Symantec NetBackup™ Deduplication Appliance Software 1.3.0.2 Release Notes

Revision 1
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Documentation version: 1.3.0.2

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■ Available memory, disk space, and NIC information
■ Operating system
■ Version and patch level
■ Network topology
■ Router, gateway, and IP address information
■ Problem description:
  ■ Error messages and log files
  ■ Troubleshooting that was performed before contacting Symantec
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This document includes the following topics:

- Prerequisites
- Product fixes
- Resolved data loss issues
- Known issues and limitations
- Related Articles
- Optimized duplication compatibility levels
- Upgrade process overview
- Download and installation instructions
- About checkpoints
- Committing patches
- Manually upgrade stand alone appliance for addition to previously upgraded storage pool
- Rollback instructions
Recovering from an upgrade failure

Upgrading Deduplication agents on media server clients

Prerequisites

You can use this patch to upgrade the software on the 5000 and the 5020 appliances from software version 1.3.0.1 to version 1.3.0.2.

Caution: This patch can only upgrade software version 1.3.0.1. Do not attempt to apply this patch to older versions of the software without first applying the 1.3.0.1 patch.

Installing this patch requires planned down time. All backup and all deduplication services on the appliance are stopped and restarted as part of the installation.

Note: The installation process automatically creates upgrade jobs for the backup and restore agent software on the clients. The job may be started immediately or manually after you commit the patch. The installation process does not create agent upgrade jobs for PDDO agents on NetBackup media server clients. More information about the upgrade process for media server clients exists.

See “Upgrading Deduplication agents on media server clients” on page 20.

Product fixes

This following product fixes are in the Deduplication Appliance Software 1.3.0.2 release:

- ET1918923: The Workflow Engine fails with the error message Timeout reached for connection from 127.0.0.1. This error causes jobs to stop responding.

- ET2249814: After you apply engineering binary bundle 2, attempts to restart the server agent generates an event error. The error is Cannot find correct installer for Agent server01.domain.com (1344000000) with OS version 21.

- ET2269894: Unable to browse files with commas in the name.

- ET2271180: Unable to create UNC data selection in administrative Web UI.
When you expand the domain name during UNC data selection creation, the following error is shown: Unable to execute dirlist on agent <agentname>(id) for path: //</domainname>.

- ET2272289: PureDisk Deduplication Option (PDDO) restore attempts fail during rerouting. The following error message is displayed: Could not send get operations for DOs: zero-sized object error message.

Example of log:

PDVFS: [1] pdvfs_lib_log: Could not send get operations for DOs: zero-sized object
PDVFS: [1] pdvfs_lib_log: Could not send all DO get operations via recommended route table: zero-sized object
PDVFS: [1] pdvfs_pread: CRDOReaderRead for myclient_1295398433_C1_F5.map failed: 47 (zero-sized object) verify_mapfile_version error reading mapfile version (5 Input/output error)

- ET2278855: PDDO replication policy incorrectly replicates expired images to destination storage pool. PDDO replicates all images from the data selection, including images that are expired from NetBackup but not yet fully cleaned by the PureDisk maintenance workflows. This patch implements changes so only valid PDDO images are replicated.

- ET2299755: The zypper command outputs error for the pdagent script after you install the pdagent-Linux_2.6_x86-6.6.1.45937.run onto SUSE 11 SP1.

- ET2312853: Queue processing fails to create new transaction login queue directory.

Queue processing error: Could not move spool log /Storage/spool/8748.tlog to /Storage/spool/8748.tlog (The file exists.)

- ET2314380: Replication attempts fail with the message Error: 2 : Could not load route table /Storage/tmp/<n>.recommended.

- ET2327808: A PureDisk storage pool that is registered to NetBackup 7.1 receives critical events getSDKversion ever hour with the description Validation error: action has an invalid value: getSDKVersion.

- ET2341505: PDDO optimized duplication leaves blank bandwidth and compress parameter at execution. This omission causes the duplication to ignore the OPTDUP_BANDWIDTH and the OPTDUP_ENCRYPTION parameters.

- ET2343216: The installation of the PureDisk agent on Windows prevents the removal of mapped drives.
You cannot remove mapped drives of the agent with the `net use` command after you successfully install the PureDisk agent software. Attempts to remove the mapped drives with Windows Explorer also fails.

