**Standard Operating Process**

**(SOP) for**

**RHEL 6 to RHEL 7 OS Upgradation**

**Document**

**Prepared By**

****

**Vikram Mandhare, Wipro Technologies**

# Contents

[1. Contents 2](#_Toc14083584)

[2. Document Details 3](#_Toc14083585)

[3. Revision History 3](#_Toc14083586)

[4. Statement of Confidentiality 3](#_Toc14083587)

[5. Copyright Acknowledgment 3](#_Toc14083588)

[6. Disclaimer 4](#_Toc14083589)

[7. Warranty 4](#_Toc14083590)

[8. Purpose 4](#_Toc14083591)

[9. Pre-requisite 4](#_Toc14083592)

[10. Introduction 4](#_Toc14083593)

[11. Keywords 4](#_Toc14083594)

[12. References 4](#_Toc14083595)

# Document Details

|  |  |
| --- | --- |
| Project Name | RHEL 6 to RHEL 7 OS Upgradation |
| Account |  |
| Current Version | 1.0.0 |
| List of Contributors | Unix |
| Document Name/ID | RHEL 6 to RHEL 7 OS Upgradation |

# Revision History

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Version | Date of Revision | Next Review Date | Description | Author  (Wipro) | Reviewed By (Wipro) | Approved By  (XXXXXX) |
| 1.0.0 |  |  | RHEL 6 to RHEL 7 OS Upgradation | Vikram Mandhare |  |  |

# Statement of Confidentiality

The information contained in this document is confidential to Wipro. It shall not be disclosed, duplicated, or used for any purpose other than that stated herein, in whole or in part, without prior written consent from Wipro

# Copyright Acknowledgment

Any registered names, trademarks and logos used in this manual remain the property of the owning respective companies or organizations concerned. This documentation may in whole or in part, be copied or replicated to any electronic medium for use within Wipro organization only. All copies that are made shall retain all copyright notices.

# Disclaimer

The documentation is prepared based on the specifications and requirements specified or disclosed to Wipro Technologies

This document provides information and user instructions. These functional descriptions have an underlying assumption that internal procedures will have defined and implemented levels of user authorization appropriate to the various functions involved in order to minimize the risk of accidental or intentional misuse of those systems.

The contents of the documentation could include technical inaccuracies or typographical errors. Changes are periodically added to the information herein: these changes will be incorporated in subsequent version(s) of the documentation. Wipro may make improvements and / or changes in the documentation.

# Warranty

This documentation is provided “as is“, without warranty of any kind, either expressed, implied or statutory, including but not limited to the implied warranties of merchantability or fitness for a particular purpose.

# Purpose

Red Hat Enterprise Linux 7 (RHEL 7) is the first major release of RHEL to allow in-place upgrades from the previous RHEL major release (RHEL 6). An in-place upgrade offers a way of upgrading a system to a new major release of Red Hat Enterprise Linux by replacing the existing operating system.

# Pre-requisite

Clone the VM / configure ReaR

Take the backup copy of /etc folder

Install nfs-utils Package if required

Copy Kernel packages

Copy Preupgrade package to Destination server

If the system is not

[server name:/var/ftp/pub/Preupgrade-New to destination server :/tmp ]

Login Jump server and copy preupgrade packages to destination server

# cd /var/ftp/pub

# scp –rpv Preupgrade-New <destination\_server>:/tmp/

# scp –rpv Kernel-514.2.2 <destination\_server>:/tmp/

Take backup copy of /etc/ folder on destination server

# Login destination server and take copy of /etc/ folder

# cp –rpv /etc /etc.bak.EL6-7

# Introduction

# This document is prepared for Wipro team and provides the concepts of RHEL 6 to RHEL 7 OS upgradation for Linux procedure.

NFS-UTILS Package installation if required

Take the backup copy of all the repo to /etc/yum.repos.d.Bak and remove all the repo and create below one.

# cp –rpv /etc/yum.repos.d /etc/yum.repos.d.Bak

# cd /etc/yum.repos.d

# rm –f \*

# touch rhel6.repo

# Add below lines in rhel6.repo file

[rhel6]

