

Reload for Retain 2.0

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Front

Retain Archive Backup powered by Reload for Retain
Version 2.0

August 2017

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Preface

Retain Archive Backup powered by Reload for Retain.

About This Guide

This *Retain Archive Backup Guide* helps you integrate this software into your existing email system.

Audience

This manual is intended for IT administrators in their use of Retain Archive Backup or anyone wanting to learn more about Retain Archive Backup. It includes installation instructions and feature descriptions.

Feedback

We want to hear your comments and suggestions about this manual and the other documentation included with this product. Please use the User Comment feature at the bottom of each page of the online documentation.

Additional Documentation

Online documentation can be found on the [GWAVA](#) website and the [Micro Focus](#) website.

Knowledge Base articles can be found on the [GWAVA Support](#) website and the [Micro Focus Knowledge Base](#) website.

Retain Archive Backup

2.0

Overview

Retain Archive Backup is a backup system for Micro Focus Retain Unified Archiving.

Retain Archive Backup integrates with Retain Unified archiving to provide reliable backups.

Retain Archive Backup is a Disaster and Recovery solution for Retain archive systems that provides live backups and recovery for Retain archive systems. In the event of a disaster where the Retain server is unusable or lost, Reload can provide a temporary archive solution.

Retain Archive Backup performs this function by creating backup copies of the archive, database and indexes, which it then can load. With Retain Archive Backup, losing Retain in a system is no longer a crisis, and in most cases, not even an inconvenience.

Multiple Retain Archive Backup servers can also be tied together to add multiple redundant layers of protection for complete off site backups of the Retain archive system.

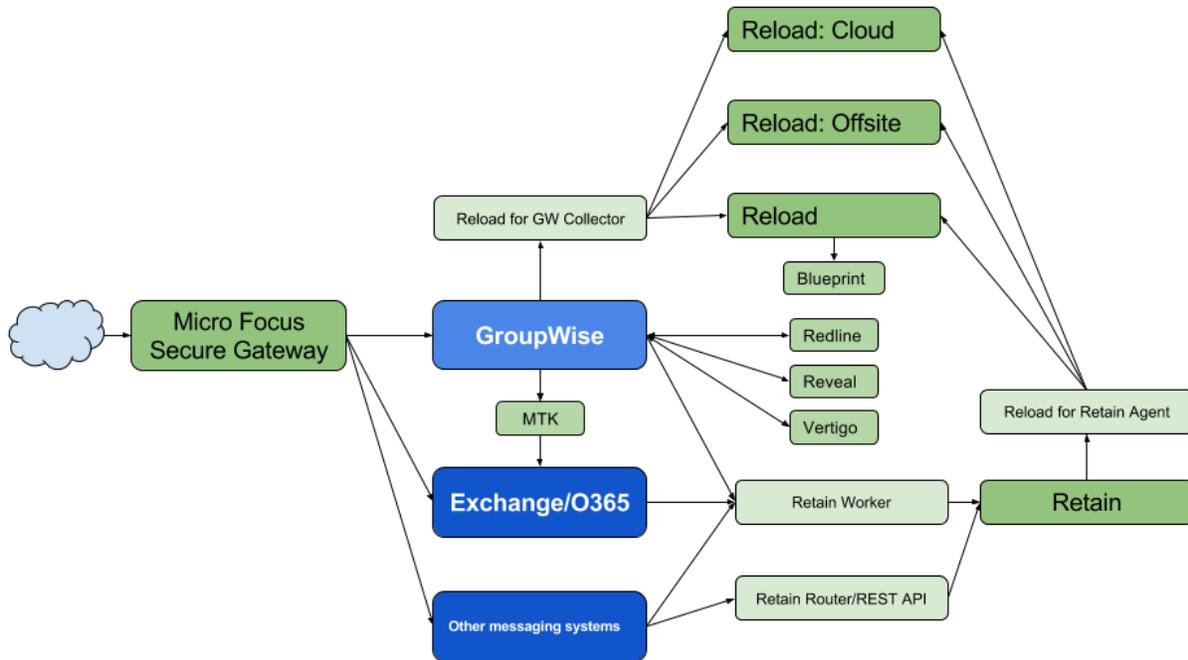
Retain Archive Backup only runs on the Linux platform.

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

Micro Focus GWAVA Family of Message Handling Products

- **Micro Focus Secure Gateway** is a message scanning product that protects your system from malware and spam.
- **Retain** is an archive storage product that is designed to keep messages from GroupWise, Exchange/O365, GMail, BlackBerry, Bloomberg, Notes, mobile, social and other messaging platforms for the long term to meet data retention legal requirements and has powerful search capabilities for eDiscovery.

- **GroupWise Disaster Recovery powered by Reload for GroupWise** is a hot-backup and disaster recovery product for GroupWise. It keeps a few weeks of data and can easily restore messages, calendar items, address books, and even whole users. It can also act as a fully functional Post Office in times when the GroupWise POA is down.
- **Blueprint** extracts important business intelligence data from your GroupWise message store by performing in-depth analysis on your Reload backups.
- **Retain Archive Backup** is a hot-backup and disaster recovery product for Retain. The Retain archive keeps items for the long term and often becomes the only repository of an item. Without a backup you can leave yourself open to legal liability if the items are lost before the retention period has passed. Retain Archive Backup provides high speed backups and can temporarily take over duties of the Retain server should an incident occur.
- **Migration Tool Kit** for migrating users and data from GroupWise to Exchange/O365.
- **GroupWise Reporting & Monitoring powered by Redline** is a comprehensive, customizable, monitoring and reporting tool for GroupWise.
- **GroupWise Forensics powered by Reveal** provides essential auditing and oversight capabilities that legal, human resources, and auditing personnel need within GroupWise.
- **GroupWise Mailbox Management powered by Vertigo** is the Enterprise Mailbox Management tool for GroupWise.



Technical Support

If you have a technical support question, please consult the Micro Focus Technical Support at <http://support.gwava.com>

Sales

Micro Focus contact information and office locations: www.microfocus.com

To contact a Micro Focus sales team member, please e-mail info@gwava.com or call 866-GO-GWAVA ((866) 464-9282), or +1 (514) 639-4850 in North America.

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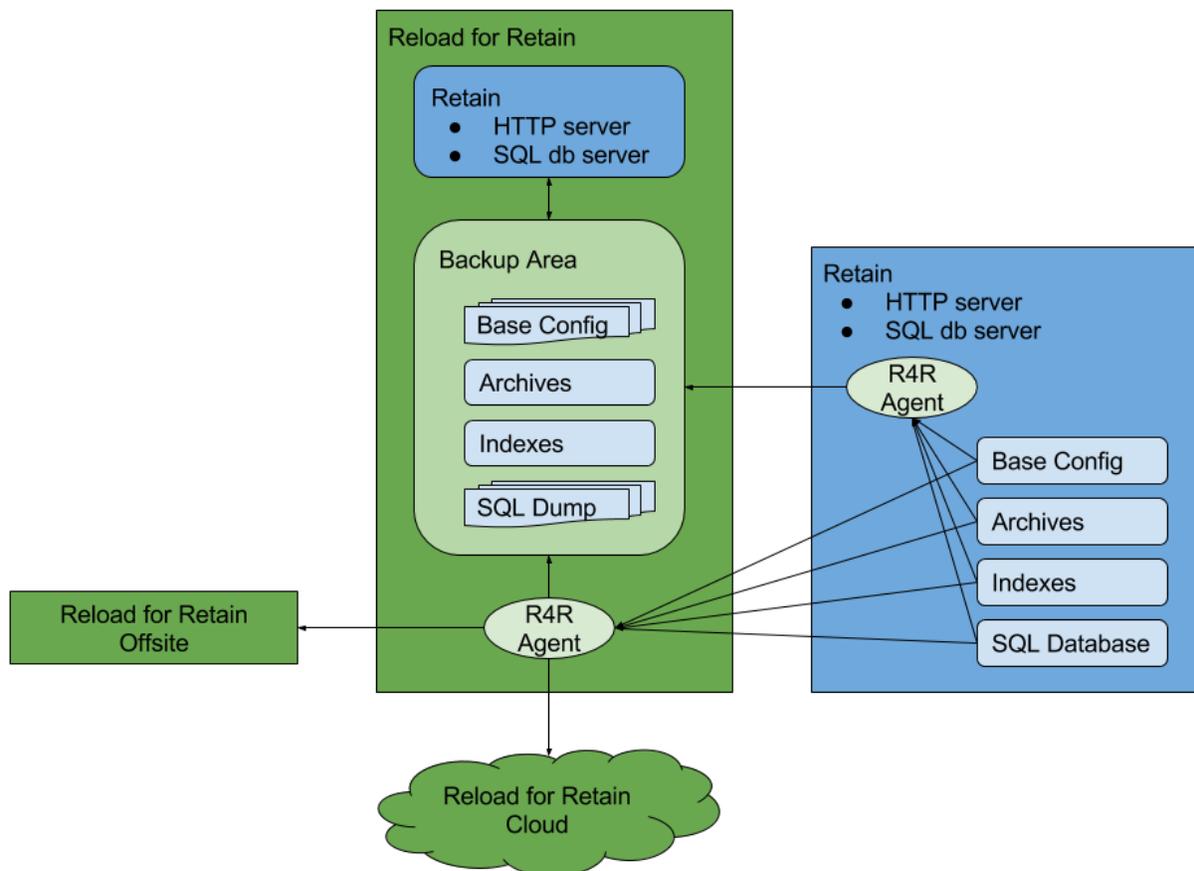
System Design

Reload for Retain uses a software backup agent to back up the essential files of Retain to the Reload server. The agent can be installed on a Linux-based Retain server or on the Reload for Retain server. The agent software can also backup to an off-site and cloud location.

With Retain installed on the Reload for Retain server, it can act as a Retain server in times of disaster.

Reload for Retain can backup MySQL databases itself, but if you are using other SQL database management software you will have to take a dump of the data that the Agent can backup.

If the Retain database is on a separate database server, they make sure that is backed up properly and is accessible to the Reload for Retain server for Disaster Recovery.



What is Backed Up

There are five components to a Retain Server.

1. The Retain software (executable)

This is **not** backed up by Reload for Retain, but you should have a copy since Retain needed to be installed on the Reload for Retain server. It may be an older version, you can get the correct version from the Retain Website or Technical support, if needed.

2. The Retain Base Directory contents

The Base Directory contents is backed up by Reload for Retain

The Base Directory contents are not critical components to back up, but it is better that you do.

You will see directories off of the Base Directory with names such as: ebdb, export, backup etc.

Reload for Retain keeps the Base Directory content backups on the Reload server at the following location:

```
[Reload/Retain Backup Storage
Path]/backups/[day]/base_data
```

3. The Retain Database

Reload for Retain only backs up MySQL databases.

Please assure that you have a backup solution for your Retain database even if Reload for Retain is not backing up your Retain database.

If your Retain database is not backed up, your Retain system cannot be recreated in any manner without the Retain database.

The Retain database could be on the Retain server or on a separate server from the Retain server.

Reload for Retain keeps the MySQL dumps on the Reload server at the following location:

```
[Reload/Retain Backup Storage
Path]/backups/[day]/mysql_backup
```

4. The Retain Archive Files

Reload for Retain backs up Retain Archive Files by looking for their existence via a query to the Retain Database

Retain Archive BLOB (Binary Large Object) Files are kept amongst 16.7 Million Directories under the Retain archive location

All blob files are referenced in the Retain Database. As far as Retain is concerned, a blob file that is not registered in the Retain Database does not exist.

The Retain Archive location can be partitioned into additional Retain Archive locations. Here is how it works:

The Retain Archive location for the first Retain Archive Partition is defined in the Retain Configuration file called "ASConfig.cfg".

Reload for Retain 2.0

Additional Retain Archive locations are defined under "Storage Manager" in Retain Server Administration

Reload for Retain backs up Retain Archive Files to the following location on the Reload Server:

```
[Reload/Retain Backup Storage  
Path]/archive_data/[partition number]
```

If you have only one partition in Retain, then everything is in the archive_1 directory. If you have more than one partition then the second partition would go into partition_2 and so on.

5. The Retain Indexes

Reload for Retain backs up Retain Indexes.

Retain creates Indexes that enable the Search functionality in Retain. The Retain Indexes are derived from the content of the Retain Database and the Retain Archive Files.

Reload for Retain backs up Retain Index Files to the following location on the Reload Server:

```
[Reload/Retain Backup Storage Path]/index_data/index
```

6. Other Items

Reload for Retain will also store additional data about the backup in grb_data which is gwava retain backup data that reload uses for itself.

Installation

System Requirements

Reload for Retain is a backup system and will use significant amounts of disk space.

The Reload for Retain server will need to be able to support Reload for Retain and Retain and all the data and copies of the data.

Retain Versions

- Retain 4.x or higher

Supported OS versions

The Reload server must be run on the Linux platform, but it backs up Retain servers on Linux or Windows platforms.

- SUSE Linux Enterprise Server 12 (SLES12) 64-Bit.
- SUSE Linux Enterprise Server 11 (SLES11) 64-Bit.

Memory

Retain requires a minimum of 12GB of RAM

CPU

Type

The Reload server only supports the Intel Platform x-86 Platform

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.

Disk

Disk space must be carefully considered for each Reload for Retain 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.

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.

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.

Calculating Disk Space

The rule of thumb is 1.13-1.2 times the existing data space on the Retain server for the Reload for Retain server. This will allow the copying the archives, database, indexes and configuration files, and a 14-day backup cycle for the database.

Reload for Retain stores the following data from the Retain Server:
Retain Base Directory contents (A few megabytes)

The Retain Database - Ratio: 1:2.4 (14 Days worth of Backups)
If using MySQL, consider using a Master/Slave configuration of MySQL so that the Retain Database can be replicated in real-time. The size of the Slave MySQL Database will be the same size as the Master MySQL Database because the Slave is a duplicate replica of the MySQL Database on the Master.

Reload for Retain can perform MySQL Dumps of the Retain database. Each dump of the Retain Database is approximately 10% of the actual size of the database. The reason for this is that the MySQL Dump is compressed into a zip file. Example: The Retain database is 100 Gigabytes Allocate 100 GB on the Reload for Retain Server In order to keep 14 days worth of dumps, allocate 140 GB on the Reload for Retain Server to store the dumps.

The Retain Archive (blob files) - Ratio: 1:1

Reload for Retain 2.0

The Retain Archive files are replicated in their entirety. Retain can maintain multiple Retain Archive partitions. Make sure to allocate disk space on the Reload for Retain Server for all Retain Archive Partitions.

The Retain Indexes - Ratio: 1:1

Generally, only one copy of the Retain Indexes (the latest version of the Indexes) is necessary.

Installation Overview

Reload for Retain will need to be installed, configured and licensed.

Apache, a **Database Management System** and **Retain** will need to be installed, but not configured. The Retain configuration will be copied from the production Retain server.

The **Reload for Retain Agent** will need to be installed and configured.

An **initial backup** will have to be run and this will take significant time depending on how large your production system is.

Once the initial backup is complete, the backup the logs will need to be checked for errors, and **Disaster Recovery** will need to be tested.

Install Reload

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 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.

Install Reload

Download Reload

`http://download.gwava.com/download.php?product=Reload&version=rpm` or

`wget`

`"http://download.gwava.com/download.php?product=Reload&version=current"`

Unzip the archive

`unzip reload5.zip`

Reload for Retain 2.0

Install Reload by running the following command in the same directory the download is in:

```
rpm -ivh reload5.rpm
```

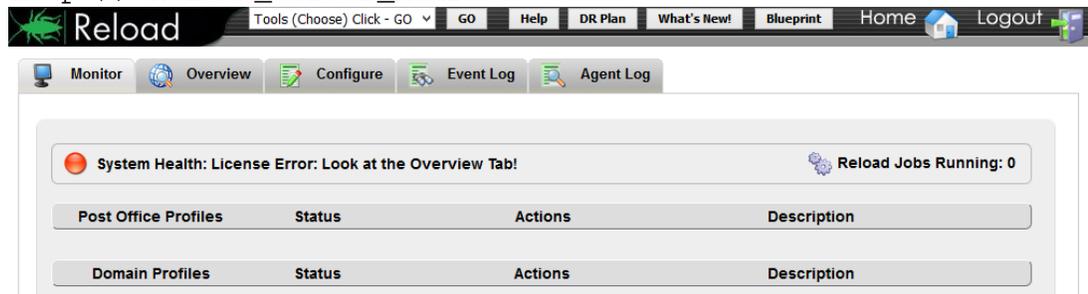
```
reload172:~ # rpm -ivh reload5.rpm
Preparing... ##### [100%]
 1:begininfinite-reload  ##### ( 10%)
```

License Reload

License Reload by browsing to the <https://licenses.gwava.com/> Licensing Website, entering your validation keys and downloading the PEM file.

Browse to the Reload Web Administration console

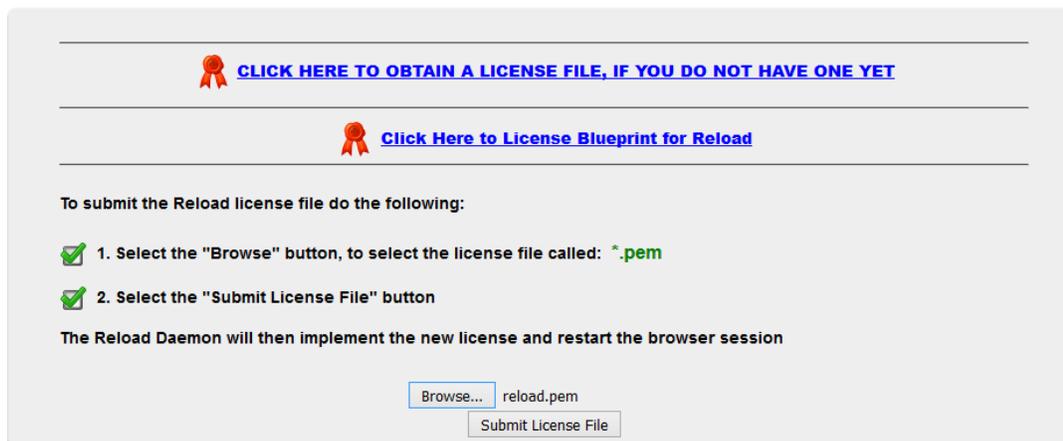
```
http://<Reload_Server_Address>:5555
```



On the Toolbar, select Tools | License



Browse to the license PEM file



Submit the license file by clicking the **Submit License File** button.

Wait for Reload to consume the license.



The license file was uploaded successfully. Please wait for 45 seconds while the daemon consumes the new license file, and restarts.

When 45 seconds has passed, this page will be redirected to the Home page.

You will be required to re-authenticate if authentication is enabled.

Upgrading Reload

Web Console

To upgrade Reload from the Web Console, choose upgrade from the Tools dropdown menu, press Go.



Select Upgrade Now



[Automated Software Download and Automated Upgrade](#)

NOTE: This automated upgrade feature does require that the Reload server have HTTP (Port 80) access to the Internet. If the Reload server does not have HTTP access to the Internet because of a proxy or some other reason, then open the "Manual Software Download and Automated Upgrade" panel below.

By selecting the "Upgrade Now" link, a request is made for the Reload Daemon to check to see if there is a newer version of Reload. If there is a newer version, the Reload Daemon will upgrade the Reload software package automatically.

To determine if Reload should be upgraded to a newer release, follow these steps:



The currently installed version of Reload is: [Reload 5.1 Build \(510125\)](#)



1. Check the [GWAVA Reload Support Forum Patches Section](#) to see if a newer version is available



2. To upgrade Reload select:  [Upgrade Now](#) which will install the latest version of Reload



[Manual Software Download and Automated Upgrade](#)



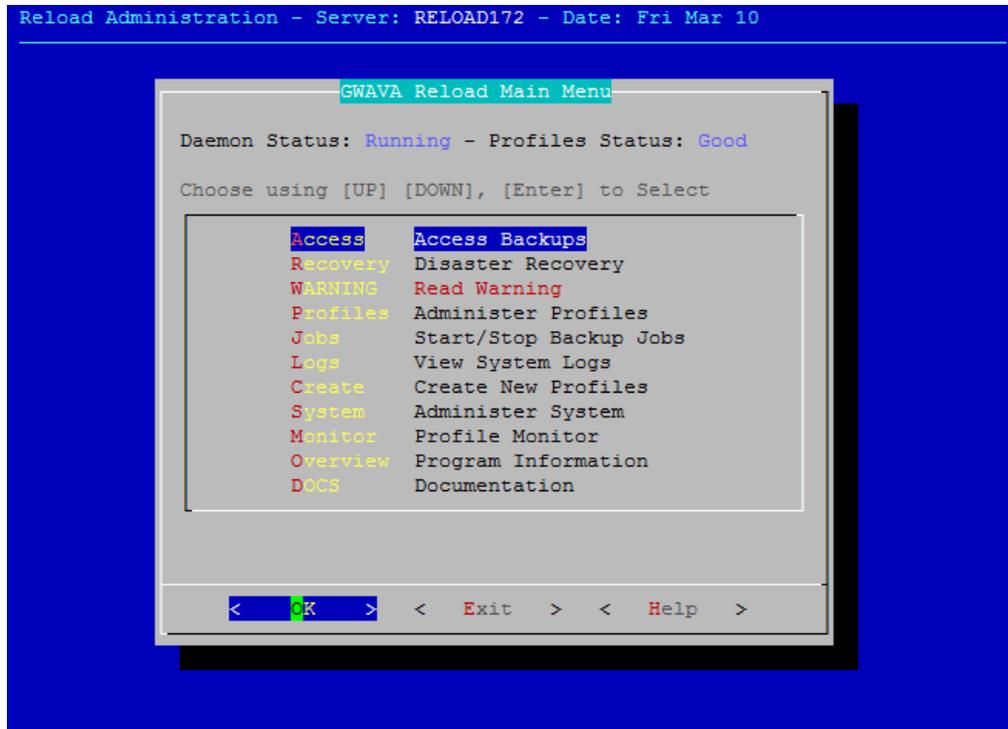
[Advanced Upgrade Options](#)

Reload Administration

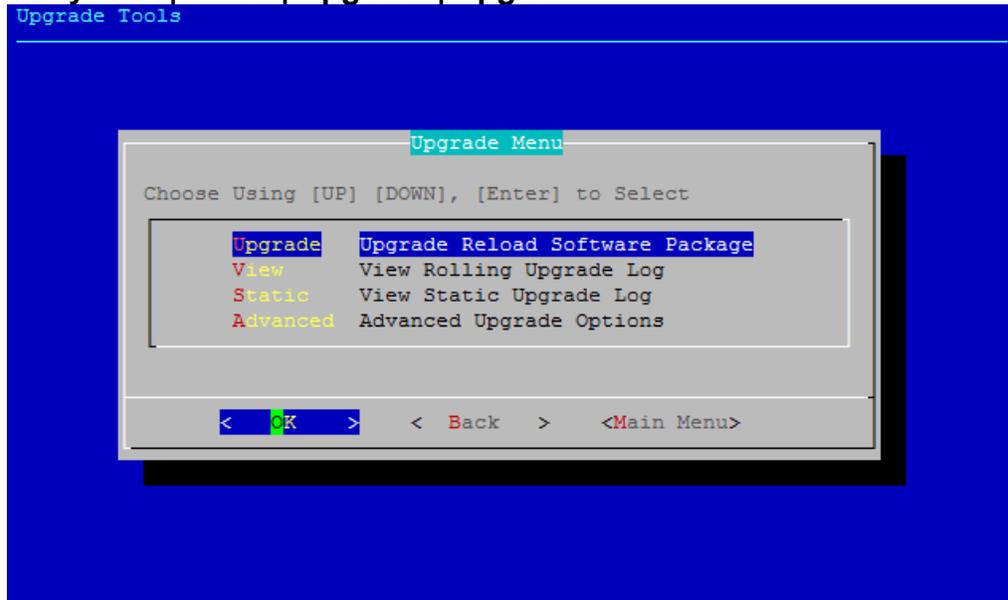
To upgrade Reload from the Retain Administration, run:

```
reload
```

Reload for Retain 2.0



Choose **System | Tools | Upgrade | Upgrade**



Progress will be shown onscreen.

Command Line

To upgrade Reload from the command line, run:

```
reloadu  
reloadu -r will force a download of the available version  
even if you previously downloaded it.
```

```
reloadu -h shows a help page
If the Reload server does not have access to the internet then the update
can be downloaded from
http://download.gwava.com/download.php?product=Reload&version=current
Copy the file to the Reload Server and place in
/opt/beginfinite/reload/upgrade
At a command prompt, type:
reloadu
```

Automatic Upgrades

To have Reload automatically upgrade itself, create a cron job:

```
crontab -e
and enter
00 1 * * 3 root /usr/sbin/reloadu
```

Upgrading the Agent

To upgrade the agent log onto the server with the agent and run:

```
reload upgrade
ribs upgrade
or for the latest beta code
ribs upgrade beta
```

Uninstall Reload

This only removes the Reload Software Package. The configuration data, profiles and profile backups are left in their storage directories, by default, /opt/beginfinite/reload/. The data can be removed manually.

To uninstall the Reload Software Package, run:

```
/opt/beginfinite/reload/uninstall
```

Reinstall Reload

To reinstall Reload Software Package, run:

```
reloadu
```

Install Retain

This is a full Linux install of Retain on the Reload, that includes: The web server, SQL database management software, and Retain.

WARNING: ONCE YOU HAVE INSTALLED THE RETAIN SERVER, DO NOT RUN THE WEB-BASED CONFIGURATION WIZARD FOR RETAIN. IT WILL DELETE THE CONTENTS OF YOUR PRODUCTION RETAIN DATABASE.

Install the exact version of Retain on the Reload server as is running on the Production Retain Server. Most customers using Retain on Linux have the version of Retain installed on their Production Retain Server sitting somewhere in an installation directory on the Retain Server. Locate the software there.

Install Apache web server

Open YaST and set the HTTP Server to start on boot.

Install SQL database management software

The SQL start guides are included here as a courtesy. It is your responsibility to find the proper installation procedures and documentation from your chosen database vendor. The entire responsibility for installation, care, and maintenance of the database server lies with the customer. We do not provide any kind of support for the database server.

In some cases, the SQL database management software will have to be installed on a separate server that supports it and only client software is installed on the Reload server. The Agent will need to be configured depending on the SQL database management software installed.

WARNING: NFS shares should not be utilized in any database system. NFS locking is insufficient for database requirements and will result in corruption.

Create a new database for Retain

MySQL

If using MySQL with Retain you will also need to download and install the Connector/J software, which is detailed below.

Reload for Retain Agent MySQL Setup Script

NOTE: If the Reload for Retain Agent is running on the Retain Server, then the MySQL Client and Server are already installed. So there is nothing that needs to be done.

If the Reload for Retain Agent is running remotely from the Retain Server, then you must install the MySQL Client that matches the version of MySQL Server. GWAVA has created a script to assist with the MySQL Client install. If it does not work for you, go ahead and download the MySQL software from <https://www.mysql.com>

Here are the instructions for using the script created by GWAVA:

1. Download the script **installmysql.zip** to the server that is running the Reload for Retain Agent

2. Unzip the script:

```
unzip installmysql.zip
```

3. Run the script:

```
bash mysqlinstall.sh
```

Client Install to the Reload Server

1. Download and install the latest 5.6x MySQL server and client and configure according to local system needs.

2. Install the client:

```
rpm -ivh MySQL-client-5.6.3.5-1.sles11.x86_64.rpm
```

Full Install to the Reload Server

1. Download and install the latest 5.6x MySQL server and client and configure according to local system needs.

Install the server:

```
rpm -ivh MySQL-server-5.6.3.5-1.sles11.x86_64.rpm
```

Install the client:

```
rpm -ivh MySQL-client-5.6.3.5-1.sles11.x86_64.rpm
```

If using a separate data volume: Modify `/usr/my.cnf`, to move the database to a data volume, by adding the line

```
datadir=/path/to/where/you/want/the/MySQL/data
```

Find the root password in `/root/.mysql_secret`

```
cat /root/.mysql_secret
```

Start MySQL:

```
rcmysql start
```

Change the root password:

```
/usr/bin/mysql_secure_installation
```

2. Log in to MySQL using the client:

```
mysql -u root -p
```

3. Create the database: * This is critical. Not storing the database in UTF-8 format guarantees irreparable corruption for non-US-ASCII characters. *

```
CREATE DATABASE retain DEFAULT CHARACTER SET
'utf8' DEFAULT COLLATE 'utf8_bin';
```

3a. If you make a mistake, enter this command:

```
DROP DATABASE retain;
```

...and repeat step 3 to create the database.

4. Retain needs a user account created that has full rights to the Retain database. It is strongly recommended that the 'root' account is not used. While logged in to MySQL, enter the following commands. Replace (UserName) and (Password) with the desired user name and password (Both commands are needed. The '%' is a wildcard. If you want to restrict the connection to a specific IP address, put that address instead of the '%' sign.):

```
GRANT ALL PRIVILEGES ON retain.* TO  
'(UserName)@'%' IDENTIFIED BY '(Password)';  
GRANT ALL PRIVILEGES ON retain.* TO  
'(Username)@'localhost' IDENTIFIED BY '(Password)';
```

For example, if the database user's name is "retain" and the password is "Password1":

```
GRANT ALL PRIVILEGES ON retain.* TO  
'retain'@'%' IDENTIFIED BY 'Password1';  
GRANT ALL PRIVILEGES ON retain.* TO 'retain'@'localhost'  
IDENTIFIED BY 'Password1';
```

MS SQL Server 2008 R2, 2012, 2014

Client Install

Install UNIXODBC Driver on a SUSE Linux Enterprise Server

YAST Console Instructions

Run the YAST Utility:

```
yast
```

Select **Software | Software Management**

In the Search Phrase field enter the following: **unixodbc**

Select the package that reads: **unixODBC**

Do not worry about the other packages

Use the Spacebar to select the package

Select the Accept button to proceed with the installation

Install FreeTDS UNIXODBC Driver Software Packages

Obtain Supporting Driver for FreeTDS (libsybdb5-0.95.80-51.1.x86_64.rpm)

Copy the .rpm file to the server that is running the Reload for Retain Agent

In a terminal session, install the Supporting Database Driver for the FreeTDS package, see next step

Install in this manner:

```
rpm -ivh libsybdb5-0.95.80-51.1.x86_64.rpm
```

Install the FreeTDS Package

SLES11: (freetds-tools-0.95.80-51.1.x86_64.rpm)

SLES12: (freetds-tools-0.95.95-60.1.x86_64.rpm)

In a terminal session, install the FreeTDS UNIXODBC Driver package, see next step

Install in this manner:

```
rpm -ivh freetds-tools-0.95.80-51.1.x86_64.rpm
```

Full Install

1. Install as default instance, with **Latin 1_General_C1_AS** as standard encoding.
2. Enable SQL Server Authentication in addition to Windows Authentication
3. Once installed, verify the server is listening on port 1433 (on the command line run: telnet <IP address> 1433)
4. Ensure TCP/IP is enabled - Run SQL Server Configuration Manager
5. Expand SQL Server Network Configuration
6. Protocols for MSSQLSERVER
7. Enable TCP/IP
8. Run SQL Server Management Studio, connect to Server
9. Under Security/Logins, right click and select "create Login, (for example Retainuser) that uses SQL Server authentication. Assign a password.
10. Right click on Databases, and create a new database named Retain and assign Retainuser as the owner. (There are other ways to grant the permissions but this is easiest)

ORACLE 10/11g/12c

Client Install

Install Oracle Instant Client Software Packages

Obtain the Oracle Basic Client (oracle-instantclient12.1-basic-12.1.0.2.0-1.x86_64.rpm)

Copy the .rpm file to the server that will run the Reload for Retain Agent

In a terminal session, install the Oracle Instant Basic Client, see next step:

```
rpm -ivh oracle-instantclient12.1-basic-12.1.0.2.0-1.x86_64.rpm
```

Obtain the Oracle Instant SQLPlus Client (oracle-instantclient12.1-sqlplus-12.1.0.2.0-1.x86_64.rpm)

Copy the .rpm file to the server that will run the Reload for Retain Agent

In a terminal session, install the Oracle Instant SQL Plus Client, see next step:

```
rpm -ivh oracle-instantclient12.1-sqlplus-12.1.0.2.0-1.x86_64.rpm
```

Full Install

Retain supports the usage of Oracle 10, 11g, and 12c on all platforms. However, it is the customer's responsibility to employ an experienced Oracle DBA to install, maintain, and tune Oracle.

