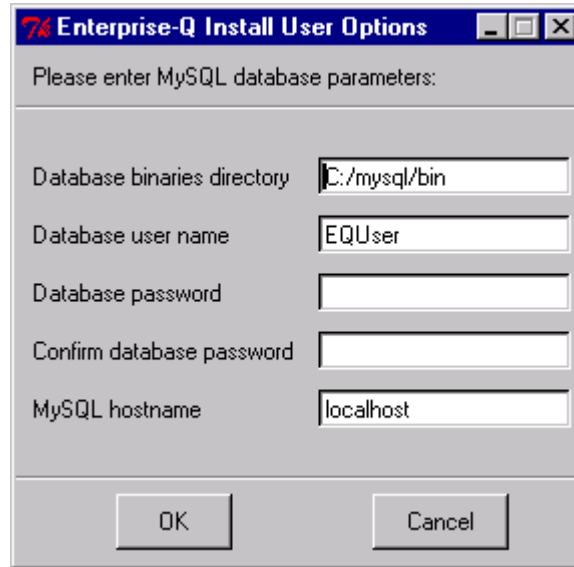
**Database password** – The corresponding account password. The Password will not be displayed in clear text.

**Confirm database password** – Enter the database password. *enterprise-Q* installation script will use this password to confirm that the password in the **Database password** field was entered correctly.

**Oracle SID** – leave empty if the Oracle Server is also the eQ Server. If using the Oracle Client software, use the proper TNSNAMES.ORA entry of the database server.

## MYSQL INSTALLATION PROMPT

If you are using MySQL for storing enterprise-Q tables and data, the enterprise-Q installation script will automatically complete the RDBMS installation and configuration. So, use the default values unless you have changed the default MySQL installation settings.



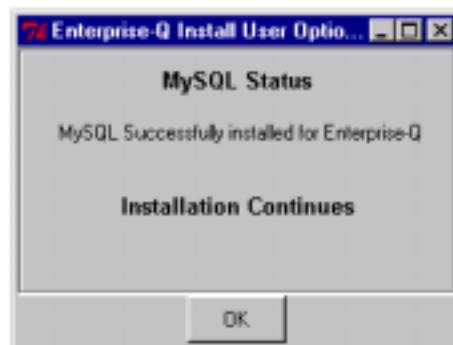
**Database binaries directory** – Enter the fully qualified path to the binary files for your RDBMS. For DB2, the default location is **c:\mysql\bin**.

**Database username** – Use the default settings.

**Database pass word** – Use the default settings.

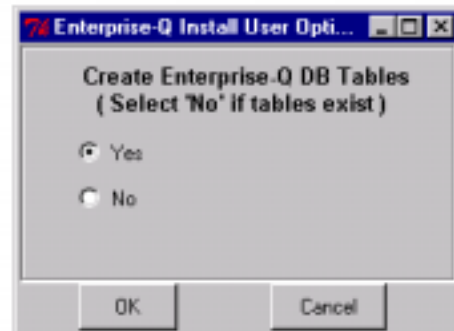
**Confirm database password** – Use the default settings.

**MySQL hostname** – Use the default settings.



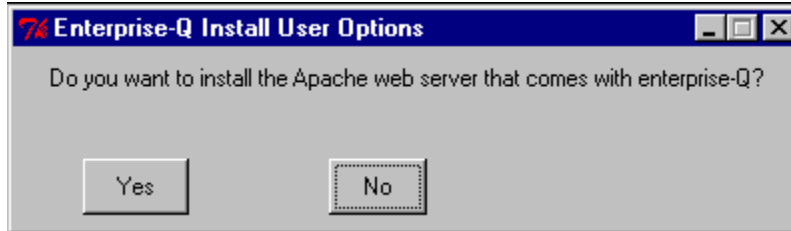
The window depicted above indicates that MySQL has been successfully configured to meet eQ requirements. Please proceed to the next prompt by clicking 'OK'.

Regardless of the RDBMS selection, the enterprise-Q installation will verify the information you provided by attempting to establish a connection to the database. If the information is incorrect, or the database is not reachable, an error message will be displayed and you will be prompted to enter the RDBMS information again. So, before installing *enterprise-Q* please make sure the database is up and accessible using the information you provided.

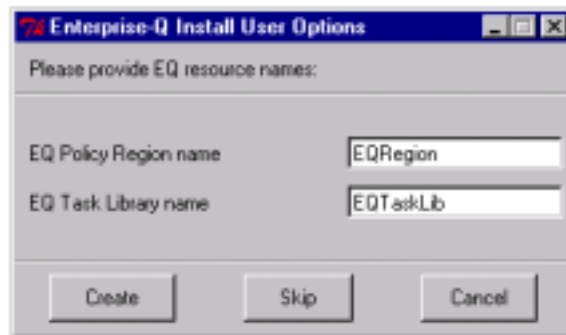


Once database connectivity is validated, you will be prompted to create the database schema, which is used to store the results of everything initiated from enterprise-Q. Answering 'Yes' to this prompt will (re)create the enterprise-Q tables in the default tablespace of the account specified in the RDBMS section of the installation. If the tables already exist, and you wish to save the contents, please select 'No'. Click "OK" after making your selection.

