

Oracle SuperCluster Configuration Backup Utility - Recovery Guide

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Using This Documentation

- **Overview** – Describes how to recover Oracle SuperCluster components using `osc-config-backup` data.
- **Audience** – System administrators and authorized service providers.
- **Required knowledge** – Advanced experience in system recovery.

Product Documentation Library

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

- SuperCluster M8 and SuperCluster M7 library – http://docs.oracle.com/cd/E58626_01
- SuperCluster T5-8 library – http://docs.oracle.com/cd/E40166_01

Feedback

Provide feedback about this documentation at <http://www.oracle.com/goto/docfeedback>.

Understanding the Recovery Process

These topics describe the recovery process:

- [“Recovery Overview” on page 9](#)
- [“Recovery Scenarios” on page 9](#)
- [“Recovery Data” on page 10](#)

Recovery Overview

When `osc-config-backup` is used to back up SuperCluster components prior to a failure, you can use the `osc-config-backup` data to recover SuperCluster components, should the need arise.

This document describes how to perform a recovery for specific scenarios. This document is updated frequently, so check back for an updated document.

Note - More advanced recoveries are possible in coordination with Oracle Support.

To back up SuperCluster components with the `osc-config-backup` utility, refer to [Oracle SuperCluster Configuration Backup Utility - Backup Guide](#).

Release notes for the backup and recovery processes are available from My Oracle Support (<https://support.oracle.com>). Refer to these MOS Doc IDs:

- `osc-config-backup` release notes – 1934129.1
- Recovery process release notes – 1934130.1

Recovery Scenarios

This guide describes these recovery scenarios:

- [“Restoring an Oracle Solaris Zone” on page 13](#)
- [“Rolling Back an I/O Domain on SuperCluster M8 and SuperCluster M7” on page 19](#)
- [“Restore a Domain Configuration” on page 24](#)
- [“Restore an IB Switch” on page 25](#)
- [“Restore the Ethernet Management Switch” on page 28](#)
- [“Restore an Oracle ILOM Configuration” on page 29](#)

Recovery Data

The `osc-config-backup` file system presented from the ZFS storage appliance contains these directories, which are all accessible through the IB or management (read-only) networks.

Directory	Includes
<code>domains</code>	<code>zpool</code> stream dumps, boot arguments (enables booting backup iSCSI LUN), and zone backups.
<code>exadata</code>	Exadata storage cell griddisk sizing information.
<code>explorers</code>	Explorer output.
<code>ib-switches</code>	Configuration, logs, and topology information.
<code>log</code>	Log of <code>osc-config-backup</code> executions.
<code>mngt-switch</code>	<code>running-config</code> and switch firmware.
<code>service-processors</code>	SP XML backup.
<code>ssc-data</code>	Initial SuperCluster deployment tool data (SSCU) and Java OneCommand (JOC) data.
<code>zfs-sa</code>	ZFS storage appliance support extractor output and configuration backup.

Note - For security reasons, the content of these directories cannot be accessed by the root user. To get access, connect as root to a domain and run `su - oscbackR` to become the `oscbackR` user. An `osc-config-backup` directory containing all the backup directories is available in the home directory. From there, data needed for recovery can be copied to a directory that is accessible by root.

Note - `osc-config-backup` only backs up the configuration information of the ZFS storage appliance. It is the customer's responsibility to ensure that all data on the ZFS storage appliance is backed up through replication (to a remote ZFS backup appliance) or NDMP. For more details about NDMP, refer to the white paper titled *NDMP Implementation Guide for the Sun ZFS Storage Appliance*, available from:<http://www.oracle.com/technetwork/server-storage/sun-unified-storage/documentation>

Restoring an Oracle Solaris Zone

A zone restoration brings a non-global zone back to the running state in the global zone and on the raw storage that hosted this zone at backup time.

The global zone must be healthy, and the raw storage (either local disk, virtual disk, or iSCSI LUN from the ZFSSA) must be available.

A zone can be restored if its rpool and configuration have been deleted.

