

AutoPilot[®] and AutoPilot[®] WMQ Configuration in a Cluster Server

Version 1.0

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Chapter 1: Introduction

Welcome to the *Nastel AutoPilot and AutoPilot WMQ Configuration in a Cluster Server Guide*. This guide describes the configuration of AutoPilot/IT, AutoPilot M6, AutoPilot/WMQ, and M6 for WMQ.

1.1 How This Guide is Organized

- [Chapter 1:](#) Identifies the users and history of the document, as well as additional and alternate documents.
- [Chapter 2:](#) Provides instructions for AutoPilot M6 configuration in a cluster environment.
- [Chapter 3:](#) Provides instructions for AutoPilot/IT configuration in a cluster environment.
- [Chapter 4:](#) Provides instructions for AP/WMQ configuration in a cluster environment.
- [Chapter 5:](#) Provides instructions for M6 WMQ configuration in a cluster environment.
- [Appendix A:](#) Provides a list of reference information.
- [Appendix B:](#) Contains conventions used in this document.
- [Glossary:](#) Contains a listing of unique and common acronyms and words and their definition.
- [Index:](#) Contains an alphanumeric cross-reference of all topics and subjects of importance.

1.2 History of this Document

Release Date	Document Number	For AutoPilot Version	Summary
August 2008	CS 100.001	AP/IT, AP M6, AP/WMQ, M6 for WMQ	Initial release
August 2010	CS 100.002	AP/IT, AP M6, AP/WMQ, M6 for WMQ	Update AP M6 configuration requirements
August 2017	CS 100.003	AP/IT, AP M6, AP/WMQ, M6 for WMQ	Update Nastel's phone numbers and street address

1.2.1 User Feedback

Nastel encourages all Users and Administrators of AutoPilot to submit comments, suggestions, corrections, and recommendations for improvement for all AutoPilot documentation. Please send your comments via Post/Mail, or by e-mail. Send messages to: support@nastel.com. You will receive a written response, along with status of any proposed change, update, or correction.

1.3 Related Documents

A complete listing of related and referenced documents is in [Appendix A](#) of this guide.

1.4 Release Notes

See the **README.htm** files on your installation media or AutoPilot installation directory. Release notes and updates are also available through the Nastel Resource Center at: <http://www.nastel.com/resources>.

1.5 Intended Audience

The Nastel AutoPilot and AutoPilot WMQ Configuration in a Cluster Server (CS) Guide is intended for use by installers and administrators of Nastel's AutoPilot and AutoPilot/WMQ. There are three user groups defined for the purpose of installation and use.

- **Installer:** Should be familiar with Java Run Time Environment 1.5.1 (JRE 1.5.1) or higher (included in AutoPilot M6) Software installation procedures and set-up on Windows and UNIX. Basic understanding of TCP/IP.
- **Administrator:** Should have a working knowledge of middleware, TCP/IP and systems management. An understanding of Java Runtime Environment (JRE), TCP/IP, and installation procedures for the platform where AutoPilot M6 is installed.
- **User:** Requires only local operating system operations knowledge and basic knowledge of AutoPilot.

1.6 System Requirements

Refer to the appropriate installation guides for system requirements.

1.7 Terms and Abbreviations

A list of terms and abbreviations used in this document is located in the [Glossary](#).

1.8 Technical Support

If you need additional technical support, you can contact Nastel by telephone or by e-mail.

- To contact Nastel technical support by telephone, call **800-963-9822 ext. 1**. If you are calling from outside the United States, dial **001-516-801-2100**.
- To contact Nastel technical support by e-mail, send a message to support@nastel.com.
- To contact Nastel technical support through the support website (user ID and password are required), go to <http://support.nastel.com/btracker>, or visit the Nastel Resource Center at: <http://www.nastel.com/resources>.

1.9 Conventions

Refer to [Appendix B](#) for typographical and naming conventions used in all Nastel documentation.

Chapter 2: AutoPilot M6 Configuration in a Microsoft Cluster Server (MSCS)

	NOTE: The information in this chapter applies to AutoPilot M6. The procedure below is a guide and may require minor modification to fulfill your specific requirements.
---	--

1. Install AutoPilot M6 on the server that currently has the shared drive mounted.

Do the install on the shared drive (example, F: in Figure 2-1) in accordance with the AutoPilotM6 Installation Guide and any additional updates, SU (Service Update) or Hot Fix according to the instructions provided. During the installation, environment variable AUTOPILOT_HOME will be defined as:

```
[shared_drive:]\nastel\AutoPilotM6
```

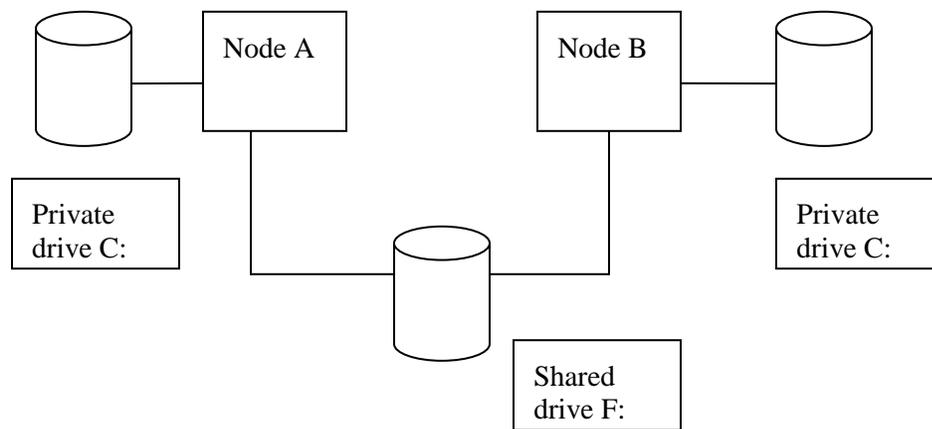


Figure 2-1. Shared Drive Installation for AP M6

(Steps 2 through 9 are performed on each server in the MSCS cluster. These steps affect the Windows registry on the private drive of each server (C: in Figure 2-1.))

