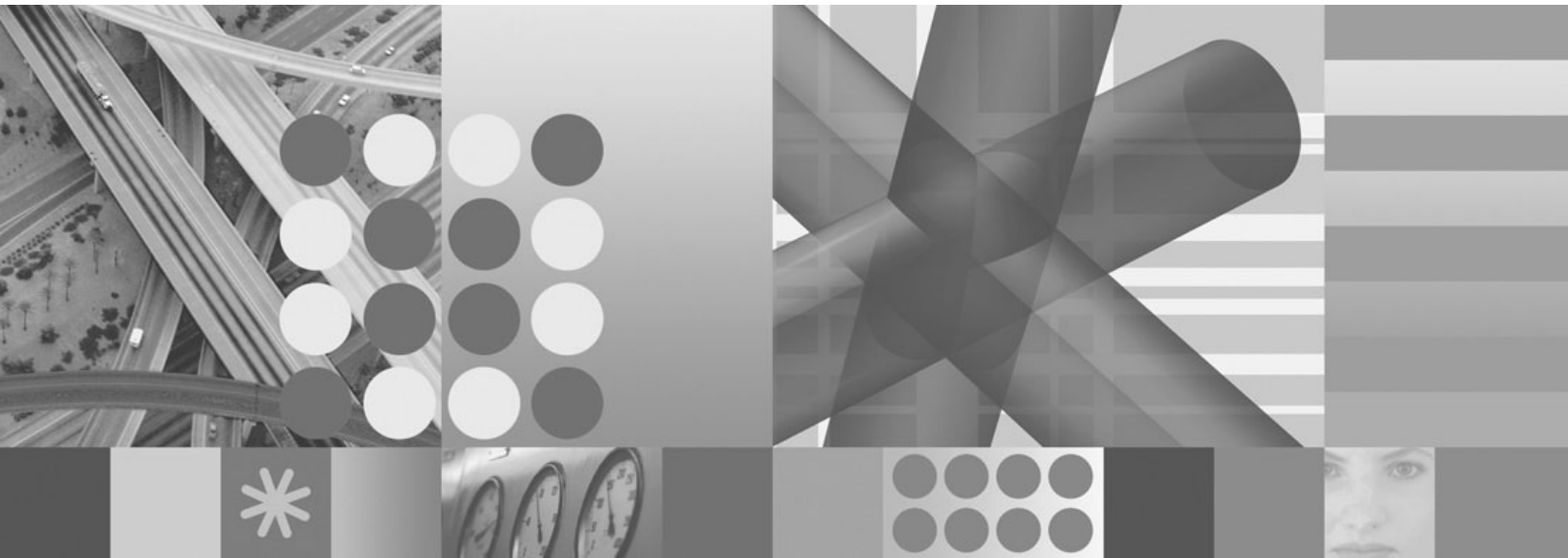




**Version 2.1 Migration Tool Readme**





## Version 2.1 Migration Tool Readme

**Note**

Before using this information and the product it supports, read the information under “Notices” on page 63.

**First Edition, July 2004**

This edition applies to the migration procedure for Version 2.1 of IBM Tivoli License Manager (program number 5724-D33) and to all subsequent releases and modifications until otherwise indicated in new editions.

IBM welcomes your comments.

Address your comments to:

IBM License Management Information Development  
Rome Tivoli Lab  
IBM Italia S.p.A.  
Via Sciangai, 53  
00144 Rome  
Italy

Fax Number: (+39) 06 5966 2077

Internet ID: LMPUBS@IT.IBM.COM

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# IBM Tivoli License Manager, Version 2.1, Migration Tool: Readme file

This readme file describes how to migrate from a prior version of IBM® Tivoli® License Manager, to version 2.1.

The readme file is divided into these main sections:

- “Summary of changes from V1.1.1 to version V2.1”
- “Plan to migrate to V2.1” on page 6
- “Migration procedures” on page 33
- “Other useful information” on page 55

In this document, *V1.1.1* refers to IBM Tivoli License Manager, version 1.1.1 components and facilities and *V2.1* refers to IBM Tivoli License Manager, version 2.1 components and facilities.

---

## Summary of changes from V1.1.1 to version V2.1

This chapter summarizes the changes between V1.1.1 and V2.1 of IBM Tivoli License Manager. It is divided into the following sections:

- Supported platform and browser changes
- Installation changes
- Functional changes
- Catalog manager changes
- Documentation library changes

### Supported platform and browser changes

This section shows the platforms and browsers now supported in V2.1, also indicating those that were supported in V1.1.1, but which are no longer supported.

#### Supported server and database platforms

*Table 1. Supported server platforms*

Platform		
Operating system	Version	Level, service packs, patches
Windows	2000 Server for Intel™ x86 (32-bit)	Service Pack 3
	2000 Advanced Server for Intel x86 (32-bit)	
	Server 2003 Standard or Enterprise Edition for Intel x86 (32-bit)	
IBM AIX	5.1 (32-bit)	
	5.1 (64-bit)	
	5.2 (32-bit)	
	5.2 (64-bit)	
HP/UX	11i for PA-Risc (32-bit)	
	11i for PA-Risc (64-bit, in 32-bit compatibility mode)	

## What's new

Table 1. Supported server platforms (continued)

Platform		
Operating system	Version	Level, service packs, patches
Red Hat Enterprise Linux™	ES/AS/WS 2.1 for Intel x86 (Standard or Premium edition)	Update 2
	ES/AS/WS 3.0 for Intel x86 (Standard or Premium edition)	Update 1
	AS, version 3.0 for IBM iSeries™ and pSeries® (64-bit, in 32-bit compatibility mode: Standard or Premium edition)	Update 2
	AS, version 3.0 for IBM zSeries® and IBM S/390® (31-bit: Standard or Premium edition)	Update 1
SUSE LINUX Enterprise Server	8 for x86 (Intel)	Service Pack 3
	8 for IBM iSeries/pSeries (64-bit, in 32-bit compatibility mode)	Service Pack 3a for iSeries  Service Pack 3 for pSeries
	8 for IBM Mainframes (zSeries 31-bit)	
Sun Solaris	8 Operating System for SPARC platforms (32-bit)	
	8 Operating System for SPARC platforms (64-bit)	
	9 Operating System for SPARC platforms (32-bit)	
	9 Operating System for SPARC platforms (64-bit)	
<b>Note:</b> Platforms that were also supported in version 1.1.1 are shown in <i>italics</i> .		

## Supported agent platforms

Table 2. Supported agent platforms

Platform		
Operating system	Version	Levels, service packs, patches
Windows	<i>2000 Professional for Intel x86 (32-bit)</i>	Service Pack 3
	<i>2000 Server for Intel x86 (32-bit)</i>	
	<i>2000 Advanced Server for Intel x86 (32-bit)</i>	
	Server 2003 Standard or Enterprise Editions for Intel x86 (32-bit)	
	<i>XP Professional for Intel x86 (32-bit)</i>	
IBM AIX	5.1 (32-bit)	Fix xlC.aix50.rte.6.0.0.0
	5.1 (64-bit)	Patch for APAR IY52121
	5.2 (32-bit)	Fix xlC.aix50.rte.6.0.0.0
	5.2 (64-bit)	



Table 2. Supported agent platforms (continued)

Platform		
Operating system	Version	Levels, service packs, patches
OS/400	V5R2	Option 13 of 5722SS1  The following PTFs for product 5722SS1: SI10060, SI07110, and SI10904  If the agent is running WebSphere® Application Server, product 5722AC3 and PTFs SF99245, SF99169  If you intend to implement SSL between the runtime server and the agent, PTFs MF31411, SI10035, SI10759
	V5R3 <b>Note:</b> The name of the OS/400® operating system is changing with V5R3 to <i>i5/OS™</i> . However, in this document, OS/400 V5R2 and i5/OS V5R3 are referred to collectively as <i>OS/400</i> .	Option 13 of 5722SS1  PTF SI12116
HP/UX	11i on PA-Risc 32-bit	Patches PHSS_26560, PHSS_26946, and PHSS_28880
	11i on PA-Risc 64-bit (in 32-bit compatibility mode)	
Red Hat Enterprise Linux	ES/AS/WS, version 2.1 for Intel X86 (Standard or Premium edition)	Update 2
	ES/AS/WS, version 3.0 for Intel X86 (Standard or Premium edition)	Update 1
	AS, version 3.0 for PPC (iSeries and pSeries - 64-bit, in 32-bit compatibility mode)	Update 2
	AS, version 3.0 for zSeries and S/390 (31-bit)	Update 1
SUSE LINUX Enterprise Server	8 for x86	Service Pack 3
	8 for IBM iSeries/pSeries (64-bit, in 32-bit compatibility mode)	Service Pack 3a for iSeries  Service Pack 3 for pSeries
	8 for IBM Mainframes (zSeries 31-bit)	

## What's new

Table 2. Supported agent platforms (continued)

Platform		
Operating system	Version	Levels, service packs, patches
Sun Solaris	8 Operating System for SPARC platforms (32-bit)	Patches 108434-14, 108528-29, 108991, 108993-31, 111023-03, 111317-05, 111327-05, 113648-03, 115827-01, and 116602-01
	<i>8 Operating System for SPARC platforms (64-bit)</i>	Patch 111711-08
	9 Operating System for SPARC platforms (32-bit)	Patches 108435-14, 108528-29, 108991, 108993-31, 111023-03, 111317-05, 111327-05, 113648-03, 115827-01, and 116602-01
	<i>9 Operating System for SPARC platforms (64-bit)</i>	Patch 111712-08
<b>Note:</b> Platforms that were also supported in version 1.1.1 are shown in <i>italics</i> .		

## Supported browsers

Table 3. Supported browsers

Internet browser	
	One of the following browsers: <b>Windows® platforms</b> Microsoft® Internet Explorer, version 5.5 or later <b>Other supported platforms</b> Mozilla, versions 1.4 or 1.5

## Browsers and platforms no longer supported

V2.1 no longer supports the following browsers:

- Netscape
- Internet Explorer 5.0 or earlier

V2.1 no longer supports the following platforms on the administration and runtime servers:

- Windows NT® 4 Server
- IBM AIX® 4.3.3

V2.1 no longer supports the following platforms on the agent:

- IBM AIX 4.3.3 (32-bit only)
- Sun Solaris 7 (64-bit only)
- Windows 98 Second Edition
- Windows ME
- Windows NT 4.0 Server
- Windows NT 4.0 Workstation

## Installation and agent deployment changes

The following changes were made to the installation for V2.1:

- Automation of installation of Tivoli License Manager and its prerequisites (DB2<sup>®</sup> and WebSphere Application Server)
- Automation of the database setup
- Automation of server startup
- Integration with operating systems' registry keys
- Automation of agent deployment
- Addition of centralized agent deployment using Tivoli Configuration Manager
- Addition of logon scripts for agent deployment
- Addition of support for remote shell scripts

## Functional enhancements

The following enhancements were made to the functionality for V2.1:

- Addition of contract management, including linking to licenses.
- Addition of many-to-many association between licenses and products.
- Addition of support for different levels of compliance.
- Enhanced privacy policy support.
- Addition of maintenance support for runtime server downtimes.
- Addition of setting entitlement at any level: product/version/release.
- Addition of setting report queries at any level: product/version/release.
- Enhanced software detection capability based on new signature types (OS and registry keys) and a new model (signature for inventory and for monitoring).
- Addition of J2EE modules used to identify web applications running on WebSphere Application Server for monitoring purposes.
- Automation of serial number retrieval from agents.
- Addition of support for direct catalog management using the administration server interface.
- Recognition of IBM products coded in Java<sup>™</sup>
- Addition of new reports to the reporting facility.
- Addition of commands to the command line interface.
- Addition of support for disconnected use.
- Addition of roles for a broader spectrum of task definitions. The roles for IBM Tivoli License Manager version 2.1 are:
  - **Super Administrator:** with access to all of the Web UI tasks
  - **Administrator:** with access to all of the Web UI tasks, with the exception of account and organization management
  - **Procurement Manager:** with access to the Web UI tasks related to the creation of licenses and contracts
  - **Software Resources Manager:** with access to the Web UI report tasks to better define software resource requirements
  - **License Administrator:** with access to the Web UI tasks related to license assignments and product compliance
  - **System Resources Manager:** with access to the Web UI report tasks to ensure system resource are running correctly

## What's new

- **Procurement and Licensing Manager:** with access to the Web UI tasks that are related to creation and assignment of licenses, creation of contracts, and compliance of products
- Usability enhancements to the Web UI.
- Usability enhancements to the online assistance provided by the Web UI.
- Serviceability enhancements, including improved tracing and diagnostic tools.
- Scalability enhancements, including databases, services, and background tasks.
- Functional enhancements to the reporting facility.

## Catalog manager changes

The following changes were made to the catalog manager for V2.1:

- Direct updating of administration server database
- Introduction of different module types to enhance the accuracy of software recognition and monitoring
- Introduction of a hierarchical product/version/release product structure
- Redesign of the graphical user interface

## Warehouse enablement pack changes

The following changes were made to the warehouse enablement pack for V2.1:

- Remodeling of the tables
- Remodeling of the reports
- Addition of new reports

## Documentation library changes

The documentation library was remodeled to better describe the various enhancements to the product. Catalog management and problem determination are now described in separate books. For a description of what the library now consists of, refer to "Tivoli License Manager library" on page 55.

---

## Plan to migrate to V2.1

The migration procedure actually involves just the migration of the administration server database. New versions of the administration server, runtime server and runtime database must be installed. Agents can be migrated automatically or can be redeployed. V1.1.1 components must be uninstalled if you want to install the new components on the same computers. All these activities must be completed in the correct sequence.

To plan to migrate to V2.1 you need to determine the following:

- What you need to perform the migration. See "Migration prerequisites" on page 7.
- Effects of the migration on your existing data. See "Effects of migration" on page 8.
- Compatibility of the new components with the old. See "Component compatibility" on page 20.
- The broad steps of the migration procedure. See "Migration stages" on page 20.
- Other items to consider during the migration. See "Other optional migration activities" on page 31.
- When is the best time to perform migration activities. See "Choosing the best time to migrate" on page 32.

- Is migration what you want? Is there an alternative? See “To migrate or not to migrate” on page 33.

## Migration prerequisites

The prerequisites for this migration are as follows:

- **Servers and databases must be at V1.1.1:** All administration or runtime servers or databases must be upgraded to V1.1.1 before you start the migration. Instructions for this are provided in *IBM Tivoli License Manager: System Administrator's Guide*, version 1.1.1.
- **Agents must be at version 1.1.1:** If any of your agents are at version 1.1 you must upgrade them to V1.1.1 either before, or as part of the migration (see the instructions for agent migration in *IBM Tivoli License Manager: System Administrator's Guide*, version 1.1.1) , or redeploy them after the migration as V2.1 agents (see the instructions for agent deployment in *IBM Tivoli License Manager: Planning, Installation, and Configuration*, version 2.1).

**Note:** Agents prior to version 1.1 are not supported in any way during or after the migration.

- **Agent kernels must be fixed:** If you have any agents with a version number less than 1.1.1.20, you must use the `kfixer` utility to resolve a problem with the agent kernel that can occur when upgrading agents. This problem applies to almost all agent platforms.

To obtain the `kfixer` utility you need to first obtain interim fix 1.1.1–TLM–0005 from the Tivoli License Manager software support Web site (see “Contacting software support” on page 57) for details of how to access the site). The utility has its own README file which describes how and when to use it.

- **You must plan for V2.1:** You must read the Planning chapter of *IBM Tivoli License Manager: Planning, Installation, and Configuration*, version 2.1 very carefully, to determine the following:
  - The *new prerequisites* for the components and options
  - The *new functionality* which is available
  - The *changed advice* about designing the product infrastructure and topology

Our suggestion is that you plan for V2.1 as if it was a new product, determining the infrastructure and topology that is best going to serve your requirements. Only when this phase is complete should you start thinking how to migrate your existing environment to the new one.

Finally, you should keep in mind that V2.1 is a much more complex product than V1.1.1. Thus, in your planning for V2.1, you should consider as essential the maximizing of network speeds and computer processing capacity of the computers where components are to be installed.

- **Administration server database operating system cannot be changed:** The operating system under which the administration server database runs must not be changed during the migration. Thus, an administration server database installed on an operating system platform no longer supported, (AIX 4.3.3 or Windows NT), cannot be migrated. The operating systems of databases installed on other platforms can be upgraded, but cannot be changed. For example, you cannot change from a database on Windows 2000 to a database on HP/UX, nor Windows 2003.

### Migration tool prerequisites

The following are the prerequisites of the migration tools:

- The migration scripts run on Windows or AIX. They do not run on other UNIX® platforms supported for the V2.1 databases, so if you want to migrate your existing administration server database to a platform other than Windows or AIX, you must perform the migration on a Windows or AIX computer before moving the migrated database to the computer where the V2.1 administration server database has been installed.
- The scripts require Java Virtual Machine (JVM), Version 1.3.1 or higher installed and working on the computer where the administration server database is installed. The migration tool will first attempt to use any version of JVM installed with DB2; if it cannot find any version, or the version is not compatible, it attempts to use the default JVM for the computer.

