



GWAVA 4

Installation Guide

GWAVA4

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OVERVIEW

Thank you for choosing GWAVA 4. This guide will walk you through the basic installation steps for GWAVA 4.

If you are trying to install WASP 2, please refer to the [WASP2_InstallationGuide.pdf](#).

Installation - General Procedure

- Choose GWAVA 4 installation location
- Download the installation zip file (GWAVA4_WASP2_Install_xxx.zip).
- Unzip the installation zip file
- Run the gwava_setup.jar file and follow the wizard to install all of the GWAVA program files.
- Log in to the GWAVA4 management console and perform server activation
- Log in to the GWAVA4 management console and set up a scanner.
- Restart GroupWise to utilize GWAVA 4.

PREPARATION

The preparation section outlines some considerations in installing GWAVA 4 for the first time.

GWAVA 4 Scanning Location

GWAVA 4 offers protection at multiple e-mail scanning levels. Before beginning installation, you must determine where GWAVA scanning should be done.

GWAVA 4 protects your GroupWise system at the following levels:

- GroupWise Internet Agent (GWIA)
- Message Transfer Agent (MTA)
- Post Office Agent (POA)

To protect messages at the GWIA or MTA level, GWAVA must be installed on the same server as the GroupWise agent. Only install GWAVA on the servers that you want to be protected.

To scan messages at the POA level, GWAVA does not need to be installed on the same server as the agent, but must have access to the Post Office via IMAP and a trusted application key.

Choosing where to scan

One of the most critical choices you will make is where scanning is performed. Some of the advantages/disadvantages are outlined below to help you choose where you would like to protect your e-mail system.

GWIA

A GWIA scanner cleans Internet traffic or messages that pass through the GWIA.

Internal messages (messages between users in separate post offices and messages between users in the same Post Office) will not be scanned. Generally most messages that need to be blocked are Internet traffic.

MTA

A MTA scanner cleans Internet traffic and internal messages between post offices (messages between users in the same Post Office are not scanned).

The MTA scanner does provide added protection between post offices.

POA

A POA scanner cleans out messages after they have already been delivered. This is useful for making sure mailboxes do not contain inappropriate content.

A GWIA or MTA scanner can be done in real-time. POA real-time scanning is not available at this time.

GWIA scanning is highly recommended.

If you only want mail to be scanned once, use the GWIA scanner.

If you do not know which level is most appropriate, use the GWIA scanner.

Minimum Requirements

To ensure the smoothest operation of GWAVA 4 your server should meet some basic criteria. This criterion is outlined below.

- 2.4 GHz Pentium 4 processor, 1 Gig RAM, 36Gb hard drive
- 2,000 mail/hour + 100 concurrent Internet connections
- 4,000 mail/hour
- 400 concurrent Internet connections

- 3.2 GHz Pentium 4 processor, 1.5 Gb RAM, 40Gb hard drive
- 4,000 mail/hour + 300 concurrent Internet connections
- 7,000 mail/hour
- 600 concurrent Internet connections

- 3.6 GHz Pentium 4, 2Gb RAM, 60Gb hard drive
- 8,000 mail/hour + 600 concurrent Internet connections
- 10,000 mail/hour
- 900 concurrent Internet connections

Keep in mind that even if your server meets these requirements that you still need to consider the other programs running on the server. If there are other resource intensive programs on the server you may experience slow operation of GWAVA. The best recommendation is to have GWAVA 4 and the GroupWise Internet Agent on a server by themselves.

The Quarantine Management System (QMS) will use the most disk space. QMS stores blocked messages for a period of time (configurable), and allows the administrator to release any false positives that may occur. QMS replaces the old archive viewer used in GWAVA 3.6.

QMS will store these messages in the directory where GWAVA is installed. You should make sure that you have ample disk space on the volume where GWAVA will be installed.

You must have at least 5 GB of available disk space for the program software and additional space if you want to retain more than 7 days of quarantined messages.

Expect 10GB of space used by QMS to retain 30 days of data in a 500 user system.

(NetWare) Only install GWAVA on your SYS volume if it is the only volume on the server.

GWAVA 4 INSTALLATION

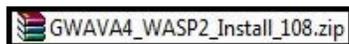
This section will outline the installation of GWAVA 4 on Linux and NetWare. If you are installing WASP 2 please refer to the WASP quick start guide.

Running a previous version of GWAVA during installation

Before starting GWAVA 4, you should shut down any previous versions of GWAVA 3. If you do not do this then there will be some conflicting files.

Installing GWAVA 4

Download the installation file and unzip the file contents to a location of your choice.



Run the installation jar file from your Windows workstation if you are installing GWAVA on NetWare.

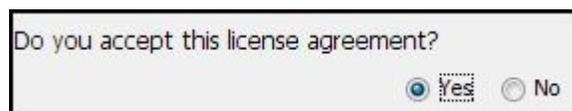
If you are installing GWAVA on Linux, run the jar file from your Linux server's GUI. Open a terminal in Linux and use the command 'java -jar gwava_setup.jar'.

Once you run the file a welcome screen will come up. Click 'Next'.

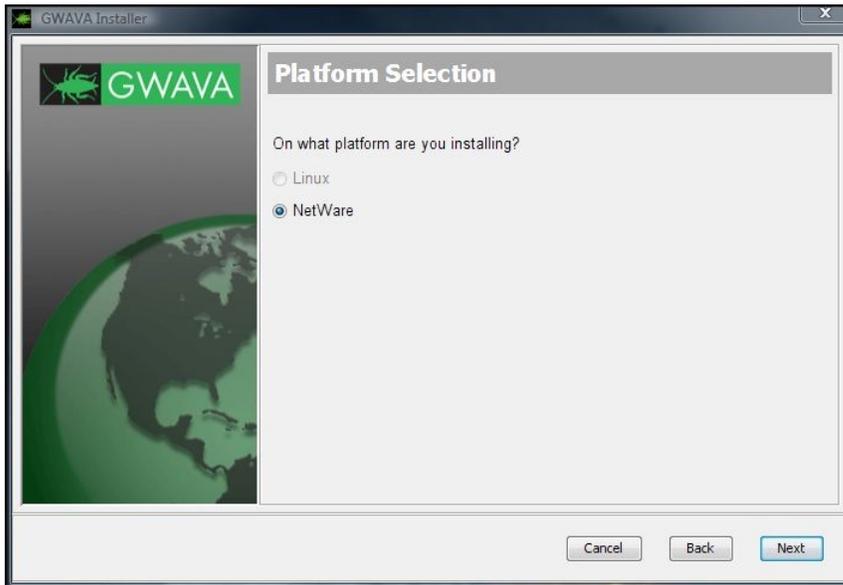
The installation file can be found at www.gwava.com



Accept the license agreement by clicking the radio button 'Yes' and clicking 'Next'.

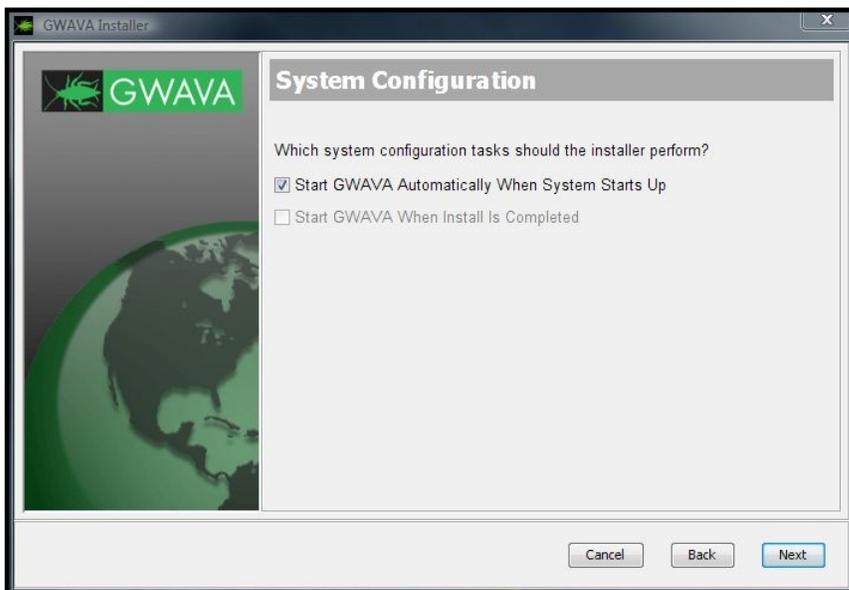


Browse through the Readme and then click 'Next'. On the following screen make sure that NetWare is selected for a NetWare install, and Linux selected for a Linux install, then click 'Next'.

