LEARNING MANAGEMENT SERVER
LEARNING EXPERIENCE SERVER

INSTALLATION AND UPGRADE GUIDE

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Aspen Learning Management & Experience Server Installation and Upgrade Guide

Aspen Learning Management Server & Aspen Learning Experience Server

Part I: Installation and upgrade instructions for SQL Server

Part I of this document provides detailed installation, upgrade, and configuration instructions for the Aspen Learning Management Server (LMS) and Aspen Learning Experience Server (LXS) using Microsoft SQL Server 7.0 or 2000. You can install these Aspen components one of three ways:

- Install/upgrade both Aspen LMS and LXS
- Install/upgrade LMS only
- Install/upgrade LXS only

In addition to the installation process for new Aspen customers, this document describes the process for customers upgrading from multiple versions of Ingenium to Aspen.

Before installing or upgrading

Before installing or upgrading to this version of Aspen, make sure your server and client computers conform to the hardware and software requirements according to *Aspen Learning Management and Experience Server System Requirements* on the Aspen CD in *SystemRequirements.pdf*.

If you are upgrading from a previous version of Aspen or Ingenium:

- Make sure that no one is logged into the Ingenium or Aspen database using any of the client applications or other tools.
- Back up the Ingenium or Aspen database(s) on the server.
- Make sure that Messenger is not processing.
- Stop the Data Filter service.

Preparing the database for installation or upgrade of Aspen LMS and LXS

If you plan to install both LMS and LXS, follow the guidelines in this section to install or upgrade the database.

➤ **To prepare the database configuration for LMS and LXS:**

1. Please check the release notes for both Aspen LMS and LXS for important information about your installation or upgrade.
2. Start the SQL Server service on the server computer where you will install the Aspen database.

3. Verify that Microsoft SQL Server Full-Text Search is installed and the Microsoft Windows Indexing service is started and set to start automatically.
4. Verify that the SqlServerAgent service is started and set to start automatically.
5. If performing a new installation, create the Aspen database on the server computer.
6. From the Aspen CD, copy *IngServer.exe* to the database server.
7. Run *IngServer.exe* on the database server. Select Aspen Database Installer from the list of components to install.
8. If performing a new installation, create an ODBC System DSN (data source name) for the Aspen database on the database server.
9. From the Windows Start Menu, run the Aspen Database Installer to create a new Aspen database or upgrade an existing database.
10. If performing a new installation, add SQL Server logins for Aspen LMS Workstation client application users who will be new users of the server.
11. From the Aspen CD, copy *ImeSetup.exe* to the Aspen LMS Messenger server.
12. Run *ImeSetup.exe* on the Messenger server to install or upgrade the Aspen LMS Messenger component according to the procedure in the "Install or upgrade Aspen LMS Messenger" section. If you are upgrading from a previous version of Messenger, install this version over the old one.

13 From the Aspen CD, copy the Aspen reports that you want to make available as shared reports to a location accessible to all Aspen LMS Report Browser users. Alternatively, copy the reports to each Aspen administrators' computer.

14 From the Aspen CD, copy *IngClient.exe* to all Aspen administrators' computers.

15 Run *IngClient.exe* on these computers to install Aspen LMS Workstation, Aspen LMS AdminTools, and Aspen LMS Report Browser, and, if running on Windows 98 or Windows NT, Microsoft Data Access Components 2.5. If performing an upgrade, install this version of these applications over the previous versions.

16 If performing a new installation, create ODBC System DSNs (data source names) for the Aspen database on each of the administrators' computers.

17 If performing a new installation, run the Aspen LMS AdminTools from the Windows Start Menu to create administrative users and security roles for all users of Aspen LMS Workstation, Aspen LMS AdminTools, and Aspen LMS Report Browser.

18 From the Aspen CD, copy *IngServer.exe* to the computer that will run the Aspen Data Filter component (unless you plan to use the Data Filter on the database server, in which case, *IngServer.exe* was copied there earlier in this procedure).

19 Run *IngServer.exe* on the Data Filter server. Select Aspen Data Filter and if installing on Windows NT, Microsoft Data Access Components 2.5 from the list of components to install. If performing an upgrade, install this version of the data filter service over any previous version.

20 If performing a new installation, create an ODBC System DSN for the Aspen database on the Data Filter service computer, unless you plan to use the Data Filter on the database server and use the DSN created on the database server.

21 From the Windows Start Menu, run the Aspen Data Filter Administration Utility. Select the DSN and enter the username and password that the Data Filter service will use to connect to the Aspen database.

22 From the Aspen CD, copy *IwcSetup.exe* to the web server.

23 If performing a new installation, create an ODBC System DSN (data source name) for the Aspen database on the web server.

24 Run *IwcSetup.exe* on the web server to install Aspen. If performing an upgrade, we suggest that you install this version of Aspen over any previous version.

Preparing the database for installation or upgrade of Aspen LMS only

If you will be installing Aspen LMS without Aspen LXS, follow the instructions below to install the database for LMS.

➤ **To prepare the database configuration for LMS:**

1 Please check the Aspen LMS release notes for important information about your installation or upgrade.

2 Start the SQL Server service on the server computer where you will install the Aspen database.

3 If performing a new installation, create the Aspen database on the server computer.

4 From the Aspen CD, copy *IngServer.exe* to the database server.

5 Run *IngServer.exe* on the database server. Select Aspen Database Installer from the list of components to install. In an installation on Windows NT, select Microsoft Data Access Components 2.5.

6. If performing a new installation, create an ODBC System DSN (data source name) for the Aspen database on the database server.
7. From the Windows Start Menu, run the Aspen Database Installer to create a new Aspen database or upgrade an existing database.
8. In a new installation, add SQL Server logins for Aspen LMS Workstation client application users who will be new users of the server.
9. From the Aspen CD, copy *ImeSetup.exe* to the Aspen LMS Messenger server.
10. Run *ImeSetup.exe* on the Messenger server to install or upgrade the Aspen LMS Messenger component according to the procedure in the "Install or upgrade Aspen LMS Messenger" section. If you are upgrading from a previous version of Messenger, install this version over the old one.
11. From the Aspen CD, copy the Aspen reports that you want to make available as shared reports to a location accessible to all Aspen LMS Report Browser users. Alternatively, copy the reports to each Aspen administrators' computer
12. From the Aspen CD, copy *IngClient.exe* to all Aspen administrators' computers.
13. Run *IngClient.exe* on the computers to install Aspen LMS Workstation, Aspen LMS AdminTools, Aspen LMS Report Browser, and, if running on Windows 98 or Windows NT, Microsoft Data Access Components 2.5. If performing an upgrade, install this version of these applications over any previous versions.
14. If performing a new installation, create ODBC System DSNs (data source name) for the Aspen database on these computers.

15 If performing a new installation, run the Aspen LMS AdminTools from the Windows Start Menu to create administrative users and security roles for all users of Aspen LMS Workstation, Aspen LMS AdminTools, and Aspen LMS Report Browser.

16 From the Aspen CD, copy *IngServer.exe* to the computer that will run the Aspen Data Filter component (unless you plan to use the Data Filter on the database server, in which case, *IngServer.exe* was copied there earlier in this procedure).

17 Run *IngServer.exe* on the data filter server. Select Aspen Data Filter and if installing on Windows NT, Microsoft Data Access Components 2.5 from the list of components to install. If performing an upgrade, install this version of the Data Filter service over previous versions.

18 If performing a new installation, create an ODBC System DSN for the Aspen database on the Data Filter service computer, unless you plan to use the Data Filter on the database server and use the DSN created on the database server.

19 From the Windows Start Menu, run the Aspen Data Filter Administration Utility. Select the DSN and enter the username and password that the Data Filter service will use to connect to the Aspen database.

20 From the Aspen CD, copy *IwcSetup.exe* to the web server computer.

21 In a new installation, create an ODBC System DSN (data source name) for the Aspen database on the web server.

22 Run *IwcSetup.exe* on the web server to install Aspen. If performing an upgrade, we suggest you install this version of Aspen over any previous versions.

Preparing the database for installation or upgrade of Aspen LXS only

➤ **To prepare the database configuration for Aspen LXS:**

1. Please check the Aspen LXS release notes for important information about your installation or upgrade.
2. Start the SQL Server service on the server computer where you will install the Aspen database.
3. Verify that Microsoft SQL Server Full-Text Search is installed and the Microsoft Windows Indexing Service is started and set to start automatically.
4. Verify that the SqlServerAgent service is started and set to start automatically.
5. If performing a new installation, create the Aspen database on the server computer.
6. From the Aspen CD, copy *IngServer.exe* to the database server.
7. Run *IngServer.exe* on the database server. Select Aspen Database Installer from the list of components to install.
8. If performing a new installation, create an ODBC System DSN (data source name) for the Aspen database on the database server.
9. From the Windows Start Menu, run the Aspen Database Installer to create the Aspen database or upgrade an existing one.
10. From the Aspen CD, copy *IwcSetup.exe* to the web server.
11. If performing a new installation, create an ODBC System DSN (data source name) for the Aspen database on the web server.

12 Run *IwcSetup.exe* on the web server to install Aspen. If performing an upgrade, we suggest you install this version of Aspen over previous versions.

Start the Microsoft SQL Server service

Follow the steps below to verify that the Microsoft SQL Server [MSSQLSERVER] service is running and is set to run automatically whenever Windows starts:

1 From the Windows Control Panel, open Services.

2 Double-click the MSSQLServer services.

3 Click the Start button if the service is stopped.

4 Select Automatic from the Startup Type list. This will make sure the Microsoft SQL Server service is running whenever Windows starts.

Verify that Microsoft SQL server full text search is installed

The following procedure is only required if you will be using Aspen Learning Experience Server.

To verify that the Microsoft SQL Server service is running and set to run automatically whenever Windows starts:

1 From the Windows Control Panel or from Start Menu > Administrative Tools folder, select Services.

2 Make sure there is a service named Microsoft Search. If you cannot find it, then you need to install Microsoft Search (full text) service.

3 If full text is installed then double-click the Microsoft Search service.

4 Click the Start button if the service is stopped.

5 Select Automatic from the Startup Type list to make sure the Microsoft Search service is running whenever Windows starts.

Create the Aspen Database using SQL Server 7 or SQL Server 2000

Use the Microsoft SQL Server Enterprise Manager to create the Aspen database on the server computer.

➤ **To create a new Aspen database:**

1 Make sure that all the computers that will have Aspen components installed conform to the hardware and software requirements as listed in the *Aspen Learning Management and Experience Server System Requirements* document.

2 From the Windows Start menu, select Programs then Microsoft SQL Server. Click on SQL Server Enterprise Manager.

3 Expand the list of databases for the server group where you wish to install the Aspen database.

4 Right-click Databases and select New Database from the menu.

5 In the Database Properties dialog box, type Aspen in the Name box. The primary database file, *Aspen_Data.mdf*, and transaction log file, *Aspen_Log.ldf*, are automatically created.

6 Make that the Automatically grow file check box is selected for the database file. On the Transaction Log tab, we strongly suggest that Automatically grow file is also selected. You can keep the default values for the other options.

7 Click OK to close this dialog box and return to the SQL Server Enterprise Manager. The new Aspen database is displayed in the details pane.

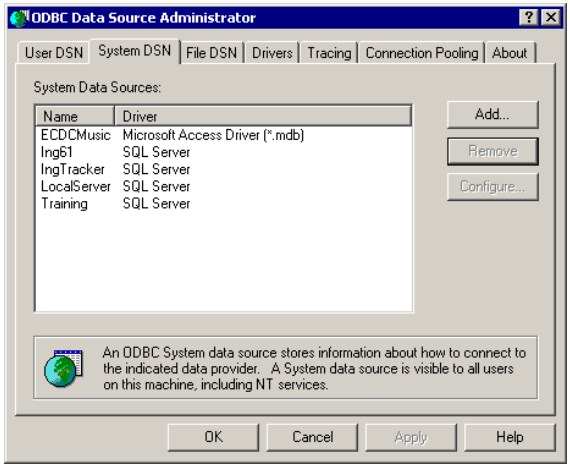
Create an ODBC System DSN

Aspen uses ODBC (Open Database Connectivity) and OLE DB to communicate with the Aspen database. Depending on your installation, you may need to create ODBC system DSN's on many different computers when installing Aspen.

➤ **To create an ODBC System DSN:**

1 From the Windows Control Panel or from Start Menu > Administrative Tools folder, select ODBC Data Sources.

2 In the ODBC Data Source Administrator, click the System DSN tab.



3 Click Add.

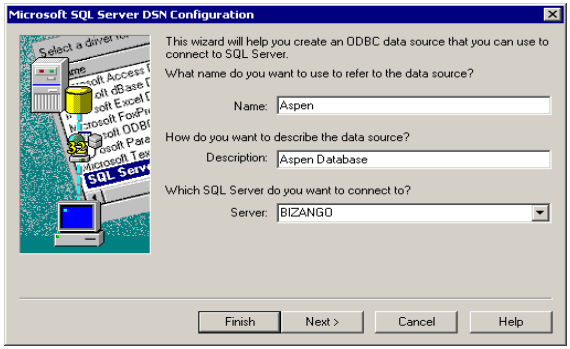
4 In the Create New Data Source dialog box, select SQL Server from the list of drivers.

5 Click Next. The Create a New Data Source to SQL Server dialog box is displayed.

6 In the Name box, type a name for this DSN.

7 In the optional Description box, type a description for the data source.

8 In the Server box, click the name of the computer containing the Aspen database.



9 Click Next.

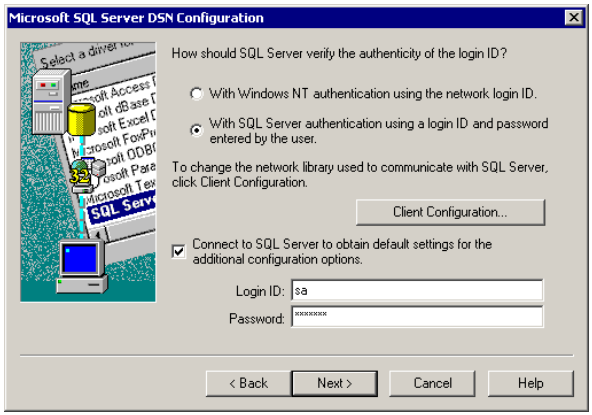
10 Select to authenticate the user with Windows NT authentication using the network login ID (See the section, About Windows NT authentication) or with SQL Server authentication using a login ID and a password entered by the user.

11 Click the Client Configuration button. Verify that TCP/IP is selected from the list of Network Libraries.

12 If you selected the option to authenticate With SQL Server authentication, be sure to select the option to Connect to the SQL Server to obtain default settings for the additional configuration options.

A Type “sa” into the Login ID box to log in as the system administrator to configure the data source.

B Type the password for the server into the Password box.



13 Click Next.

14 In the following dialog box, select the check box and click the Aspen database in the Change the default database to box.

15 Keep the remaining default settings through the following dialog boxes by clicking Next.

16 When you have finished, the ODBC Microsoft SQL Server Setup dialog box summarizes the configuration of the new system DSN.

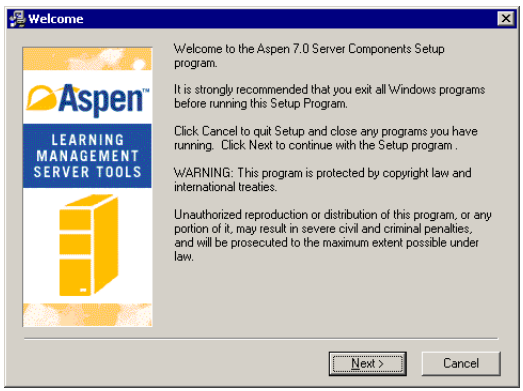
You can click Test Data Source to check the data source.

17 Click OK to return to the ODBC Data Source Administrator.

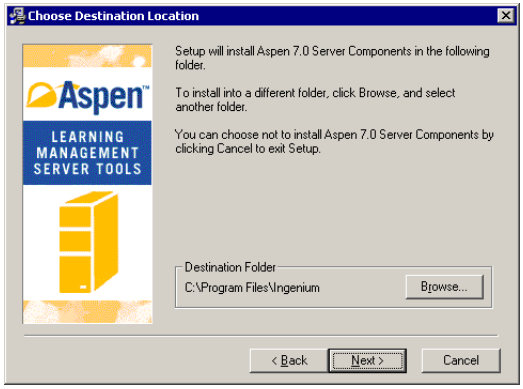
The new DSN appears in the System Data Sources list.

Install the Aspen Database Installer

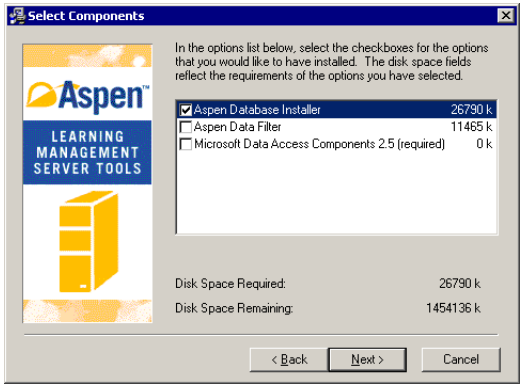
1. Make sure that all the computers that will have Aspen components installed conform to the hardware and software requirements as listed in the *Aspen Learning Management and Experience Server System Requirements* document.
2. From the Aspen CD, copy *IngServer.exe* to the database server. The Aspen Database Installer must be run on the database server.
3. Run *IngServer.exe* on the database server.



