

## Disk based backup and automated offsite of GroupWise and Non-GroupWise data



A GWAVA Reload and Touchpoint Technical White Paper

### Introduction

Underlying backup technologies have progressed significantly in the last two years, and these advances are now available to organisations using Novell GroupWise. Backup has moved beyond the use and handling of tapes on a daily basis, with the adoption of robust disk based storage and automatic offsite of data. These automation advances enable backup to now form one of the primary critical elements in an organisations overall IT Business Continuity strategy. These changes result in recovery time reductions of over 80% when compared to tape based backup solutions, and allow Recovery Points to be measured in minutes not hours or days with facilities like Continuous Data Protection (CDP). Backup is about recovery time and minimising the data lost - how quickly the IT services can be resumed, and from what prior point in time the data is restored.

What happens to your IT if disaster strikes? From a single server failure, to a building flood or fire that prevents access to all systems and data. What service levels does IT offer the organisation regarding the recovery and resumption of their systems and services? Gwava Reload and TouchPoint have combined to deliver a single source Managed Backup Service for the GroupWise market that uniquely addresses the needs of users of both GroupWise and non-GroupWise systems. This combined service is already installed backing up Terabytes of GroupWise and Non-GroupWise data at customer sites throughout the UK.

Reload is the proven, market-leading GroupWise backup application from GWAVA, acknowledged as the leading 3<sup>rd</sup> party developers of security and business continuity software for the Novell market. TouchPoint, secure, online backup addresses the challenges associated with automating data offsite for business continuity purposes, the backup of all data within the service occurs through a dedicated backup appliance (TouchPoint Local Server – TPLS) offering onsite disk based storage for LAN speed recovery. Reload and TouchPoint seamlessly combine through the leading UK distributor of Novell solutions, Adsisto to deliver a comprehensive, single source of backup and business continuity service for users of GroupWise and non-GroupWise systems. This white paper explains how the service operates.



## **Target Audience of this Document**

This paper is aimed at the technical contact or persons responsible for the reliable delivery of the selected backup solution. A good understanding of the GroupWise system and other data sources is not essential but will help.

## **How to Backup Novell GroupWise and automate data offsite ?**

In overview Reload captures, through backup processes all the system and user data necessary to support a complete GroupWise system rebuild, or to bring an operational post office online for users. TouchPoint takes the Reload backup data into a dedicated disk based backup appliance onsite (TouchPoint Local Server TPLS), along with all other Non-GroupWise data, which may include NetWare, Linux, Windows, SQL or data from over 40 different environments and applications. Once the backup data is on the appliance it is de-duplicated, compressed and encrypted before daily incremental changes are transmitted securely to the TouchPoint backup vault in Northampton. A range of analysis tools are available to determine the volume of data that will be stored, the daily incremental changes and the utilisation of bandwidth for these changes to be transmitted.

Restore and recovery is very straight forward, all of the data is held locally on the TPLS, any recovery occurs at disk system and LAN speed. If data is required from the data centre in Northampton, a TPLS would be setup with the complete backup set required from the site, and shipped to any UK location for recovery to take place. Individual files can be served from either TPLS or over the wire.

In many instances with GroupWise data, the first full backup is large, so a removable storage device is provided free of charge, a full backup is taken onto this device and the device is shipped to the data centre where a complete restore into the TouchPoint backup vault occurs. The local TPLS and data centre synchronise, and then only daily changes transmit.

## **What does Reload and TouchPoint provide?**

- Hot Backup System for GroupWise post offices and domains
- Local Disk based, online backup service that is fully automated and supports over 40 different environments and applications
- Disaster Recovery Solution for GroupWise post offices, domains and any supported user data that can be restored and shipped on a backup appliance to any UK location for Business Continuity purposes



## How Reload for GroupWise Post Office backup works

A GroupWise post office has three major data locations.

They are the,

- OFUSER
- OFMSG
- OFFILES directories.

The contents of the OFUSER and OFMSG directories are always changing. The contents of the OFFILES directory are not changing; files are either added or deleted from the OFFILES directory. Every Reload backup set contains the entire contents of the OFUSER and OFMSG directories, but only the additions to the OFFILES directory. The previous files that were backed up from the OFFILES directories are simply referenced through a technology available on the Linux platform called a “symbolic link”.

