Abstract
This guide outlines the ideal way to successfully install and configure an IBM® WebSphere® application server 7.0 with EMC® Documentum® WDK/Webtop in a clustered environment to enable high availability and load balancing. This guide describes the installation and configuration on multiple machines. The volume of incoming requests is high in a production environment. This can be handled in an efficient manner if the web application is deployed in a clustered environment.
# Table of Contents

**Introduction** ............................................................................................................ 4  
**Audience** ................................................................................................................. 4  
**Single Cluster - Multiple Machine Deployment Environment Pattern** .................... 4  
  - About IBM WebSphere clustering ........................................................................... 5  
  - Configuring IBM WebSphere application server in a cluster .................................... 5  
  - Installing WebSphere Application Server Network Deployer .................................... 6  
  - Installing WebSphere Application Server .................................................................. 13  
  - Installing WebSphere Nodes .................................................................................... 18  
**Installing and running the IBM Update Installer for WebSphere 7.0.0.1** .................... 21  
  - Installing IBM HTTP Server and plug-ins ................................................................. 31  
  - Updating IBM HTTP Server and plug-ins to FixPak 17 .............................................. 40  
  - Adding nodes to the deployment manager profile .................................................... 51  
**Creating a Cluster** .................................................................................................. 53  
**Adding custom properties specific to Documentum Webtop** .................................... 58  
**Integrating the IBM HTTP Server to the cluster environment** .................................. 60  
**Generating the IBM HTTP Server plug-in file** ......................................................... 65  
**Load Balancer Configuration for IBM HTTP Server** ................................................ 66  
**Testing the IBM HTTP Server Integration** ................................................................ 66  
**Deploying Documentum Webtop in a cluster** ........................................................... 71  
**Modifying the class loader order for Documentum Webtop** .................................... 77  
**References** ............................................................................................................. 80
Introduction

This guide discusses how high availability and load balancing are achieved if IBM® WebSphere® Application Server 7.0 is installed and configured in a clustered environment.

The process of installing and configuring IBM WebSphere Application Server 7.0 on multiple machines in a clustered environment involves the following steps:

• Installing WebSphere Application Server Network Deployment
• Installing WebSphere Application Server
• Installing the IBM Update Installer for WebSphere 7.0.0.1
• Installing IBM HTTP Server
• Configuring IBM WebSphere Application Server in a cluster
• Deploying Documentum Webtop in a cluster

Audience

This guide addressed developers and testers who want to understand the process of installing and configuring IBM WebSphere Application Server 7.0 on multiple machines in a clustered environment with load balancing. We assume that you possess working knowledge of Documentum WDK/Webtop.

Single Cluster - Multiple Machine Deployment Environment Pattern

The new concept of profiles makes the task of managing an IBM® WebSphere® Application Server easier.

Use the network deployment installer (C1G2JML.zip) to create the network deployment manager profile and the application server profile. You can set up a basic clustered IBM WebSphere Process Server 7.0.0 installation using a step-by-step approach for a reasonably simple, yet robust, clustered topology that improves availability and scalability.

Two kinds of specialized application servers enable you to configure, control, and monitor the behavior of a distributed network of servers and services that IBM calls WebSphere Application Server:

• Deployment manager
• Node agent
A deployment manager is an application server that runs only one application - an application that manages the configuration and behavior of an entire cell. There is only one deployment manager in any cell. The deployment manager holds the official configuration records for every server and service in the entire distributed network that is part of a cell. When a deployment manager orders a node agent to change the configuration of its servers and services to match this master record, we say the deployment manager has performed synchronization. Deployment managers talk to node agents only.

A node agent controls, configures, and monitors all the servers and services in a node. Node agents talk to a deployment manager and to the servers in their node. They relay administrative traffic from the deployment manager to the individual servers in their node. They relay status from the servers in their node to the deployment manager.