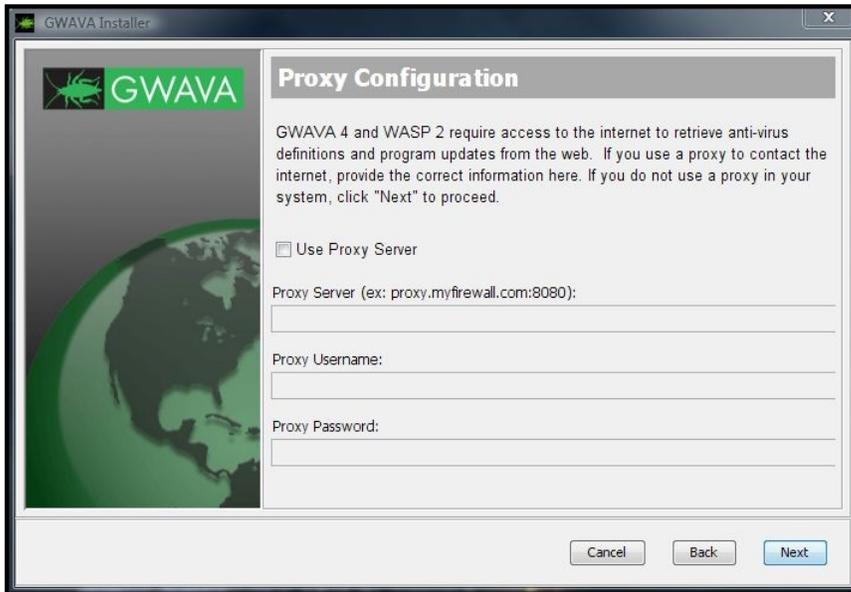


Next, choose what other tasks you would like the installer to perform. Normally, you want GWAVA to start up automatically. Check the first checkbox for the installer to edit your autoexec.ncf (NetWare) or add the GWAVA start script to your runlevels (Linux).

After the installation is complete, the installation program can also start GWAVA automatically. This option is only available on Linux. Click 'Next' once you have selected the correct options.



GWAVA requires the use of the Internet to get virus definitions and to get product updates. If your server goes through a proxy enter the appropriate information, otherwise, click 'Next'.



Enter the installation directory where you want GWAVA to reside.

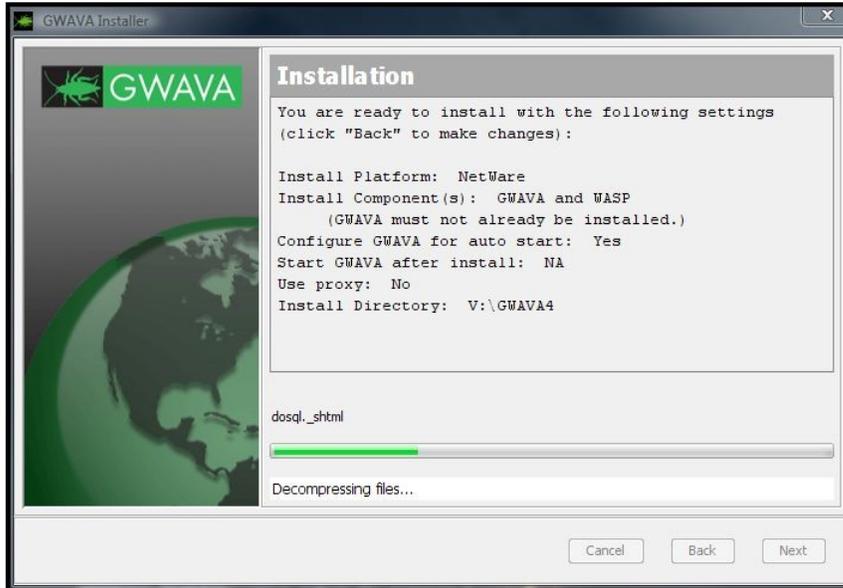
NetWare: This location should not be on the sys volume and should be on a volume with plenty of free disk space. In this example the mapped drive V points to the root of the NetWare vol1 (vol1:\GWAVA4).

Linux: The recommended installation path for Linux is /opt/beginfinite/gwava. Be sure that the /opt location has plenty of allocated disk space.



A summary of the installation will now be displayed. Check that all the locations and options are correct. If you need to make changes, click 'Back'. Otherwise, click 'Next' to begin the installation.

Refer to the Minimum Specifications section for more details about disk space.



Once the installation has completed click 'Finish'.



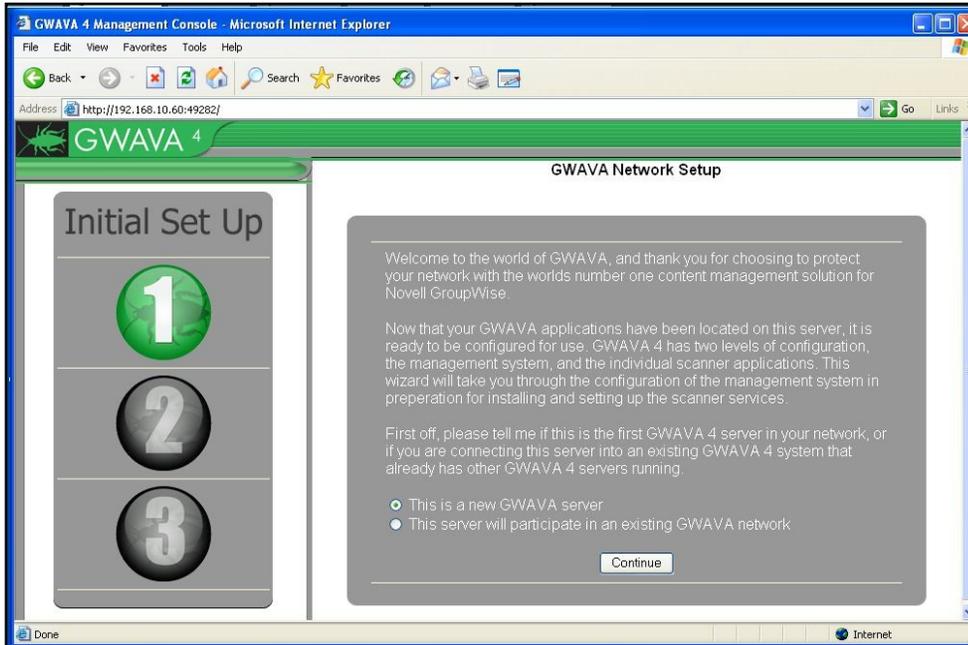
NetWare: Follow the onscreen instructions to add a search path and start GWAVA. GWAVA 4 has now been successfully installed. Click 'Finish' and continue with the installation process by following the instructions in the server activation section.

SERVER ACTIVATION

From your workstation, enter the URL http://<your_server_ip>:49282. For example, <http://192.168.10.60:49282>, then click 'Go' or press 'Enter'.

Choose the default, 'This is a new GWAVA server' and click 'Continue'.

If you open ports 49282 and 49285 on your firewall, you will be able to access your GWAVA configuration and mail quarantine from any location.



Enter the requested information for your environment GWAVA 4.

Because this is the first, or only GWAVA management server in your network, we need to gather some rudimentary settings to secure the server and prepare it for installing the scanner applications that will protect your e-mail system.

Server Parameters	
Server identifying Name	NW65 (NetWare)
Client connection address	192.168.10.60:49282

Administration Information	
GWAVA administrator Login Name	Admin
GWAVA administrator password	••••••
Verify administrator password	••••••
Internet Domain (eg. GWAVA.com)	gwava.com
GWAVA administrators full name	GWAVA Four
GWAVA administrator e-mail address	gwava4@gwava.com

Mail Relay / User Authentication	
SMTP server for notification/authentication	127.0.0.1
SMTP AUTH username	gwava4
SMTP AUTH password	••••••••

Continue

Remember your password. You will need this to log in to the GWAVA 4 Web Administration console.

Confirm that the information is accurate and click 'Install'.

Please verify the information below is correct and accurate, and press the install button to proceed with server activation.

Server identifying name	NW65 (NetWare)
Address to access server	192.168.10.60:49282
Administrator login	Admin
Administrator password	[concealed]
Primary domain	gwava.com
Administrator full name	GWAVA Four
Administrator e-mail address	gwava4@gwava.com
SMTP server address	127.0.0.1
SMTP AUTH username	gwava4
SMTP AUTH password	[concealed]

After the server has been activated, the following screen should appear. This is what you should see when you log in to the web interface in the future.



