GWAVA Reload 5

GroupWise Disaster Recovery, Hot Backup, Quick Restore and Redundant Backup

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Intended Audience

This manual is intended for IT administrators in their use of Reload. It includes installation instructions and feature descriptions.

Technical Support

If you have a technical support question, please consult the GWAVA Technical Support section of our website at ://support.gwava.com/.

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Overview

Reload is a disaster recovery, hot backup, and quick restore system for Novell GroupWise. Reload integrates with GroupWise post offices and domains on NetWare, Linux and Windows to provide reliable backups. All the mail in those backups can then be examined using any Novell GroupWise client. Reload backs up post offices and domains from GroupWise 8 or greater. The Reload Server must run on the Novell Linux server platform. Specifically, Reload only runs on these platforms:

SUSE Linux Enterprise Server 11 – 32-Bit or 64-Bit
SUSE Linux Enterprise Server 12 (64-Bit)

Licensing

Reload is licensed per user. Reload will operate as a demo for thirty days for testing purposes. A demo license file (reload.pem) must be obtained separately from the
Reload software download. The demo license file can be obtained at:

://getreload.gwava.com

After 30 days, the demo license will expire. You will then be required to purchase a license for the appropriate number of users on your system.

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Introduction

Reload is a Disaster and Recovery solution for GroupWise mail systems that provides live backups and recovery for GroupWise post offices and domains. In the event of a disaster where the post office or domain is unusable or lost, Reload can provide a temporary post office and domain for the GroupWise system to run off of, making messages flow seamlessly, even in a crisis.

Reload performs this function by creating backup copies of the post office and domain databases, which it then can load with GroupWise agents. Reload also can load post office agents against any post office backup, allowing users to transparently restore deleted or lost mail to the live post office, directly from the user's GroupWise client. With Reload, losing mail in a system is no longer a crisis, and in most cases, not even an inconvenience.

Multiple Reload servers can also be tied together to add multiple redundant layers of protection for complete offsite backups of the GroupWise message system.

Reload only runs on the Linux platform and requires that one setting in GroupWise Administration be enabled, as well as on the host machine for both the GroupWise system and the Reload Server. Reload does not require eDirectory, Active Directory or any TSA components.

Setting-up Reload can seem to be an intimidating process, but this guide will walk you through the process. There also is online documentation, an extensive knowledgebase, full support, and consulting services available to aid you in customizing and perfecting your Reload system.

Reload backs up GroupWise post offices and domains according to profiles that the administrator specifies, which tells Reload what to backup, where it is located, and where to store the data. The Profile can also keep track of disk space and when to expire the backups it creates. After the initial backup, each successive backup takes an average of 12% the full size of the live post office, also saving network and disk resources.

The basic steps to setup a functioning Reload system are as follows:

1. Reload
2. Reload
3. backup Profile(s)
4. a Job
5. Disaster Recovery
6. Disaster Recovery

(It is also recommended to setup Reload's and error threshold monitoring and alerting message service.)

After the initial setup and test, the base of your Reload system is setup. If you wish to configure the Access Mode Reload POA, you may do that at your leisure. It is best to review the entire guide to

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familiarize yourself with the system in order to plan where your Reload Server will go, and which features you wish to implement.

Minimum System Requirements

Supported OS's:

- SUSE Linux Enterprise Server 11 (SLES11) 32-Bit or 64-Bit.
- SUSE Linux Enterprise Server 12 (SLES12) 64-Bit.
- The Reload server only supports the Intel Platform x-86 Platform

The Reload server must be run on the Linux platform, but it backs up GroupWise post offices on NetWare, Linux or Windows platforms.

Memory

Two gigabytes of available RAM should be sufficient for most environments. More memory is helpful.

CPU Speed

The faster the better; SMP is not to be considered a requirement, however testing of Reload on SMP has shown that Reload is benefited by SMP.

Network

- **Server Only Backup Method**

  This backup method in with the Reload Server gets a client connection via a Linux mount point to the post office or domain to be backed up. Reload would then copy date from the live server to the Reload server via the mount point it had established to the live server housing GroupWise. Prior to Reload 5, this was the only method of performing backups.

  In this scenario the Reload Server should be in close network proximity to the GroupWise servers that are being backed up with Reload. If a Reload Server and some GroupWise post offices are on a Gigabit switch, it would be best to have a network card in the Reload server that supports a Gigabit speed.

- **Paired Collector/Server Model**

  This backup method is new to Reload 5. A "Collector" runs on the server that houses a GroupWise post office or domain. The Collector then uses Rsync as the transport to get data from the GroupWise server to the Reload Server.

  This model requires the following disk space on the GroupWise server:

  - Post Office

  2 times the size of the post office OFUSER, OFMSG and GWDMS directories. But not including the OFUSER/INDEX directory.

  So for example, if the OFUSER directory contents was 1.5 GB and the OFMSG directory was 2.5 GB and the GWDMS directory was 1 GB the total space needed to service the Collector

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would be 1.5+2.5+1 = 5 X 2 = 10 GB – Needed somewhere on the GroupWise server to sustain the Reload Collector.

Disk Space on The Reload Server

The disk space may reside on the Reload server or on a SAN. The requirements of the disk solution are as follows:

- The disk solution should always be mounted for use with Reload.
- The disk solution should be formatted with a Linux based file system, specifically a file system that supports symbolic links.
- If the disk is not a SAN, but a NAS solution for example, the mount should be an NFS mount. No other protocol other than NFS.

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Calculating Disk Space

Disk space must be carefully considered for each Reload Server. When the Reload server reaches the error threshold for disk space, it will no longer create backups. Make sure the target system has plenty of space to accommodate the needs of your Reload backups.

The Reload server requires the following disk space per profile:

- Initial backup: 100% of the size of the post office.
- Then 14 days of backups (on average) will be retained: 150% of the size of the post office.

A 100 gigabyte post office, for example, would require approximately 250 GB of disk space to retain 14 days worth of backups.

Disk speed directly impacts Reload performance. A disk that is tuned for fast writes to disk is highly recommended and will improve performance. When considering disk space requirements, also take into account future growth of GroupWise post offices, and the space that will be required to sustain that growth.

If Reload runs out of hard disk space, backups will no longer be created. A Reload profile has a threshold of days to keep in hot backups. This can help prevent systems from running out of disk space.

This setting is found in the Reload Web Administration under the Profile configuration | <select desired profile> | Configure | Backup Job Settings | Number of Backups To Keep.

Remember to take Post Office growth and the host Operating system into account while calculating disk space needs.

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Installation

Reload installation is straightforward and simple. The installation file is an .RPM file, the preferred installation method on the Novell Linux platforms. Locate the install file:

```
reload<version>.rpm
```

DO NOT INSTALL Reload FROM YaST. Install Reload from within a terminal session. Installing Reload from YaST will not work correctly. To install the Reload package, do the following:

1. Open up a terminal window on the Linux server. This can be done either at the Linux server, or from a remote session via SSH or VNC.
2. Make sure to be logged in as root
3. Install the *.rpm with the following command:

   ```
   rpm -ivh /tmp/reload<version>.rpm
   ```

For example:

```
rpm -ivh /tmp/reload5.rpm
```

The Installation performs the following tasks:

- Installs the Reload System software to the path: /opt/beginfinite/reload
- Creates initialization scripts to start the Reload Daemon on server bootup
- Creates various Reload initialization scripts such as "reload, reloadd, reloadm, and reloadj" in the /usr/sbin directory, so that they are available to the Linux administrator "root".
- Sets up a default Reload System configuration
- Starts the Reload Daemon
- If needed, the installation also installs the GroupWise DBCOPY and GroupWise Agent packages, unless these packages have been installed before, or if the installation determines that other GroupWise agent software is already installed.
- If the Reload server has a connection to the Internet and can browse the web, then the Reload server will attempt to install a piece of software called Xdialog. The Xdialog is used to view Reload log files in a graphical user interface. It cannot be bundled with Reload, because of licensing issues, so Reload downloads it to the Reload server if the server has a connection to the Internet. Xdialog is not required.
- Installs a Reload Administration icon to the root user's Xwindows desktop. If you are in an XWindows type session, you should see an icon on the root user's desktop. This icon is compatible with a basic GNOME or KDE installation. The icon is for convenience, and may not work in all Linux desktop environments. The command to start Reload Administration from within a terminal session is:

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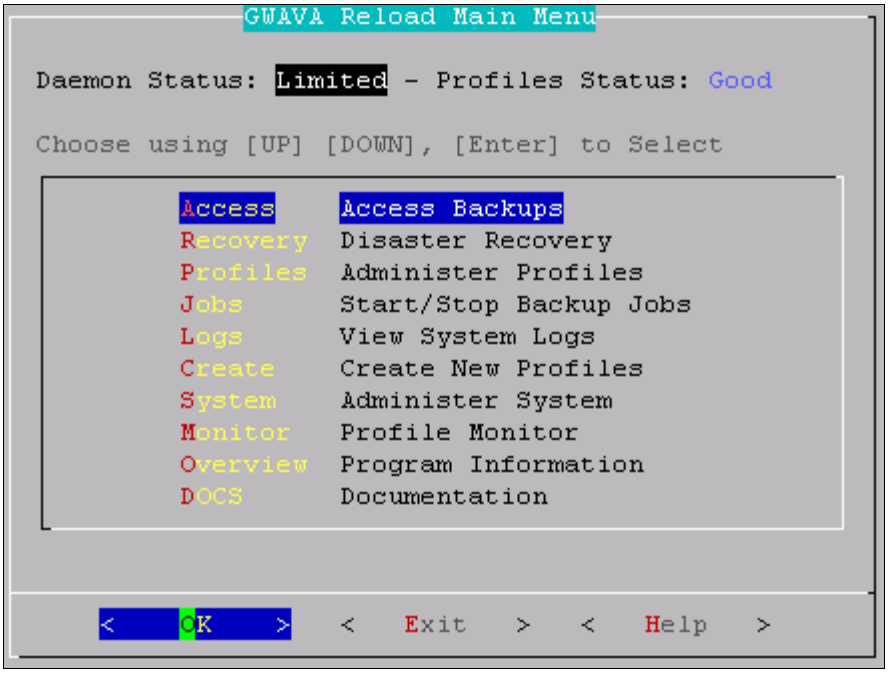
reload

Licensing

When Reload is first installed, it does not come with a "license file". Without a license file installed, the Reload Daemon is running in “Limited” mode. So if you run Reload Administration, the Daemon Status may indicate: “Limited”, as shown.



The Reload system will not function until a license file is obtained. The license file is named:

reload.pem

The Reload System Daemon looks for the license file in the directory:

/opt/beginfinite/reload/license

The license file can be either manually copied to the above directory, or it can be uploaded to the Reload System via the Reload Web Administration. If the license file is manually copied into the reload license directory, it must be named reload.pem, and the reload daemon must be restarted for the license to be recognized.

Example: if the server were at the IP address of 10.1.1.100; to access the Reload Web Administration type the following in a web browser:

http://10.1.1.100:5555

Follow the link **Tools** | **License**, to put the **reload.pem** license file in place. A temporary reload.pem file can be obtained from:

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://getreload.gwava.com

Once a valid license file is uploaded, the Reload Daemon will consume the new License file, and immediately give the Reload System full functionality.

If the time on the Linux server running Reload is incorrect (specifically the date reflects sometime in the past), you may see an error on Reload Web Administration home page in the "License Expiration Status" field. After receiving a License error, you may need to wait for a couple of minutes for the 'License Expiration Status' to indicate the problem with the License file. To configure the time on the server, see the "Reload Server Time Synchronization" section with regards to NTP configuration.

Post installation tasks

Reload connectivity to NetWare GroupWise Post Offices.

If the Reload server is backing up GroupWise post offices on a NetWare server or a cluster resource, then the NetWare connectivity package called "NCPFS" must be installed. The Linux-based "Novel" client that is commonly used is not sufficient. The package can be installed from YaST. To see if NCPFS is installed on your Linux server, use the following command in a terminal session:

```
rpm –qa | grep ncpfs
```

If the ncpfs package is installed, there should be a response similar to:

ncpfs-2.2.4-25.1

If you get nothing back from the above command, then NCPFS is not installed and needs to be installed through YaST. Start YaST and search for "ncpfs". Once it is located, install the package.

NOTE: For customers on the **SLES11** platform, Novell has put the NCPFS client on the SDK. When this document was written, the NCPFS client was on the "Media 1" disk.

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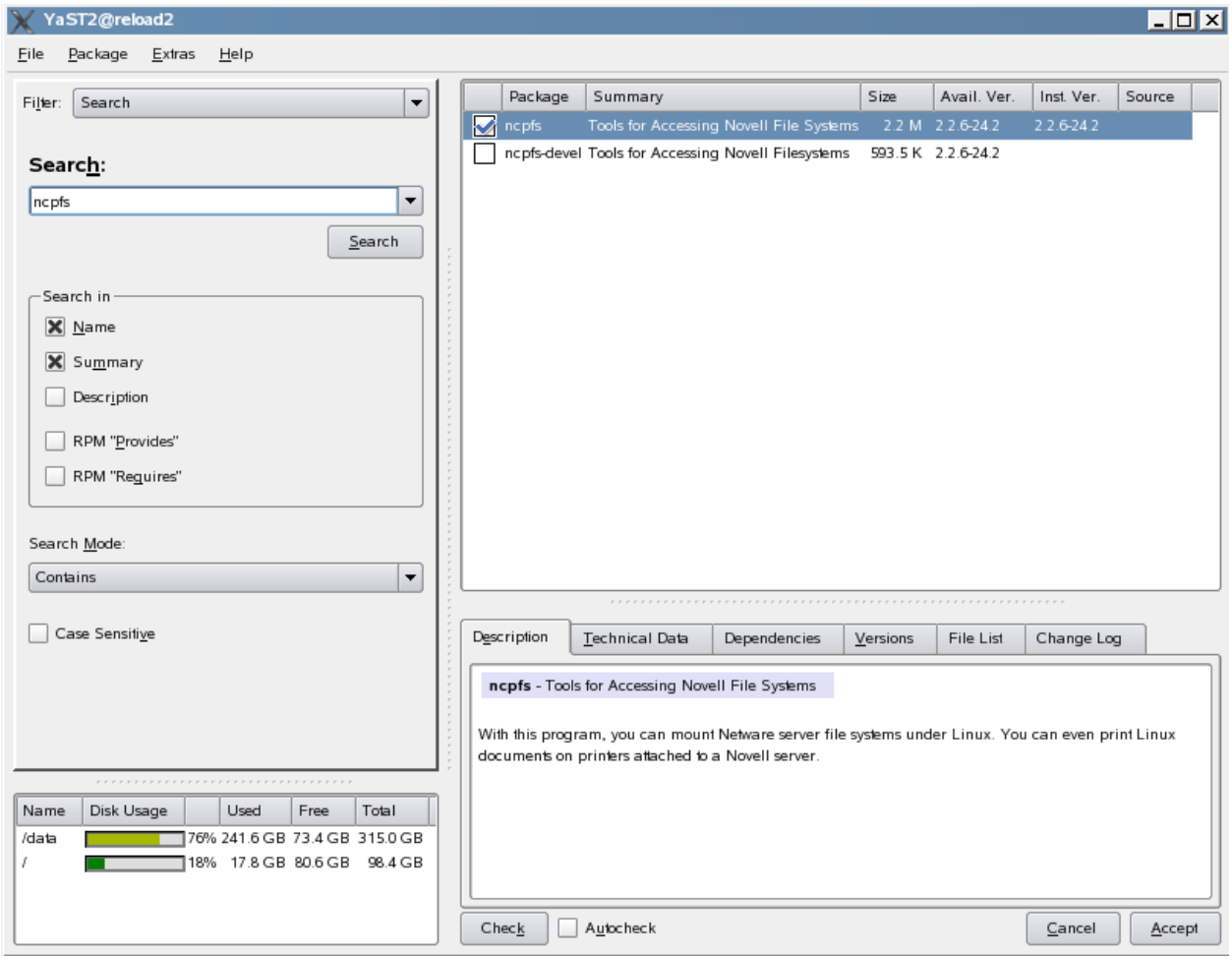

STOP! Do not install any of the GroupWise Software Components mentioned in this section, until you have read the entire section. **Most customers will not need to install any GroupWise Software Components.**

Reload must have the following two GroupWise Software Components in order to run:

- GroupWise DBCOPY
- GroupWise Agents

The Reload installation routine will attempt to install the GroupWise DBCOPY and GroupWise Agent packages. The installation routine will not install these packages if it detects that there is a directory called

`/opt/novell/groupwise/agents/bin`

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If the server has never had GroupWise for Linux packages installed, then there is a good chance this software will just be installed automatically. However, if for some reason this software does not install automatically, then you must install it manually.

The version of the GroupWise DBCOPY and GroupWise Agent packages is important. If the post offices are GroupWise 8, then back them up with GroupWise 8, or 2012 or 2014 software. If the post offices are GroupWise 8, then back them up with GroupWise, 8, 2012 or 2014 software. If the post offices are GroupWise 2012, then back them up with GroupWise 2012 or GroupWise 2014, but preferably GroupWise 2012. If you are using GroupWise 2014, then backup with the GroupWise 2014 software installed on the Reload server.

If you need to manually install the GroupWise Agents or DBCOPY software, first locate the source .rpm files. Reload comes with the 8, 2012 and 2014 Versions of DBCOPY and Agent .rpms, if you do not have them. They are located in,

/opt/beginfinite/reload/setup/rpms

To install an *.rpm use the command: rpm -ivh <name of the *.rpm file>

Example:

```
rpm –ivh novell-groupwise-agents-8.0.3-20080309.i386.rpm
rpm –ivh novell-groupwise-dbcopy-8.0.3-20080309.i386.rpm
```

The command to un-install, (erase), an RPM is: rpm -e <package>. So if you need to un-install some older GroupWise code in order to install newer code you would first use the follow commands:

THIS IS AN EXAMPLE ONLY!

```
rpm -e novell-groupwise-agents
rpm -e novell-groupwise-dbcopy
rpm -e novell-groupwise-gwia
```

These are simply examples being provided. You may need to un-install more or fewer than the packages listed.

The Reload Server also must have the following three packages installed. On a default SUSE installation, these packages are automatically installed, however if the Reload Linux server was installed a minimum installation was performed, these packages may not be installed:

- Dialog – A text based menu system, used for the Reload Administration interface
- Perl – An interpretive language, used by the Reload Migration Agent, and Domain Backup Agent
- Python – An interpretive language, used by the Reload Daemon to carry on a simulated GroupWise client session with Restore Mode POAs, and for Retain for GroupWise Integration

The installation status of these components is indicated on the Reload Web Interface in the Overview tab | Software Installation Overview. You may check the components' installation status there.

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Logs

The **Event Log** is a **simple**, informative log. The **Agent Log** is a **verbose** log that tells everything that is going on. The Event Log is meant to be very structured, and intuitive. Generally you should just concern yourself with the Event Log. The Agent Log is not necessarily intuitive, but it is very informative. Sometimes you might see “errors” in the Agent Log, which are not actually errors, but just logging of conditions that the Reload Agents take into account when they run. Each profile has its individual Event and Agent log. When the Reload Agent acts upon a profile, almost all of its actions are written to both the system level Event and Agent logs, as well as the profile level logs.

Reload logs are kept in the /opt/beginfinite/reload/logs directory, but most logs are accessible in the Web Interface under the general system or their respective profiles.

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Configuring Reload Server Time Synchronization

Time affects Reload in the following manner:

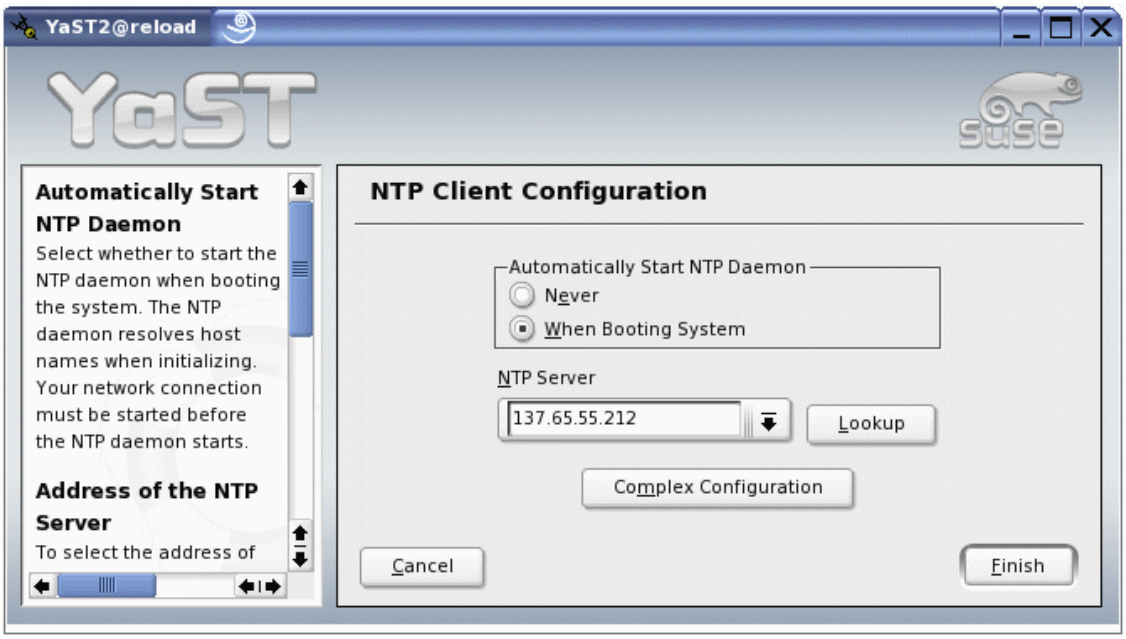
- Licensing
- Backup names
- Timestamps on user's mailboxes
- Scheduling of backup jobs

Ensure that the Linux server's time is synchronized correctly with the network. The correct time is **critical** to the success of Reload. The NTP Client is really simple to configure in YAST2 in an XWindows session or YAST in an SSH session. The quick terminal based command to get to the NTP client module in YAST2 is the following:

```
yast2 ntp-client &
```

Or, in a terminal session without an XWindows desktop, for example an SSH session:

```
yast ntp-client
```



Enabling SmartPurge in ConsoleOne

VERY IMPORTANT: By enabling SmartPurge functionality within GroupWise, users will not be able to purge messages until their mailbox is backed up with Reload. This ensures that all sent or received messages cannot be deleted until they are backed up. Furthermore, by enabling SmartPurge functionality, data backed up to the Reload server cannot be purged.

Following are the steps you would perform in ConsoleOne, with GroupWise Administration SNAPins to ConsoleOne. To enable SmartPurge functionality on a GroupWise post office that is being backed up by Reload, do the following:

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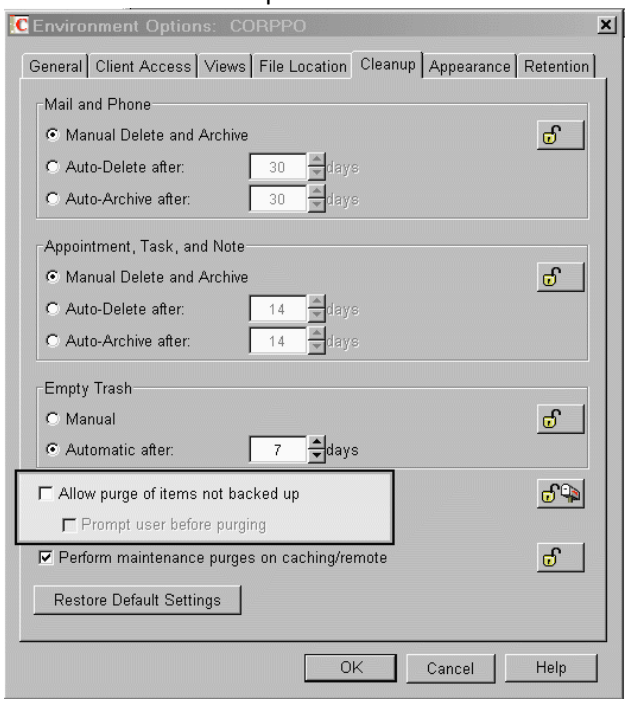
In ConsoleOne, **highlight the GroupWise post office** that will be backed up with Reload.

- **Tools** | **GroupWise Utilities** | **Client Options**
- Select **Environment** | **Cleanup**
- Ensure that the checkbox that reads "**Allow purge of items not backed up**" is **unchecked**.

Perform these steps on all GroupWise post offices that will be backed up with Reload.



By enabling GroupWise SmartPurge the following will be enabled:

- Users will not be able to purge messages from their trash unless they are backed up with Reload. This ensures that all sent or received messages cannot be purged, until they are backed up.
- Even if a user archives an item, before the item is backed up, a copy of the item is actually kept in the trash, until Reload has performed the backup of that item.
- When users access a backup from the Reload server, they will not be able to purge items in the backup. Even if the users archive items, the items are not actually removed; they are just moved to the Trash folder. That's good, because you do not want users to be able to purge items from the backup, or else it really is not much of a backup.
- All items are backed up. A copy of the mail item is actually kept in the user's trash until such time that the item is backed up by Reload. This assures that the GroupWise archive does not become a black hole for information as far as backups go. Because of the GroupWise SmartPurge technology that Reload integrates with, nothing that comes into the GroupWise message store can be fully removed from the message store until it is backed up with Reload.

NOTE: **Perhaps you may want to exclude one or more users from the SmartPurge feature. For example, one customer wanted the SmartPurge feature in place, except for one executive that wanted the privilege to purge trash items if needed, so that certain trash items might not be backed up by Reload. In ConsoleOne, the SmartPurge feature was disabled for just this one user by editing their client options and disabling SmartPurge.**

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Administration

Reload utilizes two different administration interfaces; Reload Web Administration and the Reload Console Administration. Reload Web Administration is the core administration. Reload Console administration is used to create new profiles, and for some advanced administration settings that are only used on special occasions. Once a profile is created, all other configuration of the profile should be done in Reload Web Administration. It is important to know the use of both administration interfaces. Reload Console administration must be used to create the base of the system, whereas Reload Web Administration is used for all other configuration and day to day tasks such as accessing backups.

To launch the Reload Console Administration, either select the desktop icon on the server, or from a terminal session, enter the command:

```
reload
```

Reload Web Administration is designed to provide control of day to day functions and system monitoring tools in a pleasing and easily accessible interface. By default, Reload Web Administration does not require authentication, but it can be configured to require authentication. Reload Web Administration is served by the Reload Daemon, which must be running for the interface to be available.

To access Reload Web Administration, open a browser on any machine with a network connection to the Reload Server and enter the following URL:

http://<Reload server IP or DNS>:5555

Unless SSL is enabled, then the address is:

https://<server ip or dns>:5555.

You can change the default port and other features of the HTTP monitoring page in Reload Administration.

The Web Administration is covered in detail later in the guide. See the Administration section for details.

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CONSOLE Administration

The Reload Console Administration is the place to start using Reload. There should be a Reload Administration launch icon on the server XWindows desktop, if the server is running “GNOME” or “KDE”. (This should also show in a VNC session.)

This icon is only compatible with GNOME or KDE Desktops. If the icon does not work on your server, simply run the target command ‘**reload’** in a Terminal session.

Reload Administration is completely compatible with an SSH client session, though you will want an SSH session that supports color. Administrators using a Windows workstation should consider getting the free SSH utility called " ". Putty will give you a terminal session to your Reload server, from your Windows workstation.

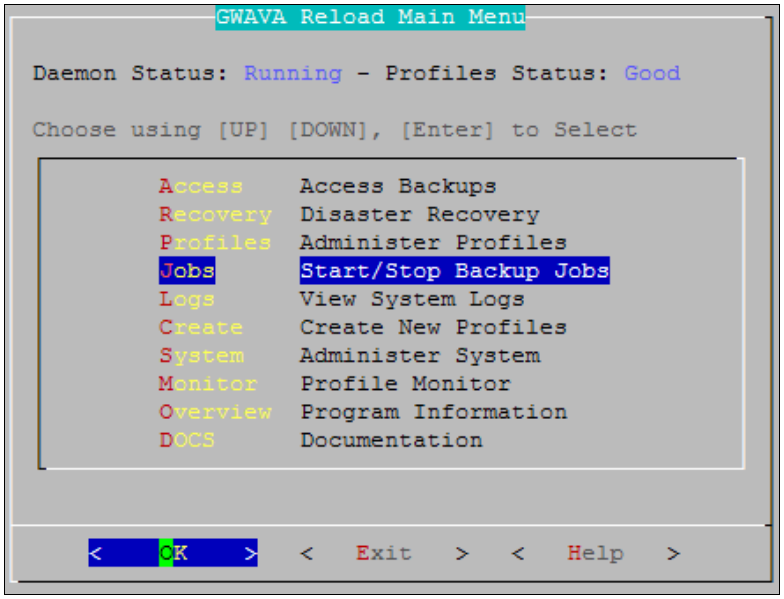
The Reload Administration was designed for a Terminal session window sized **80 Columns by 35 rows**. To determine the size of a terminal session window, issue the command:

```
stty –a
```

This command will report the size of the terminal session window. If the terminal session window is not the correct size, you can adjust it as needed.

Open a Terminal session, (, XTerm, Gnome Terminal, or the standard Terminal interface), then enter the command:

```
reload
```



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Within Reload Console Administration, you can create backup "profiles" that correspond to your GroupWise Post Offices and GroupWise Domains. The maximum number of profiles that a Reload Server will support is 20 Post Offices and 20 Domains.

Each Reload server is configured via Reload Administration. In an environment in which there are multiple Reload servers, each Reload server acts independently of other Reload servers. The Reload Administration must be run on each individual Reload server.

Reload comes pre-configured with factory system defaults. You can alter these defaults as needed, or as instructed by GWAVA Support staff. The system defaults are located under the System menu. The Reload Administration has a quick-key worth noting. Wherever you are in Reload Administration, to get to the Main Menu screen, hit the **Escape Key** once or twice.

Issues With VNC Client Sessions

VNC is known to sometimes have problems where keystrokes entered, are enacted multiple times. VNC is particularly vulnerable in situations in which the network link to the Reload server is slow or the Reload server's CPU is being taxed. The Reload Administration menu will act like someone else is controlling or hitting keystrokes. Really, VNC is interpreting a single keystroke as multiple keystrokes. Reload was entirely developed using a VNC session to a VMWARE hosted SLES9 server, and worked flawlessly, but that was on a fast connection with no network latency. Here are some tips with regards to using VNC:

• Consider using mouse clicks in Reload Administration. For example, click a menu option, and then click the "OK" button. VNC does not repeat mouse clicks errantly, so the behavior should be predictable.