These topics describe how to restore an Oracle Solaris zone:

- [“Restore the Zone Configuration” on page 13](#)
- [“Restore the Zonpath” on page 14](#)
- [“Restore the /u01 of a Database Zone” on page 15](#)
- [“Bring the Zone Back to a Running State” on page 16](#)

▼ Restore the Zone Configuration

1. **Check if the zone configuration still exists.**

```
# zonecfg -z myzone info
```

If the command returns `No such zone configured`, the zone configuration must be restored.

2. **If the zone configuration does not exist, restore it.**

Locate the `.cfg` configuration backup file in `osc-config-backup/domains/mydomain/SolarisZones/myzone` and run this command:

```
root# mkdir /sharedPath ; chmod 777 /sharedPath
root# su - oscbackR
oscbackR$ cd osc-config-backup/domains/mydomain/SolarisZones/myzone
oscbackR$ cp myzone.date.cfg myzone.data.info /sharedPath
oscbackR$ exit
root# zonecfg -z myzone -f /sharedPath/myzone.date.cfg
```

▼ Restore the Zonepath

If the data located in the zonepath or in the zone's rpool has been damaged or lost, this procedure provides instructions on how to restore this data.

If the zonepath is healthy, ignore this procedure.



Caution - When following the process to restore the zonepath, do not try to install the zone, and do not run the `zoneadm -z myzone install` command. Doing so can corrupt the zonepath that is being restored.

Backing up a zone generates a ZFS stream out of the zonepath. The restore procedure consists of receiving this stream back.

1. Obtain the zonepath.

```
# zonepath=`zonecfg -z myzone info zonepath | awk '{print $2}'`
```

2. Check if the zonepath's dataset is still available.

```
# zfs list -H -o name -t filesystem $zonepath
```

3. Restore a zonepath that is damaged or not available.

- a. Check if the zpool hosting the zonepath is available. Obtain the zpool from the .info file in `osc-config-backup/domains/mydomain/SolarisZones/myzone`.**

```
# pool=`grep zonepath /sharedPath/myzone.data.info | grep pool | awk '{print $3}'`
```

- b. Check if the zpool is online.**

```
# zpool list $pool
```

- c. If the pool is not online, obtain the raw device used by the pool, then recreate it.**

```
# device=`grep zonepath /sharedPath/myzone.data.info | grep 'raw device' | awk '{print $4}'`
# zpool create $pool $device
```

- d. Once the pool is online, obtain the dataset, then obtain its mount point, then recreate the dataset associated with the zonepath.**

```
# dataset=`grep zonepath /sharedPath/myzone.data.info | grep dataset | awk '{print $3}'`
# mountpoint=`grep zonepath /sharedPath/myzone.data.info | grep mountpoint | awk '{print $3}'`
# zfs create $dataset
```

4. Receive the zonepath stream and set its mount point.

Locate the .zfs file in `osc-config-backup/domains/mydomain/SolarisZones/myzone` and receive it.

```
root# su - oscbackR
oscbackR$ cd osc-config-backup/domains/mydomain/SolarisZones/myzone
oscbackR$ cp rpool.backup.data.zfs /sharedPath
oscbackR$ exit
root# cat /sharedPath/rpool.backup.data.zfs | zfs receive -vF $dataset
root# zfs set mountpoint=$mountpoint $dataset
```

5. Destroy the remaining snapshot.

```
# zfs destroy -r $dataset@osc-config-backup
```

6. Ensure that the zonepath dataset is mounted.

```
# zonepath=`zonecfg -z myzone info zonepath | awk '{print $2}'`
# dataset=`zfs list -Ho name -t filesystem $zonepath`
# zfs mount $dataset
```

▼ Restore the /u01 of a Database Zone

Database zones can have their /u01 located on a separate dataset. If so, the backup creates a ZFS stream for this second dataset and a specific restore is required.