About IBM WebSphere clustering

Clustering is a key technique that you can use to improve the availability and the scalability of a WebSphere Process Server environment. With clustering, you can:

- Increase the system’s availability by providing redundant Java™ Virtual Machine (JVM) processes or hardware components, which can ensure some level of continuity of service in case of failures.
- Provide a mechanism to accommodate additional workload scalability by making available additional processes and systems to run transactions.

The concepts of failover and scalability are largely independent. Since this is the case, you may find that a topology that ensures scalability may not be very good at ensuring availability, and vice-versa. With WebSphere Process Server, you can use clustering techniques in many different ways to address availability and scalability.

Configuring IBM WebSphere application server in a cluster

This guide describes the process of configuring a cluster on multiple computers. You need six machines for this setup.

First machine (Deployment manager) will have:
- Deployment manager

Second and Third machine (Appserver1 and Appserver2 machines) will have:
- WebSphere AppServer instance

Fourth and fifth machine (WebServer1 and WebServer2 machines) will have:
- Node Agent
- IBM Http Server

Sixth machine (LoadBalancer machine) will have:
- IBM Http Server configured for load balancing
You must perform the following tasks to configure the IBM WebSphere cluster. Detailed steps for each task are provided in the next section.

1. Install the WebSphere Application Server Network deployment.
2. Install application servers.
3. Install the IBM Update Installer for WebSphere 7.0.0.1
4. Run the IBM Update Installer and apply FixPak 9 on WebSphere Application Servers.
5. Install the IBM HTTP Server.
6. Update the IBM HTTP Server by applying FixPak 9.

Figure 1. Load Balancer Setup

Installing WebSphere Application Server Network Deployer

This section lists the instructions to install WebSphere Application Server Network Deployment. This document covers WebSphere cluster setup for Windows 64 bit.

1. Login to Depmnger machine.
2. Download the C1G2JML.zip file and extract its content to a temporary location.
3. Run the WebSphere Application Server Network Deployment installer from the temporary location. The Welcome page is displayed.
4. Click **Next**. The Software License Agreement page is displayed.

5. Select the **I accept both the IBM and the non-IBM terms** option.
6. Click **Next**. The System Prerequisites Check page is displayed.

![System Prerequisites Check](image1)

**Warning:** A supported operating system was not detected.

Support for your operating system might have been added after the release of the product. See the [WebSphere Application Server detailed system requirements](#) Web pages for more information about supported operating systems. You can continue with the installation, but the installation or product operation might not succeed without applying maintenance. Go to the [product support](#) Web pages to obtain the latest maintenance packages to apply after installation.

The installation wizard also checks for existing installations of WebSphere Application Server. To have more than one installation of WebSphere Application Server running on the same machine, unique port values must be assigned to each installation. Otherwise, only one installation of WebSphere Application Server can run.

- **Installations of WebSphere Application Server prior to Version 6.1 may not be found reliably.**

7. Click **Next**. The Optional Features Installation page is displayed.

![Optional Features Installation](image2)

**Optional Features Installation**

Select IBM WebSphere Application Server Network Deployment features to install. See the InstallGuide.onl.html file in the docs directory for detailed descriptions of the optional features.

- **Install the Sample applications.**
  
  The Samples include both source code files and integrated enterprise applications that demonstrate some of the latest Java (TM) Platform, Enterprise Edition (Java EE) and WebSphere technologies. The samples are recommended for installation to learning and demonstration environments, such as development environments. However, they are not recommended for installation to production application server environments.

- **Install non-English language packages for the administrative console.**
  
  In addition to installing the English language files, you can also install all the non-English language files needed for using the administrative console from machines with non-English locales.
8. Select the **Install the Sample applications** option and click **Next**. The Installation Directory page is displayed.

9. Specify or select the Product installation location, and click **Next**. The WebSphere Application Server Environments page is displayed.
10. In the **Environments** list, select the **Cell (deployment manager and a managed node)** environment and click **Next**. The Enable Administrative Security page is displayed.
11. Clear the **Enable administrative security** option.