After RDBMS configuration, the Apache Web Server that comes with enterprise-Q can optionally be installed.



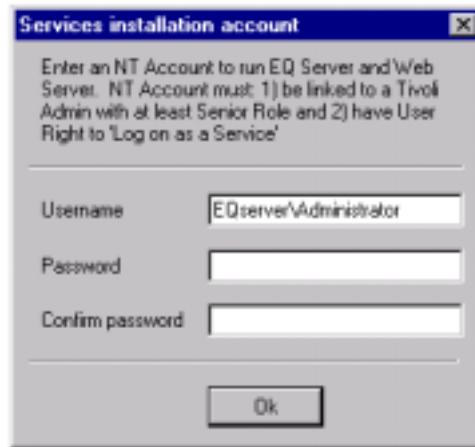
Click 'Yes' to install the Apache web server, 'No' if it is already installed.



*enterprise-Q* can optionally create a Tivoli Policy Region and a Tivoli Task Library with associated *enterprise-Q* defined Tivoli tasks. These resources will be used internally by the software and should not be modified or deleted. Choose 'Skip' if you don't want to create those resources. If you choose 'Create' the installation script will create the following resources:

- If the specified Policy Region does not exist in the TMR, *enterprise-Q* will create a top-level policy region with the provided name.
- If the specified Task Library does not exist, *enterprise-Q* will create the task library in the specified eQ Policy Region.
- Next, the installation program will create internal tasks in the specified task library.

After creating internal *enterprise-Q* tasks the following window will be displayed:

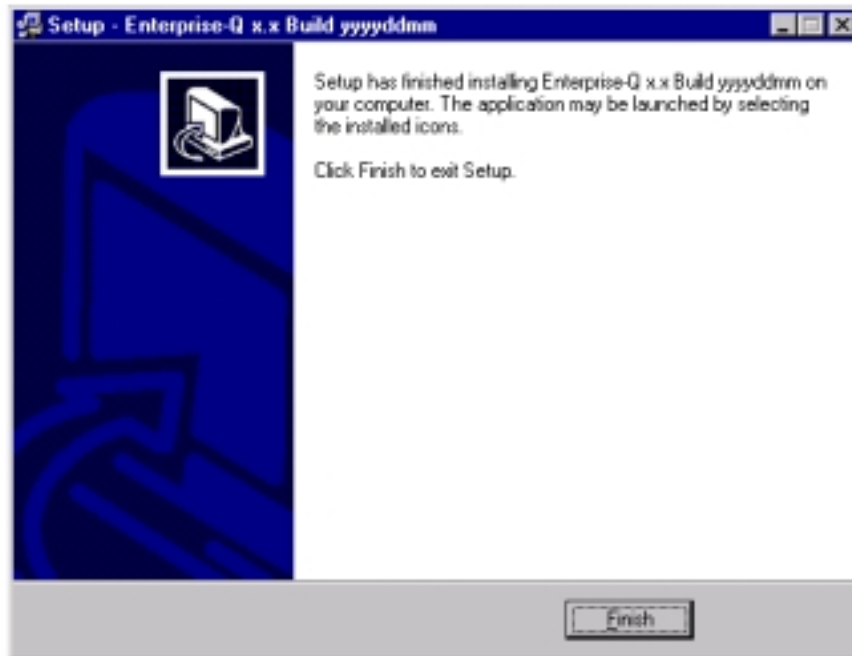


Enter the username and password of the account used for running the *enterprise-Q* installed services. The account must be associated with a Tivoli Admin, and must have the right to 'Log on as a service'. You may specify a domain account by including the domain name in the username field, using a backslash ('\') as a separator.



This window indicates the services were successfully installed and started. This window serves as a reminder to add the contents of `<eq>/install/login_policy.inc` to Endpoint Login Policy in order to automate the distribution of queued transactions. Please see the appropriate section of this document for details.

Verify that no errors occur within the CLI before responding to "Press any key to continue..." option. If no errors have occurred, the next dialog box will appear.



This completes the *enterprise-Q* software installation. Remember to setup the Login Policy. Please send email to [support@capitalsoftware.com](mailto:support@capitalsoftware.com) if any errors occur during your installation. When doing so, please include the contents of the file named **eq\_install\_log.txt** located in the enterprise-Q top-level installation directory.