**Note:** To determine which version of JDK you are using, enter `java -version` on the command line (on AIX as user `db2inst1`), and check the version. If it is less than 1.3.1, either install JDK 1.3.1 or higher (it can be obtained from Sun's Web site), or, if it is already installed on this computer, add the path of the JDK bin directory into the PATH environment variable of the user that will run the migration tools.

### Effects of migration

Before reading this section you are advised to familiarize yourself with the new options and capabilities of V2.1. Look through *IBM Tivoli License Manager: Administration*, version 2.1, to see in detail what changes have taken place, and what they mean to you as a license administrator.

V2.1 is different from V1.1.1 in almost every area. All GUI tasks have been placed in a new portfolio structure, and thus have new names. Nearly all tasks have additional functionality. In the process of migrating your data so that it can take advantage of the new functionality, inevitably there have been some changes made to the data, and certain assumptions have had to be made for settings that are required in V2.1. These settings have to be applied by across-the-board rules, and you may find that some of them do not suit your requirements. This section explains what has changed, where to find it in the new product, and what work needs to be done by you before, during, or after, the migration.

The impact has been broken down into the following areas:

- "Terminology:" on page 9
- "Catalog manager" on page 9
- "Entitlement" on page 13
- "Administration server GUI" on page 13
- "Runtime server and database" on page 18
- "Agent deployment" on page 18
- "Agents" on page 19
- "Other changes" on page 19

## Terminology:

The following changes have taken place to the general product terminology:

### "Customer" changed to "Organization"

In the product interfaces (GUI and CLI), and throughout the documentation, the term *customer* has been changed to *organization*, without changing the scope of the term. However, you may notice that, for technical reasons, the name of the CUSTOMER table in the database has not changed, even though it now contains details of organizations.

### "Usage" changed to "Use"

Wherever V1.1.1 reports referred to software "usage", they now refer to software "use". However, you may notice that, for technical reasons, the name of the various USAGE tables in the database has not changed, even though they now refer to "use" rather than "usage" of software.

## Catalog manager

V2.1 contains a new catalog manager. The most important difference is that it now acts directly on the master catalog, so there is no need for the importing and exporting activities performed in V1.1.1. You still import a new IBM catalog from time-to-time, but any changes you make to products using the catalog manager are saved directly into the administration server database.

The catalog itself has also changed quite significantly. The details are as follows:

### New hierarchical tree structure:

In the V1.1.1 catalog a product's version and release identified a single licensable entity, for which an entry existed in the COMPONENT table. For example, consider the following product in version 1.1.1:

Table 4. Lotus Notes, version 3.5 in V1.1.1

Product name	Version
Lotus® Notes®	3.5

In V2.1 a separate entry is made in the catalog for each product, version and release, and a license can be assigned to any of these. The migration examines the **version** field in the V1.1.1 COMPONENT table, and creates a hierarchical structure of product, version and release in the V2.1 COMPONENT table.

The migration behaves differently, depending on whether product in the V1.1.1 COMPONENT table has a version field that is in a valid format for V1.1.1:

#### Version field valid

If the product has a **version** field that is already in the format "n.n" or "n.n.\*", the tool is able to create the full hierarchy.

Thus, for example, for the above entry for *Lotus Notes, version 3.5* it would create the following entries in the V2.1 COMPONENT table:

Table 5. Lotus Notes, version 3.5 in V2.1

Product	Version	Tree level
Lotus Notes	*	1
Lotus Notes	3.*	2
Lotus Notes	3.5.*	3

Where, the *Tree level* value has the following meaning:

## Plan to migrate

- 1 Product
- 2 Version
- 3 Release

In this example, a license specifically assigned to *Lotus Notes, version 3.5* would be assigned to the release entity.

**Note:** In the case of *custom* products (products that are not in the IBM catalog), the version field

### Version field not valid

If the version field is not in the format "n.n" or "n.n.\*", the migration tool cannot create a correct structure. Instead, it creates a matching release entry, and extrapolates the product and version entries. For example, there could be an entry for *Lotus Notes, version Beta 3.5* in the V1.1.1 catalog, as follows:

Table 6. Lotus Notes, version Beta 3.5 in V1.1.1

Product	Version
Lotus Notes	Beta 3.5

The migration would create the following entries:

Table 7. Lotus Notes, version 3.5 Beta in V2.1

Product	Version	Tree level
Lotus Notes	*	1
Lotus Notes	Beta 3.5.*	2
Lotus Notes	Beta 3.5	3

There are some additional rules:

- If the product is a *custom* product (it is not in the IBM catalog), but is valid, the version field at tree-level 3 after migration is in the format "n", "n.n" or "n.n.n", non "n.n.\*", as is the case with products in the catalog.
- If a product has a module associated with it which the migration recognizes as belong to a different product, it will create a product hierarchy for that release of the product.

Any other changes that you may observe will come from the IBM catalog that you have imported, where the version field may have been changed by IBM into the valid structure.

The following are some examples:

Table 8. Product conversion examples

Version 1.1		Version 2.1			Notes
Product	Version	Product	Version	Tree level	
Stock Exchange 32	2.0	Stock Exchange 32	*	1	This is a product in the IBM catalog with a valid version.
		Stock Exchange 32	2	2	
		Stock Exchange 32	2.0.*	3	



Table 8. Product conversion examples (continued)

Version 1.1		Version 2.1			Notes
Product	Version	Product	Version	Tree level	
IBM DB2 UDB Enterprise Edition for HP	7.2.5	IBM DB2 UDB Enterprise Edition for HP	*	1	This is a product in the IBM catalog with a valid version.
		IBM DB2 UDB Enterprise Edition for HP	7.*	2	
		IBM DB2 UDB Enterprise Edition for HP	7.2.*	3	
123-Talk	1.2 2.0	123-Talk	*	1	This is a product in the IBM catalog with 2 valid versions.
		123-Talk	1.*	2	
		123-Talk	2.*	2	
		123-Talk	1.2.*	3	
		123-Talk	2.0.*	3	
Accounting	B.10.10	Accounting	*	1	This is a product that has had its version number changed when the new IBM catalog was imported. The new version number is "10.1.*", and so is in a valid format, even though the old catalog entry had a non-valid format.
		Accounting	10.*	2	
		Accounting	10.1.*	3	
-	-	Microsoft Windows Notepad	*	1	This is a product generated by the migration because another product had a module associated with it that the migration recognized as belonging to a product in the IBM catalog.
		Microsoft Windows Notepad	4.*	2	
		Microsoft Windows Notepad	4.0.*	3	
myApplication1	1.1	myApplication1	*	1	This is a custom product with a valid version number.
		myApplication1	1.*	2	
		myApplication1	1.1	3	
myApplication2	B 1.1	myApplication2	*	1	This is a custom product with a non-valid version number.
		myApplication2	B 1.1.*	2	
		myApplication2	B 1.1	3	
myApplication3	1.2.1 1.2.3 1.2.4B	myApplication3	*	1	This is a custom product with 2 versions in valid formats and one version in a non-valid format.
		myApplication3	1.*	2	
		myApplication3	1.2.4B.*	2	
		myApplication3	1.2.1	3	
		myApplication3	1.2.3	3	
		myApplication3	1.2.4B	3	

## Plan to migrate

### *To do, before the migration*

You are strongly advised to use the V1.1.1 catalog manager before starting the migration to clean up the version fields of custom products, so that the migration tool will make a good match. If you leave the cleanup until after the migration, the task will be more complicated, as you may have to change all the entries in a product's hierarchy in order to get the correct structure. In particular, you should avoid having custom entries with the format "n.n.\*", (the asterisk in this case is a literal value) which the tool cannot convert into the correct structure.

**Note:** If, after the migration, you use the catalog manager of V2.1 to access a non-standard entry like the one for *Lotus Notes, version Beta 3.5*, a message is displayed reminding you that the version field is not in the correct format.

### **Collapsing IBM catalog entries:**

During the migration, the converter needs to deal with any entries it finds that have the same product name, version, release and modification level (for example, "3.7.1" and "3.7.2"), which is a structure not allowed in V2.1. The converter collapses the entries into a generic entry, for example "3.7.\*". All modules, licenses, and other properties of both original products are moved from the old entry into the one new entry, whereas the license entitlement details are merged.

When IBM catalog entries are merged, if the entitlement settings are the same, the merged entry will have that value. However, if the entitlement settings on the different merged products are not the same, the following decisions are made:

<b>Conflicting entitlement settings</b>	<b>Values in V1.1.1</b>	<b>Value given to merged entries in V2.1</b>
<b>Software Monitoring</b>	If all values are <i>No</i>	<i>No</i>
	If at least one value is <i>Yes</i>	<i>Yes</i>
<b>License control</b>	If all values are <i>User-defined</i>	<i>User-defined</i>
	If at least one value is <i>Default</i>	<i>Default</i>
<b>Run offline</b>	If all values are <i>No</i>	<i>No</i>
	If at least one value is <i>Yes</i>	<i>Yes</i>
<b>Server response</b>	If all values are <i>Required</i>	<i>Required</i>
	If at least one value is <i>Not required</i>	<i>Not required</i>

Similar sets of non-IBM catalog entries are not collapsed. They are migrated to the new catalog just as they are, because each entry may have a different license or be associated with different modules, that cannot be merged.

## Entitlement

The changes that have taken place to entitlement are principally that whereas entitlement was enabled by default in V1.1.1, the situation is more complicated in V2.1, and entitlement only becomes enabled if certain conditions are met. The details are as follows:

- If entitlement was set in V1.1.1, it will also be set in V2.1. However, in the entitlement settings the two parameters **License Control** and **Need Response** are no longer explicitly displayed. Instead their values are combined to provide the values of the new parameter **Compliance Level** as follows:

License Control	Need Response	Compliance Level
User-defined	Required	High
Default	Required	Low
Any value	Not required	None

- If entitlement was not set in V1.1.1, product use monitoring (called **Product monitoring** in the GUI) is disabled by default in V2.1 (license monitoring is always enabled).

However, once you start up the administration server a background task starts that examines each product. If the task finds at least one use license assigned to a release, version or product in the catalog, the task sets **Product monitoring** to enabled for all product releases.

### *To do, after the migration*

If you do not want this task to run, because you want to enable product use monitoring on a product-by-product basis, you should edit the `system.properties` file of the administration server before starting the server, and change the value of the parameter `activateProductsEnabled` to "false".

## Administration server GUI

The changes that have taken place to the administration server GUI are described by their main portfolio headings.

### Software usage and inventory tasks

#### *GUI correspondence*

V1.1.1 Portfolio option	V2.1 Portfolio
Snapshot	Produce Reports ► Use Snapshot
Trend Analysis	Produce Reports ► Use Trend
Level Analysis	Produce Reports ► Use Level
Report	Produce Reports ► Installs Snapshot
Scheduling	Schedule Software scans

#### *New GUI tasks*

The following tasks have been added:

- Installs Snapshot
- Unlicensed Use
- License Compliance

## Plan to migrate

### *Migration notes*

#### **Historical data:**

Old historical installation and use data are migrated to the new structure. New data to populate the new aggregated tables are not calculated, so the new reports based on aggregated data are not available with respect to the historical data. The reports affected are the following:

- License Compliance Report
- Unlicensed Use Report

#### **Historical aggregated use table:**

The old historical aggregated use table present in V1.1.1 is dropped. If this data is of use to you outside Tivoli License Manager you should copy it to a table outside the product structure before commencing the migration.

#### **Products found by scans:**

All products found by inventory scans in V1.1.1 (the contents of the table AGENT\_INV prior to migration) are considered unlicensed, as the **license type** "install" did not exist in V1.1.1. They will thus not be linked to any license, the corresponding table in V2.1 AGENT\_INV\_LIC will be empty.

#### ***To do, after the migration***

After the migration is complete, you should examine these products and decide whether to create licenses for them.

## Software entitlement tasks

### *GUI correspondence*

V1.1.1 Portfolio option	V2.1 Portfolio
Define Software Entitlement Settings	<ul style="list-style-type: none"><li>• <b>Manage Procurement</b>► Licenses</li><li>• <b>Manage Procurement</b>► Contracts</li><li>• <b>Assign Licenses</b></li><li>• <b>Define Monitoring</b></li></ul>

### *Migration notes*

#### **Procured licenses:**

For each V1.1.1 license a V2.1 procured license is created and distributed.

#### **Capacity type: (see List of all licenses in Define Software Entitlement Settings)**

In V2.1 **capacity type** "configured processors" and "online processors" are no longer supported. For licenses with either of these values for **capacity type** the value is changed to "processors".

#### **License type:**

In V2.1 there are a new set of values for **license type**. Each migrated license is given a **license type** of "Concurrent Network".

*To do, after the migration*

After the migration is complete you should examine each license and ensure that the license type is correct.

**Purchase type:**

The field purchase type, which did not exist in V1.1.1, is set up with the value 0 (Unknown).

**License pool information:**

Migrated licenses will have the following license pool information:

If Target type is ...	Organization	Division	User
License pool parameter is ...	Values set by migration tool		
Distribute to all targets	Yes	No	No
Distribute to all users	Yes	Yes	No

**Product monitoring:**

In V1.1.1 the enablement option **Software monitoring** in the **Define Software Entitlement Settings** task has changed meaning and location. It is now called **Product monitoring** in the **Define monitoring** task, and it now only applies to use monitoring. Inventory scanning is always enabled.

Migrated products are created with **Product monitoring** disabled. However, once you start up the administration server a background task starts that examines each product and if it finds at least one use license assigned to a release, version or product in the catalog, the task sets **Product monitoring** to enabled for all product releases.

*To do, after the migration*

If you do not want this task to run, because you want to enable product use monitoring on an individual product basis, you should edit the `system.properties` file of the administration server before starting the server, and change the value of the parameter `activateProductsEnabled` to "false".

## Plan to migrate

### Topology

*GUI correspondence*

V1.1.1 Portfolio option	V2.1 Portfolio
Agents	Manage Components ► Agents
Nodes	Manage Resources ► Nodes
Server	Manage Components ► Servers
Divisions	Manage Resources ► Divisions
Users	Manage Resources ► Application Users

### Administration

*GUI correspondence*

V1.1.1 Portfolio option	V2.1 Portfolio
Customers	Manage Organizations
Accounts	Manage Access

*Migration notes*

#### Organizations (Customers)

##### Country codes:

The **country code** in the CUSTOMER table in V1.1.1 was a free-format text field. In V2.1 it has to be one of a set of specific values defined in the COUNTRY table. The migration will attempt to map the value in the table with the preset values in the COUNTRY table. It will only make a match if the **country code** value is one of the standard two or three-letter alphabetic ISO country codes (for example, US, UK, JP; IT).

Where a match is not made the field will be blanked out, and you should re-enter it using the V2.1 administration server GUI, which has a drop-down list of country codes from which to select. The country code is for information only, and its absence on migrated data will not create any processing problems.

##### *To do, before or after the migration*

Correct any country codes which are not in the standard two or three-letter alphabetic ISO country codes (for example, US, UK, JP; IT).

#### Accounts

##### User authentication

If you want to retain the user authentication data from V1.1.1 you can do so. However, it may not be worth doing so, depending on the authentication option you want to use in V2.1, as follows:

- If you want to use the XML option the users will not need to change their passwords after the migration
- If you want to use the DB option the users will need to change their passwords after the migration
- If you want to use the LDAP option, you will almost certainly have to recreate all user accounts

More details about authentication can be found in the Configuration chapter of *IBM Tivoli License Manager: Planning, Installation, and Configuration*, version 2.1. Full instructions on how to retain the user account data are given in the migration procedures.

### Account profiles

In V2.1 there are new profiles with different names and different rights to access different facilities in the GUI. Thus, the migration needs to map the V1.1.1 profiles to the V2.1 profiles, as follows:

V1.1.1 Profile	Becomes V2.1 Profile
Administrator	Administrator
Licensing manager	Procurement & Licensing Manager
Software resources manager	System Resources Manager

### *To do, after the migration*

Assign new profiles to your users, covering the tasks that you want them to be able to have access to.

### Account details

In V1.1.1 there was no validation for phone/fax numbers or e-mail addresses. In V2.1 the following validation applies:

- E-mail addresses must satisfy the requirements of the ARPA Internet address standard RFC822
- Phone/fax numbers can contain the following characters 0-9, (, ), -, +, space

However, the non-numeric characters cannot be combined in sequence with each other, without at least one numeric character or a space intervening.

After the migration, if any of the e-mail addresses and phone/fax numbers are not valid, you will be prompted to correct them whenever you open the accounts containing the non-valid data.

## Plan to migrate

### Duplicate logon names:

V2.1 does not support having the same logon names in different accounts, except where the logon names have the value <null>. Any such duplicates will be given the logon name of MIGRATION\_<id>, where <id> is a unique numeric value supplied by the migration tool.

### *To do, after the migration*

After the migration is completed you should check for this situation, as you may wish to assign more meaningful logon names to these accounts. The user details are recorded in the database table ENDUSER.