- ET2343634: OpsCenter 7.1 is unable to collect job data from PD 6.6.1.2. OpsCenter 7.1 fails to collect job data for PureDisk replication jobs. The process generates a `NumberFormatException` error.

- ET2347424: The mailbox backup of Exchange fails. The error message is: `vss_cmd_server_DB error. Phase 2 enumeration could not complete and OPEN DATABASE FAILED: -1022 There is a disk IO error.`

- ET2349415: A disaster recovery backup adds the `REQUIRED_INTERFACE` entry to `bp.conf` during run time. This addition causes the export to NetBackup to fail.

- ET2349540: Unexpected byte sequence error is received when you use the Manual Backup Wizard. When you create a backup job using the Manual Backup Wizard, an exception error message is shown at the Data selection definition screen. The error is `org.xml.sax.SAXParseException: An invalid XML character (Unicode: 0x1) was found in the element content of the document`. When you click the root directory, the error message disappears, but the directory and files cannot be listed.

- ET2361643: Rerouting fails when compaction removes a corrupt data object. The underlying segment object is corrupt.

- ET2363637: An unexpected raw data segment is encountered during replication which causes the job to fail.

- ET2369869: The PureDisk client agent leaks memory which causes various errors and failures.

- ET2380137: The Reroute Storage Pool button does not appear in the administrative Web UI under Settings > Topology.

- ET2393173: The export of data to NetBackup fails on certain Windows BKF and VHD files. The failure generates a `Could not be exported (invalid file descriptor)`.

- ET2395644: Queries during replication on a PureDisk Virtual Appliance take too long to complete and this delay causes a backup failure.

- ET2400447: The appliance restarts when you press `CTRL+ALT+DEL` at the console prompt. If you accidentally press this key combination the appliance restarts. This restart can cause job failures and other problems.
ET2406993: After you restart the PureDisk services in the appliance shell menu, the pdmbe and the pdgui services are not started.

ET2409674: The /tmp/mbestart.tmp and the /tmp/mbestop.tmp files are not automatically cleaned up. The files grow exponentially when the pdmbe service is restarted.

ET2410817: After a factory reset from the appliance shell menu and logging out, the pdmbe and the pdgui services are not started.

Resolved data loss issues

Known resolved data loss issues

ET2334662: The fingerprint information was not written to the transaction log. This results in a backup that exits successfully, but you cannot restore the data. More information is available about this issue.  
http://symantec.com/docs/TECH159757

Known issues and limitations

The following items are known issues and limitations with this patch release:

The software version number scheme for the appliance was changed after the initial release of the appliance. The order of the software version numbers for the appliance is: 6.6.0.2 > 1.2 > 1.3.0.0 > 1.3.0.1 > 1.3.0.2.

Related Articles

For PureDisk 6.6.1.2 fixes, please see:
http://www.symantec.com/business/support/index?page=content&id=TECH146067

For PureDisk 6.6.1 fixes, please see:
http://www.symantec.com/business/support/index?page=content&id=TECH137146

For Deduplication Appliance Software version 1.3.0.1, please see:
http://www.symantec.com/business/support/index?page=content&id=DOC4108

Optimized duplication compatibility levels

In an optimized duplication, NetBackup writes unique, deduplicated data segments from one host to another. When you upgrade storage pools, remember that the order in which you upgrade can affect the success of optimized duplication.
Software levels can affect optimized duplication's success, and the general rules are as follows:

- Storage pools that are at the same Deduplication Appliance Software level can write optimized duplications to each other.
- Storage pools that are at a lower Deduplication Appliance Software level can write optimized duplications to storage pools that are at a higher Deduplication Appliance Software level.
- Storage pools that are at a higher Deduplication Appliance Software level cannot write optimized duplications to storage pools that are at a lower Deduplication Appliance Software level.

For example, a storage pool at the Deduplication Appliance Software 1.2 level can write optimized duplications to storage pools at the Deduplication Appliance Software 1.3.0.2 level. A storage pool at the Deduplication Appliance Software 1.3.0.2 level cannot write optimized duplications to storage pools at the 1.2 level.

Symantec supports optimized duplication in several forms. Table 1-1 lists each type of optimized duplication you can perform and shows the NetBackup versions that are required. In order for optimized duplication to succeed, all NetBackup media servers must be running the same NetBackup software release level.

