



IBM Software Group

# IBM WebSphere Partner Gateway V6.1 Advanced and Enterprise Editions

## *Simple Distributed Mode Installation and Topologies*



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This presentation covers WebSphere® Partner Gateway V6.1 simple distributed mode installation and the topologies that can be created through the installation options. The procedure for starting servers and logging into the console is covered in a separate presentation.

## Agenda

- Simple Distributed mode install – details and topologies
- Adding additional WebSphere Partner Gateway servers (cluster members)
- Installation logs
- Resources created during install
- Uninstall
- Summary and References



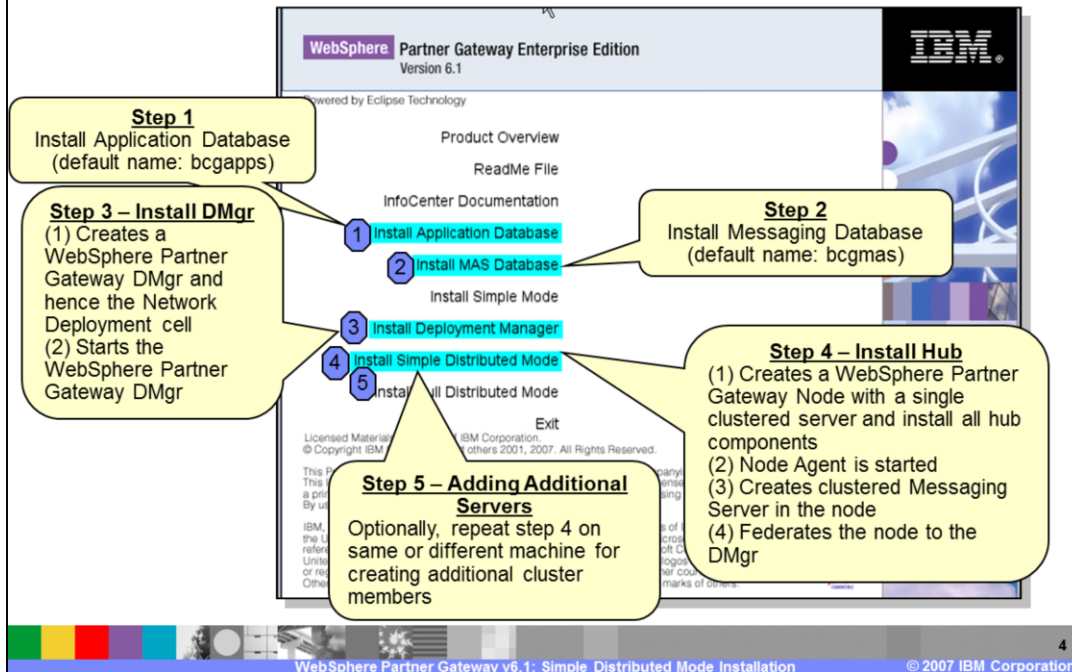
The agenda begins with an overview of Network Deployment Cell and Clustering basics, which provides the foundation needed to discuss the WebSphere Partner Gateway V6.1 distributed mode installation features. Distributed mode installation options, topologies, and adding additional WebSphere Partner Gateway servers to the clusters created during installation is covered next, followed by installation logs, failures and resources created during installation. Finally, uninstalling WebSphere Partner Gateway V6.1 distributed mode environment is discussed.

## ***Simple Distributed Mode Installation and Topologies***



This section provides detailed coverage of the simple distributed mode installation and possible topologies.

## Steps for simple distributed mode installation



The order of the installation steps is as shown here. The prerequisite steps, including setting up the shared file system and database, must be performed before installing WebSphere Partner Gateway V6.1. The first two steps are related to the installation of the application and messaging databases, which can be installed on systems separate from WebSphere Partner Gateway, but must be accessible by the WebSphere Partner Gateway components. Step 3 is to install the WebSphere Partner Gateway Deployment manager, which is installed on top of an existing WebSphere Application Server Network Deployment installation and is started during the installation process. Step 4 is to install the hub, which creates a WebSphere Partner Gateway profile, and a node in the profile. A cluster is created and the WebSphere Partner Gateway components installed in the cluster. A cluster member is created for the cluster, where the WebSphere Partner Gateway components run. A cluster is created for the messaging application server, the common shared file directory is created and you can specify the directory of the common shared file system. The WebSphere Partner Gateway node is started and federated to the Deployment Manager, adding the new WebSphere Partner Gateway node to the cell. Scalability and high availability are provided by adding additional servers to the clusters for the WebSphere Partner Gateway components and the messaging server. Adding extra servers on a different machine requires that you install the hub on that machine, as indicated by step 5. More details are provided later in this presentation.