4. Click Next to begin the installation process.

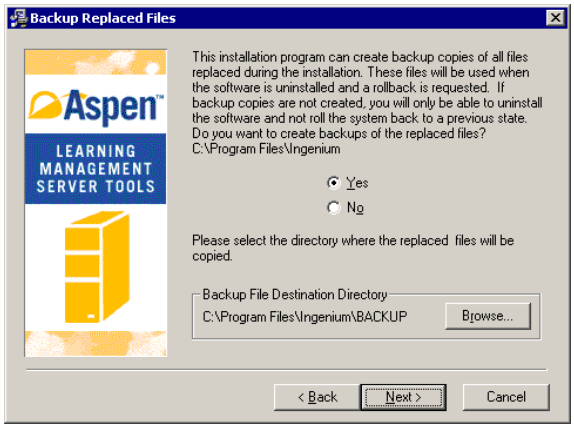


5 Click Next to install the Aspen Database Installer to the default directory or click Browse to select another directory.

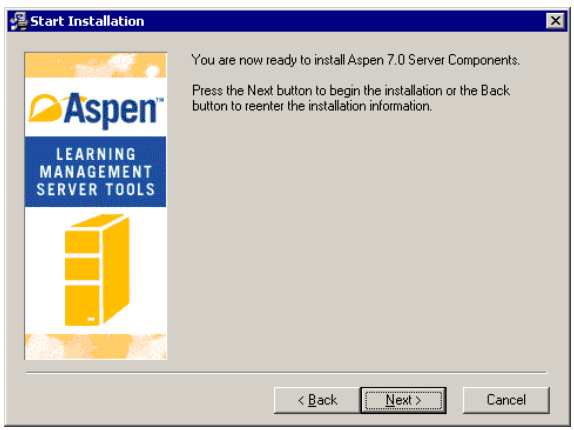


6 Select Aspen Database Installer and click Next to continue.

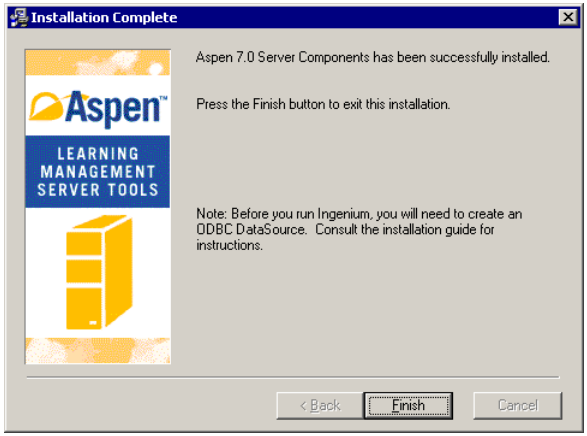
Note if installing on Windows NT, please also select Microsoft Data Access Components 2.5.



7 Select whether to backup files that this installation system will replace. We strongly suggest you choose Yes.



8 Click Next to begin installing the Aspen Database Installer.



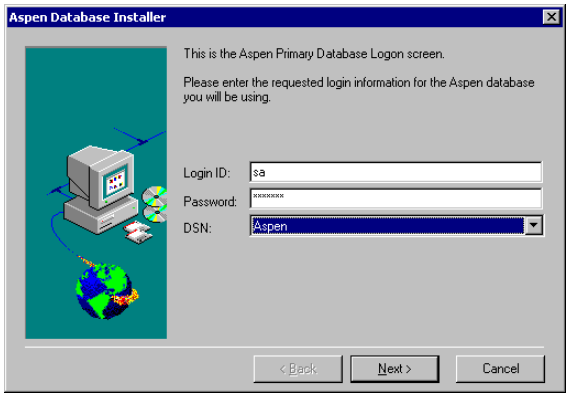
9 The Aspen Database Installer is now installed. Click Finish to complete the installation.

Run the Aspen Database Installer

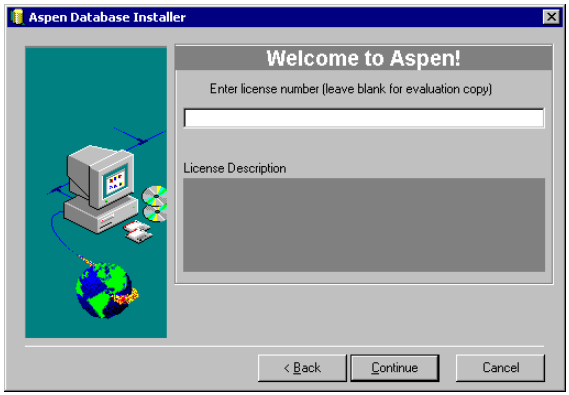
The Aspen Database Installer prepares the database server for use. Depending on whether you are installing or upgrading Aspen Learning Experience Server, Learning Management Server, or both, the Aspen Database Installer will perform some or all of the following steps: install a new Aspen database or upgrade an Ingenium or Aspen database to the most recent version, create a default Aspen database administration user and security role, create demo data (optional), and create a directory on the database server to store course meta information used in full-text searches.

➤ **To run the Database Installer:**

1. Make sure that the all the computers that will have Aspen components installed conform to the hardware and software requirements as listed in the *Aspen Learning Management and Experience Server System Requirements* document.
2. If performing a new installation, create an ODBC System DSN (data source name) for the Aspen database on the database server.
3. From the Windows Start Menu, run the Aspen Database Installer to create a new Aspen database or upgrade an existing database.

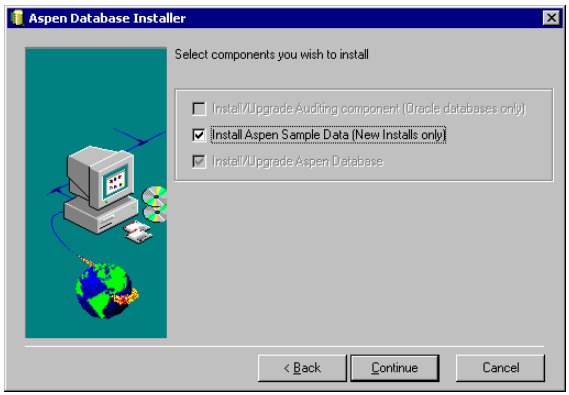


4. Enter the login ID, password, and DSN for the Aspen database.

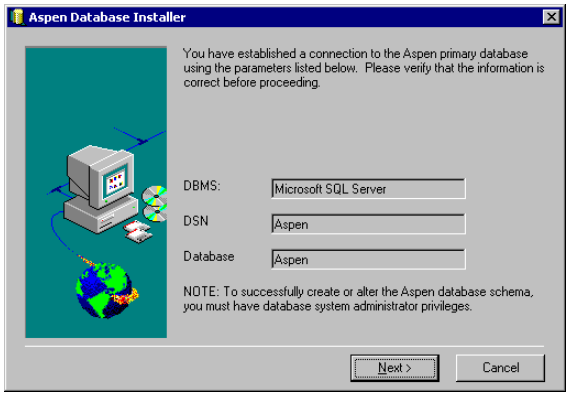


5 Enter your license number and click Continue.

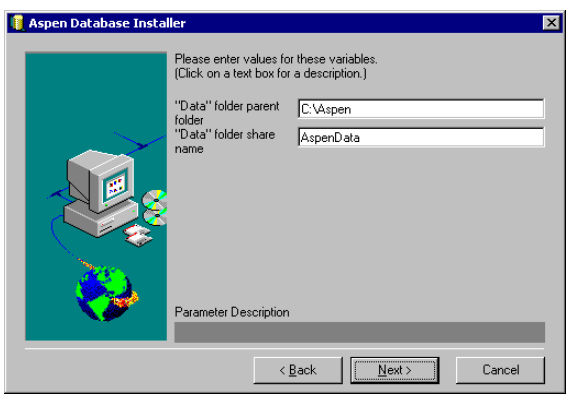
Leave the license number box blank for an evaluation license.



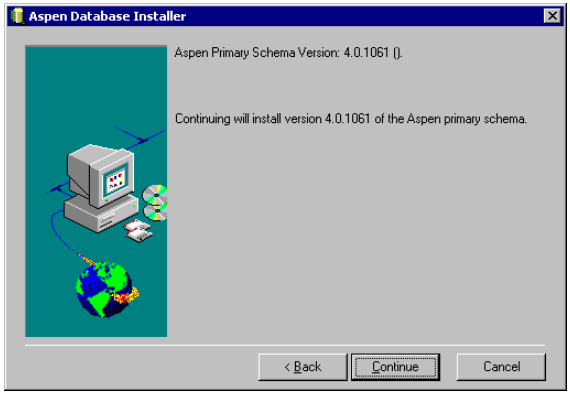
6 In new installations, you can select Install Aspen Sample Data to install sample data with your database.



7 Verify that the DBMS, DSN and Database are correct and click Next to continue.

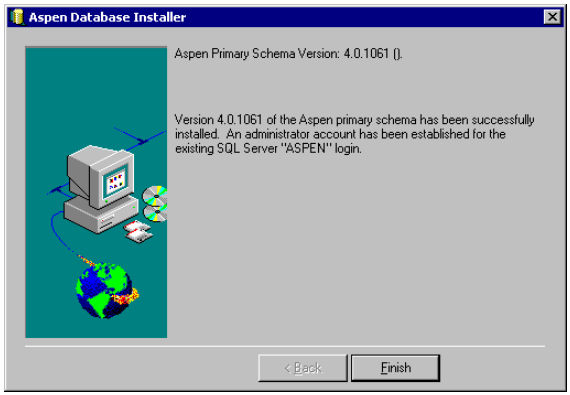


8 This step will only appear if the license number you entered includes Learning Experience Server. Enter the path and share name of the folder that will be used by Learning Experience Server to store course metadata. Click Next to continue.



9 Click Continue to start installing or upgrading the Aspen database.

Note if you are upgrading an existing database, the screens will vary slightly from the screens shown in the remaining steps of this procedure.



10 The Aspen database server is now ready. Press Finish to complete the installation.

Install or upgrade Aspen Web applications

➤ **To install or upgrade the Aspen Web interface:**

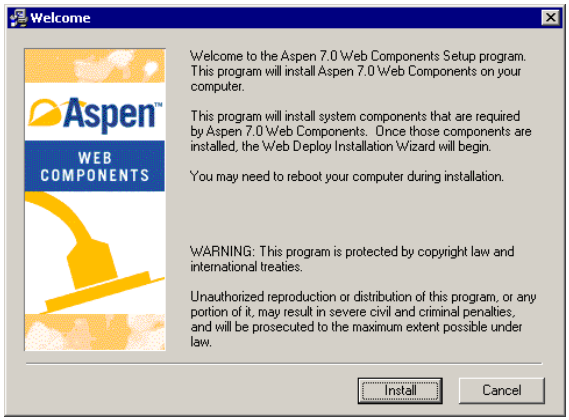
1 Make sure that the all the computers that will have Aspen components installed conform to the hardware and software requirements as listed in the *Aspen Learning Management and Experience Server System Requirements* document.

2 From the Aspen CD, copy *IwcSetup.exe* to the web server. Please note that the Aspen Installer must run on the web server.

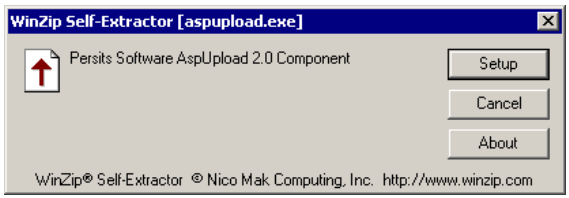
3 If performing a new installation, create an ODBC System DSN (data source name) for Aspen on the web server.

4 Verify the World Wide Web Publishing service is started.

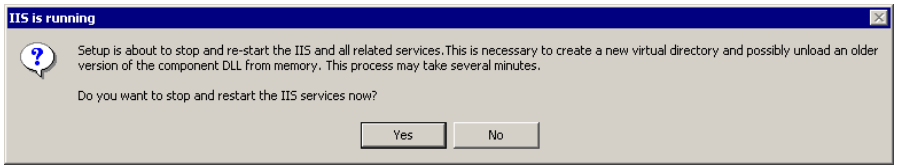
5 Run *IwcSetup.exe* on the web server to install Aspen Web Deploy. Web Deploy will install all the web components required by Aspen.



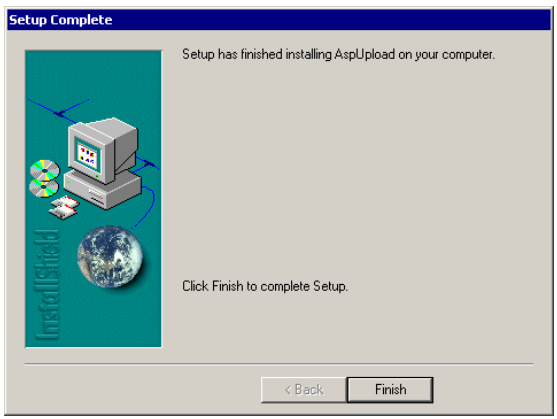
6 Click Install to begin the installation or upgrade process.



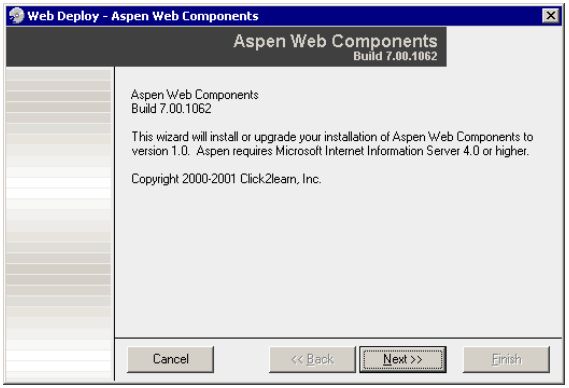
7 Click Setup to start installing Persits Software AspUpload.



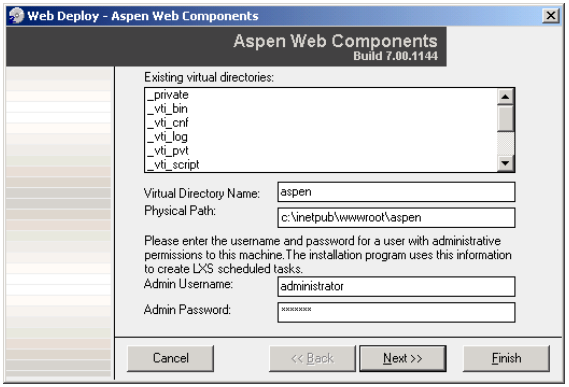
8 At one point you will be prompted to stop and restart IIS. Click Yes.



9 When AspUpload is installed, click Finish. The installation of Aspen Web Components continues.



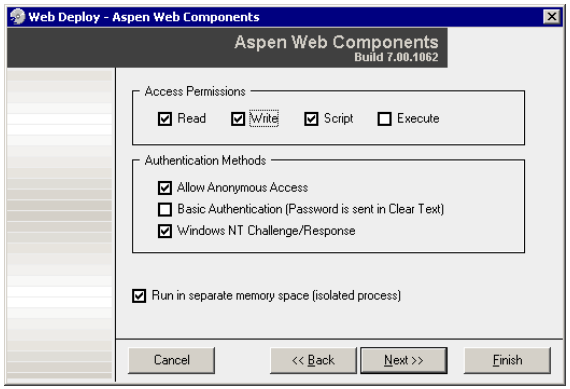
10 Click Next to begin Web Deploy.



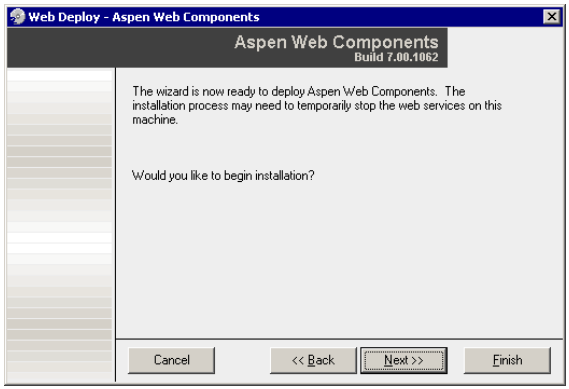
11 Enter the name for the virtual directory where Aspen will be installed. If performing an upgrade, the name of the current Aspen or Ingenium virtual directory that should be upgraded appears by default.

If you are installing or upgrading LXS, you must also enter the computer administrator username and password for LXS scheduled tasks.

Click Next to continue to the next step.



12 Select Read, Write, and Script Access permissions. Select Allow Anonymous Access and Windows NT Challenge/Response if you are setting Aspen up in an NT integrated environment. We strongly recommend you select “Run in separate memory space” for maximum robustness.



13 Click Next to continue the installation process. If you are installing Aspen Learning Management Server and Learning Experience Server, Web Deploy will perform the following tasks:

Stop the World Wide Web Publishing service, stop the Index Server service, increase the priority for the Index Server service, create a virtual directory and physical directory for Aspen, set appropriate permissions on this directory and sub directories, install Aspen into this directory, register various DLLs, install an ISAPI filter, add a system environment variable (CLASSPATH), create several NT/Windows 2000 tasks, restart the services that Web Deploy stopped.

If you are installing Aspen Learning Management Server only, Web Deploy will perform the following tasks: Stop the World Wide Web Publishing service, create a virtual directory and physical directory for Aspen, set appropriate permissions on this directory and sub directories, install Aspen into this directory, register various DLLs, restart the services that Web Deploy stopped.

If you are installing Aspen Learning Experience Server only, Web Deploy will perform the following tasks: Stop the World Wide Web Publishing service, stop the Index Server service, increase the priority for the Index Server service, create a virtual directory and physical directory for Aspen, set appropriate permissions on this directory and sub directories, install Aspen into this directory, register various DLLs, install an ISAPI filter, add a system environment variable (CLASSPATH), create several NT/Windows 2000 tasks, restart the services that Web Deploy stopped.

