

hp OpenView
operations for
Windows 7.5

backup & restore
white paper

version 1.4

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Table of Contents

1	Change record.....	6
2	Overview.....	7
3	Backup of management server data	8
3.1	Full system backup/imaging & restore - offline.....	8
3.2	Partial backup overview	8
3.2.1	Special OVO configurations based on white papers.....	10
3.2.2	MSDE or MS SQL Server 2000	10
3.2.3	Summary of folders to be backed up.....	10
3.2.4	Backing up a clustered OVOW installation.....	11
3.3	Policies.....	11
3.3.1	Tips on backing up the policy files	12
3.4	User Created Graphs.....	12
3.5	Custom Instrumentation	12
3.6	User Created Report definitions.....	12
3.7	Group membership.....	13
3.8	Reports (optional)	13
3.9	Exported Messages (optional).....	13
3.10	Custom OVOW console MMC definitions (optional)	13
3.11	OVOW Patches	14
3.12	Licenses.....	14
3.13	OVOW configuration files (optional).....	14
3.14	Databases	15
3.14.1	SQL DB "Openview"	15
3.14.2	SQL Database "Reporter".....	15
3.15	Procedures and tips on backing up the OVOW databases.....	15
3.15.1	"do.bat" wrapper.....	15
3.15.2	Backup and restore related SQL scripts.....	16
3.15.3	Backup the Openview Database	16



3.15.4	recovery.bat script.....	18
3.15.5	Backup the Reporter Database.....	18
3.16	What's not included in the backup.....	19
4	Restore using the same domain/hostname/IP address.....	21
4.1	Building a new OVOW server - Re-image or Re-install.....	21
4.2	Restoring the OVOW database.....	22
4.2.1	Stop OVOW Management Server and agent processes.....	22
4.2.2	Restore the Openview Database.....	22
4.2.3	Restore the Reporter Database (Optional).....	24
4.3	Restore other required configuration data.....	25
4.4	Restore other, optional, data structures.....	25
4.5	Restore Group membership.....	26
4.6	Restart OVOW server.....	26
4.7	Reset Agent on OVOW Management Server.....	26
4.8	Eventlog messages.....	28
4.9	Verify the Restored System.....	28
5	Restore using another hostname/IP address.....	29
5.1	Re-image or Install the new OVOW server system.....	29
5.2	Change node properties of management server.....	30
5.3	Reset Agent on OVOW Management Server.....	30
5.4	Switching the agents.....	31
5.5	Consoles.....	31
5.6	Heartbeat-polling and report generation.....	31
5.7	Licenses.....	32
5.8	OVO_BackupJob1 cannot be rescheduled or deleted.....	32
6	Example Partial Backup Implementation.....	33
6.1	Modify the backup destination of the Openview database.....	34
6.2	Create and schedule a script to copy files.....	34
6.2.1	OVOWBackup.cmd.....	34
6.2.2	Schedule OVOWBackup.cmd.....	35

6.3 Verify backup folder content 35



1 Change record

Version	Date	Changes
0.9	October 2003	Draft version (tests pending)
1.0	October 2003	Version for partner web, described procedures apply for all OVOW 7.x versions, enhanced reporter backup/restore procedure, start of MSSQL\$OVOPS service added to restore procedure. Vpstat -p added.
1.1	November 2003	Some typos corrected. Possibility to switch of health check mentioned.
1.2	November 2003	Added call to sp_change_users_login after restore of reporter database.
1.3	October 2004	Added chapter how to delete or change schedule of backup job OVO_BackupJob1 after a restore on a system with different hostname.
1.4	April 2005	Updated for OVOW 7.5

2 Overview

This white paper describes the procedures necessary to backup and restore an OVO 7.5 for Windows management server.

Chapter 3 [Backup of management server data](#) lists the data that needs to be included in a backup.

After a backup, a server can be restored using the following restore possibilities:

- 1) [Restore using the same domain/hostname/IP address](#) (see chapter 4)
This is the typical restore case. The server is restored as it was before either using the same hardware as before or using an identical system (in case the old hardware cannot be used any more). If new hardware is used, then that means that the new and the old system cannot be connected to the same network at the same time. At some point in time the old management server has to be shut down and replaced by the new management server, which means that there is a short time frame in which no management server is available.
- 2) [Restore using another hostname/IP address](#) (see chapter 5)
In this scenario both the old and the restored management server can coexist and the new management server can take over the existing agents at any point in time. However, this restore requires additional steps because of the name and IP address change.

At the end, chapter 6 shows an example of a partial backup implementation.

3 Backup of management server data

3.1 Full system backup/imaging & restore - offline

A full system backup, including operating system, all partitions, disks, files etc. is the easiest way to backup and restore your OVOW management server.

In this case the backup is done offline – that means the OVOW server as well as the OS is shutdown and the backup is started using a special boot disk or partition and special backup or imaging software.

HP recommends that you create an image/backup of your OVOW management server using a suitable solution so that you can restore your complete system, including OS settings like IP configuration, DNS configuration, and all installed software, including OVO for Windows.

However, such a solution is not appropriate for a daily backup, as the management server has to be shut down. Therefore 'full' backups need to be combined with another backup mechanism that saves the differences between a full system backup or fresh install and the latest runtime data. This partial backup is described in the following chapters.

In cases where you cannot use a full-system backup or imaging solution (for example if the system where you want to restore the data uses different hardware and disks), you can also restore an OVOW server by reinstalling the Operating System and OVOW software using exactly the same steps as for the original installation.

3.2 Partial backup overview

The following sections list data that cannot be restored by recreating an OVOW server using [the install CDs](#).

In summary you need to back up all data structures that may be modified during normal daily operation of the OVOW server or that you have customized to accommodate your specific environment.

