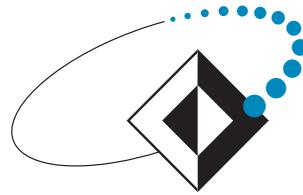


Niagara Mail Server v2.20 Admin Guide



OFFICE-NET Kkt.

Internet/Intranet
messaging for your network

NIAGARA MAIL SERVER

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Welcome to Niagara Mail Server

Thank you for choosing Niagara Mail Server v2.20, the flagship product of Office-Net Kkt. We are quite sure that our software will provide all the features you need, and a long and successful story will begin now, when you start to explore the power of a new generation communication channel: the world of e-mail.

Reading this manual in advance is recommended to avoid any difficulties when you install and use Niagara Mail Server. We made every effort to produce a manual which can be easily used even without previous experiences in this area. We assumed you have some expertise in networking like issuing console commands, and network management using NetWare Administrator.

The following styles were used when formatting this documentation:

IMPORTANT! You must carefully read this section and follow the recommendations made, otherwise this software may not operate correctly, or may cause harmful interferences with other applications or services on your network.

Note: This style denotes non-critical comments or useful explanations which help you understand the background of a given operation.

- 1 Follow this guides step by step...
- 2 ... to make the desired settings..

Feel free to look up this manual anytime you need assistance on an issue, or just to get an image of the features offered by Niagara. If you need additional help you can always contact our technical support group (details can be found at the end of this manual).

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Installation and Basic Setup

Installation of Niagara Mail Server is very easy, just follow this guide and your mail server will be operational in a couple of minutes.

Prerequisites

Please make sure the following minimum requirements are met:

- NetWare 4.10, intraNetWare or NetWare 5 have been already installed and it works perfectly;
- latest support pack and/or individual patches were applied, and workstations use the latest Novell clients available;
- TCP/IP is configured with at least one static IP address;
- free memory available: 1 MB + 80 kB / total threads allowed.

You will also need a workstation connected to the network, logged in as a user with sufficient rights, and direct or remote access to the server console.

Installation

The preferred way to install Niagara Mail Server is through INSTALL.NLM (NW 4.x) or NWCONFIG.NLM (NW 5.x). You can use this method if you used the default directory locations for Windows 95 / NT versions of NetWare Administrator.

These defaults are:

- NetWare Administrator for Windows 3.1x: sys:\public
- NetWare Administrator for Windows 95: sys:\public\win95
- NetWare Administrator for Windows NT: sys:\public\winnt
- NetWare Administrator for 32-bit Windows: sys:\public\win32

The steps to perform the product install are:

- 1 Mount the CD-ROM as a volume.
- 2 Load INSTALL.NLM (NW 4.x) or NWCONFIG.NLM (NW 5.x) on the server.
- 3 Select Product Options, then Install a product not listed.
- 4 Press <F3> and change "A:" to "NIAG22:\INSTALL".
- 5 Follow the server prompts to complete the installation.

Remote installation using RCONSOLE.EXE is also possible, just press the key <F4> instead of <F3> in the step 4 above, and specify the correct remote path in the step 5.

Copying files manually

Copy the files listed below to the specified directories:

Server modules

niagara.nlm	sys:\system
niagres.nlm	sys:\system
ngresut.nlm	sys:\system
nguninst.nlm	sys:\system
niagara.msg	sys:\system\nls\4
niagres.msg	sys:\system\nls\4
ngresut.msg	sys:\system\nls\4

Snapin for NetWare Administrator f. Windows 3.1x
(NW 4.x only)

bc450rtl.dll	sys:\public
niagsn3x.dll	sys:\public
ngres3x.dll	sys:\public\nls\english
niagsnap.hlp	sys:\public\nls\english

Snapin for NetWare Administrator f. Windows 95 /98

cw3215.dll	sys:\public\win95
snapin32.dll	sys:\public\win95
niagsn32.dll	sys:\public\win95
ngres32.dll	sys:\public\win95\nls\english
niagsnap.hlp	sys:\public\win95\nls\english

Snapin for NetWare Administrator f. Windows NT

cw3215.dll	sys:\public\winnt
niagsn32.dll	sys:\public\winnt
niagsnap.hlp	sys:\public\winnt\nls\english
ngres32.dll	sys:\public\winnt\nls\english

Snapin for NetWare Administrator 32

cw3215.dll	sys:\public\win32
niagsn32.dll	sys:\public\win32\snapins
niagsnap.hlp	sys:\public\win32\nls\english
ngres32.dll	sys:\public\win32\nls\english

Creating product directory

Niagara Mail Server will create and store files in the product directory and subdirectories beneath. The NDS object representing your mail server needs full rights to this directory, but no one else should have access to it anyway (except Admin of course).

Create a directory for this purpose, preferably under the root of the volume. Niagara will create the subdirectories the first time it will be loaded on the server.

IMPORTANT! Do not create the product directory on the SYS: volume, to prevent a possible Denial of Service attack. Otherwise a hacker could send many large messages causing the volume SYS: to fill up completely, which is dangerous in a NDS environment.

A QUEUE subdirectory will be created in the product directory, holding the main job queue of Niagara Mail Server. This queue will hold a huge number of temporary control files, messages in transit etc., created then deleted on demand. Because of that behaviour, we strongly suggest you set the Purge attribute to this queue directory after Niagara Mail Server loaded and created it. The same precaution applies to the directory where trace files will be created on demand, LOGS\SMTP and LOGS\POP3. This way you can prevent the unnecessary growing of directory entry tables, causing loss of free disk space, and long volume mounting times.

Activating the snapin modules

Niagara Mail Server can be managed using the NetWare Administrator utility. This well-known utility is the central place of administration in NetWare 4.x and higher environments, which can be extended through the snapin interface to allow 3rd-party developers to integrate the management of their applications. You get the snapin modules for several Windows platforms on the product CD out of the box, and the necessary files were already copied during the installation phase. To activate those snapins, you have to perform the following steps on every workstation running NetWare Administrator.

NetWare Administrator for Windows 3.1x

To make the Niagara Mail Server snapin modules recognized and loaded by NetWare Administrator running on Windows 3.1x systems, perform the following:

- 1 Using a text editor, open the \WINDOWS\NWADMIN3X.INI file on your workstation.
- 2 Add the following line below the (Snapin Object DLLs WIN3X) heading:
NIAGSN3X.DLL=NIAGSN3X.DLL
- 3 Save the file.
- 4 Run the NWADMIN3X.EXE utility.

Note: As this version of NetWare Administrator is no longer included with NetWare 5, the installation script does not copy the 16-bit snapin modules if it detects the NetWare version is other than 4.x.

NetWare Administrator for Windows 95

To make the Niagara Mail Server snapin modules recognized and loaded by NetWare Administrator running on Windows 95/98 systems, perform the following:

- 1 Run the Registry Editor (REGEDIT.EXE).
- 2 Select Registry/Import Registry File...
- 3 Open the SYS:\PUBLIC\WIN95\NIAG_W95.REG file. The registry entries will be created for you.
- 4 Run the NWADMN95.EXE utility.

NetWare Administrator for Windows NT

To make the Niagara Mail Server snapin modules recognized and loaded by NetWare Administrator running on Windows NT systems, perform the following:

- 1 Run the Registry Editor (REGEDIT.EXE).
- 2 Select Registry/Import Registry File...
- 3 Open the SYS:\PUBLIC\WINNT\NIAG_WNT.REG file. The registry entries will be created for you.
- 4 Run the NWADMNNT.EXE utility.

NetWare Administrator 32

You do not need any further steps here, because this version uses a different approach to find the snapin modules to be loaded. Instead of looking around in the registry, NetWare Administrator 32 will attempt to load every DLL found in the snapins directory, usually `sys:\public\win32\snapins`.

This is the newest version of NetWare Administrator, developed for 32-bits versions of Windows operating system (including Windows 95/98/NT 4.0). We suggest you to prefer this one over any older versions.

Extending the NDS schema

If you are ready with the previous steps, you have to launch NetWare Administrator (any version) now. The Niagara snapin module will load, and perform an NDS schema check to see whether it contains the necessary changes or not. If not (this will be the case after installation, and maybe after performing future upgrades), you will be prompted to confirm schema extension. Answer Yes as this is a new installation.

As schema extension requires Supervisor right to the root of the tree, the first installation in a given tree must be done by Admin or security equivalent. Subsequent installations does not have this limitation.

Performing this step also extends several classes belonging to the base schema (user, group), which makes these changes irrevocable, due to a limitation in the current NetWare API set. You do not have to worry anyway, because Niagara uses a name prefix registered with Novell DeveloperNet.

The schema changes made by Niagara Mail Server are listed at the end of this manual.

Creating Mail Server object in NDS

Niagara Mail Server uses its own object class to store the settings in NDS. Every instance of Niagara requires a different object to be created in NetWare Administrator. Follow this guide to create a new mail server object:

- 1 Select the container object (Organization, Organizational Unit), in which you are going to create the new object for Niagara Mail Server. For performance reasons a local replica should exist on the host server, containing all the objects involved in the mail service.
- 2 Right click on that object and select Create... from the popup menu. Choose Niagara Mail Server from the list of available classes.
- 3 Give a name for the new object, and select or type in the product directory created in one of the previous steps.
- 4 Clicking on OK button will create the object with all the parameters set to default values.

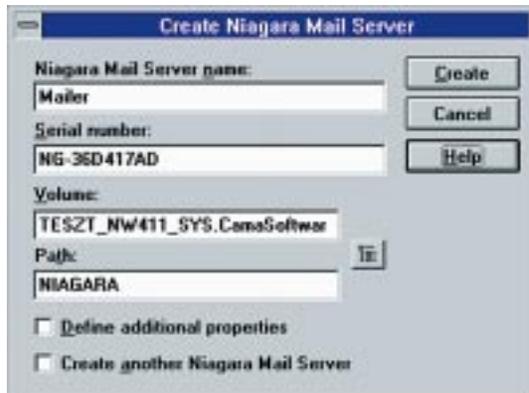


Fig. 1. Creation of the NDS object

Basic settings

As we mentioned before, the mail server object was created with parameters set to default values. These default values are suitable for most cases. There are some other values however, which one must set before Niagara can be loaded successfully.

This guide will drive you through the post-installation steps:

- 1 Select the Niagara Mail Server object you created, and double-click on it to bring up the details window.
- 2 Switch to Identification page and find the Host name field. Type in the DNS host name belonging to that server. If multiple host names exists, select the

one best describing the mail server functionality, such as mail.company.com. This host name must resolve to a valid IP address bound to one of the interfaces installed in that server.

- 3 There is a Search context field on the same page, which can be used to limit the scope of NDS searches. If you leave this field blank, then all searches will originate from the (Root). Type in or use the browser to select another NDS context. This is especially important in a WAN environment, to eliminate unnecessary traffic and delays in operation. Keep in mind that all mail-related objects must be located below this context, such as the mail server and mailing list objects and all users having mailboxes locally.
- 4 Assign an e-mail address to the Niagara Mail Server itself (like MAILER_DAEMON@company.com), which will be used as sender in delivery notifications and other automatically generated messages. Type in this address to the E-mail address field, which is located on the Configuration page.
- 5 Switch to Domains page, and add all the domains you are going to service. Each of these local domains must have a DNS MX record pointing to that host.
- 6 Go to the Postmasters page, and designate at least one user to this role. Preferably this user would have a basic knowledge of mail server operations, as he/she will get notifications about something going wrong.
- 7 Press OK to save the changes. You will be notified whether reloading of mail server is required in order to activate the new settings. Most of the settings can be changed on the fly however.
- 8 Follow this manual to assign mailboxes to users assigned to the role of Postmaster.

We suggest to review the remaining settings as well. Details on each item can be found later in this document, or in the context sensitive help accessible directly from NetWare Administrator.

NDS and file system rights required

In order to function properly, a Niagara Mail Server object MUST have the following rights:

- B entry right to the (Root) object
- RC rights to all attributes of the (Root) object
- RWCEMF file system rights to the product directory

Additional rights required when using the optional Pegasus Mail Gateway:

- RWCEMF file system rights to the Spool directory
- RWCEMF file system rights to %HOMEDIR\PMAIL directories of affected users

Additional rights required when using mailing lists:

- BCD entry rights to every Niagara Mailing List object
- CRW rights to all attributes of every Niagara Mailing List object

These rights are assigned (and/or removed) by the snapin module dynamically. Check them first if you are experiencing problems with Niagara.

Adding licences

This package contains a licence card, showing the serial number and an associated activation key. You will need both of them to install this licence. The licence card also contains the product name and version for which this licence can be used.

There is no relation between the number of Niagara Mail Server licences and the user level of NetWare used. You can create as many mailboxes (meaning the same number of users offered with mail services) as the number of Niagara licences you installed to that particular mail server instance. This can be less than, equal to or greater than the number of concurrent users on your NetWare server.

Follow these steps to install a licence:

- 1 Select the Niagara Mail Server object and double-click on it to bring up the Details window.
- 2 Select the Licences tab to display the associated page.
- 3 Click on the Add... button, then type in the serial number, the licence count and the activation key exactly as found on the licence card. Select OK to close this dialog box. The new licence will appear in the list of currently installed licences.
- 4 Select OK to save your changes.

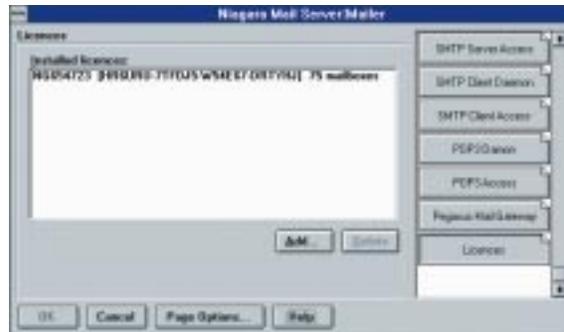


Fig. 2. Licence installation

Do not try to use more mailboxes than the total licenced count installed, or Niagara Mail Server may refuse to operate correctly.

Note: If you do not have at least one valid licence installed, then Niagara will run in 45-days evaluation mode only, counting time from the date of first installation made on that particular server.

Starting Niagara Mail Server

Niagara Mail Server can be started by loading NIAGARA.NLM. All other components and referenced libraries will be autoloading if they are not present in the memory.

The command-line parameters are the following:

LOAD NIAGARA.NLM objectname (TSTON) (DBG=fndc) (password)

Objectname is the full or relative distinguished name of the Niagara Mail Server object in NDS (eg. "Mailer", "CN=Mailer.O=MyCompany", without the quotes). Relative names are searched in the server's context. The name may contain spaces in it, but you must pass it with the spaces converted to underscore (eg. "CN=Very_long_name"). NDS treats spaces and underscores equally.

If TSTON was specified, then additional screens will be opened at your server, one for each daemon: SMTPc (outgoing), SMTPs (incoming) and POP3. The screens will show the same trace info that is recorded into trace files if requested. Maximum threads will be reduced to one, in order to prevent message interleaving on the screen from multiple threads. This parameter is useful as a debug aid only, do not use it under normal circumstances.

The optional DBG (debug) parameter can be used only as directed by our technical support group (1 = enable, 0 (default) = disable):

- f: file operations
- n: TCP/IP connection establishments / closures
- d: excess delays, or waiting for temporarily unavailable resources
- c: server-to-server connections

The optional password parameter can be used if you had set one for the Niagara Mail Server object. A default password will be always used, so no one can log in using this object to gain access to the mail queues.