2. Logon as an **administrator**.
3. Create a group named **Autopilot**.
 - If using Windows /2000/XP:
Under User Manager, click **Start > Settings > Control Panel > Admin Tools > Computer management > Local Users and Groups > Users**.
 - If using Windows Server 2003 Enterprise Edition:
Under User Manager, click **Start > Settings > Control Panel > Admin Tools > Active Directory Users and Groups**.
4. Add the Administrator user to the Autopilot group.
5. Close all open GUI application windows (for example: MQSeries Console).
6. Navigate to **Control Panel > System > Advanced > Environment Variables** and set the following system environment variables. (These will already be defined on the first server where AP M6 was installed.)

```
AUTOPILOT_HOME = [Shared_Drive]\nastel\AutoPilotM6
CATALINA_HOME = [AUTOPILOT_HOME]\jakarta-tomcat
JAVA_HOME = [AUTOPILOT_HOME]\jre
```

7. Create AP M6 Windows services from the command prompt as follows:

Managed Node:

```
sc create M6_CEP_Server binPath=
"%AUTOPILOT_HOME%\localhost\ATPNODE.exe
-zglaxservice M6_CEP_Server" start= auto
```

Domain Server:

```
sc create M6_Domain_Server binPath=
"%AUTOPILOT_HOME%\naming\ATPNAMES.exe
-zglaxservice M6_Domain_Server" start= auto
```

Web Server:

```
cd %AUTOPILOT_HOME%\jakarta-tomcat\bin\
m6service.bat install "M6 Web Server" %AUTOPILOT_HOME%
%AUTOPILOT_HOME%\jre
```

8. Open **Control Panel > Services** and ensure all the AutoPilot M6 services are set to manual start-up.
9. Reboot Windows server.

(Step 10 is performed on the server in the cluster that currently has the shared drive mounted.)

10. Define resources that will be accessible to the other nodes in the cluster as follows:
 - a. Launch the Cluster Administrator tool.
 - b. Create a Cluster Group named **Autopilot**.
 - c. Right click the Cluster Group **Autopilot** and select **New > Resource** from the menus.
 - d. Create new resources with the following names:
 - M6_Domain_Server
 - M6_CEP_Server
 - M6_Web_Server
 - e. Make all server nodes in the cluster **possible owners** of each resource.
 - f. Make the shared drive and the **floating cluster IP** address dependencies of each resource.
 - g. Set the **Service Name** attribute for each of the above three resources, respectively, leaving the start-up parameter field blank:
 - M6_Domain_Server
 - M6_CEP_Server
 - M6_Web_Server
 - h. Click **Add** in the **Registry Replication** window and enter the required registry keys for each of the above three resources, respectively:
 - SYSTEM\CurrentControlSet\Services\M6_Domain_Server
 - SYSTEM\CurrentControlSet\Services\M6_CEP_Server
 - SYSTEM\CurrentControlSet\Services\M6_Web_Server
 - i. Right-click the new resource and select **Properties** from the menu.
 - j. From the advanced section, deselect the **Affect Group**, change the threshold value to 1 (one) and then click **OK**.
 - k. Bring the resource online by right-clicking it and selecting **Bring Online**.
 - l. When the AutoPilot M6 resources are online, move the group to the other server and ensure the resources start correctly on that server.

Chapter 3: AutoPilot/IT Configuration in a Microsoft Cluster Server (MSCS)

**NOTE:**

The information in this chapter applies to AutoPilot/IT. The procedure below is a guide and may require minor modification to fulfill your specific requirements.

1. Install AutoPilot M6 on the server that currently has the shared drive mounted.

The installation should be accomplished on the shared drive (example, F: in the figure below) in accordance with the AutoPilot/IT Installation Guide and any additional updates; including Service Updates (SUs) or Hot Fixes according to the instructions provided. During the installation, environment variable AUTOPILOT_HOME will be defined as:

```
[shared_drive:]\nastel\AutoPilotIT
```