12. Click **Next**. The Repository for Centralized Installation Managers page is displayed.

13. Click **Next**. The Installation Summary page is displayed.
14. Review the installation summary listing the products and features that will be installed, and other details. Click **Back** to modify values in previous pages, if it is required.

15. Click **Next**. The IBM WebSphere Application Server Network Deployment Version 7.0 installation is started. When the installation is completed, the Installation Results page is displayed indicating successful installation.
16. Click Finish.

**Installing WebSphere Application Server**

This section lists the instructions to install WebSphere Application Server.

1. Log in to the **Appserver1** machine.
2. Download **C1G0TML.zip** file and extract its content to temporary location.
3. Run the WebSphere Application Server installer from the temporary location. The Welcome page is displayed.
4. Click **Next**. The Software License Agreement page is displayed.
5. Select the **I accept both the IBM and the non-IBM terms** option.
6. Click **Next**. The System Prerequisites Check page is displayed.
7. Click **Next**. The Optional Features Installation page is displayed.
8. Select the **Install the Sample applications** option and click **Next**. The **Installation Directory** page is displayed.
9. Specify or select the Product installation location, and click **Next**. The WebSphere Application server Environments page is displayed.
10. In the **Environments** list, select Application server and click **Next**. The Enable Administrative Security page is displayed.

11. Clear the **Enable administrative security** option.

12. Click **Next**. The Installation Summary page is displayed.
13. Review the installation summary listing the products and features that will be installed, and other details. Click Back to modify values in previous pages, if it is required.

14. Click Next. The IBM WebSphere Application Server installation is started. When the installation is completed, the Installation Results page is displayed indicating successful installation.
15. Click Finish. Repeat Steps 1 through 15 to install the application server on the Appserver2 machine.

**Installing WebSphere Nodes**

1. Log in to WebServer1 machine.
2. Download the C1G2JML.zip file and extract its content to a temporary location.
3. Run the WebSphere Application Server installer from the temporary location. The Welcome page is displayed.
4. Click Next. The Software License Agreement page is displayed.
5. Select the I accept both the IBM and the non-IBM terms option.
6. Click Next. The System Prerequisites Check page is displayed.
7. Click Next. Optional Feature Installation page is displayed.
8. Accept the default selections and click Next.
9. Specify or select the Product installation location and click Next. The WebSphere Application Server Environments page is displayed.
10. Select **Custom** and click **Next**. The Federation page is displayed.
11. Select **Federate this managed node later using the addNode command**. Click **Next**. The Installation Summary page is displayed.
12. Click **Next**. The Installation Results page is displayed.

13. Click **Finish** to complete the installation.

Repeat Steps 1 through 13 to install the Node Agent on the other HttpServer2 machine.

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**Installing and running the IBM Update Installer for WebSphere 7.0.0.1**

You must install the IBM Update Installer for WebSphere 7.0.0.1, and then run the update installer to install FixPak 9 on WebSphere Application Server 7.0.

Download 7.0.0-WS-WAS-WinX64-FP0000009.pak to a temporary location. Update installer is needed to install FixPacks.

To install and run the update installer:

1. Log in to Depmnger machine.

2. Obtain the update installer archive **7.0.0.1-WS-UPDI-WinAMD64.zip** and extract it to a temporary folder.

3. Navigate to the **UpdateInstaller** directory in the temporary folder. Double-click **install.exe** to launch the installer. The Welcome page is displayed.
4. Click **Next**. The Software License Agreement page is displayed.

5. Select the **I accept the terms in the license agreement** option.
6. Click **Next**. The System Prerequisites Check page is displayed.

7. Click **Next**. The Installation Directory page is displayed.
8. In the **Directory path** field, a default installation path is displayed.

9. Click **Next**. The Installation Summary page is displayed.

![Installation Summary](image)

**Installation Summary**

Review the summary for correctness. Click **Back** to change the values on previous panels. Click **Next** to begin the installation.