**Post-Installation**

1. If your TMR Server is Windows-based then designate the *enterprise-Q* Managed Node as the default repeater to off-load some of the processing demands from your TMR Server and spread the workload to the *enterprise-Q* Managed Node. For more information, please see the wrpt command documentation in the Tivoli Framework Reference Manual.
2. To optimize performance, do not make the *enterprise-Q* Managed Node a Gateway if possible.
3. Read section Automating Distributions for Endpoints to find out how automate queued distributions via Endpoint Login Policy.

## **RDBMS Notes**

This section provides notes about each supported RDBMS.

### **MySQL Notes**

1. Download and install WinZip from the WinZip Home Page ([www.WinZip.com](http://www.WinZip.com)).
2. Download the Win32 version of MySQL from the *enterprise-Q* Home Page ([www.capitalsoftware.com](http://www.capitalsoftware.com)) or from the MySQL Home Page ([www.MySQL.com](http://www.MySQL.com)). In case if you download MySQL database from MySQL.com website please ensure the version you downloaded is supported by *enterprise-Q*. The list of supported MySQL version can be found in *enterprise-Q* 1.6 Release Notes.
3. Double-click on MySQL for the Win32 file named "**mysql-shareware-win32-x.x.zip**" to open in WinZip.
4. Run the "**SETUP.EXE**" file to install MySQL in the default location (**C:\mysql**).
5. Installation and configuration of MySQL will be completed during the installation of *enterprise-Q*.

### **Oracle Notes**

1. Install Oracle for NT Client or Server version 7.3 or higher on the eQ Server. For the purposes of this document, an installation directory of "C:\ORANT" is assumed.
2. Create an Oracle account or use the Tivoli Inventory account. The Oracle account must have the ability to create a table.
3. Verify Oracle database connectivity from the eQ Server using a valid username, password, and hostname. Use the following command to do this:

```
C:\ORANT\bin\plus33.exe username/password[@dbhost]
```

If **plus33.exe** is not found, try **plus80.exe**, or **sqlplus.exe**.

### **DB2 Notes**

1. Install DB2 Administrator Client or DB2 database v7.2 or higher.
2. Create a DB2 database account or use the Tivoli Inventory account. The account must have the ability to create a table.
3. Verify DB2 database connectivity from the eQ Server using a valid username, password, and database name. Use the following command to do this:

```
db2cmd connect to <dbname> user <username> using <password>  
db2cmd disconnect current
```

## **Granting “Log on as a Service” Right to Account**

The account under which the *enterprise-Q* services execute must have the right to **Log on as a Service**. This section describes the steps involved to grant this right.

### **Windows NT**

1. Run the NT User Manager by clicking the following sequence:

Start | Administrative Tools | User Manager (for Domain)

2. From the User Manager dialog, click *Policies* followed by *User Rights...*
3. Check the box labeled *Show Advanced User Rights*.
4. Scroll through the Rights and highlight *Log on as a Service*.
5. Click the *Add* button on the User Rights Policy dialog to display the Add Users and Groups dialog.
6. Click *Show Users* button and highlight the proper account.
7. Click *Add* followed by *OK*.
8. The account should appear in the text area labeled *Grant To*:
9. Click *OK* to save settings.
10. Press *Alt+F4* to exit User Manager dialog.

### **Windows 2000**

1. Access the User Rights Assignment by clicking the following sequence:

Start | Control Panel | Administrative Tools  
| Local Security Policy | Security Settings |  
Local Policies | User Rights Assignments

2. Select Log on as a Service.
3. Click the *Add* button.
4. Highlight account and click *Add*.
5. The account should appear in the text area below.
6. Click *OK* to save settings.
7. The account should appear in the Logon as a service window with the Local Policy checked.
8. Click *OK* to save settings.
9. Exit panels.

**Note:** Domain policy settings override local policy settings.

## UNIX Installation

This section describes the enterprise-Q installation procedures for one of the supported Unix platforms. Please review section 2 Hardware Requirements and section 3 Software Requirements and verify your system meets these requirements before installing enterprise-Q.

### Prerequisites

1. Verify all hardware and software requirements are met, as defined in sections 2 and 3 of this document.
2. **Root** access is required to complete the *enterprise-Q* installation, as you will need superuser rights to perform the following operations (detailed in the next section of this document titled **Pre-Installation**):
  - Create system account (called **eQ** in this document)
  - Create directory **/etc/EQ** and assign permission to the **eQ** account.
  - Create an installation directory (called **/opt/EQ** in this document) and assign permission to the **eQ** account.
  - Place files or symbolic links in the system startup directory to automate daemon startup upon system boot (documented in the OS-specific sections of this document titled **Post-Installation**).
  - Start the Apache Web Server.
3. Tivoli authority is required to associate the non-root system account (i.e. **eQ**) used during the installation to a Tivoli Admin with at least **Senior** role. Tivoli **Super** role is required if the localhost is not the loghost.
4. If enterprise-Q historical reporting is to be used, verify RDBMS connectivity using either the Tivoli Inventory account or a new RDBMS account capable of creating tables in the default user's tablespace. Please see your database administrator for more details.