The instructions below serve as a guideline, but may result in poorly performing, insecure environments.

Oracle Installation instructions vary wildly depending the version, OS, storage, clustering, etc. so consult your DBA. There is no one-size-fits-all. This is also true of other SQL Server products, but Oracle even more so.

Using Oracle with Retain consists of:

- Installation of the Oracle Server
- Setting up a TCP IP listener
- Setting up a new database named Retain
- Creating a user to access the database, and granting sufficient rights.

Installation

Install your Oracle Server normally, according to your standards and practices. One option is to use the Universal Installer, specifying a custom installation, choose the type of Oracle Server to install, and to Install Files Only

TCPIP Listener

Next use the Net Configuration Assistant (or manually edit the Oracle Listener configuration) to create a TCP based listener on port 1521. This allows TCPIP clients to connect to Oracle and is required for Retain.

Database Creation

Next, either use the Database Configuration Assistant or manually create the database with your favorite tool. Regardless, you want to create a database and sid, named Retain, and create your SYSTEM account

An example of a create statement (which should *not* be used as is):

```
connect "SYS"/"&&sysPassword" as SYSDBA
set echo on
spool
C:\oracle\product\10.2.0\admin\Retain\scripts\CreatedB.1
og
startup nomount
pfile="C:\oracle\product\10.2.0\admin\Retain\scripts\ini
t.ora";
CREATE DATABASE "Retain"
MAXINSTANCES 8
MAXLOGHISTORY 1
MAXLOGFILES 16
MAXLOGMEMBERS 3
MAXDATAFILES 100
DATAFILE
'C:\oracle\product\10.2.0\oradata\Retain\system01.dbf'
SIZE 300M REUSE AUTOEXTEND ON NEXT 10240K MAXSIZE
UNLIMITED
```

```

EXTENT MANAGEMENT LOCAL
SYSaux DATAFILE
'C:\oracle\product\10.2.0\oradata\Retain\sysaux01.dbf'
SIZE 120M REUSE AUTOEXTEND ON NEXT 10240K MAXSIZE
UNLIMITED
SMALLFILE DEFAULT TEMPORARY TABLESPACE TEMP TEMPFILE
'C:\oracle\product\10.2.0\oradata\Retain\temp01.dbf'
SIZE 20M REUSE AUTOEXTEND ON NEXT 640K MAXSIZE UNLIMITED
SMALLFILE UNDO TABLESPACE "UNDOTBS1" DATAFILE
'C:\oracle\product\10.2.0\oradata\Retain\undotbs01.dbf'
SIZE 200M REUSE AUTOEXTEND ON NEXT 5120K MAXSIZE
UNLIMITED
CHARACTER SET AL32UTF8
NATIONAL CHARACTER SET AL16UTF16
LOGFILE GROUP 1
('C:\oracle\product\10.2.0\oradata\Retain\redo01.log')
SIZE 51200K,
GROUP 2
('C:\oracle\product\10.2.0\oradata\Retain\redo02.log')
SIZE 51200K,
GROUP 3
('C:\oracle\product\10.2.0\oradata\Retain\redo03.log')
SIZE 51200K
USER SYS IDENTIFIED BY "&&sysPassword" USER SYSTEM
IDENTIFIED BY "&&systemPassword";
spool off

```

The most critical items to note are the CHARACTER SET (AL32UTF8 aka UTF8), and the NATIONAL CHARACTER SET (AL16UTF16). If using a GUI based installed, be careful to set these - they are easily missed. (They are located on the Encoding tab of the 10th step or so of the wizard).

User Account Creation

Finally, using the SYSTEM account, connect to the database, create a user, and grant full system privileges to the account. An example is shown below:

```

CREATE USER user-name IDENTIFIED BY password;
grant dba to user-name;

```

Restart everything, and verify you can telnet on the TCP LISTENER's PORT (1521 if as above).

If a restricted user is desired, Retain requires a user with the following roles:

```

RESOURCE CONNECT

```

And the following database privileges to the Retain database:

```

CREATE PROCEDURE
CREATE SESSION
CREATE SYNONYM
CREATE TABLE
CREATE TYPE
CREATE VIEW

```

Tuning

Tuning Oracle is quite far beyond the scope of this manual. The manuals on Oracle's site, as well as an experienced DBA or extensive training is strongly recommended.

Postgres 9

Client Install

Full Install

When creating a PostgreSQL database for use by Retain, specify UTF8 encoding. If the Retain Server is on a different machine, you will need to configure PostgreSQL to accept connections from that machine's IP address.

1. Connect to PostgreSQL using its psql utility.
2. Create a new user for use by Retain. In the example below, we are creating a user named "Retainuser" with a password of "Retainpassword":

```
CREATE ROLE Retainuser LOGIN ENCRYPTED PASSWORD
'Retainpassword';
```

The psql utility should respond with "CREATE ROLE."

3. Create a new database for use by Retain. Assign the user created in the previous step as the owner:

```
CREATE DATABASE Retain WITH ENCODING='UTF8'
OWNER=Retainuser;
```

The psql utility should respond with >"CREATE DATABASE."

4. If Retain Server is running on a different machine, you'll need to configure PostgreSQL to permit access:
 - By default, PostgreSQL only permits local "loopback" connections. To allow connections from other machines, add the following to the postgresql.conf configuration file:

```
listen_addresses='*'
```
 - Specify the user and IP address that is permitted to connect to PostgreSQL by editing the pg_hba.conf configuration file. The following example grants the user "Retainuser" access to the database "Retain" from IP address "192.168.2.2":

```
# TYPE      DATABASE      USER          CIDR-ADDRESS
METHOD
# IPv4 local connections:
host       Retain        Retainuser    192.168.2.2/32  md5
```
 - Restart PostgreSQL to activate these changes.

Retain Install

Extract the Retain software

Open a terminal window in the Retain install folder and make the installer script executable by running the command:

```
chmod +x *.sh
```

(The installer installs Retain-Tomcat and initialize the Retain installation which will install the embedded Tomcat as well. Consider removing any existing Tomcat installation.)

1. Install Retain. Enter the following command:

```
./RetainInstall.sh
```

2. Read and accept the license agreement.

ial computer software" and (b) commercial computer software documentation as the said terms are used in 48 C.F.R. 12.212 (Sept 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), U.S. Government End Users shall acquire the Software in accordance with the terms and conditions as herein set forth.

14. Term

The License granted herein shall be effective until terminated except for an evaluation License which shall terminate in accordance with the provisions as set forth at Paragraph 3 herein. You shall be entitled to terminate the License granted herein at any time. GWAVA may, at its sole option, elect to terminate the present Agreement and revoke the License granted herein upon the breach by You of any of the terms herein. In the event that GWAVA shall so elect, or upon the termination of the License granted herein for any reason, it is understood and agreed that You shall, immediately, and without formal notice, discontinue all use of the Software and destroy the said Software together with all copies thereof. It is further understood and agreed that with the exception of the License granted herein to Use the Software, the other provisions of this Agreement will survive the termination of the said License or the termination of the Agreement itself and shall remain, for all legal purposes, fully enforceable.

15. Severability

The present Agreement constitutes the entirety of the Agreement between the Parties with respect to its subject matter. In the event that any provision hereof shall be deemed unenforceable, void or invalid, such provision shall be amended so as to render it valid and enforceable and, as so amended, the Agreement, in its entirety, shall remain in full force and effect. It is further stipulated herein that no decision, action or inaction by GWAVA shall be construed to be a waiver of any right(s) or remedy available to it.

16. Waiver

The waiver by either Party of any default or breach of this Agreement shall, in no event, constitute a waiver of any other or subsequent default or breach.

17. Jurisdiction and Choice of Law

The parties hereto stipulate that the present Agreement shall be interpreted in accordance with the laws of the State of Utah and the United States of America and that, further, the application hereof of the United Nations Convention on the International Sale of Goods is hereby specifically excluded. The Parties hereby further stipulate that the Courts of Utah and of the United States shall have exclusive and preemptory jurisdiction to entertain all applications in relation hereto of every nature and description, both legal and equitable.

18. Complete Agreement

It is expressly understood and agreed that this Agreement constitutes the complete contract between the Parties and supersedes and replaces all prior or contemporaneous representations, communications, understandings and agreements between the Parties, oral or written, with respect to the subject matter hereof. Further, it is expressly understood and agreed that the present Agreement shall not be amended or modified except, in writing, where such writing is signed by the authorized representative of each Party. No representations, statements, warranties or agreements, other than those herein expressed, have intervened to induce the making, execution and /or delivery of this Agreement.

*GWAVA is a Registered Trade Mark of GWAVA Inc., 100 Alexis Nihon, Suite 500, St-Laurent, Quebec, Canada H4M 2P1

Choose one of these options:

- 1) You agree to this license agreement
- 2) You DO NOT agree to this license agreement
- 3) You want to re-read the license agreement

Choose (1-3): 1

3. Read the software requirements and press Enter.

Reload for Retain 2.0

```
Retain requires the following:
  - Apache 2.2.x or 2.4.x
  - Tomcat 8.0 (Installer will install it).
  - Java 8 (Installer will install it).
  - Supported database (not necessarily on this server), with database created as per install guide.
  - MySQL Connector/J (JDBC driver for MySQL) version 5.1.21 or later if using MySQL database
```

```
Minimum memory requirements for different install scenarios:
  1- Any combination of Server, Reporting and Monitoring Server, and Message Router: 8 GB RAM
  2- Worker: 4 GB RAM
  3- Worker and any other component: 12 GB RAM
```

```
After running Setup: Be sure to read the documentation on tuning memory usage in Tomcat.
```

```
Press Enter to continue.█
```

4. You will be asked what components to install. Each of these components can be installed on a separate server or on the same server. However, the Message Router needs to be in the network DMZ and is usually installed separately.

Options include:

Retain Server

Stubbing Server (GroupWise only)

Reporting and Monitoring Server

Retain Worker

Retain Message Router (needs to be installed in the network DMZ)

Generally, we recommend installing the Server, Reporting and Monitoring, and Worker on the Retain server.

```
=====
```

Retain Installation Options

```
=====
```

```
Choose components...
```

```
Install Retain Server (y/n)?y
```

```
Install Retain Stubbing Server (y/n)?n
```

```
Install Retain Reporting & Monitoring Server (y/n)?y
```

```
Install Retain Worker (y/n)?y
```

```
Install Retain Message Router (y/n)?n█
```

4a. If you are upgrading Retain, you are given a list of currently installed options and the ability to select upgrade options, if you wish to add

components you can choose which ones to add here. Otherwise during a new installation, Java will be installed.

Retain has already been installed on this system with the following components:

```
Retain Server
Retain Reporting & Monitoring Server
Retain Worker
```

Choose one of these options:

- 1) Upgrade current installation of Retain
- 2) Upgrade current installation of Retain and add new components
- 3) Exit this installer

Choose (1-3):

4b. During an upgrade the installer will check the Apache/Tomcat configuration.

NOTE: If components already exist on the system, but new features are being added, all new and existing features must be selected for install, AND the upgrade must be selected with the first option: "Upgrade Retain, Preserving configuration" must be selected.

```
=====
```

Apache/Tomcat Configuration

```
=====
```

```
Apache 2 appears to be installed
Apache Base is /etc/apache2
Apache Service is /etc/init.d/apache2
Apache Conf is /etc/apache2/httpd.conf
Apache Version is 2.2
Apache Group is www
Will assume that mod_proxy, mod_rewrite, and mod_proxy_ajp
are installed and enabled. These are standard in Apache 2.2+.
You may check in the Http Server control Panel in Yast
```

/opt/beginfinite/retain exists. Choose one:

- 1) Upgrade Retain, preserving configuration (recommended)
- 2) Overwrite Retain, losing configuration
- 3) Quit

Choose (1-3):

5. Java is checked, and automatically installed or upgraded, if necessary.

Reload for Retain 2.0

```
=====
                          JAVA Configuration
=====
Checking Java...

Downloading Java from http://download.gwava.com/download.php?product=jvm8&version=alin64server ...
--2016-11-04 09:05:13-- http://download.gwava.com/download.php?product=jvm8&version=alin64server
Resolving download.gwava.com... 209.90.108.66
Connecting to download.gwava.com[209.90.108.66]:80... connected.
HTTP request sent, awaiting response... 302 Found
Location: http://download.gwava.com/jvm/server-jre-8u60-linux-x64.tar.gz [following]
--2016-11-04 09:05:17-- http://download.gwava.com/jvm/server-jre-8u60-linux-x64.tar.gz
Connecting to download.gwava.com[209.90.108.66]:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 59798027 (57M) [application/x-gzip]
Saving to: `jvm.tar.gz'

39% [=====>] 23,608,670 10.1M/s
```

6. Installation completes, shows the URL to the RetainServer web console and returns to the prompt.

From your browser, if the Apache integration works, you should be able to type `http://127.0.0.1/RetainServer` and/or `http://127.0.0.1/RetainWorker` and/or `http://127.0.0.1/RetainRouter`.

An additional diagnostic if that fails:
Try `http://127.0.0.1:48080/RetainServer` and `http://127.0.0.1:48080/RetainWorker` or `http://127.0.0.1:48080/RetainRouter`.

The direct Tomcat ports may be used to troubleshoot Jakarta and the proxy connector. If TOMCAT's ports work but Apache's don't, double check Jakarta and the proxy connector settings.

If the TOMCAT install fails, it is likely due to a missing or incorrect `JAVA_HOME` variable. Verify or reset the `JAVA_HOME` variable. See the installation guide for steps to set the `JAVA_HOME` variable.

IMPORTANT: Be sure to read the documentation on tuning Tomcat's memory usage. The default memory may not be sufficient.
Backup `/root/Desktop/Retain4100dev_218/RetainInstall.log` to `/opt/beginfinite/retain/backup/20161104/RetainInstall.log`
`sf105:~/Desktop/Retain4100dev_218 #`

7. Check the status of Apache 2 and Retain Tomcat. (They should both be 'running'.)

Controlling Tomcat

SLES12

To check the status, start or stop apache or retain-tomcat, use the following runtime commands:

```
service apache2 status|start|stop|restart
service retain-tomcat8 status|start|stop|restart
```

SLES11

To check the status, start or stop apache or retain-tomcat, use the following runtime commands:

```
rcapache2 status|start|stop|restart
rcretain-tomcat8 status|start|stop|restart
```

8. If using MySQL, install the MySQL Connector/J (JDBC driver for MySQL) before configuring Retain.

MySQL Connector/J (JDBC driver for MySQL) Installation

The MySQL Connector/J driver must be provided to the Retain Server and, or the Reporting and Monitoring Server. This must be installed **after** Retain has been installed but **before** Retain is configured.

1. Download the MySQL Connector/J (JDBC driver for MySQL) version 5.1.21 or later ZIP file.

2. Extract the *mysql-connector-java-5.1.X-bin.jar* file (**X being the current version number**) from the ZIP. For example, on Linux use the command:

```
unzip mysql-connector-java-5.1.41.zip
```

2. Stop Tomcat service

SLES12:

```
service retain-tomcat7 stop
```

SLES11:

```
rcretain-tomcat7 stop
```

Windows:

```
Start | Services | Retain Tomcat | Stop the  
service
```

3. Copy the *mysql-connector-java-5.1.X-bin.jar* file (**X being the current version number**) to the following Retain directories or where Retain was installed:

/opt/beginfinite/retain/RetainServer/WEB-INF/lib (for Retain Server)

/opt/beginfinite/retain/RetainStatsServer/WEB-INF/lib (for the Reporting and Monitoring Server)

/opt/beginfinite/retain/RetainStubbingServer/WEB-INF/lib (for the Stubbing Server)

For example:

```
cp mysql-connector-java-5.1.41-bin.jar  
/opt/beginfinite/retain/RetainServer/WEB-  
INF/lib/
```

3a. If on Linux, change ownership of the file to match the other files with the terminal command:

```
chown tomcat:www mysql-connector-java-5.1.41-  
bin.jar
```

3b. If on Linux, change rights of the file to match the other files with the terminal command:

```
chmod 774 mysql-connector-java-5.1.41-bin.jar
```

4. Start Tomcat service

SLES12:

```
service retain-tomcat7 start
```

SLES11:

```
rcretain-tomcat7 start
```

Windows:

```
Start | Services | Retain Tomcat | Start the  
service
```

Schema update note: On Linux, some systems have encountered an error after a schema update caused when MySQL cannot create a temporary file for the result of a Retain query.

The following appears in the Retain Server log:

```
2008-10-27 00:00:59,786 [TP-Processor2] ERROR  
com.maintainet.dao.HibernateUtil - SCHEMA UPDATE FAILURE:  
Something went wrong during Schema Update - contact tech support  
immediately  
2008-10-27 00:00:59,786 [TP-Processor2] ERROR  
com.GWAVA.utils.ErrorHandle - reportError: SchemaUpdate ::  
EXCEPTION : org.hibernate.exception.GenericJDBCException: could  
not get table metadata: Audit org.hibernate.exception.Gener-  
icJDBCException: could not get table metadata: Audit
```

This is usually caused when MySQL cannot create or has lost rights to the tmp working directory. Try the following from a system terminal:

1. Add rights to the tmp working directory:

```
mkdir /var/lib/mysql/tmp  
chown mysql:mysql /var/lib/mysql/tmp
```

2. Add the following line into the [mysqld] section of /etc/my.cnf:

```
tmpdir = /var/lib/mysql/tmp
```

3. Restart the Server

9. Match the tomcat identity on the Reload server to the tomcat identity on the Retain server

On the Retain server type the following command on the Linux command line.

```
cat /etc/passwd
```

This will list out all the user accounts on the server, showing their userids and group IDs. In the list in the screenshot, tomcat is listed last and its userid is **110** and its group ID is **1000**.

```

10.1.5.30 - PuTTY
ldap:x:76:70:User for OpenLDAP:/var/lib/ldap:/bin/bash
lp:x:4:7:Printing daemon:/var/spool/lpd:/bin/bash
mail:x:8:12:Mailer daemon:/var/spool/clientmqueue:/bin/false
man:x:13:62:Manual pages viewer:/var/cache/man:/bin/bash
messagebus:x:100:101:User for D-Bus:/var/run/dbus:/bin/false
named:x:44:44:Name server daemon:/var/lib/named:/bin/false
news:x:9:13:News system:/etc/news:/bin/bash
nobody:x:65534:65533:nobody:/var/lib/nobody:/bin/bash
ntp:x:74:107:NTP daemon:/var/lib/ntp:/bin/false
polkituser:x:104:106:PolicyKit:/var/run/PolicyKit:/bin/false
postfix:x:51:51:Postfix Daemon:/var/spool/postfix:/bin/false
pulse:x:105:108:PulseAudio daemon:/var/lib/pulseaudio:/bin/false
puppet:x:113:105:Puppet daemon:/var/lib/puppet:/bin/false
root:x:0:0:root:/root:/bin/bash
sshd:x:71:65:SSH daemon:/var/lib/ssh:/bin/false
suse-ncc:x:107:111:Novell Customer Center User:/var/lib/YaST2/suse-ncc-fakehome:/bin/bash
uucp:x:10:14:Unix-to-Unix CoPy system:/etc/uucp:/bin/bash
uidd:x:102:104:User for uidd:/var/run/uidd:/bin/false
wwwrun:x:30:8:WWW daemon apache:/var/lib/wwwrun:/bin/false
mysql:x:109:114:MySQL server:/var/lib/mysql:/bin/bash
tomcat:x:110:1000:/:home/tomcat:/sbin/nologin
+:::
retain3:~ #

```

On the Retain server type the following command on the Linux command line.

```
cat /etc/passwd
```

If the userids match, skip to step 10.

If the userids do not match, you will need to change the tomcat userid. Also changing the userid of the process currently using the userid.

On the Reload server:

```
edit /etc/passwd with vi or other text editor
```

```
or use the usermod command
```

```
usermod -u [new userid assignment] [username getting the new userid]
```

```
For example,
```

```
usermod -u 103 tomcat
```

Restart the server

10. Copy the ASConfig.cfg file from the Retain server to the Retain installation on the Reload server found in **/opt/beginfinite/retain/RetainServer/WEB-INF/cfg**

No more configuration of Retain needs to be done as Reload for Retain will copy the configuration files from the production Retain Server.

WARNING: ONCE YOU HAVE INSTALLED THE RETAIN SERVER, DO NOT RUN THE WEB-BASED CONFIGURATION WIZARD FOR RETAIN. IT WILL DELETE THE CONTENTS OF YOUR PRODUCTION RETAIN DATABASE.

Configure Reload for Retain

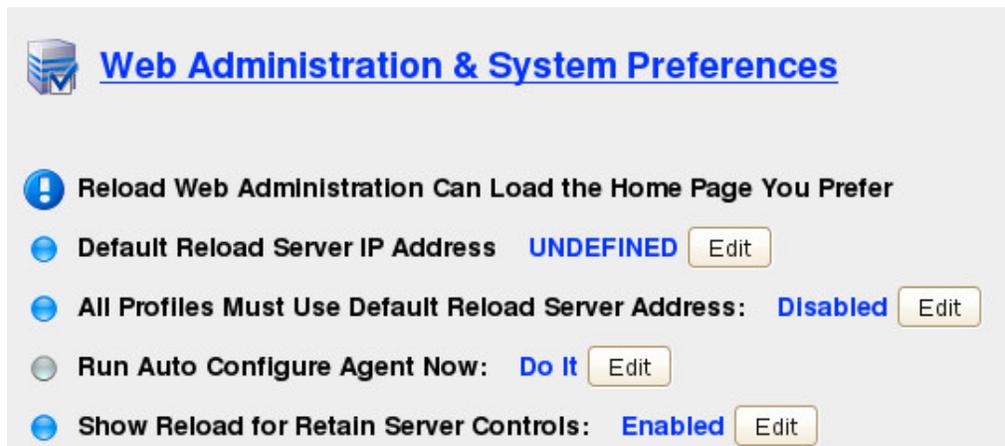
Create a Data Directory

- Create a directory for Reload to backup the data to. It is recommended to use a separate data volume. The data directory can be named anything you want. For example,

```
mkdir /reload
```

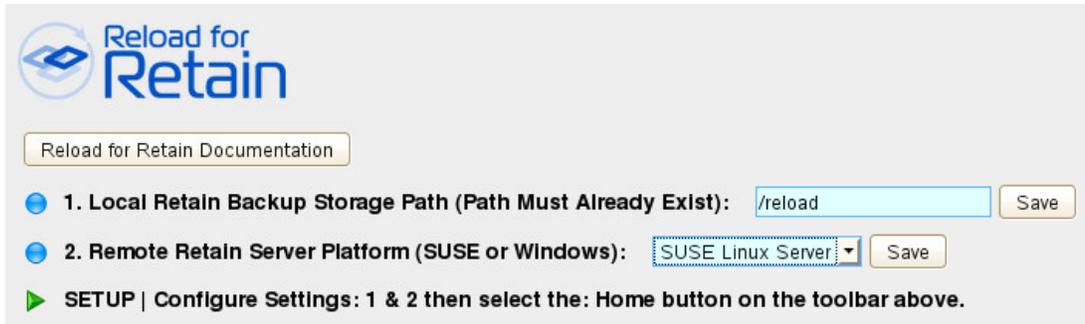
Enable Reload for Retain

- Browse to the Reload Web Console
- Select the Configure tab
 - If the Reload for Retain panel does not appear, go to **Configure | Web Administration & System Preferences | Show Reload for Retain Server Controls: Enabled**



Open the Reload for Retain panel

- Edit the "**Local Retain Backup Storage Path**" and provide a directory for the backup data. For example, /data/reload
- Edit the "**Remote Retain Server Platform**" to specify the Operating System that Retain is on.
- Save settings



Reload for Retain Documentation

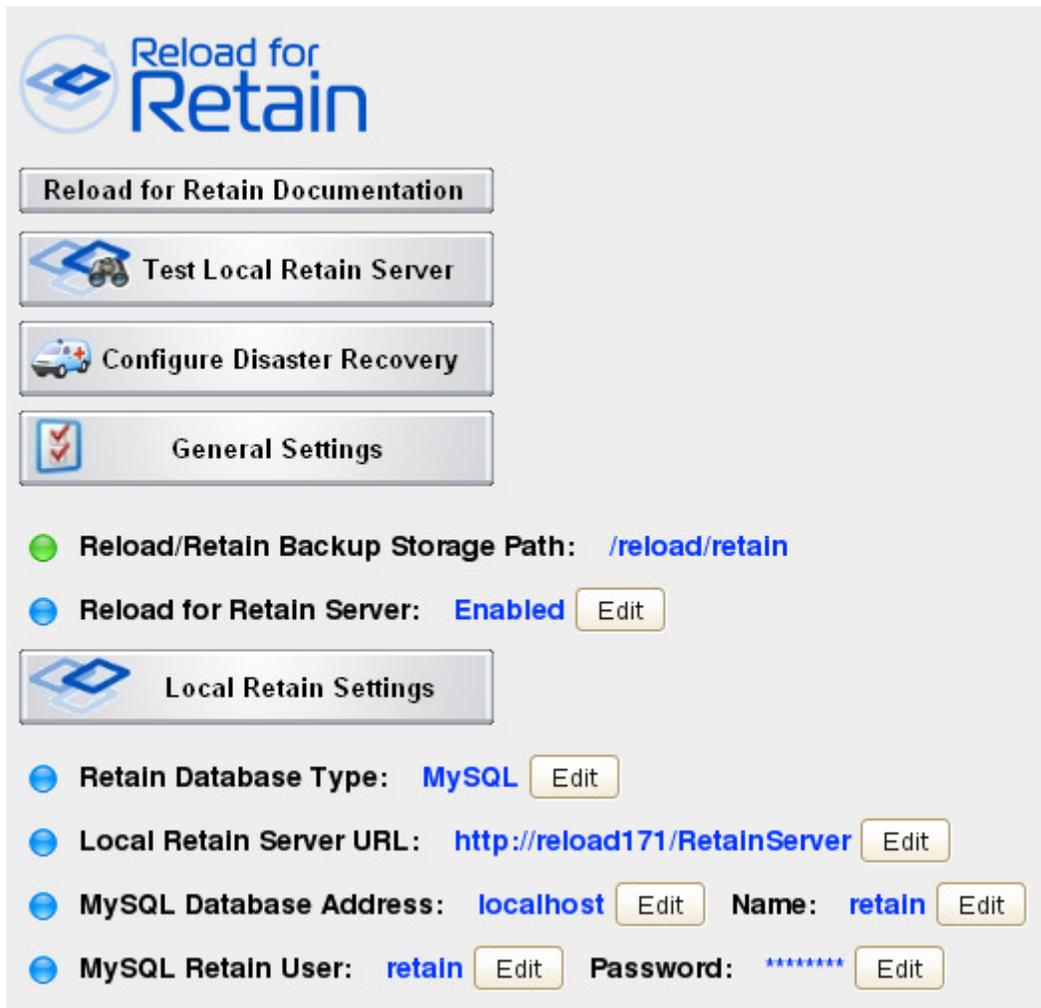
1. Local Retain Backup Storage Path (Path Must Already Exist): Save

2. Remote Retain Server Platform (SUSE or Windows): Save

▶ SETUP | Configure Settings: 1 & 2 then select the: Home button on the toolbar above.

Open the General Settings pane Open the Local Retain Settings pane:

- Enter the **Retain Database Type**, if it is incorrect.
- Enter the **Local Retain Server URL**. Hostname is preferred for disaster recovery.



Reload for Retain Documentation

Test Local Retain Server

Configure Disaster Recovery

General Settings

Reload/Retain Backup Storage Path: [/reload/retain](#)

Reload for Retain Server: **Enabled** Edit

Local Retain Settings

Retain Database Type: **MySQL** Edit

Local Retain Server URL: <http://reload171/RetainServer> Edit

MySQL Database Address: **localhost** Edit Name: **retain** Edit

MySQL Retain User: **retain** Edit Password: ********* Edit

Open the Production Retain Settings:

Reload for Retain 2.0

- Enter the **Production Retain Server URL** and **Production Retain Worker URL**

 **Production Retain Settings**

- Show Production Retain Server Controls: **Disabled**
- Production Retain Server URL: <http://retain161.gwava.net/RetainServer>
- Production Retain Worker URL: <http://retain161.gwava.net/RetainWorker>

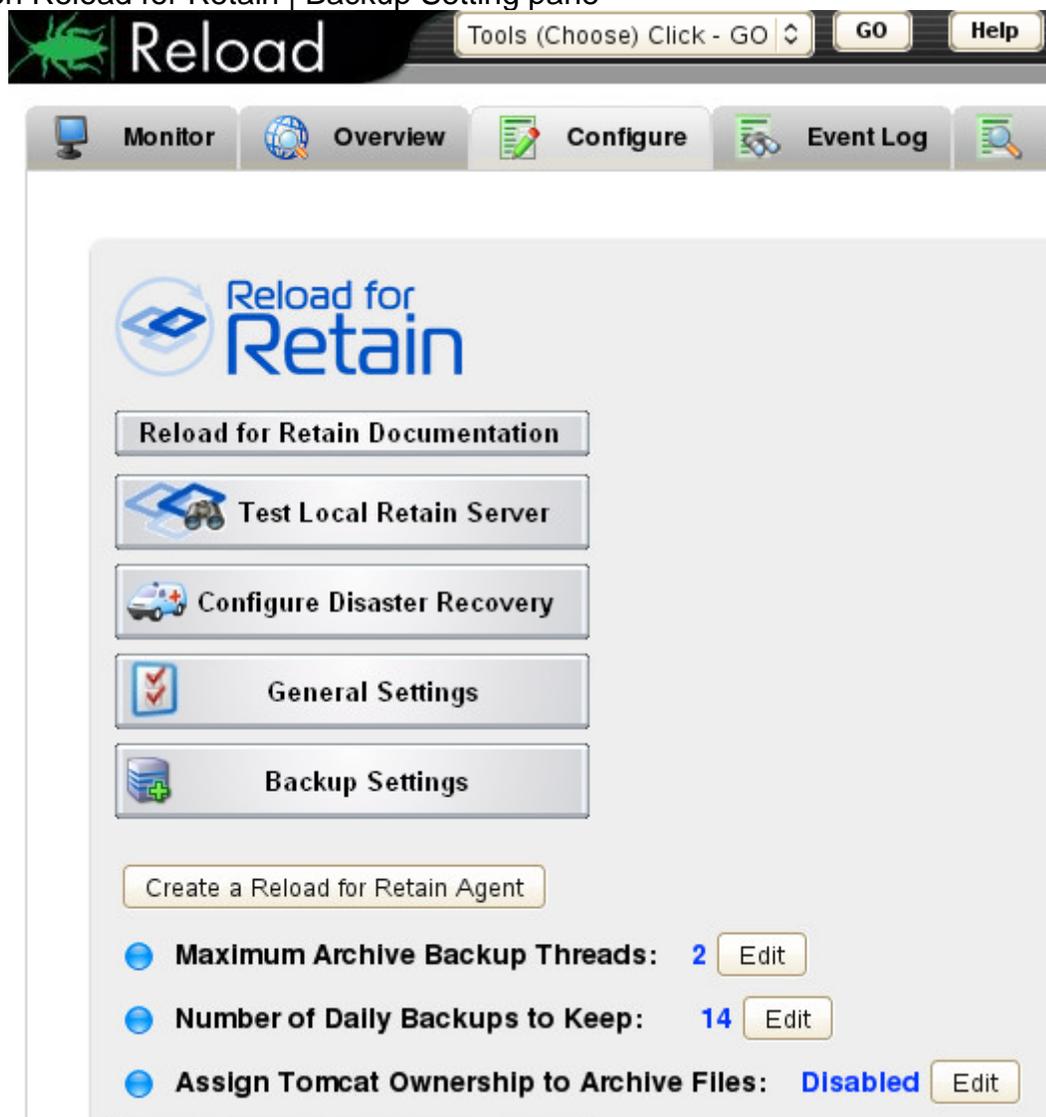
Install Reload for Retain Agent

The Reload for Retain Agent moves the data from one server to another. The agent runs on Linux and can run on the Reload or Retain server. If Retain is on Windows, the agent will need to run on the Reload server.

