Sun Virtual Desktop Infrastructure

Update Guide for Version 3.1.1

April 2011

ORACLE

VDI 3.1.1 Update Installation (All Topics)

Contents

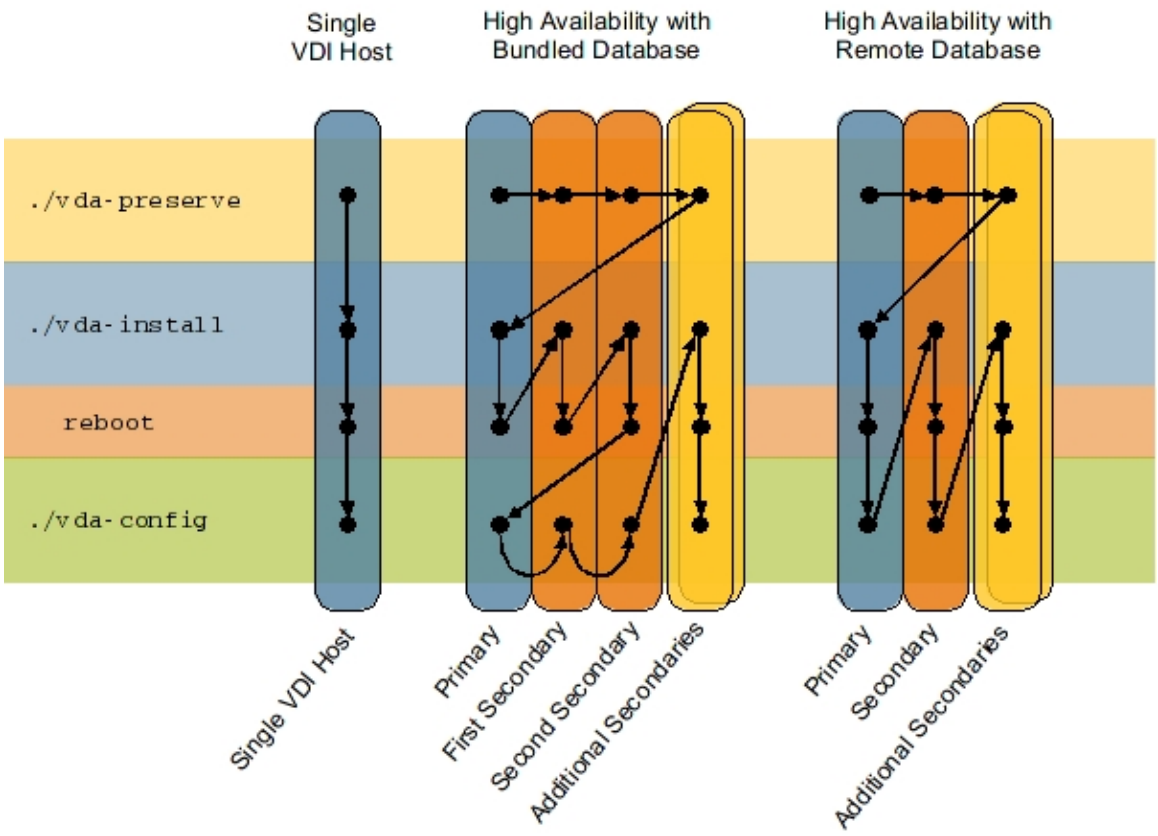
VDI 3.1.1 Update Installation (All Topics)

About Updating to VDI 3.1.1

After the official release of VDI we continue to add features that are available as "micro releases". The way micro releases are handled between VDI 3.0 and VDI 3.1 are slightly different. In VDI 3.0, micro releases were downloaded as a patch and installed on top of the existing VDI software package. With VDI 3.1, micro releases are available as a new bundled software package. In order to apply the changes to your existing VDI setup, you must update to the new software. There are two supported update types for VDI 3.1.1 software – version 3.0 to 3.1.1, and version 3.1 to 3.1.1. Both update types follow the same procedures.

Because of the various supported databases and virtualization platforms in VDI 3, it's necessary to follow specific instructions for updating to version 3.1.1. The following update paths are currently supported:

- How to Update to VDI 3.1.1 (High Availability with Bundled MySQL Database)
- How to Update to VDI 3.1.1 (High Availability with Remote Database)
- How to Update to VDI 3.1.1 (Single VDI Host)



In addition to updating the VDI Core setup, the virtualization platform will also require an update.

