



# Installation Prerequisites

This chapter discusses the system requirements, user requirements, installation prerequisites and the supported databases for the various components of Cisco Tidal Enterprise Scheduler (TES) version 6.2.0.

## Minimum System Requirements

The following table contains the minimum system requirements for installing and running TES. The specified quantities of CPU, memory and disk space must be available for exclusive use by TES. Use additional RAM and disk space as necessary for your particular environment.

**Table 1-1**      **System Requirements**

Component	Platform					Minimum System Requirements (Dedicated Machine)			
	OS Name	Version	Chipset	32-bit	64-bit	JVM	Processor	RAM	Disk
Master (Primary or Backup)	HPUX	11.11	RISC	X		HP 7	Dual Processor	2GB for TES Master + 1GB per adapter	1GB
	Solaris	9,10	Sparc	X	X	Oracle 7	Dual Processor	2GB for TES Master + 1GB per adapter	1GB
		10	Opteron		X	Oracle 7	Xeon Dual	2GB for TES Master + 1GB per adapter	1GB
	AIX	5.3 TL,9,10,11,6.1, 7	RISC, PPC	X	X	IBM 7	Dual Processor	2GB for TES Master + 1GB per adapter	1GB
	Windows	Server 2008	Intel/A MD	X	X	Oracle 7	Xeon Dual Core 2GHz	2GB for TES Master + 1GB per adapter	1GB
		Server 2012	Intel/A MD	X	X	Oracle 7	Xeon Dual Core 2GHz	2GB for TES Master + 1GB per adapter	1GB

Component	Platform					Minimum System Requirements (Dedicated Machine)			
	Linux	Redhat Enterprise Server v4,v5, v6 (64-bit)	Intel/A MD	X	X	Oracle 7	Xeon Dual Core 2GHz	2GB for TES Master + 1GB per adapter	1GB
		SUSE Enterprise Server v11	Intel/A MD	X	X	Oracle 7	Xeon Dual Core	2GB for TES Master + 1GB per adapter	1GB
		Oracle Enterprise Linux v5	Intel/A MD	X	X	Oracle 7	Xeon Dual Core	2GB for TES Master + 1GB per adapter	1GB
Fault Monitor (OS must match master)	HPUX	11.11	Itanium		X	HP 7	100 MHz	256MB	500MB
	Solaris	9,10	Sparc	X	X	Oracle 7	100 MHz	256MB	500MB
		10	Opteron		X	Oracle 7	100 MHz	256MB	500MB
	AIX	5.3 TL, 9,10, 11,6.1	RISC & PPC	X	X	IBM 7	100 MHz	256MB	500MB
	Windows	Server 2008	Intel/A MD	X	X	Oracle 7	400 MHz	256MB	500MB
		Server 2012	Intel/A MD	X	X	Oracle 7	400 MHz	256MB	500MB
	Linux	Redhat Enterprise Server v4,v5, v6	Intel/A MD	X	X	Oracle 7	400 MHz	256MB	500MB
		Cent OS v4, v5, v6							
		SUSE Enterprise Server v11	Intel/A MD	X	X	Oracle 7	400 MHz	256MB	500MB
		Oracle Enterprise Linux 5.2	Intel/A MD	X	X	Oracle 7	400 MHz	256MB	500MB
	VMWare	ESX 3.0, ESXi 3.5, ESXi 4.0, 5							

Component	Platform					Minimum System Requirements (Dedicated Machine)			
	VMWare ESX on UCS	ESXi 4.0 U1, 5	UCS: B250 M1, C250 M1, B200 M1, B200 M2, B250 M2, C200 M1, C210 M1						
		ESX 3.5 U5, 5	UCS: B250 M1, C250 M1, B200 M1, B250 M2, C200 M1, C210 M1						
Transporter	Windows 7 (64 bit); Windows 2008 (64 bit)	1.6	6 GB (recommended for moderate envs 25K jobs)						
Client Manager Web Service API runs against this platform	HPUX	11.11	RISC			HP 7	Dual Processor 1GHz	8GB for Client Manager	2GB/S CSI 10,000 RPM
	Solaris	9,10	Sparc		X	Oracle 7	Dual Processor 1GHz	8GB for Client Manager	2GB/S CSI 10,000 RPM
		10	Opteron		X	Oracle 7	Xeon Quad 2GHz	8GB for Client Manager	2GB/S CSI 10,000 RPM

