IBM Tivoli License Manager

A quick guide

Version 2.1

IBM Tivoli License Manager

A quick guide

Version 2.1

Contents

A quick guide to installing and using IBM Tivoli License Manager

This guide aims to assist those organizations that are using Tivoli® License Manager to monitor use of IBM® products for which they have acquired sub-capacity licenses. It assumes that use of Tivoli License Manager is confined to monitoring the sub-capacity products, and that you do not need to monitor more than 250 computers.

The following tasks must be performed to enable Tivoli License Manager to monitor your products:

- "Prepare to install"
- "Install Tivoli License Manager and its prerequisites" on page 3
- "Apply the latest fix pack" on page 4
- "Update the product catalog" on page 4
- "Create the organization infrastructure" on page 5
- "Register administration servers" on page 6
- "Set test configuration parameters" on page 11
- "Deploy the agents" on page 11
- "Schedule software scans" on page 14
- "Create and verify licenses" on page 14

When you have performed these tasks, Tivoli License Manager will monitor the use of your products and store the use information in its database. You must then following the instructions provided in "Using Tivoli License Manager" on page 15 to produce regular reports for IBM and to ensure that monitoring continues to be accurate.

Note: This guide provides a high level overview of the tasks involved in setting up and using Tivoli License Manager. Detailed information about the tasks is available in the publications that are referenced in this guide. All publications with the exception of *Licensing Scenarios* are available on the IBM Publications Center at the following link:

http://www.elink.ibmlink.ibm.com/public/applications/publications/cgibin/pbi.cgi

The Licensing Scenarios guide relates specifically to sub-capacity licensing and is available from the Passport Advantage® Web site. Go to the following page and click the link **Using IBM Tivoli License Manager to track and report licenses**:

http://www.elink.ibmlink.ibm.com/public/applications/publications/cgibin/pbi.cgi

Prepare to install

A Tivoli License Manager implementation includes the following components:

- An administration server
- An administration server database
- At least one runtime server

- A runtime server database for each runtime server
- An agent for each computer that is to be monitored.

WebSphere® Application Server is a prerequisite for the servers and DB2® UDB is a prerequisite for the databases. Tivoli License Manager bundles the prerequisite versions of these two products (WebSphere Application Server version 5.1 and DB2 UDB version 8.1) and you can install them on the computer or computers where you plan to install the servers and databases.

Assuming an implementation of fewer than 250 agents, the server and database components and their prerequisites can all be installed on the same computer, provided that it meets the following specification:

- 2 processors
- 2 GB RAM
- SCSI discs
- 2 GB space

Note: During installation, there must be a minimum of 100 MB of available temporary space on the default drive for Windows® platforms, while on UNIX® platforms there must be at least 250 MB of free space in the /tmp directory.

Before you start the installation, do the following:

Check the prerequisites for installing DB2 and WebSphere Application Server
Ensure that your system is correctly configured for the installation of DB2 UDB and WebSphere Application Server and that it meets the minimum operating system maintenance levels or service pack requirements. Refer to the following information sources:

- *IBM DB2 Universal Database™: Quick Beginnings for DB2 Servers*, GC09-4836
- The WebSphere Application Server information center: www.ibm.com/software/webservers/appserv/infocenter.html

  In particular the topics relating to preparing the operating system for product installation, which describe preinstallation tasks for each platform.
- The Tivoli platform and database support matrix:

  http://www-306.ibm.com/software/sysmgmt/products/support/Tivoli_Supported_Platforms.html
- WebSphere Application Server supported hardware and software:

  http://www-306.ibm.com/software/webservers/appserv/doc/latest/prereq.html
- DB2 UDB system requirements:

  http://www-306.ibm.com/software/data/db2/udb/sysreqs.html

Check prerequisites
Check that the computers on which you plan to install the elements of the Tivoli License Manager infrastructure are supported platforms and meet the installation prerequisites. See *IBM Tivoli License Manager: Planning, Installation, and Configuration* and *IBM Tivoli License Manager: Release Notes*®.

On UNIX, check korn shell availability
On UNIX platforms, the korn shell must be installed and activated, though the setup can be run from other shells.

On AIX 5.3, create the user tlmsrv

During the installation of a server, the installation wizard creates an account for the user **tlmsrv** on the computer where you are installing. This account is used by WebSphere Application Server to access the Tivoli License Manager databases. When installing on AIX® 5.3, permission to create the user account is not granted to the installation wizard. Therefore, before starting the installation you must manually create the account on the computer where you are installing a Tivoli License Manager. The account must have the following characteristics:

Table 1.