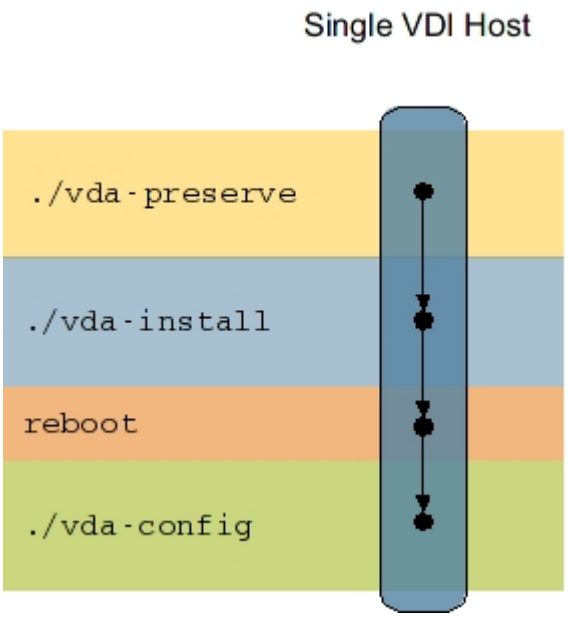
If your VDI 3 installation has a VirtualBox virtualization platform, it's required that you update to the supported version of VirtualBox for VDI 3.1.1. The VirtualBox server should be updated after updating the VDI Core hosts to avoid communication issues with the VDI Core. Besides updating the VirtualBox server, you'll also need to update the VirtualBox Guest Additions on all the desktops to correspond to the VirtualBox version on the VirtualBox host. Refer to the How to Update to VDI 3.1.1 (VirtualBox and vCenter Virtualization Platforms) page for more details.

If your VDI 3 installation has a VMware vCenter virtualization platform, you'll need to to update the VDA Tools on each of the desktops. Refer to the How to Update to VDI 3.1.1 (VirtualBox and vCenter Virtualization Platforms) page for more details.

If you would like to upgrade to the Sun Storage 7000 2010.Q1 firmware, you should also do that after updating the VDI Core. Refer to the How to Update to Sun Storage 7000 2010.Q1 page for more details.

How to Update to VDI 3.1.1 (Single VDI Host)

⚠ Outage Implications
Updating the VDI single host will cause a full VDI Core outage.



Before You Begin

Back up!
Use the following checklist to be sure all important data has been backed up properly.

Database - It is highly recommended to back up the database before starting the update process if, for some reason, the update process were to fail. For more information about backing up data on a remote database, refer to the How to Back Up and Restore Data (Remote MySQL Database) page.

Customized **`pam.conf`** files - The update process will regenerate the content of the file `/etc/pam.conf` (an SRSS access configuration file). If you have customized the file, you will need to back it up before updating, and re-add the customization to the newly generated file.

Making Changes with VDI Manager and CLI
Making changes to the VDI Core through the VDI Manager or CLI is strictly forbidden while updating to VDI 3.1.1.

Steps

1. Run the update installation and configuration on the single VDI host.

   a. As root user, unzip the VDI archive, and change to the corresponding directory.

   ```
   # unzip vda_3.1.1_amd64.zip
   # cd vda_3.1.1_amd64.zip
   ```

   or

   ```
   # unzip vda_3.1.1_sparc.zip
   # cd vda_3.1.1_sparc
   ```

   b. Run the `vda-preserve` script.

```
# ./vda-preserve
```

c. Run the installation.

```
# ./vda-install
```

The `vda-install` script will recognize if VDI 3 or 3.1 is installed and will ask if you want to update. By answering 'y', the installation part of the update process will be started. The old VDI 3 or 3.1 packages will be un-installed and replaced by the new VDI 3.1.1 packages.

d. Once the `vda-install` script has finished, reboot the single VDI host, and wait until the host is up again.

```
# reboot
```