The structure of a GroupWise post office backup on the Reload server looks and feels exactly like a normal GroupWise post office directory structure. So the GroupWise POA functions normally against the backup, even though the size of the backup is typically only 12% of the total size of the post office.

The Reload Backup Agent gathers the data from a GroupWise post office through a client mapping to the post office being backed up. The Reload Backup Agent can scale up to 11 simultaneous threads accessing the GroupWise message store in order to determine and backup all changes to the message store. Because of this model, customers are able to accomplish backup speeds across a LAN based on the following:

**NetWare post offices:** 3 gigabytes per minute. Or for example, a GroupWise post office that is 250 gigabytes in size is backed up in 85 minutes per **night**. **Linux post offices:** 6 gigabytes per minute. Or for example a **GroupWise post office** that is 60 gigabytes in size is backed up in 10 minutes per night.

Full Backups in Reload, which wrap up a backup period, are unique in that they do not take ANY bandwidth to accomplish. The reason for this is that all data needed for a Full Backup is actually on the Reload server, because it has been obtained through the Standard (Incremental) Backups. When a Reload Full Backup is created, data is actually just copied on the local Reload server; no data is pulled from the live server housing the GroupWise post office. Outside of the initial Reload backup for a GroupWise post office, the notion of a full replication of the post office to the Reload server is an old-fashion view, attributable to other backup solutions.



The speed differences in Reload allows for the following:

1. Reload Standard (Incremental) backup windows are much smaller than with most traditional backup solutions.
2. Reload Full Backups can be scheduled even during peak business hours, because they do not use bandwidth, or require exclusive access to the GroupWise post office message store.

Once Reload has successfully completed the backup the data is automatically processed within the TPLS appliance and transmitted offsite to the Touchpoint data centre.

### **Typical problems alternate backup software has backing up GroupWise Post Offices**

An explanation of the “problems” with backing up a GroupWise post office are required, the problems are not unique to GroupWise, they are specific to any set of data that is in a constant state of change.

A GroupWise post office is in a constant state of change, even during non-peak hours. This poses a problem for most traditional GroupWise backup applications as they struggle to capture changes to the message store while the backup is underway. In order for the backup to truly be considered a backup, any changes to the message store that occur during a backup cycle must make it into the backup.

However, in order to accomplish this, the traditional backup software vendors waste time taking a second pass over the GroupWise post office, trying to catch items that came in during the backup window. Other backup solutions attempt to exert exclusive locks on GroupWise databases in order to ensure a consistent backup. As a result of this, many backup solutions are inefficient, problematic, and some backup solutions cannot be considered as entirely accurate, or complete version.

Most GroupWise systems are running on NetWare, however, customers are migrating or planning to migrate their GroupWise systems to the Linux or Windows platform. On the NetWare platform, many backup solutions are using the NetWare TSA technology. The TSA technology is not fully available for the Linux platform, and is not available at all on the Windows platform. The TSA technology has its benefits (speed), but it also has its limitations (not cross platform, TSA abends etc).

However, because Reload uses a unique approach to backups with symbolic links along with APIs that are GroupWise based, it accomplishes significant speed that is even greater than TSA backup speeds. This ensures that all GroupWise customers using Reload will have the benefits of TSA-like backup speeds, no matter which platform they choose to run their GroupWise post offices on.

Another thing to consider is, does your current backup solution catch messages that may be deleted and purged from the trash, or archived, on the same day the item was received? Most backup solutions cannot claim such a feature, however Reload does do this, as Reload uses the SmartPurge APIs that allows for the following:



- All user databases have an internal backup timestamp
- Every message that is received has a timestamp
- When the GroupWise SmartPurge feature is enabled from within ConsoleOne, messages that have a timestamp after the backup timestamp cannot be purged. Messages that are archived do archive, but a copy of the message is kept by GroupWise in the user's trash folder.
- Reload advances the internal timestamp of user databases to the time that is just prior to when the Reload backup job began. By using this method the following is accomplished:
- The Reload backup agent only needs to take one pass at a message store, because messages that came in during the time, in which the backup was running, can be caught at the next backup period.

### **Disaster Recovery with Reload**

There are two different kinds of disaster recovery scenarios to consider, and plan for.

