

Running webMethods Broker in a High-Availability Windows Enterprise Server 2019 Cluster

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This document applies to webMethods Broker 10.5 and to all subsequent releases.

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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About this Guide

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This guide describes how to install webMethods Broker in a high-availability Windows Enterprise Server Cluster.

Installing webMethods Broker in a high-availability cluster requires the efforts of three people: the user's system administrator, the cluster vendor's installation consultant, and a webMethods administrator. This guide is written primarily for the webMethods administrator.

For simplicity, this guide assumes users are installing components in the default locations. For example, it assumes the root directory for webMethods Broker is C:\ *Software AG_directory*\Broker.

Important:

If you have a lower fix level installed, some of the features described in this document might not be available to you. For a cumulative list of fixes and features, see the latest fix readme on the Empower website at <https://empower.softwareag.com>.

Document Conventions

Convention	Description
Bold	Identifies elements on a screen.
Narrowfont	Identifies service names and locations in the format <i>folder.subfolder.service</i> , APIs, Java classes, methods, properties.
<i>Italic</i>	Identifies: Variables for which you must supply values specific to your own situation or environment. New terms the first time they occur in the text. References to other documentation sources.
Monospace font	Identifies: Text you must type in. Messages displayed by the system. Program code.
{ }	Indicates a set of choices from which you must choose one. Type only the information inside the curly braces. Do not type the { } symbols.
	Separates two mutually exclusive choices in a syntax line. Type one of these choices. Do not type the symbol.
[]	Indicates one or more options. Type only the information inside the square brackets. Do not type the [] symbols.
...	Indicates that you can type multiple options of the same type. Type only the information. Do not type the ellipsis (...).

Online Information and Support

Product Documentation

You can find the product documentation on our documentation website at <https://documentation.softwareag.com>.

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You can find helpful product training material on our Learning Portal at <https://knowledge.softwareag.com>.

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- Browse through our vast knowledge base.
- Ask questions and find answers in our discussion forums.
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Product Support

Support for Software AG products is provided to licensed customers via our Empower Portal at <https://empower.softwareag.com>. Many services on this portal require that you have an account. If you do not yet have one, you can request it at <https://empower.softwareag.com/register>. Once you have an account, you can, for example:

- Download products, updates and fixes.
- Search the Knowledge Center for technical information and tips.
- Subscribe to early warnings and critical alerts.
- Open and update support incidents.
- Add product feature requests.

Data Protection

Software AG products provide functionality with respect to processing of personal data according to the EU General Data Protection Regulation (GDPR). Where applicable, appropriate steps are documented in the respective administration documentation.

1 Overview

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What is a Cluster?

A *Microsoft Cluster Server* consists of two nodes (CPUs with memory and a private, non-sharable disk) with highly-available shared storage, usually provided via SAN or NAS. Software running on each node monitors the health of the other nodes as well as the shared storage. The cluster can be configured such that if one node fails, the other node automatically takes over the services of the failed node. This binds the hosts together more closely than a collection of stand-alone servers and results in the increased availability of webMethods Broker.

Cluster Hardware

The cluster hardware configuration consists of two nodes and a shared disk array. The shared disk array provides higher resilience to disk, controller, and cable failures. The two nodes are also interconnected on a private network. This enables the nodes to monitor each other's health and synchronize the allocation of services and resources.

Each node has one or more public network interfaces that connect the node to a corporate network, along with a private network interface that connects the nodes to each other.

How Does webMethods Broker Run in a Windows Cluster?

In a cluster environment, the webMethods Broker runs as a service defined within a Windows cluster group. You use the Cluster Administrator application to configure and monitor the Broker Server, and all the associated webMethods Broker resources. Once configured, a failure on one node will cause Broker Monitor and Broker Server to be moved to the surviving node.

Cluster Services

You will use the Cluster Administrator to create a *webMethods Broker cluster group* that will define all the resources and dependencies involved in starting, monitoring, and stopping a service. The *resources* specified in the webMethods Broker cluster group define all the components required to run webMethods Broker on a particular node.

The cluster group will define the following resources:

Resource...	Depends on...
Shared disk used by webMethods Broker	Nothing
Virtual IP address used by Broker Server	Shared disk
Virtual host name	Virtual IP address
Broker Monitor	Network name
Broker Server	Broker Monitor

Note: Since the Broker Server is associated with a particular IP address, the failure of one node will cause the IP address and all dependent resources to be moved to the other node.