User Name	tlmsrv
Administrative user?	false
Primary Group	staff
Group set	staff, Guests
Administrative Groups	
Roles	
Another user can SU to user?	true
SU groups	All
Home directory	/home/tlmsrv
Initial program	/usr/bin/ksh

Install Tivoli License Manager and its prerequisites

The Tivoli License Manager packaging contains a number of CDs. For the installation described here, you need to have available the DB2 UDB CD, the WebSphere Application Server CD, and the Tivoli License Manager servers and agents CD.

To install all the components on the same computer, do the following:

1. Insert the DB2 UDB CD and install the version of DB2 UDB delivered with Tivoli License Manager.

   Refer to *IBM DB2 Universal Database: Quick Beginnings for DB2 Servers*, GC09-4836 for help in completing the installation.

   When the installation is complete, test that it has been successful by logging on to the system as the DB2 instance owner and creating a test database, for example:

   ```
   db2 create db testdb
   ```

   After you have verified that the create has worked, delete this database.

2. Insert the WebSphere Application Server CD and install the version of WebSphere Application Server delivered with Tivoli License Manager.

   When the installation is complete, test it using the Installation Verification Test tool from the First Steps panel of the administrative console. This tool verifies the core functionality of WebSphere Application Server.

   Refer to www.ibm.com/software/webservers/appserv/infocenter.html for help in completing the installation and using the Installation Verification Tool.

3. Insert the server and agents CD and select the setup file for the platform on which you are installing.

AIX	`setup/servers/AIX/setupServers.bin`
HP/UX	`setup/servers/Hpux/setupServers.bin`
Linux	`setup/servers/Linux/setupServers.bin`
Linux 390	`setup/servers/Linux390/setupServers.bin`
Linux ppc	`setup/servers/LinuxPPC/setupServers.bin`
Sun	`setup/servers/Solaris/setupServers.bin`
Windows	`setup\servers\Win32\setupServers.exe`

4. Follow the instructions on the wizard panels.
   - On the Installation type panel, select **Custom**.
   - On the component selection panel, select **Administration server**, **Administration server database**, **Runtime server**, and **Runtime server database**.

   Note: During the installation, you will be asked to supply an organization name, a runtime server name, and a communication password for the runtime server. Keep a note of the values you use. You will need them when you set up the organization infrastructure.

   For detailed instructions about how to install IBM Tivoli License Manager, see *Planning, Installation, and Configuration*.

Apply the latest fix pack

When you have installed the servers and databases, you must apply the latest fix pack. To obtain the latest fix pack, do the following:

1. Go to the IBM Support & download Web page at http://www.ibm.com/support/us/.
2. Click **Downloads and drivers** in the **Support topics** section.
3. In the category list, scroll down to the **Software** section and select **Tivoli**.
4. Select a product in the **Sub-category** list.
5. In the **Subcategory** list, scroll down until you find IBM Tivoli License Manager.
6. Click **Continue**.

   The list of downloads returned by your search is shown by default with the latest fix first.
7. Find the latest fix pack to be issued and download it.
8. Follow the instructions in the fix pack readme to install the fix pack.

Update the product catalog

During the installation, tables in the administration server database are populated with a catalog of information that enables Tivoli License Manager to detect the presence and use of products on computers where the agent is installed. This information is current at the general availability date of Tivoli License Manager, version 2.1. IBM provides regular updates that must be imported into the database to enable detection of products that are changed or introduced later. To update your catalog, perform the following steps:

1. Access the latest catalog at the following Web address:

   http://www-306.ibm.com/software/sysmgmt/products/support/IBMTivoliLicenseManager.html

2. In the Download section of the page, look for the latest IBM Software Catalog update.

3. Download the relevant catalog files.

   Note: Ensure that you select the correct update. Two versions of the catalog are supplied at each update. One version is for Tivoli License Manager for IBM Software and includes only IBM products. The other is for the commercial product and includes a range of IBM and non-IBM products. You must select the update for the product you are using, otherwise you will not be able to import the catalog into your database.

4. Open a Tivoli License Manager administration server command line session:

   Windows
   Open the **Start** menu and click **Tivoli License Manager >Admin CLI**.

