

# Novell GroupWise® Async Gateway

2.0

July 1, 2004

[www.novell.com](http://www.novell.com)

---

INSTALLATION AND ADMINISTRATION  
GUIDE



Novell®

## Legal Notices

Novell, Inc. makes no representations or warranties with respect to the contents or use of this documentation, and specifically disclaims any express or implied warranties of merchantability or fitness for any particular purpose. Further, Novell, Inc. reserves the right to revise this publication and to make changes to its content, at any time, without obligation to notify any person or entity of such revisions or changes.

Further, Novell, Inc. makes no representations or warranties with respect to any software, and specifically disclaims any express or implied warranties of merchantability or fitness for any particular purpose. Further, Novell, Inc. reserves the right to make changes to any and all parts of Novell software, at any time, without any obligation to notify any person or entity of such changes.

You may not export or re-export this product in violation of any applicable laws or regulations including, without limitation, U.S. export regulations or the laws of the country in which you reside.

Copyright © 2004 Novell, Inc. All rights reserved. No part of this publication may be reproduced, photocopied, stored on a retrieval system, or transmitted without the express written consent of the publisher.

Novell, Inc.  
404 Wyman Street, Suite 500  
Waltham, MA 02451  
U.S.A.

[www.novell.com](http://www.novell.com)

GroupWise Async Gateway 2.0 Installation and Administration Guide  
[July 1, 2004](#)

**Online Documentation:** To access the online documentation for this and other Novell products, and to get updates, see [www.novell.com/documentation](http://www.novell.com/documentation).

## **Novell Trademarks**

ConsoleOne is a registered trademark of Novell, Inc. in the United States and other countries.

eDirectory is a trademark of Novell, Inc.

GroupWise is a registered trademark of Novell, Inc. in the United States and other countries.

ManageWise is a registered trademark of Novell, Inc. in the United States and other countries.

NLM is a trademark of Novell, Inc.

NetWare is a registered trademark of Novell, Inc. in the United States and other countries.

NetWare Loadable Module is a trademark of Novell, Inc.

Novell is a registered trademark of Novell, Inc. in the United States and other countries.

SUSE is a registered trademark of SUSE AG, a Novell company.

ZENWorks is a registered trademark of Novell, Inc. in the United States and other countries.

## **Third-Party Trademarks**

All third-party trademarks are the property of their respective owners.



# Contents

- About This Guide** **11**
  
- 1 What is the GroupWise Async Gateway?** **13**
  
- 2 Async Gateway System Requirements** **15**
  - NetWare Async Gateway Requirements . . . . . 15
    - Hardware and Software System Requirements on NetWare . . . . . 15
    - Required NLM Programs . . . . . 16
    - Optional NLM Programs . . . . . 16
    - Memory Requirements on NetWare . . . . . 17
  - Windows Async Gateway Requirements . . . . . 17
  
- 3 Installing the Async Gateway** **19**
  - Planning the GroupWise Async Gateway . . . . . 19
    - Determining Async Connections . . . . . 19
    - Selecting a Serial Port Configuration . . . . . 20
    - Gathering Modem Information . . . . . 20
    - Gathering I/O Port Driver Information for NetWare . . . . . 21
    - Determining Where to Install the Async Gateway Administrator Snap-In to ConsoleOne . . . . . 21
    - Selecting a Domain for the Async Gateway . . . . . 22
    - Deciding Where to Install the Async Gateway Software . . . . . 23
    - Choosing a Gateway Name . . . . . 23
    - Configuring the Windows Async Gateway . . . . . 23
    - Determining Local Async Link Information . . . . . 25
    - Gathering Remote Async Link Information . . . . . 25
    - Setting Up a Calling Schedule (Optional) . . . . . 26
  - Meeting Installation Prerequisites . . . . . 26
    - Ensuring ConsoleOne Readiness . . . . . 27
    - Ensuring Domain/MTA Availability . . . . . 27
    - Ensuring File System Access . . . . . 27
    - Preparing Ports for the NetWare Async Gateway . . . . . 27
    - Preparing Ports for the Windows Async Gateway . . . . . 28
  - Installing the Async Gateway Software . . . . . 29
  - Async Gateway Installation and Configuration Worksheets . . . . . 31
    - Async Connection and Modem Worksheet . . . . . 31
    - Async Gateway Installation Worksheet . . . . . 31
    - Async Gateway Link Worksheet . . . . . 33
  
- 4 Defining Async-to-Async Connections** **35**
  - Defining Ports for Modems . . . . . 35
  - Defining a Domain Connection . . . . . 36
  
- 5 Running the Async Gateway** **39**
  - Starting the Async Gateway . . . . . 39
    - Starting the NetWare Async Gateway . . . . . 39
    - Starting the Windows Async Gateway . . . . . 41

Testing the Async Gateway . . . . .	42
Helping Users . . . . .	42
<b>6 Configuring the Async Gateway</b>	<b>43</b>
Customizing Gateway Configuration . . . . .	43
Defining Gateway Information . . . . .	43
Defining Gateway Time Settings . . . . .	44
Defining Log Settings . . . . .	45
Defining Optional Gateway Settings . . . . .	47
Defining Gateway Administrators . . . . .	48
Defining User Access to the Gateway . . . . .	49
Using the Access Control File (access.cfg) . . . . .	50
Applying Access Control Settings to Individual Users . . . . .	54
Simplifying Addressing . . . . .	55
Addressing Concepts . . . . .	56
Creating a Customized Addressing Rule . . . . .	56
Creating an External Domain Structure . . . . .	59
Merging GroupWise Domains . . . . .	64
Setting Up Gateway Accounting . . . . .	65
Enabling Accounting . . . . .	65
Selecting an Accountant . . . . .	66
Understanding the Accounting File . . . . .	66
Supporting GroupWise Remote Users . . . . .	67
GroupWise Remote Concepts . . . . .	68
Defining a GroupWise Remote Profile . . . . .	68
Backing Up and Recovering the Gateway Database . . . . .	69
<b>7 Monitoring the Async Gateway</b>	<b>71</b>
Using the Async Gateway Console . . . . .	71
Description . . . . .	72
Status . . . . .	72
Statistics . . . . .	72
Logging . . . . .	73
Menu Functions . . . . .	73
Using the Async Gateway Web Console . . . . .	75
Setting Up the Async Gateway Web Console . . . . .	76
Accessing the Async Gateway Web Console . . . . .	77
Monitoring the Async Gateway from the Web Console . . . . .	78
Using Async Gateway Log Files . . . . .	82
Configuring Log Settings and Switches . . . . .	82
Viewing the Log File . . . . .	83
Using SNMP Monitoring Programs . . . . .	83
Enabling SNMP Support in a NetWare Environment . . . . .	83
Enabling SNMP Support in a Windows Environment . . . . .	83
Understanding Async Gateway Error Messages . . . . .	86
<b>8 Optimizing the Async Gateway</b>	<b>87</b>
Scripting for the GroupWise Async Gateway . . . . .	87
Script File Details . . . . .	87
Performing Queue Maintenance . . . . .	91
Using Forced Dialing . . . . .	92
Forced Dialing in the NetWare Async Gateway . . . . .	92
Forced Dialing in the Windows Async Gateway . . . . .	92
<b>9 Using Async Gateway Startup Switches</b>	<b>93</b>
/bkupdir . . . . .	94

/color (NetWare Only)	94
/help	94
/home	95
/httppassword	95
/httpport	95
/httprefresh	95
/httpuser	96
/log	96
/logdays	96
/loglevel	96
/logmax	97
/mono (NetWare Only)	97
/password (NetWare Only)	97
/recv	97
/send	97
/single	98
/user (NetWare Only)	98
/work	98

## **A Asynchronous Input/Output Drivers 99**

HardWare Descriptions	100
AIO TCP for IP Drivers (aiotcp.nlm)	100
AIO TSM for ISDN Drivers (aiotsm.nlm)	100
Arnet Corporation 8 Port SmartPort (aiosdrv.nlm)	100
Arnet Corporation 8-128 Port ComStack (aiocsdv.nlm)	100
Artisoft Central Station Printer Driver (aiocsprt.nlm)	100
Computone Corporation 16 Port IntelliPort (aioctone.nlm)	100
Control 4/8/16 Port Hostess-186 (aiohst.nlm)	101
Control 4 Port RocketPort Adapter (aiorckt.nlm)	101
Control 8 Port RocketPort Adapter (aiorckt.nlm)	101
Control 16 Port RocketPort Adapter (aiorckt.nlm)	101
Control 32 Port RocketPort Adapter (aiorckt.nlm)	101
Cubix 8 Port MP2008 Multiport Comm board (aiocubix.nlm)	101
Digi 1-512 Port Terminal Server (aiodgts.nlm)	101
Digi 2/4/8/16 Port PX/Xe,PC/Xi,MC/Xi (aiodgxi.nlm)	101
Digi 8-128 Port PC/Xm and PC/Xem (aiodgxm.nlm)	101
Digi 16-128 Port C/X Cluster (aiodgxc.nlm)	102
Digi EPC/X System (aiodgepc.nlm)	102
Equinox SSP 1-1024 Port Super Serial Port (aioeqnx.nlm)	102
Fujitsu FMR 1-5 Port Comx (Japan) (aiocomxf.nlm)	102
Hayes 1-2 Port ESP Comm Accelerator (aioespca.nlm)	102
Hayes 2 Port Enhanced Serial Port (aioesp.nlm)	102
IBM 1-4 Port Comx (ISA,EISA,MCA) (aiocomx.nlm)	102
IBM Artic (aioartic.nlm)	102
Microdyne 4 Port WNIM+ (aiownim.nlm)	102
Microdyne 8 Port WNIM3000 (aiownim3.nlm)	103
Multitech ISI608 8 Port (ISA) (aioisix.nlm)	103
Newport Systems 8 Port ACI (aioaci.nlm)	103
Newport Systems XCI (aioxc.nlm)	103
Stallion 4 Port Brumby (aiostln.nlm)	103
Stallion 4 Port ONboard (aiostln.nlm)	103
Stallion 4 Port ONboard2 (aiostln.nlm)	103
Stallion 4 Port ONboard/E (aiostln.nlm)	103
Stallion 8 Port ONboard (aiostln.nlm)	103
Stallion 8 Port ONboard2 (aiostln.nlm)	104
Stallion 8 Port ONboard/E (aiostln.nlm)	104

Stallion 8-64 Port EasyConnection (EISA) (aioeasy.nlm) . . . . .	104
Stallion 8-64 Port EasyConnection (ISA) (aioeasy.nlm) . . . . .	104
Stallion 8-64 Port EasyConnection (MCA) (aioeasy.nlm) . . . . .	104
Technology Concepts 2 Port PCC/MX (aiotcl.nlm) . . . . .	104
Technology Concepts 8 Port PCC/8i (aiotcl.nlm) . . . . .	104
Technology Concepts 8 Port Superport-186 (aiotcl.nlm) . . . . .	104
Virtual AIO driver (aiovaio.nlm) . . . . .	104
X.25 PAD (aiopad.nlm) . . . . .	105
Xircom 4/8 Port Access Server (aioxrcm1.nlm) . . . . .	105
<b>B Creating a Modem Definition . . . . .</b>	<b>107</b>
Creating a New Modem Definition . . . . .	107
Creating a Modem Initialization String . . . . .	108
<b>C Async Gateway Error Messages . . . . .</b>	<b>111</b>
Error Message List . . . . .	111
<b>D Async Gateway Troubleshooting Strategies . . . . .</b>	<b>113</b>
Troubleshooting the Gateway . . . . .	113
Connection Suggestions . . . . .	113
Port and Modem Suggestions . . . . .	114
Specific Problems . . . . .	114
Troubleshooting Modems . . . . .	114
Creating a Modem Initialization String . . . . .	115
Using Aioterm.nlm to Troubleshoot the NetWare Async Gateway . . . . .	115
Troubleshooting GroupWise Remote . . . . .	116
Setup and Configuration Problems . . . . .	116
User Hardware and Configuration Problems . . . . .	116
Specific Item or Request Problems . . . . .	117
Connection Problems . . . . .	117
User Database Problems . . . . .	117
Troubleshooting the Script File . . . . .	117
The Gateway Is Not Dialing . . . . .	118
The Gateway Is Not Answering . . . . .	118
The Script Is Not Executing . . . . .	118
<b>E Async Gateway Directory Structures . . . . .</b>	<b>119</b>
Async Gateway Directory Structure . . . . .	119
<i>domain</i> \wpgate\async directory . . . . .	120
000.prc directory . . . . .	120
wpcsin directory . . . . .	121
wpcout directory . . . . .	121
gwin directory . . . . .	121
gwout directory . . . . .	122
gwhold directory . . . . .	122
gwprob directory . . . . .	122
async.db file . . . . .	122
async.dc file . . . . .	122
wpmodem.db file . . . . .	123
ngwasync.mib file . . . . .	123
wp_ge_xx_trs file . . . . .	123
GroupWise Remote Directory Structure . . . . .	123
<b>F Async Gateway Message Flow Diagrams . . . . .</b>	<b>125</b>
Message Delivery Between GroupWise Domains . . . . .	125
User . . . . .	125
Post Office Agent . . . . .	126



Message Transfer Agent . . . . .	126
Async Gateway . . . . .	126
Process 1: User Sends Message . . . . .	126
Process 2: MTA Queues Message . . . . .	126
Process 3: Async Gateway Transfers Message . . . . .	126
Process 4: Async Gateway Queues Message . . . . .	126
Process 5: MTA Queues Message . . . . .	126
Process 6: POA Updates Message . . . . .	126
Process 7: POA Generates Message Status . . . . .	126
Process 8: MTA Delivers Message Status . . . . .	127
Process 9: Async Gateway Transfers Message Status . . . . .	127
Process 10: Async Gateway Transfers Message Status . . . . .	127
Process 11: MTA transfers Message Status . . . . .	127
Process 12: POA Updates Database . . . . .	127
GroupWise Remote to Async Gateway Message Delivery . . . . .	128
Process 1: Remote User Sends Message . . . . .	128
Process 2: GroupWise Client Initiates Modem Connection . . . . .	128
Process 3: Async Gateway Transfers Message . . . . .	128
Process 4: MTA Delivers Message . . . . .	128
Process 5: POA Updates Master Mailbox . . . . .	128
Process 6: POA Generates Message Status . . . . .	129
Process 7: MTA Delivers Message Status . . . . .	129
Process 8: Async Gateway Delivers Message . . . . .	129
Message Flow from Async Gateway to Async Gateway . . . . .	130
Stage 1: Sender . . . . .	130
Stage 2: Sender's GroupWise Client . . . . .	130
Stage 3: MTA in Sender's Domain . . . . .	130
Stage 4: Async Gateway in Sender's Domain . . . . .	131
Stage 5: Async Gateway in Sender's Domain . . . . .	131
Stage 6: Modem Connection Between Gateways . . . . .	131
Stage 7: Async Gateway in Recipient's Domain . . . . .	131
Stage 8: Async Gateway in Recipient's Domain . . . . .	131
Stage 9: MTA in Recipient's Domain . . . . .	131
Stage 10: POA in Recipient's Post Office . . . . .	131
Stage 11: Recipient's GroupWise Client . . . . .	132
Stage 12: Recipient . . . . .	132
Stage 13: Recipient's GroupWise Client . . . . .	132
Stage 14: MTA in Recipient's Domain . . . . .	132
Stage 15: Async Gateway in Recipient's Domain . . . . .	132
Stage 16: Async Gateway in Recipient's Domain . . . . .	132
Stage 17: Modem Connection Between Gateways . . . . .	132
Stage 18: Async Gateway in Sender's Domain . . . . .	133
Stage 19: Async Gateway in Sender's Domain . . . . .	133
Stage 20: MTA in Sender's Domain . . . . .	133
Stage 21: POA in Sender's Post Office . . . . .	133
Stage 22: Sender . . . . .	133
Message Flow from GroupWise Remote to the Async Gateway . . . . .	134
Stage 1: Remote User . . . . .	134
Stage 2: Remote User's GroupWise Client . . . . .	134
Stage 3: Remote User's GroupWise Client . . . . .	134
Stage 4: Remote User's GroupWise Client (Modem Connection) . . . . .	135
Stage 5: Async Gateway . . . . .	135
Stage 6: Async Gateway . . . . .	135
Stage 7: MTA in Remote User's Domain . . . . .	135
Stage 8: POA in Remote User's Post Office . . . . .	135

Stage 9: MTA in Remote User's Domain . . . . .	136
Stage 10: Async Gateway . . . . .	136
Stage 11: Async Gateway . . . . .	136
Stage 12: Async Gateway (Modem Connection) . . . . .	136
Stage 13: Remote User's GroupWise Client. . . . .	136
Stage 14: Remote User's GroupWise Client. . . . .	136
Stage 15: Remote User . . . . .	136

# About This Guide

This Novell® *GroupWise® Async Gateway Installation and Administration Guide* explains how to install, configure, and run the GroupWise Async Gateway. The guide is intended for administrators with a working knowledge of GroupWise. The guide is divided into the following sections:

- ◆ Chapter 1, “What is the GroupWise Async Gateway?,” on page 13
- ◆ Chapter 2, “Async Gateway System Requirements,” on page 15
- ◆ Chapter 3, “Installing the Async Gateway,” on page 19
- ◆ Chapter 4, “Defining Async-to-Async Connections,” on page 35
- ◆ Chapter 5, “Running the Async Gateway,” on page 39
- ◆ Chapter 6, “Configuring the Async Gateway,” on page 43
- ◆ Chapter 7, “Monitoring the Async Gateway,” on page 71
- ◆ Chapter 8, “Optimizing the Async Gateway,” on page 87
- ◆ Chapter 9, “Using Async Gateway Startup Switches,” on page 93
- ◆ Appendix A, “Asynchronous Input/Output Drivers,” on page 99
- ◆ Appendix B, “Creating a Modem Definition,” on page 107
- ◆ Appendix C, “Async Gateway Error Messages,” on page 111
- ◆ Appendix D, “Async Gateway Troubleshooting Strategies,” on page 113
- ◆ Appendix E, “Async Gateway Directory Structures,” on page 119
- ◆ Appendix F, “Async Gateway Message Flow Diagrams,” on page 125

## Additional Documentation

For additional GroupWise documentation, see the following guides at the [Novell GroupWise 6.5 documentation Web site \(http://www.novell.com/documentation/gw65\)](http://www.novell.com/documentation/gw65):

- ◆ *Installation Guide*
- ◆ *Administration Guide*
- ◆ *Multi-System Administration Guide*
- ◆ *Interoperability Guide*
- ◆ *Troubleshooting Guides*
- ◆ *GroupWise Windows Client User Guide*
- ◆ *GroupWise WebAccess Client User Guide*
- ◆ *GroupWise Cross-Platform Client User Guide*

## **Documentation Updates**

For the most recent version of the *GroupWise Async Gateway 2.0 Installation and Administration Guide*, visit the [Novell GroupWise 6.5 documentation Web site \(http://www.novell.com/documentation/gw65\)](http://www.novell.com/documentation/gw65).

## **Documentation Conventions**

In Novell documentation, a greater-than symbol (>) is used to separate actions within a step and items in a cross-reference path.

A trademark symbol (®, ™, etc.) denotes a Novell trademark. An asterisk (\*) denotes a third-party trademark.

## **User Comments**

We want to hear your comments and suggestions about this manual and the other documentation included with GroupWise. To contact us, send e-mail to [proddoc@novell.com](mailto:proddoc@novell.com).

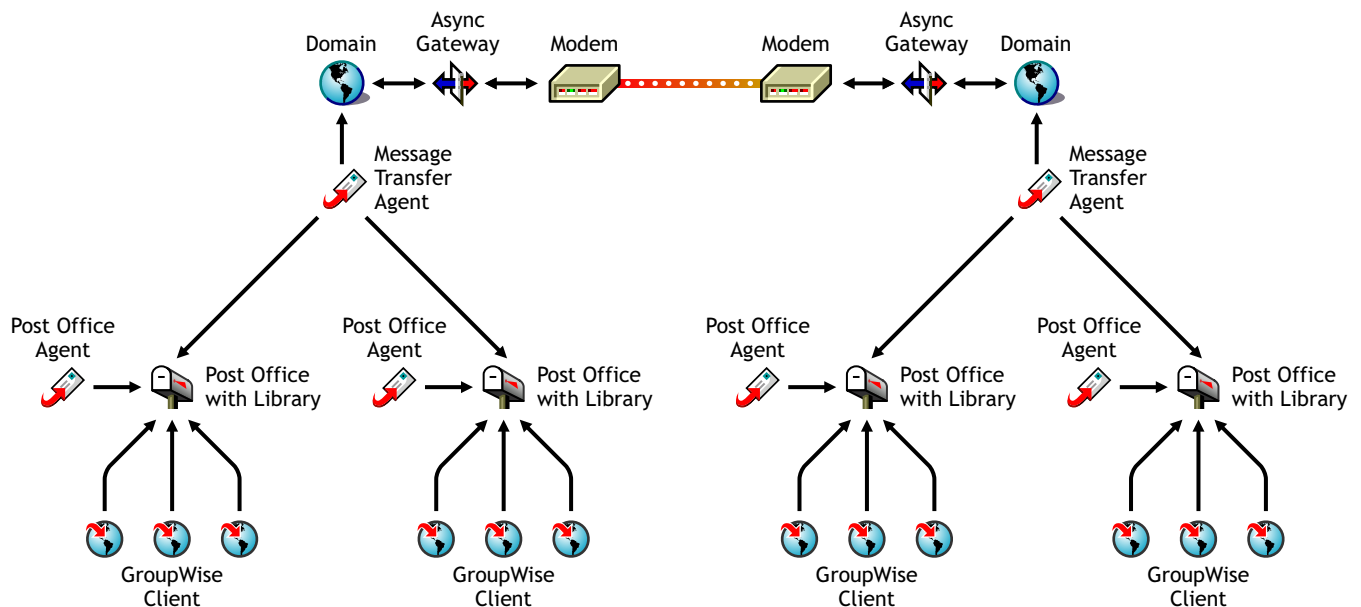
# 1

## What is the GroupWise Async Gateway?

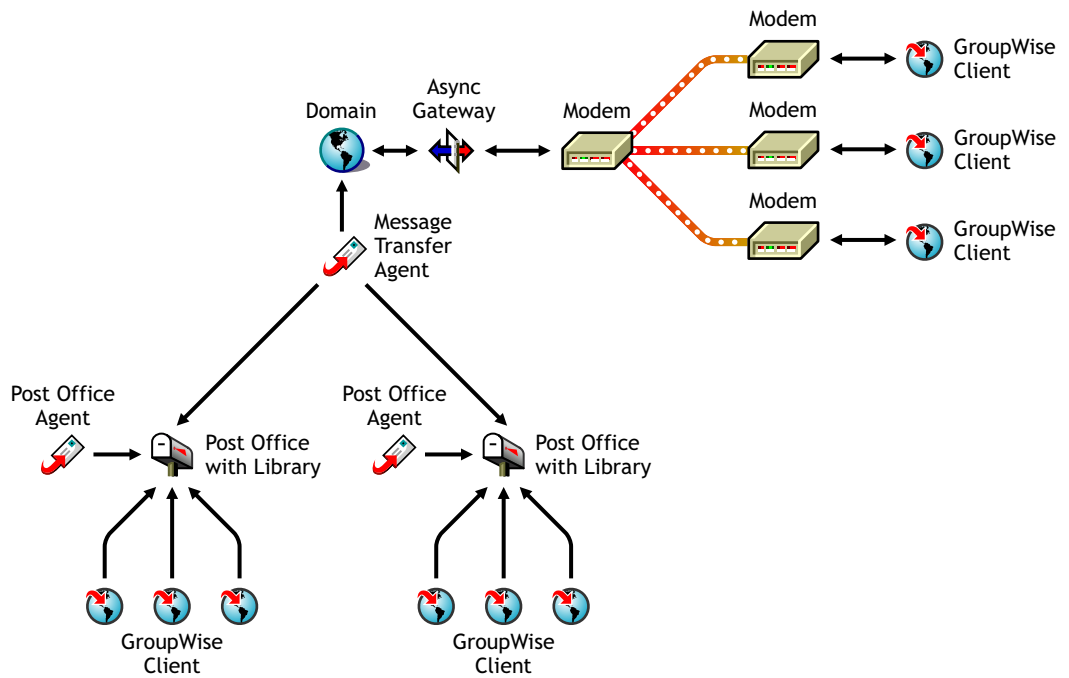
The Novell® GroupWise® Async Gateway connects GroupWise domains and users by way of modems and phone lines.

When you connect GroupWise domains using the Async Gateway, the domains can be part of your local GroupWise system, or you can use the Async Gateway to connect domains in separate GroupWise systems so that the GroupWise systems are connected using the Async Gateway. The Async Gateway can be installed in a primary domain or a secondary domain. The Async Gateway enables the MTAs for the domains to communicate with each other over phone lines.

The following diagram illustrates that the Async Gateway must be installed in both domains that it links together.



When you connect GroupWise users to your GroupWise system using the Async Gateway, they must run the GroupWise Windows client in Remote mode, as described in [“Using Remote Mode”](#) in the *GroupWise 6.5 Windows Client User Guide*. The Async Gateway enables the Windows\* client to access users’ GroupWise mailboxes over phone lines. This can be convenient for users who want to access their GroupWise mailboxes from a hotel room or from home.



If your GroupWise system is large or supports a heavy message load, you might need more than one Async Gateway. You can install additional Async Gateways in the same domain or in different domains, as needed.

# 2

## Async Gateway System Requirements

Before installing the Novell® GroupWise® Async Gateway, make sure that the NetWare or Windows server where you plan to install it meets the Async Gateway system requirements.

- ♦ “NetWare Async Gateway Requirements” on page 15
- ♦ “Windows Async Gateway Requirements” on page 17

### NetWare Async Gateway Requirements

- ♦ “Hardware and Software System Requirements on NetWare” on page 15
- ♦ “Required NLM Programs” on page 16
- ♦ “Optional NLM Programs” on page 16
- ♦ “Memory Requirements on NetWare” on page 17

### Hardware and Software System Requirements on NetWare

Component	Recommendation
Processor	Server-class PC with a Pentium* II or higher processor (1 to 16 ports) Server-class PC with a Pentium III or higher processor (17 to 32 ports)
Disk Space	9 MB
NetWare	4.2, 5.1, or 6.x
Modem	AT command-set-compatible, with error correction protocol, 14400 baud or faster
GroupWise System	5.5 or later
ConsoleOne®	1.3.5 or later (with a GroupWise 6.x system)
NetWare Administrator	(with a GroupWise 5.5 system)

The 9-megabyte requirement for installation includes space for the gateway program, the library NLM™, and miscellaneous GroupWise gateway files. Additional hard disk space is required for a file use area, where GroupWise messages are temporarily held. The amount of space needed is directly proportional to the amount of message traffic your GroupWise system handles.

## Required NLM Programs

NetWare Loadable Modules™ (NLM programs) generally reside on your NetWare server in the `sys:\system` directory. The NetWare Async Gateway requires, and automatically loads, the following NLM programs, if they are not already loaded.

NLM Name	Description
<code>aio.nlm</code>	Asynchronous Input/Output (AIO) communication NLM. Should be present in <code>sys:\system</code> as part of NetWare. Must be loaded as a link between NetWare and other AIO device drivers that are configured as NLM programs.
<code>clib.nlm</code>	C Language Runtime Library used for NetWare services. Should already be present in <code>sys:\system</code> as part of NetWare.
<code>gwenn3.nlm</code>	GroupWise Agent Engine NLM. Might be present on your server if other GroupWise components have already been installed. It is included with the Async Gateway to ensure that it is in the <code>sys:\system</code> directory.
<code>nwsnut.nlm</code>	NetWare screens NLM. Should already be present in <code>sys:\system</code> as part of NetWare.

## Optional NLM Programs

The following NLM programs might be required to run the NetWare Async Gateway, depending on the hardware configuration of your system. The table below lists some of the most common port driver NLM programs you have the option of loading. There are many other AIO-compliant NLM programs you can load according to the hardware you buy or other system needs. For a more complete listing of AIO-compliant NLM programs, see [Appendix A, “Asynchronous Input/Output Drivers,”](#) on page 99.

NLM Name	Description
<code>aiocomx.nlm</code>	The default communication port driver for use with your PC. Use if you intend to use the existing communication ports (COM1, COM2) in your NetWare server without adding a multiport expansion board.
<code>aiodgxi.nlm</code>	The Digi* device driver for the DigiCHANNEL PC/Xi (16- port) multiport expansion board.
<code>aiodgxem.nlm</code>	The Digi device driver for the DigiCHANNEL PC/Xem (32-port) multiport expansion board.



## Memory Requirements on NetWare

The following table lists the memory requirements for various hardware and software components of the NetWare Async Gateway. Analyze the components your server needs and then compare them against the server's memory capabilities to determine if a memory upgrade is required.

Components	Minimum Memory Requirement
Basic one-port configuration (ngwasync.nlm)	510 KB
Each additional port	57 KB
gwenn3.nlm (Required)	6 MB
aio.nlm (Required)	6 KB
aiocomx.nlm	17 KB
aiodgmem.nlm	2 KB
aiodgxi.nlm	80 KB
aiodgxem.nlm	80 KB

## Windows Async Gateway Requirements

The following table shows the minimum recommendations for hardware and software system components on a Windows server.

Component	Recommended Requirements
Processor	80486
Windows	2000 with the latest Service Pack
Memory	64 MB
Available Disk Space	20 MB
Modem	AT command-set-compatible, with error correction protocol, 14400 baud or faster
GroupWise System	5.5 or later



# 3

## Installing the Async Gateway

The Novell® GroupWise® Async Gateway can be set up in a GroupWise primary domain or in a GroupWise secondary domain. Make sure you understand the Async Gateway requirements noted in [Chapter 2, “Async Gateway System Requirements,” on page 15](#) before you install and configure the Async Gateway software.

