



BackHome/TSM V6.0

New Features

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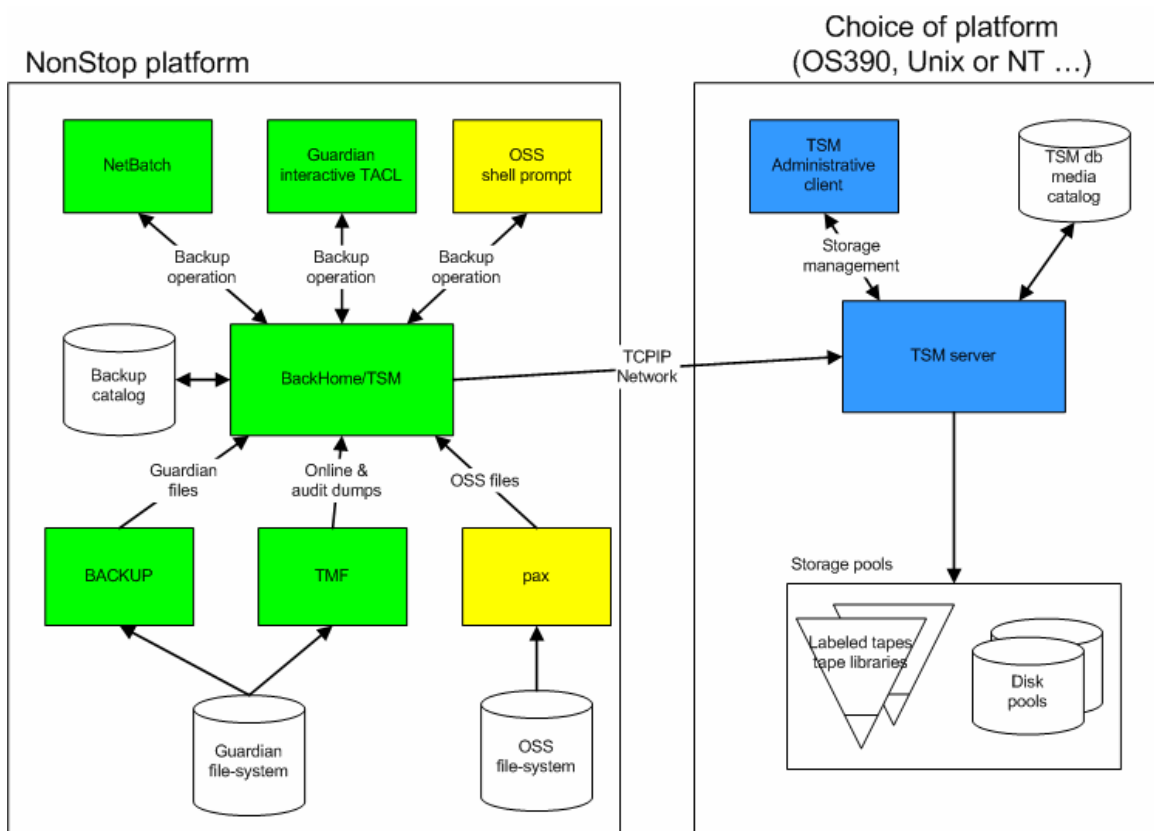
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Introduction

This document presents the new features of BackHome/TSM V6.0 that integrates the NonStop backups in an enterprise backup architecture: the IBM Tivoli Storage Manager (TSM).

Guardian backups and TMF dumps were supported in prior versions of BackHome/TSM.

The main new feature in version V6.00 is the backup of OSS files.



Backup of OSS files

BackHome/TSM has been extended to provide to OSS files the same backup services that are provided to Guardian files.

