Oracle® SuperCluster Systems Zones on Application Domains

Configuration Guide

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Using This Documentation

- **Overview** – Describes how to set up zones on Application Domains in the SuperCluster system
- **Audience** – System administrators
- **Required knowledge** – Understanding of SuperCluster LDoms

Product Documentation Library

Documentation and resources for this product and related products are available at:

- SuperCluster M7 documentation library: http://docs.oracle.com/cd/E58626_01/index.html
- SuperCluster M6-32 documentation library: http://docs.oracle.com/cd/E41531_01/index.html
- SuperCluster T5-8 documentation library: http://docs.oracle.com/cd/E40166_01/index.html
- SuperCluster T4-4 documentation library: http://docs.oracle.com/cd/E21659_01/index.html

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Preparing to Configure Zones on Application Domains

These topics describe how to prepare to configure zones on the Application Domains.

▼ Update the Base Software

1. **Log in to MOS.**

   http://support.oracle.com

2. **Select the Patches & Updates tab.**

3. **In the Patch Search panel, select Product or Family (Advanced).**

4. **In the Product field, search for and select SuperCluster.**

   Select your SuperCluster system from the options.

5. **In the Release field, select the SuperCluster V2.0 release or later.**

6. **Click the Search button.**

7. **Select the QUARTERLY FULL STACK DOWNLOAD PATCH FOR SUPERCLUSTER (*release-date*) (PATCH) option.**

8. **Click the Read Me button to get installation instructions for the patch.**

9. **Click the Download button to download the ZIP files for the patch.**

Determine the Repository Location

Your SuperCluster system accesses the files that you need to set up zones on the Application Domains using one of the following repositories:

- Files are accessed remotely on Oracle's IPS repository
- Files are accessed locally on the ZFS storage appliance in the SuperCluster system

This procedure allows you to determine how you access the files that you need to set up the zones on the Database Domains.

1. **Log in to an Application Domain.**
2. **Type:**

   ```
   # pkg publisher
   ```

3. **In the output for that command, locate the URI field at the end of the output.**

   - If you see one of the following outputs in the URI field, then your system is set up to access files remotely, from Oracle's IPS repository. Go to "Install or Update Packages From the Remote Repository" on page 10.

     `https://pkg.oracle.com/solaris/exa-family`

     `https://pkg.oracle.com/solaris/support`

   - If you see one of the following outputs in the URI field, where *repository-location* is not `pkg.oracle.com`, but rather a local IPS repository that serves packages over `http`, then your system is set up to access files locally, from the ZFS storage appliance in the SuperCluster system. Go to "Install or Update Files From the Local Repository" on page 12.

     `file:///`*repository-location*

     `http://`*repository-location*

Install or Update Packages From the Remote Repository

1. **On the first Application Domain to contain zones, determine if you have the necessary packages to set up zones on the Application Domains:**

```
# pkg info supercluster supercluster/ssc-exavm supercluster/iscsi supercluster/ssctuner
```

   - **If all packages listed in the command are installed, then you have the correct packages. Go to Step 2.**

- **If you see that one or more of the packages listed in the command are *not* installed, then you must get the packages that you need. Go to Step 4.**

2. **Verify that the `exa-family` publisher is configured:**

```
# pkg publisher exa-family
```

If the output shows that a publisher for `exa-family` is not configured, add the `exa-family` publisher:

a. **Go to the following location:**

`https://pkg-register.oracle.com/`

b. **In the Certificate Requests page, select the Oracle Exadata Database Machine option.**

c. **In the Certificate Information page, download the key and certificate, and follow the instructions on the page to install the certificate.**

3. **Update those packages to the latest versions.**

a. **Update the packages from Oracle's IPS repository on this Application Domain:**

```
# pkg update pkg://exa-family/system/platform/supercluster
# pkg update pkg://exa-family/system/platform/supercluster/iscsi
# pkg update pkg://exa-family/system/platform/supercluster/ssc-exavm
# pkg update pkg://exa-family/system/platform/supercluster/osc-compmon
# pkg update pkg://exa-family/system/platform/supercluster/osc-exawatcher
```

b. **Repeat Step 3a for every Application Domain to contain zones.**

When you have updated the packages on every Application Domain to contain zones, go to "Verify Remaining Configuration Tool Installation" on page 16.