For **DB2** database, use the following command to verify connectivity:

```
db2 connect to <dbname> user <user> using <password>
db2 disconnect current
```

For **Oracle** database, use the following command to verify connectivity:

```
sqlplus <username>/<password>@<tnsnames.ora entry>
```

## ***Pre-Installation***

1. Do not install *enterprise-Q* using the **root** account! However, you must first log on as root to complete the initial pre-installation steps.
2. Logon as **root** and create a new account (or use an existing account). For the purpose of this document, we will call this account **eQ**.

### **Creating a New Account on Solaris:**

Use the following procedure to create a new account and set the password:

1. Start admintool by entering the following command:

```
admintool <Enter>
```

The utility displays the Administration application icons.

2. Open the Database Manager application by double-clicking on the Database Manager icon.

The application displays the Main Menu.

3. From the Main Menu, make the following selections:

```
Passwd  
Edit  
Add Entry
```

The utility displays a form in which you can enter the new user information.

4. Fill in the User Name, User ID, Comment, Home Path directory, shell, and Group ID fields and click on Add. Set the Home Path to where you want *enterprise-Q* installed ('**/opt/EQ**' for example)

The application saves the information and creates the user entry.

5. Click in the upper left-hand corner of the window to exit.

The utility returns to the desktop.

6. Set the users password using 'passwd' followed by the login name

```
passwd eQ
```

The system prompts you to enter the new password and reenter it to verify you typed it correctly.

**Creating a New Account on AIX:**

Use the following procedure to create a user account.

1. Start SMIT by entering  
**smit <Enter>**
2. From the Main Menu, make the following selections:  
Security and Users  
Users  
Add a User to the System  
The utility displays a form for adding new user information. Use the <Up-arrow> and <Down-arrow> keys to move through the form. Do not use <Enter> until you are finished and ready to exit the screen.
3. Fill in the appropriate fields of the Create User form. Set the home directory where you want to install enterprise-Q ('/opt/EQ' for example)

Use the following procedure to set a new user's password.

1. From the SMIT Main Menu, make the following selections:  
Security and Users  
Change User Password  
The utility displays a form for entering the new user's name.
2. Fill in the user name or use <F4> to highlight a user name and press <Enter>.  
The utility displays the user name that you selected.
3. Press <Enter> to enter a new password.  
The utility prompts you for the new password.
4. Type the new password and press <Enter>.  
The system prompts you to reenter the password.
5. Reenter the password.  
The system assigns the password when you exit the screen.

3. Create a directory named **'/etc/EQ'** where the main *enterprise-Q* configuration file will reside, then change the owner to the **eQ** account:

```
mkdir /etc/EQ
chown eQ /etc/EQ
```

4. Create a home directory for the **eQ** account where you want to install *enterprise-Q* and set the ownership to the **eQ** account. For this document, we will install *enterprise-Q* in **/opt/EQ**:

```
mkdir /opt/EQ
chown eQ /opt/EQ
```

5. Use the Tivoli **'wsetadmin'** command or the Tivoli Desktop to add the **eQ** account as a valid logon for a Tivoli Admin. The Tivoli Admin must have at least the Senior Role across the TMR. Here is the syntax of the **'wsetadmin'** command.

```
wsetadmin -l eQ@<hostname> <Tivoli_Admin>
```

6. Now, login using the **eQ** account and create/modify the file named **'profile'** in the home directory to source in the Tivoli environment by adding the following line:

```
. /etc/Tivoli/setup_env.sh
```

This file (**.profile**) must also be modified to establish the proper RDBMS environment.

For **DB2** database, add the following lines to this file, substituting the correct path for **"/path/to/INSTANCE"**:

```
if [ -f /path/to/INSTANCE/sqlllib/db2profile ]; then
    . /path/to/INSTANCE/sqlllib/db2profile
fi
```

For **Oracle** database, add the following lines to this file, substituting the correct path for **"/path/to/oracle"**, and the correct **<SID>**:

```
ORACLE_BASE=/path/to/oracle
export ORACLE_BASE
ORACLE_HOME=/path/to/oracle
export ORACLE_HOME
ORACLE_SID=<SID>
export ORACLE_SID
LD_LIBRARY_PATH=$LD_LIBRARY_PATH:$ORACLE_HOME/lib
export LD_LIBRARY_PATH
PATH=$PATH:$ORACLE_HOME/bin
export PATH
```

For more information, please see the appropriate RDBMS documentation.