• Sometimes VNC client sessions just get too funny for words. Then it's time to bring down the VNC Server. The command for doing this is:

vncserver –kill <VNC Port Number>

Example:

vncserver –kill :01

or:

killall Xvnc

Now the only trick is how to load the VNC Server again. The way to do this is to type in the command vncserver :<vnc port>. You need to get a terminal session with the server either through an SSH session, or at the server console. The command to start the VNC server might be:

vncserver :01

From a VNC Client, such as a Windows VNC client, the way to get to the server if you loaded the VNC Server with the ":01" command would be:

<ip address>:01

For example:

10.1.1.100:01

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• If VNC is just too problematic, you may want to consider connecting to the Reload server with an SSH client such as "Putty" as mentioned earlier in this documentation.

Reload Daemon

COMMANDS:

```
reloadd restart
reloadd stop
reloadd start
reloadd status
```

Reload has a "Daemon". **This process must be running in order for Reload to function**. The Daemon is designed to automatically load when the Linux server loads. The Reload Daemon can be controlled completely from within the Reload Administration. Choose System (Administer System) | Control (Control Daemon). The Daemon can also be controlled with the "reloadd" script. To run the script, run the "reloadd" command in a terminal session.
The Reload Daemon has an auto-recovery script which runs every minute. So if the daemon is not running, the auto-recovery script attempts to start the daemon. If you want to make sure the Reload Daemon is not running, you must disable the auto-recovery script. In Reload Administration select:

System (Administer System)

Control (Control Daemon Process). Then select the choice for
Reload Daemon Auto Recovery, and select disable.

The Reload Daemon can be monitored by reading the Daemon Log file. The Daemon Log File can be viewed through the Reload Administration. To see the Daemon Log File, from within Reload Administration, select **Logs** (View Logs). The Active Daemon Log file is a rolling view of the Reload Daemon's log file. To see a static Daemon Log file, select **More** (More Log Viewing Options) | **Daemon** (Static Daemon Log).

Troubleshooting the Reload Daemon

If for some reason the Reload Daemon won't load, you can troubleshoot it using the following process:
Change to the directory **/opt/beginfinite/reload/lib/code**

```
cd /opt/beginfinite/reload/lib/code
```

Type the following command to run the Daemon in the most basic mode:

```
./gre -r ../../ &
```

This runs the Reload Daemon with its minimum command line requirements. In this mode the Reload Daemon is not providing a Web Page, or reading any other configuration parameters that are specified in Reload Administration. So if the Reload Daemon runs in this most basic mode, then the problem is one of the settings in Reload Administration. If the command to load the daemon fails, the daemon

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should give some kind of an error message, and the messages are generally informative, but not verbose. The way to bring down the Reload Daemon with the Reload Daemon script is:

```
reloadd stop
```

or

```
/etc/init.d/reloadd stop
```

The way to bring down the Reload Daemon manually is with the following command:

```
kill -3 <Reload Daemon PID>
```

TIP: You can find the PID for the Reload Daemon with the following command:

```
ps aux | grep "./gre –r"
```


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Reload Agents

The Reload agents are spawned by the Reload Daemon as needed. The agents are the real workhorse of the Reload System. The Reload agents have two files to which they log: the Agent Log and the Event Log. Both of these can be accessed from Reload Web Administration, and from the Reload Console Administration.

Configuring Reload Settings

- From the Reload Console Administration, Reload administrators are able to:
- Create and configure "profiles" which correlate to backup profiles for GroupWise domains and post offices
- Monitor Reload logs

Whenever a setting change is made to the Reload Daemon configuration from within the Reload Administration, the Reload Daemon will be restarted so that it rereads the configuration settings that you made. **You do not need to restart the daemon in order for the changes you made to take effect.**

See the respective sections in the documentation on how to configure specific parts of Reload. Custom configuration of all major settings is explained. Almost all other Reload System settings should just be kept the same. Many of the settings are self-explanatory. Those settings not so intuitive, such as the "WAIT Counter" and the "KILL Counter" should be kept at factory defaults, unless support recommends that you make changes to them.

Understanding Reload Post Office Profile Backups

When a Reload post office profile is created, and initialized, it comes pre-configured to function. The very first backup job can take a while depending on the size of the post office. However all other backup jobs should be significantly faster than the first backup job that Reload created for a particular profile. Most customers will find it educational to kick off a Standard Backup job for their newly defined Reload profile. To do this, do the following:

From Reload Web Administration Select the Profile

- Select the **Backups** tab
- Select the **Reload Job Control** panel
- Select **Start a Standard Backup Job [SmartPurge Disabled]**

A "Standard Backup" is the backup job that would typically happen once a day, at night for example. Generally this kind of a backup job is called an "Incremental" backup job. However, what is different about Reload's Standard Backup job is that with Reload's synchronization model, **a Standard Backup job effectively becomes a fully accessible backup job that does not need to be manually combined with a "Full Backup" job in order to be of use**. The Standard Backup job daily retrieves the additions to the offiles, (blobs), and fresh copies of the ofuser and ofmsg directories. This allows the Standard Backup to catch all changes in the post office, but each Standard Backup job only takes approximately 12% of the post office's total size in order to replicate.

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Accessing a Reload Backup through the Access Menu

By choosing the option "**Access** (Access Backups)" and following the menu prompts, Reload Administration can load a GroupWise Post Office Agent (POA) running against a Reload backed up GroupWise post office message store so that mail can be examined by any native GroupWise client. There are two different connectivity modes in Reload. They are:

- Access POA Mode
- Restore Area Mode

Here's an explanation of both of these modes.

Access Mode – All Post Office Platforms

With Access Mode, a GroupWise POA loads against the post office backup on the Reload box that represents a particular day that you want to access e-mail from. With the Access Mode POA loaded, a user will do the following:

- Exit their GroupWise client session connected to their live mailbox.
- Direct their GroupWise client to the IP address and port that the Access Mode POA is listening at on the Reload box.
- When a user logs into the Access Mode POA on the Reload box, it's as if the user is going back in time. They will see their GroupWise mailbox in the state it was when the backup was performed, for the day that you as the administrator selected.
- If a user wishes to actually retrieve and restore an email item to their live mailbox they would take the following steps:
    - Highlight the item
    - Select Actions|Move to Archive
    - Exit the GroupWise client session with the Access Mode POA on the Reload server
    - Return to GroupWise connecting to the live mailbox
    - Select File|Open Archive
    - Highlight the archived item, and select Actions|Move to Archive
    - Exit the archive mailbox by selecting File|Open Archive
    - The item will now be restored to the user's live GroupWise mailbox Using Access mode, the GroupWise client does not need any special plug-ins or file access in order to access the backed up message store. The user simply needs to point their GroupWise client at the correct TCP/IP address and port to talk to the POA on the Reload server that was loaded from Reload Administration.
    - If the archive path is not specified when the backup is made, the n the path will need to be configured in the client while connected to both the reload and the production servers.

Access Mode has the following benefits and limitations:

- GroupWise client, version 6.5 and up, may be used in order to access backed up mail.
- The GroupWise password from the time the backup was performed may be needed. Generally this is not a problem, but sometimes it can be if a user changed their password, and cannot

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remember their old password. If the GroupWise post office is configured to use LDAP, then users do not need to remember an old password, their current password will work.

- Users use the Archive feature unless archiving is turned off.

Restore Area Mode

This mode of accessing a backup from the Reload Server is available to post offices on Linux and on Windows. It works like this

- On the Reload Server create an NFS Export of the Reload Profile's directory
- Start the NFS Server
- On the server that runs the GroupWise Post Office, create a persistent NFS mount to the Reload Server at the location that you exported.
- Create a GroupWise Restore Area definition in GroupWise administration.
- Once this architecture is in place, when you have selected a backup in Reload Web Administration, users can access the backup from within their client by selecting "File | Open Backup".

There is a section in this documentation completely dedicated to how to configure a GroupWise Restore Area. See that section for all the setup details.

Standard (Incremental) Backups

Generally you would pull a **Standard Backup (Incremental Backup)** every day. However, with the Job Creation Utility, you can pull backup jobs more often than once a day. Here are some important points to remember about Standard Backups:

- A **Standard Backup** equals approximately 12% of the size of the post office that the Reload profile is backing up. Although a Standard Backup is only 12% of the size of a post office, it is actually the equivalent to an entire replica of a post office. The Standard Backup is actually what most backup systems would call a Full Backup. The Standard backup is the only backup that actually backs up data from a GroupWise post office or domain.

- If **SmartPurge** is enabled, then after Reload backs up the GroupWise post office for a particular Reload profile, it flags the timestamps of the mailboxes to indicate that the backed up message items can be purged at will.

Tape Archive Backups

Tape Archives can be created. The Tape Archive process should generally be designed to happen once a week. The Tape Archive process acts independent of other processes. So the Tape Archive process does

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Generally, you will design the Tape Archive process to happen once a week because the TAR file contains the OFFILES directory contents which is large. So it makes sense to TAR up a week's work of daily backups and the OFFILES directory contents into the TAR file.

Determining Disk Space Needed for Backups

Reload was designed with the following **observations in mind**:

- **25% of the time**, when data needs to be retrieved from backup, **the most recent backup is used**.
- **14 days of backups** retained on the Reload server **is going to fulfill 99% of customer's needs** for easily accessible backups on the Reload server
- The other **1% of the time in which data is needed from a different time period, (such as 6 months ago), and then data will need to be retrieved from Tape**. Let's say, that you want to calculate the disk space needed in order to have **2 weeks** of backups always available on the Reload server.
  For a detailed example and calculation of disk space usage, see the following link:
  ://support.gwava.com/kb/?View=entry&EntryID=514

Reload can copy all backups for a week into a single Tape Archive (*.tar) file. The *.tar file can then be committed to tape. Whenever a *.tar file is created, sufficient disk space should be made available for the creation of the .tar file. A more in-depth discussion on creating *.tar files, will be discussed in greater detail later on in this chapter; outlining a fuller explanation of the advantages and methods of using Reload to create *.tar files.

Integrating Third-Party Backup Solutions with Reload

Some customers may want to do the following with Reload:

- Allow Reload to pull nightly backups from GroupWise post offices
- Backup up the GroupWise post offices each night from the Reload server using a third-party backup solution, this is feasible with Reload. The latest version of the GroupWise post office that the Reload profile represents is kept in a directory called:

<Reload profile path>/connect/current

If you were to view this directory, you would see that this directory looks just like a standard GroupWise post office. The.../connect/current directory is actually linked to the latest Standard Backup (Incremental) for the Reload profile. So when configuring the third-party backup solution, you would simply point the backup software to the .../connect/current directory. You will be required to get a backup agent for the third-party software that will run on Linux. However, the solution does not necessarily need to be integrated with GroupWise in any manner, because the files on the Reload server will not be locked, and data is not being added to the GroupWise message store on the Reload server. Furthermore, the Reload Agent has already flagged the databases on the live post office as having been backed up. And the data on the Reload Server has been flagged in such a manner that nothing in the GroupWise message store on the Reload server can be deleted.

The backup files in the Reload Server can be locked if the Access mode POA is loaded. Take loaded POA backups into consideration during a third-party backup.

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Backup Schedule Times

Note: Use Reload Web Administration for changing schedules, it is much easier!

Reload still uses the common model that most backup solutions use. That is, incremental backups (Standard Backups in Reload) are generally configured to happen each day, and a weekly maintenance job is designed to happen once a week. Specific schedules are configured inside each individual profile.

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Creating a Reload Post Office or Domain Profile

The Reload System performs backup actions on GroupWise domains and post offices that are defined as a "**profile**" in the Reload system. **The entire Reload System really exists to manage and act upon the profiles that you create**. A Reload Profile is used for the following:

- To backup GroupWise domains or post offices
- To access backed up data from a GroupWise post office for message recovery and discovery.
- To bring backed up data on-line to be connected to as a live GroupWise post office or domain in a disaster recovery scenario.

Creating a profile is a wizard-driven process within Reload Console Administration. When a profile is created, basic default settings are enabled. To configure beyond the basic defaults you will want to read further through this documentation for more in-depth documentation on how to configure profiles beyond the factory defaults.

Reload requires direct file access to backup the Post Office or Domain databases. To accomplish file access, profile creation requires a share to be created on target Linux and Windows GroupWise servers. Backing up a post office or domain on NetWare requires a user that has Read, Write, Modify and File Scan rights to the post office or domain path and subpaths off of the post office. Please follow the appropriate instructions for your target servers to create a share.

After your share has been created, continue with profile creation.

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Backup Models for GroupWise Systems on Linux

NOTE: If your domain or post office is on Linux, you have two choices as to how your post office and/or domain are backed up. You can back them up via a "Server Only" model, or a "Paired Collector/Server" model.

Server Only Model

The Server Only model is one in which the Reload Profile on the Reload Server, establishes a mapping to the GroupWise server, and then copies data from the GroupWise server to the Reload server via the mapping. This method works just fine, and in all the releases of Reload prior to Reload 5, this was the only method of backing up a GroupWise post office or domain that is on Linux.

Paired Collector/Server Model

This model is new to Reload 5. When a customer's GroupWise system is on Linux, this model can be deployed. With this model, the Reload software is installed to both the Reload Server and to the GroupWise server. A Reload "Paired Reload Server" profile is first created on the Reload Server. And then, a "Paired Reload Collector" profile is created on the GroupWise server where the Reload software has been installed. The GroupWise DBCOPY module from Novell must also be manually installed on the GroupWise server, if it is not already installed. If the version of GroupWise is GroupWise 2014, DBCOPY is already installed.

The advantages of a Paired Collector/Server Model over the Server Only Model are as follows:

- The Reload Server does not require NFS privileges to the GroupWise server
- Generally backups are faster than the Server Only Model
- Less data needs to traverse between the GroupWise Server and the Reload Server
- The Collector can transmit the backup set that it creates to up to 3 Reload Servers

If you intend to use the Collector/Server model, then you can entirely skip the section on **Share Creation**.

You need to configure the Linux server that hosts the GroupWise post office or domain, so that it supports an NFS mount point. This way the Reload Agent can mount the NFS mount point on the remote server that has the GroupWise post office on it. The mount point should support a Read/Write [RW] NFS mount; Reload needs the ability to write to and modify files. The Reload server does not ever delete post office or domain type files when connected to a server that houses a GroupWise post office or domain.

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Share Creation

NOTE: If you intend to use the Collector/Server model, then you can entirely skip the section on **Share Creation**.

Linux

Setting up NFS, can be tricky depending on your system. These courtesy instructions utilize YaST 2, and will not match every server environment. Most SUSE systems should work with these instructions, or be very similar.

Perform the following steps on the Linux server that houses the GroupWise post office or domain:

1. If you are in a graphical Xwindows type session to your Linux server, the quick command to get to the YaST 2 NFS Server module **yast2 nfs_server &**. Per the prompts, **allow the NFS Server to be started**, and then create an NFS mount point by doing the following.

If a post office were at the following path /data/grpwise/po1, then you could create an NFS mount point right at: /data/grpwise/po1 by doing the following:

2. Select "**Add Directory**"
3. In the Directory to export dialog, **browse to, or type in the path to the post office or domain,** which in our example would be: /data/grpwise and /data/grpwise/po1
4. When prompted in the next dialog for the Hosts wildcard and Options, do the following:
5. **Hosts Wildcard Field: <The IP Address of the Reload Server>** (For Example: 10.1.1.100)
6. **Options Field: fsid=0,rw,no_root_squash,sync**
7. Select **Finish** to apply the changes.

If you cat the /etc/exports file: **cat /etc/exports** you will see the new NFS export that you created.
For Example:

```
/data/grpwise/po1 10.1.1.100(fsid=0,rw,no_root_squash,sync)
/data/grpwise/dom1 10.1.1.100(fsid=1,rw,no_root_squash,sync)
```

To confirm that the NFS server is running type:

```
ps -eaf | grep nfsd
```

This command should present something similar to this if the NFS Daemon is running:

```
root 2942 1 0 Nov17 ? 00:00:00 [nfsd]
root 2943 1 0 Nov17 ? 00:00:00 [nfsd]
root 2944 1 0 Nov17 ? 00:00:00 [nfsd]
root 2945 1 0 Nov17 ? 00:00:00 [nfsd]
```

Now that the NFS server is on the server where the GroupWise post office or domain is, it can serve up the path of the GroupWise post office or domain. Now you can create a profile for the post office or domain inside of Reload Administration.

Create a separate export for each Post Office and Domain.

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Windows

The Reload Server connects to a Windows server using the "CIFS" client that is included on the Linux platform. CIFS may be difficult to work with, because sometimes the underlying protocols for CIFS are disabled through routers. So, it may be necessary to have the Reload Server on the same network segment as the Windows GroupWise server with the target Post Office or Domain. The Windows server must have a Windows Share available for the Reload Server to connect to. **The following are steps used on a Windows 2000 Server to create a Windows share.** The steps appropriate for your server may vary. In the following example, the GroupWise post office is on d:\grpwise\po1
In Windows Explorer highlight the folder for the post office path at: d:\grpwise\po1

1. Select: **File Properties**
2. Select the tab across the top of the dialog box: **Sharing**
3. Choose the option: **Share this folder**
4. **Give the "Share" a name**, and **take note of the name** you will need it when creating the Reload Profile for this post office.
5. Select the tab across the top of the dialog box: **Security**
6. Choose a **user**, or add a user that will have the following **rights**: **Modify, Read & Execute, Write, List Folder Contents and Read**
7. This completes the process of making a Windows share. For troubleshooting purposes, first try to map a drive from a Windows workstation to the Share that was just created. Then create a file in the post office or domain directory before trying to create the Reload Profile for this post office or domain.
8. Now that the Windows server where the GroupWise post office or domain is can serve up the path to the GroupWise post office or domain, you can create a profile for the post office or domain inside of Reload Administration.

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Profile Creation – Server Only Model

NOTE: If you are going to use the Paired Collector/Server Model, skip this section, and go to next section titled Profile Creation – Paired Collector/Server Model

1. In Reload Administration select the option "**Create** (Create Profiles)".
2. Select whether or not to create a post office or a domain profile.
3. Enter a **name** for the profile. ***Be aware, that a profile cannot be renamed, once it has been created.*** Choose the name wisely. Perhaps you will want to name the profile so that its name is the same as the GroupWise post office or domain that the profile represents. Select the **Next** button.
4. Enter a **description** for the profile. The description of the profile will be added to the Agent Log when backup jobs are run for the profile. Select the **Next** button.
5. Enter the **path** where the Reload server will store data for this profile. This path can be a location on the Linux server, or an NFS mount to another Linux/Unix server, or to a SAN. The path should always be available; Reload is not configured to mount paths in order to access stored data. Also, the path should be to a location that has a lot of disk space available. Select the **Next** button.
6. Select the server type. This is the target server holding the GroupWise Post Office or Domain Reload is to backup. (Netware, Linux, Windows)
7. Select standard or cluster server type, as appropriate.
    a. (Windows servers will not have this option**.**)
    b. **For a NetWare Cluster system, you must also indicate the IP address of the NetWare Cluster Resource and the volume on the resource that houses the GroupWise post office or domain**.
8. Select the **Next** button.
9. Indicate the path to the GroupWise Post Office or Domain on the target server.
    a. **NetWare UNC path for standard NetWare servers:** Make sure to use the following convention: **\\<server name>\<volume>\<full path to p.o. or domain>** For example: **\\wwwfs1\vol1\apps\grpwise**
    Select the **Next** button. Fill in the **TCP/IP address** of the NetWare server. Select the **Next** button
    b. **NetWare UNC Paths for Cluster Systems:** Make sure to use the following convention: **\\<cluster resource ip address>\<volume>\<full path to post office or domain>** For example: **\\137.65.55.211\vol1\apps\grpwise**
    c. **Linux servers (cluster and standard):** Fill in the **TCP/IP address** of the Linux Server. Select the **Next** button. Indicate the **NFS Export Path** on the Linux server that houses the GroupWise post office or domain. Select the **Next** button. Make sure to use the following convention: **/<full path to post office or domain via the NFS Export Path>** For example: **/data/apps/grpwise** Select **Next**. Linux users now move to step 13.
    d. **Windows Servers:** Fill in the TCP/IP Address of the Windows Server and select **Next.** Indicate the **Windows Share Name** on the Windows server that houses the GroupWise post office. Select the **Next** button. Make sure to use the following convention: **<Windows Share Name>** For example: **grpwise**

10. Select the **Next** button.

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11. Reload needs authentication information for NetWare and Windows systems.
    a. NetWare: Specify the user name of an **eDirectory user** with **[RWMF] rights at the post office or domain path**, and the directories off of the post office or domain path. It's probably best to create a user just for this purpose. The name of the user should be specified using their **"typless" eDirectory username**. For example: **reload.apps.acme**
    b. **Windows:** Specify the user name of a Windows **user** with the following rights: **Modify, Read & Execute, Write, List Folder Contents and Read at the post office path**, and the directories off of the post office path.
12. Select the **Next** button. Now indicate the **password** for the user that you specified in step 11. (The password does not display on the screen or in any log file. The password is kept in one ASCII text *.conf file on the Linux server. The directory where this *.conf file is located is: /opt/beginfinite/reload/conf.)
13. Select the **Next** button. At this point, you can go back in the wizard and make any needed changes, but **when you select the "Next" button after the password prompt, there is no going back to the wizard.**
14. Select the **Next** button.
15. Now the profile creation wizard gives a summary of the newly created profile. The profile is actually created at this point, but it does need to be **tested and initialized**. Until a profile is tested and initialized, it cannot be used in any manner. The testing process confirms that the Reload server can actually access the GroupWise post office or domain with the information you filled out in the profile creation wizard. For post offices, the initialization process actually pulls down the contents of the post office's OFVIEWS directory and the NGWGUARD.DC from the post office directory.

At the **Test and Initialize** screen you can either test the profile now, or you can choose to test it later. Until the profile is tested, it will not be usable. Most customers will want to choose **Test** to immediately test and initialize the profile.

Testing and initializing a profile, does not backup the post office or domain in any way.
The Test and Initialize utility gives a verbose, step-by-step explanation of each action that it is performing. If the profile does not successfully pass the testing process it should be easy from viewing the log, to see why it failed. You can then modify the profile by going to the "Create (Create Profiles)" menu from the Main Menu again, and selecting "Modify a Profile". Once the profile is modified, it can be tested again. If you want to see the log file from previous testing attempts on a particular profile, select the option "View" from the Create Profile menu, and you can view the testing log for any profile.

Once a profile is tested and initialized successfully, the profile is available to be configured further. The default configuration of a profile is sufficient for making quickly accessible backups with Reload.

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Profile Creation – Paired Collector/**Server** Model

NOTE: First you create the **Paired Server** profile on the Reload Server. Then you create the Paired Collector profile on the GroupWise server. Following are the instructions for creating a **Paired Server** Reload profile.

On the **Reload Server** do the following:

Get into Reload Console administration by typing in the command at a terminal prompt on the Reload server:

```
reload
```

1. In Reload Console Administration select the option "**Create** (Create Profiles)".
2. Select whether or not to create a post office or a domain profile.
3. Enter a **name** for the profile. ***Be aware, that a profile cannot be renamed, once it has been created.*** Choose the name wisely. Perhaps you will want to name the profile so that its name is the same as the GroupWise post office or domain that the profile represents. Select the **Next** button.
4. Enter a **description** for the profile. The description of the profile will be added to the Agent Log when backup jobs are run for the profile. Select the **Next** button.
5. Enter the **path** where the Reload server will store data for this profile. This path can be a location on the Linux server, or an NFS mount to another Linux/Unix server, or to a SAN. The path should always be available; Reload is not configured to mount paths in order to access stored data. Also, the path should be to a location that has a lot of disk space available. Select the **Next** button.
6. Choose the server type of: **Paired A Profile on This Server that has a Paired Collector**
7. Select the **Next** button.
8. Now the profile creation wizard tests and initializes the newly created profile and prepares it to accept a pairing request from a Paired Collector.

Testing and initializing a profile, does not backup the post office or domain in any way.

Once a profile is tested and initialized successfully, the profile is available to be configured further. The default configuration of a profile is sufficient for making quickly accessible backups with Reload. Further configuration of the profile should be done in Reload Web Administration.

Profile Creation – Paired **Collector**/Server Model

NOTE: First you create the Paired Server profile on the Reload Server. Then you create the **Paired Collector** profile on the GroupWise server. Following are the instructions for creating a **Paired Collector**.

NOTE: You can also create a **Paired Collector** on the Reload Server which can push backed up data to another Reload Server. That method is explained after this section in the section called Profile Creation "Linked Paired Collector".

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On the **GroupWise Server** do the following:

NOTE: Make sure to install the Reload Collector software on the GroupWise Server. The Reload Collector software (**reload_collector.rpm**) can be downloaded from the Reload Server web page by going to Tools | Post Office Collector or Domain Collector, the software is exactly the same. The reload_collector.rpm file is also on the Reload server at **/opt/beginfinite/reload/setup/collect/reload_collector.rpm**

After obtaining the **reload_collector.rpm** file, install it from a console prompt in the following manner:

```
rpm –ivh reload_collector.rpm
```

Get into Reload Console administration by typing in the command at a terminal prompt on the Reload server:

```
reload
```

1. In Reload Console Administration select the option "**Create** (Create Profiles)".
2. Select whether or not to create a post office or a domain profile.
3. Enter a **name** for the profile. Generally you would give the **name** of the profile, the **same name** as the soon to be paired **profile** that you **created** on the **Reload Server**. ***Be aware, that a profile cannot be renamed, once it has been created.***
4. Enter a **description** for the profile. The description of the profile will be added to the Agent Log when backup jobs are run for the profile. Select the **Next** button.
5. Enter the **path** where the Reload server will store data for this profile. This path can be a location on the GroupWise server. For example, you might put the path on the same volume where the post office or domain is that you are backing up. For example: under **<post office path>/collect**.
6. Select the **Next** button.
7. Choose the server type of: **Collector A Local Post Office/Domain Paired to a Reload Server**
8. Select the **Next** button.
9. Next you are prompted for the **TCP/IP or DNS Address of the Reload Server** that this Collector will be **paired to**.
10. Select the Next button.
11. You will be dropped into a terminal session and possibly prompted to **accept** an SSH key, and then prompted for the **root password for the Reload Server.**
12. After entering the password, be patient as a key exchange happens, and the screen is paused for 3 seconds.
13. On the next screen you will be prompted for the proper SSH port to contact the Reload Server on. Generally the port is **22.**
14. Select the Next button.
15. In the next screen **indicate the path of the Reload profile on the Reload Server** that this Collector will be pairing to. NOTE: Reload makes a guess at a path, it might be wrong; just change it to the correct path.
16. Select the Next button.
17. Next you are prompted for the path to the local post office or domain. Indicate the entire path to the domain or post office. For example: **/media/nss/VOL1/po1**.

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NOTE: Reload uses this path to get the domain or post office content

18. Now the profile creation wizard tests and initializes the newly created profile. The test process tests for the local location of the GroupWise domain or post office, and it also tests for connectivity to the remote Reload Paired Server profile.

Testing and initializing a profile, does not backup the post office or domain in any way.

Once a profile is tested and initialized successfully, the profile is available to be configured further. The default configuration of a profile is sufficient for making quickly accessible backups with Reload. Further

configuration of the profile should be done in Reload Web Administration.

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Profile Creation – **Linked Paired Collector**

NOTE: First you create the Paired Server profile on the Reload Server. Then you create the **Linked Paired Collector** profile on the GroupWise server. Following are the instructions for creating a **Linked Paired Collector**.

NOTE: Here is an explanation of why would use a Linked Paired Collector. A Linked Paired Collector runs on the Reload Server. Let's imagine that you have a post office on Windows that you want to back up, but you also want to replicate that backup to an off-site Reload server. Since the Reload Collector does not run on Windows, the need to create a Linked Paired Collector would be required. Here is the backup flow:

- The Reload Server gets mount points to the Windows server
- The Reload Server captures a backup and completes the backup routine for a GroupWise post office domain
- The Reload Profile that backed up the Windows post office or domain, is linked to a Paired Collector profile that is installed on the Reload Server
- The Paired Collector profile, then replicates the backup to the Reload Server that it is paired with. The Paired Collector can actually replicate to up to 3 Reload Servers that it is paired with.

In our examples in this section, we will refer to the first profile **PO1** which backs up the Windows post office. We will refer to the Linked Collector Profile as **COLLECT1**.

In these instructions, we assume you have already:

- Established the profile **PO1** on the Local Reload server
- Have gotten a backup of the post office via the PO1 profile
- Established a profile on the Remote Reload Server, and it is probably best to have also called that profile: **PO1**

On the **Local Reload Server** do the following:

Get into Reload Console administration by typing in the command at a terminal prompt on the Reload server:

```
reload
```

1. In Reload Console Administration select the option "**Create** (Create Profiles)".
2. Select whether or not to create a post office or a domain profile.
3. Enter a **name** for the profile. ***Be aware, that a profile cannot be renamed, once it has been created.*** *In our example we will call the profile* ***COLLECT1***

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4. Enter a **description** for the profile. The description of the profile will be added to the Agent Log when backup jobs are run for the profile. Select the **Next** button.
5. Enter the **path** where the Reload server will store data for this profile. This path can be a location on the Reload server where you keep other profiles.
6. Select the **Next** button.
7. Choose the server type of: **Collector A Local Post Office/Domain Paired to a Reload Server**
8. Select the **Next** button.
9. Next you are prompted for the **TCP/IP or DNS Address of the Reload Server** that this Collector will be **paired to**.
10. Select the Next button.
11. You will be dropped into a terminal session and possibly prompted to **accept** an SSH key, and then prompted for the **root password for the Reload Server.**
12. After entering the password, be patient as a key exchange happens, and the screen is paused for 3 seconds.
13. On the next screen you will be prompted for the proper SSH port to contact the Reload Server on. Generally the port is **22.**
14. Select the Next button.
15. In the next screen **indicate the path of the Reload profile on the Reload Server** that this Collector will be pairing to. NOTE: Reload makes a guess at a path, it might be wrong; just change it to the correct path.
16. Select the Next button.
17. Next you are prompted for the path to the local post office or domain. Indicate the **path to the Reload profile** on the Reload Server that is already backing up a domain or post office, and add to the path **/connect/current** For example: **/reload/po1/connect/current**.

18. Now the profile creation wizard tests and initializes the newly created profile. The test process tests for the local location of the GroupWise domain or post office, and it also tests for connectivity to the remote Reload Paired Server profile.

    NOTE: Finally you need to link the profiles. So that when the first profile backs up the Windows post office (in our example), and finishes the backup process, it then lets the second profile that represents the Linked Collector Profile pull a backup from the first profiles "<profile path>/connect/current" directory.

19. In Reload Web Administration, to the first profile, in our example it is called **PO1**, and on the **Configure** tab, select **Backup Job Settings** and select **Advanced.** Indicate that PO1 should "**Start a Backup on a Linked Profile"** as enabled. And for the **Linked Profile Name,** indicate the name as the Collector Profile you just created. In our example it will be **COLLECT1**. NOTE: Case sensitivity is not important.