Installing Reload for Retain Agent on a Linux Retain Server

On the Retain server:

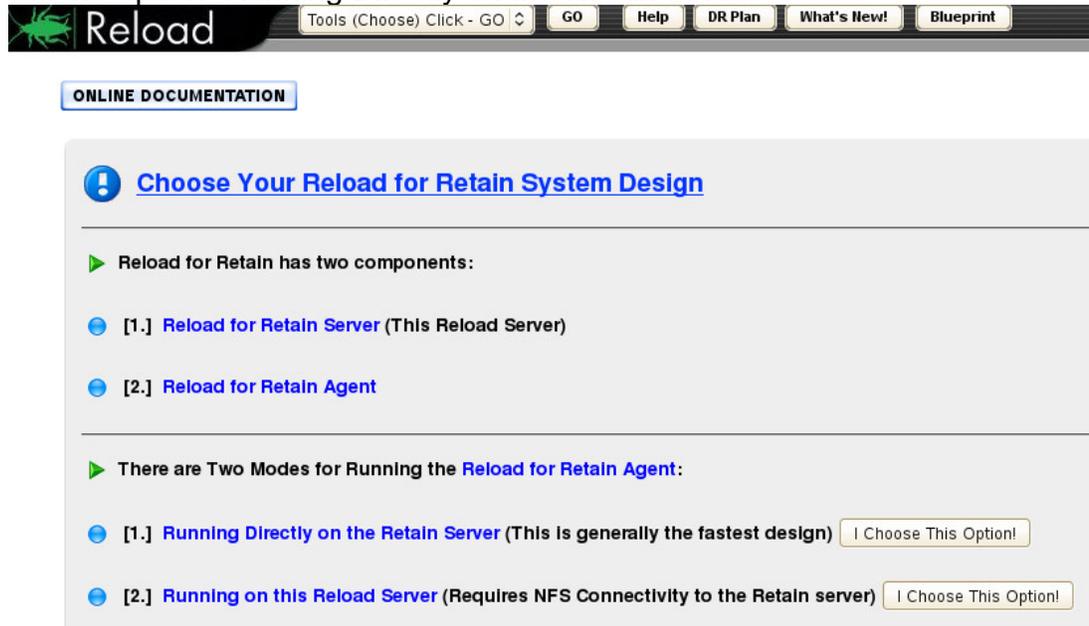
- Browse to the Reload Web Console | Configure tab
- Open Reload for Retain | Backup Setting pane



- Click "Create a Reload for Retain Agent" button
This will open a new window.

Reload for Retain 2.0

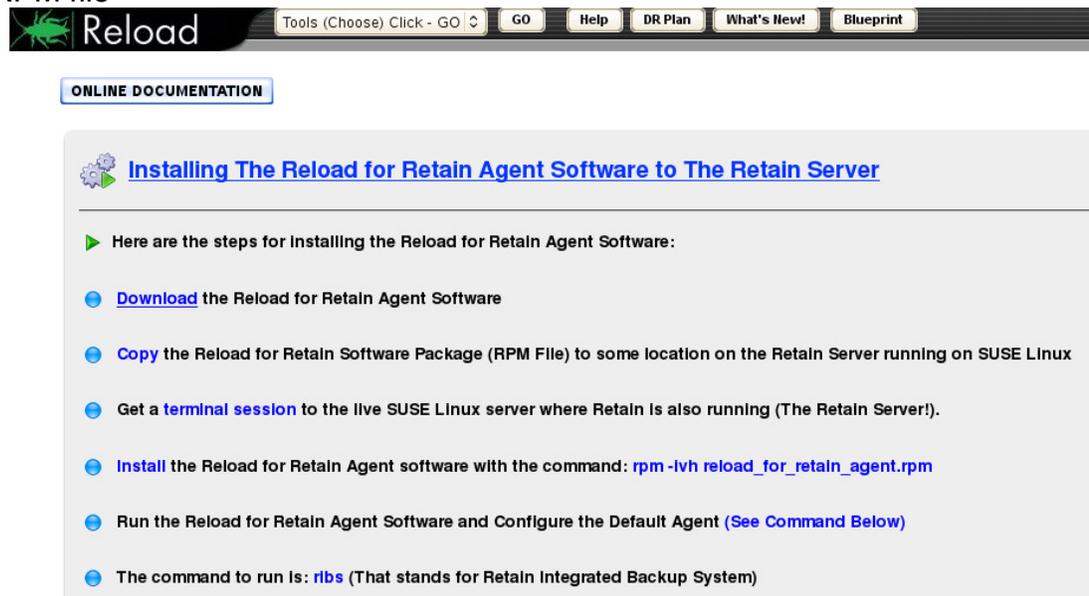
- Choose the option "Running Directly on the Retain Server"



The screenshot shows the Reload for Retain website interface. At the top, there is a navigation bar with the 'Reload' logo and several menu items: 'Tools (Choose) Click - GO', 'GO', 'Help', 'DR Plan', 'What's New!', and 'Blueprint'. Below the navigation bar is a button labeled 'ONLINE DOCUMENTATION'. The main content area features a heading 'Choose Your Reload for Retain System Design' with an information icon. Below this heading, there are two main sections. The first section, 'Reload for Retain has two components:', lists two options: '[1.] Reload for Retain Server (This Reload Server)' and '[2.] Reload for Retain Agent'. The second section, 'There are Two Modes for Running the Reload for Retain Agent:', lists two modes: '[1.] Running Directly on the Retain Server (This is generally the fastest design)' with a button 'I Choose This Option!', and '[2.] Running on this Reload Server (Requires NFS Connectivity to the Retain server)' with a button 'I Choose This Option!'.

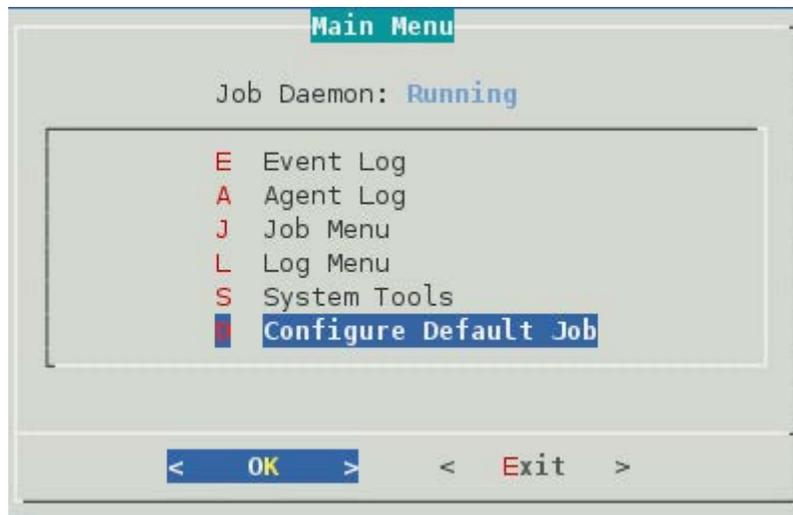
This will open a new window.

- Download the Reload for Retain Agent software to the Retain server. This will be an RPM file



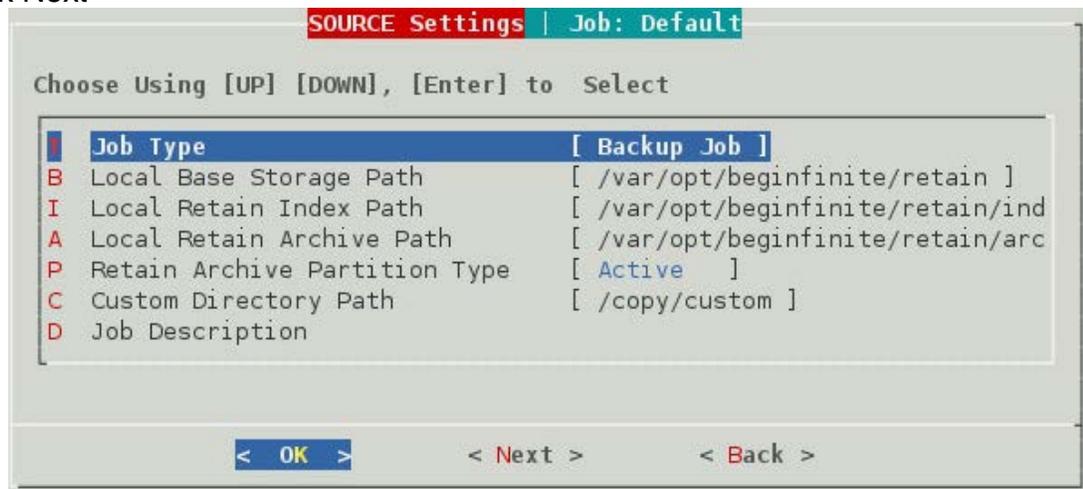
The screenshot shows the Reload for Retain website interface. At the top, there is a navigation bar with the 'Reload' logo and several menu items: 'Tools (Choose) Click - GO', 'GO', 'Help', 'DR Plan', 'What's New!', and 'Blueprint'. Below the navigation bar is a button labeled 'ONLINE DOCUMENTATION'. The main content area features a heading 'Installing The Reload for Retain Agent Software to The Retain Server' with a gear icon. Below this heading, there is a section 'Here are the steps for installing the Reload for Retain Agent Software:' followed by a list of seven steps: 1. 'Download the Reload for Retain Agent Software', 2. 'Copy the Reload for Retain Software Package (RPM File) to some location on the Retain Server running on SUSE Linux', 3. 'Get a terminal session to the live SUSE Linux server where Retain is also running (The Retain Server!).', 4. 'Install the Reload for Retain Agent software with the command: rpm -ivh reload_for_retain_agent.rpm', 5. 'Run the Reload for Retain Agent Software and Configure the Default Agent (See Command Below)', and 6. 'The command to run is: ribs (That stands for Retain Integrated Backup System)'.

- Open a terminal window where the file is and run the command:
`rpm -ivh reload_for_retain_agent.rpm`
- Run the agent software by running the command:
`reload`
- Select "Configure Default Job"



The Source settings fields will be filled in with default settings.

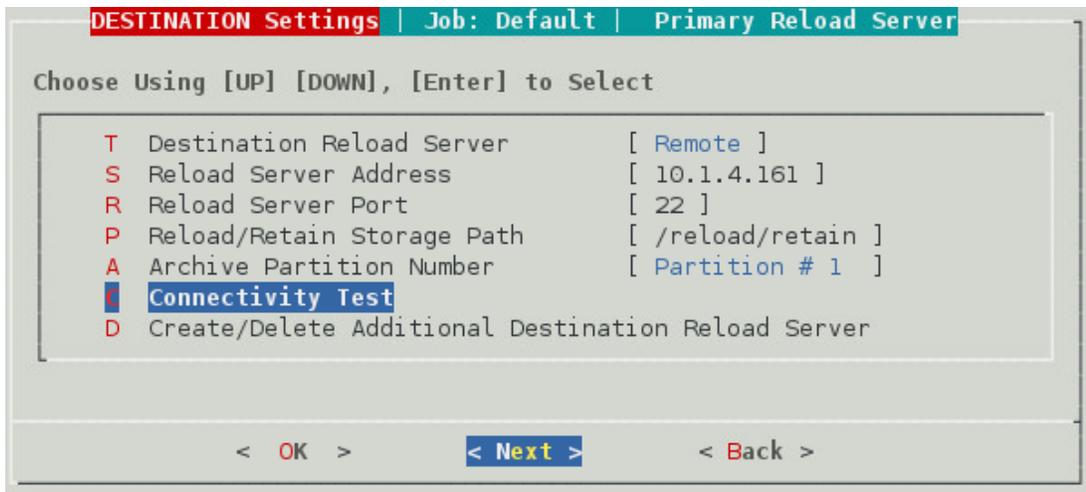
- Set the "Job Type" to "Backup Job"
- Set the "Local Base Storage Path" to the storage path on the Retain server
- Set the "Local Index Path" to the index path on the Retain server
- Set the "Local Retain Archive Path" to the archive path on the Retain server
- Click Next



The Destination settings fields will be filled in with default settings.

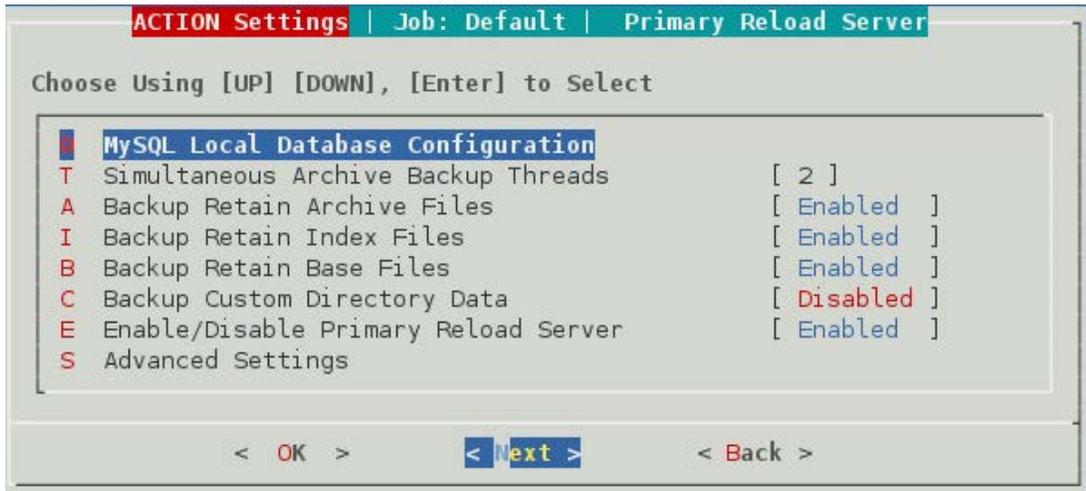
- Set the "Destination Reload Server to Remote"
 - Enter the Reload Server Address
 - The software will connect to the Reload server
- Press OK
- Test the connection
- Press Next

Reload for Retain 2.0



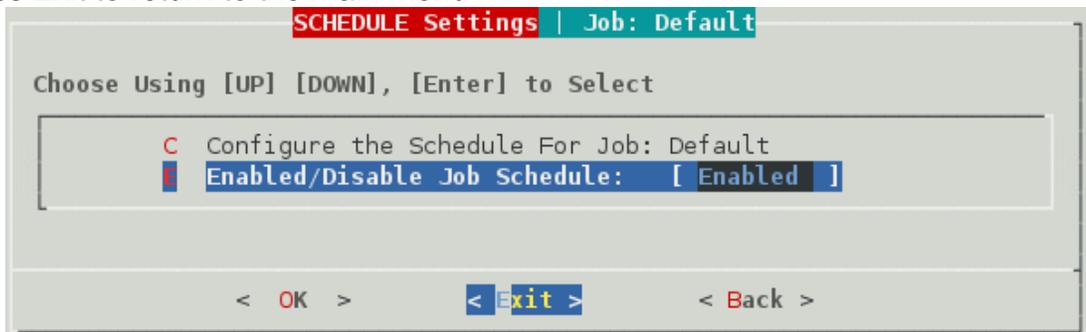
The Action settings window

- The defaults are usually good
- Press Next



The Schedule settings window

- Enable the job schedule
- Press Exit to return to the main menu

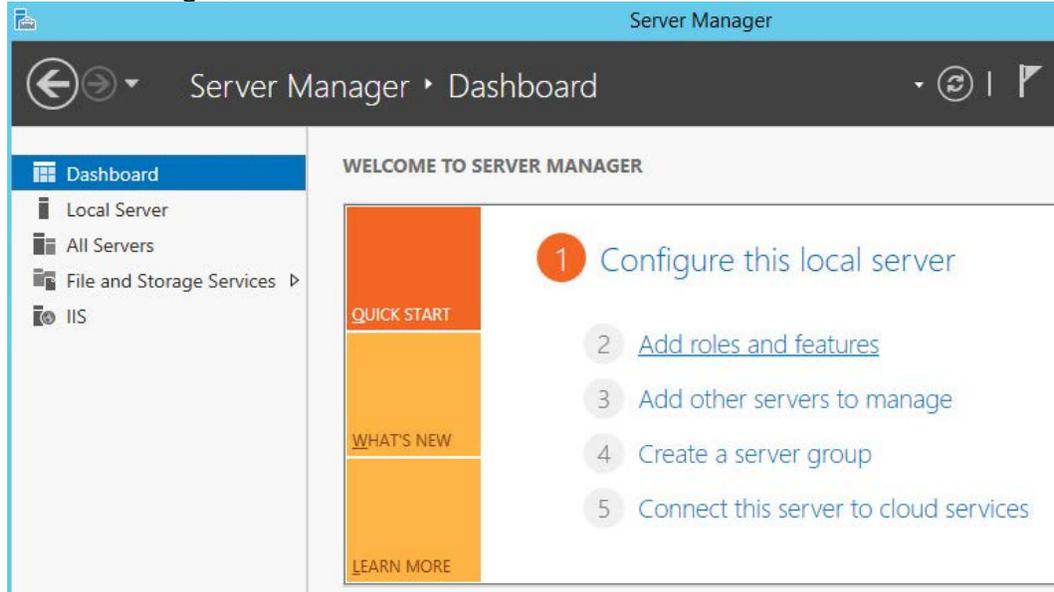


Start a job [hyperlink to that page]

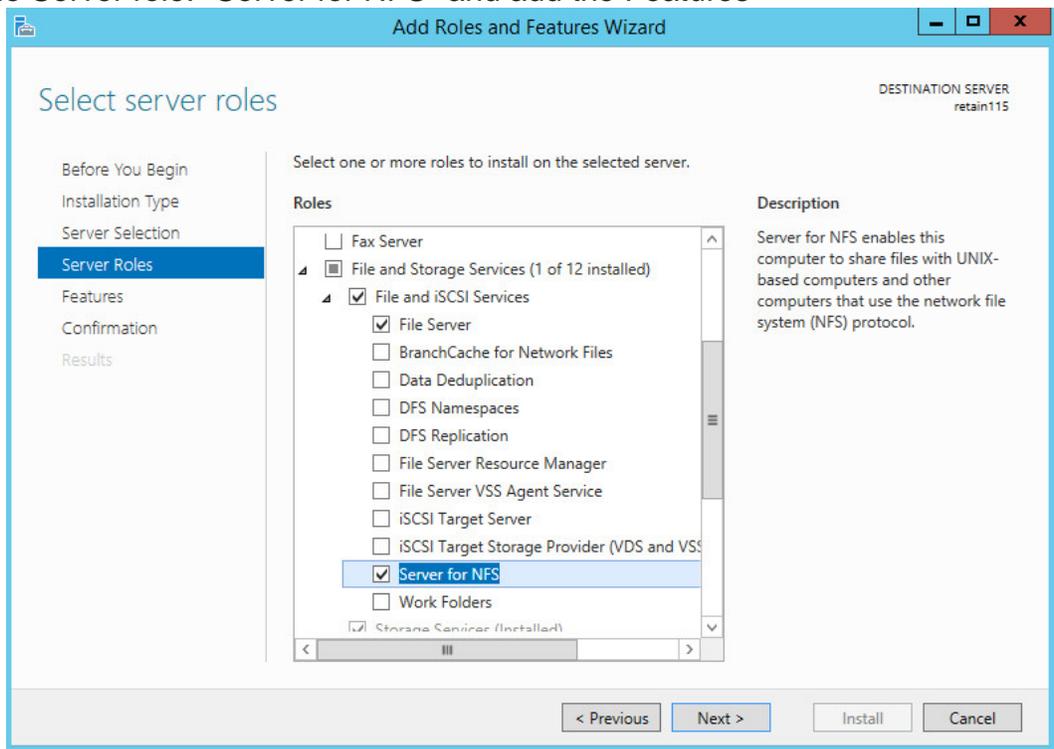
Installing Reload for Retain Agent on the Reload Server

On the Windows Retain server:

- Open Server Manager, if needed.



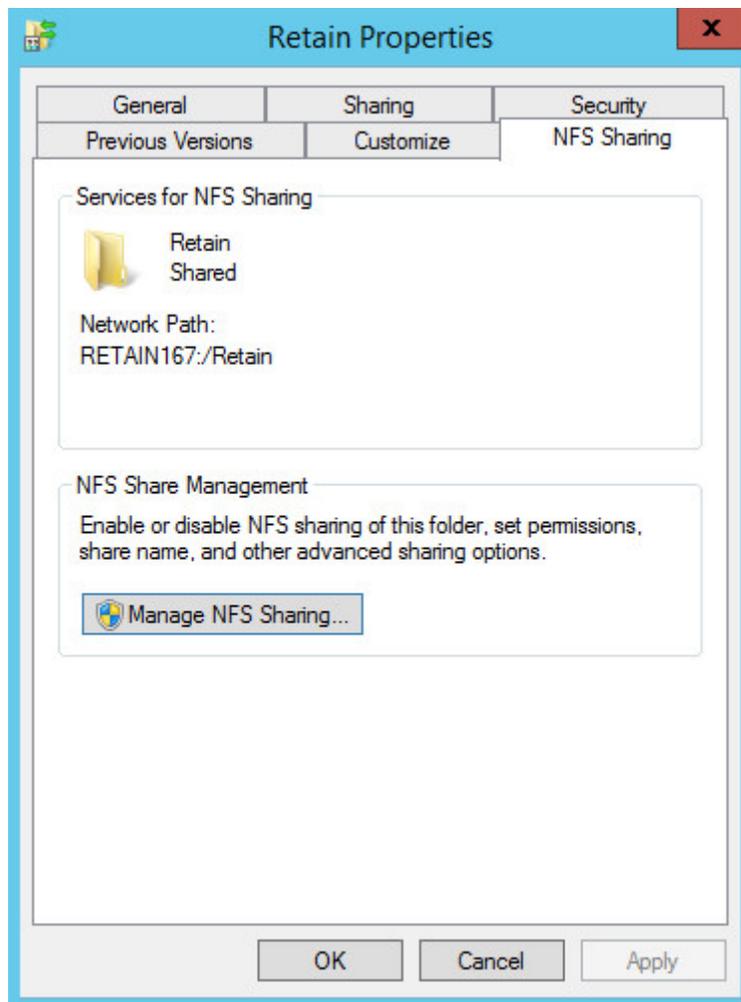
- Select "Add roles and features"
- Add the Server role: "Server for NFS" and add the Features



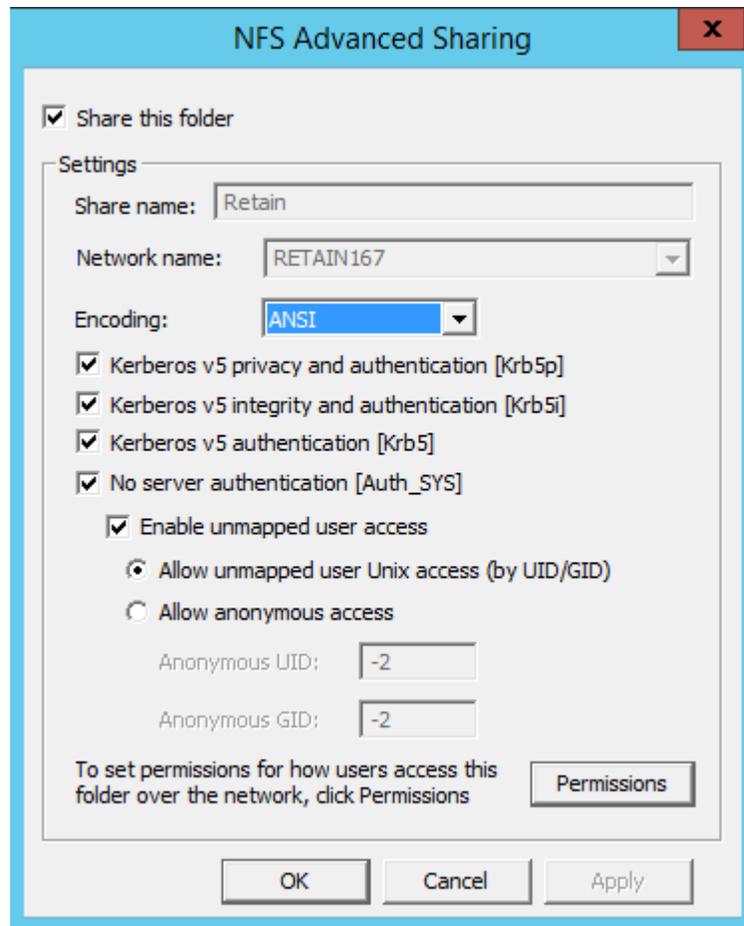
Once it is installed, browse to the storage area with File Explorer.

- Right-click on the Retain folder and select Properties
- Select the NFS Sharing tab

Reload for Retain 2.0

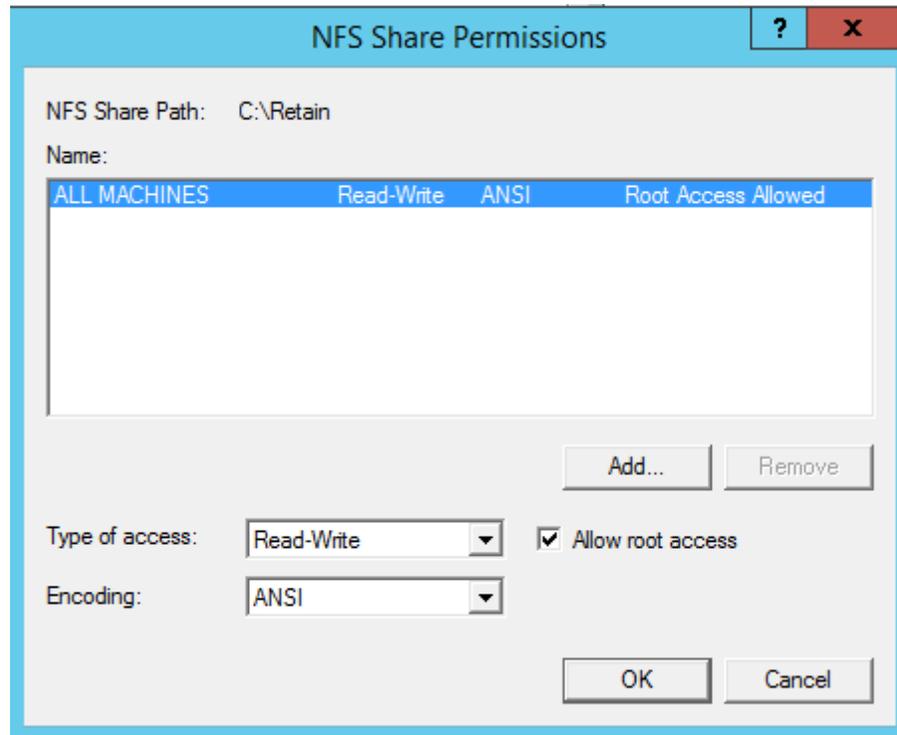


- Click on the Manage NFS Sharing button
- Enable "Share this folder"



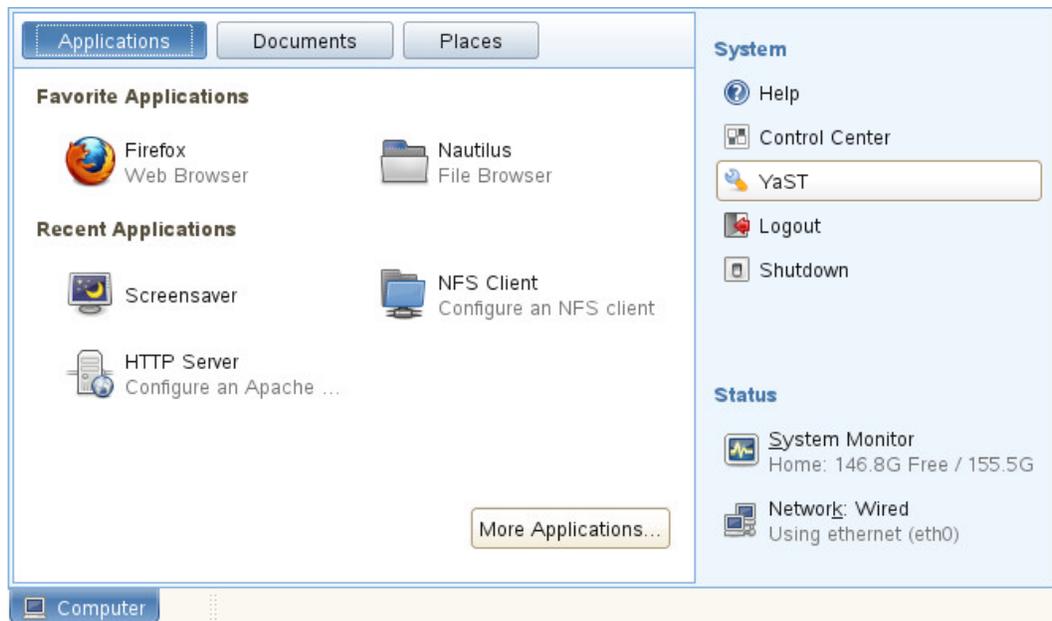
- Click on the "Permissions" button
 - Set "Type of access" to "Read-Write"
 - Enable "Allow root access"

Reload for Retain 2.0

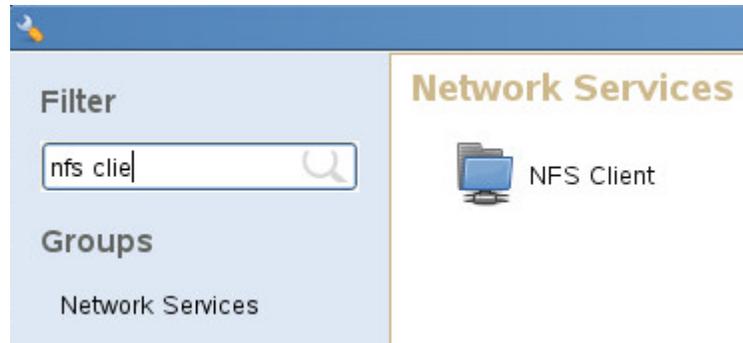


On the Reload server: Setup a persistent NFS client mount:

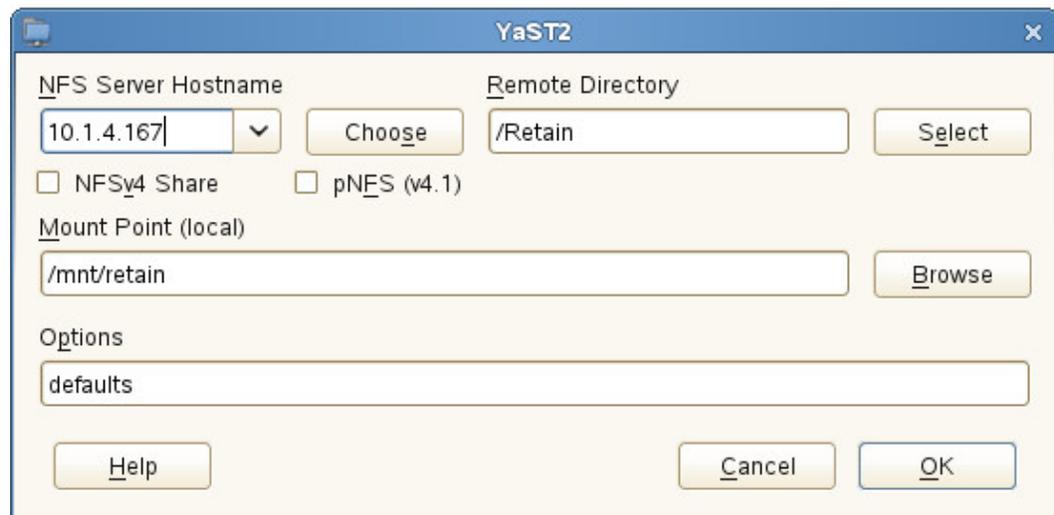
- Open YaST



- Select Network Services | NFS Client



-
- Under NFS Shares, Click "Add"
 - Enter the NFS Server Hostname or IP address
 - Enter the Remote directory with the Select button
 - Enter the Mount Point. For example, /mnt/retain
 - Press OK



-
- Press OK

Control Mounts of remote disks

In the terminal enter the appropriate command.

