Lotus® Learning Management System R1

Version 1.0.4
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Quick Install Guide

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Contents

IBM Lotus LMS Quick Install Guide

This guide provides a summary of the installation process for LMS 1.0.2. For complete information and instructions, see the *Installation Guide*.

Prerequisites for installation

- **WebSphere Application Server**

  http://www-3.ibm.com/software/webservers/appserv/was/library/index.html

  The IBM Lotus Learning Management System (LMS) server requires the WebSphere Application Server (WAS) 5.0 core. If the LMS server is going to make use of multiple server machines, then the user must also install the WAS Network Deployment (ND) module. In addition, an HTTP server is required. The IBM HTTP Server included with WAS can be installed to meet the HTTP server requirement.

  LMS comes bundled with WAS 5.0 and supports the following OS platforms:

  - IBM AIX Release 5.1 or later (PowerPC RISC architecture - pSeries)
  - Microsoft Windows 2000 and NT Release 4.0 (Intel 32 architecture)
  - Sun Solaris Release 8 or later (UltraSPARC 32/64 architecture - not on Intel)
  - Linux Release 2.2 or later (Intel 32/64 architecture with SuSe 7.2 or later and RedHat 7.2 or later only)
  - Linux Advanced Server 2.1

- **LDAP Server**

  If an existing LDAP directory is not currently available, then an LDAP directory server must be installed and configured. The LMS requires an LDAP v3. compliant directory, and supports the following products:

  - IBM SecureWay 3.2 - http://www-3.ibm.com/software/network/help-directory/
  - IBM Directory Server 4.1 - http://www-3.ibm.com/software/network/help-directory/
  - Lotus Domino - http://publib-b.boulder.ibm.com/Redbooks.nsf/9445fa5b416f6e32852569ae006bb65f/9df432f2040f6ced852569e400546ed4?OpenDocument
  - iPlanet 5.0
  - Microsoft Active Directory

- **Database Server**

  If an existing database server is not available, then a database server must be installed and configured. The LMS requires one of the following databases:

  - DB2 UDB 7.2 or later http://www-3.ibm.com/software/data/db2/udb/support.html
  - Microsoft SQL Server 2000 for Windows Advanced Server
  - Oracle 8i or later

LMS Installer

The LMS 1.0 Installer prepares the LMS application files for installation. The LMS Installer does not deploy the LMS enterprise applications to WAS. The LMS Installer uses InstallShield, and runs on all LMS OS platforms. Specifically, the LMS Installer does the following:

1. Allows the user to select which components to install.

   The user can install any combination of the following: Learning Management Module (LMM) server application, the Delivery Server (DS) application, LMS Authoring Tool, and/or LMS utilities (command-line import and rostering utilities).

2. Prompts the user for the following information, depending upon which components are selected:
   - LDAP settings (URL, base distinguished name (DN), username and password, provider). If the LDAP server is available, there's a button that allows the user to test the LDAP connection.
   - LMM server settings, including the base url of the deployed LMM application.
   - Delivery Server settings, including the base url of the deployed DS application.
   - Administrator settings
   - Course content management and deployments settings.
3. Generates database scripts using the information supplied by the user, and depending upon the components selected, creates the following directory structure in the selected target directory:
   - **bin**: command-line import (CLIMP) and rostering utilities
   - **discussion**: JAR file to be installed on Domino discussion database server
   - **distribute**: Offline Learning Client installer, Authoring Tool installer, content tracking frameset files; files are moved to the appropriate location by the administrator
   - **java**: IBM JDK used by the utilities in bin
   - **lib**: JAR files used by the utilities in bin
   - **license**: license text files in various languages
   - **portlet**: 3 sample LMS portlets
   - **prt**: product registration files
   - **scripts**: database scripts used to populate the LMS databases
   - **update**: LMS Updater (more information below)
   - **web-apps**: EAR files for the LMM and DS servers, help WAR file, and additional WAR files that contain only static resources from the LMM and DS

The LMS Installer includes an LMS Updater component, which allows users to change settings that were specified during the initial install. The Updater presents the same UI as the Installer, with all the properties (except for passwords) entered on install. The user makes the desired changes, and the Updater generates a set of update database scripts that must be run to apply the changes to the LMM and DS application databases.

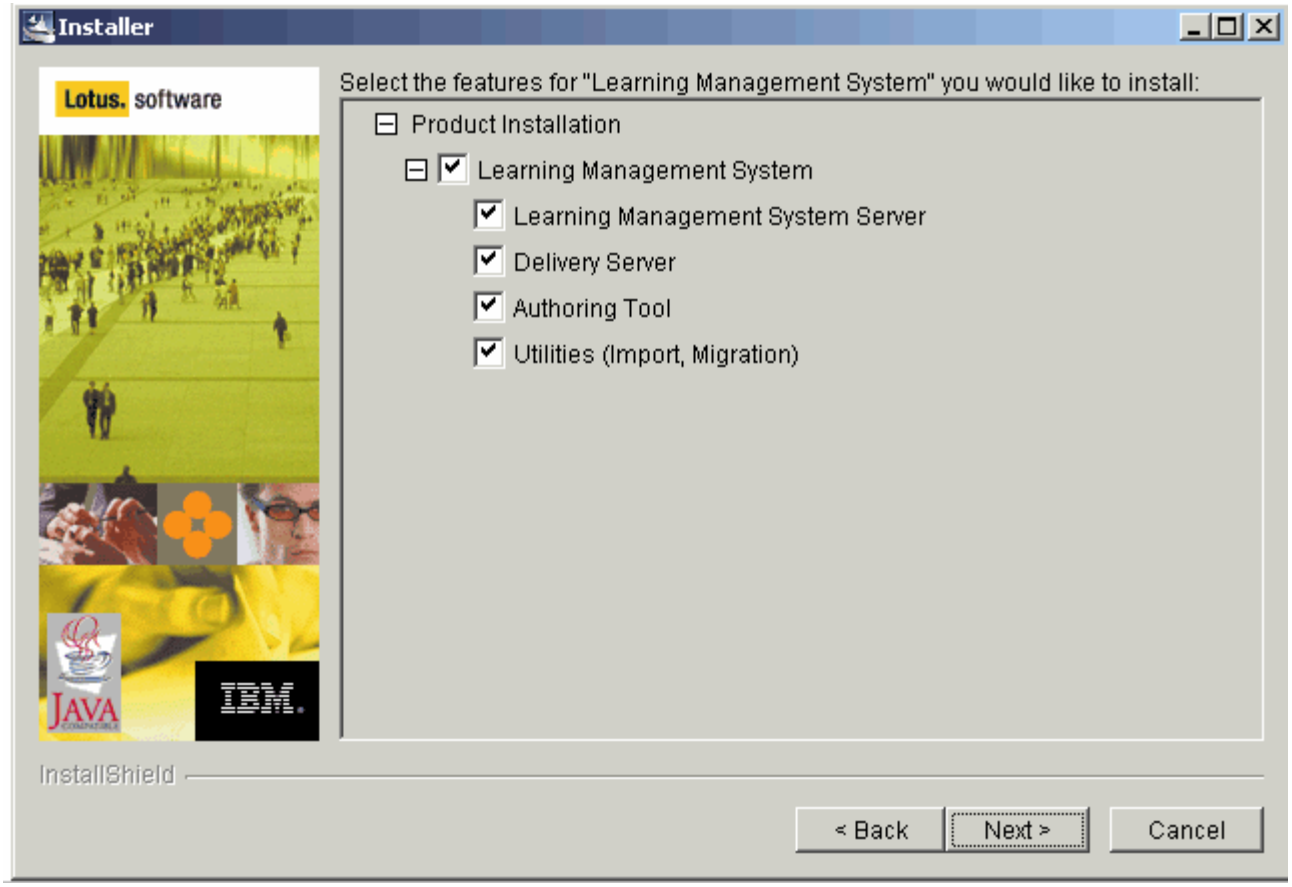
Installer Details

The following example illustrates the installation of both the LMM and DS applications on a single Windows 2000 machine. The LDAP directory is an IBM Directory Server 4.1.