Basic Reload Post Office Profile Configuration

Note: Use Reload Web Administration for administering profiles. When it comes to configuring Reload Profiles, Reload Console Administration is meant only for creating Reload profiles, and for a few advanced features, such as Retain integration. All other features of Reload Console Administration are supported fully. But Profile Configuration is not officially supported, and is highly discouraged.

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In Reload Web Administration, documentation of all features is “in-line”. Meaning, as you hover over the configuration setting, you will see help text which explains that particular feature.

Creating a GroupWise Restore Area for use with Reload – Linux Post Offices

If a GroupWise post office is on the Linux platform, then using Reload is even simpler. In fact, users don’t even need to exit their live GroupWise account to leverage Reload. The users only need to use the File|Open Backup feature in GroupWise to access a Reload backup. With Reload in play, the experience of using Reload from within the GroupWise 7.0.1 client feels completely natural. You need only to do some pre-configuration once to enable this feature for all users on a Linux-based post office. Here is a high-level outline of what you need to do:

- Configure the NFS Server software on the Reload server, and create an NFS export of the Reload profile directory
- Configure the NFS Client software on the Linux server housing the GroupWise post office, and create a mount point to the NFS export on the Reload server
- Define a GroupWise Restore Area in ConsoleOne that reflects the NFS mount point on the Linux server that houses the GroupWise post office

Configuring an NFS Server Export Location on the Reload Server

Configure the NFS Server software on the Reload server, and create an NFS export of the Reload profile directory A Linux server allows file access to another Linux server through the NFS (Network File System) protocol. NFS is a reliable and fast file-system based protocol between Linux servers.
When a Linux host wants to share a location on one of its own partitions, it creates an “NFS export”. When the Linux host is running the NFS Server daemon, other Linux hosts running can request an NFS Client mount (much like a mapping) to the NFS Export.

The first item of business then is creating the NFS export, and running the NFS Server on the Reload server. Here are general instructions for doing so, based upon instructions on a SLES10 server, the menu prompts on your Reload server could be different.

a. Go into the YaST Control Center. For example, if you are in a graphical session, to launch the graphical version of YAST from a terminal session, type in the command:
   yast2
b. Within the YaST Control Control Center, select **Network Services|NFS Server**
c. Make sure to Start the NFS Server if prompted to do so
d. In the Directories to Export screen, select the Add Directory button, and add the Reload profile path for the Reload profile that you are configuring to be accessible as an NFS export. For example:
   /data/reload/corppo

If you want to determine the path to the Reload profile, edit the profile in Reload Administration, and select the menu choice INFO – Profile Information.

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e. When prompted in the next dialog for the Hosts wildcard and Options, do the following: Hosts Wildcard Field: <The IP Address of the Reload Server> (For Example: 10.1.1.100) Options Field: **rw,no_root_squash,sync**
f. Select Finish for the changes to take effect.

If you cat the /etc/exports file:

```
cat /etc/exports
```

You will see the new NFS export that you created.

For Example:

/data/reload/corppo/ 10.1.1.100(rw,no_root_squash,sync)

To confirm that the NFS server is running type:

```
ps -eaf | grep nfsd
```

This command should present something similar to this if the NFS Daemon is running:

root 2942 1 0 Nov17 ? 00:00:00 [nfsd]
root 2943 1 0 Nov17 ? 00:00:00 [nfsd]
root 2944 1 0 Nov17 ? 00:00:00 [nfsd]
root 2945 1 0 Nov17 ? 00:00:00 [nfsd]

The command script to control the NFS Server is:

```
/etc/init.d/nfsserver
```

So to restart the NFS Server you would type in the command:

```
/etc/init.d/nfsserver restart
```

Configuring an NFS Client Mount Point on the GroupWise Post Office Server

Configure the NFS Client software on the Linux server housing the GroupWise post office, and create a mount point to the NFS export on the Reload server. The way a Linux server gets file access to another Linux server is through an NFS mount. All Linux servers keep their local partition mounts and their NFS mounts in the "fstab" file. The file is located in the /etc directory on the Linux server.
This section walks through using the NFS Client configuration utility in YAST, to define a permanent NFS mount point that the Linux host running the GroupWise post office, will always make to the Reload server. Here are general instructions for doing so, based upon instructions on a SLES10 server, the menu prompts on your Reload server may be different.

1. In a Terminal session or a File Manager on the Linux server, **Create** a new mount point local directory called **"backup".** Generally mount points are made off of the /mnt directory. In a terminal session to make the mount point local directory type use the **"mkdir"** command.

For example:

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```
mkdir /mnt/backup
```

2. **Go** into the YAST Control Center.

For example, if you are in a graphical session, to launch the graphical version of YAST from a terminal session;

Type in the command: **yast2**
Within the YAST Control Center, Select **Network Services**|**NFS Client**

3. **Select** the **Add button**, to add a new NFS mount point.
4. **Fill** in the fields, for example:

a. NFS Server Hostname: <IP Address or DNS Host name of the Reload server>.
For example: 137.65.55.214
b. **Remote File System**: <The NFS export created on the Reload server>.
For example: /data/reload/corppo/
c. **Mount Point (local**) <The local mount point that will become the link over to the Reload server>.
For example: /mnt/backup
d. **Select** the Finish button, to complete the NFS Client mount point.

5. **Select** Finish for the changes to take effect.

If you cat the /etc/exports file:

```
cat /etc/exports
```

You will see the new NFS-based mount point that you created. For Example:

137.65.55.214:/data/reload/corppo /mnt/backup nfs

The mount point **should already be established**, however if you ever wished to establish the mount point, since it's in the fstab file you would type in the command:

```
mount /mnt/backup
```

The command to dismount would be:

