

ServiceGuard NFS Toolkit for Linux



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1 ServiceGuard NFS Toolkit for Linux

NFS Toolkit for Linux is a software product for HP high availability cluster system. It works as a subsystem under ServiceGuard-Linux core software and will be invoked by ServiceGuard to provide functions for starting, stopping, and monitoring a Network File System (NFS) package in a cluster. This toolkit consists of Linux shell (bash version 2.0 or above) scripts and a binary executable code.

This NFS toolkit is designed specifically as a subsystem for the package control script, which is part of ServiceGuard core software to run packages in a cluster. It will provide all necessary functions to control and monitor the NFS packages. One of the scripts, HA NFS Script, is designed as a template that is provided for cluster users to copy and assign variable values for their own cluster packages they plan to provide for their NFS clients.

NOTE

This toolkit supports SG/LX version A.11.14.02 that comes with SG/LX supported Linux distributions. As such, RedHat AdvancedServer 2.1, RedHat 7.3, and SuSE Linux Enterprise Server 8 powered by UnitedLinux 1.0 (subsequently referred to as SLES 8/UL 1.0) are supported.)

The NFS Toolkit works together with ServiceGuard-Linux. The user never needs to invoke the toolkit (except for testing). In fact, the ServiceGuard package manager will invoke an entry in the Package Control Script with a “start” or “stop” parameter. (The ServiceGuard users manual, *Managing ServiceGuard on Linux*, describes detail information about the Package Control Script.) One of the functions in the interface script invokes the HA NFS Script with the “start” or “stop” parameter. The flow of the operation is as follows:

Start a Package

1. ServiceGuard package manager invokes the Package Control Script with “start” as an input parameter.
2. The *Package Control Script* runs each startup command in sequence to check for status, to start other processes, and to enable package resources. The startup commands are:
 - Start mirroring disk (MD) process
 - Enable disk volume group (VG)
 - Enable File Systems
 - Enable relocatable IP addresses
 - Start user defined resources
 - Start package service processes
3. The Package Control Script executes the toolkit interface script with the “start” parameter immediately after the Enable File Systems command above. Then, the interface script executes the HA NFS Script with the same parameter.
4. The *HA NFS Script* runs each startup command in sequence to enable each NFS resource. The NFS resources include:
 - Export file systems
 - NFS Server Daemons
 - NFS service processes (Including NFS monitoring process)
5. If an error happens during any of the startup commands, the Package Control Script and the *HA NFS Script* will roll back to their initial state and then exit with an error code. The exit codes are:
 - 0: SUCCESS (no error)
 - 1: FAILURE (error)
 - 2: FAILURE (error that will cause the package to fail over; only the Package Control Script exits with this error code.)

Stop a Package

1. ServiceGuard package manager invokes the Package Control Script with “stop” as an input parameter.
2. The *Package Control Script* cleans up the resources that were enabled during the start sequence.
3. The Package Control Script also executes the HA NFS Script through the toolkit interface script with the “stop” parameter.
4. The HA NFS Script cleans up the NFS resources that were enabled during the NFS start sequence.
5. If an error happens during this stop of the package, each script will continue to complete the clean up sequence, and then exit with an error code. The *exit codes* include:
 - 0: SUCCESS (no error)
 - 1: FAILURE (error)

NFS Toolkit Files

After installing the toolkit, *three scripts* and one README file will be installed.

- In a RedHat environment, the toolkit will be installed in
`/usr/local/cmcluster/nfstoolkit`
- In a SLES 8/UL environment, the toolkit will be installed in
`/opt/cmcluster/nfstoolkit`

The *NFS Toolkit* contains the following four files:

- `toolkit.sh`:

The toolkit interface script that interacts with a package control script and HA NFS script.

- `hanfs.sh`:

The HA NFS script that starts and stops NFS daemons and exports and unexports file systems.

- `nfs.mon`:

The NFS monitor script.

`/usr/bin/sync_rmtab`: Remote mount table synchronization binary code.

Further Information

For detailed information, refer to the user's manual, *Managing ServiceGuard NFS Linux*.