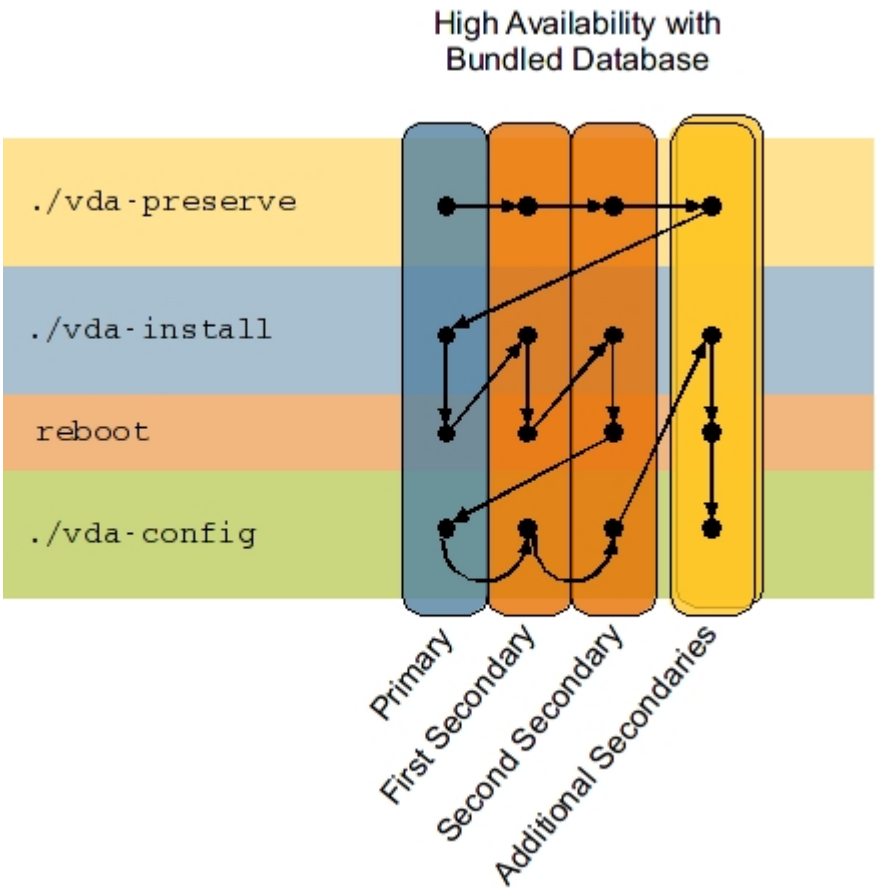
e. Run the configuration.

```
/opt/SUNWvda/sbin/vda-config
```

The `vda-config` script will recognize if the VDI Single Host is in the middle of the update process, and will conclude the update process by running the update configuration. The configuration will turn on all VDI-related services again.

How to Update to VDI 3.1.1 (High Availability with Bundled MySQL Database)

Outage Implications
Updating the VDI Primary host and the first two VDI Secondary hosts will cause a VDI Core outage on these hosts. Additional secondary VDI hosts will stay functional throughout the update process. Once the first phase of the migration has been started you must not restart any of the SQL nodes running on any of the VDI hosts.



Before You Begin

Back up!
Use the following checklist to be sure all important data has been backed up properly.

Database - It is highly recommended to back up the database before starting the update process if, for some reason, the update process were to fail. For more information about backing up data on the bundled MySQL Cluster database, refer to the How to Back Up and Restore Data (Bundled MySQL Database) page.

Customized **`my.conf`** files - The update process for any host within a MySQL (embedded) cluster setup will regenerate the content of the file `/etc/opt/SUNWvda/my.cnf` (a database configuration file). If you have customized the file, you will need to back it up before updating, and re-add the customization to the newly generated file.

Customized **`pam.conf`** files - The update process will regenerate the content of the file `/etc/pam.conf` (an SRSS access configuration file). If you have customized the file, you will need to back it up before updating, and re-add the customization to the newly generated file.

Making Changes with VDI Manager and CLI
Making changes to the VDI Core through the VDI Manager or CLI is strictly forbidden while updating to VDI 3.1.1.

Steps

1. Preserve the data on all VDI hosts.
    a. As root user, unzip the VDI archive, and change to the image directory.

```
# unzip vda_3.1.1_amd64.zip
# cd vda_3.1.1_amd64
```

or

```
# unzip vda_3.1.1_sparc.zip
# cd vda_3.1.1_sparc
```

b. Run the `vda-preserve` script.

```
# ./vda-preserve
```

c. Run the previous sub-steps on all VDI Primary and Secondary hosts.