4. **Install the necessary packages:**

```
# pkg install pkg://exa-family/system/platform/supercluster
# pkg install pkg://exa-family/system/platform/supercluster/iscsi
# pkg install pkg://exa-family/system/platform/supercluster/ssc-exavm
# pkg install pkg://exa-family/system/platform/supercluster/osc-compmon
# pkg install pkg://exa-family/system/platform/supercluster/osc-exawatcher
```

5. **Repeat Step 2 through Step 4 for every Application Domain to contain zones.**

6. **Verify that the configuration tools are installed.**

   Go to "Verify Remaining Configuration Tool Installation" on page 16.

Install or Update Files From the Local Repository

This procedure describes7 how to install or update files from the local repository on the ZFS storage appliance.

Note - For more information on setting up a repository on the ZFS storage appliance, refer to MOS note 1503899.1.

---

1. **Type `ssh` to get in to the active ZFS storage controller through the 1GbE host management network.**

2. **Locate the project for the local repository on the ZFS storage appliance:**

```
stor-contr:> shares
stor-contr:shares> show
```

   The project for the repository should have an obvious name, such as `IPS-repos`, and should be shown towards the end of the output from the `show` command.

3. **Select that project for the repository:**

```
stor-contr:shares> select repository
```

   For example:

```
stor-contr:shares> select IPS-repos
```

4. **List the file systems in the repository area:**

```
stor-contr:shares IPS-repos> show
```

5. **For every file system that is displayed in the `show` command, select each file system in this area and set the `root` permissions to 755.**

   For example, if you see the following file systems in the output for the `show` command:

   - `solaris`
   - `s11repo`
   - `exa-family`

then type the following commands to set the root permissions to 755 for each of those file systems, ending with the `end` command after you have set the root permissions for the last file system in the list:

```
stor-contr:shares IPS-repos> filesystem solaris
stor-contr:shares IPS-repos/solaris (uncommitted)> set root_permissions=755
stor-contr:shares IPS-repos/solaris (uncommitted)> commit
stor-contr:shares IPS-repos/solaris (uncommitted)> done
stor-contr:shares IPS-repos> filesystem s11repo
stor-contr:shares IPS-repos/s11repo (uncommitted)> set root_permissions=755
stor-contr:shares IPS-repos/s11repo (uncommitted)> commit
stor-contr:shares IPS-repos/s11repo (uncommitted)> done
stor-contr:shares IPS-repos> filesystem exa-family
stor-contr:shares IPS-repos/exa-family (uncommitted)> set root_permissions=755
stor-contr:shares IPS-repos/exa-family (uncommitted)> commit
stor-contr:shares IPS-repos/exa-family (uncommitted)> done
stor-contr:shares IPS-repos> end
```

6. **On the first Application Domain to contain zones, determine if you have the necessary packages to set up zones on the Application Domains:**

```
# pkg info supercluster/ssc-exavm supercluster/iscsi supercluster/osc-exawatcher supercluster/osc-compmon
```

- **If you see that one or more of the packages listed in the command are *not* installed, then you must get the packages that you need. Go to Step 7.**
- **If all four packages listed in the command above are installed, then you have the files that you need. Follow these instructions to determine if you have the latest versions of the packages:**

  a. **Log in to MOS:**

     http://support.oracle.com

  b. **Select the `Patches & Updates` tab.**

  c. **In the Patch Search panel, select `Product or Family (Advanced)`.**

  d. **In the Product field, search for and select SuperCluster.**

     Select your SuperCluster system from the options.

  e. **In the Release field, select all releases.**

f. **Choose `Description contains` in the pull-down menus, then type `exa-family` in the search field.**

g. **Click the Search button.**

h. **In the Patch Search Results page, select the option for the most recent release (2.3 or later) and click the `Read Me` button.**

i. **Compare the version number of each package shown in the Read Me file to the version numbers displayed when you entered the `pkg info` command earlier in these procedures.**

- If the version numbers match for each package, then you have the latest versions. Go to Step 11.

- If the versions of the packages on your local repository are older than the package versions listed in the Read Me file, or if there is no package version information in the Read Me file, then you must update the packages on the local repository. Go to Step 8.