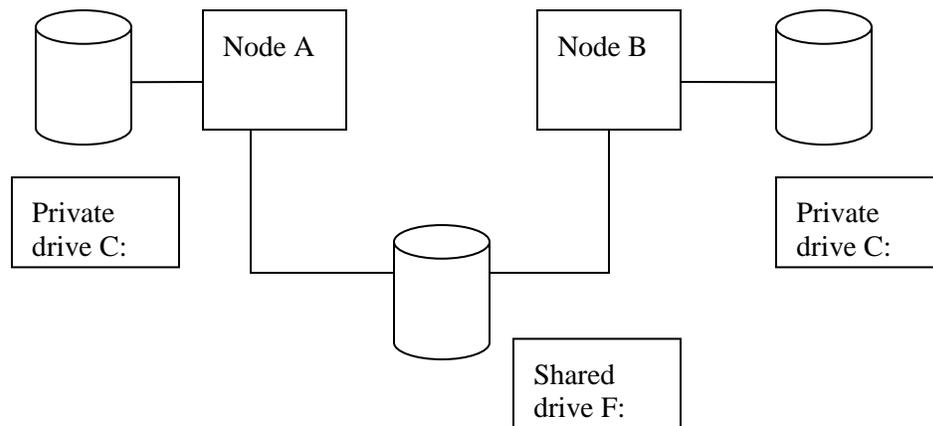


Figure 3-1. Shared Drive Installation for AP/IT

(Steps 2 through 9 are performed on each server in the MSCS cluster. These steps affect the Windows registry on the private drive of each server (C: in the figure above.))

2. Logon as an **administrator**.
3. Create a group named **Autopilot**.
 - If using Windows /2000/XP
Under User Manager, click **Start > Settings > Control Panel > Admin Tools > Computer management > Local Users and Groups > Users**.
 - If using Windows Server 2003 Enterprise Edition:
Under User Manager, click **Start > Settings > Control Panel > Admin Tools > Active Directory Users and Groups**.
4. Add the **Administrator** user to the Autopilot group.
5. Close all open GUI application windows (for example: WebSphere MQ Console).
6. Navigate to **Control Panel > System > Advanced > Environment Variables** and set the following system environment variables. (These will already be defined on the first server where AP/IT was installed.)

```
AUTOPILOT_HOME = [Install Drive]\nastel\AutoPilotIT
```

```
CATALINA_HOME = [AUTOPILOT_HOME]\jakarta-tomcat
```

```
JAVA_HOME = [AUTOPILOT_HOME]\jre
```

7. Create AP/IT Windows services from the command prompt as follows:

Managed Node:

```
sc create AutoPilotIT_Managed_Node binPath=
"%AUTOPILOT_HOME%\localhost\ATPNODE.exe
-zglaxservice AutoPilotIT_Managed_Node" start= auto
```

Domain Server:

```
sc create AutoPilotIT_Domain_Server binPath=
"%AUTOPILOT_HOME%\naming\ATPNAMES.exe
-zglaxservice AutoPilotIT_Domain_Server" start= auto
```

Web Server:

```
cd %AUTOPILOT_HOME%\jakarta-tomcat\bin\
installAPWEB.bat %AUTOPILOT_HOME% %AUTOPILOT_HOME%\jre
```

8. Open **Control Panel > Services** and ensure all the AutoPilot/IT services are set to manual start-up.
9. Reboot Windows server.

(Step 10 is performed on the server in the cluster that currently has the shared drive mounted.)

10. Define resources that will be accessible to the other nodes in the cluster as follows:

- a. Launch the Cluster Administrator tool.
- b. Create a Cluster Group named **Autopilot**.
- c. Right click the Cluster Group **Autopilot** and select **New > Resource** from the menus.
- d. Create new resources with the following names:

```
AutoPilotIT_Domain_Server
AutoPilotIT_Managed_Node
AutoPilotIT_Web_Server
```

Set the **Resource Type** for each to *Generic Service*.

- e. Make all server nodes in the cluster **possible owners** of each resource.
- f. Make the shared drive and the **floating cluster IP** address dependencies of each resource.
- g. Set the Service Name attribute for each of the above three resources, respectively, if they were defined, leaving the start-up parameter field blank:

```
AutoPilotIT_Domain_Server
AutoPilotIT_Managed_Node
AutoPilotIT_Web_Server
```

- h. Click Add in the registry replication window and enter the required registry keys for each of the above three resources, respectively:

```
SYSTEM\CurrentControlSet\Services\AutoPilotIT_Domain_Server
SYSTEM\CurrentControlSet\Services\AutoPilotIT_Managed_Node
SYSTEM\CurrentControlSet\Services\AutoPilotIT_Web_Server
```

- i. Right-click the new resource and select **Properties** from the menu.
- j. From the advanced section, uncheck the **Affect the group** and change the threshold value to 1 (one) and then click **OK**.
- k. Bring the resource online by right-clicking it and selecting **Bring Online**.
- l. When the AutoPilot/IT resources are online, move the group to the other server and ensure the resources start correctly on that server.

Chapter 4: AP/WMQ Configuration in a Cluster Environment

4.1 Configuration in a Veritas Cluster

Agent Configuration

To monitor specific queue managers assigned to a Veritas cluster host, it will be necessary to have a Veritas AP-WMQ agent configuration that moves with the cluster host and can run on any physical host in the cluster alongside other cluster hosts/APWMQ agents. The AP-WMQ agent configuration will exclude any other queue managers defined in the generic `mqs.ini` file that are not designated to that cluster host, by having a modified `mqs.ini` specific to that configuration. The cluster-specific AP-WMQ agents will also require their own IP listener port to avoid conflicts.

Message servers will also need to follow the cluster host.

How this is Achieved

- A Veritas resource will need to be defined that starts an agent and provides a path to a modified `mqs.ini` file and a port to start the agent on.
- The `mqs.ini` file will need to be created and maintained for each cluster host and made available on all physical hosts in the cluster.
- By defining, for example, "`export APWMQ_MQS_HOME=/app/nastel/apwmq/NODEA`", it is possible to selectively monitor certain queue managers on NODEA. The edited `mqs.ini` file would be placed in the example directory `/app/nastel/apwmq/NODEA`.
- By specifying different ports with the `-s` option at agent start-up, it should be possible to run two agents on one physical host. This is necessary when a host fails over to a host that already has another AP-WMQ agent running.