This includes:

- q the content of the OVO database,
- q the Policy folder including custom and modified 'out of the box' policies,
- q the instrumentation folder structure,
- q custom graphs,
- q license information
- q report definitions

- q custom OVOW console MMC definition files
- q modified OVOW configuration files, such as backup scripts or Dbmaint definitions.

If you use a full-system backup or imaging solution then you might not need to backup all the listed data on a daily basis, as they may already be included in your full-system backup - but this will depend upon the amount of change in your environment since your last full-system backup.

For example, if you do a full system backup after you installed all licenses, adjusted all policies and created your own graphs, then you don't have to include this data in your daily partial backup and you only need to backup data that changes daily, such as messages in the database or generated reports.

You may also decide that you do not need the latest generated reports or the exported messages if they are not business critical. If this is the case then the corresponding chapters can be ignored.

One of the main deciding factors for the backup strategy that you adopt is the restore mechanism that you plan to use.

If your recovery plan includes re-imaging a new machine and restoring a full backup of your OVOW server along with the most recent incremental daily backup, then your daily backups can be optimized to only include

- q the content of the OVO database,
- q incremental backups of the Policy folder, including custom and modified 'out of the box' policies, based on files modified since the last full backup,
- q incremental backups of the instrumentation folder structure, based on files modified since the last full backup,
- q custom graphs,
- q optionally, the generated reports and exported messages

You should, however, plan to perform a full system image / backup regularly – weekly for example.

However, if you plan to install a new OVOW server and simply recover the data from your existing server then your backup strategy should include all of the components listed earlier – and you may choose to backup complete copies of all of the items listed (i.e. not incremental backups).

Backup or restore of other OpenView products like Service Desk or OV Internet services, which might be installed on the same system, is not described here. Refer to the corresponding product documentations for details.

3.2.1 Special OVO configurations based on white papers

The following instructions assume a standard OVOW installation. If you are using the setup as described in the whitepaper "OVOW 7.2 High Availability Utilizing Microsoft SQL Server Log Shipping" then your setup is different, and may have to adjust your backup strategy. This whitepaper is available at the HP OpenView Channel Web <http://partners.openview.hp.com/>.

3.2.2 MSDE or MS SQL Server 2000

The OVOW Management Server installs the MSDE (Microsoft Desktop Engine) as part of the standard installation. In production environments, the MSDE replaced by a full MS SQL server 2000 installation (referred to as MS SQL hereafter) to eliminate the 2GB database instance limit

The backup and restore procedures described in this document apply to both MSDE and MS SQL, differences in the procedures used are mainly in the restore of databases greater than 2GB.

3.2.3 Summary of folders to be backed up.

In summary, the folders / file sets that must be backed up on an OVOW server on a regular (i.e. daily) basis is as follows (for details please see the following chapters).

- ü The OVOW database. Backup the folder %OvDataDir%\Databases\Backup\ after the scheduled backup task has completed (start is 01:00 a.m in the morning by default)
- ü Policies. %OvShareDir%\Policies\¹
- ü Custom Graph definitions. %OvDataDir%\ VPI_GraphsUser*.txt or %OvShareDir%\VPI_GraphsUser*.txt in a clustered OVOW installation
- ü Instrumentation files. %OvShareDir%\Instrumentation\¹
- ü User created Report definitions (requires the 'full' OV Reporter product be installed) – User defined folder
- ü User / Group definitions for local users on the OVOW server that are used in User Role assignments (see 3.7). This is not necessary if domain groups are used.
- ü Generated Reports (OPTIONAL). %OvShareDir%\webpages²

¹ In case of an OVOW installation that got upgraded from 7.x to 7.5 in place, the policies and instrumentation directories are located in %OvInstallDir%.

² In case of an OVOW installation that got upgraded from 7.x to 7.5 in place, the generated reports are located in %OvDataDir%\webpages.

- ü Exported messages (OPTIONAL). Defined in %OvInstallDir%\Support\DBMaint.reg
- ü Custom OVOW MMC console definitions (OPTIONAL). Default file is %OvInstallDir%\bin\HP OpenView Operations.msc. Additional user defined files may exist.
- ü Reporter Database (OPTIONAL). Location depends upon user defined backup strategy for Reporter database.
- ü OVOW Patches. Required to allow a rebuild of an identical OVOW server. User defined folder.
- ü OVOW licenses. Held in the file %Program Files%\Common Files\Hewlett-Packard\PPP\LicFile.txt or %OvShareDir%\HPOvLic\data\LicFile.txt in a clustered OVOW installation
- ü OVOW database backup and message maintenance configuration. The database script folder is %OvDataDir%\Databases\scripts\ and the message maintenance definition file is %OvInstallDir%\Support\Dbmaint.reg

3.2.4 Backing up a clustered OVOW installation

On a clustered OVOW installation, the %OvShareDir% is located on shared disk assigned to the OVOW cluster resource group. As this disk can only be accessed from the currently active node, all files system backups need to be performed on the active node.

3.3 Policies

Policies are stored in files in the folder %OvShareDir%\Policies. Modifying an existing policy or creating a new policy will create a new file in the Policies folder. The file name is the GUID (Globally Unique Identifier) representing the Version ID of a policy. The files are in a structured storage format and cannot be viewed or edited.

On the initial OVOW installation, all SPI and core policy files are created with the "last modified" date of the actual installation time and date. All files more recent than the default policies need to be backed up. Note however that if you upgraded from an older version, then your custom policies might have an older date as the default SPI and core policies, so make sure that you are really able to recover all policy files. The best way to be sure is to backup the complete policy folder.

IMPORTANT NOTE: Be aware that policy information is stored in the SQL databases as well as in files in the Policies folders. A valid backup requires the policy data from the "Openview" database and all policy files in the Policy folder at the same time (that is, no policy modifications are allowed between the backup of the Openview database and backup of the files in the policies folder).

