

# **TIBCO Enterprise Message Service™**

## **Installation**

*Software Release 6.0  
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# Contents

<b>Tables</b> .....	<b>v</b>
<b>Preface</b> .....	<b>vii</b>
Changes from the Previous Release of this Guide .....	viii
Related Documentation .....	ix
TIBCO Enterprise Message Service Documentation .....	ix
Other TIBCO Product Documentation .....	ix
Third Party Documentation .....	x
Typographical Conventions .....	xi
How to Contact TIBCO Customer Support .....	xiv
<b>Chapter 1 Installation Overview</b> .....	<b>1</b>
Installation Requirements .....	2
Required Software .....	2
Optional Software .....	2
System Requirements .....	4
Disk Space .....	4
Supported Platforms .....	5
Before Installing .....	6
Installer Account .....	6
Installer Log File .....	7
Installation Registry .....	7
Installation Modes .....	8
GUI Mode .....	8
Console Mode .....	8
Silent Mode .....	8
<b>Chapter 2 Platform-Specific Instructions</b> .....	<b>9</b>
Installation on UNIX .....	10
Supported Platforms and Installation Packages .....	10
EMS on 64-Bit Systems .....	11
Multicast and Root Access .....	11
Root Access and Administrative Privileges .....	12
Installation on Mac Platforms .....	12
Loading the JVM on AIX .....	12
Dynamically Linked Libraries .....	13

Installation on Microsoft Windows . . . . . 14

    Supported Platforms . . . . . 14

    Installing on Windows Terminal Server 2003 . . . . . 14

    Installing on Windows Server 2008 and Windows Vista . . . . . 15

    .NET DLL Installation . . . . . 16

    Dynamically Linked Libraries . . . . . 16

    Register the Server as a Windows Service . . . . . 17

Installation on VMS . . . . . 18

    Supported Platforms and Installation Packages . . . . . 18

    Installing TIBCO Enterprise Message Service on VMS Platforms . . . . . 18

    Additional Information for VMS Programmers . . . . . 21

**Chapter 3 TIBCO Universal Installer . . . . . 23**

    Installing TIBCO Enterprise Message Service . . . . . 24

        Install in GUI Mode . . . . . 24

        Install in Console Mode . . . . . 27

        Install in Silent Mode . . . . . 28

    Uninstalling the Software . . . . . 29

**Chapter 4 Installation FAQs and Troubleshooting . . . . . 31**

    Running Out of Disk Space . . . . . 32

    DISPLAY Variable FAQ . . . . . 33

**Index . . . . . 35**

# Tables

Table 1	General Typographical Conventions . . . . .	xi
Table 2	Syntax Typographical Conventions . . . . .	xiii
Table 3	Supported Databases and Drivers . . . . .	3
Table 4	UNIX Distribution Directories . . . . .	10
Table 5	EMS on 64-bit systems . . . . .	11
Table 6	Microsoft Windows Distribution Directories . . . . .	14
Table 7	VMS Distribution Directories . . . . .	18



# Preface



**This software may be available on multiple operating systems. However, not all operating system platforms for a specific software version are released at the same time. Please see the readme.txt file for the availability of this software version on a specific operating system platform.**

TIBCO Enterprise Message Service™ software lets application programs send and receive messages according to the Java Message Service (JMS) protocol. It also integrates with TIBCO Rendezvous and TIBCO SmartSockets messaging products.

## Topics

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- [Changes from the Previous Release of this Guide, page viii](#)
- [Related Documentation, page ix](#)
- [Typographical Conventions, page xi](#)
- [How to Contact TIBCO Customer Support, page xiv](#)

## Changes from the Previous Release of this Guide

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This section itemizes the major changes from the previous release of this guide.

### New Platform Support

This release of TIBCO Enterprise Message Service adds support for the following platforms:

- Support for Microsoft Windows 7
- Novell SUSE Linux Enterprise 11

### Deprecated Platforms

For the following platform, the minimum supported release has been changed to the indicated version:

- Mac OS X on PowerPC hardware is deprecated. Future releases will support only Mac Intel hardware.

### .NET Assembly Versioning

This release of TIBCO Enterprise Message Service introduces versioning in the .NET assembly files. Prior to TIBCO Enterprise Message Service release 6.0.0, all EMS .NET assemblies showed an assembly version number 1.0.0.0, which allowed client applications to upgrade to the latest version of EMS without rebuilding.

This same functionality is now available through the introduction of `policy` DLL files, which are included for each EMS assembly. For more information, see [.NET DLL Installation on page 16](#) and the section on Assembly Versioning in the *TIBCO Enterprise Message Service User's Guide*.



## Related Documentation

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This section lists documentation resources you may find useful.

### TIBCO Enterprise Message Service Documentation

The following documents form the TIBCO Enterprise Message Service documentation set:

- *TIBCO Enterprise Message Service User's Guide* Read this manual to gain an overall understanding of the product, its features, and configuration.
- *TIBCO Enterprise Message Service Installation* Read the relevant sections of this manual before installing this product.
- *TIBCO Enterprise Message Service Application Integration Guide* This manual presents detailed instructions for integrating TIBCO Enterprise Message Service with third-party products.
- *TIBCO Enterprise Message Service C & COBOL API Reference* The C API reference is available in HTML and PDF formats.
- *TIBCO Enterprise Message Service Java API Reference* The Java API reference can be accessed only through the HTML documentation interface.
- *TIBCO Enterprise Message Service .NET API Reference* The .NET API reference can be accessed only through the HTML documentation interface.
- *TIBCO Enterprise Message Service Release Notes* Read the release notes for a list of new and changed features. This document also contains lists of known issues and closed issues for this release. This document is available only in PDF format.