They are:

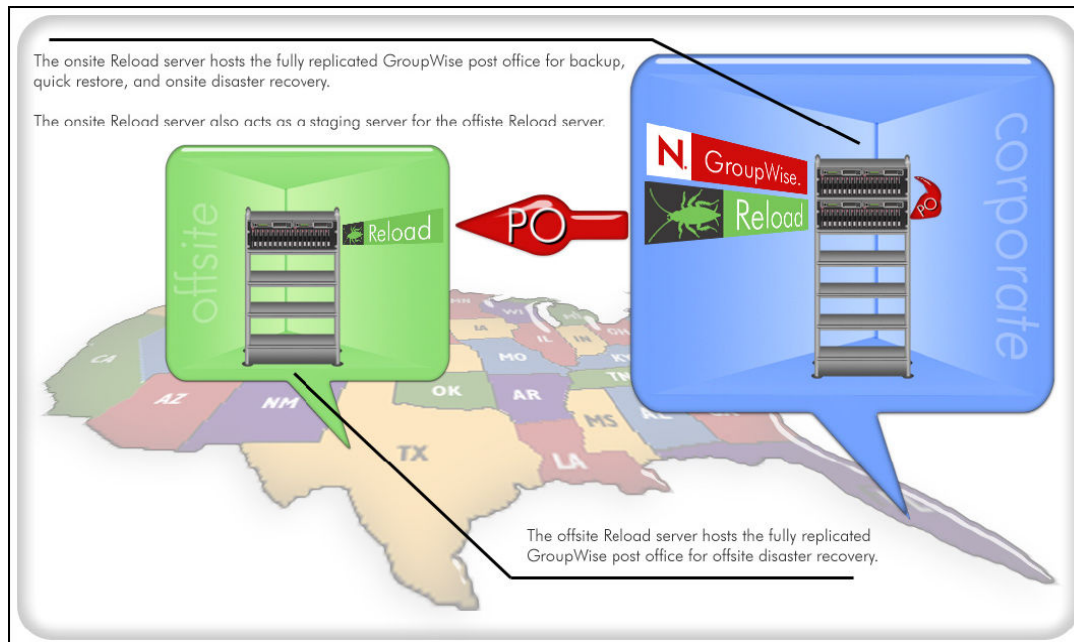
- Server Disaster Including disk sub-system failure
- Other hardware failure
- Software failure
- Human error, someone deletes a post office or domain directory structure, or a portion thereof
- Site Disaster
- Extreme weather
- Flooding, fire, earthquake, man-made disasters

Generally a Server Disaster is the most likely scenario, however due to the ever-present and increasing threat of both natural and man-made causes, Site Disasters are posing an escalating and more significant risk

In the case of a Server Disaster, the Reload server becomes the live server for a GroupWise post office or domain. In the case of a Site Disaster, if you have configured what's called a "Remote Reload Profile" on a Reload server at an offsite location, then you have the most comprehensive Disaster Recovery scenario. Remote Reload is available and can be incorporated into Touchpoint



Figure 1 illustrates this scenario.



## Post Office Disaster Recovery

Because every Reload Backup is a Full Backup of a GroupWise post office, it can be used immediately as a “live” post office. Reload has a “Live Mode POA” that is a GroupWise POA that accesses the most current backup for a particular post office. When the Disaster Recovery “FAILOVER” button is pushed, the Live Mode POA is launched, and ready to take GroupWise client connections, along with communicate with the GroupWise MTA etc.

Furthermore, when Disaster Recovery is enabled, the Reload server will not attempt to pull backups from the original server during the time in which the post office that is in Disaster Recovery mode is being hosted on the Reload server. Switching to the Reload server for Disaster Recovery purposes really is as simple as pushing a button. You must also make sure that the GroupWise client knows how to connect to the Reload server. If you are using DNS to configure your GroupWise client connections to the GroupWise POA, then making the switch to the Reload server is a simple two step process:

1. Enabled Disaster Recovery Failover on the Reload server
2. Switch the DNS entry indicating that the GroupWise POA for that particular post office should point to the



IP Address of the Reload server Generally in a Disaster Recovery scenario, repairing or replacing the original server.