Niagara Mail Server

Messaging was one of the first wide-spread applications of the Internet. Although related standards are being continuously enhanced to provide new features as needed, the basic protocol (SMTP) is still the same as the one used in the early 80's.

Messaging on the Internet is very similar to the one used in the real life. The message is mailed to a post office (sent to a mail server using the SMTP protocol), which forwards it (mail relay) to another one based on the predefined rules (DNS MX records), until it reaches the final destination, being delivered to the recipients' mailbox (final delivery). Recipient is responsible for checking the mailbox periodically and collecting any messages waiting there (downloading using POP3 protocol). Undeliverable messages are sent back to the original sender (DSN, delivery notifications).

Basic operation

The operation of Niagara Mail Server is based on it's main job queue, which is in fact a subdirectory under the product root. This queue is responsible for exchange of messages and synchronization between the various modules. Jobs rescheduled as a result of some temporary errors are also waiting in this queue for further processing.

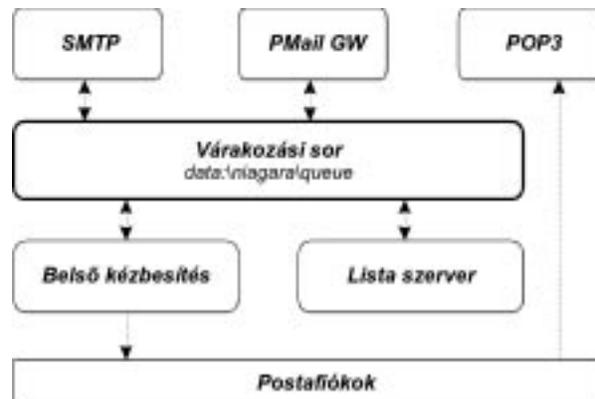


Fig. 3. Basic operation of Niagara Mail Server

Niagara Mail Server is responsible for initiating and accepting TCP/IP connections, handling them as described in various protocol standards. It also processes the incoming and outgoing messages, and initiates the background tasks. Niagara uses multiple threads to achieve scalability, maintaining a relatively simple working model at the same time. The number of concurrent threads (equal to the number of concurrent TCP/IP connections) are limited, to defend against a possible Denial of Service type attack.

Received messages are handled by the SMTP server. Every message is examined to see whether the sender and the recipient(s) are local addresses or not. The results of this examination are used to reject unknown local destinations, and they are also passed along to the Anti-SPAM module. Recipients are grouped based on their local, non-local

or special status, then the entire message is placed in the main queue for further processing.

Handling outgoing messages is the role of the SMTP client. The destination server address is determined based on the recipient's e-mail address and the requested delivery mode (forward or smart delivery), then a connection is initiated. When a failure occurs, the job gets rescheduled or returned immediately back to the sender, depending on the temporary or permanent nature of that error. With dialup link support set to on, messages are collected in the queue, and sent out once when the requested period elapsed. The remote server will be notified at the same time that the message reception is now possible.

Messages destined to local mail users will be delivered internally by the corresponding agent. This agent supports group addresses by delivering such messages to the members of that group. Pegasus Mail Gateway will get messages sent to PMail users, delivering them locally.

The POP3 server is servicing messages to users requesting them. First it authenticates the user, then opens his/her mailbox and sends out the requested messages.

Niagara List Server handles both list server commands and list messages. Recognized commands will be executed, sending back a reply message with the results. List messages will go through a modification process, creating a whole new message by adding the necessary headers and removing those may cause trouble later. Recipient list is created from the member information found in NDS. The completed list message is then placed to the main queue for further processing.

The main scheduler is responsible for triggering those internal tasks not related to incoming connections in any way, like the spool directory checking in Pegasus Mail Gateway, or the deletion of completed tasks and log files older than the retention interval.

Interaction with the DNS

Niagara Mail Server is using the services offered by DNS servers for several types of queries: to get the MX records when performing smart delivery, or to translate between the host names and the associated IP addresses. Since the NetDB.NLM shipped with NetWare does not provide all these features, Niagara has its own DNS resolver library called NiagRes.NLM.

There's no need to configure the DNS resolver. The same DNS client settings will be used as the one set up on your server at Inetcfg.NLM -> Protocols -> TCP/IP -> IPX/IP GW and DNS Resolver Configuration. You may find more information about this in the NetWare manuals.

If you are experiencing any DNS related errors, please use NGRESUT.NLM to check the DNS connectivity first. Make sure you have valid settings in the sys:\etc\resolv.cfg file, and that the DNS servers listed in that file can be reached. This is a sample resolv.cfg file:

```
domain officenet.hu
nameserver 194.143.224.1
nameserver 145.236.224.249
```

Ask your ISP for the domain name and addresses suitable for your server.

Configuring mailboxes

Niagara Mail Server is based on the idea that only users have mailboxes in their physical form. Every user mailbox must have an e-mail address, and may have virtually unlimited number of alias addresses. Other type of addresses (group address) or special built-in addresses (postmaster, list server address) are just mappings to individual user mailboxes.

After installation of Niagara Mail Server noone has a mailbox on the server, as the assignment between NDS users and Niagara mailboxes does not happen by default. The administrator must configure selected users before they can start using the messaging services provided by Niagara.

Note: This chapter describes how to configure mailboxes for POP3 access. For users of Pegasus Mail client working in file based mode (without TCP/IP connectivity on workstations) please refer to the Pegasus Mail Gateway chapter later in this manual.

User addresses

As we mentioned before, only users have their mailboxes existing in their physical form. Niagara creates a unique ID for every user object you are going to configure for the first time, and uses this ID for subsequent operations. The mailbox is in fact a subdirectory, you can find it as <product root>\STORE\MAILS\

There is no relation between login names and e-mail addresses, the only restriction is that e-mail addresses must be unique across the NDS tree. Addresses are handled in a case insensitive manner, you can even mix uppercase and lowercase characters when referring to them.

IMPORTANT! Using the login name as the e-mail address (eg. loginname@company.com) is not recommended for security reasons. Hackers are probing known mailbox names first to gain access to the system being under attack. Do not give them a clue about login names used on your network.

Follow these steps to configure a mailbox to a given user:

- 1 Launch NetWare Administrator on a workstation. Select the NDS user object, and double click on it to bring up the Details window.
- 2 Switch to the Niagara Mail Account page.
- 3 Set Retrieve mail using option to show any POP3 client, with TCP/IP, and enable the mailbox by checking the POP3 access enabled setting.
- 4 Select the Niagara Mail Server object assigned with this mailbox, or type in its full distinguished name into the POP3 server field. Use the flat browser to make your selection.
- 5 Type in a user name to the POP3 user field. This user name, along with the password, have to be set on the client to authenticate it to this mailbox. POP3 user names must be unique for a given mail server.

- 6 Set Mailbox size to show Limited to, and type in the maximum allowed size in kBytes to the edit box appearing at the right. Set it to Unlimited if you allow the mailbox to grow as needed to accommodate the received messages.
- 7 Set Authentication to the allowed methods for checking the user identification. USER/PASS is widely implemented, but sends the password in its cleartext form across the wire. APOP is more secure against tampering, but not every mail client supports it. You can select Both if you leave this choice to your clients.
- 8 Press the Change password button to set the password used with the USER/PASS authentication method. The default setting is to use the NDS login password. See the following sections for details on password settings.
- 9 Press the Change shared secret button to set the password used with the APOP authentication method. Shared secret defaults to none, you must set it if you allow this type of authentication.
- 10 Check the SMTP access enabled option to allow receiving messages to the address set below.
- 11 Type in an E-mail address for this user. This address must be unique across the entire NDS tree. The domain part must be listed as local domain in the configuration of the associated Niagara Mail Server.
- 12 Save the changes made. A new mailbox is assigned to the user, ready to accept his/her messages immediately.

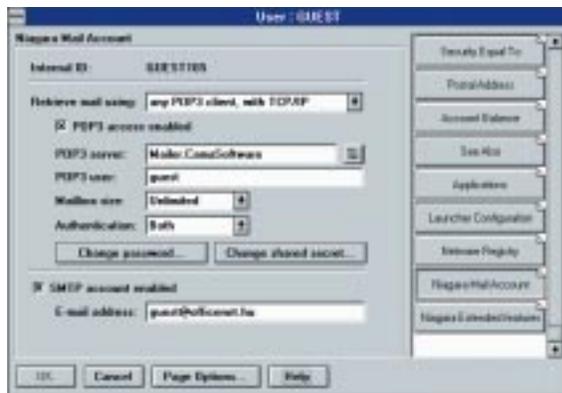


Fig. 4. Configuring a user mailbox

IMPORTANT! For security reasons do not set a POP3 user name to be the same as the login name, unless you are going to disable this account for local access (like in case of ISPs). Disabling an account does not disable the access to the associated mailbox.

Group addresses

NetWare groups may also have e-mail addresses associated with them. This is the easiest way to reach a group of individual users with a single e-mail address. A typical use of group addresses are general or rule-based addresses like sales@company.com or info@company.com, where the intended recipients often changes.

When a message is received for a group address recipient, Niagara will deliver it to every member of that group. Because no mailbox is associated with a group, there isn't any way to download these group messages separately. The internal delivery agent does not change the headers of a group message when doing the final delivery to the members. This means the To: header field in the message will retain the original group address, making the distinction possible between user and group messages.

Follow these steps to assign e-mail addresses to group objects:

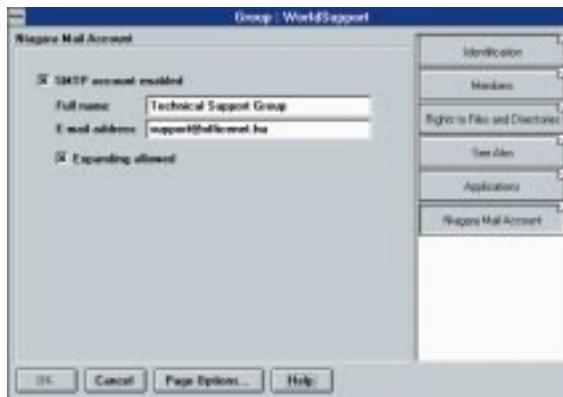


Fig. 5. Configuring group addresses

- 1 Launch NetWare Administrator on a workstation. Select the NDS group object, and double click on it to bring up the Details window.
- 2 Switch to the Niagara Mail Account page, and enable the message reception by checking the SMTP access enabled setting.
- 3 Type in a descriptive name to the Full name edit box. VRFY and EXPN commands will use this name.
- 4 Type in an E-mail address for this group. This address must be unique across the entire NDS tree. The domain part must be listed as local domain in the configuration of the associated Niagara Mail Server.
- 5 Check the Expanding allowed option, if you wish to allow everyone to use the EXPN command to retrieve a list of member names and addresses of this group. The optional command EXPN must also be enabled on the SMTP Daemon page for this feature to work.

6 Save the changes made. The group is ready to accept messages immediately.

When a message has a group address recipient, and the internal delivery module finds out that not every member has a mailbox configured on this server, it will send a notification message to the postmaster:

```
Date: Fri, 11 Sep 1998 19:02:57 +0100
From: Mail Delivery Subsystem <mailer_daemon@officenet.hu>
Subject: Group address resolution
To: PostMaster@officenet.hu

User CN=nomailuser.O=CamaSoftware does not have an assigned mailbox.
Message to groupmail@officenet.hu will be delivered for remaining
members only.
```

Of course, messages will still be delivered to those members already having their mailboxes configured.

Password settings

A successful authentication is required in order to access a mailbox. Niagara supports two authentication methods. USER/PASS is a simple method, sending the username and password in cleartext form over the wire. APOP is more secure than the previous one, as the password (or shared secret, in the RFC terminology) never hits the wire, it is used only to calculate an MD5 hash from the unique timestamp received in the server greeting. Not every mail client can use the APOP method either.

The POP3 username must be unique within a given mail server, that's why it is often set up once and leaved unchanged. The password should be changed on a regular basis however, like any other passwords used on a network. Niagara uses different passwords for those methods mentioned above.

Follow these steps to set or change the passwords used to gain access to user mailboxes:

- 1 Launch NetWare Administrator on a workstation. Select the NDS user object, and double click on it to bring up the Details window.
- 2 Switch to the Niagara Mail Account page.
- 3 The Change password button will lead you to a dialog box, where you can change the password used by the USER/PASS authentication. Go ahead to step 7 if you do not need to change this password.



Fig. 6. Password for the USER/PASS authentication

- 4 Type in the previous password to the Old password field. You do not need to (and in fact, you cannot) provide the old password if you are a postmaster or have administrator privileges on your network.
- 5 Check the Use LOGIN password option if you want to use the same password to access your mailbox as the one used to log in to the network. Otherwise type in your secret password to the New password field, and retype it in the next field to allow detection of typing errors.
- 6 Press OK to save the new password. You will see the Niagara Mail Account page again.
- 7 The Change shared secret button will lead you to a dialog box, where you can change the password (or shared secret, in the RFC terminology) used by the APOP authentication. Go ahead to step 11 if you do not need to change this password.



Fig. 7. Password for the APOP authentication

- 8 Type in the previous password to the Old shared secret field. You do not need to (and in fact, you cannot) provide the old password if you are a postmaster or have administrator privileges on your network.
- 9 Type in your secret password to the New shared secret field, and retype it in the next field to allow detection of typing errors.
- 10 Press OK to save the new password. You will see the Niagara Mail Account page again.
- 11 Save the changes made.

Note: You do not have the option to Use the LOGIN password with the APOP authentication. Server needs access to the shared secret in its cleartext form to perform the APOP authentication, and this is not possible with LOGIN passwords because of security restrictions enforced by the NDS.

Autoforwarding

One of the features of Niagara Mail Server is the ability to forward all messages arriving to a user mailbox to another e-mail address. There is no restriction on the redirection address, as Niagara will send the message through the SMTP client if the recipient does not have a mailbox on the local mail server.

There are two main autoforward methods available, the difference between them is whether delivery to the local mailbox is also requested or not. The third method is somewhat special, as it will actually deny the message reception, but the remote host will receive the redirection address in the reply to the RCPT TO: command issued during the SMTP session. The sender in turn will receive a bounce message, containing the new address of the original recipient. This feature is especially useful when a mailbox was moved to another mail server.

Follow these steps to configure autoforwarding:

- 1 Launch NetWare Administrator on a workstation. Select the NDS user object, and double click on it to bring up the Details window.
- 2 Switch to the Niagara Extended Features page, and set the Autoforwarding method to one of these options:

<i>Disabled</i>	no action requested
<i>Auto-forward a copy of the message</i>	leave the message in the mailbox, and forward a copy to another address
<i>Auto-forward the message itself</i>	just forward, do not leave a copy here
<i>Redirect mailers to another address</i>	do not accept messages, just give a redirection answer to the remote host

- 3 A new field will be showing up just below the Autoforwarding method selection when autoforwarding is enabled. Type in the e-mail address where you want all messages to be forwarded or redirected.
- 4 Save the changes made.



Fig. 8. Extended feature settings: autoforwarding, aliases

Aliases

Aliases are secondary e-mail addresses associated with the same user. Although regular users will find that having just one e-mail address is enough, there are some special cases where one must receive messages for more than one addresses. Think about a company having multiple domain names in use, with a webmaster wishing to receive messages as `webmaster@companyA.com` and `webmaster@companyB.com` too.

As we mentioned before, Niagara Mail Server is inspecting every message at the SMTP reception phase, to determine whether the sender and recipients have local mailboxes or not. The e-mail address and the aliases are treated equally, and the message will be placed into the recipient's mailbox. The only difference is that the e-mail address will always be returned when internal processes requests an objectname to address mapping to be done.