Now that the server is activated we can proceed installing a scanner.

[Click here to move to the Scanner Installation section.](#)

To connect to the GWAVA4 Management Console in the future, open any browser that has access to the server and type the URL
http://<server_ip>:49282

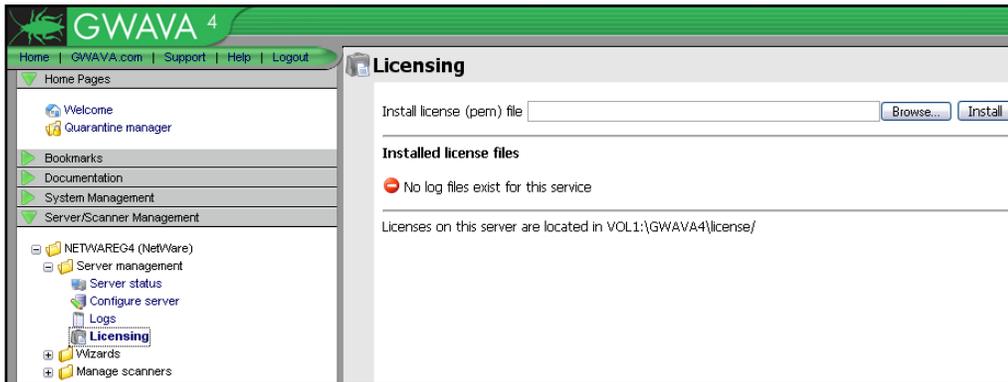
LICENSE APPLICATION

In contrast to GWAVA 3, a license key and code will not be used to license GWAVA. PEM files, which are encoded certificates, will be used.

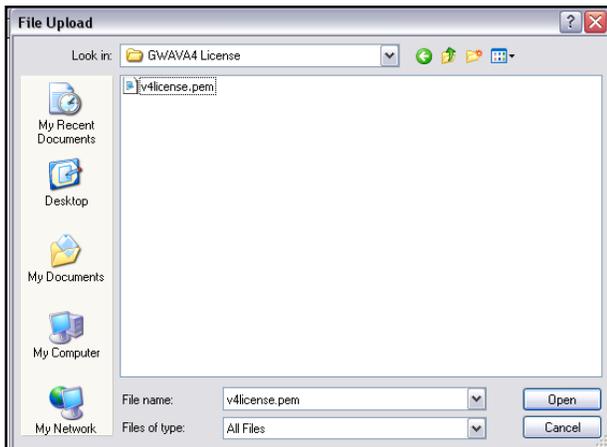
If you do not have your PEM file visit <https://licenses.gwava.com/>, enter your validation key: XXXXXXXX and complete the registration form. Then print the displayed License Certificate and download the PEM file.

To apply your license file open the GWAVA4 Management Console (<IP_Address>:49282) and log in as 'admin'. Then under 'Server/Scanner' Management click on your server folder and then click on 'Server Management'. Click on 'Licensing' to load the Licensing screen.

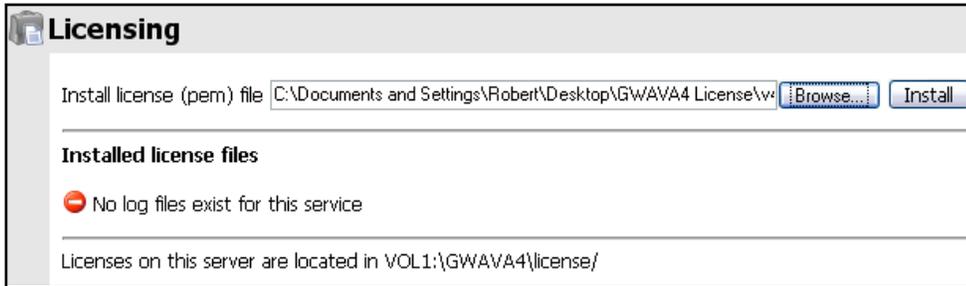
If you do not have a validation key, contact your sales representative.



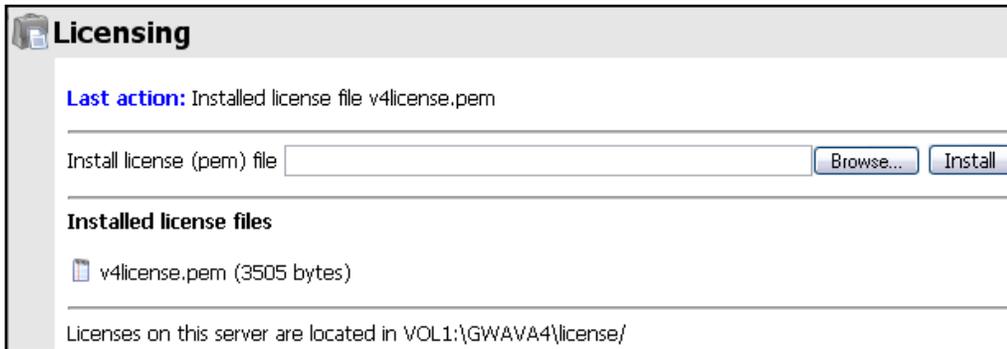
Click 'Browse' to find the location of your PEM file on your workstation, and then click 'Open'.



The path to the PEM file will now be shown on the licensing page.



Click 'Install' for the license to be applied.



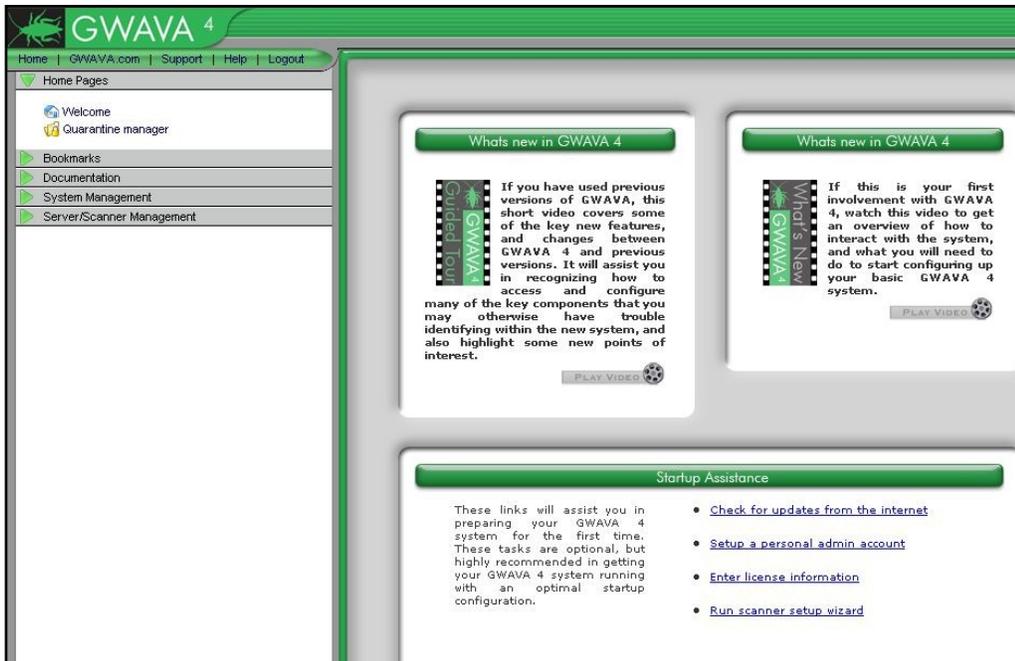
GWAVA 4 is now fully licensed and has complete functionality.

SCANNER INSTALLATION

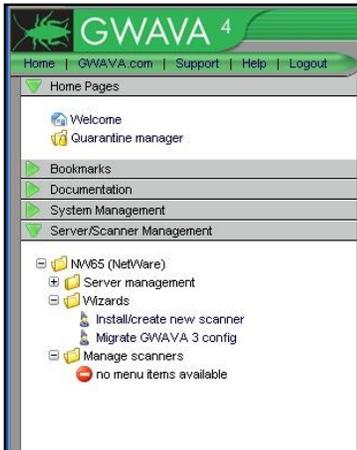
To install a scanner access the GWAVA 4 Management Console by browsing to the URL http://<your_server_ip>:49282. Click 'Enter Management Console'. When prompted, provide the username and password you used during the Server Activation process.