14 The first time you log in to the application, Aspen prompts you for basic configuration information:

A In the Database Access section, enter the ODBC system DSN that Aspen will use to connect to the database.

B In the Default Security section

- Select Set up basic user security for me to grant basic permissions to the Default Guest and Default Employee built-in security roles. These basic permissions allow users who are members of these roles to view, but not update, most of their training and skill information. A local administrator can change these permissions after setup is complete.
- Select No, don't set security to grant no permissions at this point. A local administrator will have to use the Role Security page to assign permissions to the built-in roles.

C Click Save to save your changes.

If the information you have entered is valid, Aspen prompts you to log into the application. If an entry is invalid, Aspen displays an error message at the top of the page. Correct the error and click Save. You can now login to Aspen with a username of Administrator. You will be asked to define a password for the Administrator.

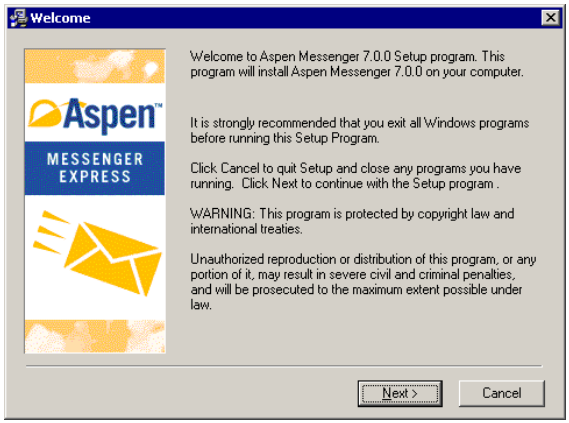
Install or upgrade Aspen LMS Messenger

If possible, you should install the Aspen LMS Messenger on a separate computer from the core Aspen LMS components and Web server.

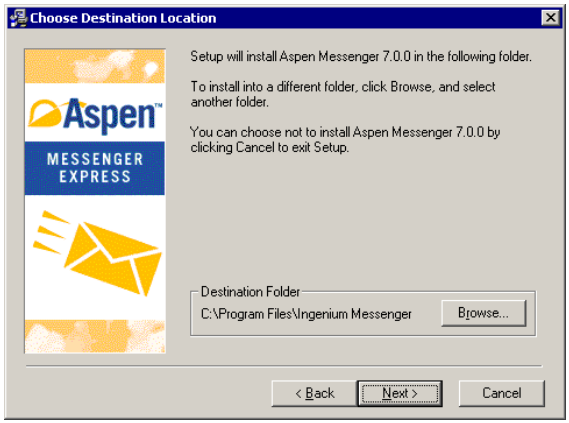
Important (1) Only one installation of Messenger per Aspen database is recommended. (2) Messenger should use the default mail account on the computer where it is installed.

➤ **To install, upgrade, and configure Aspen LMS Messenger:**

1. Make sure that the all the computers that will have Aspen components installed conform to the hardware and software requirements as listed in the *Aspen Learning Management and Experience Server System Requirements* document.
2. From the Aspen CD, copy *ImeSetup.exe* to the Messenger server.
3. Run *ImeSetup.exe* on the Messenger server.

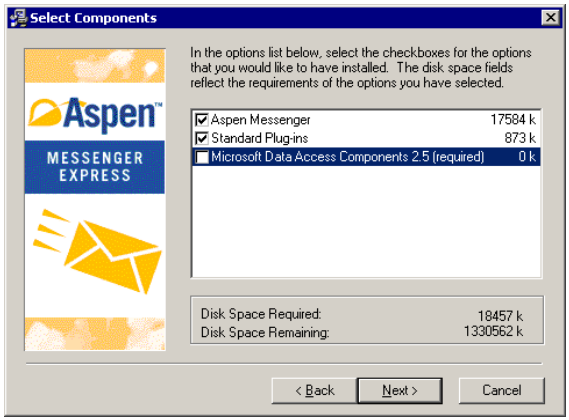


4 Click Next to continue.



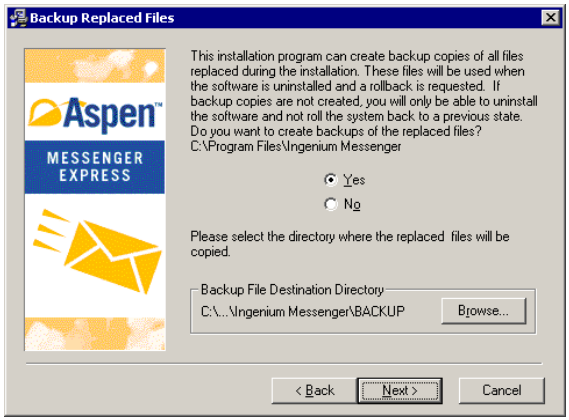
5 Click Next to install Messenger to the default directory or click Browse to select another directory.

If you are upgrading from a previous version of Messenger, install this version over the old one.

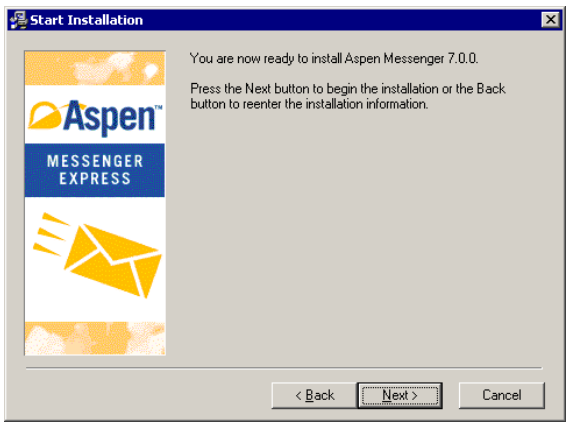


6 Select Aspen Messenger and Standard Plug-ins and click Next to continue.

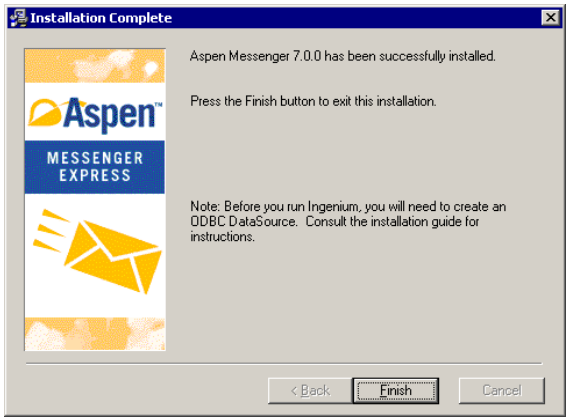
Note if installing on Windows NT, please also select Microsoft Data Access Components 2.5.



7 Select whether to back up files that this installation system will replace. We strongly recommend that you choose Yes.



8 Click Next to begin the installation.



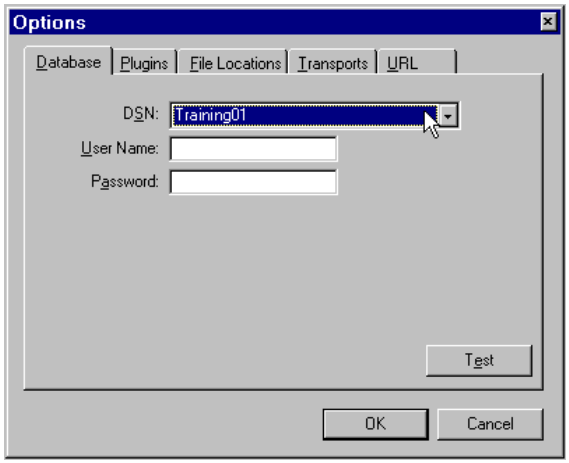
9 Aspen LMS Messenger is now installed. Press Finish to complete the installation.

10 If performing a new installation, create an ODBC System DSN (data source name) for the Aspen database.

11 If your mail protocol is MAPI, create a mail profile for Messenger to use.

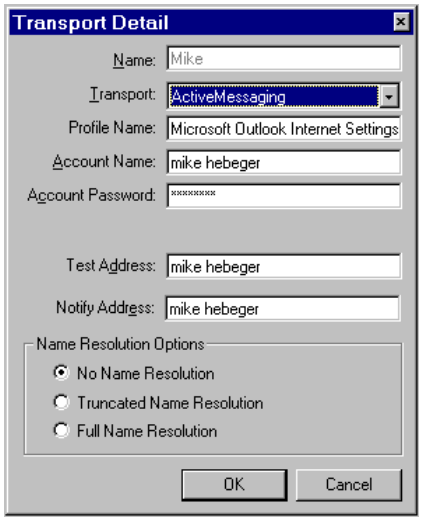
12 From the Windows Start menu, select Programs then Aspen Messenger Processor.

13 In the Messenger Processor window, select Configure then General Options to open the Options dialog box.



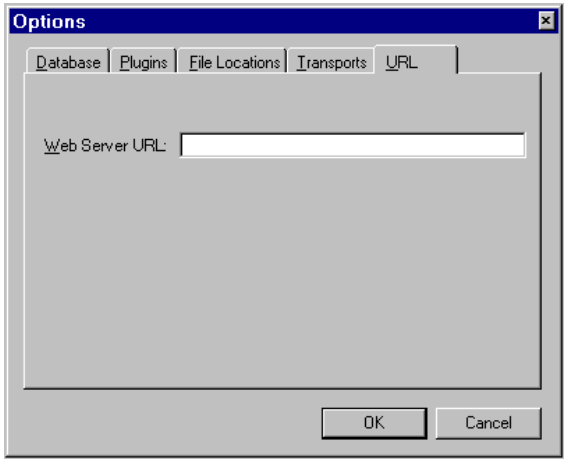
14 In the Database tab of the Options dialog box, enter the Aspen DSN (data source name), user name, and password.

The settings for the default administrator account ASPEN is recommended. Click Test to verify the database connection. Messenger will use this username and password whenever it connects to the database.



15 Add and select a transport option in the Transports tab.

If your mail protocol is MAPI or Active Messaging, use the settings from the system mail profile.



16 Enter the Aspen Web interface URL in the URL tab.

17 Click Scheduled Jobs in the Configure menu.

18 In the Scheduled Jobs dialog box, create and configure one or more jobs. Now you can start Messenger by clicking Start Processing in the Messenger Processor application window. Next, run the Messenger Mailer and click the Start Mailing button on the toolbar.

For more detailed step-by-step instructions, see the *Aspen LMS Messenger User Guide*.

Install or upgrade the Data Filter

The Aspen Data Filter is a required component for Aspen Learning Management Server only. Do not install this component unless you are using Aspen LMS. The Data Filter is a Windows NT or Windows 2000 service that performs a number of tasks and optimizes performance of the database. It runs according to a schedule that is configured using the Aspen LMS AdminTools application. Install only one Data Filter application per Aspen database and only one per computer. This computer should be continuously dedicated to running the filtering processes.

➤ **To install the Aspen Data Filter on a client computer:**

1 Before you start:

Make sure that the all the computers that will have Aspen components installed conform to the hardware and software requirements as listed in the *Aspen Learning Management and Experience Server System Requirements* document.

If you are upgrading, stop the Click2learn Ingenium Data Filter service in Services in the Windows Control Panel. In Windows 2000, Services are in Administrative Tools in the Control panel. To disable the Data Filter service, open its properties and change the Startup Type to Disabled.

2 From the Aspen CD, copy *IngServer.exe* to the database server.

3 Run *IngServer.exe* on the Data Filter service computer.

4 Select Aspen Data Filter and click Next to continue.

Note if installing on Windows NT, please also select Microsoft Data Access Components 2.5.

5 Click Next to begin the installation process.

6. When the installation is complete, click Finish. If asked to reboot your computer, please do so now.
7. In a new installation, create an ODBC System DSN for the Aspen database.
8. From the Windows Start menu, run the Aspen Data Filter Administration Utility.
9. Enter a user name, password, and the Aspen DSN, then click OK. The Data Filter uses these settings whenever it connects to the database.
10. If the Data Filter service was able to log in to the Aspen database, a message is displayed indicating that the login was successful.
11. Start the Aspen Data Filter service

Start the Aspen Data Filter service

1. From the Windows Control Panel, open Services. In Windows 2000, Services are in Administrative Tools in the Control panel.
2. Double-click the Click2learn Aspen Data Filter service.
3. If the service is stopped, click the Start button.
4. Select Automatic from the Startup Type list. This option sets the Data Filter service to start automatically whenever Windows starts up.
5. Set up the Data Filter options:
   - **A** After installing Aspen client tools, run Aspen LMS AdminTools from the Windows Start menu
   - **B** Click Administrative Options in the Tools menu.

C Enter the time between updates for the Learning Experiences Filter and the Viewable Employee Filter.

These fields set the number of minutes between updates of the list of learning experiences that each Aspen Web user has permissions to view and the list of employees that each Aspen client application user has permissions to view.

D Select the Learning Experience Optional Parameters that are relevant for your Aspen implementation. These parameters determine the contents of the training catalog.

E Click OK to save these settings.

6 Click Update Viewable Employees and Update Learning Experiences in the Tools menu to apply these settings immediately.

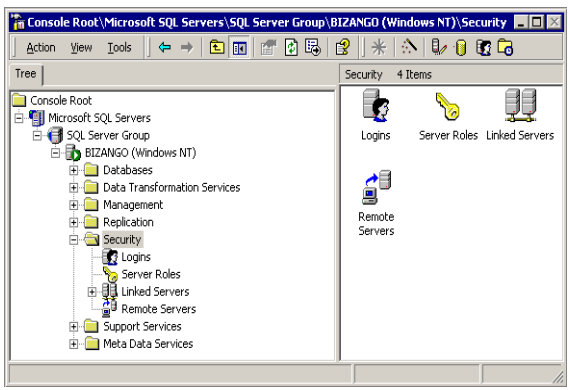
Add SQL Server logins for client application users

Before you can create Aspen client application users (e.g. users of Aspen LMS Workstation, Aspen LMS AdminTools, Aspen LMS Report Browser, etc.), you must make sure that they each have a login to the Aspen server. Add SQL Server logins for any prospective users who do not already have one. Please note that this step is not necessary for the Aspen Web interface users. They access the Aspen data collectively through the ASPEN user.

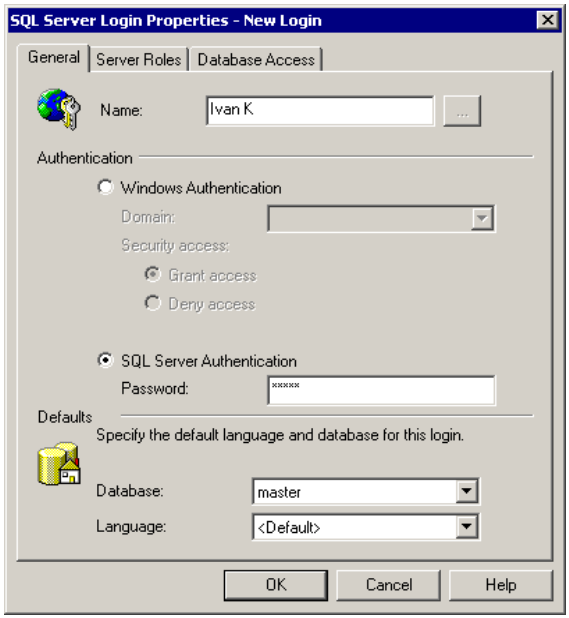
SQL Server 7.0/2000: adding a SQL Server user login

➤ **To use the Microsoft SQL Enterprise Manager application to create a new user login:**

1. Start the Enterprise Manager application from the Microsoft SQL Server program group.
2. In the Console Tree, expand the server group and server where you created the new Aspen database.
3. Expand the Security folder.



4. Right-click the Logins icon and click New Login from the shortcut menu.
5. In the SQL Server Login Properties dialog box, type a name into the Name box.
6. Under Authentication, click SQL Server authentication.
7. In the Password box, type a password for the login.



8 Click OK.

9 In the Confirm Password dialog box, type the password in the Confirm New Password box.

10 Click OK to close this dialog box and return to the console.

The new login is displayed as an item in the details pane of the console.

Note Even though it may seem appropriate to administer users in the Enterprise Manager, any user administration other than creating a new login should be done using Aspen LMS AdminTools. Aspen maintains its user and role data in its own tables that should only be edited by Aspen LMS AdminTools.

Create Aspen administrative users and security roles

Use Aspen LMS AdminTools to create new Aspen client application users. Make sure that each user already has an SQL Server login to the Aspen database server; add logins as needed. If necessary, you can also create new security roles.

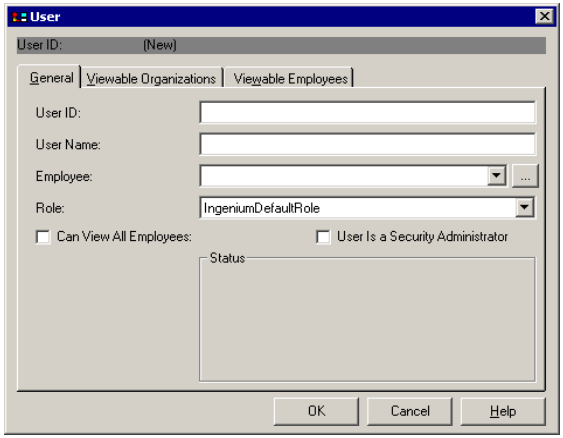
This step does not apply to the Aspen Web interface users.

➤ **To create a new Aspen user:**

1. Start Aspen LMS AdminTools from the Aspen program group.
2. In the Aspen Logon dialog box, type ASPEN in the Login ID box.
3. Type the password into the Password box.
4. Click the ODBC system DSN in the DSN box.
5. Click OK.
6. If the License Manager dialog box appears, enter your license number and click OK.