Niagara can handle virtually unlimited number of aliases. One user requires exactly one licence from the installed licence count, regardless of the number of aliases assigned.

Follow these steps to create aliases:

- 1 Launch NetWare Administrator on a workstation. Select the NDS user object, and double click on it to bring up the Details window.
- 2 Switch to the Niagara Extended Features page. You will see the list of currently defined aliases.
- 3 Use the Add... and Delete buttons to add new aliases, or to delete previous ones. Keep in mind that the domain portion of these aliases must be listed as local domains in the mail server configuration.
- 4 Save the changes made.

Size limitations

Leaving mailboxes unlimited in size (which is the default setting) is very comfortable for an average user, but can cause trouble in the messaging service. When a user has not downloaded his/her messages for a long time, the mailbox can become very-very large, taking up space from other mailboxes. In extreme cases this could lead to filling up the NetWare volume holding the product root directory, resulting in the inability to send or receive any messages. Even a hacker can try this to conduct a Denial of Service type attack against your server, sending large files continuously to several users at a time.

You can eliminate these issues by limiting the size of the user mailboxes. Follow these steps to set or remove this limitation:

- 1 Launch NetWare Administrator on a workstation. Select the NDS user object, and double click on it to bring up the Details window.
- 2 Switch to the Niagara Mail Account page.
- 3 Set Mailbox size to Limited, and type in the maximum allowed size (in kBytes) to the edit control showed at the right. You can remove the size limitation by setting Mailbox size back to the Unlimited option.
- 4 Save the changes made.

Postmasters

According to the related messaging standards on the Internet, every mail server must provide a Postmaster mailbox for every domain it is servicing. This mailbox must be monitored by real persons responsible for the operation of that mail server. This rule creates a general address where all problem reports or questions about a particular mail service can be sent. If a mail server is servicing the company.com domain for example, then postmaster@company.com must be a valid address, and messages sent to that address must be answered in a usual time frame.

Niagara Mail Server can have multiple postmasters assigned to this role, using a special built-in account. Only users or group of users with assigned mailboxes can be selected to become postmasters. Postmasters will receive those messages sent to the postmaster@any.local.domain, if Niagara was configured to provide mail services to the any.local.domain in this example. They will also receive notifications about system events, and copies about selected user notifications like delivery status notifications, or mailboxes becoming full.

Assign Postmasters

Although you can assign users both directly and indirectly (using groups) to the Postmaster role, there are some differences between these two methods. Postmaster users will receive notifications and different kind of messages in both case, but we suggest you to assign users directly and forget about groups here. Several features are working only this way, like changing a users' POP3 password without having to type in the old password.

Follow these steps to assign users or groups to the role of postmaster:

- 1 Launch NetWare Administrator on a workstation. Select the NDS object representing the Niagara Mail Server, and double click on it to bring up the Details window.
- 2 Switch to the Postmasters page, and use the Add... and Delete buttons to manage the list of users and groups currently assigned to the role of postmaster.
- 3 Check the Expanding allowed option, if you wish to allow anyone to use the EXPN command to retrieve the individual names and addresses of Postmaster group members. The optional command EXPN must also be enabled on the SMTP Daemon page for this feature to work.
- 4 Save the changes made.

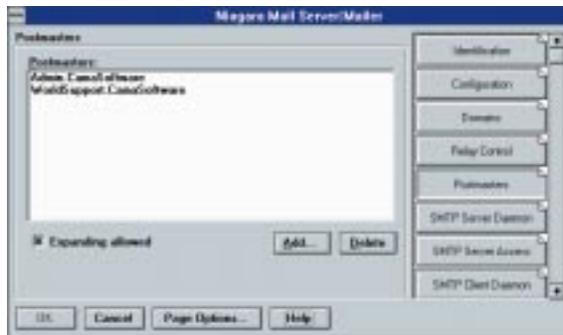


Fig. 9. Assign postmasters

Notifications

Different kind of notification messages are generated during the operation of Niagara Mail Server. Some of them are closely related to the settings and configuration of the mail server itself, so they are always delivered to postmasters to let them know something is going wrong and needs their attention. Postmasters can also choose to receive a copy of notification messages, which are sent to users only by default. These type of notifications include bounce messages, delayed or undeliverable conditions, or size limited mailboxes being full.

Follow these steps to get notifications about user related system events:

- 1 Launch NetWare Administrator on a workstation. Select the NDS object representing the Niagara Mail Server, and double click on it to bring up the Details window.
- 2 Switch to the Configuration page.

- 3 Check the DSN option near the CC PostMaster label to receive notifications about delayed or undeliverable messages.
- 4 Check the MBF option near the CC PostMaster label to receive notifications about user mailboxes being full.
- 5 Save the changes made.



Fig. 10. Enabling system notifications

SMTP server

The SMTP server is responsible for accepting and preprocessing incoming messages, then storing them into the main job queue. The source of these messages can be a remote mail server or a user client (message submission), but the server cannot distinguish between these two scenarios, nor it has any reasons to make such a distinction.

The implementation is based entirely on the SMTP protocol specified in RFC 821, and several other extensions like SIZE (message size limitations) and PIPELINING (command sequence grouping). Optional commands can be disabled or restricted for certain situations, to allow administrators for deciding between enhanced features and security.

During an SMTP conversation, the SMTP server always checks the sender and recipient addresses against the local domain list and local addresses stored in NDS. Unknown recipients (unknown mailbox in a local domain) will be immediately rejected, and the remote server will issue an undeliverable notification to the sender. This method saves the bandwidth otherwise required to receive the message just to send it back to the sender as a bounce message. It also protects against a possible DoS-type (Denial of Service) attack. This information will also be used by the Anti-SPAM feature to prevent relaying for anyone.

Remote identification

Remote SMTP servers and clients are required to identify themselves at the beginning of every session, specifying their domain names as a parameter of the initial HELO or EHLO command. This is not a real identification as the remote host can say anything here.

Checking the domain name presented can be a time consuming process, which often fails due to inadequate DNS domain configuration. Related RFCs say no mail server can even refuse messages if this checking fails for any reason.

Niagara Mail Server can be set up to issue a DNS PTR query on the remote IP address (obtained from the underlying TCP/IP stack), and include the real host name in the log files and in the message itself. The remote IP address will always be included there, regardless of this setting. The administrator/postmaster and the actual recipient will be able to determine the real source of every message this way.

A Received: header will be inserted into the message, similar like this one:

```
Received: from mars.company.com ([10.1.1.10] - mars.company.com.)  
        by mail.company.com (Niagara v2.20 / NetWare 4.11)  
        with SMTP id 0001064B; Fri, 11 Sep 1998 18:58:32 +0100
```

Follow these steps to enable identifying the remote connections:

- 1 Launch NetWare Administrator on a workstation. Select the NDS object representing the mail server, and double click on it to bring up the Details window.
- 2 Switch to the Configuration page.
- 3 Check DNS Lookup option near the Start daemons label to include the real host name (as returned from the PTR query) in the log files and in the message itself.
- 4 Save the changes made.

Local domains

Messaging on the internet is organized around the DNS domain hierarchy. Mail servers are designated to handle messages for specific domains only, and this process is called final delivery. All other messages are to be relayed to another host, or refused to accept delivery.

You must set up Niagara with a list of domains to be treated locally. This list will be used to separate local and remote recipients requiring almost different processing to be done. For example, time-consuming NDS searches will be performed on local addresses only.

Those special built-in mailboxes (postmaster, listserv) will be accepted and processed for every local domain listed here.



Fig. 11. Designate local domains

Follow these steps to select which domains has to be serviced locally:

- 1 Launch NetWare Administrator on a workstation. Select the NDS object representing the mail server, and double click on it to bring up the Details window.
- 2 Switch to the Domains page, and use the Add... and Delete buttons to build the list of domains to be recognized as local.
- 3 Save the changes made.

Note: E-mail addresses or aliases assigned to users, groups, mailing lists, or the address of the mail server itself will be valid and accepted only when they are belonging to a local domain listed here. Failure to comply with this rule will result in bounce messages or infinite mailing loops.

Loop detection

Sometimes a message does not reach its final destination server, instead it is looping around intermediate mail servers on the net. This effect may be caused by a misconfiguration on one of these servers, or a recent change in the DNS zone not completely transferred to the secondary name servers yet. Because messages being transferred in an endless loop use unnecessary bandwidth and processing power on the host servers, and the sender does not get a notification about the message not reaching the intended recipient(s), every mail server must detect and break up this condition.

Niagara Mail Server is detecting the loop condition by counting the number of Received: header lines in the incoming messages. When this value exceeds the predefined limit, Niagara will assume a mailing loop condition was occurred, and will discard the message, notifying the sender at the same time. We do not recommend setting this limit below 25, as every time a message is traversing a relay server, a mail gateway or a firewall a Received: header will be inserted in it. In the era of today's complex networks this may result in messages carrying a number of such headers under normal conditions.

Follow these steps to enable loop detection:

- 1 Launch NetWare Administrator on a workstation. Select the NDS object representing the mail server, and double click on it to bring up the Details window.
- 2 Switch to the SMTP Server Daemon page.
- 3 Set Max. hop count option to Limited, and specify how many Received: header lines will render a message as being looped, therefore considered undeliverable. Set this option to Unlimited to disable the message loop detection.
- 4 Save the settings made.

Note: No perfect method exists to recognize message loops caused by misconfiguration. Even the one used by Niagara Mail Server has its drawbacks, like its inability to capture messages before taking several rounds looped. Hopefully message loops are seldom occurring in the real life, but if they do occur, then it is important to have something in place against them.

Size limitations

You may find a size limitation option described earlier in this manual, which is a feature available for individual user mailboxes, so it has effect on that users' messaging environment only. A similar option is available for the entire SMTP server as well, limiting the size of individual messages that can be received. This feature can prevent volume full conditions, and helps reducing the excess bandwidth utilization.

When this feature is enabled, the SMTP server will reject messages having a size greater than the predefined limit, possibly before the actual transmission would happen. If the remote server also conforms to the SIZE SMTP extension described in RFC 1870, the size negotiation will take place at the beginning of every transaction, and the remote side will never try to send messages greater than the announced limit. Niagara will always check the actual message size after reception, to defeat bypassing this limitation by specifying a false message size.

Postmasters should inform their users about any size limitations in effect, recommending the use of FTP for transferring large files over the net.



Fig. 12. Message size limitations

Follow these steps to set up message size limitations:

- 1 Launch NetWare Administrator on a workstation. Select the NDS object representing the mail server, and double click on it to bring up the Details window.
- 2 Switch to the SMTP Server Daemon page.
- 3 Set the Max. message size option to Limited, and specify the allowed message size limit in kBytes. Set this option to Unlimited if you want to disable this feature.
- 4 Save the changes made.

If you set up a size limitation here, then Niagara will advertise the current limit in the SIZE answer given to an EHLO command, according to the rules described in RFC 1870. Transactions stating a message size above this limit will not be accepted. The message size cannot be determined prior to the actual transmission when the remote does not use the extended SMTP framework, resulting in a 5xx reply at the end of the transaction.

Optional commands

SMTP server is responsible for receiving messages from remote servers or user clients, followed by the local delivery (in case of local recipients) or relaying to the next or final destination otherwise. There were several extensions made to the original SMTP command set to add new features or enhance the existing ones.

The RFC 821, the current SMTP standard classifies the commands into mandatory and optional categories. Mandatory commands must be known by all servers, to make the communication possible between the various systems. Optional commands are rather extensions or added features only, possibly not implemented on every system or disabled by the administrator due to security reasons.

- **VRFY**

This command is often used by postmasters to verify whether a given address do exist. Niagara Mail Server will try to find the specified parameter as a mailbox or address, and will return the full name and address of the user or group found in NDS. Does not work on non-local addresses.

- **EXPN**

This command can be used to expand group and similar multi-recipient addresses to individual e-mail addresses. Niagara Mail Server will check whether the address given is allowed to be expanded. If allowed, it will return a list of e-mail addresses (together with full names) for everyone who will receive the mail so addressed. EXPN cannot be used on mailing list addresses.

- **ETRN**

This command requests a remote mail server to release messages waiting in it's queue for delivery, destined to the domain passed as a parameter of ETRN command. If enabled, Niagara Mail Server will issue an MX query for the domain parameter it receives, and the host IP addresses found in the answer will be removed from the blocking list. As a result, SMTP Client Daemon will send out any pending messages for this domain, if they exist.

Details of these commands can be found in the SMTP (RFC 821) and ETRN (RFC 1985) standards, downloadable from the net.



Fig. 13. Optional SMTP commands

Follow these steps to enable selected optional SMTP server commands only:

- 1 Launch NetWare Administrator on a workstation. Select the NDS object representing the mail server, and double click on it to bring up the Details window.

- 2 Switch to the SMTP Server Daemon page. At the Optional commands label check those commands you want to be enabled, based on the informations provided earlier in this section. Unchecked thus disabled commands will report "500 Unknown command" back to the sender.
- 3 Save the changes made.

SMTP client

The SMTP client has a similar role like any mail client running on user workstations: it connects to another mail server, and uses the SMTP protocol to send out a message to recipients not having a mailbox on the local server.

When a message enters the main job queue, the SMTP client will be triggered to begin processing it as soon as possible. It also scans the job queue at predefined intervals, and retries sending out messages which previously encountered temporary errors. Messages older then the predefined number of days will be considered undeliverable, causing a notification message to be sent to the original sender.

There are two delivery methods available, forwarding and smart delivery. The first one just forwards all messages to another mail server, for example to the one maintained by your ISP. Smart delivery method uses the DNS MX records to find the final destination for every recipient, and send the message directly to the servers holding the recipient's mailboxes. The second method does not depend on third party mail servers to be up and running, nor on their willingness to accept messages for relaying elsewhere.

Niagara Mail Server can be operated on permanent and dialup links too. The differences in scheduling the message sending and reception, as well as requesting the relay host to release messages waiting in its queue, are all handled by the SMTP client.

DNS queries are issued by the Niagres.NLM library module. This module requires the DNS client settings to be set up correctly, using the INETCFG configuration utility, or manually by editing the `sys:\etc\resolv.cfg` file. See the details in the Interaction with the DNS section earlier in this chapter.

Delivery methods

Messages sent to local recipients will be delivered internally by Niagara, making them available for later download using a POP3-based mail client, or a file-based Pegasus Mail client software. The SMTP client will have to deliver messages sent to anyone else.

Basically there are two delivery methods to choose from. The first one, called "Forwarding" will direct Niagara to send all messages to a predefined remote mail server, acting as a relay host. This remote server will be responsible for performing the necessary tasks, like grouping recipients based on the domains they are belonging to, and issuing DNS MX queries to find out the final destination hosts. You should make an agreement with the owner of that remote server, as you may have to pay for the bandwidth used, and to ensure your messages will be accepted for relaying instead of being bounced back by the spam filters. In most cases your ISP will provide you with this service free of charge.

The second method, called "Smart delivery" will direct Niagara to act as a full featured mail server, breaking recipient lists based on the destination domains, and send out messages directly to the mail servers where the recipients' mailboxes are handled locally. This method uses more resources (memory, CPU cycles) on the local server, and uses greater bandwidth for messages having multiple recipients, but enhances the availability and fault tolerance of your messaging service at the same time by eliminating the dependence on another mail servers' availability and willingness. Smart delivery method is based entirely on RFC 974, Mail Routing and the Domain System.