1. Language

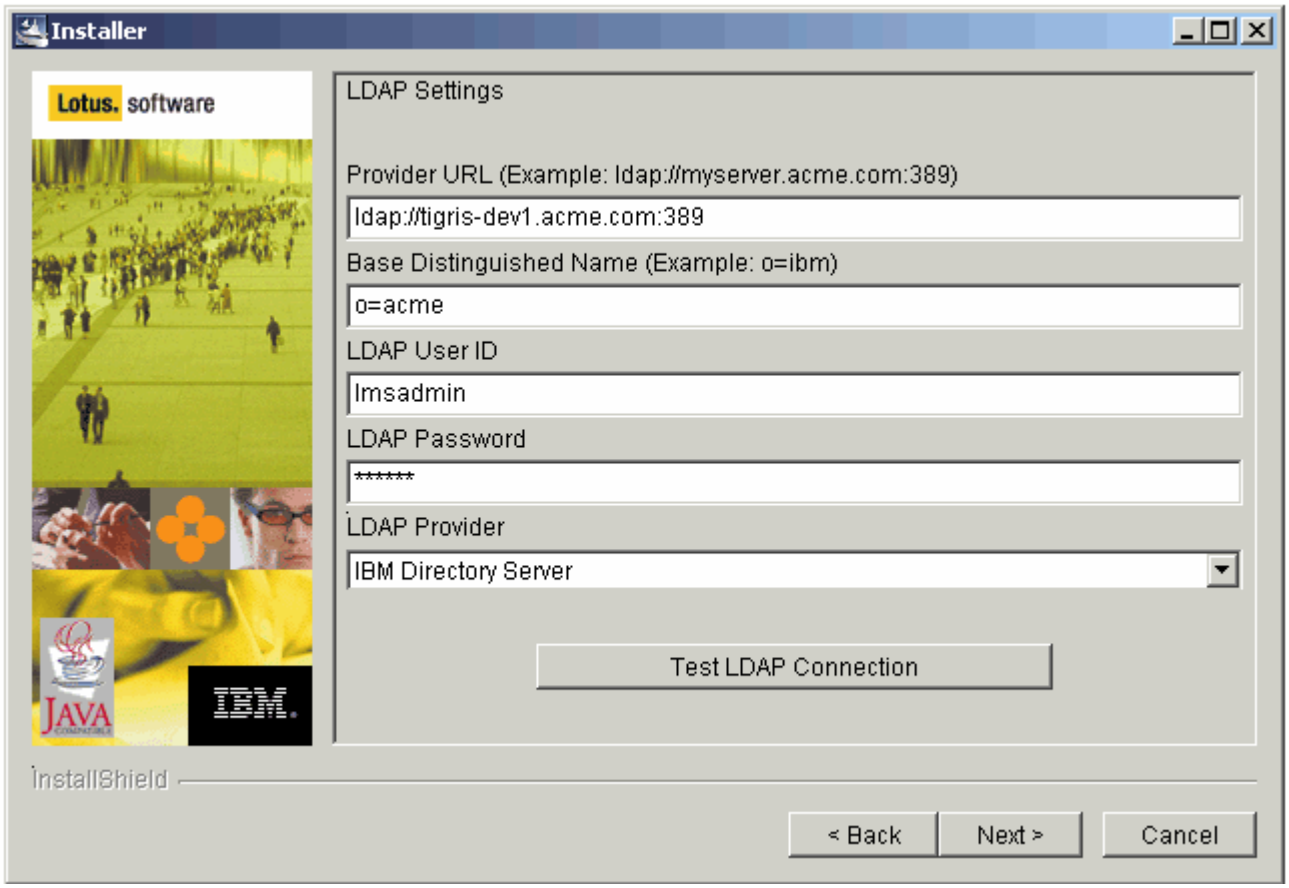
Select language and click on OK. On the Welcome page, click on Next to continue. Read and accept the Software License Agreement. Click on Next to continue.

2. Feature Selection



Select desired features of the LMS. The LMS Server and Delivery Server can be installed at the same time, even if they will be deployed to different machines.

3. LDAP Settings



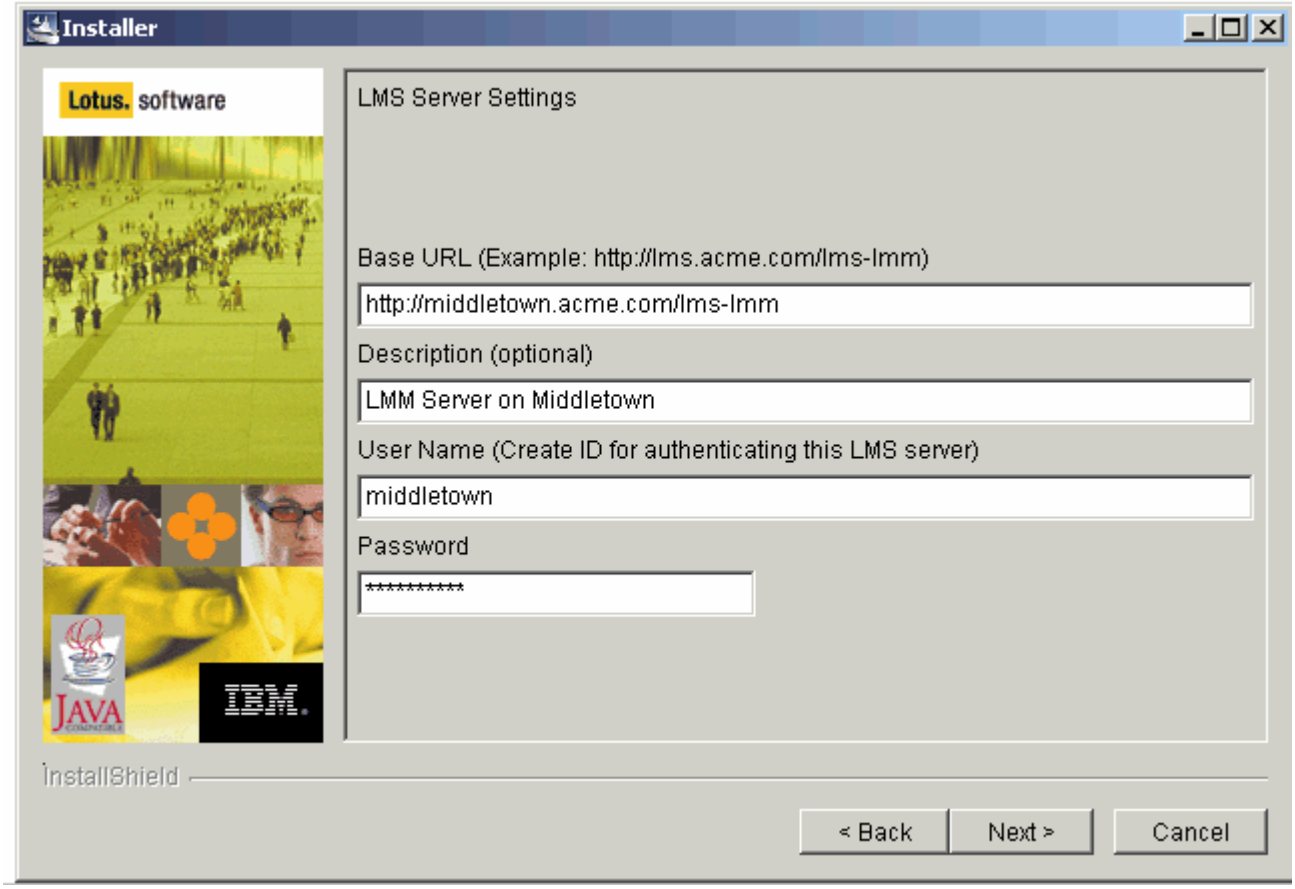
In this example, the LDAP server is on port 389 of tigris-dev1.acme.com. The Base DN is o=acme and the LDAP user name is lmsadmin.

The LDAP user name must exist in the LDAP directory within the specified base. This user requires the ability to read the entries of all the users in the base and does not have to be either the LDAP administrator or a WAS administrator.

The Test LDAP Connection button will confirm that your LDAP settings are correct. Click on Next to continue.

4. LMS Server Settings

The LMS Server Settings capture information for the Learning Management Module application.



