

VDCF - Virtual Datacenter Control Framework for the Solaris™ Operating System

Sun Cluster Guide

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1 Introduction

This documentation describes the Sun Cluster Feature of the Virtual Datacenter Control Framework (VDCF) for the Solaris Operating System, Version 1.0 and explains how to use this feature.

See:

VDCF – Base and vServer Administration for detailed information about this product, the commands and arguments.

1.1 Overview

The Sun Cluster product supports the failover of Solaris 10 Zones between Cluster Nodes. Using the VDCF Sun Cluster Feature enables you to create Datasets and vServers including Sun Cluster configuration needed to use the automatic failover feature of Sun Cluster.

1.2 Installation

The JSvdcf-suncluster package requires the JSvdcf-base and JSvdcf-vserver package 2.0.0 or later to be installed on the Management Server and the JSvdcf-client package 2.0.0 to be installed on the Cluster Nodes.

a) sparc platform

```
cd </cdrom/cdrom0>/vdcf/sparc  
pkgadd -d ./JSvdcf-suncluster_<version>_sparc.pkg
```

b) i386 platform

```
cd </cdrom/cdrom0>/vdcf/i386  
pkgadd -d ./JSvdcf-suncluster_<version>_i386.pkg
```

2 Sun Cluster Installation and Configuration

2.1 Overview

Currently the Sun Cluster Software must be installed manually on a Node, which was previously installed using the VDCF framework. The VDCF Administration Guide contains information how to install a Node using the VDCF framework.

2.2 Requirements

Sun Cluster requires a /globaldevices Filesysteme with 512MB, which must be configured in the /var/opt/jomasoft/vdcf/conf/<node>_partitioning.cfg before installing the Node.

VDCF requires to install the following or later Sun Cluster Patches

126106-13 / Synopsis: Sun Cluster 3.2: CORE patch for Solaris 10
Date: Apr/25/2008

2.3 Sun Cluster Installation

The Feature "Sun Cluster HA for Solaris Container" must be installed on the Compute Nodes.

3 VDCF Sun Cluster - Configuration

3.1 VDCF Sun Cluster – Configuration Variables

You may override the Default Cluster Resource prefixes with your own Naming Conventions by adding the following variables in `/var/opt/jomasoft/vdcf/conf/customize.cfg`

```
export SC_POSTFIX_RESGROUP=rg
export SC_POSTFIX_DATASET=hasp
export SC_POSTFIX_ZONEPATH=hasp_zonepath
export SC_POSTFIX_ZONEBOOT=sczbt
```

For the Sun Zone Boot Resource (`_sczbt`) timeouts may optionally be configured:

```
export SC_START_TIMEOUT=600    In seconds, set per default by VDCF
export SC_STOP_TIMEOUT=300     In seconds, set per default by VDCF
export SC_PROBE_TIMEOUT=120    to overwrite the 30 seconds Sun Cluster default.
```

3.2 Cluster Resource Definitions

VDCF defines the following Cluster Resources in the Cluster.

- ResourceGroup <vserver>_rg
- HAStoragePlus Resource for Datasets <dataset>_hasp
- HAStoragePlus Resource for zonepath <vserver>_hasp_zonepath
- VDCF Zone Preboot Resource <vserver>_preboot
- Sun Zone Boot Resource <vserver>_sczbt
- VDCF Zone Postboot Resource <vserver>_postboot

3.3 VDCF Resources

A) VDCF Zone Preboot Resource

This Resource currently adds routes to the Node, which are required by the vServer.

B) VDCF Zone Postboot Resource

This Resource updates the current vServer location in the VDCF Configuration Repository.

4 VDCF Sun Cluster - Administration

After the Sun Cluster Software is installed and configured on a Node, run the command

```
node -c update name=<node>
```

This operation updates the VDCF Configuration Repository about the Cluster and the Cluster Nodes.

Check the Node using

```
node -c show name=<node>
```

If you create a Dataset or vServer on such configured Nodes, the Cluster is configured accordingly.

You may boot the vServer using `vserver -c boot`, `reboot` or `shutdown`.

To migrate the vServer to another Node use the VDCF command:

```
vserver -c migrate name=<vserver> node=<newnode>
```

or use the Sun Cluster command on a Cluster Node:

```
/usr/cluster/bin/clresourcegroup switch -n <newnode> <vserver>_rg
```

5 Patch Management

VDCF supports patching of Sun Cluster Nodes, if the JSvdcf-patch (Patch Management Feature) 2.0.0 or later is installed on the VDCF Management Server.

PatchSet's of Type STANDARD may be installed without any special requirements in the Sun Cluster environment.

Special handling is required for NON_STANDARD patches, which require installation in Single User Mode. Installation of patches in a Sun Cluster environment using Zones requires a complete shutdown of Sun Cluster.

Use the following sequence of commands to patch your cluster efficiently:

1. Make sure the vServer's are distributed evenly on the Cluster Nodes.

Use

```
vserver -c show to verify the vServer locations
```

and

```
vserver -c migrate to change the vServer locations.
```

2. Verify the Patch Target. It should be applied to all Cluster Nodes.

```
patchadm -c show_target name=xy
```

3. Shutdown the Sun Cluster / Reboot Node in Non-Cluster-Mode

Execute on one Cluster Node: `/usr/cluster/bin/cluster shutdown`

Boot the Nodes in Non-Cluster-Mode: `OK> boot -x`

4. Patch the Nodes using VDCF

```
patchadm -c install target=XY reboot
```

VDCF will mount all required filesystems for the vServer's on the Nodes and boot the vServer's into Single User Mode. The Patches are then applied on the Nodes in parallel. After Patch Installation the Nodes stay in Single-User State. Once patching is complete manually reboot all Cluster Nodes back into cluster mode.

6 Open Issues / Restrictions

- A vServer/Zone doesn't switch if a Network problem occurs. A Network Resource will be implemented in the future to solve this issue.