We can't make a general recommendation here, as the best choice is always based on local considerations. The smart delivery method has a number of advantages over forwarding as described above, but the later one seems better when a dialup connection is used. Anyway, you have to think about both methods, and choose that one which better fits your unique requirements.



Fig. 14. Selecting the delivery method

Follow these steps to set the delivery method to be used:

- 1 Launch NetWare Administrator on a workstation. Select the NDS object representing the mail server, and double click on it to bring up the Details window.
- 2 Switch to the SMTP Client Daemon page, and select the Delivery method to be used:

<i>Forward</i>	forward all messages to another relay host
<i>Smart (RFC 974)</i>	full end-to-end delivery based on DNS MX
- 3 A Relay host edit control will be showing if you selected Forward in the previous step. Type in the name of a mail server which will be willing to process your outgoing messages for further delivery.
- 4 Set the Delivery time frame to the number of days Niagara will have to try sending out messages. Messages previously encountered a temporary error (DNS server error, no connection etc.) will be tried again regularly, until the sending succeeds, or the Delivery time frame elapses. Messages still being

undelivered will be discarded, notifying the sender at the same time.

- 5 Save the changes made.

IMPORTANT! Others may choose your mail server to relay spam or other unsolicited junk mail to a huge number of recipients. Prevent yourself and your company from complaints sent by annoyed recipients, and other consequences. See the Anti-SPAM section for further details on how to do this.

Using on permanent links

It is the most simple way to operate Niagara Mail Server on a leased line, or any other kind of permanent link to the internet. Outgoing messages will be immediately processed and sent out, and the SMTP server is always ready to accept incoming messages. This is the default setting when you install Niagara Mail Server.

We suggest setting up Niagara to use the smart delivery mode, whenever it is connected through permanent links to the internet. This way you no longer have to rely on services provided by other mail servers out there, being operated under someone else's supervision. See the previous section for details on how to set up Niagara for smart delivery mode.

Follow these steps if you are going to operate the Niagara SMTP client on permanent link:

- 1 Launch NetWare Administrator on a workstation. Select the NDS object representing the mail server, and double click on it to bring up the Details window.
- 2 Switch to the SMTP Client Daemon page, and set the Schedule option to ASAP (As Soon As Possible) to send out messages without any delays.
- 3 Set the Dialup control option to Disabled / Permanent link, as messages are received directly, without any mail relay hosts involved.
- 4 Save the changes made.

Using on dialup links

Niagara Mail Server was designed to operate over dialup links as well, mostly used by small and medium sized companies where a permanent link is not a choice, or they are not going to use anything other than e-mail. Messaging only does not require a huge amount of bandwidth in many cases, and it is easier and cheaper to set up a PSTN or ISDN connection than a permanent link.

You will need to ask your Internet provider for the following informations:

- The name of the mail relay host, where all incoming messages are waiting on hold, until Niagara Mail Server will be ready to receive them;
- The notification method supported by your ISP. Niagara can work in Queued SMTP or ETRN mode as well.

Messages are processed immediately on permanent links. On dialup links several things may change a little bit. Messages are accumulated in the queue for the specified amount of time. When this time interval elapses, the SMTP client wakes up, connects to the mail relay host (activating the dialup link at the same time), and sends out the messages waiting in the queue, requesting the temporarily stored incoming messages to be received in a separate connection. The dialup link will be terminated by the router, when the inactivity period is over.

Keep in mind that Queued SMTP and ETRN methods are just requests for the relay host, asking to release its queue for the IP address or domain name specified. The actual message transmission may be delayed, because of excess load on the remote mail server, or other intermediate transmission conditions. You have to set up your router's idle timeout period accordingly, to prevent early link hangups. A good choice would be checking for new e-mails hourly, with at least 5 minutes of idle timeout.

Note: Signaling the mail relay host will happen even if there are no messages waiting to be sent in the queue. Sending and receiving messages are working independently of each other.

We suggest setting up Niagara to use the forward method instead of smart delivery, whenever it is connected through dialup links to the internet. This way all messages are being sent once, regardless of the number of recipients. If a message cannot be delivered immediately for any reason, the relay host will make the delivery attempts over and over again, not using the limited dialup bandwidth nor causing excess telco charges. In most cases you can use the same relay host as a target to all your messages being forwarded, which is holding your incoming mails temporarily until you are ready to receive them.

Follow these steps if you are going to operate the Niagara SMTP client on a dialup link:

- 1 Launch NetWare Administrator on a workstation. Select the NDS object representing the mail server, and double click on it to bring up the Details window.
- 2 Switch to the SMTP Client Daemon page.
- 3 Change the Schedule setting from ASAP (As Soon As Possible) to Every XX minutes. Set the time interval (in minutes) to be elapsed between two connections initiated by Niagara Mail Server.
- 4 Set the Dialup control to the method required by your mail relay. If both Queued SMTP and ETRN methods can be used, we suggest setting up the later one.
- 5 Type in the name of the mail relay host (usually provided by your ISP) to the Host to control edit field.
- 6 Save the changes made.

POP3 server

At the beginning all computers on the Internet were connected and running permanently, using SMTP-only messaging solutions. As the Internet evolved, more and more workstations gained connectivity over permanent or dialup links, lacking the continuous run and the necessary resources to have an SMTP daemon implemented on them. The POP3 protocol was developed to address this issue, to allow e-mail messages to be collected on SMTP servers dedicated to this task, and downloaded later when the client asked them.

POP3 is a very simple protocol. It was designed to provide commands for downloading and deleting messages only. During the years elapsed since its first version, this protocol has undergone minor changes only, mostly to provide alternate user authentication methods. IETF has declared it will continue to keep POP3 as simple and effective as it is today. One may look at IMAP4 instead of POP3 when more features are needed, however, the current version of Niagara does not support it yet.

Because POP3 is so simple, very few settings can be made to customize it. Most of these settings are related to the individual mailboxes, like size limitations, or the authentication methods allowed, described in the Setting up mailboxes section earlier in this guide.

POP3 servers store messages temporarily by default, until the user logs in and requests messages to be retrieved then deleted from the server. Most mail clients can also be instructed to leave mail on server after retrieving. This feature can cause thousands of messages to accumulate on the server, causing longer response times and lower quality of service. Volumes holding user mailboxes can also become full, rendering the entire mail service useless. As more and more mailboxes are defined on a server, the more difficulties will arise from the application management.

There are several solutions offered to deal with this issue, also covered in RFC 1939, the POP3 standard. Niagara Mail Server can impose limits on user mailboxes, and can be instructed to not allow for messages to be left on the server.

Size limitations

Individual mailboxes may have a size limitation set on them, as you can see in a user object's Niagara Mail Account page. More details on this setting can be found in a previous section describing the creation of mailboxes. These individual size limitations can be globally enabled or disabled here for the entire POP3 server.

Follow these steps to enable the individual mailbox size limitations globally:

- 1 Launch NetWare Administrator on a workstation. Select the NDS object representing the Niagara Mail Server, and double click on it to bring up the Details window.
- 2 Switch to the POP3 Daemon page, and check the Enable user mailbox size limits option to turn on the individual mailbox size limitations. Uncheck the same option to convert all mailboxes to unlimited state.
- 3 Save the changes you made.

Deleting messages after retrieving

Mail clients have an option to leave all messages on the POP3 server after they were retrieved. This feature would be useful in several situations, like in case of mobile users, but users often misuse it, causing their mailbox to grow indefinitely. Mailboxes holding thousands of messages are just consuming disk space, and rendering the user access rather slow. As this practice is not recommended, POP3 servers were not designed to effectively handle this load.

Niagara Mail Server can virtually overcome this behaviour by deleting messages retrieved successfully. When enabled, this causes an implicit DELE command to be issued after each successful RETR command. Messages will never get lost, as DELE is just marking the message for deletion. The physical deletion will be occurring only when the client sends the QUIT command to close the communication with the server, meaning the entire download process was successful.

This feature means that user client settings regarding messages to be leaved on server will be effectively disabled. Before you enable this feature, it is very important to notify your users that no message will be held on the server, regardless of their client settings made.

Follow these steps to enable this feature:

- 1 Launch NetWare Administrator on a workstation. Select the NDS object representing the Niagara Mail Server, and double click on it to bring up the Details window.
- 2 Switch to the POP3 Daemon page.
- 3 Check the Delete retrieved messages when QUIT option to make the deletion of retrieved messages mandatory, regardless of the client settings. Leave this option unchecked if you want to delete messages only when the client explicitly requested it.
- 4 Save the changes made.

Optional commands

POP3 server allows the mail client to download messages from the mailbox of that user. This also means that enabling or disabling optional POP3 commands affects only the communication between the user and his/her mailbox.

The RFC 1939, the current POP3 standard classifies the commands into mandatory and optional categories. Mandatory commands must be known by all servers, to make the communication possible between the various systems. Optional commands are rather extensions or added features only, possibly not implemented on every system or disabled by the administrator due to security reasons.

TOP

This command retrieves the header of the message and the specified number of lines from the body of message. It is similar to the mandatory command RETR, which is normally used to retrieve the entire message. Several mail clients uses TOP when requested to leave mail on the server after retrieving. Note that site policies regarding mail retention on server does not work when mail is retrieved using TOP instead of RETR.

UIDL

This command is used to retrieve a unique message identifier for the specified message, or for every message waiting in the mailbox. This unique identifiers are permanent across the sessions. Several mail clients uses UIDL when requested to leave mail on the server after retrieving.

USER / PASS

This command pair forms a basic authentication method, which uses plaintext password to gain access to a mailbox. It is not secure as the credentials can be easily captured using a sniffer. Every mail client can use this authentication method.

APOP

APOP is an advanced authentication method, which uses the MD5 hash algorithm to create a fingerprint of the password and a unique timestamp issued by the server. This way the password never hits unencrypted the wire. Unfortunately, this method is not widely supported yet.

Details of the optional commands mentioned above can be found in the POP3 (RFC 1939) standard, which is also included in the online help (accessible from NetWare Administrator).

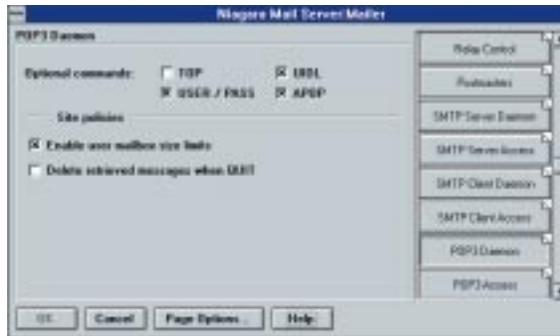


Fig. 15. Optional POP3 server commands

Follow these steps to enable selected optional POP3 server commands only:

- 1 Launch NetWare Administrator on a workstation. Select the NDS object representing the Niagara Mail Server, and double click on it to bring up the Details window.
- 2 Switch to the POP3 Daemon page. At the Optional commands label check those commands you want to be enabled, based on the informations provided earlier in this section. Unchecked thus disabled commands will report "-ERR Unknown command" back to the sender.
- 3 Save the changes made.

Anti-SPAM

Living in this world full of spam and other unsolicited bulk e-mail messages, postmasters could not live without taking the necessary steps against them. Although several methods exist to fight spammers and their messages out of the business, none of them can eliminate spam messages completely, not affecting the regular mail transport at the same time.

The Anti-SPAM feature of Niagara Mail Server can be used to deny using it as a mail relay for spam messages. This is very important, as a usual spam message does not have a real sender, or the From header contains the address of a human which is not responsible for, or even not knowing about that message in any way. People receiving this kind of messages will complain at the postmaster of relay hosts found in Received header lines, which is something they really do not want to happen.

Anti-SPAM can be selected to operate on three different levels of protection. Keep in mind that messages arriving to local addresses, or messages sent from local addresses will not be affected.

No restriction

Mail relay is opened to anyone, no spam filtering will be done.

Relay denied completely

Only messages referencing a local sender or recipient (local means a user who has a mailbox in this server) will be accepted. Other messages will be rejected immediately when the envelope is received, just before the actual message transfer would begin otherwise. Filtering works for individual recipients, meaning if a message comes in with a non-local sender, then only local recipients will be accepted.

Partial restriction

This is a modified version of the previous rule. Mail relay is denied by default, but recipients belonging to predefined domains will always be accepted.

Partial restriction mode is typically used when Niagara is acting as a backup mail relay for specific domains. In this case another mailer is set up to handle messages for addresses belonging to a specific domain. Niagara will receive these messages as a backup host when the other mailer is unreachable for any reason, and will try to send them through to the primary host. To enable this functionality, Niagara must be set up to use the smart delivery mode, and Anti-SPAM must be in the partial restriction mode, with the allowed destination domain list set accordingly. Partial restriction mode will allow for backup mail relay functionality, while still providing some prevention against spammers.

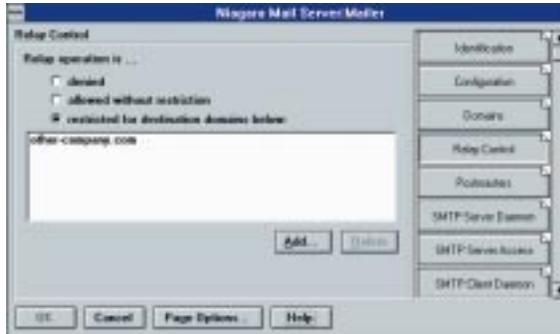


Fig. 16. Enabling the Anti-SPAM feature

Follow these steps to set the Anti-SPAM feature to the desired level of protection:

- 1 Launch NetWare Administrator on a workstation. Select the NDS object representing the Niagara Mail Server, and double click on it to bring up the Details window.
- 2 Switch to the Relay Control page, and set Relay operation to the desired protection level:

<i>denied</i>	mail relay is denied completely (strongest setting)
<i>allowed without restriction</i>	mail relay is opened for anyone (weakest setting)
<i>restricted for destination domains below</i>	relaying is allowed for preset destination domains only

- 3 If you set Relay operation to partial restriction, then use the Add... and Delete buttons to build the list of allowed destination domains.
- 4 Save the changes you made.

Activity and error logs

Log files provide a way to get a short summary on Niagara Mail Server activities. Every connection will result in a corresponding entry saved into the log files, showing the most important characteristics of it. This log can be used later to identify the IP address the connection was originated from, as well as the requested service (SMTP or POP3), the username given in the POP3 session, or the number of local / non-local / mailing list recipients specified in the SMTP session. It would be useful to archive these log files, or at least keep them for several weeks, as they would be needed by the help desk people to solve problems reported by users, or to assist in investigations regarding possible hacker activities.

Niagara creates new log files every day in the LOGS subdirectory under the product root, using the name YYYYMMDD.LOG (current date). Previous log files will be preserved, due to security reasons. Administrators has to decide what to do with them. You can find a sample log file at the end of this chapter.

Niagara has another logging facility to track error codes returned by NetWare APIs, or other erroneous events detected. These errors are also broken down into daily log files, saved in the LOGS subdirectory under the product root, using the name YYYYMMDD.ERR (current date). Previous log files will be reserved, as in the case of activity logs. Most of the errors logged are temporary errors, which will result in retrying later, when these errors will most likely not happen again. If you ever find some persistent problems in Niagara, our technical support group will probably ask you to send in these error log files to help us identifying and eliminating your problems.

Note: Error logging (logs*.err files) is mandatory, it cannot be switched off.