   UNIX
   a. Open a shell window and change to the directory:

      `<INSTALL_DIR>`/admin/cli

   b. Enter the command:

      . ./tlmcli

5. Enter the command: **impcat** *filename* where *filename* is the XML catalog file you are uploading. When the file is in the administration command line directory, you only need to specify the file name. When the file is located in a directory other than the administration command line, you need to specify the full path name.

Create the organization infrastructure

Before you can deploy agents on the computers that you want to monitor, you must define an organization infrastructure consisting of the following elements:

- An organization
- A runtime server
- A division

Note: If you installed all server and database components on the same computer, the installation wizard has automatically created entries in the administration server database for the organization and the runtime server, using the details you specified on the wizard panels. In this case, you need only to create at least one division before deploying agents.

To set up the organization infrastructure, do the following:

1. Start a browser session and go to the following page:

   http://`<administration_server name>`:`<port>`/slmadmin/login

2. Log on as user **tlmroot**, password **system**.

3. Ensure that the following are set up:

   a. An organization.

      If the organization has not been automatically created by the wizard, when you log on to the Web UI for the first time, you are taken directly to the **Manage Organizations** task. Complete the task and be careful to use exactly the same organization name as you used when you installed the product.

      Now that a single organization exists, the other objects that you create or review on the Web UI belong to that organization.

b. A server

If the server has not been automatically created by the wizard, use the **Manage Components: Servers** task to create the runtime server information. Be careful to use the runtime server name and password you used when you installed the product.

The runtime server can only plug in to the administration server after you have created the server registration details. The runtime server attempts to plugin at regular configurable intervals until it is successful, so a delay of some hours is possible before the next attempt. You can avoid this delay by restarting the servers. See "Common tasks," on page 17 for instructions on stopping and starting servers.

c. A division

Use the **Manage Resources: Division** task.

For detailed instructions about how to complete these tasks , see *Administration*.

Register administration servers

Each organization that reports software use to IBM must register the administration server that generates the use figures with the **IBM License management support** site. The organization is identified by a server registration ID that is generated by Tivoli License Manager for each organization.

To register your IBM Tivoli License Manager administration servers, perform the following steps:

1. Obtain the server registration ID for the organization you created.

   The server registration ID is displayed on the Organization Data page of the administration server Web UI. To see this page, click the Home icon on the toolbar.

2. Go to the IBM License management support site at this address: http://www.ibm.com/software/lms..

   The home page is displayed.

3. Click **ITLM Registration**.

4. Type your **IBM ID** and **Password** and click **Submit**.

   Complete the form as follows:

Contact information

The data is taken from your IBM id registration details. If some details are incorrect, use the **Update my profile** button to access your profile and make the required changes. Once your profile is updated, press the **"Refresh my profile"** button.

The fields indicated with an asterisk (*) are required to complete this transaction; other fields are optional. If you do not want to provide us with the required information, please use the "Back" button on your browser to return to the previous page, or close the window or browser session that is displaying this page.

→ **Update my profile**   → **Refresh my profile**

Salutation	
* First name	Phil
* Last name	Hughes
* Company	IBM
* Street address	via Scangai
* City	Rome
* State or Province (required for US and Canada)	
* Postal code	1111
* Country / region	IT
* Daytime phone	123456789

→ **Update my profile**   → **Refresh my profile**

Update my profile
> Click **Update my profile** to modify the profile details of the **License Administrator** responsible for the administration server that you are registering.

Refresh my profile
> When you modified the profile of the **License Administrator** responsible for the administration server that you are registering, click **Refresh my profile** to see the modifications.

IBM Tivoli License Manager administration server

Insert the administration server ID:

* ITLM administration server ID: [   ]   Help
The ID is unique for each IBM Tivoli License Manager installation and organization setup.