3.3.1 Tips on backing up the policy files

A suggested procedure is to use backup software and the archive flag to backup only new or modified files. You also can use the Windows command

`xcopy /m` to copy newer or modified files to a destination backup folder.

3.4 User Created Graphs

(daily backup might not be necessary if latest versions are included in full-system backup)

Graph definitions are stored as regular files in the folder `%OvDataDir%`. The files are named **VPI_GraphsUser<name>.txt**, with <name> representing the Graph Family name. Each file may contain multiple graph definitions and categories.

On a clustered OVOW installation, the graph definitions are stored in the folder `%OVShareDir%`.

3.5 Custom Instrumentation

(daily backup might not be necessary if latest versions are included in full-system backup)

Custom instrumentation files are any user created instrumentation files, which are not part of a SPI or the core product.

The files are stored in

`%OvShareDir%\Instrumentation\<Platform>\<OS vers>\<Category>` ¹

Example:

`%OvShareDir%\Instrumentation\Windows 2000\5.0\MyScripts` ¹

Instead of a category folder, custom files may also be located in the legacy folders Action, Command, Monitor or any other subfolders.

3.6 User Created Report definitions

SPIs containing custom reports will automatically be reinstalled and configured with the SPI reinstallation. Any other custom reports created using OV Reporter may need to be reinstalled after the OVOW server recovery procedure has been followed. This may not be necessary if they custom Reports were included in a full system back up and, hence, were restored by the full system recovery. Please refer to the OV Reporter documentation.

3.7 Group membership

In case of a local setup of the OVOW user groups, write down which users belong to the groups HP-OVE-OPERATORS and HP-OVE-ADMINS on the OVO for Windows management server. These group memberships will need to be recreated manually unless they will be restored as part of a full system recovery (from a complete server image backup).

If you used domain user groups during the OVOW installation, there is no need to backup the group membership information from the management server.

3.8 Reports (optional)

Generated reports are stored in the %OvShareDir%\webpages directory². To backup the generated reports, backup the complete directory including subfolders.

3.9 Exported Messages (optional)

The default setting of the OVOW server is to delete messages in the acknowledged message browser after 30 days. It is also possible to export the message into a CSV (Comma Separated Value) files. The setting is customizable via a registry key; a set of sample registry settings is available in the file %OvInstallDir%\Support\DBMaint.reg.

If you require to backup the downloaded messages, e.g. for custom reporting on messages, make sure that these files are included in the backup procedure.

3.10 Custom OVOW console MMC definitions (optional)

By default the OVOW server includes only one OVOW console MMC definition file - %OvInstallDir%\bin\HP OpenView Operations.msc

Reconfiguring your setting in this single file is not complex or time consuming but you may wish to backup the file as part of your daily backup.

If you have created additional OVOW console MMC configuration files for specific users then these files will have been saved in a location that you have explicitly selected – a common choice being

Documents and Settings\\Desktop

A backup of these files will save time when recovering the OVOW server, particularly if you have a number of these files – such as when multiple users are allowed to connect to the OVOW server using Terminal Services to run the OVOW console.

In most cases the OVOW console MMC configuration files will reside on the systems that host the OVOW 'remote' console. Consideration of the backup strategy for these files should be part of a full disaster recovery plan – although in many cases, recreating the console definitions is a simple option.

3.11 OVOW Patches

To successfully recover your OVOW server, you must start by recreating an identical OVOW installation with the same patch level. In some cases patches may be superseded by new patches and will then no longer be available on the hp support web page. Therefore you should include the patch files (OVOW_xxxxx.exe) in your backup to ensure that you have the relevant patch files when you need to recreate your system.

You can use `vpstat -p` to get a list of all currently installed patches. You can also include this information into your backup by redirecting the output to a file (Use `vpstat -p >vpstat.out`. Then include `vpstat.out` in your backup). This will allow you to check if you have recreated a system with the exact same patch level.

3.12 Licenses

All licenses are stored in the file

```
%Program Files%\Common Files\Hewlett-Packard\PPP\LicFile.txt
```

On a clustered OVOW installation the licenses are stored in the file

```
%OvShareDir%\HPOvLIC\data\LicFile.txt
```

3.13 OVOW configuration files (optional)

1) Database backup and maintenance files

If you have modified the OVOW server database backup scripts or database maintenance definitions then you should back up the database server scripts and maintenance definition file

```
q %OvDataDir%\Databases\scripts
q %OvInstallDir\Support\Dbmaint.reg
```

2) Message action server configuration files

The message action server configuration files for message forwarding is stored in the directory

```
q %OvShareDir%\conf\MsgActSrv
```

3.14 Databases

The MS SQL Instance OVOPS is the core data repository of the OVOW Managements server and the Reporter component. It is also shared by other OpenView products, which create other databases in the OVOPS instance.

If MSDE is used as the OVOW database, the full database instance name is ".\OVOPS". In case of a remote MS SQL database it is "<servername>\OVOPS". If the MS SQL database is clustered, the instance name is "<virtual sql servername>\OVOPS".

3.14.1 SQL DB "Openview"

If MSDE is used a default OVOW installation creates an automatic online backup every night at 1:00 am to the folder

`%OvDataDir%\Databases\Backup\`

- `openview.dat_bak`
- `openview.log_bak`

Schedule time and destination can be changed easily (see 3.15 [Procedures and tips on backing up the OVOW databases](#)). It's also possible to start a backup manually.

3.14.2 SQL Database "Reporter"

This database does not have a default backup job configured. To provide a complete backup strategy, you need to create a backup job for the Reporter runtime data. Be aware that the Reporter database may grow fairly large depending on the number of managed nodes and the amount of collected data per managed node.

3.15 Procedures and tips on backing up the OVOW databases

The following scripts are located in `%OvDataDir%\Databases\scripts`. Additional information about these scripts is available in the online-help.