### Other TIBCO Product Documentation

You may find it useful to read the documentation for the following TIBCO products:

- TIBCO Rendezvous<sup>®</sup>
- TIBCO SmartSockets<sup>®</sup>
- TIBCO Hawk<sup>®</sup>
- TIBCO EMS<sup>®</sup> Client for z/OS (CICS)
- TIBCO EMS<sup>®</sup> Client for z/OS (MVS)
- TIBCO EMS<sup>®</sup> Client for i5/OS

## Third Party Documentation

- Java™ Message Service specification, available through <http://java.sun.com/products/jms/index.html>.
- *Java™ Message Service* by Richard Monson-Haefel and David A. Chappell, O'Reilly and Associates, Sebastopol, California, 2001.
- Java™ Authentication and Authorization Service (JAAS) *LoginModule Developer's Guide* and *Reference Guide*, available through <http://java.sun.com/products/jaas/>.

# Typographical Conventions

The following typographical conventions are used in this manual.

Table 1 General Typographical Conventions

Convention	Use
<i>TIBCO_HOME</i>	<p>Many TIBCO products must be installed within the same home directory. This directory is referenced in documentation as <i>TIBCO_HOME</i>. The value of <i>TIBCO_HOME</i> depends on the operating system. For example, on Windows systems, the default value is <code>C:\tibco</code>.</p> <p>Other TIBCO products are installed into an installation environment. Incompatible products and multiple instances of the same product are installed into different installation environments. The directory into which such products are installed is referenced in documentation as <i>ENV_HOME</i>. The value of <i>ENV_HOME</i> depends on the operating system. For example, on Windows systems the default value is <code>C:\tibco</code>.</p> <p>TIBCO Enterprise Message Service installs into a directory within <i>TIBCO_HOME</i>. This directory is referenced in documentation as <i>EMS_HOME</i>. The value of <i>EMS_HOME</i> depends on the operating system. For example on Windows systems, the default value is <code>C:\tibco\ems\6.0</code>.</p>
<i>ENV_HOME</i>	
<i>EMS_HOME</i>	
code font	<p>Code font identifies commands, code examples, filenames, pathnames, and output displayed in a command window. For example:</p> <p>Use <code>MyCommand</code> to start the TIBCO foo process.</p>
bold code font	<p>Bold code font is used in the following ways:</p> <ul style="list-style-type: none"> <li>In procedures, to indicate what a user types. For example: Type the username <code>admin</code>.</li> <li>In large code samples, to indicate the parts of the sample that are of particular interest.</li> <li>In command syntax, to indicate the default value. For example, if no parameter is specified, <code>MyCommand</code> is enabled:</li> </ul> <pre>MyCommand [enable   disable]</pre>

Table 1 General Typographical Conventions

Convention	Use
<i>italic font</i>	<p>Italic font is used in the following ways:</p> <ul style="list-style-type: none"><li>• To indicate a document title. For example: See <i>TIBCO BusinessWorks Concepts</i> for more details.</li><li>• To introduce new terms For example: A portal page may contain several <i>portlets</i>. Portlets are mini-applications that run in a portal.</li><li>• To indicate a variable in a command or code syntax that you must replace. For example: <code>MyCommand</code> <i>pathname</i></li></ul>
Key combinations	<p>Key name separated by a plus sign indicate keys pressed simultaneously. For example: Ctrl+C.</p> <p>Key names separated by a comma and space indicate keys pressed one after the other. For example: Esc, Ctrl+Q.</p>

Table 2 Syntax Typographical Conventions

Convention	Use
[ ]	<p>An optional item in a command or code syntax.</p> <p>For example:</p> <pre>MyCommand [optional_parameter] required_parameter</pre>
	<p>A logical 'OR' that separates multiple items of which only one may be chosen.</p> <p>For example, you can select only one of the following parameters:</p> <pre>MyCommand param1   param2   param3</pre>
{ }	<p>A logical group of items. Other syntax notations may appear within each logical group.</p> <p>For example, the following command requires two parameters, which can be either <code>param1</code> and <code>param2</code> or <code>param3</code> and <code>param4</code>:</p> <pre>MyCommand {param1 param2}   {param3 param4}</pre> <p>In the next example, the command requires two parameters. The first parameter can be either <code>param1</code> or <code>param2</code> and the second can be either <code>param3</code> or <code>param4</code>:</p> <pre>MyCommand {param1   param2} {param3   param4}</pre> <p>In the next example, the command can accept either two or three parameters. The first parameter must be <code>param1</code>. You can optionally include <code>param2</code> as the second parameter. And the last parameter is either <code>param3</code> or <code>param4</code>.</p> <pre>MyCommand param1 [param2] {param3   param4}</pre>

## How to Contact TIBCO Customer Support

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For comments or problems with this manual or the software it addresses, please contact TIBCO Support Services as follows.

- For an overview of TIBCO Support Services, and information about getting started with TIBCO Product Support, visit this site:

<http://www.tibco.com/services/support>

- If you already have a valid maintenance or support contract, visit this site:

<http://support.tibco.com>

Entry to this site requires a username and password. If you do not have a username, you can request one.

## Chapter 1      **Installation Overview**

This chapter presents an overview of the installation process.

### Topics

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- [Installation Requirements, page 2](#)
- [Before Installing, page 6](#)
- [Installation Modes, page 8](#)

## Installation Requirements

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Before starting the installation procedure, review the topics in this section to determine that your system meets the basic requirements and that you have the prerequisite software installed.

### Required Software

The following software is required for all TIBCO Enterprise Message Service installations:

- Java Runtime Environment (JRE) (current release).
- Java Developer Kit (JDK), version 1.6. is required to complete the product installation. If JDK 1.6 is not installed on the target host machine, the TIBCO Universal Installer will install it. See [Chapter 2, Platform-Specific Instructions](#) for platform-specific details.

After installation, JDK version 1.5 or later is required to run TIBCO Enterprise Message Service.

### Optional Software

The following software products are optional or required only when the specified optional feature is employed:

- Entrust Version 7.2 or greater libraries are required if you wish to use Entrust with an EMS client.
- Hibernate Core for Java and related jar files are required if you will use the database store feature, which allows the EMS server to store messages in a database.

Hibernate Core for Java is available, along with your TIBCO Enterprise Message Service product distribution, from [download.tibco.com](http://download.tibco.com). See [Table 3 on page 3](#) for a list of supported databases and drivers.