Table 1-1: Software levels compatible with optimized duplication

<table>
<thead>
<tr>
<th>NetBackup operation</th>
<th>NetBackup software level required</th>
</tr>
</thead>
</table>
| Backing up files from NetBackup clients to a Deduplication Appliance Software 1.3.0.2 storage pool | A master server or media server running one of the following:  
- NetBackup 7.1.0.1 with HotFix NB_7.1.0.1_ET2412409  
- NetBackup 7.0.1 with HotFix NB_7.0.1_ET2233961  
- NetBackup 6.5.6 using the PDDO agent shipped with 1.3.0.2  
A NetBackup 5200 running one of the following:  
- NetBackup Appliance Software, version 2.0  
- NetBackup Appliance Software, version 1.2 |
| Optimized duplication from a NetBackup Media Server Deduplication Pool (MSDP) to a Deduplication Appliance Software 1.3.0.2 storage pool | A NetBackup MSDP running NetBackup 7.0.1.  
A NetBackup 5200 running one of the following:  
- NetBackup Appliance Software, version 2.0  
- NetBackup Appliance Software, version 1.2 |
| Optimized duplication from a Deduplication Appliance Software 1.2 storage pool to a Deduplication Appliance Software 1.3.0.2 storage pool | A media server running one of the following:  
- NetBackup 7.1.0.1 with HotFix NB_7.1.0.1_ET2412409  
- NetBackup 7.0.1 with HotFix NB_7.0.1_ET2233961  
- NetBackup 6.5.6 using the PDDO agent shipped with 1.3.0.2 |
Table 1-1  Software levels compatible with optimized duplication (continued)

<table>
<thead>
<tr>
<th>NetBackup operation</th>
<th>NetBackup software level required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimized duplication from a Deduplication Appliance Software 1.3.0.2 storage pool to a Deduplication Appliance Software 1.3.0.2 storage pool</td>
<td>A media server running one of the following:</td>
</tr>
<tr>
<td></td>
<td>■ NetBackup 7.1.0.1 with HotFix NB_7.1.0.1_ET2412409</td>
</tr>
<tr>
<td></td>
<td>■ NetBackup 7.0.1 with HotFix NB_7.0.1_ET2233961</td>
</tr>
<tr>
<td></td>
<td>■ NetBackup 6.5.6 using the PDDO agent shipped with 1.3.0.2</td>
</tr>
<tr>
<td></td>
<td>A NetBackup 5200 running NetBackup Appliance Software, version 1.2.</td>
</tr>
</tbody>
</table>

**Upgrade process overview**

Be aware of the following concerns before upgrading the appliance software:

- Please note your passwords before an upgrade. While the upgrade process does not change existing passwords, a rollback reverts passwords to their value before the upgrade.

- If any of the content routers is not accessible, the patch installation process on the storage pool authority and the content router fails.

- If the `topology.ini` file is encrypted, the patch installer prompts you for the password to decrypt this file. The password for the topology.ini is the same as the installer UI.

- The installation process stops all PureDisk services on all nodes in the storage pool. The services are restarted after the installation.

- The installer automatically pushes the software to all nodes in the storage pool.

- The installation process automatically creates upgrade jobs for the backup and restore agent software on the clients. The job may be started immediately or manually after you commit the patch. However, you must upgrade PDDO agents manually. More information about this topic is available. See “Upgrading Deduplication agents on media server clients” on page 20.

- If you add an additional node to the storage pool after the patch is installed, you must upgrade the new node to the same level as the storage pool authority. You must perform this upgrade before attempting to add the new node to the storage pool. If you do not upgrade the new node, the attempt to add the new node to the storage pool fails.
Download and installation instructions

Use the following procedure to download and install the patch:

Download and install the patch

1. Make sure that no PureDisk jobs are currently running or are scheduled to be run. Make sure that all the content routers are up and running and accessible from the storage pool authority.

2. Log on as root on the appliance node that hosts the storage pool authority and copy the patch tarball (NBU5020_1.3.0.2.tar) to the /root/pd-patches directory. If the directory does not exist, you must create it.