Overview of webMethods Broker High Availability Installation

Installing webMethods Broker for high availability requires you to complete the following tasks in the given order:

1. Review this guide. Please read through this guide to gain a better understanding of the installation and configuration process before starting the installation steps.
2. Complete the installation worksheets. This ensures that you have the information necessary to install and configure. See [“Installation Worksheets” on page 14](#) to view the installation worksheets.
3. Verify the cluster installation. Make sure that your administrator has properly installed and configured the cluster. See [“Verify the Cluster” on page 16](#) for detailed instructions.
4. Install the webMethods Broker software. Install the webMethods Broker software on each node in the cluster. After the software is installed, you must remove the default webMethods Broker configuration. The webMethods Broker service data must be removed from each node's private disk. It will be recreated on the shared disk in a later step.
5. Create the webMethods Broker cluster group. Define all the resources and dependencies required to run webMethods Broker.
6. Create and configure the Broker Server on each node.
7. Finish the webMethods Broker cluster configuration.
8. Verify the cluster configuration. Make sure that the installation and configuration enables the Broker Server to failover correctly from one node to the other.
9. Complete the post-installation tasks listed in [“Common Post-Installation Tasks” on page 31](#).

2 Before You Begin

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Prepare for Installation

This section contains important information relating to the installation. To install and properly configure the webMethods High Availability option, you need several pieces of information.

Please use the worksheets provided below to collect this information before beginning the installation process.

Note:

To fill in some of the required values of the configuration parameters, you will need to talk to the system administrator who installed and configured the cluster.

Installation Worksheets

There are three Installation worksheets:

- General Information
- Cluster Information
- webMethods Broker Cluster Information

The names of the variables used in command line examples are shown in parentheses after the name of each parameter.

General Information

Field	Description	Value
Location	The physical location where installation occurred.	
webMethods Broker Version	The version of webMethods Broker to be installed.	10.15
webMethods Broker Installation Location (<i>webMethods Broker_directory</i>)	The location where you are installing webMethods Broker. Typically C:\SoftwareAG\Broker.	
MS Cluster Server Version	The version of the Cluster Server installed. It is recommended that you install the most recent version available.	
webMethods Broker Runtime Keys (<i>key</i>)	The runtime keys supplied by Software AG to the customer for running the webMethods Broker and Adapters.	

Cluster Information

Field	Description	Host Name	Path Name	Public IP Address
Node A	The name of the first cluster node, path name for the node's private disk where the program files will be located, and the public IP address that will be used by the Broker Server service.			
Node B	The name of the second cluster node, path name for the node's private disk where the program files will be located, and the public IP address that will be used by the Broker Server service.			

webMethods Broker Cluster Group Information

The following table lists the cluster configuration parameters:

Parameter	Description	Value
Network Name (<i>network_name</i>)	The network name of the Windows Cluster.	
Node Names (<i>Node A</i> , <i>Node B</i>)	The names of the two nodes in the Windows cluster.	
Shared Disk Name (<i>shared_dir</i>)	The name of the shared disk, accessible to both nodes in the cluster.	
Broker Server Data Directory (<i>broker_shared_dir</i>)	The directory on the shared disk where the program data for the Broker Server will be stored.	
webMethods Broker Cluster Group Name	The cluster group name for webMethods Broker resources, such as the shared disk, IP address, network name, the Software AG Broker Monitor service, and the Software AG Broker Server service.	
Broker Server IP address (<i>ip_addr</i>)	The IP address used by the Broker Server.	

Parameter	Description	Value
Broker Server Port Number (<i>port</i>)	The port number on which the Broker Server will accept connections. Typically, 6849.	
Broker Server Service Name (<i>servicename</i>)	The host name of the Broker Server service.	
Broker Server Name (<i>broker_name</i>)	The name of the Broker Server configured on the Broker Server which is to be monitored by the cluster.	

Login as Administrator

You must login as administrator to each of the cluster nodes in order to perform the installation tasks.

Note:

If you cannot log on, verify that the nodes are running by running `ping`. Logging on the node console should always give you access to the nodes. If necessary, power on the disks and the nodes and boot the operating system.

Verify the Cluster

Before installing Broker Server, verify that the cluster is properly installed.

A Windows professional will typically perform the cluster installation for you; however, you should verify the following:

- The shared disk can be accessed from both nodes.
- The virtual IP address of the cluster is accessible on the public network.
- Only one Broker Server instance in the cluster can access the shared drive at any given time.