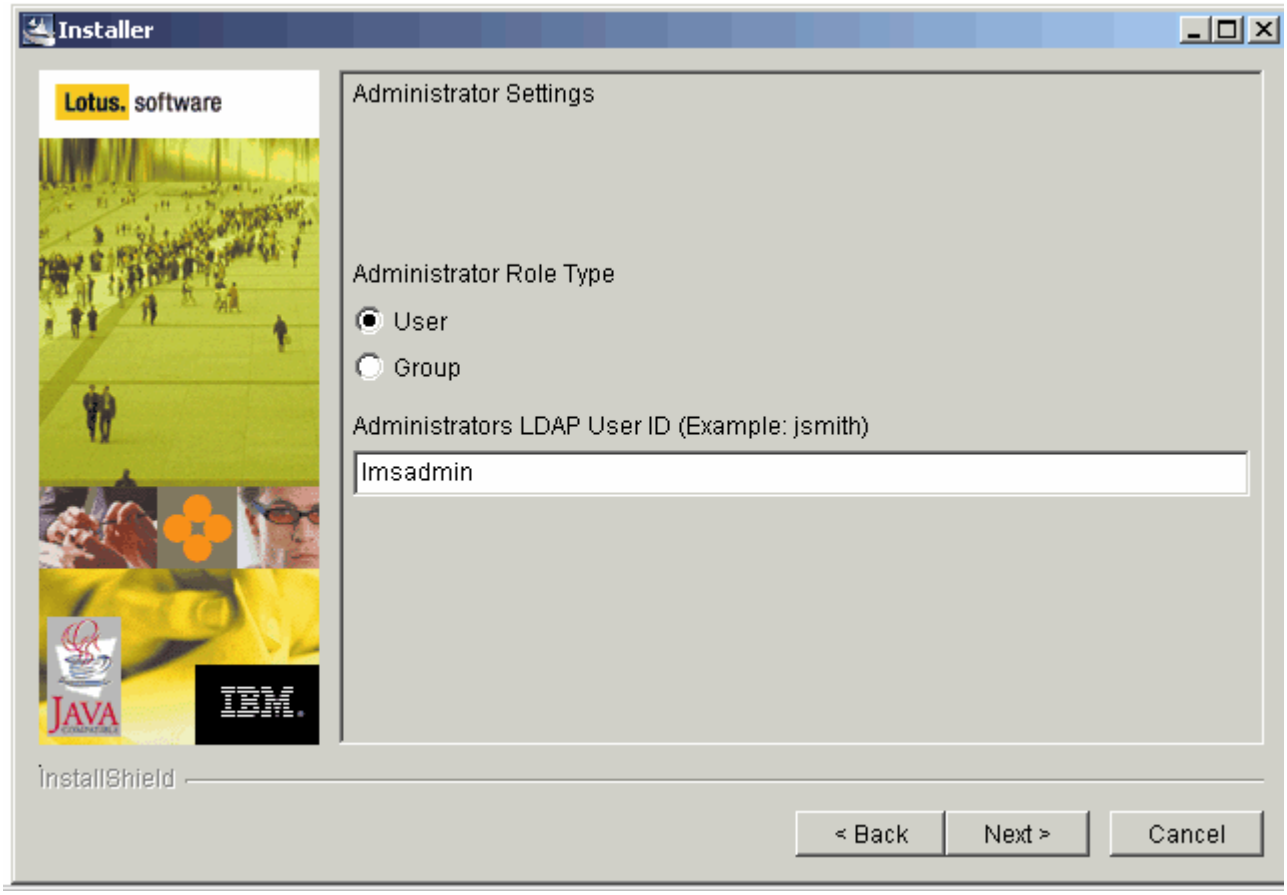
Enter the base URL of the LMM application which includes the base url of the LMM application server and a context root of "lms-lmm" for the LMM application. The context root will always be "lms-lmm" and cannot be changed.

Optionally enter a description for the application.

Enter a user name and password which will allow the DS server to authenticate with the LMM application. This user name and password will be stored in the LMM database and does not reflect a user in the LDAP directory. Click on Next to continue.

5. Administrator Settings

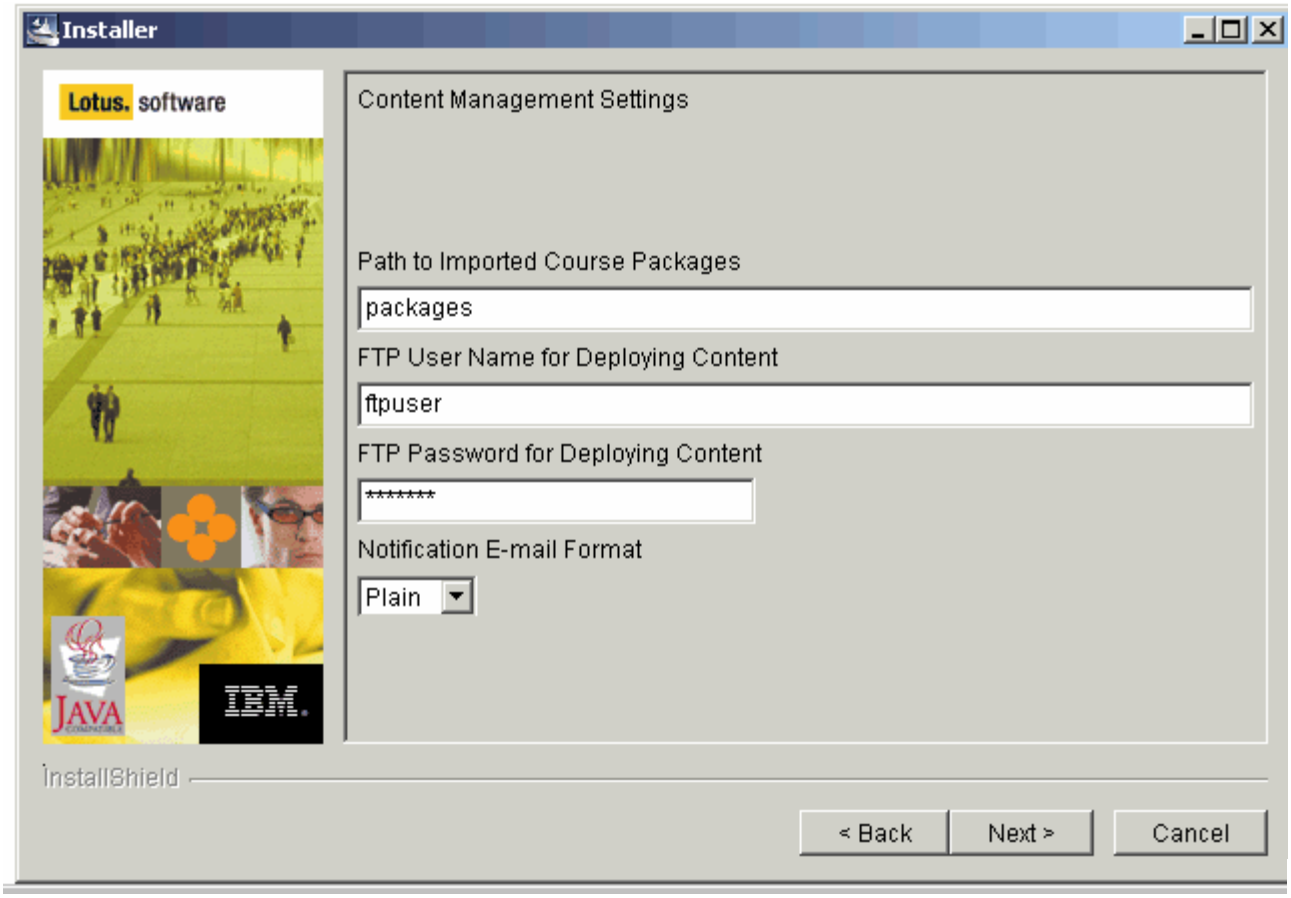
The Administrator Settings capture information about which user or group should receive Administrator access to the LMM application upon installation.



Select the Administrator role type and specify a user or group that will receive administrator access to the LMM application. An LMS Administrator has administrative rights to the LMS and can perform tasks such as User and Content Management and Settings. In this example, the user specified in the LDAP settings, lmsadmin, is used. An example of a group is LMSAdmins/group/acme. The user or group must exist in the LDAP directory. Click on Next to continue.