Licence information

Provide the site number under which the license for IBM Tivoli License Manager is registered:
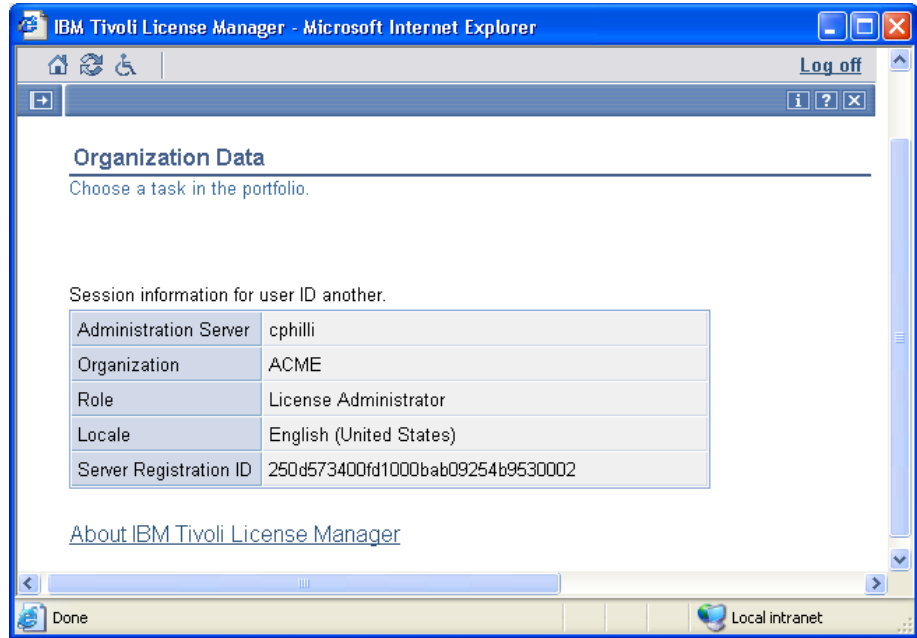
Passport Advantage site number: [   ]   Help

If you do not know your site number you can provide us your country and IBM customer number:

Country / region   [Select one   ▼]
IBM customer number: [   ]   Help

ITLM Administration Server ID
> Input the **Server Registration ID** that you obtained from administration server Web UI.

Passport Advantage Site Number
> The site where the IBM Tivoli License Manager license is registered.

Country/region
> You must select the **Country/Region** of your site.

IBM Customer Number
> You must provide your **IBM Customer Number**.

Use this section to register the sites where the runtime servers being monitored are located, and their **Passport Advantage** site numbers.

Country / region
> Select the country or region of the runtime server.

Location (city)
> Type the name of the city where the server is located.

IBM Customer number
> Type the IBM customer number of the runtime server site.

Passport Advantage site number
　　Type the Passport Advantage site number of the site where runtime server is located.

Add a row
　　Click **Add a row** to add a new row to the table.

Click **Submit**.

5. A confirmation form similar to the following is displayed.

Click **Confirm the data**. A confirmation message similar to the following is displayed.

6. Click **Continue**.

Set test configuration parameters

Information is passed between the administration server and the runtime servers and between agents and runtime servers at regular intervals. The length of time between successive communications is defined by a series of parameters in the system.properties configuration files on the administration server and runtime server computers. Default timings are defined in the files that are installed, but during the testing period you might want to shorten the time intervals and so shorten the time required to verify that product and license use is being correctly monitored.

Make backups of the configuration before making changes so that you can later restore the default configuration. It is not recommended to use the test settings in a live environment.

Make the following changes:

Administration server
    In file :

```
<INSTALL_DIR>\admin\SLM_Admin_Application.ear\slm_admin.war\WEB-
INF\conf\system.properties
```

    Set the following values for defined properties:
        aggregateUsagePeriod=120
        maxAggregateUsageAge=1

    Add the following parameter to the file:
        activateProductsPeriod=60

Runtime server
    In file :

```
<INSTALL_DIR>\runtime\SLM_Runtime_Application.ear\slm_runtime.war\WEB-
INF\conf\system.properties
```

    Set the following values for defined properties:
        cacheUpdatePeriod=60
        adminDownloadPeriod=60
        adminUploadPeriod=60
        usageSnapshotPeriod=60
        downloadParametersPeriod=720
        downloadTopologyPeriod=720

For more information about configuration settings, see *IBM Tivoli License Manager: Planning, Installation, and Configuration*.

Deploy the agents

You must deploy agents for all of the computers that you intend to monitor for IBM use.

There are several deployment methods, which are described in *Planning, Installation, and Configuration*. Two methods are described here: "Web deployment" on page 12 and "Local deployment" on page 12.

When you have deployed an agent, you can check that it has been correctly installed and that it can communicate with the runtime server. See "Validating the agent installation" on page 13.

Web deployment

The Web deployment method is available on all supported platforms other than OS/400® and Linux on s/390 and z/Series. It is suitable for small scale implementations. To use this method, the computers on which you are planning to deploy the agents must meet the following prerequisites:

The following details the prerequisites for deploying the agent component using the Web.