7. **On a system that has access to the Internet, locate the repository ISO image from the remote Oracle site.**

a. **Log in to MOS:**

`http://support.oracle.com`

b. **Select the Patches & Updates tab.**

c. **In the Patch Search panel, select Product or Family (Advanced).**

d. **In the Product field, search for and select SuperCluster.**

Select your SuperCluster system from the options.

e. **In the Release field, select all releases.**

f. **Choose Description Contains in the pull-down menus, then enter `exa-family` in the search field.**

g. **Click the Search button.**

8. **In the Patch Search Results page, select the option for the most recent release (2.3 or later) and click the Download button.**

   Do not unzip the file at this time.

9. **Update the local repository on the ZFS storage appliance.**

   a. **Locate the ISO image ZIP file that you downloaded in Step 8 and copy that file to a temporary directory on the first PDomain.**

      For example, copy the ZIP file to the `/var/tmp` directory on the first PDomain.

   b. **Unzip the ISO image ZIP file.**

   c. **Locate the ISO image in this directory.**

   d. **Update the local repository on the ZFS storage appliance:**

```
# mkdir -p tmp-dir
# mount -F hsfs iso-name.iso tmp-dir
# pkgrecv -s /tmp-dir/repo -d path-to-repo-on-ZFSSA/repo '*'
# umount tmp-dir
# pkgrepo rebuild -s path-to-repo-on-ZFSSA/repo
```

      where:

      - *tmp-dir* is the name of the temporary directory that you use as a mount point.

      - *iso-name*`.iso` is the name of the ISO image.

      - *path-to-repo-on-ZFSSA* is the path to the repository on the ZFS storage appliance. This path appears after the `file://` output from the `pkg publisher` command that you entered in the section "Determine the Repository Location" on page 10.

      The single quotes at the end of the second line ('*') are quotes formed when you select the unshifted double-quotes (") key on your keyboard (single quotes that are either straight up and down or pointing left).

10. **Install the packages onto each Application Domain with zones where you will be setting up zones.**

    a. **Log in to the first Application Domain with zones.**

    b. **Install the necessary packages:**

```
# pkg install pkg://exa-family/system/platform/supercluster
# pkg install pkg://exa-family/system/platform/supercluster/iscsi
```

```
# pkg install pkg://exa-family/system/platform/supercluster/ssc-exavm
# pkg install pkg://exa-family/system/platform/supercluster/osc-exawatcher
# pkg install pkg://exa-family/system/platform/supercluster/osc-compmon
```

11. **Repeat these steps for every Application Domain.**

12. **When you have installed the packages on every Application Domain that will contain zones, go to "Verify Remaining Configuration Tool Installation" on page 16.**

Verify Remaining Configuration Tool Installation

1. **Log in to the first Application Domain to contain zones.**

2. **Change directories to the `/opt/oracle.supercluster` directory:**

   ```
   # cd /opt/oracle.supercluster
   ```

3. **Verify that the necessary tools and scripts are available in the `bin` and `zonetools` subdirectories.**

   - To verify the tools and scripts are in the `bin` subdirectory, type:

     ```
     # ls bin
     ```

     You should see the following tools and scripts:

     - `applyconfig_ssc.sh`
     - `dcli`
     - `gen_cellaffinity_ssc.sh`
     - `ib_set_node_desc_ssc.sh`
     - `iscsi-lun.sh`
     - `iscsi-zpool.sh`
     - `oidcli`
     - `setup_ssh_eq.sh`
     - `zonemanifest.sh`

   - To verify that the tools and scripts are in the `zonetools` subdirectory, type:

     ```
     # ls zonetools
     ```

     Verify that you have the `ssc_exavm` script in the `zonetools` directory.

4. **Repeat Step 1 through Step 3 for all other Application Domains to contain zones.**

Creating Zones on Application Domains

This topic provides instructions for setting up zones on Application Domains.