To Mount:

```
mount -a
```

To Dismount:

```
umount -l /mnt/retain
```

Install Agent Software

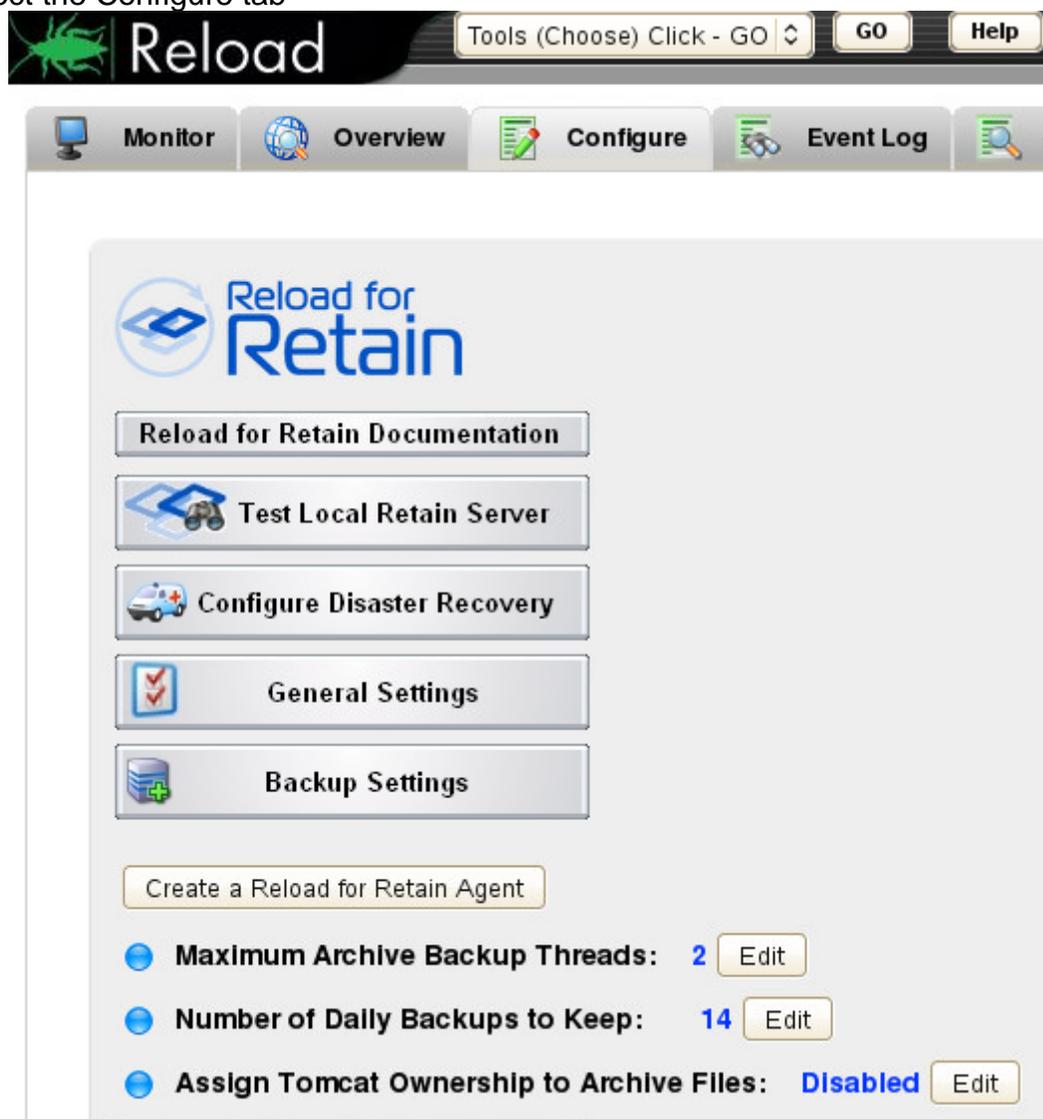
On the Reload for Retain Server:

Download the Agent software:

- Browse to the Reload Web Console

Reload for Retain 2.0

- Select the Configure tab



The screenshot displays the Reload for Retain 2.0 web interface. At the top, there is a navigation bar with the 'Reload' logo and a search bar containing 'Tools (Choose) Click - GO'. Below the navigation bar, there are several tabs: 'Monitor', 'Overview', 'Configure' (which is selected), 'Event Log', and a partially visible 'A' tab. The main content area shows the 'Reload for Retain' logo and a list of configuration options: 'Reload for Retain Documentation', 'Test Local Retain Server', 'Configure Disaster Recovery', 'General Settings', and 'Backup Settings'. Below these options, there is a button labeled 'Create a Reload for Retain Agent'. Underneath, there are three settings with 'Edit' buttons: 'Maximum Archive Backup Threads: 2', 'Number of Dally Backups to Keep: 14', and 'Assign Tomcat Ownership to Archive Files: Disabled'.

- Open the Reload for Retain panel
- Open the Backup Settings section
- Press the "Create a Reload for Retain Agent" button, a new window/tab will open

The screenshot shows the Reload web interface. At the top, there is a navigation bar with the Reload logo and several buttons: Tools (Choose) Click - GO, GO, Help, DR Plan, What's New!, and Blueprint. Below the navigation bar, there is a section titled 'ONLINE DOCUMENTATION'. The main content area is titled 'Choose Your Reload for Retain System Design'. It contains the following information:

- Reload for Retain has two components:
 - [1.] Reload for Retain Server (This Reload Server)
 - [2.] Reload for Retain Agent
- There are Two Modes for Running the Reload for Retain Agent:
 - [1.] Running Directly on the Retain Server (This is generally the fastest design) | Choose This Option!
 - [2.] Running on this Reload Server (Requires NFS Connectivity to the Retain server) | Choose This Option!

- Choose the option "Running on this Reload Server".

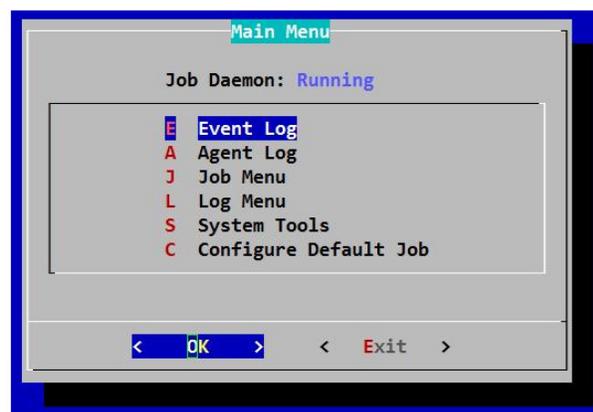
This will open a new window.

- This will download the agent software to the Reload server. This will be an RPM file

A request for the Reload Daemon to install the Reload for Retain Agent software package was created.

Now get a terminal session to the Reload Server and run The Reload for Retain Agent Administration Console with the simple command:

`ribs (Retain Integrated Backup System)`

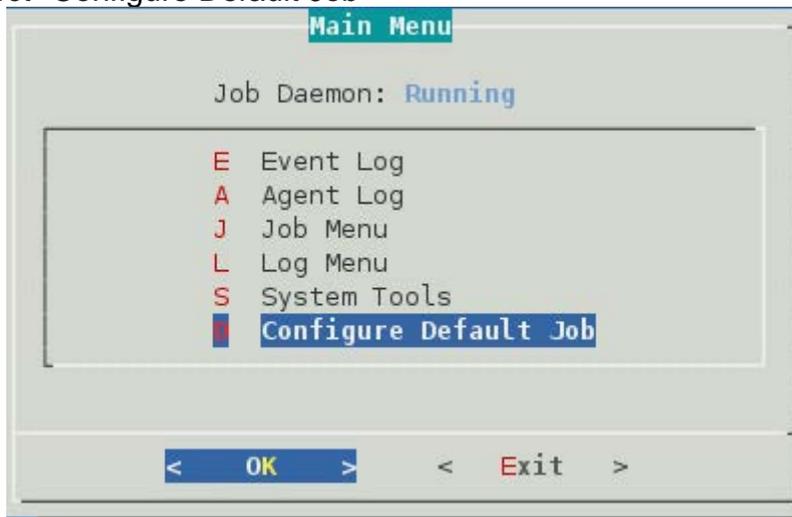


NOTE: This is the Reload for Retain Console Administration Tool

- Run the agent software by running the command:
`ribs`

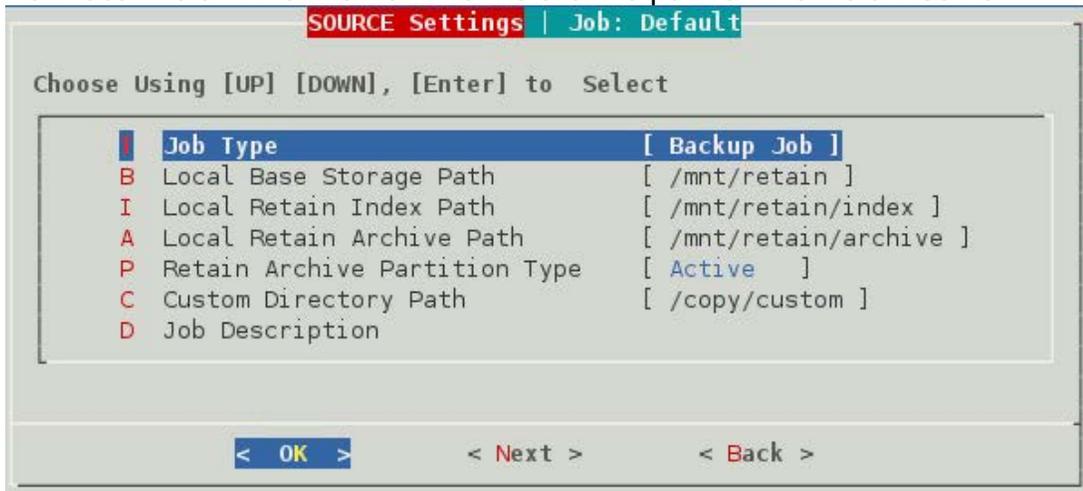
Reload for Retain 2.0

- Select "Configure Default Job"



The Source settings fields will be filled in with default settings.

- Set the "Job Type" to "Backup Job"
- Set the "Local Base Storage Path" to the mount to the storage path on the Retain server. For example, /mnt/retain
- Set the "Local Index Path" to the index path on the Retain server
- Set the "Local Retain Archive Path" to the archive path on the Retain server

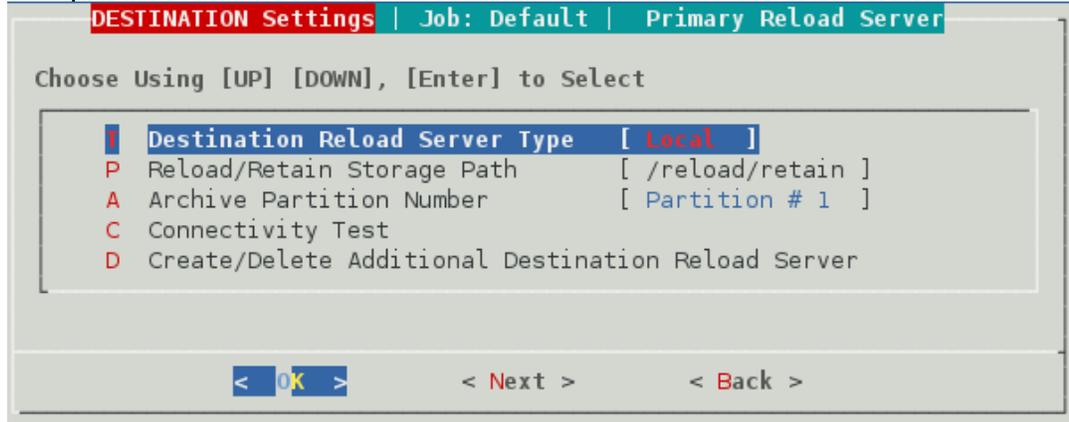


- Click Next

The Destination settings fields will be filled in with default settings.

- Set the "Destination Reload Server Type" to Local
- Enter the Reload Server Address
- Set the Reload/Retain Storage Path where the data will be stored on the Reload server. This must be the same as found in the Reload Web Console | Configure | Reload for Retain | General Settings | Reload/Retain Backup Storage Path. For example, /reload/retain

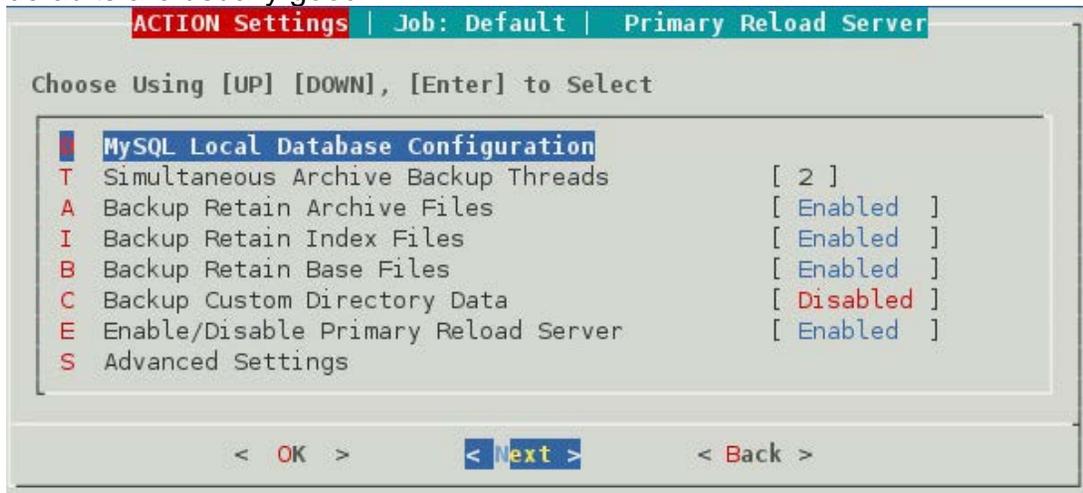
- If using Storage Manager on the Retain server and you have more than one partition: Set the "Archive Partition Number"



- Select "Connectivity Test"
- Press OK to test the connection
- Press Next

The Action settings window

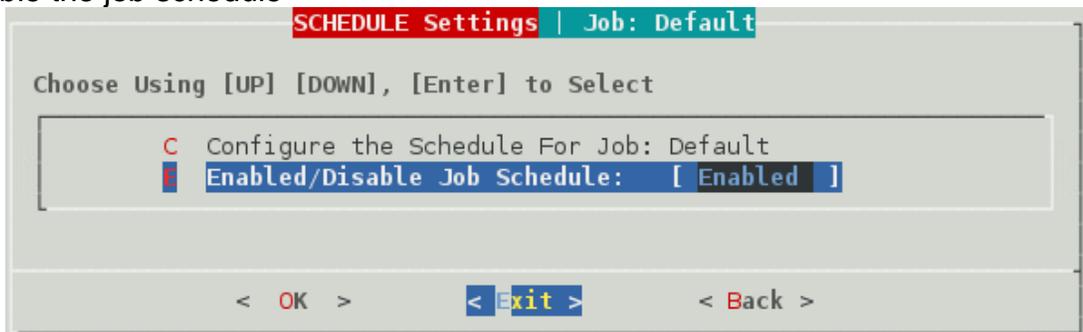
- The defaults are usually good



- Press Next

The Schedule settings window

- Enable the job schedule



Reload for Retain 2.0

- Press Exit to return to the main menu

Configure Mirroring

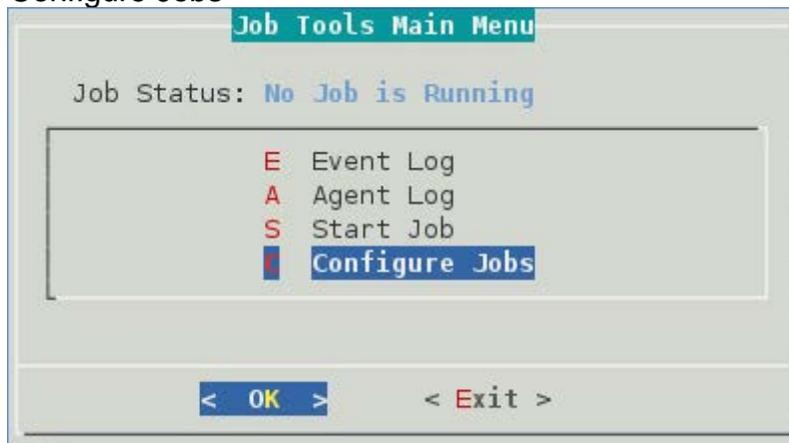
Mirroring is a job that will have Reload for Retain check for new BLOBS and index files every minute. This is useful when Retain is archiving mobile and other continuous flow data sources.

On the server with the Reload for Retain Agent:

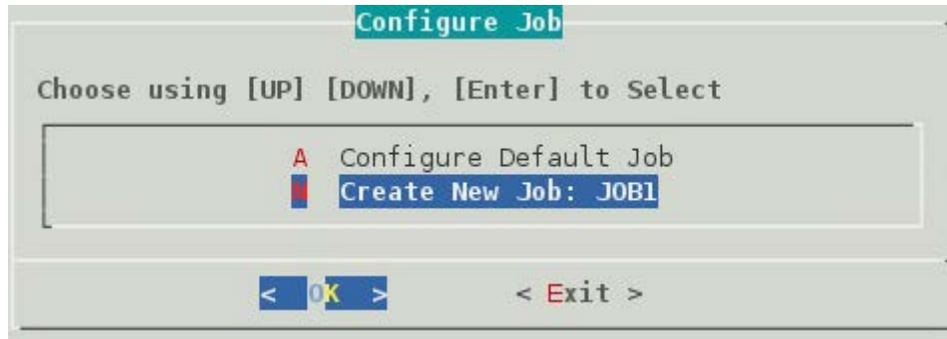
- Open a terminal window and run: ribs
- Select Job Menu



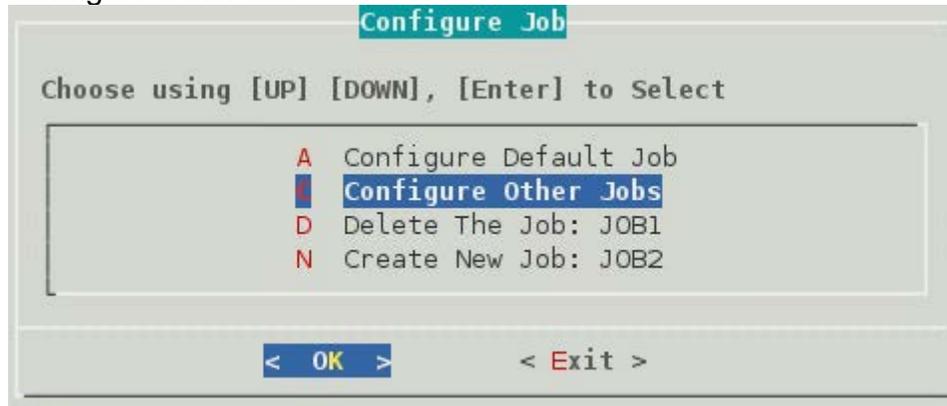
- Select Configure Jobs



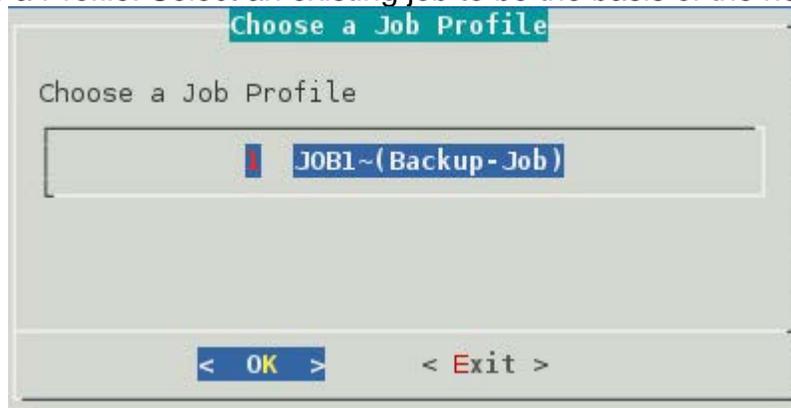
- Select Create New Job



- Select Configure Other Job

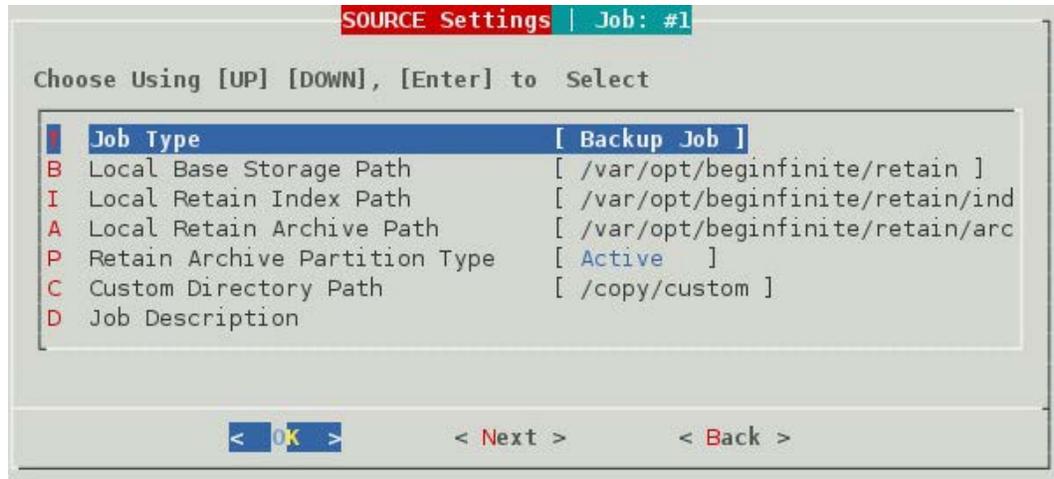


- Chose a Profile. Select an existing job to be the basis of the new job



- On Source Settings, select Job Type and press OK

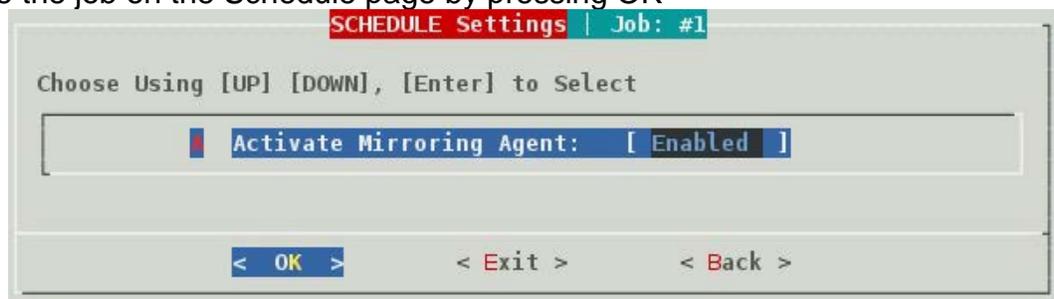
Reload for Retain 2.0



- Change the Job Type to Mirroring Agent and press Space to select.



- Press OK to return to Source Settings. This is populated by the data in the default job.
- Select Next to leave the Source page
- Select Next to leave the Destination page
- Select Next to leave the Action page
- Enable the job on the Schedule page by pressing OK



- Press Exit to return to the Main Menu

On the Main Menu the option Mirroring Agent will appear.



From this menu option the agent can be configured or stopped.



Logging

The Agent log will begin rolling as data is sent.

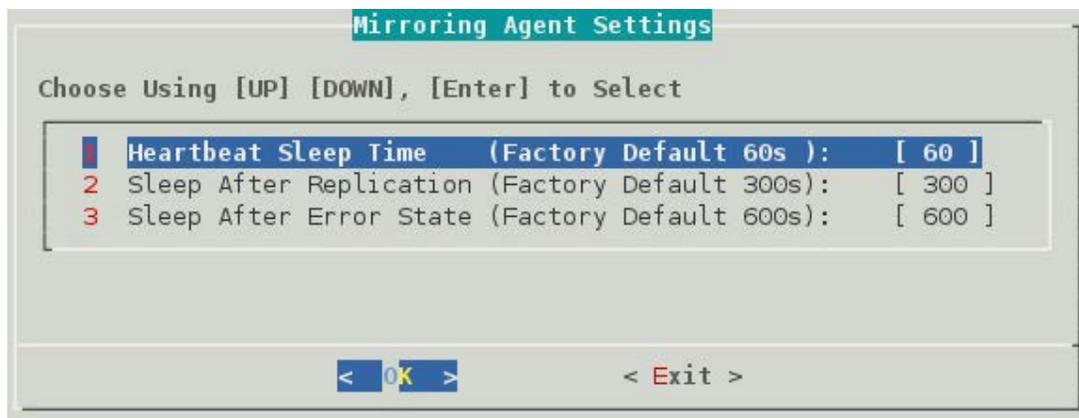
Configure Mirroring Intervals

Once a mirror job completes replicating the data, the agent will wait 300 seconds before beginning to check every minute again, so data can accrue.

To change the time between mirror jobs:

- Select **Mirroring Agent | Configure Mirroring Agent | Mirroring Agent Settings**
 - Heartbeat Sleep Time (Factory Default 60s)
 - Sleep After Replication (Factory Default 300s)
 - Sleep After Error State (Factory Default 600s)

Reload for Retain 2.0



Install Agent with Retain on Linux

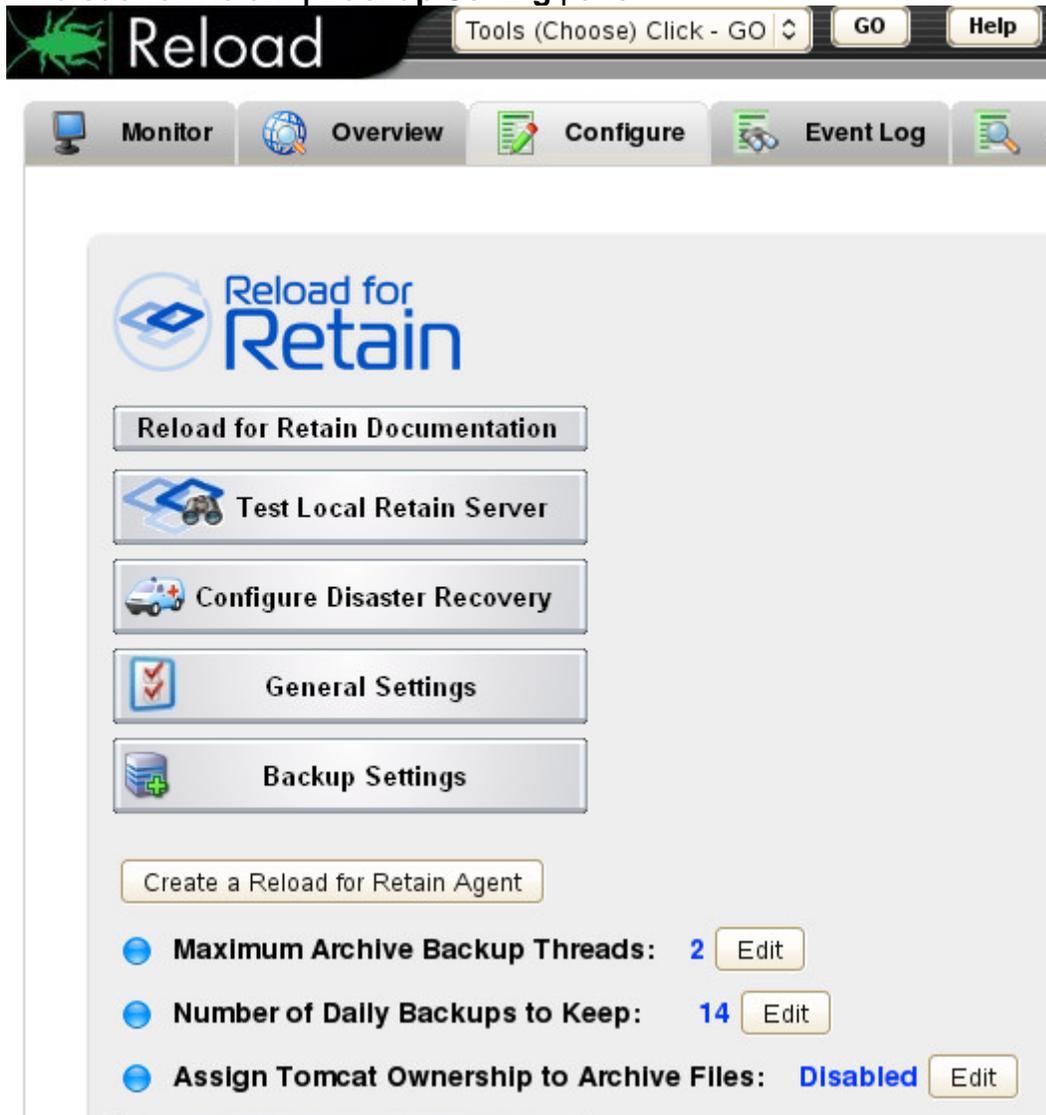
Install Reload for Retain Agent

The Reload for Retain Agent moves the data from one server to another. The agent runs on Linux and can run on the Reload or Retain server. If Retain is on Windows, the agent will need to run on the Reload server.