**Domain Disaster Recovery**

Disaster recovery of a GroupWise domain is just as simple to enable as a post office. However, in the case of a GroupWise domain that owns a GWIA for example, you will need to perform some additional design in your existing system to allow for a GWIA on the Reload server to function.

This is explained further in the Reload documentation. Furthermore, if you need to administer your GroupWise system, you need eDirectory access also. So when considering your overall disaster recovery plan, consider that an off-site location for example will need to have a server in it that houses eDirectory replicas. You may choose to host these eDirectory replicas on the same Linux server that is hosting Reload.

**After Disaster Recovery**

Once the disaster recovery situation has been remedied, and a production server is ready to host the GroupWise post office or domain, you can migrate the data from the Reload server back to the production server. Reload has a migration agent that will enable migrate the data from the reload server to a production server. Configuring a migration is a simple wizard driven process, within the Reload Administration interface, it's not a side utility or manual process.

The migration agent for post office migrations can perform a Pre-Migration which copies over most of the data from the post office on the Reload server, prior to the time that you bring down the Live Mode POA on the Reload server. The Full-Migration is then run with the Live Mode POA down. Since the Pre-Migration was done, the Full-Migration goes much faster which helps to limit downtime.

**Technical Specifications for Reload**

Reload supports GroupWise 6.5 and GroupWise 7.
The Reload server must be SLES9, SLES10 (32-Bit or 64-Bit) or OES Linux.
The Reload server must have disk space available according to the following calculations:
2.5 X size of post office for each week of hot backups + 1 extra week

**Example:** 10 gigabyte post office, two weeks of hot backups = 75 gigabytes of space needed on the Reload server  
 1 X size of the domain database for each backup of a domain



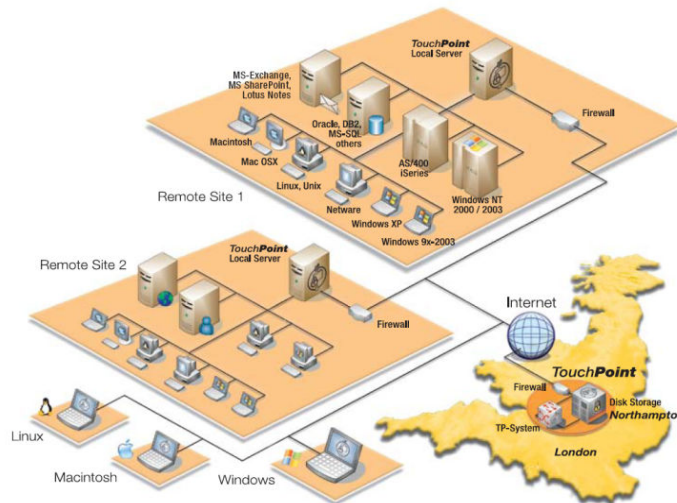
- |  |
|--|
| <ul style="list-style-type: none"> <li>• Installing the Reload software package is one command</li> </ul>  |
| <ul style="list-style-type: none"> <li>• Each Reload server can backup up to 20 post offices and 20 domains</li> </ul>   |
| <ul style="list-style-type: none"> <li>• Most customers will want to keep their Tape Backup solution for long-term backup purposes. Reload can enhance existing Tape Backup solutions, while significantly reducing the need to use the Tape Backup system for restoration of backed up data.</li> </ul> |

### How does Reload Integrate with TouchPoint?

The advantages of the TouchPoint/Reload combination are the availability of localised Reload backups and synchronized offsite backups. This leads to the availability of simple self provisioning for local based users who have accidentally deleted emails, or had a corruption. Coupled with the failover to backup Post Offices that can be enabled by local IT staff. In addition TouchPoint offers remotely located Post Offices for offsite access for remote users, or a full restore to a separate physical location through a data restore and the provision of a replacement backup appliance with Reload and the appropriate Post Office data.

### How TouchPoint for Non-GroupWise data works

TouchPoint will backup non-GroupWise data without the need to deploy any backup agents, the TPLS backup appliance has a TouchPoint client running and the service takes advantage of backup routines that natively occur in operating systems and applications.