## Database Servers and Drivers

The database store feature is supported with the following databases and corresponding drivers:

*Table 3 Supported Databases and Drivers*

Database	Driver
MySQL InnoDB	MySQL Connector: <code>mysql-connector-java-5.0.6-bin.jar</code>
Microsoft SQL Server	Microsoft JDBC Driver for SQL Server: <code>sqljdbc.jar</code>
Oracle 9i, 10g and 11g	Oracle JDBC Thin Driver: <code>ojdbc14.jar</code> <b>OR</b> <code>ojdbc5.jar</code>
Oracle Real Application Clusters (RAC) 10g	Oracle Instant Client 11g, a light-weight JDBC OCI driver <ul style="list-style-type: none"> <li>• <code>ojdbc5.jar</code> with JDK 1.5</li> <li>• <code>ojdbc6.jar</code> with JDK 1.6</li> </ul>
IBM DB2 Server 8.1 and 9.1	DB2 Universal JDBC Driver: <code>db2jcc.jar</code> <b>and</b> <code>db2jcc_license_cu.jar</code>

For more information about the database store feature, see [Database Store Overview on page 286](#) of the *TIBCO Enterprise Message Service User's Guide*.

## TIBCO Software

- We strongly recommend TIBCO Rendezvous 8.2.2 or higher if you will use TIBCO Enterprise Message Service to exchange messages with TIBCO Rendezvous. If Rendezvous is already installed on your network, additional licenses are required only if you are adding additional hosts (client, server, development subnets, and so on) to your network.
- TIBCO SmartSockets 6.8.2 or higher is required if you will use TIBCO Enterprise Message Service to exchange messages with TIBCO SmartSockets. If SmartSockets is already installed on your system, additional licenses are required only if you are adding additional RTclients or RTservers to your network.

## System Requirements

- Hardware Memory: 1GB of RAM recommended
- Disk Space: 600MB for installation on UNIX platforms; 512MB on Windows.
- Disk Space for Messaging: 256MB minimum

## Disk Space

### Temporary Disk Space Required by the Installer

When a TIBCO Enterprise Message Service package is unpacked, it is extracted into a temporary folder. The installer requires at least 250 MB of free space in the temporary directory. On Microsoft Windows, the temporary directory location is `%SystemDrive%:\Documents and Settings\user_name\Local Settings\Temp`.

If your system does not have sufficient free disk space in the default temporary directory, you can run the installer with a different temporary directory by using the following option when starting the installer. For example:

```
TIBCOUniversalInstaller -is:tempdir \new_tmp
```

where `\new_tmp` has sufficient free disk space.

The installer calculates the disk space required in product home location for the selected components. The calculation is done before the actual installation (copying of files to system) begins. The installer will proceed only if sufficient free disk space is available in product home location.

However, if disk space is consumed by another process while the installer is copying the files, and if the required disk space is thereby reduced, the installer may fail and will then give a failure message.

While performing installation, avoid running other processes that consume disk space in product home location.

### Disk Space After Installation

TIBCO EMS can consume 600MB of free space under `TIBCO_HOME` on UNIX platforms, and 512MB on Windows platforms.

### Disk Space Requirement in User's Home Directory

On UNIX platforms, when a regular (non-root) user installs a TIBCO product, the installation registry (`vpd` files) is maintained in the user's home directory. As more products are installed, entries are added into these `vpd` files.

The user's home directory must at least have 1MB of free disk space.

## VMS

To run EMS client programs, user accounts must have `NETMBX` and `TMPMBX` privileges.

## Supported Platforms

Supported platforms are listed in the following sections:

- On UNIX: [Table 4, UNIX Distribution Directories, on page 10](#)
- On Windows: [Table 6, Microsoft Windows Distribution Directories, on page 14](#)
- On VMS: [Table 7, VMS Distribution Directories, on page 18](#)

## Before Installing

---

Before you begin to install the software, do these items first:

- Read the Compatibility With Previous Versions section of the *TIBCO Enterprise Message Service Release Notes*.
- Read the README file for your platform. There is a README file for each platform, located on the TIBCO download site and on the product distribution, in the same directory as the installation files.
- Read the TIBCO Software Inc. License Agreement included with the product.
- Read the appropriate chapters for your platforms.

If you are upgrading TIBCO Enterprise Message Service, or reinstalling a clean version of the software, you may uninstall the product first or let the installer take care of performing the upgrade or reinstall.

## Installer Account

### UNIX

To install TIBCO EMS, you can login either as a regular (non-root) user or as super-user (root).

A graphic environment such as CDE or X Windows is required to run the installer in GUI mode.



For information about installing on UNIX systems, see [DISPLAY Variable FAQ on page 33](#).

### Microsoft Windows

You must have administrator privileges to install TIBCO Enterprise Message Service. If you do not have administrator privileges, the installer exits. You must then log out of the system and log in as a user with the required privileges, or request your system administrator to assign privileges to your account.

If you intend to install the product on a network drive, you must ensure that the account used for installation has permission to access the network drive.

## Installer Log File

The installer writes its log file to the `User_Home/.TIBCO` directory. For example, on Windows, the installer writes its log to the `C:\Documents and Settings\user-name\.TIBCO` directory.

## Installation Registry

The installer maintains an installation registry. The registry location depends on the platform. This section explains where the registry files are located. The file names include the prefix `vpd`, which stands for Vital Product Database.



Do not edit, modify, rename, move, or remove any of the registry `vpd` files.

### UNIX Platforms

If installation is performed by a regular user (non-root), the installation registry is maintained in the following files in the user's home directory:

```
$HOME /INSTALLSHIELD
```

If installation is performed by super-user (root), the installation registry is maintained as follows:

- On Solaris and HP-UX, in the root user's home directory (which is `/`) as `vpd` files.
- On Linux, in the `/root` directory as `vpd` files.
- On AIX, in the `/usr/lib/objrepos` directory as `vpd` files.

### Microsoft Windows Platforms

On Windows platforms, the installation registry is maintained in the

`%CommonProgramFiles%` folder:

```
%CommonProgramFiles%\Installshield
```

## Installation Modes

---

The TIBCO Universal Installer allows you to run in different modes. Each mode is supported on all platforms.