- ◆ [“Planning the GroupWise Async Gateway” on page 19](#)
- ◆ [“Meeting Installation Prerequisites” on page 26](#)
- ◆ [“Installing the Async Gateway Software” on page 29](#)
- ◆ [“Async Gateway Installation and Configuration Worksheets” on page 31](#)

### Planning the GroupWise Async Gateway

Perform the following tasks plan your Async Gateway installation:

- ◆ [“Determining Async Connections” on page 19](#)
- ◆ [“Selecting a Serial Port Configuration” on page 20](#)
- ◆ [“Gathering Modem Information” on page 20](#)
- ◆ [“Gathering I/O Port Driver Information for NetWare” on page 21](#)
- ◆ [“Determining Where to Install the Async Gateway Administrator Snap-In to ConsoleOne” on page 21](#)
- ◆ [“Selecting a Domain for the Async Gateway” on page 22](#)
- ◆ [“Deciding Where to Install the Async Gateway Software” on page 23](#)
- ◆ [“Choosing a Gateway Name” on page 23](#)
- ◆ [“Configuring the Windows Async Gateway” on page 23](#)
- ◆ [“Determining Local Async Link Information” on page 25](#)
- ◆ [“Gathering Remote Async Link Information” on page 25](#)
- ◆ [“Setting Up a Calling Schedule \(Optional\)” on page 26](#)

### Determining Async Connections

The number of async connections you use for GroupWise depends on the amount of message traffic that passes through the connection. It also depends on your available hardware. You must arrange for a serial port and a modem plugged into an analog phone line for each connection. Keep in mind that each connection can be used by several GroupWise client users in Remote mode or by several MTAs when connecting domains. If message traffic to and from remote sites is heavy,

you can increase the number of connections (up to 32) or the number of Async Gateways that you install.

---

**ASYNC CONNECTION AND MODEM WORKSHEET**

---

Under **Item 1: Number of Connections**, record the number of async connections you need for your GroupWise system.

---

## Selecting a Serial Port Configuration

After you determine the number of connections you need, you must arrange for a serial port and a modem plugged into an analog phone line for each connection. If one or two serial ports are adequate for your GroupWise message traffic, you can use the existing serial ports on the server. If message traffic is heavy, you may need to increase the number of connections. The Async Gateway supports 4-, 8-, 16- and 32-port communication through a multiport serial expansion board or multiple, daisy-chained boards.

---

**ASYNC CONNECTION AND MODEM WORKSHEET**

---

Under **Item 2: Serial Port Configuration**, mark whether you're going to use existing serial ports or multiport expansion boards.

---

## Gathering Modem Information

In order to attach a modem to a serial port, you need to know the following information about the serial port and the modem:

- ◆ **Serial Port Name:** The name of the serial port as specified by the device driver (for example, com1).
- ◆ **Modem Name:** The name of the modem definition for your particular modem. If your system does not have an appropriate modem definition for your modem, see [Appendix B, "Creating a Modem Definition,"](#) on page 107.
- ◆ **Baud Rate:** The transmission speed of an asynchronous modem measured at the port to which it is connected.
- ◆ **Flow Control:** The communication method between the modem and the port. The Async Gateway uses the standard value CTS/RTS. The modem raises the CTS (Clear to Send) signal when it is ready to receive data. The serial port raises the RTS (Request to Send) signal when it is ready to receive data.
- ◆ **Character Length:** The number of bits in a byte, typically 8.
- ◆ **Parity Bit:** A method of checking that data has been transmitted accurately. You do not need to use a parity bit for the Async Gateway unless you are connecting to a system that does not support an 8-bit data path.
- ◆ **Stop Bit:** A bit that indicates that a byte has just been transmitted. Every byte of data is preceded by a start bit and followed by a stop bit. You can use the standard 1 stop bit for the Async Gateway unless you are connecting to a system that uses 2 stop bits.

---

**ASYNC CONNECTION AND MODEM WORKSHEET**

---

Under **Item 3: Modem Information**, fill in the port and modem information.

---

## Gathering I/O Port Driver Information for NetWare

If you are installing the NetWare<sup>®</sup> Async Gateway, some additional information must be determined:

- ◆ **Hardware Type:** If you load only one communication port driver, you do not need to define a hardware type. If you load multiple port drivers, each driver must be identified by a unique name referred to as a hardware type. The driver must be AIO compliant.

When two or more multiple IO boards are installed, list the hardware number assigned by Novell to the AIO-compliant driver you have installed. For more information, including driver names, their hardware type (number), and the number of ports they support, see [Appendix A, “Asynchronous Input/Output Drivers,” on page 99](#).

- ◆ **Board Number:** If you load only one communication port driver, you do not need to define a port number. If you load multiple drivers or add ports, you need a unique board number for each port definition.

When two or more multiple IO boards are installed, you must provide a memory address (usually d0000) and a unique port address when you load its driver.

You can obtain this information when you include these parameters on the command line during loading. The load program displays the board number that it assigns to the IO board. Use this board number for all the ports you configure for this board. This information is also available in the Readme file or printed documentation for the IO expansion board.

- ◆ **Port Number:** If you load only one communication port driver, you do not need to define a port number. If you load a single multiport communication driver (such as aioicomx.nlm), the first port should be defined as 0. Subsequent ports that you define increase incrementally by 1. Assign one port per modem. Some drivers auto-detect the next available port when they are loaded, and others do not, so you might have to keep track of the next available port.

If you cannot obtain the hardware type or board number from loading the IO board driver, you can use aioterm.nlm to obtain it.

---

### ASYNCHRONOUS CONNECTION AND MODEM WORKSHEET

---

Under [Item 4: Additional Information for NetWare](#), provide the extra information required for the NetWare Async Gateway.

---

## Determining Where to Install the Async Gateway Administrator Snap-In to ConsoleOne

For a GroupWise 6.x system, Async Gateway administration is performed through ConsoleOne<sup>®</sup>, version 1.3.5 or later. If necessary, this can be downloaded from [Novell download site \(http://www.novell.com/downloads\)](http://www.novell.com/downloads).

When you install the Async Gateway, the Gateway Administrator snap-in files are copied to a ConsoleOne location that you specify. The Gateway Administrator snap-in files extend the functionality of ConsoleOne to let you administer the Async Gateway.

You should install the Gateway Administrator snap-in files wherever the GroupWise Administrator snap-in files are already installed. Different Gateway Administrator files are installed depending on whether you are using the GroupWise 6.0.x or 6.5.x version of the GroupWise Administrator snap-ins. You can check the GroupWise Administrator snap-in version in ConsoleOne. Click Help > About Snap-Ins > GroupWise Administration.

For a GroupWise 5.5 system, you do not need to install the snap-in to ConsoleOne, because you use NetWare Administrator to administer your GroupWise system.

---

#### ASYNC GATEWAY INSTALLATION WORKSHEET

---

Under **Item 11: Install Gateway Administrator Snap-In to ConsoleOne**, mark whether or not you plan to install the snap-in to ConsoleOne, specify the path for the ConsoleOne location you want to use to administer the Async Gateway, and specify the version of the GroupWise Administrator snap-ins that are already in use.

---

You can install the Gateway Administrator snap-in files to additional locations after you have installed the gateway.

## Selecting a Domain for the Async Gateway

The Async Gateway can be installed in a primary or secondary domain. A domain can contain one or more Async Gateways, if necessary, to handle a large volume of message traffic.

If a specific domain in your GroupWise system contains many GroupWise Remote users, or if users on a specific domain generate many messages that must be sent through an Async Gateway, you could install the gateway, or gateways, in that domain. This minimizes delivery time for those users.

If users on all domains generate about the same number of messages sent through the Async Gateway, install the gateway in a central domain to minimize message delivery time for all users throughout the GroupWise system by minimizing the number of domain hops the MTA must make.

If you plan to install multiple Async Gateways, you might want to install all the Async Gateways in a central domain that can be accessed directly by all other domains in the system. This arrangement makes it easier to maintain and administer the gateways.

You might want to create a new domain specifically for one or more Async Gateways. This keeps Async Gateway activity separate from domains where post offices are located.

---

#### ASYNC GATEWAY INSTALLATION WORKSHEET

---

Under **Item 7: Domain Information**, specify the name of the domain where you want to install the Async Gateway and the full path to the domain directory.

Under **Item 6: eDirectory Information**, specify the context where the Domain objects is located, along with the name of the Novell eDirectory™ tree.

Under **Item 5: Domain Server Type**, mark whether the domain resides on a NetWare or a Windows server.

If you want to create a new domain specifically for the Async Gateway, create the domain before starting to install the Async Gateway.

---

## Deciding Where to Install the Async Gateway Software

The Windows Async Gateway software is automatically installed under the `\domain\wpgate\async` directory, regardless of whether the domain is located on Windows or NetWare. If needed, you can move the software to a different server.

You can choose where the NetWare Async Gateway is installed. Although the Installation program allows you to specify different locations for the Async Gateway NLM™ program, shared NLM programs, and the .ncf file, the simplest choice is to install all files to `sys:\system`. Installing the gateway files on the same server where the domain is located reduces network traffic, but the gateway files can be installed on a different server if necessary.

If you install the NetWare Async Gateway on a different server from where the domain is located, you must provide a username and password for the gateway to use when logging in to the server where the domain is located. The gateway requires Read, Write, Create, Erase, Modify, and File Scan rights in the domain directory.

---

### ASYNC GATEWAY INSTALLATION WORKSHEET

---

Under **Item 9: Software Platform**, mark the platform where you plan to install the Async Gateway software. Also, mark whether you want to install the Async Gateway on the same server where the domain is located or on a remote server. For a remote server location, specify a username and password to provide login and access rights.

---

## Choosing a Gateway Name

When you install the Async Gateway, a Gateway object is created in the domain where you install the gateway. The default gateway name is Async.

---

### ASYNC GATEWAY INSTALLATION WORKSHEET

---

Under **Item 8: Gateway Information**, specify the name you want to use for the Async Gateway object.

---

When you install the Exchange Gateway, a subdirectory for the gateway software and queues is created under the domain directory. By default, the directory name is the same as the object name. If you use the default object name of Async, the gateway subdirectory is `domain\wpgate\async`. This is the root directory for the gateway.

---

### ASYNC GATEWAY INSTALLATION WORKSHEET

---

Under **Item 8: Gateway Information**, specify the name you want to use for the Async Gateway directory.

---

## Configuring the Windows Async Gateway

When you install the Windows Async Gateway, you have choices about how the Async Gateway interacts with the Windows operating system.

- ◆ “Choosing between Windows Application and Windows Service” on page 24
- ◆ “Enabling SNMP” on page 24

## Choosing between Windows Application and Windows Service

You can install the Windows Async Gateway as an application or a service.

When you install the Windows Async Gateway as an application, it can be manually started by a user or it can be added to a user's Startup folder so that it starts automatically when the user logs in to the Windows server. When running as an application, the Async Gateway displays a console on the Windows server where you can monitor and control the gateway.

When you install the Windows Async Gateway as a service, it can be configured to start automatically when the server starts and must run under a specific Windows user account that has rights to run services. When running as a service, the Async Gateway does not display a user interface on the Windows server. However, it can still be monitored from its Web console, as described in [“Using the Async Gateway Web Console” on page 75](#).

---

### ASYNC GATEWAY INSTALLATION WORKSHEET

---

Under [Item 10: Windows Information](#), mark whether you want to install and run the Async Gateway as an application or service. If you want to install it as a service, provide a username and password of the Windows account that you want to own the service.

If the user account does not yet exist, create the user account now and give the account rights to run services.

---

If you want to run the Async Gateway as a service and if the domain it belongs to is on a NetWare server ([Item 5: Domain Server Type](#)), you must create an eDirectory account with a username and password that match the Windows user account. The eDirectory user must have Read, Write, Compare, Edit, Modify, and File Scan rights to the `domain\wpgate\async` directory.

## Enabling SNMP

If desired, you can monitor the Windows Async Gateway from the Management and Monitoring component of Novell ZENworks® for Servers, ManageWise®, or any other SNMP management and monitoring program. When properly configured, the Async Gateway sends SNMP traps to network management consoles for display along with other SNMP monitored programs.

---

### ASYNC GATEWAY INSTALLATION WORKSHEET

---

Under [Item 10: Windows Information](#), mark whether you want to configure the Async Gateway for SNMP.

---

You must enable SNMP during gateway installation. You cannot add this functionality after installation. In order for the option to be offered during installation, the Windows server where you install the gateway must have the SNMP service installed.

The SNMP service is usually not included during the initial Windows operating system installation. If you want to use SNMP, make sure that it has been installed on your Windows server. To add or configure the SNMP service on the server where you plan to install and run the Async Gateway, you must be logged in as a member of the Administrator group.

- 1 From the Control Panel, double-click Add/Remove Programs.
- 2 Click Add/Remove Windows Components.
- 3 Select Management and Monitoring Tools.
- 4 Click Details, then select Simple Network Management Protocol.



- 5 After the installation is complete, reboot the Windows 2000 server.

For more information about configuring the SNMP service, see your Windows 2000 documentation.

## Determining Local Async Link Information

You need to define the following information so that other Async Gateways and Remote client users can connect to your local Async Gateway:

- ♦ **Local Gateway ID:** The login ID that you want remote sites to use when they log in to the local Async Gateway. You must provide this ID to the administrator of the remote Async Gateway. Your local gateway ID is the remote gateway ID that the administrator must provide when configuring the remote Async Gateway.
- ♦ **Password to Access Local Gateway:** The password that you want remote sites to use when they log in to the local Async Gateway using the local gateway ID. You must provide this password to the administrator of the remote site along with the local gateway ID.
- ♦ **Required Serial Port (Optional):** The port through which you want to force all outgoing messages from your domain. This might be useful if you are connecting to a remote domain whose modem speed should match with a similar modem of your own. Each port receives a name when it is associated with a specific modem. For more information, see [“Gathering Modem Information” on page 20](#).

---

### ASYNC GATEWAY LINK WORKSHEET

---

Under [Item 14: Local Gateway Information](#), record the identifying information for your Async Gateway.

---

## Gathering Remote Async Link Information

In order to connect this Async Gateway to another Async Gateway, you need to gather the following information about the other Async Gateway:

- ♦ **Remote Gateway ID:** The name by which the remote Async Gateway is known in its GroupWise system. You must obtain this ID from the system administrator of the remote Async Gateway that you are connecting to.
- ♦ **Password to Access Remote Gateway:** The password associated with the gateway ID for the Async Gateway at the remote site. You must obtain this password from the system administrator of the remote Async Gateway you are connecting to. The password is case sensitive.
- ♦ **Remote Phone Number:** The phone number that the modem for your Async Gateway users to call the modem for the remote Async Gateway. You must obtain this number from the system administrator of the remote Async Gateway connected to this modem. The number is necessary if your gateway initiates calls to the remote gateway. It is not necessary if the remote gateway always calls the local gateway.

---

### ASYNC GATEWAY LINK WORKSHEET

---

Under [Item 13: Remote Gateway Information](#), record the information you need in order to access the remote Async Gateway.

---

## Setting Up a Calling Schedule (Optional)

If needed, you can control the time frame and duration of your Async Gateway's connection to a remote site. The following aspects of the connection can be configured as needed:

- ◆ **High Priority Messages Queued:** The number of messages that must be in the high-priority queue before a connection is initiated.
- ◆ **Medium Priority Messages Queued:** The number of messages that must be in the normal-priority queue before a connection is initiated.

Both normal and high priority messages are included in the total count. If, for example, you choose to queue 10 normal priority messages, a connection is initiated if 3 high- and 7 normal-priority messages are queued.

- ◆ **Low Priority Messages Queued:** The number of messages that must be in the low-priority queue before a connection is initiated.

All low-priority, normal-priority, and high-priority messages are included in the total count. If, for example, you choose to queue 10 low-priority messages, a connection is initiated if 3 high-priority, 7 normal-priority, and 4 low-priority messages are queued.

- ◆ **Minutes Between Forced Dials:** The number of minutes between each attempt to connect to the remote site. This setting overrides only the message queue values set in the preceding fields; it does not override the settings of the **Master Schedule** described below.

For example, if you enter 30 in this field, the gateway initiates a call after 30 minutes of inactivity have elapsed, even if there are no outgoing messages to send. You can use this option to force your gateway to poll other domains for messages.

- ◆ **Retries When Calling:** The number of times the gateway retries to connect to a busy phone number.
- ◆ **Time Between Retries:** The amount of time between dialing retries when the line is busy.
- ◆ **If No Answer, Call After:** The amount of time between retries if the call is not answered.
- ◆ **Minimum Idle Time:** The amount of time the gateway maintains an open connection when all outgoing messages have been sent or incoming messages received.

You can use this option to force the gateway to wait for return status messages from the remote site. If you set this value to 0 (zero), the connection terminates immediately after all queued messages are sent and all incoming messages are received. Any status messages are received during the next gateway connection.

- ◆ **Master Schedule:** A time matrix for specifying when your Async Gateway can initiate a call to a remote gateway, and what type of message priority triggers a call.

---

### ASYNC GATEWAY LINK WORKSHEET

---

Under **Item 15: Calling Schedule**, record the scheduling information for your Async Gateway.

---

## Meeting Installation Prerequisites

Some preparation is required before you install the Async Gateway:

- ◆ “**Ensuring ConsoleOne Readiness**” on page 27
- ◆ “**Ensuring Domain/MTA Availability**” on page 27
- ◆ “**Ensuring File System Access**” on page 27

- ◆ “Preparing Ports for the NetWare Async Gateway” on page 27
- ◆ “Preparing Ports for the Windows Async Gateway” on page 28

## Ensuring ConsoleOne Readiness

For a GroupWise 6.x system, Novell ConsoleOne 1.3.5 or later must be installed on your system. In addition, the GroupWise Administrator snap-in must be installed in ConsoleOne.

## Ensuring Domain/MTA Availability

Make sure that the domain exists where you want to install the Async Gateway and that you are familiar with the domain location and configuration.

Make sure a GroupWise Message Transfer Agent (MTA) is running for the domain where you plan to install the Async Gateway. If the MTA is not running, required directory structure for the Async Gateway is not built during installation.

## Ensuring File System Access

You must have an account that has rights to the domain directory where you want to install the gateway files. You need rights to create, erase, modify, scan files, and write in the domain directory and subdirectories.

## Preparing Ports for the NetWare Async Gateway

Some setup is required on the NetWare server before you install the NetWare Async Gateway.

- ◆ “Setting Up the Existing Serial Ports on the NetWare Server” on page 27
- ◆ “Setting Up Two Modems” on page 28
- ◆ “Setting Up a Multiport Expansion Board on the NetWare Server” on page 28

### Setting Up the Existing Serial Ports on the NetWare Server

If you want to use the existing serial ports on the NetWare server, you must load both the aio.nlm and aiocomx.nlm port drivers. These NLM files are included with NetWare.

To load the port drivers:

- 1 At the system console, enter:

```
load aio
```

The full path to the NLM file is required unless you include it in the server’s search path or it resides in the sys:\system directory.

- 2 At the system console, enter:

```
load sys:\system\aiocomx load_parameters
```

This command initializes the port address 3f8 (COM1) and displays the board and port number. For example, the first time you load AIOCOMX, the following message is displayed:

```
board 0 port 0
```

## Setting Up Two Modems

To run two modems from the NetWare Async Gateway:

- 1 At the system console, enter:

```
load sys:\system\aiocomx load_parameters
```

The driver initializes the second port with an address of 2f8 (COM2).

- 2 Repeat [Step 1](#) to add more ports.

To automatically load a communication port device driver, modify the server's autoexec.ncf file to include the load command.

## Setting Up a Multiport Expansion Board on the NetWare Server

Any multiport expansion board you use with the NetWare Async Gateway must have a Novell AIO-compatible port communication driver in NLM format in order to function properly. For information about these drivers, see [Appendix A, "Asynchronous Input/Output Drivers," on page 99](#).

Before you load the device driver for the expansion board, you must load the NetWare aio.nlm port driver.

Load both the NetWare driver and the board driver at the console prompt.

To load the expansion port drivers:

- 1 At the system console, enter:

```
load aio
```

The full path to the NLM file is required unless you include it in the server's search path or it resides in the sys:\system directory.

- 2 Load your expansion board driver.

To automatically load a communication port device driver, modify the server's autoexec.ncf file to include the load command.

## Preparing Ports for the Windows Async Gateway

Some setup is required on the Windows server before you install the Windows Async Gateway.

- ◆ ["Setting Up the Existing Serial Ports on the Windows Server" on page 28](#)
- ◆ ["Setting Up a Multiport Expansion Board on the Windows Server" on page 28](#)

### Setting Up the Existing Serial Ports on the Windows Server

If you choose to use the existing serial ports on the Windows server, you need to use the default Windows port device driver, com.sys. Refer to your Windows documentation for information about loading this driver.

### Setting Up a Multiport Expansion Board on the Windows Server

If you choose to use a multiport expansion board on the Windows server, the board must have a Windows-compatible device driver. Make sure to find out the individual names of the serial ports on the board as exported by the driver provided. Refer to the driver vendor's documentation for this information. You need to create port entries of the same names while configuring the Windows Async Gateway. The gateway always refers to each hardware port by the name exported by the driver.

# Installing the Async Gateway Software

- 1 Download the GroupWise Async Gateway from the [Novell Product Downloads site \(http://download.novell.com/pages/PublicSearch.jsp\)](http://download.novell.com/pages/PublicSearch.jsp) into a temporary directory.
- 2 Run setupasy.exe to extract the Async Gateway files and start the Async Gateway Installation program.



If the Installation program does not start it manually, run install.exe in the directory where you extracted the Async Gateway files.

- 3 Click Next to view the License Agreement, then click Accept to proceed with the installation.



- 4 Select GroupWise Async Gateway, then click Next.
- 5 Follow the prompts, using the information from the “[Async Gateway Installation Worksheet](#)” on page 31 to install the Async Gateway.
- 6 Click Install.  
The status bar displays the progress of the installation.
- 7 Select View Readme to view the Readme file included with the software.

- 8** Click Finish.
- 9** If you are updating an existing installation of the Async Gateway, check in ConsoleOne to make sure that the Database Version field on the Async Gateway Identification page is set to 4.x.  
See [“Defining Gateway Information” on page 43](#).
- 10** Do not start the Async Gateway at this time. Continue with [Chapter 4, “Defining Async-to-Async Connections,” on page 35](#).

# Async Gateway Installation and Configuration Worksheets

- ♦ [“Async Connection and Modem Worksheet” on page 31](#)
- ♦ [“Async Gateway Installation Worksheet” on page 31](#)
- ♦ [“Async Gateway Link Worksheet” on page 33](#)

## Async Connection and Modem Worksheet

Item	Explanation
1) Number of Connections:	Specify how many async connections your GroupWise system needs.  See <a href="#">“Determining Async Connections” on page 19</a> .
2) Serial Port Configuration:	Mark whether you plan to use the existing serial ports on your server or whether you plan to install one or more multiport boards.
♦ Existing serial port(s)	
♦ Multiport expansion board(s)	<a href="#">“Selecting a Serial Port Configuration” on page 20</a>
3) Modem Information:	List the technical details for the type of modem you are using.
♦ Serial port name	See <a href="#">“Gathering Modem Information” on page 20</a> .
♦ Modem name	
♦ Baud rate	
♦ Flow control	
♦ Parity bit	
♦ Character length	
♦ Stop bits	
4) Additional Information for NetWare	If you are installing the Async Gateway on a NetWare server, record the port driver information required by NetWare servers.
♦ Hardware type	See <a href="#">“Gathering I/O Port Driver Information for NetWare” on page 21</a> .
♦ Board number	
♦ Port number	

## Async Gateway Installation Worksheet

Item	Explanation
5) Domain Server Type:	Mark the platform of the server where the gateway’s domain is located.
♦ NetWare	See <a href="#">“Selecting a Domain for the Async Gateway” on page 22</a> .
♦ Windows	
6) eDirectory Information:	Specify the eDirectory tree and context where the Domain object is located. The Async Gateway object is created in the Domain object.
♦ Tree	
♦ Domain object context	See <a href="#">“Selecting a Domain for the Async Gateway” on page 22</a> .

Item	Explanation
7) Domain Information:	Specify the domain name and directory. The Async Gateway software is installed in a subdirectory under the domain.
<ul style="list-style-type: none"> <li>♦ Domain name</li> <li>♦ Domain directory</li> </ul>	See <a href="#">“Selecting a Domain for the Async Gateway” on page 22.</a>
8) Gateway Information:	Specify the name of the Async Gateway object in the GroupWise system and the subdirectory in the domain where the Async Gateway software is installed.
<ul style="list-style-type: none"> <li>♦ Gateway object name</li> <li>♦ Gateway directory</li> </ul>	See <a href="#">“Choosing a Gateway Name” on page 23.</a>
9) Software Platform:	Make the platform of the server where you plan to install the Async Gateway software.
<ul style="list-style-type: none"> <li>♦ NetWare</li> <li>♦ Windows</li> </ul>	See <a href="#">“Deciding Where to Install the Async Gateway Software” on page 23.</a>
Software Location:	
<ul style="list-style-type: none"> <li>♦ Domain Server</li> <li>♦ Remote Server <ul style="list-style-type: none"> <li>Username</li> <li>Password</li> </ul> </li> </ul>	
10) Windows Information:	Mark whether you want to enable SNMP. See <a href="#">“Enabling SNMP” on page 24.</a>
Enable SNMP?	Mark whether you want to install the Windows Async Gateway as an application (with a user interface) or as a service (without a user interface).
<ul style="list-style-type: none"> <li>♦ Yes</li> <li>♦ No</li> </ul>	If you want to install it as a service, provide a username and password for the Windows account that will own the service.
Installation Method	See <a href="#">“Choosing between Windows Application and Windows Service” on page 24.</a>
<ul style="list-style-type: none"> <li>♦ Application</li> <li>♦ Service <ul style="list-style-type: none"> <li>User</li> <li>Password</li> </ul> </li> </ul>	
11) Install Gateway Administrator Snap-In to ConsoleOne:	Mark whether you want to install the Gateway Administrator snap-in to ConsoleOne at the same time when you install the gateway software. If you do, make sure that you know where ConsoleOne is already installed and what version of the GroupWise snap-ins have already been installed to that location.
<ul style="list-style-type: none"> <li>♦ Yes <ul style="list-style-type: none"> <li>ConsoleOne path</li> <li>Snap-in version</li> </ul> </li> <li>♦ No</li> </ul>	See <a href="#">“Determining Where to Install the Async Gateway Administrator Snap-In to ConsoleOne” on page 21.</a>
12) NetWare Information:	Specify where you want the various components of the Async Gateway software to be installed on the NetWare server.
<ul style="list-style-type: none"> <li>♦ Gateway NLM location</li> <li>♦ Shared NLM location</li> <li>♦ .ncf file location</li> </ul>	See <a href="#">“Deciding Where to Install the Async Gateway Software” on page 23.</a>



## Async Gateway Link Worksheet

---

Item	Explanation
13) Remote Gateway Information:	Record the information provided to you by the administrator of the remote site.
♦ Remote gateway ID	See <a href="#">“Gathering Remote Async Link Information” on page 25.</a>
♦ Password to access remote gateway	
♦ Remote phone number:	
14) Local Gateway Information:	Decide how you want to identify your local Async Gateway.
♦ Local gateway ID	See <a href="#">“Determining Local Async Link Information” on page 25.</a>
♦ Password to access local gateway	
♦ Required serial port (optional)	
15) Calling Schedule:	If necessary, establish a schedule for the Async Gateway to follow when connecting to the remote site.
♦ High priority messages queued	See <a href="#">“Setting Up a Calling Schedule (Optional)” on page 26.</a>
♦ Medium priority messages queued	
♦ Low priority messages queued	
♦ Minutes between forced dials	
♦ Retries when calling	
♦ If no answer, call after	
♦ Minimum idle time	
♦ Master schedule	

---



# 4

## Defining Async-to-Async Connections

Before starting the Novell® GroupWise® Async Gateway, you must configure the properties unique to the gateway so it can function properly with the ports and modems installed on your gateway server, and so proper async-to-async connections can be made.

Complete the following tasks to set up your async-to-async connection:

- ♦ “Defining Ports for Modems” on page 35
- ♦ “Defining a Domain Connection” on page 36

### Defining Ports for Modems

The port definition sets the properties of the gateway server’s serial ports, including any changes made available if you installed a multiport serial expansion card. These properties are mandatory, and must be defined before the gateway will operate.

To define ports for modems:

- 1** In ConsoleOne®, browse to and select the Domain object where you created the Async Gateway.
- 2** Right-click the Async Gateway object, then click Properties to display the Ports page.
- 3** Click Create to display the Port Information page.

Serial Port:	<input type="text"/>	OK
Modem:	<input type="text"/>	Cancel
	<input type="button" value="Choose Modem"/>	
Baud Rate:	1200	Help
Flow Control:	CTS/RTS	
Parity Bit:	None	
Character Length:	8	
Stop Bits:	1	
Hardware Type:	<input type="text"/>	<input checked="" type="checkbox"/> Any Type
Board Number:	<input type="text"/>	<input checked="" type="checkbox"/> Any Board
Port Number:	0	<input type="checkbox"/> Any Number

The information you provide on the Port Information page defines the parameters of the gateway server’s serial ports, including any made available if you installed a multiport serial expansion board. Check each field to make sure it contains the correct information for your system.

If you have configured multiple serial ports, you must fill in the Port Information page for each serial port.

**4** Fill in the fields ([worksheet item 3](#)):

**Serial Port:** Specify a unique name for the serial port.

**Modem:** Click Choose Modem, then select the modem definition for the serial port connection.

**Baud Rate:** In the drop-down list, select the baud rate that matches the baud rate of the modem you plan to connect to this serial port.

**Flow Control:** Use the default value CTS/RTS.

When you initialize your modem, check the initialization string to make sure it is configured for the type of flow control you select in this field.

**Parity Bit:** Keep the default of None unless you are connecting to a system that requires an extra bit to make the sum of bits odd or even.

**Character Length:** Keep the default of 8 unless you are connecting to a system that does not support an 8-bit data path.