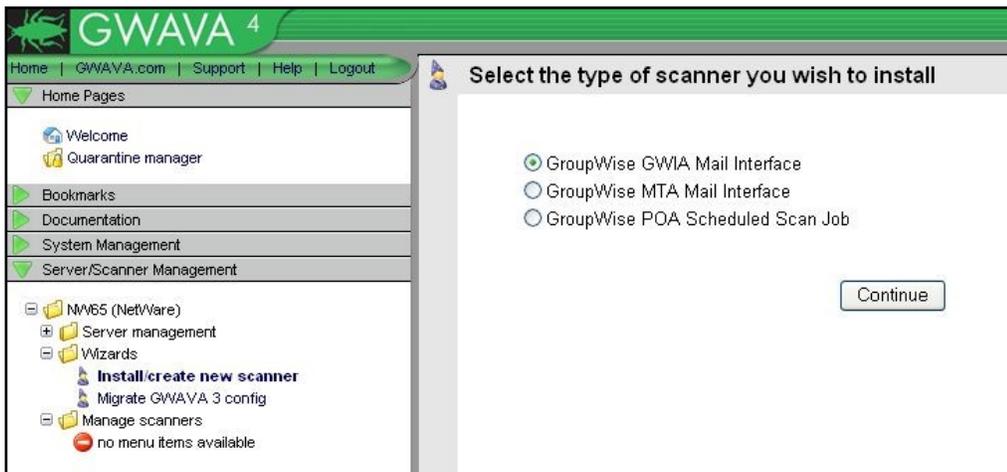
Controls are on the left, information is on the right.



On the left-hand pane, expand your view below Server/Scanner Management.



Since no scanners have been defined, you see the “no menu items available”. Click ‘Install/create new scanner’ to install a scanner. If you want to migrate your GWAVA 3.x configuration, click ‘Migrate GWAVA 3 config’.

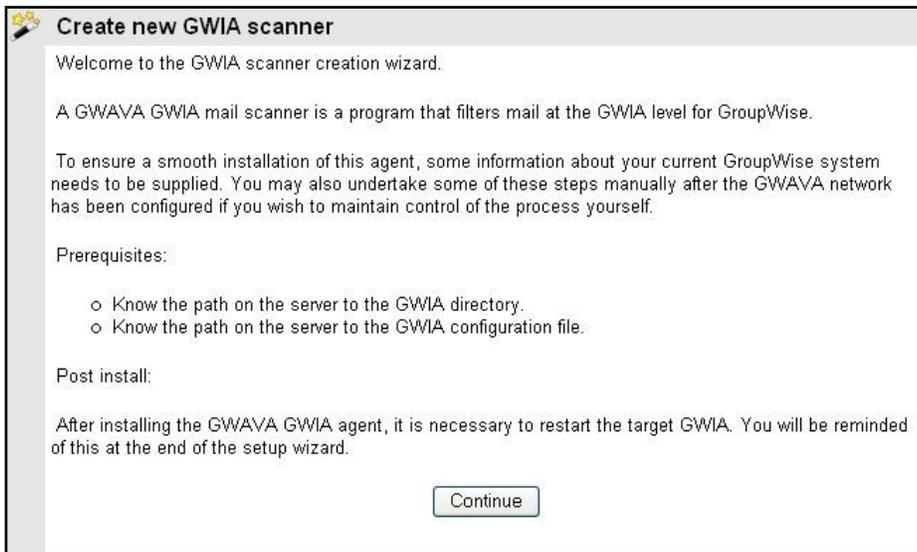


The Management Console will walk you through the rest of the process. For this example a GWIA scanner will be installed.

To install a GWIA scanner, select ‘GroupWise GWIA Mail Interface’ and select ‘Continue’.

This example will not be a migration. The steps are exactly the same, except the migration will ask for your GWAVA 3 gmtacfg.ini file. When the wizard asks browse to the <domain_dir>\GWAVA4 \config directory and select the ini file for the installer.

GWAVA provides helpful information before the scanner is created. Read the information then click 'Continue'.



Enter the name of the new GWIA scanner. Choose a name you will be able to recognize as this particular GWIA scanner when you see it in the scanner list.



Make sure you use forward slashes in the path.

Also enter the paths to your GWIA. The first path is to the GWIA.CFG in your SYS:SYSTEM directory. The second path is to the GWIA working directory. This is under the domain directory (gwdom in the example shown).

If you are unsure of these paths, **DO NOT** click 'Continue' until you have verified the paths.

Verify configuration file directory

For the GWIA scanner the needed file is gwia.cfg, for an MTA scanner the file is <domain_name>.mta. These files for NetWare will be located in SYS:\System most of the time. For Linux these files will probably be located in /opt/novell/groupwise/agents/share.

To verify this, browse to the SYS:\System or /opt/novell/groupwise/agents/share directory and make sure you find the file the scanner installation is asking for.

If the file is not there, consult [Appendix A: Locating Configuration Files](#).

The gwia.cfg file will be located wherever the GroupWise NLMS are located.

The MTA startup file does not have to be the domain name, but it most often is. Look for something that ends with the extension 'MTA', it is most likely the startup file.

Verify domain directory

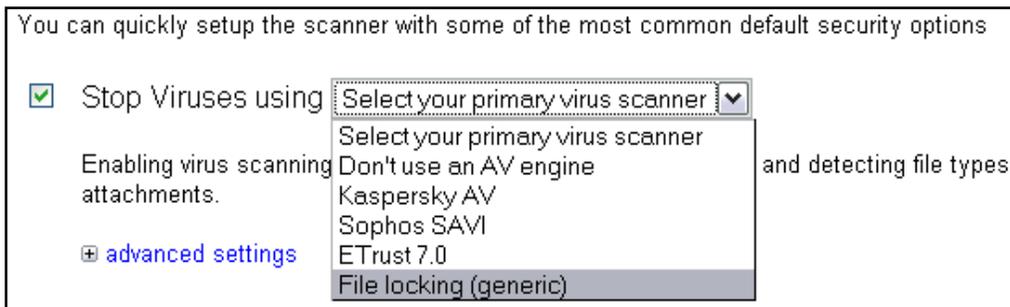
Once the configuration files are found you can find out where your domain directory is by looking in the gwia.cfg. At the bottom of the file there should be a 'Home' switch that resembles /Home-\\NETWAREG4\vol1\dom1\wpgate\GWIA or /Home-Vol1:\dom1\wpgate\GWIA or --home /mail/dom1/wpgate/gwia. The part before you get to the wpgate directory is your domain directory, just add the wpgate/gwia on to the domain directory for the GWIA path when installing a GWIA Scanner.

When you've entered the paths correctly, click 'Continue'.

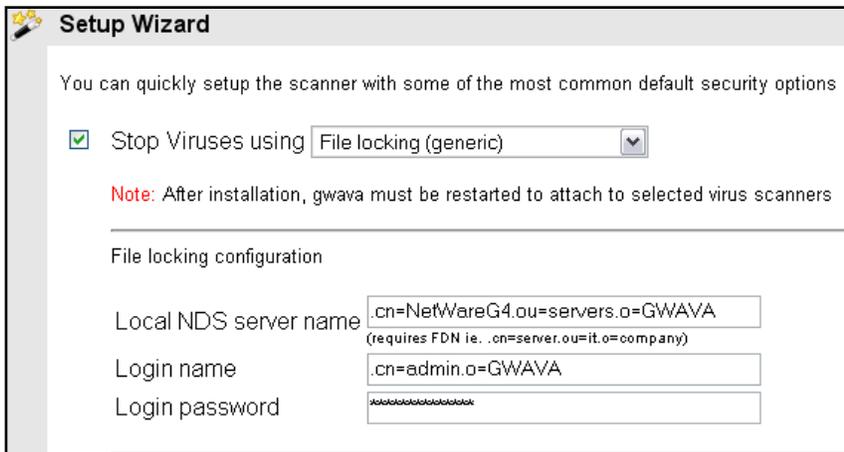
Scanner Options

There are two sections of scanner options, viruses and spam.

First select your AV scanner, for this example file locking is displayed. Typical file locking AV products are McAfee NetShield and Symantec AV.



For a file locking AV GWAVA needs access to the file system via a NDS user. Admin is typically used for this purpose. Fill in the server and admin/password fields.



You will not see this screen if you are doing a migration.

The Virus scanner selection option is only available in NetWare. Kaspersky will automatically be used as your AV scanner in Linux.

For Kaspersky, Sophos SAVI, and ETrust all you have to do is select it from the list.