## Activities During Install

- During install of Deployment Manager (DMgr):
  - ▶ WebSphere Partner Gateway DMgr created and started
  
- During install of hub in Simple Distributed mode:
  - ▶ WebSphere Partner Gateway Node created in a new profile
  - ▶ WebSphere Partner Gateway Node is added to the WebSphere Partner Gateway DMgr and the Node Agent is started
  - ▶ Single Clustered WebSphere Partner Gateway Server is created within WebSphere Partner Gateway Node, but not started
  - ▶ All WebSphere Partner Gateway components installed in the WebSphere Partner Gateway server and configured
  - ▶ Clustered Messaging Server created within the WebSphere Partner Gateway Node, but not started
  - ▶ WebSphere Partner Gateway node is synchronized with the configuration in the DMgr

Result: 1 Node, 1 Node Agent, 2 Clusters containing a server each are created during hub install

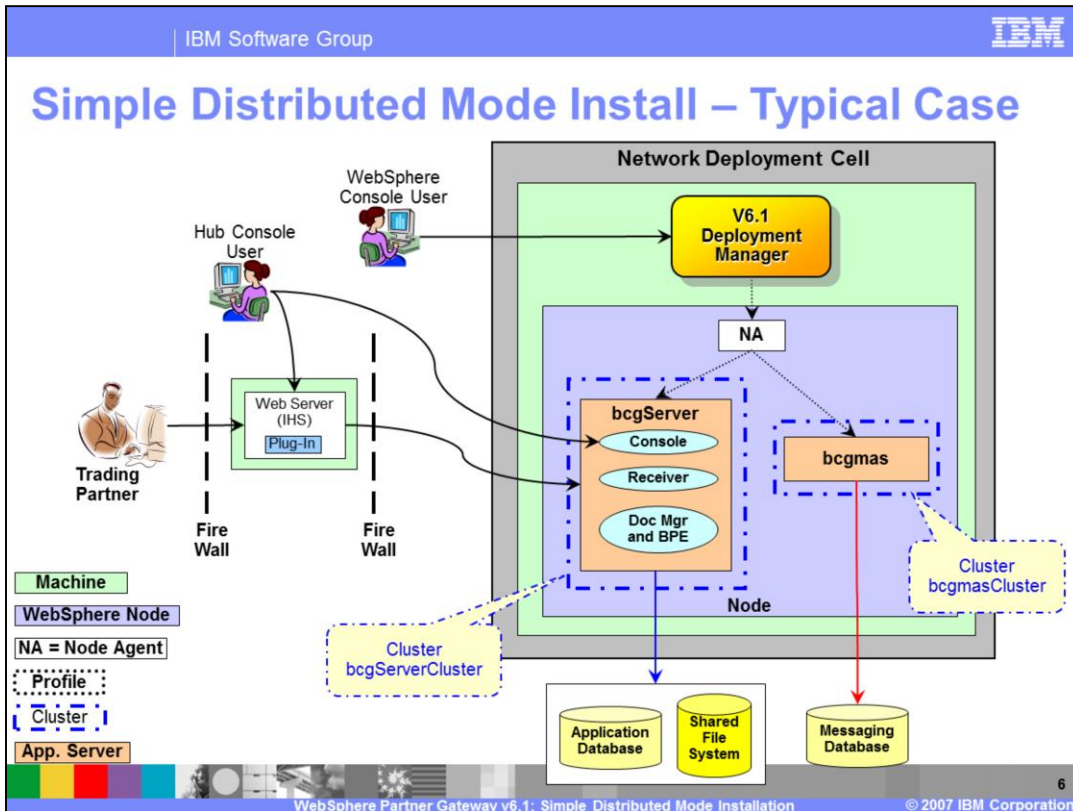


The activities that occur during the installation are listed here.

During the installation of the Deployment manager (DMgr), a DMgr profile and instance is created. The profile registry of the WebSphere Application Server is updated with the new DMgr profile and the DMgr is started.