6. Content Management Settings

The Content Management Settings identify where course content is stored when imported into the LMM, the FTP username and password if the content will be deployed via FTP to the Delivery Server and the Notification email format.



Note: Set up and configuration of FTP servers is not covered in this guide. If FTP is to be used for content deployment (see Content Deployment Settings), FTP must be set up and configured separately for each content server. Since the FTP username and password are global to the LMS, all content servers must have the same user name and password.

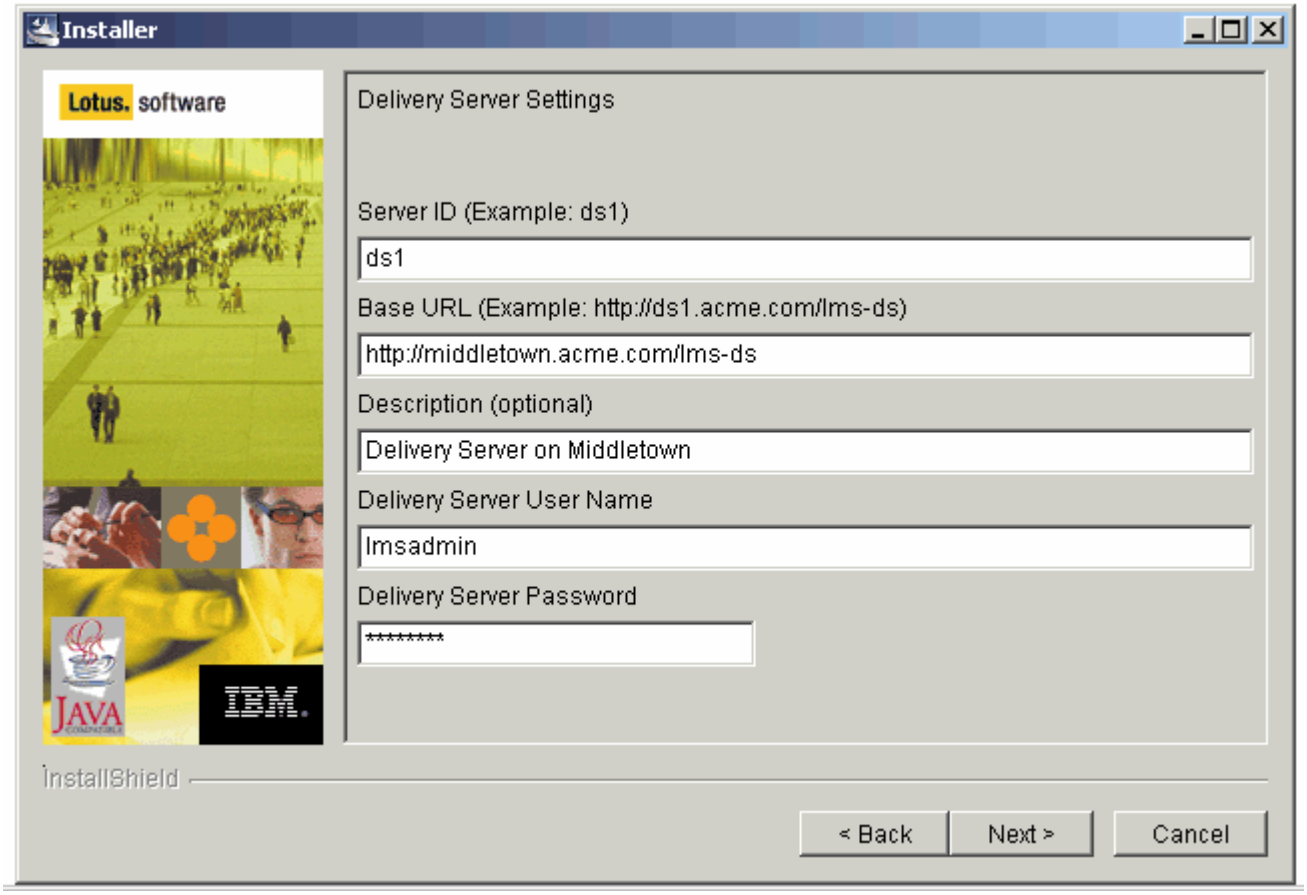
Enter a path to the local directory on the LMM server where imported courses will be stored. The path may be absolute or relative. A relative path as shown in this example, would store course packages at <WASINSTALLPATH>\InstalledApps\<NODE>\LMM.ear\lms-lmm-complete-23.war\packages. An absolute path of "c:\packages" would specify the \packages directory on the LMM server's c: drive.

Enter a valid FTP username and password if FTP deployment will be configured. If FTP will not be used for content deployment, it is recommended to used a dummy value such as "not used" for the FTP username and password. The installer requires that both fields have values defined.

Select the Notification e-mail format. Click on Next to continue.

7. Delivery Server Settings

The Delivery Server Settings capture information for the Delivery Server application.



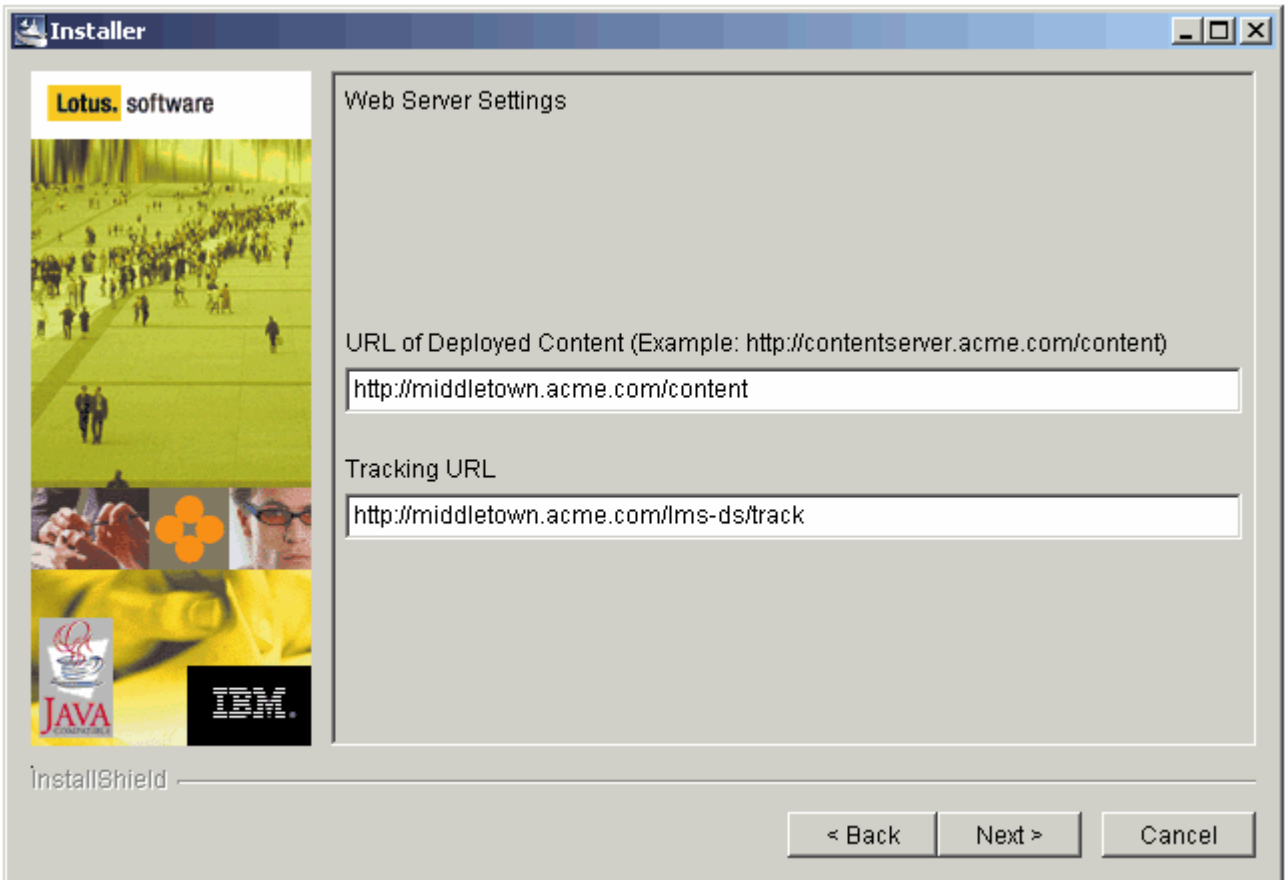
Enter a string to identify this Delivery Server to the LMM application.