The following product will be **installed**:  
- **IBM Update Installer for WebSphere Software**  
  Path: C:\Program Files\IBM\WebSphere\UpdateInstaller

for a total size:  
- 387 MB

10. Review the installation summary that indicates the product that will be installed.

11. Click **Next** to continue with the installation. After the IBM Update Installer for WebSphere 7.0.0.1 is installed, the Installation Complete page is displayed.
12. Select the Launch IBM Update Installer for WebSphere Software on exit option, if you want to perform the update task, and click Next. Alternatively, click Finish and launch the Update Installer from the Start menu. If you click Next, the Welcome page of the IBM Update Installer for WebSphere Software wizard is started.
13. Click **Next**. The Product Selection page is displayed.
14. Ensure that you specify the correct WebSphere installation root in the Directory path field.

15. Click Next. The Maintenance Operation Selection page is displayed.

17. Browse to the temporary location where you downloaded the 7.0.0-WS-WAS-WinX64-FP0000009.pak file.

18. Click Next. The Available Maintenance Package to Install page is displayed.
The 7.0.0-WS-WAS-WinX64-FP0000009.pak option is selected by default. Click Next. The Installation Summary page is displayed indicating the maintenance package that will be installed and the product on which it will be installed.
21. Click **Next** to continue.
22. When the update is completed, the Installation Complete page is displayed indicating a successful update.

![IBM Update Installer for WebSphere Software 7.0.0.1](image)

23. Click **Finish**. All profiles of WebSphere Application Server are updated to version 7.0.0.9.

Install the Update installer and update the Websphere AppServer on both the AppServer (i.e. Appserver1 and Appserver2) machines using the preceding steps.

**Installing IBM HTTP Server and plug-ins**

Before you install IBM HTTP Server, you must ensure you have shut down all application server instances on Depmnger machine.

You can now install IBM HTTP Server 7.0 using the installer packaged in C1G2KML.zip. After installing the Web server, you must install the plug-in using the appropriate installer.

**To install the IBM HTTP Server and the plug-in:**

1. Log in to the LoadBalancer machine.

2. Download the WebSphere Application Server 7.0 Express installer (C1G2KML.zip) and extract its contents to a temporary folder.

3. Launch the IBM HTTP Server 7.0 installer available in the following path: `<temp Folder\C1G2KML\IHS`. The Welcome page is displayed.
4. Click **Next**. The Software License Agreement page is displayed.

5. Select the **I accept both the IBM and non-IBM terms** option.
6. Click **Next**. The System Prerequisites Check page is displayed.

![Image of System Prerequisites Check](image)

**Warning:** A supported operating system was not detected.

Support for your operating system might have been added after the release of the product. See the [WebSphere Application Server detailed system requirements](#) Web pages for more information about supported operating systems. You can continue with the installation, but the installation or product operation might not succeed without applying maintenance. Go to the [product support](#) Web pages to obtain the latest maintenance packages to apply after installation.

Click **Cancel** to stop the installation and install a supported operating system. Click **Next** to continue the installation. 

7. Review the system prerequisites information.

8. Click **Next**. The Enter the installation location page is displayed.
9. By default, the path where the HTTP Server will be installed is displayed. You can modify the path.

10. Click **Next**. The Port Values Assignment page is displayed.
11. Review the default port values. Ensure that the port numbers are unique and do not conflict with other services running on this host machine.

12. Click **Next**. The Windows Service Definition page is displayed.
13. Select the **Run IBM HTTP Server as a Windows Service** option.
14. Select the **Run IBM HTTP Administration Server as a Windows Service** option.
15. Select the **Log on as a specified user account** option.
16. Enter the **User name** and **Password** details. (Windows user ID/password).
17. Click **Next**. The HTTP Administration Server Authentication page is displayed.
18. Select the **Create a user ID for IBM HTTP administration server authentication** option.