Component	Platform					Minimum System Requirements (Dedicated Machine)			
	AIX	5.3,6.1,7	RISC & PPC		X	IBM 7	Dual Processor 1GHz	8GB for Client Manager	2GB/S CSI 10,000 RPM
	Windows	Server 2008	Intel x86/A MD		x	Oracle 7	Xeon Quad 2GHz	8GB for Client Manager	2GB/S CSI 10,000 RPM
		Server 2012	Intel/A MD		X	Oracle 7	Xeon Quad 2GHz	8GB for Client Manager	2GB/S CSI 10,000 RPM
	Linux	Redhat Enterprise Server v4,v5, v6	Intel x86/A MD		X	Oracle 7	Xeon Quad 2GHz	8GB for Client Manager	2GB/S CSI 10,000 RPM
		SUSE Enterprise Server v11	Intel x86/A MD		X	Oracle 7	Xeon Quad 2GHz	8GB for Client Manager	2GB/S CSI 10,000 RPM
		Oracle Enterprise Linux 5.2	Intel x86/A MD		X	Oracle 7	Xeon Quad 2GHz	8GB for Client Manager	2GB/S CSI 10,000 RPM
	VMWare	ESX 3.0, ESXi 3.5, ESXi 4.0, 5				Oracle 7	Xeon Quad 2GHz	8GB for Client Manager	2GB/S CSI 10,000 RPM

Component	Platform					Minimum System Requirements (Dedicated Machine)			
	VMWare ESX on UCS	ESXi 4.0 U1, 5	UCS: B250 M1, C250 M1, B200 M1, B200 M2, B250 M2, C200 M1, C210 M1						
		ESX 3.5 U5, 5	UCS: B250 M1, C250 M1, B200 M1, B250 M2, C200 M1, C210 M1						

**Warning**

It is recommended that no more than five agents be run on the minimum hardware platform. However, the number of agents that can be run on a given server depends upon the CPU and memory resources available on the machine. Add a single agent at a time and gauge the effect of each added agent on system performance before adding more. You have to experiment with the configuration to achieve optimal results.

**Note**

Although the minimum memory required is 4GB for PCs running the Web Client, additional memory helps with better performance. At least 2GB of free memory must be available for the browser.

**Note**

When installing a 64-bit master for use with an Oracle database, the installer requires that 32-bit oracle client software in order to connect to the Oracle database. After installing, the master does not require the 32-bit client software to run.

# Browser Compatibility

**Table 1-2 Browser Compatibility**

Browser Type	Version	Platform
Internet Explorer (64-bit) (32-bit not recommended)	9, 10	Windows Server 2003 Windows Server 2008 Windows Server 2012 RedHat Linux SUSE Linux Windows 7
Firefox	15, 16, 18, 20, 22, 24	Windows Server 2003 (32-bit and 64-bit) Windows Server 2008 (32-bit and 64-bit) Windows Server 2012 (32-bit and 64-bit) Redhat Linux (32-bit and 64-bit) SUSE Linux (32-bit and 64-bit) Windows 7 (32-bit and 64-bit)



**Note**

For Client Manager installation instructions and compatibility matrix, refer to [“Installing Client Manager”](#).

## User Security Requirements

The security requirements for TES vary according to the task the user account needs to accomplish. The user account that installs the components of TES requires different security rights than an account that runs TES as a service. The user account that will operate TES has its own security needs. The following points and [Table 1-3](#) illustrate security rights differences between the various TES components.

- If you are planning to use an Oracle or Microsoft SQL database, your database administrator will be required during installation of the Client Manager and the master. Passwords to the database and connections to the database are necessary for installing the product. Agent and master installations also require a Windows administrator to provide passwords during installation.
- The Client Manager and agent should be installed under the same user name with equivalent capabilities.
- When installing TES Agent for Unix, you must be able to log in as root.
- The Tidal Agent for Unix provides another layer of security by having its single java process run as the agent owner with the same security rights as its owner. By default, the agent does not have access to all of the dependent files, scripts and environment variables it may need. A Unix job cannot complete successfully unless you ensure that the agent has the proper access rights to all of the files needed during the processing of a job.