Follow these steps to enable the activity logging:

- 1 Launch NetWare Administrator on a workstation. Select the NDS object representing the Niagara Mail Server, and double click on it to bring up the Details window.
- 2 Switch to the SMTP Server Access page, and check the Write access log option to enable logging of the SMTP server activities (messages received).
- 3 Switch to the SMTP Client Access page, and check the Write access log option to enable logging of the SMTP client activities (messages sent, remote queue starting on dialup links).
- 4 Switch to the POP3 Access page, and check the Write access log option to enable logging of the POP3 server activities (messages downloaded by users).
- 5 Save the changes you made.

Tracing messages

Setting up and maintaining Niagara Mail Server is a very simple and self-explanatory task. The user interface was designed to allow even administrators with moderate skills to manage this mailing system. Our experiences (and the comments of our customers) proves that Niagara can be installed and configured in a matter of minutes, following those steps described in the first chapter of this manual. Enabling advanced features later can be done very easy too.

There are several cases however, when the administration team is facing with a complicated issue. To solve this situation, they need as much detailed information as the system can provide about the connections made, and the conversations occurring between local and remote servers or clients. In the following pages we will present you several features, allowing you to monitor and debug the different aspects of your Niagara mail service.

Queue retention

The default action is to delete a message from the queue as soon as processing was ended successfully. This way the unneeded directory spaces are recovered, and the privacy of messages are also protected. If you were set up the queue directory for Immediate Purge as we suggested before, then the directory entries are also recovered, and further salvage of deleted messages will not be possible.

Sometimes it would be helpful to retain processed messages in the queue for a limited time. As long as only administrators may have access to this directory, this does not represent a security issue. They can look into these messages to solve some routing problems (think about the Received: headers inserted by all servers they were traversed). If your company policy permits this, these messages can also be inspected for security reasons, eg. by searching for keywords considered company confidential.



Fig. 17. Enabling queue retention

Follow these steps to enable queue retention:

- 1 Launch NetWare Administrator on your workstation. Select the NDS object belonging to the mail server, and double click on it to bring up the Details window.
- 2 Switch to the Configuration page, and set Queue retention to the number of days you want to hold serviced jobs in the queue, before they will be deleted automatically. Type in 0 to disable the queue retention, and messages will be deleted immediately after processing.
- 3 Save the changes you made.

Note: Only the message will be held in the queue, as the envelope information and any associated control files were deleted immediately when the job was processed successfully.

Trace file generation

Sometimes it would be necessary to get as much details as possible for a given connection, otherwise it would be almost impossible to find the reason of the problems occurred. Niagara Mail Server can be instructed to create a trace file for every individual connection accepted or initiated, and save the requested level of detailed informations. These trace files can then be used to see what's happened at the protocol level, uncovering issues like bad passwords given, or unknown commands issued by the remote server or client. Even the contents of transmitted messages can be saved into these trace files, if this is required to find the cause of a problem.

The administrator can set the amount of information to be included, and the number of days for which these trace files must be retained. Be careful when you set them, or the space occupied by the trace files could grow indefinitely.

Niagara Mail Server will create trace files in the LOGS/ subdirectory under the product root. The following table shows you the name and location of various trace files created by Niagara, assumed that the product root is data:\niagara:

Niagara Mail Server functionality	Trace file
SMTP server	<i>data:\niagara\logs\smtp\XXXXXXXXX.rcv</i>
SMTP cliens	<i>data:\niagara\logs\smtp\XXXXXXXXX.snd</i>
Dialup link support	<i>data:\niagara\logs\smtp\XXXXXXXXX.etr</i>
POP3 server	<i>data:\niagara\logs\pop3\XXXXXXXXX.snd</i>

(XXXXXXXXXX means a unique hexadecimal ID)

Trace file generation and the level of informations included can be set up as follows:

- 1 Launch NetWare Administrator. Select the mail server object, and double click on it to bring up the Details window.
- 2 Switch to the SMTP Server Access page, and set Trace to file to the level of information needed about the SMTP server. The possible settings are:

<i>Nothing</i>	trace file creation is disabled
<i>Connections</i>	include timestamps for connection establishment and closure, the remote IP address, and any special events ocured (like time out, shutdown)
<i>Connections, RFC 821</i>	all the above, with the RFC 821 commands and responses added
<i>Connections, RFC 821, 822 headers</i>	all the above, with the headers of received messages added
<i>Connections, RFC 821, 822 headers/data</i>	all the above, but save the entire messages

- 3 Set Keep trace data until ... days old to the number of days you want the trace files (the ones belonging to the SMTP server connections) to be retained.
- 4 Switch to the SMTP Client Access page, and set Trace to file to the level of information needed about the SMTP client. The possible settings are:

<i>Nothing</i>	trace file creation is disabled
<i>Connections</i>	include timestamps for connection establishment and closure, the remote IP address, and any special events

- | | |
|---|--|
| <i>Connections, RFC 821</i> | occured (like time out, shutdown)
all the above, with the RFC 821
commands and responses added |
| <i>Connections, RFC 821, 822 headers</i> | all the above, with the headers of
outgoing messages added |
| <i>Connections, RFC 821, 822 headers/data</i> | all the above, but save the entire
messages |
- 5 Set Keep trace data until ... days old to the number of days you want the trace files (the ones belonging to the SMTP client connections) to be retained.
 - 6 Switch to the POP3 Access page, and set Trace to file to the level of information needed about the POP3 server. The possible settings are:

<i>Nothing</i>	trace file creation is disabled
<i>Connections</i>	include timestamps for connection establishment and closure, the remote IP address, and any special events occured (like time out, shutdown)
<i>Connections, RFC 1939</i>	all the above, with the RFC 1939 commands and responses added
<i>Connections, RFC 1939, 822 headers/data</i>	all the above, but save the entire messages
 - 7 Set Keep trace data until ... days old to the number of days you want the trace files (the ones belonging to the POP3 server connections) to be retained.
 - 8 Save the changes made.

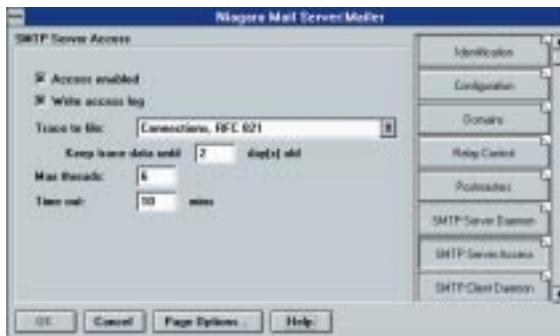


Fig. 18. Trace file generation

Understanding the server screen

An additional screen is opened on the server when you load Niagara. There are no menu or any kind of hot keys available at this screen, as the proper place for the entire management is in NetWare Administrator. The server screen was designed to show the actual server state, together with the most important events and counters related to your mail service.



Fig. 19. Niagara Mail Server screen on the server

See the following table for an explanation of the events and common counters displayed on the server screen:

Label displayed	Description
<i>Up since</i>	The date and time when Niagara Mail Server was started. All counters on the screen started at 0 that time. The time is displayed in the local timezone set on that server.
<i>Licences</i>	The number of installed licences, meaning the maximum number of assigned mailboxes allowed. Niagara may refuse to load or may not work as expected, if it detects more mailboxes then licences allows.
<i>Status</i>	Current state of Niagara Mail Server. Can be Running (normal usage) or Running in test mode (test mode, restricted to one connection per protocol), or one of the various load and unload stages.
<i>Services</i>	It's just a header for the table below. SMTPs = SMTP server (incoming messages), SMTPc = SMTP client (outgoing messages), POP3 = POP3 server (user downloads).
<i>Started</i>	The number of connection indications received so far.

<i>Accepted</i>	The number of connections accepted. Can be equal to, or less than the Started value just above. The difference can be caused by connection errors, refused connections, memory underrun errors, exhausted disk capacity or services being temporarily disabled.
<i>Errors</i>	The number of errors happened inside the connection handler, like memory allocation failed, file cannot be opened etc. Does not include protocol errors, like unknown recipient etc.
<i>Received</i>	The number of messages received.
<i>Sent</i>	The number of messages sent.
<i>Threads</i>	The number of current connections vs. the configured connection limit.
<i>(List server) Commands</i>	The number of list server messages parsed for commands to be executed.
<i>(List server) Messages</i>	The number of list messages processed by the list exploder.
<i>(PMail Gateway) Checked</i>	The number of times Pegasus Mail Gateway was checking the spool directory for any messages waiting to be processed.
<i>(PMail Gateway) Picked up</i>	The number of messages found in the spool directory, picked up and processed by the Pegasus Mail Gateway
<i>(PMail Gateway) Delivered</i>	The number of messages delivered to Pegasus Mail users.
<i>(Notifications) Delivery</i>	The number of messages bounced back to the sender, being unable to deliver them to the original recipients.
<i>(Notifications) Mailbox</i>	The number of notifications sent as a result of mailboxes filled up.
<i>(Notifications) Postmaster</i>	The number of notification messages sent to the postmaster about system errors or possible misconfigurations detected.

A scrolling region is visible at the bottom of that screen, showing the last five events occurred on the mail server. You will see the timestamp, the event type, the name or address of the sender/recipient/user (depending on the event occurred), and the number (or the total size) of messages involved.

Log samples

Log files

```
[10.1.1.10] - clienthost.officenet.hu - (Fri, 11 Sep 1998 12:28:32 +0100)
SMTP: rcvd in:1 out:0 lst:0 msgs
[10.1.1.10] - - jsmith (Fri, 11 Sep 1998 12:28:40 +0100)
POP3: 6 msg(s)
```

```
[10.1.1.14] - guesthost.officenet.hu - (Fri, 11 Sep 1998 12:41:12 +0100)
SMTP: rcvd in:0 out:0 lst:1 msgs
[10.1.1.14] - - guest (Fri, 11 Sep 1998 12:41:46 +0100)
POP3: 1 msg(s)
```

Trace files

This trace file shows the details of a message submission using the SMTP protocol:

```
Niagara Conversation File

1: Connection from [10.1.1.10] (clienthost.officenet.hu.) accepted on Fri, 11
Sep 1998 12:28:30 +0100
Snd: 220 mail.officenet.hu Niagara v2.20 SMTP Service ready
HELO clienthost.officenet.hu
Snd: 250 mail.officenet.hu saying hello
MAIL FROM:<guest@company.com>
Snd: 250 2.1.0 Sender (local) Ok
RCPT TO:<guest@officenet.hu>
Snd: 250 2.1.5 Recipient (local) Ok
DATA
Snd: 354 Start mail data, end with <CRLF.CRLF>
...
Snd: 250 2.6.0 Transaction Ok (00012241@mail.officenet.hu)
1: Connection from [10.1.1.10] closed on Fri, 11 Sep 1998 12:28:32 +0100
```

And this one shows a user download of the message sent above, using the POP3 protocol:

Niagara Conversation File

```
1: Connection from [10.1.1.10] accepted on Fri, 11 Sep 1998 12:28:40
+0100
Snd: +OK mail.officenet.hu Niagara v2.20 POP3 Service ready
<00012242.920806120@mail.officenet.hu>
USER guest
Snd: +OK Hello guest, let me know your password
PASS password
Snd: +OK guest, access granted
STAT
Snd: +OK 1 731
RETR 1
Snd: +OK 731 octets (00012241@mail.officenet.hu)
DELE 1
Snd: +OK message 1 deleted
QUIT
Snd: +OK mail.officenet.hu Closing transmission (mailbox empty)
```

```
1: Connection from [10.1.1.10] (clienthost.officenet.hu.) closed on Fri, 11 Sep
1998 12:28:40 +0100
```

Niagara List Server

Mailing lists are widely used on the Internet today. There are so many lists for a huge amount of topics covered, and almost everyone having an e-mail address is a member of at least one of them.

From a members' point of view, the operation of a mailing list is very simple. If someone is interested in becoming a member, she or he can join the list by sending a subscription message to the list server. Members are sending their messages to a special e-mail address associated with that list, and the list exploder will distribute these messages to every member currently subscribed. Of course, they can reply to that message using the same way, and the reply message will also be distributed to the members. The result is a kind of a virtual round-table discussion.

Niagara Mail Server has an integrated list server component, often referred as Niagara List Server. In this chapter we give you an insight on the features offered, and provide you with an easy to follow guide to set up your own mailing lists.

Basic operation

As can be seen in the figure below, Niagara List Server has two distinct parts, having their own e-mail addresses: one of them is responsible for the administration and management of the entire list server, the other is the list exploder requesting the mail server to deliver list messages to the actual members.

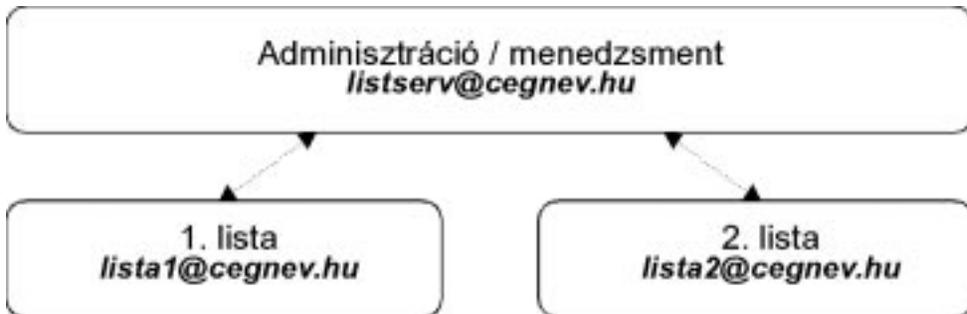


Fig. 20. Basic operation of Niagara List Server

The list server administration & management module has the following tasks:

- servicing the subscribe and unsubscribe requests received, creating or deleting the list member objects on demand;
- sending out the predefined help and/or list of lists messages in the requested language, as a response to help or list commands received.

The list exploder module has the following tasks:

- removing unwanted headers from list messages, to prevent them causing trouble later (eg. the non-standard headers used by Pegasus Mail clients to request delivery/reading notifications);
- rewriting the From:, To:, Reply-to:, Subject: headers, according to the settings made by the list owner (special care is taken in case of one-way distribution lists);
- requesting the SMTP client to send out this modified message to every current member of that list.

List server commands

```
SUB <List ID> <Your full Name>
SUBSCRIBE <List ID> <Your full Name>
```

Subscribes the sender to the mailing list identified by <list name>. List name and full name are mandatory parameters, the e-mail address will be the one used in the From: field of that message. Full name may contain spaces as well, there's no need to use quotes around it. A command confirmation will be sent back, including all informations needed in order to use this mailing list: the id, full description and address of that list, and the full name and address registered as a new member. A "Welcome to list" message will be sent to the new member if one was defined for the list.

```
UNSUB <List ID>
UNSUBSCRIBE <List ID>
SIGNOFF <List ID>
```

Unsubscribes the sender from the specified list. List name is a mandatory parameter, the e-mail address will be the one used in the From: field of that message. This command must be sent from the same address as the one used in the original subscription request. A "Farewell" message will be sent to the leaving member if one was defined for the list.

```
LIST [Language ID]
```

Sends back a message with the list of lists hosted at the given server. The list is assembled manually, so it may not contain every list because of site restrictions in place. The optional language parameter can be used to retrieve the help in other language then the default one. (Languages are site-specific.)

```
HELP [Language ID]
```

Sends back this message about list commands interpreted by Niagara Mail Server. The optional language parameter can be used to retrieve the help in other language then the default one. (Languages are site-specific.)

```
END
EXIT
```

Terminates parsing of that message for list server commands. Anything beyond this command will have no effect in any way. Although this command is merely optional, it is very useful to prevent parsing of signatures, which will be appended automatically by many mail clients.