19. Enter the User ID, Password, and Confirm Password details. (Windows user ID/password)

20. Click **Next**. The IBM HTTP Server Plug-in for IBM WebSphere Application Server page is displayed.
21. Select the **Install the IBM HTTP Server Plug-in for IBM WebSphere Application Server** option.

22. In the **Web server definition** field, specify the definition of the HTTP Server instance you are installing.

23. In the **Host name or IP address for the Application Server** field specify the host name or IP address of the current machine.

24. Click **Next**. The Installation summary page is displayed.
25. Review the installation summary to verify the values you have specified.
26. Click **Next** to continue with the installation. When the installation is complete, the last page of the IBM HTTP Server 7.0 installer indicates that the installation was completed successfully.
27. Click **Finish**.

**Updating IBM HTTP Server and plug-ins to FixPak 17**

You must run the update installer to install FixPak 9 on IBM HTTP Server 7.0.

You must also download 7.0.0-WS-IHS-WinX64-FP0000009.pak and 7.0.0-WS-PLG-WinX64-FP0000009.pak to a temporary location.

**To update IBM HTTP Server to FixPak 9:**
1. Browse to the following path and run **update.exe**: `C:\Program Files\IBM\WebSphere\UpdateInstaller\update.exe` The Welcome page is displayed.
2. Click Next. The Product Selection page is displayed

3. In the Directory path field, specify the installation path of the HTTP Server.
4. Click **Next**. The Maintenance Operation Selection page is displayed.

![Maintenance Operation Selection](image)

5. The **Install maintenance package** option is selected by default.

6. Click **Next**. The Maintenance Package Directory Selection page is displayed.
7. In the **Directory path** field, browse to the directory containing the list maintenance packages that can be installed.

8. Click **Next**. The Available Maintenance Package to install page is displayed.
9. Select the **7.0.0-WS-IHS-WinX64-FP0000009.pak** option to install the package for the IBM HTTP Server.

10. Click **Next**. The Installation Summary page is displayed.
11. Review the installation summary of the maintenance package that will be installed and the product on which it will be installed.

12. Click Back to modify values in previous pages, if it is required.

13. Click Next. The installation is started.
14. When the installation is completed, the Installation Complete page is displayed indicating successful installation.

15. Click **Relaunch** and add a maintenance package for the Web server plug-in for IBM HTTP Server the Product Selection page is displayed.
16. In the Directory path field, specify the path to the IBM HTTP Server plug-in.
17. Click Next. The Maintenance Operation Selection page is displayed.
18. The Install maintenance package option is selected by default.
19. Click **Next**. The Maintenance Package Directory Selection page is displayed.
20. In the **Directory path** field, specify the path to the directory containing the maintenance packages that can be installed.

21. Click **Next**. The Available Maintenance Package to Install page is displayed.

![Available Maintenance Package to Install](image)

22. Select the **7.0.0-WS-PLG-WinX64-FP0000009.pak** option to install the package for the IBM HTTP Server Plug-in.

23. Click **Next**. The Installation Summary page is displayed.
24. Review the installation summary of the maintenance package that will be installed and the product on which it will be installed. Click Back to modify values in previous pages, if it is required.

25. Click Next. The installation is started. When the installation is completed, the Installation Complete page is displayed indicating successful installation.
Repeat Steps 1 through 26 to install IBM HttpServer and Update Installer and Fix Packs for Webserver1 and Webserver2 machines.

Adding nodes to the deployment manager profile

You must add IBM WebSphere Application Server nodes to the deployment manager prior to creating the cluster.