- The Windows components require access to COM objects. Verify that the user doing the installation can access COM objects or an access violation error will occur when you attempt installation. If necessary, the procedure to verify and provide access to COM objects is explained in “[Java Path Mismatch](#)” in the *Troubleshooting* chapter.
- LDAP users can be imported into TES for improving user audit trails. These imported users inherit security from multiple LDAP groups. Imported LDAP user information is stored into a user definition that includes email, telephone, etc. Imported LDAP users are allowed to be owners of scheduling constructs such as jobs if their security permits it. User definitions must be migrated to LDAP groups.
- The Administration group in 6.2 has three distinct entries for adding users, “Interactive Users”, “Runtime Users” and “LDAP Groups”. TES 6.0 allows for the setup of a user that authenticates against Active Directory/LDAP. TES also supports AD/LDAP only users.
- At login, user credentials are validated against Active Directory/LDAP. Once authenticated, TES obtains the users AD/LDAP groups and other information such as phone number and email.
- Once login has completed, a record is established in TES to represent the Active Directory/LDAP **only** user if not already present and only if the user belongs to an Active Directory/LDAP group defined in TES. All user activity logging is then done against this new user record allowing for correct auditing and reporting.
- Active Directory/LDAP only users will be allowed to create and own jobs and other objects if their security permissions permit.
- TES LDAP groups are supported by the creation of groups within the TES application.
- Security policies can be defined and specialized by application administrators.
- Each group within TES can be assigned one security policy.
- The security capabilities of a user are based upon the summation of the security policies defined for each of the groups that the user is a member of and any security policy directly assigned to the user. The latter is only available for users created within TES not imported from AD/LDAP.
- Workgroups are also available within the TES application. These workgroups can be used to own related objects. Users and groups can be made a member of one or more workgroups. Workgroup security allows for additional security policies to be applied to scheduling constructs (jobs, view, alerts, etc.) owned by the workgroup for a particular user associated with the workgroup.
- When a user or a group is made a member of a workgroup then additional security policies can be applied to this relationship. The users total security capabilities will then be a summation of their user applied security policy, the security policy associated with each of the groups they are a member of, and the security policies contained in the relationship between the user or group and the workgroups they are a member of (in the context of objects contained in that workgroup).

**Table 1-3 Rights Required for Installation and Usage of Scheduler Components**

	Installation Rights	Service Rights	User Rights
Windows Master	<ul style="list-style-type: none"> <li>• Local Administrator</li> <li>• Able to access COM objects</li> </ul>	<ul style="list-style-type: none"> <li>• Local Administrator or Local System</li> <li>• Logon as a service</li> <li>• Able to access COM objects</li> </ul>	Local Administrator or Local System
Unix Master	<ul style="list-style-type: none"> <li>• Must be installed under a user created by root</li> <li>• Access rights to JVM</li> </ul>	Access rights to JVM	<ul style="list-style-type: none"> <li>• User account must be created by root</li> <li>• Access rights to JVM</li> </ul>

**Table 1-3** *Rights Required for Installation and Usage of Scheduler Components*

	Installation Rights	Service Rights	User Rights
Windows Agent	Local Administrator Able to access COM objects	Local System or if running under Domain\User must have local administrator rights including: <ul style="list-style-type: none"> <li>Logon as a batch job</li> <li>Logon as a service</li> <li>Act as part of the operating system</li> <li>Replace a process level token</li> <li>Able to access COM objects</li> </ul> On machines running Windows 2003, you also need the following privileges: <ul style="list-style-type: none"> <li>Bypass traverse checking</li> <li>Adjust memory quotas for the process</li> <li>User must be root or created by root</li> <li>Access rights to JVM</li> </ul>	Local System or if running under Domain\User must have local administrator rights including: <ul style="list-style-type: none"> <li>Logon as a batch job</li> <li>Logon as a service</li> <li>Act as part of the operating system</li> <li>Replace a process level token</li> <li>User must be root or created by root</li> <li>Access rights to JVM</li> <li>Ability to change to the runtime user</li> </ul>
Unix Agent	Logon as root	N/A	N/A
Client Manager	<ul style="list-style-type: none"> <li>Local Administrator</li> <li>Able to access COM objects</li> </ul>	N/A	General user rights

## Installation Requirements

- Determine which components you are going to install and where you are going to install them before you install TES. Because the InstallShield Wizard/Scheduler Setup requires information about the location of masters, Client Managers and agents, decide beforehand where they will be installed. Obtain machine names, host names, port numbers and IP addresses before beginning the installation.
- Ensure that each computer used for TES can communicate with the other machines on the network. If you cannot ping to and from each component machine, TES cannot function properly. Network conditions affect the operation of TES.
- Ensure that you are logged on with an account that has Administrator privileges.
- Download the latest set of hotfixes for Tidal Enterprise Scheduler from [cisco.com](http://cisco.com).
- Review any supplementary documentation provided with your software such as the release notes or *Read Before Installing*. Last-minute instructions may be contained in these documents.
- If you are upgrading TES, install the program in the same directory in which the previous version was installed to keep your data intact.
- Exit all Windows programs before running any installation.
- Contact Support if you have any questions.