In the hub installation phase, several important activities occur, though the exact sequence is not important. First a new WebSphere Partner Gateway profile is created in the underlying WebSphere Application Server and a WebSphere node, referred to as WebSphere Partner Gateway node, is created in that profile. The WebSphere Partner Gateway node is federated to the WebSphere Partner Gateway Deployment Manager. The DMgr must be running for federation to be successful. Once federated, the node agent is started. A cluster is created in the Node and a new server or cluster member is added to the cluster. All the WebSphere Partner Gateway components, such as the Console, Receiver, and Doc. Manager, are installed in the clustered server and then configured.

A new cluster is created and a messaging server is created and added to the cluster within the same WebSphere Partner Gateway node. Finally, the WebSphere Partner Gateway Node is synchronized with the changed configuration at the DMgr.



The topology shown here is for a typical simple distributed mode installation.

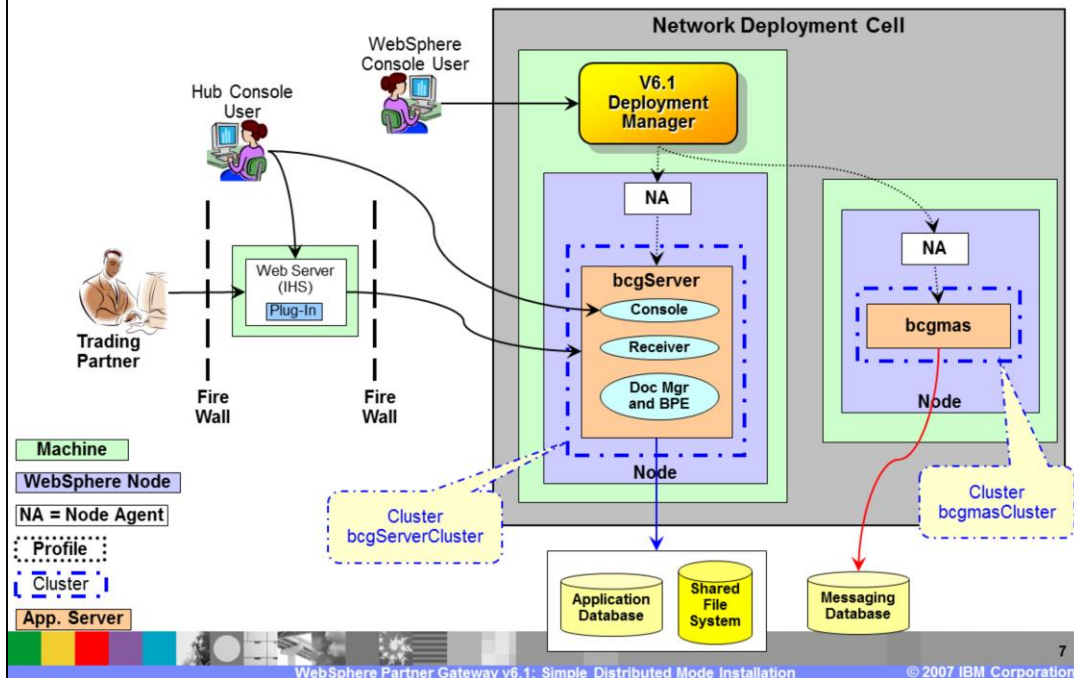
The WebSphere Partner Gateway Deployment manager must be installed before the hub. The installation process creates a cluster with a server in it and all the WebSphere Partner Gateway components are installed on a single clustered server. The default names are “bcgServer” for the server and “bcgServerCluster” for the cluster. A separate messaging application server cluster is created with one messaging application server, with a default server name of “bcgmas” and a default cluster name of “bcgmasCluster”. All the cluster members are typically created on a single machine. If they are created on multiple machines, they must be able to access the application database, messaging database and shared file system.

Adding additional cluster members for WebSphere Partner Gateway components or messaging server makes them scalable and highly available. Creating additional cluster members is discussed later in this presentation.

The WebSphere Partner Gateway console user connects to the Console component and the WebSphere Application Server administrator connects to the Deployment Manager to administer the resources and servers in the cell.

Shown here is an optional Web server within the firewall that can receive the incoming HTTP request and forward it to the hub,

## Simple Distributed Mode Install – Variation



Another variation of the simple mode installation is when the Messaging Application Server is on a different system than the WebSphere Partner Gateway components, reducing the load on the machine running the WebSphere Partner Gateway components. In this topology, after the Deployment manager is installed, there are 2 installations of the WebSphere Partner Gateway hub. For the first installation, only WebSphere Partner Gateway components are selected to be installed. On a separate machine, only the Messaging Application Server of the WebSphere Partner Gateway hub installation is selected. During the WebSphere Partner Gateway installations, the Deployment Manager host and port is provided to add WebSphere Partner Gateway components or the messaging server into the Network Deployment cell.