Creating mailing lists

Niagara List Server uses its own object class to store the settings in NDS. Every mailing list requires a different object to be created in NetWare Administrator. Follow this guide to create a new mailing list object:

- 1 Select the container object (Organization, Organizational Unit), in which you are going to create the new object for Niagara Mailing List. For performance reasons a local replica should exist on the host server, containing all the objects involved in the mail service.
- 2 Right click on that object and select Create... from the popup menu. Choose Niagara Mailing List from the list of available classes.
- 3 Type in a name for the new object.
- 4 Clicking on OK button will create the object with all the parameters set to default values.

Mailing list settings

As we mentioned before, Niagara Mailing List objects are created with parameters set to their default values. These default values are suitable for most cases. There are some other values however, which must be set before a mailing list can be operated successfully. This guide will drive you through the necessary steps to make those basic settings:

- 1 Select the NDS object belonging to the mailing list you just created. Right click on it and select Details from the popup menu to bring up the associated window.
- 2 Switch to the Identification page, and set a unique List ID for this list. This ID will be used to identify this list among other ones hosted on the same server. Must not contain spaces or foreign characters, and must be unique inside Niagara Mail Server.
- 3 Type in the description of this list into the Full name edit box. The name will better identify this mailing list for humans, eg. in subscription confirmations sent back automatically.
- 4 Specify the list address in the E-mail address field. The address is usually created following the list_id@local.domain.com pattern, but this is a recommendation only rather than a restriction. This address must be unique across the mail server, duplicates are not allowed.
- 5 Use the browser to select the List owner, or type in his/her name in the edit box provided. List owners get all errors and notifications about the operation of assigned mailing lists. They must be able to do the necessary actions for continued and error-free operation.

- 6 Use the browser to select the Host server, or type in the name of the Niagara Mail Server associated with this mailing list. Please make sure that the selected mail server was set up to handle the e-mail address given in step 4 (the domain portion is listed under the Domains page).
- 7 Save the changes made. There's no need to restart Niagara, as the new settings will be activated immediately.

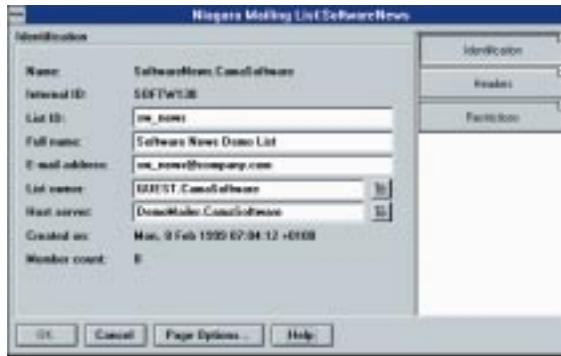


Fig. 21. Basic mailing list settings

We suggest to review the remaining settings as well. Details on each item can be found later in this document, or in the context sensitive help accessible directly from NetWare Administrator.

Restrictions on membership changes

Mailing lists are widely used for special purposes as well, not just for public discussions. These kind of applications often involves the need to restrict people from subscribing to these lists. Subscription can be obtained by other means, as the appropriate commands will be rejected by the list server. Sometimes it would be useful to disallow even unsubscribe requests for the same reason, for example in case of an internal mailing list, where each employee must remain subscribed as long as they are working for that company.

Follow these steps to restrict membership changes:

- 1 Select the NDS object belonging to the mailing list. Right click on it and select Details from the popup menu to bring up the associated window.
- 2 Switch to the Restrictions page, and set Subscribe to denied to disable the processing of subscription commands to this list. Set it to allowed if you want to reenable automatic subscriptions.
- 3 The Unsubscribe setting behave the same, but it controls whether unsubscribe commands will be processed or not.
- 4 Save the changes made. There's no need to restart Niagara, as the new settings will be activated immediately.

When subscribing or unsubscribing is not allowed due to the restrictions made above, it is still possible to use NetWare Administrator and create or remove list members manually. See the following section for further details.

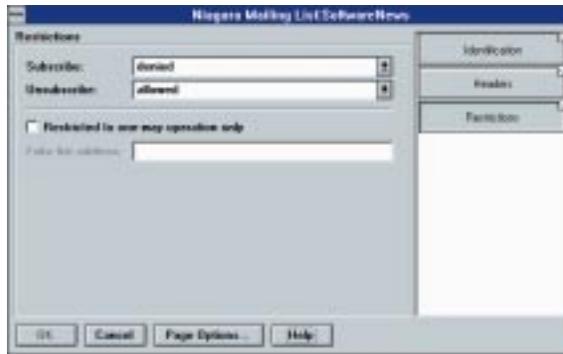


Fig. 22. Restrictions on membership changes

Creating or removing list members manually

List owners can use NetWare Administrator to create or delete list members manually. This feature is often used to remove members with mailboxes being no longer available. It works even if subscribe / unsubscribe commands were restricted as described in the previous section.

Niagara List Server uses a separate object class for storing list member settings in NDS. Every member requires a different object to be created in NetWare Administrator. Follow this guide to create a new list member object:

- 1 Select the NDS object belonging to the mailing list for which you want to add the new member.
- 2 Right click on it, and select Create... from the popup menu. Choose Niagara List Member from the list of available object classes.
- 3 Type in a name for the new object. We suggest using a descriptive object name to make it easier to find the list member later.
- 4 Clicking on OK button will create the object with all the parameters set to default values.

Deleting a member from a list is even easier:

- 1 Select the NDS object belonging to the list member to be deleted.
- 2 Right click on it, and select Delete from the popup menu. Answer Yes to the confirmation message.

Informational messages

There are some informations or common rules which has to be known and followed by the members of a mailing list. Think about the purpose of that list, the topics covered, an URL where the FAQ (Frequently Asked Questions) is stored, method of unsubscribing or anything like these. You can create a welcome message with all these informations in it, and set up Niagara to send it out to every new member when they subscribe. You can create another message to bid farewell to leaving members.

People are often requesting some help on the mailing list commands, asking for the correct syntax or a short usage guide. Niagara can provide this automatically, as a response to a HELP command. Another command can be used to retrieve the lists hosted locally, which is in fact another message composed by the postmaster.

These informational messages are stored as individual files in a predefined directory, rather than including them in the Niagara NDS object itself. That's why they do not show up in NetWare Administrator. You can create or modify them using a text editor instead, and save them using the proper filename in the proper directory.

Niagara Mail Server will search for these files in the STORE/LISTS subdirectory under the product root directory. If a sample mailing list has an Internal ID of SOFTW130, and the product root directory is data:\niagara, then the following directory structure will be used:

data:\niagara\store\lists

This directory holds the reply files pertaining to the list server. Replies for the HELP and LIST commands falls into this category.

data:\niagara\store\lists\softw130

This directory holds the reply files pertaining to the given mailing list, having an internal ID of softw130 in this example. Replies for the SUBSCRIBE and UNSUBSCRIBE commands falls into this category.

IMPORTANT! The headers of these informational messages will be created by the list server itself, they can not be changed in any way. Content-type will be set to text/plain. Do not place any headers in these reply files, as they will show up at the beginning of that message.

List server commands resulting in sending out informational messages automatically, and the associated reply file names and locations are listed in the table below:

List server command	Associated reply file
SUBSCRIBE	data:\niagara\store\lists\softw130\sub.txt
UNSUBSCRIBE	data:\niagara\store\lists\softw130\unsub.txt
LIST	data:\niagara\store\lists\list.txt
LIST hun	data:\niagara\store\lists\list.hun
HELP	data:\niagara\store\lists\help.txt
HELP hun	data:\niagara\store\lists\help.hun

Note: Language IDs used in HELP and LIST commands can be anything, not just the "hun" one showed above. Reply files for these commands must have an extension identical to the language ID corresponding to their content.

Header rewrites

Generally it is prohibited (or at least discouraged) for a mail server to modify the headers of a message, other than adding a Received line with the necessary trace info, and the Return-path in case of final delivery was performed. However, a list server does more than just mail forwarding, and this functionality may require some headers to be modified.

Think about the following reasons. You may want to provide a consistent look and feel for every message on a given mailing list, to make the distinction easier from other incoming messages in members' mailboxes. Those consistent headers will make possible to write rules for filtering or placing messages in the right folder. Replies will always go to the list (thanks to the Reply-to header) instead of the sender only. And the undeliverable or other kind of error messages will always be sent to the persons responsible for maintaining the list, not to the mailing list or to the original sender.

Follow these steps to enable header rewrites:

- 1 Select the NDS object belonging to the given mailing list. Right click on it, and select Details from the popup menu to bring up the associated window.
- 2 Switch to the Headers page, and set the From field to whatever you want to appear as sender in outgoing list messages. Possible settings are:

<i><no change></i>	keep the original sender (recommended)
<i>owner address</i>	change to the list owner address
<i>list address</i>	change to the list address
<i>specific address</i>	change to the given address

- 3 Set the To field to whatever you want to appear as recipient in outgoing list messages. Possible settings are:

<i><no change></i>	keep the original recipients address
<i>owner address</i>	change to the list owner address
<i>list address</i>	change to the list address (recommended)
<i>specific address</i>	change to the given address

- 4 Set the Reply-to field to whatever you want to appear as a Reply-to address in outgoing list messages. Mail clients will automatically treat this address as the intended recipient of replies to that message. Possible settings are:

<i><no change></i>	keep the original address
<i>owner address</i>	change to the list owner address
<i>list address</i>	change to the list address (recommended)
<i>specific address</i>	change to the given address
<i><remove></i>	remove any Reply-to header from messages

- 5 Set the Errors-to field to the address of a person responsible for mailing list operations. Some older mail servers on the Internet treat this header as the intended recipient of all error and undeliverable messages. Possible settings are:

<i><no change></i>	keep the original address
<i>owner address</i>	change to the list owner address (recommended)
<i>specific address</i>	change to the given address
<i><remove></i>	remove any Errors-to header from messages

- 6 Set the Subject field to keep the original subject in list messages, or to allow some modifications on it. We strongly suggest to leave the original subject unchanged. The possible settings are:

<i><no change></i>	keep the original subject (recommended)
<i>insert before</i>	insert something before the original subject
<i>insert after</i>	append something to the original subject
<i>specific subject</i>	change to the given subject

- 7 Save the changes you made. There's no need to restart Niagara, as the new settings will be activated immediately.

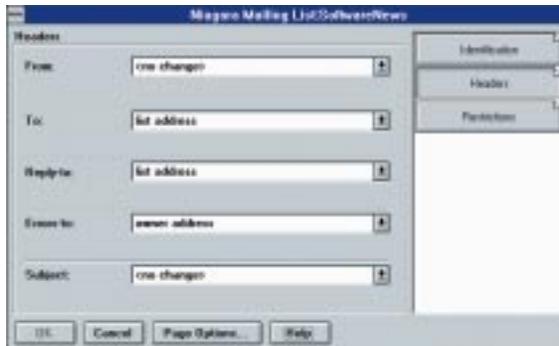


Fig. 23. Header rewrites

Note: Inserting something at the beginning of the original subject is possible but not recommended. Most mail clients will be unable to detect the usual Re:, Fw:, Vá:, Antw: etc. prefixes in the subject, therefore will insert them again.

One-way distribution lists

Mailing lists handled by Niagara List Server are opened for public by default. Everyone can send a message to the list, or send a reply to a list message, which in turn will be distributed to every member currently subscribed to that list. This is a kind of two-way communications forum, like a round-table discussion.

There are situations however where some restrictions must apply. Think about a mailing list distributing company news to customers, or another one sending out new product announcements and price list updates. Anyone interested in it could subscribe to these lists, and of course, can also choose to leave it for some unknown reasons. It is of primary importance that only authorized persons be allowed to send messages to these lists. No one wants to get spam or other kind of unsolicited junk messages from such a list, and no company may expose its customers to this risk, if it wants to keep them.

The solution is called one-way distribution list. This kind of mailing list has an additional e-mail address, the fake list address. The real address will continue to accept the list messages for delivery, but it will never be published in any way: the fake list address will take place instead. Members will see the fake list address in the list messages they receive, as well as in the subscribe / unsubscribe reply messages. Only people knowing the real address may submit list messages to these lists. Anyone else will try to use the fake list address, but those messages will never reach the list itself. Depending on your settings, these messages will be bounced back, or delivered to the security staff for further investigation.

Follow these steps to set up one-way distribution lists:

- 1 Select the NDS object belonging to that mailing list. Right click on it, and select Details from the popup menu to bring up the associated window.
- 2 Switch to the Restrictions page, and set the Restricted to one way operation only checkbox.
- 3 Type in the false e-mail address to the Fake list address edit box. This will be presented to anyone, instead of the real and working one.
- 4 Save the changes you made.

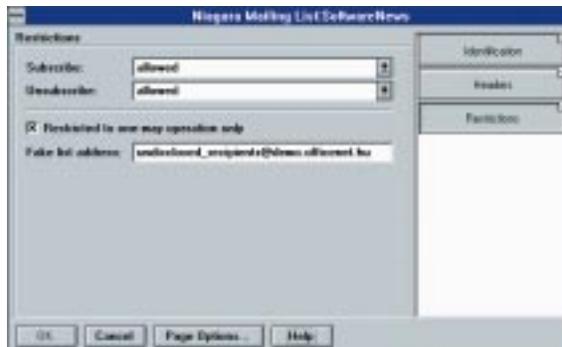


Fig. 24. One-way distribution lists

Be aware of the following limitations:

The list exploder will send out messages containing a Message-ID header, which is always created using the Host name setting (see the Identification page in NWAdmin). This means the host name will remain determinable;

Always change the real list address when you convert an existing regular mailing list to operate as one-way only. Otherwise old members may still send messages to the list, as they know the real address from their past experiences;

To hide the real address completely, you must set header rewrites as described before. The List address option in the Headers page means the fake list address in this case.

Notifications about membership changes

Niagara List Server can send notifications to list owners about joining or leaving list members. When this feature is enabled, the list owner will get a copy of the actual reply message sent back to the sender of the subscribe or unsubscribe command. List owner will be added as a BCC (blind carbon copy) recipient, to keep this fact hidden from the sender. As we mentioned before, this notification will contain both the commands issued, and the responses given for them by the list server.

Follow these steps to enable sending notifications to the list owner:

- 1 Select the NDS object belonging to that particular mailing list. Right click on it, and select Details from the popup menu to bring up the associated window.
- 2 Switch to the Restrictions page.
- 3 Set Subscribe to Allowed, Bcc: ListOwner in order to send notifications to the list owner about subscriptions to that list.
- 4 Set Unsubscribe to Allowed, Bcc: ListOwner in order to send notifications to the list owner about members leaving that list.
- 5 Save the changes you made.

User guide to mailing lists

On the previous pages you got a presentation of Niagara List Server features, together with detailed instructions on how to create and manage those mailing lists you are going to serve. These are vital informations for the people involved in maintaining and administering those lists, especially for the network administrator, the postmaster and the owner of a particular mailing lists.

Now it's time to review the usage of those mailing lists from a users (or list members) point of view. They are interested in subscribing / unsubscribing methods, the individual settings they have on their membership, and the characteristics of a list message helping them to set up filters in the mail client programs they use.

Something not to be confused

There are two e-mail addresses associated with a given mailing list: one for the mailing list, and another one for the list server itself. Take extra cautions to not mix these two addresses, as your list message will be bounced back as full of unknown commands, or, more importantly, your list command will reach thousands of subscribers carrying the message you aren't as professional as you say.