- GUI Mode
- Console Mode
- Silent mode

### GUI Mode

In GUI mode, the installer presents panels that allow you to make choices about product selection, product location, and so on. GUI mode is the installer's default mode, it is used, for example, when you invoke the installer by double-clicking on the icon in Microsoft Windows.

### Console Mode

Console mode allows you to run the installer from the command line. This is useful if your machine does not have a window environment.

### Silent Mode

Silent mode either installs using the default settings or uses a response file that contains properties you can set for your installation. Silent mode installs without prompting you for information.

The `TIBCOUniversalInstaller.silent` file is packaged in the directory that contains the universal installer. You must edit the file with information for your environment before launching the silent installation. The file includes comments that describe the installation properties you can set.

While you can use the `TIBCOUniversalInstaller.silent` file, it's good practice to copy the file to a different name and use that file for the silent install. Once you have created a `TIBCOUniversalInstaller.silent` for your installation, you can use that file for all your TIBCO EMS version 6.0 installations.

- If you invoke the installer with the `-silent` argument alone, the default `TIBCOUniversalInstaller.silent` file is used.
- If the installer is started with `-silent -V responseFile="responseFileName.silent"` as an argument, the installer uses the properties specified by the file.

## Chapter 2      **Platform-Specific Instructions**

This chapter provides installation instructions specific to different platforms. Read this chapter before following the installation procedures outlined in [Chapter 3, TIBCO Universal Installer](#).

### Topics

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- [Installation on UNIX, page 10](#)
- [Installation on Microsoft Windows, page 14](#)
- [Installation on VMS, page 18](#)

# Installation on UNIX

This section gives information that is specific to UNIX platforms.

## Supported Platforms and Installation Packages

TIBCO Enterprise Message Service is available on the UNIX operating systems listed in [Table 4](#). (For the latest changes, see the README file.)

Table 4 UNIX Distribution Directories

OS	Hardware	Installer Package Suffix	Notes
AIX 5.3+	IBM PowerPC	aix53_power.tar.gz	
HP-UX 11.11	HP PA-RISC	hpux111_hppa.tar.gz	Does not support Java server functions. Does not support database, multicast, or extensible security features.
HP-UX 11.23	IA64 (Itanium)	hpux112_ia64.tar.gz	
Novell SUSE Linux Enterprise 10 and 11	Intel	linux26gl23_x86.tar.gz	32-bit and 64-bit
Red Hat Enterprise Linux 4.x and 5.x			
Oracle Enterprise Linux 4			
Mac OS X 10.4	PowerPC	macos104_power.tar.gz	Mac OS X uses the TIBCO Universal Installer (it does not use Apple's installer GUI).
Mac OS X 10.5+	Intel	macosx_x86.tar.gz	
Solaris 8+	Sun SPARC	sol8_sparc.tar.gz	
Solaris 10	Intel	sol10_x86.tar.gz	



## EMS on 64-Bit Systems

TIBCO Enterprise Message Service installations on 64-bit platforms usually include both 32-bit and 64-bit versions of the EMS server and multicast daemons. All daemons are installed in the `EMS_HOME/bin` directory, and you may use either or both versions. There is no difference between the two versions other than the processing speed.

[Table 5](#) shows the names given to each daemon version. Note that on a few 64-bit systems, *only* the 64-bit version is provided. In such cases, the 64-bit daemons use the standard daemon name. This is the case, for example, on all 64-bit Windows systems.

*Table 5 EMS on 64-bit systems*

Daemon	Daemon Name	64-Bit Daemon Name
EMS Server	<code>tibemsd</code>	<code>tibemsd64</code>
Multicast Daemon	<code>tibemsmcd</code>	<code>tibemsmcd64</code>

Throughout the TIBCO Enterprise Message Service documentation, the EMS server daemon is referred to as `tibemsd`, while the multicast daemon is the `tibemsmcd`. The descriptions and instructions apply to both daemon versions.

## Multicast and Root Access

To use multicast on UNIX, the EMS server and multicast daemon require root access when started. This can be accomplished in two ways:

1. Start the `tibemsd` and `tibemsmcd` as the root user.
2. Enable the `setuid` (set user ID) flag on the files and give root ownership to the executables.

The second method allows you to start the processes as a normal user and still provide root access on startup. However, on AIX, this prevents the server from loading the Java virtual machine (JVM) for features such as database storage or extensible security. Furthermore, this method also prevents certain Unix operating systems from saving the process's core file in the event of a crash.

If you wish to use both multicast and JVM-based features on AIX in the same EMS server, or if you encounter a crash which requires saving a core file, you must use the first method, starting the server and multicast daemon processes as the root user.

Note that once multicast initialization is complete, the EMS server and multicast daemon release root privileges.

## Root Access and Administrative Privileges

If TIBCO Enterprise Message Service is installed and the `tibemsd` is started as root, it drops root permissions after the server starts. This protects the EMS server from security exploits. Once the server has dropped root privileges, it cannot write to the files created during the installation. As a result, it is not able to create configuration and log files. To avoid this conflict, create the necessary directories and assign the appropriate privileges to the regular user ID with which the EMS server is started.

## Installation on Mac Platforms

The JDK version required to install TIBCO Enterprise Message Service on Mac platforms is dependent on the Mac system:

Intel Hardware	In order to install TIBCO Enterprise Message Service on Mac Intel systems, JDK version 1.6 must be pre-installed and included in the <code>PATH</code> environment variable. JDK 1.6 must be installed on the target host machine when installing the <code>macosx_x86.tar.gz</code> package. You will not be able to complete the EMS installation if an earlier version of the JDK is installed.
PowerPC Hardware	On Mac PowerPC systems, the TIBCO Universal Installer requires the JDK version 1.5. (All other packages require version 1.6.) To install the <code>macos104_power.tar.gz</code> package, JDK 1.5 must be pre-installed and included in the <code>PATH</code> environment variable.

## Loading the JVM on AIX

The JVM is required to run certain features, such as extensible security and database storage.