## Default Ports –Simple Distributed Mode

WebSphere Partner Gateway component	Port #
Console HTTP	58080
Console HTTPs	58443 - Console
Receiver HTTP – used internally	58081

WebSphere Application Server Ports	Port #
DMgr HTTP for Administration Console	58090
DMgr HTTPs for Administration Console	58043
DMgr SOAP Connector	58880
DMgr BootStrap	55809

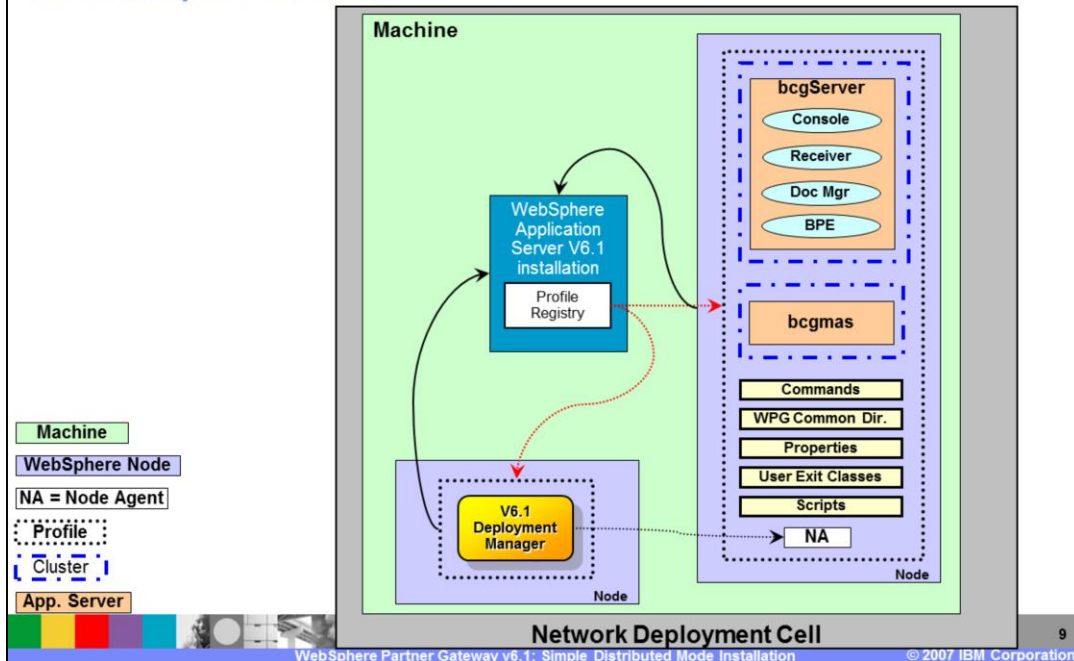
Other Ports	Port #
Used to connect to DB2	50000
Used to connect to Oracle	1521
Used for SMTP connection (from router to E-mail server)	25



The default ports used by WebSphere Partner Gateway components and the underlying WebSphere Application Server Deployment Manager are shown here. The important ports are the WebSphere Partner Gateway HTTP ports used for the Community Console and other WebSphere Partner Gateway components. These ports are similar to Simple Mode installation. In addition to the default port of 58080, the receiver uses port 58081 internally. When the Document Mgr is processing a synchronous response document, it uses this port to give the document to the Receiver. The other important port is the WebSphere Application Server Deployment Manager administrative console port 58090, which is used to make configuration changes to the underlying Application Server.



## WebSphere Application Server and WebSphere Partner Gateway Link: Simple Dist. Mode



WebSphere Partner Gateway components are installed on WebSphere Application Server V6.1 as J2EE™ applications. The relation between WebSphere Partner Gateway and WebSphere Application Server V6.1 is shown here. Arrows from the WebSphere Partner Gateway installation directory structure point to WebSphere Application Server V6.1 directory for the runtime binaries. The Profile Registry in the WebSphere Application Server is updated by the WebSphere Partner Gateway profiles created during WebSphere Partner Gateway installation. In the diagram shown, there are 2 profiles added to the profile registry, one for the hub containing all the WebSphere Partner Gateway components and one for the Deployment Manager.