   The Aspen LMS AdminTools application window is displayed.
7. Click User Manager in the Tools menu to open the User Manager dialog box.
8. In the Users box, click New.

   The User dialog box opens, displaying the General tab.



9 In the User ID box, type the SQL login name of a new user.

This user ID must be a login for the Aspen database server. The Status box indicates whether the entered user ID has a login.

10 In the User Name box, type the new user's name.

11 If this user is an employee in the Aspen database, use the Employee inline find box or click the Lookup button to find the employee's record and assign it to this user.

12 In the Role box, click an Aspen role to assign this user.

For details on how to add or edit roles, see the *Aspen LMS Administration Guide*.

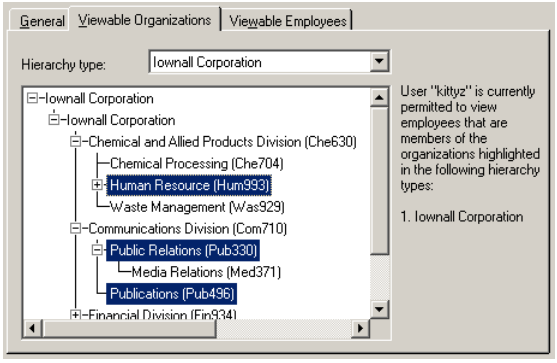
13 Set the employees that this user has permissions to see.

- To grant access to all employees in the database, select Can View All Employees.
- To grant access to employees by organizations:

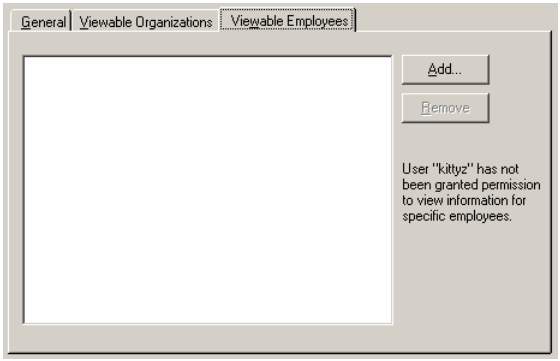
  A Click the Viewable Organizations tab.

  B In the Hierarchy type box, click a hierarchy type.

  C Click organizations in the hierarchy box to select/deselect their members as viewable employees.



- To give this user access to specific employees, click the Viewable Employees tab.

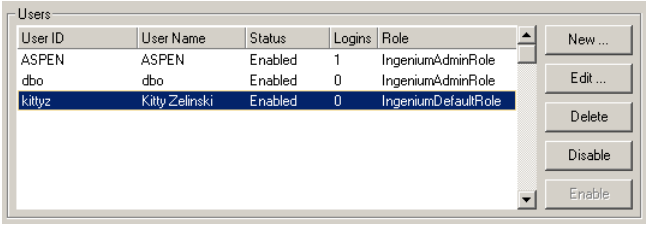


Click Add to select viewable employees using the Find Employees dialog box. For details on how to use the Find dialog box, see the *Aspen LMS Workstation User Guide*.

14 To grant this user the rights to manage user and role security using this application, select the User Is a Security Administrator check box.

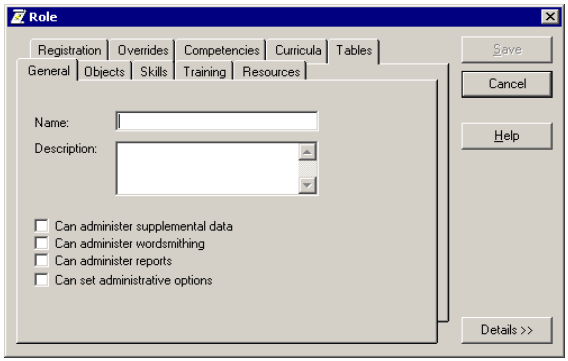
15 Click OK to save changes and close the User dialog box.

Back in the User Manager dialog box, the new user is listed in the Users box.



➤ **To create a new Aspen role:**

1 In the Roles box, click New to open the Role dialog box.



2 In the General tab, type a Name and Description for this role and select the appropriate administrative permission options.

3 In the remaining tabs in the Role dialog box, select check boxes for permissions that apply to this role

4 Click Save to save changes and close the Role dialog box.

5 Back in the User Manager dialog box, the new role is listed in the Roles box. It can be assigned to any of the new users you create.

Install or upgrade client software

After you have created Aspen users, you can install or upgrade the Aspen LMS Workstation and/or Aspen LMS Report Browser client applications on their computers

➤ **To install or upgrade Aspen LMS client applications:**

1. Make sure that the all the computers that will have Aspen components installed conform to the hardware and software requirements as listed in the *Aspen Learning Management and Experience Server System Requirements* document.
2. On the Aspen CD, navigate to and run the Aspen client setup program *IngClient.exe*. Follow the screens and click the appropriate buttons to successfully complete your installation. Make sure that you select the Aspen Workstation, Aspen Report Browser, and, if installing on Windows 98 or Windows NT, Microsoft Data Access Components 2.5 check boxes in the Select Components dialog box. If you are upgrading, install this version of these applications over any previous versions.
3. If performing a new installation, create an ODBC system DSN for the Aspen database according to the instructions in the "Create an ODBC system DSN" section.

Using Aspen reports

Aspen LMS contains over 80 preformatted Seagate Crystal Reports that may be available in the Aspen LMS Report Browser application as Shared Reports. Copy any of these reports to a location that is accessible to the Report Browser users and then add them to the Shared Category. If you are upgrading, make sure you do not write over any of your existing customized or otherwise important report files from previous versions.

➤ **To use the Aspen reports:**

1. Copy the reports from the Aspen CD to a location that can be accessed either locally or across the network by the Report Browser users. You can find these reports on the Aspen CD in the folder:

   \Reports\SQLServer\

2. Run the Report Browser and log in as the ASPEN user. If necessary, you can install just the Report Browser application and Microsoft Data Access Components on a client computer with an ODBC connection to the Aspen database.

3. Add a category to the Shared Categories folder and add the reports you want into that folder. You may make multiple categories to organize the reports in multiple folders. When adding the reports, you must enter a path and folder name that works for all client users regardless of their location on the network.

   For example, if you add the reports using the computer that contains the reports, you should use the global network path to specify the report in the Add Report dialog box.

   Do not use a name that is only valid for the local Report Browser such as: C:\Public Reports\

   Use: F:\Public Reports\ (where F is a mapped drive to the shared network folder containing the reports; F must be the same letter for all client users).

   Or use: \\ASPEN\Public Reports\ (where ASPEN is the network name of the computer containing the reports; ASPEN must be in the same domain as all client users).

About Windows NT and Windows 2000 authentication

If NT authentication is used with Aspen on SQL Server, it is strongly recommended that administrators verify the following:

- Only authorized users who should have administration rights on the NT machine (and SQL Server) should be Local Administrators in NT's User Manager.
- SQL Server administrators may optionally disable system administration privileges of local administrators in SQL Server. (Confer with your NT Administrator before disabling access; this is a significant security change and could cause maintenance issues.) To remove system administration privileges, open Enterprise Manager, expand Security and Logins. Right-click BUILTIN\Administrators, click Properties and select the Server Roles tab. Deselect the System Administration option to disable the system administration rights of all local NT administrators.

Aspen Learning Management Server

Part II: Installation and upgrade instructions for Oracle

Part II of this document provides detailed installation, upgrade, and configuration instructions for the Aspen Learning Management Server (LMS) using Oracle. It is written for database administrators and system administrators.

Important notes

Before you implement Aspen on Oracle, note the following:

- Aspen Oracle support is limited to Aspen LMS - Currently, Aspen Learning Management Server is the only Aspen component that can be implemented using Oracle. Aspen Learning Experience Server and Aspen Content Delivery Server do not support Oracle.
- No public or private synonyms - The Aspen Database Installer does not create any public or private synonyms. However, all the Aspen schema objects must be owned by the ASPEN administrative user (default administrator username).
- Modifiable scripts - The Aspen Database Installer uses scripts that can be edited by a DBA as needed.
- Tablespace - The Aspen Database Installer uses the default tablespace of the ASPEN user for tables and Aspen_index for the indexes. The tablespace(s) should have default storage parameters defined.
- No storage parameters defined during table creation - We do not specify any storage parameters during table or index creation. A DBA should tune the schema installation script to specify storage parameters, depending on the estimated number or rows and the average row sizes.
- Privileges required by the ASPEN user - refer to the script *ora_user.sql* to see what permissions are required by the ASPEN user.

- Using an Oracle database server on SunOS - The procedures described in this document can be used to install an Aspen database on an Oracle database server running a UNIX operating system. The user-create script, *ora_user.sql*, can be run on a UNIX machine.

  Once you have set up the tablespaces on the Oracle server, install and run the Aspen Database Installer on a computer using an ODBC system DSN (using the Microsoft ODBC for Oracle driver) for the Aspen database on the UNIX server. All the Aspen client Windows-based applications can connect to an Aspen database on a UNIX Oracle system using the same ODBC driver.

Before installing or upgrading

Before installing or upgrading to this version of Aspen, make sure your server and client computers conform to the hardware and software requirements according to *Aspen Learning Management and Experience Server System Requirements* on the Aspen CD in *SystemRequirements.pdf*.

If you are upgrading from a previous version of Aspen or Ingenium:

- Make sure that no one is logged into the Ingenium or Aspen database using any of the client applications.
- Back up the Ingenium or Aspen database(s) on the server.
- Make sure that Messenger is not processing.
- Stop the Data Filter service.

Installing or upgrading Aspen LMS overview

Installing the Aspen LMS on a network using an Oracle database server consists of the general steps outlined in the following procedure. Some of these steps are described in detail in the subsequent sections of this document.

➤ **To prepare the database configuration for the LMS:**

1. Please check the Aspen LMS release notes for important infomation about your installation or upgrade.
2. If performing a new installation, the DBA should create or select the primary and index tablespaces for Aspen on the Oracle server.
3. If the Aspen auditing component is to be installed or upgraded, the DBA should create or select the auditing tablespace for Aspen.
4. In a new installation, make sure the Oracle client tools are on the computer that will run the Aspen Database Installer .
5. From the Aspen CD, copy *IngServer.exe* to the computer that will be running the Database Installer.
6. Run *IngServer.exe* and select Aspen Database Installer from the list of components to install. If installing on Windows NT, select Microsoft Data Access Components 2.5.
7. In a new installation, create an ODBC System DSN (data source name) for the Aspen database on the computer that will be running the Aspen Database Installer using Microsoft's Oracle ODBC driver.

8. In a new installation, if the Aspen auditing component is to be installed, create an ODBC System DSN for the auditing database on the computer that will be running the Database Installer using Microsoft's Oracle ODBC driver.

9. In a new installation, from the Scripts folder in the Aspen program folder where the Aspen Database Installer is installed, copy *ora_profile.sql*, and *ora_user.sql* to the database server or a computer with Oracle client tools. The DBA should follow the instructions for editing these files in the "Run the Aspen User Script" section.

10. In a new installation, if you are installing the Aspen auditing component, copy *ora_loguser.sql* from the Scripts folder where the Aspen Database Installer is installed to the computer that will be running the Database Installer. The DBA should follow the instructions for editing this file in the "Run the Aspen User Script" section.

11. In a new installation, if you want to implement database access limits for Aspen users, you can optionally run the user-profile script *ora_profile.sql* to create the ASPEN Oracle profile.

    This profile can be used to handle password management for Aspen users.

12. In a new installation, run the user-create script *ora_user.sql* to:

    - Create the ASPEN Oracle user. This user becomes the owner of all the Aspen schema objects (schema owner).
    - Specify the default Aspen primary tablespace.
    - Specify the Aspen index tablespace.

13 In a new installation, if you are installing the Aspen auditing component, run the auditing user-create script *ora_loguser.sql* to:

- Create the ASPENLOGGING auditing Oracle user. This user becomes the owner of all the Aspen auditing schema objects (schema owner).
- Alter the ASPEN primary Oracle user. This gives the Aspen user access to the ASPENLOGGING tablespace.
- Specify the default tablespace for the Aspen auditing tables.

14 From the Windows Start menu, run the Aspen Database Installer in the Aspen program group to create or update the Aspen schema, and, optionally, the Aspen auditing schema.

15 On the Oracle server, the DBA should add any new logins who will be new Aspen client application users (Aspen administrators).

16 From the Aspen CD, copy *IwcSetup.exe* to the Web server.

17 Make sure the Oracle client tools are installed on the Web server.

18 In a new installation, create an ODBC System DSN (data source name) for the Aspen database on the Web server using Microsoft's Oracle ODBC driver.

19 Run *IwcSetup.exe* on the Web server to install or upgrade Aspen LMS. If performing an upgrade, we suggest you install this version of Aspen over previous versions.

20 From the Aspen CD, copy *ImeSetup.exe* to the Aspen LMS Messenger server.

21 Make sure the Oracle client tools are installed on the Messenger server.

22 In a new installation, create an ODBC System DSN (data source name) for the Aspen database on the database server.

23 Run *ImeSetup.exe* on the Messenger server to install the Aspen LMS Messenger component. If you are upgrading from a previous version of Messenger, install this version over the old one.

24 From the Aspen CD, copy the Aspen reports that you want to make available as shared reports to a location accessible to all Aspen LMS Report Browser users. Alternatively, copy the reports to each Aspen Administrators' computer.

25 From the Aspen CD, copy *IngClient.exe* to all Aspen administrators' computers.

26 Make sure that the Oracle client tools are installed on each of the administrators' computers.

27 Run *IngClient.exe* on the computers to install Aspen LMS Workstation, Aspen LMS AdminTools, Aspen LMS Report Browser, and, if running on Windows 98 or Windows NT, Microsoft Data Access Components 2.5. If performing an upgrade, install this version of these applications over any previous versions.

28 In a new installation, create ODBC System DSNs (data source name) for the Aspen database.

29 In a new installation, run the Aspen LMS AdminTools component from the Windows Start menu, to create administrative users and security roles for client application users. The client applications include Aspen LMS Workstation, Aspen LMS AdminTools, and Aspen LMS Report Browser.

30 From the Aspen CD, copy *IngServer.exe* to the computer that will run the Aspen Data Filter component.

31 Make sure that the Oracle client tools are installed on the computer that will continuously run the Aspen Data Filter service.

32 In a new installation, create an ODBC System DSN (data source name) for the Aspen database on the Data Filter service computer.

33 Run *IngServer.exe* on the data filter server. Select Aspen Data Filter and, if running on Windows NT, select Microsoft Data Access Components 2.5. If performing an upgrade, install this version of the data filter service over previous versions.

34 In a new installation, create an ODBC System DSN for the Aspen database.

35 From the Windows Start menu, run the Aspen Data Filter Administration Utility. Select the DSN and enter the username, password, and schema name that the Data Filter service will use to connect to the Aspen database.

Create the Aspen tablespaces

The initial step in a new installation of Aspen on an Oracle database server is to create the required Oracle tablespaces for the primary and index tablespaces on the database server. This task must be done by the Oracle database administrator; there are no Aspen scripts for creating tablespaces. The default primary and index tablespace names referenced in other Aspen-supplied scripts are ASPEN_TBS1 and ASPEN_INDEX respectively.

If you are installing the Aspen auditing option, you should create another Oracle tablespace to contain the auditing tables. Other Aspen database installation scripts refer to this tablespace by the default name ASPENLOGGING_TBS1.

If you want to change these names, you must change the "default tablespace" and "quota unlimited" entries in the *ora_user.sql* and *ora_loguser.sql* scripts to reflect these changes after installing the Aspen Database Installer. After the tablespaces are created, the DBA must run three scripts against Oracle's root login. By default, the login's username is INTERNAL and password is ORACLE.

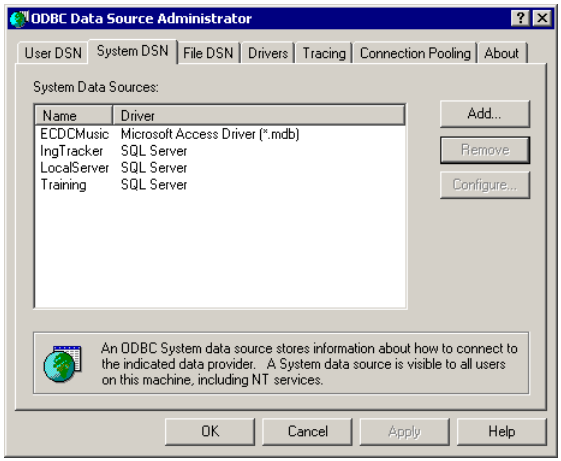
Create an ODBC System DSN

Aspen uses ODBC (Open Database Connectivity) and OLE DB to communicate with the Aspen database. Before you can use any Aspen applications, you must set up the ODBC connection to the Aspen database on the system where they are installed. Depending on your installation, you may need to create ODBC system DSN's on many different computers when installing Aspen.

➤ To create an ODBC System DSN:

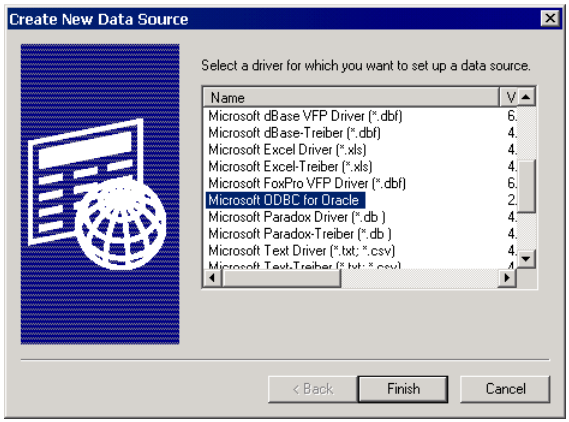
1 From the Windows Control Panel, open ODBC Data Sources.