7. Logout and then login as **eQ** user to verify Tivoli commands are operational by issuing the following command:

```
odadmin odlist
```

8. Change to the directory where you downloaded the gzipped tar file and uncompress it using the **gunzip** command. We will assume the archive is in the **/tmp** directory: Also, **<os>** will either be **sol** or **aix**:

```
cd /tmp/eq1.6_<os>.tgz
gunzip eq1.6_<os>.tgz
```

**Note:** You may not need to **gunzip** if your version of **tar** is able to extract files from a **tgz** file. You may want to try the next step first to see if it works, especially if you do not have 'gunzip' installed on your system. If you need to install 'gunzip', please download it from <http://www.gzip.org/>.

9. As the **eQ** user, change to the eQ installation directory and extract *enterprise-Q* files:

```
cd /opt/EQ
tar xvf /path/to/eq1.6_<os>.tar
```

10. Still logged as the **eQ** user, change to the 'install' subdirectory and run the installation script. Make sure to include the 'install' argument on the command line:

```
cd /opt/EQ/install
./InstEQ install
```

**NOTE:** Do not use **root** account to install *enterprise-Q*!

## **Installation Procedures**

After executing the steps in the Pre-Installation section above, you should be running the *enterprise-Q* installation script. Although most of the prompts are self-explanatory, this section documents all the prompts and how to respond to each. To accept the default value in [brackets] for a given prompt, press the **<Enter>** key.

The first prompt in the *enterprise-Q* installation is shown below:

```
eQ Install Information Message:
Click CTRL-C at any time to abort installation
Please enter the enterprise-Q license [ ]
```

Type the *enterprise-Q* License exactly as shown in the e-mail message or as otherwise provided by Capital Software Corporation. If you have any problems, please contact Capital Software for assistance. License key is case sensitive.

```
Manage targets in local TMR only (L) or in all interconnected
TMRs (I)
```

If you have interconnected TMRs you have the option to manage only the local TMR (L) or all interconnected TMRs (I). The default is to manage targets for all interconnected TMRs. This option can be changed once eQ is installed, refer to the description of the **Installation Parameters** screen in EQ 1.6 User's Guide.

```
Database vendor (DB2 or Oracle or None)
```

At this prompt, please type in either 'DB2', 'Oracle', or 'None' and press [return]. Unless 'None' was selected, you will be prompted for RDBMS-related information as follows:

```
Database binaries directory
```

Enter the fully qualified path to the binary files for your RDBMS.

```
Database username
```

Enter the account that will be used to access the database. This account must have permission to create tables in the default user's tablespace.

```
Database password
```

Enter the password for the account provided. The password will be displayed in clear text.

```
Confirm database password
```

After confirming the password, the installation procedure will prompt for either the Oracle SID, or the DB2 database name.

- For **Oracle**, the next prompt will be:

**Oracle SID**

Enter a valid entry from the Oracle TNSNAMES.ORA file or, if the Oracle Server is installed locally, leave the Oracle SID blank (just hit return).

- For **DB2**, the next prompt will be:

**DB2 database name**

Enter the name of the database as defined on your client/server.

Next, you will be asked whether or not to create the enterprise-Q database tables, which are used to store the results of enterprise-Q initiated transactions.

**Create enterprise-Q DB tables (Select 'N' if tables exist)? (Y/N)**

If this is a new installation or if you wish to drop the existing tables and recreate new ones, enter 'Y'. If enterprise-Q is already installed, and you wish to save the data stored in the database, enter 'N'.

After RDBMS configuration, the Apache Web Server that comes with enterprise-Q can optionally be installed.

**Do you want to install the Apache web server that comes with enterprise-Q?**

Enter 'Y' to install the Apache web server, 'N' if it is already installed.

Next, *enterprise-Q* can optionally create a Tivoli Policy Region and a Tivoli Task Library with associated *enterprise-Q* defined Tivoli tasks. These resources will be used internally by the software and should not be modified or deleted:

**Create eQ resources (Y/N)? [Y]**

Choose N if you don't want to create those resources. If you choose Y the following prompts will be displayed

**eQ Policy Region name [EQRegion]**

**eQ Task Library name [EQTaskLib]**

If the specified Policy Region does not exist in the TMR, *enterprise-Q* will create a top-level policy region with the provided name. If the specified Task Library does not exist, *enterprise-Q* will create the task library in the specified eQ Policy Region. Next, the installation program will create internal tasks in the specified task library.