In order to load the JVM on AIX, you must set `LIBPATH` to point to the directory containing the `libjvm.so` and its dependent libraries. These libraries are part of your JRE installation.

To use JVM-based features with multicast, you must also start the `tibemsd` and `tibemsmcd` as the root user. This is described above, in [Multicast and Root Access on page 11](#).

## Dynamically Linked Libraries

The EMS server dynamically loads the SSL and compression shared libraries, rather than statically linking them. If the `tibemsd` executable is executed from the `bin` directory, it automatically locates these libraries. If the server is moved elsewhere, the shared library directory must be moved as well.

# Installation on Microsoft Windows

This section gives information that is specific to Microsoft Windows platforms.

## Supported Platforms

TIBCO Enterprise Message Service is available on the Windows platforms listed in [Table 6](#). (For the latest changes, see the README file.)

Table 6 Microsoft Windows Distribution Directories

OS/Platform	Hardware	Installer Package Suffix	Notes
Windows 7 Windows XP Windows Server 2003 Windows Server 2008 Windows Vista	Intel (32-bit)	win_x86_vc8.zip	For developers using Visual Studio 8.
Windows 7 64-bit Windows XP 64-bit Windows Server 2003 64-bit Windows Server 2008 64-bit Windows Vista 64-bit	Intel (64-bit)	win_x86_64_vc8.zip	For developers using Visual Studio 8.

## Installing on Windows Terminal Server 2003

There are two modes in Windows Terminal Server: *Execute* and *Install*. Users are logged on by default in Execute mode, which allows them to run applications. To install an adapter so that everyone can use it, log on as administrator in Install mode. When the adapter is installed in the Install mode, the installation registry is maintained in %windir%\.



Windows Terminal Server must be running in remote admin mode, not application sharing mode. TIBCO Enterprise Message Service is not supported if installed on a machine that is using Windows Terminal Server in application sharing mode.

The best way to install the TIBCO Enterprise Message Service on Windows Terminal Server is to use the Add/Remove Programs control panel applet. This automatically sets your mode to Install during the installation and then back to Execute afterwards. Alternatively, you can manually change your mode to Install before starting the installation by typing the following at a command prompt:

```
C:\> change user /install
```

Change back to Execute mode after installation is complete by typing:

```
C:\> change user /execute
```

To check your current mode, type the following:

```
C:\> change user /query
```

## Installing on Windows Server 2008 and Windows Vista

Windows Server 2008 and Windows Vista have more stringent file access control than earlier versions of Windows. The access control policies affect all users, even those with Administrator permissions.

### Administrator Permissions

In order to ensure that an administrator has permissions to modify configuration and data files, TIBCO Enterprise Message Service now installs these files in a different directory on Windows systems. During installation, you are prompted to enter a Configuration Directory location. After installation, you will find configuration and data files in the specified directory.

The default Configuration Directory is based on the value of your `PROGRAMDATA` environment variable. For example:

```
C:\ProgramData\tibco
```

### Executable Prompt

By default, Windows prompts for consent before starting the `tibemsd` or `tibemsmcd` as administrator. You can disable this elevation prompt for administrator users with the Windows Local Security Policy application. For more information, see the section on changing the elevation prompt behavior here:

<http://technet.microsoft.com/en-us/library/cc709691.aspx>

If you elect not to disable the prompt, the User Account Control screen opens each time you attempt to start the EMS server or multicast daemon. Click **Allow** to start the application.

## Works With Windows Server 2008 Certification



TIBCO Enterprise Message Service version 5.x is certified to work with Windows Server 2008.

## .NET DLL Installation

During installation, several DLL files are installed in the global assembly cache:

```
TIBCO.EMS.DLL
TIBCO.EMS.ADMIN.DLL
TIBCO.EMS.UFO.DLL
```

If an earlier release of TIBCO Enterprise Message Service is installed on the computer, the EMS 6.0 DLLs replace those of the earlier version.

To reinstall the previous EMS release DLLs, you must first uninstall the 6.0 DLLs, then reinstall the DLLs from the previous release. Both of these tasks are accomplished using the Global Assembly Cache Tool (`gacutil.exe`) provided by Microsoft. DLL files are located in the `bin` directory of the EMS installation.

**Policy Files**      Additionally, the following policy files can optionally be installed in the global cache:

```
policy.1.0.TIBCO.EMS.UFO.dll
policy.1.0.TIBCO.EMS.dll
policy.1.0.TIBCO.EMS.ADMIN.dll
```

When installed, these policy files facilitate upgrades by automatically redirecting existing EMS applications from an older assembly to the newest assembly.

**See Also**      For more information, see the section on Assembly Versioning in the *TIBCO Enterprise Message Service User's Guide*.

## Dynamically Linked Libraries

The EMS server dynamically loads the SSL and compression shared libraries, rather than statically linking them. If the `tibemsd` executable is executed from the `bin` directory, it automatically locates these libraries. If the server is moved elsewhere, the shared library directory must be moved as well.

## Register the Server as a Windows Service

Some situations require the EMS server to start automatically. The installer automatically installs the EMS server as a Windows service, and allows you to choose whether start the server manually or automatically. After EMS is installed, you can use the `emsntsrsg` utility to change the service settings or unregister an EMS server.

See [step 11 of Install in GUI Mode on page 24](#) for more information.

See Also [emsntsrsg on page 105](#) in *TIBCO Enterprise Message Service User's Guide*.

## Installation on VMS

This section gives information that is specific to VMS platforms.

### Supported Platforms and Installation Packages

TIBCO Enterprise Message Service is available on the VMS platforms listed in [Table 7](#). (For the latest changes, see the README file.)

Table 7 VMS Distribution Directories

Platform	Hardware Platform	Installer Package Suffix	Notes
OpenVMS v.7.3-2 or later	HP Alpha, 32-bit	vms73_alpha.zip	Supports the C client library only.
OpenVMS v.8.2 or later	HP Integrity/Itanium, 32-bit	vms82_ia64.zip	Supports the C client library only.

### Installing TIBCO Enterprise Message Service on VMS Platforms

Follow these instructions to install TIBCO EMS software on VMS platforms.