2. Run the update installation on the Primary VDI host from the image directory.

a. Go to the image directory.

```
# cd vda_3.1.1_amd64
```

or

```
# cd vda_3.1.1_sparc
```

b. Run the installation.

```
# ./vda-install
```

The `vda-install` script will recognize if VDI 3 or 3.1 is installed and will ask if you want to update. By answering 'y' phase 1 of the update process will be started. The installation part of the update process will back up several settings on your Primary and prepare the VDI database to support new VDI 3.1.1 features. The first update phase will also shut down the MySQL Cluster management node and, because the Primary has been configured to host VDI sessions, will turn down all VDI related services. Next, the old VDI 3 or 3.1 packages will be un-installed and replaced by the new VDI 3.1.1 packages.

c. Once the `vda-install` script has finished, reboot your Primary, and wait until the host is up again.

```
# reboot
```

3. Run the update installation on the first VDI Secondary host.
In order to safely update your two Secondary hosts, install the VDI Core on the first Secondary completely, and then install the VDI Core on your second Secondary completely. Installing the VDI Core on both Secondary hosts at the same

time is not supported.

a. Go to the image directory.

```
# cd vda_3.1.1_amd64
```

or

```
# cd vda_3.1.1_sparc
```

b. Run the installation.

```
# ./vda-install
```

The `vda-install` script will recognize if VDI 3 or 3.1 is installed and will ask you whether you want to update or not. Answer 'y' to start the installation of the VDI 3.1.1 Core. will back up several settings on your Secondary. In addition to backing up several settings on your Secondary, the installation script will also shut down the MySQL Cluster data node and will turn down all VDI-related services on the host. Next, the old VDI 3 or 3.1 packages will be un-installed and replaced by the new VDI 3.1.1 packages.

c. Once the `vda-install` script has finished, reboot your first Secondary and wait until the host is up again.

```
# reboot
```

d. Check that the MySQL database has been fully started again by running the following command.

```
/opt/SUNWvda/sbin/vda-db-status
```

All nodes must be in the 'up' state.

4. Run the update installation on the second VDI Secondary host by following Step 2 above.

5. Run the update configuration on the VDI Primary host.
Once the installation part of the update process is complete on the VDI Primary and first two Secondaries, you are ready to start the configuration part of the update process.

- As root user, run the following command.

```
# /opt/SUNWvda/sbin/vda-config
```

The `vda-config` script will recognize if the VDI Primary is in the middle of the update process, and will conclude the update process by running the update configuration. If the VDI Primary host was configured to act as a full functional VDI host, the configuration will turn on all VDI-related services again.

6. Run the update configuration on the first VDI Secondary host.
After the update configuration has finished on the VDI Primary, you can start the update configuration on the first two VDI Secondaries. Like the update installation, you must completely configure the first VDI Secondary, then completely configure the second VDI Secondary. Configuring the VDI Core on both Secondary hosts at the same time is not supported.

- As root user, run the following command.

```
# /opt/SUNWvda/sbin/vda-config
```

The `vda-config` script will recognize if the VDI Secondary is in the middle of the update process, and will conclude the update process by running the update configuration. The configuration will turn on all VDI-related services again.

7. Run the update configuration on the second VDI Secondary host by following Step 5 above.

8. Run the update installation and configuration on additional (optional) VDI Secondary hosts.
   After you have completely updated the VDI Primary host and first two VDI Secondary hosts, you can update the additional VDI Secondaries in any sequence. To start the update process, run the following steps.

   a. Go to the image directory.

   ```
   # cd vda_3.1.1_amd64
   ```

   or

   ```
   # cd vda_3.1.1_sparc
   ```

   b. Run the installation.

   ```
   # ./vda-install
   ```

   The `vda-install` script will recognize if VDI 3 or 3.1 is installed and will ask you whether you want to update or not. By answering 'y' the migration process will be started. It will un-install the old VDI 3 or 3.1 packages, and replace them with the new VDI 3.1.1 packages.

   c. Once `vda-install` script has finished, reboot your VDI host, and wait until the host is up again.