**Stop Bits:** Keep the default of 1 unless you are connecting to a system that uses 2 stop bits.

**5** If you have installed the NetWare Async Gateway, fill in the following additional fields ([worksheet item 4](#)):

**Hardware Type:** If you have only one serial port, keep the default of Any Type. If you have an multiport expansion board, provide the hardware type for the one you are currently configuring.

**Board Number:** If you have only one serial port, keep the default of Any Type. If you have multiple serial ports, provide the board number for the one you are currently configuring.

**Port Number:** If you load only one communication port driver, keep the default of Any Number. If you load a single multiport communication driver (such as aioicomx.nlm), provide the port number for the one you are currently configuring.

**6** Click OK to save the port and modem information.

**7** Repeat [Step 3](#) through [Step 6](#) to define additional ports.

**8** Click OK to save the updated list of ports.

**9** Continue with [Defining a Domain Connection](#).

## Defining a Domain Connection

A domain connection is a description of the information used to connect one Async Gateway to another Async Gateway. The connection could be between two domains in the same GroupWise system or between different systems.

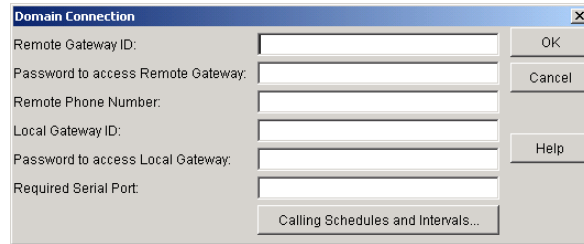
To define a domain connection:

**1** In ConsoleOne, browse to and select the Domain object where you created the Async Gateway.

**2** Right-click the Async Gateway object, then click Properties.

**3** Click Domain Connections.

**4** Click Create to display the Domain Connection dialog box.



- 5** Fill in the fields with remote gateway information ([worksheet item 13](#)):
  - Remote Gateway ID:** Specify the login ID for the Async Gateway at the remote site.
  - Password to Access Remote Gateway:** Specify the password for the Async Gateway at the remote site).
  - Remote Phone Number:** Specify the phone number for the modem at the remote site.
- 6** Fill in the fields with local gateway information ([worksheet item 14](#)):
  - Local Gateway ID:** Specify the login ID for this Async Gateway.
  - Password to Access Local Gateway:** Specify the password required to log in to this Async Gateway.
  - Required Serial Port:** If you want to force all outgoing messages from your domain through one port, specify the port name.
- 7** If you want to define parameters to control the time frame and duration of your domain's connection to a remote site, click Calling Schedules and Intervals, then set up the schedule as needed ([worksheet item 15](#))
- 8** Click OK to save the domain connection information.
- 9** Continue with [Chapter 5, "Running the Async Gateway,"](#) on page 39



# 5

## Running the Async Gateway

After you have installed the Novell® GroupWise® Async Gateway and defined async-to-async links, you are ready to run the gateway.

- ♦ [“Starting the Async Gateway” on page 39](#)
- ♦ [“Testing the Async Gateway” on page 42](#)
- ♦ [“Helping Users” on page 42](#)

### Starting the Async Gateway

Select the platform where you installed the Async Gateway.

- ♦ [“Starting the NetWare Async Gateway” on page 39](#)
- ♦ [“Starting the Windows Async Gateway” on page 41](#)

### Starting the NetWare Async Gateway

To start the Async Gateway NLM™ at the NetWare® server console, enter:

```
load install_path\ngwasync @install_path\gwasync.cfg
```

where *install\_path* is the path where the gateway files are installed.

For example:

```
load ngwasync @gwasync.cfg
```

The *gwasync.cfg* file includes the **/home** startup switch, which is required to start the gateway. Other startup switches are optional. The gateway console should appear and display normal startup status messages. For more information, see [“Using the Async Gateway Console” on page 71](#).

When you start the gateway as described above, it is configured according to the gateway properties specified in ConsoleOne®. You can go back to ConsoleOne and modify gateway properties as needed.

Another way to start the NetWare Async Gateway is to run the *async.ncf* file. If you want the Async Gateway to start whenever the server restarts, add an *async.ncf* line to your server's *autoexec.ncf* file.

## Running the NLM Files from Another File Server

If the file server where GroupWise is running has limited disk space, memory, or power, or if it is routinely busy with other processes, you might want to run the gateway and port drivers from a different file server. To do this, install these NLM files at another server and use a load syntax that points the process to the server. This requires that you use the `/home`, `/user (NetWare Only)`, and `/password (NetWare Only)` startup switches when you load the Async Gateway NLM.

### Syntax:

```
load ngwasync /home- path_to_gateway /user-NetWare_user_ID
              /password-NetWare password
```

### Example:

```
load ngwasync /home-Server\sys1:headq\wpgate\async /user-Ernie
              /password-crevasse
```

If you use your own user ID and password in the `gwasync.cfg` file, they are secure if you have copied the file to a `sys:\system` directory where you are the only user with rights.

## Setting up a Connection User

If you want more complete security for your Async Gateway, you can set up a user account on the GroupWise file server specifically for your Async Gateway. If you create such an account, it should have the following network rights:

Directory	Rights
GroupWise Domain Directory	Read, File Scan
GroupWise Home Directory	Read, Write, Create, Erase, Modify

If the gateway resides on a server in another Novell eDirectory™ tree, you must set up a bindery context so the gateway can attach to the GroupWise server.

## Gwasync.cfg File

`Gwasync.cfg` is an ASCII text file that stores the startup switches (see [Appendix 9, “Using Async Gateway Startup Switches,” on page 93](#), for further information) used by the Async Gateway. Startup switches configure the gateway to work in your specific network environment. You can edit `gwasync.cfg` and the startup switches in a text editor.

When you load the Async Gateway, include the full path to the startup file. For example:

```
load async @sys:\apps\nlm\gwasync.cfg
```

If the full path is not provided, the gateway searches for it first in the subdirectory where `ngwasync.nlm` resides and then in the `sys:\system` directory.

If you want to automatically load the gateway each time the server is brought up, you can modify the server's `autoexec.ncf` file to include the load command.

You can specify a different startup filename in the load command by using the `@` switch on the command line, as in the following example:

```
load async @sys:\apps\nlm\gwaync.ncf
```

If no startup file is specified on the command line, the gateway searches for the default startup file (`gwasync.cfg`) using the same search parameters.



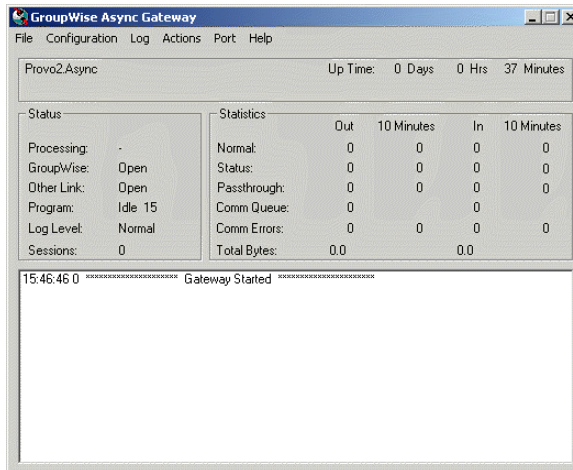
## Starting the Windows Async Gateway

Select the installation method you chose for the Async Gateway.

- ♦ “Starting the Gateway as an Application” on page 41
- ♦ “Starting the Gateway as a Service” on page 41

### Starting the Gateway as an Application

- 1 At the Windows server, click Start > Programs.
- 2 Click GroupWise Async Gateway > Async Gateway > Start.



For more information, see “Using the Async Gateway Console” on page 71.

### Starting the Gateway as a Service

If the domain that the Async Gateway belongs to is located on a NetWare server, create an eDirectory user account with a username and password that are the same as a Windows administrator user. This eDirectory account should also have all the security rights assigned for an administrator. If the Async Gateway’s domain is on a Windows server, you do not need to create this account.

- 1 At the Windows server, click Start > Settings > Control Panel.
- 2 Double-click Services.  
or  
Click Administrative Tools, then double-click Services.
- 3 Right-click the Async Gateway service, then click Properties.
- 4 In the Startup Type field, select Automatic.
- 5 Click Log On, then select This Account.
- 6 Specify the username and the password.
- 7 Click OK to save your changes and return to the list of services.
- 8 Right-click the Async Gateway, then click Start.

## Testing the Async Gateway

If you want to test the Async Gateway after it is installed, or if you suspect that your network links might be incorrect, you can test the connectivity of the gateway by sending a message to an unconfigured address. If the message arrives, you can assume that the domain connections, gateway links, port configurations, and modem definitions are all good.

The address syntax for a test message is:

**Syntax:** *your\_domain.your\_gateway:"loginID":domain.post\_office.userID*

**Example:** *Headquarters.Async:"Main":Main.Marketing.Jenny*

**Your Domain:** The name of domain where your Async Gateway resides. This element of the syntax is necessary only if you are using GroupWise in a different domain than where the Async Gateway resides.

**Your Gateway:** The name of the Async Gateway installed at your site.

**Login ID:** The remote gateway's login ID for the connection. It must match the login ID of the domain connection.

**Domain:** The GroupWise domain of the GroupWise user you are addressing.

**Post Office:** The GroupWise post office of the GroupWise user you are addressing.

**User ID:** The GroupWise user ID of the individual, group, or resource you are addressing.

## Helping Users

GroupWise users can send a message to the gateway to receive an ASCII text file that contains information about explicitly addressing messages. This file, named *helpuser.txt*, is located in the *domain\wpgate\gateway\_directory\helpqrst* directory. You can edit this file to include the name of your gateway and any other information you feel is appropriate. The table below helps you understand the various addresses to which you can forward your requests to obtain assistance.

Address	Description
<i>Gateway_Name:Help</i> or <i>Gateway_Name:?</i>	The gateway responds with information on how you can send a message to the foreign system.
<i>Gateway_Name:Assist</i>	The gateway returns an address assistance message or information on how you can send a message to the foreign system.
<i>Gateway_Name:ShutDown</i>	Only the administrator can request the gateway to be shut down. The gateway shuts down immediately if the request comes as a mail message. If the request comes as an appointment, the gateway will shut down at the appointed time, if it is not shut down earlier.

You might also need to assist GroupWise Remote users with the following tasks:

- ◆ Setting a password on the user's Master Mailbox. See ["Creating or Changing a Mailbox Password"](#) in ["Users"](#) in the *GroupWise 6.5 Administration Guide*.
- ◆ Using the basic features of the GroupWise Remote client. See ["Using Remote Mode"](#) in the *GroupWise 6.5 Windows Client User Guide*.

# 6

## Configuring the Async Gateway

Although the Novell® GroupWise® Async Gateway will run and send messages after you install and set up connections, you can enhance the way it runs, keeps log and accounting files, and maintains its databases.

- ♦ [“Customizing Gateway Configuration” on page 43](#)
- ♦ [“Defining Gateway Administrators” on page 48](#)
- ♦ [“Defining User Access to the Gateway” on page 49](#)
- ♦ [“Simplifying Addressing” on page 55](#)
- ♦ [“Setting Up Gateway Accounting” on page 65](#)
- ♦ [“Supporting GroupWise Remote Users” on page 67](#)
- ♦ [“Backing Up and Recovering the Gateway Database” on page 69](#)

### Customizing Gateway Configuration

Configuration information for the Async Gateway is stored on the Async Gateway object in Novell® eDirectory™.

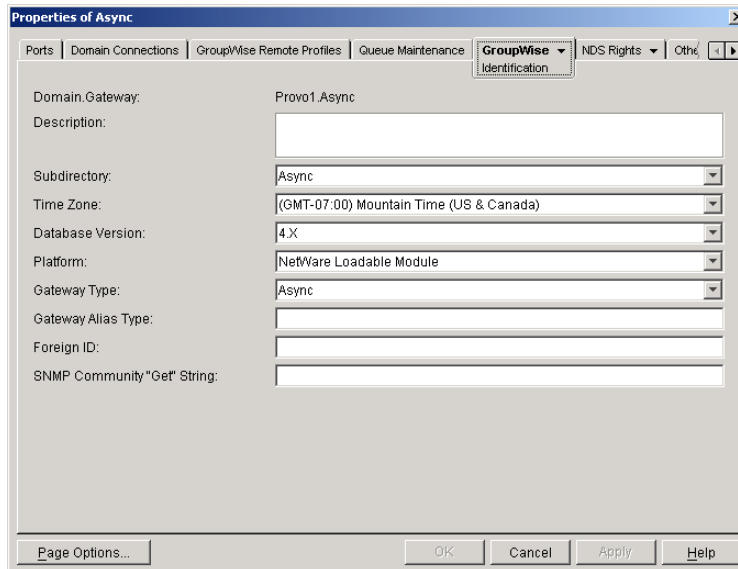
- ♦ [“Defining Gateway Information” on page 43](#)
- ♦ [“Defining Gateway Time Settings” on page 44](#)
- ♦ [“Defining Log Settings” on page 45](#)
- ♦ [“Defining Optional Gateway Settings” on page 47](#)

### Defining Gateway Information

Gateway information describes the location, purpose, and platform of the gateway.

To define gateway information:

- 1** In ConsoleOne®, browse to and select the Domain object where you created the Async Gateway.
- 2** Right-click the Async Gateway object, then click Properties.
- 3** Click GroupWise > Identification.



**4** Fill in the fields:

**Description:** Enter details that will help you identify why or when the gateway was created.

**Subdirectory:** Displays the gateway subdirectory under *domain/wpgate* that was created when the Async Gateway was installed.

**Time Zone:** Displays the time zone of the domain that the Async Gateway belongs to. You can change the time zone for the gateway if necessary.

**Database Version:** Leave the gateway database version number set to 4.x regardless of the version of the GroupWise domain it belongs to.

**Platform:** Select the platform where you installed the Async Gateway (NetWare Loadable Module or Windows).

**Gateway Type:** Defaults to Async, which is correct.

**Gateway Alias Type:** This option does not apply to the Async Gateway.

**Foreign ID:** This option does not apply to the Async Gateway.

**SNMP Community “Get” String:** If you want to be able to use GroupWise Monitor to monitor the Async Gateway, specify your system SNMP community GET string.

**5** Click OK to save your changes.

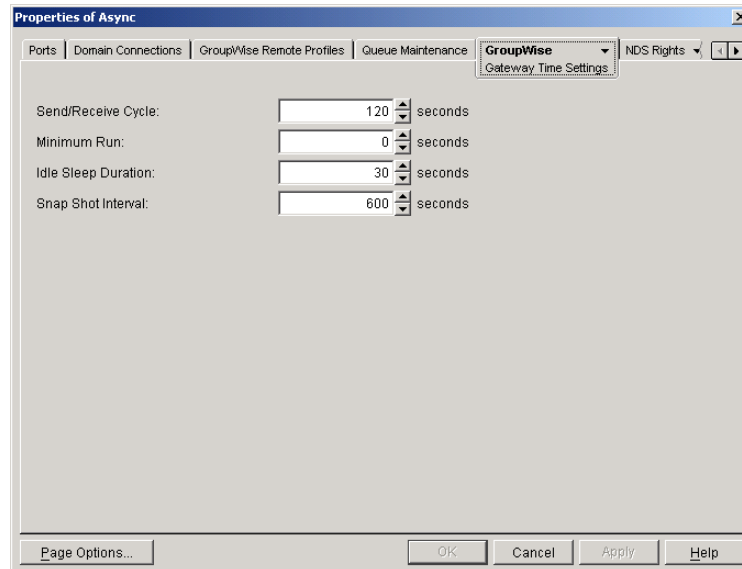
## Defining Gateway Time Settings

Gateway time settings let you adjust how frequently the gateway performs tasks associated with its routine message processing functions.

**1** In ConsoleOne, browse to and select the Domain object where you created the Async Gateway.

**2** Right-click the Async Gateway object, then click Properties.,

**3** Click GroupWise > click Gateway Time Settings.



**4** Fill in the fields:

**Send/Receive Cycle:** This option does not apply to the Async Gateway.

**Minimum Run:** This option does not apply to the Async Gateway.

**Idle Sleep Duration:** Specify the time in seconds that you want the gateway to sleep when it has no files to send, receive, or convert. When this duration expires, the gateway wakes up briefly to check for messages. If there are no messages, it sleeps again. The default is 30 seconds.

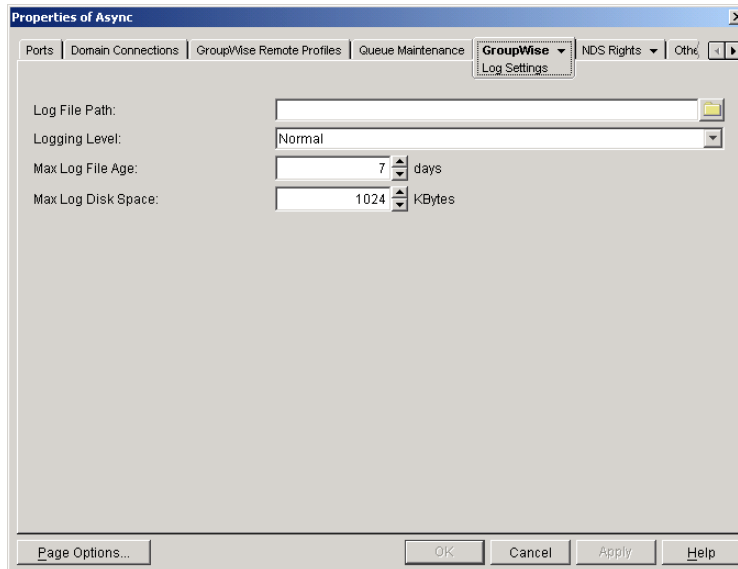
**Snap Shot Interval:** Specify the amount of time in seconds after which you want the gateway to compile its performance statistics. This field is a sliding interval that is used in the gateway console. The display changes every 60 seconds to show only the previous x seconds of activity. The default is 600 seconds (10 minutes).

**5** Click OK to save your changes.

## Defining Log Settings

A log file is a processing record for incoming and outgoing messages. Log settings set the gateway's log file configuration defaults according to your needs. The Async Gateway creates a log file as it runs. The gateway log file is stored in the gateway's 000.prc directory and can be viewed from the gateway operation screen.

- 1** In ConsoleOne, select the Domain object where you created the Async Gateway.
- 2** Right-click the Async Gateway object, then click Properties.
- 3** Click GroupWise > Log Settings.



**4** Fill in the fields.

**Log File Path:** Specify the directory where you want the Async Gateway to create its log files. The default is the gateway home directory (*domain\wpgate\async\000.prc*).

**Logging Level:** Select the level of detail to be recorded in the log file from the drop-down list. The table below provides a description of the available logging levels.

Logging Level	Description
None	This setting disables the logging mode. No messages are displayed in the log window at the gateway console.
Normal	This is the default setting. It displays only basic message routing information, providing only a summary of gateway activity.
Verbose	This setting displays extra message routing details and message processing information useful for troubleshooting.
Diagnostic	This setting provides a detailed trace of gateway messages, errors, and operations and can be useful for troubleshooting.

**Max Log File Age:** Enter the maximum number of days you want to save the log file before the gateway deletes it. The default is 7 days.

**Max Log Disk Space:** Enter the amount of disk space (in kilobytes) you want the limit to be for log files. When the limit is reached, the gateway deletes the oldest file until the space occupied is under the maximum allowable limit. If you set the limit to 0 (zero), there will be no disk space limit for log files.

**5** Click OK to save your changes.

## Defining Optional Gateway Settings

You can change the settings on the Optional Gateway Settings screen to customize the configuration of your Async Gateway.

The screenshot shows the 'Properties of Async' dialog box with the 'Optional Gateway Settings' tab selected. The settings are as follows:

- Directory Sync/Exchange: None
- Accounting: Yes
- Convert Status to Messages: No
- Outbound Status Level: Open
- Enable Recovery: Yes
- Retry Count: 10 (range 1-99)
- Retry Interval: 60 seconds
- Failed Recovery Wait: 3600 seconds
- Network Reattach Command: (empty field)
- Correlation Enabled: Yes
- Correlation Age: 14 days
- HTTP Settings:
  - HTTP User Name: (empty field)
  - HTTP Password: (empty field with 'Set Password' button)

**Directory Sync/Exchange:** None of the options in this field apply to the Async Gateway.

**Accounting:** Click Yes if you want the gateway to keep accounting records for every message it sends or receives. The gateway records this information in an ASCII text file called acct, which is placed in the xxx.prc subdirectory and updated daily at midnight or when the gateway is terminated. Accounting information for the previous day's activity is sent daily to the user designated as the accountant. If no user is so designated, the file is cleared.

**Convert Status to Messages:** Click Yes to enable GroupWise to convert status information (normally accessible only from Out Box Information) to a mail message and place it in the sender's mailbox.

**Outbound Status Level:** GroupWise lets you track a message's status from the time it is sent until the recipient deletes it. When a GroupWise user receives a message from a user of a foreign messaging system, GroupWise sends a status message to the sender. Using this option, you can adjust the amount of detail in the status messages sent to the foreign system. You might not always want to have the outbound status level enabled. For instance, if you work with a radio carrier or some other form of message transport for which it is expensive to send messages, disable this option.

The five outbound status levels include:

Outbound Status Level	Description
None	No status information delivered
Undelivered	Undeliverable status information delivered
Delivered	A status message is delivered. The message is either Message Undeliverable or Message Delivered

Outbound Status Level	Description
Open	One or more of the following status messages is delivered: Message Undeliverable, Message Delivered, Message Opened
Full	One or more of following status messages is delivered: Message Undeliverable, Message Delivered, Message Opened, Message Deleted, Message Emptied

**Enable Recovery:** Click Yes to let the gateway attempt to restart itself or reestablish the connection to the foreign system when either fails.

**Retry Count:** Specify the number of times you want the gateway to attempt to recover a connection if the connection fails.

**Retry Interval:** Specify the number of seconds you want the gateway to wait between attempts to recover its connection if the connection fails.

**Failed Recovery Wait:** Specify the number of seconds you want the gateway to wait between a failed recovery and a retry.

**Network Reattach:** Specify a command the gateway can use (such as a batch file) to reattach to the network if its network access is interrupted and if you select Yes for the Enable Recovery option.

For example:

```
map j:=server1\sys:headq
```

**Correlation Enabled:** This option does not apply to the Async Gateway.

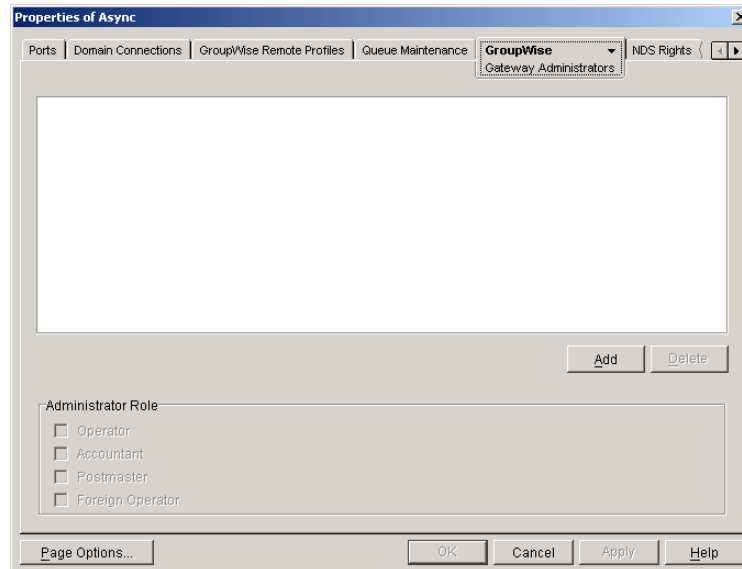
**Correlation Age:** This option does not apply to the Async Gateway.

## Defining Gateway Administrators

A gateway administrator is any GroupWise user assigned to receive information and error messages from the gateway. The Async Gateway does not require an administrator, but if you want to define one, the administrator must either be a user who is associated with GroupWise or with a GroupWise distribution list.

- 1** In ConsoleOne, browse to and select the Domain object where you created the Async Gateway.
- 2** Right-click the Async Gateway object, then click Properties.
- 3** Click GroupWise > Gateway Administrators.





- 4 Click Add to display the Select GroupWise Object dialog box.  
All users in your GroupWise system are listed alphabetically by their user IDs. You can select Distribution Lists to list distribution lists instead of users.
- 5 Use the Filter fields above the list to restrict the length of the list.
- 6 Double-click a user that you want to add to the list of gateway administrators.  
The user's context is displayed in the Gateway Administrators list.
- 7 Select the user, then select one of the two administrator roles that can be used with the Async Gateway. The two administrator roles are:
  - ♦ **Operator:** A gateway administrator type that enables the gateway program to send a messages notifying the designated GroupWise user (that is, the gateway's operator) when certain errors occur.
  - ♦ **Accountant:** A gateway administrator feature that enables the gateway to keep accounting records for every message it sends. Each day, the record is sent to the user designated as the gateway's accountant. Multiple users can be designated as gateway accountants. For more information, see ["Setting Up Gateway Accounting" on page 65](#).
- 8 Click Apply.
- 9 To add more administrators, repeat [Step 4](#) through [Step 8](#).
- 10 When your administrator list is complete, click OK.

## Defining User Access to the Gateway

The access control feature lets you control inbound and outbound messages through the Async Gateway. You can specify which GroupWise users can send messages through the gateway. You can also specify which GroupWise users can receive messages through the gateway and from which addresses. You can control the size of messages allowed through the gateway and also control rule-generated messages.

Access control can be implemented on a minimal user-by-user basis through the Gateway Access field on the User Information page of each User object in ConsoleOne. To fully implement access control, you must use the configuration file called `access.cfg`.

- ◆ “Using the Access Control File (`access.cfg`)” on page 50
- ◆ “Applying Access Control Settings to Individual Users” on page 54

## Using the Access Control File (`access.cfg`)

The `access.cfg` file is an ASCII text file you can edit with a standard text editor. It is located in the gateway home directory.

- ◆ “Access Control” on page 50
- ◆ “Access Control Headers” on page 50
- ◆ “Access Control Keywords” on page 51
- ◆ “Syntax Conventions in the `Access.cfg` File” on page 53
- ◆ “Sample Configuration File” on page 53

### Access Control

The `access.cfg` file contains one access control statement. The statement is used to turn access control on or off.

**Syntax:** `access control = on /off`

**Example:** `access control = on`

There should only be one access control statement in the file. If the file includes multiple statements, the last statement is used.

### Access Control Headers

The access control header specifies the group of users that the access control settings (keywords) will apply to. In addition, the header specifies the direction (inbound or outbound) for which the settings apply. There are three possible headers:

- ◆ `[Domain.po:direction]`
- ◆ `[Default:direction]`
- ◆ `[Accessgroup:name]`

#### **[*Domain.po:direction*]**

The *Domain.po* header specifies the GroupWise post office to which you are applying the access control settings. Only users in the specified post office are affected by the settings.

*Direction* determines in which direction the settings are valid. The two possible directions are In and Out. In specifies messages coming into the GroupWise system through the Async Gateway and Out specifies messages sent out from the GroupWise system through the Async Gateway. If no direction is specified, Out is the default.

**Syntax:** `[domain.po:direction]`

**Example:** `[corporate.accounting:out]`

In the example, all settings under this header apply to users in the ACCOUNTING post office who send mail to users on the other side of the Async Gateway.

### **[Default:direction]**

The Default header specifies the default access control settings for GroupWise users who are not covered by one of the other headers.

*Direction* determines in which direction the settings are valid. The two possible directions are In and Out. In specifies messages coming in to the GroupWise system through the Async Gateway and Out specifies messages sent out from the GroupWise system through the Async Gateway. If no direction is specified, Out is the default.

**Syntax:** [default:direction]

**Example:** [default:in]

In the example, all settings under this header apply to users who are receiving mail from Async users and who are not covered by another header.

### **[Accessgroup:name]**

The Accessgroup:name header defines the name of an access control group. Any settings under this header apply to users with the same access group name specified in the Gateway Access field on the GroupWise Account page of their User objects in ConsoleOne. This header enables you to apply access control settings to a single user or multiple users.

**Syntax:** [accessgroup:name]

**Example:** [accessgroup:staff]

After you've created an access group header in the access.cfg file, you need to modify the Gateway Access field on User objects in ConsoleOne to assign users to the access group. For information, see [“Using the Gateway Access Field” on page 54](#).

This header is not associated with GroupWise personal groups or public distribution lists. If you have a GroupWise distribution list called Managers and want access control to be applied to the entire group, you must edit the user information for each member of the distribution list in the Gateway Access field of each User object.

## **Access Control Keywords**

Keywords are used to apply access control settings to the users specified by the header. The following keywords are available:

- ◆ **ALLACCESS**
- ◆ **NOACCESS**
- ◆ **BLOCK**
- ◆ **ALLOW**
- ◆ **MAXSIZE**
- ◆ **ALLOWRULEGENERATED**

## ALLACCESS

The ALLACCESS keyword allows the users unrestricted access to the Async Gateway. Anyone can send and receive messages. This is how the gateway operated before the access control feature was added. If access is denied for inbound messages, the Gateway does not send an Undelivered message. This can be avoided in a domain-to-domain connection by setting access control on the gateway sending messages to the Out direction.

**Example:** `[Corporate.Accounting:in] allaccess`

In this example, all users on the Accounting post office under the Corporate domain can receive inbound messages.

## NOACCESS

The NOACCESS keyword restricts users from accessing the Async Gateway. No one can send or receive any messages through the gateway, depending on the direction specified in the header.

**Example:** `[default:in] noaccess`

In this example, by default, users cannot receive mail through the gateway. Users can send messages through the gateway.

## BLOCK

The BLOCK keyword blocks the message when the foreign address matches *gwaddresstext*. This keyword differs from NOACCESS because a specific remote or domain profile name can be specified. If users try to send messages to an address which has been blocked, they receive an Undeliverable message from the gateway.

**Example:** `[default:out] remote_profile_name or domain_profile_name`

In this example, all users are prevented from sending messages to the remote or domain profile name.

**Example:** `[Headquarters:in] primary`

In this example, any user in the GroupWise Headquarters domain is prevented from receiving a message from primary domain.