When access occurs on block level, for example when you are using a SAN, only one machine may have access to the shared disk at any given time (also known as exclusive mount), unless the underlying file system is specifically designed to support parallel access. On normal file systems, parallel access via SAN will almost instantly corrupt the file system. This is a general issue and not specific to webMethods Broker. You can prevent parallel access via SAN by configuring the respective LUN in a way that only exclusive mount is possible irrespective how the computers are set up.

If access is on character level, typical for NAS, parallel access to the file system from various clients is usually not a problem. However, even in this case, make sure only one Broker Server instance is configured for those files, and Broker Server must be up and running at any given point of time. Please contact Software AG Global Consulting Services (GCS) to discuss the implementation details.

3 webMethods Broker Installation

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Install webMethods Broker On Both Cluster Nodes

Following the normal installation instructions, install on each node in the cluster. Refer to *Installing and Upgrading webMethods Broker* for complete procedures.

When installing, ensure the following:

- The installation directory is on the private disk.
- You accept the default installation parameters. You can modify each node's installation in a later step.
- When prompted for a Broker Server configuration, use the default port number and the default location of the Broker Server data files. Repeat the installation for the other node in the cluster.

Important:

The installation must be identical on both nodes.

- Ensure that the host name and IP address parameters provided in the Broker configuration files are being correctly resolved. Verify if the reverse lookup is successful using the `nslookup` command in the Broker command line interface. Software AG recommends that you use the broker configuration parameter `hostname` if `territory/cluster/gateway` is used. That is, add `hostname=<virtualhostname>` in `awbroker.cfg`. For more information about using `nslookup`, see *Administering webMethods Broker*.

When the installation is complete, select **Installed** on the Completion Sheet Checklist.

Remove the Installed Default Broker Server

Due to the manner in which Windows services and cluster are defined and controlled, you must remove the Broker Server that was created when you installed. Later, once you have performed the necessary cluster configuration steps, you will recreate the Broker Server and the default Broker Server configuration for each node.

Important:

You must perform this procedure on *both* nodes in the cluster.

➤ **To remove the installed default Broker Server**

1. Start a command shell.
2. Type the following commands at the prompt to stop and then remove the Broker Server that was created by the installation process. Substitute the appropriate values from your [“Installation Worksheets”](#) on page 14 for the various parameters:
 - a. To stop the Broker Server, type:

```
C:> webMethods Broker_directory\bin\broker_stop localhost:6849
```

- b. To remove the Broker Server, type:

```
C:> webMethods Broker_directory\bin\server_config  
delete webMethods Broker_directory\data\awbrokersversion\default
```

You have completed webMethods Broker installation. When the installation is complete, check off "Install webMethods Broker" on the Completion Sheet Checklist.

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Configure the Shared Drive

Before you create the Broker cluster and add the shared drive to the cluster, you must mount the shared drive. One way to mount the shared drive is by using the Microsoft iSCSI Initiator.

➤ To mount the shared drive using the iSCSI initiator

1. From the Windows Start menu, navigate to **Administrative Tools > iSCSI Initiator** in the control panel.
2. Click the **Discovery** tab.
3. In the Target portals panel, click **Discover Portal**.
4. Type the IP address and port of the shared drive and click **OK**.
5. Click the **Targets** tab.

The discovered targets are listed in the **Discovered Targets** list box with status.

You can also add the addresses of the failover Virtual Machines while setting up the target. When the initiators try to discover the connection, it is already connected.

6. If the shared drive is not connected, select the name of the drive and click **Connect**.

The shared drive, if discovered, is recognized and connected to the machine.

7. Click the **Volumes and Devices** tab.

The available volumes and devices are displayed in the **Volume List** list box. If a program or service uses a specific volume or device and it is not included in this list, you need to add it.

8. Click **Auto Configure**.

This step automatically configures all the listed volumes and devices, and binds them so that, after restarting the system, they are more readily available for use by the program or service.

9. Click **OK**.
10. Restart the machine.

You are now ready to create and configure the Broker cluster.

Create the Broker Cluster

Use the Failover Cluster Manager to create a Broker cluster in Windows Server.

➤ **To create a Broker cluster in Windows Server 2019 R2**

1. Open the Failover Cluster Management console.
2. Right-click **Failover Cluster Manager** and select **Create a Cluster**.
The **Create Cluster Wizard** appears.
3. In the **Before You Begin** page, click **Next**.
4. In the **Select Servers** page, browse to select all the server nodes or enter the names of the servers, and click **Add**.
5. Click **Next**.
6. In the **Validation Warning** page, select **Yes** to run the **Validate a Configuration** wizard.