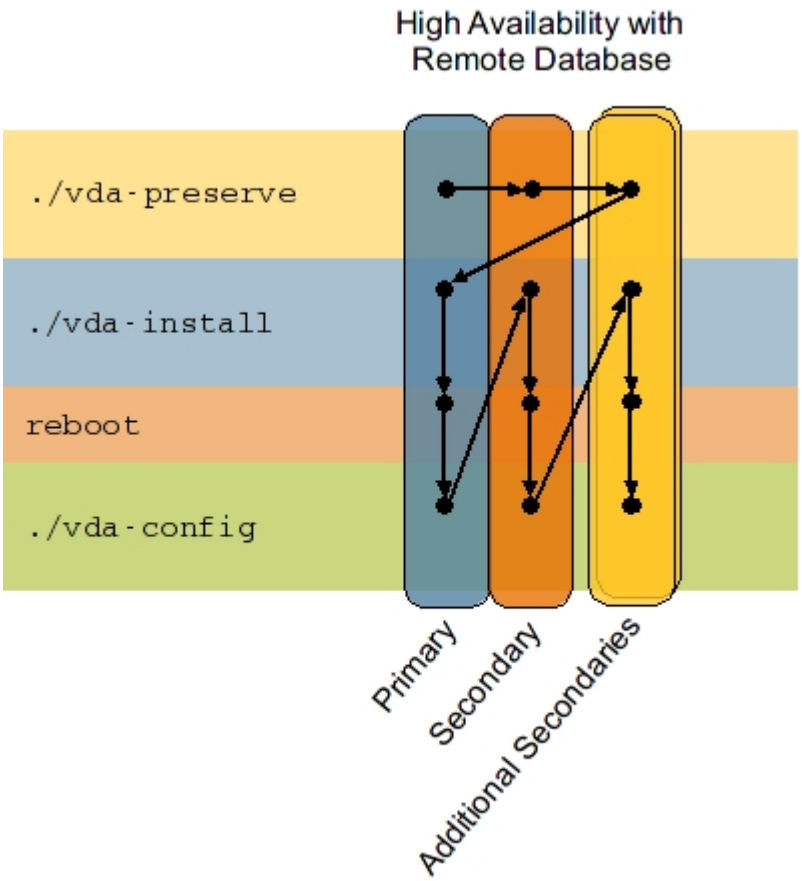
   d. Run the configuration.

   ```
   # /opt/SUNWvda/sbin/vda-config
   ```

   The `vda-config` script will recognize if the VDI Secondary is in the middle of the update process, and will conclude the update process by executing the update configuration. The update configuration will turn on all VDI related services again.

How to Update to VDI 3.1.1 (High Availability with Remote Database)

Outage Implications
Updating the VDI Primary host and the first two VDI Secondary hosts will cause a VDI Core outage on these hosts. Additional secondary VDI hosts will stay functional throughout the update process. Once the first phase of the migration has been started you must not restart any of the SQL nodes running on any of the VDI hosts.



Before You Begin

Back up!
Use the following checklist to be sure all important data has been backed up properly.

Database - It is highly recommended to back up the database before starting the update process if, for some reason, the update process were to fail. For detailed information about backing up data on a remote database, refer to the How to Back Up and Restore Data (Remote MySQL Database) page.

Customized **`pam.conf`** files - The update process will regenerate the content of the file `/etc/pam.conf` (an SRSS access configuration file). If you have customized the file, you will need to back it up before updating, and re-add the customization to the newly generated file.

Making Changes with VDI Manager and CLI
Making changes to the VDI Core through the VDI Manager or CLI is strictly forbidden while updating to VDI 3.1.1.

Steps

1. Preserve the data on all VDI hosts.

    a. As root user, unzip the VDI archive, and change to the corresponding directory.

```
# unzip vda_3.1.1_amd64.zip
# cd vda_3.1.1_amd64
```

    or

```
# unzip vda_3.1.1_sparc.zip
# cd vda_3.1.1_sparc
```

b. Run the `vda-preserve` script.

```
# ./vda-preserve
```

c. Run the previous sub-steps on all VDI Primary and Secondary hosts.

2. Run the update installation on the Primary VDI host from the image directory.

a. Go to the image directory.

```
# cd vda_3.1.1_amd64
```

or

```
# cd vda_3.1.1_sparc
```

b. Run the installation.

```
# ./vda-install
```

The `vda-install` script will recognize if VDI 3 or 3.1 is installed and will ask if you want to update. By answering 'y' phase 1 of the update process will be started. The installation part of the update process will back up several settings on your Primary and prepare the VDI database to support new VDI 3.1.1 features. The first update phase will also shut down the MySQL Cluster management node and, because the Primary has been configured to host VDI sessions, will turn down all VDI related services. Next, the old VDI 3 or 3.1 packages will be un-installed and replaced by the new VDI 3.1.1 packages.

c. Once the `vda-install` script has finished, reboot your Primary, and wait until the host is up again.

```
# reboot
```

d. Run the configuration.

```
# /opt/SUNWvda/sbin/vda-config
```

The `vda-config` script will recognize if the VDI Primary is in the middle of the update process, and will conclude the update process by running the update configuration. If the VDI Primary host was configured to act as a full functional VDI host, the configuration will turn on all VDI-related services again.