- BackHome/TSM is still a Guardian application, where backups are pre-defined in *requests*, and queued for execution. Guardian backups and OSS backups are operated by the same commands of the same user interface.
- There are few differences between a OSS backup request and Guardian backup requests:
 - The OSS request has a local attribute FILE-SYSTEM OSS
 - The OSS request contain a command for the OSS pax utility, rather than for the Guardian BACKUP utility
 - Sample OSS backup request:

```
SET TYPE FILE-BACKUP
SET LATTR FILE-SYSTEM OSS
SET LATTR BRPARAMS=cd /home/user1 &&
SET LATTR BRPARAMS=bh_pax -wv dir1
SET REMOTE-FILE $BACK.OSS.HOME
```

- Supported features:
 - Checkpoint/restart
 - Incremental and differential backups (also new for Guardian)
 - Fast Restore processing to reduce the quantity of unused data transferred to restore part of a backup
 - Catalog of backed files, supporting long OSS pathnames
 - To ease the query of long OSS pathnames in the catalog (LISTSAVEDFILE / LISTSF command), navigation in the "file tree" of backed up files has been implemented.
 - the new command "cd <pathname>" sets a 'current directory'
 - LISTSF allows the specification of a relative pathname pattern
 - Example:

```
cd /home/user1
listsf *.dat
listsf dir2/file2.dat
```

Incremental and differential backups

A new parameter has been added to the QUEUE command to allow the submission of incremental backups, for the OSS or Guardian file system.

- `QUEUE #request-name`
submits a full backup.
- `QUEUE #request-name INCR[EMENTAL]`
submits an incremental backup, where only files modified or created since the last backup of any type (full, incremental, differential) will be backed up
- `QUEUE #request-name DIFF[ERENTIAL]`
submits a differential backup, where only files modified or created since the last full backup will be backed up.

Partial backups are enabled by adding in the native backup command a selection keyword on the start time of a last backup execution.

- For Guardian BACKUP, the PARTIAL keyword is used. Note that files skipped because of the PARTIAL clause are not cataloged.
- For OSS BACKUP, the -N flag of the bh_pax utility is used.

Partial backups are identified in the output of the queries to the local catalog and to the TSM server.

Standardization of the nomenclature of TSM object names

Backups are identified by the names of TSM object names containing the backup data-stream. In previous BackHome/TSM versions, a backup could be stored in a single or several TSM objects, depending of the activation of the checkpoint/restart feature.

Thus the request's remote-file had two formats:

```
SET REMOTE-FILE $VOL.SUBVOL.FILE
```

when checkpoint is disabled

```
SET REMOTE-FILE $VOL.SUBVOL.*
```

when checkpoint is enabled and BackHome will generate the last part of the object names

In BackHome/TSM V6.00, incremental backup is another reason for BackHome/TSM to generate part of the TSM object names, and all requests should be defined with the standard format `$VOL.SUBVOL.*` that allows checkpoint activation or not, full or incremental backups.

The previous format `$VOL.SUBVOL.FILE` is still supported for compatibility, but does not allow checkpoint/restart and incremental backups.

Enhancements to the catalog query

Improved pattern matching in LISTSF

Wild-card "*" and "?" are supported.

For OSS pathnames, the wild-card "/.../" has been implemented for matching a variable number of directory names.

```
LISTSF /.../*.dat
```

will list the backups of all files with type .dat, in any directory.

Numbering f the lines of LISTSF output

The LISTSF command has been modified to number the output lines, giving short alias to backup entries that might be:

- queried again to get more detail, by a subsequent LISTSF #nn, DETAIL
- referred for creation of a restore request: SET-RESTORE #nn

```
~listsf $DATA05.LSOUT.*
FILE  MODIF. DATE          BACKUP IN %K1E, TSMNOD1          BACKUP TIME
-----
-
\LEOMIRA.$DATA05.LSOUT.R10MEG
#1    2002-09-18 15:08:21 $G01.FB01.DATA          2003-09-25 15:50:47
#2    2002-09-19 15:11:05 $G01.FB01.DATA          2003-09-25 15:54:33
#3    2002-09-20 15:09:24 $G01.FB01.DATA          2003-09-25 17:11:15
\LEOMIRA.$DATA05.LSOUT.R85FMT2
#4    2001-10-29 22:33:08 $G01.FB01.DATA          2003-09-25 15:50:47
#5    2001-10-29 22:33:08 $G01.FB01.DATA          2003-09-25 15:54:33
#6    2001-10-29 22:33:08 $G01.FB01.DATA          2003-09-25 17:11:15
```

```
~listsf #2, detail
#2    FILE NAME           : \LEOMIRA.$DATA05.LSOUT.R10MEG
      MODIFICATION DATE   : 2002-09-19 15:11:05
      FILE CODE           : 0
      EOF                 : 10452992
      SECURITY            : NANA
      FILE OWNER         : ETIQC.BFSB03
      BLOCK SIZE         : 4096
      RECORD SIZE       : 80
      FILE TYPE          : ENSCRIBE FILE
      PARTITION          : NO PARTITION
      REMOTE LOCATION    : %K1E          (TSM)
      BACKUP NAME        : $G01.FB01.DATA
      EXECUTION MODE     : REGULAR
      BACKUP MODE        : FILE
      TSM NODE           : TSMNOD1
      GUARDIAN OWNER     : ETINET.OSS01
      BACKUP TIME        : 2003-09-25 15:54:33
```