Enter the base URL of the DS application which includes the base url of the DS application server and a context root of "lms-ds" for the DS application. The context root cannot be changed. Optionally enter a description for the application.

Enter a user name and password which allows for authentication with the DS application. This user name and password will be stored in the DS database and does not reflect a user in the LDAP directory. Click on Next to continue.

8. Web Server Settings

The Web Server Settings capture information about the location of deployed content and the location of the tracking servlet.



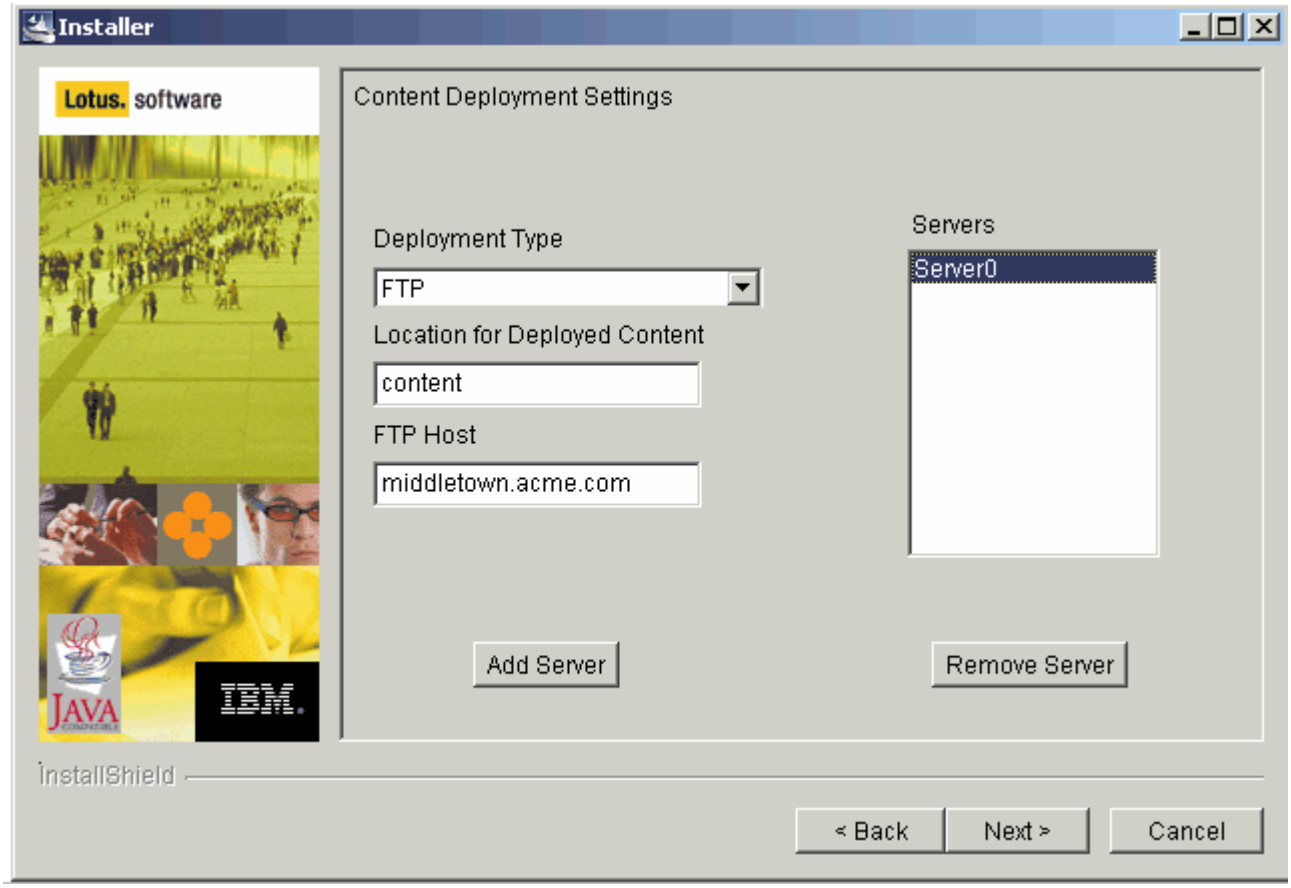
Enter the URL of deployed content. This url points to a location on the Content server where course content will be deployed when an offering is created. The Delivery Server looks for the content at this location when launching a course. If the IBM HTTP Server is the content server, the directory must be created manually under the HTTP server's document root, <HTTPSERVERINSTALLPATH>\htdocs\<LANGUAGE>\content. For example, c:\IBMHTTPServer\htdocs\en_US\content for US English.

The Tracking URL is predetermined by the DS base URL and does not need to be changed.

Click on Next to continue.

9. Content Deployment Settings

The Content Deployment Settings allow you to specify the type and location of deployed content.



There are two ways in which content is deployed to the content server either via FTP or through a filesystem copy.

For FTP, as in the example above, you would select a deployment type of FTP, enter the location relative to the FTP root where content will be placed and the FTP host. The location is a directory that has been setup under the FTP server's root directory. The FTP user specified in the Content Management Settings must have write access to this location. This location must also map to the url of deployed content specified in the Web Server Settings.

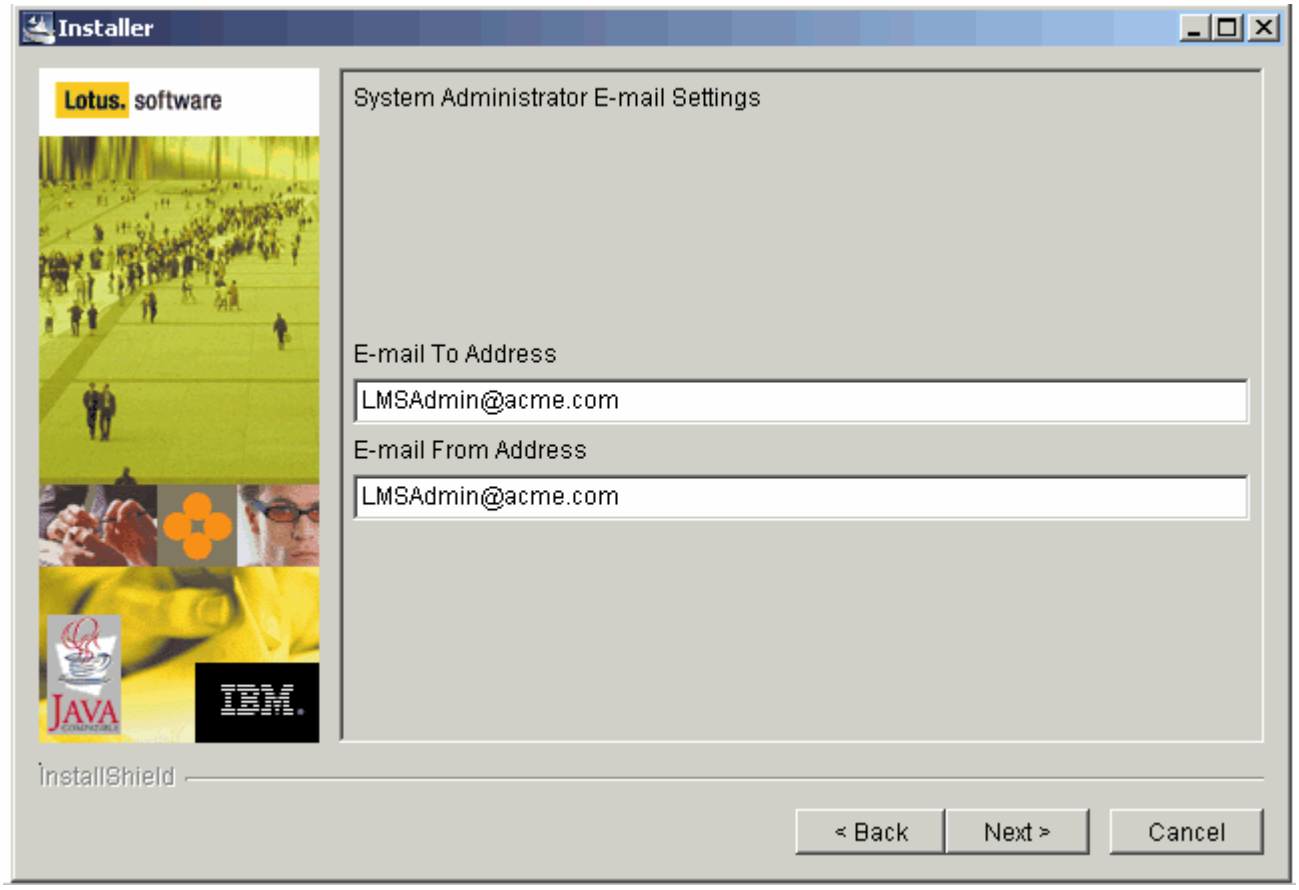
For File System deployment, select File System as the deployment type and enter an absolute path to the deployed content directory on the content server. For example, c:\IBMHTTPServer\htdocs\en_US\content. **Note:** The file system path must be accessible by the LMM.