## Runtime server and database

### *GUI correspondence*

V1.1.1 Portfolio	V2.1 Portfolio
Software usage	Produce Reports ► Current Use
Administration	Manage Access

## Agent deployment

The agent deployment methods used in V1.1.1 have changed in the following ways:

### Web deployment

You can now define a default method of determining the computer label of each node, using data available in the operating system of the computer.

You can also determine that the deployment should use SSL for its first plug-in.

### installagent command

Additional parameters are now required that provide more flexibility for the agent, and define information required for some of the new platforms. A script has been added that collects the files that you need to send to the target node before running the **installagent** command.

**Other** Other deployment methods are now available:

- Using the software distribution component of Tivoli Configuration Manager
- On UNIX nodes in RSH/SSH networks
- Windows logon script
- OS/400 agent deployment from connected Windows node



## Agents

### Unsupported agents

With V2.1 some agent platforms are no longer supported. However, as the V1.1.1 agents are compatible with V2.1 runtime servers, you can continue using these agents. Their functionality is at V1.1.1 level.

### Communication method:

In V1.1.1, SSL could only be enabled between the runtime server and the administration server. In V2.1, SSL can not only be configured in both directions between the administration and runtime servers, but also between the agent and the runtime server. In addition, you can use SSL from any Web server used to access the GUI.

At migration, all agents will be set to not use SSL. All divisions will be set to inherit the choice about SSL from the organization and all organizations will be set to not use SSL for agents.

### *To do, after migration*

Follow the configuration instructions in *IBM Tivoli License Manager: Planning, Installation, and Configuration*, version 2.1, if you want to use SSL between the agents and the runtime server.

### Platform:

In V2.1 there are new values for the **platform** field in the NODE table. The migration appends the old **platform** field to the text in the **description** field in the same table, and **platform** is cleared. It will be automatically repopulated when the version 2.1 agent for that node plugs in.

## Other changes

### External IDs

Many of the tables in the V1.1.1 database contained fields called "External ID" (EXT\_ID). These fields were not used by V1.1.1, but are used in V2.1. However, the migration process needs to use these fields, so if you have used them to store any information, that information will be lost.

### Age of historical data

Change history is maintained in the V1.1.1 database for the following entities:

- Agents
- Divisions
- Distribution of licenses
- Licenses
- Servers

The migration process does not migrate all of this change history data. For each item in an historical table, all history for the period of the three months preceding the migration is retained. For older data, history is only retained if there is not a more recent entry for the item in question.

For example, if you have made changes to the information recorded about your "Sales" division once every month for the last 6 months, only the last three history items will be migrated. However, if you have not changed the information about your "Manufacturing" division for 6 months, just the record from 6 months ago will be migrated. This history data is not used in any reports in V1.1.1 or V2.1.

## Component compatibility

Table 9 shows each component at V2.1, and the components at versions 1.1.1 and 1.1 with which it is compatible:

Table 9. Component compatibility table

Backwards compatibility	Administration server 2.1 (migrated database)	Administration server 2.1 (freshly installed database)	Runtime server 2.1	Agent 2.1
Administration server 1.1.1			No	No
Administration server 1.x			No	No
Runtime server 1.1.1 (existing)	Yes	No		No
Runtime server 1.1.1 (freshly installed)	No	No		No
Runtime server 1.x	No	No		No
Agent 1.1.1			Yes	
Agent 1.x			No	

### Notes:

1. All V2.1 components are compatible with each other.
2. Each Tivoli License Manager database is only compatible with its server at the same version.
3. To more precisely spell out what is in the table, a V1.1.1 runtime server is only compatible with a V2.1 administration server if the runtime server already has a record in the V1.1.1 administration server database at the time of the migration.

The implications of this backwards compatibility is that the migration can be staged.

## Migration stages

This section gives an overview of the migration stages. It also highlights the choices you have when planning the migration, showing the consequences of each choice.

The migration of the Tivoli License Manager main components is a top-down procedure. It starts with the administration server and its database, and then proceeds to the runtime servers and their databases. Finally, the agents are migrated.

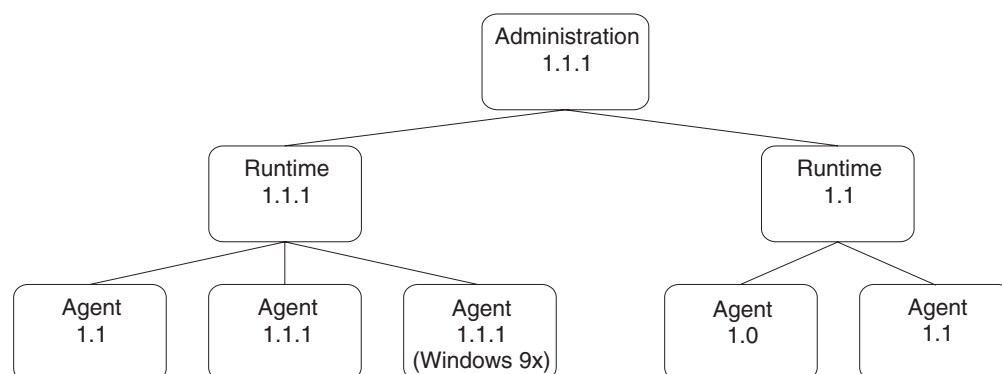
**Attention:** If you have installed more than one server or database component on the same computer, you must migrate *all* components at the same time. Alternatively, you can redesign your environment so that after the migration, these components are on separate computers. However, if you have installed agents on computers where server and database components are installed, the agents do not have to be migrated at the same time.

## Starting point

The scenario assumes that you have a mixed environment, as follows:

- An administration server at version 1.1.1.
- One or more runtime servers at version 1.1.1.
- One or more runtime servers at version 1.1.
- At the version 1.1.1 runtime server there are one or more agents at versions 1.1 and 1.1.1. Of the latter, one or more agents is running Windows 9x, an operating system not supported by the version 2.1 agent.
- At the version 1.1 runtime server there are one or more agents at versions 1.0 and 1.1.

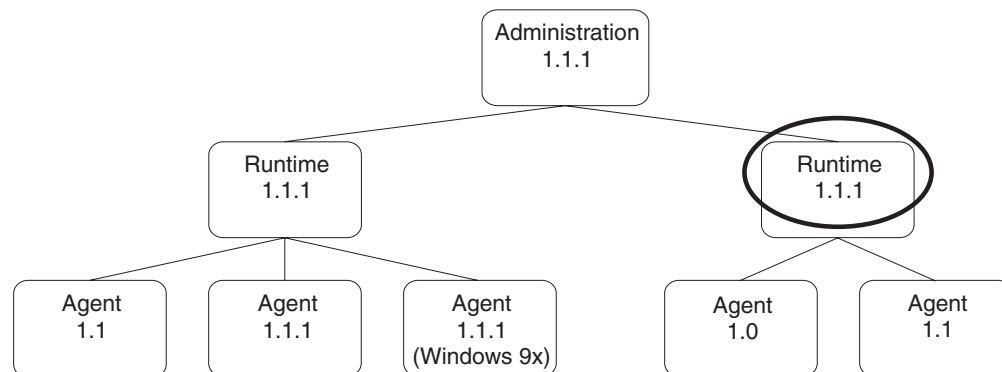
In the following schematic representation of this environment, each box in the diagram represents one or more of the components of that type to be migrated.



## Step 1: Getting started

The procedure for obtaining the required scripts and downloading the catalog is described in “1. Getting started” on page 34.

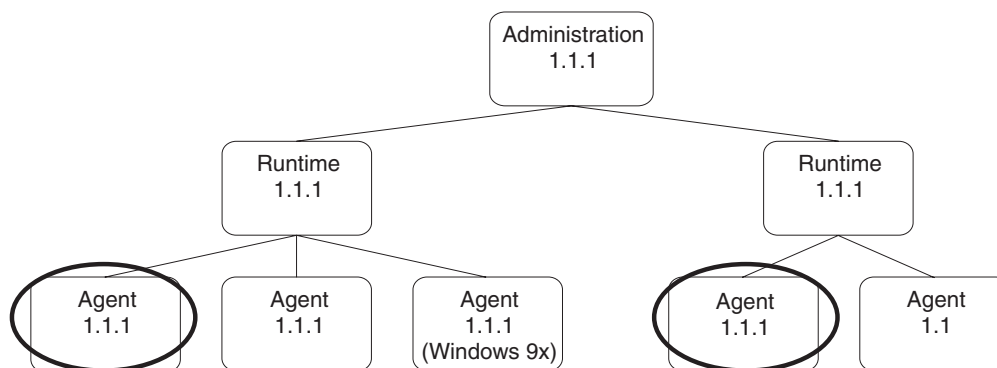
## Step 2: Upgrade all servers to V1.1.1



The first step is to upgrade all version 1.1 runtime servers to V1.1.1. Follow the instructions in the V1.1.1 documentation.

This step must be carried out first, as the V2.1 administration server cannot work with a runtime server prior to V1.1.1.

### Step 3: Upgrade all agents to V1.1.1 (optional)



Once its runtime server is at V1.1.1, an agent can be migrated to V1.1.1, as well. You are advised to do this, to maximize the functionality of the server (an upgraded agent offers more functionality) and to avoid that older agents become inactive when you upgrade their runtime server to V2.1. However, this step is not obligatory at this point. You must migrate agents prior to version 1.1, as they are not compatible with any components of V2.1.

#### Choice: what is the best way to migrate older (pre-V1.1.1) agents to V1.1.1?

There are two ways of migrating an older (pre-V1.1.1) agent to V1.1.1:

- Use the self-update facility at the V1.1.1 runtime server. In this way, by changing a setting on the runtime server, the agents will be automatically updated when they next contact the runtime server. However, this option has a significant impact on the runtime server's performance during the period of the self-update, as the server has to download all the new code to the agents. If you are going to use this method, you must first apply interim fix 1.1.1-TLM-0005 or later to the runtime server before enabling the upgrade. Then you must run the `kfixer` utility at each agent. See "Running `kfixer`" on page 54 for details. Those agents that you upgrade to V1.1.1 in this way can then also be migrated in the same way from V1.1.1 to V2.1.
- Wait until the runtime server has been migrated to V2.1 and then deploy the V2.1 version of the agent, overwriting the old version. Before taking this step, however, you must run the `kfixer` utility at the pre-V1.1.1 agents.

Instructions for migrating agents are provided in the documentation for V1.1.1.

**Attention:** Make sure to read the V1.1.1 Release Notes (the version issued in December 2003) for instructions on how to avoid the "agent out-of-sync" situation when upgrading agents to V1.1.1.

### Step 4: Prepare to migrate the administration server and database to V2.1

While carrying out steps 1 and 2, you can also perform the preparatory steps for the migration of the administration server and its database. These steps are as follows:

**Step 4.1: Update the catalog:**

Have you any outstanding catalog updates performed by the V1.1.1 catalog manager, that have not been included in the main catalog? If so, you must import them using the **impcat** command before starting.

**Step 4.2: Prepare the catalog:**

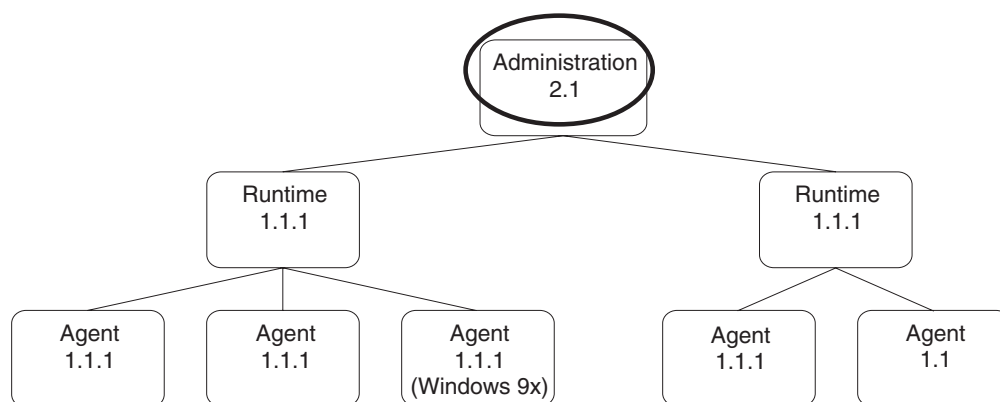
The Tivoli License Manager software product catalog has undergone some quite significant changes between V1.1.1 and V2.1. This means that you need to run some scripts to prepare the catalog to be migrated.

See “2. Prepare the catalog” on page 36 for full details of the procedure.

**Step 4.3: Prepare the components:**

Before starting the migration there are a number of preparatory activities to be performed at the servers.

See “3. Prepare the components” on page 37 for full details of the procedures.

**Step 5: Migrate the administration server and database to V2.1**

The migration requires you to migrate the administration server database to V2.1, and install a V2.1 administration server to replace the old version.

**Choice: do you want to use new computers or reinstall the components on the same computers?**

The advantage of using new computers is that not only do you get the benefit of features like the more powerful processors, faster clock speed, and larger disk, but also you can install the V2.1 components and test them without interrupting the functioning of your existing V1.1.1 installation.

The advantage of re-using the existing computers is that not only do you save on computer resources, but also the migration procedure is a little simpler.

The differences are illustrated in the following scenarios:

**Step 5 Scenario 1: all new computers**

In this scenario you install the V2.1 components on new computers. You would take the following steps:

1. **Install new administration components:** Install the new administration server and database on the new computers you have chosen for this purpose. This will be the permanent home for your administration server components. Either before or during this process you install the prerequisite version of DB2 on all computers, and the prerequisite

## Plan to migrate

version of WebSphere Application Server on the computer where the administration server is going to be.

2. **Test the configuration:** Install a runtime server and database and deploy a couple of agents. Test that the administration server is working correctly and that you have configured it correctly, for example, for SSL. The runtime server can either be a production runtime server that you will want to use in the completed configuration, or it can be a test runtime server that you will uninstall after the testing is completed.
3. **Stop the administration servers:** Stop both the V1.1.1 and V2.1 administration servers, and drop the test administration server database.
4. **Migrate the administration database:** Migrate the V1.1.1 administration server database on the computer where it is installed.
5. **Copy the database:** Copy the migrated database to the computer where you had installed the new administration server database.
6. **Choice: retain use data recorded at the runtime servers after the V1.1.1 administration server was stopped?** You now have to reconnect the runtime servers to the administration server. The alternatives are:

### Reconfigure runtime servers:

Change the runtime server's communications configuration files to point to the new administration server. This involves stopping the V1.1.1 runtime servers, reconfiguring them and restarting them. Inventory data from the agents is saved in the runtime servers' databases, but any use data in the runtime servers' memory is not saved.

### Recycle administration server's host name

If you want to retain the continuity of this data, one way would be to disconnect the V1.1.1 administration server from the network, and give the V2.1 administration server the same host name as the V1.1.1 administration server had.

7. **Start V2.1 administration server:** Restart the administration server. The next time, according to its schedule or its requirements, that a runtime server connects to the administration server, the mismatch between its catalog and the administration server's catalog causes the new catalog to be downloaded, but no other changes are made until the runtime servers themselves are migrated.

See "Scenario 4.1: all new computers" on page 38 for full details of this procedure.

## Step 5 Scenario 2: same computers

The second scenario assumes that you have the administration server and its database on separate computers, and you want to maintain them on those computers.

Take the following steps:

1. **Stop the V1.1.1 administration server:**
2. **Uninstall V1.1.1 administration server database:** Uninstall the administration server database, being careful not to drop the database when requested.
3. **Migrate the administration server database:** Migrate the V1.1.1 administration server database on the old administration database computer.

