**[Linux Tips & Tricks](http://linuxkarthik.blogspot.com/)**

**Wednesday, January 1, 2014**

**Install VCS on RHEL 5**

**Install VCS on RHEL 5**

Host name  :    node1.example.com

Host name  :    node2.example.com

OS         :    RHEL 5.6 64 bit

Make sure both the servers time is sync up.

Make sure host names are resolving. Edit /etc/hosts files on both the servers.

# more /etc/hosts

127.0.0.1               localhost.localdomain localhost

::1             localhost6.localdomain6 localhost6

192.168.80.21   node1.example.com       node1

192.168.80.22   node2.example.com       node2

Installation package has been copied on node1 /opt folder. Enable execute permission on that folder.

# chmod +x VRTS\_SF\_HA\_Solutions\_5.1\_SP1\_RHEL/ -R

**Pre check the pre-requisite on both the servers.**

# ./installer -precheck

1)  Veritas Dynamic Multi-Pathing (DMP)

     2)  Veritas Cluster Server (VCS)

     3)  Veritas Storage Foundation (SF)

     4)  Veritas Storage Foundation and High Availability (SFHA)

     5)  Veritas Storage Foundation Cluster File System (SFCFS)

     6)  Veritas Storage Foundation Cluster File System/HA (SFCFSHA)

     7)  Veritas Storage Foundation for Oracle RAC (SFRAC)

     8)  Veritas Storage Foundation Cluster File System for Oracle RAC (SFCFS RAC)

     9)  Symantec VirtualStore (SVS)

    10)  Symantec Product Authentication Services (AT)

     b)  Back to previous menu

Select a product to perform pre-installation check for: [1-10,b,q] 3

Verifying systems: 100%

    Estimated time remaining: 0:00                                                        8 of 8

    Checking system communication ............................... Done

    Checking release compatibility .............................. Done

    Checking installed product .................................. Done

    Checking prerequisite patches and rpms ...................... Done

    Checking platform version ................................... Done

    Checking file space ......................................... Done

    Performing product license checks ........................... Done

    Performing product prechecks ................................ Done

Precheck report completed

System verification checks completed successfully

No issues found in prechecks

Would you like to install SF on node1 node2? [y,n,q] (n) n

installer log files, summary file, and response file are saved at:

        /opt/VRTS/install/logs/installer-201401011724IFa

**Now we can start the VCS installation**

# ./installer node1 node2

Task Menu:

    P) Perform a Pre-Installation Check     I) Install a Product

    C) Configure an Installed Product       G) Upgrade a Product

    O) Perform a Post-Installation Check    U) Uninstall a Product

    L) License a Product                    S) Start a Product

    D) View Product Descriptions            X) Stop a Product

    R) View Product Requirements            ?) Help

Enter a Task: [P,I,C,G,O,U,L,S,D,X,R,?] I 🡨 Press “I” and enter

     1)  Veritas Dynamic Multi-Pathing (DMP)

     2)  Veritas Cluster Server (VCS)

     3)  Veritas Storage Foundation (SF)

     4)  Veritas Storage Foundation and High Availability (SFHA)

     5)  Veritas Storage Foundation Cluster File System (SFCFS)

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     9)  Symantec VirtualStore (SVS)

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     b)  Back to previous menu

Select a product to install: [1-10,b,q] 4 🡨 Press “4” and enter

Do you agree with the terms of the End User License Agreement as specified in the

storage\_foundation\_high\_availability/EULA/en/EULA\_SFHA\_Ux\_5.1SP1.pdf file present on media? [y,n,q,?] y 🡨 Press “y” and enter

1)  Install minimal required Veritas Storage Foundation and High Availability rpms - 378 MB required

     2)  Install recommended Veritas Storage Foundation and High Availability rpms - 581 MB required

     3)  Install all Veritas Storage Foundation and High Availability rpms - 618 MB required

     4)  Display rpms to be installed for each option

Select the rpms to be installed on all systems? [1-4,q,?] (2) 🡨 Use default option

Enter the 64 bit RHEL5 system names separated by spaces: [q,?] node1 node2 🡨 enter servers hostname

Estimated time remaining: 0:00                                                                                          8 of 8