Benefits

- By monitoring only the queue managers that are designated to a cluster host, other queue managers will not appear to be down on that host and attempts to discover their objects will not be initiated.
- The cluster host will show the underlying physical host. An AutoPilot business view could be created to show when a resource has failed over.

4.2 Configuration in a MSCS Cluster

1. Install AP/WMQ on the server that currently has the shared drive mounted.

The installation should be accomplished on the shared drive (example, F: in the figure below) in accordance with the AP/WMQ Installation Guide and any additional updates; including Cumulative Service Packs (CSPs) or Hot Fixes according to the instructions provided. During the installation, environment variable `APWMQ_HOME` will be defined as:

```
[shared_drive:]\nastel\apwmq
```

2. Edit the `[install_dir]\nastel\apwmq\config\groups\mqgroup.ini` file and enter the workgroup name, node name and port number.

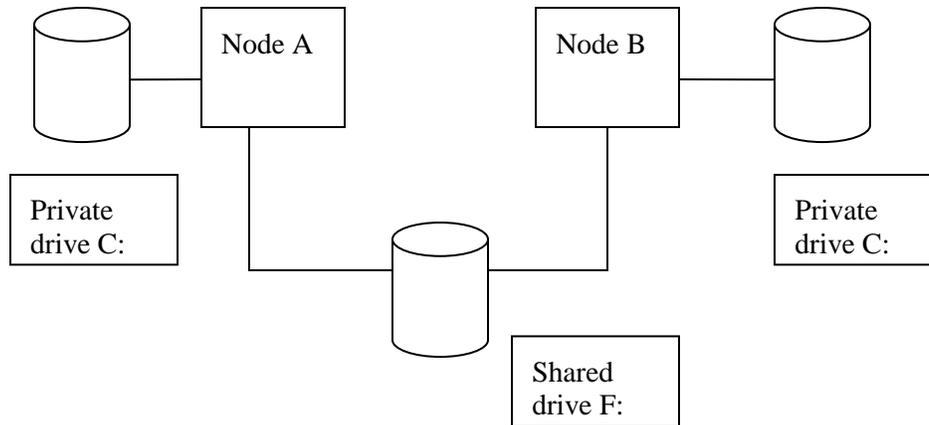


Figure 4-1. Shared Drive Installation for AP/WMQ

(Steps 3 through 9 are performed on each server in the MSCS cluster. These steps affect the Windows registry on the private drive of each server (C: in the figure above)

3. Create an MQM group in the Windows /2000/XP User Manager (click **Start > Settings > Control Panel > Admin Tools > Computer management > Local Users and Groups > Users**)
4. Add the Administrator user to the MQM group
5. Close all open GUI application windows (for example: AP/WMQ Console)
6. Logon as a domain administrator.
7. Navigate to **Control Panel > System > Advanced > Environment Variables** and set the following system environment variables:

`APWMQ_LS_OPTIONS = -m<workgroup_name>; -u; -e; -n<node_alias>; -s<port_nbr>`

Define this environment variable if the agent will run in the MSCS

`<node_alias>` needed so that agent will look like the same entity when registering with the workgroup server from any physical node in the cluster

`<port_nbr>` is the listener port number used by the agent

-u means no user authority checking

`APWMQ_GS_OPTIONS = -m<workgroup_name>; -u`

Define this environment variable if the workgroup server will run in the MSCS

-u means no user authority checking

`APWMQ_MS_OPTIONS=-m*`

Define this environment variable if the message server will run in the MSCS;

* means connect to all queue managers or all those qualified by environment variable
`APWMQ_MQS_HOME`

`APWMQ_MQS_HOME=drive:\nastel\apwmq\<nodei>`

optional; define if subset of all queue managers on node will be managed by the agent

8. Open **Control Panel > Services**, ensure all the Nastel services are set to manual start-up.
9. Reboot the Windows server.

(Steps 10 through 18 are performed on the server in the cluster that currently has the shared drive mounted)

10. Define resources that will be accessible to the other nodes in the cluster as follows:
 - a. Launch the Cluster Administrator tool.
 - b. Right-click the **Cluster Group** containing the queue manager and select **New > Resource** from the menus.
 - c. Create new resources with the following attributes:

Name=AP-WMQ Agent	Define if WMQ will run in the cluster; then the agent will also
Resource Type=Generic Service	
Name=AP-WMQ Publish-Subscriber	Define if WMQ will run in the cluster and you want DLQ events or the WMQ node will be managed by multiple workgroup servers
Resource Type=Generic Service	
Name=AP-WMQ Message Server	Define if WMQ is running in the cluster and you want message management
Resource Type=Generic Service	
Name=AP-WMQ Workgroup Server	Define if the workgroup server will be running in the cluster
Resource Type=Generic Service	
11. Make all the server nodes in the cluster **possible owner** of each resource.
12. Make the shared drive and the **floating cluster IP address** dependencies of each resource.
13. Set the **Service Name** attribute for each of the above four resources, respectively, if they were defined, leaving the start-up parameter field blank:
 - APWMQAgent
 - APWMQPubSubServer
 - APWMQMessageServer
 - APWMQWorkgroup_group