4. **Upgrade the hardware and operating system:** You will almost certainly want to upgrade the memory of the administration server database's computer, and maybe the operating system as well.
5. **Upgrade DB2.** The version of DB2 that was supported by V1.1.1 (version 7.2.0 with fix pack 7) is not supported by V2.1. You will need to upgrade DB2 on the administration server database computer. You have two choices: apply a fix pack to bring DB2 up to the V2.1 supported level (fix pack 10a) or upgrade to version 8.1.4. If you choose the former, you need only apply the fix pack to the existing version of DB2; if you decide to upgrade you will need to export the Tivoli License Manager database or databases involved, and uninstall the old version before installing version 8.1.4. If you decide to migrate to version 8.1.4, you can use either the bundled prerequisite version or your own version (see the discussion in the Planning chapter of the *IBM Tivoli License Manager: Planning, Installation, and Configuration*, version 2.1). The migration procedure described below explains when to do this upgrade, but for detailed instructions you must refer to the original documentation for DB2.
6. **Uninstall V1.1.1 administration server.**
7. **Upgrade the hardware and operating system:** You will almost certainly want to upgrade the memory of the administration server's computer, and maybe the operating system as well.
8. **Upgrade WebSphere Application Server:** None of the versions of WebSphere Application Server that were supported by V1.1.1 are supported by V2.1. You will need to upgrade WebSphere Application Server on the administration server computer. You can use either the bundled prerequisite version or your own version (see the discussion in the Planning chapter of the *IBM Tivoli License Manager: Planning, Installation, and Configuration*, version 2.1). The migration procedure described below explains when to do this upgrade, but for detailed instructions on how to upgrade, you must refer to the original documentation for WebSphere Application Server.
9. **Upgrade DB2:** The version of DB2 that was supported by V1.1.1 (version 7.2.0 with fix pack 7) is not supported by V2.1. You will need to upgrade DB2 on the administration server computer. You have two choices: apply a fix pack to bring DB2 up to the V2.1 supported level (fix pack 10a) or upgrade to version 8.1.4. If you choose the former, you need only apply the fix pack to the existing version of DB2; if you decide to upgrade you will need to export the Tivoli License Manager database or databases involved, and uninstall the old version before installing version 8.1.4. If you decide to migrate to version 8.1.4, you can use either the bundled prerequisite version or your own version (see the discussion in the Planning chapter of the *IBM Tivoli License Manager: Planning, Installation, and Configuration*, version 2.1). The migration procedure described below explains when to do this upgrade, but for detailed instructions you must refer to the original documentation for DB2.
10. **Install V2.1 administration server:** Install the V2.1 administration server, identifying the migrated administration server database when requested.
11. **Start V2.1 administration server:** When you restart the administration server, the runtime servers plug in. The mismatch between their

## Plan to migrate

catalog and the administration server's catalog causes the new catalog to be downloaded, but no other changes are made until the runtime servers themselves are migrated.

**Note:** If both administration server and database are on the same computer you follow the same basic procedure, but you can uninstall the components together.

See "Scenario 4.2: same computers" on page 43 for full details of this procedure.

Whichever choice you make, at the end you will have a new V2.1 administration server and its migrated database, using the required prerequisite software.

The runtime servers of V1.1.1 are compatible with the administration server of V2.1, so you can recommence license monitoring immediately after this step.

**Attention:** The following restrictions to functionality should be noted while a runtime server is at V1.1.1 while its administration server is at V2.1:

- If you want to create and distribute licences from a V2.1 administration server to a V1.1.1 runtime server and agents, the created license needs to be defined at release level and can be associated only to a single product (multi-product association is not supported by V1.1.1).
- When software use is monitored by a V1.1.1 runtime server, in the Software Use reports on the V2.1 administration server the "Licence" field in the report contains "No information available".
- The runtime wake-up service does not work for V1.1.1 runtime servers. The wake-up service is a means by which the administration server alerts runtime servers to changes in information that are available for download. If the wake-up service is not in use, the download of information must wait until the next scheduled download. By default, information is downloaded from the administration server as documented in the configuration parameters for the system.properties file in an appendix to *IBM Tivoli License Manager: Planning, Installation, and Configuration*, version 2.1. This system.properties file setting (adminDownloadPeriod) is configurable for each runtime server.

You can keep this configuration with no runtime servers migrated for an indefinite period, but during that period you will not be able to take advantage of the new facilities in the V2.1 administration server.

**Note:** If you have any agents at versions prior to 1.1.1, a warning message about them will be issued by the migration procedure.

### Step 6: Migrate the catalog manager

Now that you have the administration server and database migrated, you will probably want to perform some of the post-migration activities described in "Effects of migration" on page 8. For some of these you need to use the catalog manager, so now you should now uninstall the old catalog manager and install the new one.

The V2.1 catalog manager has changed extensively with respect to the V1.1.1 catalog manager. It now works directly on the master catalog, and no longer requires the use of commands to import and export the data. The V1.1.1 catalog manager is not compatible with any of the V2.1 components and the V2.1 catalog manager is not compatible with any of the V1.1.1 components. There is no



migration path; the new catalog manager should be installed. If you want to install it on the same computer as the old version, not only must the old version be uninstalled, but you must also upgrade DB2, as discussed above.

See “5. Migrate the catalog manager” on page 48 for full details.

### Step 7: Migrate runtime servers and databases with all agents at V1.1.1

The migration requires you to install a V2.1 runtime server and database, to replace the old versions.

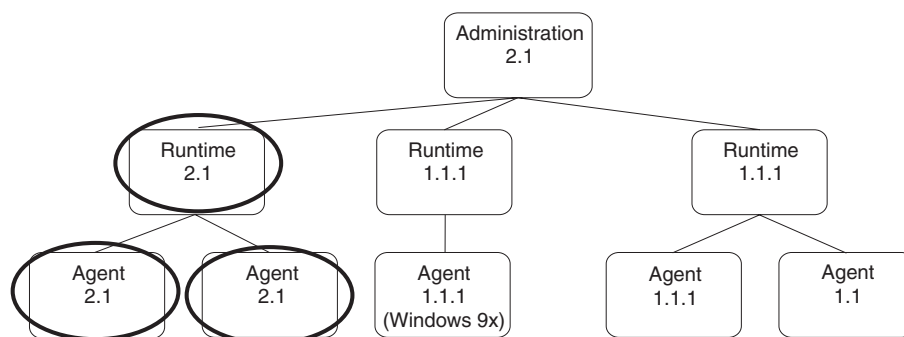
#### Choice: do you want to use new computers or reinstall the components on the same computers?

The advantages and disadvantages of using or not using new computers are the same as for the administration server computers.

The differences in the procedures are illustrated in the following scenarios:

#### Step 7 Scenario 1: all new computers

In this scenario you install the V2.1 components on new computers.



You take the following steps:

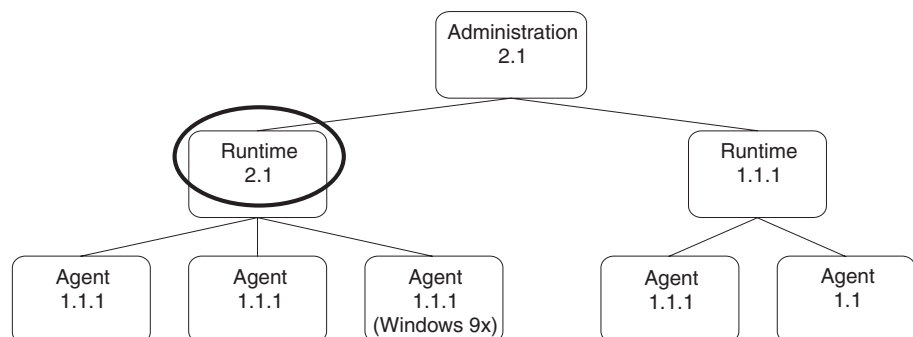
- 1. Install new runtime components:** Install new runtime servers and databases on the new computers you have chosen for this purpose. Either before or during this process you install the prerequisite version of DB2 on all computers, and the prerequisite version of WebSphere Application Server on the computers where the runtime servers are going to be.
- 2. Test the configuration:** Configure the runtime server or servers to plug in to the V2.1 administration server, and deploy a couple of test agents. Test that the configuration is working correctly.
- 3. Redeploy agents:** Using all the facilities of V2.1, redeploy your agents as V2.1 agents, pointing to the new runtime servers.  
Use the facilities in the administration server GUI to measure the progress of the redeployment.
- 4. Optionally maintain V1.1.1 runtime servers for unsupported platforms:** Agents that are on now unsupported platforms, as in the Windows 9x agent in this scenario, can remain attached to their V1.1.1 runtime servers for as long as you wish. However, if you have no agents on supported platforms, the runtime servers and its database can be switched off and uninstalled.

See “Scenario 6.1: new computers” on page 50 for full details of this procedure.

## Plan to migrate

### Step 7 Scenario 2: same computers

The second scenario assumes that you have the administration server and its database on separate computers, and you want to maintain them on those computers.



Take the following steps:

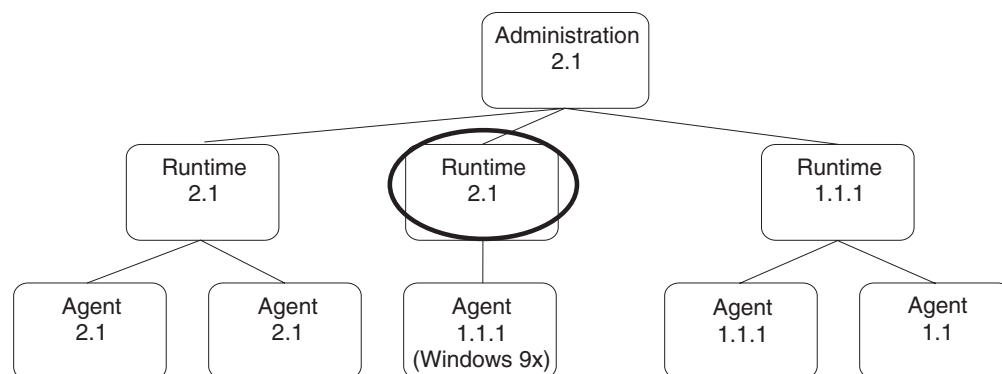
1. **Stop the V1.1.1 runtime server:**
2. **Uninstall V1.1.1 runtime server components:** Uninstall the runtime server and its database, dropping the database when requested.
3. **Upgrade the hardware and operating system:** You will almost certainly want to upgrade the memory of the administration server database's computer, and maybe the operating system as well.
4. **Upgrade WebSphere Application Server:** None of the versions of WebSphere Application Server that were supported by V1.1.1 are supported by V2.1. You will need to upgrade WebSphere Application Server on the runtime server computer. You can use either the bundled prerequisite version or your own version (see the discussion in the Planning chapter of the *IBM Tivoli License Manager: Planning, Installation, and Configuration*, version 2.1). The migration procedure described below explains when to do this upgrade, but for detailed instructions on how to upgrade, you must refer to the original documentation for WebSphere Application Server.
5. **Upgrade DB2:** The version of DB2 that was supported by V1.1.1 (version 7.2.0 with fix pack 7) is not supported by V2.1. You will need to upgrade DB2 on the runtime server computer. You have two choices: apply a fix pack to bring DB2 up to the V2.1 supported level (fix pack 10a) or upgrade to version 8.1.4. If you choose the former, you need only apply the fix pack to the existing version of DB2; if you decide to upgrade you will need to export the Tivoli License Manager database or databases involved, and uninstall the old version before installing version 8.1.4. If you decide to migrate to version 8.1.4, you can use either the bundled prerequisite version or your own version (see the discussion in the Planning chapter of the *IBM Tivoli License Manager: Planning, Installation, and Configuration*, version 2.1). The migration procedure described below explains when to do this upgrade, but for detailed instructions you must refer to the original documentation for DB2.
6. **Install V2.1 runtime server components:** Install the V2.1 runtime server and its database. You must give the V2.1 runtime server the same names as it had in V1.1.1.
7. **Start V2.1 runtime server:** Start the runtime server. It will plug in to the administration server and download its new catalog and other data. The next time that an agent connects to the runtime server, the

mismatch between its catalog and the runtime server's catalog causes the new catalog to be downloaded to the agent.

**Note:** If both runtime server and database are on the same computer you follow the same basic procedure, but you can uninstall the old and install the new components together.

See "Scenario 6.2: same computers" on page 52 for full details of this procedure.

**Combined scenario:** You can also choose to combine these scenarios, to get the advantages of both. For example, in Step 7, Scenario 1, a new runtime server was created and the agents were redeployed to it, leaving the old V1.1.1 runtime server supporting only those agents that cannot be deployed on V2.1 runtime servers. You can now migrate these runtime servers, without changing the computers on which they run, exactly as described in Scenario 2:



This option enables you to continue supporting older agents in a way that when those platforms have all been replaced you can take the runtime server out of service without disturbing the rest of the environment.

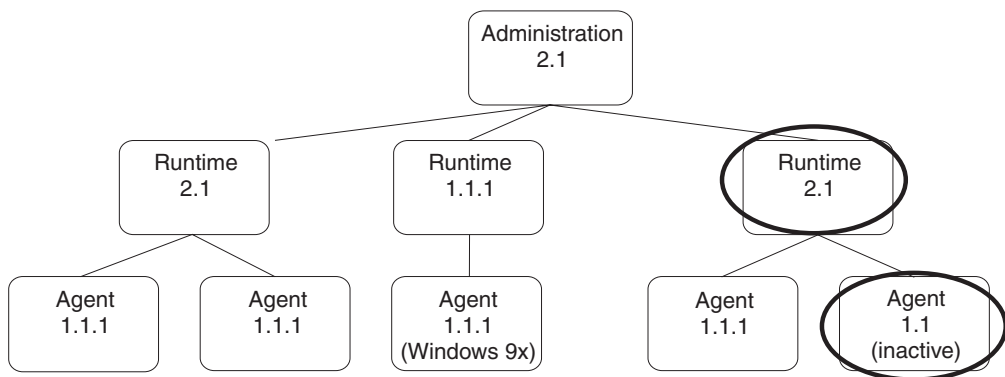
Whichever choice you make, you will end up with new V2.1 runtime servers and databases, using the required prerequisite software.

When the migration of the server is completed, your V1.1.1 agents will return to full V1.1.1 functionality using the new server. You can keep this configuration with no agents migrated for an indefinite period, but during that period you will not be able to take advantage of the new facilities in the V2.1 runtime server.

**Note:** If you have any agents at versions prior to 1.1.1, they will become inactive.

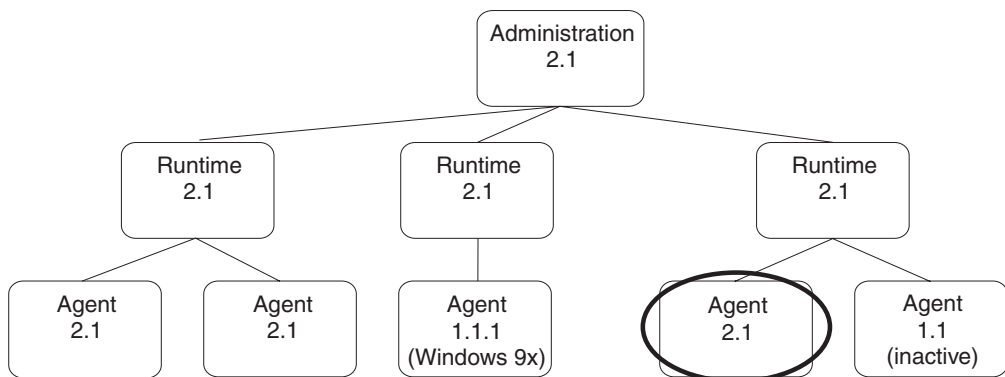
If you are using the alternative server option at division level, before migrating the agents belonging to a server, all runtime servers in the same division must be migrated. If you are using the alternative server option at organization level, before migrating the agents belonging to a server, all runtime servers in the same organization must be migrated.

### Step 8: Migrating runtime servers and databases with agents at older versions



The same comments apply to these servers as applied to runtime servers with only version 1.1.1 agents, with this difference. After the migration is complete, any agents at versions prior to 1.1.1 will become inactive, and remain so until they are upgraded. If you have a mix of agents at version 1.1.1 and at prior versions on the same runtime, the version 1.1.1 agents will retain their version 1.1.1 functionality after the migration of the runtime server – only the older agents will be impacted.

### Step 9: Migrate agents at version 1.1.1



Agents can be migrated in one of two ways:

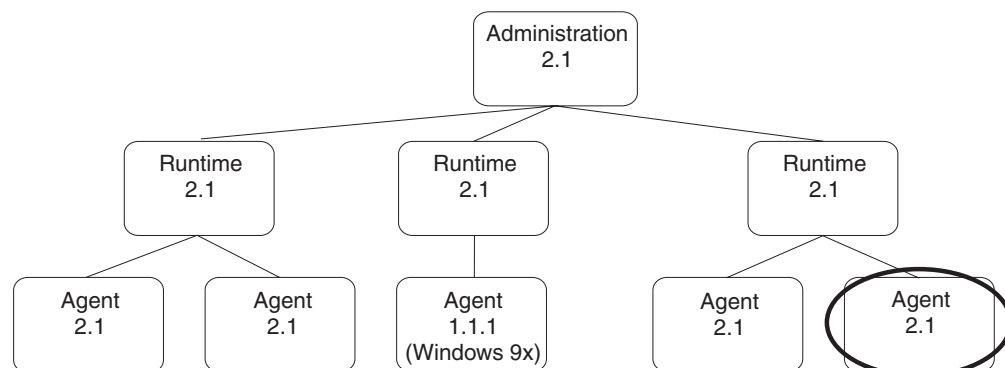
- Use the self-update facility at the runtime server. In this way, by changing a setting on the runtime server, the agents will be automatically updated when they next contact the runtime server. However, this option has a significant impact on the runtime server's performance during the period of the self-update, as the server has to download all the new code to the agents. If this method is used on runtime servers with agents at both version 1.1.1 and older versions, only the version 1.1.1 agents will be updated – the others are ignored.
- Deploy the new version of the agent, overwriting the old version.

Whichever method you use, you must first run the *kfixer* utility at each agent which has a version number lower than *1.1.1.20*. See "Running *kfixer*" on page 54 for details.