The Delivery Server sends this location to the LMM when requesting content deployment. The LMM pushes the content to this location.

Click Add Server to save your settings. Click on Next to continue.

10. System Administrator E-mail Settings

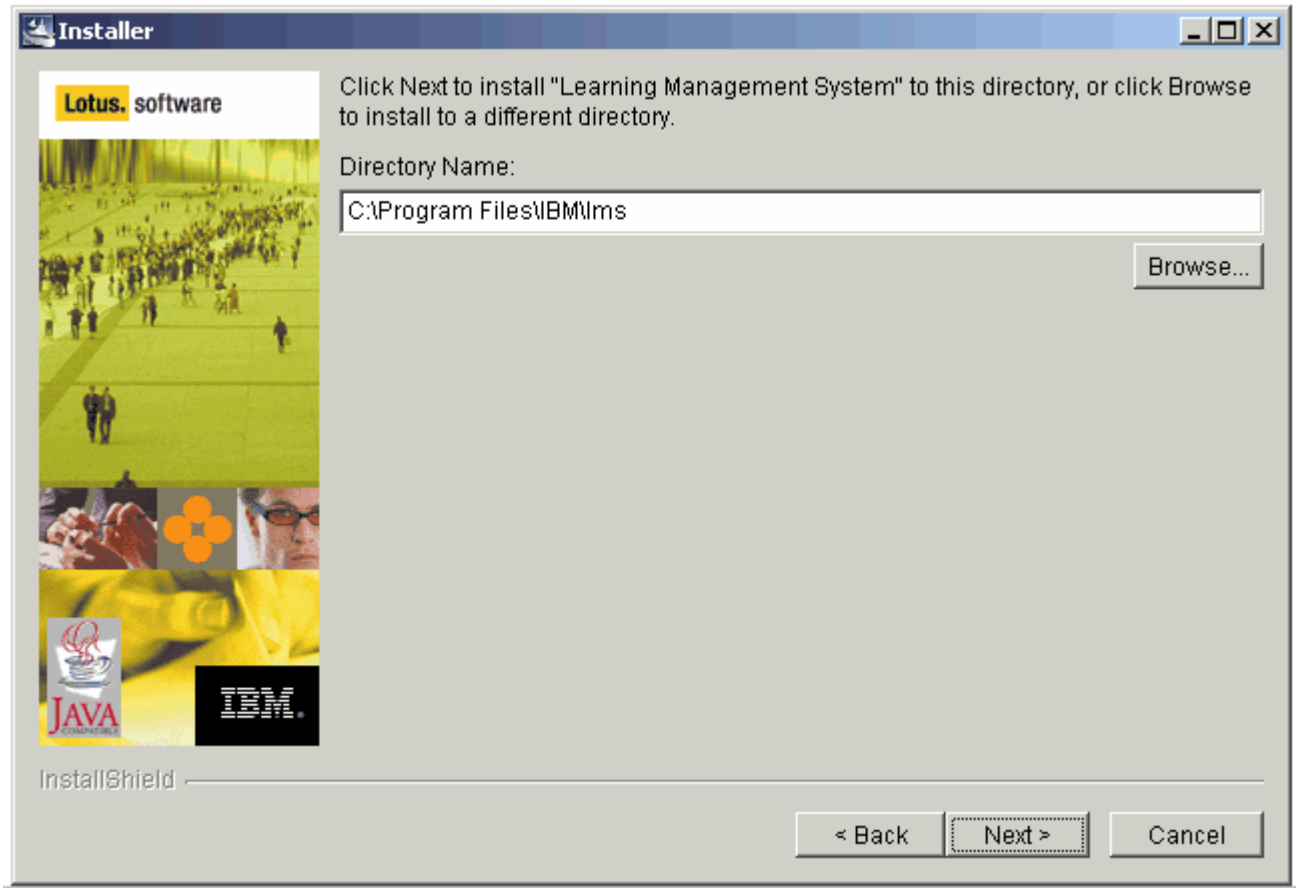
The System Administrator E-mail settings allow you to specify an email address that will receive notifications from the system and an email address that appears as the From email address on these notifications.



Enter the system administrator's email address. Enter the email From address. Click on Next to continue.

11. Install path

This setting specifies the directory path to where install files will be written.

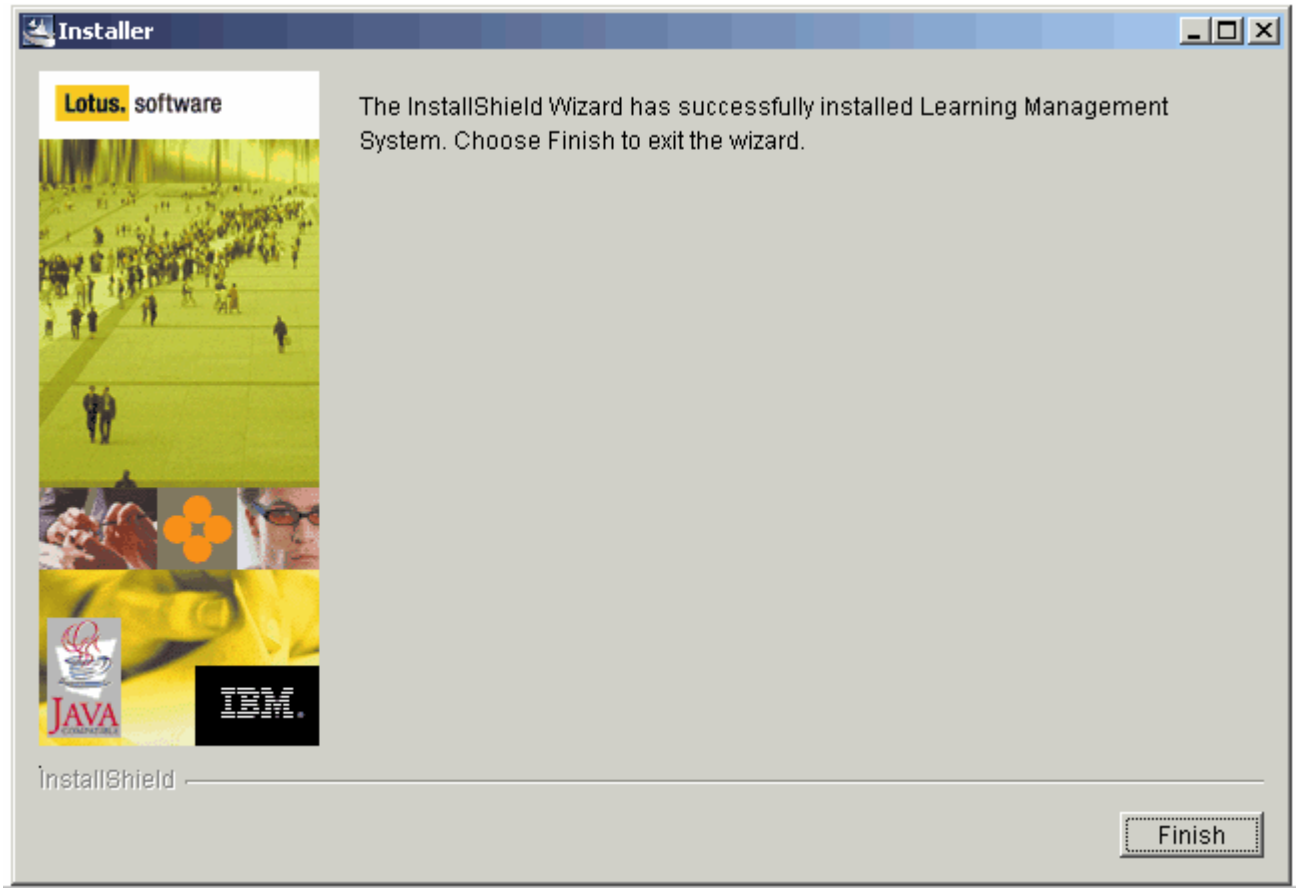


To choose the default installation directory, click on Next to continue. Otherwise, enter the installation destination path or click on Browse to navigate to the install directory. Click on Next to continue.