group is a workgroup name
14. Click **Add** in the **Registry Replication** window and enter the required registry keys for each of the above four resources, respectively, if they were defined:
 - SYSTEM\CurrentControlSet\Services\ APWMQAgent
 - SYSTEM\CurrentControlSet\Services\ APWMQPubSubServer
 - SYSTEM\CurrentControlSet\Services\ APWMQMessageServer
 - SYSTEM\CurrentControlSet\Services\ APWMQWorkgroup_group
15. Right-click the new resource and select **Properties** from the menu.
16. From the advanced section uncheck the **Affect the group** and change the threshold value to 1 (one) before clicking the ok button.
17. Bring the resource online by right clicking it and selecting **Bring Online**.
18. When the AP-WMQ resources are online, move the group to the other server and ensure the resources start correctly on that server.

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Chapter 5: M6 for WMQ Configuration in a Cluster Environment

5.1 Configuration in a Veritas Cluster

Agent Configuration

To monitor specific queue managers assigned to a *Veritas cluster* host, it will be necessary to have a Veritas M6 for WMQ agent configuration that moves with the cluster host and can run on any physical host in the cluster alongside other cluster hosts/M6 WMQ agents. The M6 WMQ agent configuration will exclude any other queue managers defined in the generic `mqs.ini` file that are not designated to that cluster host, by having a modified `mqs.ini` specific to that configuration. The cluster-specific M6 WMQ agents will also require their own IP listener port to avoid conflicts.

Message servers will also need to follow the cluster host.

How this is Achieved

- A Veritas resource will need to be defined that starts an agent and provides a path to a modified **mqs.ini** file and a port to start the agent on.
- The **mqs.ini** file will need to be created and maintained for each cluster host and made available on all physical hosts in the cluster.
- By defining, for example, "`export M6WMQ_MQS_HOME=/app/nastel/apwmq/NODEA`", it is possible to selectively monitor certain queue managers on NODEA. The edited **mqs.ini** file would be placed in the example directory `/app/nastel/apwmq/NODEA`.
- By specifying different ports with the `-s` option at agent start-up, it should be possible to run two agents on one physical host. This is necessary when a host fails over to a host that already has another M6 WMQ agent running.

Benefits

- By monitoring only the queue managers that are designated to a cluster host, other queue managers will not appear to be down on that host and attempts to discover their objects will not be initiated.
- The cluster host will show the underlying physical host. An AutoPilot business view could be created to show when a resource has failed over.

5.2 Configuration in a MSCS Cluster

1. Install M6 for WMQ on the server that currently has the shared drive mounted.

The installation should be accomplished on the shared drive (example, F: in the figure below) in accordance with the M6 for WMQ Installation Guide and any additional updates; including Cumulative Service Packs (CSPs) or Hot Fixes according to the instructions provided. During the installation, environment variable `APWMQ_HOME` will be defined as:

```
[shared_drive:]\nastel\apwmq
```

2. Edit the `[shared_drive]\nastel\apwmq\config\groups\mqgroup.ini` file and enter the workgroup name, node name and port number.

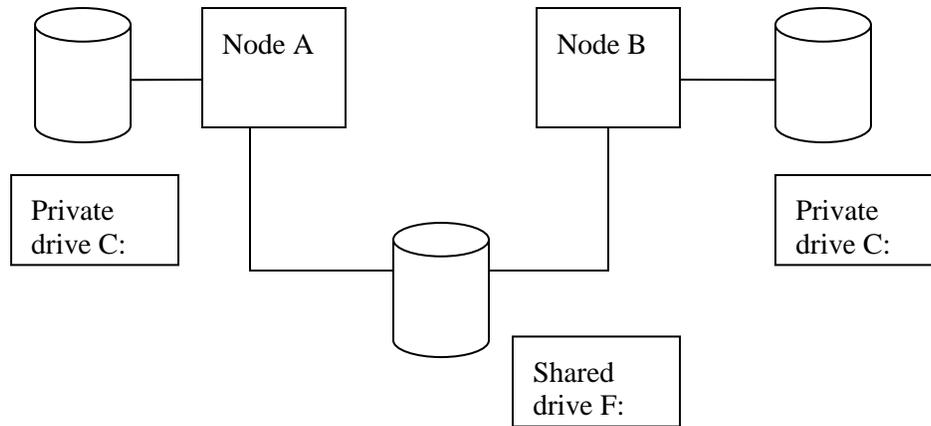


Figure 5-1. Shared Drive Installation for M6 WMQ

(Steps 3 through 9 are performed on each server in the MSCS cluster. These steps affect the Windows registry on the private drive of each server (C: in the figure above)

3. Create an MQM group in the Windows /2000/XP User Manager (click **Start > Settings > Control Panel > Admin Tools > Computer management > Local Users and Groups > Users**)
4. Add the Administrator user to the MQM group
5. Close all open GUI application windows (e.g., MQSeries Console)
6. Logon as a domain administrator.
7. Navigate to **Control Panel > System > Advanced > Environment Variables** and set the following system environment variables:

`APWMQ_LS_OPTIONS[_group] = -m<workgroup_name>; -u;-e;-n<node_alias>; -s<port_nbr>`

Define this environment variable if the agent will run in the MSCS

<node_alias> needed so that agent will look like the same entity when registering with the workgroup server from any physical node in the cluster

<port_nbr> is the listener port number used by the agent

-u means no user authority checking

[group] If you want to run multiple agents on the node, each one reporting to a different workgroup, define one such environment variable with the group name as a suffix.