Agents that are on platforms that are no longer supported (Windows 9x, in this example) cannot be migrated or redeployed, but if their agent version is at 1.1.1, they are supported by the version 2.1 servers (with version 1.1.1 functionality).

The procedure for migrating agents is described in “7. Migrate the agents” on page 54.

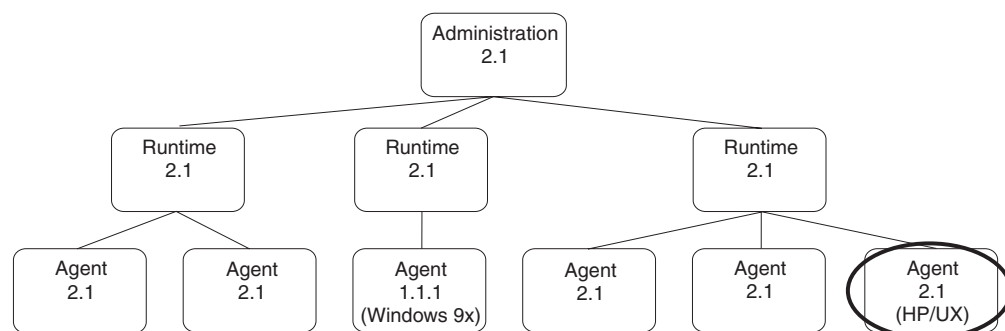
### Step 10: Redeploy agents at older versions



Redeploy all agents with versions older than 1.1.1 where the platform is still supported in version 2.1.

The procedure for deploying agents is described in *IBM Tivoli License Manager: Planning, Installation, and Configuration*, version 2.1.

### Step 11: Deploy new agents (optional)



At this point you can also add new agents on platforms that were not supported in previous releases.

The procedure for deploying agents is described in *IBM Tivoli License Manager: Planning, Installation, and Configuration*, version 2.1.

## Other optional migration activities

In addition to the steps indicated in the previous section, there are some other tasks that you might or might not want to perform as part of the migration.

### Clean up before migration

“Effects of migration” on page 8 describes the effects that the migration will have on your data. In this section are several indications of clean-up activities that you are advised to do before starting the migration.

### Change topology

As part of the migration, information about your existing organizations, divisions, runtime servers and agents are all migrated to the new database.

## Plan to migrate

Provided that you subsequently install the same number of new runtime servers with the same names on the same computers, you should not need to change any of these details.

However, you may like to take this opportunity to consider changing the topology of your Tivoli License Manager environment. If you want to reduce the workload of a runtime server by having it share its agents with an extra server, you will need to redeploy all of the agents that should now be registered with the new runtime server. If, however, you want to do the opposite, and merge the agents of two runtime servers onto one, you should redeploy the agents registered with the runtime server that is to be removed. These activities should be performed after the migration.

### Retain users

Decide whether you want to retain the V1.1.1 user authentication data for use in V2.1. If you do, you need to save the file containing the authentication data and copy it into the V2.1 directory structure, changing the V2.1 default authentication method so that the data can be used. If you intend to use LDAP authentication in V2.1, there is no point in doing this step, as changing to LDAP requires you to create new accounts. The procedure is described in detail as part of the main migration procedure.

### Print the configuration files

Many of the configuration parameters of V1.1.1 have changed meaning or value in V2.1. For this reason these parameters cannot be migrated. You should consider printing the configuration files, so that where you want to restore values that you used in V1.1.1 you can do so.

## Choosing the best time to migrate

Depending on your choice of migration scenario, there may be periods when the administration server is not available to the runtime servers or a runtime server is not available to its agents. It would be better if you could time these periods to occur when the Tivoli License Manager environment is less active. This is largely intuitional; for most organizations weekends, holidays and nighttimes are quiet periods. However, if you want to find out when there is typically least activity in your Tivoli License Manager environment, you can run some queries against the tables in the V1.1.1 administration server database.

The administration server database tables that need to be queried are called `ADM.USAGE` and `ADM.USAGE_H`. The first contains recent use data (the length of the period is a customizable figure in the `system.properties` file on the administration server), and the second contains aggregated historical data. Particularly useful in determining the software use are the `START_TIME` and `END_TIME` fields of the `ADM.USAGE` table, that show the moment that a software item was started and closed.

By querying this data you can look at the following factors:

- When do users start applications?
- When do users close applications?
- If there is a period of relative inactivity in your enterprise, for example at weekends or national holidays, do users leave many applications open?

You are likely to find that users in divisions of your enterprise that carry out administrative activities are less active over weekends. However, users in sales

areas may be more active at weekends, depending on the type of sales activity, while users in manufacturing, where shift work is the norm, may show a more even pattern throughout the week.

You may find that some types of user often work for some hours without opening or closing applications, so that carrying out operations on the administration server, for example, would have little impact because the migrated server could be made available to the unmigrated runtime servers while the applications were still running.

You may also find that many users switch off their computers over weekends, with a matching reduction in monitoring of base products, such as operating systems, e-mail browsers, and so on.

You should also take into consideration any periodic activity that is planned, such as inventory scans, and set the frequency of such scans so that the period of the migration falls between scans.

### To migrate or not to migrate

Now that you have an overview of the migration process, you can see that it is quite complex and time consuming, and requires the implementation of a detailed plan. There are also choices that you might want to make about your new environment that might result in having to waste migrated data. And finally, you may be using V1.1.1 in such a way that the maintenance of data between V1.1.1 and V2.1 is not very important to you. Is there an alternative?

The only alternative to migrating is starting afresh. In this case you would ignore the existence of your previous version and implement V2.1 servers and databases on new computers, redeploying all agents to version 2.1. This scenario has these disadvantages:

- The license and other data that you have created would be lost.
- The history accumulated in V1.1.1 would be lost.
- You would be unable to monitor V1.1.1 agent platforms not supported in V2.1.

It should be noted that you cannot make a fresh installation of the administration server and database, and then register V1.1.1 runtime servers with it. V1.1.1 runtime servers are only compatible with a migrated administration server database. Similarly, although a V2.1 administration server and runtime server can continue to support existing V1.1.1 agents that are on platforms not supported in V2.1, such agents cannot be deployed on V2.1 (see “Component compatibility” on page 20).

---

## Migration procedures

To upgrade a prior version of the Tivoli License Manager servers and databases to V2.1, these are the procedures:

- “1. Getting started” on page 34
- “2. Prepare the catalog” on page 36
- “3. Prepare the components” on page 37
- “4. Migrate the administration database and server” on page 38
- “5. Migrate the catalog manager” on page 48
- “6. Migrate a runtime server and database” on page 50
- “7. Migrate the agents” on page 54

## Migration procedures

Unless stated otherwise, detailed information about processes in V1.1.1 can be found in *IBM Tivoli License Manager: System Administrator's Guide*, version 1.1.1. Detailed information about processes in V2.1 can be found in *IBM Tivoli License Manager: Planning, Installation, and Configuration*, version 2.1.

### 1. Getting started

The procedures in this section are all performed on the computer where the *administration server* is installed.

1. **Download migration package:** If you have obtained this readme file other than by downloading the migration tool, you now need to download it. Go to the Tivoli License Manager support web site. The URL is

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

The migration packages will be in the **Downloads** section of the page that is displayed. The following items are available:

#### 2.1-TLM-MigrationTool.tar

This contains the scripts for use on AIX. The files are as follows:

```
catalogConverter.sh
catalogConverter.xml
CatalogHandler.class
checks_111_21.sql
create_db.sql
create_fct.sql
create_tr.sql
create_v.sql
drop_111.sql
ext_id_update_111.sql
ext_id_update_111_21.sh
migrate_111_21.sql
migration_111_21.sh
opt_field_def.dat
swcat_create_fct.sql
swcat_create_tr.sql
META-INF
MANIFEST.MF
```

The main scripts that you will be using are as follows:

#### **catalogConverter.sh**

The catalog converter.

#### **ext\_id\_update\_111\_21.sh**

The script for updating the external ID fields in the database.

#### **migration\_111\_21.sh**

The script for migrating the database.

#### 2.1-TLM-MigrationTool.zip

This contains the scripts for use on Windows. The files are broadly the same as in the corresponding tar file, except that the scripts are batch files with the extension `.bat`. The details are as follows:

```
catalogConverter.bat
catalogConverter.xml
CatalogHandler.class
checks_111_21.sql
create_db.sql
create_fct.sql
create_tr.sql
create_v.sql
drop_111.sql
```



```

ext_id_update_111.sql
ext_id_update_111_21.bat
migrate_111_21.sql
migration_111_21.bat
opt_field_def.dat
swcat_create_fct.sql
swcat_create_tr.sql
META-INF
MANIFEST.MF

```

### 2.1-TLM-MigrationTool\_readme.pdf

The pdf of the readme file that you are now reading.

### 2.1-TLM-MigrationTool\_readme.zip

A zipped file containing the html version of the readme file that you are now reading. If you unzip the file it will create a folder called 2.1-TLM-MigrationTool\_readme. Open the file 2.1-TLM-MigrationTool\_readme.htm in this folder with your Internet browser to access the html version. The folder contains all the files necessary for the html version.

Download the readme file, package or packages that you require.

**Note:** Two of these scripts are run on the administration server and one on the administration server database. If one of these components is on Windows and the other on AIX, you will need both packages, and you must ensure you use the scripts for the correct package on the appropriate computer.

2. **Unzip the package:** Unzip the package extracting all of the files into the following directory on the V2.1 administration server computer:

```
<INSTALL_DIR>\admin\cli
```

Where <INSTALL\_DIR> is the V1.1.1 installation directory.

3. **On AIX, set permissions:** On AIX, run the following command to add read and execute permissions to the DB2 instance owner that will run scripts in later steps:

```
chmod +rx <files>
```

where <files> are all the files in the package.

4. **Download V2.1 IBM software catalog:** Download the latest version of the V2.1 IBM software catalog from its Web site:

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

and save the XML catalog file into the same directory where you unzipped the migration package.

**Note:** Make sure you get the V2.1 catalog, as the catalogs for V1.1.1 and V2.1 are quite different in structure.

5. **Make another copy of the catalog:** Make an additional copy of the IBM software catalog outside the V1.1.1 installation directory. In these instructions the location of this directory will be called <CAT\_TEMP\_DIR>.

### 2. Prepare the catalog

1. **Log on to V1.1.1 administration server computer:** Log on to the computer where the V1.1.1 administration server is installed as Administrator (Windows) or root (AIX).
2. **Transform IBM software catalog:** Generate a V1.1.1 IBM catalog from the V2.1 catalog using the transformer, as follows:
  - a. Start the V1.1.1 administration server command line.
  - b. Run the catalog transformer by issuing the following command:

**AIX:** `./catalogConverter.sh <IBMCatalogFileName>`

**Windows:** `catalogConverter.bat <IBMCatalogFileName>`

where *<IBMCatalogFileName>* is the name of the XML file that you downloaded from the IBM catalog Web site.

3. **Optionally import outstanding catalog changes:** If you have any outstanding changes you have made to the catalog with the V1.1.1 catalog manager, use the **impcat** command to import them into the database.
4. **Clean up database:** If you have identified any changes to make to the V1.1.1 administration server database in “Plan to migrate to V2.1” on page 6, prior to the migration, you should implement them now.
5. **Stop the V1.1.1 administration server:** Use the following command:

**AIX:** `./srvstop`  
**Windows:** `srvstop`
6. **Log on to the V1.1.1 administration server database computer:** Log on to the V1.1.1 administration server database computer as the DB2 administration user (Windows: default is db2admin) or the DB2 instance owner (AIX: default is db2inst1).
7. **Backup database:** Backup the V1.1.1 administration server database, saving the backup image outside the V1.1.1 installation directory
8. **Log on to V1.1.1 administration server computer:** Log on to the computer where the V1.1.1 administration server is installed as Administrator (Windows) or root (AIX).
9. **Update the EXT\_ID fields in the catalog** Run a script to prepare the external ID fields in the catalog for use by the migration. The procedure differs according to the platform:

**AIX:**

- a. Copy the following files to the home directory of the DB2 instance owner (default is /home/db2inst1):
  - checks\_111\_21.sql
  - ext\_id\_update\_111.sql
  - ext\_id\_update\_111\_21.sh

- b. Change the ownership of those files by issuing the following command:

**chown** *<DB2\_Instance\_Owner>*:*<DB2\_Instance\_Owner\_Group>*  
*<files>*

where

*<DB2\_Instance\_Owner>*

The user id of the DB2 instance owner.

*<DB2\_Instance\_Owner\_Group>*

The user group to which the DB2 instance owner belongs.

<files>

The above-mentioned three files.

- c. Change user to the DB2 instance owner (default is db2inst1):

**su** <DB2\_Instance\_Owner>

- d. Run the following command from the administration server command line:

**./ext\_id\_update\_111\_21.sh**

**Windows:**

Run the following command from the administration server command line:

**ext\_id\_update\_111\_21.bat**

- 10. **Start the V1.1.1 administration server:** Use the following command:

**AIX:** **./srvstart**

**Windows:** **srvstart**

- 11. **Update catalog:** Update the catalog as follows:

- a. Use the **expcat** command from the V1.1.1 administration server command line to export the current catalog.
- b. Use the **Import IBM Catalog** option on the V1.1.1 catalog manager GUI to merge the exported catalog with the transformed catalog generated at step 2 on page 36.
- c. Use the **impcat** command from the V1.1.1 administration server command line to import this catalog into the database.

### 3. Prepare the components

- 1. **Log on to V1.1.1 administration server database:** Log on to the computer where the V1.1.1 administration server database is installed as Administrator (Windows) or root (AIX).
- 2. **Copy the migration tool:** Copy the downloaded and unzipped database migration tool files to the computer where the V1.1.1 administration server database is installed (outside the installation's directory structure). The exact location depends on the platform:

**AIX:** Copy the files into the home directory of the DB2 instance owner (for example, /home/db2inst1).

**Windows:**

Copy the files into any temporary directory.

**Note:** You do not need to copy the scripts you have already run, but the files are not large, and it may be quicker to copy them all rather than be selective.

- 3. **Optionally copy the software use data:** If you want to preserve the software use data, copy the table USAGE\_H to a location outside the Tivoli License Manager database schema (TLMA).
- 4. **Log on to V1.1.1 administration server computer:** Log on to the computer where the V1.1.1 administration server is installed as Administrator (Windows) or root (AIX).
- 5. **Optionally retain the user authentication file:** If you want to retain the existing user authentication, copy the file psw.xml from the directory <INSTALL\_DIR>\admin\conf\users on the administration server to a location outside the product's installation directory.

## Migration procedures

6. **Optionally print the configuration files:** After the migration, V2.1 has new configuration files that contain the default configuration values at installation. Configuration parameters are not migrated because not only have there been significant changes to the parameters themselves, but also many parameters that have remained the same with the same meaning now require different values to achieve the same result. However, it will be useful to have a copy of the configuration parameters that you were using. The files to print are in the <INSTALL\_DIR>\admin\conf and <INSTALL\_DIR>\runtime\conf directories of the V1.1.1 administration server, as follows:
  - agent\_install.properties
  - db.properties
  - scp.properties
  - system.properties

### 4. Migrate the administration database and server

As described at “Step 5: Migrate the administration server and database to V2.1” on page 23, the migration of the administration server and its database depend on the scenario you have chosen to follow:

- “Scenario 4.1: all new computers.”
- “Scenario 4.2: same computers” on page 43

#### Scenario 4.1: all new computers

1. **Install new administration components:** Install the new V2.1 administration server and database on the new computers you have chosen for this purpose. This will be the permanent home for your V2.1 administration server components. Either before or during this process you must install the prerequisite version of DB2 on all computers, and the prerequisite version of WebSphere Application Server on the computer where the administration server is going to be.

If both components are going to be on the same computer you can use the *typical* installation of the administration server components, which installs them applying default values. If the components are to be installed on separate computers, run a *custom* installation of each, starting with the database component. You may wish in all cases to use a *custom* installation as it allows you to change the installation default values.

See the instructions in *IBM Tivoli License Manager: Planning, Installation, and Configuration*, version 2.1.

2. **Test the configuration:** Install a V2.1 runtime server and database and deploy a few agents. Test that the V2.1 administration server is working correctly and that you have configured it correctly, for example, for SSL. The runtime server can either be a production runtime server that you will want to use in the completed configuration, or it can be a test runtime server that you will uninstall after the testing is completed.

See the instructions in *IBM Tivoli License Manager: Planning, Installation, and Configuration*, version 2.1.

3. **Log on to V2.1 administration server computer:** Log on to the computer where the V2.1 administration server is installed as Administrator (Windows) or root (AIX).