## ALLOW

The ALLOW keyword is the opposite of BLOCK. The gateway delivers the message only if the message's recipient matches *gwaddresstext*. This keyword is useful if you've blocked an entire domain, but you want to allow specific users in that domain to send or receive messages through the Async Gateway.

**Example:** `[Headquarters.in] allow remote_profile_name or domain_profile_name`

In this example, any user in the Headquarters domain is allowed to receive messages sent from the remote or domain profile name.

**Example:** `[Headquarters.out] allow primary`

In this example, the default is set to allow all GroupWise users to send mail to the primary domain.

When you use the ALLOW keyword, it functions as an exclusive ALLOW and restricts the users to only those that are specifically allowed access, unless a previous setting has provided for more access.

### **MAXSIZE**

The MAXSIZE keyword determines the maximum size message, including attachments, that the gateway transfers. MAXSIZE is specified in bytes (1000=1000 bytes), with a range from 0 to 2147483647.

**Example:** [default:in] maxsize = 10000

In this example, all GroupWise users can receive messages that are less than 10000 bytes.

### **ALLOWRULEGENERATED**

The ALLOWRULEGENERATED keyword determines whether or not rule-generated messages are allowed through the gateway. You could use this keyword to control rule-generated message replies such as “On Vacation” from passing through the Async Gateway. Unlike NOACCESS and BLOCK, the gateway does not generate an Undeliverable status for rule-generated messages that are not delivered. Instead, the message remains pending in the sender’s mailbox. This keyword applies only to outbound messages.

**Example:** [default:out] allowrulegenerated = no

In this example, no GroupWise messages that have been generated by a rule are sent through the gateway.

**Example:** [Marketing.Secretaries:out] allowrulegenerated = yes

In this example, rule-generated messages created by users in the Marketing domain and the Secretaries post office are allowed to pass through the gateway.

## **Syntax Conventions in the Access.cfg File**

**Headers:** Headers are enclosed in square brackets ([ ]). The header applies to all keywords after the one header and before the next header. See [“Access Control Headers” on page 50](#).

**Semicolon (;), Slash (/), Pound sign (#):** These characters can be used as comment or remark lines in the file. Any text following a semicolon, slash, or pound sign is ignored.

**Gwaddresstext:** Replace this field with the GroupWise address you want to use, such as Novell.Sales.Glen, where Novell.Sales.Glen is the GroupWise proxy address of the GroupWise user.

## **Sample Configuration File**

```
;access control = on

;Heading for the default outbound settings. Remember that a semicolon
is a
;remark and is ignored by the gateway;

;maxsize = 3000

;[default:out]
;allowrulegenerated = no
```

```

;block primary
;allow remote profile name

[Corporate:out]
allaccess
maxsize = 10000

[Corporate.Accounting:in]
maxsize = 200000

;name "Executives" to be used in Gateway Access field of a user
[accessgroup:Executives]
allaccess

```

## Applying Access Control Settings to Individual Users

Access control settings can be applied to individual users in two ways:

- ◆ [“Using the Access.cfg file” on page 54](#)
- ◆ [“Using the Gateway Access Field” on page 54](#)

### Using the Access.cfg file

You can use the [\[Accessgroup.name\]](#) in the access.cfg file to control access settings for individual users. For the name, you can enter any identifier you choose, such as `[ACCESSGROUP:CONTROL]`. In the example below, the name is control. Under this header, include the keywords you want to apply to the given users.

#### Sample Configuration File

```

access control = on

[accessgroup:control]
maxsize = 100000
allowrulegenerated = no
allow domain profile name
block remote profile name

```

For the access group named control, this example access.cfg file limits the size of messages allowed to pass through the gateway to 100000 bytes. Messages created by rules are not sent through the gateway. Messages to or from users in the domain profile name pass through the gateway. Messages to or from users in the remote profile name cannot pass through the gateway.

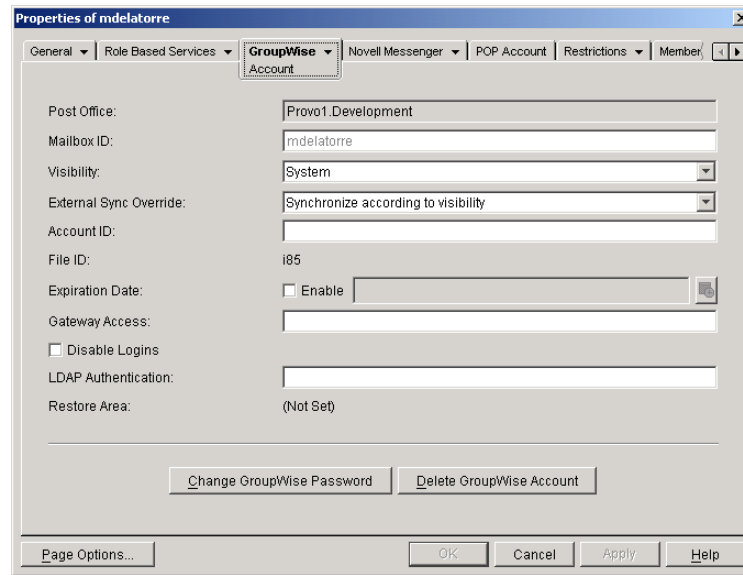
The example access.cfg file becomes effective only when the word “control” is placed in a user’s Gateway Access field along with a gateway alias type and an optional direction. For information on how to set this field, see [“Access Control Headers” on page 50](#).

### Using the Gateway Access Field

You can also apply access control to specific users is through the Gateway Access field on the User Information page of each User object ConsoleOne. This is done in nearly the same way as using ACCESSGROUP names. The difference is that you use the gateway name followed by the specific keyword you require.

To assign the access control settings to users:

- 1 Browse to and right-click a User object, then click Properties.
- 2 Click GroupWise > Account.



- 3 In the Gateway Access field, assign a name to the user.

Use the following syntax: `gateway_alias_type.direction`

The gateway name specified in the Gateway Access field must be the name of the actual gateway and not the foreign domain name. [what does this mean??]

**IMPORTANT:** The BLOCK and ALLOW keywords cannot be used in the Gateway Access field. To use these keywords, use an ACCESSGROUP name in the access.cfg file.

## Simplifying Addressing

Even though GroupWise users can connect fairly easily with users in other GroupWise systems through the Async Gateway, a simple addressing syntax can make the connection even more convenient and less confusing. You can simplify the Async Gateway addressing syntax in a number of ways.

The simplification method you use depends on your network situation and the needs of your GroupWise users. Make sure you notify the GroupWise users when you decide on a method and syntax. Of course, none of these methods are necessary if you are using the Async Gateway to connect to GroupWise Remote users. A GroupWise Remote user has the same GroupWise Address Book as in the Master Mailbox. See [“Supporting GroupWise Remote Users” on page 67](#).

- ◆ [“Addressing Concepts” on page 56](#)
- ◆ [“Creating a Customized Addressing Rule” on page 56](#)
- ◆ [“Creating an External Domain Structure” on page 59](#)
- ◆ [“Merging GroupWise Domains” on page 64](#)

## Addressing Concepts

The term “address syntax” refers to the address elements that a GroupWise user provides in the GroupWise client to send a message to another GroupWise user. GroupWise depends on three necessary elements in the address for sending messages: the domain name, the post office or gateway name, and the object ID. If all three elements are legitimate GroupWise objects and proper links are made between domains, GroupWise replicates this information to every post office database in each of its domains. The information is stored in the GroupWise Address Book.

When a user sends a message, GroupWise checks the address to see if a customized addressing rule applies to its syntax. If no rule exists, the GroupWise client validates the first element in the address syntax. If the address contains only the object ID, the client checks the Address Book to verify that the object is associated with a legitimate domain and post office before handing it to the local MTA to send it on to the associated domain. If the object does not exist in the Address Book, or if the domain or post office is not legitimately associated, GroupWise cannot send the message.

- ◆ [“Sending to the Same GroupWise System” on page 56](#)
- ◆ [“Sending to a GroupWise Remote User” on page 56](#)
- ◆ [“Sending to a Different GroupWise System” on page 56](#)

### Sending to the Same GroupWise System

The Async Gateway connects GroupWise users whose domains are not otherwise physically connected. If the Async Gateway is used to connect domains to make them part of the same GroupWise system, separate Async Gateways must be installed at the respective domains. GroupWise can then use either an explicit address or a gateway link to establish communication between the domains.

### Sending to a GroupWise Remote User

The Async Gateway allows a GroupWise Remote user to exchange information with a Master Mailbox. If proper links are made between the domains in the GroupWise system, the Address Book data should be correct and current.

The Remote user’s Address Book synchronizes with the GroupWise Address Book when the Remote user dials in to send or receive information. As messages to GroupWise Remote require no special addressing, no configuration for addressing is necessary. For more information, see [“Supporting GroupWise Remote Users” on page 67](#).

### Sending to a Different GroupWise System

Users on different GroupWise systems can send messages to each other if the Async Gateway has been installed and configured with a domain connection defined on the domains of each system.

This configuration provides the minimum information needed for an async connection. With this minimum configuration in place, you can send a test message through the gateway by using an explicit address to determine whether all of the network links and the modem connections are working properly.

## Creating a Customized Addressing Rule

A customized addressing rule allows you to establish a prescribed syntax for users to send messages across the Async Gateway.

- ◆ [“Addressing Rule Concepts” on page 57](#)



- ◆ “Creating an Async Addressing Rule” on page 57
- ◆ “Enabling and Disabling Addressing Rules” on page 59
- ◆ “Changing the Addressing Rule Order” on page 59

## Addressing Rule Concepts

Addressing rules allow your users to select an external address from their personal address book or enter a shortened form of an address that is then resolved to an explicit Async Gateway address. Addressing rules are created with the Addressing Rules tool, available from the GroupWise System Operations menu in ConsoleOne. Addressing rules created there are available for any domain in the GroupWise system. Understanding the following characteristics of the Addressing Rules tool might help you as you use it:

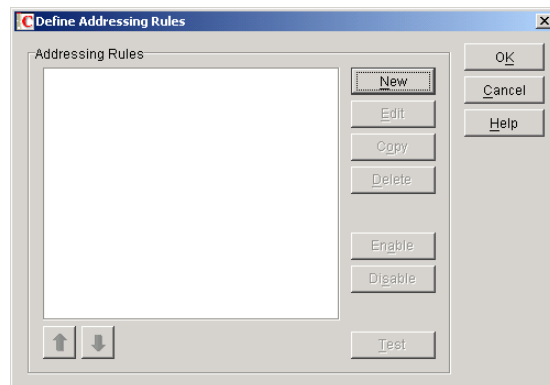
- ◆ The Addressing Rules tool is not a macro language. You cannot use one rule to trigger another. It is more of a search-and-replace engine.
- ◆ The tool searches for a specific string pattern and replaces it with the syntax defined in the rule.
- ◆ The complexity of the addressing rule you construct depends on the number of async connections possible. Generally, the more Async Gateways you can connect to, the more complex the rule you might need to construct.
- ◆ An unlimited number of addressing rules can be created or selected for a given domain.
- ◆ The Addressing Rules tool looks at the rules in the order they are listed. When the tool encounters a rule that applies to the address syntax entered by the user, no other rule is applied. Therefore, the rules should be listed in order from general to specific.

## Creating an Async Addressing Rule

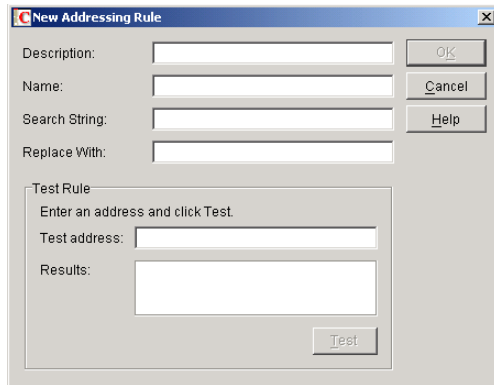
Before you create a customized addressing rule for the Async Gateway, remember to obtain all the remote login IDs and the *domain.post\_office* combinations of the other GroupWise systems you connect to with the Async Gateway.

To create an Async Gateway addressing rule:

- 1 In ConsoleOne, click Tools > GroupWise System Operations > Addressing Rules.



- 2 Click New to create a new rule or Copy to use an existing rule as a template for a new rule.



### 3 Fill in the fields:

**Description:** Specify a short description (fewer than 16 characters) for the rule.

**Name:** Specify a name for the rule. Do not use any invalid characters. The name should be descriptive.

**Search String:** Specify a string of characters (including any wildcards for variable elements) that represent the addressing syntax you expect for an outgoing message to a user in another GroupWise system. The syntax must have at least one unique character that will identify it for your rule as an Async address. The rule can then plug in the required, missing elements of the explicit address.

As a GroupWise administrator, you can prescribe the addressing syntax your users implement when they send messages through the Async Gateway, but the diversity of your remote connections might require a more complex syntax. Do not use the at sign (@) in any arbitrary addressing syntax. Use of this character, though not reserved for Internet addresses, might cause confusion if you currently have the GroupWise Internet Agent or intend to install it in the future.

**Replace With:** Specify the symbol for variable string (information typed in by the user) you want to replace for the wildcard characters. In addition to the variable symbol, you can also add any additional static elements required in the explicit address.

When the message is sent, the rule refers to the wildcards in search string order. That is, %1 (replace string 1) replaces the first wildcard in the search string, %2 replaces the second wildcard, and so on. The replacement variables do not have to be positioned in numerical order in the replacement string; instead, they must be placed in the string according to the order required for the explicit address. For examples of explicit addresses, see [“Scenario One” on page 58](#) and [“Scenario Two” on page 59](#).

**Test Rule:** Type an address just as you would expect a GroupWise user to type an address in the GroupWise client, then click Test to determine if your search and replace strings result in an accurately resolved explicit address.

### Scenario One

A user in your system sends a sales order to her co-worker, Maria, whose GroupWise account is on another system. Maria’s domain is Manufacturing. Her mailbox is in the PO1 post office. Her remote login ID is “firefly.”

Your Async Gateway is installed in the Accounting domain. It connects to only one other Async Gateway, which is installed in the Manufacturing domain.

**Address Syntax (entered by user):** maria#

**Search String:** \*#

**Replacement String:** sales.async:'firefly':manufacturing.pol.%1

**Results (explicit address):** sales.async:'firefly':manufacturing.pol.maria

### Scenario Two

A user in your system sends a message to her co-worker, Margaret, whose GroupWise account is on another GroupWise system. You have defined .com as a replacement for the marketing.pol combination, .dev for the marketing.research combination, and .edu for the marketing.training combination. The marketing domain has two different Async Gateways, the first with abc as the ID and the second with xyz as the ID.

Your Async Gateway is installed in the Sales domain.

**Address Syntax (entered by user):** margaret#xyz.com

**Search String:** \*#\*.com

**Replacement String:** sales.async:'%2':marketing.pol.%1

**Results (explicit address):** sales.async:'xyz':marketing.pol.margaret

## Enabling and Disabling Addressing Rules

Previously created addressing rules can be enabled in any domain in your GroupWise system. When a rule applies, the process ends and no more rules are processed.

To enable or disable addressing rules:

- 1** Browse to and right-click a Domain object, then click Properties.
- 2** Click GroupWise > Addressing Rules.
- 3** Select the Addressing Rules check box to enable the addressing rule in this domain.
- 4** Click Test to make sure it is being applied correctly.
- 5** From the Run Addressing Rules dialog box, enter an address as if you were a user sending a message. The Results field displays the resolved address that would be sent to the other GroupWise system.

If the rule you selected is not being applied, check the other rules that precede it in the rules list. Address strings are evaluated against the rules in the order the rules are listed.

## Changing the Addressing Rule Order

Addressing rules are applied in the order they are encountered. If a rule is applied to an address string, the search for a rule ends. You can, however, rearrange the order of the rules to create a different sequence.

- 1** In the list of rules for a domain, select a rule, then click the up-arrow or down-arrow to change its order in the list.

## Creating an External Domain Structure

Another way to simplify addressing between two GroupWise sites with an async-to-async connection is to create an external GroupWise domain structure that duplicates the domain structure of the external GroupWise site. This method requires manual creation of an external

domain in your system for every primary or secondary domain in the external system to ensure that your local GroupWise system has the message routing information it needs to send messages to external GroupWise users.

When you complete the external domain structure, it looks like the local domain structure of the external system, but you have no administrative rights over the domains at the external site. The GroupWise administrator at the other site also needs to construct the external domain structure to represent yours, but that administrator has no administrative rights over the domains at your site.

When you create the external domains locally, you must also link them to the local domain where the Async Gateway resides. The links provide further information about the domains at the other site and how they communicate through the gateway. To create links in both systems, you and the system administrator at the other site must contact each other to obtain two important pieces of information:

- ◆ The other system's domain structure; that is, the names of the domains
- ◆ The name of the domain on the other system where the gateway is located

With this information, both system administrators can create the links needed to accommodate communication through the Async Gateway.

- ◆ [“Basic Addressing Syntax” on page 60](#)
- ◆ [“Simplifying Address Syntax to Domain.Post\\_Office.UserID” on page 60](#)
- ◆ [“Simplifying Address Syntax to Post\\_Office.UserID” on page 63](#)
- ◆ [“Simplifying Address Syntax to UserID” on page 64](#)

## Basic Addressing Syntax

Each of the elements in the *domain.post\_office.user* address syntax are required by GroupWise to send to any other GroupWise destination, whether or not the user enters them on the address line.

### How GroupWise Validates this Syntax

The GroupWise client recognizes the domain name (the first element in the syntax) and verifies it is a legitimate GroupWise object, an external domain linked to the local system through a gateway link. The presence of an external domain name in the syntax alerts the GroupWise MTA to identify the gateway link and to send the message to the appropriate gateway (in this case, Async). From there, the message is delivered to the Async Gateway on the other system, where another GroupWise MTA verifies the address elements and sends the message to the correct post office, and a POA sends it on to the correct user mailbox.

## Simplifying Address Syntax to *Domain.Post\_Office.UserID*

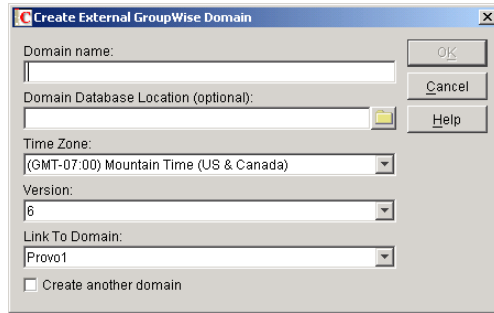
The following tasks are required to configure this address syntax:

- ◆ [“Creating an External Domain” on page 60](#)
- ◆ [“Creating a Gateway Link to the External Domain” on page 61](#)
- ◆ [“Creating an Indirect Link to the External Domain” on page 62](#)

### Creating an External Domain

Creating an external domain does not add an object to the eDirectory tree. However, you can see the external domain in the GroupWise View as an external object.

- 1 In ConsoleOne, right-click GroupWise System, then click New > External Domain.



**2** Specify a domain name.

If you are defining an external GroupWise 4.1 or 5.x system, the name must match the name given to the domain in the external system. Names are not case sensitive

**3** For the Async Gateway, keep the default domain type, External GroupWise.

**4** Use the drop-down list to select the time zone where the external GroupWise domain is physically located.

**5** Browse to and select the domain you want the external GroupWise domain linked to.

Messages to and from the external system are routed through this domain.

**6** Click OK.

**7** Continue with [Creating a Gateway Link to the External Domain](#).

**Creating a Gateway Link to the External Domain**

To simplify addressing, a gateway link must exist between the Async Gateway’s domain in your system and the Async Gateway’s domain in the external GroupWise system.

If you have created more than one external domain to represent the structure of the external GroupWise system, you must create an indirect link for each external domain that does not include the Async Gateway at the remote site. GroupWise uses indirect links to route messages to domains that do not have a gateway.

Each Domain object in eDirectory includes a link configuration attribute that controls access to link information. If you have rights, you can view and change domain links with the GroupWise link configuration tool.

To create the gateway link:

**1** In ConsoleOne, browse to and select the Domain object where the Async Gateway is located.





This is the domain whose links you will edit.

**2** Click Tools > GroupWise Utilities > Link Configuration.

**3** Click View, then click Gateway to display the Direct, Indirect and Gateway links between the gateway’s domain and the external domain.

The link status icons next to the link records indicate their status.

Icon	Description
	Unmodified

Icon	Description
	Modified - needs to be saved
	Unsafe - change currently being replicated
	Change made to link from another view
	No rights to change link

- 4** Click the name of the external GroupWise domain you want to link to.
- 5** To change the link type to or from the external domain, click and drag the linked domain to the gateway link type window.
- 6** Fill in the fields:

**Description:** Check this field to make sure you are editing the correct link. The description identifies the domains being linked.

**Link Type:** Select Gateway in the Link Type field. This link type is necessary to link the external domain to the domain where the gateway is located.

**Gateway Link:** If you have created only one gateway object, the name of the gateway is displayed in the Gateway Link field. If you have created more than one gateway object, select the correct gateway name from the drop-down list.

**Gateway Access String:** The information in this field must match the name entered in the Remote Gateway ID field of the Domain Connection dialog box. The best way to obtain this information is to ask the system administrator at the external GroupWise site to send the default login ID to you.

**Return Link:** This field displays the name of your domain as the default. Change it to the Local Login ID from the Domain Connections Property Page of the Async Gateway object.

- 7** Click OK to save the gateway link.
- 8** Continue with [Creating an Indirect Link to the External Domain](#).

### Creating an Indirect Link to the External Domain






If you have created more than one external domain to represent the structure of the external GroupWise system, you must create an indirect link for each external domain that does not include the Async Gateway at the remote site. GroupWise uses indirect links to route messages to domains that do not have a gateway.

The following steps trace the creation of an indirect link to an external domain that does not have an Async Gateway. Follow the same steps to create an indirect link for secondary domains without the gateway.

To create indirect link to external domain:

- 1** In ConsoleOne, click Tools > GroupWise View, then select GroupWise System or the external domain
- 2** Click View, then click Indirect to display the Direct, Indirect and Gateway links between the gateway's domain and the external domain.

The link status icons next to the link records indicate their status.

Icon	Description
	Unmodified
	Modified - needs to be saved
	Unsafe - change currently being replicated
	Change made to link from another view
	No rights to change link

- 3** In the Link Configuration Tool, double-click the name of the external domain you want to create an indirect link to.
- 4** In the Edit Domain Link dialog box, check the Description field to make sure you are editing the correct link.
- 5** In the Link Type field, select Indirect from the drop-down list.
- 6** Click OK to save the gateway link.

### Simplifying Address Syntax to *Post\_Office.UserID*

The same three tasks that were required to simplify address syntax to *domain.post\_office.user ID*, as described in “[Simplifying Address Syntax to Post\\_Office.UserID](#)” on page 63, are also required for this syntax. Creating an external post office in an external domain is one additional task.

- ♦ “[Creating an External Domain](#)” on page 60
- ♦ “[Creating a Gateway Link to the External Domain](#)” on page 61
- ♦ “[Creating an Indirect Link to the External Domain](#)” on page 62
- ♦ “[Creating an External Post Office in an External Domain](#)” on page 63

### Creating an External Post Office in an External Domain

If you add a post office to an external domain, users do not need to use an external domain name in the addressing syntax; they can use the name of the external domain’s post office and the user (external entity) in that post office. You must create a post office to represent each remote post office the Async Gateway connects with. Name the post office with the same name as the remote post office.

- 1** In ConsoleOne, browse to and right-click the External Domain object where you want to create the external post office.
- 2** Click New > External Post Office.
- 3** Specify the name of the post office.

If you are defining an external GroupWise 4.1 or 5 system, the name must match the name given to the post office in the external system. Names are not case sensitive.

- 4** Select the external domain that this post office will belong to.

- 5 Select the time zone where the post office defined by the external object is physically located.
- 6 Click OK to create the external post office.

## Simplifying Address Syntax to *UserID*

The same four tasks that were required to simplify address syntax to *post\_office.user\_ID*, as described in “[Simplifying Address Syntax to Post\\_Office.UserID](#)” on page 63, are also required for this syntax. Creating external users in an external post office is an additional task.

- ◆ “[Creating an External Domain](#)” on page 60
- ◆ “[Creating a Gateway Link to the External Domain](#)” on page 61
- ◆ “[Creating an Indirect Link to the External Domain](#)” on page 62
- ◆ “[Creating External Users in an External Post Office](#)” on page 64
- ◆ “[Creating an External Post Office in an External Domain](#)” on page 63

## Creating External Users in an External Post Office

If you add external users to a post office in an external domain, users do not need to use an external domain name or an external post office name in the addressing syntax; they can use the user ID only, provided the post office name is unique. You must create an external user to represent each user in the external GroupWise system the Async Gateway connects with. Name the external users with the same name as the users on the remote post office.

- 1 In ConsoleOne, browse to and right-click the External Post Office object where you want to create the external user.
- 2 Click New > External User.
- 3 Specify the GroupWise user ID exactly as it is used at the other GroupWise site, then click OK.
- 4 Double-click the user to enter the following details for the external user you created.

**Network ID:** The network ID of the external user. Make sure this ID is identical to the network ID for the user at the other GroupWise site.

**First Name:** The first name of the user at the other site. This name need not be identical to the name used at the other GroupWise site, but it must be identifiable from your GroupWise Address Book.

**Last Name:** The last name of the user at the other GroupWise site. This name need not be identical to the last name used at the other GroupWise site, but it must be identifiable from your GroupWise Address Book.

All other fields on the External User Information screen are optional.

## Merging GroupWise Domains

Merging domain databases also merges the GroupWise Address Book. When you merge databases, you not only create a centralized point of system administration, you also merge the GroupWise Address Books of the systems you are merging. This lets users consult their address books for addressing. Tasks for merging domains are performed in ConsoleOne.

Before you merge GroupWise domains, make sure that the following prerequisites are met:

- ◆ The Async Gateway is installed and configured.



- ◆ External domains have been created and named in your GroupWise system to reflect the domain structure of the other GroupWise system.

See the “[Merging with GroupWise 5.x and 6.x Systems](#)” in the *GroupWise 6.5 Multi-System Administration Guide* for information on the process of merging domains.

## Setting Up Gateway Accounting

The Async Gateway can supply accounting information for all messages, including details such as the message’s source, priority, size, and destination.

The accounting file is an ASCII-delimited text file that records the source, priority, message type, destination, and size of each item sent through the GroupWise Async Gateway. The file, which is updated daily at midnight, is called acct and is located in the xxx.prc directory. If no accountant is specified for the gateway in ConsoleOne, the file is deleted and re-created each day.

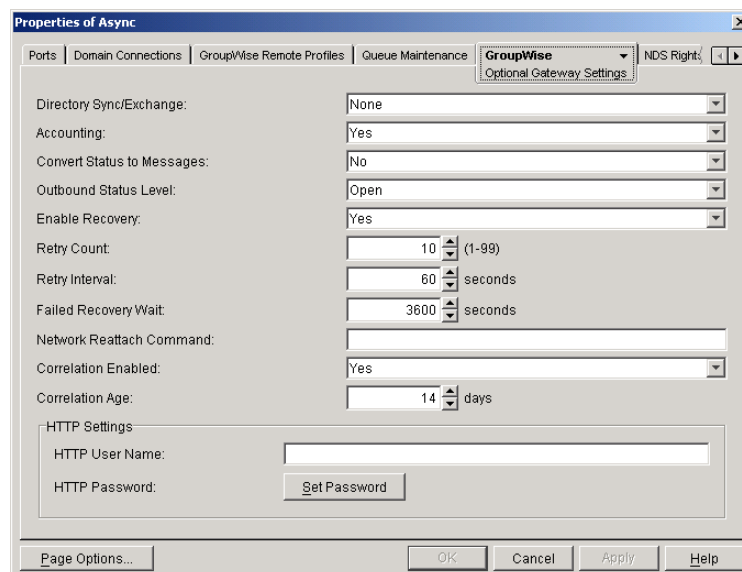
The following sections contain more information about gateway accounting:

- ◆ “[Understanding the Accounting File](#)” on page 66
- ◆ “[Enabling Accounting](#)” on page 65
- ◆ “[Selecting an Accountant](#)” on page 66

## Enabling Accounting

By default, the gateway is installed with the accounting functionality. You should verify the settings have not been changed and that accounting is still enabled.

- 1 In ConsoleOne, browse to and right-click the Domain object where the Async Gateway is located.
- 2 Right-click the Async Gateway object, then click Properties.
- 3 Click GroupWise > Optional Gateway Settings.



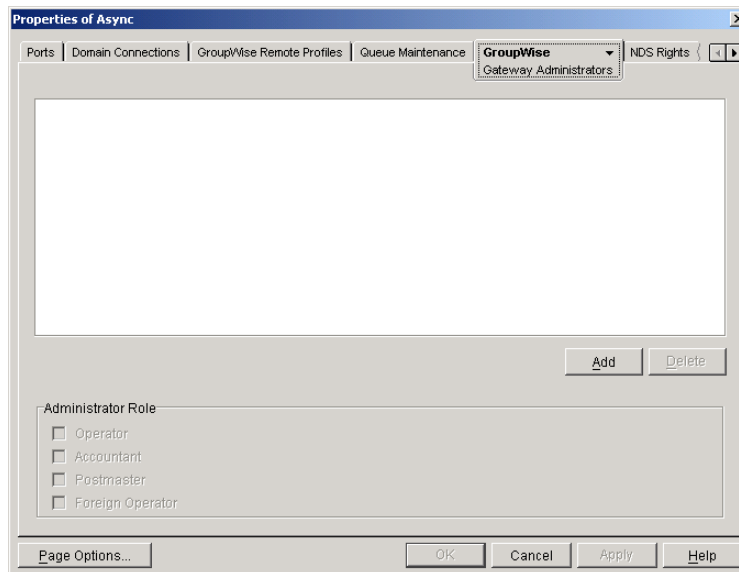
- 4 Verify that Accounting is set to Yes.

- 5** Verify that Correlation Enabled is set to Yes.
- 6** If necessary, click Apply to save your changes.
- 7** Continue with **Selecting an Accountant**.