Installing Reload for Retain Agent on a Linux Retain Server

On the Retain server:

- Browse to the **Reload Web Console | Configure** tab
- Open **Reload for Retain | Backup Setting** pane



The screenshot shows the Reload for Retain web console interface. At the top, there is a navigation bar with the 'Reload' logo and a search bar containing 'Tools (Choose) Click - GO'. Below the navigation bar, there are several tabs: 'Monitor', 'Overview', 'Configure', 'Event Log', and a partially visible 'Backup Settings' tab. The main content area displays the 'Reload for Retain' logo and a list of configuration options:

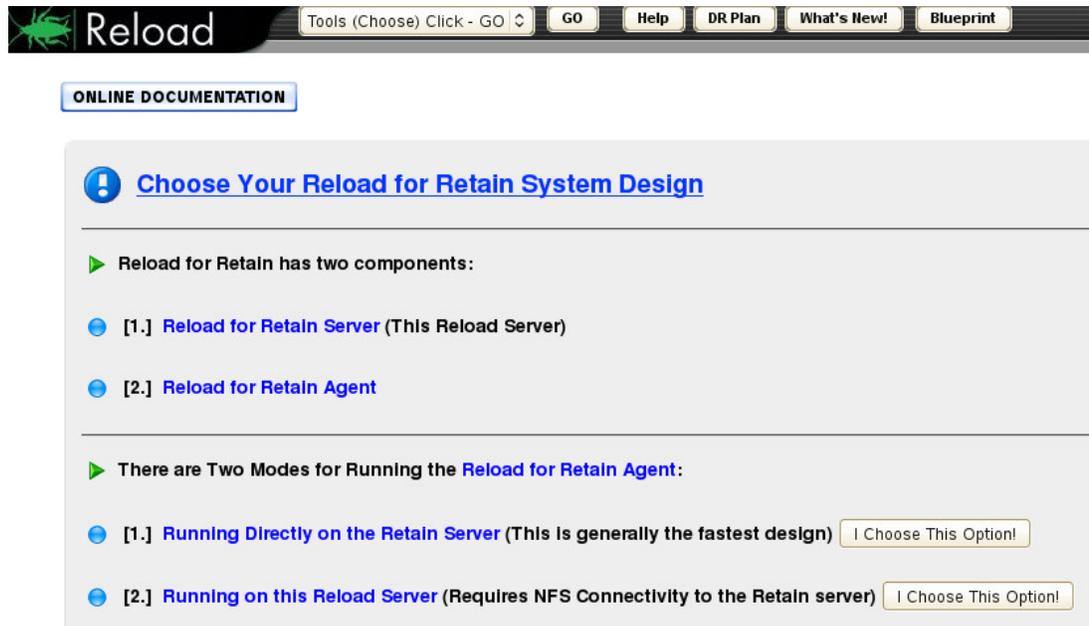
- Reload for Retain Documentation
- Test Local Retain Server
- Configure Disaster Recovery
- General Settings
- Backup Settings

Below these options, there is a button labeled 'Create a Reload for Retain Agent'. At the bottom, there are three configuration items, each with a blue circular icon and an 'Edit' button:

- Maximum Archive Backup Threads: 2 Edit
- Number of Dally Backups to Keep: 14 Edit
- Assign Tomcat Ownership to Archive Files: Disabled Edit

Reload for Retain 2.0

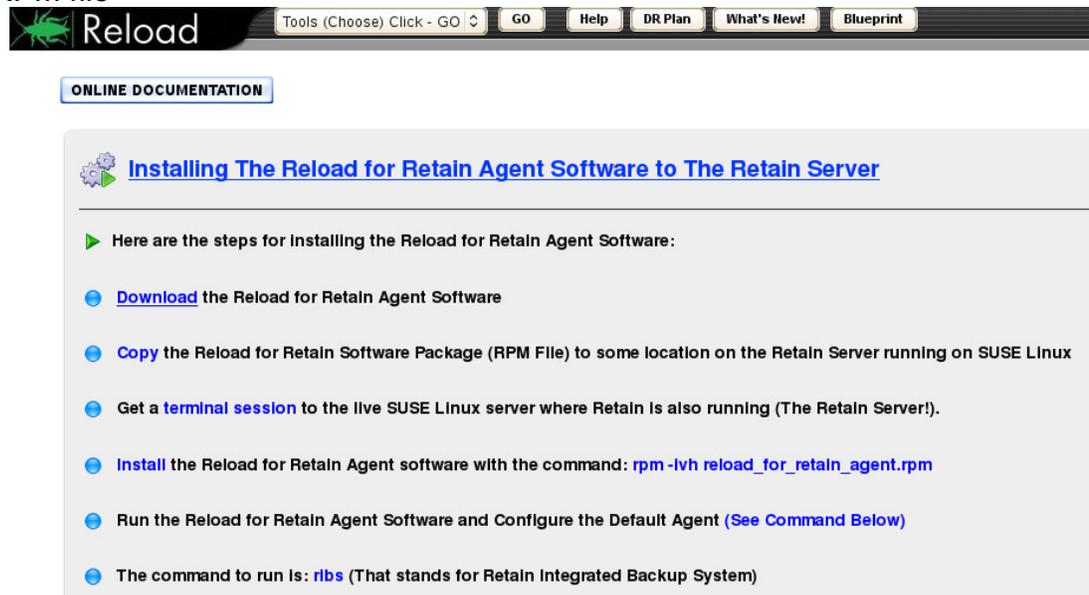
- Click "Create a Reload for Retain Agent" button. This will open a new window.
- Choose the option "Running Directly on the Retain Server". This will open a new window.



The screenshot shows the Reload for Retain web interface. At the top, there is a navigation bar with the 'Reload' logo and several buttons: 'Tools (Choose) Click - GO', 'GO', 'Help', 'DR Plan', 'What's New!', and 'Blueprint'. Below the navigation bar is a button for 'ONLINE DOCUMENTATION'. The main content area is titled 'Choose Your Reload for Retain System Design' and contains the following information:

- ▶ Reload for Retain has two components:
 - [1.] [Reload for Retain Server](#) (This Reload Server)
 - [2.] [Reload for Retain Agent](#)
- ▶ There are Two Modes for Running the [Reload for Retain Agent](#):
 - [1.] [Running Directly on the Retain Server](#) (This is generally the fastest design)
 - [2.] [Running on this Reload Server](#) (Requires NFS Connectivity to the Retain server)

- Download the Reload for Retain Agent software to the Retain server. This will be an RPM file



The screenshot shows the Reload for Retain web interface. At the top, there is a navigation bar with the 'Reload' logo and several buttons: 'Tools (Choose) Click - GO', 'GO', 'Help', 'DR Plan', 'What's New!', and 'Blueprint'. Below the navigation bar is a button for 'ONLINE DOCUMENTATION'. The main content area is titled 'Installing The Reload for Retain Agent Software to The Retain Server' and contains the following information:

- ▶ Here are the steps for installing the Reload for Retain Agent Software:
 - [Download](#) the Reload for Retain Agent Software
 - [Copy](#) the Reload for Retain Software Package (RPM File) to some location on the Retain Server running on SUSE Linux
 - Get a [terminal session](#) to the live SUSE Linux server where Retain is also running (The Retain Server!).
 - [Install](#) the Reload for Retain Agent software with the command: `rpm -ivh reload_for_retain_agent.rpm`
 - Run the Reload for Retain Agent Software and Configure the Default Agent ([See Command Below](#))
 - The command to run is: `ribs` (That stands for Retain Integrated Backup System)

- Open a terminal window where the file is and run the command:

```
rpm -ivh reload_for_retain_agent.rpm
```
- Run the agent software by running the command:

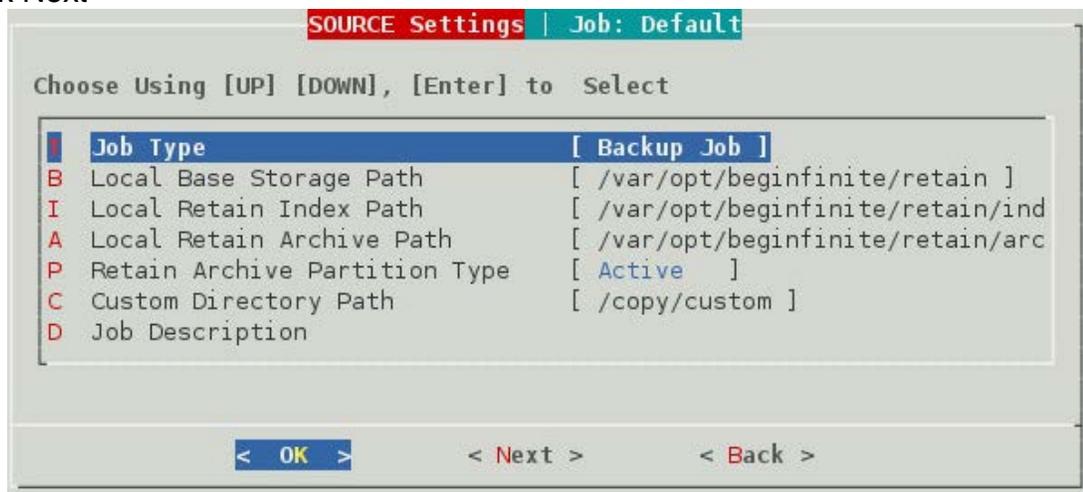
```
reload
```
- Select "Configure Default Job"



Configure Default Job

The Source settings fields will be filled in with default settings.

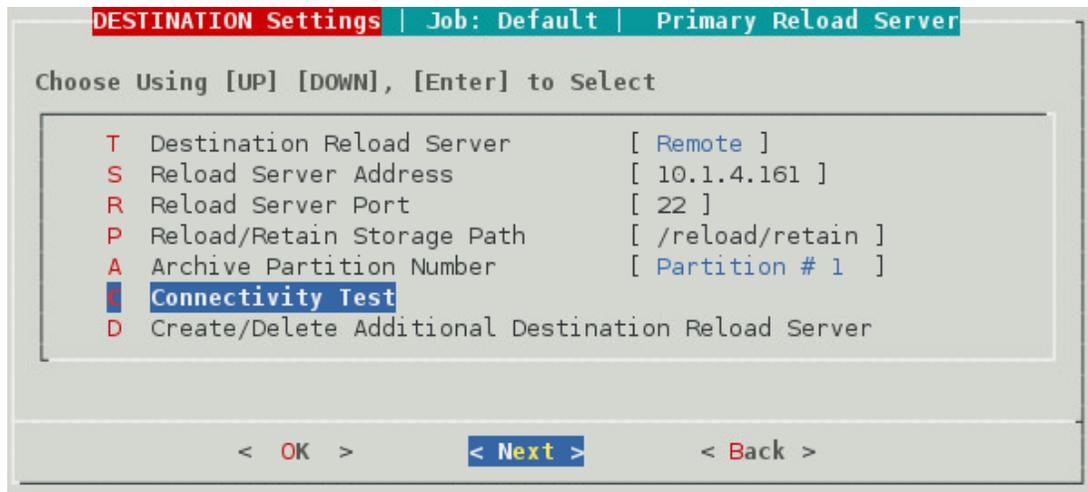
- Set the "Job Type" to "Backup Job"
- Set the "Local Base Storage Path" to the storage path on the Retain server
- Set the "Local Index Path" to the index path on the Retain server
- Set the "Local Retain Archive Path" to the archive path on the Retain server
- Click Next



The Destination settings fields will be filled in with default settings.

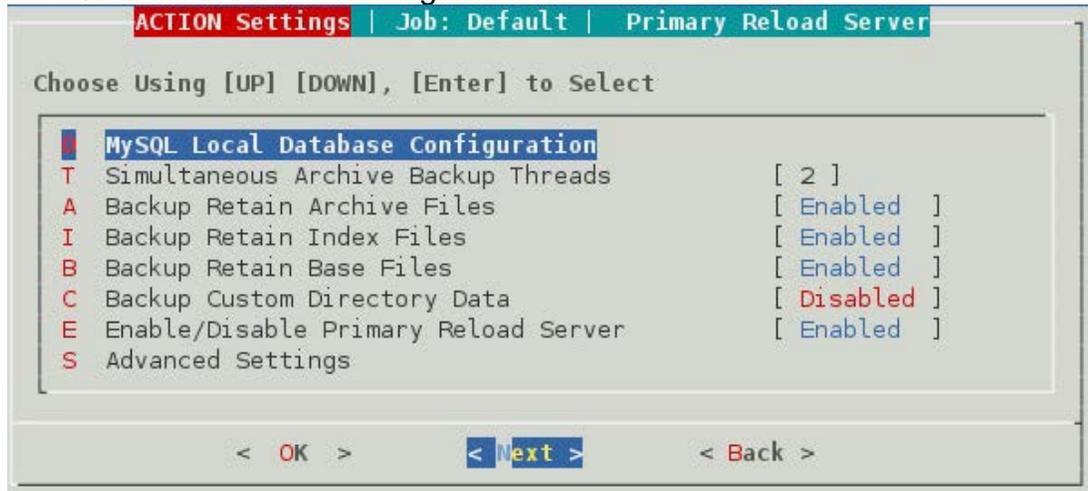
- Set the "Destination Reload Server to Remote"
 - Enter the Reload Server Address
 - The software will connect to the Reload server
- Press OK
- Test the connection
- Press Next

Reload for Retain 2.0

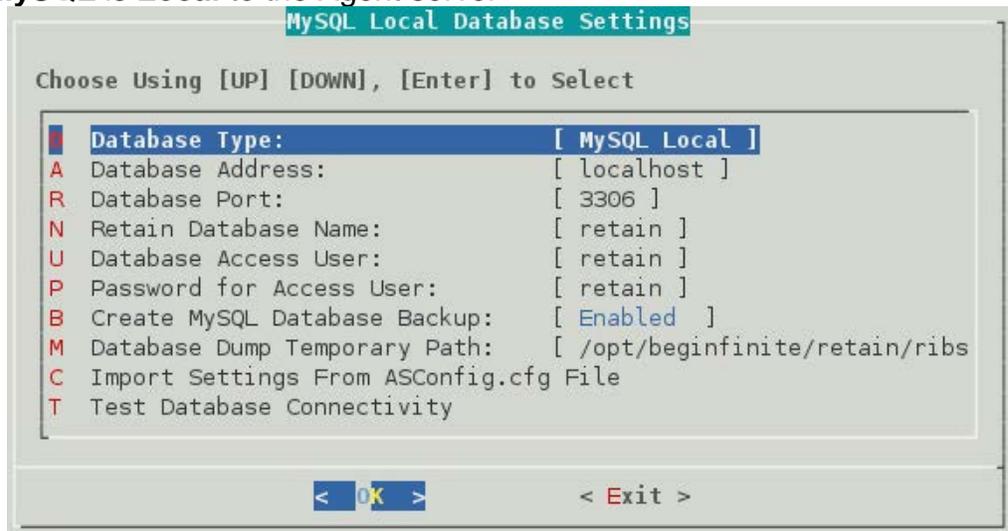


The Action settings window

- Select SQL Local Database Configuration



- Set Database Type
 - If MySQL is Local to the Agent server



- If **MySQL** is **Remote** to the Agent server

MySQL Remote Database Settings

Choose Using [UP] [DOWN], [Enter] to Select

D	Database Type:	[MySQL Remote]
A	Database Address:	[10.1.4.167]
R	Database Port:	[3306]
N	Retain Database Name:	[retain]
U	Database Access User:	[retain]
P	Password for Access User:	[retain]
B	Create Database Dump Backup:	[Enabled]
M	Database Dump Temporary Path:	[/opt/beginfinite/retain/ribs]
C	Import Settings From ASConfig.cfg File	
T	Test Database Connectivity	

< **OK** > < **Exit** >

- If **MSSQL**

MSSQL Database Settings

Choose Using [UP] [DOWN], [Enter] to Select

D	Database Type:	[MSSQL]
A	Database Address:	[10.1.4.167]
R	Database Port:	[1433]
N	Retain Database Name:	[retain]
U	Database Access User:	[retain]
P	Password for User:	[retain]
C	Import Settings From ASConfig.cfg File	
T	Test Database Connectivity	

< **OK** > < **Exit** >

- If **Oracle**

Oracle Database Settings

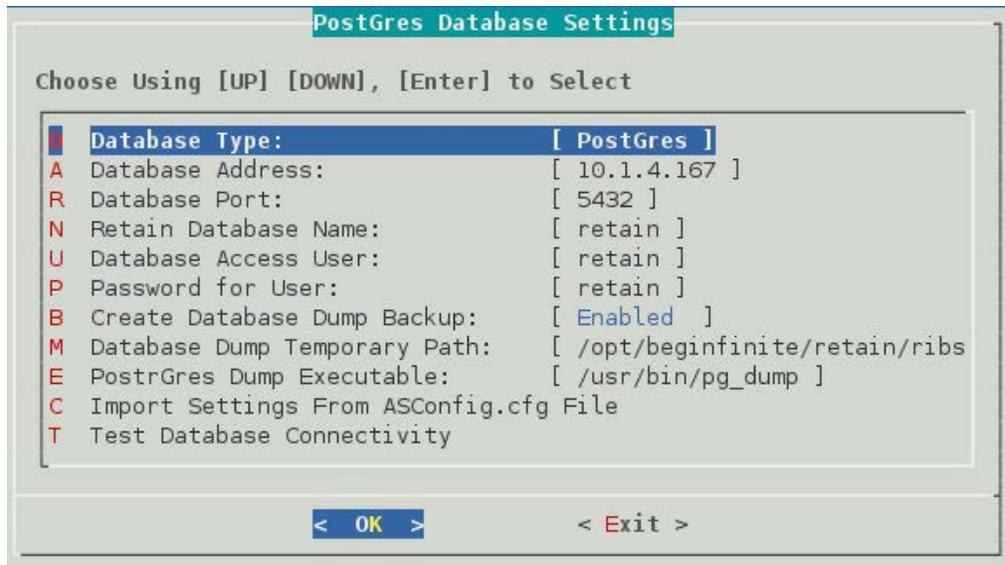
Choose Using [UP] [DOWN], [Enter] to Select

D	Database Type:	[Oracle]
O	Oracle Net Connect Identifier:	[retain]
U	Database Access User:	[retain]
P	Password for Access User:	[retain]
L	SQL Plus Client Library Path:	[/usr/lib/oracle/12.1/client6]
C	Import Settings From ASConfig.cfg File	
T	Test Database Connectivity	

< **OK** > < **Exit** >

- If **PostGres**

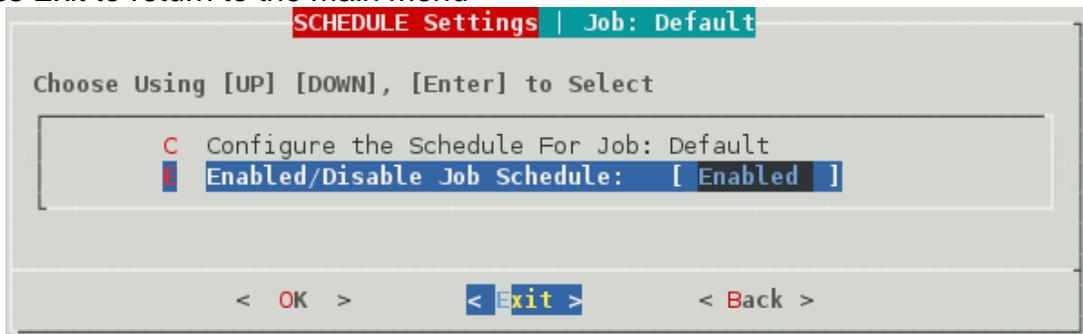
Reload for Retain 2.0



- Select **Import Settings From ASConfig.cfg File** to import configuration data or enter the data manually
- Select **Test Database Connectivity**
- Press Next

The Schedule settings window

- Enable the job schedule
- Press Exit to return to the main menu



Install Agent with Retain on Windows

Installing Reload for Retain Agent on the Reload Server

Copy ASConfig

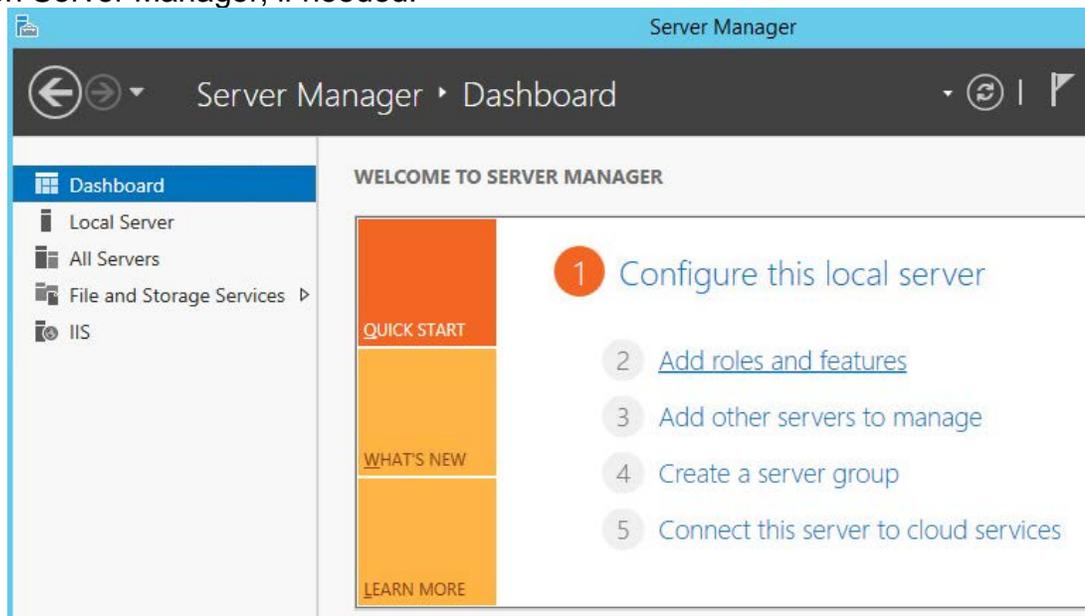
The ASConfig file contains the configuration data for Retain that Reload can use for setup.

- Copy the ASConfig.cfg file from the Retain server to the Reload server.
By default, Windows Retain Server: C:\Program Files\begininfinite\retain\RetainServer\WEB-INF\cfg
Linux Reload Server /opt/beginifite/retain/RetainServer/WEB-INF/cfg

Prepare the Windows server

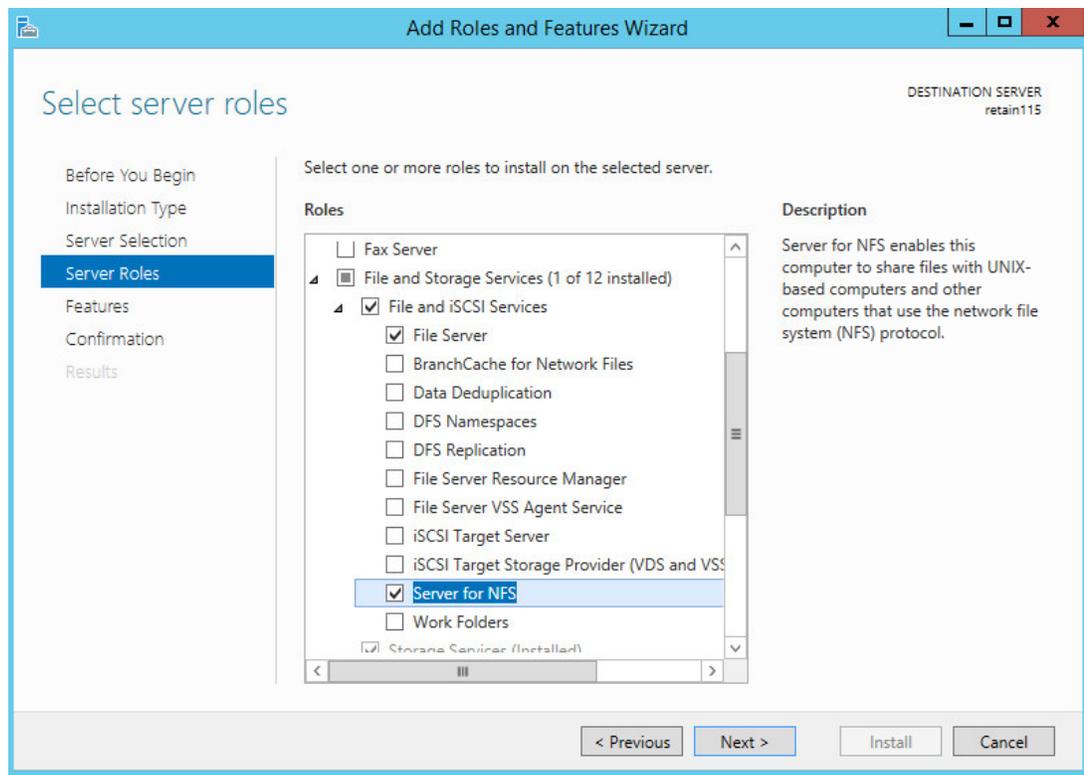
On the Windows Retain server:

- Open Server Manager, if needed.



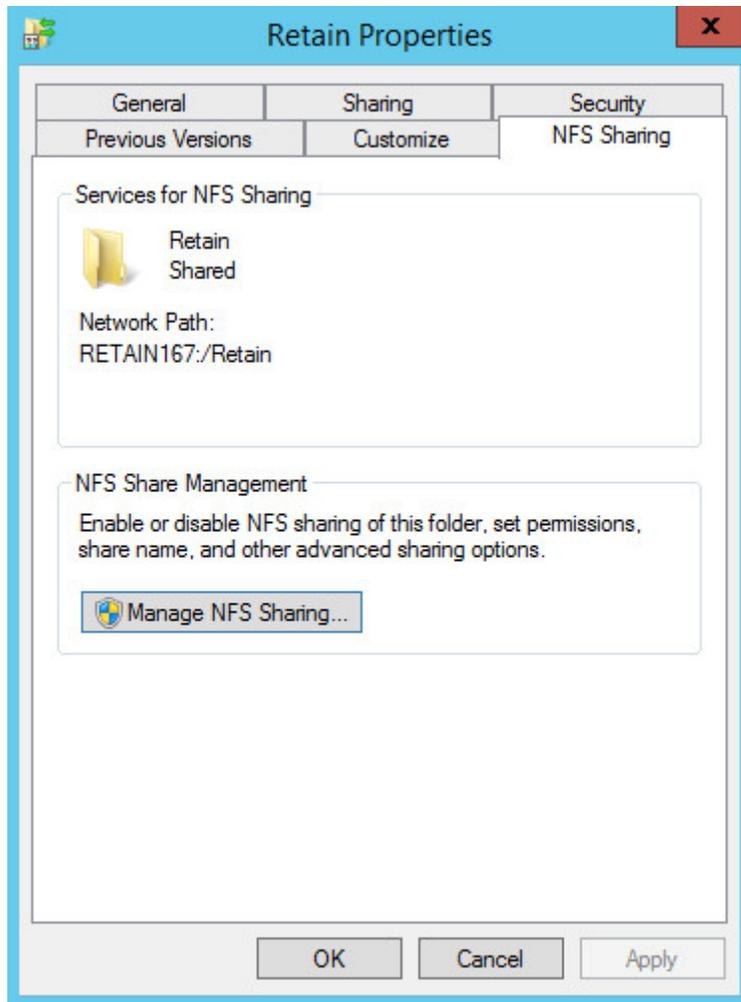
- Select "Add roles and features"
- Add the Server role: "Server for NFS" and add the Features

Reload for Retain 2.0



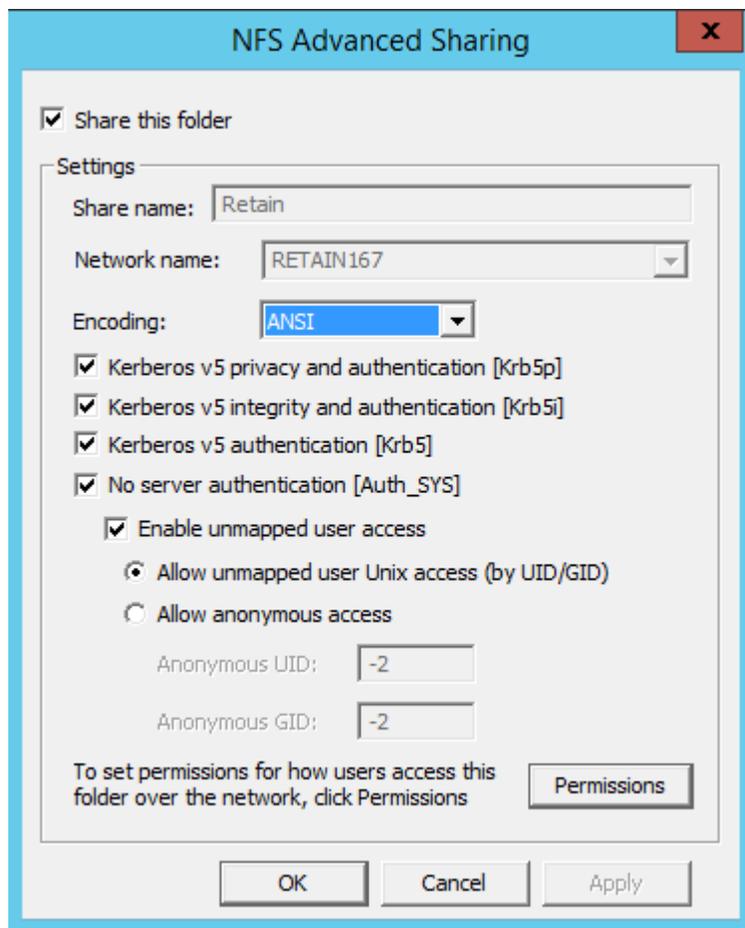
Once it is installed, browse to the storage area with File Explorer.