1. Check whether a Database zone has its /u01 on a separate dataset.

```
# zonecfg -z myzone info fs dir=/u01
```

2. If /u01 is not available or damaged, restore it.

- a. To proceed with the /u01 restore first check if the zpool hosting /u01 is available. Obtain the zpool from the .info file.

```
# pool=`grep '/u01' /sharedPath/myzone.data.info | grep pool | awk '{print $3}'`
```

- b. Check if the zpool is online.

```
# zpool list $pool
```

- c. If the pool is not online, obtain the raw device used by the pool, then recreate it.

```
# device=`grep '/u01' /sharedPath/myzone.data.info | grep 'raw device' |awk '{print $4}'`  
# zpool create $pool $device
```

- d. If the dataset is not located directly in the zpool, recreate the dataset's parent.

```
# u01Parent=${u01path%/*}  
# zfs create $u01Parent
```

3. Receive the /u01 stream and set its mount point.

- a. Locate the .zfs file in osc-config-backup/domains/mydomain/SolarisZones/myzone and receive it.

```
root# su - oscbackR  
oscbackR$ cd osc-config-backup/domain/mydomain/SolarisZones/myzone  
oscbackR$ cp u01pool.backup.date.zfs /sharedPath  
oscbackR$ exit  
root# cat /sharedPath/u01pool.backup.date.zfs | zfs receive -vF $u01path
```

- b. Obtain the mount point from the backup data and set it.

```
# mountpoint=`grep '/u01' /sharedPath/myzone.data.info | grep mountpoint | awk '{print $3}'`  
# zfs set mountpoint=$mountpoint $u01path
```

4. Destroy the remaining snapshot.

```
# zfs destroy $u01path@osc-config-backup
```

▼ Bring the Zone Back to a Running State

- Type.

```
# zoneadm -z myzone detach -F
```



```
# zoneadm -z myzone attach -u  
# zoneadm -z myzone boot
```

Note - The detach command might fail with the message *myzone: must be installed before detach*. You can safely ignore such messages.

Restoring Domains

These topics describe how to restore domains:

- [“Rolling Back an I/O Domain on SuperCluster M8 and SuperCluster M7” on page 19](#)
- [“Restore a Domain Configuration” on page 24](#)

Rolling Back an I/O Domain on SuperCluster M8 and SuperCluster M7

Rolling back an I/O Domain brings it back to the running state in the primary domain and on the raw storage that hosted this domain at backup time.

The primary domain must be healthy, and the raw storage must be available. This raw storage consists of an iSCSI LUN for the rpool, and on SuperCluster M8 and SuperCluster M7, a second iSCSI LUN for the bpool.

An I/O Domain can be rolled back if its rpool or bpool have been damaged or lost, but not if the domain has been destroyed purposefully using the I/O Domain Creation Tool.

Note - On SuperCluster M8 and SuperCluster M7, the bpool should be kept in sync with the rpool’s boot environments.

These topics describe how to roll back an I/O Domain on SuperCluster M8 and SuperCluster M7:

- [“Connect to the I/O Domain Console” on page 20](#)
- [“Roll Back the Domain's rpool” on page 21](#)
- [“Roll Back the Domain's bpool” on page 22](#)

▼ Connect to the I/O Domain Console

1. Before starting the restore process, identify the primary domain that is hosting the I/O Domain.

a. Identify the `list_constraints` files.

For each primary domain, the backup tool creates a `.list_constraints` file.

```
root# su - oscbackR
oscbackR$ cd osc-config-backup/domains
oscbackR$ find . -name *.list_constraints
./ssc1dbadm0101/ssc1dbadm0101.2016.06.14.05.01.list_constraints
./ssc1dbadm0201/ssc1dbadm0201.2016.06.14.05.01.list_constraints
```

b. Locate the `list_constraints` file that lists the I/O Domain.

An I/O Domain is only listed in one of the `.list_constraints` files.

Use the `grep` command to identify which `.list_constraints` file lists the I/O Domain. Replace *mydomain* with either the I/O Domain's name or host name.

```
oscbackR$ grep -c mydomain ./ssc1dbadm0201/ssc1dbadm0201.2016.06.14.05.01.
list_constraints
0
oscbackR$ grep -c mydomain ./ssc1dbadm0101/ssc1dbadm0101.2016.06.14.05.01.
list_constraints
10
```

In this example, the I/O Domain is listed in the `./ssc1dbadm0101/ssc1dbadm0101.2016.06.14.05.01.list_constraints` file. Based on that file name, you can determine that `ssc1dbadm0101` is the primary domain that hosts the I/O Domain.