Software AG recommends that you run the validation tests to determine whether the configuration of servers and attached storage is set up correctly to support failover.

- a. In the **Validate a Configuration** wizard, click **Next** in the **Before You Begin** page.
- b. In the **Testing Options** page, select **Run All Tests** or **Run only tests I select** depending on whether you want to run all or only selected configuration validation tests.
- c. In the **Confirmation** page, click **OK** to run the test cases.

In the **Validating** page, the wizard runs the listed test cases and displays the result for each test case. If any hardware issues are indicated, contact your system administrator or software vendor.

When the test cases have completed, the **Summary** page appears, showing the cluster name, node details, quorum, and IP Address.

- d. Click **View report** to view the detailed report or click **Finish** to complete the validation.

If you notice any issues, resolve the issues, and run the **Validate a Configuration** wizard again until all tests are successful.

7. In the **Access Point for Administering the Cluster** page, enter the cluster service name and click **Next**.

Note:

If you get a permission exception for Active Directory, contact your system administrator.

The **Confirmation** page displays the cluster nodes and IP address details.

8. Click **Next** to confirm.

The **Creating New Cluster** page displays the summary of the new cluster.

9. Choose to view the detailed report or click **Finish**.

Note:

When you create the cluster, the shared directory is automatically listed in **Storage > Available Storage** in Failover Cluster Manager.

You have configured two servers as the two nodes in the Broker cluster.

Create and Configure the Broker Server on Each Node

For each node, follow these steps to create and configure the Broker Server:

» To create and configure the Broker Server

1. Create and configure the Broker Server on node A. For more information, see [“Create and Configure the Broker Server on Node A” on page 24](#). This includes deleting the default configuration and reconfiguring the Broker Server to use the shared directory.
2. Remove the Broker Server dependency on node A. For more information, see [“Remove the Broker Server Dependency on Node A” on page 25](#).
3. Create and configure the Broker Server on node B. For more information, see [“Create and Configure the Broker Server on Node B” on page 26](#).
4. Remove the Broker Server dependency on node B. For more information, see [“Remove the Broker Server Dependency on Node B” on page 26](#).

Create and Configure the Broker Server on Node A

In order to create and configure the Broker Server on node A, change the startup type to manual for both the Broker Monitor and the Broker Server in Windows services. Start the Broker Monitor and the Broker Server if they are not running already, on both the nodes.

» To create and configure the Broker Server on node A

1. Use the Failover Cluster Manager to move the Broker Server from cluster node B to node A:
 - a. In the **Actions** pane, click **More Actions**. Select **Move cluster core resources** to select the node and move to another node.
2. Create the Broker Server on the shared disk that is mounted. Start Broker Monitor in Windows services if it is not running and run the following Windows commands on node A where the shared disk is mounted:

```
server_config create H:\webMethods\Broker\data\awbrokersversion\default
```



```

-p 6849

-k "C:\wMUpgradeRepository\Software\Licenses\license.xml"

-d "Production Broker Server"

-session_config qs

-qs_log_file H:\webMethods\Broker\data\awbrokersversion\default\BrokerConfig.qs.log
1G

-qs_storage_file
H:\webMethods\Broker\data\awbrokersversion\default\BrokerConfig.qs.stor 2G

-session_data qs -qs_log_file
H:\webMethods\Broker\data\awbrokersversion\default\BrokerData.qs.log 2G

-qs_storage_file H:\webMethods\Broker\data\awbrokersversion\default\BrokerData.qs.stor
5G 1G

```

In this example, the shared disk is mounted on drive H. You must replace the paths in the above command with actual values.

3. Run `server_config list` at command prompt and make sure that the status shows as Running.

Remove the Broker Server Dependency on Node A

The Failover Cluster Manager should control the Broker Monitor and the Broker Server. To do this, you must break the current dependency between the two services.

➤ To remove the Broker Server dependency on node A

1. Launch the Registry Editor using `regedit` or `regedt32` command.
2. Navigate to **HKEY_LOCAL_MACHINE > SYSTEM > CurrentControlSet > Services**.
3. Select **webMethodsBroker_version_6849**. If you used a port number other than 6849, the entry will end in the port number you specified when you created the Broker Server with the `server_config` command.
4. Navigate to the **DependOnService** key (type = **REG_MULT_SZ**). Double-click this key and clear the value from **webMethodsBrokerMonitor_version** to break the current dependency between the two services.
5. Click **OK**.
6. Additionally, set this parameter in `<installation>\Broker\bin\awbrokermon.cfg`: `monitor-start-servers = no`. This stops the monitor from triggering the start of the servers.