12. Confirmation

Review the summary. Click on Next to proceed with the Installation.

13. Finish



Click on Finish to close the LMS Installer.

Create and Populate Databases

The LMS server uses 3 databases:

1. LMM application database (LMM server only)
2. audit database (LMM server only)
3. DS application database (one on each DS server)

The LMS Installer generates database scripts for creating the databases, as well as scripts to create the database schema (tables, views, indices) and to populate the tables in each of the 3 databases. If the user later runs the LMS Updater to change any settings, the Updater generates database scripts to update the settings, which the user must run to update the LMM and DS application databases (the Updater does not affect the audit database).

Scripts generated by Installer are grouped by database subdirectory in the <installeddir>\scripts\ directory:

The database administrator needs to create these databases by executing the following scripts:

DB2	*MSSQL*	*Oracle*
audit\cr_db2db_audit.bat (Windows) audit\cr_db2db_audit.sh (AIX, Linux, Unix)	audit\cr_mssqldb_audit.sql	audit\cr_oraown_aud.sql
ds\cr_db2db_ds.bat (Windows) ds\cr_db2db_ds.sh (AIX, Linux, Unix)	ds\cr_mssqldb_ds.sql	ds\cr_oraown_ds.sql
lmm\cr_db2db_lmm.bat (Windows) lmm\cr_db2db_lmm.sh (AIX, Linux, Unix)	lmm\cr_mssqldb_lmm.sql	lmm\cr_oraown_lmm.sql

The database schema and seed data scripts need to be run against the 3 databases as follows:

DB2	*MSSQL*	*Oracle*
audit\audit_db2.sql, audit\audit_data.sql	audit\audit_mssql.sql, audit\audit_data.sql	audit\audit_oracle.sql
ds\ds_db2.sql	ds\ds_mssql.sql	ds\ds_oracle.sql
ds\ settings_init_ds.sql	ds\settings_init_ds.sql	
lmm\lmm_db2.sql	lmm\lmm_mssql.sql	lmm\lmm_oracle.sql
lmm\permission_data.sql	lmm\ permission_data.sql	
lmm\settings_init.sql	lmm\settings_init.sql	

The LMS *Installation Guide* provides more detailed instructions for creating and populating the LMS databases.

Configure WAS

The IBM LMS applications require various WAS resources and settings to be configured. Using the WAS administrator console, perform the following:

1. Configure the JDBC provider, data sources, and J2C Authentication entries for the 3 LMS databases. **Note**: The usernames specified in the J2C Authentication entries must be the same ones that were used to execute the database creation and population scripts.
2. Define the value of the WAS environment variable that specifies the location of the JDBC driver. For Oracle and SQL Server, the JDBC driver information may need to be obtained from another source.
3. Define an LMS resource environment provider with entries that define the LMS log file path and SSL settings.
4. Configure LDAP settings. **Note:** The IBM LMS application and WAS should use the same LDAP directory.
5. Enable Global Security.
6. Configure SSO and LTPA settings. An LTPA token can either be generated by WAS or imported from elsewhere.

The LMS *Installation Guide* provides instructions for configuring WAS.

Deploy the LMM and DS Enterprise Applications to WAS

After all the previous steps have been completed, the LMM and DS application EAR files can be deployed to WAS by selecting Applications -> Install New Application in the WAS Administrator console. The EAR files were generated by the LMS Installer and can be found in the webapps directory . The user installs these files one at a time. The applications can be installed on an existing application server or a new application server.

The LMS *Installation Guide* provides instructions for installing the EAR files.

Update Web Server Plug-in

The LMS applications were assigned HTTP ports when they were installed above. The user must perform a few additional steps using the WAS admin console to make sure the ports are correctly configured:

1. Add the new ports to the list of Virtual Hosts, if not already present.
2. Update the Web server plug-in.
3. For Network Deployment only: Edit the new plug-in and change "DeploymentManager" to "AppServer," and copy the file to the correct location. When ND is installed, WAS generates the plug in from the Deployment Manager, not the node.

The LMS Installation Guide provides instructions for update the Web server plug-in.

Start LMS Applications

After the preceding steps have been performed, the LMS is ready to be started. The Application Servers and Enterprise Applications can be started using the WAS Administrator console. The LMS administrator will typically perform additional LMS configuration, using the LMM UI, before making the LMS available for general use.

Configure LMS

Log into the LMM as an LMS administrator user. Verify that the administrator user has appropriate rights. Home, Student Catalog, Users, Course Catalog, Course Management, Resources, Reports and Settings tabs should be visible.

Configure help

Create a directory for online LMS help files in the HTTP server's document root and unzip lms-help.war to that directory. Example: c:\IBMHttpServer\htdocs\en_US\Help. As the administrator user, select Settings, LMM Server, General Settings, and enter the URL of the Help system. For example, http://middletown.acme.com/help

Add additional Delivery Servers

Add additional Delivery Servers to the LMM Server as necessary. As the administrator user, select Settings, Delivery Servers, Add. Enter delivery server name, description, username, password and base URL for the delivery server. Example: http://midletown.acme.com/lms-ds. The Test button confirms a successfully configuration. Click on Save to save the delivery server settings.

Deploy the Offline Learning Client

Copy the file <InstalledDir>\distribute\OfflineClientWin32.exe to a directory on the HTTP server. In the LMM, as the administrator user, select Settings, LMM Server, General Settings. Enter the URL of the Offline Learning Client, for example, duc\OfflineClientWin32.exe. Enter the LMS version number. Current version is 1.0.