2 In the ODBC Data Source Administrator, click the System DSN tab.



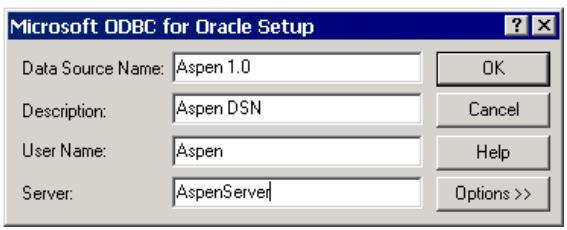
3 Click Add.

4 In the Create New Data Source dialog box, select Microsoft ODBC for Oracle from the list of drivers.



5 Click Finish.

The Microsoft ODBC for Oracle Setup dialog box is displayed.



6 In the Data Source Name box, type a name for this DSN.

7 In the optional Description box, you can type some text to describe the data source.

8 In the User Name box, enter the name of the Aspen user.

9 In the Server box, enter the net service name of the Aspen database server.

10 Click OK to return to the ODBC Data Source Administrator.

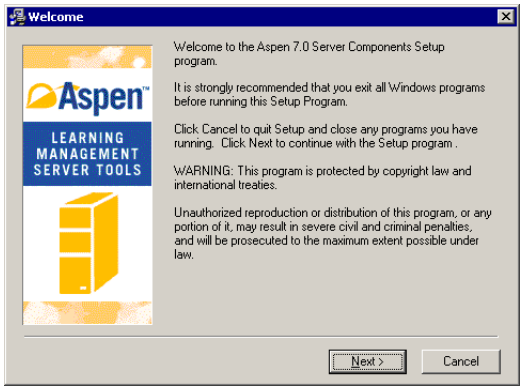
The new DSN appears in the System Data Sources list.

Install the Aspen Database Installer

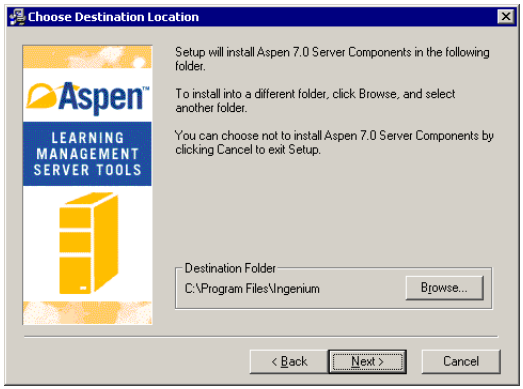
1 Make sure that all the computers that will have Aspen components installed conform to the hardware and software requirements as listed in the *Aspen Learning Management and Experience Server System Requirements* document.

2 From the Aspen CD, copy *IngServer.exe* to the database server. The Aspen Database Installer must be run on the database server.

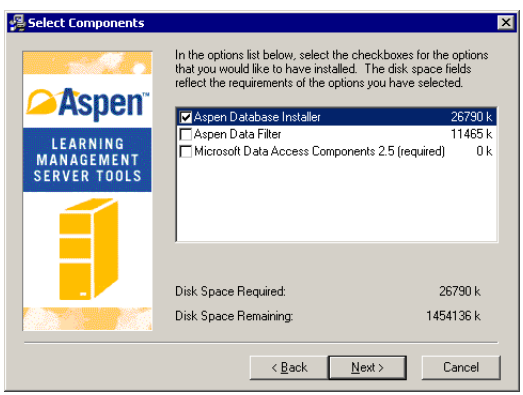
3 Run *IngServer.exe* on the database server.



4 Click Next to begin the installation process.

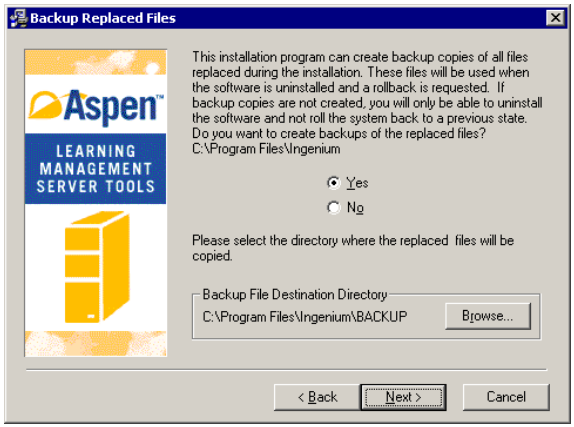


5 Click Next to install the Aspen Database Installer to the default directory or click Browse to select another directory.

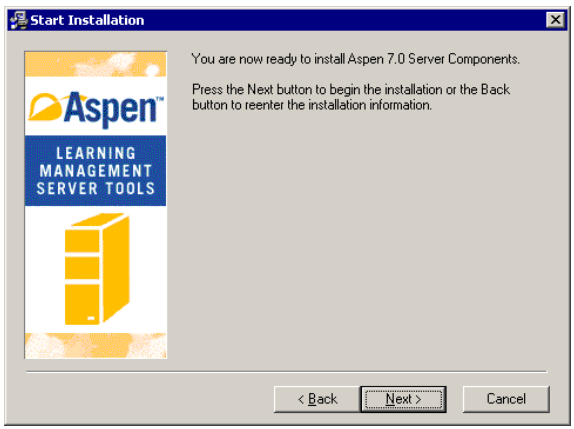


6 Select Aspen Database Installer and click Next to continue.

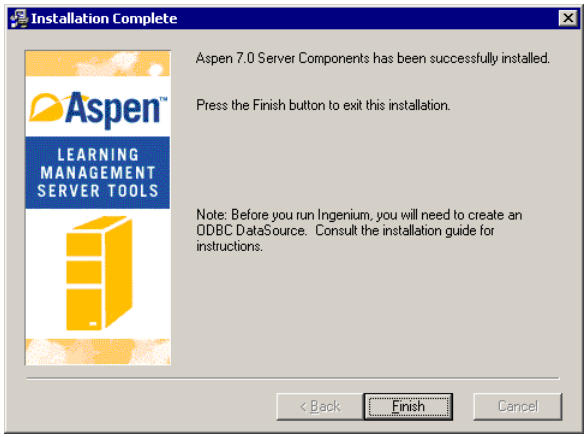
Note if installing on Windows NT, please also select Microsoft Data Access Components 2.5.



7 Select whether to backup files that this installation system will replace. We strongly suggest you choose Yes.



8 Click Next to begin installing the Aspen Database Installer.



9 The Aspen Database Installer is now installed. Click Finish to complete the installation.

Run the Aspen user scripts

The Aspen user scripts are in the Scripts folder in the Aspen program folder where the Database Installer application is located, and must be run on the database server. If you do not want to use the default settings, these scripts may be edited.

The three scripts, located in the Scripts folder in the Aspen application folder, must be run in the following order: *ora_profile.sql* (optional), *ora_user.sql*, and *ora_loguser.sql* (required only if you are installing the auditing feature).

Edit and run the user-profile script

The user-profile script *ora_profile.sql* is used to create the Aspen user profile with the default username PROF_ASPEN. This script specifies the default password management settings for the ASPEN user. Refer to your *Oracle 8.x Administrator's Guide* for complete details on creating resource profiles.

If you want to change these settings, edit this script. It includes settings for the Aspen LMS client applications password management settings. This script must be run before the *ora_user.sql* script, which references the Aspen user profile. The profile consists of the following settings:

- failed_login_attempts: the number of failed log in attempts to the user account before it is locked. The default is "3".
- password_lock_time: the number of days an account will be locked after the specified number of subsequent failed login attempts. The default is "unlimited".
- password_grace_time: the number of days after the grace period begins during which a warning is issued and login is issued. The default is "0".
- password_life_time: the number of days a user can use the same password for authentication. The default is "unlimited".

  We suggest that the password lifetime be changed from its default of 90 days.

Important if you are planning to make this change to an existing database, make sure that all passwords are changed before you run this script. After this script has been run, all passwords that have not been changed in the previous 90 days will not work, including the administrative password.

- password_reuse_max: the number of password changes required before the user can reuse a previous password. The default is "3".

- password_reuse_time: the number of days before which the current password cannot be reused. The default is "unlimited".
- password_verify_function: the PL/SQL password-complexity verification script that can be passed as an argument to the CREATE PROFILE command. The ing_verify_function procedure, also included in this script, is the default value.

Edit and run the user-create script

The user-create script *ora_user.sql* creates the ASPEN user and grants it the required administrative permissions. This user is the default schema owner of the Aspen database and is created with certain parameters that should be verified and reconfigured as necessary.

- If you changed the name of the profile created in *ora_profile.sql* from the default of PROF_ASPEN, the corresponding change must be made in the *ora_user.sql* script to refer to the profile. The line you must change is:

  alter user ASPEN profile PROF_ASPEN;

Important Before running the script, you should change the password for the ASPEN user from its default setting.

- The user-create script specifies an existing tablespace that will be the default tablespace for the ASPEN user with a default name of 'Aspen_tbs1' for the primary tablespace. If you want to change this name, edit this script to match what the DBA created or selected in the previous step. The recommended size of this tablespace depends on the expected size of the Aspen database, but should be a minimum of 150 MB.
- The Aspen Database Installer uses the tablespace Aspen_index as the default tablespace for all indexes. Edit the user-create script to match what the DBA created or selected.

Edit and run the auditing user-create script

If you are installing the optional Aspen auditing component, configure and run the Aspen auditing user-create script *ora_loguser.sql*, on the Aspen database server. This script creates the Aspen auditing user with the default name ASPENLOGGING and grants it the required administrative permissions. This user is the default schema owner of the Aspen auditing database and is created with certain parameters that should be verified and reconfigured as necessary. The ASPEN primary user is also altered to have permissions on the Aspen auditing tablespace.

Important Before running the script, you should change the password for the ASPENLOGGING user from its default setting.

- The script specifies an existing tablespace with a default name of Aspenlogging_tbs1 that will be the default tablespace for the Aspen auditing user. If you want to change this name, edit the script to match what the DBA created or selected. The recommended size of this tablespace depends on the expected size of the Aspen database, but should be a minimum of 150 MB.
- You may change the name of this user from its default name ASPENLOGGING. If you do, change all references to this username to the new name in the *ora_logtables.sql* and *ora_LogTriggersCreate.sql* scripts, also located in the Aspen program/Scripts folder. Search for ASPENLOGGING and replace it with the new username in these files. These two scripts are run by the Database Installer.
- Also, if you changed the default username of ASPEN in this script, you must match its reference in the *ora_loguser.sql* script. The line you must change is:

  alter user ASPEN quota unlimited on AspenLogging_tbs1;

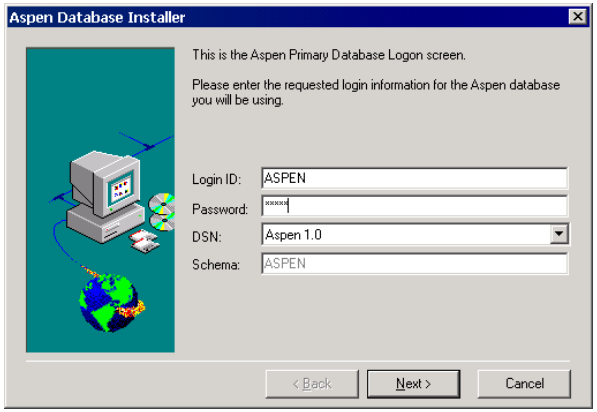
Run the Aspen Database Installer

The Aspen Database Installer prepares the database server for use. When installing or upgrading the Aspen Learning Management Server, the Aspen Oracle auditing component, or both, the Database Installer will perform some or all of the following steps: install a new Aspen database, or upgrade an existing Ingenium or Aspen database, install or upgrade an Aspen auditing database, create a default Aspen database administrator user and security role, create demo data (optional), and create a directory on the database server to store course meta information used in full-text searches.

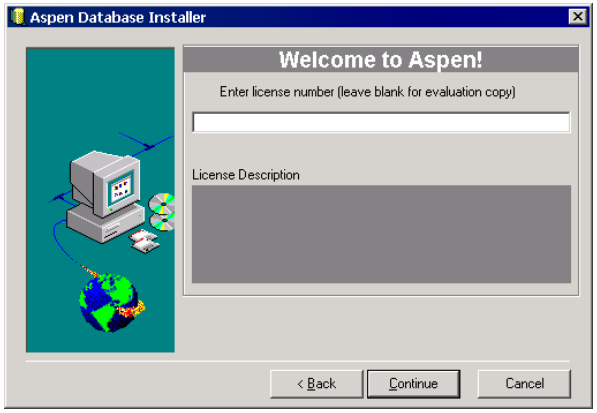
ODBC requires that the Oracle versions are the same on both the database server and the computer where the Aspen Database Installer is run.

➤ **To run the Database Installer:**

1. Make sure that the all the computers that will have Aspen components installed conform to the hardware and software requirements as listed in the *Aspen Learning Management and Experience Server System Requirements* document.
2. If performing a new installation, create an ODBC System DSN (data source name) for the Aspen database on the database server.
3. From the Windows Start menu, run the Aspen Database Installer to create the Aspen database.

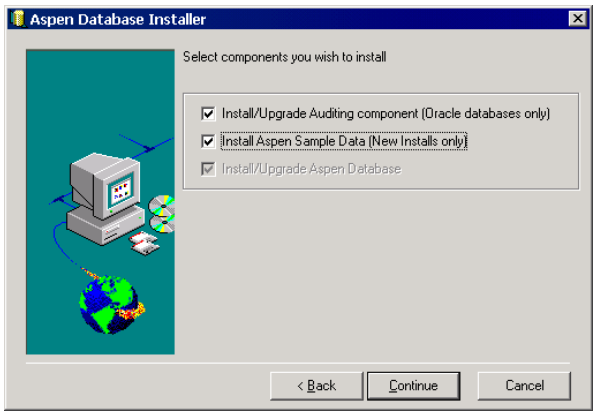


4 Enter the login ID, password, and DSN for the Aspen database.



5 Enter your license number and click Continue.

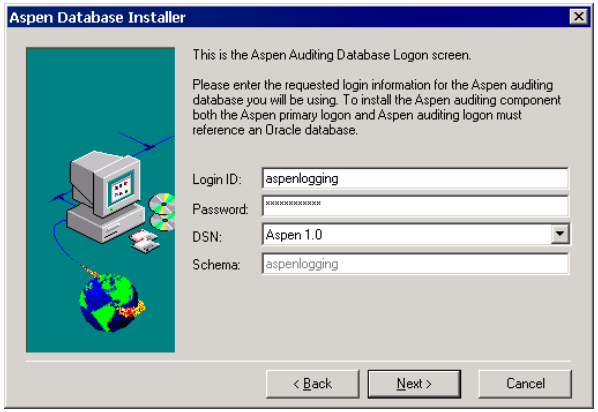
Leave the license number box blank for an evaluation license.



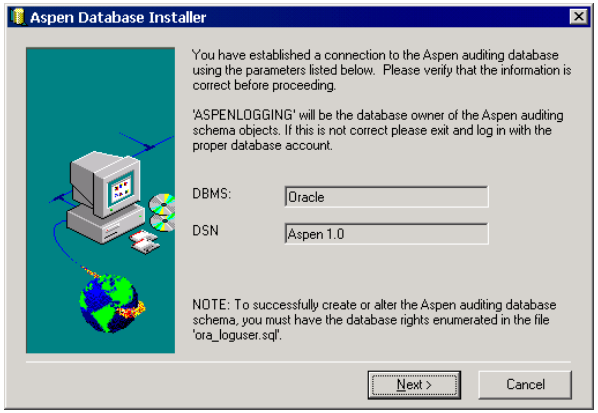
6 In new installations, you can select Install Aspen Sample Data to install sample data with your database.

You can also select Install/Upgrade Auditing component to install or upgrade the Aspen auditing option.

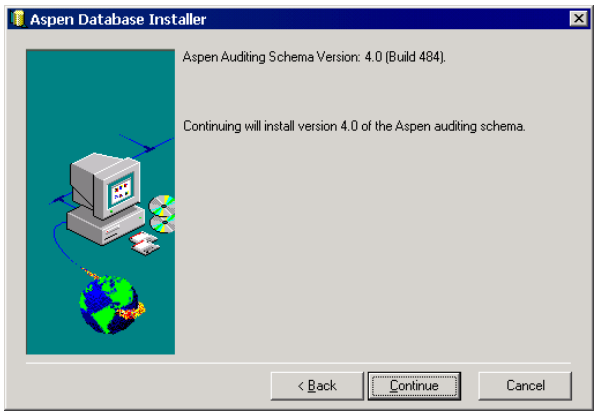
If you selected the Install/Upgrade Auditing component option, clicking Continue launches the Aspen auditing database installation. Otherwise the Aspen primary database installation is launched (step 11 below).



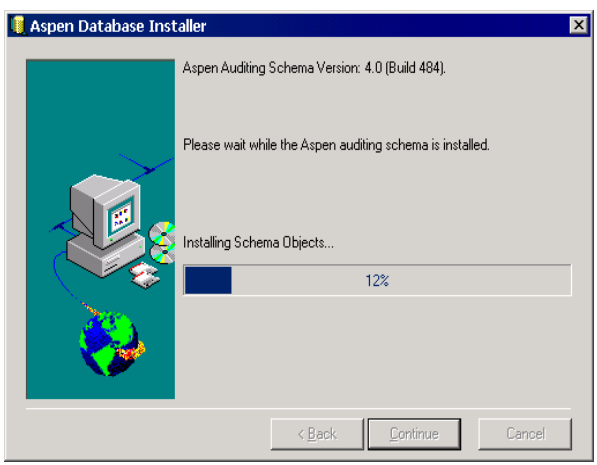
7 Enter the login ID, password, and DSN for the Aspen auditing database. You will only be prompted for this if you selected the Install/Upgrade Auditing component option from the options screen.