3. Run the update installation and configuration on the VDI Secondary host.

In order to safely update your two Secondary hosts, install the VDI Core on the first Secondary completely, and then install the VDI Core on your second Secondary completely. Installing the VDI Core on both Secondary hosts at the same time is not supported.

a. Go to the image directory.

```
# cd vda_3.1.1_amd64
```

or

```
# cd vda_3.1.1_sparc
```

b. Run the installation.

```
# ./vda-install
```

The `vda-install` script will recognize if VDI 3 or 3.1 is installed and will ask you whether you want to update or not. By answering 'y' the migration process will be started. It will un-install the old VDI 3 or 3.1 packages, and replace them with the new VDI 3.1.1 packages.

c. Once `vda-install` script has finished, reboot your VDI host, and wait until the host is up again.

```
# reboot
```

d. Run the configuration.

```
# /opt/SUNWvda/sbin/vda-config
```

The `vda-config` script will recognize if the VDI Secondary is in the middle of the update process, and will conclude the update process by executing the update configuration. The update configuration will turn on all VDI related services again.

How to Update to VDI 3.1.1 (VirtualBox and vCenter Virtualization Platforms)

When updating from VDI 3 or VDI 3.1 to VDI 3.1.1, it will necessary to perform some tasks on the virtualization platform. VDI 3 installations with a VirtualBox virtualization platform will require a newer version of VirtualBox to use the new features in VDI 3.1.1, and the corresponding Guest Additions will need to be installed on the VirtualBox virtual machines. VMware vCenter virtualization platforms will not require updating since VDI 3.1.1 supports all the versions of vCenter and ESX Server as in VDI 3 and VDI 3.1.

Before You Begin

The VDI Core hosts should be updated before the virtualization platform. If you have not already updated the VDI Core hosts, refer to the About Updating to VDI 3.1.1 page for more details.

Steps for Sun VirtualBox Virtualization Platforms

1. Update the VirtualBox version on the VirtualBox host.
    a. Un-install the previous version of VirtualBox by changing to the VirtualBox installation directory, and running the following command as root user.

```
# ./vb-install -u
```

    b. When VirtualBox has been successfully removed, install the currently supported version of VirtualBox by running the following command.

```
# ./vb-install
```

2. Update the Guest Additions on VirtualBox virtual machines.

Steps for VMware vCenter Virtualization Platforms

The only requirement for updating the vCenter virtualization platform to work with VDI 3.1 is to update the VDA tools on each of the vCenter desktops.

- Update the VDA Tools on vCenter desktops.
    1. Remove the existing VDA Tools file from the virtual machine. The default location for the VDA Tools on Windows is `C:\Program Files\Sun\Virtual Desktop Access\Tools`.
    2. Copy the `vda-tools.msi` installer file from the `/var/tmp/vda_3.1_amd64/vda_3.1/Windows/Packages` directory to the virtual machine.
    3. Within the virtual machine's console, double-click the installer and follow the prompts to complete installation. The default target location for the VDA Tools on Windows is `C:\Program Files\Sun\Virtual Desktop Access\Tools`.
    4. The VM Services list should now contain a new service named Sun VDI Tools, running and set to start automatically.

How to Update to Sun Storage 7000 2010.Q1

If your storage has more than one interface, be sure to use the alphabetically first interface for VDI. For more information refer to Bug ID 6947485 in the VDI 3.1.1 Release Notes.

Active/Active Cluster for Sun Storage 7000 2010.Q1 is not supported. For more information refer to Bug ID 6943193 in the VDI 3.1.1 Release Notes.

Steps

1. Put the storage in maintenance mode.

It is required that all desktops are powered off when putting a Hyper-V host or storage into maintenance mode. For more information refer to Bug ID 6919755 in the VDI 3.1.1 Release Notes.

    a. Select the Desktop Providers category, and click the desktop provider containing the storage server you would like to suspend.
    b. Select the Storage tab, select the storage server, and click the Maintenance button.
        i. Choose a time for the server to begin entering maintenance, or click Now to select the current time.
        ii. Click OK to submit the maintenance mode job.
    c. Wait until the maintenance mode job has completed before performing the next step.