2. Connect to the primary domain.

A best practice during a restoration involves staying connected to the I/O Domain's console.

```
# ssh ssc1dbadm0101
```

3. Check that the I/O Domain is present.

```
# ldm list | grep hostname
ssccn1-io-hostname active -n---- 5010 8 16G 0.1% 0.1% 52m
```

where *hostname* is the domain's host name and *ssccn1-io-hostname* is the domain's name.

Note - The domain might not be in an active state.

4. Connect to the domain console.

Use the port number returned by the previous command. In this example, the port number is 5010.

```
# telnet localhost 5010
Trying 127.0.0.1...
Escape character is '^]'.

Connecting to console "domain-name" in group "domain-name"
Press ~? for control options ..
```

Remain connected, because useful messages might be displayed on the console.

▼ Roll Back the Domain's rpool

If the data located in the rpool has been damaged or lost, or if the rpool has been destroyed, this step provides instructions on how to restore this data.

During the backup, a ZFS snapshot of the domain's rpool is created on the ZFS storage appliance. The restore procedure consists of rolling back this snapshot.

1. Locate the snapshot.

The information required to locate the snapshot is available in the `osc-config-backup/domains/hostname/hostname.snapshots.date.info` file, where *hostname* is the domain's host name. The file includes the ZFS storage appliance head to connect to, the project, and the LUN. For example:

```
root# su - oscbackR
oscbackR$ cd osc-config-backup/domains/hostname
oscbackR$ grep rpool hostname.snapshots.date.info
Pool: rpool ; Device: c0t600144F0A67C70FB0000575AA4E90004d0 ; \
Head: ssc1-h1-storadm ; Project: scl-ldomfs ; \
LUN name: xyx-io-hostname_rpool ; \
Snapshot: 2016.06.14.05.18.osc-config-backup
```

2. From the primary domain, determine if the domain is bootable.

- If the domain is running, you do not need to roll back the snapshot. Instead, resync the boot pool with this command, and do not perform the remaining steps in this procedure.

```
# bootadm boot-pool resync -A
```

- **If the domain is having problems booting the boot pool, stop the domain and perform the remaining steps in this procedure.**

```
# ldm stop -f domain-name
```

3. Connect as root to the ZFS storage appliance head.

In this example, the head is ssc1-h1-storadm.

```
# ssh ssc1-h1-storadm
Last login: Tue Jun 14 13:28:56 2016 from 10.129.76.2
ssc1-h1-storadm:>
```

4. Go to the project.

The project name was identified in [Step 1](#) (select sc1-ldomfs in this example).

```
ssc1-h1-storadm:> shares
ssc1-h1-storadm:shares> select sc1-ldomfs
ssc1-h1-storadm:shares sc1-ldomfs>
```

5. Select the LUN and snapshot.

The LUN and snapshot were identified in [Step 1](#).

```
... sc1-ldomfs> select xyx-io-hostname_rpool
... sc1-ldomfs/xyx-io-hostname_rpool> snapshots
... sc1-ldomfs/xyx-io-hostname_rpool snapshots> select 2016.06.14.05.18.osc-config-backup
... sc1-ldomfs/xyx-io-hostname_rpool@2016.06.14.05.18.osc-config-backup>
```

6. Roll back the snapshot.

```
... sc1-ldomfs/xyx-io-hostname_rpool@2016.06.14.05.18.osc-config-backup> rollback
Rolling back will revert data to snapshot, destroying newer data.
Active initiators will be disconnected.
Continue? (Y/N) Y
```

7. From the primary domain, restart the I/O Domain.

```
# ldm start domain-name
```

▼ Roll Back the Domain's bpool

On SuperCluster M8 and SuperCluster M7, I/O Domains come with a second ZFS pool called the bpool. The bpool is required to boot the domain over iSCSI and Infiniband. Similarly to the

rpool, when an I/O Domain is backed up, a ZFS snapshot is created for the bpool on the ZFS storage appliance. The restore procedure consists of rolling back this snapshot.