Create and Configure the Broker Server on Node B

After you remove the Broker Server dependency on node A, add and configure the Broker Server on node B.

➤ To create and configure the Broker Server on node B

1. Move the Broker Server services from cluster node A to node B using the Failover Cluster Manager. In the **Actions** pane, click **More Actions**. Select **Move cluster core resources** to select the node and move to another node.
2. Create and configure the Broker Server on node B by executing the following commands at the command prompt:

- a. `server_config add H:\webMethods\Broker\data\awbrokersversion\default`

Note:

In the command above, replace `H:\webMethods\Broker` with actual values.

- b. `server_config list`

Make sure that the status shows as Running.

Remove the Broker Server Dependency on Node B

Remove the Broker Server dependence on the node B by following the steps described in [“Remove the Broker Server Dependency on Node A” on page 25](#).

Configure the Cluster

➤ To configure the cluster

1. Add the Broker Monitor service to the cluster. For more information, see [“Add the Broker Monitor Service to the Cluster” on page 27](#). This includes assigning an IP address to the cluster service as an access point and adding a network storage.
2. Add the Broker Server service to the cluster. For more information, see [“Add the Broker Server Service to the Cluster” on page 27](#).
3. Add the Broker Server dependency to Broker Monitor. For more information, see [“Add the Broker Server Dependency to the Broker Monitor ” on page 28](#).
4. Add the registry replication for Broker Monitor and Broker Server. For more information, see [“Add the Registry Replication for the Broker Monitor and the Broker Server ” on page 28](#).
5. Verify the failover in the cluster. For more information, see [“Verify Failover in the Cluster” on page 28](#).

Add the Broker Monitor Service to the Cluster

➤ To add Broker Monitor service to the cluster

1. In Failover Cluster Manager, in the **Action** pane and select **Configure role** action.
2. In the **Before you Begin** page of the **High Availability** wizard, click **Next**.
3. In the **Select service or application** page, select **Generic Service** and click **Next**.
4. In the **Select Service** page, select Software AG Broker Monitor and click **Next**.
5. In the **Client Access Point** page, enter the *service name* and click **Next**.
6. In the **Select Storage** page, select the storage option and click **Next**.
7. In the **Replicate Registry Settings** page, click **Add**.
8. In the Registry Key dialog box, enter the path of the registry key. You can get the registry key path using the `regedit` command. Select the complete path of the Broker Monitor key name as shown:

```
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\services\webMethodsBrokerMonitor_<version>
```

Note:

Do not include `HKEY_LOCAL_MACHINE\` when entering the path in the Registry Key dialog box.

9. Click **OK** in the Registry Key dialog box.
10. Click **Next** in the wizard.
The **Confirmation** page displays the Service, Network Name, IP Address, Registry Key, and Parameters details.
11. The **Summary** page displays a summary of the generic service. View the report or click **Finish** to complete the exercise.

Add the Broker Server Service to the Cluster

➤ To add the Broker Server service to the cluster

1. Select the service in the cluster.
2. Select Software AG Broker Monitor service listed under **Roles**.
3. In the **Actions** pane, click **Add resource**.
4. Click **Generic Service** in the pop-up dialog box.
5. In the **New Resource** wizard, select Software AG Broker Server service and click **Next**.

6. The **Confirmation** page displays the service and parameters. Click **Next** to continue.
7. The **Summary** page displays the summary. View the report or click **Finish**.

Add the Broker Server Dependency to the Broker Monitor

> To add the Broker Server dependency to the Broker Monitor

1. Right-click **SAG Broker Server** and click **Properties**.
2. Click **Insert** in the **Dependencies** tab to add the Broker Server dependency to Broker Monitor.
3. Select Software AG Broker Monitor service from the **Resource** drop-down list.
4. Click **OK**.

Add the Registry Replication for the Broker Monitor and the Broker Server

> To add the registry replication for the Broker Server

1. Right-click **Software AG Broker Server** and click **Properties**.
2. Click the **Registry Replication** tab.
3. Click **Add** and enter the following paths in the **Registry Key** text box:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\services\webMethodsBrokerMonitor_*version*

HKEY_LOCAL_MACHINE\
SYSTEM\CurrentControlSet\services\webMethodsBroker_*version*_6849

Note:

Delete HKEY_LOCAL_MACHINE\ from the path that you have entered as it is already included in the Registry Key dialog.

