

Install Patch on ISE

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Introduction

This document describes ways to install ISE patches and FAQs during installation.

Prerequisites

Requirements

Basic knowledge of the Identity Service Engine (ISE).

Components Used

The information in this document is based on these software and hardware versions:

- Cisco Identity Service Engine 2.X

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

Background Information

Cisco releases ISE patches on a semi-regular basis. These patches contain bug fixes and, when necessary, security fixes (for example, the **Heartbleed** and **Poodle** vulnerabilities discovered with SSL).

To ensure that bug fixes are applied, security vulnerabilities are plugged in, and the solution works seamlessly.

When you install a patch on an ISE node, the node is rebooted. Restart the services after the installation is complete. Wait several minutes before you can log in again.

You can schedule patch installations during a maintenance window to avoid a temporary outage.

Install only patches that are applicable for the Cisco version deployed in your network. Cisco reports any mismatch in versions as well as any errors in the patch file.

You cannot install a patch of a lower version than the patch that is currently installed on Cisco. Similarly, you cannot roll back changes of a lower-version patch if a higher version is currently installed on Cisco.


When you install a patch from the **Primary Administration Node (PAN)** that is part of a distributed deployment, Cisco ISE installs the patch on the primary node and then on all the secondary nodes in the deployment.

If the patch installation is successful on the **PAN**, Cisco ISE then continues patch installation on the secondary nodes. If it fails on the **PAN**, the installation does not proceed to the secondary nodes.

However, if the installation fails on any of the secondary nodes for any reason, it still continues with the next secondary node in your deployment.

When you install a patch from the **PAN** that is part of a two-node deployment, Cisco installs the patch on the primary node and then on the secondary node.

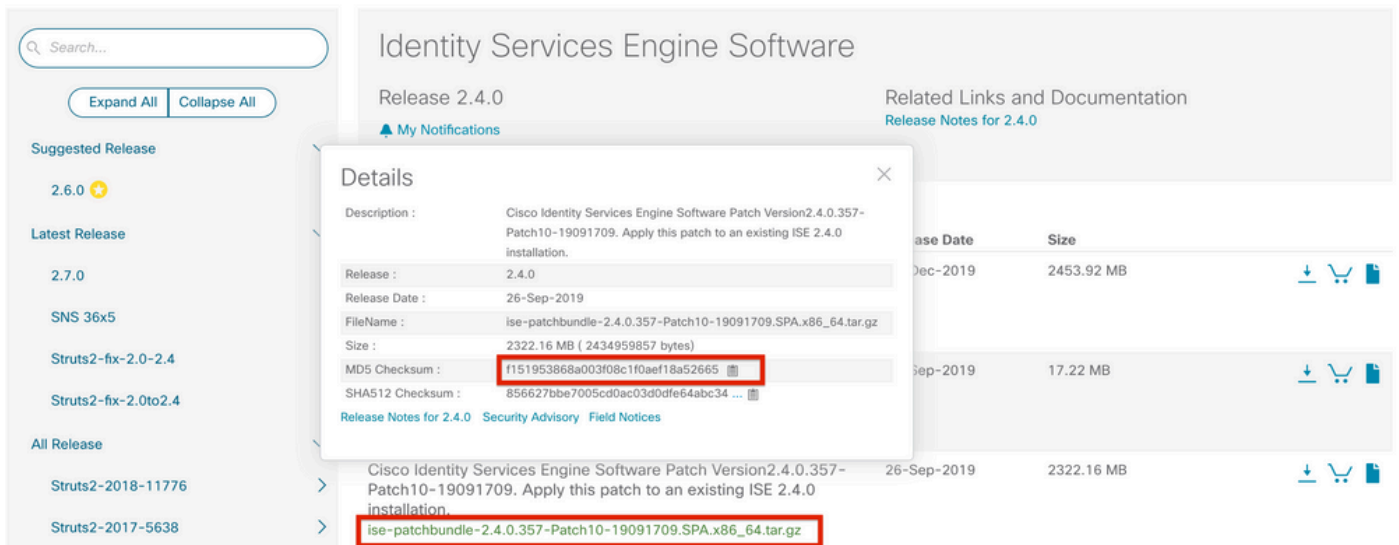
If the patch installation is successful on the **PAN**, Cisco then continues patch installation on the secondary node. If it fails on the **PAN**, the installation does not proceed to the secondary node.