    Checking system communication ........................................................................................... Done

    Checking release compatibility .......................................................................................... Done

    Checking installed product .............................................................................................. Done

    Checking prerequisite patches and rpms .................................................................................. Done

    Checking platform version ............................................................................................... Done

    Checking file space ..................................................................................................... Done

    Performing product license checks ....................................................................................... Done

    Performing product prechecks ............................................................................................ Done

System verification checks completed successfully

Rpm               Rpm Description

VRTSvlic          Veritas Licensing

VRTSperl          Veritas Perl 5.10.0 Redistribution

VRTSspt           Veritas Software Support Tools by Symantec

VRTSvxvm          Veritas Volume Manager Binaries

VRTSaslapm        Volume Manager - ASL/APM

VRTSob            Veritas Enterprise Administrator Service by Symantec

VRTSsfmh          Veritas Storage Foundation Managed Host by Symantec

VRTSvxfs          Veritas File System

VRTSatClient      Symantec Product Authentication Service Client

VRTSatServer      Symantec Product Authentication Service

VRTSllt           Veritas Low Latency Transport

VRTSgab           Veritas Group Membership and Atomic Broadcast

VRTSvxfen         Veritas I/O Fencing by Symantec

VRTSamf           Veritas Asynchronous Monitoring Framework by Symantec

VRTSvcs           Veritas Cluster Server

VRTSvcsag         Veritas Cluster Server Bundled Agents by Symantec

VRTSvcsdr         Veritas Cluster Server Disk Reservation Modules

VRTSvcsea         Veritas Cluster Server Enterprise Agents by Symantec

VRTSdbed          Veritas Storage Foundation Databases

VRTSodm           Veritas Oracle Disk Manager

Press [Enter] to continue: 🡨 Enter here

Installing SFHA: 100%

    Estimated time remaining: 0:00                                                                                        23 of 23

    Performing SFHA preinstall tasks ........................................................................................ Done

    Installing VRTSvlic rpm ................................................................................................. Done

    Installing VRTSperl rpm ................................................................................................. Done

    Installing VRTSspt rpm .................................................................................................. Done

    Installing VRTSvxvm rpm ................................................................................................. Done

    Installing VRTSaslapm rpm ............................................................................................... Done

    Installing VRTSob rpm ................................................................................................... Done

    Installing VRTSvxfs rpm ................................................................................................. Done

    Installing VRTSatClient rpm ............................................................................................. Done

    Installing VRTSatServer rpm ............................................................................................. Done

    Installing VRTSllt rpm .................................................................................................. Done

    Installing VRTSgab rpm .................................................................................................. Done

    Installing VRTSvxfen rpm ................................................................................................ Done

    Installing VRTSamf rpm .................................................................................................. Done

    Installing VRTSvcs rpm .................................................................................................. Done

    Installing VRTSvcsag rpm ................................................................................................ Done

    Installing VRTSvcsdr rpm ................................................................................................ Done

    Installing VRTSvcsea rpm ................................................................................................ Done

    Installing VRTSdbed rpm ................................................................................................. Done

    Installing VRTSodm rpm .................................................................................................. Done

    Installing VRTSsfmh rpm ................................................................................................. Done

    Performing SFHA postinstall tasks ....................................................................................... Done

    Copying installer libraries and scripts ................................................................................. Done

Veritas Storage Foundation and High Availability Install completed successfully

1)  Enter a valid license key

     2)  Enable keyless licensing and complete system licensing later

How would you like to license the systems? [1-2,q] (2) 🡨 choose the default and press enter

1)  SF Standard HA

     2)  SF Enterprise HA

     b)  Back to previous menu

Select product mode to license: [1-2,b,q,?] (1) 🡨 choose the default and press enter

Would you like to enable the Veritas Volume Replicator? [y,n,q] (n) 🡨 press “n” and enter

Registering SFHA license

Would you like to configure SFHA on node1 node2? [y,n,q] (n) y 🡨 type “y” and enter

I/O Fencing

It needs to be determined at this time if you plan to configure I/O Fencing in enabled or disabled mode, as well as help in

determining the number of network interconnects (NICS) required on your systems. If you configure I/O Fencing in enabled mode,

only a single NIC is required, though at least two are recommended.