4. **Stop the V2.1 administration server** Use the following command:

**AIX:**            ./srvstop  
**Windows:**      srvstop

5. **Log on to V1.1.1 administration server computer:** Log on to the computer where the V1.1.1 administration server is installed as Administrator (Windows) or root (AIX).
6. **Stop the V1.1.1 administration server computer:** Use the following command:  
**AIX:** `./srvstop`  
**Windows:** `srvstop`
7. **Log on to the V2.1 administration server database computer:** Log on to the V2.1 administration server database computer as the DB2 administration user (Windows: default is db2admin) or the DB2 instance owner (AIX: default is db2inst1).
8. **Drop the V2.1 administration server database:** Use the following command at the DB2 command line:  
**db2 drop database tlma**  
Do not uninstall the component.
9. **Uncatalog the V2.1 administration server database:** Use the following command at the DB2 command line:  
**db2 uncatalog database tlma**  
There is no need to uncatalog the node.
10. **Log on to the V1.1.1 administration server database computer:**  
**AIX:** The DB2 instance owner (default is db2inst1).  
**Windows:** A user with Administrator privileges.
11. **Backup the V1.1.1 administration server database:** Backup the V1.1.1 administration server database and place the backup in a directory outside the DB2 installation tree (on AIX, outside the home directory of the DB2 instance owner. It can be recovered from here, if necessary).
12. **Migrate the V1.1.1 administration server database:** On the V1.1.1 administration server database computer, migrate the administration server database as follows:
  - a. Open a DB2 command line window.
  - b. From within the window, change directory to the directory where you copied the files in step 2 on page 37 of "3. Prepare the components" on page 37:  
**AIX:** The home directory of the DB2 instance owner (for example, /home/db2inst1).  
**Windows:**  
The temporary directory.
  - c. Run the migration tool as follows:  
**AIX:** `./migration_111_21.sh`  
**Windows:** `migration_111_21.bat`  
  
Messages indicating success or failure will be written to a log file called migration\_111\_21.log, saved in the directory from which you are running the tool.  
  
**Note:** The migration tool commences with a backup that allows it to restore the database should there be any problems. If that backup fails on AIX, one possible reason might be that the database is large,

## Migration procedures

and the environment is not enabled to permit the creation of large files. The following are steps that may be necessary to allow such files to be written:

- 1) Issue the command **smitty fs** to check the fileset. Set the fileset attribute Large Files Enabled to *true*.
  - 2) Issue the command **ulimit -a** to check if there are any limits on file sizes for the DB2 instance owner. To set the file size limit to *Unlimited*, issue the command **chuser fsize=-1 <DB2\_Instance\_Owner>**.
  - 3) Rerun the migration.
13. **Copy the migrated database:** Copy the migrated V1.1.1 database to the computer where the V2.1 administration server database is installed, using the DB2 **backup** or **restore** utilities or the DB2 **move** command. The receiving database should be empty, as you dropped it in step 8 on page 39.
14. **Catalog the V2.1 administration server database:** Use the following command at the DB2 command line:

```
db2 catalog database tlma as tlmadb at node tlmanodea
```

15. **Choose how to attach the runtime servers:** You have two alternatives for attaching the V1.1.1 runtime servers, as follows:

### Reconfigure runtime servers:

Change the V1.1.1 runtime server's communications configuration files to point to the new V2.1 administration server. The procedure is as follows, and must be repeated on all runtime servers:

- a. Log on to the V1.1.1 runtime server computer as Administrator (Windows) or root (AIX).
- b. Edit the `scp.properties` file in the following directory:  
`<INSTALL_DIR>\runtime\conf`
- c. Change the `server` parameter, and, if necessary the `port` parameter, to point to the V2.1 administration server. If there is a proxy server between the V2.1 administration server and the V1.1.1 runtime server, you should also change the proxy server parameters.
- d. Stop the V1.1.1 runtime server. Use the following command:  
**AIX:** `./srvstop`  
**Windows:** `srvstop`
- e. Restart the V1.1.1 runtime server. Use the following command:  
**AIX:** `./srvstart`  
**Windows:** `srvstart`

### Recycle V2.1 administration server's host name

Request your network administrator to rename the V2.1 administration server with the same host name as the V1.1.1 administration server.

16. **Create user access:**

### Optionally import the authentication file from V1.1.1:

If you want to use the V1.1.1 authentication information in V2.1, and you saved the password file (see step 5 on page 37, follow these steps:

- a. **Change default authentication method:** Change the authentication method from the default value of "DB" to "XML" (see *IBM Tivoli License Manager: Planning, Installation, and Configuration*, version 2.1 for a full description of how to do this).
- b. **Restore the authentication file:** Locate the file `psw.xml` in the following directory on the administration server computer:

<INSTALL\_DIR>\admin\SLM\_Admin\_Application.ear\slm\_admin.war\WEB-INF\conf\users

Replace it with the file backed up in step 5 on page 37.

This enables you to use the user account information.

- c. **Optionally set a more secure authentication method:** You are recommended to change the authentication method from "XML" to "DB", as this option is more secure. If you do make this change, you will have to create new passwords for your users in the V2.1 administration server GUI, after the migration is complete.
- d. **Start the V2.1 administration server:** Use the following command:  
**AIX:**            ./srvstart  
**Windows:**        srvstart
- e. **Optionally reset user passwords:** If you have changed the authentication method to "DB", you must log on as "tlmroot" with password "system" to the V2.1 administration server and reset all of the user passwords, including "tlmroot".

### Create new accounts:

If you do not want to use the V1.1.1 authentication information in V2.1, or you want to implement LDAP authentication in V2.1, you will need to do the following:

- a. **Start the V2.1 administration server:** Using the **srvstart** command, start the V2.1 administration server.
  - b. **Create the accounts:** Using the V2.1 administration server GUI, create the new accounts to allow your users to access Tivoli License Manager.
17. **Import IBM Software Catalog:** Using either the catalog manager or the **impcat** command, import the V2.1 IBM Software Catalog that you made a copy of in step 5 of "1. Getting started" on page 34.
  18. **Clean up database:** If, in "Plan to migrate to V2.1" on page 6, you have identified any changes to make to the V2.1 administration server database after migration, you should implement them now.
  19. **Clean up the V1.1.1 administration server computers:** If you intend to re-use the computer where the V1.1.1 administration server or the V1.1.1 administration server database were installed, without deleting the computer's file structures, you should perform the following clean-up activities on each computer:
    - a. **Uninstall the V1.1.1 administration server components:** Following the instructions in *IBM Tivoli License Manager: System Administrator's Guide*, version 1.1.1, uninstall the administration server and the administration server database. You must also uninstall any runtime server or database components, or the catalog manager, if they are installed on the same computer, in parallel.
    - b. **Delete the installation directory:** On each of the computers involved, delete the installation directory in which V1.1.1 was installed, making sure that any files that you copied following earlier steps in this procedure are outside the installation directory structure.
    - c. **Delete the registry keys:** The V1.1.1 uninstaller does not remove the V1.1.1 registry keys. It is necessary to remove the keys in order to successfully install V2.1. The process requires you to modify the computer's registry. This is a process that must be undertaken with care, as it is possible to render the computer unusable if the files become corrupt. The process differs, depending on the platform:

## Migration procedures

AIX The process requires the following steps:

1) Backup the registry, using the following commands:

```
cp -r /etc/objrepos /etc/objrepos_backup
cp -r /usr/lib/objrepos /usr/lib/objrepos_backup
```

2) Check that the registry keys exist, by issuing the following commands:

```
export ODMDIR=/usr/lib/objrepos
```

```
odmget -q "name='Tivoli License Manager'" lpp
odmget -q "lpp_name='Tivoli License Manager'" product
```

If the registry keys exist the STDOUT will list details relating to them. If they do not exist nothing will be written to STDOUT.

3) If the registry keys exist, delete them, using the following commands:

```
export ODMDIR=/usr/lib/objrepos
```

```
odmdelete -o lpp -q "name='Tivoli License Manager'"
odmdelete -o product -q "lpp_name='Tivoli License Manager'"
```

If you have any concern that something has gone wrong with the ODM commands, you should take the following steps:

a) Delete the registry files, which may have become corrupt, using the following commands:

```
rm -rf /etc/objrepos
rm -rf /usr/lib/objrepos
```

b) Restore the backed up files, using the following commands:

```
mv /etc/objrepos_backup /etc/objrepos
mv /usr/lib/objrepos_backup /usr/lib/objrepos
```

## Windows

Delete the following keys using the registry editor on your computer:

### Administration server

```
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM]
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM]
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM\1.1.1]
"Install Location"="$P(SLMRoot.installLocation)"
"RegCompany"="IBM"
"DisplayVersion"="1.1.1"
"DisplayName"="IBM Tivoli License Manager"
"VersionMajor"="1"
"VersionMinor"="1"
"VersionMaintenance"="1"

[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM\1.1.1\Features]
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM\1.1.1\Features\Administrator Server]
```

### Administration server database

```
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM]
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM]
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM\1.1.1]
"Install Location"="$P(SLMRoot.installLocation)"
"RegCompany"="IBM"
"DisplayVersion"="1.1.1"
"DisplayName"="IBM Tivoli License Manager"
"VersionMajor"="1"
"VersionMinor"="1"
"VersionMaintenance"="1"
```



```
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM\1.1.1\Features]
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM\1.1.1\Features\Administrator Database]
```

**Note:** The fact that the V1.1.1 keys are different from the V2.1 keys means that if you attempt to install V1.1.1 on top of an existing V2.1 installation, the installation will not give an error, but you will overwrite some V2.1 files, and V2.1 will become corrupted and unusable. Thus, you are recommended at this point to place all V1.1.1 installation CDs in secure storage and delete any CD images that you may have, to avoid any risk that they are used in error.

### Scenario 4.2: same computers

The following scenario assumes that the administration server and the administration server database are installed on the same computer. In the scenario this computer will be called the "administration" computer. At the end of the scenario you will find an explanation of the difference in the procedures if they are installed on separate computers ("Scenario 4.2: same computers; where the server and database are on separate computers" on page 48).

1. **Log on to V1.1.1 administration computer:** Log on to the computer where the V1.1.1 administration server and database are installed, as Administrator (Windows) or root (AIX).

2. **Stop the V1.1.1 administration server** Use the following command:

**AIX:** `./srvstop`

**Windows:** `srvstop`

3. **Uninstall the V1.1.1 administration server and the administration server database:** You must also uninstall any V1.1.1 runtime server or database components, or the V1.1.1 catalog manager, if they are installed on the same computer, in parallel.

**Attention:** *Do not drop the databases.* The instructions in *IBM Tivoli License Manager: System Administrator's Guide*, version 1.1.1, for uninstalling the V1.1.1 administration server database, include how to drop the database. *These instructions must be ignored.*

**Attention:** Each time you run the uninstall wizard on the computers where the Tivoli License Manager components are installed, it will ask you if you want to save the configuration files. As none of these are migrated, you may always answer "No".

4. **Delete the installation directory:** As you have uninstalled all Tivoli License Manager components, you can now delete the installation directory in which V1.1.1 was installed, making sure that any files that you copied following earlier steps in this procedure are outside the installation directory structure. This step will ensure that V2.1 has a clean environment in which it will be installed. Do not delete the DB2 install directory.

5. **Delete the registry keys:** The V1.1.1 uninstaller does not remove the V1.1.1 registry keys. It is necessary to remove the keys in order to successfully install V2.1. The process requires you to modify the computer's registry. This is a process that must be undertaken with care, as it is possible to render the computer unusable if the files become corrupt. The process differs, depending on the platform:

**AIX** The process requires the following steps:

a. Backup the registry, using the following commands:

```
cp -r /etc/objrepos /etc/objrepos_backup
cp -r /usr/lib/objrepos /usr/lib/objrepos_backup
```

## Migration procedures

- b. Check that the registry keys exist, by issuing the following commands:

```
export ODMDIR=/usr/lib/objrepos
```

```
odmget -q "name='Tivoli License Manager'" lpp
odmget -q "lpp_name='Tivoli License Manager'" product
```

If the registry keys exist the STDOUT will list details relating to them. If they do not exist nothing will be written to STDOUT.

- c. If the registry keys exist, delete them, using the following commands:

```
export ODMDIR=/usr/lib/objrepos
```

```
odmdelete -o lpp -q "name='Tivoli License Manager'"
odmdelete -o product -q "lpp_name='Tivoli License Manager'"
```

If you have any concern that something has gone wrong with the ODM commands, you should take the following steps:

- 1) Delete the registry files, which may have become corrupt, using the following commands:

```
rm -rf /etc/objrepos
rm -rf /usr/lib/objrepos
```

- 2) Restore the backed up files, using the following commands:

```
mv /etc/objrepos_backup /etc/objrepos
mv /usr/lib/objrepos_backup /usr/lib/objrepos
```

## Windows

Delete the following keys using the registry editor on your computer:

### Administration server

```
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM]
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM]
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM\1.1.1]
"Install Location"="$P(SLMRoot.installLocation)"
"RegCompany"="IBM"
"DisplayVersion"="1.1.1"
"DisplayName"="IBM Tivoli License Manager"
"VersionMajor"="1"
"VersionMinor"="1"
"VersionMaintenance"="1"
```

```
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM\1.1.1\Features]
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM\1.1.1\Features\Administrator Server]
```

### Administration server database

```
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM]
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM]
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM\1.1.1]
"Install Location"="$P(SLMRoot.installLocation)"
"RegCompany"="IBM"
"DisplayVersion"="1.1.1"
"DisplayName"="IBM Tivoli License Manager"
"VersionMajor"="1"
"VersionMinor"="1"
"VersionMaintenance"="1"
```

```
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM\1.1.1\Features]
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM\1.1.1\Features\Administrator Database]
```

**Note:** The fact that the V1.1.1 keys are different from the V2.1 keys means that if you attempt to install V1.1.1 on top of an existing V2.1

installation, the installation will not give an error, but you will overwrite some V2.1 files, and V2.1 will become corrupted and unusable. Thus, you are recommended at this point to place all V1.1.1 installation CDs in secure storage and delete any CD images that you may have, to avoid any risk that they are used in error.

6. **On AIX, change user on the V1.1.1 administration computer:** If the V1.1.1 administration server and database are on AIX, change user to the DB2 instance owner (default is `db2inst1`).
7. **Backup the V1.1.1 administration server database:** Backup the V1.1.1 administration server database and place the backup in a directory outside the DB2 installation tree (on AIX, outside the home directory of the DB2 instance owner. It can be recovered from here, if necessary).
8. **Migrate the V1.1.1 administration server database:** On the V1.1.1 administration server database computer, migrate the administration server database as follows:

**Note:** This step can be left until after DB2 has been upgraded, if you prefer.

- a. Open a DB2 command line window.
- b. From within the window, change directory to the directory where you copied the files in step 2 on page 37 of "3. Prepare the components" on page 37:

**AIX:** The home directory of the DB2 instance owner (for example, `/home/db2inst1`).

**Windows:**

A temporary directory.

- c. Run the migration tool as follows:

**AIX:** `./migration_111_21.sh`

**Windows** `migration_111_21.bat`

Messages indicating success or failure will be written to a log file called `migration_111_21.log`, saved in the directory from which you are running the tool.

**Note:** The migration tool commences with a backup that allows it to restore the database should there be any problems. If that backup fails on AIX, one possible reason might be that the database is large, and the environment is not enabled to permit the creation of large files. The following are steps that may be necessary to allow such files to be written:

- 1) Issue the command **smitty fs** to check the fileset. Set the fileset attribute Large Files Enabled to *true*.
  - 2) Issue the command **ulimit -a** to check if there are any limits on file sizes for the DB2 instance owner. To set the file size limit to *Unlimited*, issue the command **chuser fsize=-1 <DB2\_Instance\_Owner>**
  - 3) Rerun the migration.
9. **Backup the migrated administration server database:** This is the backup that you will restore to become the new database.
  10. **Drop the migrated administration server database:** Use the following command at the DB2 command line:  
**db2 drop database tlma**

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11. **Uncatalog the migrated administration server database:** Use the following command at the DB2 command line:

**db2 uncatalog database tlma** There is no need to uncatalog the node.

12. **Upgrade DB2 and WebSphere Application Server, and optionally upgrade operating systems:** If you have been using V1.1.1 on the administration computer with the supported prerequisite versions of DB2 and WebSphere Application Server, you will now need to upgrade them, as the V1.1.1 prerequisites are not supported in V2.1.

While you are doing this, you may want to take the opportunity of upgrading the computer's operating system.

V2.1 comes bundled with version 8.1.4 of DB2 and version 5.1 of WebSphere Application Server (see *IBM Tivoli License Manager: Planning, Installation, and Configuration*, version 2.1, for full details). These bundled versions only perform fresh installs, so you must first uninstall the old version before using the bundled prerequisites.

Perform the following steps:

- a. Uninstall WebSphere Application Server. You do not need to install a fresh version of WebSphere Application Server, as it will be installed automatically when you install the V2.1 administration server
- b.
  - If you plan to upgrade DB2 from 7.0.2 to 8.1.4, or upgrade the operating system, or both, perform the following steps:
    - 1) Uninstall DB2
    - 2) Optionally upgrade the operating system. If the upgrade requires that the disk is reformatted, copy the backup of the database to a remote location before starting.
    - 3) You do not need to install a fresh version of DB2 or , as it will be installed automatically when you install the V2.1 administration server.
  - If, on the other hand, you plan to stay with version 7.0, on the same computer, with the same operating system, you should just install fix pack 10a

If you do not wish to use the bundled prerequisites you should uninstall DB2 and WebSphere Application Server and then make fresh installs using your own versions of them.