Example: `APWMQ_LS_OPTIONS_MQM1`, `APWMQ_LS_OPTIONS_MQM2`.

The `-s<port_nbr>` must be unique for each workgroup. (See note 1.)

`APWMQ_GS_OPTIONS = -m<workgroup_name>; -u`

Define this environment variable if the workgroup server will run in the MSCS

-u means no user authority checking

`APWMQ_MS_OPTIONS=-m*`

Define this environment variable if the message server will run in the MSCS

* means connect to all queue managers or all those qualified by environment variable

`APWMQ_MQS_HOME`

`APWMQ_MQS_HOME=drive:\nastel\apwmq\<nodei>`

Optional; this environment variable if subset of all queue managers on node will be managed by the agent

8. Open **Control Panel > Services**, ensure all the Nastel services are set to manual start-up.
9. Reboot the Windows server.

(Steps 10 through 18 are performed on the server in the cluster that currently has the shared drive mounted.)

10. Define resources that will be accessible to the other nodes in the cluster as follows:

- a. Launch the Cluster Administrator tool.
- b. Right-click the **Cluster Group** containing the queue manager and select **New > Resource** from the menus.
- c. Create new resources with the following attributes:

Name=AP-WMQ Agent Define if WMQ will run in the cluster; then the agent will also

Resource Type=Generic Service (See note 1.)

Name=AP-WMQ Publish-Subscriber Define if WMQ will run in the cluster and you want DLQ events or the WMQ node will be managed by multiple workgroup servers

Resource Type=Generic Service

Name=M6-WMQ Message Server Define if WMQ is running in the cluster and you want message management

Resource Type=Generic Service

Name=M6-WMQ Workgroup Server Define if the workgroup server will be running in the cluster

Resource Type=Generic Service

11. Make all the server nodes in the cluster **possible owner** of each resource.

12. Make the shared drive and the **floating cluster IP address** dependencies of each resource.

13. Set the **Service Name** attribute for each of the above four resources, respectively, if they were defined, leaving the start-up parameter field blank:

- APWMQAgent[_group]
- APWMQPubSubServer
- APWMQMessageServer
- PWMQWorkgroup_group

group is a workgroup name.

	NOTE 1: If you defined multiple APWMQ_LS_OPTIONS_group environment variables in step 7, then define multiple agent services APWMQAgent_group. Likewise, you will have to define an additional resource in step 10c above and an additional registry key in step 14 below.
---	--

14. Click **Add** in the **Registry Replication** window and enter the required registry keys for each of the above four resources, respectively, if they were defined:

- SYSTEM\CurrentControlSet\Services\ APWMQAgent[_group] (See note 1.)
- SYSTEM\CurrentControlSet\Services\ APWMQPubSubServer
- SYSTEM\CurrentControlSet\Services\ APWMQMessageServer
- SYSTEM\CurrentControlSet\Services\ APWMQWorkgroup_group

15. Right-click the new resource and select **Properties** from the menu.

16. From the advanced section uncheck the **Affect the group** and change the threshold value to 1 (one) before clicking the ok button.

17. Bring the resource online by right clicking it and selecting **Bring Online**.

18. When the M6 WMQ resources are online, move the group to the other server and ensure the resources start correctly on that server.

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Appendix A: References

A.1 Nastel Documentation

The following table provides a list of reference information.

Table A-1. Nastel Documentation	
Document Number (or higher)	Title
M6/INS 625.001	<i>Nastel AutoPilot M6 Installation Guide</i>
M6/USR 625.001	<i>Nastel AutoPilot M6 Administrator's Guide</i>
M6/WS/JMX 600.002	<i>Nastel AutoPilot Plug-in for WebSphere Application Server (JMX) Guide</i>
M6/WMQ 600.003	<i>Nastel AutoPilot M6 Plug-in for WebSphere MQ</i>
M6WMQ/ADM 658.002	<i>Nastel AutoPilot M6 for WebSphere MQ Administrator's Guide</i>
M6WMQ/SM 660.001	<i>Nastel AutoPilot M6 for WebSphere MQ Security Manager User's Guide</i>
M6WMQ-INS 658.002	<i>Nastel AutoPilot M6 for WebSphere MQ Installation Guide</i>

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Appendix B: Conventions

B.1 Typographical Conventions

Table B-1. Typographical Conventions	
Convention	Description
Blue/Underlined	Used to identify links to referenced material or websites. Example: support@nastel.com
Bold Print	Used to identify topical headings, glossary entries, and toggles or buttons used in procedural steps. Example: Click EXIT .
<i>Italic Print</i>	Used to place emphasis on a title, menu, screen name, or other category.
Monospaced bold	Used to identify keystrokes/data entries, file names, directory names, etc.
<i>Monospaced italic</i>	Used to identify variables in an address location. Example: [C:\AutoPilot_Home]\documents, where the portion of the address in brackets [] is variable.
Monospaced text	Used to identify addresses, commands, scripts, etc.
Normal Text	Typically used for general text throughout the document.
Table Text	Table text is generally a smaller size to conserve space.

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Glossary

Application: A logical collection of software components that perform a business function, running on a specific server.