New LAST keyword in LISTSF

A new parameter LAST [timestamp] has been added to the LISTSF command, to limit the output to one backup entry per cataloged file: the latest backup at or before time stamp. LAST without timestamp is a way to reduce the output to the latest backup of each cataloged file.

```
~listsf $DATA05.LSOUT.*
FILE   MODIF. DATE           BACKUP IN %K1E, TSMNOD1           BACKUP TIME
-----
\LEOMIRA.$DATA05.LSOUT.R10MEG
#1     2002-09-20 15:09:24 $G01.FB01.DATA           2003-09-25 15:50:47
#2     2002-09-20 15:09:24 $G01.FB01.DATA           2003-09-25 15:54:33
#3     2002-09-20 15:09:24 $G01.FB01.DATA           2003-09-25 17:11:15
\LEOMIRA.$DATA05.LSOUT.R85FMT2
#4     2001-10-29 22:33:08 $G01.FB01.DATA           2003-09-25 15:50:47
#5     2001-10-29 22:33:08 $G01.FB01.DATA           2003-09-25 15:54:33
#6     2001-10-29 22:33:08 $G01.FB01.DATA           2003-09-25 17:11:15

~listsf $DATA05.LSOUT.*, LAST
FILE   MODIF. DATE           BACKUP IN %K1E, S7000LSAL           BACKUP TIME
-----
\LEOMIRA.$DATA05.LSOUT.R10MEG
#1     2002-09-20 15:09:24 $G01.FB01.DATA           2003-09-25 17:11:15
\LEOMIRA.$DATA05.LSOUT.R85FMT2
#2     2001-10-29 22:33:08 $G01.FB01.DATA           2003-09-25 15:50:47
```

New SET-RESTORE command

A new SET-RESTORE command prepares a complete restore request according the data available in a catalog entry. It works for a single file, Guardian and OSS.

```
~ SET-RESTORE #2
```

```
REQUEST PARAMETERS
```

```
REQUEST-TYPE           = FILE-RESTORE
ROUTING-CLASS          = 1
PRIORITY-CLASS         = 5
LOCAL-LOCATION          = %K1T
LOCAL-FILE             = <None>
LOCAL-FILE-ATTRIBUTES:
  01 BACKUPTIME 2003-09-25 15:54:33
  02 BRPARAMS= \LEOMIRA.$DATA05.LSOUT.R10MEG,
  03 BRPARAMS= OPEN, MYID, AUDITED, LISTALL
REMOTE-LOCATION          = %K1E
REMOTE-FILE            = $G01.FB01.DATA
NORMAL-END             = <None>
ABNORMAL-END           = <None>
```

```
~ADD #REST01
REQUEST ADDED
```

Changes to security parameters in the configuration

MSTOPER

MSTOPER specifies the Guardian userid authorized to commands managing the BackHome/TSM environment, such as the SHUTDOWN command.

MSTOPER can now be specified as a group, and SUPER.SUPER has automatically MSTOPER authority.

TSM-LOCAL-ROOT

TSM-LOCAL-ROOT is a new parameter that extends to the SUPER group, the TSM privileges of the 'local root', that were reserved to SUPER.SUPER in previous versions.