Table 2. Prerequisites for Web deployment

Software		
Internet browser		
	Windows	Microsoft Internet Explorer, version 6.x or later
	Supported iSeries™ and pSeries™ platforms	Mozilla, version 1.0
	Other platforms	Mozilla, versions 1.4 or 1.5
Java™ Runtime Environment Before starting the deployment you should have already installed Java Runtime Environment (JRE), with the Java Plug-in, as follows:		
	Supported iSeries and pSeries platforms:	Version 1.3.1 from Sun
	Other platforms:	Version 1.4

To deploy an agent using the Web deployment method, do the following:

1. Log on to a computer that you want to monitor as a user with administrative rights.
2. Start a browser session and go to the following page:

   `http://<runtime_server name>:<port>/slmruntime/deploy`
3. Provide the requested information. The computer label can be any value you choose.
4. Click **Finish**.

Local deployment

This method of deployment involves moving the required files from a runtime server to the target computer and running a command locally to install the agent. It can be used on all supported agent platforms other than OS/400.

To deploy the agent using this method, complete the following steps:

1. Obtain the files that are required for the installation of the agent.

   a. On the runtime server computer, navigate to the directory:

   `<INSTALL_DIR>\runtime\SLM_Runtime_Application.ear\slm_runtime.war\webdoc\agent`

   b. Launch the script:

> **Windows**
>> `manualDeploy.bat <destination directory>`
>
> **UNIX**
>> `manualDeploy.sh <destination directory>`

The command creates a subdirectory for each supported platform.

2. Move the files to the target computers.

   a. For each platform on which you want to deploy the agent, create a tar file containing the contents of the directory and copy the tar file to the target computers.

   b. On each target computer, untar the file and change the file permissions (chmod 777).

3. Install the agent.

   The agent is installed by running the command **installagent**. The parameters required by the command can be defined in a file or supplied on the shell. The file option is useful for debugging, because you can easily examine the file for errors if the command fails. You could also copy the file to other computers to which you are deploying using the same parameters.

   a. Create a text file containing the agent parameters, for example:

   ```
   division = Sales
   nodeTag = sales291
   server = rome_runtime.ibm.com
   port = 80
   secure_port = 443
   uri = /slmruntime/service
   organization = IBM
   useProxy = n
   proxyName =
   proxyPort = 3129
   security_level = 4
   gskit = gsk7bas.exe
   certificate = cert.arm
   scanner = wscanner.tar
   ```

   > **Note:** Ensure that the security level you set matches the security level of the runtime server that the agent is assigned to. If it does not, the agent will not be able to contact the server.

   See the agent deployment chapter of *IBM Tivoli License Manager: Planning, Installation, and Configuration* for full details of the possible values for agent installation parameters.

   b. Launch the agent installation command
   > `installagent -f <filename>`

Validating the agent installation

The agent installation process generates a return code to indicate the success of the installation or the reason for its failure. If the agent is deployed using the Web method, a message is returned to the Web browser, indicating the success or the return code that identifies the reason for failure. For the manual install method, the return code is stored in the file `slmrc.log` in the directory from which the **installagent** command was run. The success code is 0. All other codes indicate a failure reason. For details of failure reasons, see the installation logging chapter of *IBM Tivoli License Manager: Problem Determination*.

When the installation has been successfully completed, you can check that the agent is able to plug in to the runtime server. On the agent computer, issue the command:

```
tlmagent -p
```

If the agent is able to contact the runtime server, a success message appears.

Schedule software scans

To enable the agents to collect software use information from the computers where they are deployed, they must perform an installed software scan. Only software that is detected by such a scan is monitored. For this reason, if you install or upgrade software that needs to be monitored, you must ensure that a new scan is performed.

You schedule installed software scans using the administration server Web UI task **Schedule Software Scan**.

You can also perform a scan directly on a monitored computer by using the agent command:

```
tlmagent -s
```

For detailed instructions about scheduling installed software scans, see *Administration*.

Create and verify licenses

After your infrastructure is in place, and you have registered your administration servers, you need to create the licenses for your sub-capacity pricing model products and verify that they are correctly monitoring the use of your sub-capacity product.

Note: The tasks you perform to verify the presence of the product, create the license, and verify the validity of the license require you to select the product from a product list. Many products have similar names, so care is needed. The IBM Product Information spreadsheet, available from the Passport Advantage Web site, provides a list of all sub-capacity products and the names used for them in the IBM catalog. Check your product in spreadsheet before continuing.