AutoPilot M6: Nastel Technologies' Enterprise Application Management Platform. AutoPilot monitors and automates the management of eBusiness integration components such as middleware application, application servers and user applications.

AutoPilot/Message Tracking (AP/MT): Nastel's AutoPilot/Message Tracking plug-in that enables AutoPilot to intercept message exits and forward the statistical data to an AutoPilot expert.

AutoPilot TransactionWorks (AP/TW): Nastel Technologies' transaction and application performance monitoring product.

AutoPilot/WebSphere Message Queue Integrator (AP/WMQI): Formerly AP/MQSI.

BCI: *See* Byte Code Instrumentation.

BSV: *See* Business Views.

Business Transaction: A collection of related Transactions that comprise a user defined business function (for example, purchase a book, return merchandize, purchase stock). Each of the business activities may be comprised of various workloads.

Business View (BSV): A collection of rules that define a desired state of an eBusiness environment. Business Views can be tailored to present information in the form most suited to a given user, as defined by the user.

Byte Code Instrumentation (BCI): The process of adding small portions of Java byte code around methods of a Java class. The added code performs tasks such as time spent or CPU utilization within the monitored class.

CEP: *See* Complex Event Processing.

CEP Server: A container that can host any number of AutoPilot services such as experts, managers, policies, etc. (called managed node prior to AutoPilot M6 Service Update 6.)

Client: Any programming component that uses the AutoPilot infrastructure; for example, the AutoPilot Console.

Common Object Request Broker Architecture (CORBA): A standard defined by the Object Management Group that enables software components written in multiple computer languages and running on multiple computers to work together. It can be invoked from a Web browser using CGI scripts or applets.

Complex Event Processing (CEP): Primarily an event processing concept that deals with the task of processing multiple events from an event cloud with the goal of identifying the meaningful events within the event cloud. CEP employs techniques such as detection of complex patterns of many events, event correlation and abstraction, event hierarchies, and relationships between events such as causality, membership, and timing, and event-driven processes.

Composite Application: A collection of applications that collaborate or communicate with each other (have related sessions).

Console: The console acts as the graphical interface for AutoPilot.

Contacts: A subordinate to a given Manager or Expert.

CORBA: *See* Common Object Request Broker Architecture.

Data Source Name: A Data Source Name (DSN) is the logical name that is used by Open Database Connectivity (ODBC) to refer to the drive and other information that is required to access data. The name is use by Internet Information Services (IIS) for a connection to an ODBC data source, (example: Microsoft SQL Server database). The ODBC tool in Control Panel is used to set the DSN. When ODBC DSN entries are used to store the connection string values externally, you simplify the information that is needed in the connection string. This makes changes to the data source completely transparent to the code itself.

Deploy: To put to use, to position for use or action.

Derby Database Server: A relational database management system that is based on Java and SQL. It will run in any certified Java Virtual Machine.

Domain Server: A specialized managed node that maintains the directory of managed nodes, experts etc. The domain server is also capable of hosting experts, managers, etc.

DSN: *See* Data Source Name.

Event: An *Event* is something that happens to an object. Events are logged by AutoPilot and are available for use by AutoPilot Policies or the user.

EVT: Event Log file extension (for example, **sample.evt**).

Expert: Services that monitor specific applications such as an applications server, Web server or specific components within the applications (for example, channels in WMQ). Experts generate facts.

Fact: Facts are single pieces of data that has a unique name and value. One or more facts are used to determine the health of the object, application or server.

Graphical User Interface (GUI): A type of environment that represents programs, files, and options by means of icons, menus, and dialog boxes on the screen. The user can select and activate these options by pointing and clicking with a mouse or, often, with the keyboard. Because the graphical user interface provides standard software routines to handle these elements and report the user's actions (such as a mouse click on a particular icon or at a particular location in text, or a key press); applications call these routines with specific parameters rather than attempting to reproduce them from scratch.

GUI: *See* Graphical User Interface.

Heap: In Java programming, a block of memory that the Java virtual machine uses at run time to store Java objects. Java heap memory is managed by a garbage collector, which automatically de-allocates Java objects that are no longer in use.

IIS: *See* Internet Information Services.

Instrumentation: Modifies a program by adding code at particular program points to capture dynamic information. For example, a program could be instrumented to count how many times each method is called.

Internet Information Services: Microsoft's brand of Web server software, utilizing HTTP to deliver World Wide Web documents. It incorporates various functions for security, allows CGI programs, and also provides for Gopher and FTP services.

Java: A platform-independent, object-oriented programming language developed and made available by Sun Microsystems.

Java Database Connectivity (JDBC): The JDBC API provides universal data access from the Java programming language. Using the JDBC 2.0 API, you can access virtually any data source, from relational databases to spreadsheets and flat files. JDBC technology also provides a common base on which tools and alternate interfaces can be built. The JDBC Test Tool that was developed by Merant and Sun Microsystems may be used to test drivers, to demonstrate executing queries and getting results, and to teach programmers about the JDBC API.

Java Developer's Kit (JDK): A set of software tools developed by Sun Microsystems, Inc., for writing Java applets or applications. The kit, which is distributed free, includes a Java compiler, interpreter, debugger, viewer for applets, and documentation.

Java Messaging Service (JMS): A Java Message Oriented Middleware API for sending messages between two or more clients.

