Backing Up Helix ALM Native Project Databases

Helix ALM projects should be backed up regularly. You can use the Helix ALM Native Database Backup Command Line Utility to back up Helix ALM native (SQLite) project databases without stopping the Helix ALM Server. You can use the utility in a command shell (Unix) or at a DOS prompt (Windows).

> **Note:** The utility only backs up projects, not server databases, and can only be used for Helix ALM (and TestTrack 2012 - 2016.1) native projects. See Backing Up Databases for information about backing up server databases and older project versions.

Keep the following in mind when backing up project databases:

- If backing up while the server is running, the utility updates the backup as changes are made to the project. Because these backups may take longer and users may encounter slower performance, you may want to schedule backups to run overnight. See Scheduling backups, page 2.

- File attachments are stored in subdirectories in project databases. If users make changes to attachments during a backup, the backup may contain extra or missing attachment information.

> **Note:** The following information applies to the Backup Command Line Utility 1.4 and later.

Performing backups

The backup contains an exact copy of the Helix ALM project directory you specify. By default, the backup is added to a .zip file to compress it. You can optionally skip creating the zip file and create only the directory instead.

Keep the following in mind before running the backup utility:

- Only run the utility from the Helix ALM Server computer. Attempting to back up databases from a remote computer could cause data loss or corruption.

- You may need administrative rights to perform the backup (e.g., sudo on Unix or Run as administrator on Windows).

- During the backup, approximately twice the disk space as the database uses is needed to store temporary files. Make sure there is enough free disk space before backing up.

1. Download the backup utility and save it in the Helix ALM Server application directory. The utility is named ttNativeBackupUtil.exe.

2. Open a command shell or DOS prompt.

3. Change `(cd)` to the directory that contains the backup utility.

4. Enter the following at the prompt: `ttNativeBackupUtil [-d] [-f] [-n] [-t] SourceProject DestinationZipFile`

Option	Description
-d	Only back up the database file without attachments and other external data (e.g., custom report stylesheets, SoloBug files, etc.).

Option	Description
-f	Overwrite backup.zip if it exists (optional).
-n	Do not zip the backup directory (optional).
-t	Full or relative path to the directory used for temporary files. Defaults to the operating system temp directory.
SourceProject	Full or relative path to the Helix ALM native database directory to back up. Projects are each stored in a subdirectory in the TTServDb directory by default, but they may be stored in other locations depending on your configuration.
DestinationZipFile	Full or relative path and file name for the .zip backup file. The .zip extension is automatically added if not included.

Note: To view help for the backup utility, enter `ttNativeBackupUtil -h`. To view version information, enter `ttNativeBackupUtil -v`.

Examples

Windows

- `ttNativeBackupUtil.exe "C:\Helix ALM\TTServDb\TTDbs\Sample Project" C:\MyBackup.zip`

- `ttNativeBackupUtil.exe -f MyProject\ C:\MyBackup.zip`

Unix

- `./ttNativeBackupUtil /var/lib/HelixALM/TTServDb/TTDbs/Sample Project /home/currentUser/mybackup.zip`

- `./ttNativeBackupUtil -f MyProject/ mybackup.zip`

- `sudo ./ttNativeBackupUtil -f MyProject/ mybackup.zip` (Administrative permissions may be needed to execute this command)

Scheduling backups

You can use Cron (Unix) or Task Scheduler (Windows) to schedule recurring Helix ALM project database backups.

Cron (Unix)

1. Enter `crontab -e`.

2. Enter the following command:

```
minute hour day month dow user BackupUtilityPath [-f] SourceProject
DestinationZipFile
```

Option	Description
minute	Minute when the backup should run. Valid values are 0 - 59.
hour	Hour of the day when the backup should run. Valid values are 0 - 23.
day	Day of the month when the backup should run. Valid values are 1 - 31 or an asterisk (*) for every day.
month	Month of the year the backup should run. Valid values are 1 - 12 or an asterisk (*) for every month.
dow	Day of the week when the backup should run. Valid values are 0 - 6 or an asterisk (*) for every day. Use 0 for Sunday.
user	Username required to run the command prompt. Specify the root user if scheduling a backup while the Helix ALM Server is running.
BackupUtilityPath	Full path to the backup utility.
-f	Overwrite backup.zip if it exists. This option is not required, but it is recommended for recurring backups to ensure old backup files are replaced with new ones.
SourceProject	Full path to the Helix ALM database directory to back up.
DestinationZipFile	Full path and file name for the .zip backup file. For example, C:\Backups\WysiCorpCompliance.zip.

Task Scheduler (Windows)

Use the Windows Task Scheduler to create a task that starts the Helix ALM Native Backup Command Line Utility on a specified schedule.

To overwrite old backup files for recurring backups, enter the -f argument in the task configuration.

See the Windows help for information.

Analyzing backup return codes

When running a back up from a batch script, it is critical to make sure it completes successfully. The backup utility returns error codes to indicate problems that occur. A return code of 0 (zero) indicates success. A non-zero return code indicates an error.

If you are running the backup utility from a DOS batch file, you can use %ERRORLEVEL% to view the return code. For example:

```
ttNativeBackupUtil.exe -f MyProject\ C:\MyBackup.zip
IF %ERRORLEVEL% NEQ 0 echo Backup failed with error %ERRORLEVEL%
```

Error codes

The backup utility may return the following error codes.

Error code	Description
525	The project backup could not be placed in a temporary directory due to a permission error. Check temporary file permissions and retry the backup.
526	The project backup could not be placed in a temporary directory due to an I/O error. Retry the backup later.
527	The backup database created in a temporary directory could not be opened. Check temporary file permissions and retry the backup.
528	A Helix ALM native project database was found in the temporary directory and could not be deleted. Check temporary file permissions and retry the backup.
529	An unknown error occurred when copying the project to a temporary directory. Retry the backup later.
531	A read-only Helix ALM native project database was found in the temporary directory. Check temporary files permissions and retry the backup.

Restoring backups

To restore a backup, copy the files to a Helix ALM project directory.

1. Stop the Helix ALM Server.

2. If you are restoring to an existing project directory, move or delete the ttproj.db-shm and ttproj.db-wal files in the directory.

   These are transaction log files generated when projects load. If you do not delete these files, the restored ttproj.db file will be corrupted and projects will not load.

3. If the backup is stored in a .zip file, extract it to the project directory.

4. Move the backup contents to the project directory.

5. Start the Helix ALM Server.

6. In the Helix ALM Server Admin Utility, add the existing projects to the server.

   If the project ID is already used on the server, you are prompted to change it.

7. Click **Yes** to change the project ID.