3.15.1 "do.bat" wrapper

This is a wrapper for executing the other SQL scripts. It assumes a blank 'sa' password (not recommended). You can modify the script in three different ways:

1. Use `osql -S<instance name> -E -i %1`
The `-E` option specifies that the NTLM authentication should be used. This change requires that a local Administrator starts the script.
2. Use `osql -S<instance name> -Usa -n -i %1`
The script will prompt you for the 'sa' password each time it is executed.
3. Use `osql -S<instance name> -Usa -P<sa password> -n -i %1`
Specify the correct password in the `do.bat` script. This is not recommended as everyone with read access to `do.bat` can read the password.

<Instance name> has to be replaced with the full database instance name as described in 3.14 Databases.

The usage of the `do.bat` script is: `do.bat <script.sql>`

3.15.2 Backup and restore related SQL scripts

NOTE: Modification to these scripts require basic knowledge of the MS SQL command language:

- `create_backupjob.sql`: This script defines the backup job 'OVO_BackupJob1' as a stored procedure. You can modify this script if you want to specify a different destination for the backup files. If this file has been changed, you need to delete the existing schedule (`delete_backupjob.sql`) and reschedule (`sched_backup.sql`).
- `sched_backup.sql`: Defines the backup schedule (time and frequency) for 'OVO_BackupJob1'. Default is daily at 1am.
- `delete_backupjob.sql`: Delete backup schedule for 'OVO_BackupJob1'
- `backup_now.sql`: Executes the job 'OVO_BackupJob1' immediately
- `check4pr.sql`: Stored procedure to check, prior to restore, if there any processes attached to the Openview database.
- `killproc.sql`: Stored procedure to terminate any processes attached to the Openview database (usage only prior to restore)
- `restore_openview.sql`: SQL script to restore the "Openview" database from the backup

3.15.3 Backup the Openview Database

In case of a local MSDE database there is already a preconfigured backup job for the openview database. See 3.14.1.

If MS SQL is used as database, the administrator has to setup the backup job on his own.

Creating an automatic backup job

The SQL script %OvDataDir%\databases\scripts\create_backupjob.sql can be used to setup the automatic backup job. By default, the backup files are created in the directory %OvDataDir%\databases\backup. If you want to use a different directory you have to edit the lines containing the destination of the backup files:

- @command = 'BACKUP DATABASE OpenView to disk = 'f:\backup\db\openview.dat_bak'' WITH INIT',
- @command = 'BACKUP LOG OpenView to disk = 'f:\backup\db\openview.log_bak'' WITH INIT',

You have to ensure that the defined destination directory exists on the machine running MS SQL and is accessible by it. Be aware that on a clustered database, the backup files are always created on the machine currently running the MS SQL.

To setup the backup job, execute the following command:

```
%OvDataDir%\databases\scripts\do.bat create_backupjob.sql
```

You may also change the default schedule of the backup job by editing the file %OvDataDir%\databases\scripts\sched_backup.sql followed by the execution of %OvDataDir%\databases\scripts\do.bat sched_backup.sql

Important Note: Any modifications of the openview database backup jobs require that you at first delete the existing backup job with the following command:

```
%OvDataDir%\databases\scripts\do.bat delete_backupjob.sql
```

before you recreate it with the command

```
%OvDataDir%\databases\scripts\do.bat create_backupjob.sql
```

Important Note: Do not forget to do a backup of the created backup files.

Starting the backup job manually

If you want to execute the backup job immediately, you can trigger this with the command

```
%OvDataDir%\databases\scripts\do.bat backup_now.sql
```

3.15.4 recovery.bat script

This script resets the user login into the Openview database after a restore. Like the do.bat this script assumes an empty 'sa' password. Before running this script, please edit it as described for the do.bat script.

3.15.5 Backup the Reporter Database

Manual Backup

The default Reporter database (created by the Reporter Lite functionality in a default OVOW installation) includes 'transitory' data that is automatically managed by the Reporter Lite installation. Old data is automatically removed from the database on an ongoing basis – with the generated reports folder providing reference to the data in the form of published reports. If you choose to not back up the Reporter database the main impact is that, after recovering your OVOW server, some limited report data will be lost – this will mean that weekly reports cannot be generated until Reporter Lite has built up some history. This is not a significant issue so you may choose to NOT back up the Reporter Lite database.

However, if you have installed a full version of OV Reporter then your reporter database WILL contain a much more significant history of the data from the managed systems and you SHOULD back up the database. NOTE that this backup may take some time to complete as the Reporter database can grow to be quite large.

For details see the online help.

MSDE: Open a command prompt and run `osql -S<instance name> -Usa -P<sa password>`
MS SQL Server full version: use the tool `isqlw`

Enter the password for the sa user when prompted for a password.

Certain defaults have been chosen in the following example. You may be required to change the directory name or user name. Enter the following commands:

```
USE reporter
go
BACKUP LOG reporter WITH TRUNCATE_ONLY
go
EXEC sp_addumpdevice 'disk', 'Reporter_BKUP',
'C:\Program Files\HP OpenView\Data\Databases\backup\Reporter_1.bak'
go
BACKUP DATABASE reporter TO Reporter_BKUP WITH INIT, STATS
go
EXEC sp_dropdevice 'Reporter_BKUP'
go
```

Here's how your output should look like (above commands are in bold):

```
1> USE reporter
2> go
1> BACKUP LOG reporter WITH TRUNCATE_ONLY
2> go
1> EXEC sp_addumpdevice 'disk', 'Reporter_BKUP',
2> 'C:\Program Files\HP OpenView\Data\Databases\backup\Reporter_1.bak'
3> go
(1 row affected)
'Disk' device added.
1> BACKUP DATABASE reporter TO Reporter_BKUP WITH INIT, STATS
2> go
11 percent backed up.
20 percent backed up.
30 percent backed up.
40 percent backed up.
51 percent backed up.
61 percent backed up.
70 percent backed up.
80 percent backed up.
90 percent backed up.
Processed XXX pages for database 'reporter', file 'reporter_dat' on
file 1.
100 percent backed up.
Processed 1 pages for database 'reporter', file 'reporter_log' on file
1.
BACKUP DATABASE successfully processed XXX pages in X.XXX seconds (X.XXX
MB/sec).
1> EXEC sp_dropdevice 'Reporter_BKUP'
2> go
Device dropped.
```

Now the backup files are created in the file system and can be backed up.

