
BEYOND PARTIAL BACKUPS
Incremental and Differential Backup Using
BackHome®/TSM V6.00



WHITE PAPER

This paper compares backup services available from standard Backup/Restore Utility with those available when using BackHome/TSM - for Guardian and/or OSS backups.

Traditional incremental backups

Guardian partial backup

The native BACKUP program, used as a stand-alone utility or through the BackHome/TSM environment, provides a clause to execute incremental backups: PARTIAL <timestamp>.

Because the PARTIAL clause contains a timestamp, the backup command must be changed at each backup execution. Thus, in most sites, TACL macros are built to store the last backup timestamp on a file, and generate the proper backup command.

OSS partial backup

As the Guardian file-system, the OSS file-system does not provide an “archive bit” in the file directory, requiring the user to enter a timestamp that the native backup uses to compare to the last file modification.

When using the pax program, users frequently use the find utility to select the files whose names are piped to the pax.

Incremental backups with BackHome/TSM V6

Types of backups

Three execution types are provided for in BackHome/TSM. They are available for both Guardian and OSS backups.

A **Regular execution** corresponds to a “full” backup. The user did not specify any option in the QUEUE command, and the backup command is not modified.

An **Incremental execution** selects only the files that were modified, or recreated, since the last backup execution – whatever its type. The user added the INCREMENTAL keyword to the QUEUE command.

A **Differential execution** selects all the files that were modified, or recreated, since the last regular execution. The user added the DIFFERENTIAL keyword to the QUEUE command.

Implementation

BackHome/TSM Catalog records the time of each successful REQUEST execution. When an Incremental or Differential backup is executed, the backup REQUEST file is automatically modified to add the syntax that will select the appropriate files.

For Guardian backups, the PARTIAL clause is generated. The files selected but not backed up because of their modification/creation timestamps are not cataloged in BackHome/TSM.

For OSS backups, a new option has been implemented in the *bh_pax* command to select files according a timestamp. This new option is generated for incremental backups.

Benefits

- **Easier setup**

Users are relieved from writing TACL macros. Adding one of the new options (INCR or DIFF) in the QUEUE. command is enough to trigger an incremental backup.

- **Better information**

The queries of the local BackHome catalog and the queries of the remote TSM objects report the type of execution, helping the preparation of restore operations.

- **Standardization**

Complements in the nomenclature of TSM object names normalize these names.

The TSM object names are important not only because they identify a backup container, but also because they control the Management Class associated to the backup container, hence the type of media and how long the TSM server will keep it. It is now recommended to always let BackHome/TSM generate the last part of the TSM object names.

Compatibility

The standardization of TSM object names does not prevent users from continuing to use older naming conventions to restore or to execute new backups. It is also possible to continue to run PARTIAL backups as before BackHome/TSM V6. These executions are considered "regular executions" in the BackHome catalog.