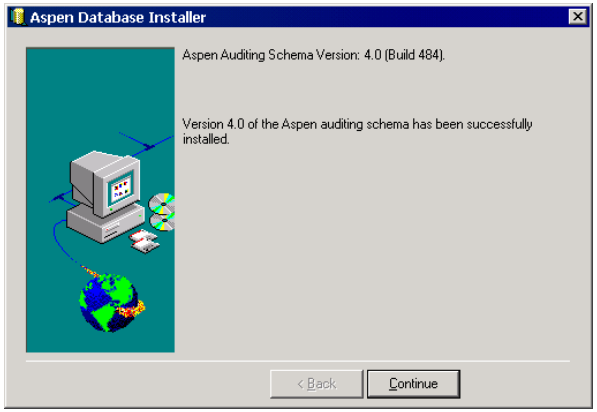
8 Verify that the DBMS, DSN and database owner for the Aspen auditing component are correct and click Next to continue.



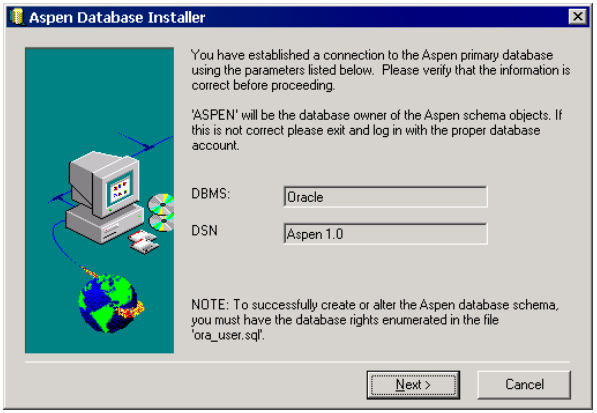
9 Click Continue to install or upgrade the Aspen auditing database.



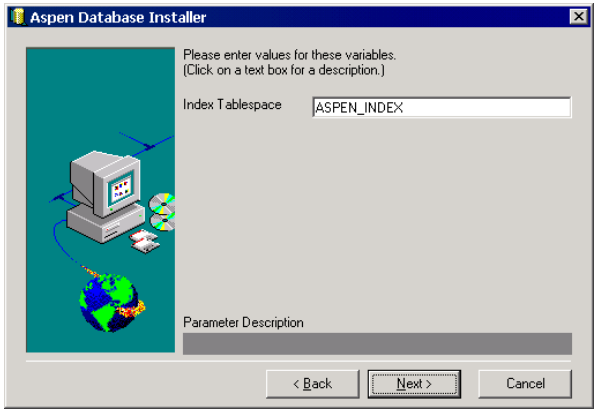
The Database Installer installs or upgrades the Aspen auditing database.



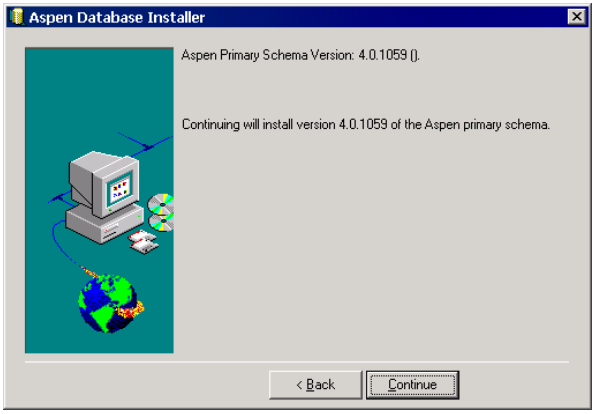
10 The Aspen auditing database server is now ready. Click Continue to install or upgrade the Aspen database.



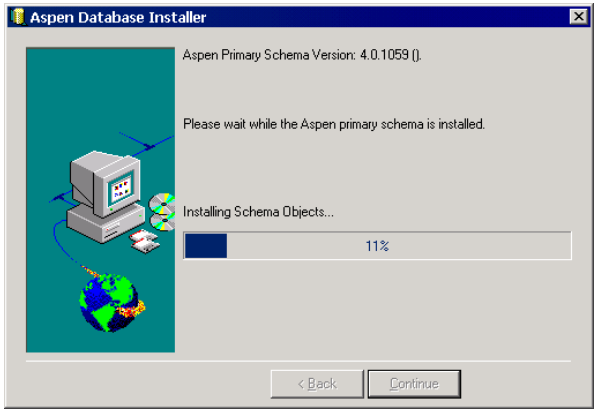
11 Verify that the DBMS, DSN and Database name for the Aspen primary database are correct and click Next to continue.



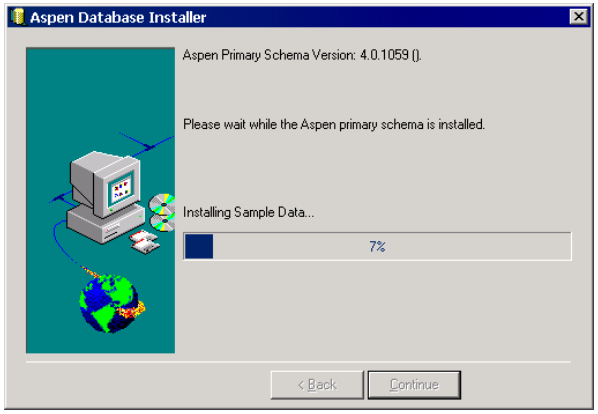
12 Enter the name of the Aspen Index Tablespace. If you do not know this name, ask your DBA. Click Next to continue.



13 Click Continue to install the Aspen primary database.



14 The Database Installer installs or upgrades the Aspen primary database. It also installs the sample data if you selected the Install Aspen Sample Data option from the options screen.

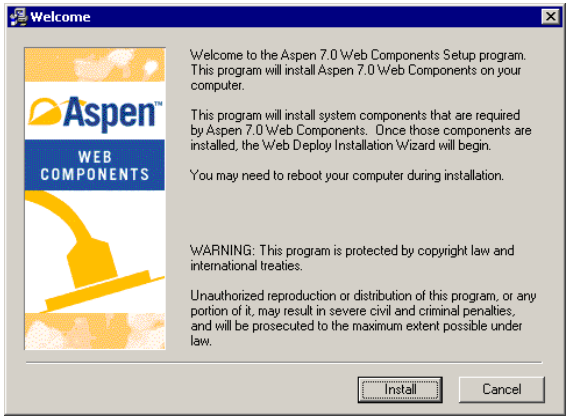


15 The Aspen database server is now ready. Click Finish to complete the installation.

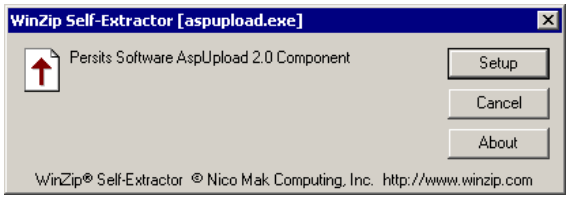
Install Aspen Web applications

➤ **To install the Aspen Web interface:**

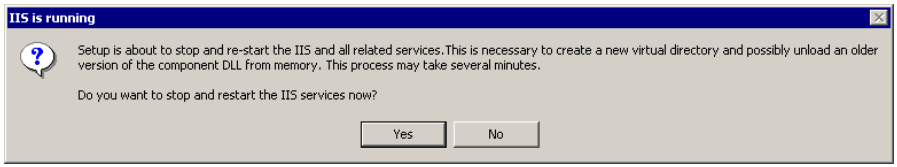
1. Make sure that the all the computers that will have Aspen components installed conform to the hardware and software requirements as listed in the *Aspen Learning Management and Experience Server System Requirements* document.
2. From the Aspen CD, copy *IwcSetup.exe* to the web server. Please note that the Aspen Installer must run on the web server.
3. In a new installation, create an ODBC System DSN (data source name) for Aspen on the web server.
4. Verify that the World Wide Web Publishing service is started.
5. Run *IwcSetup.exe* on the web server to install Aspen Web Deploy. Web Deploy will install all the web components required by Aspen.



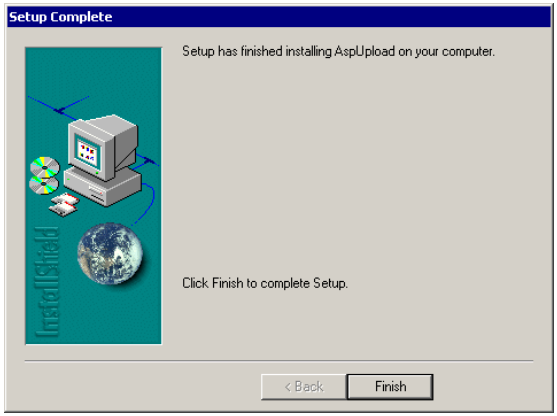
6. Click Install to begin the installation process.



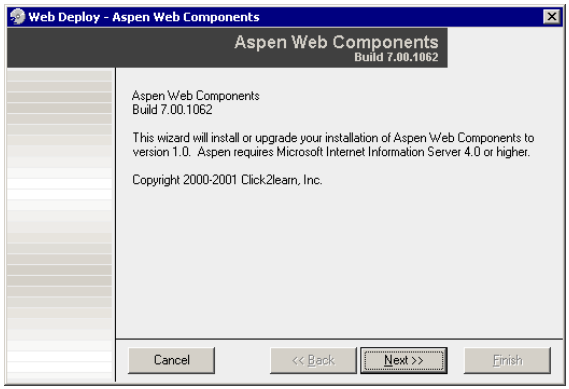
7 Click Setup to start installing Persits Software AspUpload.



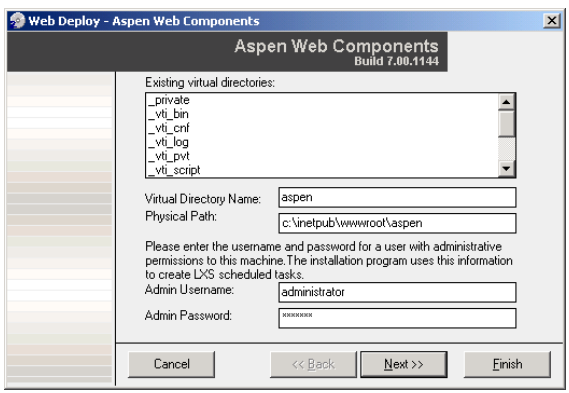
8 At one point you will be prompted to stop and restart IIS. Click Yes.



9 When AspUpload is installed, click Finish. The installation of Aspen Web Components continues.



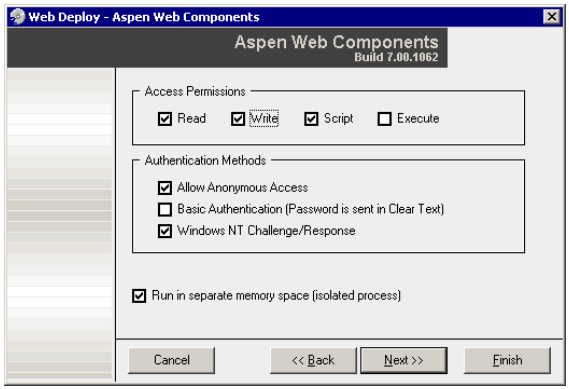
10 Click Next to begin Web Deploy.



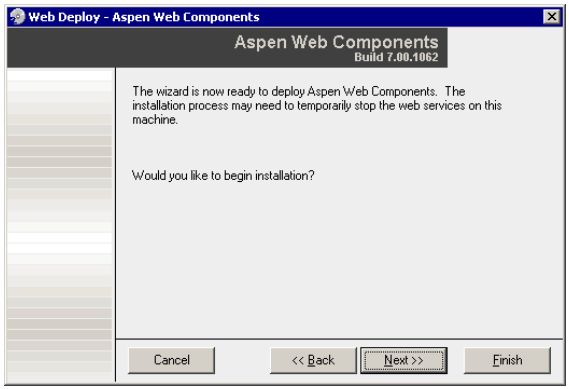
11 Enter the name for the virtual directory where Aspen will be installed. If performing an upgrade, the name of the current Aspen or Ingenium virtual directory that should be upgraded appears by default.

If you are installing or upgrading LXS, you must also enter the computer administrator username and password for LXS scheduled tasks.

Click Next to continue to the next step.



12 Select Read, Write, and Script Access permissions. Select Allow Anonymous Access and Windows NT Challenge/Response if you are setting Aspen up in an NT integrated environment. We strongly recommend you select “Run in separate memory space” for maximum robustness.



13 Click Next to continue the installation process.

Web Deploy will stop the World Wide Web Publishing service, create a virtual directory and physical directory for Aspen, set appropriate permissions on this directory and sub directories, install Aspen into this directory, register various DLLs, and then restart the services that it stopped.

14 The first time you log in to the application, Aspen prompts you for basic configuration information:

A In the Database Access section, enter the ODBC system DSN that Aspen will use to connect to the database.

B In the Default Security section

- Select Set up basic user security for me to grant basic permissions to the Default Guest and Default Employee built-in security roles. These basic permissions allow users who are members of these roles to view, but not update, most of their training and skill information. A local administrator can change these permissions after setup is complete.

- Select No, don't set security to grant no permissions at this point. A local administrator will have to use the Role Security page to assign permissions to the built-in roles.

C Click Save to save your changes.

If the information you have entered is valid, Aspen prompts you to log into the application. If an entry is invalid, Aspen displays an error message at the top of the page. Correct the error and click Save. You can now login to Aspen with a username of Administrator. You will be asked to define a password for the Administrator.

Install or upgrade Aspen LMS Messenger

If possible, you should install the Aspen LMS Messenger on a separate computer from the core Aspen LMS components and Web server.

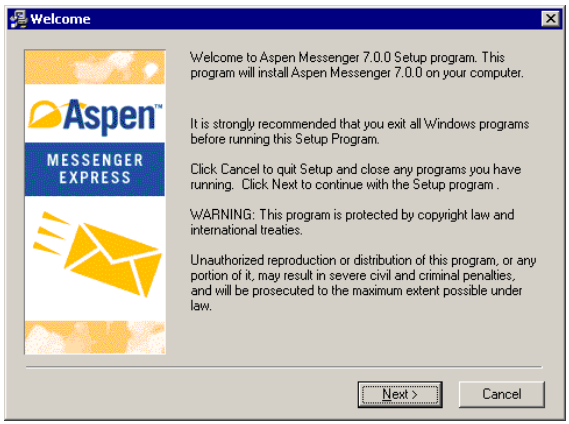
Important (1) Only one installation of Messenger per Aspen database is recommended. (2) Messenger should use the default mail account on the computer where it is installed.

➤ **To install, upgrade, and configure Aspen LMS Messenger:**

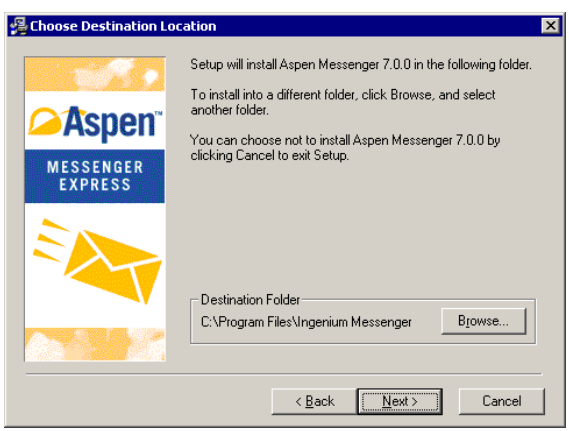
1 Make sure that the all the computers that will have Aspen components installed conform to the hardware and software requirements as listed in the *Aspen Learning Management and Experience Server System Requirements* document.

2 From the Aspen CD, copy *ImeSetup.exe* to the Messenger server.

3 Run *ImeSetup.exe* on the Messenger server.



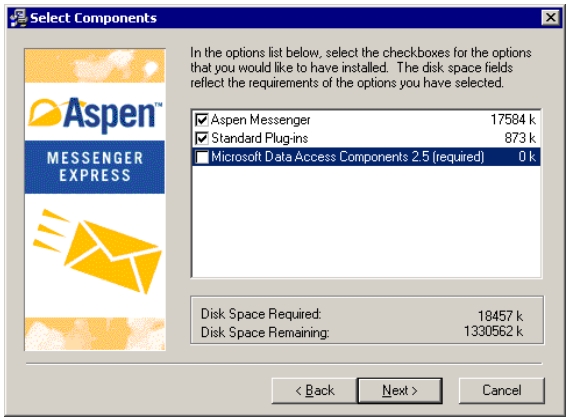
4 Click Next to continue.



5 Click Next to install Messenger to the default directory

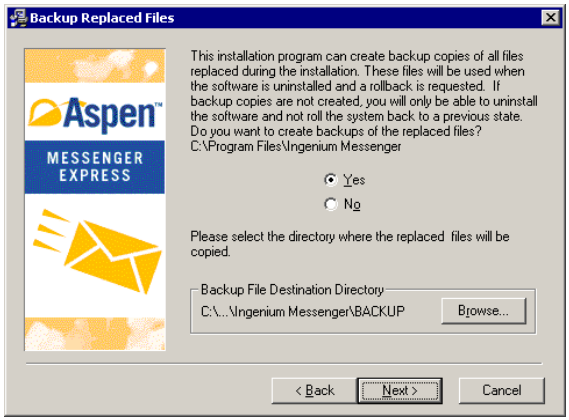
or click Browse to select another directory.

If you are upgrading from a previous version of Messenger, install this version over the old one.