## Supported Databases

Before installing TES you should already have database software installed on your machine.

The Master supports the following databases:

- MSSQL Server 2008 or SQL Server 2012 single or multi-instance: 128 MB Data, 32 MB Log



- Oracle 10g, 11g, 11gR2 (Oracle provided software for Scheduler client): 400MB Data, 300MB index, 200MB temp

**Note**

TES does not support case-sensitive sort-ordered databases.

You need the following number of database access licenses:

- Each master should have access to up to 20 database client licenses to use as needed during processing

Client Manager supports the following databases:

- Derby (default)
- SQL server (external)
- Oracle 11g R2 (external)

## Supported Database Configurations

The following DB configurations are supported:

<b>Master on Unix</b>	Oracle DB on UNIX
<b>Master on Windows</b>	<ul style="list-style-type: none"> <li>• Oracle DB on UNIX</li> <li>• MSSQL on Windows</li> <li>• Oracle On Windows</li> </ul>

## Microsoft SQL Database Requirements

Microsoft SQL Server users should verify the following items before installing TES:

- There exists a DATA folder in your SQL Server installation.
- There is enough space on the drive to create the TES database.
- The Microsoft SQL client or the actual database is already installed on the machine that will have a TES master on it.

If you are installing a TES master, SQL Server must already be installed, either on the same machine where you are installing the master, or on another machine in the same domain.

## Oracle Database Requirements

The master uses only JDBC to connect to any Oracle-related database. TES requires that the OLE providers for the Oracle 10g, 11i database be installed on each TES machine. These OLE providers are normally installed only during a full Oracle client install. Have your Oracle administrator install these drivers on each machine that will run TES. The drivers are called “Oracle Provider for OLE DB” and are selected in the Oracle Windows Interfaces section of a custom install.

If you are performing a master installation, your database administrator will also need to know the Oracle tablespace datafiles to be used with TES. The following three Oracle tablespace datafiles are created by TES during installation and require at least the stated amount of tablespace:

- ADMIRAL\_DATA 400 MB
- ADMIRAL\_INDEX 300 MB

- ADMIRAL\_TEMP 200 MB

The *tnsnames.ora* file must exist on or be available to the TES master machine. This file is typically found in the Oracle home directory. The *tnsnames.ora* file should be local since network access may not always be available to the master service, and it must be available to the TES master. Verify that the Oracle bin folder is in your system path before installing TES.

Because TES utilizes the Oracle Native drivers for connectivity, the Oracle SQL\*Net client needs to be installed and configured on all Windows masters. To verify that the ORACLE client connection is correctly configured, from the DOS prompt, use the `tnsping` to the database `tns` entry.

## Licensing

Before you can run TES, you need to run through the licensing procedure. This applies whether you are just trying out the software, or have already decided to implement TES. TES provides different types of licenses to fit your needs.



### Note

Ensure that your database is licensed in line with your database vendors licensing terms and conditions.

Table 1 Software License Types

License Type	Description
Demo License (unrestricted)	If you want to demo the product, you can ask for a demo license from a sales representative. You will be given a license code to enter when you run the product for the first time. Full use of the software will be available for a limited amount of time.
Demo License (restricted)	The restricted demo license allows full use of the product on a limited number of machines for a limited amount of time.
Production License	If you decide to purchase TES, your sales representative can give you a production license. This license will be customized to match your planned installation. Apply your license file as soon as possible so that the software does not expire. You will receive a Master/Agent License Summary which you should keep for your records.
Floating License	Usually a product license specifies that the software works on a particular machine, but a floating license is not tied to a specific machine. Instead the right to use the license “floats” among many users but only the approved number of users can use the license at once.
Annual Use Production License	This has provisions similar to a Production License and is renewed on a yearly basis.
Emergency License	If you already have a license, and you need to expand your scheduling capabilities for a short period of time for disaster recovery, you can request an Emergency License code. This code will give you unlimited use. You will be able to add as many agents as you need, or to transfer your master to another machine to help you through your situation.