```
umount /mnt/backup
```

Creating the GroupWise Restore Area

Define a GroupWise Restore Area in ConsoleOne that reflects the NFS mount point on the Linux server that houses the GroupWise post office In order to use the Restore functionality, you must create a GroupWise Restore Area in ConsoleOne. Once the Restore Area is created, and assigned to a post office, there are no other steps you need to take in ConsoleOne in order to use the Restore Area. Reload links up the backup that you want to access, with the Restore Area path that you specify once in ConsoleOne. Here are the steps to follow in ConsoleOne to create a GroupWise Restore Area:

1. Launch ConsoleOne
2. In ConsoleOne connect to the Primary Domain. The reason for this is that GroupWise Restore Areas are considered "System Level Records" and as such, they are owned by the Primary Domain.

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3. In the GroupWise view, highlight a domain in the GroupWise system, and select Tools|GroupWise System Operations|Restore Area Management
4. Select the “Create” button to create a new Restore Area. This Restore Area will be specific to a particular post office that Reload is backing up. Each post office that Reload is backing up will need its own Restore Area.
5. Give the Restore Area a name. For example, CORPPO-Reload
6. In the UNC path field, indicate the following path:

<path to the NFS client mount point on the Linux GroupWise server>/connect/restore

For example:

/mnt/backup/connect/restore

It may not seem logical to put a Linux path in a UNC path, but because Reload is on Linux, this is the only way it will function.

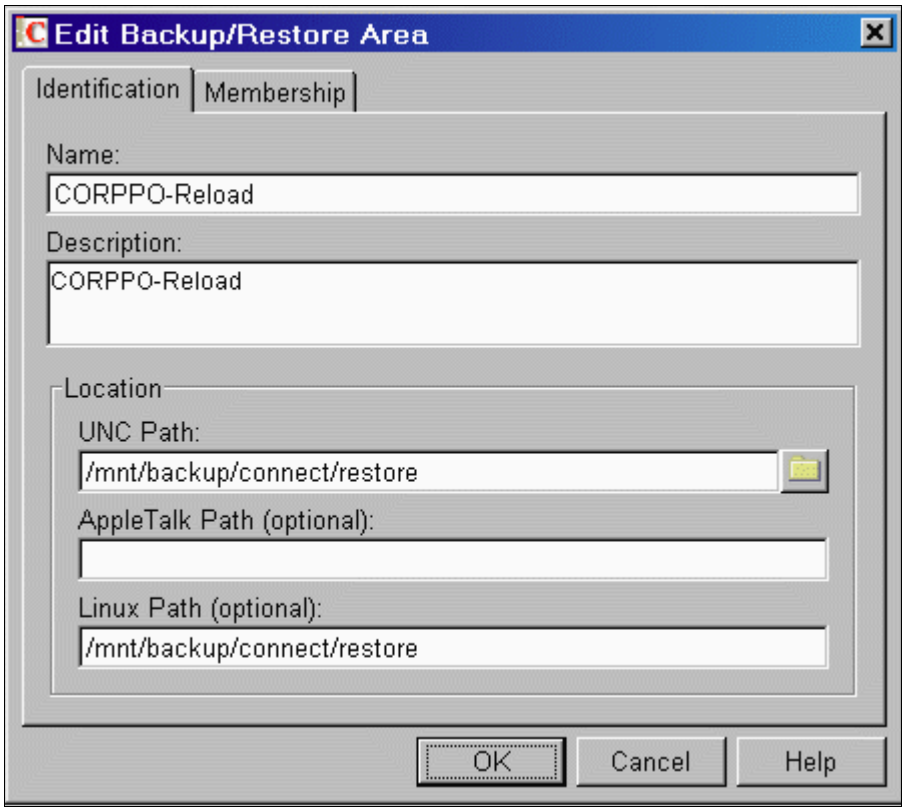
7. In the Linux path field, fill in the exact same path that you did before, namely:

<path to the NFS mount point on the Linux server>/connect/restore

For example:

/mnt/backup/connect/restore

The Restore Area should look something like this:



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8. At the Membership tab, select the Add button, and add the GroupWise post office that this Restore Area represents. The changes you have made in ConsoleOne may take a few minutes to replicate. And once they do, the Restore Area functionality is immediately available via the File|Open Backup feature in the GroupWise 7.0.1 client.

In order to make sure that the latest backup is the one that is immediately available to your users, make sure to configure Reload to allow for this.
Do the following:

A. Configure the Reload post office profile's Access Backup Preferences, under the Preferences menu, so that Reload links to the Restore Area when you choose a backup. The Restore Mode POA and Access Mode POA do not need to load because the clients are not connecting to POAs on the Reload server.
B. Configure the Reload post office profile's Auto-Reload configuration under the Preferences menu, so that "Auto-Restore" is enabled. This will ensure that the most current backup is automatically linked to the restore area.

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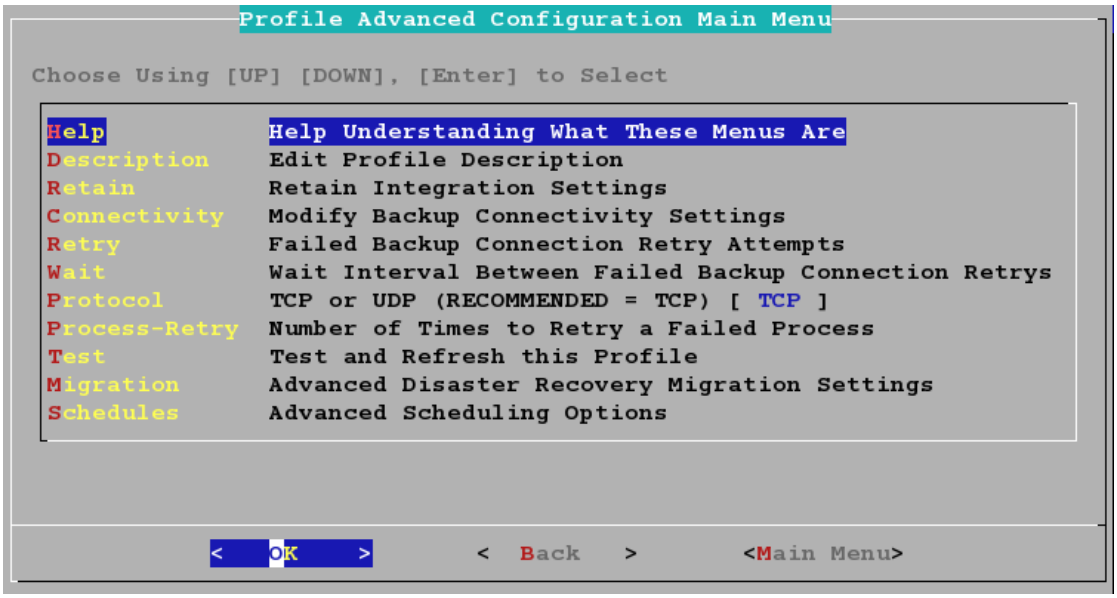
Advanced Reload Post Office Profile Configuration

The Profile Advanced Configuration menu shown below is available by selecting the following from the Main Menu:

1. Profiles (Modify Profiles)
2. Choose the Reload Profile
3. Choose Advanced (Advanced Profile Configuration Menu)



Description

The profile description can be modified from this menu. The profile description is used in the Overview page of the profile and in the Reload Web Administration interface.

Retain Integration

First, Reload must be set up so that the backups are available. There is a special feature in Reload for this. It calls up a post office agent that stays up all the time and it only goes down long enough to change to the most recent backup. So it will always be there with very small interruptions as the POA is brought down then up.

Setting up Reload is done on a Profile-by-profile basis. Each post office that you set up for Retain to dredge from must be configured within the profile configuration menu.

1) Start up Reload's Administration menu.

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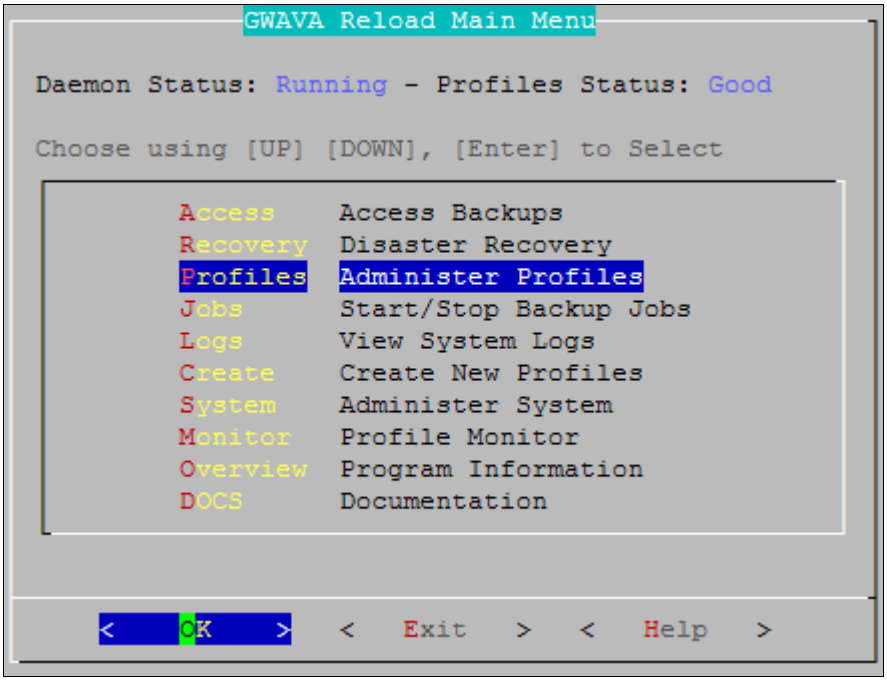
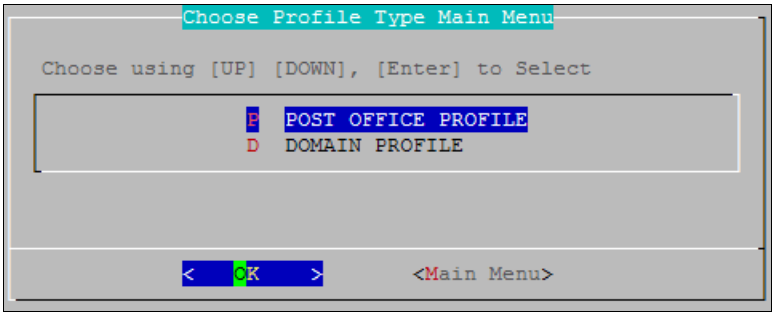
2) From the main menu, choose Profiles – Administer Profiles.



3) Select the Desired Profile. (The Retain POA must be setup for each profile).



4) Choose Advances Profile Configuration Menu

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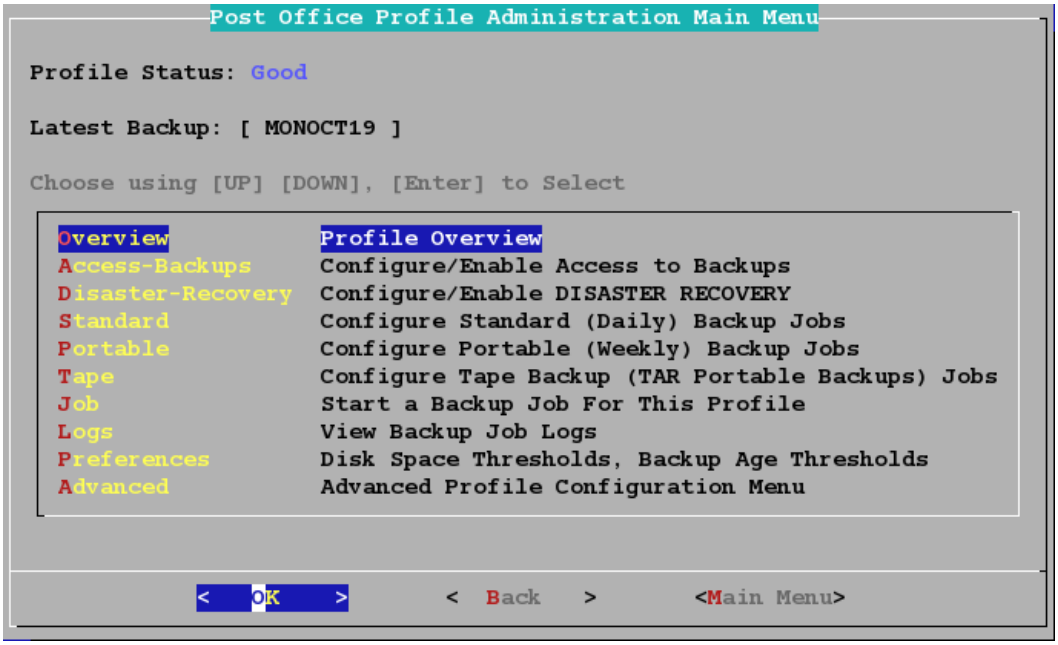
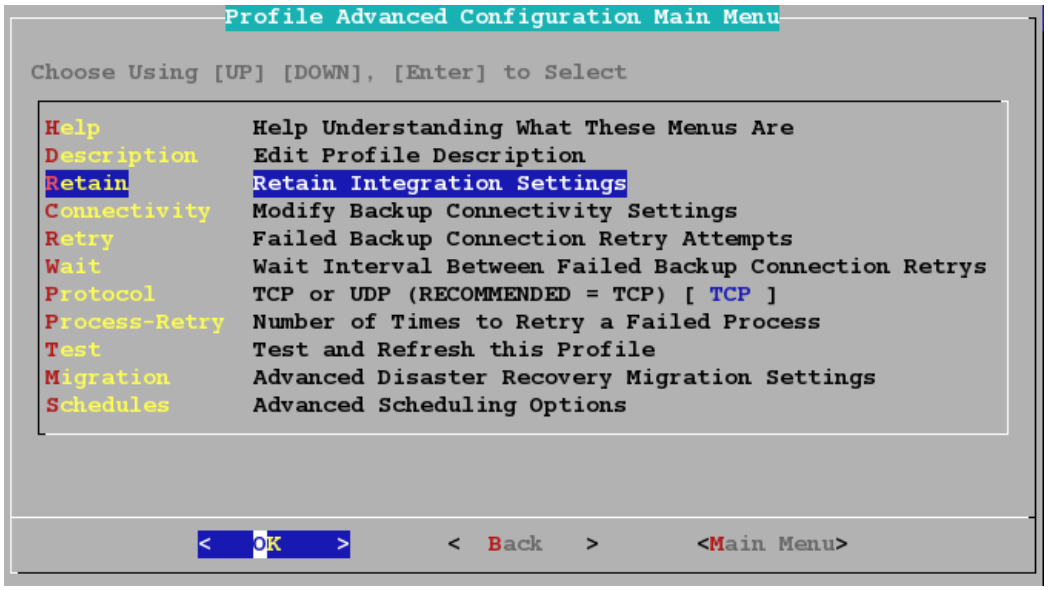


5) Choose Retain POA Menu & Settings



Now it's worthwhile examining this menu. It contains all the settings you will need to make the Retain integration work. This is a separate POA and the settings NEED to be different from the Disaster, Recovery, or Access POA. The easiest way to start is to run the wizard.

At the top, the status of the Retain Integration POA is displayed.

- Wizard: Run the configuration wizard.
- Startup: modify the startup file for the POA if you want to make specific changes to it.
- Delete-Retain: delete the startup file if you want to start fresh and configure from default.

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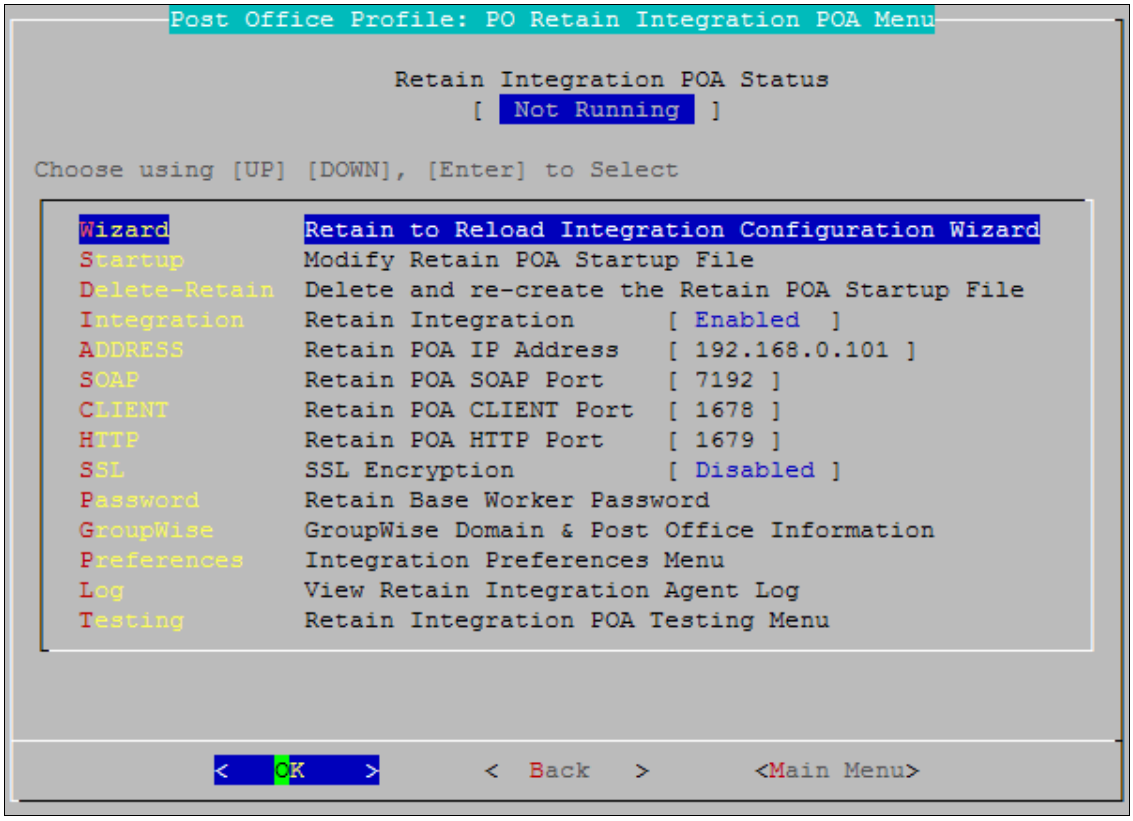
- Integration: Enable or disable the Retain Integration
- Address: The IP address this POA will listen on.
- SOAP: The SOAP port this POA will use.
- CLIENT: The port that a GroupWise client may use to access this POA.
- HTTP: The HTTP port for this POA.
- SSL: Enable or disable SSL (Generally keep SSL Disabled)
- Key: A password Retain for GroupWise will use to access this POA.
- GroupWise: Specify the domain name and post office name for this POA.
- Log: View the Integration Agent Log.
- Testing: Offers support options to test load the Retain POA



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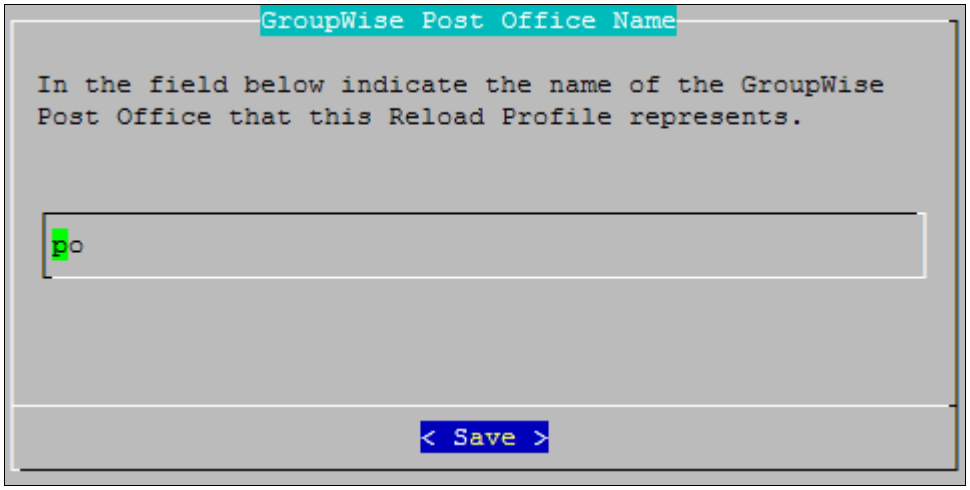
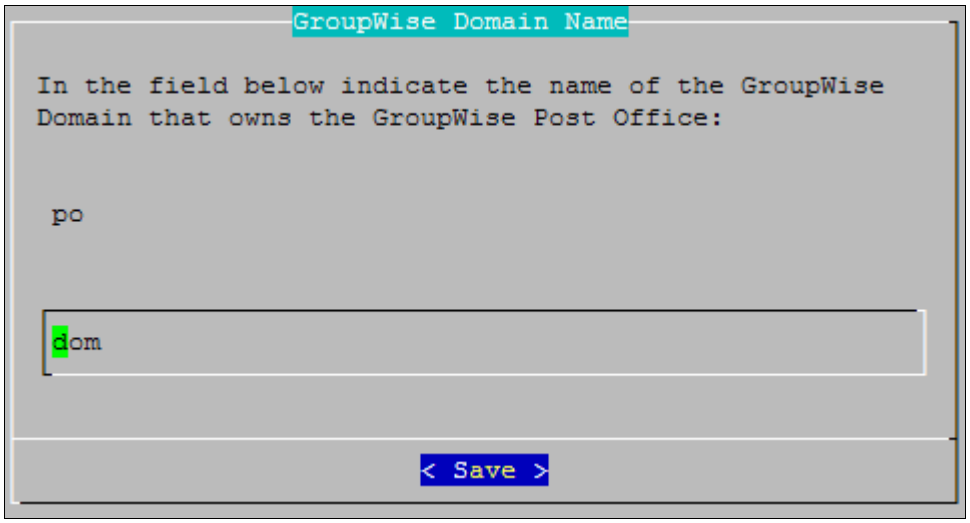
1) Run the Wizard



2) Enter the name of the post office and domain.



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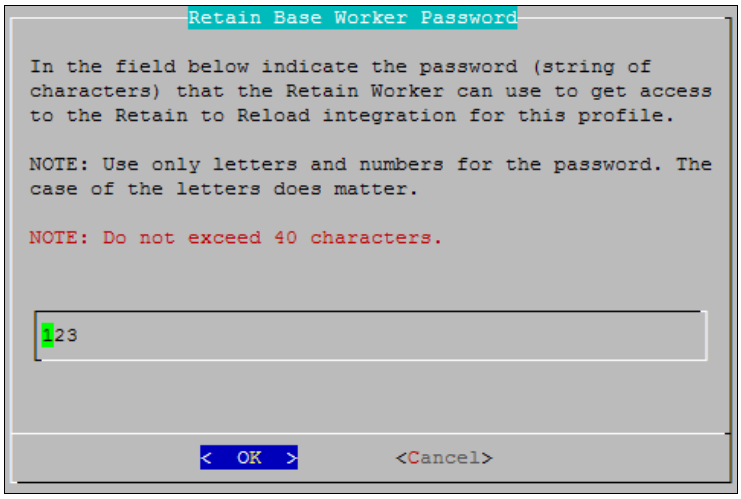
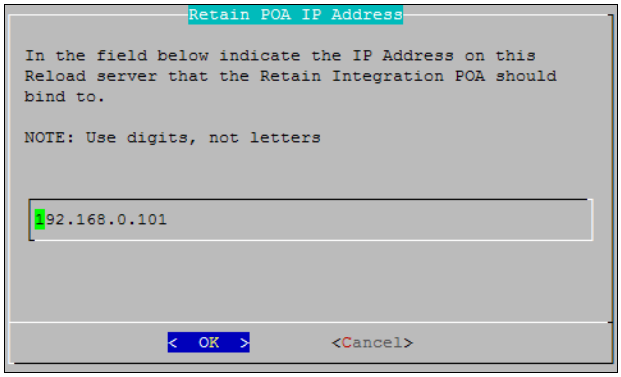
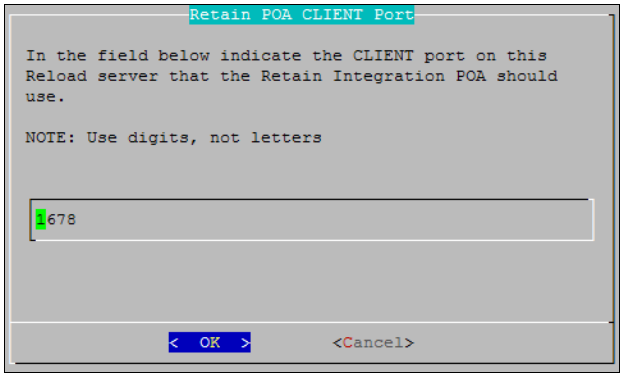
3) Choose an authentication key that Retain will use to access this POA. **This password must also be set in the Retain Server for the Worker password. If the passwords do not match, Retain will be denied access to the Reload backups.**



4) Set the IP address and ports which the Retain POA will bind to. If this POA will be sharing the IP address with any other Reload POA, the Client, SOAP, and HTTP connection ports must be unique to avoid port conflicts.





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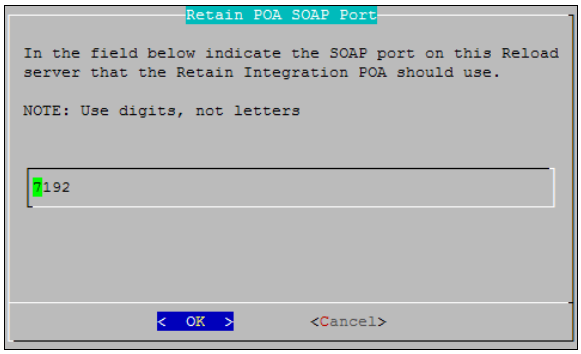

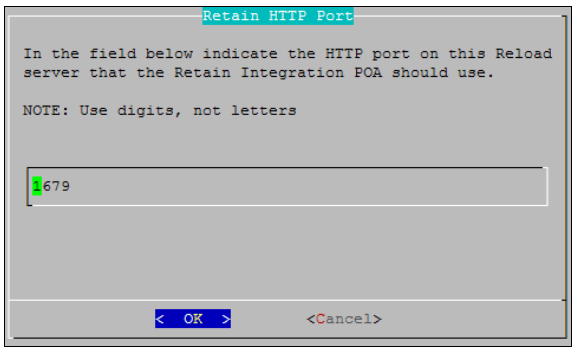

Reload should be installed on a machine other than the live POA server, but the standard ports are usually best used for one of the other Reload POAs, (Disaster, Restore, and Access). Pick a port for each connection which you know is open.

Retain will pull all necessary connection information from the Reload server. There is no need to enter these settings into the Retain Server.

Now that you have set up the basics, you may edit the POA startup file in case you wish you change any other settings, (retain.poa), or you can re-run the wizard from step 1.

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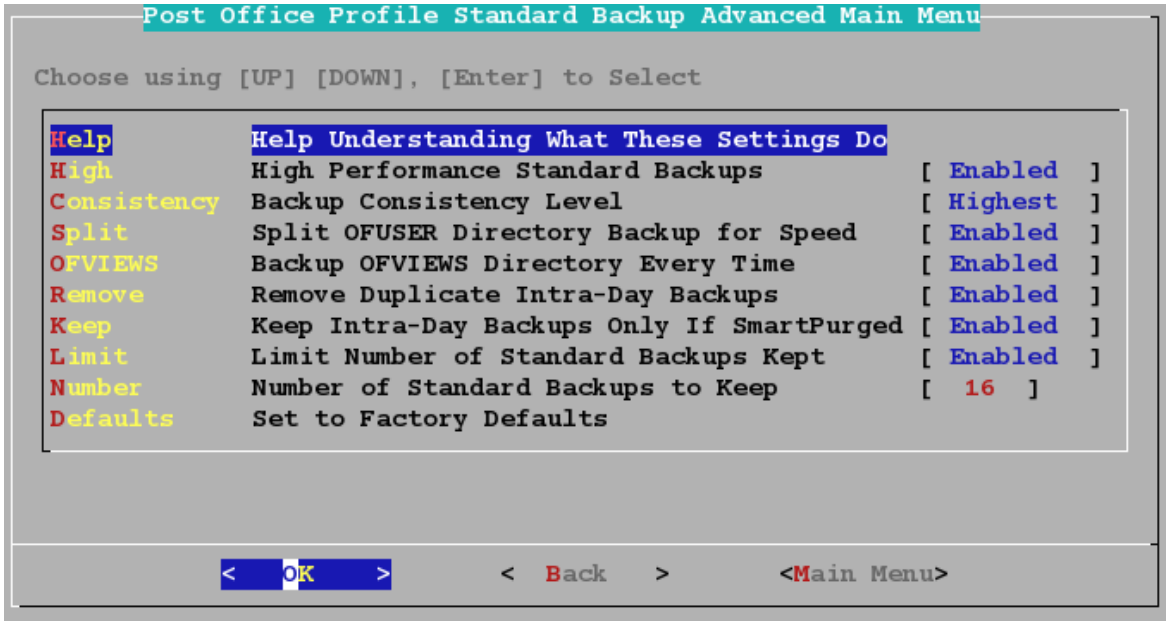
To mitigate the chances of getting Retain Worker archive errors while working against a Reload POA, it is **STRONGLY** recommended that Reload is set to create highly consistent backups.

This setting is located at:

Main menu | Profiles | (Select Profile) |Standard | Advanced | Consistency: Set to highest.



You want a highly consistent backup, to make sure that you have all the blobs associated with the database. Database is picked-up first, so the blobs that are referenced in the database will be consistent with the current backup.

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Retain Settings for Reload Integration

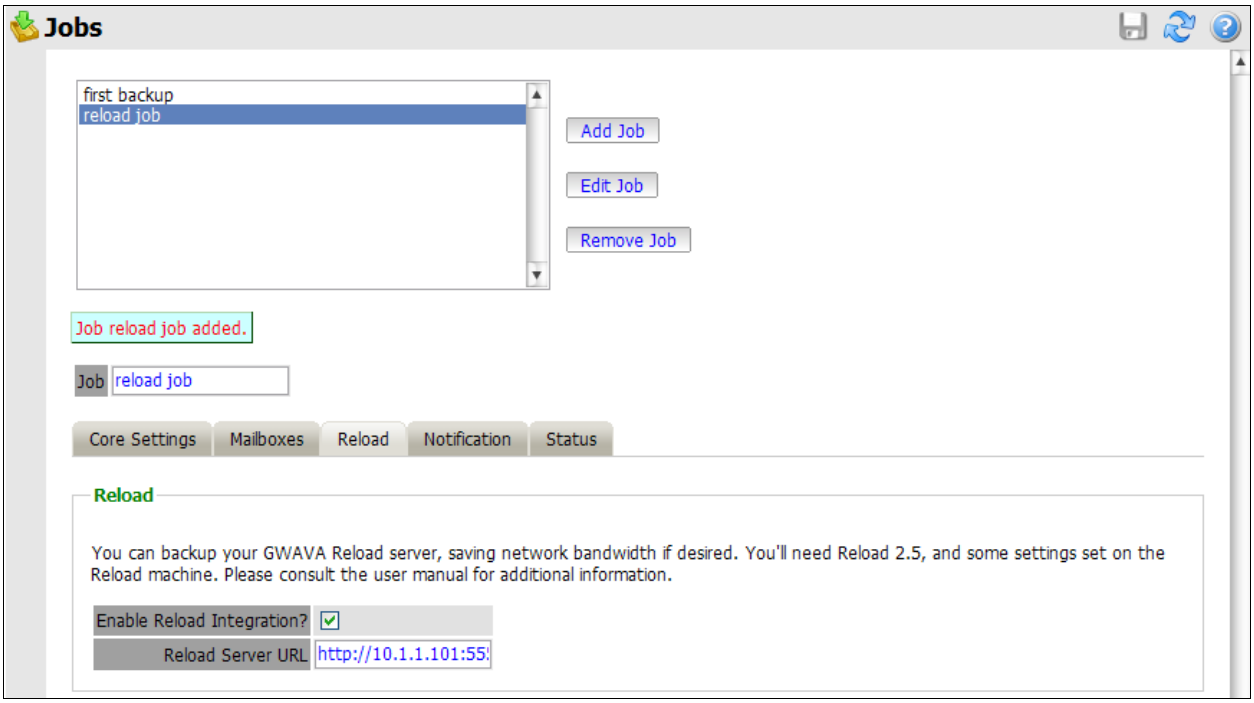
A quick list of tasks for Retain settings:

- Configure the Retain job to use the Reload backups
- Set and use the Date Range. This automatically selects the latest Reload backup.
- Use the Item Store Flag
- Set the Retain Worker password to the Retain integration password you set in Reload
- Recopy the bootstrap file to the worker

Configure to use Reload

Retain has been designed to work with Reload, and all that is involved is to assign the running jobs to use the Reload integration. This setting is found in the Jobs configuration page in the Retain management console, (you must be logged-in as the administrator or posses administrator rights).

Enter the management console, and select Jobs from the Data Collection menu.



Create or select a job which you desire to use against the Reload system, and select the Reload Tab. You must select the Enable Reload Integration option, as well as supply the correct connection address for the Reload Server URL. (Both IP address and DNS name will work, but DNS is recommended wherever possible.)

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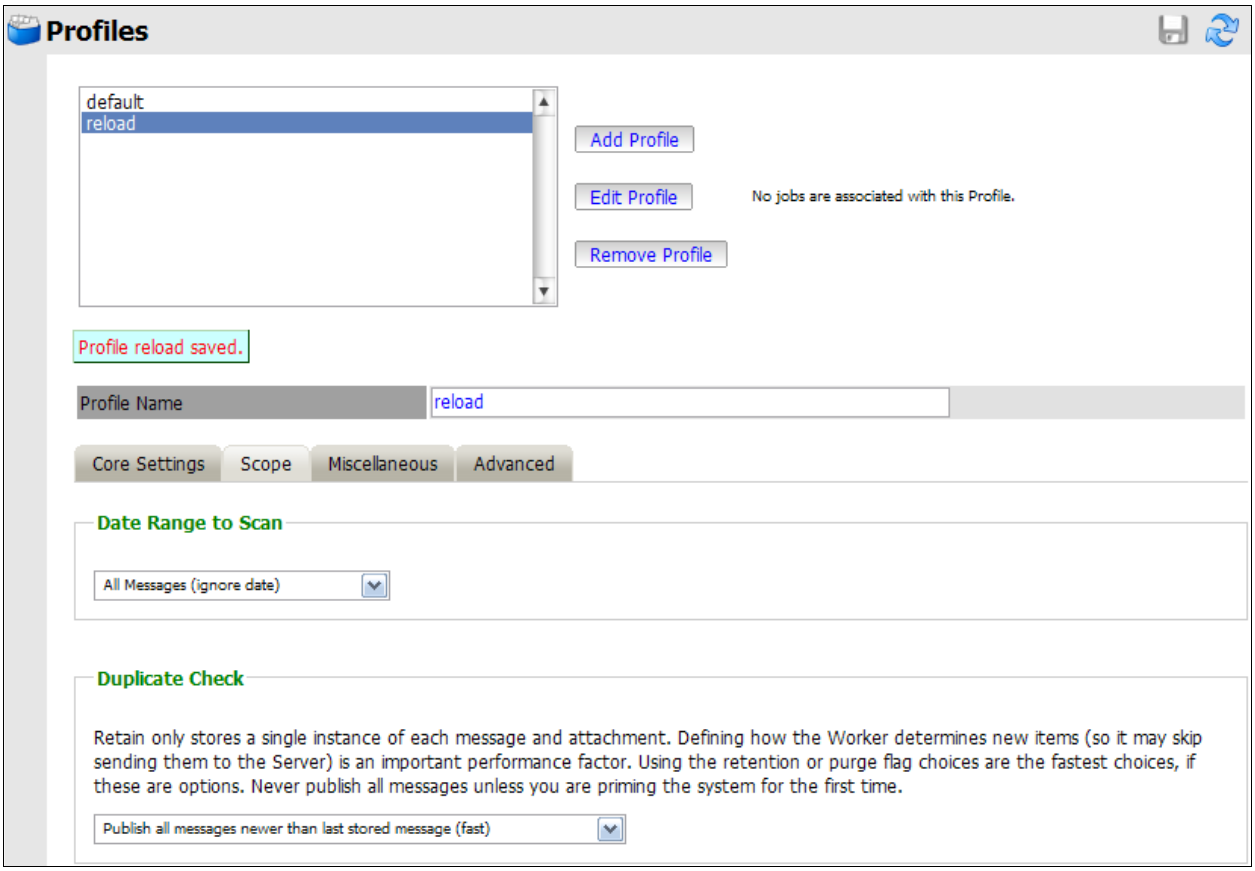
Set the rest of the Core Settings, Notification, and Status as you would normally for your Retain system, but note that in the Mailboxes section you MUST assign the mailbox that Reload is backing-up. Save the changes.

Schedule

It's important to schedule the data collection on Retain so that the Reload backup will be complete long before the Retain job is scheduled to start. This is set in the schedule section under the Data Collection menu in Retain.

Profile Scope

To ensure that the latest Reload snapshot is used with Retain backups, the Retain profile should be set to use the 'Date Range to Scan' setting. Set this to scan for mail at the desired amount of days after job start.



Because Reload essentially creates a snapshot of the Post Office, the duplicate checks that Retain can use are very limited. The retention flag and purge flag will not function as they are kept within GroupWise and would be changed back as soon as Reload creates a new backup. **The Item Store Flag is the only duplicate check that is internal to Retain, and is the ONLY duplicate check ability that will work when Retain archives against a Reload system.** Again, the retention and purge flags will not work but the item store flag will. Be sure your Retain Profile matches this setting.

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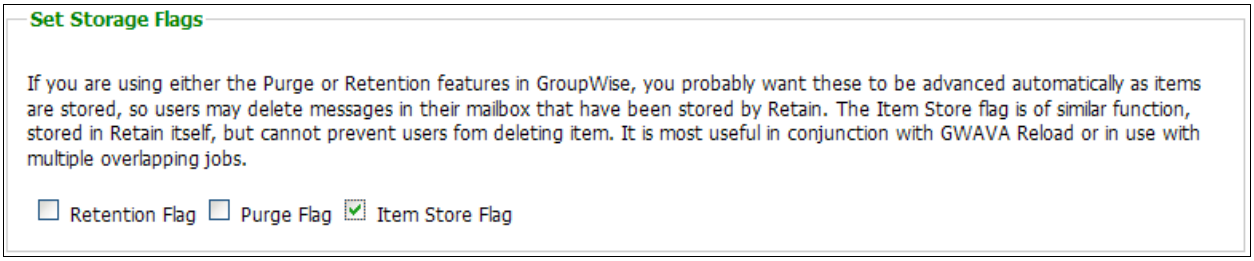
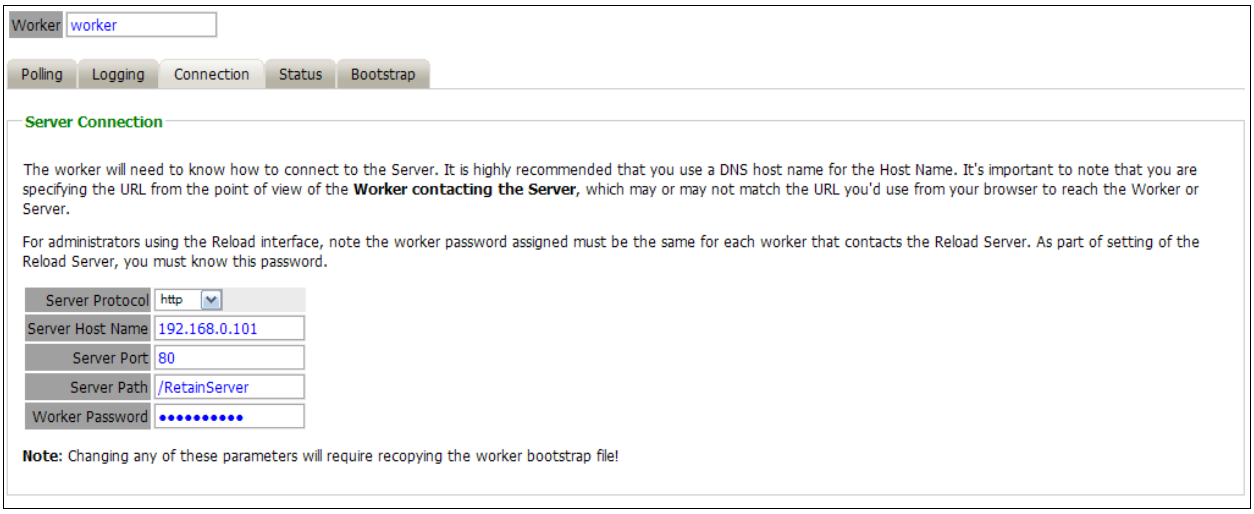
The item store flag is set in two places: Duplicate Check under the Scope tab and under Set Storage Flags under the Miscellaneous tab. The correct settings are shown.



Set Worker Password

The Retain Worker assigned to the job configured to connect to the Reload system MUST have the worker password changed to match the password specified in the Reload system. **The password supplied to the Reload system for Retain MUST match the Retain Worker password or the connection will be refused.**

Under the worker menu | Connection tab, reset the Worker password to match the password set in Reload.



Recopy the Bootstrap File

Once the worker password has been changed, the bootstrap file (worker.cfg) must be recopied over to the worker. If this is a new worker which does not have a bootstrap file, you can upload the new bootstrap file through the web interface at ://<server_address>:48080/RetainWorker To recopy the bootstrap file to an existing worker you must replace the existing bootstrap file.

- Shutdown tomcat
- Copy the new bootstrap file over the existing file in /opt/beginfinite/retain/RetainWorker/WEB-INF/cfg/ or <your retain install directory>/RetainWorker/WEB-INF/cfg

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- Restart tomcat

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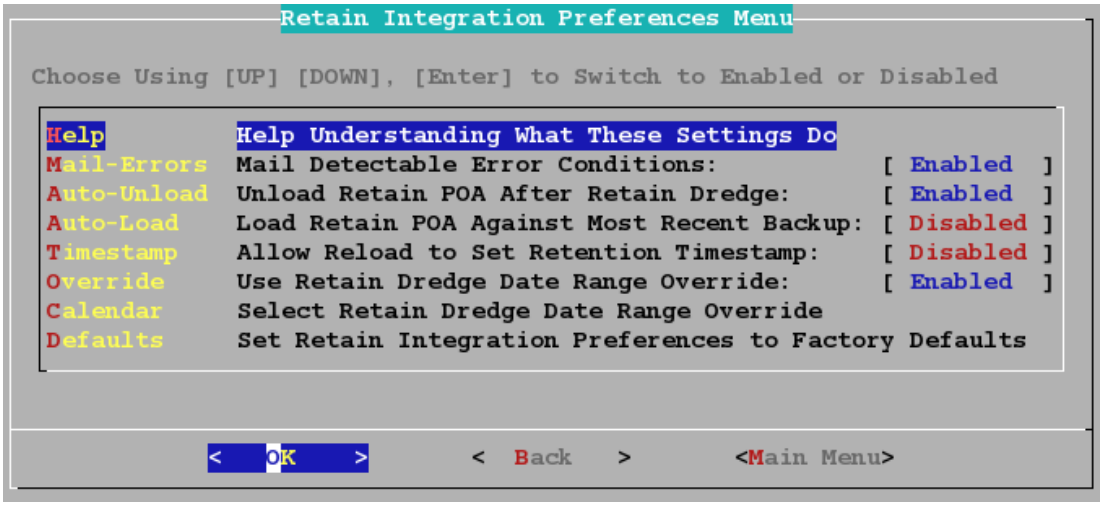
The following menu and features are maintained for support purposes only.

These options are antiquated and should not be used against Retain Version 1.5 except at the request of GWAVA Support.

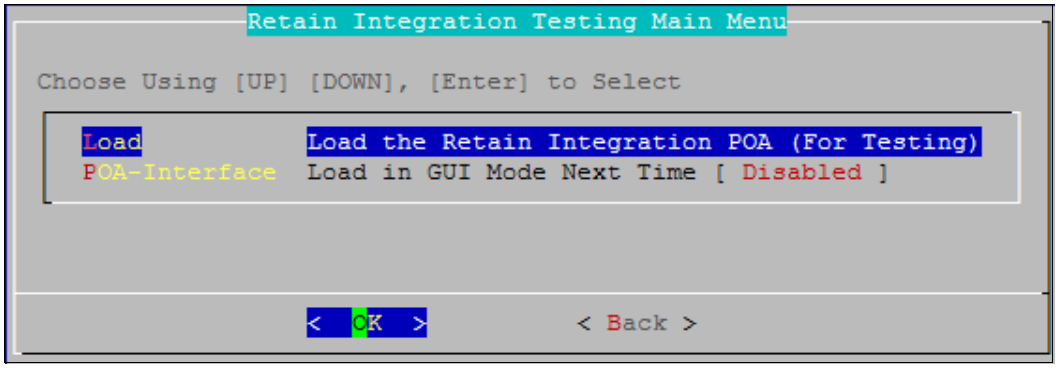
- Specify whether to load this POA against the most recent backup automatically.
- Specify whether to enable support for the GroupWise retention flag.

Reload Integration Preferences Menu



TESTING the Retain Integration Piece

From the testing menu, you can load the POA to test it. You can also specify whether the POA should be loaded in graphical mode. Ordinarily, this is not necessary but for the purposes of testing, you may want to see it. This setting automatically reverts to DISABLED once you've done a load-up in graphical mode, so the setting is never stuck to ON



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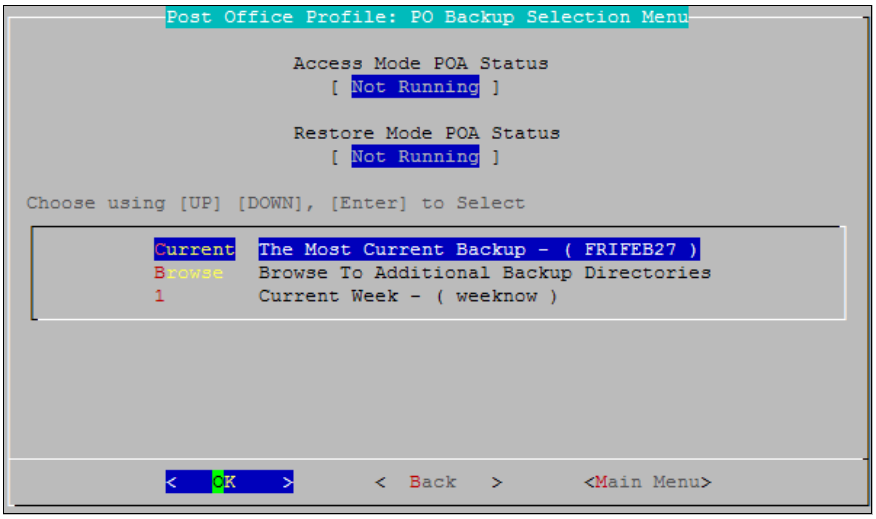
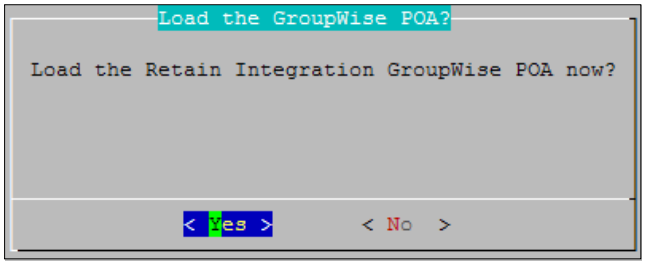
When you ask it to load the POA, it will ask you which backup to load. This is also a handy way of manually enabling an older backup for Retain to dredge.
You will then be asked whether you want to load the POA.



Load the POA.

Once the Reload POA is loaded, you can run the Retain Job against Reload's POA.



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Connectivity

The Connectivity settings option re-runs the connection settings wizard that is first filled out when the Profile is first created. This allows the administrator to change the settings if the environment of the Profile's target Post Office changes.

Working with a Reload Profile for a GroupWise Post Office That Has Moved to Another Server Platform

If a GroupWise post office has moved to a server that is on a different operating system or platform, the profile's connectivity settings must be edited. Change the connectivity settings to reflect the new platform and proceed through the prompts of the Connectivity Settings wizard. Make sure to test the profile, because when you change the Connectivity Settings of a profile, it is automatically disabled until such time as the testing process has verified the changes you have made.

Configuring the Reload Agent For Failed Connectivity

When the Reload Agent attempts to get a connection to the server that hosts the GroupWise Post Office, it can retry in its attempts if at first it fails. Use the **Retry** and **Wait** settings to configure the Reload Agent's behavior when connectivity cannot be established or re-established immediately.

Retry

When the Reload Agent runs a Standard (Incremental) Backup, it has several sub processes that run in order to obtain the data for a Standard Backup. If any one of the processes fails, a "Process Retry" counter increments. By default, if the Process Retry counter increments beyond 5, then the backup job is aborted. The value of this is if a Reload server is backing up other Reload Profile, it will not be consumed for a day trying to get the backup for a Profile that may be having problems. The factory default of 5 is a good Process Retry number, it can be lowered or increased, but it is not recommended that you lower the value below 2.

Testing a Profile

Testing a Profile kicks off the Test and Initialize utility. If a Reload Profile is tested, and fails to pass the testing process, the only way to modify the profile and/or to correct the reason for the testing failure, is to go back to the "Create" menu from the Reload Administration Main Menu.

Advanced Scheduling

The Advanced Scheduling menu allows the ability to specify Reload backup job types to happen in a different manner than the daily/weekly approach of the Standard Schedule for a Reload profile. Most customers will want to stick to the Standard Schedule to mirror common backup procedures throughout the rest of their computing systems.

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Using the Reload Run Job Creation Utility for Enhancing Reload Backups for Disaster Recovery Applications

Sit back for a minute, and really think this section through. Imagine that when your Reload server backs up your GroupWise post office, it takes approximately 18 minutes. What if you could get Reload to backup your GroupWise post office every hour, why not? For disaster recovery, wouldn't it be nice to have the most current backup be the one that Reload pulled just an hour ago? The Reload menu-based scheduling system has a traditional approach that is designed to only pull one Reload Standard (Incremental) Backup each day. Even if the scheduling system could allow for multiple backups, the Reload system is hard-coded to only keep up to three Standard Backups around per day. This way, if you were to manually kick off ten Standard Backups for a particular Reload Profile, Reload would automatically prune off the first seven Standard Backup jobs for that particular day. The "pruning" process of Reload is by design. However, if you were to pull 10 backups in a day, the problem is that users' mail that was purged from their trash, which was in one of the first 7 backups, is essentially not backed up. That's bad! How do we fix this?

The **Reload Run Job Creation Utility** allows you to work around Reload's standard design. Let's set up an example scenario. At ACME Corporation, they would like to backup up one of their GroupWise post offices every hour, from 6:00 (6:00 A.M.) to 18:00 (6:00 P.M.) However, they do not want any of the mail to be purgable, until a final backup is done by the Reload Scheduling system at 22:00 (10:00 P.M.) Here's how they would accomplish this task, as explained at a high-level.

- Use the **Reload Run Job Creation Utility** to create the six "Incremental" jobs using the Linux server's CRON system which is enabled by modifying the /etc/crontab file.

By default, unless you specify otherwise, the Reload Run Job Creation Utility tells the Reload Agent not to flag message items as purgable.

- Use the Reload Scheduling System to run the final Standard Backup job at 22:00 (10:00 P.M.). When this job runs, then the SmartPurge features that Reload integrates with will function, and messages will be flagged as purgable after the 22:00 (10:00 P.M.)

To see the syntax for the **Reload Run Job Creation Utility** type in the following command from in a terminal session:

```
reloadj
```

The output will be similar to this:

Reload Run Job Creation Utility - Version 5
This utility is for creating Reload run jobs
See the Reload documentation at www.gwava.com for more help.
The supported switches are as follows:
-h This help screen
-p Specify the Reload profile to create run job for, use lowercase
-i Create a Standard Backup (Incremental) run job
-f Create a Weekly Maintenance run job
-t Create a Tape Archive run job
-e Create an Expire run job
-s Do run a SmartPurge of messages when running an Incremental job

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-q Query to find out if a Reload job is currently running
Incremental & SmartPurge Example: reloadj -p po1 -i -s
Incremental Example: reloadj -p po1 –i
Full Backup Example: reloadj -p po1 -f
Tape Archive Example: reloadj -p po1 -t
Expire Example: reloadj -p po1 –e

To schedule a Standard (Incremental) Backup job to happen for the Reload Profile "**po1**" the command would be:

```
reloadj -p po1 –i
```

To have the job executed by the Linux server's CRON system every hour, add the following line to the /etc/crontab file:

```
1 6-18 * * * root reloadj –p po1 –i
```

This means the following:

<On the first Minute><Of Hours 6 – 18><Every Day><Every Day of the Month><Every Week of the Year> <root user privileges> reloadj –p po1 –i

For additional help on modifying a crontab file, consider searching for "linux crontab" at ://www.google.com.

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Domain Database Profiles

Understanding What a Domain Database Profile Does

A Reload Domain Database profile backs up the essential components of a GroupWise domain, so that it can be used for disaster recovery purposes. A Reload Domain Database profile does not back up the subdirectories off of a GroupWise domain, or the configuration files for GroupWise gateways. The reason for this is that GroupWise is currently, running a GroupWise gateway on a different platform, and path is invalid.

A Reload Domain Database profile backup backs up the following files, and **only** the following files:

- wpdomain.db
- wpdomain.dc
- gwdom.dc
- gwpo.dc
- wpoffile directory contents
- reveal.ini (For GWAVA Reveal)
- archsearch.txt (For GWAVA Reveal)
- reveal.xml (For GWAVA Reveal)
- gwsystem.xml (For GWAVA Reveal)

Accessing a GroupWise Domain Database Backup

Accessing a GroupWise Domain Database backup is easy. Here are the steps you would take:

For the most Current Backup

1. Go to the Reload Web Administration
2. Choose the Domain Database profile under the Domain Profiles section.
3. Select the “Access Backups” tab
4. Choose the option “Download Most Current Backup” as shown.

A Backup Other Than the Most Current Backup

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1. Go to the Reload Web Administration Choose the Domain Database profile under the Domain Profiles section.
2. Select the “Access Backups” tab
3. Select “Select another Domain Backup for Download”. A drop-down menu will appear allowing you to choose the desired backup.
4. Select “Download Most Recently Selected Backup”

Disaster Recovery

Disaster Recovery must be configured and tested before a disaster happens. The Disaster POA and MTA will default to the Reload Server's IP address(es) with the default port and the latest backup for each profile unless configured otherwise. If this default behavior is not desired, each profile must be configured separately. See the profile "Disaster-Recovery" sections for details. (Disaster MTA , Disaster POA.)

In the case of a disaster, there are five different methods for enabling disaster recovery for a GroupWise post office or domain:

Reload Web Administration Method #1

Log into the Reload Server's Web Page

Click the ambulance button next to the profile that you would like to enable disaster recovery for.

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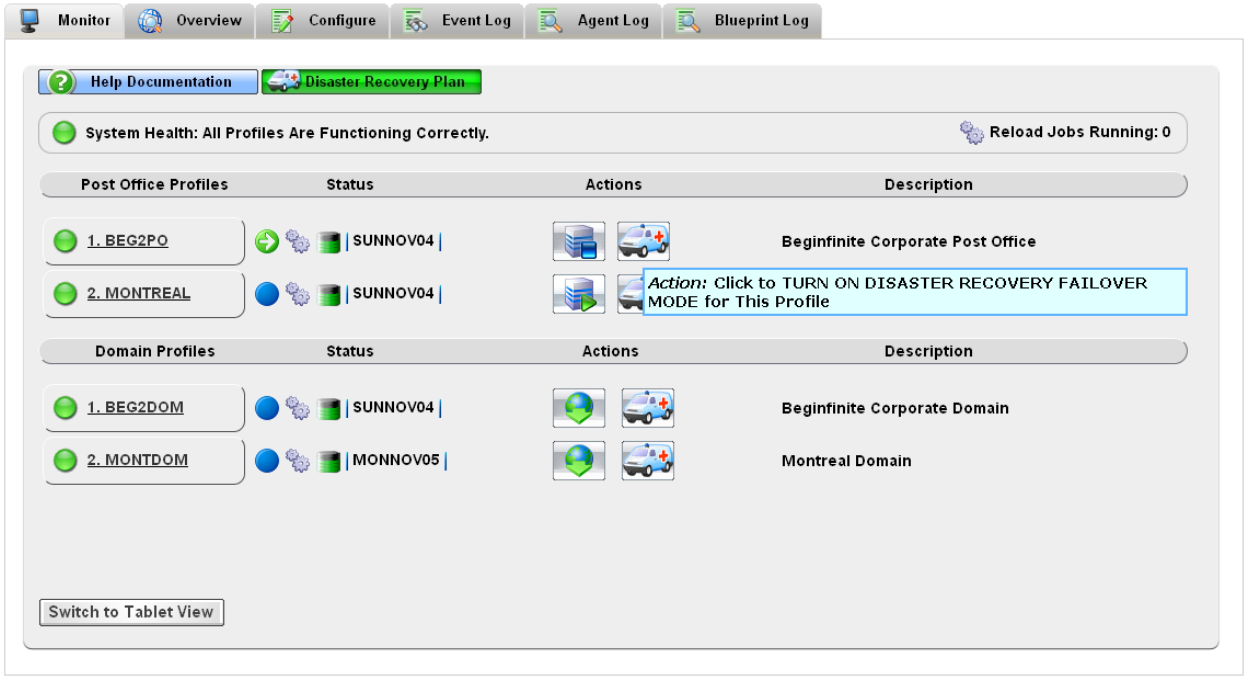


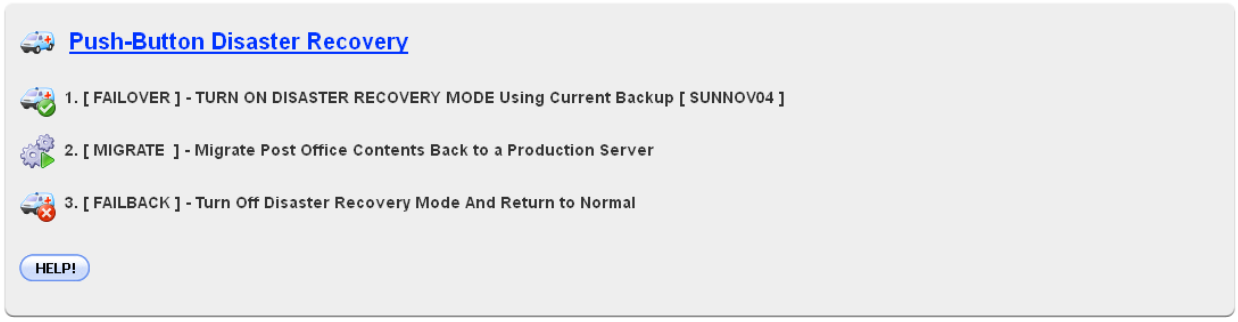
Reload Web Administration Method #2

Log into the Reload Server's Web Page

Choose the post office or domain profile that needs to be switched over to for disaster recovery purposes.

Choose the "Disaster Recovery" Tab.

Choose the option for FAILOVER.



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Reload Console Administration Method #1

1. Get a VNC, or SSH session, or go to the Reload server Console

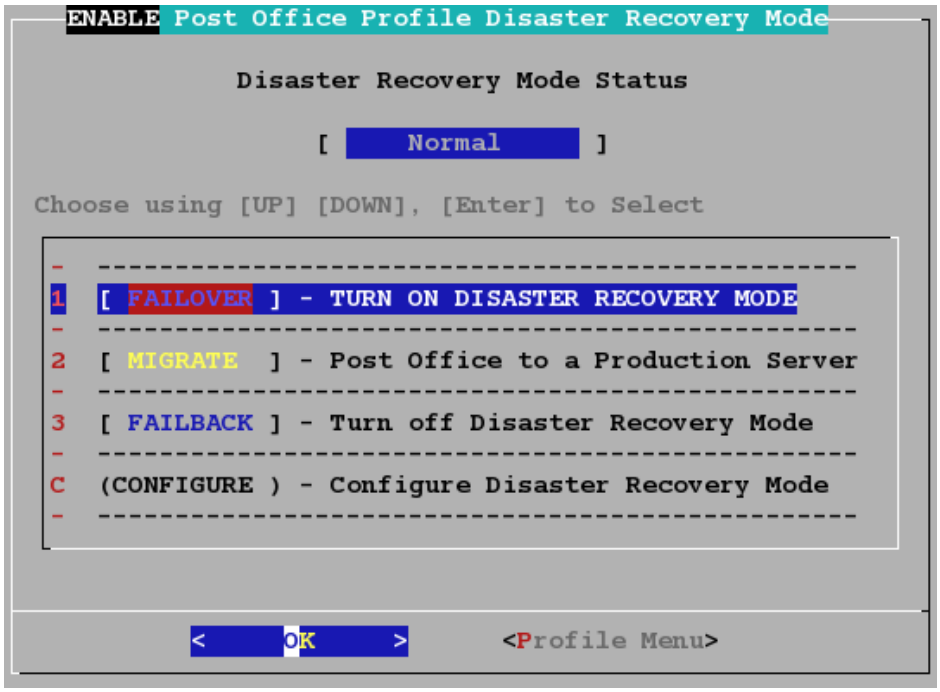
2. Run Reload Administration, either from an icon, or type in the command:

```
reload
```

3. Select Recovery (Disaster Recovery)

4. Choose the post office or domain profile that needs to be switched over to for disaster recovery purposes.

5. Choose the option for FAILOVER.



Reload Console Administration Method #2

1. Get a VNC, or SSH session, or go to the Reload server Console

2. Run Reload Administration, either from an icon, or type in the command:

```
reload
```

3. Select **Profiles** (Administer Profiles)

4. Choose the post office or domain profile that needs to be switched over to for disaster recovery purposes.

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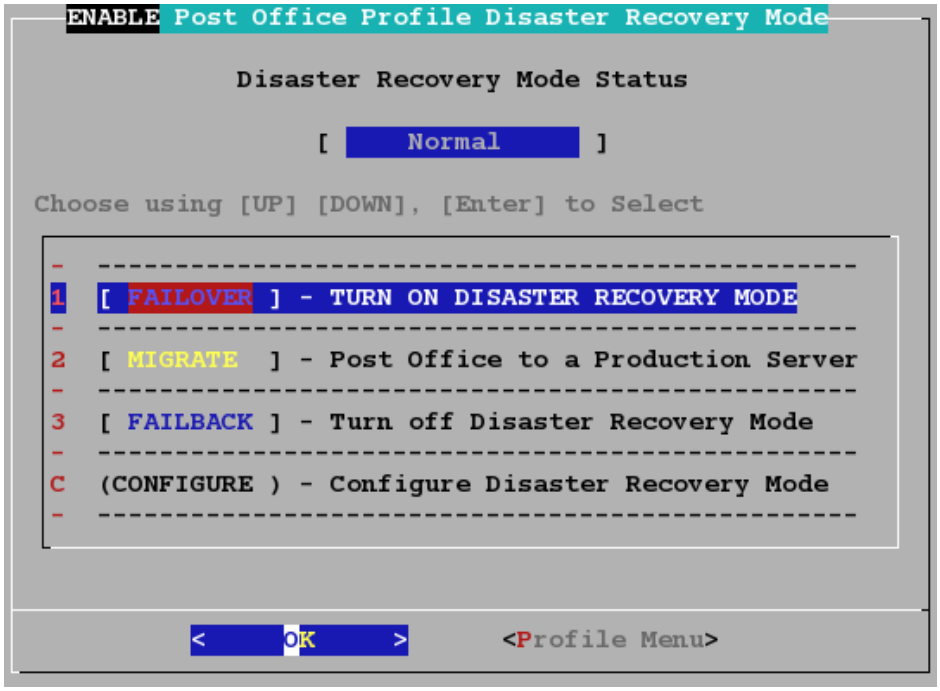
5. Choose the option for **Disaster-Recovery**.

6. Choose **Enable|Failover**



Configuring Disaster Recovery Actions

Reloads disaster recovery FAILOVER and FAILBACK capabilities are meant to be enabled with the push of a button. When the button is pushed, a handful of things can happen, and will happen by default.

By default a Reload profile has default actions that are taken when FAILOVER or FAILBACK are chosen. However, Reload also creates a framework for allowing the FAILBACK and FAILOVER actions to perform automated actions also. Generally in the case of a disaster recovery scenario you would do the following:

- Choose FAILOVER
- Rebuild a live server that will house the GroupWise post office or domain that is currently running on the Reload server
- Choose MIGRATE; to move the data from the Reload server back to a live server. Test the migrated data at the new location to ensure that it is working just fine

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- Choose FAILBACK

To Configure the steps taken during Failover, Select **Disaster-Recovery|Configure|Failover**.

Here you can define the actions that are taken with FAILOVER option enabled. By Default, the following actions are taken:

- The Profile is switched to FAILOVER mode
- All backup schedules for the profile are disabled, until FAILBACK is enabled
- All queued jobs for backups for the profile are removed
- The Disaster Mode agent (POA or MTA) for the profile is loaded
- Optional - A customized pre-load agent and post-load agent command can be executed

The idea behind the customized pre-load and post-load commands is that you can make a script that performs an action. For example, you could call a script that loads a GroupWise Internet Agent or perhaps a script that telnets to a DNS server and switches a DNS A record entry.

You may also modify the FAILBACK options.

Here are the Default actions that are taken with FAILBACK are enabled:

- The Profile is switched back to normal mode
- All backup schedules for the profile are re-enabled
- The Disaster Recovery Mode agent (POA or MTA) for the profile is un-loaded
- Optional - A customized pre-unload agent and post-unload agent command can be executed

The idea behind the customized pre-load and post-load commands is that you could make a script that performs an action. For example, you could call a script that unloads a GroupWise Internet Agent or perhaps a script that telnets to a DNS server and switches a DNS A record entry.

It is vitally important to test your setup and Disaster Recovery configuration before a Disaster occurs.

After configuring your system for Disaster Recovery, test the configuration and verify that all steps work as expected for your system.

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After you have successfully tested your system, verify and upload your Disaster Recovery Plan to the Web Administration.

Migrating Data Back to a Live Server

When you failover to a Reload server, the data on the Reload server will be updated with new data that you will want to have back on the Disaster Recovery GroupWise system. So once you have a live production server prepared to function as the live production post office or domain, you will need to get the data migrated from the Reload server, over to the live production server.

The Reload Migration Agent can help you to accomplish this. The Reload Migration Agent copies the live post office or domain that has been running on the Reload server, to the location that you specify.

To configure the actions of the Reload Migration Agent, use the MIGRATE option under Disaster Recovery, and simply follow the wizard for migrating. A post office migration can take a while, particularly for the contents of the OFFILES directory to replicate over. It is for this reason that the PRE-MIGRATION job type is in place. When migrating a GroupWise post office from the Reload server to a production server, make sure to run the PRE-MIGRATION first. When the PRE-MIGRATION job is running, your Reload server can still be hosting the post office. Then, when the PREMIGRATION is complete, you will want to bring down the Live Mode POA, and run the FULL-MIGRATION job.

Disaster Recovery and Internet Mail

Perhaps you want to make your Reload server a GWIA in the case of a disaster. This is feasible; however it is important that you design your system to allow for this to happen very smoothly. Please read the Novell Press Novell GroupWise 7 Administrator Solutions Guide. Then read Chapter 32 of this guide titled: "Creating a Highly Available GroupWise Internet Agent Solution". You should then consider creating a GroupWise secondary domain that will always be hosted on the Reload server. This secondary domain will host an auxiliary GroupWise Internet Agent that will most likely not be running. You can then configure the Reload Domain Database profile that is backing up the GroupWise domain that also hosts your GWIA regularly, to load the auxiliary GWIA. This can be done with the Customized Load Command functionality of the FAILOVER feature of a profile.

The reason you must use an auxiliary GWIA is because GroupWise gateways cannot be run from a location other than the location they are hard-configured to run at. So the next best thing is to use an auxiliary GWIA, in conjunction with the instructions in Chapter 32 "Creating a Highly Available GroupWise Internet Agent Solution" in the Novell Press Novell GroupWise 7 Administrator Solutions Guide.

Schedule

A Reload Domain Database profile Standard Backup job can generally happen any time of the day. It doesn't take long and generally does not require much bandwidth. If you would like to create more than one intra-day backup of a Reload domain profile, see the Job Creation utility section for details on how to fit the paradigm of multiple daily backups.

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Retention

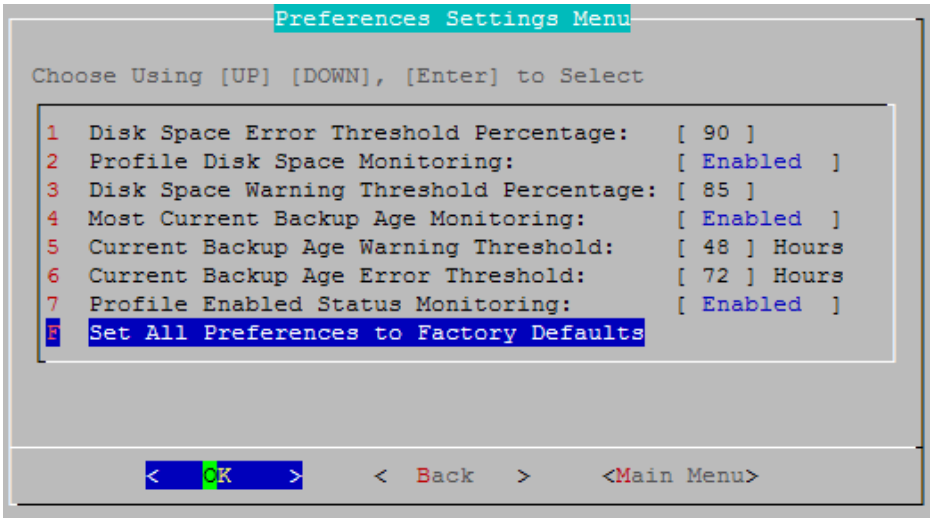
Each Domain Database backup uses approximately the size of the WPDOMAIN.DB from a GroupWise domain in disk space. Because of this, it is feasible to keep around several weeks' worth of backups of a Reload Domain Database backup.

Expire Action - Delete or Archive

Reload can be configured to either delete or archive data that has expired. The Archive feature requires that you specify a location for the Reload Agent to move the backup after it has expired. The idea being, that perhaps a NAS device or some other mass storage solution is in-place where the backed up GroupWise data can be moved to. Once Reload has archived a Domain Database backup, the Reload server no longer manages the backup. Most customers will not choose to use the Archive feature, but some may find it useful, if they have mass storage solutions in place and a need for backed up GroupWise data to be easily available.

Preferences

The Preference Settings Menu allows you to configure monitoring and the warning and error thresholds for this profile.



Error and Warning thresholds

Setting the error and warning thresholds will allow Reload to alert you via email, before a problem blocks Reload's normal system functions can develop. This setting allows Reload to monitor the disk space and backup age for your system in order to warn you if they exceed your specified amount. The monitoring for each warning and error threshold must be enabled for the threshold to take effect. **The warning and error thresholds allow Reload to be a 'set and forget' system which will contact you if there is a problem.** Status reports, warning, and error threshold messages all use Postfix to send email messages. **Postfix must be running and configured for you to receive warning messages from the Reload system.** Postfix is included in the standard Linux platform by default.

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The Disk Space Warning and Error thresholds are a percentage, and are tied to the amount of space left on your hard disk. They will warn you when your system starts running out of disk space.
The Current Backup Age Warning and Error thresholds will warn you when the latest backup in your system exceeds the listed age for each threshold. The variable is in hours. This may indicate a failure for a Profile's backup schedule, and the status should be checked. A disk space error will lead to a backup age error. When there is no longer enough space to complete a full backup, Reload will stop creating backups until space becomes available.

Configuring Tape Backups

Reload does not eliminate the need for offline (cold) backup solutions, such as tape backup solutions. Most organizations will still need to retain a tape backup system. However, Reload can prolong the life and enhance tape backup solutions in the following manner:

- Eliminates wear and tear on your tape backup systems, because most backed up data will be retrieved from the Reload server, and not tapes
- Reload can create a Tape Archive (*.tar) file which contains the entire contents of a Domain Database backup set within it.
- Reload can be configured to run a "Pre-TAR" command and a "Post-TAR" command. With this architecture in place, some customers have designed Reload to "push" the *.tar file that Reload creates to their backup server. In this section we will explain how to do this.

Schedule

When the Reload Domain Database backup runs, it runs the Tape Backup routine towards the end of the backup. There is no need to schedule a special time that the *.tar file will be created.

Create Tape Archive (TAR) Files

By configuring Reload to create *.tar files, the Reload Agent creates a *.tar file out of the Domain Database backups available for a particular Reload Profile. Creating the *.tar file does not eliminate the backup, the *.tar file is created in addition to the backup.

The *.tar file that gets created by the Reload Agent follows this naming convention:

<profile name>-<Domain Database Backup Directory Name>.tar

Example:

dom1-15-monaug28-2006.tar

Expire Old Tape Archive (TAR) Files

When Reload creates *.tar files at the path that you specify, you can have Reload delete the *.tar files that were created for the Reload profile previously. Here's what this does.

- Reload creates the *.tar file when the Reload Agent runs the tar routine
- The tape backup solution can be pointed at the location where Reload creates the *.tar file so that it can be backed up
- The next time the Reload Agent creates a *.tar file (generally this will be the next day), the Reload Agent will delete any files that following the naming convention of:

<profile name>-<Domain Database Backup Directory Name>.tar

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- The Number of Tape Archive Files to Retain setting does allow for Reload to allow a certain number of *.tar files to be retained, before it expires them. This design is in place particularly to help in scenarios where customers expect to be creating intra-day backups.

Specify Tape Archive (TAR) File Path

This is the location that the Reload server should put the *.tar file. The TAR File Path should be a path that is always available to the Reload server. However, if you combine the "Pre-TAR" and "Post-TAR" commands (explained a little later) to create a mount on the Reload Linux server to a different server, then Reload will effectively "push" the *.tar file to another server.

Configuring Advanced Tape Settings

The Reload Agent can execute the command called the "Pre-TAR" Command before it puts the *.tar file at the Tape Archive (TAR) File Path. The Reload Agent can also perform a "Post-TAR" command. When the Reload Agent executes the Pre-TAR command that you specify, the following happens:

- The Reload Agent creates the *.tar file from the existing daily backups that have not been put into a TAR file yet.
- The Reload Agent sends the Pre-TAR command to the background to be executed by the Linux operating system.
- The Reload Agent does not check to see the status of the command, but it does wait for the amount of seconds specified by the **Customized Pre-TAR Command Wait Time**.
- The Reload Agent copies the *.tar file that it created previously, to the TAR File Path.
- If a Post-TAR Command is specified then the Reload Agent does the following:
    - The Reload Agent sends the Post-TAR the command to the background to be executed by the Linux operating system.
    - The Reload Agent does not check to see the status of the command, but it does wait for the amount of seconds specified by **Customized Post-TAR Command Wait Time**.

Configuring the Reload Agent to "Push" a *.tar File to Another Server

Because of the ability to specify a Pre-TAR and a Post-TAR command, you can effectively get the Reload Agent to "push" the *.tar file that it creates to a different server. Some customers have done this. Here's an explanation of how it is done. Goal: Get the Reload server to push the *.tar file to a Windows server that is running Veritas.

1. Create a directory that will be mounted to the Windows server with a CIFS mount.

For example: **/data/tape**

2. Create a BASH shell script to mount the /data/tape directory to a Windows share created on the Windows server running Veritas. For more guidance on making a Windows share, you can read the section titled "Creating a Reload Profile for a GroupWise Post Office or Domain on a Windows Server" in Chapter 4.

Reload ships with a great little (un-supported) CIFS mount BASH shell script. You may consider using this script. The name of the file is cifsmnt.sh and it is located in the directory: /opt/beginfinte/reload/setup

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Run the **cifsmnt.sh** script from within a terminal session, and read the instructions of this utility for more guidance on using this script.

3. In the Pre-TAR Command, specify the command that performs the CIFS mount.
4. Specify a time that the Reload Agent should pause to allow the Pre-TAR command to complete. Generally the default of 10 seconds is sufficient.
5. In the Post-TAR Command, specify the command that performs the dismount of the CIFS mount created with the Pre-TAR command.
6. Specify a time that the Reload Agent should pause to allow the Post-TAR command to complete. Generally the default of 10 seconds is sufficient.

Customize
The customize feature allows for a custom action that the Reload server will perform in the event of the following three states of a Job.

- Job Start
- Job Error
- Job End

You could for example, have a script process send an e-mail if a Standard Backup job errors. Reload ships with a script called **"mailer.sh".** Because this is a script, and can be modified, the script is not a supported component of Reload. However you could consider using this script to generate an e-mail. The script is located in the directory:

/opt/beginfinite/reload/setup
If you were to reference the mailer script in as the Customized Job Error Command, the syntax you would use would most likely be:

```
cd /opt/beginfinite/reload/setup
./mailer.sh –c mailer.conf
```

To learn more about the mailer script, run it once, to see the syntax and usage for this script. To run the script, do the following. In a terminal session, go to the directory where the script is located, and run it. Example:

```
cd /opt/beginfinite/reload/setup
./mailer.sh
```

Jobs

The Jobs menu allows you to create an unscheduled backup job for the domain profile.

Logs

The Logs menu allows you to view either the rolling tail of this profile's agent or event logs, or the full logs, (static). This menu also allows you to set the log preferences for this profile.

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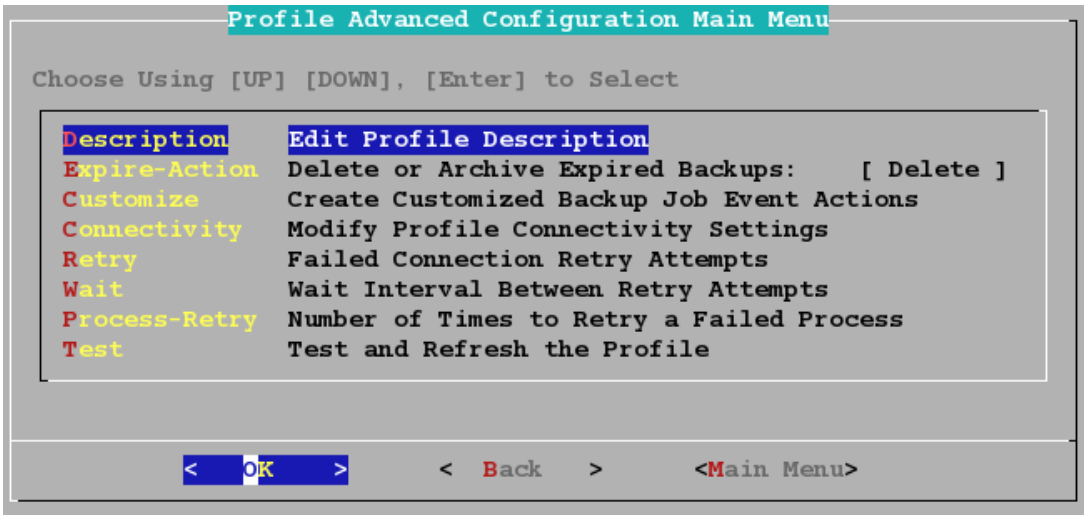
Customize - Job Event Actions

The Reload Agent can execute the commands called the “Job Start” Command before it puts the Domain Database backup to be archived at the Archive Path. The Reload Agent can also perform “Job Stop” and “Job Error” commands. All these commands can be specified here.

Advanced Reload Domain Database Profile Configuration

The Profile Advanced Configuration menu, shown below, is available by selecting the following from the Main Menu:

- **Profiles** (Modify Profiles)
- **Choose** the Reload Profile
- **Choose Advanced** (Advanced Profile Configuration Menu)



Expire Action - Delete or Archive

Reload can be configured to either delete or archive data that has expired. The Archive feature requires that you specify a location for the Reload Agent to move the data to after it has expired. The idea being, that perhaps a NAS device or some other mass storage solution is in-place where the backed up GroupWise data can be moved to. Once Reload has "Archived" a Backup, the Reload server no longer manages the data. Most customers will not choose to use the "Archive" feature. Some may find it useful, if they have mass storage solutions in place and a need for backed up GroupWise data to be easily available.

Configuring Archive Settings

The Archive Settings menu is only accessible, if the Expire-Action is set to "Archive". If you would like the Archive to be immediately useable by Reload make sure that the location where you put the Archived data fulfills the following requirements:

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- The Archive location should support a Linux/Unix system file system that supports Symbolic Links

Specify Archive Path

This is the location that the Reload server should put the archived backups. The Archive Path should be a path that is available to the Reload server. If you combine the "Pre-ARCHIVE" and "Post-ARCHIVE" commands (explained a little later) to create a mount to a different server, then Reload can "push" the backup to the new server location.

Customize

The customize feature allows for a custom action that the Reload server will perform in the event of the following three states of a Job.

- Job Start
- Job Error
- Job End

You could for example, have a script process send an e-mail if a backup job errors. Reload ships with a script called "mailer.sh". Because this is a script, and can be modified, the script is not a supported component of Reload. However you could consider using this script to generate an e-mail. The script is located in the directory: /opt/beginfinite/reload/setup

If you were to reference the mailer script in as the Customized Job Error Command, the syntax you would use would most likely be:

```
/opt/beginfinite/reload/setup/mailer.sh -c /opt/beginfinite/reload/setup/mailer.conf
```

To learn more about the mailer script, run it once, to see the syntax and usage for this script. To run the script, do the following. In a terminal session, go to the directory where the script is located, and run it. Example:

```
cd /opt/beginfinite/reload/setup
```

```
./mailer.sh
```

Connectivity

The Connectivity settings option re-runs the connection settings wizard that is first filled out when the Profile is first created. This allows the administrator to change the settings if the environment of the Profile's target Post Office changes. Once you modify a Profile's Connectivity Settings the Reload Profile needs to be tested and initialized again in order for the Profile to be active.

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Working with a Reload Profile for a GroupWise Domain That Has Moved to Another Server Platform

If a GroupWise domain has moved to a server that is on a different operating system or platform, the profile's connectivity settings must be edited. Change the connectivity settings to reflect the new platform and proceed through the prompts of the Connectivity Settings wizard. Make sure to test the profile, because when you change the Connectivity Settings of a profile, it is automatically disabled until such time the testing process has verified the changes that you have made.

Configuring the Reload Agent for Failed Connectivity

When the Reload Agent attempts to get a connection to the server that hosts the GroupWise domain, it can retry in its attempts if at first it fails. Use the **Retry** and **Wait** settings to configure the Reload Agent's behavior when connectivity cannot be established or re-established immediately.

Retry

When the Reload Agent runs a Standard Backup, it has several sub-processes that run in order to obtain the data for a Standard Backup. If any one of the processes fails, a "Process Retry" counter increments. By default, if the Process Retry counter increments beyond 5, then the backup job is aborted. The value of this is that if a Reload server is backing up other Reload Profiles, it will not be consumed for a day trying to get the backup for a Profile that may be having problems. The factory default of 5 is a good Process Retry number, it can be lowered or increased, but it is not recommended that you lower the value below 2.

Testing a Profile

Testing a Profile kicks off the Test and Initialize utility. If a Reload Profile is tested, and fails to pass the testing process, the only way to modify the profile to correct the reason for the testing failure, is to go back to the "Create" menu from the Reload Administration Main Menu.

Upgrading Reload Software

Reload is being actively developed. Reload is being continuously improved, and tightly integrated with changes made to GroupWise. It is important to keep your Reload software upgraded. There are four different ways to upgrade Reload. This chapter explains all four ways to upgrade Reload. The Reload Upgrade Tool cannot be run more than every 10 minutes. So if you attempt to upgrade Reload, you must wait another 30 minutes in order to make another upgrade attempt. If you do attempt to upgrade within the 30 minute window the Reload Upgrade tool notifies you via its log how many more minutes you must wait until you can attempt an upgrade.

The Reload Upgrade Tool requires that the Reload Server have HTTP access to the Internet. If the Reload Server does not have HTTP access to the Internet it will write to its log file that is unable to access the Internet. The Reload Upgrade Tool keeps a log called: **upgrade.log**. This log file is located in the following path

/opt/beginfinite/reload/logs

The **upgrade.log** records the events associated with the upgrade of the Reload Software Package. The **upgrade.log** file is viewable from within Reload Administration within the Upgrade Menu. The **upgrade.log** file is self-pruned by the Reload Upgrade Tool, and will not grow too large.

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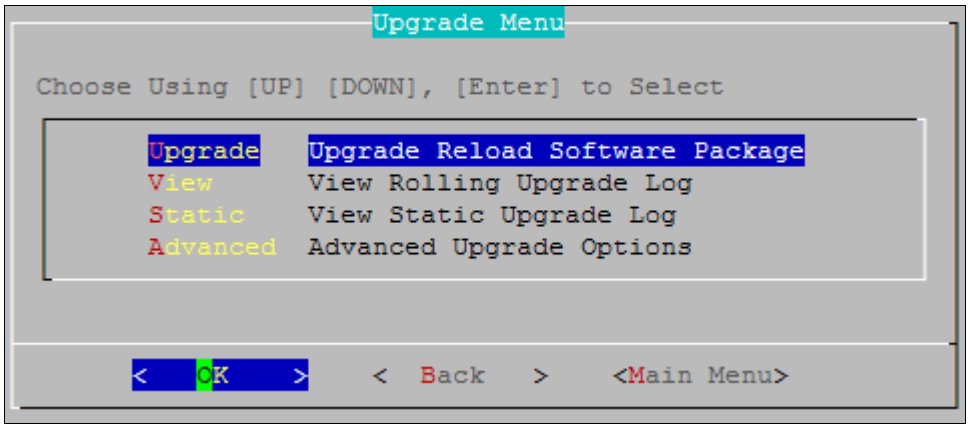
Upgrading Reload Through Reload Administration

To access the Upgrade Menu within Reload Administration, select: **System | Tools | Upgrade**



1. When you select **Upgrade** the Reload Upgrade Tool checks to see if a newer version of Reload is available. If a newer version is available, the Reload Upgrade Tool will install the newest shipping version of Reload.
2. From the Advanced Upgrade Options menu you can upgrade Reload to the latest Field Test Code. You can also choose to roll back off of the latest Field Test Code and revert to the latest Shipping Code for Reload.

Upgrading Reload from a Command Line Session

The Reload Upgrade Tool can be run within a Terminal Session outside of Reload Administration.

To do so just open up a terminal session, or an SSH session to the Reload server and type in the following command:

```
reloadu
```

The Reload Upgrade Tool has some additional switches that it supports. For example to instruct the Reload Upgrade Tool to download the latest Field Test Code (if there is any) then type in the command:

```
reloadu –f
```

Or if you want to override the Reload Upgrade Tool's version control logic, you can use the command:

```
reloadu –o
```

If you have upgraded to the latest Field Test Code, and you want to roll back to the latest Shipping Code, then you can type in the command:

```
reloadu –r
```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Upgrading Reload from the Reload Web Administration

See the Administration Upgrading Section.

Upgrading Reload Automatically

You may want to have the Reload Upgrade Tool run automatically, via a "cron" job on the Reload server. To do so, you should add an entry to the **crontab** file on the Reload server. Here are example steps for having the Reload Upgrade Tool run on the Reload server every week on Wednesday at 1:00 A.M.
Edit the **/etc/crontab** file in text editor. For example the Kwrite, gedit or vi editors. We'll use Kwrite in this example:

```
kwrite /etc/crontab &
```

Add the following text on its own line in the **crontab** file:

00 1 * * 3 root /usr/sbin/reloadu

Save the **crontab** file.
For additional help on modifying a crontab file, consider searching for "linux crontab" at http://www.google.com.

Uninstalling and Re-installing Reload With the Reload Upgrade Tool

By uninstalling the Reload Software Package, and re-installing it you can get a newly install Reload code set in case you suspect that the Reload software is corrupt.

Uninstalling Reload does not delete any configuration data, profiles, or profile backups.
If you wanted to uninstall the Reload Software Package, and then re-install it, here are the steps for doing so:

1. **Open** up a terminal session on the Reload server, or an SSH session to the Reload server
2. **Run** the Reload Uninstall utility in the following manner: **/opt/beginfinite/reload/uninstall**
3. **Follow** the prompt to uninstall Reload.
4. **Type** in the command: **reloadu**
5. This will download and install the Reload Software Package from the Internet

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Reload Web Administration

Reload Web Administration is designed for everyday use. Reload's Console Administration provides full functionality and access to the full modification of profiles, data locations, and backup schedules. These should remain consistent for your system. Reload Web Administration does not allow profile creation.

Web Administration does provide a graphical display that combines all pertinent information at a glance to provide ease of use for monitoring and daily administrative tasks without the danger of inadvertent changes to the critical backup infrastructure.

Every icon and clickable item in the Web Administration has a tool-tip explanation which will give you information on the function of the item or what the icon represents.

Reload Web Administration can be accessed through any browser with the following address:

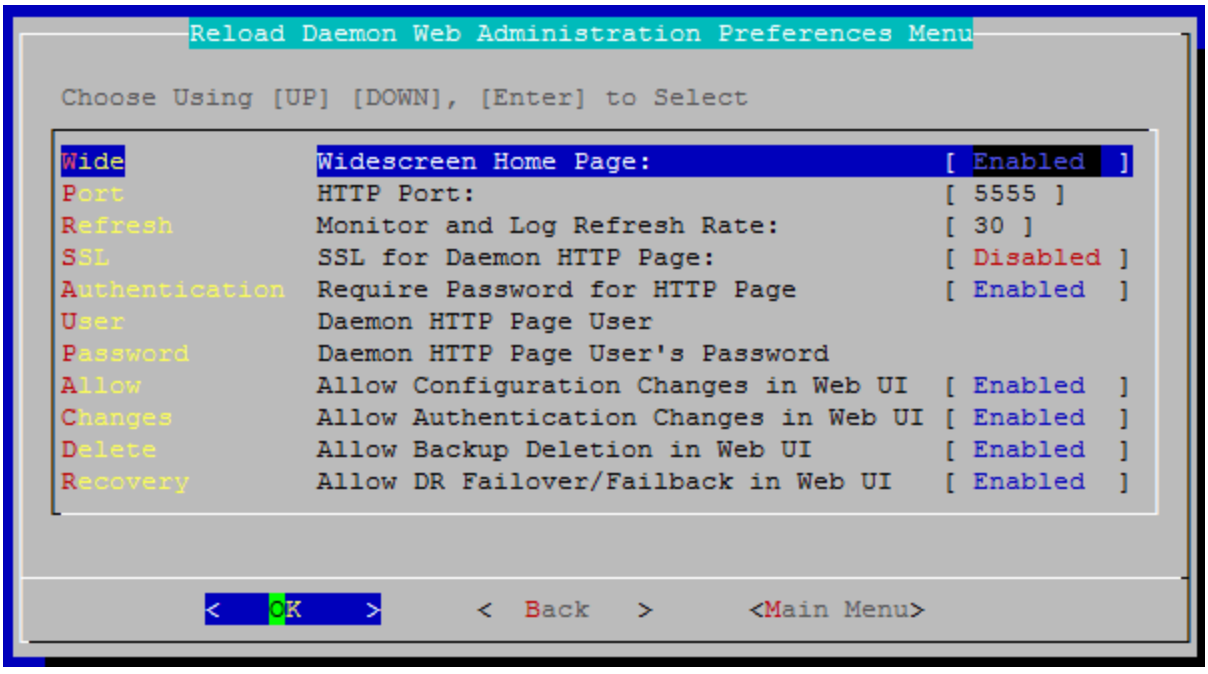
http://<Reload_server_ip_or_DNS>:5555

Unless you have enabled SSL, which would change the address to:

https://<Reload_server_ip_or_DNS>:5555

Much of the functions of the Web Administration can also be modified through Reload Console Administration. In Reload Console Administration, select **System | Web.**

This menu allows you to modify the general preferences, port, refresh rate (in seconds), SSL, authentication and whether to lockdown changes in the Web Administration or not.



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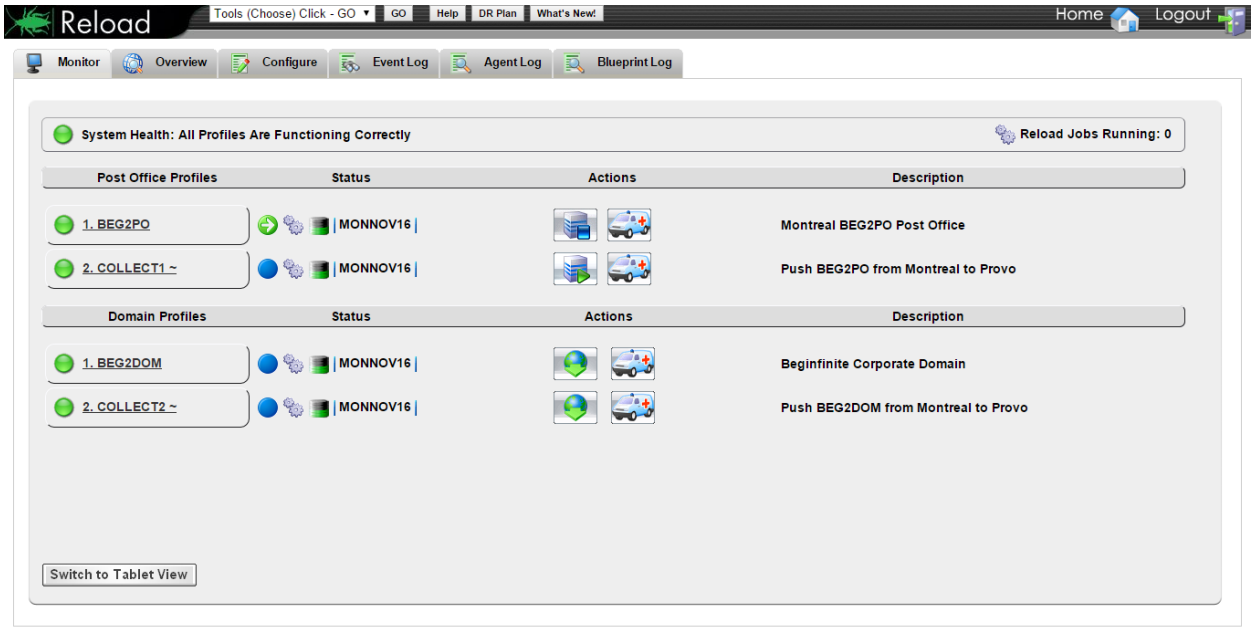
When you first connect, unless you have modified it, you will see the default homepage, the monitor page for your Reload system.

Monitor



The above window shows a small Reload system with two post offices and two domain profiles active. If you have not yet created a domain or post office profiles, then this screen will have no profiles listed. To create a profile, you must use Reload Console Administration.

The initial screen displays the status of your Reload Post Office and Domain profiles, if there are any running jobs, and provide links to each particular profile or system for you to view the details.

Disaster Recovery Plan – this download link to the disaster recovery plan document. This should be created by the system administrator for future reference. On default, the document is a placeholder document which details what a disaster plan should contain. To edit the download link, see the configure tab, administration section.

Jobs Running – This shows how many jobs are running currently.

System Health – The system health shows the overall health of your system. The Green light shows no problems. Yellow, Red, or blue lights indicate a system that requires attention or has an error. Click on the combined status indicator to send the current status report to the status recipient.

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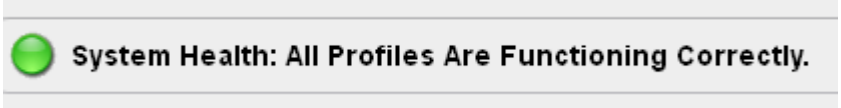
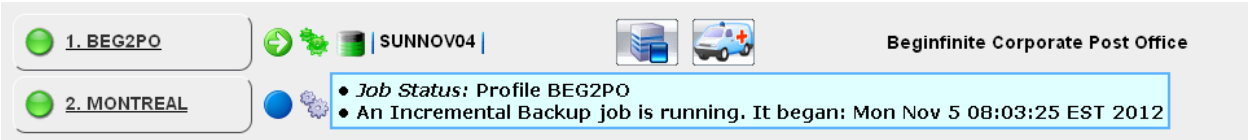


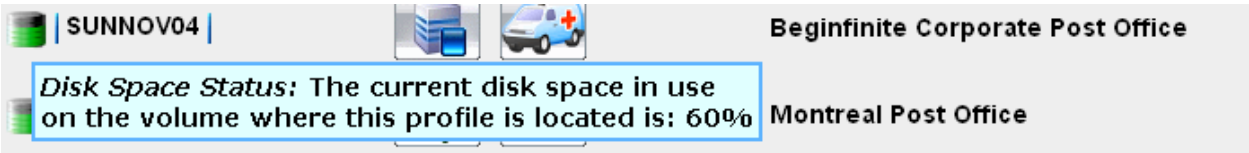
Post Office profile (1. BEG2PO in the picture): All post office profiles are listed here, along with their status and possible actions. Selecting the Profile name opens the page for that Profile.

Status – like with the system health status, this indicator shows the overall status of this specific profile. A simple hover with the mouse will tell you details about the status.

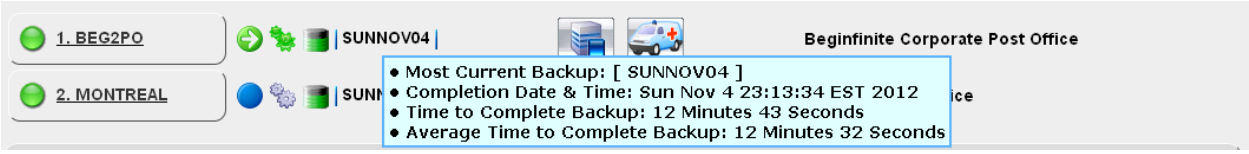
Running Job – if a job is running in your system, one of your profiles will be involved. The gears next to the profile status will indicate if a job is running. Animated green gears indicate a running job. Gray static gears indicate no job running.



Disk Usage – One of the most important bits of information on the profile is the current disk usage. This is most often overlooked, and is vitally important for your Reload system. The current disk usage is the total amount of used and free space for the hard drive resources in the Reload Server. If the free space is used-up, Reload will be unable to create rolling backups. Hover over the icon with your mouse to be shown the percentage of disk usage.



Most Current Backup – This lists the name of the most current backup for the profile.



Backup Access – This button is a toggle button. If a backup is loaded, the button unloads the backup. If the backup is unloaded, the button loads the most current backup.

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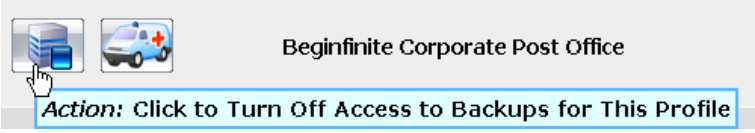
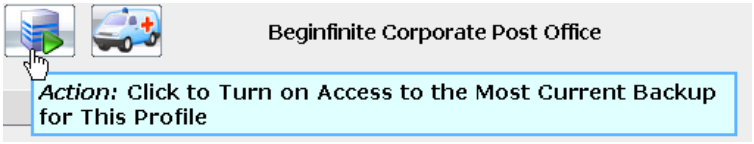
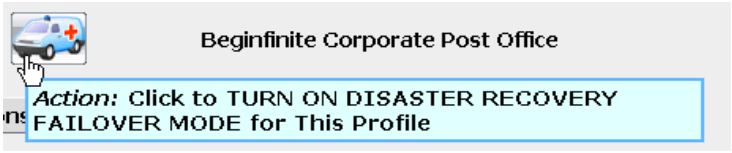
Unload a Backup



Load the Most Current Backup

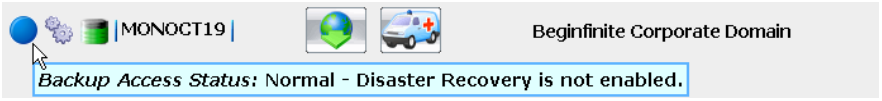


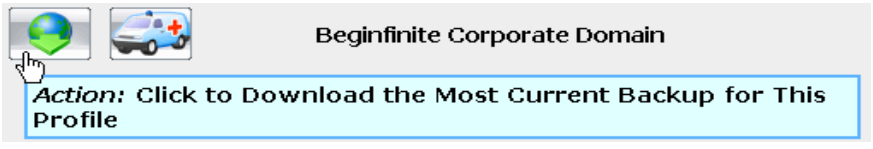
***Disaster Recovery* –** With one click you can initiate Turn On or Off Disaster Recovery Failover. This button is a toggle button, so it turns off or on Disaster Recovery.



Domain Profile (1. BEG2DOM in the picture):

The only difference in the interface between Post Office profiles and Domain profiles is the access to the backup. Since mail is not stored in the Domain, the entire domain is allowed to be downloaded. This is the actual domain database file, zipped, for download from this link.





The **Navigation Window/Widescreen Window** buttons add or remove the navigation panel on the left-hand side of the browser.

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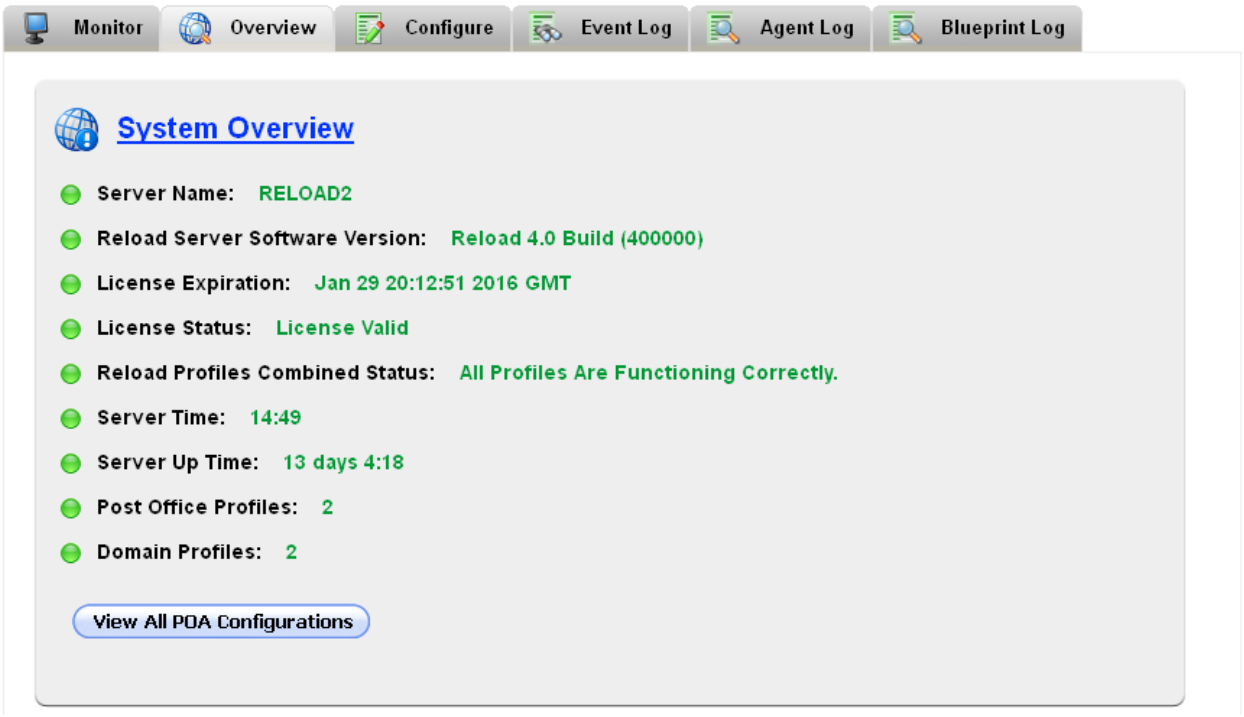
Overview

The overview tab provides information on the settings and installed software for your Reload server.

If the System Overview or the Software Installation Overview sections are not expanded, clicking on the name will expand or collapse the section for viewing. The Overview tab is very useful for viewing when checking for the versions of software are installed and active in the system.



This section is an information display only, with no menus or actions available.

Configure

The Configure tab allows you to edit system-level Reload settings and the look and feel of Web Administration. Each section can collapse or expand, and carries its own specific options. They are explained below.

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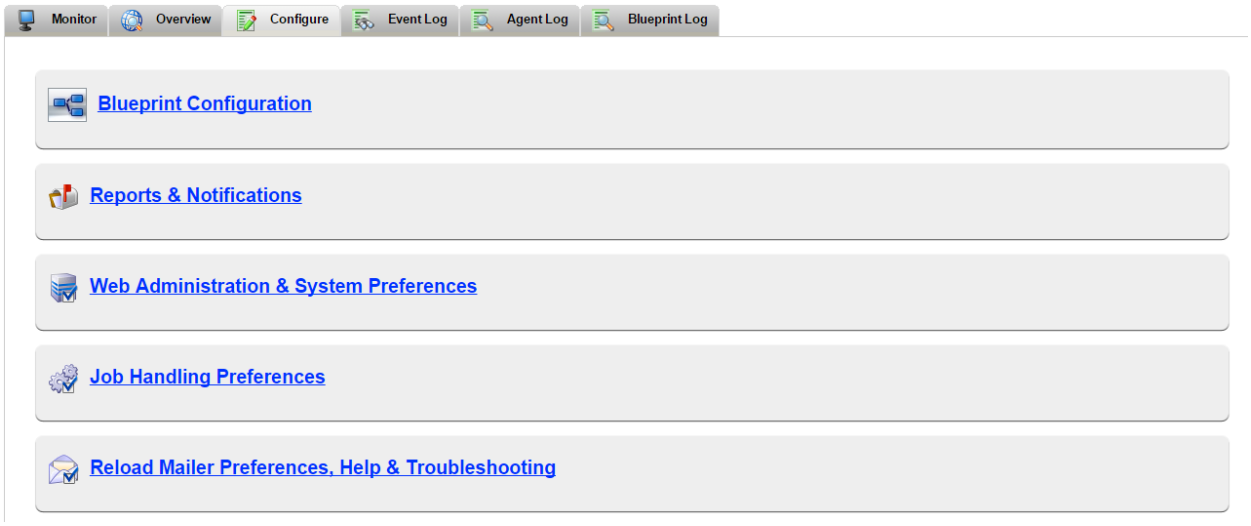

Blueprint Configuration

The Blueprint Configuration section will only show up if you have GWAVA Blueprint for Reload installed. Blueprint is a GroupWise analysis system that does post office and mailbox analysis like no other solution ever created for GroupWise. What is particularly unique is that Blueprint installs right to the Reload server. Blueprint does not need to access the live GroupWise system to create it's multiple reports. Blueprint helps GroupWise customers make much better business and technical decisions with regards to their GroupWise system.

Reload Web Administration Preferences

Web Administration allows you to modify how Web Administration acts and is displayed. Most settings are self-explanatory, though some do deserve note.

If you enable web administration authentication, the browser will require you to login to monitor the system. You may use the system monitor page without logging in to allow monitoring with no timeout while still requiring authentication.

The Disaster Recovery Plan document URL is the document that is linked to the green Disaster Recovery Plan button always at the top of Web Administration. This is simply a document for download which details what to do in the event of a 'disaster' such as a data loss, disk failure, or system unavailability. The placeholder is located at /opt/beginfinite/reload/web/custom/drplan/drplan.pdf. Place your customized plan in the same directory on the Reload server, and change the name, or replace the current drplan.pdf. You may use any file format you desire.

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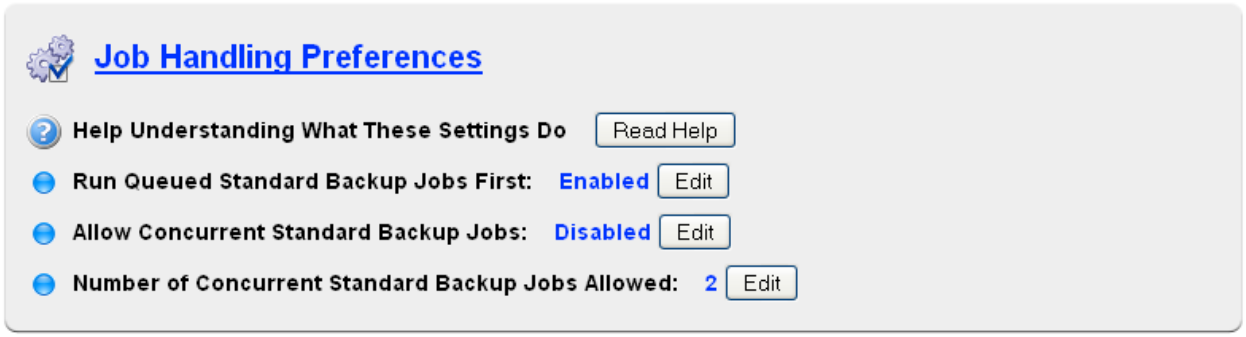
Job Handling Preferences

Job Handling allows you to specify if the Reload server is allowed to run more than one job simultaneously. This can improve performance only when the Reload Server and the host network have unused resource potential during a currently running Reload job. Running more than one job simultaneously may adversely affect performance on all but high-end systems and networks. Jobs will only run concurrently if the scheduled start times overlap any other running job. You may specify how many simultaneous jobs will be allowed and enable or disable the feature. The Run Queued Standard Backup Jobs First feature gives priority to Standard Backup Jobs prior to Weekly Maintenance or Tape Backup Jobs. This feature is enabled by default.



Reload Mailer Preferences, Help & Troubleshooting

The Reload Mailer uses Postfix to send mail. Postfix must be running and configured for notifications to work correctly. This information is located under the 'Read Help' buttons.

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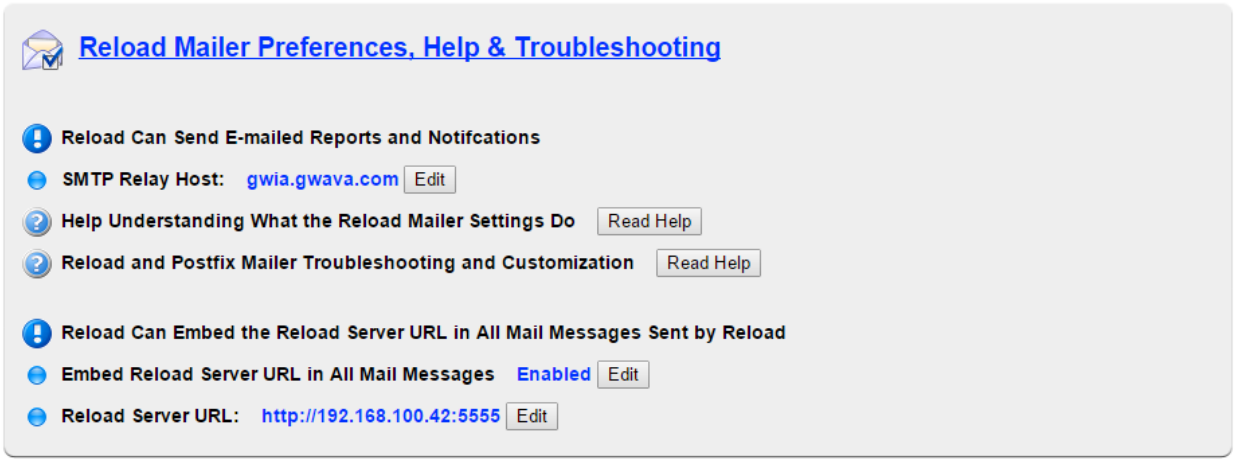
Under this section, you may embed and configure a direct link to the Reload server web page in every notification message sent by the Reload server. For example, if you wish to put a link to the Profile Monitor page in the email, your link would look similar to this:

://192.168.0.101:5555

Except your Reload server IP address or host name would be referenced.

The rest of the notifications are configured in the next few sections.



Reports & Notifications

Daily Status Report

Reload can send a daily status report at the given time and on the given schedule to the recipient of your choice. You can send the status report to any recipient and may also send to a CC recipient. Specify them here.

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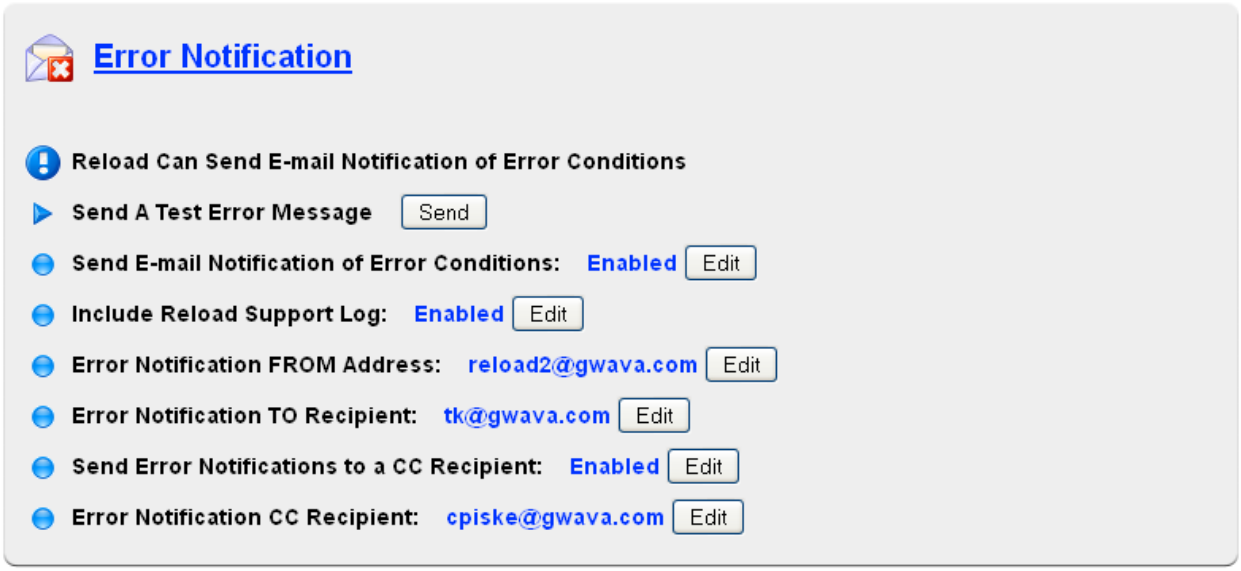
Error Notification

Error notification sends a warning notification when errors occur in the system. With the error notification enabled, a warning message will be sent to the address specified in the settings. Notifications are sent on the following events:

- Failed job
- Disk space threshold exceeded
- A Profile becomes disabled
- The latest backup for a profile is too old and exceeds the age threshold

Error thresholds are configured under each profile's preferences menu.



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Warning Notification

The warning notification works the same as the error notification, and for the same events, but is set to a different threshold, the warning threshold, set in Reload Administration under each profile's preferences menu.

Job Completion Notification

Reload can send a notification after each job is completed. The completion notification works the same way as the previous notifications, but is triggered when a job is completed.

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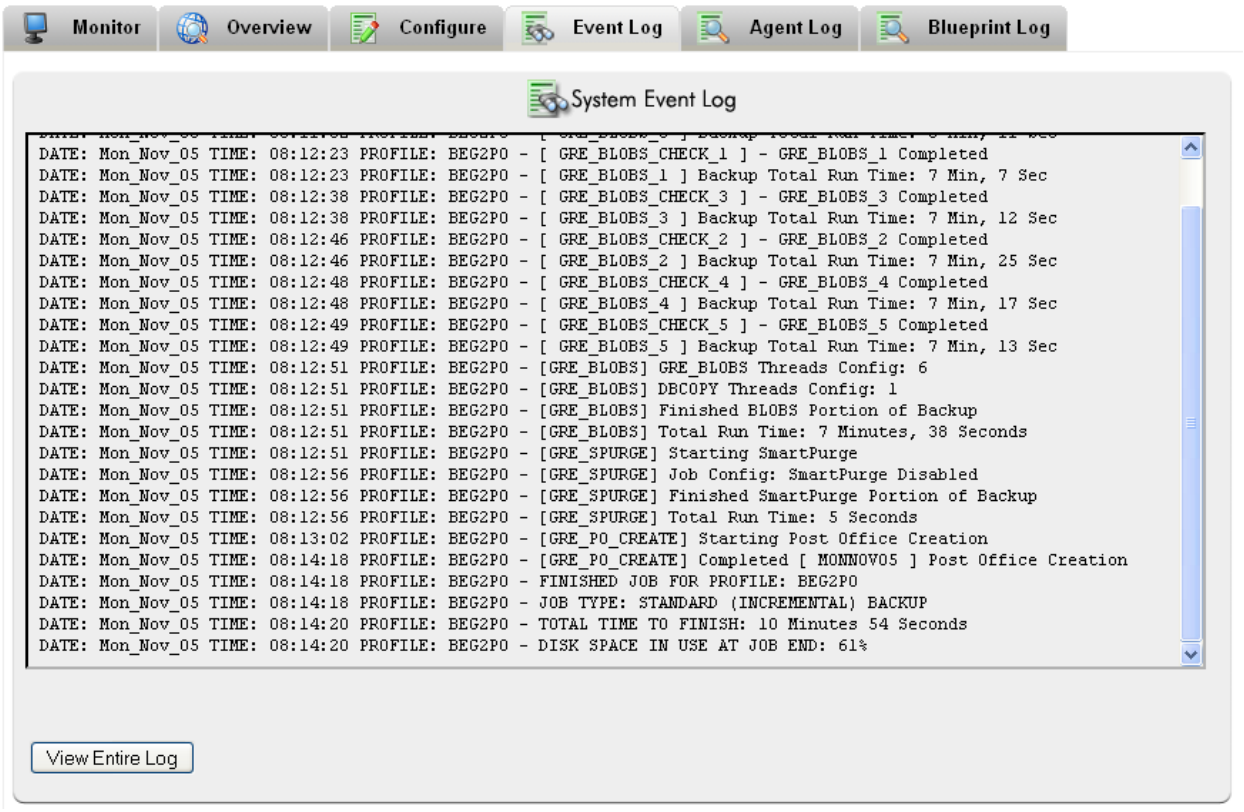
Event Log

The system event log contains all information on the Reload system actions. It is displayed here for convenience. The display here has a rolling cache that refreshed with the latest information. To view the entire log from this location, select the 'View Entire Log' button at the bottom of the screen. When selected, the entire log will be opened in a separate window or tab of your browser.



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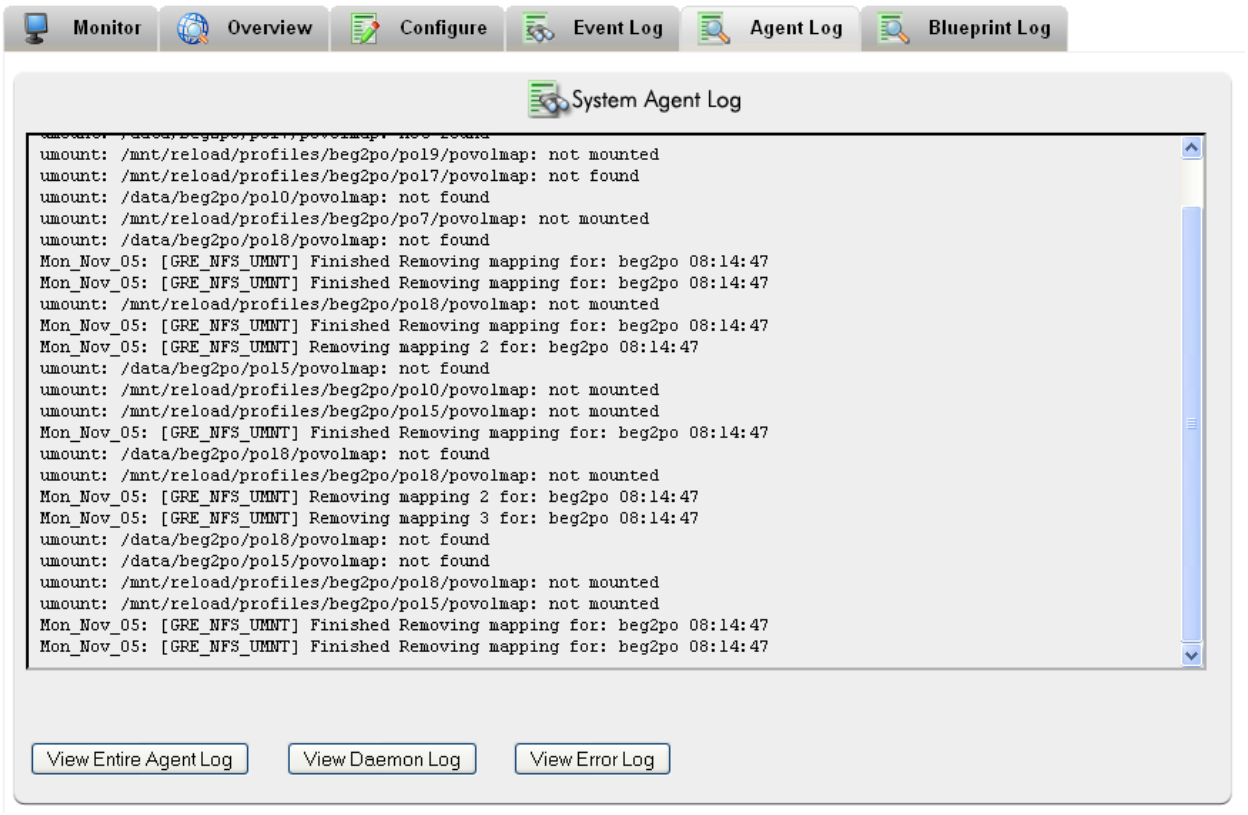
Agent Logs

The agent log records all the actions of the Reload agent. The agent logs tab displays a rolling cache of the Reload system agent log, which refreshes to show the latest information at the end of the log. If you wish to see the entire log, select the 'View Entire Log' button at the bottom of the window. When selected, the entire Agent Log is opened in a new window or tab of your browser.



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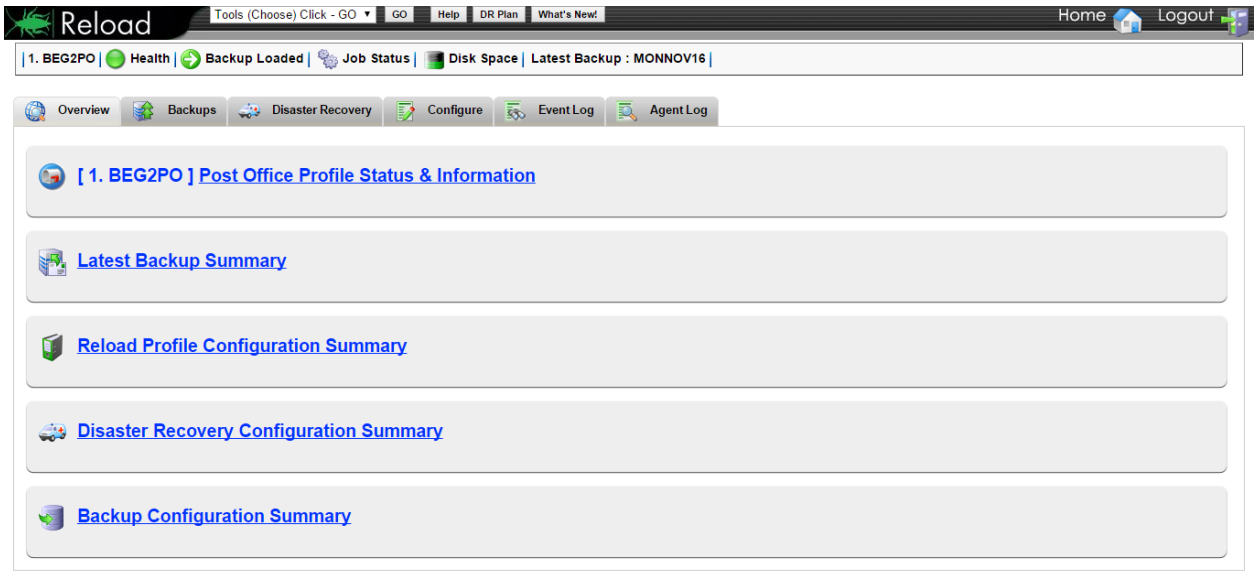
Profile page

To enter the profile page, you may either select the desired profile from the home page, or from the tree on the left when “Switch to Tablet View” has been selected. The two types of profiles, post office and domain, both have very similar pages. The difference is in the access to the backups. Domain profiles allow access to backups as a downloadable zipped file of the actual domain database, where the Post Office access to backups allows a post office agent to connect to the backup of the database to retrieve requested items for a Group Wise Client.

Some very advanced settings for a profile are completed through the Reload Console Administration.

The profile page for a post office profile, shown below, provides detailed information about the individual profile not found on the status home page. The different tabs are explained.



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Overview

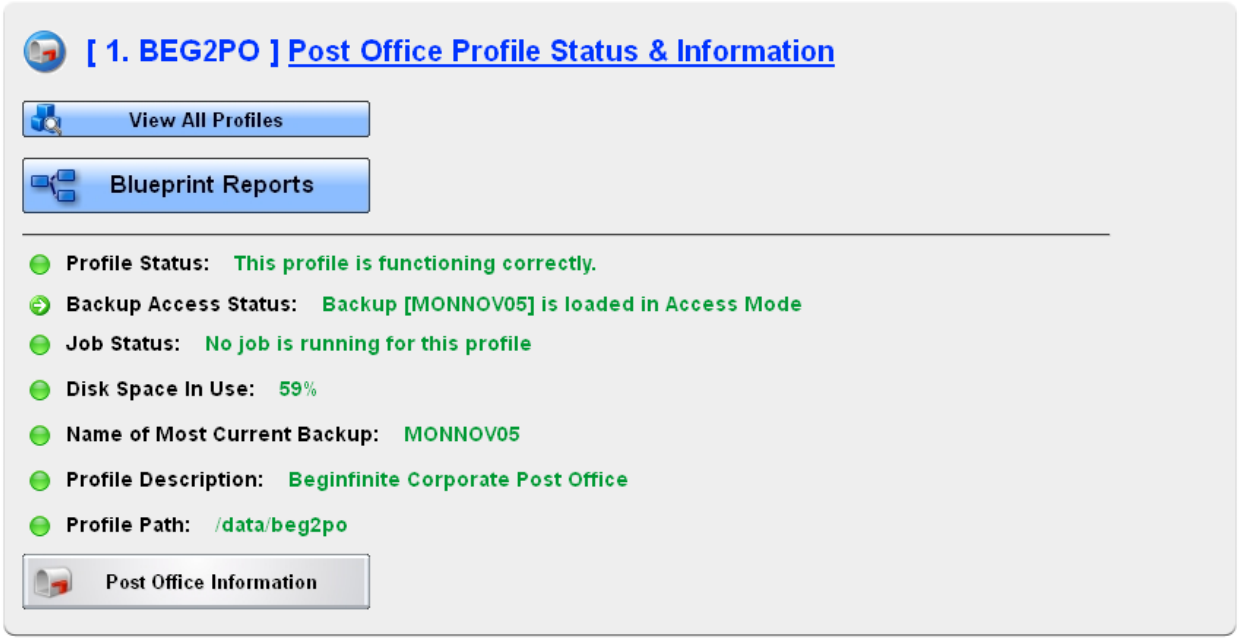
The Overview page holds seven items:

- Profile Information
- Latest Backup Status Information
- Reload Profile Configuration Summary
- Disaster Recovery Configuration Summary
- Hot Backup Configuration Summary
- Preferences Configuration Summary
- Start a backup Job.