A split brain can occur if servers within the cluster become unable to communicate for any number of reasons. If I/O Fencing is

not enabled, you run the risk of data corruption should a split brain occur. Therefore, to avoid data corruption due to split

brain in CFS environments, I/O Fencing has to be enabled.

If you do not enable I/O Fencing, you do so at your own risk

See the Administrator's Guide for more information on I/O Fencing

Do you want to configure I/O Fencing in enabled mode? [y,n,q,?] (y) n 🡨 type “n” and press enter

To configure VCS, answer the set of questions on the next screen.

When [b] is presented after a question, 'b' may be entered to go back to the first question of the configuration set.

When [?] is presented after a question, '?' may be entered for help or additional information about the question.

Following each set of questions, the information you have entered will be presented for confirmation.  To repeat the set of

questions and correct any previous errors, enter 'n' at the confirmation prompt.

No configuration changes are made to the systems until all configuration questions are completed and confirmed.

Press [Enter] to continue:

A unique cluster name

        A unique cluster ID number between 0-65535

        Two or more NICs per system used for heartbeat links

        One or more heartbeat links are configured as private links

        You can configure one heartbeat link as a low-priority link

All systems are being configured to create one cluster.

Enter the unique cluster name: [q,?] mycluster 🡨 type the cluster name and press enter

Enter a unique cluster ID number between 0-65535: [b,q,?] 1 🡨 type the cluster ID and press enter

1)  Configure heartbeat links using LLT over Ethernet

     2)  Configure heartbeat links using LLT over UDP

     3)  Automatically detect configuration for LLT over Ethernet

     b)  Back to previous menu

How would you like to configure heartbeat links? [1-3,b,q,?] (1) 🡨 press “1” and enter

Discovering NICs on node1 ................................................................ Discovered eth0 eth1 eth2 eth3 sit0

Enter the NIC for the first private heartbeat link on node1: [b,q,?] (sit0) eth1

eth1 has an IP address configured on it. It could be a public NIC on node1.

Are you sure you want to use eth1 for the first private heartbeat link? [y,n,q,b,?] (n) y

Would you like to configure a second private heartbeat link? [y,n,q,b,?] (y) y

Enter the NIC for the second private heartbeat link on node1: [b,q,?] (sit0) eth2

eth2 has an IP address configured on it. It could be a public NIC on node1.

Are you sure you want to use eth2 for the second private heartbeat link? [y,n,q,b,?] (n) y

Would you like to configure a third private heartbeat link? [y,n,q,b,?] (n)

Do you want to configure an additional low-priority heartbeat link? [y,n,q,b,?] (n) y

Enter the NIC for the low-priority heartbeat link on node1: [b,q,?] (eth0)

Are you using the same NICs for private heartbeat links on all systems? [y,n,q,b,?] (y) y

Cluster information verification:

        Cluster Name:      mycluster

        Cluster ID Number: 1

        Private Heartbeat NICs for node1:

                link1=eth1

                link2=eth2

        Low-Priority Heartbeat NIC for node1:

                link-lowpri1=eth0

        Private Heartbeat NICs for node2:

                link1=eth1

                link2=eth2

        Low-Priority Heartbeat NIC for node2:

                link-lowpri1=eth0

Is this information correct? [y,n,q,b,?] (y) 🡨 type “y” and press enter

Virtual IP can be specified in RemoteGroup resource, and can be used to connect to the cluster using Java GUI

The following data is required to configure the Virtual IP of the Cluster:

        A public NIC used by each system in the cluster

        A Virtual IP address and netmask

Do you want to configure the Virtual IP? [y,n,q,?] (n) y

Active NIC devices discovered on node1: eth0 eth1 eth2 eth3

Enter the NIC for Virtual IP of the Cluster to use on node1: [b,q,?] (eth0)

Is eth0 to be the public NIC used by all systems? [y,n,q,b,?] (y) y

Enter the Virtual IP address for the Cluster: [b,q,?] 192.168.80.100

Enter the NetMask for IP 192.168.80.100: [b,q,?] (255.255.255.0)

Cluster Virtual IP verification:

        NIC: eth0

        IP: 192.168.80.100

        NetMask: 255.255.255.0

Is this information correct? [y,n,q] (y) 🡨 type “y” and press enter

Would you like to configure VCS to use Symantec Security Services? [y,n,q] (n)

The following information is required to add VCS users:

        A user name

        A password for the user

        User privileges (Administrator, Operator, or Guest)

Do you want to set the username and/or password for the Admin user

(default username = 'admin', password='password')? [y,n,q] (n) 🡨 type “n” and press enter

VCS User verification:

        User: admin     Privilege: Administrators

        Passwords are not displayed

Is this information correct? [y,n,q] (y) 🡨 type “y” and press enter

The following information is required to configure SMTP notification:

        The domain-based hostname of the SMTP server

        The email address of each SMTP recipient

        A minimum severity level of messages to send to each recipient

Do you want to configure SMTP notification? [y,n,q,?] (n) 🡨 type “n” and press enter

The following information is required to configure SNMP notification:

        System names of SNMP consoles to receive VCS trap messages

        SNMP trap daemon port numbers for each console

        A minimum severity level of messages to send to each console

Do you want to configure SNMP notification? [y,n,q,?] (n) 🡨 type “n” and press enter

All SFHA processes that are currently running must be stopped

Do you want to stop SFHA processes now? [y,n,q,?] (y) 🡨 type “y” and press enter

Stopping SFHA: 100%

    Estimated time remaining: 0:00                                                                                          9 of 9

    Performing SFHA prestop tasks ........................................................................................... Done

    Stopping had ............................................................................................................ Done

    Stopping hashadow ....................................................................................................... Done

    Stopping CmdServer ...................................................................................................... Done

    Stopping amf ............................................................................................................ Done

    Stopping vxfen .......................................................................................................... Done

    Stopping gab ............................................................................................................ Done

    Stopping llt ............................................................................................................ Done

    Stopping vxatd .......................................................................................................... Done

Veritas Storage Foundation and High Availability Shutdown completed successfully

Starting SFHA: 100%

    Estimated time remaining: 0:00                                                                                        18 of 18

    Performing SFHA configuration ........................................................................................... Done

    Starting vxdmp .......................................................................................................... Done

    Starting vxio ........................................................................................................... Done

    Starting vxspec ......................................................................................................... Done

    Starting vxconfigd ...................................................................................................... Done

    Starting vxesd .......................................................................................................... Done

    Starting vxrelocd ....................................................................................................... Done

    Starting vxconfigbackupd ................................................................................................ Done

    Starting vxportal ....................................................................................................... Done

    Starting fdd ............................................................................................................ Done

    Starting llt ............................................................................................................ Done

    Starting gab ............................................................................................................ Done

    Starting had ............................................................................................................ Done

    Starting hashadow ....................................................................................................... Done

    Starting CmdServer ...................................................................................................... Done

    Starting vxdbd .......................................................................................................... Done

    Starting vxodm .......................................................................................................... Done

    Performing SFHA poststart tasks ......................................................................................... Done

Veritas Storage Foundation and High Availability Startup completed successfully

Would you like to send the information about this installation to Symantec to help improve installation in the future? [y,n,q,?]

(y) n 🡨 type “n” and press enter

installer log files, summary file, and response file are saved at:

        /opt/VRTS/install/logs/installer-201401020035dhA

Run the following command to check the veritas cluster status

# /opt/VRTSvcs/bin/hastatus -sum

-- SYSTEM STATE

-- System               State                Frozen

A  node1                RUNNING              0

A  node2                RUNNING              0

-- GROUP STATE

-- Group           System               Probed     AutoDisabled    State

B  ClusterService  node1                Y          N               ONLINE

B  ClusterService  node2                Y          N               OFFLINE

# ps -ef | grep -i had

root     10417     1  0 00:45 ?        00:00:00 /opt/VRTSvcs/bin/had

root     10426     1  0 00:45 ?        00:00:00 /opt/VRTSvcs/bin/hashadow

# ip a | grep -i 192.168.80.100 --color

    inet 192.168.80.100/24 scope global secondary eth0:0

-----Veritas cluster suite installation completed successfully---