## Selecting an Accountant

You can select one or more GroupWise users to be Accountants. Every day at midnight, each Accountant receives an accounting file (acct) that contains information about the messages the gateway sent that day.

- 1** From the Optional Gateway Settings page, click GroupWise > Gateway Administrators.



- 2** Click Add to display the Select GroupWise Object dialog box.  
All users in your GroupWise system are listed alphabetically by their user IDs. You can select Distribution Lists to list distribution lists instead of users.
- 3** Use the Filter fields above the list to restrict the length of the list.
- 4** Double-click a user that you want to add to the list of gateway accountants.  
The user's context is displayed in the Gateway Administrators list.
- 5** Select the user, then select Accountant.
- 6** Click Apply.
- 7** To add more accountants, repeat **Step 4** through **Step 6**.
- 8** When your accountant list is complete, click OK.

## Understanding the Accounting File

One line of an accounting file is shown below.

```
0,07/06/99,20:42:55,,Mail,2,Sales,Advert,Bob,,Memo,Headq,Async,0,2593
```

Each item sent through the gateway is recorded on a separate line, with the fields separated by commas (.). Two or more commas in a row indicate that a field has no data. The following table describes the fields in the order in which they are found in the accounting file.

<b>Fields</b>	<b>Description</b>	<b>Sample</b>
IN/OUT indicator	Indicates if message is outbound (O) or inbound (I)	O
Message Date	The date of the message that was sent	07/06/99
Message Time	The time the message was sent	20:42:55
GroupWise Message ID	Set of numbers that uniquely identifies the message	
GroupWise Message Type	The type of item sent (Appointment or Mail)	Mail
GroupWise Message Priority	Priority of the message sent (0=High, 2=Normal, 4=Low)	2
GroupWise User Domain	GroupWise domain of recipient (if message is inbound), or of sender (if message is outbound)	Sales
GroupWise User Post Office	GroupWise post office of recipient or sender	Advert
GroupWise UserID	User ID of recipient (if message is inbound) or sender (if message is outbound)	Bob
GroupWise User Account ID	Account ID specified in the User Information field of the recipient or sender	0
MsgSubject	Maximum length of the Subject field	Memo
Gateway Domain	Gateway Name	HEADQ
Gateway Name	Name of the gateway	Async
Message Type	Type of item sent	Mail
Address	Internet address or recipient's user name	1
# of users at this destination	Number of users the message was sent to	1
# of Attachments	Number of attachments sent with message	0
Accounting Units	Byte size of item sent through gateway	2593
Other Info		

## Supporting GroupWise Remote Users

GroupWise Remote lets GroupWise users connect to their GroupWise mailboxes over a modem and have most of the functionality of the GroupWise Windows client. With the help of an Async Gateway connection, GroupWise Remote users can update their Remote Mailboxes and send requests to their Master Mailboxes on the GroupWise system.

- ◆ [“GroupWise Remote Concepts” on page 68](#)
- ◆ [“Defining a GroupWise Remote Profile” on page 68](#)

## GroupWise Remote Concepts

GroupWise Remote lets users perform most GroupWise functions while they are away from the office. These functions include sending and receiving mail, scheduling meetings, writing notes, and assigning tasks.

GroupWise Remote can be set up on a laptop, docking computer, or a desktop computer at a remote site. When you use GroupWise in the office, the mailbox you open is the Master Mailbox. When you use GroupWise Remote, the mailbox you open is the Remote Mailbox. A docking computer can connect directly to a Remote station and download the Address Book and items in the Master Mailbox; however, to connect users away from the office, GroupWise Remote requires the GroupWise Async Gateway or the GroupWise X.25 Gateway. For information about setting up a remote user, see “Using Remote Mode” in the *GroupWise 6.5 Windows Client User Guide*.

When setting up GroupWise Remote, keep the following considerations in mind:

- ◆ Remote users must have passwords set on their mailboxes. Passwords are case-sensitive.
- ◆ Users must be prepared to provide the following information:
  - ◆ User information such as full name, user ID, and mailbox password.
  - ◆ System information such as domain and post office.
  - ◆ Modem information such as a description (name), com port, baud rate (this might depend on the master GroupWise system’s gateway modem).
  - ◆ Modem connection information such as gateway phone number, gateway login ID, gateway password, modem script (name and location, if required).
- ◆ The Modem Disconnect Method should be configured as When All Updates Are Received, Do Not Wait for Responses.
- ◆ The Redial Attempts setting should be set to the default value of 5. If you want the Remote users to use another setting, keep them informed.
- ◆ The Redial Retry Interval setting should be 1 minute. If you want the Remote users to use another setting, keep them informed.
- ◆ The Network Connection Information setting should be the path to the user’s post office.
- ◆ The Network Disconnect Method should be configured as When All Updates Are Received, Do Not Wait for Responses.
- ◆ The Time Zone Information setting should be the Remote user’s time zone.

## Defining a GroupWise Remote Profile

A GroupWise Remote profile must be configured for the Async Gateway before GroupWise can support dial-up connections from the GroupWise Remote client. The profile defines the connection used by GroupWise Remote users or groups of users to connect to GroupWise.

A single profile can be used by any number of GroupWise Remote users, depending on the message traffic. If you prefer, you can create only one profile for all the GroupWise Remote users you are responsible for.

The GroupWise Hit the Road feature pulls information from the profile to define the remote connections that GroupWise Remote uses when connecting to the GroupWise system through the Async Gateway. This process makes it possible for GroupWise Remote users to configure their connections without any information from you.

To define a GroupWise Remote Profile:

- 1 In ConsoleOne, browse to and select the Domain object where you created the Async Gateway.
- 2 Right-click the Async Gateway object, then click Properties.
- 3 Click GroupWise Remote Profiles.
- 4 Click Create to display the Remote Profile dialog box.

- 5 Fill in the fields:

**Gateway Login ID:** You can use any string of characters you want, but the ID should be descriptive. Try using a string a group of users could identify as the correct connection. For example, you could use Sales for the Login ID used by your field salespeople.

**Password:** The access password to the Async Gateway. Provide a password that a group of users can easily remember.

**Days Before Auto-Purge of Messages:** The number of days you want to keep non-downloaded messages in the GroupWise Remote holding account before they are purged.

**Minimum Idle Time:** The number of minutes that you want the Async Gateway to remain connected while waiting for responses from the GroupWise system. If you set the number of minutes to 0 (zero), your site immediately disconnects after the user uploads the requests. To keep the connection open to give the user an opportunity to receive responses to requests sent, specify a number of minutes.

**Phone Number:** The telephone number of the modem you have defined for this Async Gateway connection, including country code and area code as needed.

**Description:** Any information that helps you to identify this Remote profile.

- 6 Click OK to save the Remote profile.

## Backing Up and Recovering the Gateway Database

The database backup and recovery feature captures the snapshot for the database whenever the gateway is started. This snapshot is stored in a backup directory. By default, the gateway's root directory is set as the backup directory. The path of the backup directory can be changed using the command line switch `/bkupdir-path`.

When a new snapshot is written to the backup directory, the existing snapshot is overwritten. The backup directory always contains only the last snapshot.

When the database is corrupted, the recovery component replaces it with the last snapshot captured before the database corruption. This means that the modification done to the database after the snapshot capture is not reflected in the database.



# 7

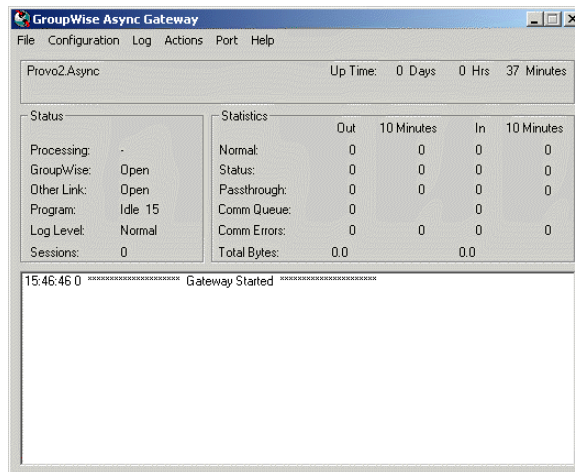
## Monitoring the Async Gateway

After you have installed, configured, and started the Novell® GroupWise® Async Gateway, there are several ways in which you can monitor gateway operation.

- ◆ “Using the Async Gateway Console” on page 71
- ◆ “Using the Async Gateway Web Console” on page 75
- ◆ “Using Async Gateway Log Files” on page 82
- ◆ “Using SNMP Monitoring Programs” on page 83
- ◆ “Understanding Async Gateway Error Messages” on page 86

### Using the Async Gateway Console

The Async Gateway console lets you monitor gateway traffic and browse through the log file to evaluate the gateway's performance.



The Async Gateway console is divided into the following areas:

- ◆ **Description**
- ◆ **Status**
- ◆ **Statistics**
- ◆ **Logging**
- ◆ **Main Menu Functions**

## Description

The Description area of the gateway console provides the following information:

**Domain.Gateway:** Displays the domain and gateway name you specified when you created the gateway.

**UpTime:** Displays the length of time the gateway has been running.

**Description:** Displays the description you added when you configured the gateway in the GroupWise identification page in ConsoleOne®.

## Status

The Status area of the gateway console provides the following information:

**Processing:** If the gateway is running, this field displays a spinning bar. If there is no bar, or if the bar is stationary for an extended period, the gateway is not running.

**GroupWise:** Indicates whether the gateway's network connection to the GroupWise domain is Open or Closed. It is normal for this field to briefly display Closed while the gateway is initializing. If the link displays Closed for an extended period, the problem could be a network failure, insufficient access rights, or an error in setup fields.

**Other Link:** Indicates whether the Async Gateway's network connection is Open or Closed. Open indicates that messages can be sent or received. Closed indicates that the network connection has terminated.

**Program:** Displays the Async Gateway's processing cycle. You can adjust this processing cycle in the Gateway Time Settings property page of ConsoleOne. See [“Defining Gateway Time Settings” on page 44](#).

**Log Level:** Displays the logging level the gateway is currently using. The level determines how much information is displayed in the logging portion of the console and written to the log file. There are a number of ways to set this level. See [“Configuring Log Settings and Switches” on page 82](#) for more information.

**Process ID:** This field is not applicable to the Async Gateway.

**Sessions:** Displays the current number of active sessions the Async Gateway is servicing (that is, the number of users who are logged in). The number of sessions can be as high as 32 for the gateway.

## Statistics

The Message Statistics field displays the volume of incoming and outgoing messages. The cumulative totals and the snap shot totals are displayed. The data in the columns are outgoing message totals, snap shot of outgoing messages, incoming message totals, and snap shot of incoming messages.

The snap shot interval statistics can help you assess the volume of messages. You can set these intervals in the Gateway Time Settings Properties page of ConsoleOne.

**Normal:** This line does not apply to the Async Gateway.

**Status:** This line is does not apply to the Async Gateway.



**Passthrough:** Displays the number of incoming and outgoing passthrough messages the gateway has processed.

**Comm Queue:** Displays the number of outgoing or incoming messages waiting in the messaging queue.

**Comm Errors:** Displays the number of communications errors for incoming and outgoing messages.

**Total Bytes:** Displays the total number of bytes for the incoming and outgoing messages the gateway has processed. The total is obtained from the compressed size of messages.

## Logging

See [“Viewing the Log File” on page 83](#).

## Menu Functions

Select the platform where you are using the Async Gateway console.

- ◆ [“NetWare Async Gateway Menu Functions” on page 73](#)
- ◆ [“Windows Async Gateway Menu Functions” on page 74](#)

### NetWare Async Gateway Menu Functions

#### Main Menu Functions

Menu Function	Description
F7-Exit	Stop the gateway and to return to the system console.
F8-Info	Display the gateway's current configuration in the Message portion of the gateway operation screen and in the log file.
<a href="#">F9-Browse Log File</a>	View the current log file.
<a href="#">F10-Options</a>	Display additional menu options.

#### F9-Browse Log File

When you are in browse mode, the following menu key options are displayed at the bottom of the screen:

Menu Function / Keystroke	Description
F1-Cancel Browse	Exit browse mode and to return to the gateway console.
F2-Search	Search forward in the log file for a text string. Press Shift-F2 to search backward for a text string.
Up-Arrow / Down-Arrow	Use the arrow keys to scroll up or down one line at a time.
Page Up / Page Down	Use these keys to scroll through the log file one screen at a time.
Home, Home, Up-Arrow	Move to the top of the log file.

Menu Function / Keystroke	Description
Home, Home, Down-Arrow	Move to the bottom of the log file.

## F10-Options

The following additional menu options are available by pressing F10:

Menu Function	Keystroke
F1-Exit Options	Return to the main menu options.
F2-Log Level	Select a logging level option for the current gateway session only. There are various ways to set logging levels. This keystroke overrides the default log level you set in the Log Settings Properties page of ConsoleOne. See <a href="#">“Configuring Log Settings and Switches” on page 82</a> .
F4-Colors	Select a color scheme for the gateway console display.
F6-Forced Dial	Activate forced dialing. For more information, see <a href="#">“Using Forced Dialing” on page 92</a> .
F8-Zero Stats	Reset the values in the Statistics box of the gateway console.
F9-Ports	Opens the Ports list in the Message Statistics box. See <a href="#">“Port Status” on page 75</a> . Press F9 again to display message statistics.  To display additional information about a specific port, press Home, then type the number of the port. For example, press Home, then type 01 to display port information for Port 1. To reset that port, press F10-Reset Port. See <a href="#">“Port Details” on page 75</a> .

## Windows Async Gateway Menu Functions

Menu	Item	Description
File	Exit	Stop the gateway.
Configuration	Gateway Settings	Display the current gateway configuration, as established in ConsoleOne, using startup switches, or for the current session at the gateway console.
Log	View Log	Display a list of log files, from which you can view a selected log file in your default ASCII text editor
	Log Settings	Display and modify log settings for the current gateway session. For information about log settings, see <a href="#">“Configuring Log Settings and Switches” on page 82</a> and <a href="#">“Viewing the Log File” on page 83</a> .
Actions	Zero Status	Reset the values in the Statistics box of the gateway console.
	Forced Dial	Activate forced dialing. For more information, see <a href="#">“Using Forced Dialing” on page 92</a> .
Port	Details	Display status and other information for a selected port. See <a href="#">“Port Status” on page 75</a> and <a href="#">“Port Details” on page 75</a>

## Platform Independent Port Status and Details

### Port Status

Status information is available for each of the 32 possible ports. The possible status options for each port include:

- ♦ **Not Configured:** The port was not defined in the Ports Properties page of ConsoleOne. See [“Defining Ports for Modems” on page 35](#).
- ♦ **Initializing:** The port is initializing.
- ♦ **Idle:** The port is set to auto answer and is waiting for a call.
- ♦ **Dialing:** The gateway is placing an outgoing call.
- ♦ **Connecting:** Carrier detect is established between gateway modems.
- ♦ **Logging In:** The @\*? and PHS sync characters have been exchanged.
- ♦ **User Name:** The user ID shown has been successfully logged in.

### Port Details

The following fields provide detailed information about port activity when a connection is made:

**Name:** The name you assigned this port connection (for example, COM1). See [“Defining Ports for Modems” on page 35](#).

**Status:** Current port activity. See [“Port Status” on page 75](#).

**User:** User ID of the person currently using the port connection.

**File Size:** Size of the file currently being processed.

**Transferred:** Percentage of the file that has been transferred.

**Files Sent:** Number of files and total size (in bytes) of the files sent through this port for this user session.

**Files Recv:** Number of files and total size (in bytes) of the files received through this port for this user session.

**Errors:** Total number of errors for this port for this user session.

**Connect Time:** Amount of time in minutes and seconds since this port connection was initiated.

**Port Rate:** The rate at which this serial port is currently transmitting data.

## Using the Async Gateway Web Console

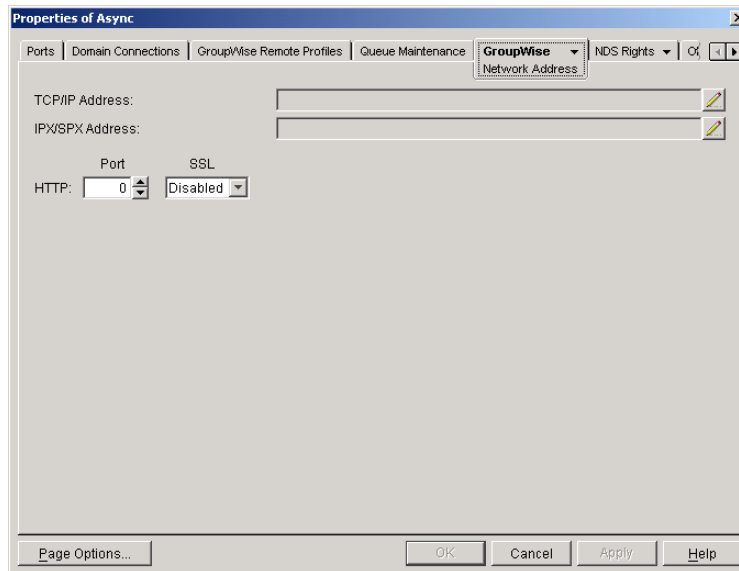
The Async Gateway Web console enables you to monitor and control the Async Gateway from any location where you have access to a Web browser and the Internet. This provides substantially more flexible access than the Async Gateway console, which can be accessed only from the NetWare® or Windows server where the Async Gateway is running.

- ♦ [“Setting Up the Async Gateway Web Console” on page 76](#)
- ♦ [“Accessing the Async Gateway Web Console” on page 77](#)
- ♦ [“Monitoring the Async Gateway from the Web Console” on page 78](#)

## Setting Up the Async Gateway Web Console

The Async Gateway Web console can be set up in ConsoleOne.

- 1 In ConsoleOne, browse to and right-click the Async Gateway object, then click Properties.
- 2 Click GroupWise > Network Address to display the Network Address page.



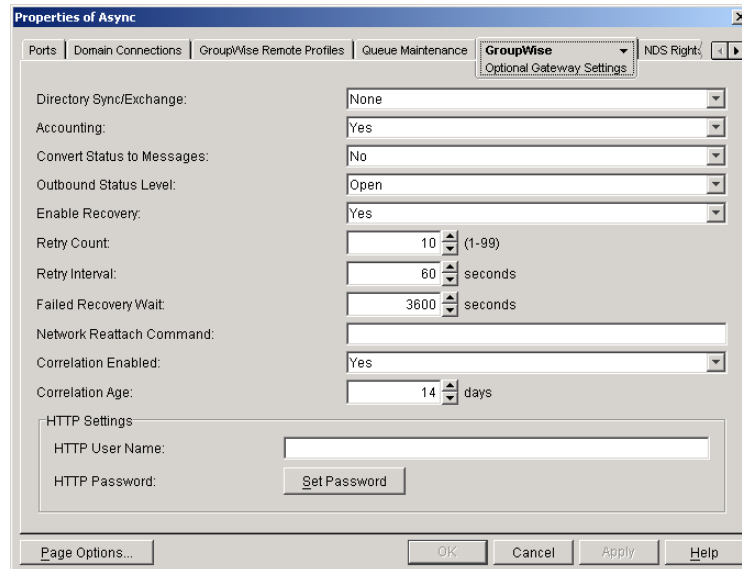
- 3 In the HTTP Port field, provide a unique port number for communication between the Async Gateway and your Web browser.

You might want to use a port number close to those used by the MTA and POA, for example, 7177.

- 4 Make a note of the HTTP port number. You need this information in order to access the Async Gateway Web console.
- 5 Click Apply to save your changes on the Network Address page.

If you want to limit access to the Async Gateway Web console, you can provide a username and password.

- 6 Click GroupWise > Optional Gateway Settings.



**7** In the HTTP Settings box:

**7a** In the HTTP User Name field, specify a unique username.

**7b** Click Set Password.

**7c** Type the password twice for verification.

**7d** Click Set Password.

Do not use a Novell eDirectory™ username and password because the information passes over the insecure connection between your Web browser and the Async Gateway.

For convenience, use the same username and password for all GroupWise agents and gateways that you plan to monitor from GroupWise Monitor. This saves you from needing to provide the username and password information as Monitor accesses each agent and gateway.

**8** Click OK to save the Async Gateway Web console settings.

ConsoleOne then notifies the Async Gateway to restart so the new settings can be put into effect.

#### **Corresponding Startup Switches:**

You could also use the `/httpport`, `/httpuser`, and `/httppassword` startup switches in the Async Gateway startup file (`gwasync.cfg`) to enable and secure the Async Gateway Web console. In addition, you can use the `/httprefresh` switch to control how often the Async Gateway refreshes the information provided to your Web browser.

## **Accessing the Async Gateway Web Console**

To monitor the Async Gateway from your Web browser, view the URL where the Async Gateway is located by supplying the network address of the NetWare or Windows server where the gateway runs and the port number as provided on the Network Address page of the Async Gateway object in ConsoleOne.

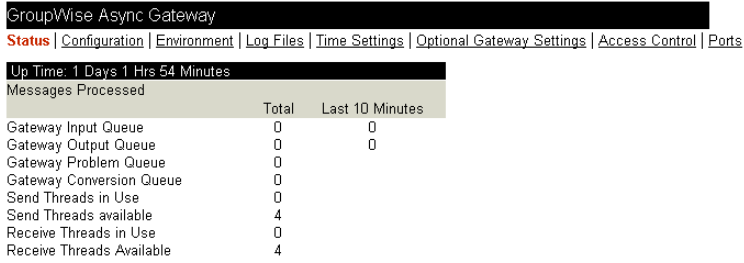
#### **Syntax:**

`http://IP_address_or_hostname:HTTP_port`

## Examples:

<http://172.16.5.18:7177>

<http://asyncserver1:7177>



The screenshot shows the GroupWise Async Gateway Status page. At the top, there is a navigation menu with links for Status, Configuration, Environment, Log Files, Time Settings, Optional Gateway Settings, Access Control, and Ports. Below the navigation, it displays 'Up Time: 1 Days 1 Hrs 54 Minutes'. A table titled 'Messages Processed' shows the following data:

	Total	Last 10 Minutes
Gateway Input Queue	0	0
Gateway Output Queue	0	0
Gateway Problem Queue	0	0
Gateway Conversion Queue	0	0
Send Threads in Use	0	0
Send Threads available	4	0
Receive Threads in Use	0	0
Receive Threads Available	4	0

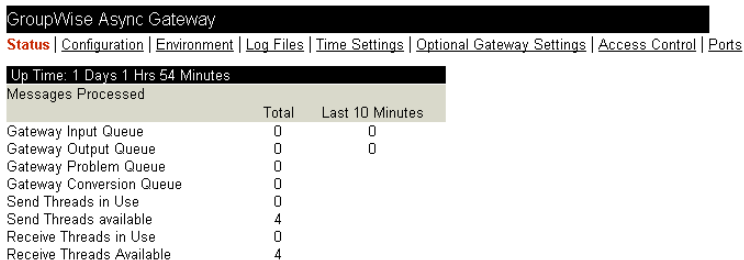
## Monitoring the Async Gateway from the Web Console

The Async Gateway Web console provides several pages of information to help you monitor the performance of the Async Gateway. The Async Gateway Web console menu lists the pages of information available in the Async Gateway Web console.

- ◆ [“Monitoring Gateway Status” on page 78](#)
- ◆ [“Checking Gateway Configuration” on page 78](#)
- ◆ [“Checking the Operating System Environment” on page 79](#)
- ◆ [“Viewing Gateway Log Files” on page 80](#)
- ◆ [“Checking and Changing Gateway Time Settings” on page 80](#)
- ◆ [“Checking and Changing Optional Gateway Settings” on page 81](#)
- ◆ [“Changing Gateway Access Control” on page 81](#)

## Monitoring Gateway Status

When you first access the Gateway Web console, the Status page is displayed.



This screenshot is identical to the one above, showing the GroupWise Async Gateway Status page with the same navigation menu, up time, and 'Messages Processed' table.

The information is the same as is displayed on the gateway console on the NetWare or Windows server where the gateway runs. For more information, see [“Status” on page 72](#).

## Checking Gateway Configuration

On the Async Gateway Web console menu, click Configuration to display the configuration information stored on various property pages on the Async Gateway object in ConsoleOne.

GroupWise Async Gateway	
<a href="#">Status</a>   <a href="#">Configuration</a>   <a href="#">Environment</a>   <a href="#">Log Files</a>   <a href="#">Time Settings</a>   <a href="#">Optional Gateway Settings</a>   <a href="#">Access Control</a>   <a href="#">Ports</a>	
GroupWise Async Gateway Configuration Settings	
TCP/IP Settings	
Port for HTTP Connections:	7200
HTTP Refresh Rate:	60 seconds
Connection Timeout:	5
Data Timeout:	20
Event Log Settings	
Log Level:	Normal
Disk Logging:	Yes
Log Directory:	\\jbd-w2k1c1\$gwssystem\provo2\wpgate\Async\000.prc
Maximum Log File Age:	7
Maximum Log Disk Space:	1024
Configuration Information	
Platform:	NT
Domain and Gateway:	
Foreign ID:	
Description:	
Alias Type:	
Root Directory:	\\jbd-w2k1c1\$gwssystem\provo2\wpgate\Async
Work Directory:	\\jbd-w2k1c1\$gwssystem\provo2\wpgate\Async\000.prc\gwwork
Log File:	\\jbd-w2k1c1\$gwssystem\provo2\wpgate\Async\000.prc\0709log.001
Directory ID:	asy194c
Directory Synchronization:	NO
Directory Exchange:	NO
Accounting:	YES
Access Control:	YES
Convert GroupWise Status to Messages:	NO
Outbound Status Level:	OPEN
Enable Recovery:	Yes

To change the log settings for the current gateway session, click Event Log Settings. All other settings listed on the Configuration page must be changed in ConsoleOne.

## Checking the Operating System Environment

On the Async Gateway Web console menu, click Environment to display information about the operating system where the Async Gateway is running.

On NetWare, the following environment information is displayed:

GroupWise Async Gateway	
<a href="#">Status</a>   <a href="#">Configuration</a>   <a href="#">Environment</a>   <a href="#">Log Files</a>   <a href="#">Time Settings</a>   <a href="#">Optional Gateway Settings</a>   <a href="#">Access Control</a>   <a href="#">Ports</a>	
Loaded Module Data	
Report Date: 7-10-2004 at 3:02	
Server Configuration	
Server	GWDOC
Company	Novell
OS Revision	NetWare 5.60.01
OS Date	January 15, 2002
Supported Connections	175
Connections in Use	34
Receive Buffer Max	10000 (Recommended 2500)
Module Information	
GroupWise Engine	
GWENN3.NLM	
Version	6.00 d
Memory Allocated	10624
Build Date	6-10-2004
GroupWise Engine (release version)	
GWENN4.NLM	
Version	6.05 a
Memory Allocated	10568
Build Date	7-10-2003
GroupWise MTA (release version)	
GWMTA.NLM	
Version	6.05 a
Memory Allocated	14792
Build Date	7-10-2003
GroupWise Post Office Agent (Release version)	
GWPOA.NLM	
Version	6.05 a
Memory Allocated	14866
Build Date	7-10-2003

On Windows, the following environment information is displayed:

GroupWise Async Gateway  
[Status](#) | [Configuration](#) | [Environment](#) | [Log Files](#) | [Time Settings](#) | [Optional Gateway Settings](#) | [Access Control](#) | [Ports](#)  
 Thursday, June 10, 2004 16:36:08  
 OS Data  
 Windows NT (TM) Version 5.0 (Build 2195) Service Pack 4  
 Build Dates  
 Gateway Build Timestamp Thursday, June 10, 2004 16:36:08

## Viewing Gateway Log Files

On the Async Gateway Web console menu, click Log Files to display gateway log files.

GroupWise Async Gateway  
[Status](#) | [Configuration](#) | [Environment](#) | [Log Files](#) | [Time Settings](#) | [Optional Gateway Settings](#) | [Access Control](#) | [Ports](#)

[View Event Log Settings](#)

Event Log Filter

Events containing

Event logs:  Select all

0707log.001	07-08-04 00:00:00	842
0708log.001	07-09-04 00:00:00	1483
* 0709log.001	07-09-04 00:00:00	156

Click Event Log Settings to change the log settings for the current Async Gateway session.

GroupWise Async Gateway  
[Status](#) | [Configuration](#) | [Environment](#) | [Log Files](#) | [Time Settings](#) | [Optional Gateway Settings](#) | [Access Control](#) | [Ports](#)  
[Event Log Settings](#)

Log Level

Off  
 Normal  
 Verbose  
 Diagnostic

Log Maintenance Settings

Max Log File Age  Days  
 Max Log File Space  KBytes

For information about Async Gateway log files, see [“Using Async Gateway Log Files”](#) on page 82.

## Checking and Changing Gateway Time Settings

On the Async Gateway Web console menu, click Time Settings to display the settings listed on the Time Settings page in ConsoleOne.

GroupWise Async Gateway  
[Status](#) | [Configuration](#) | [Environment](#) | [Log Files](#) | [Time Settings](#) | [Optional Gateway Settings](#) | [Access Control](#) | [Ports](#)  
 Gateway Time Settings

Send/Receive Cycle:  Seconds  
 Minimum Run:  Seconds  
 Idle Sleep Duration:  Seconds  
 Snap Shot Interval:  Seconds



Modify the settings as needed, then click Submit to change them for the current Async Gateway session. For information about the time settings, see “[Defining Gateway Time Settings](#)” on page 44.

## Checking and Changing Optional Gateway Settings

On the Async Gateway Web console menu, click Optional Gateway Settings to display the settings listed on the Optional Gateway Settings page in ConsoleOne.