 You must have the Super Admin or System Admin administrator role to install or roll back the patches. Collect configuration backup and operational backup before the patch installation starts.

Patch Installation With GUI

To download the ISE Patches from Cisco.com, Navigate to **Downloads > Products > Security > Access Control and Policy > Identity Services Engine > Identity Services Engine Software**, ([here.](#))

Downloads Home / Security / Network Visibility and Segmentation / Identity Services Engine / Identity Services Engine Software / Identity Services Engine System Software- 2.4.0




The screenshot shows the Cisco ISE Software Download GUI. A 'Details' modal is open, displaying the following information:

- Description: Cisco Identity Services Engine Software Patch Version 2.4.0.357- Patch10-19091709. Apply this patch to an existing ISE 2.4.0 installation.
- Release: 2.4.0
- Release Date: 26-Sep-2019
- FileName: ise-patchbundle-2.4.0.357-Patch10-19091709.SPA.x86_64.tar.gz
- Size: 2322.16 MB (2434959857 bytes)
- MD5 Checksum: f151953868a003f08c1f0aef18a52665
- SHA512 Checksum: 856627bbe7005cd0ac03d0dfe64abc34 ...
- Release Notes for 2.4.0 Security Advisory Field Notices

The MD5 and SHA512 checksums are highlighted with red boxes. In the background, a table lists available patches:

Release Date	Size	Download
Dec-2019	2453.92 MB	
Sep-2019	17.22 MB	
26-Sep-2019	2322.16 MB	

 **Note:** Cisco ISE patches are normally cumulative, which means that patch 11 installation includes all of the patches from patch 1 to patch 10. Patch installation requires a reboot of the ISE server.

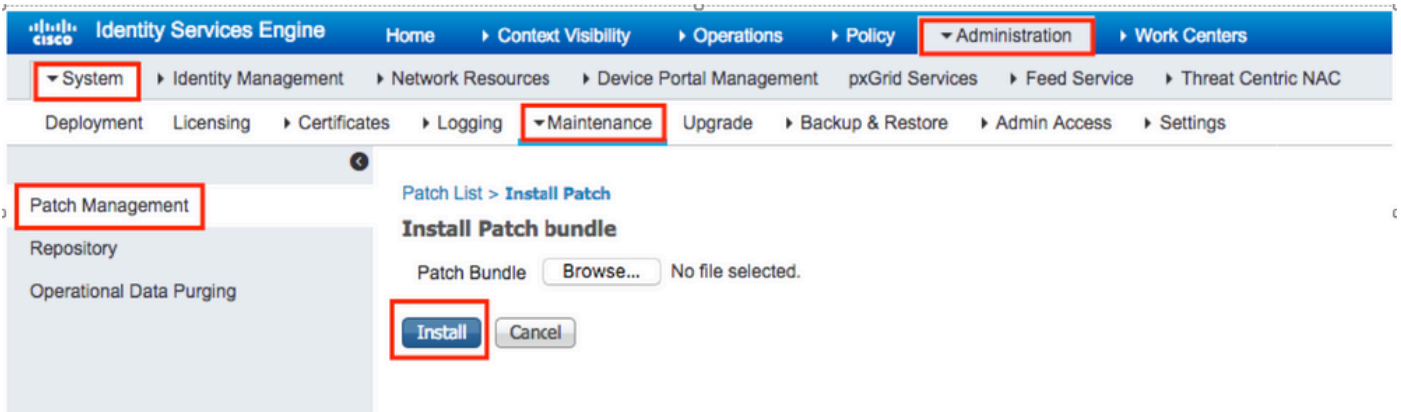
 **Note:** Verify MD5/SHA512 Checksum after the Patch file download.

In order to apply the patch on ISE, log in to ISE **Primary Administration Node (PAN)** GUI and execute these instructions:

Step 1. Navigate to **Administration > System > Maintenance > Patch Management > Install**.

