Connect:Direct for UNIX in the Veritas Cluster Server Environment

Connect:Direct for UNIX was installed and configured in a Veritas Cluster Server (VCS) 5.0 test environment and successfully passed several failover scenarios. Secure+, with strong authentication, signatures and data encryption was also configured and tested. Control and failover of the Connect:Direct File Agent was verified.

This document is intended as a supplement to the Connect:Direct for UNIX and VCS product documentation and addresses the changes required during the typical Connect:Direct for UNIX installation and setup to accommodate the specific requirements of a VCS cluster environment. This document is not a tutorial on the installation and setup of Connect:Direct or VCS.

The following information is included in this document:

- Test environment details
- Connect:Direct for UNIX installation and configuration requirements
- Sample scripts
- Failover test scenarios

Test Environment

The following hardware was used in the test environment:

- Two HP ProLiant DL380 G5 computers running Red Hat Enterprise Linux AS release 4 (Nahant Update 7) with 15.86G memory and four Intel(R) Xeon(R) CPU 5160 @ 3.00GHz CPUs
- A 1000baseT network connection via Broadcom Corporation NetXtreme II BCM5708 Gigabit Ethernet adapters.
- Heartbeat connection via second set of Broadcom Corporation NetXtreme II BCM5708 Gigabit Ethernet adapters.
- Shared drive via 2Gbps fibre channel SAN. SAN unit is a Nexsan ATABoy2x with 14x400G drives configured as a single RAID 5 column with a 500GB shared LUN exposed.

Connect:Direct for UNIX Installation and Configuration Requirements

Use the information and instructions in this section when installing and configuring Connect:Direct for UNIX to operate in a VCS High Availability environment. These procedures assume that you have set up a service group for Connect:Direct for UNIX that includes a virtual IP address (VIP) resource and a Connect:Direct for UNIX resource type defined as follows:

```
type ConnectDirect (
       static str ArgList[] = { CDInstallDir, CDNodeName, CDUser, VirtualIP }
       str CDInstallDir
       str CDNodeName
       str CDUser
       str VirtualIP
)
```

It is also assumed that there is a shared storage area available or mountable to all nodes in the cluster where Connect:Direct can be installed and for data files.

Installation

Perform the following steps before beginning the installation outlined in the *Connect:Direct for UNIX Getting Started Guide*:

1. Create a Connect:Direct user with the same name and uid on each cluster node.
2. Create a Connect:Direct subdirectory on the shared data filesystem.
3. Ensure that the Connect:Direct subdirectory is owned by the Connect:Direct user.

Configuration

Perform the following steps after installing Connect:Direct for UNIX in the subdirectory on the shared data filesystem:

1. Modify the rnode.listen record of the initialization parameters file (initparm.cfg) as follows:

```
:comm.info=0.0.0.0;1364:\
```

2. Modify the api.parms record of the NDMAPI configuration file (ndmapi.cfg) as follows:

```
:tcp.hostname=logical_host_ip_name:\
```

3. Modify the local.node record of the netmap file (netmap.cfg) as follows:

```
:tcp.api=logical_host_ip_name;1363:\
```

4. Set the outgoing address parameter. This parameter enables you to specify an IP address for the adjacent node to use for netmap checking. It prevents sessions from failing when you initiate from within a High Availability environment to a Connect:Direct node that has netmap checking turned on. See the *Connect:Direct for UNIX Administration Guide* for details.

   The outgoing address parameter is defined in the local.node record of the netmap file as follows:

```
:outgoing.address=(logical_host_ip_name|VIP):\
```

5. Modify the loopback adjacent.node record of the netmap file (netmap.cfg) as follows:

```
:comm.info=logical_host_ip_name;1364:\
```

6. Modify the tcp.max.time.to.wait parameter of the netmap file (netmap.cfg) to a value other than zero, such as 20 seconds.
7. Modify the short term session retry interval (conn.retry.stwait) and long term session retry interval (conn.retry.ltwait) parameters to a value greater than the tcp.max.time.to.wait value set in step 6.
8. Create a user data filesystem that is shared by all cluster nodes. This area is used for all file transfers.
9. Sample scripts to be placed in the $VCS_HOME/bin/ConnectDirect directory are available here. Update the scripts as required for your current environment. Copy the sample scripts to all nodes in the cluster.

Failover Test Scenarios

The following failover test scenarios were initiated and failover was then triggered via the following mechanisms:

- Kill the cdpmgr process
- Kill the cdfa process
- Pull the network cable on the node running the Connect:Direct service All of the following test scenarios passed.
- Connect:Direct and C:D File Agent running but idle.
- Connect:Direct as pnode sending a file.
- Connect:Direct as pnode receiving a file.
- Connect:Direct as snode receiving a file.
- Connect:Direct as snode sending a file.
- Connect:Direct as pnode running a task.
- Connect:Direct as snode running a task.

- ✦ Connect:Direct running stress test involving multiple pnode and snode sessions running processes with a variety of steps.

Connect:Direct Known Issue Involving Held Processes

The following is a known issue with Connect:Direct for UNIX in the Veritas Cluster Server Environment.

In order to restart all UNIX-initiated Connect:Direct Processes that were Held in Error, ***all*** held Processes are restarted when HACMP startsConnect:Direct for UNIX. This includes any Connect:Direct Processes intentionally Held by the Operator. In the event of a failure, ***all*** Connect:Direct Processes being held, for whatever reason, will be restarted when the ndm package restarts. This could be a security problem, so please note this functionality.