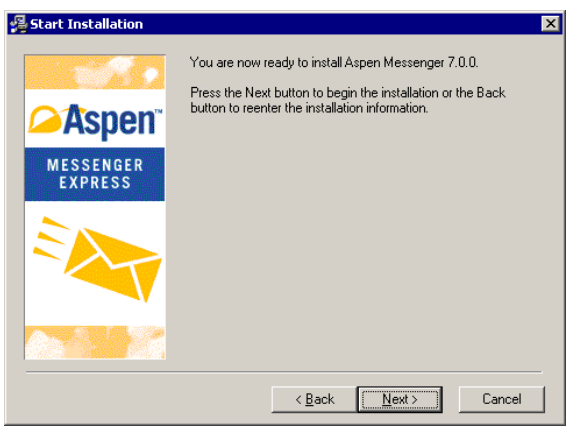


6 Select Aspen Messenger and Standard Plug-ins and click Next to continue.

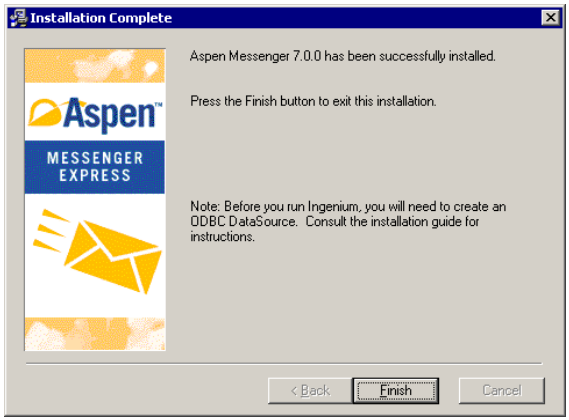
Note if installing on Windows NT, please also select Microsoft Data Access Components 2.5.



7 Select whether to backup files that this installation system will replace. We strongly suggest you choose Yes.



8 Click Next to begin the installation.



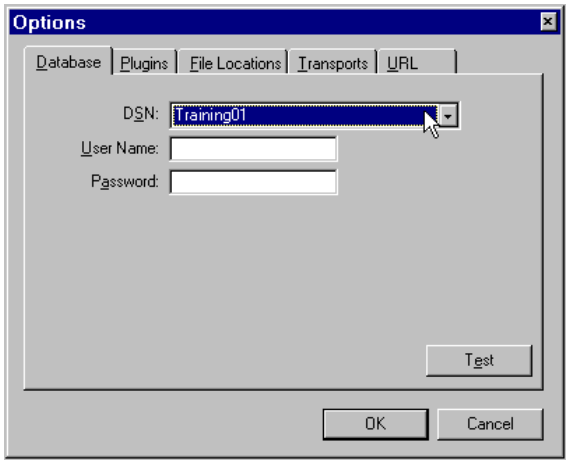
9 Aspen LMS Messenger is now installed. Press Finish to complete the installation.

10 In a new installation, create an ODBC System DSN (data source name) for the Aspen database.

11 If your mail protocol is MAPI, create a mail profile for Messenger to use.

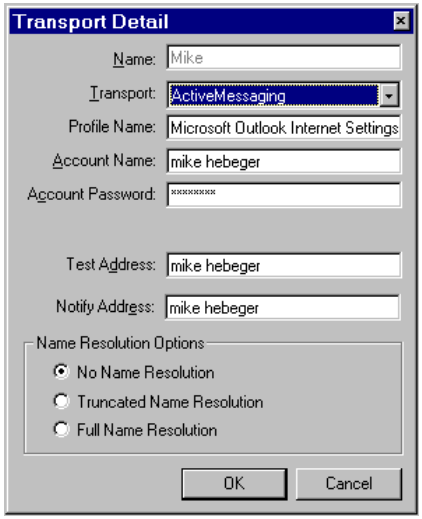
12 From the Windows Start menu, select Programs then Aspen Messenger Processor.

13 In the Messenger Processor window, select Configure and then General Options to open the Options dialog box.



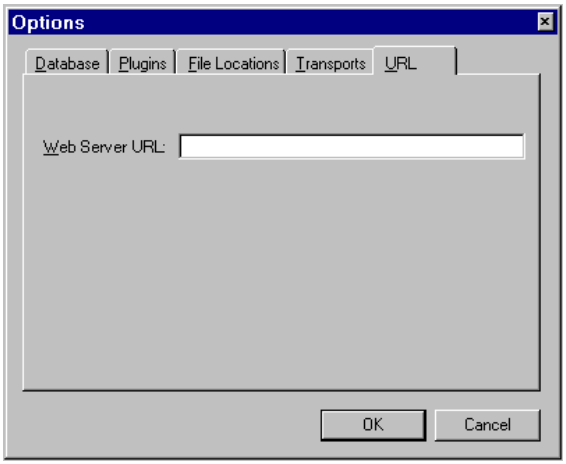
14 In the Database tab of the Options dialog box, enter the Aspen DSN (data source name), user name, and password.

The settings for the default administrator account ASPEN is recommended. Click Test to verify the database connection. Messenger will use this username and password whenever it connects to the database.



15 Add and select a transport option in the Transports tab.

If your mail protocol is MAPI or Active Messaging, use the settings from the system mail profile.



16 Enter the Aspen Web interface URL in the URL tab.

17 Click Scheduled Jobs in the Configure menu.

18 In the Scheduled Jobs dialog box, create and configure one or more jobs. Now you can start Messenger by clicking Start Processing in the Messenger Processor application window. Next, run the Messenger Mailer and click the Start Mailing button on the toolbar.

For more detailed instructions, see the *Aspen LMS Messenger User Guide*.

Install or upgrade the Aspen Data Filter service

The Aspen Data Filter is a required component for Aspen Learning Management Server only. It is a Windows NT or Windows 2000 service that performs a number of tasks and optimizes performance of the database. The Data Filter runs according to a schedule that is configured using the Aspen LMS AdminTools application. Install only one Data Filter application per Aspen database and only one per computer. This computer should be continuously dedicated to running the filtering processes.

➤ **To install the Aspen Data Filter on a client computer:**

1. Make sure that the all the computers that will have Aspen components installed conform to the hardware and software requirements as listed in the *Aspen Learning Management and Experience Server System Requirements* document.

   If you are upgrading, disable the Click2learn Ingenium Data Filter service in Services in the Windows Control Panel. In Windows 2000, Services are in Administrative Tools in the Control panel. To disable the Data Filter service, open its properties and change the Startup Type to Disabled.

2. From the Aspen CD, copy *IngServer.exe* to the database server.
3. Run *IngServer.exe* on the Data Filter service computer.
4. Select Aspen Data Filter and click Next to continue.

Note if installing on Windows NT, please also select Microsoft Data Access Components 2.5.

5. Click Next to begin the installation process.
6. When the installation is complete, click Finish. If asked to reboot your computer, please do so now.
7. In a new installation, create an ODBC System DSN for the Aspen database.
8. From the Windows Start menu, run the Aspen Data Filter Administration Utility.
9. Enter a user name, password, and the Aspen DSN, then click OK. The Data Filter uses these settings whenever it connects to the database.
10. If the Data Filter service was able to log in to the Aspen database, a message is displayed indicating that the login was successful.
11. Start the Aspen Data Filter service

Start the Aspen Data Filter service

1. From the Windows Control Panel, open Services. In Windows 2000, Services are in Administrative Tools in the Control panel.
2. Double-click the Click2learn Aspen Data Filter service.
3. If the service is stopped, click the Start button.
4. Select Automatic from the Startup Type list. This option sets the Data Filter service to start automatically whenever Windows starts up.

5 Set up the Data Filter options:

   A After installing Aspen client tools, run Aspen LMS AdminTools from the Windows Start menu

   B Click Administrative Options in the Tools menu.

   C Enter the time between updates for the Learning Experiences Filter and the Viewable Employee Filter.

   These fields set the number of minutes between updates of the list of learning experiences that each Aspen Web user has permissions to view and the list of employees that each Aspen client application user has permissions to view.

   D Select the Learning Experience Optional Parameters that are relevant for your Aspen implementation. These parameters determine the contents of the training catalog.

   E Click OK to save these settings.

6 Click Update Viewable Employees and Update Learning Experiences in the Tools menu to apply these settings immediately.

Create Aspen administrative users and security roles

Use Aspen LMS AdminTools to create new Aspen client application users. Make sure that each user already has an Oracle login to the Aspen database server; add logins as needed. If necessary, you can also create new security roles.

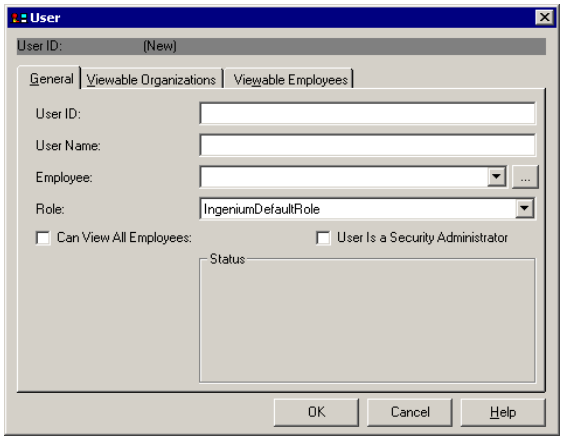
This step does not apply to the Aspen Web interface users.

➤ **To create a new Aspen user:**

1. Start Aspen LMS AdminTools from the Aspen program group.
2. In the Aspen Logon dialog box, type ASPEN in the Login ID box.
3. Type the password into the Password box.
4. Click the ODBC system DSN in the DSN box.
5. Click OK.
6. If the License Manager dialog box appears, enter your license number and click OK.

   The Aspen LMS AdminTools application window is displayed.
7. Click User Manager in the Tools menu to open the User Manager dialog box.
8. In the Users box, click New.

   The User dialog box opens, displaying the General tab.



9 In the User ID box, type the login name of a new user.

This user ID must be a login for the Aspen database server. The Status box indicates whether the entered user ID has a login.

10 In the User Name box, type the new user's name.

11 If this user is an employee in the Aspen database, use the Employee inline find box or click the Lookup button to find the employee's record and assign it to this user.

12 In the Role box, click an Aspen role to assign this user.

For details on how to add or edit roles, see the *Aspen LMS Administration Guide*.

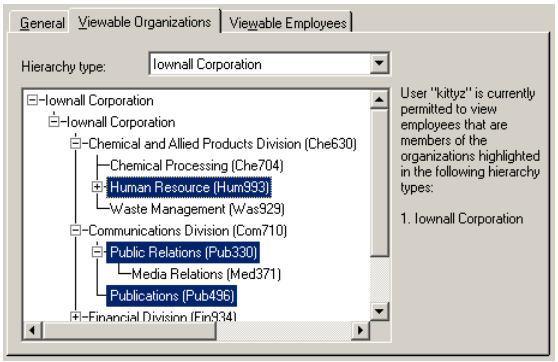
13 Set the employees that this user has permissions to see.

- To grant access to all employees in the database, select Can View All Employees.
- To grant access to employees by organizations:

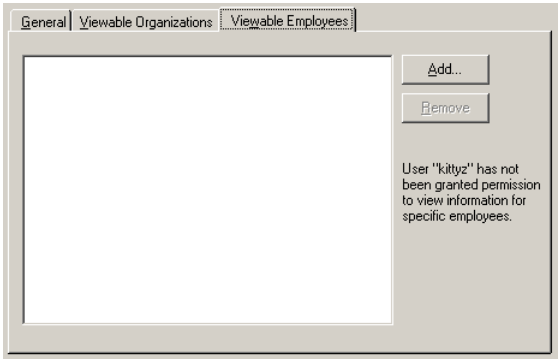
  A Click the Viewable Organizations tab.

  B In the Hierarchy type box, click a hierarchy type.

  C Click organizations in the hierarchy box to select/deselect their members as viewable employees.



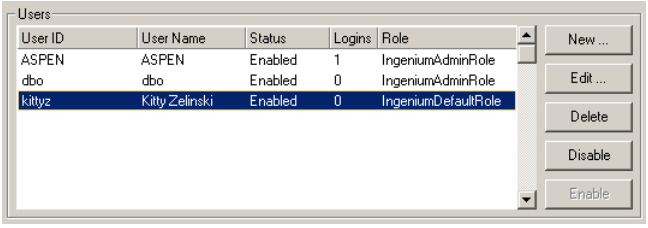
- To give this user access to specific employees, click the Viewable Employees tab.



Click Add to select viewable employees using the Find Employees dialog box. For details on how to use the Find dialog box, see the *Aspen LMS Workstation User Guide*.

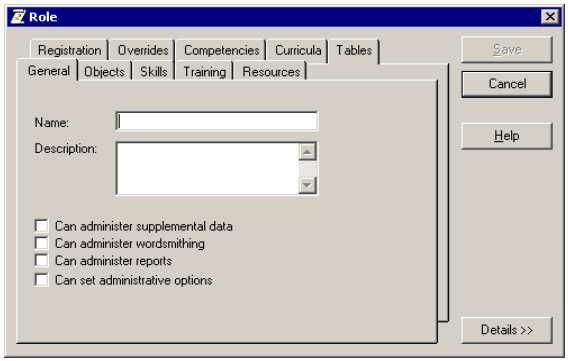
14 Click OK to save changes and close the User dialog box.

Back in the User Manager dialog box, the new user is listed in the Users box.



➤ **To create a new Aspen role:**

1 In the Roles box, click New to open the Role dialog box.



2 In the General tab, type a Name and Description for this role and select the appropriate administrative permission options.

3 In the remaining tabs in the Role dialog box, select check boxes for permissions that apply to this role

4 Click Save to save changes and close the Role dialog box.

5 Back in the User Manager dialog box, the new role is listed in the Roles box. It can be assigned to any of the new users you create.

Install or upgrade client software

After you have created Aspen users, you can install or upgrade the Aspen LMS Workstation and/or Aspen LMS Report Browser client applications on their computers

➤ **To install Aspen LMS Workstation and Report Browser:**

1. Make sure that the all the computers that will have Aspen components installed conform to the hardware and software requirements as listed in the *Aspen Learning Management and Experience Server System Requirements* document.
2. On the Aspen CD, navigate to and run the Aspen client setup program IngClient.exe. Follow the screens and click the appropriate buttons to successfully complete your installation. Make sure that you select the Aspen Workstation, Aspen Report Browser, and, if installing on Windows NT, Microsoft Data Access Components 2.5 check boxes in the Select Components dialog box. If you are upgrading, install this version of these applications over any previous versions.
3. Create an ODBC system DSN for the Aspen database according to the instructions in the *Create an ODBC system DSN* section.

Using Aspen reports

Aspen LMS contains over 80 preformatted Seagate Crystal Reports that may be available in the Aspen LMS Report Browser application as Shared Reports. Copy any of these reports to a location that is accessible to the Report Browser users and then add them to the Shared Category. If you are upgrading, make sure you do not write over any existing customized or otherwise important report files from previous versions.

Note the Aspen database schema name is stored inside each Crystal Report file. There are two versions of each Crystal Report for Oracle on the Aspen CD - one for each default schema name, depending on whether you use the default for a new Aspen installation or an upgrade from an Ingenium installation. If you use a schema name other than the defaults of ASPEN or INGENIUM, you must open each report in the Crystal Editor and save it after changing it to access your Aspen database.

➤ **To use the Aspen reports:**

1 Copy the reports from the Aspen CD to a location that can be accessed either locally or across the network by the Report Browser users. You can find these reports on the Aspen CD in the folder:

\Reports\Oracle\Aspen- if you are using the default name ASPEN (new Aspen installations) for your schema

\Reports\Oracle\Ingenium - if you are using the default name INGENIUM (Aspen installations that are upgraded Ingenium installations) for your schema

2 Run the Report Browser and log in as the ASPEN administrator user. If necessary, you can install just the Report Browser application and Microsoft Data Access Components on a client computer with an ODBC connection to the Aspen database.

3 Add a category to the Shared Categories folder and add the reports you want into that folder. You may make multiple categories to organize the reports in multiple folders. When adding the reports, you must enter a path and folder name that works for all client users regardless of their location on the network.

For example, if you add the reports using the computer that contains the reports, you should use the global network path to specify the report in the Add Report dialog box.

Do not use a name that is only valid for the local Report Browser such as: C:\Public Reports\

Use: F:\Public Reports\ (where F is a mapped drive to the shared network folder containing the reports; F must be the same letter for all client users).

Or use: \\ASPEN\Public Reports\ (where ASPEN is the network name of the computer containing the reports; ASPEN must be in the same domain as all client users).

Appendices

Appendix A: Terminal Services Client

Click2learn offers Aspen as a hosted service. Hosted Aspen is administered using Microsoft Terminal Services. Administrator's computers must have the Terminal Services Client software installed on them to run the Aspen applications. This document describes how to set up a computer to run Aspen using the Terminal Services Client. It contains information about how to:

- Install and configure the Microsoft Terminal Services Client software.
- Set up a printer for Aspen applications.
- Use Aspen Messenger in Terminal Services

Terminal Services Client Installation

To access the hosted Aspen applications, you must install the Terminal Services client software and create a connection to the Terminal Server..

➤ **To install the Microsoft Terminal Services client software:**

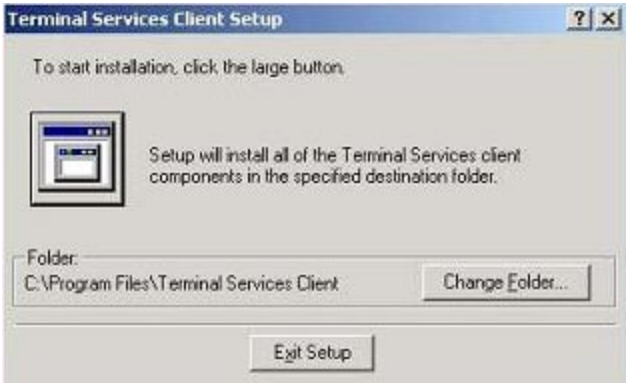
1 Unzip the termserv.zip file into a temporary directory such as c:\temp.