Step 2. Click **Browse** and choose the patch file that was downloaded from Cisco.com.

Step 3. Click **Install** to install the Patch.



Patch Installation With CLI

Step 1. Configure an ISE repository and place the required ISE patch in the repository. To configure the ISE repository refer [How to Configure Repository on ISE](#)

Step 2. Login to ISE CLI with SSH.

Step 3. Ensure the ISE CLI can list the repository content.

```
<#root>
```

```
ISE/admin# show repository FTP_repository
```

```
ise-patchbundle-10.2.0.7-Patch6-19021923.SPA.x86_64.tar.gz
```

```
ise-patchbundle-10.2.0.7-Patch9-19062923.SPA.x86_64.tar.gz
```

```
ise-patchbundle-10.1.0.0-Patch3-19110111.SPA.x86_64.tar.gz
```

Step 4. In order to install patch on a specific ISE node from the CLI, run the **patch install** command in EXEC mode.

```
Patch install <patch_file_name> <FTP_repository>
```

Log in to the CLI of the ISE node via SSH and run these commands:

```
ISE/admin#patch install ise-patchbundle-10.1.0.0-Ptach3-19110111.SPA.x86_64.tar.gz FTP_repository
% Warning: Patch installs only on this node. Install with Primary Administration node GUI to install on
Save the current ADE-OS run configuration? (yes/no) [yes] ? yes
Generating configuration...
Saved the ADE-OS run Configuration to startup successfully
Initiating Application Patch installation...

Getting bundle to local machine...
Unbundling Application Package...
Verifying Application Signature...
patch successfully installed

% This application Install or Upgrade requires reboot, rebooting now...
Broadcast message from root@ISE (pts/1) (Fri Feb 14 01:06:21 2020):
Trying to stop processes gracefully. Reload lasts approximately 3 mins
Broadcast message from root@ISE (pts/1) (Fri Feb 14 01:06:21 2020):
Trying to stop processes gracefully. Reload takes approximately 3 mins
Broadcast message from root@ISE (pts/1) (Fri Feb 14 01:06:41 2020):
The system is going down for reboot NOW
Broadcast message from root@ISE (pts/1) (Fri Feb 14 01:06:41 2020):
The system is going down for reboot NOW
```

How to Install the Patch on all the ISE nodes in the Deployment

When you install a patch from the **PAN** that is part of a distributed deployment, Cisco ISE installs the patch on the primary node and then all the secondary nodes in the deployment.

If the patch installation is successful on the Primary PAN, Cisco ISE then continues patch installation on the secondary nodes. If it fails on the **PAN**, the installation does not proceed to the secondary nodes.

However, if the installation fails on any of the secondary nodes for any reason, it still continues with the next secondary node in your deployment.

How to Roll Back the Patch on all the ISE nodes in the Deployment

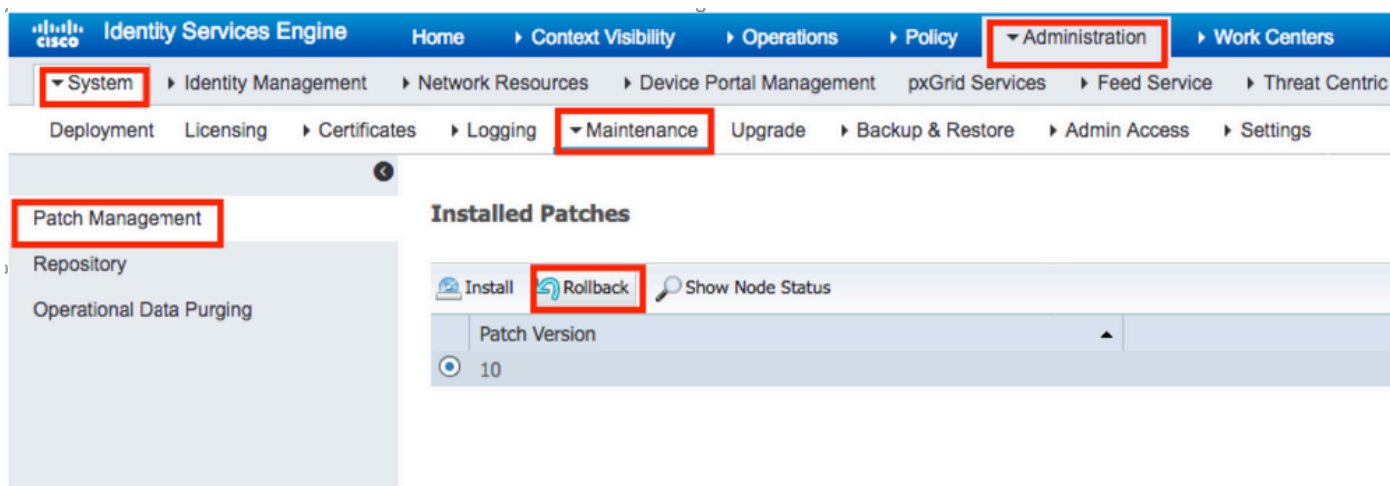
To roll back a patch from Cisco ISE nodes in a deployment, you must first roll back the change from the **PAN**.