Extensions and modules that add extra functionality to TES may require separate licenses. For example, SACmd (TES command line interface), the job monitoring tool and intermaster dependencies all require individual licenses. For more information and current availability, contact your sales representative.

You can license TES with a Demo license or a Full license. During installation, the installer will prompt you for a demo code, and if you give it a code, then it will create this file for you. When your Demo license expires, or if you did not enter it during installation, you can manually license TES.

## Registered License Dialog

The Registered License dialog displays by selecting **Activities>Registered License** from the main menu of the Tidal Web client.

## Master License Tab

This tab displays the following information about the master:

- **Company Name** – Your company name. No company name displays if you have a demo license. The company name displayed here is used in all Scheduler reports.
- **Master License for machine** – The licensed master machine name.
- **Serial Number** – The unique identification number of the master machine.
- **Operating System** – The operating system of the Scheduler master machine.
- **Database** – The type of database used. This field will show either Oracle or Microsoft SQL Server.
- **Expiration** – The license's expiration date. You may need to renew your license before the expiration date.
- **Options** – Displays added purchased software options that complement Scheduler (e.g. fault tolerance).
- **Connections** – Contains the available connections associated with the license.

## Licensed Agents Tab

The Licensed Agents tab displays information about the agents licensed to work with the master.



### Note

If your license has a floating agent provision or if you are running an unrestricted demo, you can define your own agents. Consequently, the Licensed Agents tab will display no information.

This tab displays the following information about the agents:

- **Agent** – The machine name for the licensed agent.
- **Serial** – The serial number of the licensed agent.
- **Floating** – Specifies if the license is floating or not.
- **Operating System** – The operating system type of the licensed agent. Scheduler supports MPE/iX, MVS, z/OS, OS/400, Windows and Unix platforms.

- **Expiration** – The license's expiration date. You may need to renew your license before the expiration date.
- **Max Jobs** – The maximum number of jobs that you can run on the agent concurrently. You can configure a lower value for the agent from the Connections pane, but this value cannot exceed your licensed value.
- **Jobs** – Displays the current count of jobs, tracking the number of jobs to enforce the license restriction on an agent as shown in the Max Jobs column.
- **CPU** – The number of CPUs on an agent machine. If the number of CPUs on a machine exceeds the authorized number, the master disables the agent connection and logs a licensing error. The licensing discrepancy must be resolved by contacting the Licensing Administrator for Tidal Software before the agent connection can be re-established.

**Warning**


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**Restart the Client Manager after a new license has been loaded.**

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## Licensing Procedure

Registering the license for TES is done from the Tidal Web client.

**Note**


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Before you start the licensing procedure, set the system queue to 0. Select **Queues> System Queue**, and set the value to 0. This will stop all jobs from launching. Wait until all running jobs have completed.

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To license with a Demo license:

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- Step 1** Stop the master. You must stop the master before you can load a license file. An error message will display if you attempt to load a license while the master is still running.
- For Windows:
- Click Start and select **Programs>TIDAL Software>Scheduler>Master>Service Control Manager**.
  - Verify that the master is displayed in the Service list and click the Stop button to stop the master.
- For Unix:
- Enter **tesm stop**.
- Step 2** Create a file called demo.lic.
- Step 3** Type the demo code into the demo.lic file.
- Step 4** Save and place the file in the C:\Program File\TIDAL\Scheduler\Master\config directory.
- Step 5** Restart the master:
- For Windows, restart the master by clicking Start in the Service Control Manager.
  - For Unix, restart the master by entering **tesm start**.
- The master will read and apply the demo code when it starts.
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To license with a Full license:

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- Step 1** Stop the master:
- For Windows:
- Click Start and select Programs>TIDAL Software>Scheduler>Master>Service Control Manager.
  - Verify that the master is displayed in the Service list and click the Stop button to stop the master.
- For Unix:
- Enter `tesm stop`.
- Step 2** Rename your Full license file to `master.lic`.
- Step 3** Place the file in the `C:\Program File\TIDAL\Scheduler\Master\config` directory.
- Step 4** Restart the master:
- For Windows, restart the master by clicking **Start** in the Service Control Manager.
  - For Unix, restart the master by entering `tesm start`.
- The master will read and apply the demo code when it starts.
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