3. Logout and login as sysadmin on the appliance node that hosts the storage pool authority.

4. Enter PureDisk at the appliance shell menu to access the patch subcommand.

5. Enter this command to verify the name of the downloaded patch. The output should include the patch NBU5020_1.3.0.2.tar.
   
   patch list-downloaded

6. Enter this command to install the downloaded patch. This command installs the patch on the storage pool authority node and also on all the active content router nodes.
   
   patch apply NBU5020_1.3.0.2.tar

7. Enter the following commands from the PureDisk menu to verify that the patch has been applied.
   
   patch list-applied

   The newly applied patch, NBU5020_1.3.0.2 (not committed) should appear.

   status all

   All the services status are running if the patch was successfully applied.

8. Exit the PureDisk menu and access the System menu.

9. Enter the following command from the System menu to verify the version of the appliance:
   
   applianceversion

   If the patch was successfully applied, the version is 1.3.0.2.
10  (Conditional) Upgrade the PDPO agent software on PDPO media server clients. Perform the **Upgrading PDPO agents on media server clients** procedure. The release update includes upgraded PDPO agents for Linux, Solaris, and Windows clients. More information about this topic is available. See “**Upgrading Deduplication agents on media server clients**” on page 20.

11  (Conditional) Commit the patch on any stand alone appliance you want to add to previously upgraded storage pool. More information is available on committing patches. See “**Committing patches**” on page 16.

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**Note:** Once you apply the patch, the storage pool is in checkpoint mode. Checkpoint mode lets you review the functionality of the patch in the storage pool and perform a patch rollback if necessary. While in checkpoint mode, some functionality is disabled. More information about checkpoint mode is available. See “**About checkpoints**” on page 15.

When you are confident in the patch, you need to commit the patch. More information is available on this topic. See “**Committing patches**” on page 16.

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**About checkpoints**

When you apply an upgrade patch to a deduplication appliance storage pool, the upgrade software automatically creates a checkpoint on the storage pool. If a checkpoint exists, the PureDisk administrative Web UI displays the message **Storage pool is in checkpoint mode**.

Depending on how full your backup system is, you might be able to leave a storage pool in checkpoint mode for a few days. The length of time depends on the change rate of the clients being backed up. Garbage collection does not occur when a storage pool is in checkpoint mode, so monitor your system closely during the evaluation period. Commit or roll back the patch as soon as you can.

Do not attempt to remove a checkpoint manually. After you complete the evaluation period for a patch, use the information in the patch's release notes to commit or to roll back the patch. Both the commit action and the rollback action remove the checkpoint.

The checkpoint and the rollback features that are implemented in PureDisk for the deduplication appliances differ from the checkpoint and the rollback features that are implemented in the PureDisk Remote Office Edition.
More information about checkpoints is available.
See “Storage pool functionality while in checkpoint mode” on page 16.

Storage pool functionality while in checkpoint mode

PureDisk functionality is reduced when the storage pool is in checkpoint mode. Symantec recommends that you perform only test backups and restores while the storage pool is in checkpoint mode. Specifically, checkpointing has the following effects on the storage pool:

- You can start the Configuration Wizard user interface, but the network Configuration Wizard and the storage pool Configuration Wizard are disabled. You cannot use the wizards to perform any configuration or any reconfiguration tasks. For example, you cannot add a new node to the storage pool while the storage pool is in checkpoint mode. In addition, you cannot configure or reconfigure an appliance’s network while the storage pool is in checkpoint mode.

- To prevent performance degradation and data loss, PureDisk prevents certain storage pool operations from occurring when the storage pool is in checkpoint mode. PureDisk deduplication option (PDDO) operations, rerouting, replication, disaster recovery restores, and garbage collection cannot run when the storage pool is in checkpoint mode.

After your test period is over, you can commit the patch, or you can roll back the patch. If you commit the patch, all the test backups you wrote to the storage pool remain on the storage pool. If you roll back the patch, all the test backups you wrote to the storage pool are removed from the storage pool.

Note: Symantec recommends that you perform only test backups and test restores while the storage pool is in checkpoint mode. Do not run production backups and restores on a storage pool if the storage pool is in checkpoint mode. If the storage pool is used in a NetBackup environment as a PureDisk deduplication option (PDDO) storage unit, make sure to notify the NetBackup administrator that the storage pool is in checkpoint mode and is unavailable to NetBackup during the checkpoint period.