## Section

# ***Distributed Mode Silent Install***

This section covers Simple Distributed Mode silent install.

## Simple Distributed Mode - Silent Install

- To perform silent install, run the appropriate setup.exe from the appropriate directory (DBLoader or hub)
  - ▶ **setup.exe -options "<options iss File>" -silent**
- Following separate silent installs are possible:

Silent Install of:	Sample Options File	From Directory
<b>Application Database</b>	SampleDBLoaderWindowsInstallOptions.iss	DBLoader
<b>MAS database</b>	SampleDBLoaderMASWindowsInstallOptions.iss	DBLoader
<b>Deployment Manager</b>	SampleHubdmgrWindowsInstallOptions.iss	hub
<b>Simple Distributed</b>	SampleHubWindowsSimpleDistributedInstallOptions.iss	hub



WebSphere Partner Gateway supports silent installation for all the parts of the product. Silent installation involves running the installation setup program from the appropriate directory as specified, with the appropriate options file, where you specify the installation options.

Sample options file are provided for all the installation steps, as specified in the table, and you can use the samples as a starting point to create your own custom silent installation options file.

## Section

# ***Creating Additional WebSphere Partner Gateway Cluster Member (Server) in the Cluster***

This section covers the basics of creating additional servers (called cluster members) in a simple distributed installation.

## Creating Additional Cluster Member - Steps

- Install the hub again using Simple Distributed mode
  - Recap - During the 1<sup>st</sup> install, a cluster is created for each hub component or group of hub components, with a default name of <Server>Cluster
- If using Simple Distributed mode, select all hub components
- Specify the same Deployment Manager to federate this new hub
- Use the same server name as used in the 1<sup>st</sup> installation – if modified server name is used, then use that name during this installation
  - As best practice, try to use default server names
- Do not install common directory – will need to specify the common shared directory



The steps to create additional cluster members (servers) for scalability and high availability are explained here.

Additional cluster members can be created once the initial installation of the environment using Simple or Full Distributed mode is complete.

Installing additional cluster members or servers requires a new installation of the hub within the same cell. The same Deployment Manager is used to federate the new hub installation.

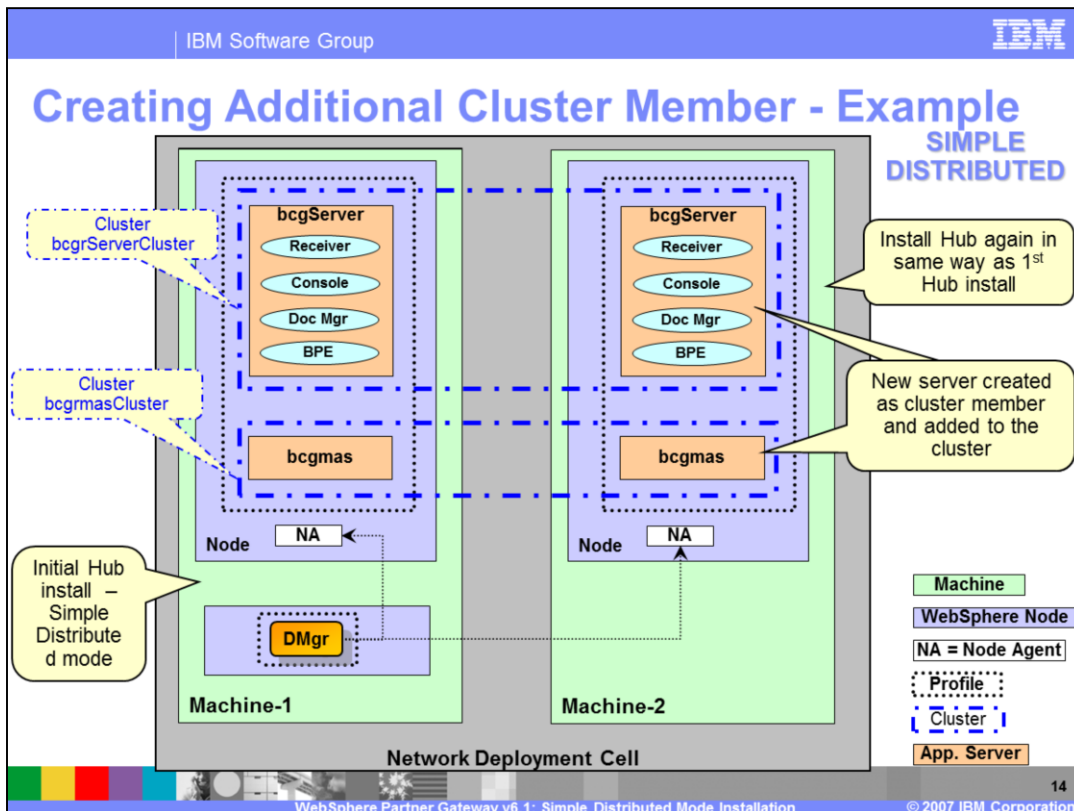
The new hub must be installed in the same mode as the first hub, in this case simple distributed mode.