▼ Create Zones on Application Domains

1. **Locate the control domain on your system:**

   a. **Log in to the first domain in your system.**

   b. **Type:**

   ```
   # virtinfo -a
   ```

   Output similar to the following appears:

   ```
   Domain role: LDoms control I/O service root
   Domain name: primary
   Domain UUID: 96ef6675-114f-e6b1-d29b-90dd48693efb
   Control domain: etc25dbadm01
   Chassis serial#: AK00083251
   ```

   c. **Locate the line beginning with `Control domain`: in the output, highlighted in the example output above.**

   The domain shown in this line is your control domain. If you are logged in to this particular domain when you enter the `virtinfo -a` command, you also see the value `LDoms control I/O service root` in the `Domain role:` line for this domain.

2. **Log in to the control domain on your system.**

   ```
   # ssh control-dom
   Password:
   control-dom#
   ```

   For example:

   ```
   # ssh etc4m7dbadm0101
   ```

```
Password:
root@etc4m7dbadm0101#
```

3. View information on the domains in your system:

control-dom# **ldm list**

```
NAME                            STATE      FLAGS   CONS    VCPU  MEMORY   UTIL  NORM  UPTIME
primary                         active     -n-cv-  UART    256   244224M  0.3%  0.3%  32d 11m
ssccn1-dom1                     active     -n----  5001    256   244224M  0.4%  0.4%  32d 11m
ssccn1-dom2                     active     -n----  5002    256   244224M  0.0%  0.0%  32d 11m
ssccn1-dom3                     active     -n--v-  5003    16    32G      0.1%  0.1%  32d 11m
ssccn1-io-db-medium             active     -n----  5008    32    64G      0.7%  0.7%  5h 46m
ssccn1-io-db-small              active     -n----  5007    16    32G      0.2%  0.2%  6h 8m
ssccn1-io-etc4m7-ioappadm0101   active     -n----  5006    16    32G      0.1%  0.1%  10h 21m
ssccn1-io-etc4m7zioadm0101      active     -n----  5004    32    64000M   1.3%  1.3%  5h 32m
```

4. Locate the Application Domain where you want to create zones.

For example, using the output above, you could create zones on the I/O Application Domain:

```
NAME                            STATE      FLAGS   CONS    VCPU  MEMORY   UTIL  NORM  UPTIME
primary                         active     -n-cv-  UART    256   244224M  0.3%  0.3%  32d 11m
ssccn1-dom1                     active     -n----  5001    256   244224M  0.4%  0.4%  32d 11m
ssccn1-dom2                     active     -n----  5002    256   244224M  0.0%  0.0%  32d 11m
ssccn1-dom3                     active     -n--v-  5003    16    32G      0.1%  0.1%  32d 11m
ssccn1-io-db-medium             active     -n----  5008    32    64G      0.7%  0.7%  5h 46m
ssccn1-io-db-small              active     -n----  5007    16    32G      0.2%  0.2%  6h 8m
ssccn1-io-etc4m7-ioappadm0101   active     -n----  5006    16    32G      0.1%  0.1%  10h 21m
ssccn1-io-etc4m7zioadm0101      active     -n----  5004    32    64000M   1.3%  1.3%  5h 32m
```

5. Exit out from the control domain:

control-dom# **exit**

6. Log in to the Application Domain:

**ssh** *app-dom*
Password:
app-dom#

For example:

```
# ssh etc4m7-ioappadm0101
Password:
root@etc4m7-ioappadm0101#
```

7. Determine if the Application Domain is a dedicated domain or an I/O Domain:

app-dom# **svcprop -a id|grep configuration/ldom_type**

- If the Application Domain is a dedicated domain, output similar to the following appears:

```
configuration/ldom_type astring dedicated
```

- If the Application Domain is an I/O Domain, output similar to the following appears:

```
configuration/ldom_type astring io
```

8. **Verify that this is an Application Domain:**

app-dom# **svcprop -a id|grep configuration/domain_type**

Output similar to the following appears:

```
configuration/domain_type astring app
```

9. **Install or update packages from the remote or local repository.**

See "Preparing to Configure Zones on Application Domains" on page 9.