Scheduled Backup

No out-of-the-box scripts are provided. A scheduled backup can be implemented by customizing copies of the scripts used for the "Openview" database.

3.16 What's not included in the backup

Temporary files / queue files

Some data (messages/action responses) of the OVO server is temporarily stored in queues or buffer files. The amount of data in such files is normally quite small, as this data is stored in the DB as soon as possible.

The procedures described above do not save such temporary data that is processed by the management server during the backup.

OVO agent on management server

The operations agent on the management server is used in scenarios where messages are forwarded to external applications, like Service Desk or another OVO management server. The procedures described above do not save any of these unprocessed messages that are not yet forwarded.

4 Restore using the same domain/hostname/IP address

The steps involved in recovering an OVOW server are described below – some of these steps are not required if you recover from a full backup / image. In summary you need to:

- q Build a new server, either by restoring a backup image or by installing a new instance of the OVOW server software on a suitable server.
- q Restore the OVOW database and (optionally) the Reporter database from your backup.
- q Restore required data structures – Policy folder, Instrumentation folder, custom graphs.
- q Restore other, optional, data structures such as the OVOW license file, modified configuration files and custom OVOW MMC console definitions etc.
- q Recreate user and group membership information.
- q Reset the AgentId of the OVO agent on the OVOW management server
- q Verify that your restored system functions correctly

4.1 Building a new OVOW server - Re-image or Re-install

Re-image

- Do a full-system restore using your backup solution

Or re-install

- Configure Computer name, FQDN (Fully Qualified Domain Name) and IP addresses identical to the failed system.
- Join the same Windows Domain prior to installing OVOW (if applicable).
- Install OVOW from the original distribution media, including exactly the same SPIs and the same patch level (no superceding patches!). It is also required to select the same OVOW program and data location as on the failed system.
- If full MS SQL Server 2000 was used in the original setup instead of MSDE, the new installation has to use it too. Otherwise restoring of database bigger than 2GB will fail.
- When prompted for the HP-OVE-Group and HP-OVE-User names and password, use the same accounts and password as before. The same applies to the HP-OVE-ADMINS and HP-OVE-OPERATORS groups
- After the reboot – bring up the OVOW Console and check the installation (e.g. generate a couple of test messages via Openview Tools -> Test Tools).
Exit the Console.

4.2 Restoring the OVOW database

4.2.1 Stop OVOW Management Server and agent processes

Close all open consoles first, before starting to restore the OVOW database.

IMPORTANT: The restore procedure requires that the WMI service is stopped and remains stopped until the recovery is complete. System management tools, such as Compaq Insight Manager and the OVO agent itself attempt to restart WMI automatically. Make sure that these tools are stopped while restoring the DB.

- Stop all services and processes using `vpstat -3 -r STOP`
- User the service control panel (Services.MSC) to stop the Windows Management Instrumentation service. Note that there is a second service called "Windows Management Instrumentation Driver Extensions" – you do not need to stop this service (in fact you can not stop it, the system disallows this). Alternatively you can use the command `net stop winmgmt` to stop the WMI service.

4.2.2 Restore the Openview Database

Restore the backup files for the OVOW database backup to the same folder that they were generated in on the failed OVOW server. By default this is `%OvDataDir%\Databases\Backup\`.

(Excerpt from the Online Help)

- Modify the files `do.bat` and `recovery.bat` (see 3.15 Procedures and tips on backing up the OVOW)
- If MSDE is used as database, start the `MSSQL$OVOPS` service again. Otherwise make sure the MS SQL Server instance is running.

In the folder `%OvDataDir%\Databases\scripts` run

- do `check4pr.sql`
Sample output:

```
There are no processes accessing the openview database
no action is taken
```
- do `killproc.sql` (if required)
- do `restore_openview.sql`
Sample output:

```
There are no processes accessing the openview database
no action is taken
Deleting database file 'E:\Program Files\HP OpenView\Data\Databases\role.ndf'.
Deleting database file 'E:\Program Files\HP
OpenView\Data\Databases\msgaction_idx.ndf'.
Deleting database file 'E:\Program Files\HP
OpenView\Data\Databases\msgaction_dat.ndf'.
Deleting database file 'E:\Program Files\HP OpenView\Data\Databases\pmad.ndf'.
Deleting database file 'E:\Program Files\HP OpenView\Data\Databases\store.ndf'.
```

```
Deleting database file 'E:\Program Files\HP
OpenView\Data\Databases\openview_log.ldf'.
Deleting database file 'E:\Program Files\HP
OpenView\Data\Databases\openview.mdf'.
Processed 184 pages for database 'openview', file 'Pri_dat' on file 1.
Processed 1352 pages for database 'openview', file 'Store_dat' on file 1.
Processed 408 pages for database 'openview', file 'Pmad_dat' on file 1.
Processed 616 pages for database 'openview', file 'MsgAction_dat' on file 1.
Processed 56 pages for database 'openview', file 'MsgActionIdx_dat' on file 1.
Processed 24 pages for database 'openview', file 'Role_dat' on file 1.
Processed 1 pages for database 'openview', file 'Openview_log' on file 1.
RESTORE DATABASE successfully processed 2641 pages in 9.734 seconds (2.221
MB/sec).
Processed 4566 pages for database 'openview', file 'Openview_log' on file 1.
RESTORE LOG successfully processed 4566 pages in 13.405 seconds (2.790 MB/sec).
```