Make sure you enter the fully distinguished name and context of the object (as shown).

Under 'Stop Viruses' click 'advanced settings' for more installation options. Check/uncheck what best suits your needs.

advanced settings

Quarantine infected messages

Block attachments with file names commonly associated with viruses (*.exe, *.pif, *.vbs etc)

- Quarantine messages blocked because of attachment names

Detect and block attachments commonly associated with viruses (fingerprint exe, pif, com etc)

- Store fingerprint blocked messages in the quarantine system

Under 'Stop Spam' click 'advanced settings' for more installation options. Check/uncheck what best suits your needs. Once you are satisfied with the configuration click 'Continue'.

Stop Spam

Enabling spam detection includes enabling the heuristic detection system and the SURBL and RBL features in GWAVA.

advanced settings

Enable antispam heuristics service

- Quarantine messages detected by the heuristics engine

Enable RBL service

- Quarantine messages detected with RBL

Enable SURBL service

- Quarantine messages detected with SURBL

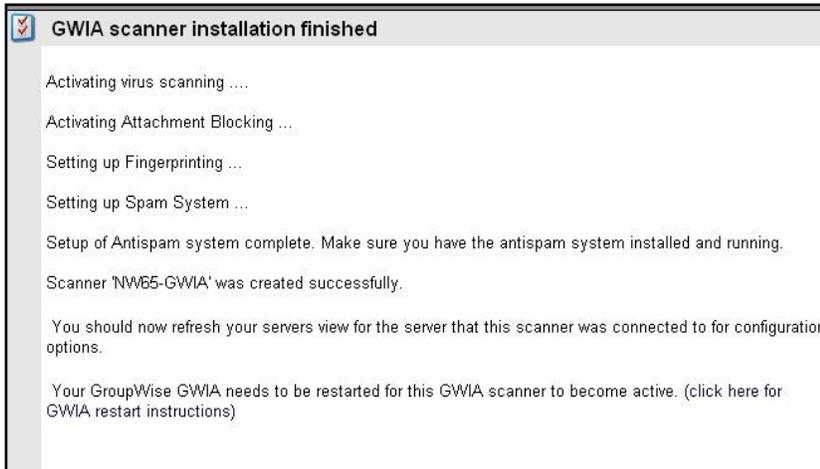
Verify the information and paths are correct and click 'Install'.

 **Create new GWIA scanner**

The requisite information has been collected and is ready to be deployed. If you are satisfied that the installation information is correct, press the install button to commit the installation procedure to the GWAVA network.

Scanner name NW65-GWIA
Install to server NW65 (NetWare)
GWIA startup file sys:/system/gwia.cfg
GWIA path data:/grpwise/gwdom/wpgate/gwia
Stop Viruses Yes
Stop Spam Yes

When this dialogue appears the scanner is ready for operation.



Before the scanner can be used, GroupWise needs to be restarted. Because we installed a GWIA Scanner all we have to do is restart the GWIA. If we had installed a MTA scanner, you need to restart the MTA.

Netware Restart Instructions

To restart the GWIA, go to the GroupWise Internet Agent screen via a remote console and press 'ESC'. Select 'Yes', and wait until the agent goes down. Then from the system console type 'gwia' and that will load the GWIA back up.

To restart the MTA, go to the MTA screen via a remote console and press 'ESC'. Select 'Yes', and wait until the agent goes down. Then from the system console type 'gwmnta @<MTA_startup_filename>.mta'. For example, 'gwmnta @gwdom.mta'.

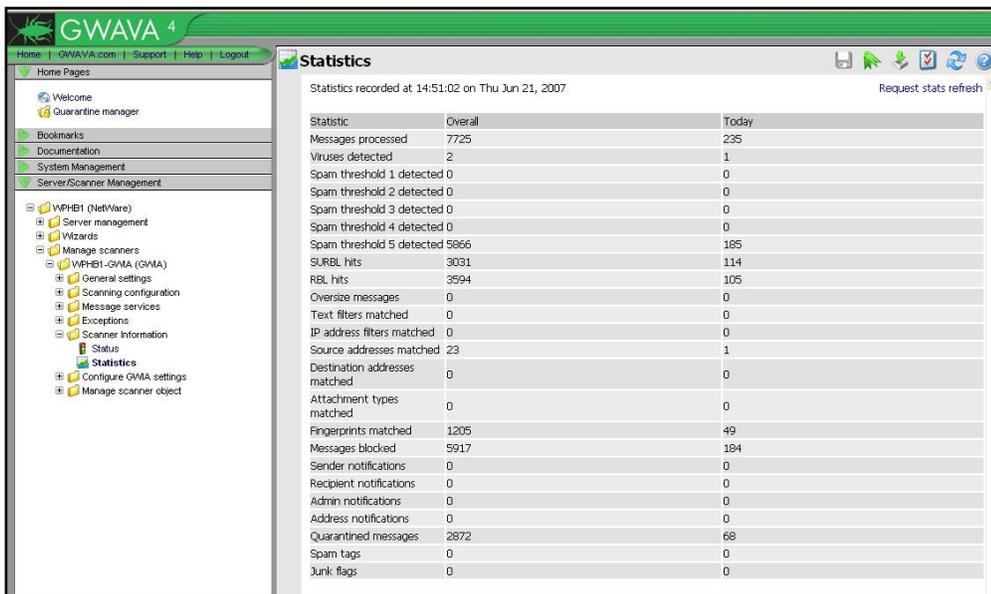
Linux Restart Instructions

In Linux it is easy to restart all of GroupWise. Open a shell prompt and type 'rcgrpwise stop' and then after it is finished type 'rcgrpwise start', and GroupWise has been restarted.

After the restart of GroupWise, messages should start to flow through GWAVA. Verify GWAVA is working by checking the statistics screen found in the GWAVA 4 Management Console.

To view the stats, log in to the Management Console (http://<server_ip_address>:49282), then under 'Server/Scanner Management' select your Server, then 'Manage scanners', then click 'Scanner Information', and finally click on 'Statistics'.

Selecting STATISTICS gives you this page. If numbers are filled in, your Scanner is working properly.



Statistic	Overall	Today
Messages processed	7725	235
Viruses detected	2	1
Spam threshold 1 detected	0	0
Spam threshold 2 detected	0	0
Spam threshold 3 detected	0	0
Spam threshold 4 detected	0	0
Spam threshold 5 detected	5866	185
SURBL hits	3031	114
RBL hits	3594	105
Oversize messages	0	0
Text filters matched	0	0
IP address filters matched	0	0
Source addresses matched	23	1
Destination addresses matched	0	0
Attachment types matched	0	0
Fingerprints matched	1205	49
Messages blocked	5917	184
Sender notifications	0	0
Recipient notifications	0	0
Admin notifications	0	0
Address notifications	0	0
Quarantined messages	2872	68
Spam tags	0	0
Junk flags	0	0

To configure the spam settings appropriately, refer to the Spam Configuration guide found in the GWAVA4Install directory.

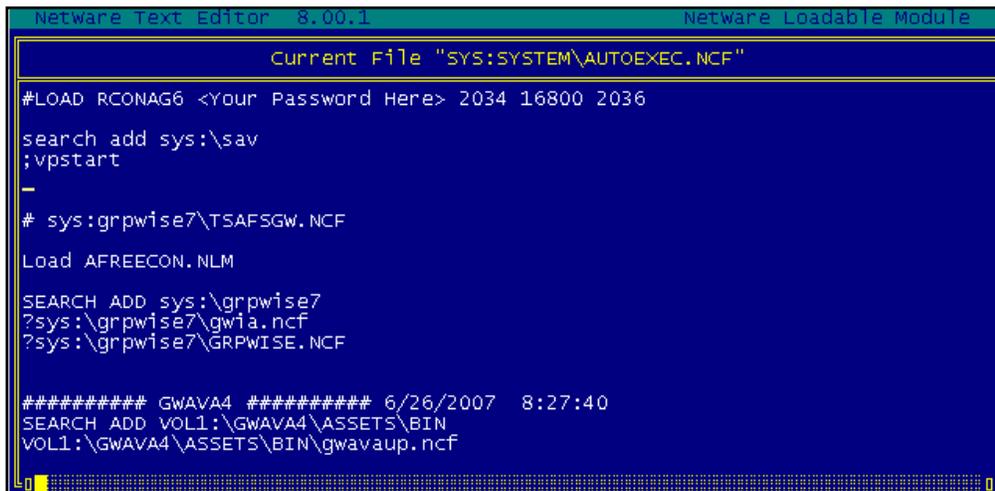
Congratulations, GWAVA has been installed and will protect your e-mail system. For more documentation please visit <http://support.gwava.com/wiki>.