10. **Determine if you currently have zones and/or a template zone on this Application Domain.**

The action you take next varies, depending on whether you currently have zones or a template zone on this Application Domain:

- If you currently have zones on this Application Domain, you will make a note of those zone names so that you can give the new zones different names from the existing zones on this Application Domain.
- If you do not currently have a template zone on this Application Domain, you can create one later in this process, if you want. Creating the template zone on the Application Domain expedites the process of creating multiple zones. When you create the template zone on each Application Domain, the core Oracle Solaris packages are installed on each Application Domain. When zones are created later on, the core Oracle Solaris packages can be cloned from the template zone onto each of the zones that are created on the Application Domains. This process can significantly reduce the amount of time it takes to install core Oracle Solaris packages on each zone.

Enter this command to determine if you currently have zones and/or a template zone on this Application Domain:

app-dom# **zoneadm list -cv**

- If you see output similar to the following:

```
ID  NAME     STATUS       PATH                           BRAND      IP
 0  global   running      /                              solaris    shared
```

then this Application Domain does not currently contain any zones or a template zone. You can create a template zone in this case, if you want (covered later in these procedures), and you are free to name the new zones you create with any name that you wish.

- If you see output similar to the following:

```
ID  NAME     STATUS       PATH                         BRAND      IP
 0  global   running      /                            solaris    shared
 -  s10-zone configured   /export/home/s10-zone        solaris10  shared
```

then this Application Domain currently contains a zone called `s10-zone`, but it does not have a template zone. In this case, you can create a template zone using procedures provided later in these steps, if you want, and when you create additional zones, make sure to name the new zones something other than the `s10-zone` name currently used by the existing zone.

- If you see output similar to the following:

```
ID  NAME                 STATUS     PATH                            BRAND    IP
 0  global               running    /                               solaris  shared
61  etc4m7zdbadm010206   running    /zoneHome/etc4m7zdbadm010206    solaris  excl
65  etc4m7-appadm0103_T  installed  /zoneHomeT/etc4m7-appadm0103_T  solaris  excl
```

then this Application Domain currently contains a zone called `etc4m7zdbadm010206`, and it also contains a template zone, shown with a "_T" at the end of the file name (`etc4m7-appadm0103_T` in this example). In this case, you do not have to create a template zone later on in these procedures, and when you create additional zones, make sure to name the new zones something other than the `etc4m7zdbadm010206` name currently used by the existing zone.

11. Set up passwordless ssh from the Application Domain to the ZFS storage appliance:

a. Log in to the Application Domain, if you are not already logged in:

```
# ssh app-dom
Password:
app-dom#
```

For example:

```
# ssh etc4m7-appadm0103
Password:
root@etc4m7-appadm0103#
```

b. Enter the following command on the Application Domain:

```
root@etc4m7-appadm0103# /usr/bin/ssh-keygen -t rsa -f ~/.ssh/id_rsa -N "" -q ;
 sync;sync;sync;
```

c. Enter the following command on the Application Domain:

```
root@etc4m7-appadm0103# cat .ssh/id_rsa.pub
```

d. From the output produced, copy the information between `ssh-rsa` and the login information for your Application Domain (in this case, `root@etc4m7-appadm0103`).

Below is example output, with the relevant information that you would need to copy highlighted in **bold** font:

```
ssh-
rsa AAAAB3NzaC1yc2EAAAABIwAAAQEA6eqf6BJTIVHKgoEGNnon6sS9m6pFp0f4qvpyHCNudStJRv8tR
+z4fFNpLb9U3ImS6asENT4+1GxoLTsNrs0CzhITyaRVTuRuHBD0CHT17DrSZxm/
oAwxaJhxjAC0Viq4KAP28daFjBODvIMLcB/paiLlNo4zLQsNbU3aDfrcL7R9yRtni63lgAM2U0BWN/
V6HUGvSK6rlhv7WQIucv4PlyjOrjPU31IMkO0MSrgxyBwfkvijiEN
+55BJFN8/7xOTMqqZOdDryw0fVS0Wyc2lvV1vzF8MidVSAhGkz2Kwyz7VuPujeB7U
+wGylpdgW877fmxSYGplQMBkqPkANqX9lQ== root@etc4m7-appadm0103
```

e. Enter the following commands, entering the necessary password when prompted:

```
root@etc4m7-appadm0103# ssh -o StrictHostKeyChecking=no zfs-controller1-
hostname.domain-name
zfs-controller1-hostname:> exit
```

where:

- *zfs-controller1-hostname* is the host name for the first storage head on the ZFS storage appliance
- *domain-name* is the domain name for your company

For example:

```
root@etc4m7-appadm0103# ssh -o StrictHostKeyChecking=no etc4m7-h1-storadm.us.
example.com
etc4m7-h1-storadm:> exit
```

f. Enter the following commands, entering the necessary passwords when prompted:

```
root@etc4m7-appadm0103# ssh -o StrictHostKeyChecking=no zfs-controller1-hostname
zfs-controller1-hostname:> exit
```

where *zfs-controller1-hostname* is the host name for the first storage head on the ZFS storage appliance. Note that you do not append your company's domain name for these two entries. For example:

```
root@etc4m7-appadm0103# ssh -o StrictHostKeyChecking=no etc4m7-h1-storadm
etc4m7-h1-storadm:> exit
```

g. Log in to the first storage head on the ZFS storage appliance:

```
# ssh zfs-controller1-hostname
Password:
zfs-controller1-hostname:>
```

For example:

```
# ssh etc4m7-h1-storadm
Password:
etc4m7-h1-storadm:>
```

h. Enter the following commands on the first storage head on the ZFS storage appliance:

```
etc4m7-h1-storadm:> configuration users
etc4m7-h1-storadm:configuration users> select root
etc4m7-h1-storadm:configuration users root> preferences keys
etc4m7-h1-storadm:configuration users root preferences keys> create
etc4m7-h1-storadm:configuration users root preferences key (uncommitted)> set
 type=RSA
```

i. Enter the following command:

```
etc4m7-h1-storadm:configuration users root preferences key (uncommitted)> set
 key="copied-output"
```

where *copied-output* is the output that you copied from Step 11d, within quotation marks. For example:

```
etc4m7-h1-storadm:configuration users root preferences key (uncommitted)> set
 key="AAAAB3NzaC1yc2EAAAABIwAAAQEA6eqf6BJTIVHKgoEGNnon6sS9m6pFp0f4qvpyHCNudStJRv8tR
+z4fFNpLb9U3ImS6asENT4+1GxoLTsNrs0CzhITyaRVTuRuHBD0CHT17DrSZxm/
oAwxaJhxjAC0Viq4KAP28daFjBODvIMLcB/paiLlNo4zLQsNbU3aDfrcL7R9yRtni63lgAM2U0BWN/
V6HUGvSK6rlhv7WQIucv4PlyjOrjPU31IMkO0MSrgxyBwfkvijiEN
+55BJFN8/7xOTMqqZOdDryw0fVS0Wyc2lvV1vzF8MidVSAhGkz2Kwyz7VuPujeB7U
+wGylpdgW877fmxSYGplQMBkqPkANqX9lQ=="
```

j. Provide a comment for these changes:

```
etc4m7-h1-storadm:configuration users root preferences key (uncommitted)> set
 comment="comment"
```

where comment is a unique comment for the changes you just applied, such as the name of the Application Domain and the date. For example:

```
etc4m7-h1-storadm:configuration users root preferences key (uncommitted)> set
 comment="etc4m7-appadm0103-20170420"
```

k. Commit these changes:

```
etc4m7-h1-storadm:configuration users root preferences key (uncommitted)> commit
```

l. Exit back to the Application Domain login prompt:

```
etc4m7-h1-storadm:configuration users root preferences key> done
etc4m7-h1-storadm:> exit
root@etc4m7-appadm0103#
```

12. If you do not have a template zone on the Application Domain and you would like to create one, do so using the following command.

From the `ssc_exavm` directory, create the template zone:

```
root@etc4m7-appadm0103# cd /opt/oracle.supercluster/zonetools/ssc_exavm
root@etc4m7-appadm0103:/opt/oracle.supercluster/zonetools/ssc_exavm# ./ssc_exavm -
template
```