The final message in the installation procedure will be as follows:

**Automating Distributions:**

To automate profile distributions LOGIN POLICY must be configured according to the eQ Installation Procedures

Please refer to the README or the eQ documentation available on the Capital Software website for making necessary modifications

This prompt is a reminder to modify the Tivoli Endpoint Login Policy to automate queued enterprise-Q transactions. Please see the corresponding section of this document for instructions.

This concludes the *enterprise-Q* software installation. Now, proceed to the Post-Installation instructions to complete the installation. Please send email to support@capitalsoftware.com if any errors occur during your installation. When doing so, please include the contents of the file named **eq\_install\_log.txt** located in the enterprise-Q top-level installation directory.

## Solaris 7/8 Post-Installation

1. **Apache Startup** – If you chose to install Apache that comes with enterprise-Q, you must start Apache as **root** user using the following command, where **<eq>** is the enterprise-Q installation directory:

```
<eq>/apache/bin/apachectl start
```

2. **Apache Configuration (if Apache pre-installed only)** – If you already had Apache installed and did not install Apache during the enterprise-Q installation process, you must update the Apache configuration file when the *enterprise-Q* installation is finished. References to **<eq>** indicate the enterprise-Q top-level installation directory: **root** access is required to execute the commands documented in this section.

- If you already have Apache web-server configured and running on your computer append the file **<eq>/install/data/add-httpd.conf** to **httpd.conf** file in the Apache configuration directory.

```
cd <eq>/install/data
cat add-httpd.conf >> /etc/apache/httpd.conf
```

Using **add-httpd.conf** will require the web user to append **'/eq'** to the end of the URL in order to access the enterprise-Q web interface.

### Notes on Using **add-httpd.conf**:

- Existing **httpd.conf** must include **User** and **Group** attributes that correspond to an account associated with a Tivoli Admin with at least **Senior** role.
- If an account referenced by **User** attribute in **httpd.conf** file (called **www** account later in this section) is different from the **eq** account then additional configuration will be required:
  - **www** account must be in the same group as the **eq** account;
  - **www** and **eq** accounts should have umask set to allow creation of group-writable files;
  - Permissions on all files and subdirectories in entire *enterprise-Q* installation directory should be changed to allow group members to read, write and execute files.
- Web users must append **'/eq'** to the end of the URL in order to access the enterprise-Q web interface.
- If you want to use the Apache web-server that comes with the Solaris operating system, copy the file **<eq>/install/data/sun-httpd.conf** to the Apache configuration directory **/etc/apache** as file **httpd.conf**.

```
cd <eq>/install/data
cp sun-httpd.conf /etc/apache/httpd.conf
```

- If you downloaded and installed the Apache web-server from [www.apache.org](http://www.apache.org), copy the file **<eq>/install/data/download-httpd.conf** to the Apache configuration directory (usually **/usr/local/apache/conf**) as file **httpd.conf**.

```
cd <eq>/install/data
cp download-httpd.conf /usr/local/apache/httpd.conf
```

- If you downloaded and installed the Apache v2.x web-server from [www.apache.org](http://www.apache.org), copy the file `<eq>/install/data/download-httpd2.conf` to the Apache configuration directory (usually `/usr/local/apache2/conf`) as file `httpd.conf`.

```
cd <eq>/install/data
cp download-httpd.conf /usr/local/apache2/httpd.conf
```

Restart the Apache web-server after modifying the Apache configuration file.

For the Apache that comes with the Solaris operating system, execute:

```
/usr/apache/bin/apachectl restart
```

If you downloaded and installed Apache in the default directory, execute:

```
/usr/local/apache/bin/apachectl restart
```

If you downloaded and installed Apache 2.x in the default directory, execute:

```
/usr/local/apache2/bin/apachectl restart
```

3. **Automatic Startup on Boot** - Login as **root** user and install the *enterprise-Q* startup files. Do **not** include the file extension (**.sh**) on the files (or links) copied (or defined) in `/etc/rc2.d` and `/etc/rc3.d`:

```
cd <eq>/install/data

cp S99VEQ.sh /etc/rc3.d/S99VEQ
cp S99VEQICMon.sh /etc/rc3.d/S99VEQICMon
cp S99VEQSPMon.sh /etc/rc3.d/S99VEQSPMon
cp S99VEQTMMon.sh /etc/rc3.d/S99VEQTMMon
cp S99VEQMDMon.sh /etc/rc3.d/S99VEQMDMon

cp S99VEQ.sh /etc/rc2.d/K20VEQ
cp S99VEQICMon.sh /etc/rc2.d/K20VEQICMon
cp S99VEQSPMon.sh /etc/rc2.d/K20VEQSPMon
cp S99VEQTMMon.sh /etc/rc2.d/K20VEQTMMon
cp S99VEQMDMon.sh /etc/rc2.d/K20VEQMDMon
```

An alternative and perhaps better method is to copy these files into the `/etc/init.d` directory and create link files in the `/etc/rc2.d` and `/etc/rc3.d` directories.