Of all the items on the Overview page, the only item with links to a system action is the last, start a backup job, which allows you to initiate a backup job for this specific profile.

Profile Information

Basic information about the functioning status of the profile is listed here.



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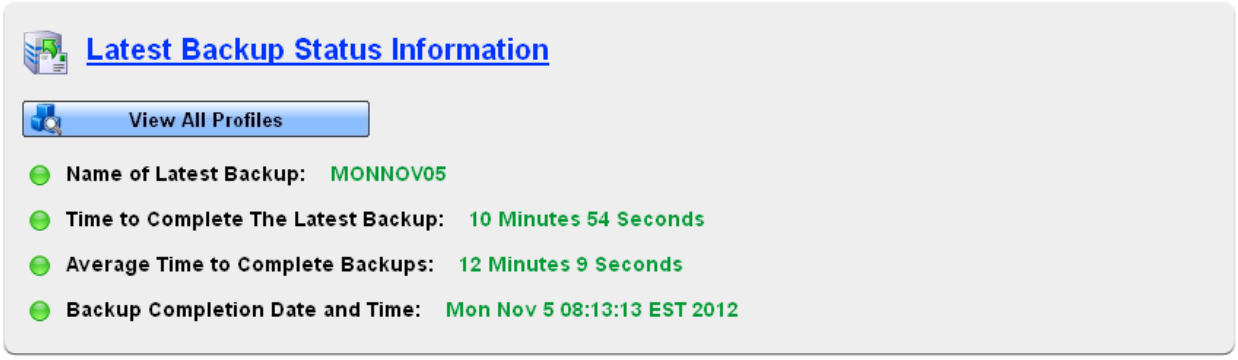
Job Control

This panel allows for starting and stopping Reload and Blueprint jobs (if Blueprint is installed). Queued jobs for a profile can also be removed. The Domain does not have SmartPurge as the Domain does not actively contain mail. Only the option to initiate a standard backup job is available for the Domain Profile.

Latest Backup Status Information

This item provides useful information about the performance of your Reload system, and helps keep track of the latest backup of a post office or Domain Database.



Reload Profile Configuration Summary

The Profile Configuration Summary shows which backup solution is currently configured for use with this profile. The six different backup options are listed, along with their active status.

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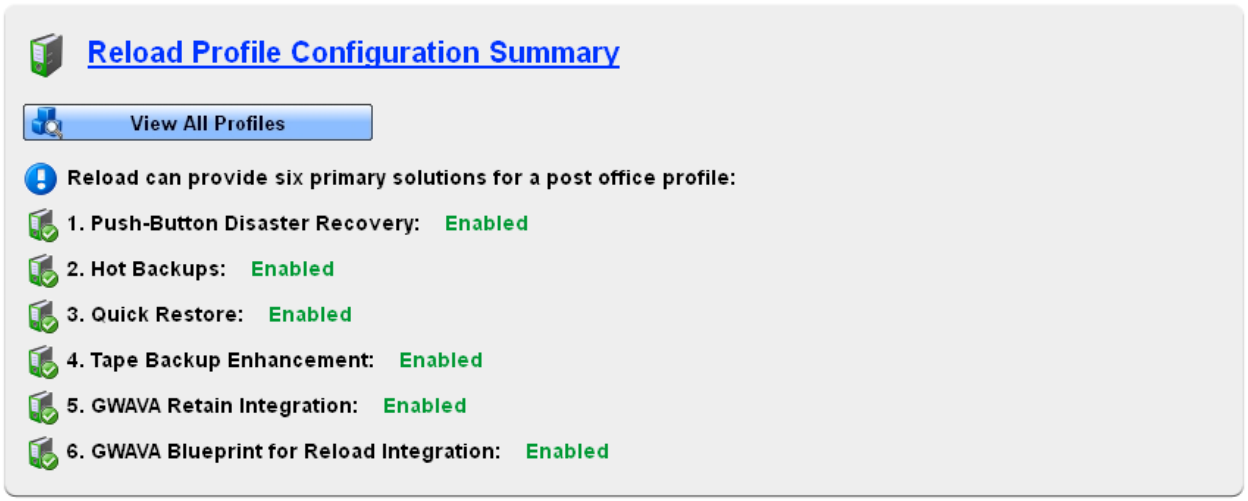

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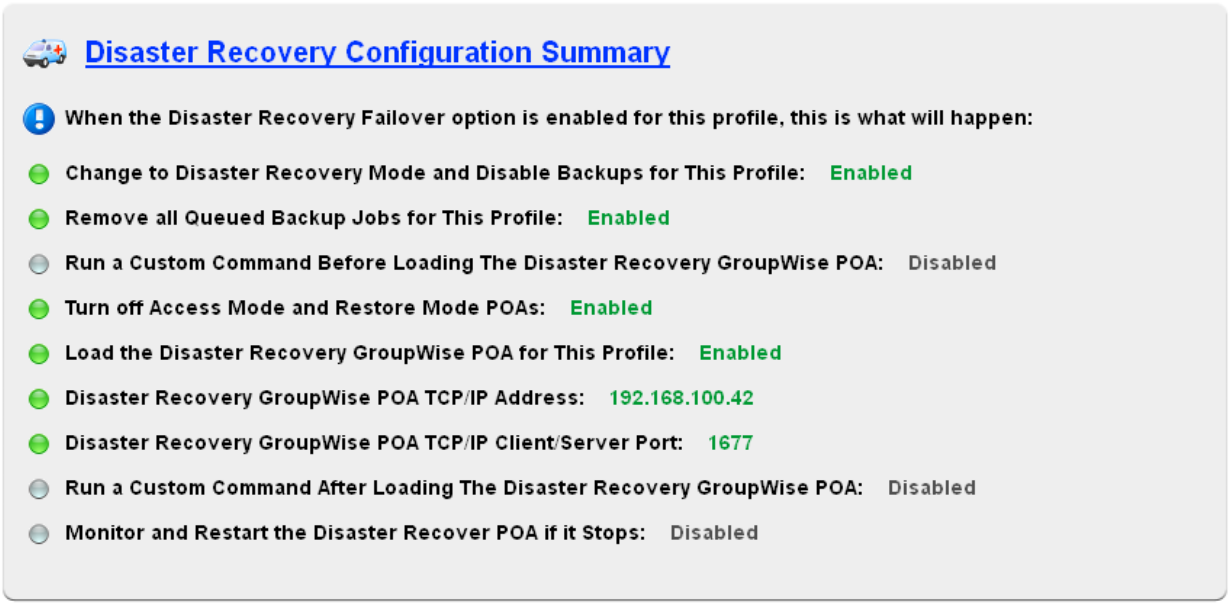
Disaster Recovery Configuration Summary

Other than actually creating backups, disaster recovery is the most important section and function of Reload. This item displays the status of your disaster recovery configuration. The disaster recovery testing item will be removed from the list when you have activated a failover, at least once, for this profile.



All pertinent options for the automated disaster recovery are listed here. Ensure that this section shows all settings as you desire them before testing your disaster recovery plan. Test to make sure that there are no port or IP address conflicts in your system or network.

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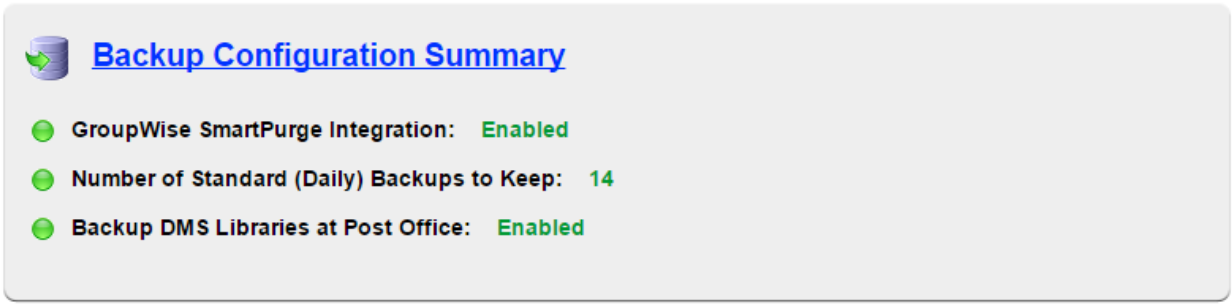
Backup Configuration Summary

This item displays the settings which are active for this profile. Smart Purge requires settings in ConsoleOne, and the Reload configuration is accomplished through the Reload Console Administration.



Backups

Accessing a Backup

The Backups tab is where the main difference between the Post office profiles and the Domain profiles. The Post Office backups can be configured to allow access to the backed up post office by the GroupWise client. You may turn on access to the post office backup here. Before turning on access, check the settings in the Configure tab to ensure that they are set correctly.

Removing a Backup on Demand

This is a new feature with Reload 5. Namely, the ability to instruct the Reload server to delete a backup that you no longer want on the Reload server. Generally, a backup just rolls off of the list of backups, when that backup is the last backup, and that backup exceeds the total number of backups to keep.

However, sometimes, you may just want to delete a particular backup to reduce disk space, or for some other reason. You can now do so with this tool. The backup deletion process begins immediately upon selecting the backup to delete, and then pressing the button to tell the server to delete the backup.

The ability to delete a backup on demand is only available for post office profiles.

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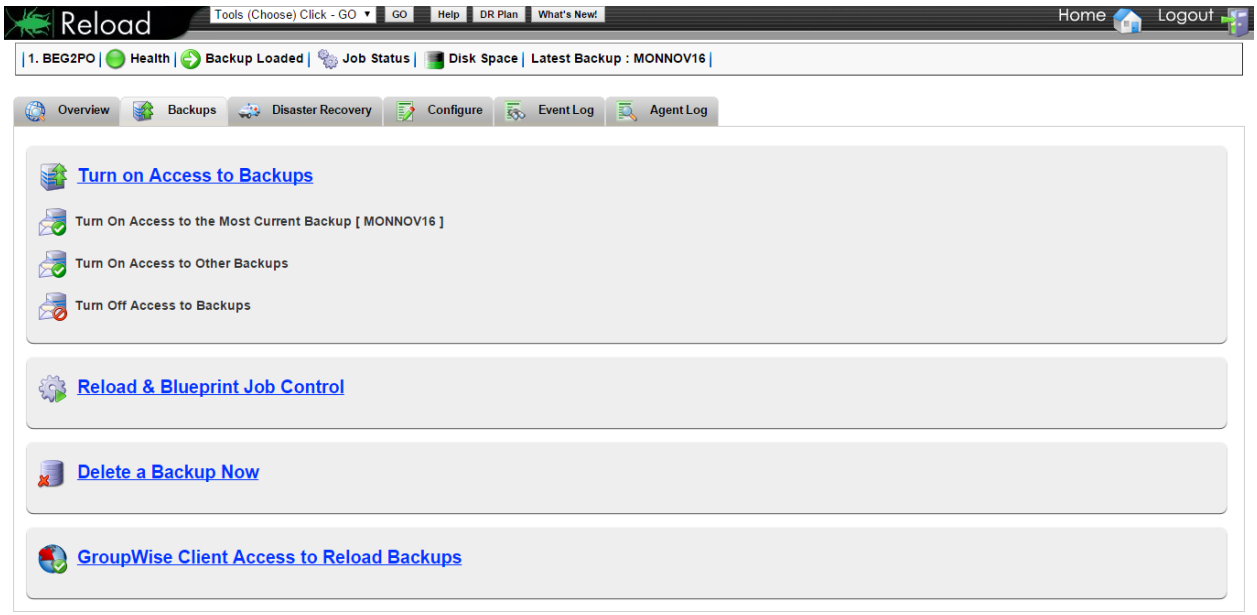

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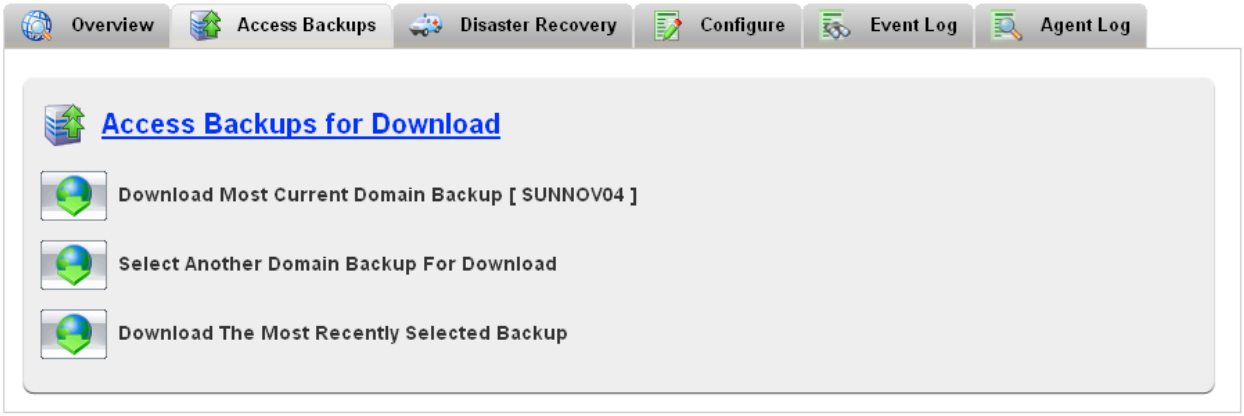
The Domain Access Backups works a little differently. Because there is no mail in the Domain databases that can be available to the client, the Domain database is simply offered as a zipped download. Select the appropriate domain and download the database you wish access.



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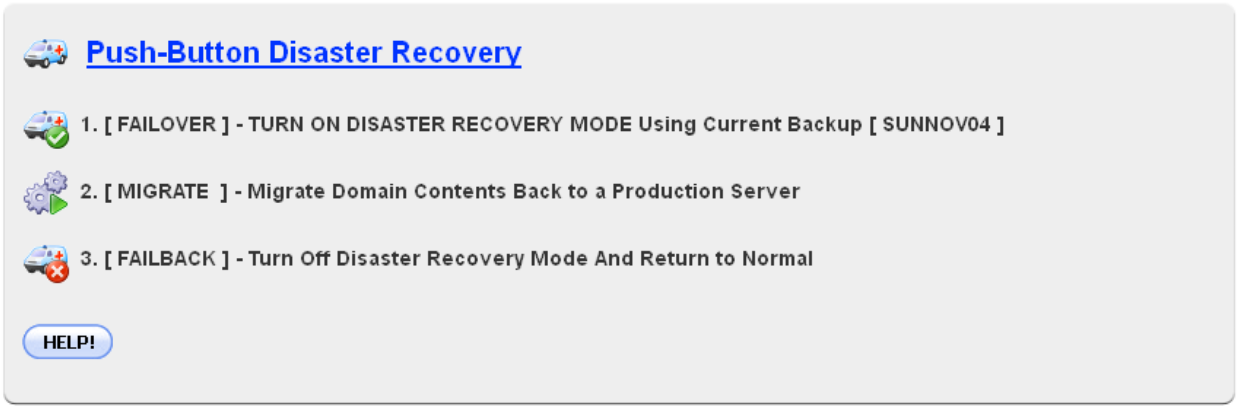
Disaster Recovery

This tab allows the management of the Disaster Recovery process for either the Domain or the Post Office profiles. The Disaster Recovery steps are listed in order under the 'Push-Button Disaster Recovery' section.

Push-Button Disaster Recovery



You first enable the 'Failover', to keep your system running when the live Post Office is down. This loads a POA or a MTA against the latest Post Office or Domain backup, filling the gap in the system left by the missing live POA or MTA.

Once the live system is ready to have the backup data, if you so wish, returned to the live system, you enable the 'Migrate' function to copy the database files from the running Reload POA or MTA, back to the live server.

Once the live server is back to full operational status, you select 'Failback', which returns the Reload System back to normal functions, resuming the backup schedule.

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Current Automated Disaster Recovery Plan

The settings and process of what a Disaster Recovery POA or MTA are listed under this item. Settings that need attention or need to be filled-out will have an exclamation next to them. You should have this dialog filled-out before there is a need for disaster recovery. Configure and test the disaster recovery function of Reload by filling out the settings in the Reload Administration, and initiating the Disaster Recovery Failover for the Profile.

Additional Steps That May Need to be Taken

Even though the Disaster POA or MTA is up and running well, there are steps that the automated disaster recovery cannot take. These are listed under the 'additional steps that may need to be taken' section. These steps will be different and may or may not be necessary depending on your system, and differ in wording for the Domain and the Post Office. Read and review both.

This section should be represented heavily in your customized Disaster Recovery Plan. Any additional steps that should be taken for your system beyond the automated disaster recovery should be listed in detail in your disaster recovery plan. Review these questions and add them to your plan as appropriate.

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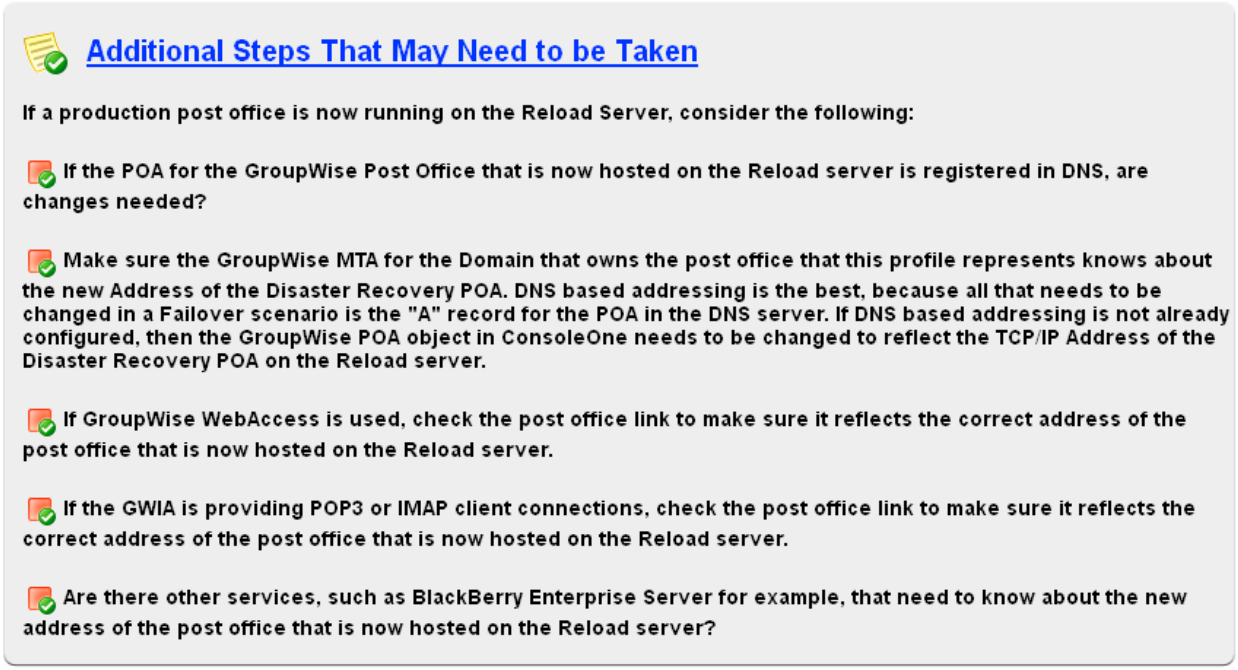

When the Disaster Recovery Post Office or Domain are hosted on the Reload server, they will be reached on a different address in the network than the live POA or MTA was located at. For your system to function correctly with the Reload agents, the rest of the GroupWise and mail system must be informed of the change.

Once the rest of the system has been informed, there will be plenty of time to sort out the live system and resolve any problems there.

Configure

The Configure tab is where profile settings are configured. Reload Web Administration uses in-line documentation to explain what each setting pertains to. Also, the **Configure All Profiles** button makes it very simple to configure all other profiles in relation to the panel of settings that you are currently in.

Another very helpful feature is **Configure All Schedules.** With this feature, all schedules for all profiles come up on one page.

Event Log

The Event Log is a rolling cache of the Profile Event Log which shows all actions associated with this profile. The log shown is the last few lines of the latest information. If you wish to view the entire log, select the 'View Entire Log' button and the log will be displayed in a new window or tab.

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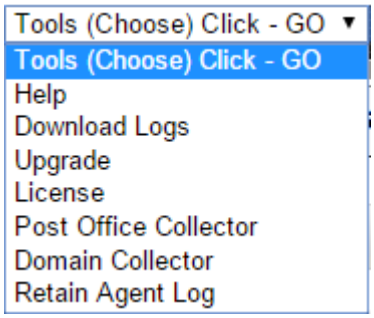
Agent Log

The Agent Log, like the Event Log, is a rolling cache of the Profile Agent Log which shows all actions associated with this profile. The log shown is the last few lines of the latest information. If you wish to view the entire log, select the 'View Entire Log' button and the log will be displayed in a new window or tab.

Tools Menu



The Tools menu, located either at the top of the home page as a dropdown menu, or always on the navigation window, on the left of the page as a tree menu, contains valuable information and tools for your system.

Help

This is the documentation for Reload which is easily accessible through this link. Reload comes with the entire guide available for download, and links to the online Reload knowledgebase and consulting resources.

All videos are helpful and recommended to help you be accustomed to, and comfortable with your Reload System.

Download Logs

When troubleshooting, working with Reload Support, or simply monitoring the processes of Reload, the logs are invaluable. The Reload Support log can be downloaded from this section in a compressed or uncompressed form. The Reload Support Log is a plain text file, but to ensure that your browser downloads the file instead of displaying it, the file has been given the suffix .lug. This can be opened with any text editor, but it is recommended to view the file using WordPad instead of Notepad on Windows workstations.

Upgrade

Upgrading your system just became much easier with the upgrade tool. The upgrade tool offers two ways to upgrade your Reload system.

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Automated Software Download an Automated Upgrade requires HTTP access to the internet on port 80 to function, but simply requires a click on the 'upgrade now' button, and your Reload system will automatically check, download, and install the latest full release version of Reload. You will be prompted to exit all administrative instances you have open, to allow the Reload Daemon to restart after the upgrade is complete.

The automated upgrade section also displays the currently installed version and links to Reload Forums to allow you to check the latest released version.

Manual Software Download and Automated Upgrade requires you to manually download the latest Reload release, and then place it in the /opt/beginfinite/reload/upgrade folder on the Reload Server. After the install file has been placed in the correct folder, select the 'Upgrade Now' button which checks for newer versions in that folder. When Reload finds the newer code, it will automatically upgrade the system to the updated build.

Advanced Upgrade Options

The advanced upgrade options require HTTP internet access on port 80. This option is for upgrading to field test code or a beta release. Simply selecting the 'Upgrade to Field Test code Now' option will initiate an upgrade. The same is true of the 'Roll Back Code Now' option, which checks for the latest full release code and installs that version of Reload on your server.

The last option allow you to update the Reload system to a specific release, beta or otherwise. If you wish to use this option, you must know the code name of the new beta build. This should only be selected in conjunction with, and under the instruction of GWAVA Reload Support, who will give you the specific build name. Enter the build name in the provided field and select 'Submit' to upgrade to the specified build name.

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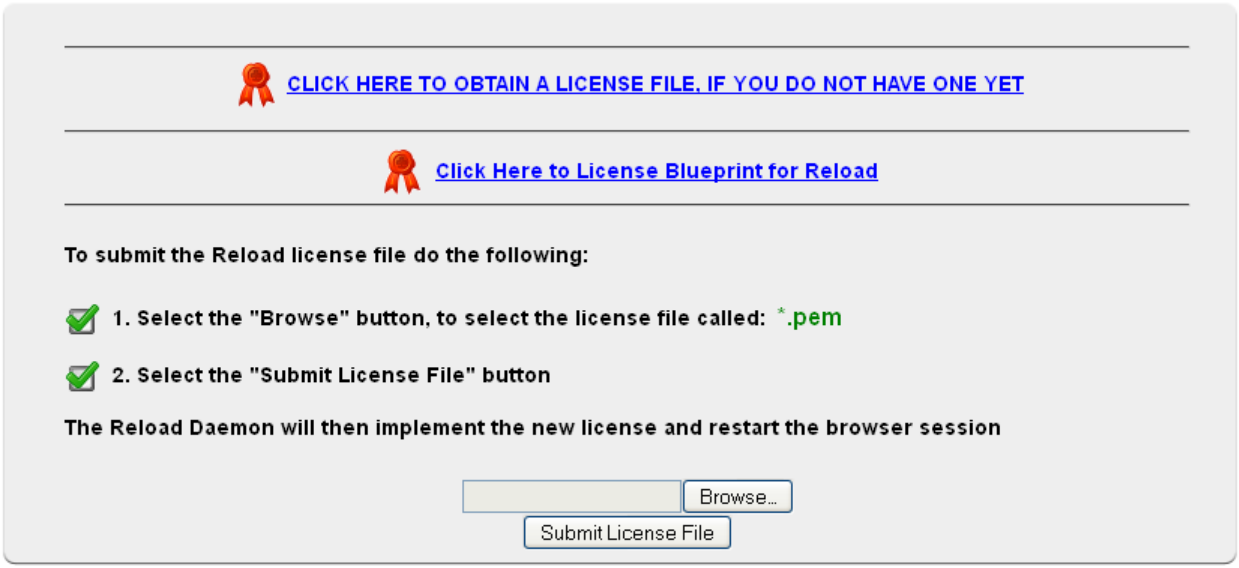
License

Reload must be licensed to function, and Reload Web Administration allows you to upload your license to your Reload Server. You may obtain a trial license by following the link at the top. When you have your license, follow the instructions to browse to, and upload your license to the system. Reload will automatically recognize and accept the license after it has been uploaded to the server.



Appendix A

Restoring an Entire GroupWise Mailbox

Reload creates a method for assuring that backed up data in the recent past is quickly available. This is done through the “Access” menu in Reload Administration, or within Reload Mobile and also from Profiles section on the Reload Daemon HTTP Page. Within a matter of a couple of minutes, you can make backed up Reload data available to a user.

If a user’s mailbox was completely deleted, they you will still need to restore the user, preferably with their original “FID”. If you have the **Novell Press GroupWise 6.5 or GroupWise 7 Administrator’s guide,** you will need to follow the steps in Chapter 28 relative to restoring the user in the GroupWise directory. Then you must access the user’s mailbox through Reload and archive off the items and un-archive them as explained in Chapter 28.

Good news, if you do not have the Novell Press GroupWise Administrator’s guide, Chapter 28 is on-line and downloadable at ://www.taykratzer.com

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Appendix B

Reload and Post Offices That Use LDAP

Here is some guidance from the experience of one of the Reload customers that is using LDAP Authentication with GroupWise.

[PROBLEM]

We use LDAP authentication against a different tree for our "real" GroupWise users. Since LDAP cannot successfully compare a DN because the tree and contexts are different; it compares the email address instead. In Netware I always have to rename the ldapx.nlm to make this work, otherwise I get an LDAP 34 error on the PO when a user tries to login. Here is a link to the Novell TID in case you aren't familiar with the way we are using LDAP.

Search for Novell's Support Knowledgebase for # 10067272

The problem is that I am seeing the same error when I try to login against the PO that Reload has created and I do not know how to fix it as I can obviously find no LDAP.NLM on the linux server.

[SOLUTION]

1. On the Linux server, open up a Terminal session
2. Make a directory for housing code that will be moved in a moment:
mkdir /opt/novell/groupwise/agents/nldap.old
2. Change to the /opt/novell/groupwise/agents/lib/nldap directory.
cd /opt/novell/groupwise/agents/lib/nldap
3. Move the following ldapx library with the following commands:
mv libldapx.so /opt/novell/groupwise/agents/nldap.old
mv libldapx.so.0.0.0 /opt/novell/groupwise/agents/nldap.old

Reload and Post Offices That Use LDAP and SSL

If a GroupWise post office is configured for LDAP and SSL is configured in conjunction with LDAP authentication, then you need to do the following:

- In ConsoleOne, do the following.
  - Highlight the GroupWise system object
  - Select Tools|GroupWise System Operations|LDAP Servers
  - Edit the LDAP server object that services the post office that is being backed up by Reload
  - Confirm the following:
    - The SSL Key file should be specified as follows:
    - Specify the keyfile name as a *.der file with a name that is all lowercase
    - Make sure that the path to the keyfile IS NOT SPECIFIED. All that should be in this field is the actual keyfile name. This will be a file with a *.der file extension
    - On your live production server that houses your GroupWise post office, make sure that the *.der file is in the program root directory. On a NetWare server

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this is: o sys:system - By default or – Wherever the GroupWise Agent software installed to on the live server (On a Linux server this is: /opt/novell/groupwise/agents/bin)

- Get the *.der file mentioned in the LDAP server definition in ConsoleOne, and place at the following path on the Reload server: /opt/novell/groupwise/agents/bin

Appendix C

Configuring Redline Integration

GWAVA Redline can monitor your Reload Server(s). To enable this ability from within Reload Administration do the following:

- From the Main Menu, select **System** | **Integrations**.