If this is successful, the patch is then rolled back from the secondary nodes. If the rollback process fails on the **PAN**, the patches are not rolled back from the secondary nodes.

However, if the patch rollback fails on any secondary node, it still continues to roll back the patch from the next secondary node in your deployment.

While Cisco ISE rolls back the patch from the secondary nodes, you can continue to perform other tasks from the **PAN GUI**. The secondary nodes restart after the rollback.

To roll back the ISE patches, log in to **ISE GUI** and navigate to **Administration > System > Maintenance > Patch Management >** and select the required patch and click **Rollback**, as shown:



How to Rollback the Patch from the ISE CLI?

Step 1. SSH to the ISE node in which you would like to remove the patch.

Step 2. Verify the installed patches on the ISE node with the command `Show Version`

```
<#root>
```

```
ISE/admin# show version
```

```
Cisco Application Deployment Engine OS Release: 3.0
ADE-OS Build Version: 3.0.5.144
ADE-OS System Architecture: x86_64
Copyright (c) 2005-2019 by Cisco Systems, Inc.
All rights reserved.
Hostname: ISE
```

```
Version information of installed applications
```

```
-----
Cisco Identity Services Engine
```

```
-----
Version : 10.1.0.0
Build Date : Tue Feb 12 00:45:06 2019
Install Date : Mon Sep 30 12:17:29 2019
```

```
Cisco Identity Services Engine Patch
```

```
-----
Version : 1
```

```
Install Date : Tue Oct 01 01:30:12 2019
```

```
Cisco Identity Services Engine Patch
```

Version : 3

Install Date : Tue Mar 24 05:35:19 2020


Step 3. Run the command `patch remove <application name> <patch file number to be removed>`

For example:- `patch remove ise 2`

```
ISE/admin# patch remove ise 3
Continue with application patch uninstall? [y/n] y
% Warning: Patch is removed only from this node. Remove patch with Primary Administration node GUI to r

Patch successfully uninstalled

% This application Install or Upgrade requires reboot, rebooting now...
Broadcast message from root@ISE (pts/1) (Sun Mar 8 03:16:29 2020):
Trying to stop processes gracefully. Reload takes approximately 3 mins
Broadcast message from root@ISE (pts/1) (Sun Mar 8 03:16:29 2020):
Trying to stop processes gracefully. Reload takes approximately 3 mins
Broadcast message from root@ISE (pts/1) (Sun Mar 8 03:17:41 2020):
The system is going down for reboot NOW
Broadcast message from root@ISE (pts/1) (Sun Mar 8 03:17:41 2020):
The system is going down for reboot NOW
```