- recovery.bat

Sample output:

```
>osql -Usa -P<pw> -S.\OVOPS -b -dopenview -Q"sp_change_users_login Update_One,
'ovms_admin', 'ovms_admin'"
The number of orphaned users fixed by updating users was 0.

>osql -Usa -P<pw> -S.\OVOPS -b -dopenview -Q"sp_change_users_login Update_One,
'ovdb_user', 'ovdb_user'"
The number of orphaned users fixed by updating users was 0.
```

4.2.3 Restore the Reporter Database (Optional)

(Excerpt from the Online Help)

- Make sure no other application is accessing the reporter Database (e.g. Reprcrys.exe)
- Stop the reporter service

Manual Restore:

- If you are running OVOW with MSDE, open a command prompt and run
osql -S<instance name> -Usa -P<sa password>
If you are running OVOW with MS SQL Server full version, use the tool isqlw

Enter the password for the sa user when prompted for a password. Enter the following commands:

```
USE master
RESTORE DATABASE reporter FROM
DISK='C:\Program Files\HP OpenView\Data\Databases\backup\Reporter_1.bak'
WITH RECOVERY, REPLACE, STATS
go
```

Here's how your output should look like (above commands are in bold):

```
1> USE master
2> RESTORE DATABASE reporter FROM
3> DISK='C:\Program Files\HP OpenView\Data\Databases\backup\Reporter_1.bak'
4> WITH RECOVERY, REPLACE, STATS
5> go
11 percent restored.
20 percent restored.
30 percent restored.
40 percent restored.
51 percent restored.
61 percent restored.
70 percent restored.
80 percent restored.
90 percent restored.
100 percent restored.
Processed 496 pages for database 'reporter', file 'reporter_dat' on file 1.
Processed 1 pages for database 'reporter', file 'reporter_log' on file 1.
RESTORE DATABASE successfully processed 497 pages in 1.909 seconds (2.128
MB/sec).
```

After restoring the database successfully you have to link the reporter database user 'openview' to the corresponding SQL Server login name.

Enter the following command at the osql prompt:

```
USE reporter
go
sp_change_users_login Update_One, 'openview', 'openview'
go
```

Here's how your output should look like (above commands are in bold):

```
1> USE reporter
2> go
3> sp_change_users_login Update_One, 'openview', 'openview'
4> go
The number of orphaned users fixed by updating users was 0.
```

4.3 Restore other required configuration data

Restore all the other files that you saved in your partial backup, including

- Restore Policy files - you can overwrite existing files³
- Restore any custom instrumentation files³
- Restore custom graph definitions

4.4 Restore other, optional, data structures

If you recovered your new OVOW server from a full backup or image then these files should have been restored. If you built a new OVOW server then you will need to restore:

- The OVOW license file %Program Files%\Common Files\Hewlett-Packard\PPP\LicFile.txt OR %OvShareDir%\HPOvLIC\data\LicFile.txt on a clustered installation.
- Customized OVOW configuration files such as custom database backup definitions and Dbmaint.reg settings. NOTE you will need to APPLY the Dbmaint.reg file (use Explorer to 'run' the Dbmaint.reg file) to the registry of the new server if you did not recover the registry from the old server as part of a full restore of a server image.
- Custom reports.
- Custom OVOW console MMC definitions.
- Message action server message forwarding configuration.
- Generated reports.⁴

³ In case that an image that got upgraded from 7.x to 7.5 in place got restored, the policies and instrumentation directories need to be restored to %OvInstallDir%. In all other cases to %OvShareDir%.

⁴ In case that an image that got upgraded from 7.x to 7.5 in place got restored, the generated reports need to be restored to %OvDataDir%\webpages. In all other cases to %OvShareDir%\webpages.

4.5 Restore Group membership

If local user groups were used during the OVOW installation, it needs to be restored. The user role information is stored in the database, but the general group membership regarding the HP-OVE-OPERATORS and HP-OVE-ADMINS group is stored in the local security database (SAM) of Windows.

This group membership has to be restored manually if not restored using a full-system restore: Use the list you created in 3.7 to recreate the correct groups again.

The user roles restored from the original server will still refer to the old users. These users can connect to the new server using remote consoles and they will get the appropriate user rights.

If domain user groups were selected during the OVOW installation, there is no need to restore the group membership information on the management server.

4.6 Restart OVOW server

- Start all services with `vpstat -3 -r START`

The above command will also start the Windows Management Instrumentation service.

If not all services start up or report errors, reboot the OVOW server.

4.7 Reset Agent on OVOW Management Server

(not applicable if system was recreated using a full-system backup)

Background Information: The Agent ID of the agent installed on the OVOW Management Server does not match the Agent ID that was created when re-installing the OVOW management server. Therefore it has to be changed manually. In addition, the policies inventory on the OVOW Server may not match the actually active policies. It is required to redeploy all policies and instrumentation (via Redeploy All).