APPENDIX A: LOCATING CONFIGURATION FILES

It is rare to see the Linux configuration files not in /opt/novell/groupwise/agents/share; only NetWare instructions are included to find your GroupWise configuration files.

NetWare

If your GroupWise system loads automatically during startup, load up the autoexec.ncf in an edit window by typing 'edit autoexec.ncf'. Scroll to the bottom of the autoexec.ncf and it should look similar to the following example.

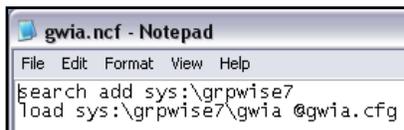


```
Netware Text Editor 8.00.1 Netware Loadable Module
Current File "SYS:SYSTEM\AUTOEXEC.NCF"
#LOAD RCONAG6 <Your Password Here> 2034 16800 2036
search add sys:\sav
;vpstart
-
# sys:grpwise7\TSAFSGW.NCF
Load AFRECON.NLM
SEARCH ADD sys:\grpwise7
?sys:\grpwise7\gwia.ncf
?sys:\grpwise7\GRPWISE.NCF

##### GWAVA4 ##### 6/26/2007 8:27:40
SEARCH ADD VOL1:\GWAVA4\ASSETS\BIN
VOL1:\GWAVA4\ASSETS\BIN\gwavaup.ncf
```

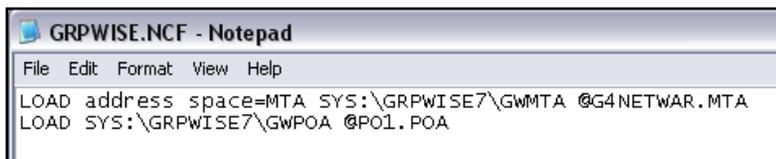
In the autexec.ncf, look for the gwia.ncf or the grpwise.ncf. If you found those files, look at where it is located. In this example it is located in sys:\grpwise7. Now that I know that sys:\grpwise7 has some of my data in it I can look in there for more information.

From my administrative workstation I access that directory and look inside the gwia.ncf first. I now know that my gwia.cfg is located in sys:\grpwise7



```
gwia.ncf - Notepad
File Edit Format View Help
search add sys:\grpwise7
load sys:\grpwise7\gwia @gwia.cfg
```

Now I need to find my MTA startup file so I open grpwise.ncf. After reviewing grpwise.ncf I know that my MTA startup file is named G4NETWAR.MTA and is located in sys:\grpwise7.



```
GRPWISE.NCF - Notepad
File Edit Format View Help
LOAD address space=MTA SYS:\GRPWISE7\GWMTA @G4NETWAR.MTA
LOAD SYS:\GRPWISE7\GWPOA @PO1.POA
```

At this point you should have enough information to complete the scanner wizard.

APPENDIX B: TCP/IP PORTS GWAVA 4 USES

GWAVA 4 has its own web services that allow access to the Management Console and QMS through a web browser.

GWAVA does have its own port assignments that you should be familiar with. The key port to remember is “49282”. An easy way to remember it is that 49282 spells out GWAVA on a touch-tone phone.

It is also important to note that if you do use SSL, you will need to have an SSL certificate and key generated by yourself or a CA.

Port	SSL Port	Name	Comment
49282	49382	GWAVAMAN	<ul style="list-style-type: none"> GWAVA Administration Console. If you use SSL, both ports 49282 AND 49382 must be opened. The Management Interface uses this port to communicate with your Web Browser.
49283	49383	GWAVA	<ul style="list-style-type: none"> Internal port used by GWAVA to communicate with the other GWAVA modules
49284	49384	ASENGINE	<ul style="list-style-type: none"> Internal port used by ASENGINE to report spam scanning results to GWAVA
49285	49385	GWAVA QMS	<ul style="list-style-type: none"> GWAVA Quarantine Management System Users will need to be able to web into this port to access their quarantine or release messages from the digest. Should be accessible from wherever users will be using GroupWise.

Once you have opened up port 49282 and 49285 in the firewall you can access the Management console and QMS from anywhere by using the server’s hostname with the port of the service you are trying to connect to added on.

You can use the hostname of the GWIA or one you’ve created yourself.

Example:
Mail.gwava.com:49282 accesses the Management Console.

Mail.gwava.com:49285 accesses QMS.

User Access to QMS

We suggest that you make a DNS entry that resolves to the physical server where you are installing GWAVA 4 both inside and outside of the firewall. Use THIS DNS address to refer to the GWAVA 4 server.

GWAVA 4 Access to the Internet

GWAVA 4 needs to access the Internet by http. This is how GWAVA stays updated, among other things. Please ensure that GWAVA 4 has access to the Internet. If a proxy is required, be sure to set that up in the GWAVA 4 administration console.

APPENDIX C: DISASTER RECOVERY

Disaster recovery is an important topic with all server software products.

Restoring GWAVA from backup

GWAVA 4 already has some backup mechanisms in place. Each critical piece of GWAVA has a backup directory. The key paths to look at (NetWare or Linux) are:

- ...\\config\\backup (Configuration DB backups)
- ...\\services\\qms\\backup (QMS DB backups)
- ...\\services\\asengine\\configs\\<config_id>\\backup (Spam Dictionary backups)
- ...\\services\\qms\\data\\storage\\ (your Quarantined messages are here)

To back up only critical data have your backup software only back up the directories listed above. The rest of the GWAVA directory structure isn't critical. If you use this method you'll need to restore the backed up zip files and then unzip the contents before GWAVA is fully restored.

For a complete backup, you can back up the entire GWAVA directory structure, but it isn't necessary. This will enable you to get GWAVA up and running faster but requires more disk space.

If you need to restore GWAVA 4, take the following steps:

- Reinstall GWAVA 4 from scratch.
- Shut down GWAVA (gwavadn or rcgwavaman stop)
- Find your backups and restore them to the GWAVA 4 directory structure.
- Reconnect your interfaces (GWIA, MTA, POA).
- Bring your GroupWise components back online.
- Start GWAVA 4 (gwavaup or rcgwavaman start). You should be back to the same configuration as before.

Reconnecting Interfaces

Once your GWAVA 4 system is running again, you will need to reconnect your GWIA and MTA.

GWIA

There are specific examples provided for Linux and NetWare. Basically, the GWIA.CFG needs the smtphome switch added to the bottom.

NetWare Example

Here is a NetWare example of the switch to include in the GWIA.CFG file (normally in SYS:\SYSTEM)

```
=====
;
/HN-"gwava.com"
/smtphome-data:/grpwise/gwdom/wpgate/gwia/3rd
```

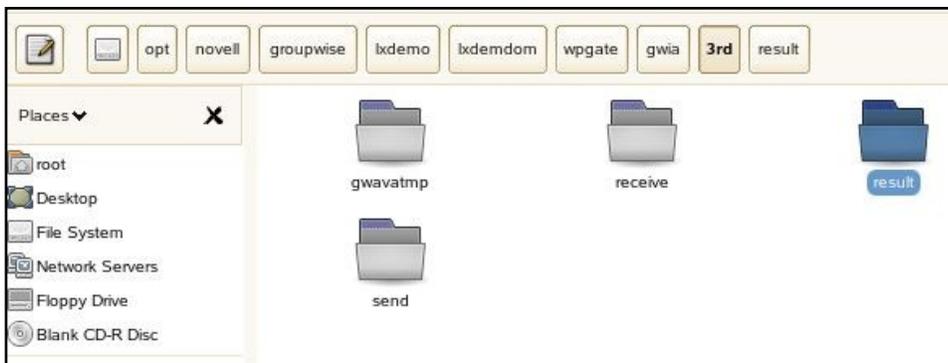
The /smtphome switch points to the directory "3rd"

Linux Example

Here is a Linux example of where to put the switch in the GWIA.CFG file, normally found in the /opt/novell/groupwise/agents/share directory.

```
-----
--smtphome /opt/novell/groupwise/lxdemo/lxdemdom/wpgate/gwia/3rd
```

For this example, here is the directory structure under GWIA. Note the path to this directory.



These are just examples. The domain can be anywhere you specify during the GroupWise installation.