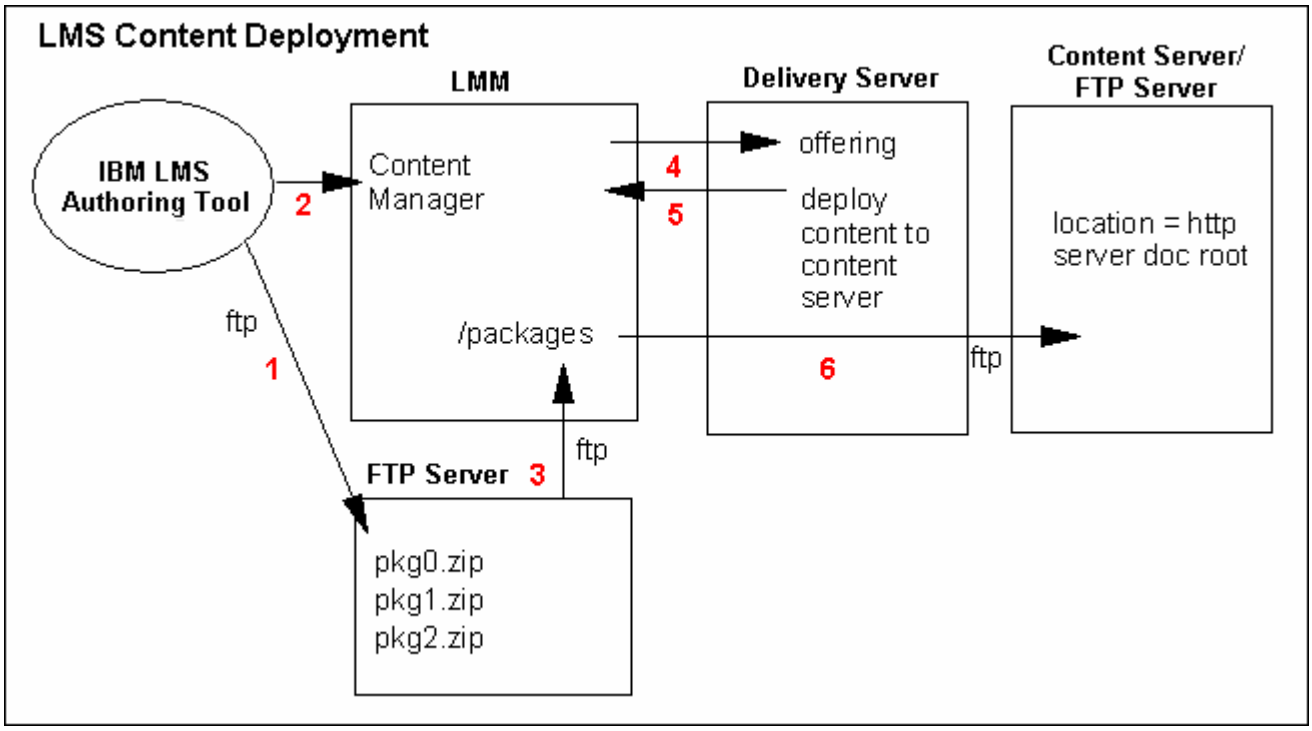
Install the Authoring Tool

Copy <InstalledDir>\distribute\AuthoringTool.zip to local machine. Unzip, maintaining folder names.Run Disk1\setup.exe, follow instructions. After installation is complete, Start - Programs - IBM Lotus LMS Authoring Tool.

Use the Command Line Import Utility

To import course content into the LMM, run the Command Line Import (CLIMP) Utility, <InstalledDir>\bin\climp.bat. Before executing, edit climp.bat to ensure the path includes the \java\jre\bin directory. See the Learning Management System *Content Guide* for more information on CLIMP.

LMS Content Deployment



Step By Step

1. The authoring tool ftp's the content package (.zip) to an ftp server.
2. The authoring tool sends a request to the Content Manager to import the package
3. The Content Manager imports the package from the ftp server and extracts the contents of the package under the "packages" directory.
4. A master and offering are created on the LMM. The LMM sends the offering to the DS.
5. The DS sends a request to the LMM to push the content to the Content/HTTP Server. DS indicates the location where the content should be sent.
6. LMM ftps the content to the location specified.

Notes

- The FTP server used by the AAT in steps 1 and 3 to import the package to the Content Manager on the LMM can but does not have to be the same FTP server utilized by the LMM in step 6. Most likely they will be different servers.
- The packages directory where the Content Manager extracts the content package needs to be accessible by the LMM. This is the Content Manager's copy of the content and is not the "deployed" copy of the content.
- The location specified for the ftp deployment to the Content Server needs to:
  a. be relative to the ftp server (for example, a location of "content" would be a directory under the ftp root, ftp.acme.com/content)
  b. map to the URL for deployed content, which is relative to the Document root of the HTTPServer.

  For example, if the URL for deployed content is set to http://lmsserver.acme.com/content, the default Document root would be IBMHTTPServer\htdocs\en_US and content would be a directory under the en_US directory.

- The default Document root for the HTTPServer can be modified in the httpd.conf file under the HTTPServer\conf directory.
- For the best performance, you would want your content to live on your content (http) server.

Also see the article "Deploying Content in the Lotus Learning Management System" at: http://www-10.lotus.com/ldd/today.nsf/a2535b4ba6b4d13f85256c59006bd67d/440c186baa9b2f9a85256cd7004b83a4?OpenDocument

LDAP Settings

Sample WAS LDAP settings for IBM SecureWay 3.2, IBM Directory Server 4.1, Lotus Domino and iPlanet 5.0:

User Filter:	(&(uid=%v)(objectclass=inetOrgPerson))
Group Filter:	(&(cn=%v)(|(objectclass=groupOfNames)(objectclass=groupOfUniqueNames)))
User ID Map:	*:uid
Group ID Map:	*:cn
Group Member ID Map:	groupOfNames:member;groupOfUniqueNames:uniqueMember

Sample WAS LDAP settings for Microsoft Active Directory:

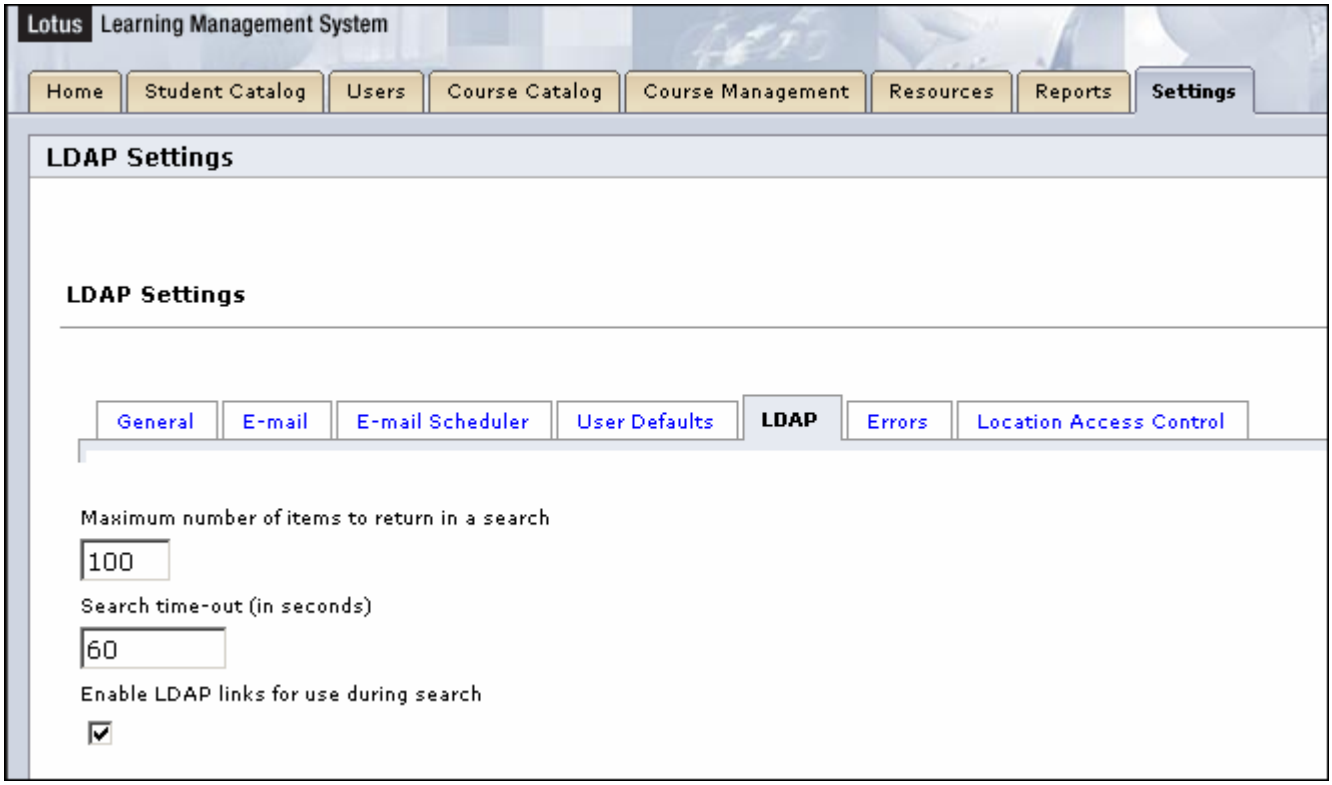
User Filter:	(&(sAMAccountName=%v)(objectclass=user))
Group Filter:	(&(cn=%v)(objectclass=group))
User ID Map:	user:sAMAccountName
Group ID Map:	*:cn
Group Member ID Map:	memberof:member

Sample WAS LDAP User Registry settings for Microsoft Active Directory:

Note that the DN format is much different than other LDAPs. Here's an example:

Base Distinguished Name (DN):	ou=acme	dc=nantasket
Bind Distinguished Name (DN):	cn=nantasket	cn=Users

For Microsoft Active Directory, in LMM Settings, LDAP, increase Search time-out from 10 to 60.



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