During the distributed mode installation, the cluster name is derived from the server name, so it is important that you use the same server names used for the first hub installation. This allows the new hub installation to add additional cluster members to the existing cluster rather than creating new clusters for the hub components.

For simple distributed mode, all the hub components are selected by default.

During the new hub installation, common shared directory should not be created and the new hub installation must point to the shared common directory already defined in the first hub installation.

The result is a new cluster member added to the cluster for the selected hub components. Examples in the next few pages will help you to better understand this process.



An example of adding a new Cluster member to a Simple Distributed topology is shown here.

Machine-1 on left side is the simple distributed installation with the Deployment Manager and all the hub components on the same machine. As a result, there are 2 clusters, one for all the hub components, "bcgServerCluster", and one for the messaging server, "bcgmasCluster". Each cluster has a cluster member or server.

When the new hub is installed in the same cell, the installer must choose the same server name and point to the Deployment manager of the cell. The artifacts created are shown on the right side. The "bcgServer" in the new hub installation becomes the new cluster member of the cluster, "bcgServerCluster". Similarly, the new Messaging server becomes the new cluster member of the messaging cluster, "bcgmasCluster".

If scalability is required only for the hub components, only the hub components should be selected and the messaging server should not be selected when installing the new hub.

If additional scalability is required only for the messaging server, only the messaging server should be selected and the hub components should not be selected during installation.

After the hub installation, the expanded WebSphere Partner Gateway Network Deployment cell is shown.

## Section

# *Installation Log Files*



This section describes the installation log files to view in the case of a failed installation.



## Installation Log Files Locations

Components	Temp (during install) log file location dir.
DBLoader	<System-temp>\bcgloader\logs For Windows, system temp is C:\Documents and Settings\ <user>\Local Settings\Temp\</user>
Hub (Console, Receiver, Document Manager) and Messaging Application Server	<System-temp>\bcghub\logs
Hub	Final log file location dir.
All WebSphere Partner Gateway servers and all install activities (like adding Node, creating profile, ....)	<WPG_INSTALL DIR>\logs\
Common	<WPG_INSTALL DIR>\logs\All
Hub server	<WPG_INSTALL DIR>\logs\bcgserver
Messaging Application Server	<WPG_INSTALL DIR>\logs\bcgmas
Deployment Manager	<WPG_INSTALL DIR>\logs\dmgr
Messaging Artifacts	<WPG_INSTALL DIR>\logs\wpm

The table specifies the location of the installation log file, which are generated during the installation. These log files are separate from the runtime log files, which are created when the WebSphere Partner Gateway servers are started. If installation fails, look at the temporary files in addition to the final installation files. Sometimes the problem is logged in the temporary file since they are created before the final log files. The log entries are appended to the existing files rather than creating new files for every installation. The application and messaging database installation log files are available only in the temporary location and are not copied to any final directory.

## Section

# ***Resources Created during Install***

This section provides a list of resources created during WebSphere Partner Gateway installation for different modes.

## Resources Created during Install

Resource Type	Resource Detail
Hub components	Receiver, Console, Document Manager and BPE as J2EE applications
Clusters	Cluster created for each server – the server becomes a cluster member. The name of the Cluster is <serverName>Cluster
Servers	All hub components in a single cluster with a single server – default <b>bcgServer</b>
	Messaging Application cluster is created with a single server – default <b>bcgmas</b>

During installation, several WebSphere Partner Gateway resources are created within the underlying WebSphere Partner Gateway profile in WebSphere Application Server V6.1. This page and the next page show the kind of resources created for the different installation modes.

Hub components are installed in the Application Server as J2EE applications.