This task comprises the following steps:

1. Verify that the product is installed and running on a monitored computer and that Tivoli License Manager is collecting information about its use, as follows:

   a. If you have not already done so, install and start the product on a computer where the agent is installed and able to contact the runtime server (see "Validating the agent installation" on page 13),

   b. Log on to the administration server Web UI, and enable use monitoring of the product.

      Use the Define Monitoring task to enable use monitoring. Select your product from the product list, then set **Product monitoring** to **Enabled** and **Compliance level** to **Minimum**.

   c. The following day, produce the Use Trend report to see whether the running of the product has been detected by Tivoli License Manager.

      To run the report, log on to the administration server Web UI and select **Produce Reports -> Use Trend**. The report is limited to a single product. Select your product from the product list and generate the report. The report should show the level of use of the product.

2. Create a sub-capacity license for the product.

   For detailed instructions on defining and distributing licenses for sub-capacity bundles and products see *IBM Tivoli License Manager: Licensing Scenarios*.

3. Verify that the use of the product is being correctly assigned to the license you have created.

   Wait a day after you created the license, then log on to the administration server Web UI, and select **Produce Reports -> License Compliance**. For **License name**, specify the license you created, and generate the report. The report should show a **Used** quantity that is equal to the level of use that appeared on the Use Trend report you produced.

For detailed instructions on using the Web UI, see *IBM Tivoli License Manager: Administration*.

Using Tivoli License Manager

When the infrastructure and licenses are in place, you need to do the following to maintain accurate monitoring and regular reporting of use information:

- When the agent has been monitoring the node for a full reporting period, produce the IBM report.

  Use the **Export IBM Report** task on the administration server Web UI to produce the report file to be sent to IBM. You must produce reports every 3 months within 9 days of the start of the month that follows the quarter end.

- Ensure that you keep the Tivoli License Manager catalog up-to-date.

  Updates of the IBM catalog to include new products and new signatures are produced at regular intervals. You do not need to import every update. However, if you install new software that needs to be monitored or if you upgrade a monitored product by applying a fix pack or installing a new release, you must import a new catalog to ensure that accurate monitoring is maintained.

- After importing the new catalog, you should also schedule a new scan of installed software.

- Fix packs for Tivoli License Manager, version 2.1 are available from the IBM Support Web site at regular intervals, and are cumulative, each successive fix pack containing the fixes included in previous fix packs. You do not need to apply every fix pack, but if you deploy new software or hardware you should apply the latest fix pack.

Appendix. Common tasks

This appendix provides instructions for performing some common tasks that you will need to perform when installing and using Tivoli License Manager. These include tasks related to WebSphere Application Server, the IBM HTTP Server, and DB2.

Instructions are provided for the following tasks:
* "Starting and stopping a Tivoli License Manager server"
* "Initializing the DB2 command line" on page 18
* "Starting and stopping the IBM HTTP Server" on page 18
* "Starting the WebSphere Administrator's Console" on page 19

Starting and stopping a Tivoli License Manager server

To start a Tivoli License Manager server depends on the platform:

Windows
> The procedure is as follows:
> 1. Select **Start ▸ Programs ▸ IBM Tivoli License Manager** and then **Administration server command line** or **Runtime server command line**, as appropriate.
> 2. Enter the command **srvstart** in the command line window.

UNIX The procedure is as follows:
> 1. Navigate to the following directory:
>   `<INSTALL_DIR>`/admin/cli
> 2. Before using a command run the following script to set the DB2 and WebSphere Application Server environments for the command line:
>   **. ./tlmcli**
>
>   **Note:** (there is a space between the two periods)
>   These environments will remain in force until you close the command line window.
> 3. Enter the command **srvstart**.

To stop a Tivoli License Manager server also depends on the platform:

Windows
> The procedure is as follows:
> 1. Select **Start ▸ Programs ▸ IBM Tivoli License Manager** and then ▸ **Administration server command line** or **Runtime server command line**, as appropriate.
> 2. Enter the command **srvstop** in the command line window.
>
>   **Note:** If you are operating WebSphere Application Server in a secure cell, you will need to provide the user id and password of the secure cell as parameters to the command. See *IBM Tivoli License Manager: Administration* for full details of the command.