2. Upgrade the firmware.
   The storage must run a 2009.Q2 firmware to be safely upgraded to 2010.Q1.
   For more information on the storage upgrade, release notes, download links, and a version history of the Sun Storage

7000 Series refer to FishWorks documentation.

> ⚠ When the storage is enabled for the first time in VDI after it has been upgraded, a resume job will adapt the LUNs on the storage, as well as the volume entries in the VDI, database to the new environment.
> To successfully resume the storage it is necessary that every LUN in every project of the storage is known by the VDI database. Therefore, you must not upgrade a storage which is already used by VDI if
> - third party tools have been creating LUNs on the storage
> - another VDI installation is, or was, using the storage

3. Enable the storage.
    a. Select the Desktop Providers category, and click the desktop provider containing the storage server.
    b. Select the Storage tab, select the storage server, and click the Enable button.

How to Back Up and Restore Data (Bundled MySQL Database)

In a typical VDI instance, using the bundled MySQL database, a back up is only necessary when updating to a new release of VDI. The integration of the bundled MySQL database already provides an assurance of fail-safety, that reduces the need for backups as a means for disaster recovery. Find further details about this topic in the official MySQL documentation.

> ⚠ Please keep in mind that flexible desktop assignments existing at the time when the backup will be created might not be valid anymore when the VDI configuration has to be restored from this backup. This may lead to some unexpected side effects. For this reason you should consider replication as an alternative to regularly taken backups. Master-Slave replication is supported with the MySQL Cluster version coming along with VDI. Find details on the topic here: MySQL Cluster Replication

Steps

The following procedure assumes that you have a functioning (installed and configured) VDI instance, using the bundled MySQL database.

1. Make a backup of the VDI database.
    a. Open the `ndb_mgm` console by running the following command on the VDI Primary host.

```
# /opt/SUNWvda/mysql/bin/ndb_mgm
```

    b. Start the back up by running the following command at the `ndb_mgm` prompt.

```
ndb_mgm> START BACKUP
```

    c. Verify that backups have been created by checking the following directory on the two VDI Secondary hosts: `/var/opt/SUNWvda/mysql-cluster/BACKUP`.

2. (Optional) Perform a VDI update.
   For more information about updating VDI, refer to the About Updating to VDI 3.1 page.

3. Restore the backed up VDI database on the new VDI installation.
    a. On the first VDI Secondary host, run the following command.

```
/opt/SUNWvda/mysql/bin/ndb_restore -b <backup #> -n <nodeid #> -r
--backup_path=<path>
```

    b. On the second VDI Secondary host, run the following command.

```
/opt/SUNWvda/mysql/bin/ndb_restore -b <backup #> -n <nodeid #> -r
--backup_path=<path>
```

c. Log into the VDI Manager, and check that all the data is restored.
Go to http://<server name>:1800 (or http://localhost:1800 if remote administration has been disabled), and use root user credentials to log in.

How to Back Up and Restore Data (Remote MySQL Database)

The following information should be used when backing up data on a remote database in either a Single Host or High Availability (Remote MySQL Database) configuration.

Steps

1. Make a backup of the VDI database.
   a. Log into the remote database.

```
# zlogin <MySQL server>
```

   b. Change to the `usr/local/mysql/bin/` directory and run `mysqldump`.

```
# cd usr/local/mysql/bin/
# ./mysqldump --user=root -u root --opt checkdb | gzip > /dumptest1.sql.gz
```

2. (Optional) Perform a VDI update.

During the un-configuration, answer 'yes' to deleting the remote database. Use the same values for "privileged administrator", "VDA database" , "user name for the VDA database" used while executing `vda-config` for the re-configuration.

   For more information about updating VDI, refer to the About Updating to VDI 3.1 page.

3. Restore the backed up VDI database on the new VDI installation.
   a. Log into the remote database.

```
# zlogin <MySQL server>
```

   b. Change to the `usr/local/mysql/bin/` directory and run the following command.

```
# cd usr/local/mysql/bin/
# ./mysql --user=root checkdb < /primary-dump/dumptest1.sql
```