- Right-click on the Retain folder and select Properties
- Select the NFS Sharing tab

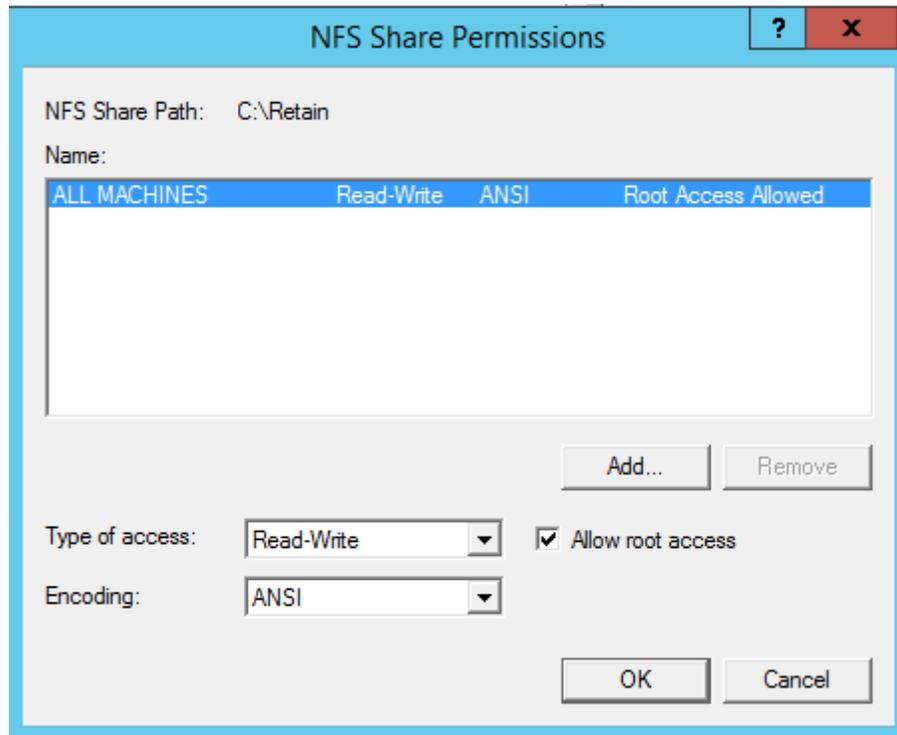


- Click on the Manage NFS Sharing button
- Enable "Share this folder"

Reload for Retain 2.0



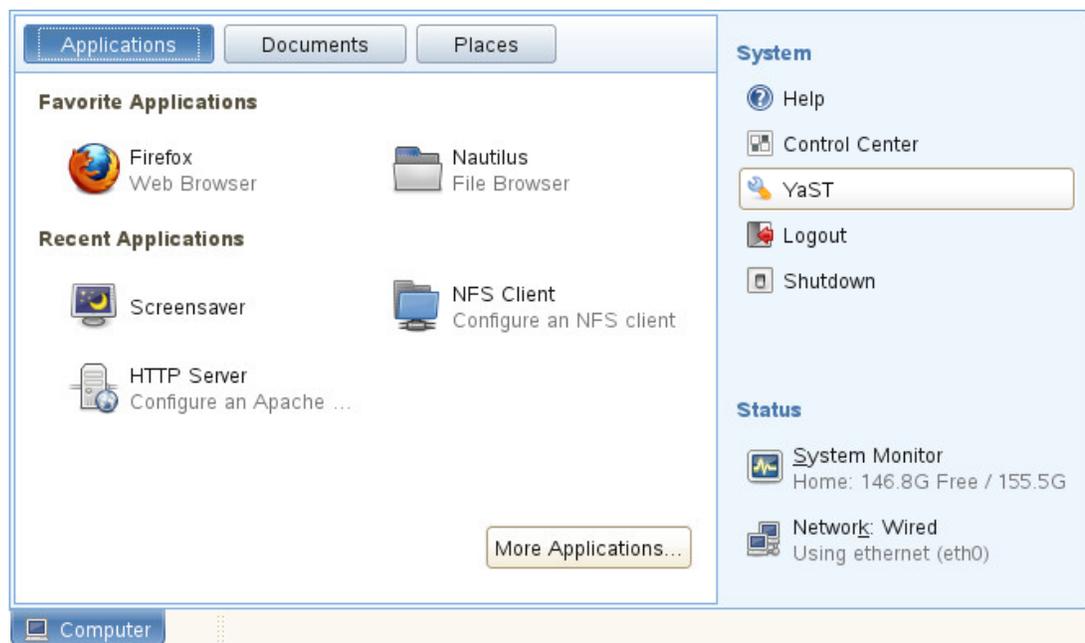
- Click on the "Permissions" button
 - Set "Type of access" to "Read-Write"
 - Enable "Allow root access"



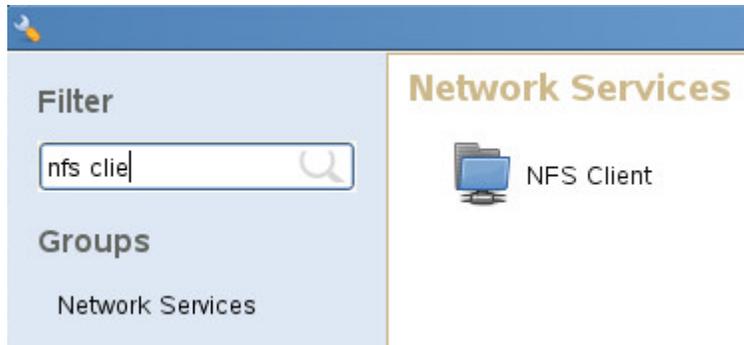
On the Reload server:

Setup a persistent NFS client mount:

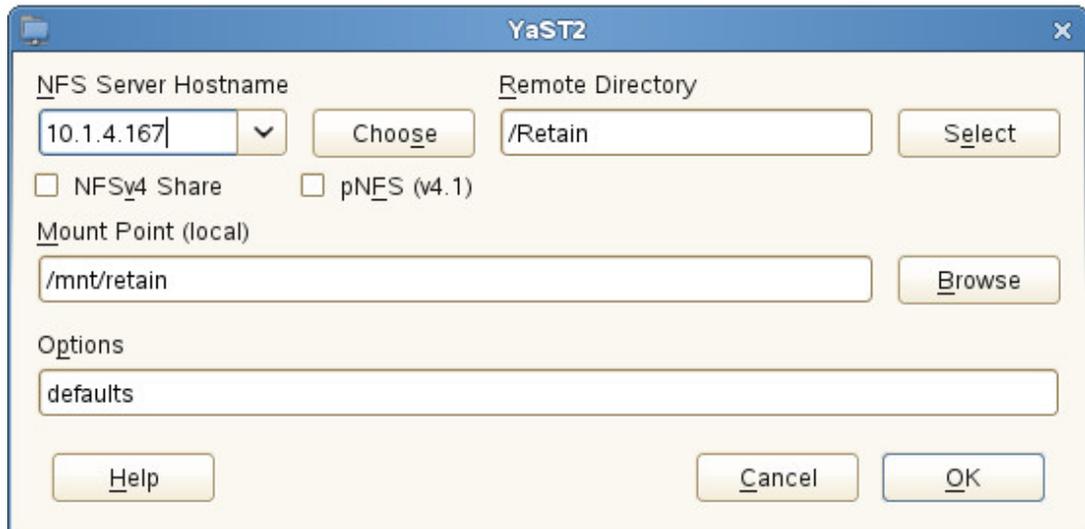
- Open YaST



- Select Network Services | NFS Client



- Under NFS Shares, Click "Add"
 - Enter the NFS Server Hostname or IP address
 - Enter the Remote directory with the Select button
 - Enter the Mount Point. For example, /mnt/retain
 - Press OK



- Press OK

Control Mounts of remote disks

In the terminal enter the appropriate command.

To Mount:
`mount -a`

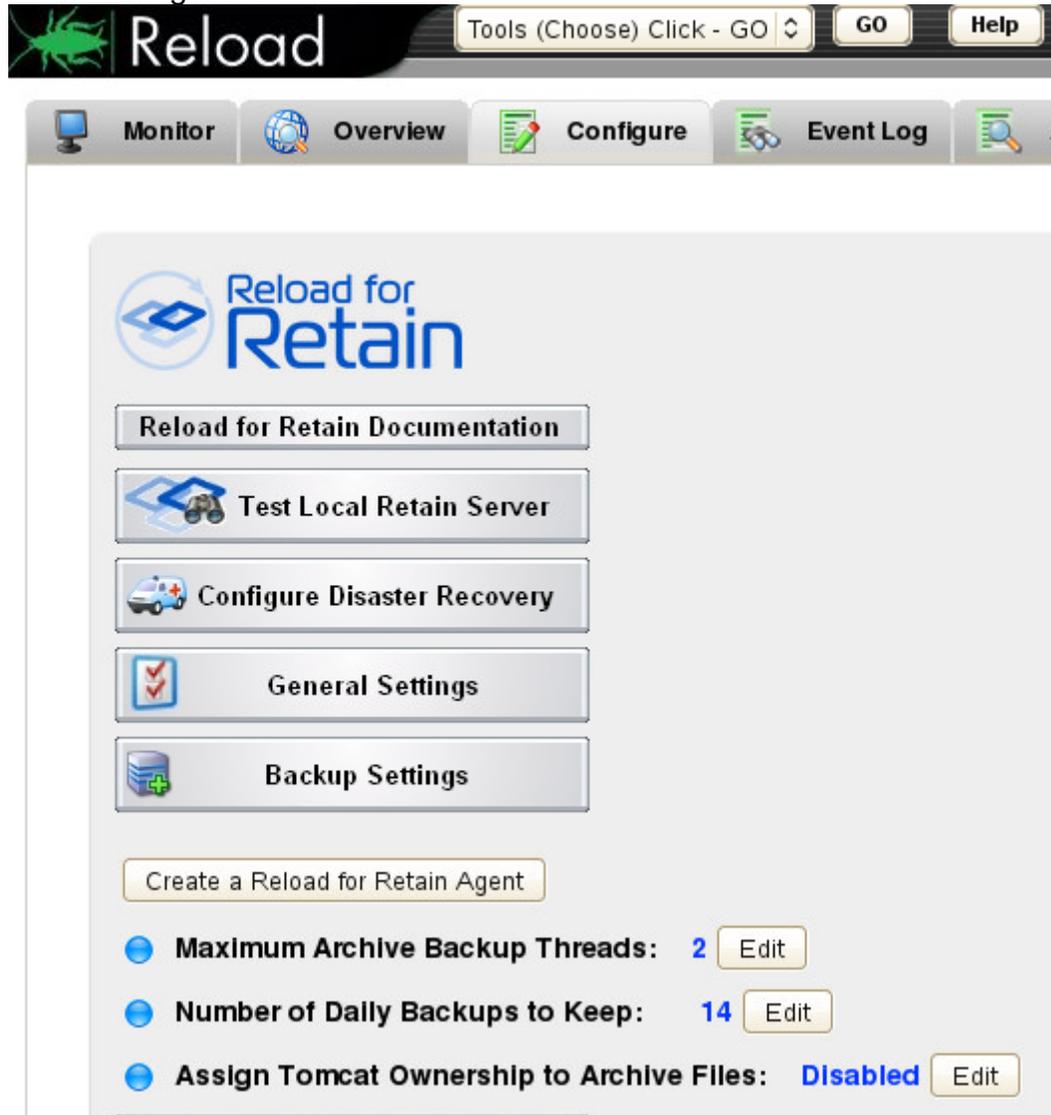
To Dismount:
`umount -l /mnt/retain`

Install the Agent Software on the Reload server

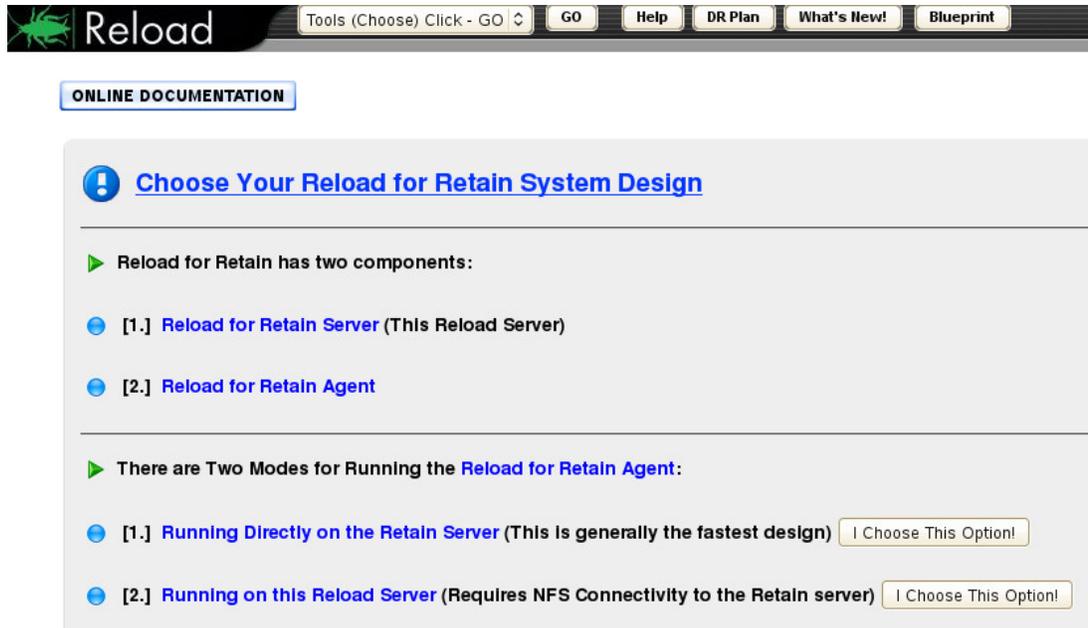
On the Reload for Retain Server:

Download the Agent software:

- Browse to the Reload Web Console
- Select the Configure tab



- Open the Reload for Retain panel
- Open the Backup Settings section
- Press the "Create a Reload for Retain Agent" button, a new window/tab will open



- Choose the option "Running on this Reload Server".

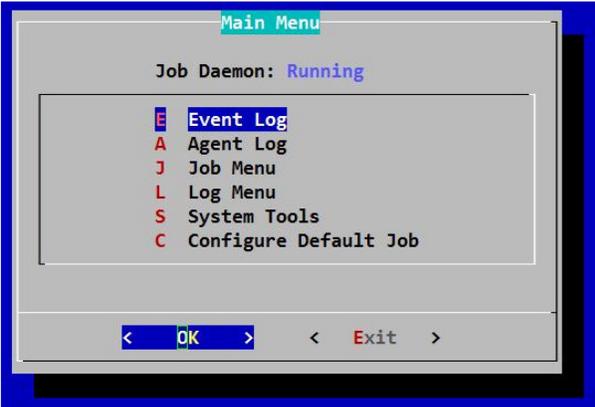
This will open a new window.

- This will download the agent software to the Reload server. This will be an RPM file

A request for the Reload Daemon to install the Reload for Retain Agent software package was created.

Now get a terminal session to the Reload Server and run The Reload for Retain Agent Administration Console with the simple command:

```
ribs (Retain Integrated Backup System)
```



The screenshot shows a terminal window titled 'Main Menu'. The text inside the terminal is as follows:

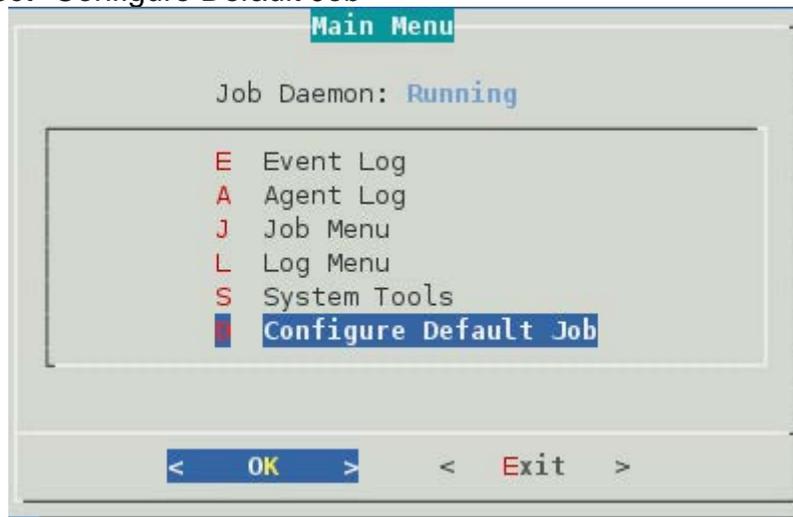
```
Job Daemon: Running
E Event Log
A Agent Log
J Job Menu
L Log Menu
S System Tools
C Configure Default Job
```

At the bottom of the terminal window, there are two buttons: '< OK >' and '< Exit >'. The 'OK' button is highlighted.

NOTE: This is the Reload for Retain Console Administration Tool

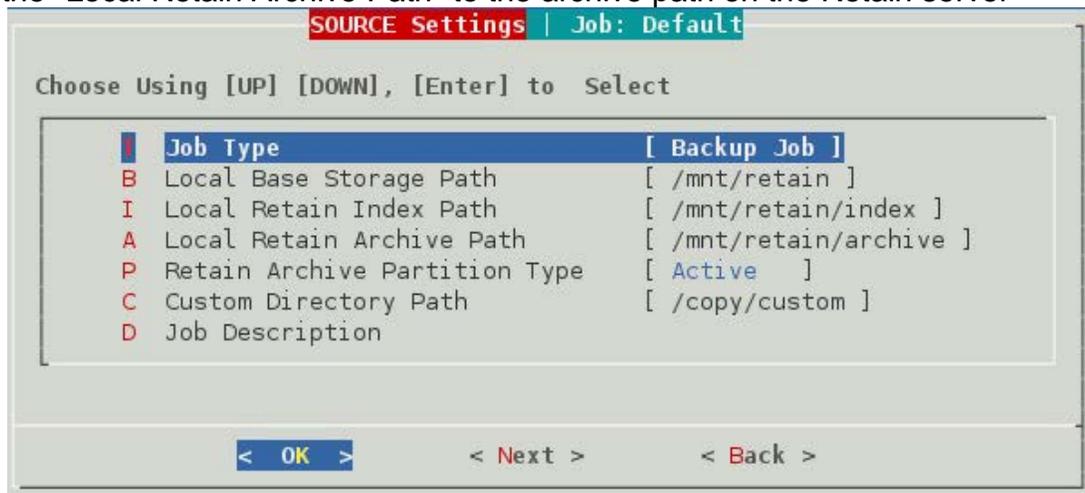
- Run the agent software by running the command:
ribs

- Select "Configure Default Job"



The Source settings fields will be filled in with default settings.

- Set the "Job Type" to "Backup Job"
- Set the "Local Base Storage Path" to the mount to the storage path on the Retain server. For example, /mnt/retain
- Set the "Local Index Path" to the index path on the Retain server
- Set the "Local Retain Archive Path" to the archive path on the Retain server



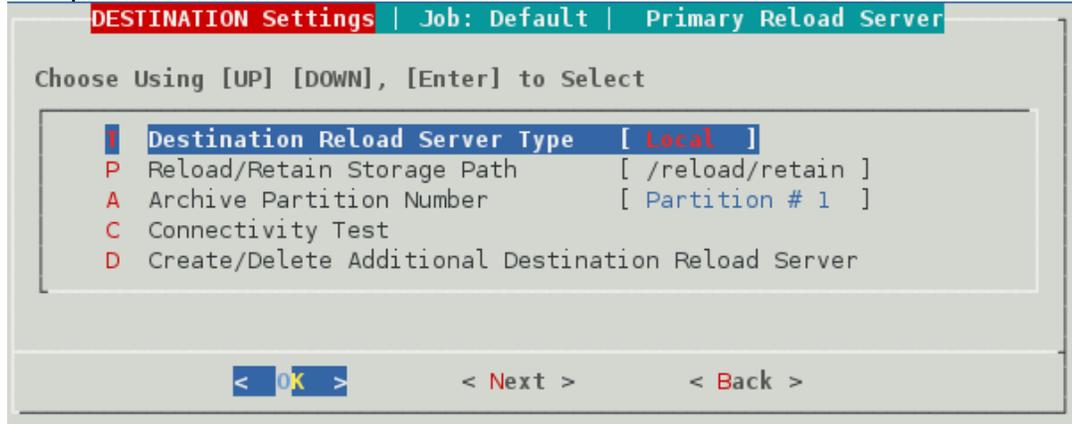
- Click Next

The Destination settings fields will be filled in with default settings.

- Set the "Destination Reload Server Type" to Local
- Enter the Reload Server Address
- Set the Reload/Retain Storage Path where the data will be stored on the Reload server. This must be the same as found in the Reload Web Console | Configure | Reload for Retain | General Settings | Reload/Retain Backup Storage Path. For example, /reload/retain

Reload for Retain 2.0

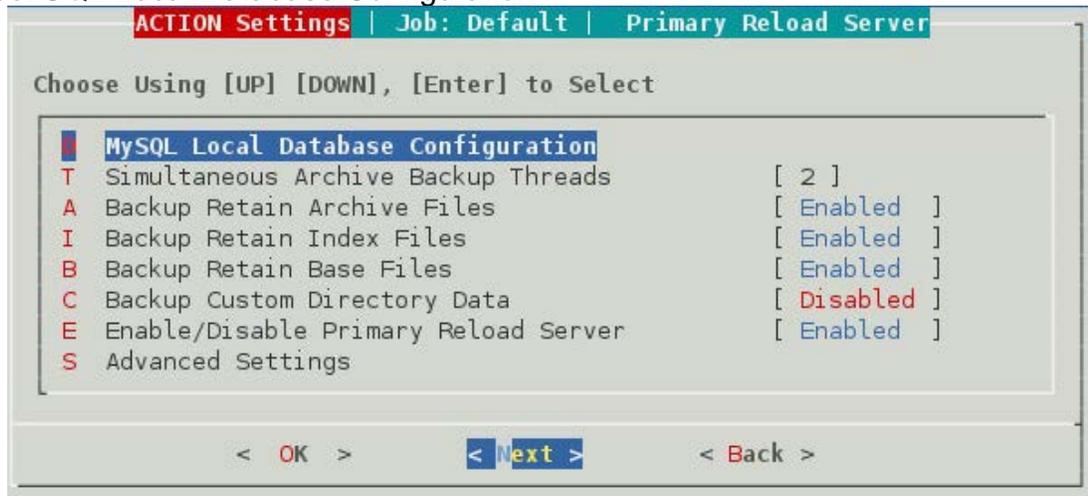
- If using Storage Manager on the Retain server and you have more than one partition: Set the "Archive Partition Number"



- Select "Connectivity Test"
- Press OK to test the connection
- Press Next

The Action settings window

- Select SQL Local Database Configuration



- Set **Database Type**
 - If **MySQL** is **Remote** to the Agent server

MySQL Remote Database Settings

Choose Using [UP] [DOWN], [Enter] to Select

D	Database Type:	[MySQL Remote]
A	Database Address:	[10.1.4.167]
R	Database Port:	[3306]
N	Retain Database Name:	[retain]
U	Database Access User:	[retain]
P	Password for Access User:	[retain]
B	Create Database Dump Backup:	[Enabled]
M	Database Dump Temporary Path:	[/opt/beginfinite/retain/ribs]
C	Import Settings From ASConfig.cfg File	
T	Test Database Connectivity	

< **OK** > < **Exit** >

- If **MSSQL**

MSSQL Database Settings

Choose Using [UP] [DOWN], [Enter] to Select

D	Database Type:	[MSSQL]
A	Database Address:	[10.1.4.167]
R	Database Port:	[1433]
N	Retain Database Name:	[retain]
U	Database Access User:	[retain]
P	Password for User:	[retain]
C	Import Settings From ASConfig.cfg File	
T	Test Database Connectivity	

< **OK** > < **Exit** >

- If **Oracle**

Oracle Database Settings

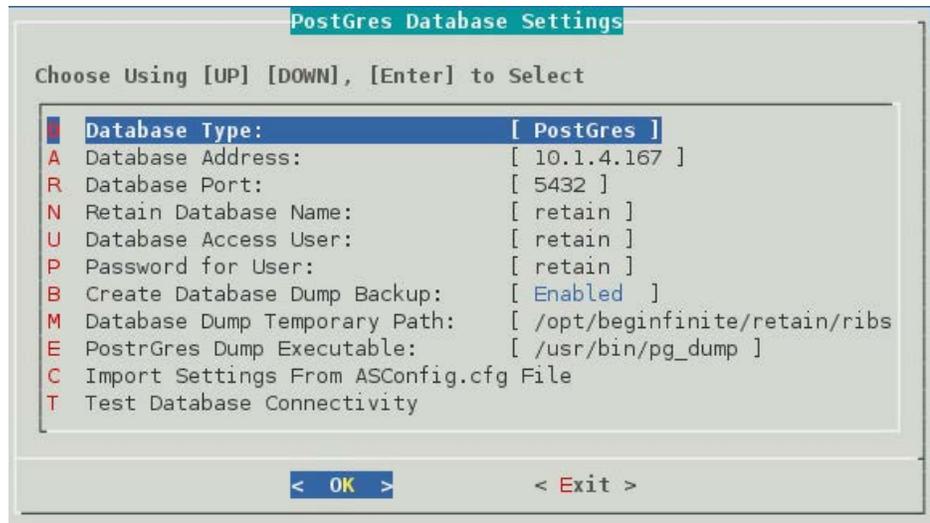
Choose Using [UP] [DOWN], [Enter] to Select

D	Database Type:	[Oracle]
O	Oracle Net Connect Identifier:	[retain]
U	Database Access User:	[retain]
P	Password for Access User:	[retain]
L	SQL Plus Client Library Path:	[/usr/lib/oracle/12.1/client6]
C	Import Settings From ASConfig.cfg File	
T	Test Database Connectivity	

< **OK** > < **Exit** >

- If **PostGres**

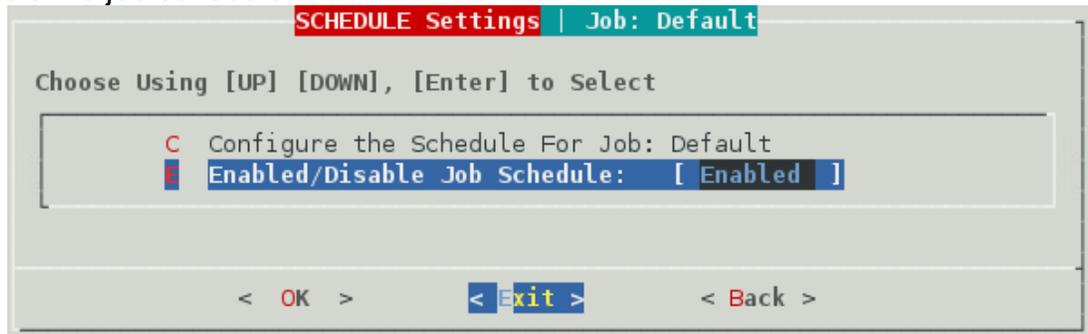
Reload for Retain 2.0



- o Select **Import Settings From ASConfig.cfg File** to import configuration data or enter the data manually
- o Select **Test Database Connectivity**
- o Press Next
- Press Next

The Schedule settings window

- Enable the job schedule



- Press Exit to return to the main menu

Backing Up Multiple Retain Archive Partitions

Retain has a Storage Manager take allows the system to use different archive partitions as they filled up. This was more useful in the days of physical servers with just a bunch of disk storage. With VMs and expandable volumes it is less of an issue.

Retain stores message headers in the database. Everything else, such as message bodies and attachments, is stored on disk in the archive storage area as Binary Large Object (BLOB) files.

Retain BLOB files are kept in an "Archive Partition", which is a directory path with directories with two character names such as 00 or AA, FF, etc.

Retain allows for the creation of a new Archive Partition. When a new Archive Partition is created in Retain, immediately the previous Retain Archive Partition is no longer actively used to store new BLOB files, and all new BLOB files are created at the path for the new Archive Partition.

Retain Archive Partition Types

Reload for Retain refers to partitions as either "Active" or "Inactive."

Active Partition

The Active Partition is the last partition created in Retain. This is the partition that Retain is actively storing new BLOB files to. Just as soon as a new partition is defined in Retain, that partition becomes the new Active Partition. To summarize:

- There is only 1 Active Partition
- Retain only adds new BLOB Files to the Active Partition
- The Active Partition is the most recent Archive Partition defined in Retain
- Customers may have just one Retain Archive Partition, this partition is the Active Partition
- As soon as a new partition is defined in Retain, the new partition immediately becomes the Active Partition

Inactive Partitions

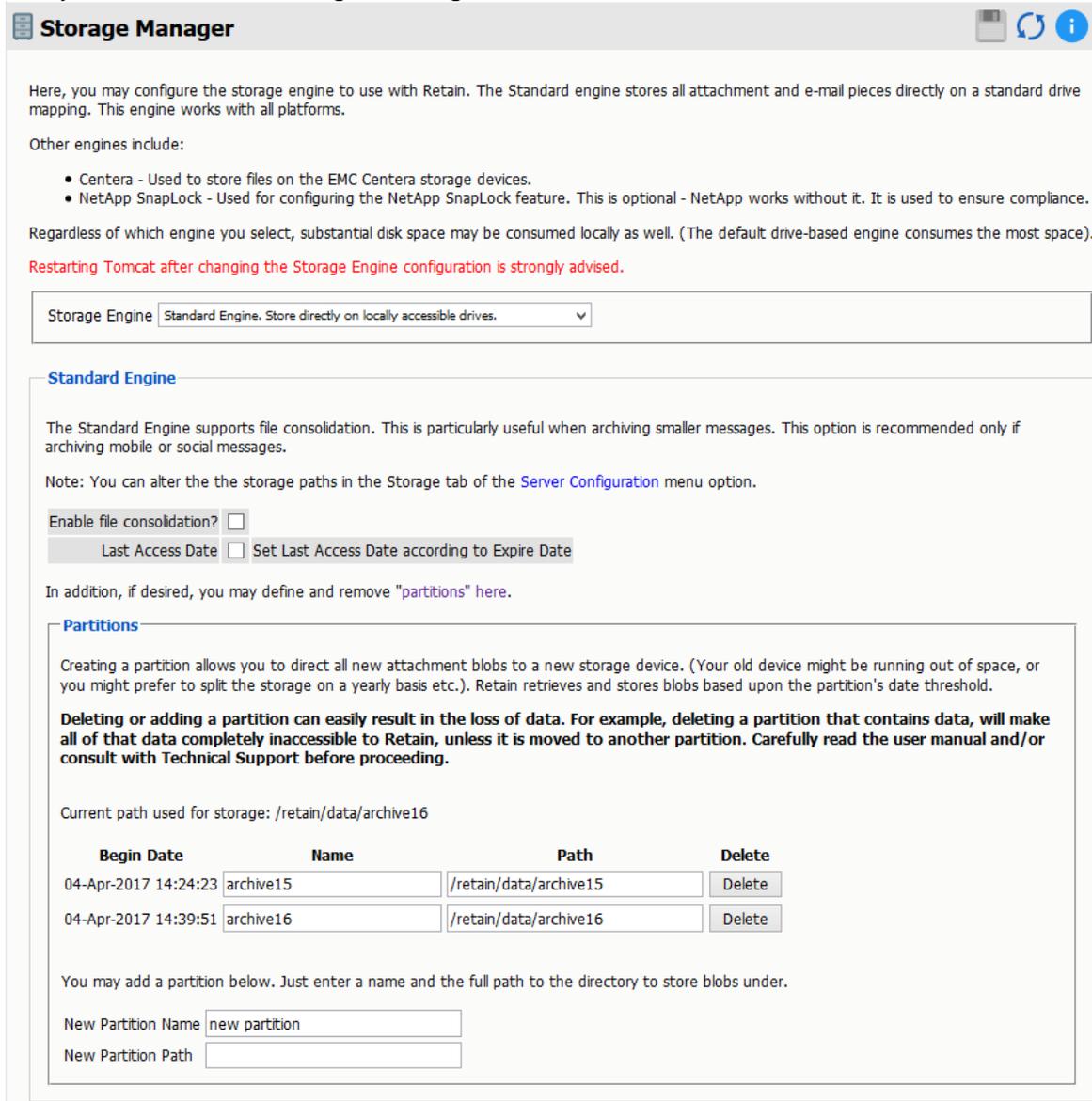
An Inactive Partition is still in use by Retain, but Retain is no longer adding data to an Inactive Partition. The data in an Inactive Partition is just as important as the Active Partition. As such, it is important that any Inactive Partitions are backed up by Reload for Retain. To summarize:

- There can be 1 or more Inactive Partitions
- There may be 0 Inactive Partitions in a Retain System

Reload for Retain 2.0

- Inactive Partitions are still important to how Retain works, and thus they should be backed up
- The content and file count of an Inactive Partition does not change
- Just as soon as a new Archive Partition is defined, the previous Archive Partition becomes an Inactive Partition

In Retain you would use Storage Manager to create archive Partitions.