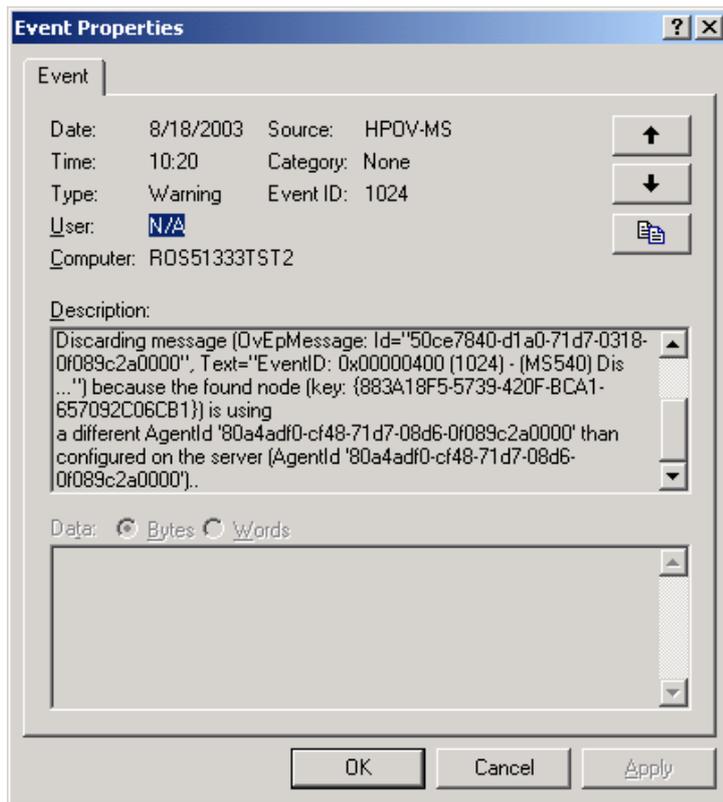
- Reset the Agent ID on the OVOW Management server as described in the online help:
 1. On the managed node, delete the `agentid` file:
`%OvAgentDir%\conf\OpC\agentid`
 2. As a user with administrative privileges, stop and restart the agent 'opcagt -kill' followed by 'opcagt -start'.
 3. On the management server, select the management server node and open the Properties of this node. On the General tab, select Advanced Configuration and remove the agent ID.
 4. Select the management server node again, select All Tasks -> Redeploy All.

- In case of a clustered OVOW installation, the steps mentioned above need to be repeated on all management server nodes.

4.8 Eventlog messages

After restarting the OVOW Management server and before the Agent ID is corrected, you will get the following messages in the event log:

“Discarding message ... is using a different AgentId”.



After the Agent ID is updated, all messages should be accepted again.

4.9 Verify the Restored System

Run a couple of test messages from remote managed nodes using the Test tools provided in the OpenView Tools groups. Ensure that all test messages are visible in the OVOW console message browser.

5 Restore using another hostname/IP address

Restoring the management server on a system with another hostname and IP address allows you to run both management servers at the same time in the same network. You can then switch the agents all at once or one by one to the new management server.

This approach may also be your only option if you are trying to recover from a disaster (such as a flooded data-center) where the existing OVOW server is completely destroyed and where you need to build a new OVOW server in a different location – with different IP subnet and naming standards.

The backup and restore steps are very similar to the steps described in chapter 4 with the following exception: Instead of step 4.1 follow the instructions outlined in 5.1. Next follow the instructions described in chapters 4.2 to 4.6 and then continue with the instructions starting with 5.2.

5.1 Re-image or Install the new OVOW server system

Re-image

- Do a full-system restore using your backup solution. Then change the hostname and IP address of the system using Windows OS tools. After that, follow the instructions in the online help about changing the management server's hostname and IP address.
- Attention, in case you re-image the OVOW Server from a full system backup there will be one particularity: a full system backup also restores the SQL Server msdb that manages the SQL Server job 'OVO_BackupJob1' that runs the scheduled backups of the OVOW database. The only drawback is that the current SQL Server 2000 versions have a bug that will not allow to update or delete a SQL Server agent job that was originally created on another SQL Server system (SQL Server with another hostname).
See the following Microsoft TechNet document
<http://support.microsoft.com/default.aspx?scid=kb;en-us;281642>.
Chapter 5.8 provides a workaround for this problem until Microsoft has fixed it.

Or Install

- Install the Windows OS and configure the new Computer name, FQDN (Fully Qualified Domain Name) and IP addresses.
- Join the Windows Domain prior to installing OVOW (if applicable).
- Install OVOW from the original distribution media, including exactly the same SPIs and the same patch level (no superseding patches!!). It is also required to select the same OVOW program and data location as on the failed system.

- When prompted for the HP-OVE-Group and HP-OVE-User names and password, enter the old account names.

Note: If you need to specify different/new accounts, then it's necessary to run the OpnView Tools->Windows node security setup tool again for existing Windows nodes prior to installing new packages to those nodes.

- After the reboot – bring up the OVOW Console and check the installation (e.g. generate a couple of test messages via Openview Tools -> Test Tools).
Exit the Console.

5.2 Change node properties of management server

The primary node name of the management server has to be changed in the model (which was uploaded via the DB restore).

Open the node properties of the management server and change the caption and primary node name (and IP address if specified).

5.3 Reset Agent on OVOW Management Server

(not applicable if system was recreated using a full-system backup)

Background Information: The Agent ID of the agent installed on the OVOW Management Server does not match the Agent ID that was created when re-installing the OVOW management server. Therefore it has to be changed manually. In addition, the policies inventory on the OVOW Server may not match the actually active policies. It is required to redeploy all policies and instrumentation (via Redeploy All).

- Reset the Agent ID on the OVOW Management server as described in the online help:
 1. On the managed node, delete the `agentid` file:
`%OvAgentDir%\conf\OpC\agentid`
 2. As a user with administrative privileges, stop and restart the agent 'opcagt -kill' followed by 'opcagt -start'.
 3. On the management server, select the management server node and open the Properties of this node. On the General tab, select Advanced Configuration and remove the agent ID.
 4. Select the management server node again, select All Tasks -> Redeploy All.
- In case of a clustered OVOW installation, the steps mentioned above need to be repeated on all management server nodes.

5.4 Switching the agents

Switching the agents remotely to the new server requires either

- a functioning old management server – then the switch to the new server can be initiated by the old server.

or

- a flexible management policy on each node – which must have been deployed using the old management server, because only the old management server is allowed to deploy policies! Then the switch to the new server can be initiated by the both servers

or

- a manual switch of every agent locally.

The flexible management policy has to allow actions from both management servers. See the online-help topic “Accept actions from multiple management servers”.