As a reminder, do **not** include the file extension (**.sh**) on the files (or links) copied (or defined) in `/etc/rc2.d` and `/etc/rc3.d`.

#### **IMPORTANT NOTE:**

We've seen problems starting up the *enterprise-Q* daemon process using these scripts unless the default shell of the `<eQ account>` is set to `'/bin/sh'`. Also, please make sure the environment variable `LD_LIBRARY_PATH` specified in the `<eQ account> ~/.profile` includes the *enterprise-Q* `'lib'` subdirectory.

### AIX 4.3.x/5.1 Post-Installation

1. **Apache Startup** – If you chose to install the Apache that comes with enterprise-Q, you must start Apache as **root** user using the following command, where **<eq>** is the enterprise-Q installation directory:

```
<eq>/apache/bin/apachectl start
```

2. **Apache Configuration (if Apache pre-installed only)** - If you already had Apache installed and did not install Apache during the enterprise-Q installation process, you must update the Apache configuration file when the *enterprise-Q* installation is finished. References to **<eq>** indicate the enterprise-Q top-level installation directory: **root** access is required to execute the commands documented in this section.

- If you already have Apache web-server configured and running on your computer append the file **<eq>/install/data/add-httpd.conf** to **httpd.conf** file in the Apache configuration directory. You may need to login as **root** to do this.

```
cd <eq>/install/data
cat add-httpd.conf >> /etc/opt/freeware/apache/httpd.conf
```

#### Notes on Using **add-httpd.conf**:

- Existing **httpd.conf** must include **User** and **Group** attributes that correspond to an account associated with a Tivoli Admin with at least **Senior** role.
- If an account referenced by **User** attribute in **httpd.conf** file (called **www** account later in this section) is different from the **eq** account then additional configuration will be required:
  - **www** account must be in the same group as the **eq** account;
  - **www** and **eq** accounts should have umask set to allow creation of group-writable files;
  - Permissions on all files and subdirectories in entire *enterprise-Q* installation directory should be changed to allow group members to read, write and execute files.
- Web users must append **'/eq/'** to the end of the URL in order to access the enterprise-Q web interface.

Restart the Apache web-server after modifying the Apache configuration file.

```
/path/to/apachectl restart
```

3. **Automatic Startup on Boot** - Login as **root** user and install the *enterprise-Q* startup files. Do **not** include the file extension (**.sh**) on the files (or links) copied (or defined) to **/etc/rc.d/rc2.d**:

```
cd <eq>/install/data

cp S99VEQ.sh /etc/rc.d/rc2.d/S99VEQ
cp S99VEQICMon.sh /etc/rc.d/rc2.d/S99VEQICMon
cp S99VEQSPMon.sh /etc/rc.d/rc2.d/S99VEQSPMon
cp S99VEQTMMon.sh /etc/rc.d/rc2.d/S99VEQTMMon
cp S99VEQMDMon.sh /etc/rc.d/rc2.d/S99VEQMDMon

cp S99VEQ.sh /etc/rc2.d/K20VEQ
cp S99VEQICMon.sh /etc/rc.d/rc2.d/K20VEQICMon
cp S99VEQSPMon.sh /etc/rc.d/rc2.d/K20VEQSPMon
cp S99VEQTMMon.sh /etc/rc.d/rc2.d/K20VEQTMMon
cp S99VEQMDMon.sh /etc/rc.d/rc2.d/K20VEQMDMon
```

An alternative and perhaps better method is to copy these files into the **/etc/init.d** directory and create link files in the **/etc/rc.d/rc2.d** directory.

As a reminder, do **not** include the extension (**.sh**) on the files (or links) copied (or defined) to **/etc/rc.d/rc2.d**.

## Additional Installation Notes

### *Distribution Notes*

1. Objects that can dump distribution results to a logfile must be configured to do so. This includes InventoryProfile (with Mcollect enabled), InventoryConfig, FilePackage, and SoftwarePackage objects. If the loghost is the enterprise-Q server, normal I/O is used to read the file. If the loghost is another ManagedNode, a custom method named **ReadRemoteLog** is used to read the file. Please see next section for more information on ReadRemoteLog.
2. The Gateway **notify\_interval** specifies the length of time between logfile updates. The default is 30 minutes. We recommend decreasing this value in order for the automated processes to determine the distribution results within a more reasonable timeframe. The following Tivoli command can be used to set the notify\_interval to five (5) minutes:

```
wmdist -s <Gateway> notify_interval=5
```