13. **Install the V2.1 administration server and database:** On the administration computer install the V2.1 administration server and administration server database components, as described in *IBM Tivoli License Manager: Planning, Installation, and Configuration*, version 2.1. You can optionally also install one or other of the prerequisite software items.

You can use the *typical* installation of the administration server components, which installs them applying default values. Alternatively, you may prefer to use a *custom* installation as it allows you to change the installation default values.

14. **Drop the V2.1 administration server database that you have just installed:** Use the following command at the DB2 command line:

**db2 drop database tlma**

15. **Uncatalog the V2.1 administration server database that you have just installed:** Use the following command at the DB2 command line:

**db2 uncatalog database tlma** There is no need to uncatalog the node.

16. **Restore the migrated database:** Restore the migrated database from the backup you took in step 9 on page 45.
17. **Catalog the restored migrated administration server database:** Use the following command at the DB2 command line:  
**db2 catalog database t1ma as t1madb at node t1manodea**There is no need to catalog the node as you did not uncatalog it.
18. **Create user access:**

### Optionally import the authentication file from V1.1.1:

If you want to use the V1.1.1 authentication information in V2.1, and you saved the password file (see step 5 on page 37, follow these steps:

- a. **Change default authentication method:** Change the authentication method from the default value of "DB" to "XML" (see *IBM Tivoli License Manager: Planning, Installation, and Configuration*, version 2.1 for a full description of how to do this.
- b. **Restore the authentication file:** Locate the file psw.xml in the following directory on the V2.1 administration server computer:

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

Replace it with the file backed up in step 5 on page 37.

This enables you to use the user account information.

- c. **Optionally set a more secure authentication method:** You are advised to change the authentication method from "XML" to "DB", as this option is more secure. If you do make this change, you will have to create new passwords for your users in the V2.1 administration server GUI, after the migration is complete.
- d. **Start the V2.1 administration server:** Use the following command:  
**AIX:           ./srvstart**  
**Windows:     srvstart**
- e. **Optionally reset user passwords:** If you have changed the authentication method to "DB", you must log on as "tlmroot" with password "system" to the V2.1 administration server and reset all of the user passwords, including "tlmroot".

### Create new accounts:

If you do not want to use the V1.1.1 authentication information in V2.1, or you want to implement LDAP authentication in V2.1, you will need to do the following:

- a. **Start the V2.1 administration server:** Use the following command:  
**AIX:           ./srvstart**  
**Windows:     srvstart**
  - b. **Create the accounts:** Using the GUI, create the new accounts to allow your users to access Tivoli License Manager.
19. **Import IBM Software Catalog:** Using either the V2.1 catalog manager or the V2.1 **impcat** command, import the V2.1 IBM Software Catalog that you made a copy of in step 5 on page 35.
  20. **Clean up database:** If you have identified any changes to make to the V2.1 administration server database in "Plan to migrate to V2.1" on page 6, after migration, you should implement them now.

## Migration procedures

**Scenario 4.2: same computers; where the server and database are on separate computers:** If the V1.1.1 administration server and V1.1.1 administration server database are installed on different computers, follow the scenario 4.2 procedure, with these differences:

- Steps 1 on page 43 to 5 on page 43 need to be performed on both computers.
- Steps 6 on page 45 to 11 on page 46 are only performed on the V1.1.1 administration server database computer.
- Step 12 on page 46 needs to be performed on both computers, but you only need WebSphere Application Server on the administration server computer.
- Step 13 on page 46 is performed on both computers. Install the V2.1 administration server database first, and then identify the database to the administration server when you install it. You will need to use the *custom* installation option.
- Steps 14 on page 46 to 17 on page 47 are only performed on the V2.1 administration server database computer.
- Step 18 on page 47 is only performed on the V2.1 administration server computer.
- Step 19 on page 47 is only performed on the V2.1 administration server database computer.
- Step 20 on page 47 is performed using the V2.1 administration server GUI.

## 5. Migrate the catalog manager

If you have the catalog manager from a prior version of Tivoli License Manager already installed on a computer, it must be uninstalled before you attempt to install the new catalog manager. If the catalog manager was installed on the same computer as the administration server or database, it will have already been uninstalled, as part of the migration procedure for these other components.

**Note:** You do not need to install a new catalog manager on the same computer as the old catalog manager. But in all cases, the old catalog manager must be uninstalled, as it does not work with the V2.1 catalog.

The procedure is as follows:

1. Close the V1.1.1 catalog manager and then run the uninstall wizard for it.  
Instructions for uninstalling the catalog manager for versions 1.x of Tivoli License Manager are given in *IBM Tivoli License Manager: System Administrator's Guide*, version 1.1.1.
2. **Delete the installation directory:** If the catalog manager was the only Tivoli License Manager component installed on the computer, delete the installation directory in which V1.1.1 was installed.
3. **Delete the registry keys:** The V1.1.1 uninstaller does not remove the V1.1.1 registry keys. If the catalog manager was the only Tivoli License Manager component installed on the computer, it is necessary to remove the keys in order to successfully install V2.1. The process requires you to modify the computer's registry. This is a process that must be undertaken with care, as it is possible to render the computer unusable if the files become corrupt. The process differs, depending on the platform:

**AIX** The process requires the following steps:

- a. Backup the registry, using the following commands:

```
cp -r /etc/objrepos /etc/objrepos_backup
cp -r /usr/lib/objrepos /usr/lib/objrepos_backup
```

- b. Check that the registry keys exist, by issuing the following commands:

```
export ODMDIR=/usr/lib/objrepos
```

```
odmget -q "name='Tivoli License Manager'" lpp
odmget -q "lpp_name='Tivoli License Manager'" product
```

If the registry keys exist the STDOUT will list details relating to them. If they do not exist nothing will be written to STDOUT.

- c. If the registry keys exist, delete them, using the following commands:

```
export ODMDIR=/usr/lib/objrepos
```

```
odmdelete -o lpp -q "name='Tivoli License Manager'"
odmdelete -o product -q "lpp_name='Tivoli License Manager'"
```

If you have any concern that something has gone wrong with the ODM commands, you should take the following steps:

- 1) Delete the registry files, which may have become corrupt, using the following commands:

```
rm -rf /etc/objrepos
rm -rf /usr/lib/objrepos
```

- 2) Restore the backed up files, using the following commands:

```
mv /etc/objrepos_backup /etc/objrepos
mv /usr/lib/objrepos_backup /usr/lib/objrepos
```

## Windows

Delete the following keys using the registry editor on your computer:

```
HKEY_LOCAL_MACHINE\SOFTWARE\IBM]
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM]
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM\1.1.1]
"Install Location"="$P(SLMRoot.installLocation)"
"RegCompany"="IBM"
"DisplayVersion"="1.1.1"
"DisplayName"="IBM Tivoli License Manager"
"VersionMajor"="1"
"VersionMinor"="1"
"VersionMaintenance"="1"

[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM\1.1.1\Features]
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM\1.1.1\Features\Catalog Manager]
```

**Note:** The fact that the V1.1.1 keys are different from the V2.1 keys means that if you attempt to install V1.1.1 on top of an existing V2.1 installation, the installation will not give an error, but you will overwrite some V2.1 files, and V2.1 will become corrupted and unusable. Thus, you are recommended at this point to place all V1.1.1 installation CDs in secure storage and delete any CD images that you may have, to avoid any risk that they are used in error.

4. **Install the V2.1 catalog manager:** If you want to use the new V2.1 catalog manager from this computer, install it, as described in *IBM Tivoli License Manager: Planning, Installation, and Configuration*, version 2.1, on a computer

with access to the V2.1 administration server database. When requested, identify the host name of the computer where the administration server database is installed.

### 6. Migrate a runtime server and database

As described at “Step 7: Migrate runtime servers and databases with all agents at V1.1.1” on page 27, the migration of the runtime server and its database depend on the scenario you have chosen to follow:

- “Scenario 6.1: new computers.”
- “Scenario 6.2: same computers” on page 52

#### Scenario 6.1: new computers

To migrate a runtime server and its database, follow this procedure:

1. **Install new V2.1 runtime components:** Install the new V2.1 runtime server and database on the new computers you have chosen for this purpose. This will be the permanent home for your runtime server components. Either before or during this process you install the prerequisite version of DB2 on all computers, and the prerequisite version of WebSphere Application Server on the computer where the runtime server is going to be.

You should use a *custom* installation of each, starting with the database component, as the custom installation allows you to change the installation default values. You must give each runtime server the same name as the runtime server it is to replace.

See the instructions in *IBM Tivoli License Manager: Planning, Installation, and Configuration*, version 2.1.

2. **Test the configuration:** Configure the V2.1 runtime server to connect to the V2.1 administration server and deploy a few agents. Test that the V2.1 runtime server is working correctly and that you have configured it correctly, for example, for SSL.

See the instructions in *IBM Tivoli License Manager: Planning, Installation, and Configuration*, version 2.1.

3. **Redeploy agents:** Using any of the V2.1 agent deployment methods, deploy the V2.1 agent on all computers where you have a V1.1.1 agent that has a platform supported in V2.1. Ensure that their deployment parameters include the new host name of the V2.1 runtime server and any other parameters that have changed.
4. **Optionally maintain the V1.1.1 runtime components:** While the runtime server is still supporting agents that you cannot redeploy onto V2.1, you can retain it as a V1.1.1 runtime server. However, you may wish to migrate it to V2.1 using the procedures described in “Scenario 6.2: same computers” on page 52.
5. **Eventually uninstall the V1.1.1 runtime server components:** When the V1.1.1 runtime server has no more agents registered with it, you can uninstall the V1.1.1 runtime server components from the computers where they are installed, dropping the V1.1.1 runtime server database.

**Attention:** Each time you run the uninstall wizard on the computers where the Tivoli License Manager components are installed, it will ask you if you want to save the configuration files. As none of these are migrated, you may always answer “No”.

6. **Clean up the V1.1.1 runtime server computer:** If you intend to re-use the computers where the V1.1.1 runtime server and runtime server database was installed, without deleting the file structures, you should perform the following clean-up activities:



- a. **Delete the installation directory:** On each of the computers involved, delete the installation directory in which V1.1.1 was installed.
- b. **Delete the registry keys:** The V1.1.1 uninstaller does not remove the V1.1.1 registry keys. It is necessary to remove the keys in order to successfully install V2.1. The process requires you to modify the computer's registry. This is a process that must be undertaken with care, as it is possible to render the computer unusable if the files become corrupt. The process differs, depending on the platform:

**AIX** The process requires the following steps:

- 1) Backup the registry, using the following commands:

```
cp -r /etc/objrepos /etc/objrepos_backup
cp -r /usr/lib/objrepos /usr/lib/objrepos_backup
```

- 2) Check that the registry keys exist, by issuing the following commands:

```
export ODMDIR=/usr/lib/objrepos
```

```
odmget -q "name='Tivoli License Manager'" lpp
odmget -q "lpp_name='Tivoli License Manager'" product
```

If the registry keys exist the STDOUT will list details relating to them. If they do not exist nothing will be written to STDOUT.

- 3) If the registry keys exist, delete them, using the following commands:

```
export ODMDIR=/usr/lib/objrepos
```

```
odmdelete -o lpp -q "name='Tivoli License Manager'"
odmdelete -o product -q "lpp_name='Tivoli License Manager'"
```

If you have any concern that something has gone wrong with the ODM commands, you should take the following steps:

- a) Delete the registry files, which may have become corrupt, using the following commands:

```
rm -rf /etc/objrepos
rm -rf /usr/lib/objrepos
```

- b) Restore the backed up files, using the following commands:

```
mv /etc/objrepos_backup /etc/objrepos
mv /usr/lib/objrepos_backup /usr/lib/objrepos
```

### Windows

Delete the following keys using the registry editor on your computer:

#### Runtime server

```
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM]
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM]
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM\1.1.1]
"Install Location"="$P(SLMRoot.installLocation)"
"RegCompany"="IBM"
"DisplayVersion"="1.1.1"
"DisplayName"="IBM Tivoli License Manager"
"VersionMajor"="1"
"VersionMinor"="1"
"VersionMaintenance"="1"
```

```
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM\1.1.1\Features]
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM\1.1.1\Features\Runtime Server]
"Customer Name"="$W(runtimeConfig.customerName)"
```

## Migration procedures

```
"Runtime Server Name"="$W(runtimeConfig.runtimeName)"
"Administrator Server Name"="$W(runtimeToAdmin.adminHost)"
"Administrator Server Port"="$W(runtimeToAdmin.port)"
```

### Runtime server database

```
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM]
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM]
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM\1.1.1]
"Install Location"="$P(SLMRoot.installLocation)"
"RegCompany"="IBM"
"DisplayVersion"="1.1.1"
"DisplayName"="IBM Tivoli License Manager"
"VersionMajor"="1"
"VersionMinor"="1"
"VersionMaintenance"="1"

[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM\1.1.1\Features]
[HKEY_LOCAL_MACHINE\SOFTWARE\IBM\TLM\1.1.1\Features\Runtime Database]
```

**Note:** The fact that the V1.1.1 keys are different from the V2.1 keys means that if you attempt to install V1.1.1 on top of an existing V2.1 installation, the installation will not give an error, but you will overwrite some V2.1 files, and V2.1 will become corrupted and unusable. Thus, you are recommended at this point to place all V1.1.1 installation CDs in secure storage and delete any CD images that you may have, to avoid any risk that they are used in error.

## Scenario 6.2: same computers

Take the following steps:

1. **Log on to V1.1.1 runtime computer:** Log on to the computer where the V1.1.1 runtime server is installed as Administrator (Windows) or root (AIX).
2. **Stop the V1.1.1 runtime server** Use the following command:  
**AIX:** `./srvstop`  
**Windows:** `srvstop`
3. **Uninstall the V1.1.1 runtime server components:** Uninstall the V1.1.1 runtime server components from the computers where they are installed.  
**Attention:** *You should drop the databases.* The instructions for uninstalling the V1.1.1 runtime server database include how to drop the database. *These instructions must be followed.*  
**Attention:** Each time you run the uninstall wizard on the computers where the Tivoli License Manager components are installed, it will ask you if you want to save the configuration files. As none of these are migrated, you may always answer "No".
4. **Delete the installation directory:** On each of the computers involved, delete the installation directory in which V1.1.1 was installed. This step will ensure that V2.1 has a clean environment in which it will be installed.
5. **Delete the registry keys:** The V1.1.1 registry keys must be deleted manually as described in Scenario 6.1. Apply the instructions given in step 6b on page 51 to this computer.
6. **Upgrade DB2 and WebSphere Application Server, and optionally upgrade operating systems:** If you have been using these V1.1.1 runtime server components with the supported prerequisite versions of DB2 and WebSphere Application Server, you will now need to upgrade them, as the V1.1.1 prerequisites are not supported in V2.1.

V2.1 comes bundled with version 8.1.4 of DB2 and version 5.1 of WebSphere Application Server (see *IBM Tivoli License Manager: Planning, Installation, and*

*Configuration*, version 2.1, for full details). These bundled versions only perform fresh installs, so if you want to use them you should perform the following steps, depending on whether the runtime server and database are on the same computer or not:

### **Runtime server and database on separate computers**

On the computer where the V1.1.1 runtime server was installed, perform these steps:

- a. Uninstall DB2
- b. Uninstall WebSphere Application Server
- c. Optionally upgrade the operating system.

On the computer where the runtime server database is installed, perform these steps:

- a. Backup any tables outside the *TLMR* schema on the runtime server's database that you want to keep
- b. Uninstall DB2
- c. Optionally upgrade the operating system.

### **Runtime server and database on the same computer**

- a. Backup any tables outside the *TLMR* schema on the runtime server's database that you want to keep
- b. Uninstall DB2
- c. Uninstall WebSphere Application Server
- d. Optionally upgrade the operating system.

You do not need to install the new prerequisites as they will be installed automatically when you install the V2.1 administration server.

If you do not wish to use the bundled prerequisites you should follow the same procedure, substituting your own versions of DB2 and WebSphere Application Server.

7. **Install the V2.1 runtime components:** On the computer you are going to use for the runtime server database, install the V2.1 runtime server database component, as described in *IBM Tivoli License Manager: Planning, Installation, and Configuration*, version 2.1. On the computer you are going to use for the runtime server, install the V2.1 runtime server component. If you want to install them both on the same computer you can do so at the same moment. You can optionally also install the prerequisite software.

You should use a *custom* installation of each, starting with the database component, as the custom installation allows you to change the installation default values. You must give each runtime server the same name as the runtime server it is to replace.

8. **Start the runtime server:** Use the following command:

**AIX:**            `./srvstart`  
**Windows:**       `srvstart`

### 7. Migrate the agents

Agents can be migrated either by using the agent self-update facility (see “Migrate the agents by self-update”) or by redeployment (see “Migrate the agents by redeployment” on page 55).