1. Locate the snapshot.

The information required to locate the snapshot is available in the `osc-config-backup/domains/hostname/hostname.snapshots.date.info` file. The file includes the ZFS storage appliance head to connect to, the project, and the LUN.

```
root# su -oscbackR
oscbackR$ cd osc-config-backup/domains/hostname
oscbackR$ grep bpool hostname.snapshots.date.info
Pool: bpool ; Device:
c0t600144F0A67C70FB0000575AA4E10003d0 ; \
Head: ssc1-h1-storadm ; Project: sc1-ldomfs ; \
LUN name: xyx-io-hostname_bpool ; \
Snapshot: 2016.06.14.05.18.osc-config-backup
```

2. From the primary domain, stop the I/O Domain.

```
# ldm stop -f domain-name
```

3. Connect as root to the ZFS storage appliance head.

In this example, the head is `ssc1-h1-storadm`.

```
# ssh ssc1-h1-storadm
Last login: Tue Jun 14 13:28:56 2016 from 10.129.76.2
ssc1-h1-storadm:>
```

4. Go to the project.

The project name was identified in [Step 1](#) (`sc1-ldomfs` in this example).

```
ssc1-h1-storadm:> shares
ssc1-h1-storadm:shares> select sc1-ldomfs
ssc1-h1-storadm:shares sc1-ldomfs>
```

5. Select the LUN and snapshot.

The LUN and snapshot were identified in [Step 1](#).

```
... sc1-ldomfs> select xyx-io-hostname_bpool
... sc1-ldomfs/xyx-io-hostname_bpool> snapshots
... sc1-ldomfs/xyx-io-hostname_bpool snapshots> select 2016.06.14.05.18.osc-config-backup
... sc1-ldomfs/xyx-io-hostname_bpool@2016.06.14.05.18.osc-config-backup>
```

6. Roll back the snapshot.

```
... scli-ldomfs/xyx-io-hostname_bpool@2016.06.14.05.18.osc-config-backup> rollback
Rolling back will revert data to snapshot, destroying newer data.
Active initiators will be disconnected.
Continue? (Y/N) Y
```

7. From the primary domain, restart the I/O Domain.

```
# ldm start domain-name
```

▼ Restore a Domain Configuration

If you modify, erase, or lose any domain configuration variables you can reference the data in the constraints file.

1. Identify the .list_constraints files.

For each primary domain, the backup utility creates a .list_constraints file.

```
root# su - oscbackR
oscbackR$ cd osc-config-backup/domains
oscbackR$ find . -name *.list_constraints
./ssc1dbadm0101/ssc1dbadm0101.2016.06.14.05.01.list_constraints
./ssc1dbadm0201/ssc1dbadm0201.2016.06.14.05.01.list_constraints
```

2. Locate the domains.

In each.list_constraints file, search for the ovf:id string.

The list_constraints file provides this information:

- VDS volumes and hardware allocation
- Core and memory allocations
- UUID and boot variables

If the SP has lost its configuration and autosave was enabled, you can recover the saved configuration from the control domain backup. Contact Oracle Support for assistance.

Also refer to the Oracle VM Server for SPARC documentation and to the ldm man page for more information. The documentation is available at <https://docs.oracle.com/en/virtualization/oracle-vm-server-sparc/>.

Restoring Switches

This section describes how to restore an IB switch and the Ethernet management switch:

- [“Restore an IB Switch” on page 25](#)
- [“Restore the Ethernet Management Switch” on page 28](#)

▼ Restore an IB Switch

A typical case where an IB switch needs to be restored is when it has been physically replaced. Oracle SuperCluster comes with three IB switches.

This task assumes these conditions:

- At least one IB switch is still up and runs as a master switch. See [Step 1](#).
- The IB switch you plan to restore must be reachable over the management network.
- The ZFS storage appliance must be up and running.

Additional information is available in these MOS notes:

- *How To Back Up and Restore Switch Settings for Sun Datacenter InfiniBand Switch 36 & Gateway Switch* (Doc ID 1341944.1)
- *How To Back Up and Restore Switch Settings for Sun Network QDR InfiniBand Gateway Switch* (Doc ID 1383752.1)

1. Check if an IB switch runs as a master by connecting to it and running `getmaster`.

Ensure that the state is MASTER. In situations where no master switch is available, contact Oracle Support.

```
[root@switch-hostame ~]# getmaster
Local SM enabled and running, state MASTER
```

2. Obtain and unzip the IB switch backup file.

The IB switch is restored using the files created during the backup in `osc-config-backup/ib-switches`. There is one file per switch, called `switch-hostname.backup.date.zip`.