Clusters are created in distributed mode for the hub components and the messaging server.

Servers are created for hub components and become part of the cluster in distributed mode.

## Resources Created during Install (cont.)

Resource Type	Resource Detail
Application Database and Data sources	Database: bcgapps (default) Separate data sources for Receiver, Console and Doc Manager to access the application database
Service Integration Bus	BCGBus
JMS Resources	Connection Factories : Separate Connection Factories for Receiver, Console and Doc Manager Queues: Many queues like AlerteventQ, datalogErrorQ, datalogQ, deliveryQ, InboundQ, etc
Messaging Database	Database: bcgmas (default)

In addition to applications, servers and clusters, several data sources are created in the application server for hub components to connect to the application and the messaging database. The Service Integration Bus is the core of the messaging infrastructure through which all the internal messages between the hub components are passed. JMS is used with the appropriate JMS resources to connect to the service integration bus and a messaging database is used for message persistence.

## Section

# *Uninstall*

This section covers the basics of uninstalling WebSphere Partner Gateway V6.1.

## Uninstall – Simple Distributed Mode

- Shutdown cluster
- Uninstall each of the hub component servers (this will remove the node from the DMgr)
  - ▶ Run <WPG\_Install>/\_uninst/uninstall.exe (or .sh)
- Shutdown Deployment Manager
- Uninstall Deployment Manager
  - ▶ Run <WPG\_DMGr\_Install>/\_uninst/uninstall.exe (or .sh)
- Uninstall DBLoader
  - ▶ Run <WPG\_DBLoader\_Install>/\_uninst/uninstall.exe (or .sh)
- Uninstall MAS database
  - ▶ Run <WPG\_MASLoader\_Install>/\_uninst/uninstall.exe (or .sh)

Uninstalling a Simple Distributed mode installation consists of several steps.

First, the hub is uninstalled by stopping the cluster and running the uninstall executable. It might be necessary to run the uninstallation on multiple machines where the hub is installed. During hub uninstallation, the WebSphere Partner Gateway node is removed from the Deployment Manager. It is possible, in cases where you want to uninstall a given node only, to just uninstall the hub and keep the rest of the system intact.

The next step is to stop and uninstall the Deployment Manager.

The hub or Deployment Manager uninstallation will remove the profile from WebSphere Application Server V6.1 Network Deployment, which was created during installation.

The next step is the uninstallation of the application database, DBloader. During this uninstallation, there is an option to drop the database, which is used for migrating to the next release. The last step is to uninstall the messaging database.

## Silent Uninstall

- To perform silent uninstall, run the appropriate setup.exe from the appropriate installation directory
  - ▶ **uninstall.exe -options "<options\_File>" -silent**
- Silent uninstalls are available for all hub components:

Silent Uninstall of:	Sample Options File	From Product Directory
<b>Application Database</b>	SampleDBLoaderWindowsUninstallOptions.iss	DBLoader
<b>MAS database</b>	SampleDBLoaderMASWindowsUninstallOptions.iss	DBLoader
<b>Deployment Manager</b>	SampleHubdmgrWindowsUninstallOptions.iss	hub
<b>Hub components</b>	SampleHubWindowsUninstallOptions.iss	hub



WebSphere Partner Gateway supports silent uninstallation, which involves running the uninstall program from the appropriate directory, with the appropriate options file, where all the uninstall options are specified. Sample options files are provided for all the uninstall steps, as specified in the table, and you can create your own custom silent uninstall options file from the sample options file.



## Section

# *Summary*

This section provides a summary of this presentation.

## Summary

- Simple distributed mode provides simple yet scalable environment
- It exploits the scalability features of the WebSphere Application Server Network Deployment
- Uses WebSphere Application Server V6.1 embedded platform messaging for internal messages, rather than require external WebSphere MQ



WebSphere Partner Gateway V6.1 distributed mode installation exploits the Network Deployment features, and in particular clustering to provide a highly scalable and highly available distributed environment. The embedded messaging is also exploited, eliminating the need to install WebSphere MQ.

## References

- **System Requirements**

- ▶ <http://www.ibm.com/software/integration/wspartnergateway/sysreqs/>

- **WebSphere Partner Gateway Information Center**

- ▶ <http://www.ibm.com/software/integration/wspartnergateway/library/>

- **Support**

- ▶ <http://www.ibm.com/software/integration/wspartnergateway/support/>



The system requirements, information center and other references are listed on this page.