Storage Manager

Here, you may configure the storage engine to use with Retain. The Standard engine stores all attachment and e-mail pieces directly on a standard drive mapping. This engine works with all platforms.

Other engines include:

- Centera - Used to store files on the EMC Centera storage devices.
- NetApp SnapLock - Used for configuring the NetApp SnapLock feature. This is optional - NetApp works without it. It is used to ensure compliance.

Regardless of which engine you select, substantial disk space may be consumed locally as well. (The default drive-based engine consumes the most space).

Restarting Tomcat after changing the Storage Engine configuration is strongly advised.

Storage Engine: Standard Engine. Store directly on locally accessible drives.

Standard Engine

The Standard Engine supports file consolidation. This is particularly useful when archiving smaller messages. This option is recommended only if archiving mobile or social messages.

Note: You can alter the the storage paths in the Storage tab of the [Server Configuration](#) menu option.

Enable file consolidation?

Last Access Date Set Last Access Date according to Expire Date

In addition, if desired, you may define and remove "partitions" [here](#).

Partitions

Creating a partition allows you to direct all new attachment blobs to a new storage device. (Your old device might be running out of space, or you might prefer to split the storage on a yearly basis etc.). Retain retrieves and stores blobs based upon the partition's date threshold.

Deleting or adding a partition can easily result in the loss of data. For example, deleting a partition that contains data, will make all of that data completely inaccessible to Retain, unless it is moved to another partition. Carefully read the user manual and/or consult with Technical Support before proceeding.

Current path used for storage: /retain/data/archive16

Begin Date	Name	Path	Delete
04-Apr-2017 14:24:23	archive15	/retain/data/archive15	Delete
04-Apr-2017 14:39:51	archive16	/retain/data/archive16	Delete

You may add a partition below. Just enter a name and the full path to the directory to store blobs under.

New Partition Name:

New Partition Path:

Backing up Active & Inactive Retain Archive Partitions

Let's use an example scenario to explain how to backup all Retain Archive Partitions correctly. Here is the example:

Our example Retain System has been in use for over 2 years. Archive Partitions have been made for each year.

The **Archive Partitions** are named as such

```
/retain/data/archive
/retain/data/archive15
/retain/data/archive16
```

The **Inactive** Partitions are:

```
/retain/data/archive
/retain/data/archive15
```

The **Active** Partition is:

```
/retain/data/archive16
```

Backing up Inactive and Active Partitions with Reload for Retain is very different. Here are the differences:

- **Inactive Partitions** are generally only backed up one time
 - NOTE: Make sure to assure that Inactive Partitions are backed up, the fact that a partition is "Inactive" **does not** mean that the partition is unimportant.
- **Active Partitions** should be backed up regularly (daily for example)
- When Reload for Retain backs up the **Active Partition** for the first time, it runs a **Full Backup** of the **Active Partition**
- Every successive backup of an **Active Partition** is considered an **Incremental Backup** of the Active Partition

Back to our example, what we will do is create 3 Jobs to back up the 3 different Retain Partitions mentioned. Here is the scheme we will use:

- The Reload for Retain "**Default Job**" will back up the Active Partition: **/retain/data/archive16**
- **JOB1** will back up the Inactive Partition: **/retain/data/archive**
- **JOB2** will back up the Inactive Partition: **/retain/data/archive15**

Furthermore, on the Reload for Retain Server (Reload Server) our example customer has designed their Reload Server with 3 separate volumes that they want to use to house the 3 Retain Partitions they currently have.

The volumes are mounted at:

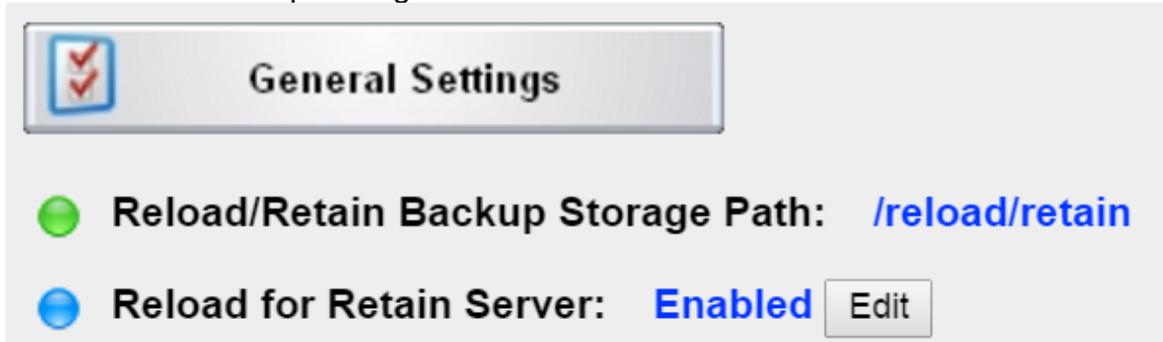
/volume1: To store the data from the Inactive Partition on the Retain Server at: **/retain/data/archive**

Reload for Retain 2.0

/volume2: To store the data from the Inactive Partition on the Retain Server at:
/retain/data/archive15

/volume3: To store the data from the Active Partition on the Retain Server at:
/retain/data/archive16

The Reload/Retain Backup Storage Path is at: **/reload/retain**



Configuring the Reload for Retain Server

On the Reload Server here are the steps the customer used to use the above mentioned volumes:

1. Go to the Reload/Retain Backup Storage Path: /reload/retain (in this example)
2. Find the path called archive_data
3. Go to the archive_1 directory (for the first partition)
4. Remove the "archive" directory that the Reload Server made by default
5. Map the path /volume1 to the directory "archive" off of the archive_1 directory with the Linux link command: ln

For example:

```
cd /reload/retain/archive_data/archive_1
rmdir ./archive
ln -s /volume1 ./archive
```

```
reload2:/reload/retain/archive_data/archive_1 # 1
total 12
drwxr-xr-x  3 root root 4096 Feb 23 17:15 ./
drwxr-xr-x 22 root root 4096 Feb 23 17:15 ../
drwxr-xr-x  2 root root 4096 Feb 23 17:15 archive/
reload2:/reload/retain/archive_data/archive_1 # rmdir archive
reload2:/reload/retain/archive_data/archive_1 # ln -s /volume1 ./archive
reload2:/reload/retain/archive_data/archive_1 # 1
total 8
drwxr-xr-x  2 root root 4096 Feb 23 17:18 ./
drwxr-xr-x 22 root root 4096 Feb 23 17:15 ../
lrwxrwxrwx  1 root root    8 Feb 23 17:18 archive -> /volume1/
reload2:/reload/retain/archive_data/archive_1 # █
```

Follow the same steps for mapping/linking to **/volume2** and **/volume3**

```

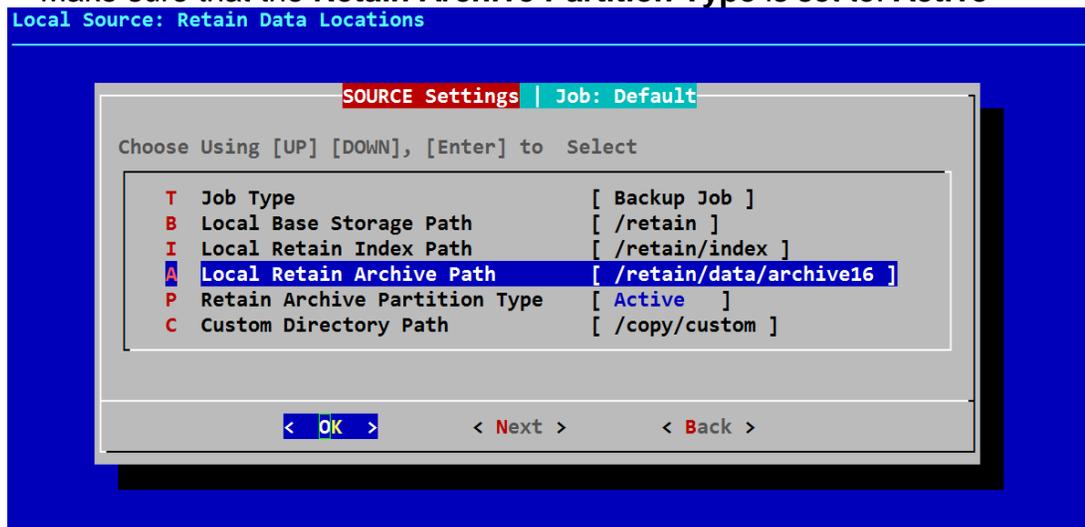
cd /reload/retain/archive_data/archive_2
rmdir ./archive
ln -s /volume2 ./archive
cd /reload/retain/archive_data/archive_3
rmdir ./archive
ln -s /volume3 ./archive

```

Configuring the Reload for Retain Agent

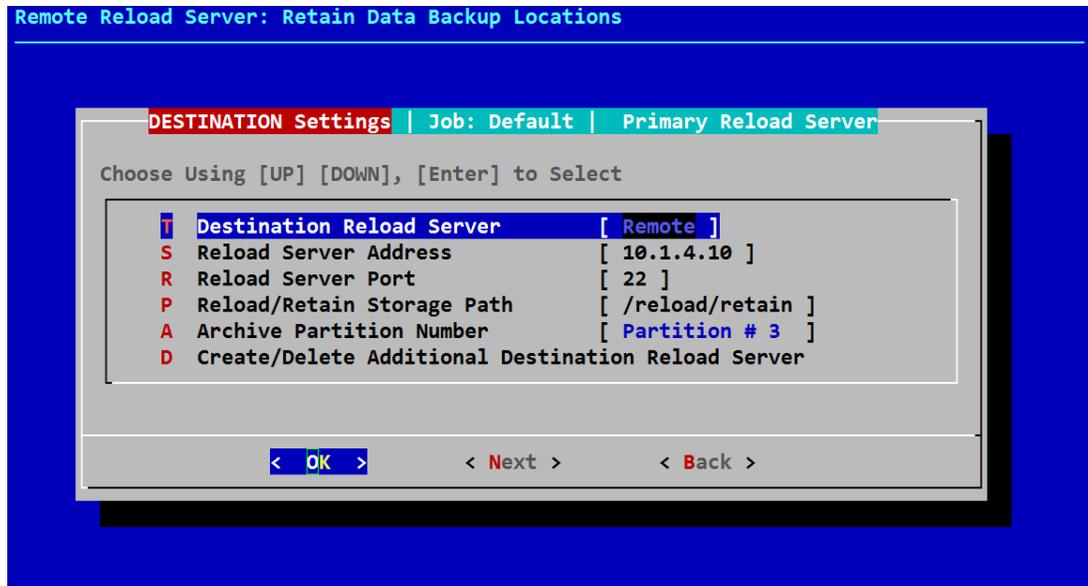
Configuring The Backup For The Active Partition

1. Configure the Reload for Retain Agent's Default Job to backup the Active Partition
 - Edit the "Default Job" in the **SOURCE Settings** Panel do the following:
 - Make sure the "Local Retain Archive Path" reflects the path:
/retain/data/archive16
 - Make sure that the **Retain Archive Partition Type** is set to: **Active**

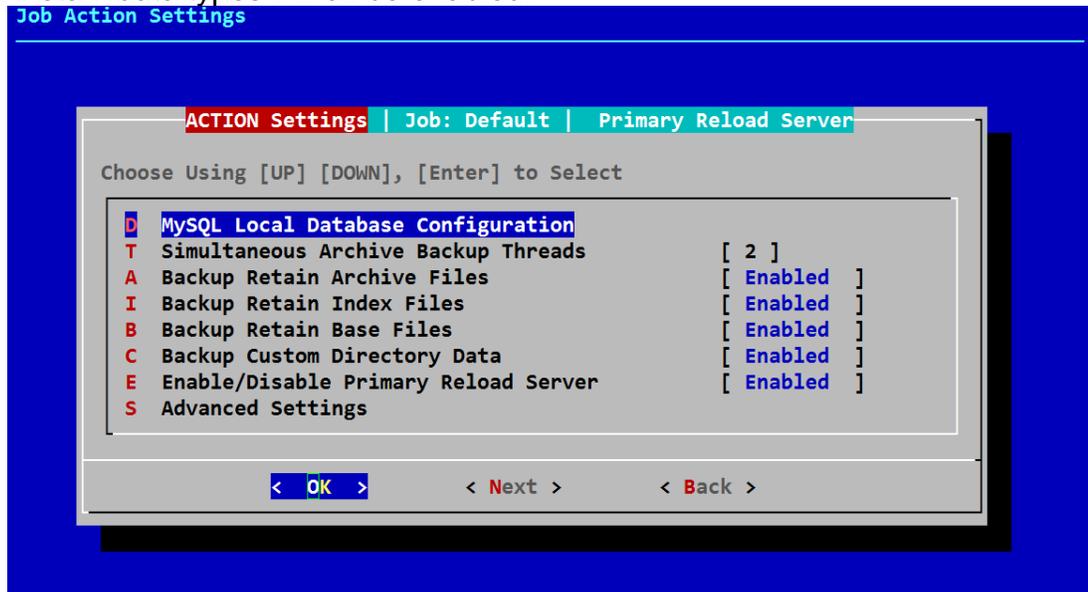


2. Select **Next** and edit the **DESTINATION Settings** Panel to reflect the partition scheme explained. Namely, the data for the Active Partition should be written to /volume3 on the Reload Server. In Reload for Retain, this is considered "**Partition #3**".

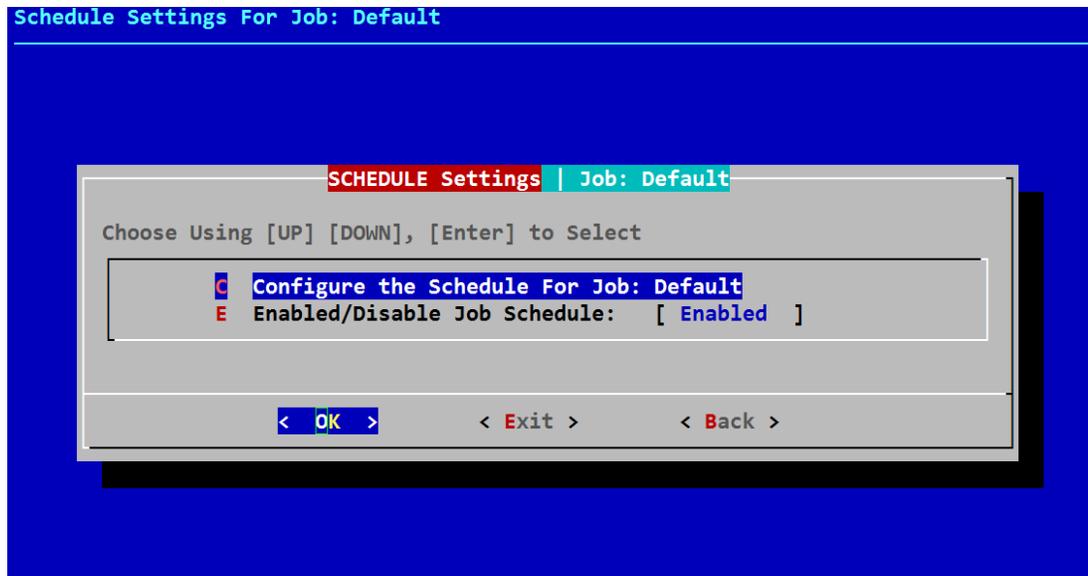
Reload for Retain 2.0



3. Select **Next** to get to the **ACTION Settings** Panel. This job is meant to backup the Retain Archive Active Partition, and everything else in Retain. So the backups for all Retain data types will all be enabled.

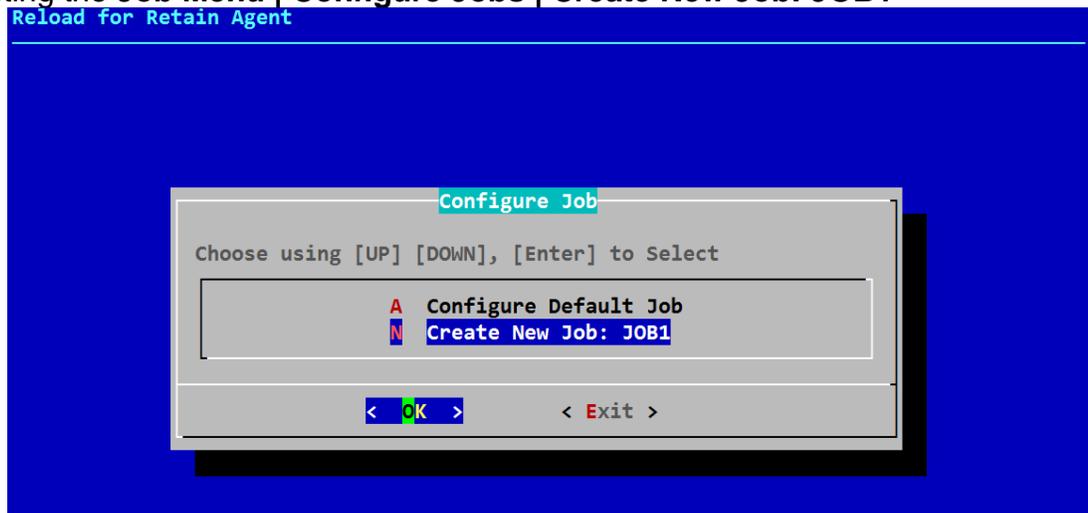


4. Click **Next** and make sure the Job Schedule is **Enabled** since, so that the backup is performed regularly.



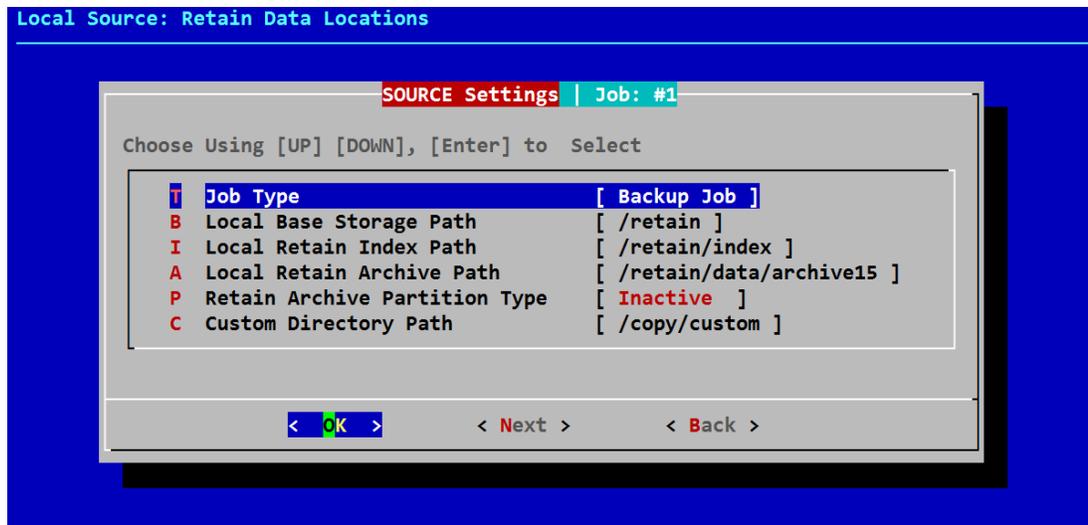
Configuring The Backup For An Inactive Partition

1. In the Reload for Retain Agent Administration Console Create a new Job by selecting the **Job Menu | Configure Jobs | Create New Job: JOB1**



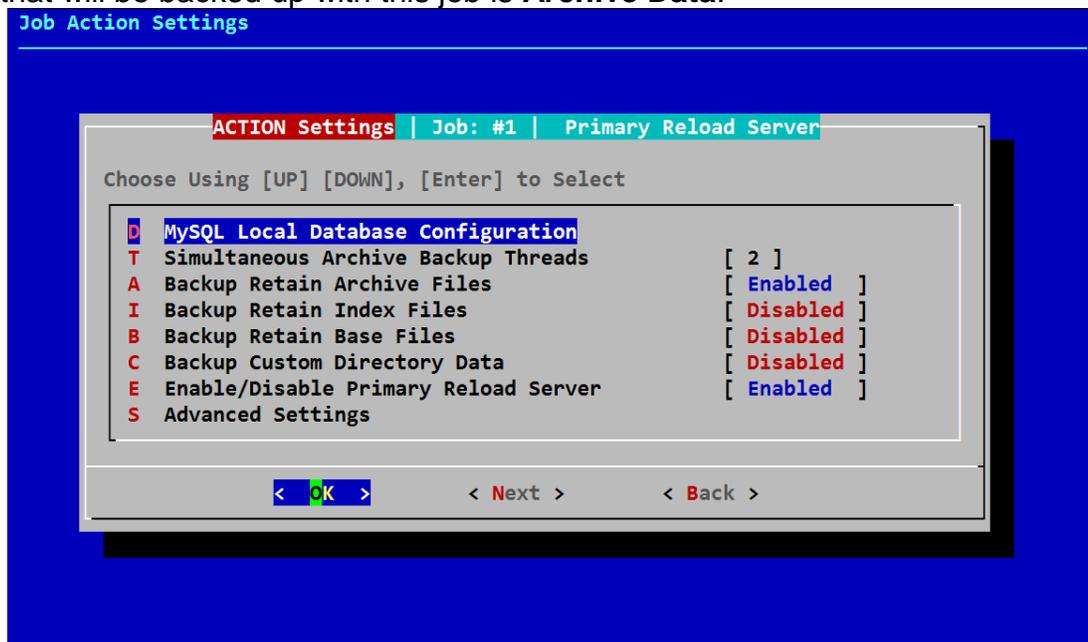
2. Then select **Configure Other Jobs** and select **JOB1**
3. In the **SOURCE Settings** Panel for **Job: #1** do the following
 - Make sure the "Local Retain Archive Path" reflects the path:
/retain/data/archive15
 - Make sure that the **Retain Archive Partition Type** is set to: **Inactive**

Reload for Retain 2.0

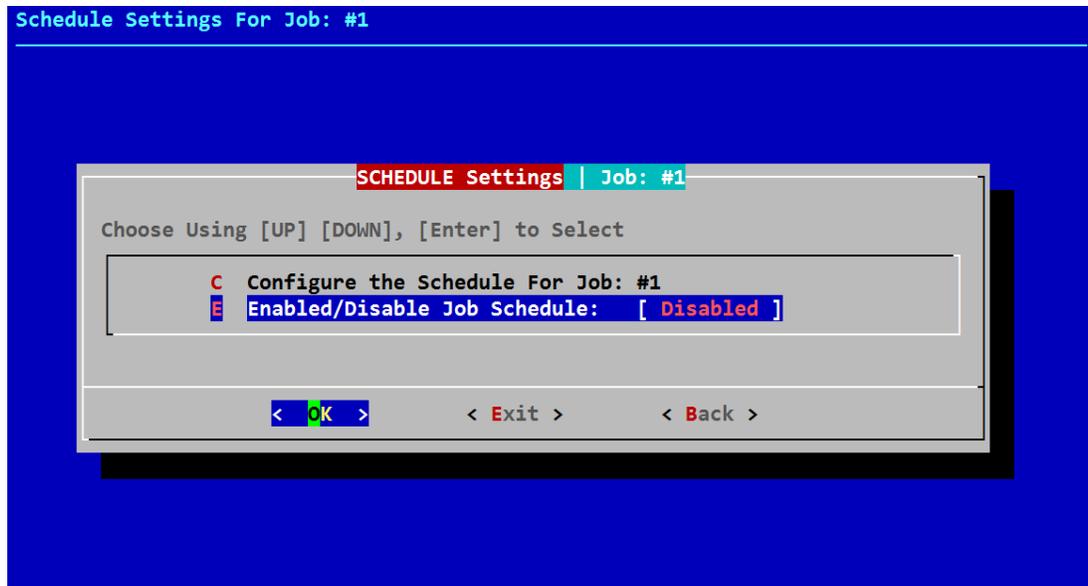


4. Select **Next** and edit the **DESTINATION Settings** Panel to reflect the partition scheme explained. Namely, the data for the Inactive Partition should be written to /volume2 on the Reload Server. In Reload for Retain, this is considered "**Partition #2**".

5. Select **Next** to get to the **ACTION Settings** Panel. This job is meant to backup just the **Inactive** Retain Archive Partition, and nothing else in Retain. So the only data that will be backed up with this job is **Archive Data**.



6. In the **SCHEDULE Settings** panel, keep the Job Schedule **Disabled**. You will run JOB1 Manually one time.



7. Follow steps 1-6 for the oldest Inactive Partition located at: **/retain/data/archive**
 Create **JOB2**
 This last partition will be designated to go to **Partition #1** which on the Reload Server is mapped to **/volume1**

Final Notes On Backing Up Inactive Partitions

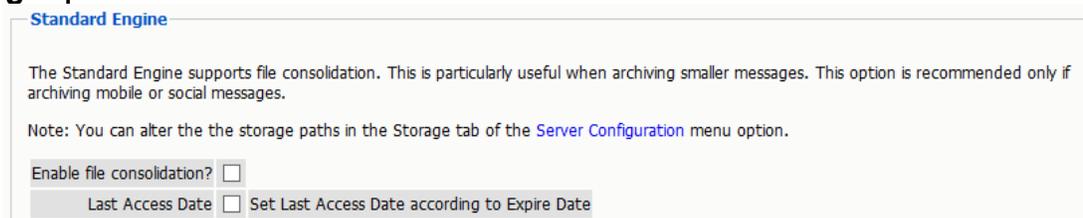
JOB1 and JOB2 can both be deleted after a backup has successfully run to back up the two inactive partitions. You do not need to delete these jobs, but you can.

File Consolidation

There is a feature in Retain that is rarely turned on. And for now, it should be turned **off** before implementing Reload for Retain.

There is a design flaw in this feature. Namely, with File Consolidation enabled, the Retain Server will consolidate files on any of the Retain Partitions into .zip files on the first Retain partition that was created in the Retain System. This can have adverse implications for customer's whose original Archive Partition may be full.

File Consolidation can be disabled in the Retain Web Interface under "**Storage Manager | Enable file consolidation?**"



Reload for Retain 2.0

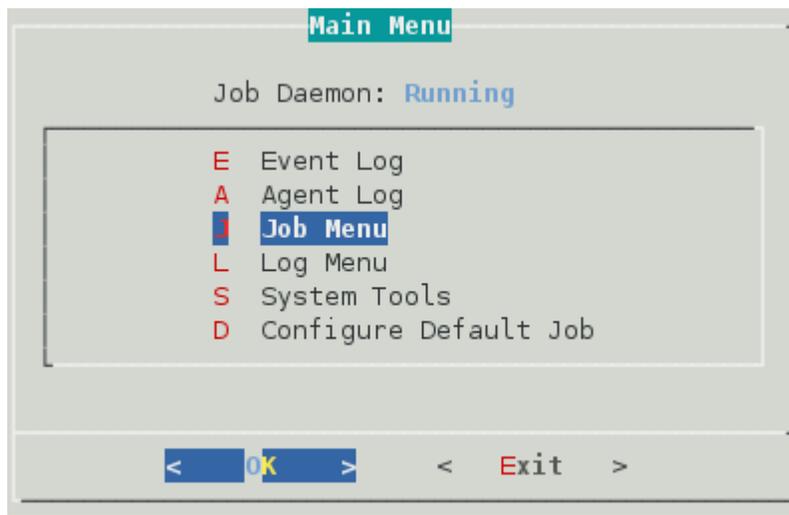
Conclusion: Reload for Retain will back up to 20 different partitions. Inactive Partitions only need to be backed up once. Active Partitions should be backed up regularly. All Partitions can be replicated to different volumes on the Reload Server through symbolic links, if desired.

Configure Mirroring

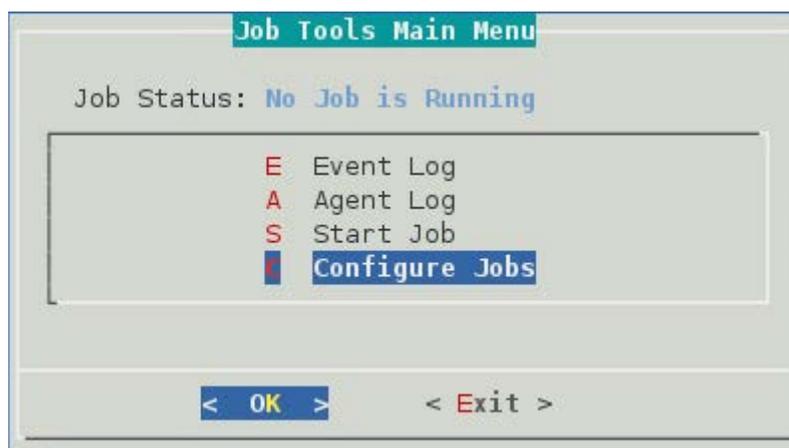
Mirroring is a job that will have Reload for Retain check for new BLOBS and index files every minute. This is useful when Retain is archiving mobile and other continuous flow data sources.