A Guardian username who is 'local root' can:

- Enter the TSM password in the command TSM CONNECT
- Query the TSM server and restore from a backup stored by any other Guardian username

BackHome/TSM V6.0 (R2) highlights

To install or migrate to BackHome/TSM V6.0, please refer to the Quick Start manual available separately.

This release presents to our customers the following new features:

Logger management

BFSMON is now able to start the Logger, Distributor and OSSTTY processes by itself. This is the alternative way of starting BFSMON messaging subsystem. The old way of starting messaging subsystem is still supported.

The key benefits using BFSMON to start all of these processes is:

- BFSMON will be able to manage all of them more efficiently. If any of those processes terminates abnormally, then BFSMON will try to restart it automatically.
- The start-up obeys files of the Logger, Distributor and OSSTTY are no longer needed. All necessary DEFINES, ASSIGNS, PARAMs can be defined for each process in the configuration file. (BCOMCONF)
- BFSMON will automatically stop the Logger, Distributor and OSSTTY after the user issues SHUTDOWN or SHUTDOWN hard command from BFSINT session. There is no need to terminate all these processes manually. Note: BFSMON will stop only processes defined in the configuration file.

For each managed process, a START-PROCESS section must be added to the configuration file BCOMCONF.

New startup parameters are available for BFSINT

RFILE-CASE-SENSITIVE

This parameter indicates if BFSINT will leave the REMOTE-FILE name as written or change it to uppercase when we specify (SET) the REMOTE-FILE on a new request.

For example, the command SET REMOTE-FILE \$dem.bkguard.* will set the REMOTE-FILE to \$DEM.BKGUARD.* if RFILE-CASE-SENSITIVE parameter is set to NO.

Note: By default REMOTE-FILE are case sensitive. See BINT user interface section for more consideration when setting the RFILE-CASE-SENSITIVE to NO.

GUARD-RESTORE-DEFAULTS

This parameter sets the default RESTORE options used by the command SET-RESTORE. See the SET-RESTORE command for more detail.

Configuration enhancement for TSM-REMOTE-IDENTIFICATION

It is now possible to configure Cataloging at the TSM-REMOTE-IDENTIFICATION level by using the keyword CATALOGING <ACTIVE | INACTIVE>

It is now possible to exclude a REMOTE-LOCATION from the list of REMOTE-LOCATION that the Catalog Synchronizer (CATSYNC) will attempt to synchronize by setting the configuration keyword CATALOG-SYNCHRO to NO. This is useful in a configuration using REMOTE-LOCATION for CROSS SYSTEM RESTORE.

It is now possible to specify a default REMOTE-LOCATION when BINT is started. To specify a default one, add the DEFAULT-RLOC to YES to the specific TSM-REMOTE-IDENTIFICATION. If none of the TSM-REMOTE-IDENTIFICATION has a DEFAULT-RLOC set to YES, the first TSM-REMOTE-IDENTIFICATION defined in the configuration file is used to be the default one at the BINT startup.

For BackHome OSS user, a TSM-REMOTE-IDENTIFICATION could be personalized to have a default FILE-SYSTEM and PATH to avoid specifying them when changing the current REMOTE-LOCATION with the SELECT CATALOG, RLOC command.

TSM DEACTIVATEOBJECT command enhancement

TSM DEACTIVATEOBJECT can be used in batch mode. Specifying a “!” character at the end of the command (TSM DEACTIVATEOBJECT <object-name>, !) will deactivate object without the need to acknowledge each object deactivation.

TSM QUERYMGMCLASS command

The new TSM QUERYMGMCLASS command lists the Management classes available on the TSM server for the current REMOTE-LOCATION connected used within BINT interface.

TSM password file management enhancement

The BackHome ADSM library now has the possibility to delegate password file access, under PROGID, to a utility program called PSWSRV. See TSM password file in the Security considerations section for more detail.

New JOB-OWNER request attribute

This attribute gives the possibility, when BackHome SECURITY is enabled, to execute a request under the user-id of the request owner instead of the user-id of the QUEUE/QUEUEWAIT performer. See the SET command for more detail. Also, see Guardian security and Guardian owner in the Security Considerations section.