Installation on VMS platforms uses the `VMSINSTAL` utility, which is described in the OpenVMS system management documentation.

#### Task A Log In as SYSTEM

Log in to the `SYSTEM` account.

#### Task B Check TCP/IP Services

EMS software will operate properly only if you have installed and started TCP/IP services.

VMS Release	Recommended TCP/IP Services
OpenVMS 7.3-2	HP TCP/IP Services v5.4 or later
OpenVMS 8.2	HP TCP/IP Services v5.5 or later
All releases	TCP/IP services from other reliable vendors



Although you can successfully install the EMS files without running TCP/IP services, the EMS installation verification procedure will fail if TCP/IP services have not been started.

### Task C Obtain the Installation Package

The product distribution contains the TIBCO Enterprise Message Service software for VMS platforms, as shown in [Supported Platforms and Installation Packages on page 18](#). These files are also available for download from the TIBCO website.

**ZIP Files** Installation packages are zipped (compressed) using the VMS free software ZIP utility. To preserve the file attributes, unzip them on a VMS computer (and *not* on a PC or UNIX computer).

Utilities to decompress zip files are available on the HP OpenVMS Freeware distributions, or at the HP web site:

<http://h71000.www7.hp.com/openvms/freeware/index.html?jumpid=/go/openvms/freeware>

**File Attributes** When copying VMS save sets through a Windows PC or UNIX computer, the resulting files do not retain the proper file attributes. As a result, the VMS BACKUP utility cannot read them to install them.

To rectify this situation, copy the files to a computer running VMS, and use this command to restore the correct file attributes:

```
$ set file /attr = (RFM:FIX, RAT:NONE, LRL:8192) tibems*.*
```

### Task D Mount the Distribution Media

Insert the EMS distribution into the drive.

The mount command automatically determines that the drive is formatted according to ISO 9660, but you must specify the record format for the backup save sets. For example:

```
$ mount /override=id/media_format=CDROM -
$_ /undefined=fix:none:8192 CD_device
```

### Task E Install the EMS Product Software

The installation procedure requires your input. The most important items you supply are the target location for the TIBCO Enterprise Message Service files, and the environment to install (development or runtime environment).

The installation procedure takes less than 10 minutes.

## Installation Steps

1. Create a disk directory for the installation kit.

```
$ create/directory DKA100:[kits.ems-5-1-0]
```

2. Set default to the root directory of the release drive, or transfer the installation package zip file to a disk directory and set default to that directory.

```
$ set default DQA0:[0000000]
```

3. Unzip the installation package (see [ZIP Files on page 19](#)).

```
$ unzip installation_package -d DKA100:[kits.ems-5-1-0]
```

4. Retrieve and read the release notes for the VMS distribution, which are in the `sys$help` directory. For example, to retrieve the release notes without installing EMS software, use these commands as a model:

```
$ @sys$update:vmsinstal tibems051 dka100:[kits.ems-5-1-0] -
$_ options N
```

The release notes are in the file `sys$help:tibems050.release_notes`.

5. Install the product software. Specify the product name and directory on the command line to `VMSINSTAL`. For example:

```
$ @sys$update:vmsinstal tibems051 dka100:[kits.ems-5-1-0]
```

### Task F Verify Installation

We recommend that you verify correct operation of EMS. You can verify installation at any time by invoking the command:

```
$ @TIBEMS:[COM]QUICK_TEST.COM.
```

The test procedure verifies that the sample program images used are available, and displays the output seen in a successful test. Finally, it accepts input of the host name and port of a server running on another system, starts a listening program, and sends three messages. The output of the sender and receiver are displayed on the console.

Visually compare the actual results with the sample above it. If they match in all details except for host and port, then EMS software is installed and operating correctly.

## Additional Information for VMS Programmers

### Compile

On VMS platforms, EMS programmers must define the `C-compile` command appropriately.

For the Compaq C compiler:

```
$ CC ::= CC/FLOAT=IEEE/IEEE_MODE=UNDERFLOW_TO_ZERO -  
/PREFIX=ALL/INCLUDE_DIRECTORY=("/tibems/include", [])
```

### Link

EMS API libraries are multi-threaded, so VMS scheduler upcalls can yield significant performance improvements:

```
$ LINK/THREADS_ENABLE=UPCALLS
```



When upgrading from EMS 4.3 to 4.4 or later versions, EMS client executables that were linked with the EMS 4.3 dynamic libraries (shareable images) must be relinked to the new libraries after EMS 4.4 has been installed with its associated third party libraries. The third party libraries are part of the full installation of EMS.



## Chapter 3 **TIBCO Universal Installer**

This chapter describes installation and uninstallation using TIBCO Universal Installer.

### Topics

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- [Installing TIBCO Enterprise Message Service, page 24](#)
- [Uninstalling the Software, page 29](#)

## Installing TIBCO Enterprise Message Service

---

If *TIBCO\_HOME* does not exist on the machine, its location must be specified when installing TIBCO Enterprise Message Service. All subsequent TIBCO software will be installed under *TIBCO\_HOME*.

Install TIBCO Enterprise Message Service using one of the following modes:

- [Install in GUI Mode on page 24](#)
- [Install in Console Mode on page 27](#)
- [Install in Silent Mode on page 28](#)



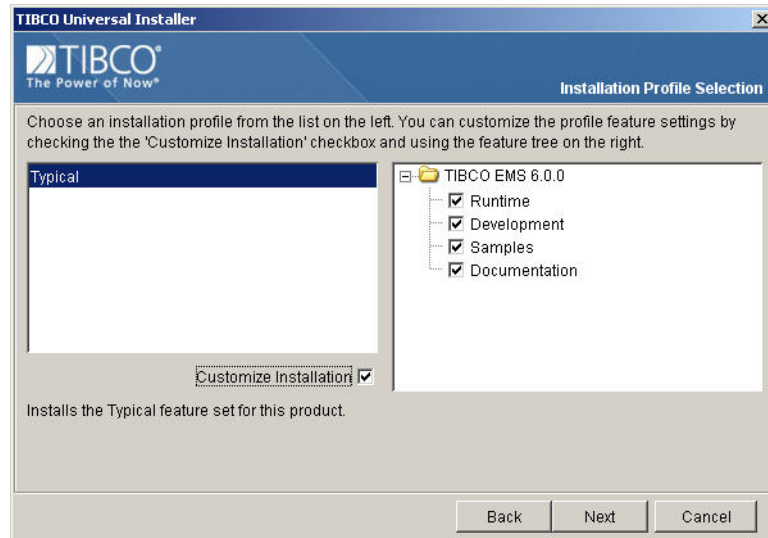
The TIBCO Universal Installer installs the .NET DLLs, `TIBCO.EMS`, `TIBCO.EMS.ADMIN`, and `TIBCO.EMS.UFO.DLL` in the global cache. Existing DLLs from a previous TIBCO EMS installation are overwritten. See [.NET DLL Installation on page 16](#) for more information.