To add nodes to the deployment manager:
1. Log in to the Depmnger machine.
2. Open the command prompt. Go to the Deployment Manager profile that is located here: C:\Program Files\IBM\WebSphere\AppServer1\profiles\Dmgr01\bin
3. Execute the following command at the command prompt to start the Deployment Manager:
   startManager.bat
4. Log in to the AppServer1 and AppServer2 machines.
5. Open the command prompt. Go to the AppServer1 profile that is located here: C:\Program Files\IBM\WebSphere\AppServer1\profiles\AppSrv01\bin
6. Execute the following command at the command prompt to add a new node to the Deployment Manager profile:
   addNode.bat dmgr_host [dmgr_soap_port]
For example, execute the following command:

```batch
addNode.bat hostname 8879
```

7. Log in to the WebServer1 and WebServer2 machines.

8. Open the command prompt. Go to the AppServer1 profile that is located here:

```plaintext
C:\Program Files\IBM\WebSphere\AppServer1\profiles\Custom01\bin
```

9. Execute the following command at the command prompt to add a new node to the Deployment Manager profile:

```batch
addNode.bat dmgr_host [dmgr_soap_port]
```

For example, execute the following command

```batch
addNode.bat hostname 8879
```

10. Open a Web browser and enter the following URL to access the WebSphere Network Deployment manager administrator console:

```plaintext
http://<Depmnger IP>:9060/admin
```

11. Check whether the four nodes have been added to the relevant deployment manager profiles and are synchronized properly as illustrated in the following two figures.
Creating a Cluster

Open the Web browser and access the Deployment Manager Administrator console using the following URL to create a cluster: http://<ip>:<port>/admin

To create a cluster:
1. In the left pane, expand the Servers node and click Clusters. The Server clusters page is displayed in the right pane.
2. **Click New.** The Enter basic cluster information page is displayed.

3. **In the Cluster name field,** specify the cluster name.

4. **Select the Configure HTTP session memory-to-memory replication option.**

5. **Click Next.** The Create first cluster member page is displayed.
6. In the **Member name** field, specify the member name.

7. In the **Select node** list, select the required node.

8. Select the **Generate unique HTTP ports** option.

9. Click **Next**. The Create additional cluster members page is displayed.
10. Specify the member name, select the required node, and select the **Generate unique HTTP ports** option.

11. Click **Add Member** to add the additional cluster member to the list below.

12. Repeat Steps 10 and 11 to add new cluster members.

13. Click **Next**. The Summary page is displayed.
14. Click Finish. The Server clusters page is displayed.

15. In the Messages area, click Save to save the changes made to the local configuration. The Server clusters page is displayed.
Adding custom properties specific to Documentum Webtop

You must create custom properties to ensure that Documentum Webtop works properly on IBM WebSphere Application Server.

To create custom properties:
1. In the Administrator Console, expand the Servers node and access the Application server’s node.
2. Select a member, and click Web container.
4. In the **Name** field, specify the name of the new property as follows: com.ibm.ws.webcontainer.invokefilterscompatibility.

5. In the **Value** field, set the value of the property as **true**.

6. Click **Apply**. The **Messages** area is displayed in the same page.

7. Click **Save** in the **Messages** area. The Preferences page is displayed with the list of custom properties you added.
8. Repeat the previous procedure to add custom properties to other members.

**Integrating the IBM HTTP Server to the cluster environment**

You must integrate the IBM HTTP Server to the cluster environment to delegate incoming requests from the client to the available application server instances.

**To integrate the IBM HTTP Server:**

1. In the Deployment Manager Administrator Console, expand the **Servers** node and access the **Server Types** node.

2. Select the **Web Servers** node, and click **New**. The Select a node for the Web server and select the Web server type page is displayed.
3. Select the required node from the **Select node** list box. i.e. IBM-HTTP1NODE1.

4. In the **Server name** field, specify the name of the web server you are adding.

5. Select **IBM HTTP Server** from the **Type** list box.

6. Click **Next**. The Select a Web server template page is displayed.
7. Select a template that corresponds to the web server you want to add. Click Next. The Enter the properties for the new Web server page is displayed.
8. In the **Port** field, accept the default port or specify the Web server port. In addition, specify the Web server installation path.