Java Platform, Enterprise Edition (Java EE): The industry standard for developing portable, robust, scalable and secure server-side Java applications. Building on the solid foundation of Java SE, Java EE provides Web services, component model, management, and communications APIs that make it the industry standard for implementing enterprise class service-oriented architecture (SOA) and Web 2.0 applications.

Java Server Pages (JSP): JSP technology enables rapid development of Web-based applications that are platform independent. Java Server Pages technology separates the user interface from content generation enabling designers to change the overall page layout without altering the underlying dynamic content. Java Server Pages technology is an extension of the Java™ Servlet technology.

Java Transactions API (JTA): Specifies standard Java interfaces between a transaction manager and the parties involved in a distributed transaction system: the resource manager, the application server, and the transactional applications.

Java Virtual Machine (JVM): The “virtual” operating system that JAVA-written programs run. The JVM is a hardware- and operating system-independent abstract computing machine and execution environment. Java programs execute in the JVM where they are protected from malicious programs and have a small compiled footprint.

JDBC: *See* Java Database Connectivity.

JDK: *See* Java Developer's Kit.

JMS: *See* Java Messaging Service.

JRE: Java Run-time Environment. The minimum core Java required to run Java programs.

JSP: *See* Java Server Pages.

JTA: *See* Java Transactions API.

JVM: *See* Java Virtual Machine.

Logical Unit of Work (LUW): A collection of operations and messages within a session that should be considered to be a single unit of work (all or nothing property). These are generally delimited by BEGIN/COMMIT calls.

LUW: *See* Logical Unit of Work.

M6 for WMQ: Nastel Technologies' WebSphere MQ management solution. Re-designated as M6 for WMQ (formally known as AutoPilot M6 for WMQ) with release 6.0. Prior releases retain either AP/WMQ for version 4.0 or MQControl trademark for version 3.0 and prior.

M6 Web Server: M6 Web Server is a browser-based interface that provides monitoring and operational control over managed resources and applications.

Managed Node: A container that can host any number of AutoPilot services such as experts, managers, policies, etc. (Managed node changed to CEP Server with AutoPilot M6 Service Update 6.)

Manager: Managers are the home or container for policies. All business views must reside on managers, and manager must be deployed prior to deploying a business view or policy.

Message: A physical message being transported through the TPN.

Message-Oriented Middleware (MOM): A category of inter-application communication software that relies on asynchronous message passing as opposed to a request/response metaphor.

Message Queue Interface: The Message Queue Interface (MQI) is part of IBM's Networking Blueprint. It is a method of program-to-program communication suitable for connecting independent and potentially non-concurrent distributed applications.

MOM: *See* Message-Oriented Middleware.

MQControl: Nastel Technologies' MQSeries management product. Re-designated as AutoPilot/MQ with release 4.0, prior releases retain the MQControl trademark.

MQI: *See* Message Queue Interface.

MQSeries: IBM's message queuing product; renamed by IBM as WebSphere MQ.

Naming Service: A common server records “names” of objects and associates them with references, locations and properties.

ORB: Object Request Broker.

Orbix: CORBA product distributed by IONA Technologies.

Package Manager: The command line utility that allows users to list, install, uninstall, verify and update AutoPilot installation on any Managed Node.

PKGMAN: *See* Package Manager.

Policy/Business Views: Business views are a collection of one or more sensors. Business views are used to visually present the health and status of the different systems as well as automatically issue remedial actions.

Resource: An entity on which transactions are executed or a medium of exchange. Examples include Queue, DB table, file, JMS topic.

Resource Manager: An entity that is managing a collection of resources. Examples include a WMQ Queue Manager, Application Server, Database Server.

Sensor: A rule that is used to determine the health of an object or application based on one or more facts. Actions can then be issued, based on the health.

Server: A physical or virtual node within a TPN that hosts all transaction processing activity.

Session: A specific period of execution of an application. Examples include the interval during which a database or queue manager connection is active.

Simple Mail Transfer Protocol (SMTP): A TCP/IP protocol for sending messages from one computer to another on a network. This protocol is used on the Internet to route e-mail. See also communications protocol, TCP/IP. Compare CCITT X series, Post Office Protocol.

SMTP: *See* Simple Mail Transfer Protocol.

Speed Manager: Type of manager which allows loading of policies from a “Speed Folder” which automatically loads all .bsv and .bsp files located in the folder upon manager’s start.

TCP/IP: *See* Transmission Control Protocol/Internet Protocol.

Transaction: A group of activities targeted at achieving a common goal or a task. Collection of related sessions and LUWs.

Transmission Control Protocol/Internet Protocol (TCP/IP): A protocol developed by the Department of Defense for communications between computers. It is built into the UNIX system and has become the de facto standard for data transmission over networks, including the Internet.

Virtual Machine: Software that mimics the performance of a hardware device, such as a program that allows applications written for an Intel processor to be run on a Motorola chip. *Also see* Java Virtual Machine.

WebLogic: A Java EE compatible application server platform which enables support for multiple programming models, which includes advanced administration tools and is the ideal foundation for Service Oriented Architecture (SOA).

WebSphere MQ: IBM’s message queuing product; formerly known as MQSeries.

Websphere_MQ_Manager: A specialized manager capable of hosting one or more WebSphere MQ specific policies, apart from the regular policies.

Wireless Application Protocol (WAP): An open global specification that is used by most mobile telephone manufacturers. WAP determines how wireless devices utilize Internet content and other services.

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