The Continuous Data Protection (CDP) facility is provided within the service, and needs only to be configured to run. Dependant on the application CDP captures all changes as they occur, and transmits them securely offsite. Thereby ensuring minimal loss of data should a restore be necessary.

Over 40 different operating systems and application environments are supported by TouchPoint, a sample list of the non-GroupWise environments are enclosed below :

<input type="radio"/> Novell NetWare
<input type="radio"/> Microsoft File Systems (32-Bit or 64-Bit)
<input type="radio"/> Microsoft SQL
<input type="radio"/> SuSe Linux
<input type="radio"/> Redhat Linux
<input type="radio"/> Microsoft Exchange
<input type="radio"/> Microsoft Sharepoint
<input type="radio"/> Lotus Notes
<input type="radio"/> Oracle RDBMS
<input type="radio"/> VMware
<input type="radio"/> NFS, SSH, Samba , AFP (Mac client only)
<input type="radio"/> MySQL
<input type="radio"/> PostgreSQL
<input type="radio"/> Tru64
<input type="radio"/> HP UX
<input type="radio"/> AS/400
<input type="radio"/> DB2 (Linux client only)
<input type="radio"/> SAGE accounts
<input type="radio"/> INVU document management system
<input type="radio"/> Interwoven DMS





**A summary of the unique capabilities of Reload and Touchpoint**

What Makes Reload Unique from Other Backup Solutions?	What Makes TouchPoint Unique from Other Backup Solutions?
<p>No <b>software</b> needs to be installed onto GroupWise servers.</p>	<p>No agents need to be installed on the non-GroupWise systems to be backed up.</p>
<p>Reload backs up <b>all server platforms</b> that GroupWise runs on, the Reload server software runs on the Novell SUSE Linux platform.</p>	<p>Optimised for WAN and distributed environments .</p>
<p>No e-mail can be purged before it is backed up by Reload.</p>	<p>Agentless technology offering Incremental forever backups .</p>
<p>Each backup of a GroupWise post office is effectively a full backup; however the amount of data that is replicated and stored is only 12% of the size of the post office.</p>	<p>After an initial full backup to removable media incremental backups are securely transmitted over the wire</p>
<p>Reload Incremental backup speeds are <b>faster</b> than other backup solutions.</p>	<p>With de-duplication and data compression TouchPoint is optimised for the automated offsiteing of backup data</p>
<p>Reload Full Backups require no network bandwidth to perform.</p>	<p>A full recovery of the data can be provided onto a replacement TPLS and shipped to any UK location within the client-driven Service Level Agreement</p>
<p>The Reload administrator can load a post office backup set, or enable Disaster Recovery Failover from their wireless device such as a BlackBerry, or any device with an SSH client.</p>	<p>Administration and management is simplified through a dedicated, secure online portal that quota's, alerts, reports and trends the backup sets</p>





### In summary

Reload enables accessing a backup of a post office or domain within 2 minutes, this can be achieved by the Users accessing the Reload backup by connecting to the Reload server with their GroupWise client (all platforms are supported, no client software snap-ins are needed). The most recent post office backup can be made available to users, without any intervention from the GroupWise administrator through Push-Button Disaster Recovery (one button to push in a web interface); this enables a GroupWise Post Office or Domain to fully function off of the most current backup of that post office or domain. Combined with the GWAVA Reveal product, Reload enables time-sliced searching of GroupWise data.

In comparison TouchPoint enables De-Duplication, Compression and Encryption of the data by the DS-Client, these encryption keys are managed by the customer and offers continuous data protection due to the files being monitored and backed up when altered. Touchpoint allows online master and delta file generation allowing retention rules to determine pattern of generations to be retained or deleted.

TouchPoint is a fully automated disk based offsite, backup service that ensures the rapid recovery of data in the event of systems failure or data loss. In a disaster recovery scenario a full copy of the client's data is held in Smartways secure facility enabling rapid recovery of IT systems and user data, thereby minimizing downtime.

Smartways TouchPoint, Secure Online Backup offers an enterprise-level backup service, supporting over 40 operating environments and applications such as Microsoft Windows, Exchange, SQL Server, Lotus Notes, Oracle and SuSe Linux, sold through an accredited reseller channel TouchPoint is powered by Asigra.

**For further information, please contact Smartways on [0800 138 0881](tel:08001380881)**