Based on your recovery situation, use one of these procedures:

- **You can access the osc-config-backup data from a domain.**

Connect as root to a domain, create a directory accessible to everybody, become oscbackR user, and copy the .zip file in the directory. Finally unzip the file.

```
root# mkdir /sharedPath ; chmod 777 /sharedPath
oscbackR$ cd osc-config-backup/ib-switches
oscbackR$ cp switch-hostname.backup.date.zip /sharedPath
oscbackR$ exit
root# cd /sharedPath
root# unzip switch-hostname.backup.date.zip
creating: switch-hostname.backup.date/
creating: switch-hostname.backup.date/system/
inflating: switch-hostname.backup.date/system/version.out
inflating: switch-hostname.backup.date/system/showfruinfo.out
inflating: switch-hostname.backup.date/system/ibstat.out
...
```

- **You cannot access the osc-config-backup data directly from a domain.**

If no domain is available to access the backup data, the .zip file can be transferred directly from the ZFS storage appliance to the switch by using SFTP. Ensure that SFTP is enabled on the ZFS storage appliance and that root SFTP is permitted. Set this parameter through the BUI, by selecting SFTP in the Configuration → Services tab. Also, on the ZFS storage appliance, the SFTP server listens on port 218. This is not the default SFTP port so it must be specified in the sftp command.

```
[root@switch-hostame ~]# cd /tmp/
[root@switch-hostame ~]# sftp -o port=218
zfssaIPAddress:/export/osc-config-backup/oscbackup/ib-switches/switch-
hostname.backup.date.zip
Connecting to zfssaIPAddress...
Password:
Fetching /export/osc-config-backup/oscbackup/ib-switches/switch-
hostname.backup.date.zip to
./switch-hostname.backup.date.zip
/export/osc-config-backup/oscbackup/ib-switches/switch-hostname.backup.date.zip
100% 179KB 179.2KB/s 00:00
```

3. Restore configuration files on the IB switch.

These files can be restored to the IB switch using scp from a domain where the backup files are available.

- /etc/sysconfig/network-scripts/ifcfg-eth0 (network configuration)

- /etc/resolv.conf (DNS information)
- /etc/ntp.conf (NTP information)
- /etc/opensm/opensm.conf (openSM settings)

For example, to locate the `ifcfg-eth0` file with the `find` command and then copy it to the switch, type.

```
root# cd /sharedPath/switch-hostname.backup.date
root# find . -name ifcfg-eth0
      ./eis/ifcfg-eth0
root# cd ./eis
root# scp hosts root@switch-hostname:/etc/sysconfig/network-scripts/ifcfg-eth0
      hosts 100%
|*****|
238 00:00
```

4. Update the `/etc/sysconfig/network` file.

Restore the host name of the switch on the management network by adding a `HOSTNAME=switch-hostname` line to the `/etc/sysconfig/network` file, if not already present.

After the restore, the file should look like this:

```
[root@switch-hostname ~]# cat /etc/sysconfig/network
NETWORKING=yes
NETWORKING_IPV6=no
HOSTNAME=switch-hostname.domainname
```

5. Update the `/etc/hosts` file.

Add the IP address and the host name of the IB switch on the management network to the file, if not already present. After the restore, the file should look like this:

```
[root@switch-hostname ~]# cat /etc/hosts
# Do not remove the following line, or various programs
# that require network functionality will fail.
127.0.0.1 localhost.localdomain localhost
::1 localhost6.localdomain6 localhost6
w.x.y.z switch-hostname.domainname switch-hostname
```

...where `w.x.y.z` is the IB switch IP address.

6. Update the `/etc/localtime` file.

Check that the time zone specified in the `/etc/localtime` file is correct.