3. *enterprise-Q* will support both Overwrite and Append modes. We strongly recommend that Append mode be used. If Overwrite mode is required, only a single distribution of the given profile should be allowed at any given time. To specify this behavior, the ‘Distribution Throttling’ option should be set to “Allow only on outstanding transaction for this Profile” when queuing the transaction from the GUI. This selection sets the following keyword in the message sent to the EQServer:  
**T\_UNIQUEKEYS=T\_PROFILE**
4. *enterprise-Q* supports “lenient” distributions, i.e. profile distributions to targets not subscribers to the given profile. *enterprise-Q* will properly recognize lenient distributions if the “lenient” flag is set for these object types. Please see the Tivoli documentation for viewing/setting the lenient flag for each supported profile type.
5. If you are using enterprise-Q for InventoryConfig distributions, please use the Tivoli command named **wsetinvglobal** to specify the following attributes:

```
Notice location: LOG_FILE  
Notice interval: IMMEDIATE  
Notice type: ALL
```

Please see the Tivoli documentation for more information on this command.

### **ReadRemoteLog Method**

If the enterprise-Q ManagedNode is not the loghost, a Tivoli custom method must be created in order to read remote logfiles. *enterprise-Q* will automatically create a method called **ReadRemoteLog** on-the-fly. In order to create this method, the following criteria must be met:

- The account under which *enterprise-Q* executes must be associated with a Tivoli Admin that has Super role;
- The loghost must be in the same TMR region as the *enterprise-Q* ManagedNode. That is, the custom method cannot be created in an interconnected TMR.

If either of these is not met, you must run **EQCreateMethod** manually. This utility is installed in the *enterprise-Q* subdirectory named **bin**. This utility can be executed on any ManagedNode in the TMR that contains the loghost. If you are going to run this utility on a platform different than the *enterprise-Q* host, please contact us for the version of **EQCreateMethod** for your platform.

Here are the steps to execute the **EQCreateMethod** utility:

1. Sign on to a ManagedNode using an account associated with a Tivoli Admin that has the Super role;
2. Source the Tivoli environment
3. FTP (using bin mode) the EQCreateMethod utility from the *enterprise-Q* host
4. Run the utility with the **-h** option to display a detailed help message (optional)
5. Run the utility with the **-d** option to display the commands being executed while creating the **ReadRemoteLog** custom method.

By default, the following steps are taken by **EQCreateMethod** to create the **ReadRemoteLog** custom method:

- Creates the custom method Perl script (named ReadRemoteLog.pl) in a temporary directory (see help output for details).
- Transfers ReadRemoteLog.pl to the TMR Server directory named **<tmr\_instdir>/generic** using the Tivoli **files\_transfer** method. THIS STEP REQUIRES TIVOLI SUPER ROLE!
- Sets the file permission to 755 using 'set\_file' method (Unix TMR Servers only)
- For each interp type, creates a method using the following Tivoli command

```
wputmeth -u $root_user -g $root_group -i <interp> -r
<resource> <method> /generic/<script>
```

where **<resource>** is ManagedNode

**<method>** is ReadRemoteLog

**<script>** is ReadRemoteLog.pl

Run the following command to test the custom method:

```
objcall <oid> ReadRemoteLog <offset> <filename>
```

where **<oid>** is the Object ID of some ManagedNode

**<offset>** is the offset to begin reading the file

**<filename>** is the file on the ManagedNode to read

## ***Automating Distributions for Endpoints***

In order to automate the distribution of enterprise-Q queued transactions, Tivoli Endpoint Login Policy must be modified to send a TCP/IP message to the eQ Server when the Endpoint logs into its Gateway. To establish this, you must include the contents of the enterprise-Q supplied Perl script named **login\_policy.inc** in the Login Policy script. Since **login\_policy.inc** is a Perl script (Perl 4 compatible), Login Policy must be written in Perl.

Follow these steps to insert our script into your Tivoli Endpoint Login Policy:

1. Change to the *enterprise-Q* installation directory (referred to as **<eQ>**). Now change to the “**install**” subdirectory.

2. Run the following command from a Tivoli CLI to dump the current Login Policy script to a file named **lo.pl**:

```
wgeteppol lo > lo.pl
```

3. Make a copy of **lo.pl** in case you need to restore it later.

4. Append the contents of **login\_policy.inc** to **lo.pl** using the following command:

```
cat login_policy.inc >> lo.pl
```

5. Now, edit **lo.pl** moving the following line towards the beginning of the file:

```
&EQ_SendDispatch( );
```

6. Save the changes to the **lo.pl** file.

7. Run the following command from a Tivoli CLI:

```
wputeppol lo < lo.pl
```

Please contact [support@capitalsoftware.com](mailto:support@capitalsoftware.com) if you need any help making these changes or have any questions regarding the code.