The screenshot shows the 'Optional Gateway Settings' page in the Async Gateway Web console. The page title is 'GroupWise Async Gateway'. The navigation menu includes 'Status', 'Configuration', 'Environment', 'Log Files', 'Time Settings', 'Optional Gateway Settings' (highlighted), and 'Access Control'. The 'Gateway Settings' section is expanded to show 'Optional Gateway Settings'. The settings are as follows:

- Directory Sync/Exchange: None (dropdown)
- Accounting:  Yes,  No
- Convert Status to Messages:  Yes,  No
- Outbound Status Level: OPEN (dropdown)
- Correlation Enabled:  Yes,  No
- Correlation Age: 14 Days (text input)
- Startup Switches:
  - Number of Threads to be used during Outbound: 4 (text input)
  - Number of Threads to be used during Inbound: 4 (text input)
  - Group expansion:  On,  Off
  - Single option: (Run one send and one receive cycle then automatically terminate)  On,  Off
  - Handling of bad messages: Move (dropdown)

A 'Submit' button is located at the bottom left of the settings area.

Modify the settings as needed, then click Submit to change them for the current Async Gateway session. For information about the optional gateway settings, see “[Defining Optional Gateway Settings](#)” on page 47.

## Changing Gateway Access Control

On the Async Gateway Web console menu, click Access Control to turn access control on and off and to adjust the maximum message size for the current Async Gateway session.

The screenshot shows the 'Access Control' page in the Async Gateway Web console. The page title is 'GroupWise Async Gateway'. The navigation menu includes 'Status', 'Configuration', 'Environment', 'Log Files', 'Time Settings', 'Optional Gateway Settings', 'Access Control' (highlighted), and 'Ports'. The 'Access control' section is expanded to show the following settings:

- On,  Off
- Max size: [ ] Bytes (text input)

A 'Submit' button is located at the bottom left of the settings area.

For information about access control, see “[Defining User Access to the Gateway](#)” on page 49.

# Using Async Gateway Log Files

The Async Gateway log files contain operational data useful for tracking gateway activity and for troubleshooting.

The gateway creates a new log file each day and each time the gateway is restarted. The log file is named *mmddlog.nnn*, where *mmdd* is the month and day and *nnn* is the log file number beginning with 001. For example, the first log file created on December 1 would be named 1201log.001. If the gateway were restarted during the day, the second log file would be named 1201log.002.

If you want to use the gateway's logging feature, a variety of logging options are available:

- ♦ [“Configuring Log Settings and Switches” on page 82](#)
- ♦ [“Viewing the Log File” on page 83](#)

## Configuring Log Settings and Switches

- 1** In ConsoleOne, browse to and select the GroupWise Domain object where you created the gateway.
- 2** Right-click the Async Gateway object, then click Properties.
- 3** Click GroupWise > Log Settings.
- 4** Adjust the following fields as needed:

**Log File Path:** Specify the directory where you want the Async Gateway to store its log files. By default, the gateway's log files are kept in the *domain\wpgate\async\ xxx.prc* directory.

You can also set the log file location by including the **/log** switch on the command line when you start the gateway or in the startup file (*gwasync.cfg*).

**Logging Level:** Select how much information is displayed to the gateway operation screen and written to the log file. You can enable gateway logging by selecting any level except None. The other logging levels are:

- ♦ **Normal:** Logs standard activity for message routing and processing. This provides a basic summary of all activity.
- ♦ **Verbose:** Logs detailed activity for message routing and processing.
- ♦ **Diagnostic:** Logs maximum activity for message routing and processing. This level should be used only when troubleshooting a problem with the gateway. This logging level cannot be set at the Gateway Log Settings page. It must be set either with a startup switch or at the gateway operation screen.

You can also set the gateway logging level by including the **/loglevel** switch on the command line when you start the gateway or in the startup file (*gwasync.cfg*).

**Max Log File Age:** Specify the number of days you want the gateway to retain a log file before deleting it. For example, the default (7 days) causes the 1201log.001 to be deleted on 12/9 (December 9).

You can also set the log file age by including the **/logdays** switch in the command line when you start the gateway or in the startup file (*gwasync.cfg*). If you use this switch, the range is from 1 to 360 days. Use 0 to designate unlimited number of days.

**Max Log Disk Space:** Specify the maximum amount of disk space used for all log files. When the limit is reached, the gateway begins to overwrite the existing log files, starting with the oldest one.

You can also set the log file size by including the `/logmax` switch on the command line when you start the gateway or in the startup file (`gwasync.cfg`). If you use this switch, the range begins at 256 KB and extends upward indefinitely. Use 0 (zero) to designate an unlimited size.

- 5 Click OK to save your change.

## Viewing the Log File

The Async Gateway log files contain operational data useful for tracking gateway activity and for troubleshooting.

You may want to use log files on a regular basis. You can view the current log file for the gateway session in progress, or an archived log file. Current log files are viewable only in the gateway operation screen, while a saved log file can only be viewed in an ASCII text editor.

To view the current log file, the Async Gateway must be running. The log file is displayed in the Logging window of the Async Gateway Console, with only the most current operations visible. The log file is complete, however, and includes the gateway startup and configuration information, as well as ongoing operations logged by time, including the shutdown operation. You can browse the file or perform a search for any text string you want.

To view the current log file from the gateway operation screen, see [“Menu Functions” on page 73](#)

## Using SNMP Monitoring Programs

The Async Gateway supports the Simple Network Management Protocol (SNMP). You can monitor the Async Gateway from the Management and Monitoring component of Novell ZENworks® for Servers or any other SNMP management and monitoring program. When properly configured, the Async Gateway sends SNMP traps to network management consoles for display along with other SNMP monitored programs.

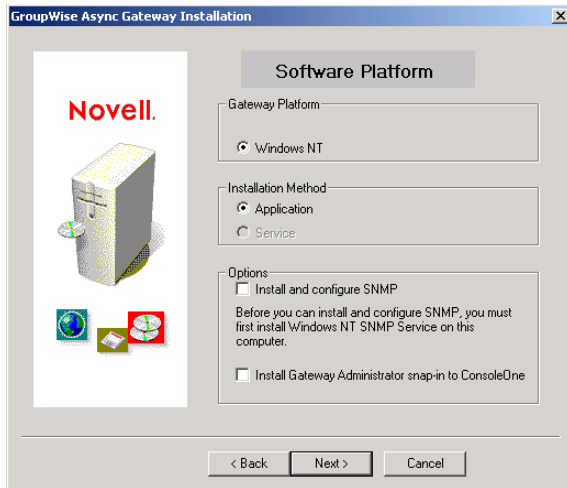
- ♦ [“Enabling SNMP Support in a NetWare Environment” on page 83](#)
- ♦ [“Enabling SNMP Support in a Windows Environment” on page 83](#)

### Enabling SNMP Support in a NetWare Environment

You must install `snmp.nlm` on the server where the Async Gateway is to be installed, then you must manually load it before you load the gateway NLM. If you do not have the `snmp.nlm`, contact Novell or your authorized Novell reseller. The Async Gateway can function without the SNMP agent (`snmp.nlm`).

### Enabling SNMP Support in a Windows Environment

During installation of the Windows Async Gateway, you had the opportunity to configure the Async Gateway for SNMP.



If the option was dimmed, then SNMP was not installed on the Windows server.

To set up SNMP services for the Windows server, complete the following tasks:

### Copying and Compiling the Async Gateway MIB File

An SNMP-enabled Async Gateway returns information contained in a Management Information Base (MIB). The MIB is an ASCII data structure that defines the information gathered. It also defines the properties that can be monitored and managed on the SNMP-enabled Async Gateway. You can view the contents of the Async Gateway MIB for a description of the SNMP variables available for it. The Async Gateway MIB is located in the *domain\wpgate\async* directory.

Before you can monitor an SNMP-enabled Async Gateway, you must compile the *ngwasync.mib* file using your SNMP management program.

- 1** Copy the *ngwasync.mib* file from the *domain\wpgate\async* directory to the location required by your SNMP management program.

For example, ZENworks for Servers users could copy the *ngwasync.mib* file to the *\agents\snmp* directory in the GroupWise software distribution directory.

- 2** Compile or import the *ngwasync.mib* file as required by your SNMP management program.

For example, to compile the *ngwasync.mib* file for ZENworks for Servers:

**2a** In ConsoleOne, right-click the Site Server object, then click Properties > MIB Pool.

**2b** Click Modify Pool > Add.

**2c** Browse to and select the *ngwasync.mib* file, then click OK.

**2d** Click Compile.

**2e** To make sure that the Windows machine where the Async Gateway is running is configured to send SNMP traps to the ZENworks for Servers Site Server, add the IP address or host name of the Site Server to the list of trap destinations.

- ♦ From the Windows NT\* Control Panel, double-click Network, then click Services > SNMP Service > Properties > Traps.
- ♦ From the Windows 2000 Control Panel, double-click Administrative Tools, then click Services > SNMP Service > Properties > Traps.

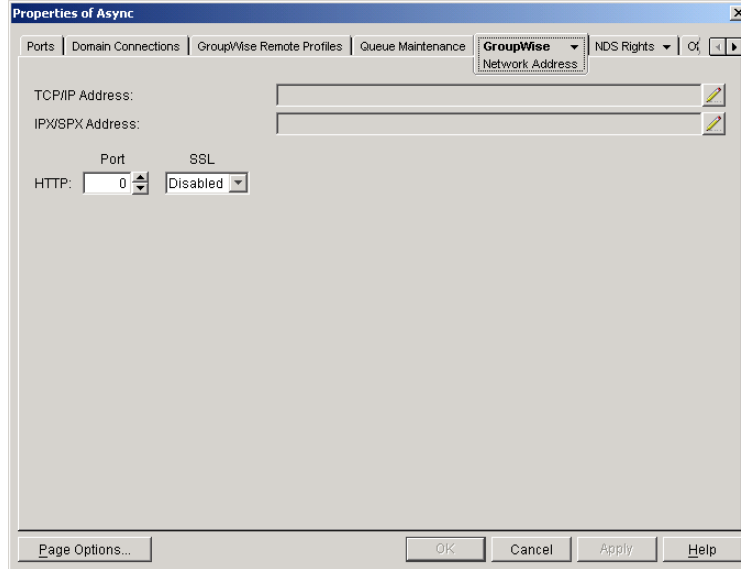
Refer to your SNMP management program documentation for specific instructions.

- 3** Continue with “Configuring the Async Gateway for SNMP Monitoring” on page 85.

## Configuring the Async Gateway for SNMP Monitoring

In order for SNMP monitoring programs to monitor the Async Gateway, the Async Gateway must be configured with a network address and SNMP community string.

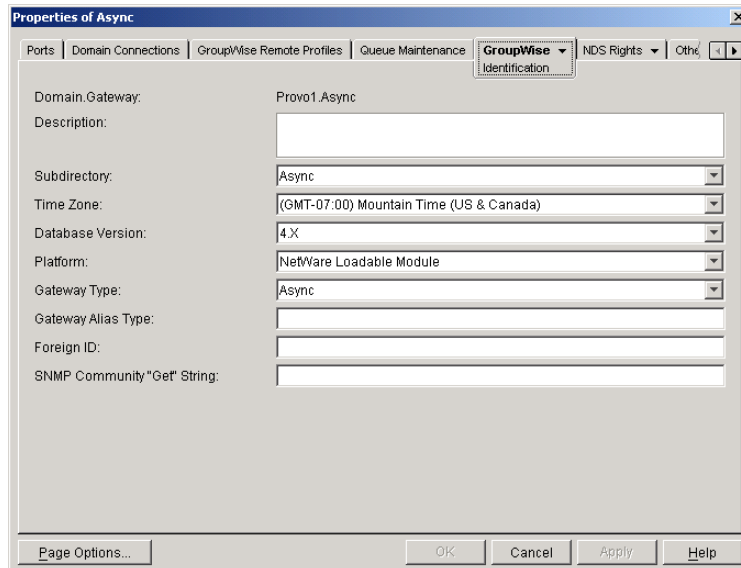
- 1 Browse to and right-click the Async Gateway object, then click Properties.
- 2 Click GroupWise > Network Address to display the Network Address page.



- 3 Click the pencil icon to provide the TCP/IP address or hostname of the machine where the Async Gateway runs, then click Apply.

The Async Gateway does not currently support SSL.

- 4 Click GroupWise > Identification.



- 5 Provide your system SNMP community GET string, then click OK.

ConsoleOne then notifies the Async Gateway to restart so the new settings can be put into effect.

The Async Gateway should now be visible to your SNMP monitoring program.

## Understanding Async Gateway Error Messages

As you monitor the Async Gateway, you might occasionally see error messages. See [Appendix C, “Async Gateway Error Messages,”](#) on page 111.

# 8

## Optimizing the Async Gateway

You can adjust how the Novell® GroupWise® Async Gateway functions in order to optimize its performance.

- ♦ [“Scripting for the GroupWise Async Gateway” on page 87](#)
- ♦ [“Performing Queue Maintenance” on page 91](#)
- ♦ [“Using Forced Dialing” on page 92](#)

### Scripting for the GroupWise Async Gateway

A script can be included with the Async Gateway. This feature extends many aspects of the gateway. To familiarize you with this functionality, some instances where scripting is useful are included in this section.

Scripting can be used to configure the Async gateway to perform X.25 network logins in order to utilize third-party X.25 networks for cheaper international connections. The gateway can also be configured to attempt a less expensive route and then fall back to more expensive routes if the call cannot be completed through a cheaper route.

Long phone numbers (for example, strings that include credit card numbers) can now be dialed via a script.

Scripts can be used to handle any pre-call dialing necessary to satisfy some PBX environments.

- ♦ [“Script File Details” on page 87](#)
- ♦ [“Scripting Language” on page 88](#)
- ♦ [“Script File Syntax” on page 89](#)
- ♦ [“Sample Scripts” on page 90](#)

### Script File Details

A script file is a sequence of statements and possibly comments that the gateway automatically detects and uses.

A default script can be created to govern all connections. Link-specific scripts can also be generated. If both a default script and a link-specific script exist, the link-specific script overrides the default script for the specific link. Consequently, it is possible to create a default script to handle most links and then create link-specific scripts for any exceptions.

The term “link” refers to a domain connection defined within ConsoleOne®. Subdirectories for each link can be found in the `\domain\wpgate\gateway\gwout\directory`. Wherever possible, the gateway uses the connection name (defined within ConsoleOne) as the directory name. However, if a directory with that name already exists, the gateway creates a unique directory name.

Default scripts are named `default.scr` and are placed in the `\domain\wpgate\gateway\gwout\` directory. Link-specific scripts are named `link.scr` and are placed in the individual `\domain\wpgate\gateway\gwout\link_id` link subdirectories:

**TIP:** The Domain Connections panel in ConsoleOne contains a field for the Remote Phone Number. This field represents the phone number you dial to complete the domain connection. If this field is empty, the gateway does not dial. If you choose to embed dialing instructions within a script (to avoid putting the phone number in the Remote Phone Number field), it is sufficient to place a space in that field.

## Scripting Language

The script file consists of a sequence of statements and possible comments. Comments start with a pound (#) character and run to the end of the line. The following is the list of statements that can be used.

### **SEND *string***

Sends the *string* to the connection.

### **SETDTR**

Raises both the Data Terminal Ready (DTR) and Request To Send (RTS) signals.

### **SETRTS**

Lowers the Data Terminal Ready (DTR) signal and raises the Request To Send (RTS) signal.

### **CLRDTR**

Lowers the Data Terminal Ready (DTR) and Request To Send (RTS) signals.

### **CLRRTS**

Raises the Data Terminal Ready (DTR) signal and lowers the Request To Send (RTS) signal.

### **DONE *string opt***

Optional. Terminates the script with a Success status and writes the optional *string* to the gateway's log file.

### **ERROR *string opt***

Optional. Terminates the script with an error status and writes the optional *string* to the gateway's log file.

### **LOG *string***

Writes the *string* to the gateway's log file.

### **GOTO *label***

Jumps to the specified *label* in the script. Forward and backward jumps are allowed.

### **PAUSE *integer***

Halts the execution for *integer* seconds.



## LISTEN

The script receives characters from the line and makes a branching decision based on the IF cases within the LISTEN statement. At least one IF case must be included and a total of four are allowed.

A time limit is optional in the LISTEN statement. In such a case, the listening terminates only when the connection times out, or if an error occurs. If a time limit is not specified, then the TIMEOUT case cannot be used in the statement.

The following sample listens on the line for only 10 seconds. During that time, if it receives the string *login:*, it sends the words “my name” to the line and proceeds to the next statement in the script.

```
LISTEN FOR 10
  IF "login:" SEND "my name"
  IF TIMEOUT GOTO END
ENDLISTEN
LOG "User id has been sent"
```

## Script File Syntax

The formal definition of syntax for the script is given below.

Make sure that you leave a blank line at the end of each script. If not, the gateway is unable to parse the script and the message “Syntax error: Invalid Statement” appears in the log file.

```
Script> := statementlist

statementlist := statement statementlist

statement :=label opt simplestatement
             label opt listen

simplestatement :=SEND string
                 ERROR string opt
                 LOG string
                 DONE string opt
                 GOTO integer
                 PAUSE integer
                 SETDTR
                 SETRTS
                 CLRDTR
                 CLRRTS

listen :=LISTEN FOR timelimit
          IF string simplestatement
          IF TIMEOUT simplestatement
ENDLISTEN

timelimit:=integer
          EVER

label := alphanumtext:

string := "text"

alphanumtext := a-zA-Z_0-9

integer := 0-9

text := any character
```

**IMPORTANT:** There is a difference between sending raw data to a COM port and a modem. If you embed modem commands in your script, such commands should be followed by \r. For example, if you want to instruct a modem to dial the number 555-1212, the instruction would be sent to the modem as follows:

```
SEND "atdt 555-1212\r"
```

## Sample Scripts

- ◆ “Sample Script for Logging In” on page 90
- ◆ “Sample Script for Initialization and Dialing” on page 90

### Sample Script for Logging In

```
LOG "Starting the login..."
SEND "something important..." #This is a comment
PAUSE 5
LABEL1:
    LISTEN FOR 10
        IF "login" SEND "my name"
        IF TIMEOUT GOTO LABEL2
    ENDLISTEN
    LOG "Sent the userid..."
    LISTEN FOR 20
        IF "passwd" SEND "my password"
        IF TIMEOUT GOTO LABEL2
    ENDLISTEN
    DONE "Login successful!"
LABEL2:
    ERROR "Login failed"
```

### Sample Script for Initialization and Dialing

```
LOG "Initiating Link Specific Script for Connection: Primary"
LOG "Initializing the Modem"
LISTEN FOR 5
    IF "RING" GOTO LABEL5
    IF "BUSY" GOTO LABEL6
ENDLISTEN
SEND "AT&FX4E0V1&M4&B1&C1&D2&H1&K0&R2S0=2\r" #Init String

# NOTE: Modem commands should
#       be followed by "\r".

LISTEN FOR 10
    IF "OK" GOTO LABEL1
    IF TIMEOUT GOTO LABEL3
ENDLISTEN
LABEL1:
    LOG "Modem Successfully Initialized"
    LOG "Dialing"
    SEND "atdt 555-1212\r"# Dial
    LISTEN FOR 30
        IF "CONNECT" GOTO LABEL2
        IF TIMEOUT GOTO LABEL4
    ENDLISTEN
LABEL2:
    DONE "Connected!"
LABEL3:
    ERROR "The Modem Is Not Responding."
LABEL4:
    LOG "Unable to Dial 555-1212."
```

```

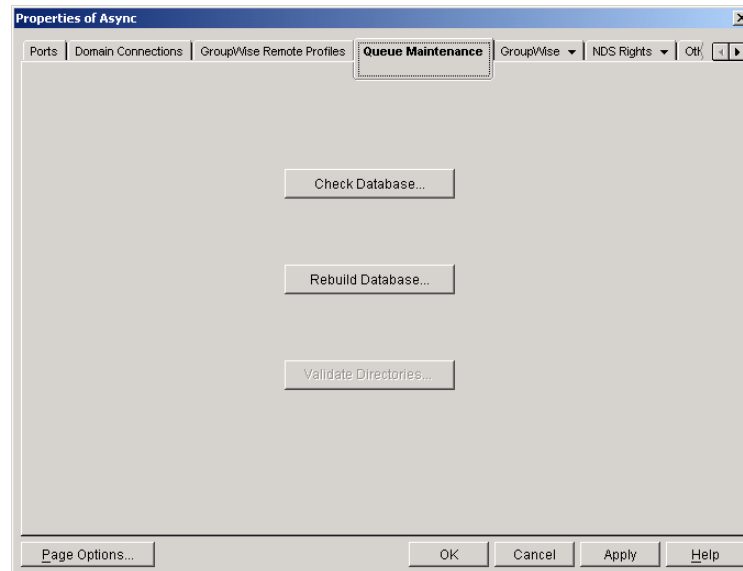
PAUSE 1
SEND "athz\r"# Hang up
PAUSE 1
LOG "Dialing 555-1414."
SEND "atdt 555-1414\r"# Dial alternate number
LISTEN FOR 30
    IF "CONNECT" GOTO LABEL2
    IF TIMEOUT GOTO LABEL4
ENDLISTEN
LABEL5:
    DONE "Aborting Script to Answer Inbound call."
LABEL6:
    DONE "The Line is BUSY. Aborting script."
LABEL7:
    DONE "Unable to Dial"

```

## Performing Queue Maintenance

Queue maintenance lets you maintain information about your Async Gateway site that other Async Gateways and GroupWise Remote clients need to connect to your Async Gateway.

- 1 In ConsoleOne<sup>®</sup>, browse to and select the Domain object where you created the Async Gateway to open the container.
- 2 Right-click the Async Gateway, then click Properties.
- 3 Click Queue Maintenance.



- 4 Select any of the following to perform the maintenance of your choice.

**Check Database:** Runs a check on the gateway database for physical errors, data integrity and valid indexes. If the check is successful, Validate Directories is enabled.

**Rebuild Database:** Runs a rebuild function on the Async database. Use this function if the Check Database function is unsuccessful.

**Validate Directories:** Matches the gateway's connection ID directories with the Async database directory structure. If there is no match, the utility deletes the directories for any

connections that are no longer in the database and creates directories for connections that do not have them. This is disabled until a Check Database function is successfully executed.

- 5 Click OK when you are finished with database maintenance.

## Using Forced Dialing

The forced dialing feature of the Async Gateway console activates forced dialing using a selected preconfigured gateway account. Only one account at a time can be selected for dialing. The default internal dialing schedule is stopped until forced dialing of the selected account takes place. This feature is provided mainly for debugging gateway-to-gateway connections and should not be used often.

- ◆ “Forced Dialing in the Windows Async Gateway” on page 92
- ◆ “Forced Dialing in the NetWare Async Gateway” on page 92

### Forced Dialing in the NetWare Async Gateway

- 1 From the main gateway screen, press F10 for Options, press PgUp to view more options, then press F6 to activate forced dialing.

The following information is displayed.

Domain: *domain name*

Port: *port name*

Phone: *phone number*

- 2 Select the account from the list of accounts configured for the gateway to dial out, using left and right arrow keys for navigating through previous and next records.
- 3 Press Insert to select an account or press Delete to cancel the selection process. Only one account can be selected at a time.

### Forced Dialing in the Windows Async Gateway

- 1 Select Action from the menu, then click Forced Dial to display the Forced Dialing dialog box.
- 2 Select the account from the list of accounts configured for the gateway to dial out. Only one account can be selected at a time.

The phone number and the name of the port through which the dialing is to be performed is displayed.

- 3 Click Select to activate forced dialing using the selected account.

# 9

## Using Async Gateway Startup Switches

The Novell® GroupWise® Async Gateway allows you to define gateway switches at the command line or within a startup file. Startup switches have two main functions:

- ♦ To specify paths to various files the gateway can read or write to
- ♦ To set operational parameters

To use a startup switch on the command line, include it immediately after the command used for starting the gateway. For example:

**Syntax:** `load ngwasync /switch`

**Example:** `load ngwasync /home-mail:\headq\wpgate\asynlm`

Startup switches provided on the command line override startup switches provided in the startup file and settings provided in ConsoleOne®.

To use a startup switch in the startup file, use an ASCII text editor to edit the startup file (`gwasync.cfg`) located in the Async Gateway installation directory. Startup switches set in the startup file override settings provided in ConsoleOne. After editing the startup file, you must restart the Async Gateway to put the new settings into effect.

Some switches must be followed by a value, which must be separated from the switch itself by a hyphen (-) or an equal sign (=).

The Async Gateway uses the following switches:

NetWare Async Gateway	Windows Async Gateway	ConsoleOne Setting
<code>/bkupdir</code>	<code>/bkupdir</code>	N/A
<code>/color</code>	N/A	N/A
<code>/help</code>	<code>/help</code>	N/A
<code>/home</code>	<code>/home</code>	N/A
<code>/httppassword</code>	<code>/httppassword</code>	GroupWise > Optional Gateway Settings > HTTP Password
<code>/httpport</code>	<code>/httpport</code>	GroupWise > Network Address > HTTP Port
<code>/httprefresh</code>	<code>/httprefresh</code>	N/A
<code>/httpuser</code>	<code>/httpuser</code>	GroupWise > Network Address > HTTP User Name
<code>/log</code>	<code>/log</code>	GroupWise > Log Settings > Log File Path

NetWare Async Gateway	Windows Async Gateway	ConsoleOne Setting
<code>/logdays</code>	<code>/logdays</code>	GroupWise > Log Settings > Max Log File Days
<code>/loglevel</code>	<code>/loglevel</code>	GroupWise > Log Settings > Logging Level
<code>/logmax</code>	<code>/logmax</code>	GroupWise > Log Settings > Max Log Disk Space
<code>/mono</code>	N/A	N/A
<code>/password</code>	N/A	N/A
<code>/recv</code>	<code>/recv</code>	N/A
<code>/send</code>	<code>/send</code>	N/A
<code>/single</code>	<code>/single</code>	N/A
<code>/user</code>	N/A	N/A
<code>/work</code>	<code>/work</code>	N/A

## `/bkupdir`

Captures a snapshot for the Async Gateway database (`gwasync.db`) whenever the gateway is started. This snapshot is stored in the backup directory mentioned in the path. By default the snapshot is stored in the gateway root directory. See “[Backing Up and Recovering the Gateway Database](#)” on page 69.

**Syntax:**

`/bkupdir-<path>`

**Example:**

`/bkupdir-d:\gateway\backup`

## `/color (NetWare Only)`

Sets the color scheme used by the NetWare Async Gateway. The default is 0.

**Syntax:**

`/color-number`

**Example:**

`/color-3`

See also `/mono`.

## `/help`

Displays the startup switch Help screen. This does not start an active gateway session.

**Syntax:**

`/help`

**Example:**

`load ngwsync /help`

## /home

Points the server to the gateway directory.

**Syntax:**

*/home-path\_to\_gateway*

**Example:**

/home-tti-rd\mail:\headq\wpgate\async

## /httppassword

Specifies the password for the Async Gateway to prompt for before allowing gateway status information to be displayed in your Web browser. Do not use an existing Novell eDirectory™ password because the information passes over the insecure connection between your Web browser and the Async Gateway. See [“Using the Async Gateway Web Console” on page 75](#).

**Syntax:**

*/httppassword-password*

**Example:**

/httppassword-GWiseAsync

See also [/httpuser](#), [/httpport](#), and [/httprefresh](#).

## /httpport

Sets the HTTP port number used for the Async Gateway to communicate with your Web browser. The setting must be unique on the server where the Async Gateway runs. See [“Using the Async Gateway Web Console” on page 75](#).

**Syntax:**

*/httpport-port\_number*

**Example:**

httpport-7177

See also [/httpuser](#), [/httppassword](#), and [/httprefresh](#).

## /httprefresh

Specifies the rate at which the Async Gateway refreshes the status information in your Web browser. The default is 60 seconds. See [“Using the Async Gateway Web Console” on page 75](#).

**Syntax:**

*/httprefresh-seconds*

**Example:**

/httprefresh-30

See also [/httpuser](#), [/password](#), and [/httpport](#).

## /httpuser

Specifies the username for the Async Gateway to prompt for before allowing gateway status information to be displayed in a Web browser. Providing a username is optional. Do not use an existing eDirectory username because the information passes over the insecure connection between your Web browser and the Async Gateway. See [“Using the Async Gateway Web Console” on page 75](#).

**Syntax:**

*/httpuser-username*

**Example:**

*/httpuser-GateWatcher*

## /log

Redirects the log files to a different location, either a path on the server where the Async Gateway is running or on the server where the GroupWise is domain located. See [“Using Async Gateway Log Files” on page 82](#).

**Syntax:**

*/log-path\_to\_directory*

**Example:**

*/log-servers\sys1:\log\newrec*

See also [/loglevel](#), [/logdays](#), and [/logmax](#).

## /logdays

Designates how many days log files remain on the disk. Files are deleted if they age beyond the number of days specified. The range is from 1 to 360 days. Use 0 to designate an unlimited number of days. See [“Using Async Gateway Log Files” on page 82](#).

**Syntax:**

*/logdays-number\_of\_days*

**Example:**

*/logdays-5*

See also [/log](#), [/loglevel](#), and [/logmax](#).

## /loglevel

Overrides the logging level set in ConsoleOne. Valid values are Diagnostic, Verbose (default), Normal, and Off. See [“Using Async Gateway Log Files” on page 82](#).

**Syntax:**

*/loglevel-logging level*

**Example:**

*/loglevel-normal*

See also [/log](#), [/logdays](#), and [/logmax](#).



## **/logmax**

Controls the maximum amount of disk space for all log files. When this limit is reached, the gateway overwrites existing log files starting with the oldest file. The default is 1024 KB or 1 MB. The range is from 256 KB to unlimited size. Use 0 for unlimited disk space. See [“Using Async Gateway Log Files” on page 82](#).

**Syntax:**

*/logmax-kilobytes*

**Example:**

*/logmax-512*

See also [/log](#), [/loglevel](#), and [/logdays](#).

## **/mono (NetWare Only)**

Operates the gateway for a monochrome monitor.

**Syntax:**

*/mono*

See also [/color](#).

## **/password (NetWare Only)**

Signifies the user’s password on the server where the GroupWise domain and gateway reside. This is used only with the NetWare Async Gateway and only if the gateway is running on a different server from where the GroupWise domain and gateway queue directories are located. See [“Deciding Where to Install the Async Gateway Software” on page 23](#).

**Syntax:**

*/password-password*

**Example:**

*/password-crevasse*

See also [/password](#).