The output shown below is abbreviated from the actual output.

```
INFO: Logging all actions in /opt/oracle.supercluster/zonetools/ssc_exavm/tmp/etc4m7-
appadm0103-20121129093659.log and traces in /opt/oracle.supercluster/zonetools/ssc_exavm/tmp/etc4m7-
appadm0103-20121129093659.trc and o/p in /opt/oracle.supercluster/zonetools/ssc_exavm/tmp/etc4m7-
appadm0103-20121129093659.out
INFO: Begin Template Creation
INFO: Checking for etc4m7-appadm0103_T
INFO: Checking for etc4m7-appadm0103_T
INFO: Creating a template Virtual Guest for future use
INFO: 2012-11-29 09:37:14 : Executing zfs create rpool/etc4m7-appadm0103_T

INFO: Executing /opt/oracle.supercluster/zonetools/ssc_exavm/tmp/vmtrash/8461.SysCall.0.cmd

INFO: Running System command ...
R  R
SUCCESS: Done
INFO: 2 : Completed Command Execution
INFO: 2012-11-29 09:37:16 : Completed Command Execution
INFO: 2012-11-29 09:37:16 : Executing zfs set quota=6G rpool/etc4m7-appadm0103_T
```

```
INFO: Executing /opt/oracle.supercluster/zonetools/ssc_exavm/tmp/vmtrash/8461.SysCall.1.cmd

... (OUTPUT ABBREVIATED) ...

INFO: Running System command ...
R
SUCCESS: Done
INFO: 1 : Completed Command Execution
INFO: 2012-11-29 09:51:25 : Completed Command Execution
SUCCESS: Completed creation of Virtual guests

INFO: Virtual Guest creation Summary :

INFO: Completed : etc4m7-appadm0103_T  Data file :: none
```

The name for the template zone for this particular domain is *app-dom*_T (for example, etc4m7-appadm0103_T).

Enter the following command to verify that the template zone was created successfully:

```
root@etc4m7-appadm0103# zoneadm list -cv
ID  NAME                 STATUS   PATH                           BRAND    IP
0   global               running  /                              solaris  shared
65  etc4m7-appadm0103_T  running  /zoneHomeT/etc4m7-appadm0103_T  solaris  excl
```

13. **Navigate to the `ssc_exavm` directory:**

```
root@etc4m7-appadm0103# cd /opt/oracle.supercluster/zonetools/ssc_exavm
```

14. **Locate the `testzone_app.xml` file within that directory.**

15. **Make a backup copy of the `testzone_app.xml` file:**

```
root@etc4m7-appadm0103# cp testzone_app.xml testzone_app.xml.orig
```

16. **Determine the entries that you want to use for the zones that you want to create in the Application Domain.**

    In the next step, you will edit the testzone_app.xml file to replace the default entries in that file with zone-specific entries. Use the following table to determine what the default values are and what values you want to use for the zone that you want to create in the Application Domain.

    Note the following:

- If there is a default entry that should remain as-is when you make your zones-specific changes to the `testzone_app.xml` file, that entry will be repeated in the Your Zone-Specific Entry column to show you that this default entry should remain as-is in your edited file.
- The SLAVES fields are empty in the generic `testzone_app.xml` file, and should remain empty in your zone-specific edited version of the file.

Section	Field	Default Entry	Your Zone-Specific Entry
ID	id	testappzone01	
HOSTINFO	DNSSERVERS	192.168.100.1, 192.168.200.1	
	DEFAULTGW	192.168.100.1	
	DOMAINNAME	mydomain.com	
	NODETYPE	app	app
	NTPSERVERS	192.168.110.1	
	TIMEZONE	America/Los_Angeles	
	VIRTUALNODENAME	testappzone01	
	VIRTUALOSTYPE	SolarisZone	SolarisZone
NETWORKS, 1st NETWORK Subsection (Management Network)	id	c0_testappzone01.us.oracle.com_admin	
	GATEWAY	192.168.100.1	
	INTERFACENAME	scm_ipmp0	scm_ipmp0
	IPADDRESS	192.168.100.10	
	NETMASK	255.255.240.0	
	NETWORKHOST	testappzone01	
	NETWORKNAME	admin	admin
	NETWORKTYPE	GigE	GigE
	NETWORKVERSION	1.0	1.0
	SLAVES	*Empty*	*Leave empty*
NETWORKS, 2nd NETWORK Subsection (Client Access Network)	id	c0_testappzone01.us.oracle.com_client	
	GATEWAY	192.168.200.1	
	INTERFACENAME	sc_ipmp0	sc_ipmp0
	IPADDRESS	192.168.200.10	
	NETMASK	255.255.240.0	
	NETWORKHOST	testappclnt01	
	NETWORKNAME	client	client