MTA

If you have an MTA scanner, you will need to add these lines to the end of the <domain_name>.mta configuration file. Here is an example:

```
===== END OF FILE =====  
  
/vscan-EXCLUDE  
/vstype-MESSAGE  
/vsnamevalue-MTASieve  
/vsthread-50  
/vsdomain-DUMMY  
/vsport-7108  
/vsaction-DISCARD
```

POA

There is no need to do anything special to reconnect the POA. Assuming that IMAP is enabled on the POA and that the trusted application key is the same, it should just work as before.

The MTA startup file does not have to be the domain name, but it most often is. Look for something that ends with the extension 'MTA', it is most likely the startup file.

APPENDIX D: MOVING A GWAVA4 INSTALLATION

GWAVA 4 was designed to be portable. All of GWAVA's components are under the same directory. This means that you can move your GWAVA 4 installation to any other place and it will run the same as before.

Some Linux purists have noticed that GWAVA 4 does not store its logs in the /var/log directory as other traditional Linux applications. The main reason for this is the portability of the GWAVA 4 system.

To move a GWAVA 4 system the general steps are as follows:

- Shut down GWIA to stop the flow of messages through GWAVA
- Shut down the MTA if you have an MTA scanner
- Shut down GWAVA by using GWAVADN or rcgwavaman stop
- Copy the directory structure to its new location
- Edit AUTOEXEC.NCF to update the system path referenced to GWAVA
- Edit the paths for the system/startup files
- Start GWAVA 4
- Restart the GroupWise components that were stopped

The specific steps for moving GWAVA are outlined below.

Moving GWAVA on NetWare

In this example GWAVA will be moved from the SYS volume to the DATA volume.

Shut down the GWIA. Press 'ESC' and select 'Yes' from the GWIA console screen.

Shut down the MTA. Press 'ESC' and select 'Yes' from the MTA console screen.

Shut down GWAVA by typing 'GWAVADN' at the system console.

```
Loading Module GWAVAUSA.NLM [NOT MULTIPLE]
NW65:gwavadm
Unloading modules from address space GWAVA4.
GWUGWIA: Waiting for threads to exit...
Module GWUGWIA.NLM unloaded
ASENGINE: Waiting for threads to exit...
Module ASENGINE.NLM unloaded
GWAVAUPT: Waiting for threads to exit...
Module GWAVAUPT.NLM unloaded
GWAVAPDA: Waiting for threads to exit...
Module GWAVAPDA.NLM unloaded
GWURELAY: Waiting for threads to exit...
Module GWURELAY.NLM unloaded
AUTOBLOCKER: Waiting for threads to exit...
Module AUTOBLKR.NLM unloaded
GWAVA: Waiting for threads to exit...
Module GWAVA.NLM unloaded
Module CLXNLM32.NLM unloaded
Module CLNLM32.NLM unloaded
Module NLMLIB.NLM unloaded
Module REQUESTR.NLM unloaded
Module THREADS.NLM unloaded
Module LIBC.NLM unloaded
Unloading modules from address space GWAVA4CFG.
GWAVAQMS: Waiting for threads to exit...
```

Using your administration workstation, copy the entire directory structure at SYS:\OPT\BEGINFINITE\GWAVA4 to DATA:\OPT\BEGINFINITE\GWAVA4.

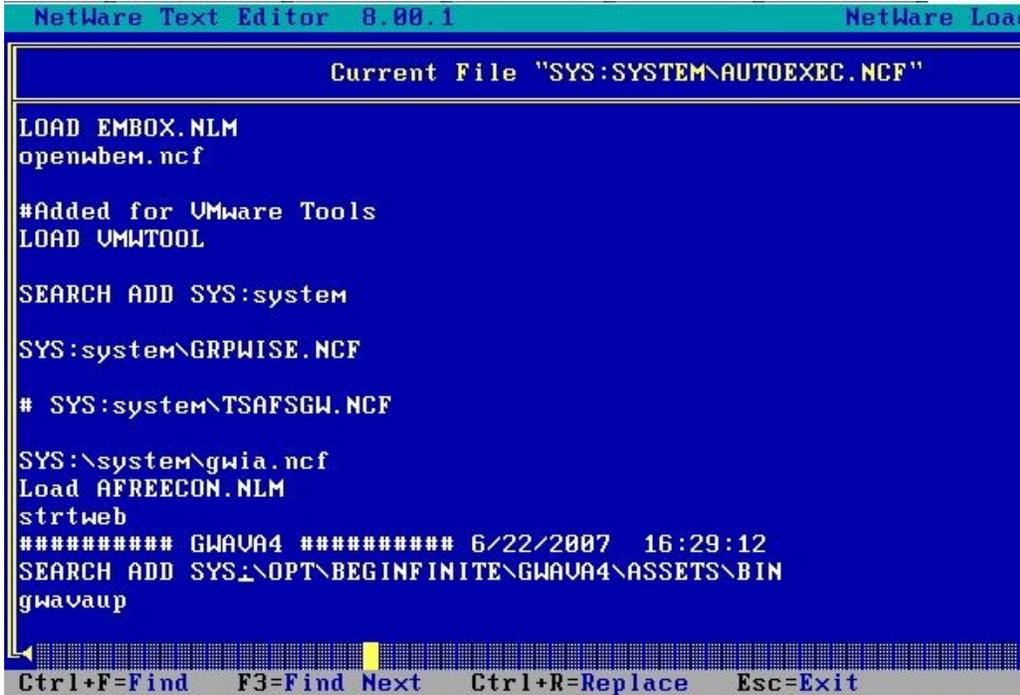
The GWAVA NCFs that must be edited are found in the GWAVA4 directory under assets\bin.

This same process could be used to move GWAVA to a cluster volume. You will need to make sure each server has an appropriate search path to the GWAVA4\assets\bin directory.

Everything that has to do with GWAVA is under that directory so you can move it without any issue.

The Autoexec.ncf must be edited first to reflect the new GWAVA location. At the system console type 'Edit AUTOEXEC.NCF'.

Look for the SYS:\OPT\Beginfinite... entry and change it to DATA:\OPT\Beginfinite...

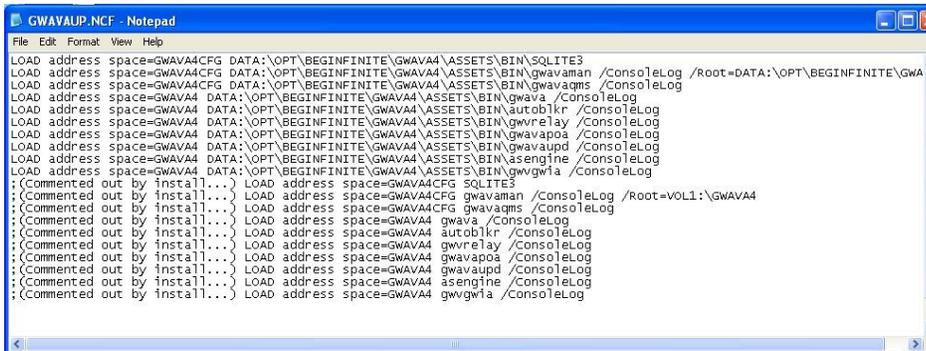


For example:



Now go to the DATA:\OPT\BEGINFINITE\GWAVA4\ASSETS\BIN directory, and find the GWAVAUP.NCF and RESTARTGWAVA.NCF files.

Edit these files by finding all references to the SYS: volume and change them to DATA: volume.



Edit the RESTARTGWAVA.ncf to also reflect the changed volume.



```
RESTARTGWAVA.NCF - Notepad
File Edit Format View Help
UNLOAD kill address space=GWAVA4
UNLOAD address space=GWAVA4CFG
DATA:\OPT\BEGINFINITE\GWAVA4\ASSETS\BIN\gwavaup.ncf
;(Commented out by install...) UNLOAD kill address space=GWAVA4
;(Commented out by install...) UNLOAD address space=GWAVA4CFG
;(Commented out by install...) gwavaup.ncf
```

Before you can start GWAVA 4, the search paths must be corrected on the server. Check the search paths by typing 'Search' at the server console.



```
NW65 :search
Search 1: SYS:SYSTEM\
Search 2: C:\NWUSER\ (default directory)
Search 3: C:\NWUSER\DRIVERS\
Search 4: SYS:\JAVA\BIN\
Search 5: SYS:\JAVA\NWGFX\BIN\
Search 6: SYS:\JAVA\NJCLU2\BIN\
Search 7: SYS:\NI\UPDATE\BIN\
Search 8: SYS:\BIN\
Search 9: SYS:\MYSQL\BIN\
Search 10: SYS:\PHP5\
Search 11: SYS:\PHP\
Search 12: SYS:\APACHE2\
Search 13: SYS:\XTIER\
Search 14: SYS:\TOMCAT\4\BIN\
Search 15: SYS:\SYSTEM\
Search 16: DATA:\OPT\BEGINFINITE\GWAVA4\ASSETS\BIN\
```

To fix the search path, first type 'search del 16' to remove the old search path and then 'search add DATA:\OPT\BEGINFINITE\GWAVA4\ASSETS\BIN'. Now you can run GWAVAUP.ncf and GWAVADN.ncf without issue.