## **/recv**

Places the gateway in receive mode only.

**Syntax:**

*/recv*

## **/send**

Places the gateway in send mode only.

**Syntax:**

*/send*

## **/single**

Runs a single send and receive cycle and then terminates the program.

**Syntax:**

`/single`

## **/user (NetWare Only)**

Designates the user ID of the user on the server where the GroupWise domain and gateway queue directories reside. See [“Deciding Where to Install the Async Gateway Software” on page 23](#).

**Syntax:**

`/user-login ID`

**Example:**

`/user-Ernie`

See also [/password](#).

## **/work**

Indicates the path where temporary files are stored while messages are transferred. This switch can be used only with a path that is on the server where the Async Gateway is running, or on the server where GroupWise domain is located.

**Syntax:**

`/work-server\volume:\directory`

`/work-drive:\directory`

**Example:**

`/work-ttird\sys:data`

`/work-s:\ttird`

# A

## Asynchronous Input/Output Drivers

The following list of AIO drivers contains information you need to complete the fields in the Port Information dialog box, as described in “[Gathering I/O Port Driver Information for NetWare](#)” on [page 21](#). The list includes the hardware type (assigned by Novell®) and the number of ports each driver supports. If the number of ports varies or is unknown, a 0 is listed.]

AIO TCP for IP Drivers (aiotcp.nlm)  
AIO TSM for ISDN Drivers (aiotsm.nlm)  
Arnet Corporation 8 Port SmartPort (aiosdrv.nlm)  
Arnet Corporation 8-128 Port ComStack (aiocsdrv.nlm)  
Artisoft Central Station Printer Driver (aiocsprt.nlm)  
Computone Corporation 16 Port IntelliPort (aioctone.nlm)  
Control 4/8/16 Port Hostess-186 (aiohst.nlm)  
Control 4 Port RocketPort Adapter (aiorckt.nlm)  
Control 8 Port RocketPort Adapter (aiorckt.nlm)  
Control 16 Port RocketPort Adapter (aiorckt.nlm)  
Control 32 Port RocketPort Adapter (aiorckt.nlm)  
Cubix 8 Port MP2008 Multiport Comm board (aiocubix.nlm)  
Digi 1-512 Port Terminal Server (aiodgts.nlm)  
Digi 2/4/8/16 Port PX/Xe,PC/Xi,MC/Xi (aiodgxi.nlm)  
Digi 8-128 Port PC/Xm and PC/Xem (aiodgxem.nlm)  
Digi 16-128 Port C/X Cluster (aiodgcx.nlm)  
Digi EPC/X System (aiodgepc.nlm)  
Equinox SSP 1-1024 Port Super Serial Port (aioeqnx.nlm)  
Fujitsu FMR 1-5 Port Comx (Japan) (aiocomxf.nlm)  
Hayes 1-2 Port ESP Comm Accelerator (aioespca.nlm)  
Hayes 2 Port Enhanced Serial Port (aioesp.nlm)  
IBM 1-4 Port Comx (ISA,EISA,MCA) (aiocomx.nlm)  
IBM Artic (aioartic.nlm)  
Microdyne 4 Port WNIM+ (aiownim.nlm)  
Microdyne 8 Port WNIM3000 (aiownim3.nlm)  
Multitech ISI608 8 Port (ISA) (aioisix.nlm)  
Newport Systems 8 Port ACI (aioaci.nlm)  
Newport Systems XCI (aioxci.nlm)  
Stallion 4 Port Brumby (aiostln.nlm)  
Stallion 4 Port ONboard (aiostln.nlm)  
Stallion 4 Port ONboard2 (aiostln.nlm)  
Stallion 8 Port ONboard/E (aiostln.nlm)  
Stallion 8 Port ONboard (aiostln.nlm)

Stallion 8 Port ONboard2 (aiostln.nlm)  
Stallion 8 Port ONboard/E (aiostln.nlm)  
Stallion 8-64 Port EasyConnection (EISA) (aioeasy.nlm)  
Stallion 8-64 Port EasyConnection (ISA) (aioeasy.nlm)  
Stallion 8-64 Port EasyConnection (MCA) (aioeasy.nlm)  
Technology Concepts 2 Port PCC/MX (aiotcl.nlm)  
Technology Concepts 8 Port PCC/8i (aiotcl.nlm)  
Technology Concepts 8 Port Superport-186 (aiotcl.nlm)  
Virtual AIO driver (aiovaio.nlm)  
X.25 PAD (aiopad.nlm)  
Xircom 4/8 Port Access Server (aioxrcm1.nlm)

## HardWare Descriptions

### AIO TCP for IP Drivers (aiotcp.nlm)

This AIO-compliant multiport expansion board driver has been assigned the following hardware type. It can also accommodate the indicated number of ports. If zero (0) is indicated, the number of ports is variable or unknown.

**Hardware Type:** 11

**Maximum Number of Ports:** 0

### AIO TSM for ISDN Drivers (aiotsm.nlm)

**Hardware Type:** 10

**Maximum Number of Ports:** 0

### Arnet Corporation 8 Port SmartPort (aiosdrv.nlm)

**Hardware Type:** 111

**Maximum Number of Ports:** 8

### Arnet Corporation 8-128 Port ComStack (aiocsdv.nlm)

**Hardware Type:** 113

**Maximum Number of Ports:** 0

### Artisoft Central Station Printer Driver (aiocsprt.nlm)

**Hardware Type:** 144

**Maximum Number of Ports:** 0

### Computone Corporation 16 Port IntelliPort (aioctone.nlm)

**Hardware Type:** 110

**Maximum Number of Ports:** 16

**Control 4/8/16 Port Hostess-186 (aiohst.nlm)**

Hardware Type: 117

Maximum Number of Ports: 0

**Control 4 Port RocketPort Adapter (aiorckt.nlm)**

Hardware Type: 130

Maximum Number of Ports: 4

**Control 8 Port RocketPort Adapter (aiorckt.nlm)**

Hardware Type: 131

Maximum Number of Ports: 8

**Control 16 Port RocketPort Adapter (aiorckt.nlm)**

Hardware Type: 132

Maximum Number of Ports: 16

**Control 32 Port RocketPort Adapter (aiorckt.nlm)**

Hardware Type: 133

Maximum Number of Ports: 32

**Cubix 8 Port MP2008 Multiport Comm board (aiocubix.nlm)**

Hardware Type: 129

Maximum Number of Ports: 8

**Digi 1-512 Port Terminal Server (aiodgts.nlm)**

Hardware Type: 134

Maximum Number of Ports: 0

**Digi 2/4/8/16 Port PX/Xe,PC/Xi,MC/Xi (aiodgxi.nlm)**

Hardware Type: 105

Maximum Number of Ports: 0

**Digi 8-128 Port PC/Xm and PC/Xem (aiodgxem.nlm)**

Hardware Type: 107

Maximum Number of Ports: 0

## **Digi 16-128 Port C/X Cluster (aiodgcx.nlm)**

**Hardware Type:** 106

**Maximum Number of Ports:** 0

## **Digi EPC/X System (aiodgepc.nlm)**

**Hardware Type:** 108

**Maximum Number of Ports:** 0

## **Equinox SSP 1-1024 Port Super Serial Port (aioeqnx.nlm)**

**Hardware Type:** 135

**Maximum Number of Ports:** 0

## **Fujitsu FMR 1-5 Port Comx (Japan) (aiocomxf.nlm)**

**Hardware Type:** 5

**Maximum Number of Ports:** 5

## **Hayes 1-2 Port ESP Comm Accelerator (aioespca.nlm)**

**Hardware Type:** 120

**Maximum Number of Ports:** 0

## **Hayes 2 Port Enhanced Serial Port (aioesp.nlm)**

**Hardware Type:** 104

**Maximum Number of Ports:** 2

## **IBM 1-4 Port Comx (ISA,EISA,MCA) (aiocomx.nlm)**

**Hardware Type:** 1

**Maximum Number of Ports:** 4

## **IBM Artic (aioartic.nlm)**

**Hardware Type:** 2

**Maximum Number of Ports:** 0

## **Microdyne 4 Port WNIM+ (aiownim.nlm)**

**Hardware Type:** 3

**Maximum Number of Ports:** 4

### **Microdyne 8 Port WNIM3000 (aiownim3.nlm)**

Hardware Type: 116

Maximum Number of Ports: 8

### **Multitech ISI608 8 Port (ISA) (aioisix.nlm)**

Hardware Type: 143

Maximum Number of Ports: 8

### **Newport Systems 8 Port ACI (aioaci.nlm)**

Hardware Type: 102

Maximum Number of Ports: 8

### **Newport Systems XCI (aioxci.nlm)**

Hardware Type: 103

Maximum Number of Ports: 0

### **Stallion 4 Port Brumby (aiostln.nlm)**

Hardware Type: 122

Maximum Number of Ports: 4

### **Stallion 4 Port ONboard (aiostln.nlm)**

Hardware Type: 123

Maximum Number of Ports: 4

### **Stallion 4 Port ONboard2 (aiostln.nlm)**

Hardware Type: 125

Maximum Number of Ports: 8

### **Stallion 4 Port ONboard/E (aiostln.nlm)**

Hardware Type: 127

Maximum Number of Ports: 4

### **Stallion 8 Port ONboard (aiostln.nlm)**

Hardware Type: 124

Maximum Number of Ports: 8

## **Stallion 8 Port ONboard2 (aiostln.nlm)**

**Hardware Type:** 126

**Maximum Number of Ports:** 8

## **Stallion 8 Port ONboard/E (aiostln.nlm)**

**Hardware Type:** 128

**Maximum Number of Ports:** 8

## **Stallion 8-64 Port EasyConnection (EISA) (aioeasy.nlm)**

**Hardware Type:** 141

**Maximum Number of Ports:** 0

## **Stallion 8-64 Port EasyConnection (ISA) (aioeasy.nlm)**

**Hardware Type:** 139

**Maximum Number of Ports:** 0

## **Stallion 8-64 Port EasyConnection (MCA) (aioeasy.nlm)**

**Hardware Type:** 142

**Maximum Number of Ports:** 0

## **Technology Concepts 2 Port PCC/MX (aiotcl.nlm)**

**Hardware Type:** 138

**Maximum Number of Ports:** 2

## **Technology Concepts 8 Port PCC/8i (aiotcl.nlm)**

**Hardware Type:** 137

**Maximum Number of Ports:** 8

## **Technology Concepts 8 Port Superport-186 (aiotcl.nlm)**

**Hardware Type:** 136

**Maximum Number of Ports:** 8

## **Virtual AIO driver (aiovaio.nlm)**

**Hardware Type:** 8

**Maximum Number of Ports:** 0



## **X.25 PAD (aiopad.nlm)**

**Hardware Type: 9**

**Maximum Number of Ports: 0**

## **Xircom 4/8 Port Access Server (aioxrcm1.nlm)**

**Hardware Type: 140**

**Maximum Number of Ports: 0**



# B

## Creating a Modem Definition

If you find it necessary to create, edit or research the properties of a modem, you can provide the modem data commands and settings needed by the Async Gateway in ConsoleOne<sup>®</sup>, as described in [“Gathering Modem Information” on page 20](#). See your modem documentation to determine the command characters for these fields.

If you are creating a new modem definition, you may find it helpful to find an existing modem definition similar to your own in the modem database, then rename the definition and edit the commands as necessary.

- ◆ [“Creating a New Modem Definition” on page 107](#)
- ◆ [“Creating a Modem Initialization String” on page 108](#)

## Creating a New Modem Definition

To create a modem definition:

- 1 In ConsoleOne, browse to and select the Domain object where you created the Async Gateway.
- 2 Right-click the Async Gateway object, then click Properties.
- 3 Click Ports > Create, then click Modem > Create to display the Create Modem dialog box.

The screenshot shows the 'Modem Parameters' dialog box. It has a title bar with a close button. The dialog is divided into several sections:

- Modem Name:** A text input field.
- Commands:** A group box containing several text input fields:
  - Initialization:
  - Dialing:
  - Suffix:
  - Answer: S0=1
  - No Answer: S0=0
  - Hang-up: HZ
  - Identify Modem:
- Time Out:** A group box containing two text input fields:
  - Character Pacing: 0
  - Escape Character: +
- Settings:** A group box containing a Baud Rate dropdown menu and a checkbox labeled 'CCITT DSR'.

On the right side of the dialog, there are three buttons: 'OK', 'Cancel', and 'Help'.

- 4 Fill in the following fields:

**Modem Name:** Specify the modem brand name and model in this field. The name is saved and displayed in the Choose Modem list.

**Initialization:** See [“Creating a Modem Initialization String” on page 108](#) for detailed information.

**Dialing:** Specify modem dialing commands, including any commands for tone or pulse dialing, dial pauses, user codes, or other required dialing commands.

**Suffix:** Command data is usually not required in this field. It is only used for special devices or circumstances, such as a cellular phone connection.

**Answer:** The command your modem uses to automatically answer incoming calls. The command includes the number of rings to allow before answering.

**No Answer:** The command your modem uses to disable automatic call answering. The command is executed before the modem dials out to another number.

**Hang Up:** The command your modem uses to hang up and reset itself

**Identity Modem:** Do not fill in this field. It is reserved for future use.

**Character Pacing:** The time interval between each character sent to the modem when the modem is in command mode. The number you enter represents 1/18 of one second. For example, if you enter 18, a 1-second pause will be placed between characters. Specify 0 if the modem does not require a pause between characters.

**Escape Character:** The ASCII character used to switch the modem from terminal mode to command mode.

**Baud Rate:** The maximum baud rate the mode can use to send and receive messages. Click the down-arrow to display a drop-down list of baud rates.

**CCITT DSR:** Do not fill in this field. It is reserved for future use.

- 5 Click OK to save the modem definition.

## Creating a Modem Initialization String

If your modem definition does not work properly, and if troubleshooting efforts are unsuccessful, it is possible that the modem initialization string you have used from the modem database might not be working. It may be necessary for you to create a new modem initialization string to check this possibility.

You need to know what to include in a new initialization string. See the manufacturer's modem operation manual under index entries such as "initialization string," "init string," or "AT string," or contact the modem manufacturer for more information about the initialization string.

The modem command initialization string can contain up to 25 command characters that execute the following modem functions:

- ◆ Enable verbal result codes
- ◆ Turn command echo off
- ◆ Track data carrier
- ◆ Return CONNECT messages
- ◆ Drop carrier and reset modem when DTR (Data Terminal Ready) drops
- ◆ Enable error correction
- ◆ Enable flow control and make sure port is enabled
- ◆ Enable fixed DTE (Data Terminating Equipment) speed

If you need multiple lines in the command string, use the grave accent (') to embed control characters, such as a carriage return. The grave accent is below the tilde (~) on your keyboard.

After you check the modem documentation for the correct characters to include in the string, you can define the initialization string for the Async Gateway.

To create the initialization string:

- 1** In ConsoleOne, browse to and select the Domain object where you created the gateway.
- 2** Right-click the Async Gateway object, click Properties, then click Ports.
- 3** Select the port you want to edit, then click Edit.

or

If you are creating a new port definition, click Create.

- 4** In the Port Information dialog box, click Choose Modem.
- 5** Select your modem from the Modems list, then click Edit.

or

If you are defining a modem not listed, click Create.

- 6** In the Initialization field, edit the existing modem initialization string.

or

If you are creating a new modem definition, specify the modem initialization string for the modem.

- 7** Complete the other fields in the Modem Parameter dialog box, as described in [Appendix B, "Creating a Modem Definition,"](#) on page 107, then click OK to save the information.



# C

## Async Gateway Error Messages

The Novell® GroupWise® Async Gateway might generate the messages in the “[Error Message List](#)” on page 111.

### Error Message List

NGWASYNC: Cannot open port xxx

NGWASYNC: Idle time exceeded (nnn mins), on xxx

NGWASYNC: Terminating connection with xxx, Error hhh

NGWASYNC: Undeliverable Message -- Configuration Error for xxx ...

NGWASYNC: Undeliverable Message from xxx

#### NGWASYNC: Cannot open port xxx

Source: GroupWise Async Gateway

Explanation: A call to open the named port failed.

Possible Cause: There might not be a device driver installed for that port

Action: For the NetWare Async Gateway, the aio.nlm and aiocomx.nlm drivers need to be installed. See “[Preparing Ports for the NetWare Async Gateway](#)” on page 27

Action: For the NetWare Async Gateway, make sure that the Hardware Type, Board Number, and Port Number fields in the Port Definition dialog box correspond to a valid serial port, and that the driver for that port has been loaded. See “[Gathering I/O Port Driver Information for NetWare](#)” on page 21

Action: For the Windows Async Gateway, if you are using some special hardware, ensure that it is installed and configured correctly.

Action: For the Windows Async Gateway, if you are using the COM port, make sure that the serial port being used is listed in the Windows Device Manager.

Action: For the Windows Async Gateway, check to see if the appropriate device driver for the modem has been installed.

To check the device driver configured for the modem:

- 1 From your Windows desktop, right-click My Computer, click Properties, then select Device Manager.
- 2 Select Modem to display the driver.
- 3 Right-click the modem driver, then click Properties.
- 4 Check the various tabs of the Modem Properties dialog box to make sure that the modem is correctly configured.

### **NGWASYNC: Idle time exceeded (*nnn* mins), on *xxx***

Source: GroupWise Async Gateway.

Explanation: If the message appears during login, the remote side took longer than two minutes to log in.

Possible Cause: If the message appears after login, the minimum idle time, as defined in ConsoleOne, has expired.

Action: Increase the minimum idle time in ConsoleOne to a time that more closely matches the response time of your GroupWise system (the longest time it takes for the Post Office Agent to fill a request and return it to the gateway). See [“Defining Gateway Time Settings” on page 44](#).

### **NGWASYNC: Terminating connection with *xxx*, Error *hhh***

Source: GroupWise Async Gateway.

Explanation: Any of the following possible errors might have caused this message.

- ◆ Error 96: Error Opening File
- ◆ Error 97: EOF While Reading File
- ◆ Error 98: Error Reading Send File
- ◆ Error 99: Error Writing Receive File
- ◆ Error A3: Generic Transmission Error
- ◆ Error A5: Cumulative Errors Past Limit
- ◆ Error A6: Internal Timeout Value Received
- ◆ Error AC: No Initial Packet Received
- ◆ Error AD: Exceeded Retry Limit Trying to Receive Packet
- ◆ Error B0: Internal Error On Cyclical Redundancy Check
- ◆ Error B1: Header Unexpected in Current ZMODEM State

### **NGWASYNC: Undeliverable Message -- Configuration Error for *xxx* ...**

Source: GroupWise Async Gateway.

Explanation: The Additional Routing Information for the message received does not match any account in the database.

Possible Cause: The Gateway Access String might not be correctly configured in GroupWise Administrator, or the account may have been deleted from the gateway database.

Action: Check the Gateway Access String in ConsoleOne, then use the Queue Maintenance feature. See [“Creating a Gateway Link to the External Domain” on page 61](#) and [“Performing Queue Maintenance” on page 91](#).

### **NGWASYNC: Undeliverable Message from *xxx***

Source: GroupWise Async Gateway.

Explanation: An attempt to queue a file from the Message Transfer Agent (MTA) to the gateway failed. The message will be deferred.

Action: None. The file will be requeued.



# D

## Async Gateway Troubleshooting Strategies

The following information can help you troubleshoot and maintain the Novell® GroupWise® Async Gateway. For information about gateway error messages, see [Appendix C, “Async Gateway Error Messages,”](#) on page 111.

- ♦ [“Troubleshooting the Gateway”](#) on page 113
- ♦ [“Troubleshooting Modems”](#) on page 114
- ♦ [“Troubleshooting GroupWise Remote”](#) on page 116
- ♦ [“Troubleshooting the Script File”](#) on page 117

### Troubleshooting the Gateway

Troubleshooting any software program requires that you to break down the process into its components, isolating each component to narrow down possible causes of the problem and thereby determine a solution.

One way to isolate the problem is to use gateway logging. The log information tracks message movements and can help you isolate breakdowns in the message routing process. Problems in the Async Gateway most often occur in either in an Async connection you have defined (to another Async Gateway or to GroupWise Remote), or in a modem or port.

- ♦ [“Connection Suggestions”](#) on page 113
- ♦ [“Port and Modem Suggestions”](#) on page 114
- ♦ [“Specific Problems”](#) on page 114

### Connection Suggestions

If you isolate the problem to a specific connection, try the following strategies:

- ♦ Verify that the connection information is correct. See [“Determining Async Connections”](#) on page 19 and [“Selecting a Serial Port Configuration”](#) on page 20.
- ♦ Use the Queue Maintenance option to make sure all the directories required for the connection have been created. See [“Performing Queue Maintenance”](#) on page 91
- ♦ Define a similar connection to find out whether it works. See [Chapter 4, “Defining Async-to-Async Connections,”](#) on page 35.
- ♦ Delete the faulty connection and redefine it.

## Port and Modem Suggestions

If you isolate the problem to a particular port or modem, try the following strategies:

- ◆ Make sure the modem's initialization string is set to a fixed DTE rate.
- ◆ Make sure the port is set to CTS/RTS flow control, and make sure the modem initialization string contains the correct commands to set the modem to CTS/RTS flow control. Check your modem documentation for more information.
- ◆ If the modems at the two sites do not synchronize, reduce the baud rates at both sites to a lower rate.
- ◆ Reset the port, turn the modem off, then turn it back on.
- ◆ Isolate the port or the modem causing the problem. For example, you might try the modem with another port.
- ◆ If your computer or port is hanging or the modem is not initializing, check the IO port address conflict for an IRQ conflict with another board.
- ◆ If your connection is slow compared to the modem capability, check to see if the baud rate configured for port is greater than the maximum baud rate supported by the aiocomx.nlm port driver. A warning is recorded in the log file if this occurs. If you want to configure a higher baud rate for the port, reload the aiocomx.nlm with the maxrate option.

For general assistance with modem configuration, see [“Gathering Modem Information” on page 20](#) and [“Gathering I/O Port Driver Information for NetWare” on page 21](#).

## Specific Problems

Search the [Novell Support Knowledgebase \(http://support.novell.com/search/kb\\_index.jsp\)](http://support.novell.com/search/kb_index.jsp) for the latest solutions to specific problems.

## Troubleshooting Modems

You can configure modems in different ways. There is no set method for solving your modem connection problems; however, there are some basic strategies you can follow and configuration changes you can try if your modem connection fails. Try using the following strategies in the order they are listed:

- ◆ Make sure the modem initialization strings at both GroupWise sites are set for a fixed DTE rate. Check your modem documentation for more information.
- ◆ Make sure flow control at the port definition and in the modem initialization string is set to CTS/RTS (hardware flow control). Check your modem documentation for initialization codes.
- ◆ Disable data compression at both GroupWise sites. If you are using the Async Gateway, data compression should be disabled on the modems of the local and remote GroupWise domains. This is because the gateway compresses files before they are transferred to the modem. In many cases, if the modem attempts to compress a file that has been compressed, modem performance can be affected. See your modem documentation for more information about disabling data compression.
- ◆ Lower the selected baud rate until the modems connect.
- ◆ Create a new modem initialization string. For more information, see [“Creating a Modem Initialization String” on page 115](#).

- ◆ Use `aioterm.nlm` to troubleshoot Async NLM™ program. For more information, see “[Using Aioterm.nlm to Troubleshoot the NetWare Async Gateway](#)” on page 115.
- ◆ Send a test message to check links and connections to certain domains. For more information, see “[Testing the Async Gateway](#)” on page 42.

## Creating a Modem Initialization String

If previous troubleshooting efforts were unsuccessful, the modem initialization string you have used from the modem database might not be working. It might be necessary for you to create a new modem initialization string to check this possibility.

You need to know what to include in a new initialization string. See the manufacturer’s modem operation manual under index entries such as “initialization string,” “init string,” or “AT string,” or contact the modem manufacturer for more information about the initialization string.

The initialization string should include characters for the following:

- ◆ Enable verbal result codes
- ◆ Turn command echo off
- ◆ Track data carrier
- ◆ Return CONNECT messages
- ◆ Drop carrier and reset modem when DTR drops
- ◆ Enable error correction
- ◆ Enable CTS/RTS
- ◆ Set modem to fixed DTE speed

For complete instructions, see “[Creating a Modem Initialization String](#)” on page 108.

## Using Aioterm.nlm to Troubleshoot the NetWare Async Gateway

`Aioterm.nlm`, available from [Novell Support \(http://support.novell.com\)](http://support.novell.com), can provide some data about the modem initialization string that you might find helpful in troubleshooting.

You should download a file called `aiotrm.exe`, which is a self-extracting, compressed file including the `aioterm.nlm`.

Load `aioterm` as you would any NLM. It displays the driver (or hardware) type, board number, and ports supported. After the initial loading sequence, the Acquired Port Test Menu is displayed.

Follow these steps to obtain modem initialization string information in `aioterm.nlm`:

- 1 From the Acquired Port Test Menu, select Really Dumb Terminal Mode to display the following prompt:

Any keyboard activity will be written to the port, but not echoed to the screen.

The screen shows only characters received from the port (if you don’t see anything, try typing **ATE1**).

- 2 Type any character on the keyboard to activate the Really Dumb Terminal communications program.

The program communicates with the modem and has it send its initialization string. If the communication is working, the screen displays information something like this:

```
at
OK
at&v
Error
ati4
USRobotics Courier 16800 HST Dual Standard Settings
B0 C1 E1 F1
```

- 3** If there is no response from the modem, enter **ATE1**. If there is still no response from the modem, a problem with the serial expansion board or IO drivers is indicated.

## Troubleshooting GroupWise Remote

As system administrator, it is your responsibility to troubleshoot problems encountered by GroupWise Remote users. The problems you deal with probably fall into one of the following categories:

- ◆ “Setup and Configuration Problems” on page 116
- ◆ “User Hardware and Configuration Problems” on page 116
- ◆ “Specific Item or Request Problems” on page 117
- ◆ “Connection Problems” on page 117
- ◆ “User Database Problems” on page 117

### Setup and Configuration Problems

GroupWise Remote users sometimes cannot connect to the main GroupWise system because of a problem with the setup of the Remote client. When a user cannot connect, check the following:

- ◆ Does the user have a password set on the Master Mailbox?
- ◆ Has the user entered the correct system information in the Remote Preferences dialog?
- ◆ Was the password on the Master Mailbox entered exactly as it was originally set? Remember that passwords are case sensitive.
- ◆ Does the user have a valid connection selected?
- ◆ Is the phone number correct?
- ◆ Have the gateway login ID and password been entered correctly? Remember that the gateway password is case sensitive.

### User Hardware and Configuration Problems

Connection problems can often be traced to problems configuring the GroupWise Remote user’s modem. When you suspect that the hardware setup might be the problem, check the following:

- ◆ Verify that the correct modem is selected.
- ◆ Verify that the correct COM port and baud rate are selected.
- ◆ Check the modem with another communications program to determine if it connects correctly with that program. For example, try using the modem to connect to a bulletin board system.
- ◆ Check the modem reference manual for additional troubleshooting options.

## Specific Item or Request Problems

Use the Pending Requests option in GroupWise Remote to view the requests that have not been responded to yet.

To access the Pending Requests dialog in GroupWise Remote, click Remote > Pending Requests.

To delete a pending request, select the request, then click Delete.

## Connection Problems

GroupWise Remote creates a log file, remotex.log (where  $x$  is 1, 2, or 3) that tracks GroupWise Remote connections.

If a user experiences problems connecting to the main GroupWise system, check this log to find out where the problem is occurring in the connection process. remotex.log is stored in the rofdata directory. The log file is in ASCII text form and can be viewed with any text editor.

The log file can also be displayed while running GroupWise Remote by clicking File > Connection Log.

## User Database Problems

If you suspect a problem with the GroupWise Remote mailbox, run the Mailbox/Library Maintenance on the mailbox to correct the problem. The user database is user.db, located in the rofdata directory.

Mailbox/Library Maintenance has the following options:

- ◆ Check structure of databases, repair problems.
- ◆ Check contents of databases, repair problems.
- ◆ Re-create user databases from message databases.
- ◆ Reduce databases (reclaim free space).

For additional information, see [“Maintaining User/Resource and Message Databases”](#) in [“Databases”](#) in the *GroupWise 6.5 Administration Guide*.

## Troubleshooting the Script File

The following troubleshooting information assumes that the Async gateway functioned properly until a script was implemented. You might be facing any of the problems listed below after its inclusion.

[“The Gateway Is Not Dialing” on page 118](#)

[“The Gateway Is Not Answering” on page 118](#)

[“The Script Is Not Executing” on page 118](#)

## The Gateway Is Not Dialing

If the Async Gateway is not dialing, verify the following:

- ◆ Modem commands are followed by “/r” in the script. Check to see if this has been appended to the dialing instructions, and ensure that it is within double quotes (“”). See [“Sample Script for Initialization and Dialing” on page 90](#) for more information on using scripts for dialing.
- ◆ Ensure that the script has reached its dialing instructions. If necessary, use log comments to confirm the path taken in your script.
- ◆ Check the Remote Phone Number field in the Domain Connections screen. If the field is blank, the gateway cannot dial. If you choose to embed dialing instructions within a script (to avoid putting the phone number in the Remote Phone Number field), place a space in the field.
- ◆ When dialing, if the message No Dial Tone appears in the log (you might even hear a dial tone from the modem’s speaker), you might be attempting to redial while the line is still open from a previous dial attempt. Try hanging up before dialing again. You should wait for a few seconds before and after issuing a hangup command. An example of such a scenario is included in Label 4 of [“Sample Script for Initialization and Dialing” on page 90](#).

## The Gateway Is Not Answering

The Async Gateway might not be responding because of the following reasons:

- ◆ The modem might not be initialized. Check the status of the Auto Answer field. You might also need to define a modem for the port even if you plan to initialize and dial from a script. If the port has a modem definition, the gateway automatically initializes the port or modem on starting the gateway.
- ◆ The Async Gateway does not listen to incoming calls while executing a script. To specify the time interval between retries, we recommend that you vary the time specified in the Time Between Retries field in the Calling Schedules and Intervals dialog box. For more information, see [“Defining a Domain Connection” on page 36](#).