4. Click **OK**.

Verify Failover in the Cluster

Use the Failover Cluster Manager to verify failover in the cluster.

Note:

Ask the system administrator to verify failover when there is a hardware failure.

> To verify failover in the cluster

1. Open the Failover Cluster Management console.

2. Make the Broker Server resource **node** online if it is offline.
3. In the **Actions** pane, click **More Actions**. Select **Move cluster core resources** to select the node and move to another node.
4. Confirm that the service is stopped on the first node and is running on *node2_name*. All the resources defined in the Broker Server cluster go offline, indicating that the resource dependencies are correctly defined.

Note:

It may take several seconds for all of the resources to be offline and for the resource states in the Failover Cluster Manager window to be updated.

5. Right-click each resource and select **Bring Online** to bring each resource back online.

Customize Broker Server Startup Behavior

Configuring the number of attempts for starting the Broker Server is a one-time activity.

› To customize the Broker Server startup

1. Open the Failover Cluster Management console.
2. Right-click *service name* and select **Properties**.
3. Click **Manage Core Cluster Resource Group** in the *service name* dialog box.
4. Click the **Failover** tab.

In the Failover tab, you can configure whether or not a failing Broker Server will be restarted, the number of restart attempts to be allowed within a given period, and the rate at which the service will be polled. You can also specify whether the Core Cluster resource group will automatically failover to the most preferred owner.

Complete the Installation

The webMethods Broker Installation for Windows Cluster Server is complete. Now, complete the Completion Worksheets below.

Completion Worksheets

Perform the following tasks based on the Completion Worksheets:

1. Fill out the Customer Information sheet, copying it from the [“Installation Worksheets” on page 14](#). Also add your name as the "webMethods Broker Cluster Installer." For the Customer Information sheet, see [“Customer Information Sheet” on page 30](#).

2. Verify the Installation Checklist. Make sure you have completed all the tasks on the list. For the Installation Checklist, see [“Installation Checklist” on page 30](#).
3. Complete the Installation Configuration. For the Installation Configuration, see [“Installation Configuration” on page 30](#).

Customer Information Sheet

Customer Information	Value
Customer Name	
Location	
webMethods Broker Cluster Installer	
webMethods Broker Version	
webMethods Broker Installation Location	
Windows Cluster Version	

Installation Checklist

Task	Completed
Complete “Installation Worksheets” on page 14 .	
Verify Cluster Installation	
Install webMethods Broker	
Create the webMethods Broker Cluster	
Create and Configure the Broker Server on Each Node	
Configure the Cluster	

Installation Configuration

Parameter	Value
Cluster Script Location	
Cluster Utility Script Location	
Network Name (name of logical host)	

Parameter	Value
Name of Cluster Service	
Broker Server Port Number	
Broker Server Name	
Number of times Broker Server restarts server	

Common Post-Installation Tasks

After you complete the installation, there are some tasks you might need to do periodically.

Shut Down the Service

Occasionally, you may need to shut down the service. For example, you must shut down the service when you want to move the machine from one location to another. Also, you must shut down the service when you need to re-install or upgrade.

1. Launch the Cluster Administrator application.
2. Right-click the webMethods Broker cluster group and select **Take Offline**.

Note:

It may take several seconds for all of the resources to be taken offline and for the resource **State** fields in the Cluster Administrator window to be updated.

Un-register the Service

1. Launch the Cluster Administrator application.
2. One by one, right-click each of the webMethods Broker cluster group resources and select **Delete**.
3. After you have deleted all of the webMethods Broker cluster group resources, right-click the webMethods Broker cluster group resource and select **Delete**.

Reinstall webMethods Broker

Use this procedure to reinstall or upgrade the webMethods High Availability Option.

1. Shut down the service. For information, see [“Shut Down the Service” on page 31](#).

2. Delete the webMethods Broker cluster group resources and the cluster group itself. For information, see [“Un-register the Service” on page 31](#). This saves the currently installed configuration.

If you are not re-installing or upgrading the Broker software, skip to step 4.

3. To re-install or upgrade to the next version, do the following:
 - a. Remove the webMethods Broker software.
 - b. Re-install or upgrade to the next version.

For more information, see *Installing and Upgrading webMethods Broker*.

4. To install webMethods Broker, return to the steps outlined in “ webMethods Broker Installation” on page 17.