Committing patches

When you are confident the patch works correctly in your environment, you need to commit the patch. Use the procedure in this topic to commit patches.
Committing patches

1 Log into the appliance with the sysadmin account.

2 Enter PureDisk at the appliance shell menu to access the patch subcommand.

3 Run the following command:
   
   `patch commit NBU5020_1.3.0.2`

Note: More information about checkpoint mode and further details on what occurs when you commit a patch is available.

See “About checkpoints” on page 15.

Manually upgrade stand alone appliance for addition to previously upgraded storage pool

When you upgrade the storage pool authority, the upgrade software automatically upgrades all non-PDDO appliance nodes in the storage pool. If you have either unconfigured and unattached appliances with older software versions or decommissioned appliances you want to add to an upgraded environment, you must upgrade them before adding them to the existing environment. Use the procedure in this topic if you want to upgrade the software level of an appliance and add the appliance to a storage pool.

Upgrading an unconfigured appliance to the 1.3.0.2 software version

1 Turn on the appliance.

2 Log into the appliance using the sysadmin user name and password.

3 Configure the TCP/IP information for the appliance through the appliance shell menu.

   Use the `config` command to configure the TCP/IP address for the network interface card.

   - Change to the Network menu.
   - Use the `config show` command to display available interfaces.

   ```
   app01.network> config show
   Node IP Address Interface IP Address Netmask
   192.168.1.26* eth0 192.168.1.1 255.255.255.0
   192.168.1.26* eth1 N/A  N/A
   ```
Use the `config addr` command to specify the interface number, TCP/IP address, and subnet mask of your network. For example, to configure port `eth1` with the TCP/IP address of `192.168.1.57` and a subnet mask of `255.255.255.0` on the `192.168.1.26` appliance, issue the following command:

```
config addr 192.168.1.26 eth1 192.168.1.57 255.255.255.0
```

4. Download and install the patch on the appliance. More information about this topic is available. See “Download and installation instructions” on page 14.

5. Log into the storage pool authority and add the new appliance. More information about this topic is available. See Adding additional appliance nodes to the storage pool in the Symantec NetBackup Deduplication Appliance Software Getting Started Guide.

### Rollback instructions

Use the following procedure to rollback an installed patch which is not committed:

**Patch rollback instructions**

1. Make sure that no PureDisk jobs are currently running or are scheduled to be run. Make sure that all the content routers are up and running and accessible from the storage pool authority.

2. Log in as `sysadmin` on the appliance node that hosts the storage pool authority.

3. Enter `PureDisk` at the appliance shell menu to access the `patch` subcommand.

4. Enter this command to verify that the patch has been applied. The applied patch, `NBU5020_1.3.0.2 (not committed)` should appear.

```
patch list-applied
```

5. Enter this command to rollback the software to the previous version.

```
patch rollback NBU5020_1.3.0.2
```

6. Enter this command to verify that the patch was removed. The patch name `NBU5020_1.3.0.2` should no longer appear.

```
patch list-applied
```

**Caution:** Symantec recommends that you do not perform any production backups between an upgrade and a rollback. If rollback is performed, the data that was backed up since the upgrade is lost.
Recovering from an upgrade failure

If the upgrade process is accidentally interrupted, it may be necessary to remove the patch before you can reinstall the patch. If there is a power failure or a loss of network connectivity, these conditions can corrupt the upgrade and require the patch to be removed. If you experience an interruption to the upgrade, use the following procedure to examine your environment and correct the upgrade:

Troubleshooting an upgrade failure

1. Log into the appliance shell menu using the sysadmin account.
2. Enter PureDisk at the appliance shell menu to access the patch subcommand.
3. List the patches that are applied using the list-applied option.
   ```bash
   patch list-applied
   ```
4. (Conditional) If NBU5020_1.3.0.2 (not committed) is not displayed, you need to manually remove the patch.
   - Exit from the PureDisk menu and return to the Root menu.
   - Enter the Admin menu and run the su command. This command lets you access the operating system shell.
   - Run the following command to manually roll the patch back:
     ```bash
     /opt/pdinstall/rollback-NBU5020_1.3.0.2.sh
     Example:
     # /opt/pdinstall/rollback-NBU5020_1.3.0.2.sh
     WARNING: This will roll back all nodes in the storage pool:
     [server_01.com]: Rollback from NBU5020( 1.3.0.2
     / 6.6.1.47653)to NBU5020( 1.3.0.1 / 6.6.1.47099)
     [server_01.com]: Rollback from NBU5020( 1.3.0.2
     / 6.6.1.47653)to NBU5020( 1.3.0.1 / 6.6.1.47099)
     Do you want to continue?[y/n]y
     + Rollback Successfully!
     