If the time zone needs to be modified and the switch runs 1.1.3-2 or later firmware, the change must be applied through Oracle ILOM. Enter the IB switch IP address in a browser, connect as `ilom-admin`, and follow the Configuration/Timezone tabs.

If you don't know which firmware version the switch is running, try to connect to Oracle ILOM, and if Oracle ILOM is present, use it.

7. Restart the network services.

```
[root@switch-hostname ~]# service network restart
[root@switch-hostname ~]# service ntpd restart
```

8. If needed, restart the OpenSM daemon.

Check the opensm.log file in osc-config-backup/ib-switches/tmp/switch-hostname.backup.date/system to see if the OpenSM daemon was running and if so, restart it.

```
[root@switch-hostname ~]# disablesm
[root@switch-hostname ~]# enablesm
```

9. Disable root SFTP and SFTP on the ZFS storage appliance.

▼ Restore the Ethernet Management Switch

The Ethernet management switch is a 48-port Cisco 4948 Gigabit Ethernet switch. Refer to the Cisco documentation for restoration instructions, and use the switch's osc-config-backup data.

● **Access the backup files.**

The backup files are located in the osc-config-backup/mngt-switch directory.

```
root# su - oscbackR
oscbackR$ ls -lhtr osc-config-backup/mngt-switch
total 30357
-rw-rw-rw- 1 root root 3.6K May 11 01:55 running-config.2016.05.11.01.16
-rw-rw-rw- 1 root root 3.5K May 11 01:56 startup-config.2016.05.11.01.16
-rw-rw-rw- 1 root root 15M May 11 01:56 cat4500-ipbase-mz.122-53.SG2.bin.
2016.05.11.01.16
```

Restoring an Oracle ILOM Configuration

This procedure is covered in this section:

- “Restore an Oracle ILOM Configuration” on page 29

▼ Restore an Oracle ILOM Configuration

Before starting the restore process, Oracle ILOM (on the SP) must be reachable over the management network. The Oracle ILOM configuration is restored using the XML file that was created during the backup and stored in the `osc-config-backup/service-processors/SP-hostname/SP-hostname.date.xml` file.

For additional information about the Oracle ILOM restore process, refer to the *Oracle ILOM Administrator's Guide for Configuration and Maintenance* at http://docs.oracle.com/cd/E37444_01. The restore process is covered in *Backing Up, Restoring, or Resetting the Oracle ILOM Configuration*.

1. **Connect to Oracle ILOM and navigate to the config target.**

```
$ ssh root@SP_hostname
Oracle(R) Integrated Lights Out Manager
Version 3.2.4.1 r93935
Copyright (c) 2014, Oracle and/or its affiliates. All rights reserved.
Hostname: SP-hostname
```

```
-> cd /SP/config
```

2. **Copy the XML file to a directory that is accessible by root.**

Connect to any domain as root and execute these commands.

```
root# mkdir /sharedPath ; chmod 777 /sharedPath
root# su - oscbackR
oscbackR$ cd osc-config-backup/service-processors/SP_hostname
oscbackR$ cp SP-hostname.date.xml /sharedPath
```

3. **Initiate the restore from the /SP/config target location.**

Using these examples, replace *source_IPAddress* with the IP address of the domain where the XML file has been copied to */sharedPath*.

Replace *directory_path* with *sharedPath*. Replace *password* with the root password.

```
-> set load_uri=sftp://root:password@source_IPAddress/directory_path/SP-hostname.date.xml
Passphrase has not been entered. Sensitive data will not be restored.
Continue ? y
Load successful.
```

If using the ZFS storage appliance for the source, *directory_path* is */export/osc-config-backup/oscbackup/service-processors/SP_hostname*.

Ensure that SFTP is enabled on the ZFS storage appliance and that root SFTP is permitted. Set this through the BUI by selecting SFTP in the Configuration tab.

On the ZFS storage appliance, the SFTP server listens on port 218. This port is not the default SFTP port, and it must be specified in *load_ur*.

```
-> set load_uri=sftp://root:password@ZFSSA_IPAddress:218/export/osc-config-backup/
backup/service_processors/SP-hostname/SP-hostname.date.xml
Passphrase has not been entered. Sensitive data will not be restored.
Continue ? y
Load successful.
```

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