### Install in GUI Mode

The following procedure explains how to install TIBCO Enterprise Message Service in GUI mode.

1. Open the physical media or download the TIBCO Enterprise Message Service product package.
2. Extract the TIBCO EMS product archive file to a temporary directory.
3. Navigate to the temporary directory that contains the universal installer.
4. Run **TIBCOUniversalInstaller**.
5. The Welcome screen appears. Click **Next**.
6. The License Agreement screen appears. After reading through the license text, click **I accept the terms of the license agreement** and then click **Next**.

7. The Installation Profile Selection screen appears. This screen allows you to install the default features, or select specific features for installation.
  - To install all features displayed in the right panel, click **Next**.
  - To specify which features to install, click the check box next to **Customize installation**. Unselect the check boxes next to the features you do not want to install, and click **Next**.



8. The Installation Profile Selection screen appears. In this screen you choose the installation environment (also called *TIBCO\_HOME* in the Installation Profile screen). An installation environment isolates product installations; a product installed into an installation environment does not access components in other installation environment.

The installation environment consists of a name, description, and path. You can choose a new environment or an existing environment.

- **Create a New TIBCO\_HOME** To install the product into a new installation environment, specify the following properties:
  - **Directory** The directory path into which the product is installed. Type a path or click **Browse** to specify the path or accept the default location.  
 The path cannot contain special characters such as "\*", "#", "?", ">", "<", "%", "&", "\$", "\"" or "|". The path cannot be the same as the path of an existing environment.
  - **Name** Identifies the installation environment. The name cannot contain special characters such as "\*", "?", ">", "<", ":", "|", "/", "\", or quotes (").  
 The name is appended to the name of Windows services created by the installer and is a component of the path to the product in the Windows Start > All Programs menu.
- **Use an Existing TIBCO\_HOME** To install the product into an existing installation environment, select the environment directory from the Environment drop-down list.

Click **Next**.

9. If a version of TIBCO Enterprise Message Service or related components have already been installed in the target directory, a warning message appears.

If you wish to reinstall TIBCO Enterprise Message Service, click **Yes**. To cancel the installation, choose **No**.

10. The Configuration Directory screen appears. The configuration directory determines the location where TIBCO Enterprise Message Service stores user data, including the sample server configuration files. The default location is:
  - On UNIX systems, the user home directory. For example:
 

```
$HOME/tibco
```
  - On Windows XP and Windows Server 2003, the `APPDATA` environment variable. For example:
 

```
C:\Documents and Settings\username\Application Data\ENV_HOME
```

 The installer appends `\tibco\cfgmgt` to the end of the selected directory.
  - On Windows Vista and Windows Server 2008, the `PROGRAMDATA` environment variable. For example:

```
C:\ProgramData\tibco
```

Accept the default location, or click **Browse** to select a different location.

Click **Next**.



11. If you are installing on a Windows platform and are installing the Runtime component, the Server Service Startup Type screen appears.
  - Click **Manual** to start the EMS server and multicast daemon manually. Click **Auto** to have Windows start the server and daemon automatically.
  - Click **Browse** to locate and select a different server configuration file.
 Click **Next**.
12. The installer prepares the components for installation. A pre-install summary screen appears. Click **Install**.
 

Click **Yes to All** to close any pop up windows that display during installation.
13. If you are installing on a UNIX platform, the setuid screen appears. As described in [Multicast and Root Access on page 11](#), the EMS server and multicast daemon must have root access when multicast will be deployed. Root access is not required to complete setup.
 

Click **Next** to continue the installation. Note that the TIBCO Universal Installer does not enable the setuid flag; the message is informative only.
14. Click **Finish** to close the installer window.

## Install in Console Mode

The following procedure explains how to install the software in console mode.

1. Open the physical media or download the TIBCO Enterprise Message Service product package.
2. Extract the TIBCO Enterprise Message Service product archive file to a temporary directory.
3. Using a console window, navigate to the temporary directory that contains the universal installer
4. Run the installer using this command line:
 

```
TIBCOUniversalInstaller -console
```
5. Complete the installation by responding to the console window prompts.

## Install in Silent Mode

The following procedure explains how to install TIBCO Enterprise Message Service product in silent mode. The `TIBCOUniversalInstaller.silent` file is packaged in the directory that contains the universal installer. You must edit the file with information for your environment before launching the silent installation. The file includes comments that describe the installation properties you can set.

While you can use the `TIBCOUniversalInstaller.silent` file, it's good practice to copy the file to a different name and edit that file for the silent mode.

If errors occur during installation, they will be listed in the installation log file (see the `User_Home/.TIBCO` directory).

1. Open the physical media or download the TIBCO Enterprise Message Service product package.
2. Extract the TIBCO Enterprise Message Service product archive file to a temporary directory.
3. Using a console window, navigate to the temporary directory that contains the universal installer
4. Copy the `TIBCOUniversalInstaller.silent` file and rename the file.
5. Using a text editor, open the copied file and update the install location and features to install.
6. Run the installer using this command line:

```
TIBCOUniversalInstaller -silent -V responseFile="myfilename.silent"
```

If you are using the `TIBCOUniversalInstaller.silent` file (rather than a copy), you need not supply the file name and can use this command line:

```
TIBCOUniversalInstaller -silent.
```

A line similar to the following is written to the installer log file when installation completes:

```
Install, com.tibco.installer.util.TIBCOInstaller, dbg.Debug,
The installation has completed. Please check the log file for
additional information.
... Install, com.tibco.installer.util.TIBCOInstaller,
dbg.Debug, Executing Event:::OnEndInstall
```

## Uninstalling the Software



Before uninstalling TIBCO EMS, save a backup copy of any files you have modified.