     If this script fails, review the /var/log/puredisk/rollback-Jackson.log file. This file contains the rollback information, and may indicate what caused the failure. Make any necessary corrections and run the script again.
   - Type exit to leave the appliance operating system shell and return to the appliance shell menu.
(Conditional) If the patch NBU5020_1.3.0.2 (not committed) is displayed, use the patch rollback command to rollback the patch.

```
patch rollback NBU5020_1.3.0.2
```

6 Reapply the 1.3.0.2 patch. More information about this topic is available. See “Download and installation instructions” on page 14.

### Upgrading Deduplication agents on media server clients

This topic describes how to upgrade deduplication agents on media server clients.

The specific upgrade procedure that you should perform depends on the release of software and the platform of your media server. Select the procedure that is appropriate for your environment:

- Upgrading NetBackup 6.5.x media servers (all platforms) and NetBackup 7.0 or 7.0.1 media servers (AIX platforms and HP-UX platforms only)
  Media servers on these platforms use the PDDO agent for deduplication. To obtain the PureDisk 6.6.1.2 enhancements, perform the procedure "Upgrading NetBackup 6.5.x media servers (all platforms) or NetBackup 7.0 or 7.0.1 media servers (AIX platforms and HP-UX platforms only)."

  **Note:** The upgrade removes the old PDDO agent software automatically. For more information about how to install the PDDO agent, see the Symantec NetBackup PureDisk Deduplication Option Guide.

- Upgrading NetBackup 7.0 or 7.0.1 media servers (Solaris, Linux, and Windows platforms)
  Media servers on these platforms use an integrated plug-in (Media Server Deduplication Pool or MSDP) for deduplication. Upgrades are not yet available for the integrated plug-in on these platforms. You can install the Deduplication Appliance Software 1.3.0.2 upgrade at this time using the procedure “Upgrading NetBackup 6.5.x media servers (all platforms) or NetBackup 7.0 or 7.0.1 media servers (AIX platforms and HP-UX platforms only).”. You cannot, however, obtain the Deduplication Appliance Software 1.3.0.2 enhancements with this upgrade.
Upgrading NetBackup 6.5.x media servers (all platforms) or NetBackup 7.0 or 7.0.1 media servers (AIX platforms and HP-UX platforms only)

1. Make sure that the storage pool software for the PDDO clients has been upgraded.

2. Refresh the PureDisk landing page.
   The landing page can be found on:
   https://<your-puredisk-spa>/
   For <your-puredisk-spa>, type the hostname or the IP address of your PureDisk storage pool authority.

3. Log on to each PDDO media server client.

4. From the PDDO media server client, download the new PDDO agent software.
   The landing page includes more than one software version of the PDDO agent, so take care to download the most recent agent.

5. (Conditional) Freeze the PureDisk service groups for the clustered PDDO server.

6. Stop all NetBackup services on the NetBackup media server.
   - On Windows systems, run the following command to stop NetBackup services:
     `c:\program files\veritas\netbackup\bin\bpdown.exe`
   - On Linux or Solaris systems, run the following command to stop NetBackup services:
     `/usr/openv/netbackup/bin/bp.kill_all`

7. Install the agent software that is included with this patch.
   - On Windows systems, double-click the PureDisk agent icon to start the Windows Installation Wizard.
   - On Linux or Solaris systems, you can use either the attended or the unattended installation method. The installer prompts you to confirm the upgrade.

8. (Conditional) Unfreeze the PureDisk service groups for the clustered PDDO server.

9. Start all the NetBackup services on the NetBackup media server.
   - On Windows systems, run the following command to stop NetBackup services:
     `c:\program files\veritas\netbackup\bin\bpup.exe`
On Linux or Solaris systems, run the following command to stop NetBackup services:
/usr/openv/netbackup/bin/bp.start_all