2 In the temporary directory, run the Terminal Services Client Setup program setup.exe.

3 In the Welcome screen, click Continue.

4 Enter your name and organization.

5 In the License Agreement window, click I Agree.



6 Click the large button on the left side of the form.

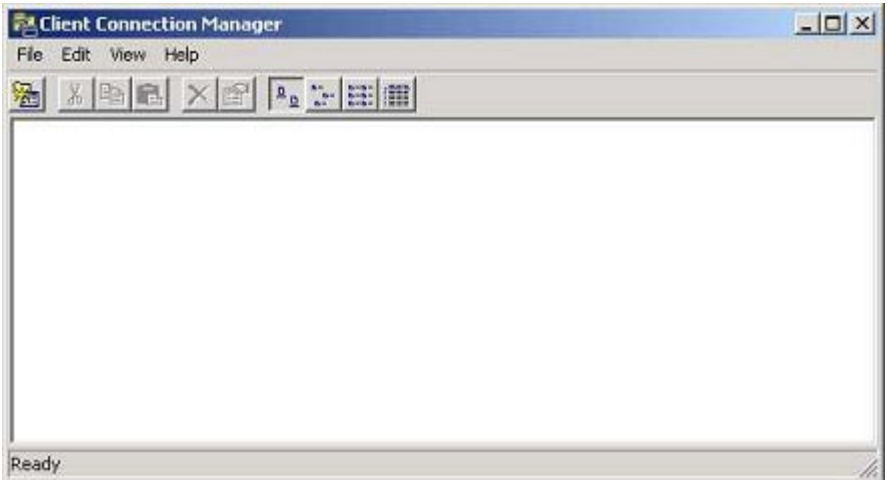
7 We recommend that you click Yes to install for all users of this computer.

8 When the setup completes, click OK to close the setup program.

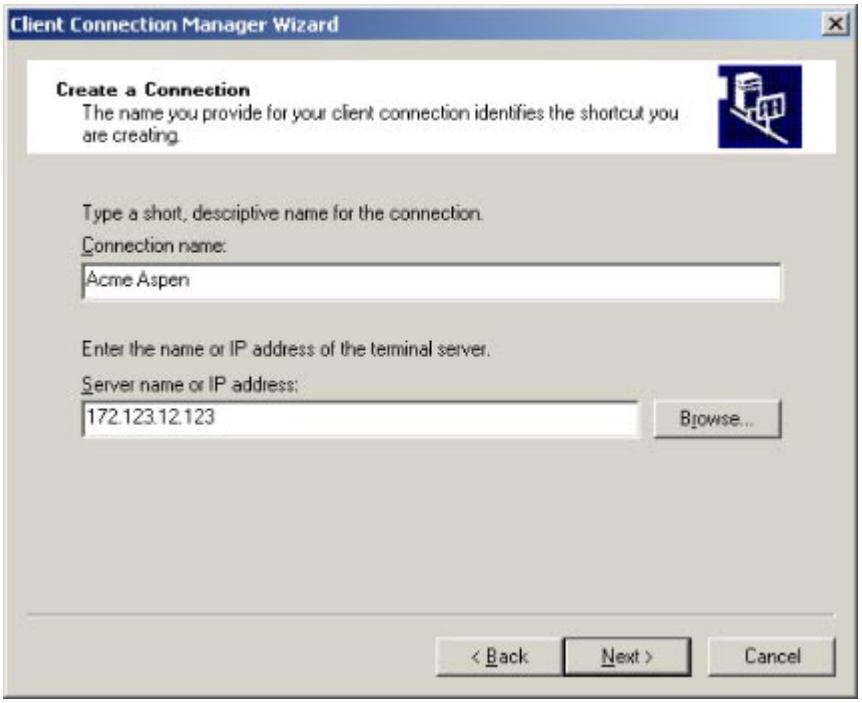
If necessary, reboot this computer.

9 Create the connection to the Aspen server using the Client Connection Manager.

Click Programs in the Start menu, point to Terminal Services Client, and click Client Connection Manager to start creating a connection.



10 Click New Connection in the File menu or press Ctrl-N to open the Client Connection Manager Wizard.



11 Enter a Connection name and the IP address for your Terminal Server (Get the IP address from your system administrator).

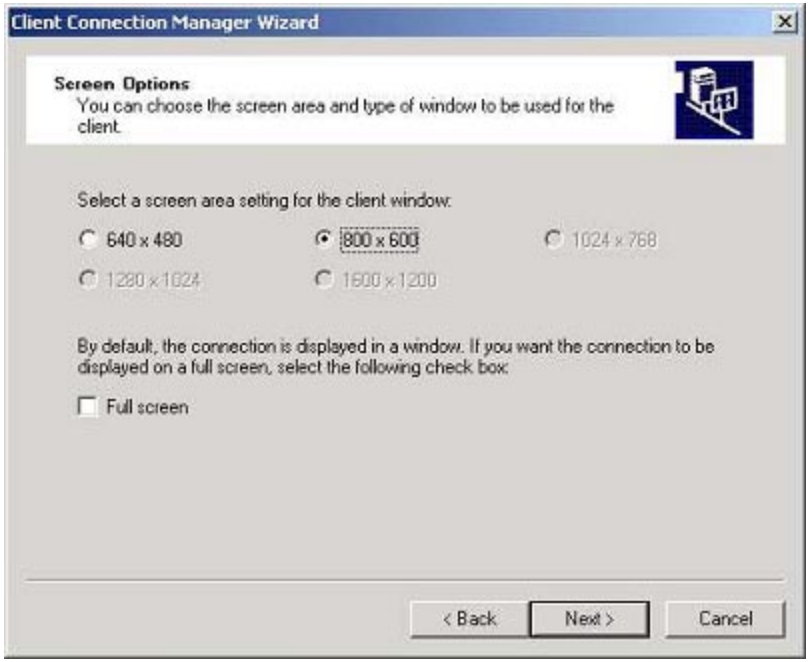
Click Next to continue.

12 Choose whether or not to log on automatically. The default is set to not to log on automatically.

Click Next to continue

13 If you choose to login automatically, enter the login information provided by your system administrator.

Click Next to continue.

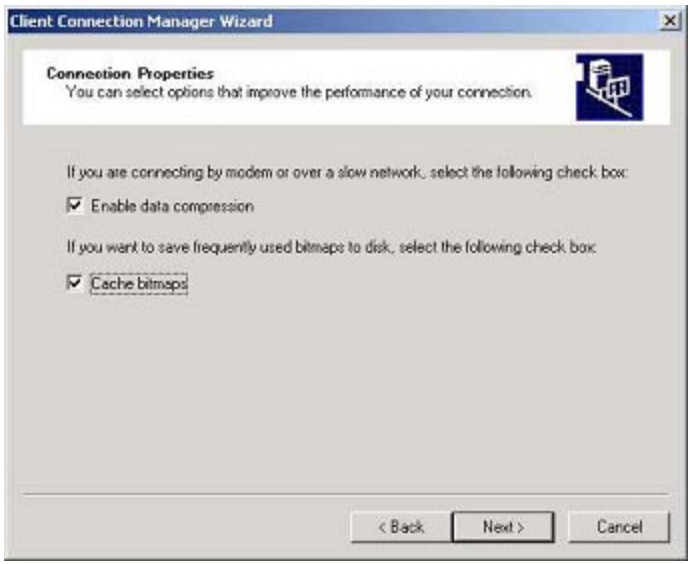


14 Choose the screen size.

The screen area should be at least one size smaller than the size of the desktop on your monitor.

For example, if the desktop size is 1024x768, use 800x600 or smaller. Full screen mode is not recommended because you must log out to exit full screen mode.

Click Next to continue.



15 You should select Enable data compression and Cache bitmaps, because they significantly improve performance and reduce network traffic.

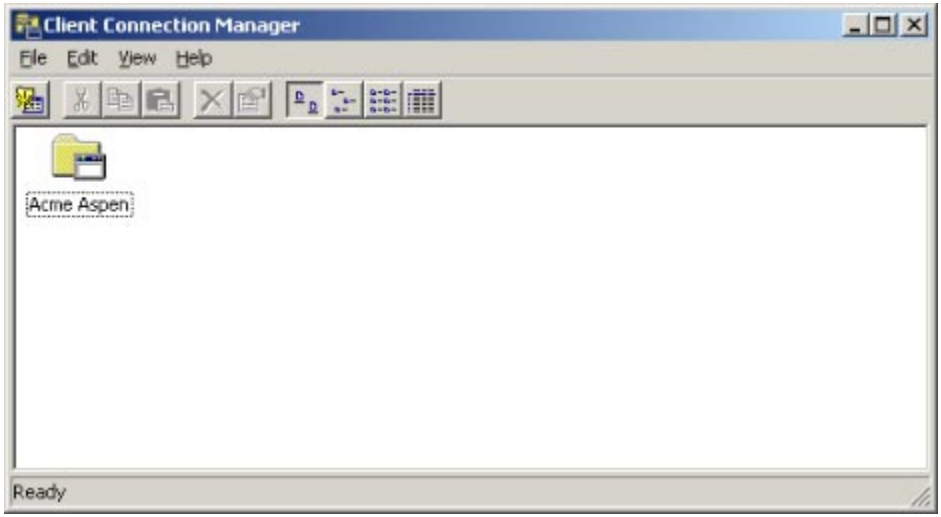
Click Next to continue.

16 Starting a program automatically is not available.

Click Next to continue.

17 It is not necessary to change the default icon.

Click Next to continue.



18 The icon for your connection is displayed in the Client Connection Manager.

Configuring a Printer

This section describes how to configure the Terminal Services client computer to print reports from the Aspen Report Browser or help pages from the Aspen applications on a network printer. If your printer is directly connected to your PC, it will be available automatically.

You must have sufficient permissions to install a network printer. Depending on your network, a system administrator may have to do this procedure. Also, if the printer that you are connecting to has a driver that is not part of the default set of printer drivers that are installed with Windows 2000 Server, you must provide that driver to Click2Learn before installing the printer for Terminal Services.

Before you open any report in the Aspen Report Browser, make sure you use the Set Location command in the Report menu to change the login information to the data source, user, and password for the Aspen database on the Terminal server. For more information, see the *Aspen Report Browser User Guide*.

➤ **To configure a printer for the Terminal Services client:**

1 On the computer where Microsoft Terminal Services Client is installed, open a command prompt window.

2 Connect a printer port to a shared printer on the network.

3 At the command prompt, type:

net use lpt1 "\\<servername>\<printer name>"

Where <servername> and <printer name> is the network name and path of the printer. If the printer port lpt1 is in use, you can use lpt2 or lpt3.

4. Close the command prompt window.
5. In the Start menu, point to Settings and then click Printers.
6. In the Printers window, double-click Add Printer.
7. In the Welcome screen of the Add Printer Wizard, click Next to continue.
8. In the Local or Network Printer screen, select the Local printer option in Windows 2000. Select My Computer in Windows NT.

   Click Next to continue.
9. In the Select the Printer Port screen, select the Printer port that you are using (from step 2).

   Click Next to continue.
10. Select the manufacturer and model of the printer you want to use

    Click Next to continue.
11. In the Use Existing Driver screen, select whether to use the existing printer driver (recommended) or replace it with a new one.

    Click Next to continue.
12. In the Name Your Printer screen, type a name for the printer in the Printer name box.
13. Choose whether or not to make this printer your default printer (you probably do not want this printer to be your default).

    Click Next to continue.
14. In the Printer Sharing screen, choose whether or not to share this printer over the network.

    Click Next to continue.

15 In the Print Test Page screen, you can print a test page to make sure the printer is installed properly.

Click Next to continue.

16 Click Finish to close the wizard.

Now you can print from Aspen within the Terminal Services Client window.

Aspen Messenger in Terminal Services

Aspen Messenger is run using the Terminal Services Client with the following restrictions:

- Messenger has its own account on the Terminal server hosting Aspen.
- In most cases, you do not want the account to log off when the session is disconnected; this way the Messenger application continues to run.
- To disconnect without logging off, click the close box in the upper right-hand corner of the Terminal Services Client window.

Note Do NOT log off by clicking the Start/Log off button. Disconnecting without logging off is the only way to leave the Aspen Messenger Processor and Mailer running.

For more instructions about using Messenger, see the Aspen Messenger User Guide.

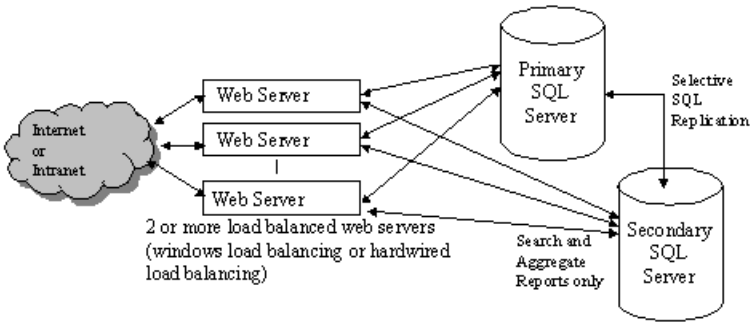
Appendix B: Configuring LMS/LXS in a WebFarm

This section provides information about configuring Learning Management Server and Learning Experience Server in a WebFarm.

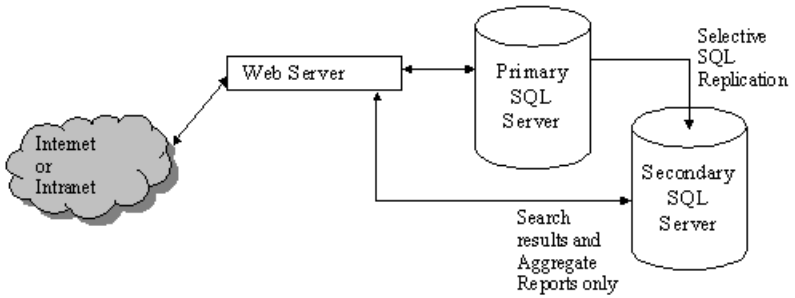
Supported Deployments and Configurations

Deployment of LMS/LXS

Aspen supports the following configurations of Web and database servers. If both the Web server and the database server are configured on the same hardware, it is assumed that the hardware is sufficient for the requirements of both servers. Common deployments of LXS require a primary database server and a secondary database server with selective SQL replications set up between the two. The secondary SQL Server builds all the search indicies as well as periodically generating aggregate data for reports. This configuration provides better response time for the users. However, in low-end installations that need to support only a few hundred users, Aspen LXS may be installed without a secondary database server.



LMS\LXS Deployment - Load balanced 3 tier



LMS\LXS Deployment – No load balance 3 tier

Before Installing LMS/LXS in a WebFarm

The following items must be configured before installing LMS/LXS in a WebFarm.

1. Make sure that all the computers (Web servers and database servers) are in a domain.
2. The SQL Client Network utility should be set to TCP/IP on database servers.

LMS/LXS Setup in a WebFarm

Sceanrio 1: With one Web server and two database servers.

1. Run *IwcSetup.exe* on the Web server. Run *IngServer.exe* on the database servers and install the database.
2. Create two ODBC System DSN's: one for the primary database server and one for the secondary database server.
3. Configure replication between primary and backup database servers. Refer to the *Aspen Learning Management and Experience Server Replication Set Up Guide* on the Aspen CD in the file, *Replication_QuickStartSetUpGuide.pdf*.

Scenario 2: With two or more Web servers and one database server.

1. Run *IwcSetup.exe* on the Web servers. Run *IngServer.exe* on the database servers and install the databases.
2. Create two ODBC System DSN's: one for the primary database server and one for the secondary database server.
3. Configure the replication between the primary and backup database servers. Refer to the *Aspen Learning Management and Experience Server Replication Set Up Guide*.

After Installing LMS/LXS on a WebFarm

Check for the following after installing LMS and/or LXS on the Web server:

- After the setup is done there should be 3 directories that are shared. Data, uploads and lms_data on the webservers and data directory on the database server.
- Open the site in the browser, select the right DSN's and click save. All the information related these shares will be updated in tbl_machine table of the LMS\LXS database.
- Check if tbl_machine table is updated with the information related to these shares.

  For example, this is the entry that was created for data directory in the tbl_machine table: ELP(machinename), 0(machinetype) \\ELP\ELP_aspen_data (share name), c:\inetpub\wwwroot\aspen\data(physicalpath)

For example, this is the entry that was created for uploads directory in the tbl_machine table: ELP(machinename), 3(machinetype) \\ELP\ELP_aspen_uploads (share name), c:\inetpub\wwwroot\aspen\uploads(physicalpath)

For example, this is the entry that was created for lms_data directory in the tbl_machine table: ELP(machinename), 2(machinetype) \\ELP\ELP_aspen_lms_data (share name), c:\inetpub\wwwroot\aspen\lms_data(physicalpath)

For example, this is the entry that was created for data directory on the database server in the tbl_machine table: ELP(machinename), 1(machinetype) \\ELP\Aspendata (share name), c:\data(physicalpath)

- The machine type is 1 for data directory on the database server.
- The machine type is 0 for data directory on the Web server.
- The machine type is 2 for lms_data directory on the Web server.
- The machine type is 3 for uploads directory on the Web server.
- Only the data directory is created on the database server. Uploads and lms_data directories are not created on database servers.
- To replicate the primary and backup database servers, refer to the *Aspen Learning Management and Experience Server Replication Set Up Guide*.