## The Script Is Not Executing

Verify the following if the script is not executing on your gateway.

- ◆ The name of your script file must be either default.scr or link.scr.
- ◆ Ensure that the script is placed in the appropriate directory. If you are utilizing a link-specific script, it must be placed in the link directory under gwout. Check the dates on those files to make sure that you are working with a current link directory. See [“Scripting Language” on page 88](#) for more information on using the scripting feature.

# E



















## Async Gateway Directory Structures















You can use directory structure information after you install and run the gateway to help you find the various files, databases and directories that comprise the Novell® GroupWise® Async Gateway. This can be critical to resolving problems.

- ♦ [“Async Gateway Directory Structure” on page 119](#)
- ♦ [“GroupWise Remote Directory Structure” on page 123](#)

### Async Gateway Directory Structure

The directory structures of the GroupWise Async Gateway for NetWare® and Windows are nearly identical. The following directories and files are created under the `\domain\wpgate\` structure for an Async gateway after the gateway has been installed and has processed messages.

 <code>domain\wpgate\async</code>	Async Gateway home directory
 <code>000.prc</code>	Gateway message processing directory
 <code>cmd</code>	Not currently used
 <code>gwork</code>	Temporary files hold directory
 <code>acct</code>	Accounting file
 <code>mmdlog.nnn</code>	Log files
 <code>proc</code>	Lock file for the gateway process
 <code>stat</code>	Statistics file for gateway operation
 <code>pulse.tmp</code>	Temporary file to verify gateway operation
 <code>wpcsin</code>	MTA input queue directory
 <code>0-7</code>	Message hold directories
 <code>wpcout</code>	MTA output queue directory
 <code>asyxxx</code>	System-defined directory
 <code>0-7</code>	Message hold queues
 <code>problem</code>	Not currently used
 <code>gwin</code>	Async Gateway input queue directory
 <code>connection_ID</code>	Domain-specific input queue
 <code>cmp</code>	Holding directory for compressed inbound messages

 gwout	Async Gateway output queue directory
 connection_ID	Domain-specific output queue
 1	High-priority compressed message queue
 2	Normal-priority compressed message queue
 3	Low-priority compressed message queue
 cmp	Holding directory for compressed outbound messages
 gwhold	Message hold directory
 qfiles	Delayed delivery hold directory
 gwprob	Hold directory for damaged inbound messages
 async.db	Async Gateway configuration database
 async.dc	Database dictionary file used to create the Async Gateway database
 wpmodem.db	Modem configuration database
 ngwasync.mib	Gateway Management Information Base (MIB) (NetWare only)
 wp_ge_xx.trc	Interface for the Async Gateway Installation program

## domain\wpgate\async directory

The *domain\wpgate\async* directory is the Async Gateway home directory where configuration files and queue directories are located. The name is established when you install the Async Gateway. The default is *wpgate\async* in the domain directory. You can change the location using the */home* startup switch in the Async Gateway configuration file (*gwasync.cfg*) located in the gateway installation directory.

## 000.prc directory

The gateway engine uses this directory to process messages.

## gwwork directory

Temporary files created by the gateway during the processing of messages are stored here.

## acct file

The acct file contains information about the messages the Async Gateway sends each day. It is e-mailed to the accountant each day at midnight. For more information about the accounting file, see [“Setting Up Gateway Accounting” on page 65](#).

## mmddlog.nnn file

The *mmddlog.nnn* files hold error and status messages about the functioning of the Async Gateway. The Async Gateway creates a log file each day with a unique name, where *mm* is the month, *dd* is the day, and *nnn* is a sequential number indicating the sequence of log files in a single day. For more information about log files, see [“Using Async Gateway Log Files” on page 82](#).



### **proc file**

The proc file is the lock file for gateway processes. The proc file is opened and locked when the gateway is started.

### **stat file**

The stat file stores statistics about the Async Gateway's functioning.

### **pulse.tmp file**

The pulse.tmp file is used to verify that the gateway is up and running.

## **wpcsin directory**

The wpcsin directory is the input queue for the MTA, as well as being the output queue for the Async Gateway.

### **0-7 directories**

The gateway places inbound messages in any of the 2-7 priority subdirectories of wpcsin. The MTA retrieves the messages and delivers them to the proper destinations.

## **wpcout directory**

The wpcout directory is output queue for the MTA, as well as being the input queue for the Async Gateway. The GroupWise MTA places outbound messages in this directory structure for the Async Gateway to process.

### **asyxxxx directory**

The *asyxxxx* directory is a system-defined directory to identify gateway. The first three characters are the first three letters of the Async Gateway object name, typically *asy*. The last four characters are automatically generated by the gateway.

### **0-7 directories**

The MTA places outbound messages in any of the 2-7 priority subdirectories of wpcout. The Async Gateway retrieves the messages and sends them across the modem to the proper destinations.

### **problem directory**

The problem directory holds message files that the Async Gateway cannot send because they are damaged.

## **gwin directory**

The gwin directory is where the Async Gateway receives compressed message files from across the modem.

### **connection\_ID directory**

Each domain where messages go to and from the Async Gateway has its own subdirectory for gateway processing.

#### **cmp directory**

The cmp directory holds compressed message files that the Async Gateway has received across the modem. The Async Gateway decompresses the message files and moves them to the MTA input queue (**wpcsin**).

### **gwout directory**

The gwout directory is where the Async Gateway processes outgoing messages.

### **connection\_ID directory**

Each domain where messages go to and from the Async Gateway has its own subdirectory for gateway processing.

#### **1-3 directories**

The 1-3 priority subdirectories hold various types of messages that will be compressed and sent across the modem based on their relative priorities.

#### **cmp directory**

The cmp directory holds compressed message files that the Async Gateway is sending across the modem.

### **gwhold directory**

The gwhold directory holds messages that are scheduled for delayed delivery

### **qfiles directory**

The qfiles directory holds messages that cannot be sent during the current Send/Receive cycle. The messages are queued to this directory until the next cycle.

### **gwprob directory**

The gwprob directory holds inbound messages that the gateway cannot process. These are usually messages that have been damaged during transmission.

### **async.db file**

The async.db file is the Async Gateway configuration file. It contains much of the same information that is stored on the Async Gateway object in eDirectory.

### **async.dc file**

The async.dc file is the data dictionary file from which the async.db file is created.

## **wpmodem.db file**

The wpdomain.db file is a database containing an extensive list of modems, along with configuration data for each modem.

## **ngwasync.mib file**

The ngwasync.mib file is the Gateway Management Information Base (MIB) containing variables used by SNMP-compliant network management systems. It is used only by the NetWare Async Gateway. For more information, see [“Using SNMP Monitoring Programs” on page 83](#).

## **wp\_ge\_xx\_trs file**

The wp\_ge\_xx.trs file contains language-specific information used by the Async Gateway Installation program. The xx is a two-letter language code.

## **GroupWise Remote Directory Structure**

You might find it necessary to keep track of the files associated with both the Async Gateway and GroupWise Remote when you trace message flow. See [“Remote Mailbox Directory”](#) in [“Directory Structure Diagrams”](#) in the *GroupWise 6.5 Troubleshooting 3: Message Flow and Directory Structure*.



# F

## Async Gateway Message Flow Diagrams

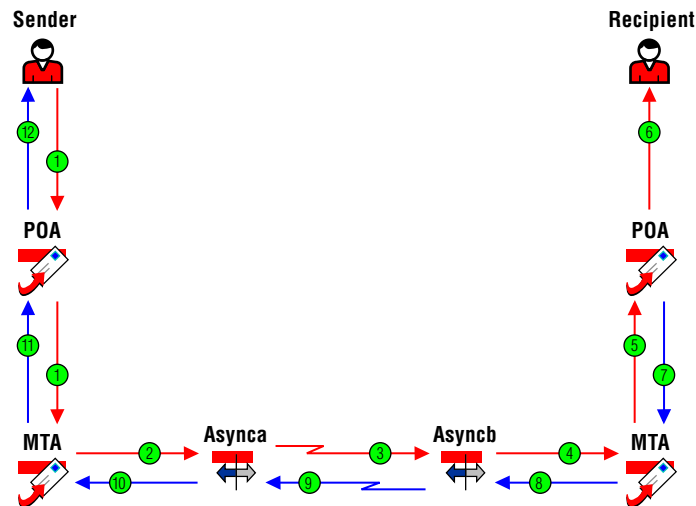
Message flow diagrams help you understand how messages travel to and from your Novell® GroupWise® system through the Async Gateway.

- ♦ “Message Delivery Between GroupWise Domains” on page 125
- ♦ “GroupWise Remote to Async Gateway Message Delivery” on page 128
- ♦ “Message Flow from Async Gateway to Async Gateway” on page 130
- ♦ “Message Flow from GroupWise Remote to the Async Gateway” on page 134

### Message Delivery Between GroupWise Domains

If two domains are to communicate through an Async Gateway, both domains must be running an Async Gateway. The gateway can be created and installed in the primary domain or in any secondary domain.

This diagram of the message delivery between domains shows the GroupWise components involved in the process.



### User

A user object in eDirectory™ that has been given a GroupWise account. Users can receive messages from and send messages to other users, act as resource owners, or act as GroupWise administrators.

## Post Office Agent

The Post Office Agent (POA) is the GroupWise program that delivers messages to users' mailboxes in each post office. In addition, the POA detects and repairs damaged databases, replicates shared folders between post offices, performs the indexing tasks of document management, and responds to requests from Remote client users.

## Message Transfer Agent

The Message Transfer Agent (MTA) is the GroupWise program that routes messages between post offices, domains, and gateways. In addition, an optional message logging module of the MTA can provide logging and statistics data about GroupWise message traffic.

## Async Gateway

The Async Gateway is the GroupWise program that enables asynchronous communication (through modems and telephone lines) between domains on the same GroupWise system or between domains in separate GroupWise systems. It also allows GroupWise Remote users to access their master mailboxes through modem communication.

### Process 1: User Sends Message

The user sends a message from the GroupWise client, then the POA delivers the message to the MTA.

### Process 2: MTA Queues Message

The MTA queues the message to the Async Gateway.

### Process 3: Async Gateway Transfers Message

The Async Gateway in the sender's domain transfers the message through a configured modem and phone line connection to the receiving Async Gateway located in the recipient's domain.

### Process 4: Async Gateway Queues Message

The Async Gateway in the recipient's domain queues the message to the MTA in the recipient's domain.

### Process 5: MTA Queues Message

The MTA queues the message to the POA.

### Process 6: POA Updates Message

The POA updates the message database and the recipient's user database.

### Process 7: POA Generates Message Status

The POA generates a Delivered status message and queues it to the MTA.

## **Process 8: MTA Delivers Message Status**

The MTA in the recipient's domain transfers the Delivered status to the Async Gateway in the recipient's domain.

## **Process 9: Async Gateway Transfers Message Status**

The Async Gateway in the recipient's domain transfers the Delivered status message to the Async Gateway in the sender's domain.

## **Process 10: Async Gateway Transfers Message Status**

The Async Gateway in the recipient's domain transfers the Delivered status message through the modem connection to the Async Gateway in the sender's domain.

## **Process 11: MTA transfers Message Status**

The MTA in the sender's domain transfers the Delivered status message to the POA in the sender's domain.

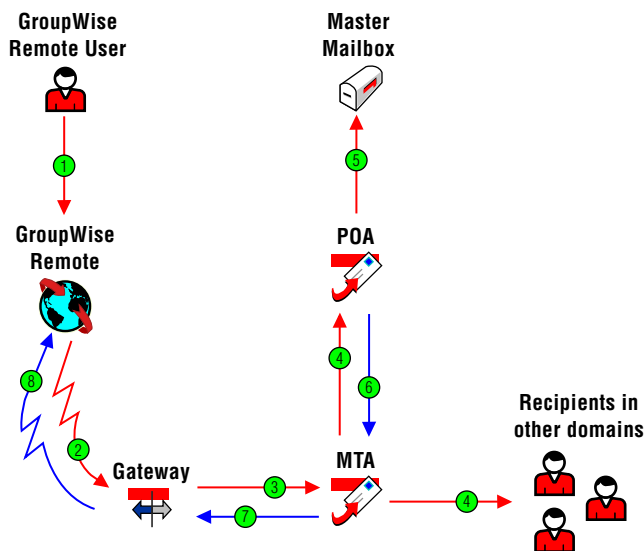
## **Process 12: POA Updates Database**

The POA in the sender's domain updates the message database with the Delivered status.

# GroupWise Remote to Async Gateway Message Delivery

GroupWise Remote gives users the ability to access their mailboxes when working away from the main GroupWise system. Each GroupWise Remote user has a Master Mailbox (on the network) and a remote mailbox. Any work performed in GroupWise Remote is done offline by the user in his or her remote mailbox, then later exchanged with his or her Master Mailbox at home. Communication is enabled through the Async Gateway and a modem connection.

This diagram of the message delivery between a user using GroupWise Remote and his or her Master Mailbox shows the GroupWise components involved in the process.



## Process 1: Remote User Sends Message

The GroupWise Remote user creates a message using the GroupWise Remote client.

## Process 2: GroupWise Client Initiates Modem Connection

The GroupWise Remote user initiates a connection to the Async Gateway in the recipient's GroupWise domain.

## Process 3: Async Gateway Transfers Message

The Async Gateway in the sender's domain transfers the message through a configured modem and phone line connection to the receiving Async Gateway located in the recipient's domain.

## Process 4: MTA Delivers Message

The MTA delivers the message to the recipient's MTA if the recipient is located in a different domain, or to the POA if the recipient is located in the same domain as the Async Gateway.

## Process 5: POA Updates Master Mailbox

The POA updates the sender's Master Mailbox and the recipient's mailbox.



## **Process 6: POA Generates Message Status**

The POA generates a Delivered status message and queues it to the MTA.

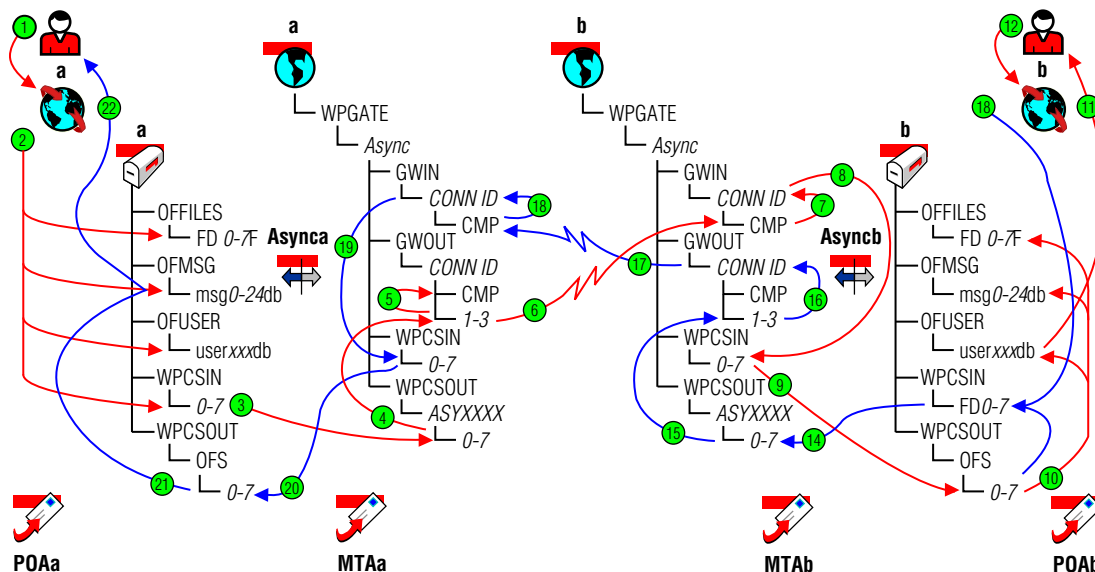
## **Process 7: MTA Delivers Message Status**

The MTA recipient's domain transfers the Delivered status to the Async Gateway in the recipient's domain.

## **Process 8: Async Gateway Delivers Message**

The Async Gateway delivers the message to the GroupWise Remote user.

# Message Flow from Async Gateway to Async Gateway



## Stage 1: Sender

The user sends a message to recipients in a post office in a different domain. In this diagram, the delivery mode in the local post office is Use App Thresholds and the threshold is not exceeded.

## Stage 2: Sender's GroupWise Client

The GroupWise client performs the following actions for the sender:

- ◆ Adds the message to the message database (msg 0-24.db file) assigned to the sender.
- ◆ Creates a pointer in the sender's user database (userxxx.db file) so the message appears in the sender's Out Box.
- ◆ Places attachments larger than 2 KB in the post office\offiles\fd0-7f subdirectory assigned to the sender and creates pointers from the message to its attachments. (For database efficiency, messages and recipient lists larger than 2 KB are also handled as attachments.)
- ◆ Creates a copy of the message in the appropriate priority 0-7 subdirectory of the sender's MTA input queue.

If a different delivery mode were in effect in the post office, some or all of these actions would be performed by the POA instead of the GroupWise client.

## Stage 3: MTA in Sender's Domain

The MTA in the sender's domain polls its input queue as specified by Scan Cycle in Agent Settings in ConsoleOne®. When it detects a new message, the MTA recognizes that it must be sent through a gateway and places the message in its output queue in the gateway's directory structure:

*domain\wpgate\async\wpcsoult\asyxxxx\1-3*

## Stage 4: Async Gateway in Sender's Domain

The Async Gateway in the sender's domain detects the message in the queue, determines the message priority, and places it in the appropriate connection ID directory and in the appropriate priority subdirectory.

`domain\wpgate\async\gwout\connection_ID\1-3`

The connection ID directory is used for a specific domain connection (other Async Gateways in other GroupWise systems). There might be several domain connection ID subdirectories for your Async Gateway. The master schedule and calling intervals use the message counts in the priority subdirectories 1-3 to determine when the gateway initiates the modem connection.

## Stage 5: Async Gateway in Sender's Domain

When message counts reach levels set in the Async Gateway's master schedule and calling intervals, the gateway dials out on the modem defined for the designated port, reads the message file from the priority directory 1-3, compresses the message, and places it in a compression directory ready for transmission across the modem.

## Stage 6: Modem Connection Between Gateways

The sender's Async Gateway establishes a modem connection with a modem defined for another Async Gateway defined at the recipient's GroupWise site. The Async Gateway in the recipient's domain begins to receive the incoming message file. The gateway begins to build the message in its input queue's compressed message directory:

`domain\wpgate\async\gwin\connection_ID\cmp`

## Stage 7: Async Gateway in Recipient's Domain

The message is fully received. The recipient's Async Gateway decompresses the file and moves it into the `\gwin\connection_ID` directory.

## Stage 8: Async Gateway in Recipient's Domain

The recipient's Async Gateway moves the file from the `\gwin\connection_ID` directory into the MTA input queue in the gateway directory structure:

`domain\wpgate\async\wpcsin\0-7`

## Stage 9: MTA in Recipient's Domain

The MTA in the recipient's domain polls the gateway's MTA input queue as specified by Scan Cycle in Agent Settings in ConsoleOne. When it detects a new message, the MTA picks up the message from its domain input queue and transfers it to its output queue in the recipient's post office. The MTA output queue is the input queue for the POA in the recipient's post office.

## Stage 10: POA in Recipient's Post Office

The POA polls its input queue regularly. When it detects a new message, the POA in the recipient's post office performs the following actions:

- ◆ Adds the message to the message database (msg 0-24.db file) corresponding to the one assigned to the sender.
- ◆ Creates a pointer in the recipient's user database (user xxx.db file) so the message appears in the recipient's In Box and updates the notification information in the user database so the recipient can be notified of the message.
- ◆ Places attachments larger than 2 KB in the *post\_office\offiles\fd0-7f* subdirectory corresponding to the one assigned to the sender and creates pointers from the message to its attachments. (For database efficiency, messages and recipient lists larger than 2 KB are also handled as attachments.)
- ◆ Creates a Delivered status message in the appropriate priority 0-7 subdirectory of the recipient's MTA input queue.

## Stage 11: Recipient's GroupWise Client

The Notify component of the recipient's GroupWise client notifies the recipient that a new message has arrived.

## Stage 12: Recipient

Each recipient opens the message in the GroupWise client.

## Stage 13: Recipient's GroupWise Client

Each recipient's GroupWise client creates an Opened status message in the appropriate priority 0-7 subdirectory of the recipient's MTA input queue.

## Stage 14: MTA in Recipient's Domain

The MTA in the recipient's domain polls all its input queues in the domain as specified by Scan Cycle in Agent Settings in ConsoleOne. When it detects a status message in the recipient's post office, the MTA picks it up and transfers it to the MTA input queue in the sender's domain.

## Stage 15: Async Gateway in Recipient's Domain

The recipient's Async Gateway picks up the message from the MTA output queue and moves it to the output queue priority subdirectories of the appropriate connection ID directory:

*domain\wpgate\async\gwout\connection\_ID\1-3*

## Stage 16: Async Gateway in Recipient's Domain

If the connection to the sender's Async Gateway is still valid, the recipient's Async Gateway compresses the file and moves it to appropriate connection ID directory for sending across the wire:

*domain\wpgate\async\gwout\connection\_ID*

## Stage 17: Modem Connection Between Gateways

The recipient's Async Gateway sends the file through the modem connection to the Async Gateway at the sender's GroupWise site. If the connection is terminated, the file waits in the

*connection\_ID* directory until a new connection is established. The Async Gateway in the sender's domain begins to receive the incoming message file. The gateway begins to build the message in its input queue, compressed message directory:

*domain\wpgate\async\gwin\connection\_ID\cmp*

## **Stage 18: Async Gateway in Sender's Domain**

The message is fully received. The sender's Async Gateway decompresses the file and moves it into the *\gwin\connection\_ID* directory.

## **Stage 19: Async Gateway in Sender's Domain**

The sender's Async Gateway moves the file from the *\gwin\connection\_ID* directory into the MTA input queue in the gateway directory structure:

*domain\wpgate\async\wpcsin\0-7*

## **Stage 20: MTA in Sender's Domain**

The MTA in the sender's domain polls all its input queues in the domain as specified by Scan Cycle in Agent Settings in ConsoleOne. When it detects a status message in its gateway input queue, the MTA picks it up and transfers it to its output queue in the sender's post office. The MTA output queue is the input queue for the POA in the sender's post office.

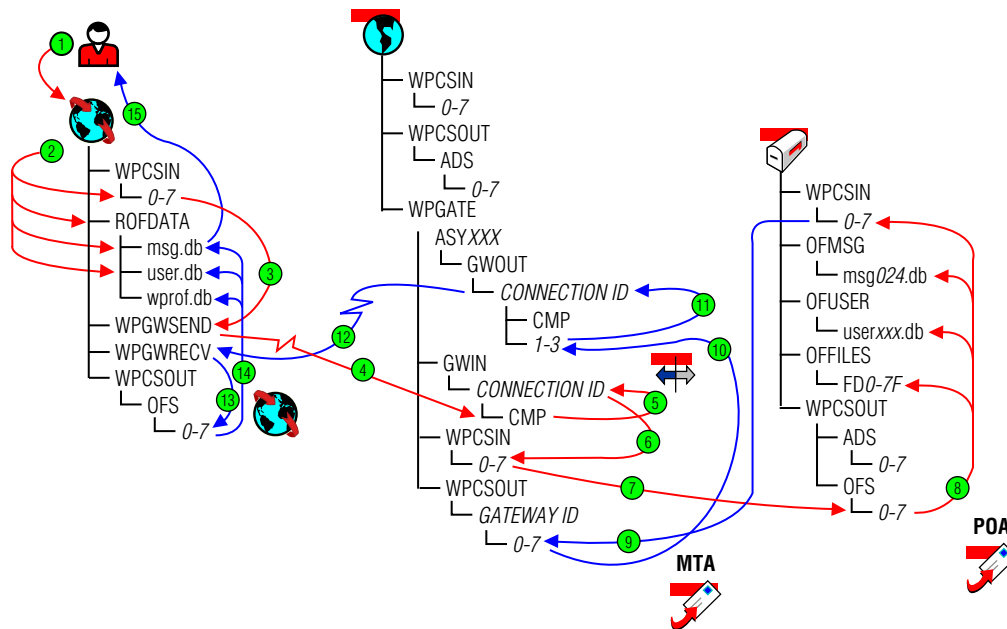
## **Stage 21: POA in Sender's Post Office**

The POA in the sender's post office updates the sender's message database (*msg 0-24.db* file) with the Delivered status information (and possibly Opened if the recipient has opened the message).

## **Stage 22: Sender**

When the sender checks his or her Out Box in the GroupWise client, the message displays a status of Delivered for each recipient (and possibly Opened if the recipient has opened the message).

# Message Flow from GroupWise Remote to the Async Gateway



## Stage 1: Remote User

The GroupWise user, who is not currently connected to the network, sends a message to another GroupWise user or creates a request for items from the Master Mailbox.

## Stage 2: Remote User's GroupWise Client

When the Remote user sends a message to another GroupWise user, the GroupWise client performs the following actions:

- ◆ Adds the message to the Remote message database (msg.db file) on the user's remote computer.
- ◆ Creates a pointer in the Remote user database (user.db file) so the message appears in the Out Box on the user's remote computer.
- ◆ Places attachments larger than 2 KB in the rofdata directory and creates pointers from the message to its attachments on the user's remote computer. (For database efficiency, messages and recipient lists larger than 2 KB are also handled as attachments.)
- ◆ Creates a copy of the message in the priority 1 subdirectory of the Remote input queue on the user's remote computer.

When the Remote user sends a request for items from the Master Mailbox, the GroupWise client places the request in the priority 1 subdirectory of the Remote input queue on the user's remote computer.

## Stage 3: Remote User's GroupWise Client

When the user initiates the modem connection, the GroupWise client on the remote computer polls the wpcsin\1 subdirectory and compresses the outgoing messages and/or requests into a file. If the compressed file totals over 50 KB, additional compressed files are created. The GroupWise client next moves the compressed files into the wpgwsend directory, then dials in to the gateway and logs in.

## Stage 4: Remote User's GroupWise Client (Modem Connection)

When the login process is completed, the GroupWise client on the remote computer transmits the compressed message/request files across the modem connection to the system where the user's Master Mailbox is located.

## Stage 5: Async Gateway

The Async gateway picks up the message/request files and decompresses them.

## Stage 6: Async Gateway

The Async gateway moves the message/request files to the MTA input queue.

## Stage 7: MTA in Remote User's Domain

The MTA in the Remote user's domain polls its input queues as specified by Scan Cycle in Agent Settings in ConsoleOne. When it detects the new message or request from the Remote user, the MTA picks it up from its domain input queue and transfers it to its output queue in the post office where the Remote user's Master Mailbox is located.

The MTA output queue is the input queue for the POA in the post office where the Remote user's Master Mailbox is located. This message flow diagram illustrates only the simplest case, where the recipient is in the same post office as the Remote user's Master Mailbox. If the Remote user sends a message to a user in any other post office, the MTA would route the message to the appropriate destination.

## Stage 8: POA in Remote User's Post Office

The POA polls its input queue regularly to quickly detect the new message or request from the Remote user. When the Remote user sends a message, the POA performs the following actions:

- ◆ Adds the message to the Remote user's message database (*msg0-24.db* file). This updates the Remote user's Master Mailbox.
- ◆ Creates a pointer in the recipient's user database (*userxxx.db* file) so the message appears in the recipient's In Box, and updates the notification information in the user database so the recipient can be notified of the message.
- ◆ Places attachments larger than 2 KB in the *post\_office\offiles\fd 0-7f* subdirectory in the Remote user's post office and creates pointers from the message to its attachments. (For database efficiency, messages and recipient lists larger than 2 KB are also handled as attachments.)
- ◆ Creates a Delivered status message in the priority 1 subdirectory of the Remote user's MTA input queue.

When the Remote user sends a request for items from the Master Mailbox, the GroupWise client performs the following actions:

- ◆ Gathers the requested items from the Remote user's Master Mailbox (*msg 0-24.db* file).
- ◆ Gathers any attachments for requested items from the *post\_office\offiles\fd0-7f* subdirectory in the Remote user's post office.
- ◆ Compiles the information into a response file and places it in the priority 1 subdirectory of the MTA input queue for return to the Remote user.

## Stage 9: MTA in Remote User's Domain

The MTA in the Remote user's domain polls its input queues as specified by Scan Cycle in Agent Settings in ConsoleOne. When it detects the new response for the Remote user, the MTA picks it up from its post office input queue and transfers it to its output queue in the Async gateway directory under wpgate in the Remote user's domain. The MTA output queue in the Async gateway directory is the input queue for the Async gateway.

## Stage 10: Async Gateway

The Async gateway picks up the response file and moves it to the priority 1 subdirectory of its output queue.

## Stage 11: Async Gateway

If the connection to the Remote user is still active, the Async gateway compresses the response files and moves them to the CMP directory. If the connection is no longer available, the response files wait in the *connection\_ID*\1 subdirectory until a new connection is established by the Remote user.

## Stage 12: Async Gateway (Modem Connection)

The Async gateway transmits the response files through the modem connection to the GroupWise client on the remote computer.

## Stage 13: Remote User's GroupWise Client

The GroupWise client on the remote computer decompresses the response files and places them in its input queue on the Remote user's computer.

## Stage 14: Remote User's GroupWise Client

Taking the items from its input queue, the GroupWise client performs the following actions for the Remote user:

- ◆ Updates the Remote message database (msg.db file) with any items requested from the Remote user's Master Mailbox.
- ◆ Creates pointers in the Remote user database (user.db file) so the messages gathered from the Master Mailbox appear in the Remote user's In Box and Out Box.
- ◆ Places any requested attachments larger than 2 KB in the rofdata directory and creates pointers from the message to its attachments. (For database efficiency, messages and recipient lists larger than 2 KB are also handled as attachments.)

The Remote user's Remote mailbox now contains current copies of requested items from the user's Master Mailbox, plus any messages received in the user's Master Mailbox from other GroupWise users.

## Stage 15: Remote User

The GroupWise user can now review current GroupWise mail when the connection to the master GroupWise system is no longer available.