Starting and stopping the server

UNIX The procedure is as follows:
1. Change to the following directory:

   `<INSTALL_DIR>`/admin/cli
2. Before using a command run the following script to set the DB2 and WebSphere Application Server environments for the command line:

   . ./tlmcli

   Note: (there is a space between the two periods)

   These environments will remain in force until you close the command line window.
3. Enter the command **srvstop**.

   Note: If you are operating WebSphere Application Server in a secure cell, you will need to provide the user id and password of the secure cell as parameters to the command. See *IBM Tivoli License Manager: Administration* for full details of the command.

Initializing the DB2 command line

This procedure is intended for users who are not familiar with DB2, and are using the bundled prerequisite version installed with Tivoli License Manager. If you already have an installation of the DB2, follow the procedures you would normally use.

To initialize the DB2 command line, do the following:

On Windows
Click **Start ▶ Programs ▶ IBM DB2 ▶ Command Window**.

This opens the DB2 command window.

On UNIX
Type:

. /home/<*DB2InstanceOwner*>**/sqllib/db2profile**

where <*DB2InstanceOwner*> is the user id of the instance owner of DB2.

Starting and stopping the IBM HTTP Server

This procedure is intended for users who are not familiar with the IBM HTTP Server, and are using the bundled prerequisite version installed with Tivoli License Manager. If you already have an installation of the IBM HTTP Server, follow the procedures you would normally use.

To start the IBM HTTP Server, do the following:

On Windows
Click **Start ▶ Programs ▶ IBM HTTP Server ▶ Start HTTP Server**.

On UNIX
1. Change to the directory: `<IBM_HTTP_SERVER_INSTALL_DIR>`/bin
2. Type:

   ./apachectl start

To stop the IBM HTTP Server, do the following:

On Windows

Click **Start ▶ Programs ▶ IBM HTTP Server ▶ Stop HTTP Server**.

On UNIX

1. Change to the directory: *<IBM_HTTP_SERVER_INSTALL_DIR>*/bin
2. Type:

   ./apachectl stop

Starting the WebSphere Administrator's Console

This procedure is intended for users who are not familiar with WebSphere Application Server, and are using the bundled prerequisite version installed with Tivoli License Manager. If you already have an installation of WebSphere Application Server, follow the procedures you would normally use.

To start the WebSphere Administrator's Console, do the following:

On Windows

Click ▶**Start ▶ Programs ▶ IBM WebSphere ▶ Application server v5.x ▶ Administrative Console**

On UNIX

1. **Locate the WebSphere Application Server install directory:**

   Note: If you are not sure which directory this is, follow these steps:

   a. Change to one of the Tivoli License Manager server's home directories:
      - <INSTALL_DIR>/admin
      - <INSTALL_DIR>/runtime
   b. View the file master.tag.
   c. The install directory for WebSphere Application Server is indicated by the key: TLM_WAS_PATH.

2. **Change to the WebSphere Application Server program directory:** *<TLM_WAS_PATH>*/bin

3. **Start the server:** Type:

   ./startServer.sh server1

4. **Start your Web browser:** It does not have to be on the same computer as the server.

5. **Access the server:** Enter the following Web address:

   http://*<serverAddress>*:9090/admin/

   Where *<serverAddress>* is the host name or IP address of the server on which you want to run the console.

Starting WebSphere Administrator's Console

Notices

This information was developed for products and services offered in the U.S.A. IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not give you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-178, U.S.A.

For license inquiries regarding double-byte (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

IBM World Trade Asia Corporation
Licensing
2-31 Roppongi 3-chome, Minato-ku
Tokyo 106, Japan

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law:

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement might not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

IBM Corporation
2Z4A/101
11400 Burnet Road
Austin, TX 78758 U.S.A.

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this document and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement or any equivalent agreement between us.

If you are viewing this information in softcopy form, the photographs and color illustrations might not appear.

Trademarks

The following terms are trademarks of the IBM Corporation in the United States or other countries or both:

AIX
 DB2
 DB2 Universal Database
 IBM
 iSeries
 Java
 OS/400
 Passport Advantage
 pSeries
 Tivoli
 UNIX
 WebSphere

Java and all Java-based trademarks and logos are trademarks or registered trademarks of Sun Microsystems, Inc. in the U.S., and other countries.

Microsoft®, Windows, and the Windows logo are registered trademarks, of Microsoft Corporation in the U.S. and other countries.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Other company, product, and service names may be trademarks or service marks of others.

IBM

Program Number: 5724-D33