9. In the **Service name** field, accept the default name or specify the name of the HTTP service.

10. In the **Plug-in installation location** field, accept the default path or specify the Plug-in installation path.

11. Select **All** in the **Application mapping to the Web server** list box.

12. Click **Next**. The Configure new Web server page is displayed.

13. Review the summary of the Web server selections.

14. Click **Finish**. The Web servers page is displayed with the list of installed web servers.
15. Click **Save** in the **Messages** area.
Generating the IBM HTTP Server plug-in file

You must generate the IBM HTTP Server plug-in file and propagate it to the deployment manager location.

To generate the plug-in file:
- In the Deployment Manager Administrator Console, expand the Servers node and access the Application servers node.
  a. Select the Web servers node. The Web servers page is displayed listing all the installed Web servers.
  b. Select the web server you installed.
  c. Click Generate Plug-in.
  d. Select the web server.
  e. Click Propagate Plug-in.
  f. Select the web server.
  g. Click Start.
  h. Select Clusters in the Server node.
i. Click Start.

j. Repeat Steps a through I to configure webserver2.

### Load Balancer Configuration for IBM HTTP Server
1. Log in to Load Balancer machine.
2. Go to `<HttpServer Installed Location>\Plugins\config\webserver1`
3. Update the plugin-cfg.xml file. Add the following lines in the **ServerCluster** node:
   