But before updating or redeploying any agent you should check whether you need to run kfixer. See “Running kfixer.”

#### Running kfixer

For all existing agents you should first check the version number of the agents on the administration server GUI. If it is less than 1.1.1.20, you must run the kfixer utility at the agent.

The version number of an agent can be found in the agent details under **Topology** ► **Agents**, in V1.1.1, and at **Manage Components** ► **Agents** in V2.1.

To obtain the utility download it, and its readme, from the IBM Support Web site (see “Contacting software support” on page 57 for details). It forms part of interim fix 1.1.1-TLM-000.

Run the utility following the instructions in the readme.

#### Migrate the agents by self-update

If you so choose, your agents need not be reregistered and will be upgraded automatically. During the period while those agents are without their runtime server they will fail to obtain a license (if they need one) or pass license-related information when they try to contact the uninstalled runtime server. A license for the application to run would then be granted or not depending on the setting of the Run offline parameter in the application’s license entitlement details. If Run offline is enabled, a license will be granted. In addition, an error will be logged in the agent’s trace file, if the trace is enabled.

To enable the automatic upgrade of the agent you must do the following:

1. Ensure that the new runtime servers you create have exactly the same organization, name, URL and access port as the old runtime servers.
2. Prepare a schedule for upgrading the agents. The agent upgrade occurs when the agents first contact an upgraded runtime server where the updateAgentEnabled option in the agent configuration file is enabled (see the appendix on the agent in *IBM Tivoli License Manager: Planning, Installation, and Configuration*, version 2.1). The updateAgentEnabled option is disabled by default, so you should enable it for each runtime server in turn. After you have ascertained that all agents have upgraded, you can disable this option. Use the Agents option in the Manage Components section of the administration server Web user interface to ascertain if the agent has been upgraded. Upgraded agents have a version number of 2.1.0.0.
3. If you deployed agents in Tivoli License Manager version 1.1 using non-ASCII characters in the agent name, you must redeploy these agents after upgrading their runtime server, otherwise they will not be recognized by it. This is because those non-ASCII characters were in the ISO code set that was supported in version 1.1, while the UTF-8 code set that is supported from V1.1.1 onwards, does not recognize these characters.

## Migrate the agents by redeployment

You could consider the following approach:

1. Create a V2.1 environment, with a new administration server, runtime servers, and runtime server databases separate from those of V1.1.1.
2. Fully configure this environment but do not start any servers.
3. Prepare a schedule for redeploying the agents to use the new runtime servers, using one or more of the V2.1 agent redeployment methods:
  - Web deployment
  - The **installagent** command
  - Using the software distribution component of Tivoli Configuration Manager
  - On UNIX nodes in RSH/SSH networks
  - Windows logon script
  - OS/400 agent deployment from connected Windows node

See the chapter on agent deployment in *IBM Tivoli License Manager: Planning, Installation, and Configuration*, version 2.1.

4. Stop the V1.1.1 servers.
5. Migrate the administration server database on to a new computer that the V2.1 administration server is configured to use.
6. Start the V2.1 servers.
7. Redeploy the agents.
8. Uninstall the V1.1.1 servers and databases.

---

## Other useful information

This section contains information on the following topics:

- “Publications”
- “Accessibility” on page 57
- “Tivoli technical training” on page 57
- “Contacting software support” on page 57
- “Conventions used in this book” on page 61

## Publications

This section lists publications in the Tivoli License Manager library and related documents. It also describes how to access Tivoli publications online and how to order Tivoli publications.

### Tivoli License Manager library

The Tivoli License Manager library consists of the following books:

- *IBM Tivoli License Manager: Administration*, SC32-1430  
Provides an overview of Tivoli License Manager and gives information about how to use the product to set up a monitoring infrastructure, define licensing conditions, and produce reports.
- *IBM Tivoli License Manager: Planning, Installation, and Configuration*, SC32-1431  
Provides information about planning, installing, and configuring the Tivoli License Manager product
- *IBM Tivoli License Manager: Data Dictionary*, SC32-1432  
Provides descriptions of the database tables and indexes maintained in the Tivoli License Manager administration server database.

## Other useful info

- *IBM Tivoli License Manager: Problem Determination, SC32-9102*  
Provides information about Tivoli License Manager diagnostic information, including messages, traces, and event logs, and about tools and techniques for diagnosing problems.
- *IBM Tivoli License Manager: Catalog Management, SC32-1434*  
Describes how to use the software catalog management tool to maintain an up-to-date master catalog of products and the modules that are used to detect their presence and use on monitored computers.
- *IBM Tivoli License Manager, Version 2.1: Warehouse Enablement Pack, Version 2.1.0 Implementation Guide for Tivoli Data Warehouse, Version 1.2, SC32-1433*  
Provides instructions and other information related to enabling the use of Tivoli Data Warehouse with Tivoli License Manager.
- *IBM Tivoli License Manager: Release Notes, SC32-1429*  
Provides a summary of changes made in the release, lists the supported platforms for each component, documents known errors and workarounds, and includes the latest information about the product that could not be included in the main documentation. This document is not delivered on the publications CD, but is available from the Tivoli Software Information Center. Updated versions of the document may be placed on the Tivoli Software Information Center at any time.  
  
How to access the Tivoli Software Information Center is described in “Accessing publications online.”

### Accessing publications online

The Tivoli License Manager documentation CD contains the publications that are in the product library, other than the *IBM Tivoli License Manager: Release Notes*, in all supported languages. The format of the publications is PDF, HTML, or both. To access the publications using a Web browser, open the `allpubs.htm` file. The file is in the root directory on the documentation CD. Select the language of your choice, and an Information Center for the product in that language is displayed. Select the publication and the format in which you want to view it.

**Note:** On Windows platforms, an autorun opens the `allpubs.htm` file in your default browser.

IBM posts publications for this and all other Tivoli products, as they become available and whenever they are updated, to the Tivoli Software Information Center Web site. Access the Tivoli Software Information Center by first going to the Tivoli software library at the following Web address:

[www.ibm.com/software/tivoli/library/](http://www.ibm.com/software/tivoli/library/)

Scroll down and click the **Product manuals** link on the left pane of the Tivoli software library window. In the Tivoli Technical Product Documents Alphabetical Listing window, click the IBM Tivoli License Manager link to access the product library at the Tivoli Information Center.

**Note:** If you print PDF documents on other than letter-sized paper, set the option in the **File → Print** window that allows Adobe Reader to print letter-sized pages on your local paper.

## Ordering publications

You can order many Tivoli publications online at the following Web site:

[www.elink.ibm.com/public/applications/publications/cgibin/pbi.cgi](http://www.elink.ibm.com/public/applications/publications/cgibin/pbi.cgi)

You can also order by telephone by calling one of these numbers:

- In the United States: 800-879-2755
- In Canada: 800-426-4968

In other countries, see the following Web site for a list of telephone numbers:

[www.ibm.com/software/tivoli/order-lit/](http://www.ibm.com/software/tivoli/order-lit/)

## Accessibility

Accessibility features help users with a physical disability, such as restricted mobility or limited vision, to use software products successfully. With this product, you can use assistive technologies to hear and navigate the interface. You can also use the keyboard instead of the mouse to operate all features of the graphical user interface.

This product is operated using a Web browser, which has certain built-in accessibility features, and has been provided with specific shortcut keys for navigating the Web interface, starting tasks, and performing toolbar actions.

For additional information, see the Accessibility appendix in the *IBM Tivoli License Manager: Administration*.

## Tivoli technical training

For Tivoli technical training information, refer to the following IBM Tivoli Education Web site:

[www.ibm.com/software/tivoli/education/](http://www.ibm.com/software/tivoli/education/)

## Contacting software support

IBM Software Support provides assistance with product defects.

Before contacting IBM Software Support, your company must have an active IBM software maintenance contract, and you must be authorized to submit problems to IBM. The type of software maintenance contract that you need depends on the type of product you have:

- For IBM distributed software products (including, but not limited to, Tivoli, Lotus, and Rational® products, as well as DB2 and WebSphere products that run on Windows or UNIX operating systems), enroll in Passport Advantage® in one of the following ways:
  - **Online:** Go to the Passport Advantage Web page and click **How to Enroll**. The Web address is the following:

[www.lotus.com/services/passport.nsf/WebDocs/Passport\\_Advantage\\_Home](http://www.lotus.com/services/passport.nsf/WebDocs/Passport_Advantage_Home)

- **By phone:** For the phone number to call in your country, go to the IBM Software Support Web site ([techsupport.services.ibm.com/guides/contacts.html](http://techsupport.services.ibm.com/guides/contacts.html)) and click the name of your geographic region.

## Other useful info

- For IBM eServer™ software products (including, but not limited to, DB2 and WebSphere products that run in zSeries, pSeries, and iSeries environments), you can purchase a software maintenance agreement by working directly with an IBM sales representative or an IBM Business Partner. For more information about support for eServer software products, go to the IBM Technical Support Advantage Web page ([www.ibm.com/servers/eserver/techsupport.html](http://www.ibm.com/servers/eserver/techsupport.html)).

If you are not sure what type of software maintenance contract you need, call 1-800-IBMSERV (1-800-426-7378) in the United States or, from other countries, go to the contacts page of the IBM Software Support Handbook on the Web ([techsupport.services.ibm.com/guides/contacts.html](http://techsupport.services.ibm.com/guides/contacts.html)) and click the name of your geographic region for phone numbers of people who provide support for your location.

Follow the steps in this topic to contact IBM Software Support:

1. “Determine the business impact of your problem”
2. “Describe your problem and gather background information”
3. “Submit your problem to IBM Software Support” on page 59

### Determine the business impact of your problem

When you report a problem to IBM, you are asked to supply a severity level. Therefore, you need to understand and assess the business impact of the problem you are reporting. Use the following criteria:

<b>Severity 1</b>	<b>Critical</b> business impact: You are unable to use the program, resulting in a critical impact on operations. This condition requires an immediate solution.
<b>Severity 2</b>	<b>Significant</b> business impact: The program is usable but is severely limited.
<b>Severity 3</b>	<b>Some</b> business impact: The program is usable with less significant features (not critical to operations) unavailable.
<b>Severity 4</b>	<b>Minimal</b> business impact: The problem causes little impact on operations, or a reasonable circumvention to the problem has been implemented.

### Describe your problem and gather background information

When explaining a problem to IBM, be as specific as possible. Include all relevant background information so that IBM Software Support specialists can help you solve the problem efficiently. To save time, know the answers to these questions:

- What software versions were you running when the problem occurred?
- Do you have logs, traces, and messages that are related to the problem symptoms? IBM Software Support is likely to ask for this information.
- Can the problem be recreated? If so, what steps led to the failure?
- Have any changes been made to the system? (For example, hardware, operating system, networking software, and so on.)
- Are you currently using a workaround for this problem? If so, please be prepared to explain it when you report the problem.

The problem determination toolkit includes commands for assembling problem determination information for all product components. For more information see *IBM Tivoli License Manager: Problem Determination*.



## Submit your problem to IBM Software Support

You can submit your problem in one of two ways:

- **Online:** Go to the "Submit and track problems" page on the IBM Software Support site ([www.ibm.com/software/support/probsub.html](http://www.ibm.com/software/support/probsub.html)). Enter your information into the appropriate problem submission tool.
- **By phone:** For the phone number to call in your country, go to the contacts page of the IBM Software Support Handbook on the Web ([techsupport.services.ibm.com/guides/contacts.html](http://techsupport.services.ibm.com/guides/contacts.html)) and click the name of your geographic region.

If the problem you submit is for a software defect or for missing or inaccurate documentation, IBM Software Support creates an Authorized Program Analysis Report (APAR). The APAR describes the problem in detail. Whenever possible, IBM Software Support provides a workaround for you to implement until the APAR is resolved and a fix is delivered. IBM publishes resolved APARs on the IBM product support Web pages daily, so that other users who experience the same problem can benefit from the same resolutions.

For more information about problem resolution, see "Searching knowledge bases" and "Obtaining fixes" on page 60.

### Searching knowledge bases

If you have a problem with your IBM software, you want it resolved quickly. Begin by searching the available knowledge bases to determine whether the resolution to your problem is already documented.

**Search the information center on your local system or network:** IBM provides extensive documentation that can be installed on your local machine or on an intranet server. You can use the search function of this information center to query conceptual information, instructions for completing tasks, reference information, and support documents.

**Search the Internet:** If you cannot find an answer to your question in the information center, search the Internet for the latest, most complete information that might help you resolve your problem. To search multiple Internet resources for your product, expand the product folder in the navigation frame to the left and select **Support on the Web**. From this topic, you can search a variety of resources including:

- IBM technotes
- IBM downloads
- IBM Redbooks™
- IBM DeveloperWorks
- Forums and newsgroups
- Google

### Obtaining fixes

A product fix might be available to resolve your problem. You can determine what fixes are available for your IBM software product by checking the product support Web site:

1. Go to the IBM Software Support Web site ([www.ibm.com/software/support](http://www.ibm.com/software/support)).
2. Under **Products A - Z**, select your product name. This opens a product-specific support site.
3. Under **Self help**, follow the link to **Search all Downloads**, where you will find a list of fixes, fix packs, and other service updates for your product. For tips on refining your search, click **Search tips**.
4. Click the name of a fix to read the description and optionally download the fix.

To receive weekly e-mail notifications about fixes and other news about IBM products, follow these steps:

1. From the support page for any IBM product, click **My support** in the upper-right corner of the page.
2. If you have already registered, skip to the next step. If you have not registered, click register in the upper-right corner of the support page to establish your user ID and password.
3. Sign in to **My support**.
4. On the My support page, click **Edit profiles** in the left navigation pane, and scroll to **Select Mail Preferences**. Select a product family and check the appropriate boxes for the type of information you want.
5. Click **Submit**.
6. For e-mail notification for other products, repeat Steps 4 and 5.

For more information about types of fixes, see the *Software Support Handbook* ([techsupport.services.ibm.com/guides/handbook.html](http://techsupport.services.ibm.com/guides/handbook.html)).

### Updating support information

Information centers typically include one or more *support information plug-ins*. These plug-ins add IBM technotes and other support documents to the information center. The following steps describe how to update your support information plug-ins:

1. Go to the IBM Software Support Web site ([www.ibm.com/software/support](http://www.ibm.com/software/support)).
2. Under **Products A - Z**, select your product name. This opens a product-specific support site.
3. Under **Search support for this product**, type the keyword phrase: `com.ibm.support`. Click the **Download** check box, and click **Submit**.
4. Check the search results for updates to support information plug-ins. All support information plug-ins follow the naming convention, "`com.ibm.support.product.doc`." If an update is available, select it from the list and view the download instructions.
5. Save the attached zip file to a temporary location on your hard drive.
6. Unzip the downloaded file, making sure that you retain the subfolders.
7. From the location where you unzipped the file, copy the support information plug-in folder to your Eclipse plug-ins folder. For example, if your IBM software product is installed at `c:\IBM\WebSphere\`, copy the updated plug-in folder (`com.ibm.support.product.doc`) to `c:\IBM\WebSphere\eclipse\plugins`.
8. To see the updated support information, start the information center (or shut it down and restart it), and expand the **Support information** node in the navigation tree.

## Conventions used in this book

This book uses several conventions for special terms and actions, and operating system-dependent paths.

### Typeface conventions

This book uses the following typeface conventions:

#### Bold

- Lowercase commands and mixed case commands that are otherwise difficult to distinguish from surrounding text
- Interface controls (check boxes, push buttons, radio buttons, spin buttons, fields, folders, icons, list boxes, items inside list boxes, multicolumn lists, containers, menu choices, menu names, tabs, property sheets), labels (such as **Tip:**, and **Operating system considerations:**)
- Column headings in a table
- Keywords and parameters in text

#### Italic

- Citations (titles of books, diskettes, and CDs)
- Words defined in text
- Emphasis of words (words as words)
- New terms in text
- Variables and values you must provide

#### Monospace

- Examples and code examples
- File names, programming keywords, and other elements that are difficult to distinguish from surrounding text
- Message text and prompts addressed to the user
- Text that the user must type
- Values for arguments or command options

#### <text>

Indicates a variable in a path name. For example, in the path `<INSTALL_DIR>\admin\conf`, `INSTALL_DIR` depends on the location where you have installed a Tivoli License Manager component, while `\admin\conf` is constant.

### Operating system-dependent notation

This book uses the Windows convention for environment variables and directory notation.

When using the UNIX, Linux, and OS/400 command line you should do the following:

#### Environment variables

First verify the correct value for the UNIX, Linux, or OS/400 variable name, as many variables in different platforms that perform the same task have different names (for example, `%TEMP%` in Windows is equivalent to `$tmp` in UNIX and Linux). Then replace `%Windows_variable%` with `$UNIX_variable`

#### File and directory paths

Replace each backslash ( \ ) with a forward slash ( / ).

## Other useful info

**Note:** If you are using the bash shell on a Windows system, you can use the UNIX conventions.

---

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