name=rhel6

gpgcheck = 0

enabled = 1

baseurl = http://us-smy-repo.am.elcompanies.net/RHEL6/rhel-6-server-rpms

# yum clean all

# yum repolist

# yum install nfs-utils

Upgrade to RHEL 6.8

# yum check-update

# yum update

# Once it completed successfully, reboot the server

Verify RHEL release once the server back online

# uname –a

# cat /etc/redhat-release

# Install Pre-Upgrade Assistant Packages

Install required Packages

# yum install openscap

# yum install openscap-utils.x86\_64

# cd /tmp/Preupgrade-New/

# rpm -ivh openscap-engine-sce-1.2.8-2.el6.x86\_64.rpm

# yum install pykickstart

# rpm -ivh preupgrade-assistant-2.1.10-6.el6.noarch.rpm

# yum install mod\_wsgi.x86\_64

# rpm -ivh preupgrade-assistant-ui-2.1.10-6.el6.noarch.rpm

# rpm -ivh redhat-upgrade-tool-0.7.47-1.el6.noarch.rpm

# rpm -ivh preupgrade-assistant-tools-2.1.10-6.el6.noarch.rpm

# rpm -ivh preupgrade-assistant-el6toel7-0.6.59-5.el6.noarch.rpm –nodeps

# rpm -ivh preupgrade-assistant-el6toel7-data-0.20161013-1.el6.noarch.rpm

# 

# Run the Pre-Upgrade Assistant

# preupg

It will take 15-20 minutes approx. Please do not interrupt

Once it done review below result ( winscp to your local desktop )

/root/preupgrade/result.html

/root/preupgrade/result-admin.html

Copy RHEL 7 ISO Image file

# mkdir –p /var/nfs

# mount -t nfs us-tht-repo:/var/ftp/pub/RHEL7\_ALL\_ISO/ /var/nfs/

# mkdir –p /mnt/iso-1

# cd /var/nfs

# cp rhel-server-7.0-x86\_64-dvd.iso /root/

# echo "/root/rhel-server-7.0-x86\_64-dvd.iso /mnt/iso-1 iso9660 rw,loop=/dev/loop0 0 0" >> /etc/fstab

# mount –a

# df –hP /var/nfs

# Run the Upgrade

# redhat-upgrade-tool --nogpgcheck --iso /root/rhel-server-7.0-x86\_64-dvd.iso --cleanup-post

Please read all the information carefully and press “Y”

preupg.risk.SLIGHT: /etc/sysconfig/network-scripts/ifcfg-eth1 is old style ethX name without HWADDR, its name can change after upgrade.

preupg.risk.SLIGHT: /usr/lib64/python2.6/site-packages/report is not owned by an RPM package.

preupg.risk.SLIGHT: /usr/lib64/python2.6/site-packages/reportclient is not owned by an RPM package.

preupg.risk.SLIGHT: Repo InstallMedia is enabled.

preupg.risk.SLIGHT: Repo rhel-source is not enabled.

preupg.risk.SLIGHT: Repo rhel-source-beta is not enabled.

preupg.risk.SLIGHT: Enabled repo files for kickstart generation are stored /root/preupgrade/kickstart/available-repos.

preupg.risk.MEDIUM: having one of [vim-filesystem ksh json-c satyr vim-common vim-enhanced grep vim-minimal] installed can break the upgrade

preupg.risk.SLIGHT: Some packages installed on the system changed their name between RHEL 6 and RHEL 7. Although they should be compatible, monitoring after the update is recommended.

preupg.risk.SLIGHT: export shell commands will be deleted from /etc/sysconfig/sshd

Continue with the upgrade [Y/N]? Y

Take the console and reboot the server

Reset root password (if required)

Reboot the server

# Remove ISO mount entry from /etc/fstab and reboot

# init 6

Monitoring the console logs (Press Esc Or Enter only DO NOT interrupt it will

take 15 – 30 Minutes to complete)

Verify RHEL release once the server back online

# uname –a

# cat /etc/redhat-release

# Upgrade 7.0 to 7.3

Verify RHEL release version once the server back online

# uname –a

# cat /etc/redhat-release

# Please follow the RHEL 7.3 Patching SOP

# Install GRUB2

Ensure the following packages are installed and updated

# yum install grub2 grub2-tools grubby

To verify what device GRUB2 should be installed

# cat /boot/grub/device.map

Install GRUB2 to the device

# grub2-install /dev/XX [ XX --> command output of cat /boot/grub/device.map ]

Create a good /etc/default/grub file

Copy & paste the whole code block directly into putty

FIRST COPY IT TO NOTEPAD

cat >/etc/default/grub <<EOF

GRUB\_TIMEOUT=5

GRUB\_DISTRIBUTOR="\$(sed 's, release .\*$,,g' /etc/system-release)"

GRUB\_DEFAULT=saved

GRUB\_DISABLE\_SUBMENU=true

GRUB\_TERMINAL\_OUTPUT="console"

GRUB\_CMDLINE\_LINUX="$(grep '^\s\*kernel /vmlinuz-3' /boot/grub/grub.conf | head -1 | sed -r -e 's,^\s\*kernel /vmlinuz\S+ ,,' -e 's,\<root=\S+ ,,' -e 's,\<ro ,,')"

GRUB\_DISABLE\_RECOVERY="true"

EOF

Take the existing grub file

# cp -p /etc/grub.conf /etc/grub.conf.bak-RHEL6-7

# cp -prv /boot/grub /boot/grub.bak-RHEL6-7

Build the new GRUB2 config file

# grub2-mkconfig -o /etc/grub2.cfg

# Reboot

# Keywords

SOP

# References

NA