Section	Field	Default Entry	Your Zone-Specific Entry
	NETWORKTYPE	XGigE	XGigE
	NETWORKVERSION	1.0	1.0
	SLAVES	*Empty*	*Leave empty*
NETWORKS, 3rd NETWORK Subsection (Private IB Network)	id	c0_testappzone01.us.oracle.com_stor	
	GATEWAY	*Empty*	*Leave empty*
	INTERFACENAME	stor_ipmp0	stor_ipmp0
	NETWORKPKEY	8503	8503
	IPADDRESS	192.168.128.240	
	NETMASK	255.255.252.0	
	NETWORKHOST	testappzone01-stor	
	NETWORKNAME	private	private
	NETWORKTYPE	IB	IB
	NETWORKVERSION	1.0	1.0
	SLAVES	*Empty*	*Leave empty*
SPACE/STORAGE	id	root	root
	MOUNTPOINT	/	/
	QUOTA	100gb	
	STORAGEBASE	testappzone01	
	STORAGEVERSION	1.0	1.0
CPU	CORELOCKED	no	
	CPUPOOLPREFIX	testappzone01	
	CPUSHARED	no	
	CPUTYPE	DevDynamic	
	CPUVERSION	1.0	
	MAX	4	
	MIN	4	
	POLICY	Static	

17. **Edit the `testzone_app.xml` file with the necessary information for the zone that you will be creating on this Application Domain.**

    Use the information that you entered in the table in the previous step to replace the default values in the file with the zone-specific values.

18. **Create the zone on the Application Domain using the edited `testzone_app.xml` file, which now contains the zone-specific information:**

```
root@etc4m7-appadm0103# ./ssc_exavm -create -xml testzone_app.xml
```

At the end of the process, you should see a confirmation message similar to the following:

```
INFO: Completed: etc4m7zdbadm010206  Data file : : testzone_app.xml
```

19. Verify that the zone was created on the Application Domain successfully:

```
root@etc4m7-appadm0103# zoneadm list -cv
```

Output similar to the following appears - note the addition of the new zone:

```
ID  NAME                   STATUS     PATH                              BRAND     IP
0   global                 running    /                                 solaris
 shared
67  etc4m7zdbadm010206     running    /zoneHome/etc4m7zdbadm010206      solaris   excl
-   etc4m7-appadm0103_T    installed  /zoneHomeT/etc4m7-appadm0103_T    solaris   excl
```

20. Log into the new zone on the Application Domain to verify that it was created successfully:

```
root@etc4m7-appadm0103# zlogin etc4m7zdbadm010206
root@etc4m7zdbadm010206#
```

21. Verify that there are no duplicate addresses:

```
root@etc4m7zdbadm010206# ipadm show-addr
```

Output similar to the following should appear:

```
ADDROBJ           TYPE       STATE     ADDR
lo0/v4            static     ok        127.0.0.1/8
scm_ipmp0/v4      static     ok        10.111.22.19/22
sc_ipmp0/v4       static     ok        10.111.222.20/22
bondib0/v4        static     ok        192.111.10.15/22
lo0/v6            static     ok        ::1/128
```

You should not see `duplicate` in the `STATE` column for the zone that you just created. If you do see duplicate IP addresses in the output:

a. Remove the duplicate address:

```
root@etc4m7zdbadm010206# ipadm delete-addr ADDROBJ-entry
```

b. Re-add the address:

```
root@etc4m7zdbadm010206# ipadm create-addr -T static -a local=new-ADDR  ADDROBJ-entry
```

For example:

```
root@etc4m7zdbadm010206# ipadm delete-addr net0/v4
root@etc4m7zdbadm010206# ipadm create-addr -T static -a local=10.7.8.9/24 net0
net0/v4
```

c. **Repeat Step 16 through Step 20 to replace the duplicate IP address in the `testzone_app.xml` file.**

d. **Create the zone again, then run Step 21 again to verify that there are no duplicate addresses after the correction.**

22. **Log out of the new zone:**

```
root@etc4m7zdbadm010206# exit
root@etc4m7-appadm0103#
```