- Enable the **Redline** integration.
- Make sure the Reload Daemon has HTTP monitoring enabled, as this is the way that the Redline Agent gets its information from Reload.

The Redline system also needs to be configured with the information needed to discover and monitor the Reload Server. Please consult the latest Redline documentation on how to do this.

Appendix D

Using Reload to Migrate a Post Office to a New Server

Once a post office is backed up to a Reload server, Reload can assist in the migration of the post office data to a new server. This is particularly helpful for the many customers that intend to migrate their GroupWise post offices from the NetWare platform to the Linux platform.

If you are migrating a post office to the Linux platform, it is recommended that you first upgrade your GroupWise post office to GroupWise 8. Migration of earlier versions of GroupWise post offices will work, however a routine called “Storelowercase” will not work. The Storelowercase routine isn’t entirely necessary, but it is more convenient to have this routine run.

The Advantages of Using Reload for Migration

The advantages to using Reload to migrate a GroupWise post office are:

- Pre-Migration is done from the Reload server, and not the current production server. Following are some notes on Pre-Migration:
    - Pre-Migration copies the OFFILES directory contents and represents about 90% of the size of the post office.
    - Pre-Migration is a required step whether you use Reload or the GroupWise Server Migration Utility provided by Novell.

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- When you use the Reload server for a post office migration, the Pre-Migration of the OFFILES directory is pushed from the Reload server to the new production server.
- Since the Reload server is pushing the OFFILES directory contents to the new production server, there is **zero impact on the production server** during the Pre-Migration.
- Reload's Pre-Migration is faster than the GroupWise Server Migration Utility provided by Novell. One reason for this is because Reload does not require DBCOPY to take a second pass at the OFFILES directory contents.

- The Final Migration is done from the Reload server, and all data is backed up to the Reload server prior to the migration of the post office. Following are some notes on Reload's Final Migration functionality:
  - Reload's Final Migration is **significantly faster** than the Final Migration in Novell's GroupWise Server Migration Utility. The reason migration speed is important is so that the downtime window is shortened. Using Reload to migrate a post office to the Linux platform will generally be between 200% and 300% perfect faster than using Novell's GroupWise Server Migration Utility. Here's why:
    - The Reload migration agent runs two simultaneously running DBCOPY instances. One DBCOPY instance is copying the databases and the other DBCOPY instance is copying the OFFILES directory contents. Novell's GroupWise Server Migration Utility only runs one instance of DBCOPY.
    - Reload's method of migrating data does not require DBCOPY to take a second pass at the OFFILES directory. The processing of the OFFILES directory generally does not copy over a whole lot of data, but it takes a long time to correlate what needs to be copied. Since Reload does not require the correlation to happen twice (as Novell's utility does) then the Reload migration of OFFILES is much faster.
    - Migration with the NFS protocol is at least two times faster than using the NCPFS protocol. The Novell GroupWise Migration Utility uses the NCPFS protocol when migrating a post office from the NetWare platform to Linux. Reload uses the NFS protocol when migrating a post office to Linux. Since the NFS protocol is at least two times faster, the file transfer rate is twice as fast.

Setting up an NFS Export on The New Production Server

If you are going to be migrating a post office to the Linux platform, then you need to set up an NFS mount to the new post office directory location that will be housed on the Reload server. Here are example steps for doing this, your steps might be different based on the version of Novell's SuSE Linux you are using on the new production server.

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In this example we will be demonstrating setting up an NFS mount on a SLES10 server with a graphical session.

1. Determine exactly where you are going to house the new GroupWise post office. For example, let's say the post office will be on a partition on your Linux server that is mounted at /data, and the post office directory is going to be called "po1". The path to the post office then should be **/data/po1**. So off of the data directory, **make the po1 directory**.

   IMPORTANT NOTE: Do not make the directory name for a post office any longer than 8 characters. This is a limitation with GroupWise that is best to comply with.

Now you need to **create an NFS Export of the /data/po1 directory**. An NFS Export is similar to a Window Share. Here are example steps to creating an NFS Export.

2. In the **"YaST2" Contol Center**, select **Network Services**
3. Then select **NFS Server**
4. Make sure to **Start** the NFS Server and select **Next** to create the NFS Directory to Export

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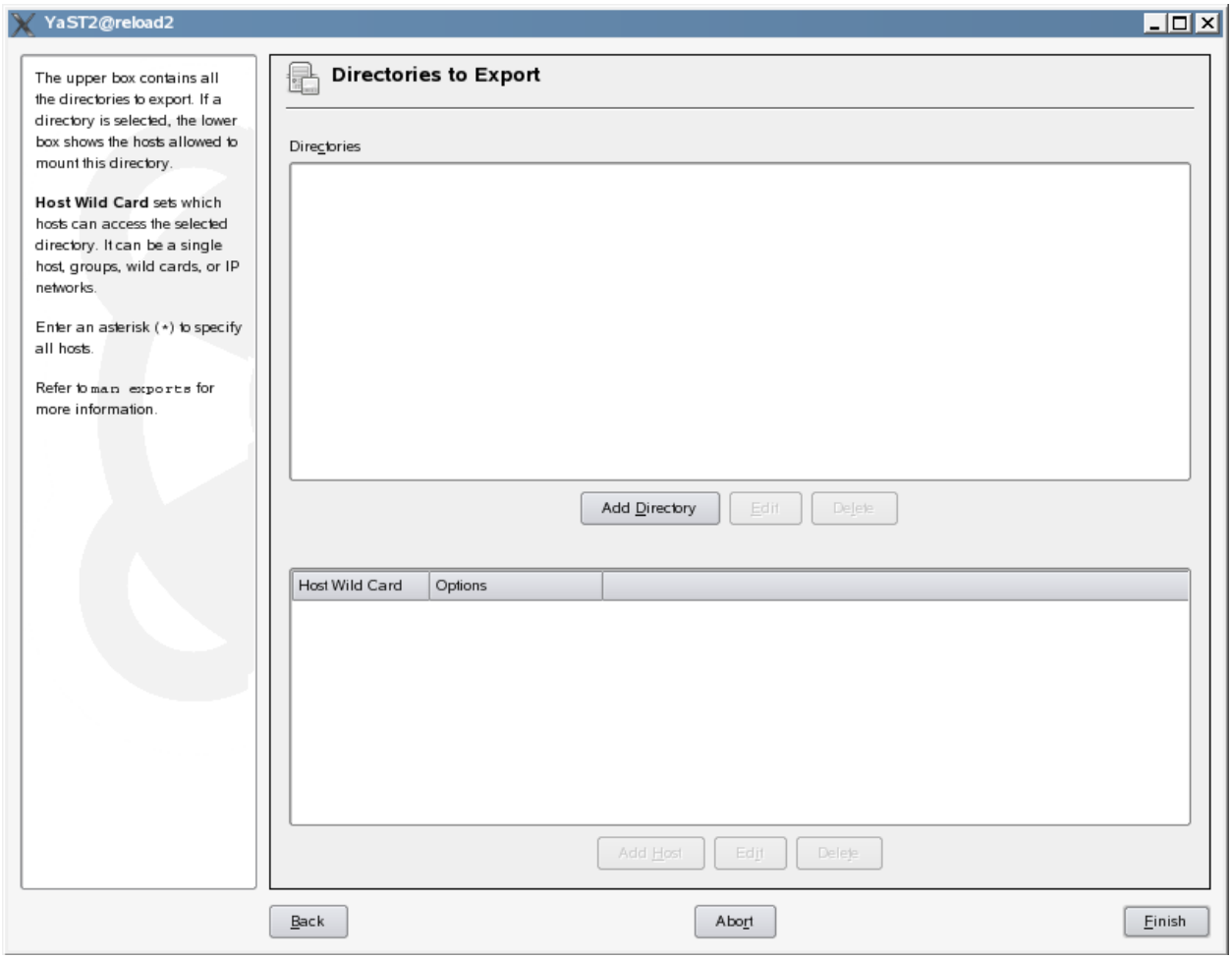
Figure 1: Directories to Export in YaST



5. Choose **Add Directory** and indicate the directory where the post office will be created. For example: /data/po1

6. When prompted for the Host Wild Card and Options you can keep the Host Wild Card at * if you would like, and generally this is best at first. The most important change to make is to the Options. *Make sure to change the Read Only setting:* **`ro`** *to* ***Read Write:*** **`rw`** . *Also make sure to change the* **`root_squash`** ***setting to*** **`no_root_squash`** . See the next figure to observe a properly configured NFS Directory Export of /data/po1.

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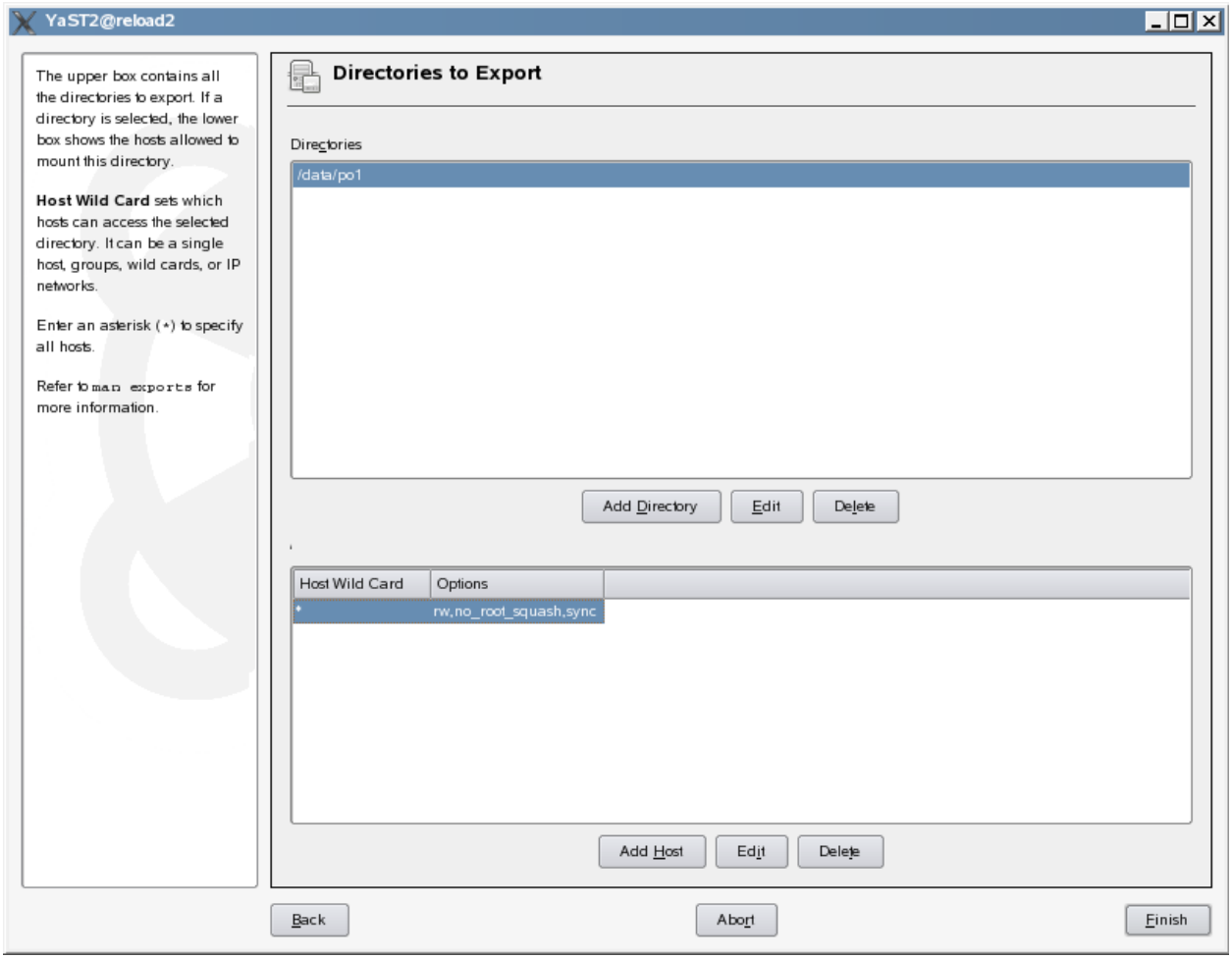
Figure 2: NFS Directory Export of /data/po1



7. Now select Finish which should save the NFS Directory Export and restart the NFS Server on the new production server.

8. If the server is running a firewall, make sure to configure the firewall to allow the NFS Server and NFS Client services through the firewall.

Post Office Migration Steps Using the Reload

Once a post office is backed up to the Reload server at least once, you can begin using the Reload Migration Wizard. The Reload Migration Wizard is available from Reload Console Administration. From the Reload Mail Menu in Console Administration select **Disaster Recovery**|<Choose **Post Office**>|<Choose **The Profile**>| **Migrate**. You will see the Reload Migration Main Menu as show in the next figure.

The Reload Migration utility is very flexible. If you would like to run steps out of their prescribed order you can do so during the testing phase of using this utility. So for example, you can do Step #4, and

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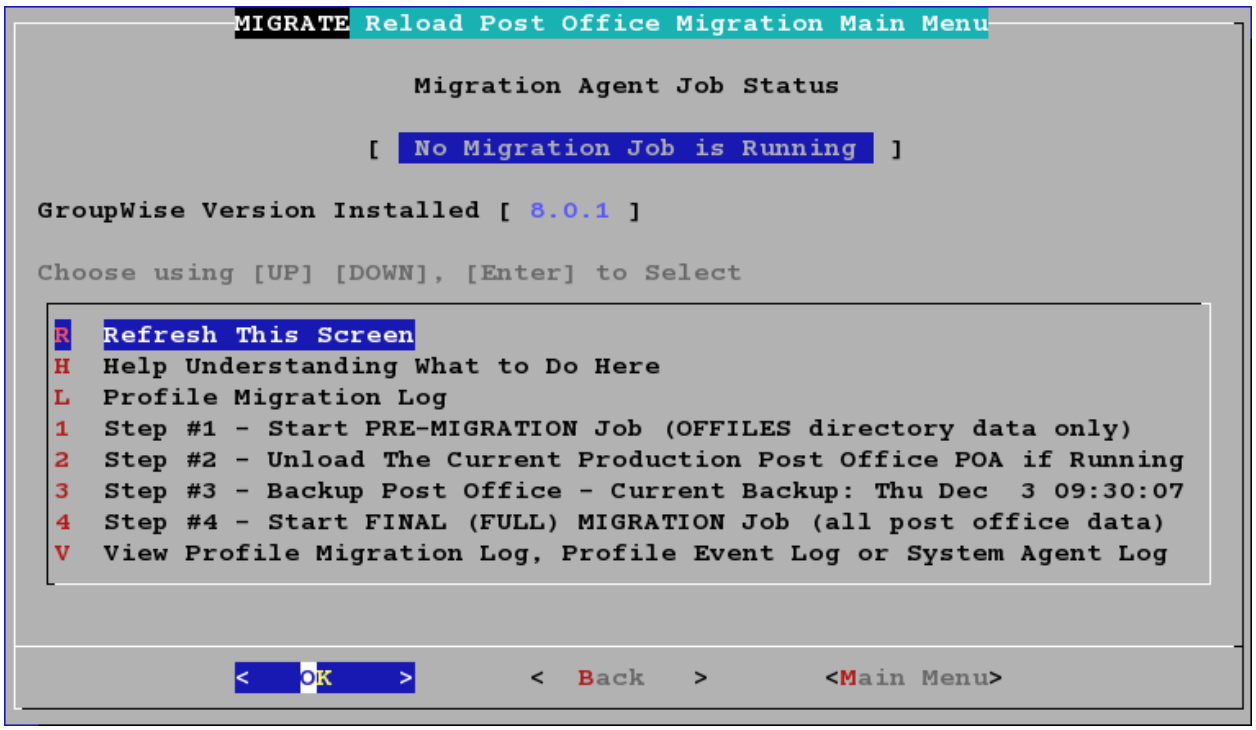
migrate the post office without actually bringing down the production post office POA. You might want to do this so that you can test how the migration utility works. Or you might want to do this so that you can install the GroupWise Agents onto the new production server. Then with the post office data migrated you want to configure the GroupWise POA to run against the post office data in a testing manner. This is all perfectly fine to do. When it comes to the day of the final migration, you should follow the steps in their prescribed order as shown in the Reload Migration Main Menu shown in Figure 3.

When a migration job has been started, it can be stopped from within the Migration Menu. The option to stop a Migration job only shows when a migration job is actually running.

Figure 3: Reload Migration Main Menu



Step #1 – Start PRE-MIGRATION Job

A PRE-MIGRATION Job copies the contents of the OFFILES directory to the new post office location. This step has a simple wizard that asks which backup to migrate, and how to get connectivity to the new production server. If you are migrating the post office to Linux you will need to specify the NFS Directory Export of the post office (Example: /data/po1) as explained earlier. Once you proceed through the wizard, the PRE-MIGRATION job will be queued up to run. As long as no other migration jobs are running, Reload will start the PRE-MIGRATION Job within about a minute's time. The PRE-MIGRATION Job will take a longer time the very first time it runs. The PRE-MIGRATION Job can run while backups are going on, it will not conflict with the backups. A PRE-MIGRATION of the profile can also run while a backup of the profile is running. There is no harm done in this.

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Step #2 - Unload the Current Production POA

This step is only necessary on the actual day that you truly intend to do the migration. This is an informational step only, it does not actually do anything other than explain that the Production POA needs to be taken down. The idea behind this step is that you want the production POA down, so that no changes are made to the GroupWise Message Store. With the GroupWise Message Store in a static state, a backup of the post office (which will happen in the next step, Step #3) will capture the complete state of the post office without any changes to the post office.

Step #3 – Backup Post Office

This step will queue up a Standard Backup Job. This Standard Backup Job is just like any other Standard Backup Job that regularly runs. Don't be confused by the fact that it is not a "Full Backup". Every Reload Standard Backup Job is actually a Full Backup, although it only copies 12% of the post office. Sounds strange, but that's one of the beauties to Reload! This step should be taken after Step #2 of bringing down the production POA. If you are getting familiar with the Reload Migration functionality and you aren't really doing a migration at the moment, you can still perform Step #3 without having performed Step #2 of bringing down the Production POA.

Step #4 - Start FINAL (FULL) MIGRATION Job

A FINAL (FULL) MIGRATION Job copies the entire contents of the post office location from the Reload server to the new production server. This step has a simple wizard that asks which backup to migrate, and how to get connectivity to the new production server. If you are migrating the post office to Linux, you will need to specify the NFS Directory Export of the post office (Example: /data/po1) as explained earlier. Once you proceed through the wizard, the FINAL (FULL) MIGRATION job will be queued up to run. As long as no other migration jobs are running, Reload will start the FINAL (FULL) MIGRATION Job within about a minute's time.

NOTE: If you are just doing migration testing, the FINAL (FULL) MIGRATION Job can run while backups are going on, it will not conflict with the backups. A FINAL (FULL) MIGRATION of the profile can also run while a backup of the profile is running. There is no harm done in this.

Migration Recommendations

It is recommended that you use the Reload Migration utility and become entirely familiar with how it works and how long migration will take. You should consider running through all of the steps, except for taking down the Production POA. This way you can become familiar with how it operates, and how the logging works and how long the migration will take. Then the day of the migration, run through steps 1 through 4 in order.

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Other Considerations for Migration

Reload only migrates the post office data. It does not install GroupWise Agents and make configuration changes in ConsoleOne etc. This is not a comprehensive list of post-migration steps, but you may want to consider the following Post Migration steps:

- Change the TCP/IP Address of the POA object for the newly migrated post office in ConsoleOne. Have the address reflect the TCP/IP Address of the new production Linux server that hosts the GroupWise post office that was just migrated.

- The GroupWise Agent software should be installed to the new Linux production server. The GroupWise Agent software should be configured to start a GroupWise POA against the newly moved post office. Why not do a FINAL (FULL) MIGRATION during a testing phase, and then install the GroupWise POA software during the testing phase. Make sure the POA comes up, and that you can log into the GroupWise POA with a GroupWise client. If a firewall is running on the new production Linux server, you may need to open up some ports. For example, port 1677 and 7101 and maybe even the HTTP monitoring port, and the SOAP port.

- Prior to doing the migration, you may want to confirm that the POA is not configured to create log files at a specific UNC path on a NetWare server for example. If it is configured to do so, before the final backup of the post office, remove the UNC path and keep the field blank.

- If you are using LDAP authentication, with SSL certificates, take steps to make sure that the path to the *.der file does not reference a NetWare UNC path. Appendix B earlier in this documentation talks about LDAP and SSL on Linux.

- Other references.

    - You may also want to consider obtaining the ***The Caledonia Guide to moving GroupWise*** from Caledonia Networks, available at ://www.caledonia.net

        - This guide is far more comprehensive then this document with regards to migrating a post office to Linux. The parts about installing DBCOPY, NCPFS and performing the migration of your post office can be disregarded as they are not needed because you are using Reload for the migration. There are a lot of other details though that are very good to know.

Post Migration Steps

Once the post office has been moved to the new server and is up and running, the Reload connectivity settings need to be altered to backup the post office at the new production server rather than the old production server. To alter the connectivity settings of the post office profile, do the following in Reload Console Administation:

1. Edit the profile

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2. Select **Advanced**
3. Select **Connectivity**
4. Proceed through the connectivity wizard which will then attempt to get connectivity to the new GroupWise post office location.

If you migrated the GroupWise post office from NetWare to Linux, there is a very powerful feature with regards to GroupWise Restore Areas. Read the Reload documentation and create a GroupWise Restore Area. By doing so, your users can restore items from Reload, without even having to exit their GroupWise client.

Appendix E

Optimizing Reload for VMWARE Environments

VMWARE is a very popular solution, that Reload fully supports. A customer using VMWARE noted that the Reload server would spike CPU utilization every minute. Reload can now be configured to minimize those CPU spikes. To make Reload work better in a VMWARE environment, do the following in Reload Console Administration. Select System|Control – and then enable “Be Friendly to VMWARE Host Server”.

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