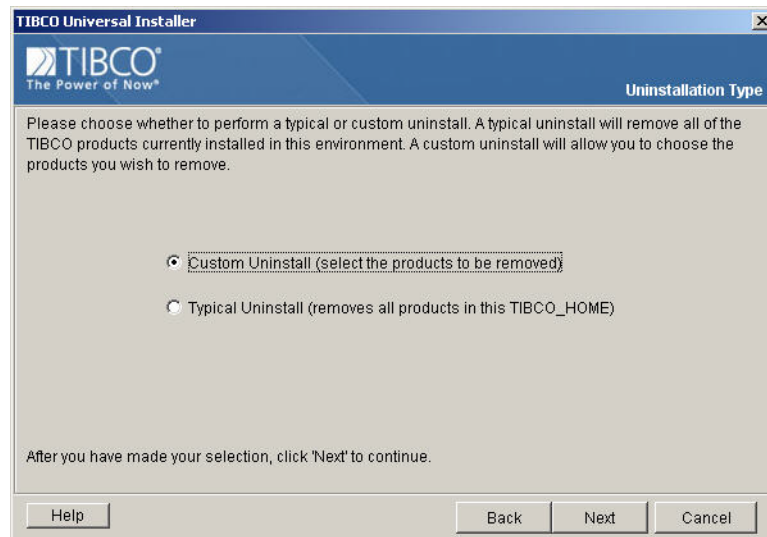
Use the following procedure to uninstall TIBCO Enterprise Message Service.

1. Stop all TIBCO Enterprise Message Service processes.
2. Run the uninstaller:

Navigate to `TIBCO_HOME\uninstall` and run the **universal\_uninstall** executable.

On Windows systems, you can also access the universal uninstall program from the Start menu, following the path **Programs > TIBCO > TIBCO EMS 6.0 > Uninstall**.

3. The Welcome screen appears. Click **Next**.
4. To uninstall only TIBCO Enterprise Message Service, click **Custom Uninstall**. To uninstall all TIBCO products (installed using the universal installer), select **Typical Uninstall**. After making your choice, click **Next**.



5. If you selected Custom Uninstall, then in the next screen select the specific products to uninstall. The choices include only TIBCO products that you installed using the universal installer. Unselect the check box next to any products you do not want to uninstall, and click **Next**.
6. The Pre-Uninstall Summary screen appears. Click **Uninstall** to remove the listed products.
7. Click **Finish** to close the uninstaller window.

## Chapter 4      **Installation FAQs and Troubleshooting**

This chapter lists answers to questions and potential issues.

### Topics

---

- [Running Out of Disk Space, page 32](#)
- [DISPLAY Variable FAQ, page 33](#)

## Running Out of Disk Space

---

The installer calculates the disk space required in product home location, for the selected components. The calculation is done before the actual installation (copying of files to system) begins. The installer will proceed only if sufficient free disk space is available in product home location.

However, if disk space is consumed by another process while the installer is copying the files, and if the required disk space is thereby reduced, then the installer may fail, then the installer may fail and will give a failure message.

### **Solution**

While performing installation, avoid running other processes that consume disk space in product home location.

## DISPLAY Variable FAQ

---

- Q** Should I set the `DISPLAY` variable on Mac OS X platforms for GUI mode?
- A** No. In Mac OS X, Java is integrated with the native Macintosh graphics system, rather than with X11. As a result, you must have physical access to the machine's graphic display in order to install EMS on Macintosh platforms.
- 

- Q** Why and how should I set the `DISPLAY` variable on other UNIX platforms for GUI mode?

- A** The installer on UNIX, must open an additional window, generally for graphics. It uses the `DISPLAY` environment variable to tell it on what computer to open the window. If the environment variable is not set, the installer will either wait or abort after displaying:

```
InstallShield Wizard
Initializing InstallShield Wizard...
Preparing Java(tm) Virtual Machine...
.....
.....
.....
```

The `DISPLAY` variable must be set to the IP address or name of the computer (on which the installer graphics window are to be displayed), followed by a screen address, which can be `:0.0`. For example:

```
# Bourne shell
DISPLAY=<ip_address>:0.0; export DISPLAY

# Korn shell
export DISPLAY=<ip_address>:0.0

# C-shell
setenv DISPLAY <ip_address>:0.0
```

For example, consider a scenario where you need to install the adapter on a remote HP-UX machine (named `itaska`). Because you have a Solaris 5.6 machine (named `alaska`) that has a video card and monitor installed, you can run an X-Window application on it. So you decide to telnet to `itaska` from `alaska`.

When you telnet to `itaska`, you will not get access to `itaska`'s monitor and will be unable to display an X-Window application. That is why you must set the `DISPLAY` variable, which instructs the X-Server to redirect all windows to the computer set in the variable. Before doing so, the computer (specified in the `DISPLAY` variable) must give permissions to share its monitor.

```
alaska> xhost + # give permission for all to its share monitor
alaska> telnet itaska
```

```
Welcome to HP-UX itaska 11.00
User:
Password:
itaska> export DISPLAY=alaska:0.0 # set display on alaska
itaska> ./ TIB_ems-simple_6.0.0_hpux110_hppa.bin
```



# Index

## C

changes from the previous release of TIBCO Enterprise Message Service Installation [viii](#)  
customer support [xiv](#)

## E

EMS  
installing [24](#)  
uninstalling [29](#)

## I

installing  
EMS [24](#)

## S

support, contacting [xiv](#)

## T

technical support [xiv](#)  
TIBCO\_HOME [xi](#)

## U

uninstalling  
all TIBCO products [29](#)  
universal installer [23](#)