Agents can be switched as described in the online-help topic “Specify the Primary Management Server”

If the old server cannot be used (in case of a disaster) and if the flexible management policy does not exist, then the management server name has to be changed manually on every node:

Run the `mgmt_sv.vbs/.sh` scripts on every node.

Usage: `mgmt_sv <new FQDN server name>`

5.5 Consoles

Console users using existing remote consoles/.mmc files will still connect to the old management server. They have to open `mmc.exe` and add the Openview snap-in manually to create a new .mmc file which connects to the new server. All settings saved in the old mmc file will be lost.

5.6 Heartbeat-polling and report generation

If two management servers are active at the same time, then they will both check the health of the agents and generate reports. This will increase the network traffic and problems might occur if both servers use the same report cycle (which they do by default).

If you want, you can switch off the health check of one of the servers by setting corresponding registry keys – see the online help for details.

5.7 Licenses

If the management server is installed on a new IP address, then the old license cannot be used. You can use the 60-day trial license during the restore process. Afterwards you either have to purchase a new license, if you want to keep both OVOW installations running, or you have to move the license to the new IP address, which can be done via <http://webware.hp.com/welcome.asp> -> move license to new server. You will need the original HP order number, the old IP address of the management server, the new IP address and the new hostname to successfully order a new license.

5.8 OVO_BackupJob1 cannot be rescheduled or deleted

(only applicable if full-system backup was used)

As already mentioned at the beginning of this chapter it is not possible to delete and reschedule the OVOW database backup job named 'OVO_BackupJob1' if the OVOW Server has been restored from a full system backup restore.

This is a bug in Microsoft SQL Server 2000. See <http://support.microsoft.com/default.aspx?scid=kb;en-us;281642>.

If you run into this problem and Microsoft doesn't provide a solution for it you can rename the attribute 'originating server' in the sysjobs table of the msdb database to the new SQL Server name with the command line:

```
osql -S.\OVOPS -E -dmsdb -n -Q"update sysjobs set originating_server = '<new OVOW Server name>\ovops' where name = 'OVO_BackupJob1'"
```

Here <new OVOW Server name> must be replaced with the network name of the new OVOW Management Server machine.

Afterwards you will be able to delete and reschedule the 'OVO_BackupJob1' backup job as usual with the command line:

```
do.bat delete_backupjob.sql
```

6 Example Partial Backup Implementation

The following backup implementation assumes a basic backup that includes

- ü The OVOW database. Backup the folder %OvDataDir%\Databases\Backup\ after the scheduled backup task has completed (start is 01:00 a.m in the morning by default)
- ü Policies. %OvShareDir%\Policies\
 - ü Custom Graph definitions. %OvDataDir%\ VPI_GraphsUser*.txt or %OvShareDir%\VPI_GraphsUser*.txt in a clustered OVOW installation
- ü Instrumentation files. %OvShareDir%\Instrumentation\
 - ü

It does not save:

- User created Report definitions (requires the ‘full’ OV Reporter product be installed) – User defined folder
- User / Group definitions for local users on the OVOW server that are used in User Role assignments.
- Generated Reports (OPTIONAL). %OvShareDir%\webpages
- Exported messages (OPTIONAL). Defined in %OvInstallDir%\Support\DBMaint.reg
- Custom OVOW MMC console definitions (OPTIONAL). Default file is %OvInstallDir%\bin\HP OpenView Operations.msc. Additional user defined files may exist.
- Reported Database (OPTIONAL). Location depends upon user defined backup strategy for Reporter database.
- OVOW Patches. Required to allow a rebuild of an identical OVOW server. User defined folder.
- OVOW licenses. Held in the file %Program Files%\Common Files\Hewlett-Packard\PPP\LicFile.txt
- OVOW database backup and message maintenance configuration. The database script folder is %OvDataDir%\Databases\scripts\ and the message maintenance definition file is %OvInstallDir%\Support\Dbmaint.reg

The backup uses a simple file copy to a network share mounted as “F:” and a folder “backup” on this share.

6.1 Modify the backup destination of the Openview database

- Modify do.bat as described in 3.15.1.
- Create a folder F:\backup\db and F:\backup\script
- Edit the file %OvDataDir% \Databases\scripts\create_backupjob.sql and change the lines (each @command is a single line)
- @command = 'BACKUP DATABASE OpenView to disk = 'f:\backup\db\openview.dat_bak' WITH INIT',
- @command = 'BACKUP LOG OpenView to disk = 'f:\backup\db\openview.log_bak' WITH INIT',
- Register update backup job, run in %OvDataDir% \Databases\scripts (in order)
 - do.bat delete_backupjob.sql
 - do.bat create_backupjob.sql
 - do.bat sched_backup.sql

6.2 Create and schedule a script to copy files

6.2.1 OVOWBackup.cmd

Location F:\backup\script\OVOWBackup.cmd. The xcopy command is used to copy all other files based on the archive flag (option /m)

Note that this script is copying all files initially, so the first pass of this script will process approx 3000 individual files, subsequent runs will then however only copy new or modified files and will be much faster.

```
@echo off
REM copy policies
xcopy "%OvShareDir%\Policies" F:\backup\policies /i /m /y /q
REM copy instrumentation
xcopy "%OvShareDir%\Instrumentation" F:\backup\Instrumentation /e /i /m /y /q
REM copy graphs
xcopy "%OvDataDir%\VPI_GraphsUser*.txt" F:\backup\Graphs /i /m /y /q
```

6.2.2 Schedule OVOWBackup.cmd

Example is set daily at 1:15am using Windows Task scheduler:

```
at 1:15am /EVERY:M,T,W,Th,F,S,Su f:\backup\script\OVOWBackup.cmd
```

6.3 Verify backup folder content

Check after a couple of runs that content in the backup folders are valid.

Generally it is a good idea to test a backup and disaster recovery procedure end-to-end in a test environment.



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