On the server with the Reload for Retain Agent:

- Open a terminal window and run: **ribs**
- Select Job Menu

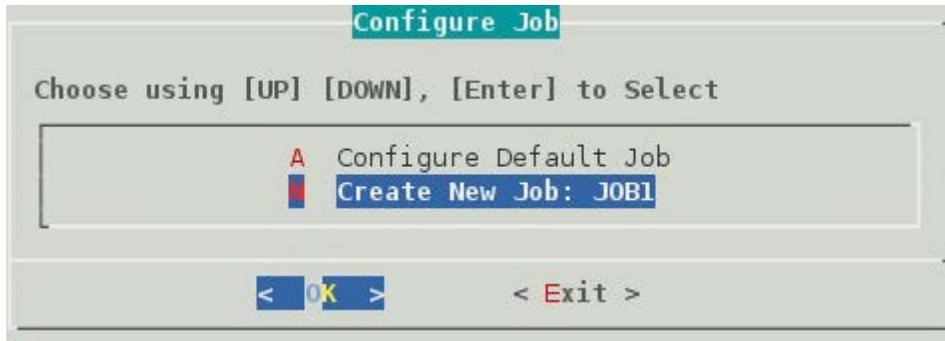


- Select Configure Jobs

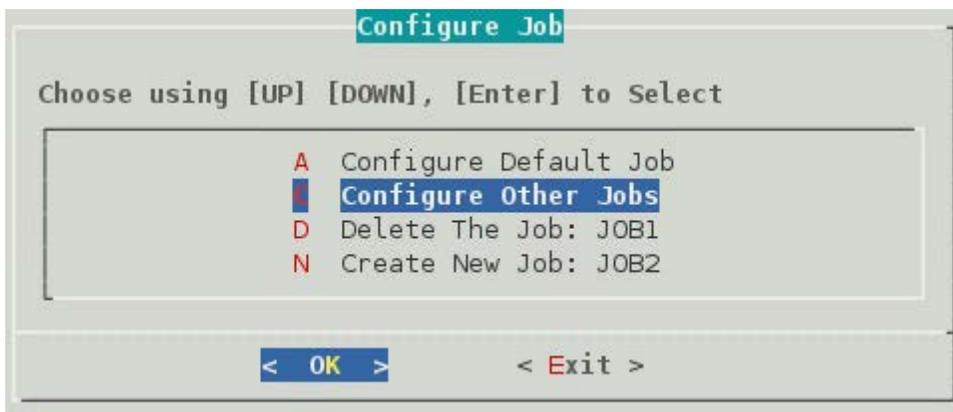


- Select Create New Job

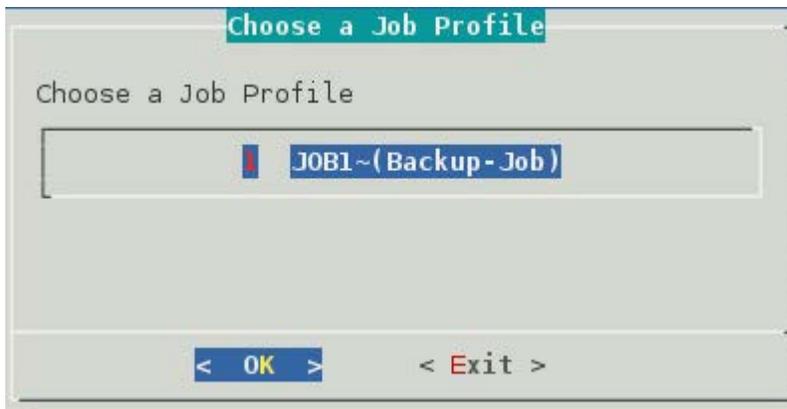
Reload for Retain 2.0



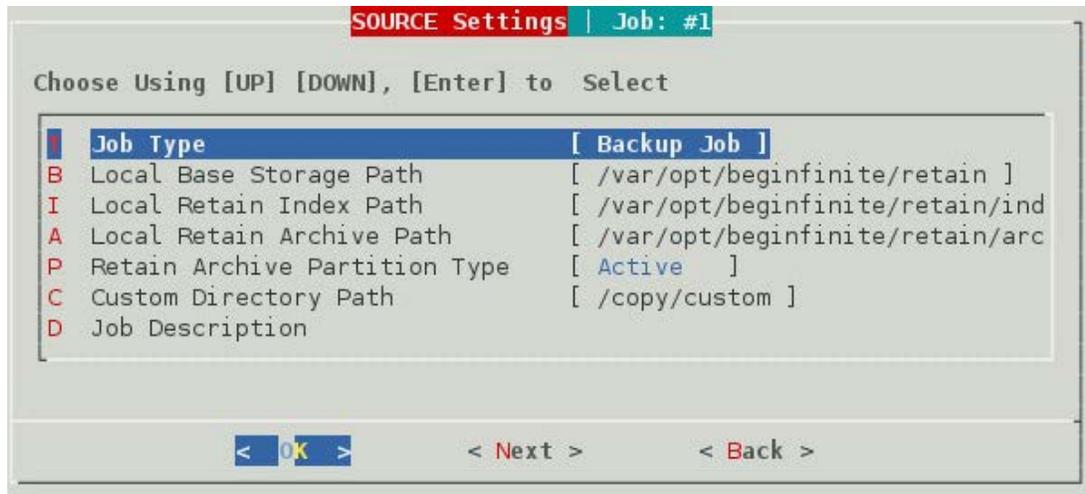
- Select Configure Other Job



- Chose a Profile. Select an existing job to be the basis of the new job



- On Source Settings, select Job Type and press OK

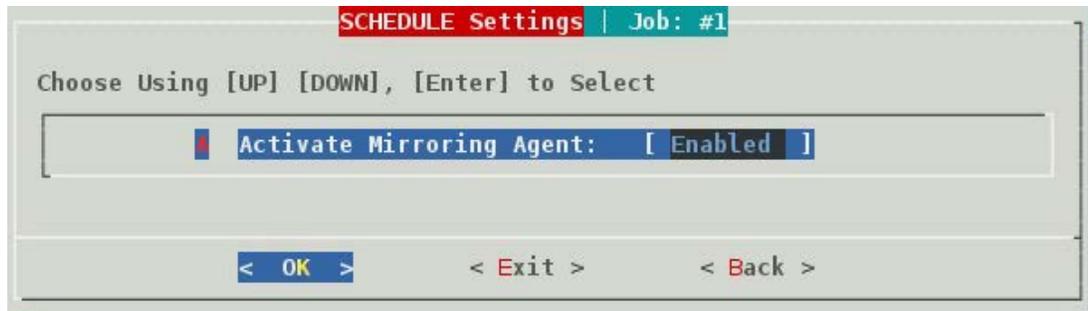


- Change the Job Type to Mirroring Agent and press Space to select.



- Press OK to return to Source Settings. This is populated by the data in the default job.
- Select Next to leave the Source page
- Select Next to leave the Destination page
- Select Next to leave the Action page
- Enable the job on the Schedule page by pressing OK

Reload for Retain 2.0



- Press Exit to return to the Main Menu

On the Main Menu the option Mirroring Agent will appear.



From this menu option the agent can be configured or stopped.



Logging

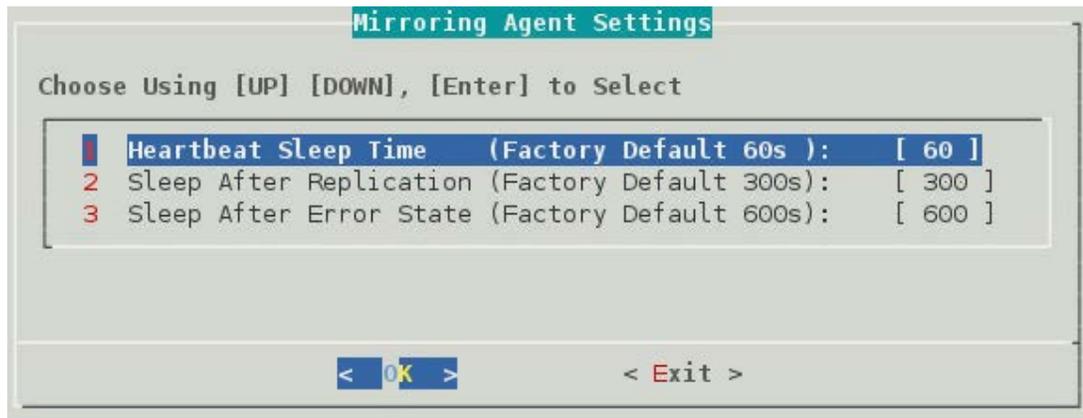
The Agent log will begin rolling as data is sent.

Configure Mirroring Intervals

Once a mirror job completes replicating the data, the agent will wait 300 seconds before beginning to check every minute again, so data can accrue.

To change the time between mirror jobs:

- Select **Mirroring Agent | Configure Mirroring Agent | Mirroring Agent Settings**
 - Heartbeat Sleep Time (Factory Default 60s)
 - Sleep After Replication (Factory Default 300s)
 - Sleep After Error State (Factory Default 600s)



Configure Disaster Recovery

Configure Disaster Recovery so that the Reload for Retain server can be used as a Retain Server if the production Retain server fails.

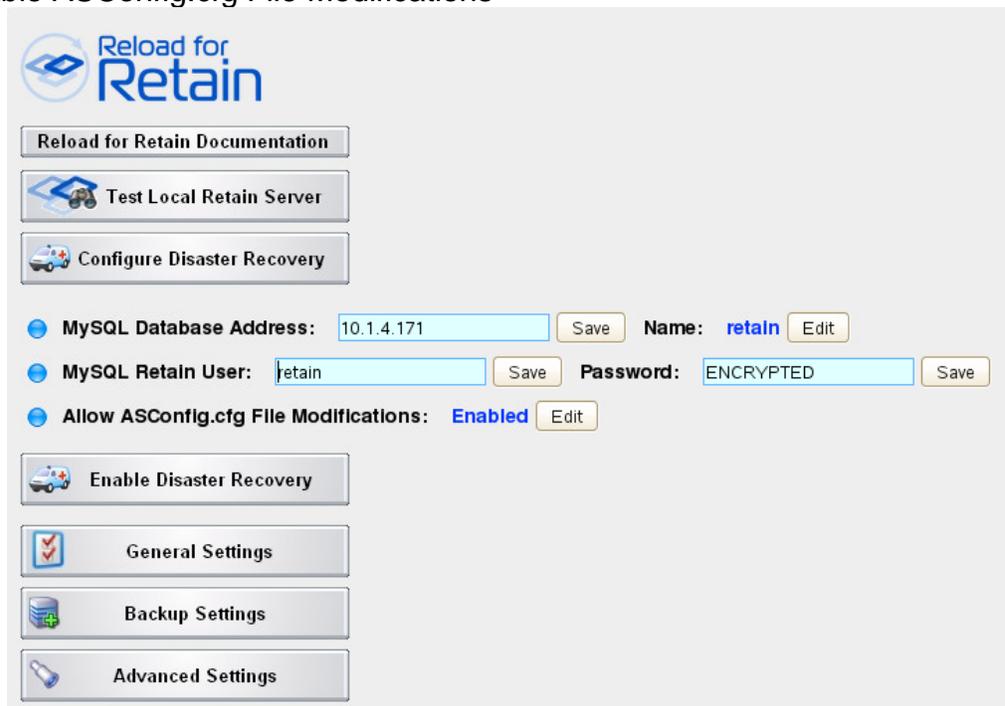
Prerequisites

- Production Retain using MySQL
- Reload installed
- Retain installed on the Reload for Retain server
- ASConfig.cfg imported into Reload

Configure Disaster Recovery Mode

Browse to Configure Tab | Reload for Retain panel. Open the Configure Disaster Recovery section and enter:

- The MySQL Database Address
- The Retain database name
- The Retain database user and password
- Enable ASConfig.cfg File Modifications



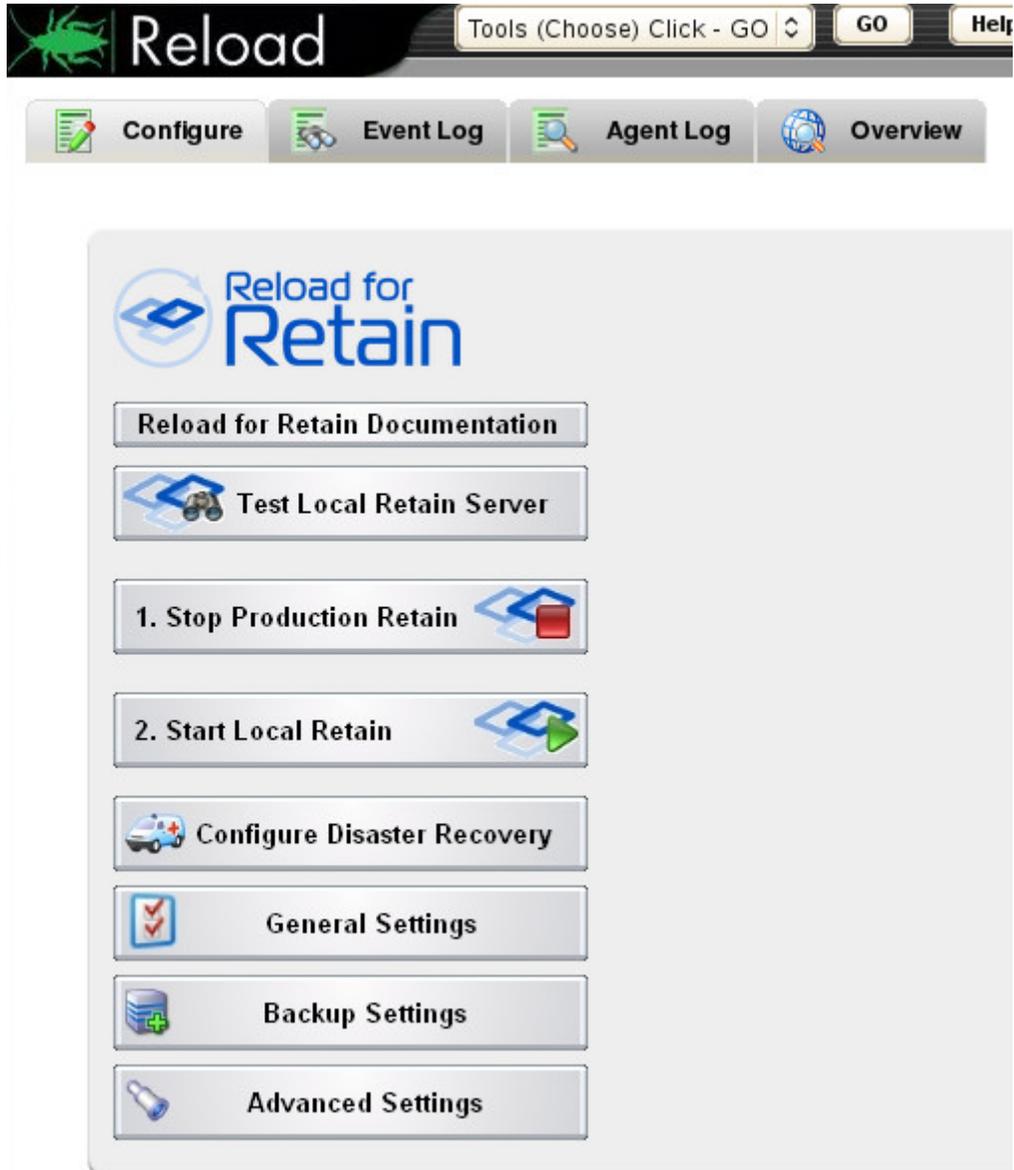
The screenshot displays the 'Reload for Retain' configuration interface. At the top left is the logo. Below it are several navigation buttons: 'Reload for Retain Documentation', 'Test Local Retain Server', and 'Configure Disaster Recovery'. The 'Configure Disaster Recovery' section is active, showing three configuration rows:

- MySQL Database Address:** Input field contains '10.1.4.171', with 'Save' and 'Name: retain Edit' buttons.
- MySQL Retain User:** Input field contains 'retain', with 'Save' and 'Password: ENCRYPTED Save' buttons.
- Allow ASConfig.cfg File Modifications:** Status is 'Enabled', with an 'Edit' button.

Below these settings are four more buttons: 'Enable Disaster Recovery', 'General Settings', 'Backup Settings', and 'Advanced Settings'.

Testing Reload for Retain

To test if Reload for Retain is running properly.
Open the **Rest Local Retain Server** section



Press the **Stop Production Retain** button to be taken to the production Retain server to see if it is running. You will have to go to the production Retain server itself and stop tomcat.

Then press the **Start Local Retain** button, which will open a new tab/window

A request for the Reload Daemon to [Start Local Retain Server](#) was created.

Please give the Retain Server about 5 minutes to load.

00:00:02

Then you can Use The Local Retain Server

1. Use Local Retain

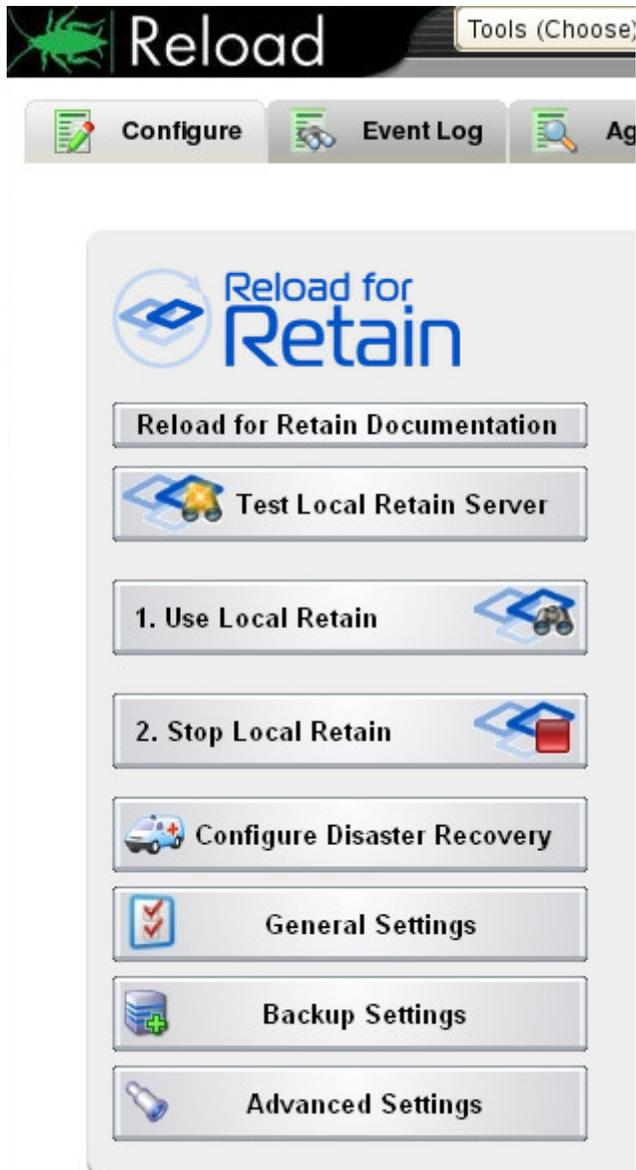


When the startup process has completed, press the **Use Local Retain** button, which will open a new tab/window to the local Retain server

To end the test

Refresh the Reload for Retain page

Under **Test Local Retain Server**, press the **Stop Local Retain** button, which will open a new tab/window



A stop request will be sent to the Reload daemon and it will take about 3 minutes to complete.

A request for the Reload Daemon to [Stop The Local Retain Server](#) was created.

Please give the Retain Server about 3 minutes to unload.

Disaster Recovery Mode

To enable Disaster Recovery Mode

1. Browse to the Reload for Retain Server `http://<reloadServerURL>:5555`
2. Select Configure tab | Retain for Retain panel | Configure Disaster Recovery section
3. Press Enable Disaster Recovery

The screenshot displays the Reload for Retain web interface. At the top, there is a navigation bar with the 'Reload' logo and a search box containing 'Tools (Choose) Click - GO'. Below this is a secondary navigation bar with buttons for 'Configure', 'Event Log', 'Agent Log', and 'Overview'. The main content area features the 'Reload for Retain' logo and several configuration options:

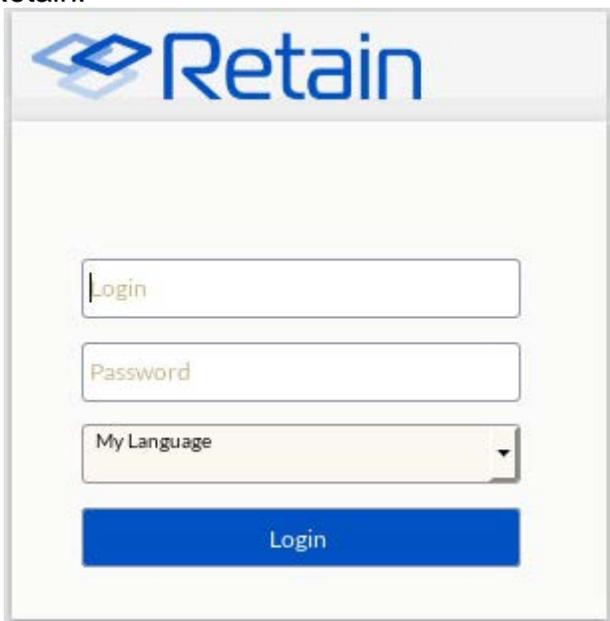
- Reload for Retain Documentation** (button)
- Test Local Retain Server** (button)
- Configure Disaster Recovery** (button)
- MySQL Database Address:** 10.1.4.171 (with Edit button) **Name:** retain (with Edit button)
- MySQL Retain User:** retain (with Edit button) **Password:** ***** (with Edit button)
- Allow ASConfig.cfg File Modifications:** Enabled (with Edit button)
- Enable Disaster Recovery** (button)
- General Settings** (button)
- Backup Settings** (button)
- Advanced Settings** (button)

A request to the daemon will be sent and Retain will begin the startup process. Generally, this will take about 5 minutes, depending on the speed of the server.



The screenshot shows the Reload web interface. At the top, there is a navigation bar with the Reload logo and several menu items: Tools (Choose) Click - GO, GO, Help, DR Plan, What's New!, Home, and Logout. Below the navigation bar, a message states: "A request for the Reload Daemon to Enable Disaster Recovery was created. Please give the Retain Server about 5 minutes to load." A green timer shows "00:00:02". Below the timer, it says "Then The Disaster Recovery Retain Server can be used." A note follows: "NOTE: While Disaster Recovery is enabled, the Reload for Retain Server will no longer accept backups from the Reload for Retain Agent." At the bottom of the message area, there is a button labeled "Use D/R Retain Server" with a small icon.

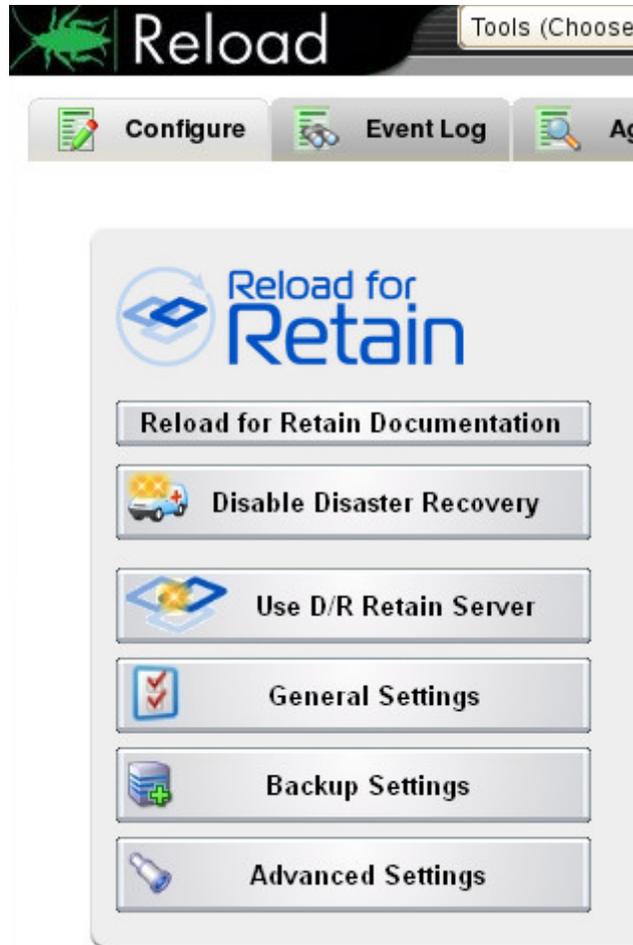
Once the startup process is complete, press the **Use D/R Retain Server** button. This opens a new tab or window that connects to the Retain Server where you may log into Retain.



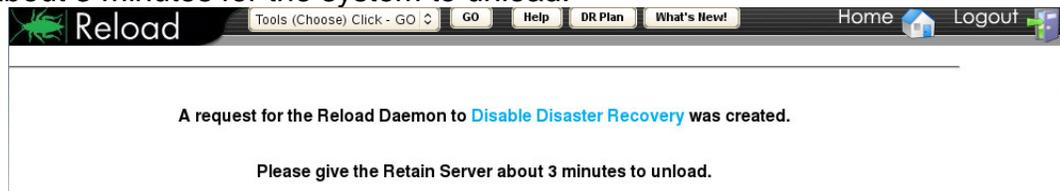
The screenshot shows the Retain login page. At the top left is the Retain logo. Below the logo are three input fields: "Login", "Password", and "My Language" (a dropdown menu). At the bottom of the form is a blue "Login" button.

To Disable Disaster Recovery mode

1. Browse to the Reload for Retain Server <http://<reloadServerURL>:5555>
2. Select Configure tab | Retain for Retain panel
3. Press Disable Disaster Recovery



- 1.
4. Wait about 3 minutes for the system to unload.



- 1.
5. Then press Home to return to the Reload Home page. The ambulance lights should be out now.

Restoring Retain

Please call support for assistance in restoring your production Retain server. Currently this is a manual process. This will take effort but most of the time will be spent copying data.

Restoring Retain generally involves recreating the Retain server software and database, and moving the data back to the Retain server from the Reload server.

On the new Retain server:

1. Reinstall but do **not** configure the version of Retain that you are currently using. See the [Retain Documentation](#)

a. If your Retain Server uses an SQL database management software on the Retain server itself, which we are assuming failed and is being rebuilt, then make sure to install the same version that was originally installed on the Retain server. So for example, if you were using MySQL 5.5, don't install MySQL 5.6, install MySQL 5.5.

b. Do not start Retain as of yet, you need to first get all of the components in place.

c. Stop Retain:

SLES 11: `rcretain-tomcat7 stop`

SLES 12: `systemctl stop retain-tomcatX.service`. Where "x" is the version of tomcat (i.e., Retain 2.x uses tomcat5, Retain 3.x and 4.0-4.1.0.1 uses tomcat7, and Retain 4.2 or higher uses tomcat8)

Windows: Open *Services* and stop the *Retain Tomcat* service

On the Reload for Retain Server:

2. Copy the latest ASConfig.cfg file from the Reload for Retain backup to the proper path for the ASConfig.cfg based upon the platform.

On the Reload for Retain server the file will be found under:

```
[Reload/Retain Backup Storage  
Path]/backups/[day]/base_data/ASConfig.cfg
```

On a **SUSE Linux** Retain server the default path is:

/opt/beginfinite/retain/RetainServer/WEB-INF/cfg

On a **Windows** Retain server the default path is **C:\Program**

Files\beginfinite\retain\RetainServer\WEB-INF\cfg

For example, copy the ASConfig from the Jun 16, 2016 backup to the SUSE Linux Retain server:

```
cp /reload/retain/backups/168-  
thu_jun_16_2016/base_data/ASConfig.cfg  
/opt/beginfinite/retain/RetainServer/WEB-INF/cfg
```

3. Copy the Base Data to whatever path is specified in the ASConfig.cfg file in the basePath line of the ASConfig.cfg file.

For example, if the bathPath on the original Retain server was \Retain you will find it in the ASConfig under <basePath>

```
<basePath>\Retain</basePath>
```

Other base data path will be listed under that section including:

```
<archivePath>\Retain\archive</archivePath>
```

```
<xmlPath>\Retain\xml</xmlPath>
```

```
<indexPath>\Retain\index</indexPath>
```

```
<backupPath>\Retain\backup</backupPath>
```

```
<licensePath>\Retain\license</licensePath>
```

```
<EBDBPath>\Retain\ebdb</EBDBPath>
```

```
<exportPath>\Retain\export</exportPath>
```

4. If your Retain database is in a MySQL Dump file, undump the file in the following manner:

a. Copy the backup of the MySQL dump file to the Retain server. Reload for Retain backs up the MySQL Dump file into a gzip file and stores it in

~/retain/backups/<day>/mysql_dumps. For example,

```
/reload/retain/backups/095-web-apr_05_2017/mysql_dumps
```

b. Unzip the gzipped file in the following manner:

```
gzip -d [mysql dump gzip file]
```

c. Import the Retain database in the following manner:

```
mysql -u root -p retain < [path to dump file]\[dump filename]
```

d. Log into the MySQL client and grant privileges to the Retain database to the Retain user specified in the ASConfig.cfg file:

Example:

```
mysql -u root retain -p
GRANT ALL PRIVILEGES ON retain.* TO 'retain'@'localhost'
IDENTIFIED BY 'password';
```

5. Retain Archive Files should be placed where the ASConfig.cfg file indicates that Archive Files are kept.

Reload for Retain backs up Retain Archive Files to the following location on the Reload Server: If you have only one partition everything is in archive_1/

```
[Reload/Retain Backup Storage
Path]/archive_data/[partition number]
```

For example, if the archive storage location on the original Retain server was \Retain\archive you will find it in the ASConfig under <basePath>

```
<archivePath>\Retain\archive</archivePath>
```

If you have additional Retain Archive partitions, make sure to place the contents of those Archive partitions in exactly the same location as specified in the Storage Manager panel. See the figure below. This can be found by starting up the Disaster Recovery Retain Server on the Reload for Retain server.

Reload for Retain 2.0

Storage Manager

Here, you may configure the storage engine to use with Retain. The Standard engine stores all attachment and e-mail pieces directly on a standard drive mapping. This engine works with all platforms.

Other engines include:

- Centera - Used to store files on the EMC Centera storage devices.
- NetApp SnapLock - Used for configuring the NetApp SnapLock feature. This is optional - NetApp works without it. It is used to ensure compliance.

Regardless of which engine you select, substantial disk space may be consumed locally as well. (The default drive-based engine consumes the most space).

Restarting Tomcat after changing the Storage Engine configuration is strongly advised.

Storage Engine: Standard Engine. Store directly on locally accessible drives.

Standard Engine

The Standard Engine supports file consolidation. This is particularly useful when archiving smaller messages. This option is recommended only if archiving mobile or social messages.

Note: You can alter the the storage paths in the Storage tab of the [Server Configuration](#) menu option.

Enable file consolidation?

Last Access Date Set Last Access Date according to Expire Date

In addition, if desired, you may define and remove "partitions" [here](#).

Partitions

Creating a partition allows you to direct all new attachment blobs to a new storage device. (Your old device might be running out of space, or you might prefer to split the storage on a yearly basis etc.). Retain retrieves and stores blobs based upon the partition's date threshold.

Deleting or adding a partition can easily result in the loss of data. For example, deleting a partition that contains data, will make all of that data completely inaccessible to Retain, unless it is moved to another partition. Carefully read the user manual and/or consult with Technical Support before proceeding.

Current path used for storage: /retain/data/archive16

Begin Date	Name	Path	Delete
04-Apr-2017 14:24:23	archive15	/retain/data/archive15	Delete
04-Apr-2017 14:39:51	archive16	/retain/data/archive16	Delete

You may add a partition below. Just enter a name and the full path to the directory to store blobs under.

New Partition Name: new partition

New Partition Path:

The [RATS](#) tool can be used to facilitate the transfer of data.

6. Indexes should be placed in the location indicated in the ASConfig.cfg file. There is just one index backup under ~/retain/index_data/index

For example, if the index storage location on the original Retain server was \Retain\index you will find it in the ASConfig under <indexPath>
<indexPath>\Retain\index</indexPath>

NOTE: If you did not back up the Retain Indexes, they can be rebuilt. The Retain Index rebuild process may take considerable time. This should be done on the restored Retain server.

7. Once all of the Retain data is in place:

a. If the Reload for Retain server is in Disaster Recovery mode, stop the Retain Server on the Reload for Retain server.

- b. Start the Retain Server on the production Retain server.
- c. Log into the production Retain Server and do a search and open up some old and new messages to confirm that everything is intact.