Start GWAVA 4 by running 'GWAVAUP' at the system console.

Start the GroupWise agents that were stopped earlier.

Moving GWAVA4 on Linux

Before moving GWAVA, shut down GWAVA by opening a terminal and typing 'rcgwavaman stop'.



```
Gwava4Demo:~ # rcgwavaman stop

Shutting down /opt/beginfinite/gwava/assets/bin/gwv gwia      done
Shutting down /opt/beginfinite/gwava/assets/bin/autoblkr     done
Shutting down /opt/beginfinite/gwava/assets/bin/gwavaupd     done
Shutting down /opt/beginfinite/gwava/assets/bin/asengine     done
Shutting down /opt/beginfinite/gwava/assets/bin/gwavapoa     done
Shutting down /opt/beginfinite/gwava/assets/bin/gwvrelay     done
Shutting down /opt/beginfinite/gwava/assets/bin/gwava        done
Shutting down /opt/beginfinite/gwava/assets/bin/gwavaqms     done
Shutting down /opt/beginfinite/gwava/assets/bin/gwavaman     done
Gwava4Demo:~ #
```

Now that GWAVA is down you can move it to the new desired location. For our example we'll move GWAVA to /test/ instead of /opt/Beginfinite/.

We'll use the terminal to move GWAVA 4 by typing 'mv /opt/beginfinite/gwava /test/'.



```
Gwava4Demo:// # mv /opt/beginfinite/gwava/ /test/
```

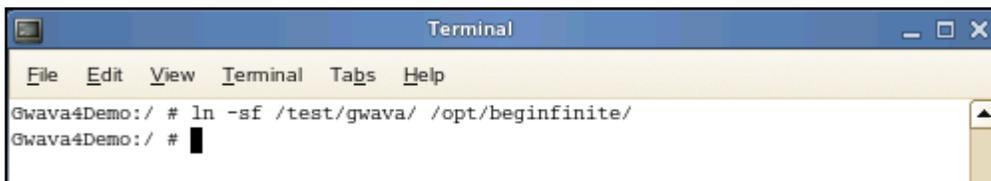
To verify that the move worked properly browse to the /test directory (cd /test) and then view the contents by using ls.



```
Gwava4Demo:~ # cd /test/
Gwava4Demo:/test # ls
gwava
```

Now that GWAVA is moved we can create a symbolic link so that the gwavaman script works properly.

To do that type 'ln -sf /test/gwava /opt/beginfinite/'.

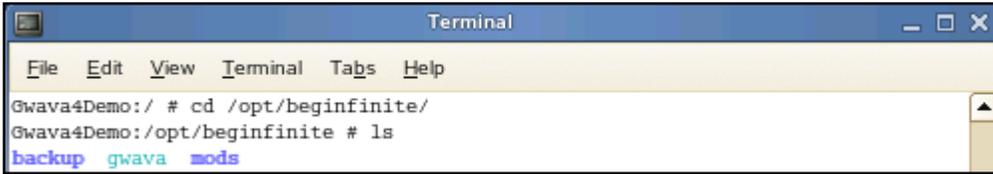


```
Gwava4Demo:// # ln -sf /test/gwava/ /opt/beginfinite/
Gwava4Demo:// #
```

This same process could be used to move GWAVA to a cluster resource. Each node would need to have the gwavaman start/stop script though.

The destination directory must already be created before moving GWAVA.

To verify that the link was made correctly, browse to the /opt/beginfinite directory (cd /opt/beginfinite) and then view the contents by typing 'ls'. The word gwava is light blue, because it is a symbolic link or a pointer to the actual file location.



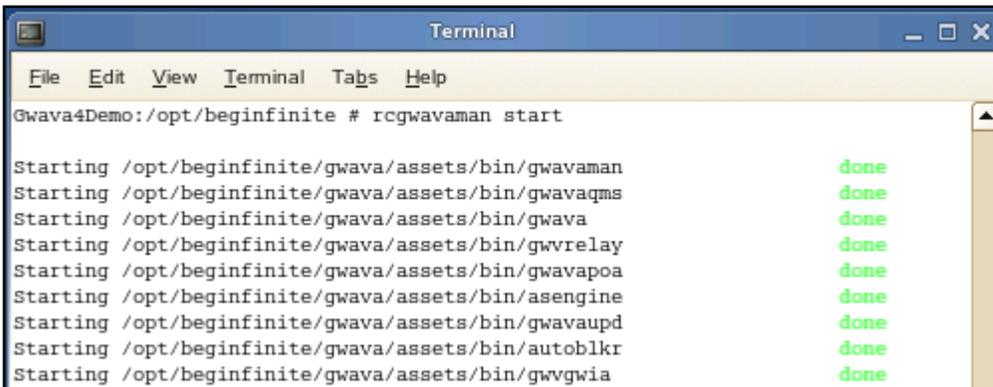
```
Terminal
File Edit View Terminal Tabs Help
Gwava4Demo:/ # cd /opt/beginfinite/
Gwava4Demo:/opt/beginfinite # ls
backup gwava mods
```

If you go into the 'gwava' (cd gwava) directory you'll see the normal file contents, but it is actually reading from the /test/gwava location.



```
Terminal
File Edit View Terminal Tabs Help
Gwava4Demo:/opt/beginfinite # ls
backup gwava mods
Gwava4Demo:/opt/beginfinite # cd gwava
Gwava4Demo:/opt/beginfinite/gwava # ls
assets config http restart.sh services temp
```

With that done you can now type 'rcgwavaman start' to start GWAVA in its new location.



```
Terminal
File Edit View Terminal Tabs Help
Gwava4Demo:/opt/beginfinite # rcgwavaman start

Starting /opt/beginfinite/gwava/assets/bin/gwavaman           done
Starting /opt/beginfinite/gwava/assets/bin/gwavaqms          done
Starting /opt/beginfinite/gwava/assets/bin/gwava             done
Starting /opt/beginfinite/gwava/assets/bin/gwvrelay          done
Starting /opt/beginfinite/gwava/assets/bin/gwavapoa          done
Starting /opt/beginfinite/gwava/assets/bin/asengine           done
Starting /opt/beginfinite/gwava/assets/bin/gwavaupd           done
Starting /opt/beginfinite/gwava/assets/bin/autoblkr           done
Starting /opt/beginfinite/gwava/assets/bin/gwvgwia            done
```

GWAVA is now in its new location and operating normally.

APPENDIX E: NOTES FOR BUSY LINUX SYSTEMS

By default, GWAVA uses 16 threads to scan messages. If for any reason you decide to change this value there is a Linux limitation you should know about.

By default Linux sets a limit on the number of files any process can handle at any given time. It is possible for GWAVA to run into this limit, on busy systems, if some changes are not made to the Linux system.

If mail halts and all of GWAVA is still running you may have ran into this issue.

To verify that this actually is the problem you are looking at:

Find the pid of asengine (**ps ax | grep asengine**).

Write down the pid.

Then type **lsof -p <asengine_pid>**.

The fourth column over is for FD (file descriptors) and if it shows any of:

- 1020r
- 1021r
- 1022r
- 1023r

Then we have run into the limit. So use these steps to correct it:

Adjustments:

Set kernel parameter fs.file-max to 65535:

Edit the file **/etc/sysctl.conf** and add:

```
fs.file-max = 65535
```

Set the hard limit for max number of open files to 65535:

Edit the file **/etc/security/limits.conf** and add:

```
*      soft    nofile  65535
*      hard    nofile  65535
```

Edit the file **/etc/pam.d/login** and add:

```
session required /lib/security/pam_limits.so
session required /lib/security/pam_unix.so
```

Set the ulimit for all shells

Edit the file: **/etc/profile.local** and add:

```
ulimit -n 65535
```

Load the new parameters:

Type the following at a terminal prompt.

```
'sysctl -p /etc/sysctl.conf'
```

Restart GWAVA by typing the following at a terminal prompt.

```
'rcgwavaman restart'
```

If you are still experiencing this pausing after making the changes, restart the server.