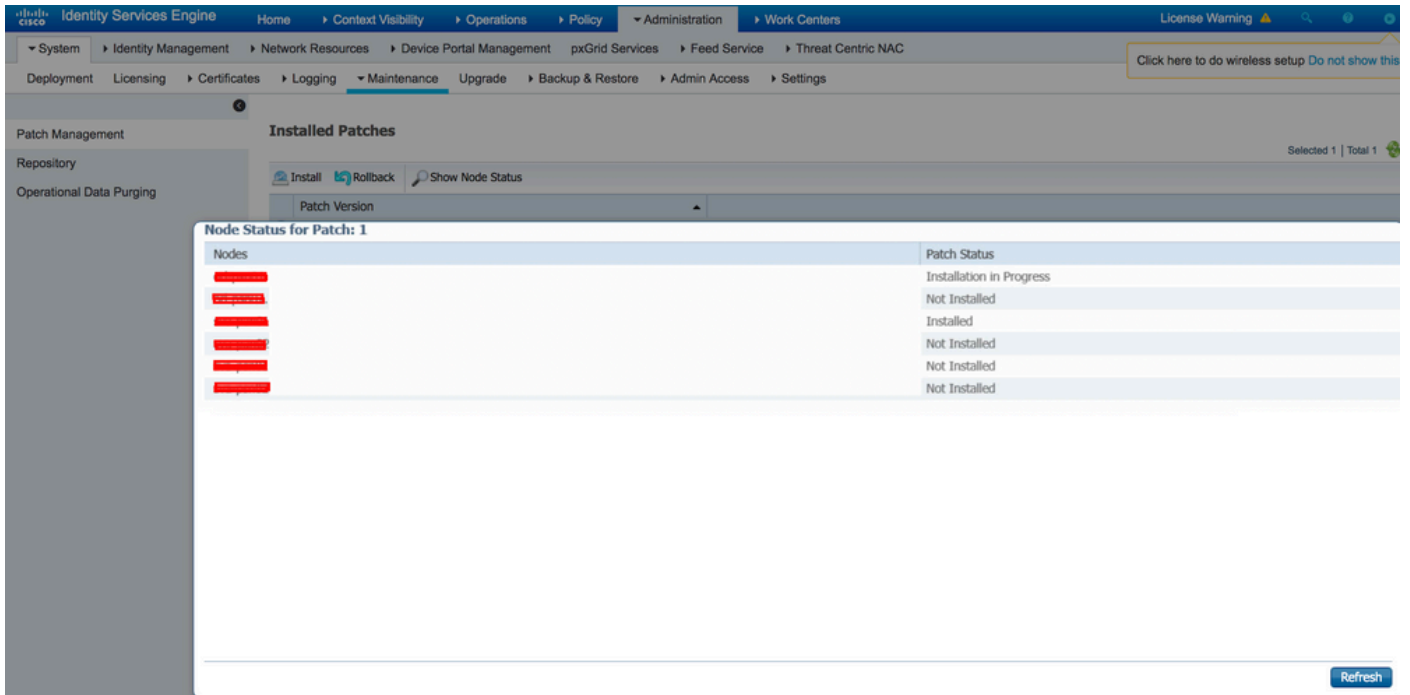
 **Note:** ISE Patches are cumulative in nature and cannot be rolled back while a newer version exists. The newer version requires to roll back first.

To uninstall the previous patch, uninstall the latest patch first and then the previous patch version.

```
ISE/admin#patch remove ise 1
Continue with application patch uninstall? [y/n] y
% Warning: Patch is removed only from this node. Remove patch with Primary Administration node GUI to r
Continue? (yes/no) [yes] ? yes
% Patch cannot be rolled back while a newer version exists, which needs to rolled back first.
```

Verify

In order to view the ISE patch installation progress, Navigate to **Administration > System > Maintenance > Patch Management > Show Node Status** as shown in the image:



Verify patch installation status from ISE node. Log to the same ISE server and run the command **Show Version**

```
ISE1/admin# show version
```

```
Cisco Application Deployment Engine OS Release: 3.0
ADE-OS Build Version: 3.0.5.144
ADE-OS System Architecture: x86_64
```

```
Copyright (c) 2005-2019 by Cisco Systems, Inc.
All rights reserved.
Hostname: ISE1
```

```
Version information of installed applications
-----
```

```
Cisco Identity Services Engine
-----
Version : 10.1.0.0
Build Date : Tue Feb 12 06:15:06 2019
Install Date : Thu Nov 21 16:39:02 2019
```

```
Cisco Identity Services Engine Patch
-----
Version : 1
Install Date : Thu Apr 02 11:00:08 2020
```

```
ISE1/admin#
```