FAQs

1. We don't use "Backup/Restore 2" from Tandem yet. So which OSS Backup utilities will BackHome work with now?

BackHome/TSM for OSS uses the HP OSS tool pax. pax support both cpio and ustar format. cpio support long file name (up to 1KB in length) while ustar limits file name to 256 characters.

2. We already use BackHome V5.2. Will we need to change anything in our current BackHome environment in order to add OSS support?

After having installed V6, your present BackHome/TSM environment for Guardian will work as before. No changes are required for your requests and NetBatch procedure to queue you backup requests. Upgrades and conversion procedure are provided. The Catalog does not need conversion and is simply complemented by new files

3. We don't use OSS. Will V6 help us anyway? Why should we install V6?

V6 offers new functionalities like incremental and differential backups. Many customers had expressed concern about BackHome/TSM security functionalities. We are pleased to announce that when security is enabled, a group can be defined as master operator and super.super is always master operator. Also a new configuration keyword (TSM-LOCAL-ROOT) allows the definition of a user or group of user to be able to restore backups owned by other users.

4. What O/S levels and Tandem systems requirements are there for V6?

D47 and higher or G06.xx are required.

5. When "Backup/Restore 2" is released, will V6 work with it?

ETI-NET has plans to support the same internal API that Backup/Restore 2 will be using as soon as it is made available by HP.

6. Does this work with Classic BackHome (into MVS) as well as BackHome/TSM?

BackHome Classic does not support OSS. We will consider support depending on the demand.

-
7. We don't have any BackHome now. How do we install and test V6? How long will this take to install?

Installing BackHome/TSM is very easy and takes about an hour. Just follow the Quick Start manual. It will guide you through the process of installing and configuring BackHome/TSM and show you how to make your first backup and restore for both Guardian and OSS.

8. We only want a solution for our OSS region. Does BackHome V6 work for only OSS backup or do we need to buy BackHome on the NSK machine? Do we need to install software on the NSK region as well as on the OSS region?

BackHome/TSM V6 is operated from the Guardian region. Most of the software is installed in the Guardian region; there are only a few files that need to be installed in the OSS region.

9. We are really a UNIX shop, and nobody understands Tandem. Will BackHome/OSS be easy for the UNIX people to understand?

An experienced Guardian person must install BackHome/TSM but although the product is operated from Guardian the interface is easy and does not require much experience in Guardian. OSS backup and restore use the pax syntax which a Unix person would know.

10. Why can't we just use the Tivoli Backup/Archive Client for UNIX? Can't you port a version to run in OSS?

There is no support for OSS in the various Unix Tivoli Backup/Archive Clients offered by IBM.

Our implementation of the OSS support under BackHome/TSM takes advantage of a familiar interface, an efficient and secure Catalog hosted on the Non-Stop platform and a fast data transfer engine. It also uses less resource on the TSM server.

11. Can we run TMF with BackHome/OSS?

The TMF option for BackHome/TSM is independent of the OSS option but both can be run in parallel.

12. We are running a version of BackHome earlier than V5.2. Can we go directly to V6 or do we need to upgrade to an intermediate version of V5 [V5.10, V5.13]?

If your BackHome is earlier than V5.2, after installing V6, you will need to run a Catalog conversion program (CATCNV) to migrate your current Catalog to the new Catalog format that was introduced with V5.20.

You do not need to upgrade to V5.20 before upgrading to V6. Migration procedures are provided to help you.

- 13.** When we are testing this would it be better to migrate our test system to V6 from V5 or should we install this as a standalone version?

You should install V6 as a standalone while you are doing your evaluation.

- 14.** Will the B-PAK option work on OSS?

All the functionalities offered with BPAK (Catalog, Fast Restore and Checkpoint/Restart) work with BackHome/TSM for OSS.

- 15.** Do we need to have a copy of the OSS option for each of our BackHome licenses?

As long as you have an Expand link between two system you can backup the OSS files from one systems using BackHome/TSM for OSS on another system.

- 16.** We don't use B-PAK. Is B-PAK required with OSS?

No, but of course you will loose the great advantages, security and ease of use that BPAK brings.