   ```xml
   <Server CloneID="12345" ConnectTimeout="5" LoadBalanceWeight="1"
     Name="server1">
     <Transport Hostname="<webserver1 ip>" Port="80"
       Protocol="http"/>
   </Server>
   <Server CloneID="12346" ConnectTimeout="20"
     LoadBalanceWeight="1"
     Name="server2">
     <Transport Hostname="<webserver2 ip>" Port="80"
       Protocol="http"/>
   </Server>
   <PrimaryServers>
     <Server Name="server1"/>
     <Server Name="server2"/>
   </PrimaryServers>
   
   4. Add the following line in the **UriGroup** node:
      
      ```xml
      <Uri Name="/<Deployed Apps Context name>/*"/>
      ```

### Testing the IBM HTTP Server Integration

You must verify whether the IBM HTTP Server was integrated successfully.

**To test the IBM HTTP Server integration:**
1. Obtain DefaultApplication.ear file from the following path:
   
   IBM\WebSphere\AppServer\installableApps\DefaultApplication.ear

2. Deploy the **DefaultApplication.ear** file in the clustered environment.
3. Test whether the cluster setup is working.

**To prepare for the deployment of the default application:**
1. In the Deployment Manager Administrator Console, expand the **Applications** node and access the **Enterprise Applications** node. The Preparing for the application installation page is displayed.
2. In the Path to the new application area, select the Local file system option (if you are accessing the application file from the depmanager machine) or select Remote File system (if you are accessing the application from another machine). In the Full path field, specify the path where the DefaultApplication.ear file is stored.
3. Select the **Prompt me only when additional information is required** option.

4. Click **Next**. The Select installation options page is displayed.
5. Accept the default selections and values.
6. Click **Next**. The Map modules to servers page are displayed.
7. Select the module you want to install.

8. In the Clusters and Servers list, hold the Ctrl key and select the cluster and web server where you want to deploy the modules that comprise the default application. Click Apply.

9. Click Next. The Summary page is displayed.

10. Review the summary of the installation actions you defined. Click Previous to modify any selections.

11. Click Finish. The deployment of the enterprise application and the modules is started.

12. After the installation process is completed, click Save.

13. In the Applications node, select Enterprise Applications. The new application you deployed is listed in the Enterprise Applications page.

14. Select the new application.

15. Click Start. The new Enterprise Application is started. The status of the application is indicated in the Application Status column.

16. Access the IBM HTTP Server using the following URL to verify whether the load balancing is working properly: http://<ip1>:<80>/snoop
http://<ip2>:80/snoop Open the Snoop Servlet page in a separate browser window to ensure that the cluster is configured properly.

17. Refresh the page or access the page in another browser window to view the node that has responded to the Snoop Servlet request. The control moves between the clone01 and clone02 members.


Deploying Documentum Webtop in a cluster

Follow the instructions in this section to deploy Documentum Webtop in a cluster.

To deploy Documentum Webtop:
1. Log in to the Deployment Manager Administrator Console.
2. Expand the Applications node.
3. Select the Enterprise Applications node.
4. Click New. The Preparing for the application installation page is displayed.

5. In the Full path field of the Local file system, specify the location of the webtop.war file, and specify the context root as webtop.
6. Click Next. The Select installation options page is displayed.
7. Select **Fast Path.** Click **Next.** The Install New Application page is displayed.
8. In the **Application name** field, rename the application name as webtop. By default, the value is **webtop_war**.

9. Click **Next**. The Map modules to servers page is displayed.

![Image of Integrated Solutions Console](image)

10. Select the **webtop.war** module.

11. In the **Clusters and Servers** list, hold the Ctrl key and select the cluster and web server (both web servers) where you want to deploy the modules that comprise the enterprise application.

12. Click **Apply**.

13. Click **Next**. The Map virtual hosts for Web modules page is displayed.
14. Select the `webtop.war` Web module.

15. Click **Next**. Map Context roots for Web Modules page is displayed.
16. Specify context root as /webtop and click **Next**. The Summary page is displayed.

17. Review the summary of the installation actions you have defined. Click **Previous** to modify any selections.

18. Click **Finish**. The deployment of Documentum Webtop is started.
19. After the deployment process is completed, click Save. The Enterprise Applications page lists the Webtop application.
Modifying the class loader order for Documentum Webtop

You must now modify the class loader order for Documentum Webtop.

To modify the class loader order for Documentum Webtop:
1. In the Deployment Manager Administrator Console, expand the Applications node and access the Enterprise Applications node.
2. Select the Webtop application.
3. Click the Manage Modules link available under the Modules section.
4. Click the webtop.war link. The General Properties page is displayed.
5. In the **Class loader order** list, select the **Classes loaded with local class loader first (parent last)** option.

6. Click **Apply**.

7. Click **Save** in the **Messages** area.
8. Stop the cluster, web servers, node agents, and the deployment manager to modify the configuration for Documentum Webtop.

9. Browse to the following path:

   C:\Program
   Files\IBM\WebSphere\AppServer1\profiles\Dmgr01\config\cells\CMAQAWIN2K36174Cell01\applications\webtop.ear\deployments\webtop\webtop.war\WEB-INF

10. Modify the **ibm-web-ext.xmi** file and add the following tags:

    \[
    \text{<jspAttributes xml:id="JSPAttribute_1178213473751" name="jdkSourceLevel" value="15"/>}
    \]

    \[
    \text{<jspAttributes xml:id="JSPAttribute_3" name="useJDKCompiler" value="true"/>}
    \]

11. Modify the **dfc.properties** file available in the following paths, with valid entries for the following nodes:

    C:\Program
    Files\IBM\WebSphere\AppServer1\profiles\AppSrv01\installedApps\CMAQAWIN2K36174Node01Cell\webtop.ear\webtop.war\WEB-INF\classes

    C:\Program
    Files\IBM\WebSphere\AppServer1\profiles\AppSrv02\installedApps\CMAQAWIN2K36174Cell01\webtop.ear\webtop.war\WEB-INF\classes.
12. Restart the deployment manager, node agents, cluster, and web servers.

13. When all the components are up and running, access the following URL to verify whether Documentum Webtop is working properly:

14. Update the plugin-cfg.xml file of load balancer machine to add <Uri Name="/webtop/*"/> in the UriGroup node.

   The Webtop login page is displayed.

References
- [http://content.websitegear.com/article/load_balance.htm](http://content.websitegear.com/article/load_balance.htm)
- [http://pcquest.ciol.com/content/technology/101071402.asp](http://pcquest.ciol.com/content/technology/101071402.asp)