Every mailing list has a unique e-mail address, set by the postmaster or network administrator at the time of creation. This address is mentioned (among other important things) in the reply message sent back as a result of a subscription request, so it would be helpful to save that message as a reference. If a message is received to this address, then Niagara List Server will change its headers a little bit (as defined in the Header rewrites section above), but the body of message remains intact, and no command parsing will be executed on it. These messages will then be sent out to the members of that mailing list.

The address of the Niagara List Server belongs to a built-in, unalterable mailbox named Listserv. This mailbox can be reached using any of the local domain names, in other words, the address listserv@company.com is valid as long as the domain company.com is recognized as being serviced locally. Niagara accepts such addresses without any differences. There is no requirement to use the same domain name as the one for which the mailing list address belongs. Messages sent to this list server address will be parsed, any commands found in the body will be executed, and a reply message will be sent back with the results of that commands.

Subscribe to a mailing list

Users can subscribe to a mailing list anytime by sending a message to the list server address. The subject can be anything, as it will not be parsed or interpreted in any way. Include the "SUB <list_id> <real user name>" command in the body of message. The real name may include spaces as well, but the list_id cannot.

User is requesting to be subscribed to the SW_NEWS mailing list:

```
Date: Fri, 11 Sep 1998 19:02:57 +0100
From: Guest Account <guest@mycompany.com>
To: listserv@officenet.hu
Subject: Subscribe
```

```
SUB SW_NEWS Dear Guest
END
```

```
- -
```

```
Dear Guest, CNE
MyCompany, Inc.
```

Niagara List Server is sending back the following confirmation to this user:

```
Date: Fri, 11 Sep 1998 19:03:00 +0100
From: Niagara List Server <Listserv@officenet.hu>
Subject: Re: Subscribe
To: Guest Account <guest@mycompany.com>

> SUB SW_NEWS Dear Guest

Subscribed successfully with the following parameters:

      Name:           Dear Guest
      Address:        guest@mycompany.com
      List name:      Software News
      List address:   sw_news@officenet.hu
      List id:        SW_NEWS

> END

END reached, remaining lines will be ignored.

> - -
> Dear Guest, CNE
> MyCompany, Inc.
```

Unsubscribe from a list

Members can leave a mailing list anytime by sending a message to the list server address. The subject can be anything, as it will not be parsed or interpreted in any way. Include the "UNSUB <list_id>" command in the body of message. The list_id must not contain spaces in it.

Member of mailing list is leaving now:

```
Date: Fri, 11 Sep 1998 19:02:05 +0100
From: Guest Account <guest@mycompany.com>
To: listserv@officenet.hu
Subject: Unsubscribe

UNSUB SW_NEWS
```

Niagara List Server is sending back the following confirmation:

```
Date: Fri, 11 Sep 1998 19:02:09 +0100
From: Niagara List Server <Listserv@officenet.hu>
Subject: Re: Unsubscribe
To: Guest Account <guest@mycompany.com>

> UNSUB SW_NEWS

Unsubscribed successfully with the following parameters:
  Name:          Dear Guest
  Address:       guest@mycompany.com
  List name:     Software News
  List address:  sw_news@officenet.hu
  List id:      SW_NEWS
```

Retrieving the list of available mailing lists

Anyone can get a list of mailing lists served on that particular Niagara List Server. The easiest way to do this is to send a message to the list server address with any subject (it will not be parsed or interpreted in any way), and include "LIST <language-id>" in the body of message. You can issue the "LIST" command alone to get the list of mailing lists in the default language. The available languages and their IDs as well as the default message are determined by the administrator / postmaster / list owner. These languages are all independent of the language of the NetWare server itself.

User is asking for the list of available mailing list on that server:

```
Date: Fri, 11 Sep 1998 16:31:45 +0100
From: Guest Account <guest@mycompany.com>
To: listserv@officenet.hu
Subject: List of lists

LIST
LIST HUN
END

- -

Dear Guest, CNE
MyCompany, Inc.
```

Niagara List Server is returning the following answers to that user, since he / she requested the list in two languages, the default and the Hungarian version:

```
Date: Fri, 11 Sep 1998 16:32:51 +0100
From: Niagara List Server <Listserv@sw.officenet.hu>
Subject: List of lists - Niagara List Server
To: guest@mycompany.com
```

The following mailing lists are served at this host:

Listname	Description
MAGICWRLD	Discussions from the future
NEWS	Company news and other interesting issues

If you would like to subscribe to one of the lists above, send a message to <listserv@mycompany.com> with the body "SUB <listname> <your full name>" (without the surrounding quotes).

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```
Date: Fri, 11 Sep 1998 16:34:47 +0100
From: Niagara List Server <Listserv@sw.officenet.hu>
Subject: List of lists - Niagara List Server
To: guest@mycompany.com
```

Ezen a kiszolgálón a következő levelezőlistákat találja meg:

Azonosító	Megnevezés
MAGICWRLD	Találgatások a jövőről
HIREK	Újdonságok, érdekességek a cégünk életében

Ha fel kíván iratkozni a fenti listák valamelyikére, akkor küldjön egy levelet a <listserv@mycompany.com> címre, tetszés szerinti címmel. A levél szövege a következő sor legyen: "SUB <azonosító> <az Ön neve>" (idézőjelek nélkül).

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<http://www.officenet.hu>

Getting help on list server commands

It is possible for a user to get help on the available list server commands and their usage. Although the basic commands are identical for list servers developed by different companies, the only way to obtain help regarding the unique commands or features or special parameters

of a given product is to issue a HELP command to that particular list server, and see the answer returned. Send a message to the list server address with any subject (it will not be parsed or interpreted in any way), and include "HELP <language-id>" in the body of message. You can issue the "HELP" command alone to get help in the default language. The available languages and their IDs as well as the default message are determined by the administrator / postmaster / list owner. These languages are all independent of the language of the NetWare server itself.

User is asking help in this message:

```
Date: Fri, 11 Sep 1998 16:31:45 +0100
From: Guest Account <guest@mycompany.com>
To: listserv@officenet.hu
Subject: List of lists
```

```
HELP
END
- -
```

```
Dear Guest, CNE
MyCompany, Inc.
```

This is the answer sent by Niagara List Server:

```
Date: Fri, 11 Sep 1998 16:32:51 +0100
From: Niagara List Server <Listserv@sw.officenet.hu>
Subject: Help - Niagara List Server
To: guest@mycompany.com
```

```
Welcome to Niagara List Server!
```

```
-----
```

```
Following we will present you a guide on using Niagara List Server
commands.
```

```
If you read this material and still has some questions open, please
contact
```

```
<PostMaster@officenet.hu>. He / she will be pleased to serve you with the
missing informations.
```

```
Syntax:
```

```
<> denotes mandatory field
```

```
[] denotes optional field
```

```
Commands are case insensitive.
```

```
Commands must be left indented, without leading spaces.
```

```
One command per line please.
```

```
The subject will never be scanned for commands.
```

```
MIME should work, but text/plain is recommended.
```

SUB <list name> <your full name>

SUBSCRIBE <list name> <your full name>

Subscribes you to the specified list. List name and full name are mandatory parameters, the e-mail address will be the one used in the From: field. Full name may contain spaces as well. The command confirmation will include all necessary data you need in order to use this list. A "Welcome to list" message will be sent to you if one was defined for the list.

UNSUB <list name>

UNSUBSCRIBE <list name>

SIGNOFF <list name>

Unsubscribes you from the specified list. List name is a mandatory parameter, the e-mail address will be the one used in the From: field. Use the same address from which you originally subscribed. A "Farewell" message will be sent to you if one was defined for the list.

LIST [language]

Sends back a message with the list of lists hosted at this server. The list is assembled manually, may not contain every list because of site restrictions in place. The optional language parameter can be used to retrieve the help in other language then the default one. (Languages are site-specific.)

HELP [language]

Sends back this message about list commands interpreted by Niagara Mail Server. The optional language parameter can be used to retrieve the help in other language then the default one. (Languages are site-specific.)

END

EXIT

Ends parsing your command message. Anything beyond this command will have no effect in any way. Although this command is merely optional, you should use it if your mail client appends signatures automatically to every message.

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Sample messages

Help on list server commands (help.txt)

Welcome to Niagara List Server!

Following we will present you a guide on using Niagara List Server commands. If you read this material and still has some questions open, please contact <PostMaster@officenet.hu>. He / she will be pleased to serve you with the missing informations.

Syntax:

<> denotes mandatory field [] denotes optional field
Commands are case insensitive. Commands must be left indented, without leading spaces. One command per line please. The subject will never be scanned for commands. MIME should work, but text/plain is recommended.

SUB <list name> <your full name>

SUBSCRIBE <list name> <your full name>

Subscribes you to the specified list. List name and full name are mandatory parameters, the e-mail address will be the one used in the From: field. Full name may contain spaces as well. The command confirmation will include all necessary data you need in order to use this list. A "Welcome to list" message will be sent to you

UNSUB <list name>

UNSUBSCRIBE <list name>

SIGNOFF <list name>

Unsubscribes you from the specified list. List name is a mandatory parameter, the e-mail address will be the one used in the From: field. Use the same address from which you originally subscribed. A "Farewell" message will be sent to you if one was defined for the list.

LIST [language]

Sends back a message with the list of lists hosted at this server. The list is assembled manually, may not contain every list because of site restrictions in place.

The optional language parameter can be used to retrieve the help in other language then the default one.

(Languages are site-specific.)

HELP [language]

Sends back this message about list commands interpreted by Niagara Mail Server.

The optional language parameter can be used to retrieve the help in other language then the default one.

(Languages are site-specific.)

END
EXIT

Ends parsing your command message. Anything beyond this command will have no effect in any way. Although this command is merely optional, you should use it if your mail client appends signatures automatically to every message.

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<http://www.officenet.hu>

List of lists (list.txt)

The following mailing lists are served at this host:

Listname	Description
MAGICWRLD	Discussions from the future
NEWS	Company news and other interesting issues

If you would like to subscribe to one of the lists above, send a message to <listserv@company.com> with the body "SUB <listname> <your full name>" (without the surrounding quotes).

Powered by Niagara Mail Server v2.20
<http://www.officenet.hu>

Welcome message (sub.txt)

Welcome!

You are joining the MAGICWORLD mailing list, the place where people canshare their ideas about the future. Take this opportunity and read ourguide on how to use this mailing list.

First of all, please remember all the time that there are two e-mail addresses associated with this list. One can be used to control your list membership itself, such as subscribe/unsubscribe requests, set listserv options etc. The other is the input of the list exploder: everything you send to that address will be distributed to every member currently subscribed to this list. Take extra cautions to not mix those two addresses, as your list message will be bounced back as full of unknown commands, or, more importantly, your list command will reach thousands of subscribers carrying the message you aren't as professional as you say.

Send listserv commands to <listserv@company.com>, placing them in the body of the message, separating multiple commands with line breaks. The subject of the message will be ignored. You will receive a reply message generated automatically, containing your commands and results for them.

You can receive help on available listserv commands by sending a HELP command as described above.

Send your messages destined to folks on this list to <MAGICWORLD@company.com>. Remember that no further processing will be done on that message, neither will be scanned for possible listserv commands. List exploder will simply distribute it to every current member of this list. Please follow the rules of the Internet when composing your message.

In the unlikely event if you want to unsubscribe from this list, you can send amessage to <listserv@company.com> with the body "UNSUB MAGICWORLD" (without the surrounding quotes). Use the same address from which you subscribed originally.

Enjoy!

the ListOwner

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<http://www.officenet.hu>

Farewell message (unsub.txt)

You are now unsubscribed from the MAGICWORLD list. Thank you for being with us!

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<http://www.officenet.hu>

Pegasus Mail Gateway

Niagara Mail Server has a unique feature called Pegasus Mail Gateway, which can be used to integrate the Pegasus Mail client software with Niagara. This results in a complete Internet messaging solution without the need to have a TCP/IP stack running on each workstation.

Pegasus Mail is a widely known and used mail client software, written by David Harris, which has the same or better features like the big ones, and is also available for free download on the Web. A lot of people installed this client for internal messaging on their network, as it is very easy to use, and does not require the cooperation of a mail server to deliver local mails. When the need arises to connect such a network to the Internet, you can simply install Niagara on your server, and you are ready to go. There's no need to change anything on your workstations. Niagara Mail Server will deliver all your messages, regardless of their internal or external recipients.

Basic operation

Pegasus Mail Gateway is in fact an integration agent, converting message formats between RFC 822 (the Internet standard) and the somewhat different approach used by Pegasus Mail. Also, Niagara stores the SMTP envelope separately in the queue, while Pegasus Mail places the sender and recipient(s) e-mail addresses at the beginning of the message file. The gateway also provides the spool directory interface expected by Pegasus Mail. There are no TCP/IP connections involved in the gateway process.

The gateway task is very simple. Pegasus Mail client places the messages (all outgoing messages or just the non-local ones, depending on the client settings) to the spool directory to be picked up for further delivery. The messages get saved as individual files with the extension of *.101. Pegasus Mail Gateway then periodically checks for any messages waiting there. For every message it finds, the beginning of the file will be read, where the optional sender and the recipients e-mail addresses are stored. The e-mail address of the file owner will be used as sender, if the message file does not have one specified (we are still talking about the SMTP envelope here, not to be confused with the From: header in the actual message). The SMTP envelope will be assigned according to that information, with the remainder of the file treated as the actual message headers and the body. The gateway then places the converted message into the queue directory. Further processing will be the same as if it were received by the SMTP server.

Incoming messages are processed differently for POP3 and Pegasus Mail users. Messages sent to Pegasus Mail users will be moved by the local delivery agent to the PMAIL directory in the recipients home directory. They will be renamed to have an extension of *.CNM. Pegasus Mail client software (running in NDS mode) will find them as new messages there.

Note: Be aware that the spool directory and the user mailboxes residing in the home directories are outside of the Niagara product directory, thus any directory space limitation you set there have no effect on them.

There are some counters displayed on the right side of the Niagara server screen, showing the activity of Pegasus Mail Gateway:

Checked: number of times the gateway was checking the spool directory;

Picked up: number of messages picked up from the spool directory;

Delivered: number of messages delivered to Pegasus Mail users.

Set Up Pegasus Mail Gateway

Setting up Pegasus Mail Gateway is a two step process. You have to enable the spool directory checking (PMail → Niagara direction), and set up mailboxes for Pegasus Mail users (Niagara → PMail direction). These two directions, sending and receiving messages, can be enabled individually, if you are using the Pegasus Mail Gateway to connect custom (3rd party) applications to Niagara.

Enable spool directory checking

The Pegasus Mail client uses the spool directory to transfer all messages (or just the outgoing ones with non-local recipients) to the gateway for further processing. For this reason, all Pegasus Mail user must have access to this directory with sufficient rights assigned. More information and the necessary rights can be found in the manuals accompanying the Pegasus Mail software.

IMPORTANT! Never create the spool directory on the SYS: volume, or leave its size unrestricted. You are going to allow a Denial of Service type attack if you do so.

Follow these steps to enable the Pegasus Mail Gateway:

- 1 Follow the associated guide to install the Pegasus Mail client software. Create the spool directory on a volume where you are willing to permit access to every PMail user on your network. Set the necessary file system rights for your users, and don't forget to set the size limitation as well.
- 2 Launch NetWare Administrator on your workstation. Select the NDS object belonging to that Niagara Mail Server instance, and double click on it to bring up the Details window.
- 3 Switch to the Pegasus Mail Gateway page, and check the Enable Pegasus Mail Gateway option to activate this feature.
- 4 Type in the Checking interval (in minutes), in which the gateway will attempt to process the messages waiting in the spool directory.
- 5 Select the Spool directory with the browser, or type in the Volume and Path directly into the associated fields.
- 6 Save the changes you made. You have to reload Niagara in order to activate the Pegasus Mail Gateway.

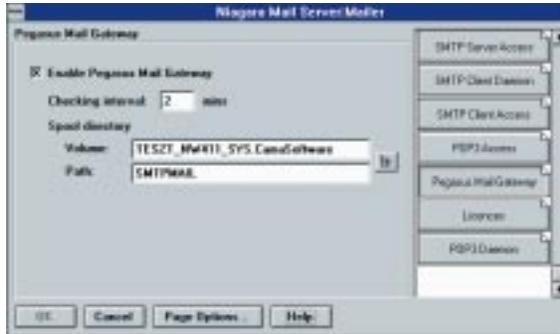


Fig. 25. Set up Pegasus Mail Gateway

Set up user mailboxes

User mailboxes can be accessed in two ways. One can use the POP3 protocol with a standards-based mail client like Eudora or Netscape Messenger, or the Pegasus Mail Gateway can be used to provide the file-based connection to the Pegasus Mail clients. Both types of connection do not work together for a given mailbox, but you can set up the Pegasus Mail client software to use the POP3 protocol also.

Follow these steps to set up a mailbox to be used with Pegasus Mail:

- 1 Launch NetWare Administrator on a workstation. Select the NDS object belonging to the user running the Pegasus Mail client, and double click on it to bring up the Details window.
- 2 Make sure that a Home directory was set up properly on the Environment page.
- 3 Switch to the Niagara Mail Account page, and change the Retrieve mail using option to Pegasus Mail, without TCP/IP.
- 4 Activate the mailbox by checking the PMail Gateway enabled option.
- 5 Type in the user's e-mail address in the field named accordingly, and activate it by selecting the SMTP account enabled checkbox.
- 6 Save the changes you made.

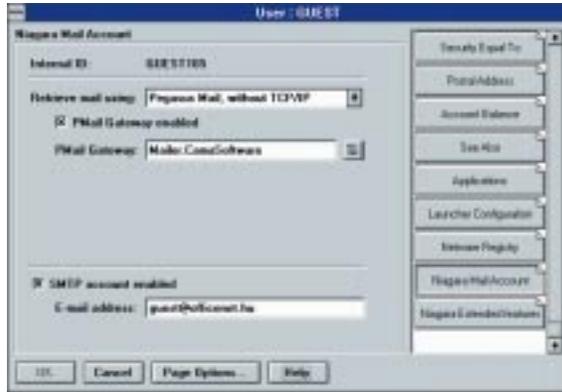


Fig. 26. Setting up a mailbox for Pegasus Mail users

Limitations

Several features or possible settings of Pegasus Mail client are currently unsupported by the Pegasus Mail Gateway in Niagara:

Bindery mode

Niagara Mail Server is an NDS-enabled application. This integration with NDS is so tight that it cannot be used on bindery-only NetWare 3.x servers. Niagara does not require nor use any bindery style operations. For this reason the gateway can be used only with Pegasus Mail clients running in NDS mode.

Group addresses selected from User Lookup

Pegasus Mail client has a User Lookup feature showing the users and groups in NDS for an easy selection of local recipients. If you select an NDS group here, or use the corresponding group address format (“#groupname”), than this message will never reach Niagara, as it will be delivered by Pegasus Mail client itself.

IMPORTANT! We strongly suggest using Internet-style addresses only when specifying recipients in Pegasus Mail. Although alternate formats like “username” or “username@mail.cegnev.hu” are accepted by the gateway, keep in mind that conversion takes place for the envelope only. The message body and its headers remain intact, causing trouble to anyone replying to it. It also represents a security issue to publish the login name this way.

Connecting to custom applications

Pegasus Mail Gateway can be used with 3rd party applications as well, enhancing their capabilities with standards-based local and Internet messaging support. As the connection between Niagara and the 3rd party application is basically nothing more than exchanging files, the only requirement is the ability to save a formatted text file into a predefined directory (sending messages), and / or the ability to check for existence then read new text files in a predefined directory (receiving messages).

Sending messages

The custom application must save the outgoing message to the spool directory with an extension of *.101. The format of the text file must be the following:

```
$$sender@company.hu  
recipient1@company.hu  
recipient2@othercompany.com  
  
Message headers (From:, To:, Subject: stb.) according to RFC 822  
  
body of the message
```

The envelope and the message headers, like the message headers and the body of the message are separated with an empty line. End of line should be LF or CRLF too.

Receiving messages

Messages can be received by creating a special user account, and setting up as a Pegasus Mail user. This way all messages sent to that e-mail address will appear as RFC 822 formatted text files in a PMAIL subdirectory under user's home directory. Those *.CNM files can be easily read, processed than deleted by that custom application. You may want to disable this account for security reasons, as this has no effect on the message reception, but prohibits anyone to log in using that account.

Utilities

DNS test utility (NGRESUT.NLM)

Niagara Mail Server requires access to the information stored in the DNS system. When running in smart delivery mode Niagara uses DNS MX queries to find the destination host names. A queries are used to get the IP address of a given host, while PTR queries do the opposite way, identifying remote hosts based on the connection address. NetWare has its own DNS resolver library called NetDB.NLM, but it does not offer all the functionality described above. For this reason, we developed our own library called NiagRes.NLM, which does not use NetDB in any way.

Sometimes it would be helpful to issue a DNS query manually, and see the results sent back. This could be used as a troubleshooting tool, making sure that DNS information is accessible, and the correct answers are given. Because Niagara uses its own resolver library, we had to include a small testing utility to accomplish this need. NGRESUT.NLM, the DNS testing utility was copied by default to sys:\system when you installed Niagara Mail Server. It is an easy to use, self-explanatory tool, just load it and you will have no questions at all.

When you load ngresut.nlm, a new screen will be opened on the server. Type in a domain name (A or MX queries) or an IP address (PTR queries) first, then select the query type to be issued. The results will be shown on the screen, then the first question will be asked again. You can leave this tool by giving an empty answer to the first question.

In case of a failed DNS query, you will get an error message like these:

Error message	Meaning
<i>memory allocation failed</i>	the server is running low on memory, or the memory is fragmented
<i>host not found</i>	host name or IP address does not exist
<i>too many requests taken</i>	reached the limit on the number of queries which can be issued for a given request; possibly caused by loop condition or bad DNS data
<i>no response from server</i>	query sent out, but no response received
<i>directory server failure</i>	temporary DNS server failure occurred, please try again later

Technical support

In case you have some technical questions, or experienced a problem which cannot be solved on your own, don't hesitate to contact our technical support team. We are committed to help you as quickly as we can, realizing that our products are playing a critical role in your business.

Please follow this guide to select your best support option:

Apply the latest patches and Novell clients

We kindly ask you to apply the minimum patches and upgrade to the latest version of NetWare client before contacting our technical support group. Failure to do so would otherwise cause missing functions and/or dealing with problems already resolved. Niagara will often refuse to load on out-of-the-box, unpatched servers.

Explore the online help features

Our products get delivered with some kind of online help features, available for your immediate use. For example, if you need some help while you are managing Niagara Mail Server through NetWare Administrator, just select the page you have questions for and click on the Help button.

Use Support Center on the Web

Browse around our Support Center on the Web, maintained by the technical support group, where you may find some idea or resolution of your particular issue. The URL of that page is <http://www.officenet.hu/support/index.htm>.

Send an e-mail

Send your question or the problem description to support@officenet.hu. Don't forget to include your name, company name, address, e-mail address in the body of your message as well as the exact product and version you use, and the description of what was occurred. If possible, write down the steps needed to duplicate the reported issue.

NDS schema changes

Niagara Mail Server uses Novell Directory Services (NDS) extensively to store the current settings of your mail service. The NDS schema contains the definitions of object classes and attributes, therefore it needs to be extended during the installation. Several new object classes are created, like the one for Niagara Mail Server itself, or another one for mailing lists. Some of the existing classes are extended with optional attributes too, like the User class to accommodate the mailbox settings.

The schema extension process is following Novell's recommendation, as it uses a registered name prefix to guarantee the uniqueness. The schema extensions affecting the base schema are permanent ones, because the current NDK APIs does not provide a way to revoke the changes once made. This is the reason why you cannot remove the NDS schema modifications made, if you ever decide to uninstall our software. This is not a real limitation, as unused schema entries takes up only several bytes in the disk, and does not have any other side effects, now or in the future.

New attributes

Attribute Name	Syntax	Size Limit	Constraint(s)
CamaSoft: Active Containers	Distinguished Name	-	DS_SYNC_IMMEDIATE
CamaSoft: Autoforward Address	E-Mail Address	-	DS_SYNC_IMMEDIATE
CamaSoft: Config Params	Stream	-	DS_SINGLE_VALUED_ATTR DS_SYNC_IMMEDIATE
CamaSoft: Gateway ID	Integer	-	DS_SINGLE_VALUED_ATTR DS_SYNC_IMMEDIATE
CamaSoft: Host Name	Case Ignore String	1 ... 64	DS_SINGLE_VALUED_ATTR DS_SIZED_ATTR DS_STRING_ATTR DS_SYNC_IMMEDIATE
CamaSoft: ID	Case Exact String	8 ... 8	DS_SINGLE_VALUED_ATTR DS_SIZED_ATTR DS_STRING_ATTR DS_SYNC_IMMEDIATE
CamaSoft: Licence	Case Ignore String	8 ... 64	DS_SIZED_ATTR DS_STRING_ATTR DS_SYNC_IMMEDIATE
CamaSoft: List ID	Case Ignore String	1 ... 32	DS_SINGLE_VALUED_ATTR DS_SIZED_ATTR DS_STRING_ATTR DS_SYNC_IMMEDIATE
CamaSoft: PMail Directory	Path	-	DS_SINGLE_VALUED_ATTR DS_SYNC_IMMEDIATE
CamaSoft: POP3 Auth Method	Integer	-	DS_SINGLE_VALUED_ATTR DS_SYNC_IMMEDIATE
CamaSoft: POP3 Enabled	Boolean	-	DS_SINGLE_VALUED_ATTR DS_SYNC_IMMEDIATE
CamaSoft: POP3 Password	Case Exact String	-	DS_SINGLE_VALUED_ATTR DS_STRING_ATTR DS_SYNC_IMMEDIATE

CamaSoft: POP3 Server ID	Distinguished Name	-	DS_SINGLE_VALUED_ATTR DS_SYNC_IMMEDIATE
CamaSoft: POP3 Shared Secret	Case Exact String	-	DS_SINGLE_VALUED_ATTR DS_STRING_ATTR DS_SYNC_IMMEDIATE
CamaSoft: POP3 Size Limit	Integer	-	DS_SINGLE_VALUED_ATTR DS_SYNC_IMMEDIATE
CamaSoft: POP3 User ID	Case Ignore String	-	DS_SINGLE_VALUED_ATTR DS_STRING_ATTR DS_SYNC_IMMEDIATE
CamaSoft: Product Directory	Path	-	DS_SINGLE_VALUED_ATTR DS_SYNC_IMMEDIATE
CamaSoft: Security Flag	Integer	-	DS_SINGLE_VALUED_ATTR DS_SYNC_IMMEDIATE
CamaSoft: SMTP Domain	Case Ignore String	-	DS_STRING_ATTR DS_SYNC_IMMEDIATE
CamaSoft: SMTP Enabled	Boolean	-	DS_SINGLE_VALUED_ATTR DS_SYNC_IMMEDIATE
CamaSoft: SMTP Relay Domain	Case Ignore String	-	DS_STRING_ATTR DS_SYNC_IMMEDIATE
CamaSoft: SMTP Relay Host	Case Ignore String	-	DS_SINGLE_VALUED_ATTR DS_STRING_ATTR DS_SYNC_IMMEDIATE
CamaSoft: Timestamp	Time	-	DS_SINGLE_VALUED_ATTR DS_SYNC_IMMEDIATE
CamaSoft:List	Case Ignore String	1 ... 64	DS_SINGLE_VALUED_ATTR DS_SIZED_ATTR DS_STRING_ATTR DS_SYNC_IMMEDIATE

New classes

Class Name:	CamaSoft: Niagara Mail Server
Flags:	DS_EFFECTIVE_CLASS
Super Class Names:	Server
Containment Class Names:	-
Naming Attribute Names:	-
Mandatory Attribute Names:	Serial Number CamaSoft: Product Directory
Optional Attribute Names:	CamaSoft: Config Params CamaSoft: Host Name CamaSoft: SMTP Domain CamaSoft: SMTP Relay Domain CamaSoft: SMTP Relay Host CamaSoft: Security Flag CamaSoft: PMail Directory EMail Address Host Server Postmaster Operator CamaSoft: Active Containers CamaSoft: Licence

Class Name:	CamaSoft: Niagara List
Flags:	DS_CONTAINER_CLASS DS_EFFECTIVE_CLASS
Super Class Names:	Top
Containment Class Names:	Organization Organizational Unit
Naming Attribute Names:	CamaSoft:List
Mandatory Attribute Names:	CamaSoft:List
Optional Attribute Names:	CamaSoft: Config Params CamaSoft: ID CamaSoft: List ID EMail Address Full Name Owner CamaSoft: SMTP Enabled Host Server CamaSoft: Timestamp

Class Name:	CamaSoft: Niagara List Member
Flags:	DS_EFFECTIVE_CLASS
Super Class Names:	Top
Containment Class Names:	CamaSoft: Niagara List
Naming Attribute Names:	CN
Mandatory Attribute Names:	CN
Optional Attribute Names:	CamaSoft: Config Params EMail Address Full Name CamaSoft: Timestamp

Changes in the base schema

Class Name:	User
Optional Attribute Names:	CamaSoft: Autoforward Address CamaSoft: Gateway ID CamaSoft: ID CamaSoft: POP3 Auth Method CamaSoft: POP3 Enabled CamaSoft: POP3 Password CamaSoft: POP3 Server ID CamaSoft: POP3 Shared Secret CamaSoft: POP3 Size Limit CamaSoft: POP3 User ID CamaSoft: Security Flag CamaSoft: SMTP Enabled

Class Name:	Group
Optional Attribute Names:	CamaSoft: Security Flag CamaSoft: SMTP Enabled Full Name EMail Address

Related RFCs

SMTP server and client conforms to the following RFCs:

- RFC 821 Simple Mail Transfer Protocol [SMTP]
- RFC 822 Standard for the format of ARPA Internet text messages
- RFC 974 Mail routing and the domain system
- RFC 1047 Duplicate messages and SMTP
- RFC 1123 Requirements for Internet hosts - application and support
- RFC 2197 SMTP Service Extension for Command Pipelining [PIPELINING]
- RFC 1869 SMTP Service Extensions [ESMTP]
- RFC 1870 SMTP Service Extension for Message Size Declaration [SIZE]
- RFC 1893 Enhanced Mail System Status Codes
- RFC 1894 An Extensible Message Format for Delivery Status Notifications
- RFC 1985 SMTP Service Extension for Remote Message Queue Starting [ETRN]
- RFC 2034 SMTP Service Extension for Returning Enhanced Error Codes

POP3 server conforms with the following RFCs:

- RFC 1939 Post Office Protocol 3 [POP3]

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- Pegasus Mail is a trademark of Pegasus Mail Systems.

User comments

We are waiting to hear your comments about this manual or any other documentation distributed within the packaging of Niagara Mail Server. Is it clear enough and easy to understand? Is the information complete? Are the examples helpful?

Send your comments or suggestions to:

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Thank you!

Note:



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