Verify successful and failed patch messages in ISE alarms:

ALARMS ³

Icon	Alarm Name	Count	Time
⚠	Queue Link Error	4646	4 mins ago
❌	Patch Failure	2	7 mins ago
⚠	Health Status Unavailable	415	8 mins ago
⚠	ISE Authentication Inactivity	1318	13 mins ago
⚠	Fewer VM licenses installed than VM nodes deployed	4	24 mins ago
❌	DNS Resolution Failure	504	24 mins ago
ℹ	Patch Success	1	24 mins ago
❌	ISE License expiring within 30 Days	42	25 mins ago
❌	Active Directory not joined	258	25 mins ago

Successful Patch installation Log Reference

<#root>

isea/admin#

sh log system ade/ADE.log tail

```
2020-04-19T15:38:01.634794+05:30 isea ADEOSJAVAAPI[26999]: ADEAUDIT 2030, type=PATCH INSTALL,
name=PATCH INSTALL STARTED
```

```
, username=kopriadm,
```

```
cause=Application patch install has been inititated
```

```
, adminipaddress=10.65.80.116,
```

```
interface=GUI,
```

```
detail=Patch Install initiated with bundle - ise-patchbundle-10.1.0.0-Patch3-19110111.SPA.x86_64.tar.gz
```

```
2020-04-19T15:38:01.635194+05:30 isea ADE-SERVICE[1158]: [26999]:[info] application:install cars_instal
```

```
ise-patchbundle-10.1.0.0-Patch3-19110111.SPA.x86_64.tar.gz
```

```
, repo - tmplocalpatchinsta
```

```
llrepo
```

```
2020-04-19T15:38:01.784100+05:30 isea ADE-SERVICE[1158]: [26999]:[info] application:install cars_instal
```

```
2020-04-19T15:38:01.827925+05:30 isea ADE-SERVICE[1158]: [26999]:[info] application:install cars_instal
```

```
2020-04-19T15:38:01.829562+05:30 isea ADE-SERVICE[1158]: [26999]:[error] config:repository: rm_repos_cf
```

```
2020-04-19T15:38:01.830656+05:30 isea ADE-SERVICE[1158]: [26999]:[info] transfer: cars_xfer.c[66] [test
```

```
2020-04-19T15:38:02.873630+05:30 isea ADE-SERVICE[1158]: [26999]:[info] transfer: cars_xfer_util.c[2293
```

```
2020-04-19T15:38:03.247065+05:30 isea ADE-SERVICE[1158]: [26999]:[info] application:install cars_instal
```

```
Got bundle at - /storeddata/Install/.1587290881/ise-patchbundle-10.1.0.0-Patch3-19110111.SPA.x86_64.tar.
```

```
2020-04-19T15:38:03.247424+05:30 isea ADE-SERVICE[1158]: [26999]:[info] application:install cars_instal
```

```
2020-04-19T15:38:09.066295+05:30 isea ADE-SERVICE[1158]: [26999]:[info] application:install cars_instal
```

```
2020-04-19T15:38:13.171615+05:30 isea ADE-SERVICE[1158]: [26999]:[info] application:install cars_instal
```

```
d with release key
```



```
2020-04-19T15:38:18.816986+05:30 isea ADE-SERVICE[1158]: [26999]:[info] application:install cars_instal
2020-04-19T15:38:18.877267+05:30 isea ADE-SERVICE[1158]: [26999]:[info] application:install cars_instal
2020-04-19T15:38:18.877604+05:30 isea ADE-SERVICE[1158]: [26999]:[info] application:install cars_instal
2020-04-19T15:38:18.878051+05:30 isea ADE-SERVICE[1158]: [26999]:[info] application:install cars_instal
2020-04-19T15:38:18.878254+05:30 isea ADE-SERVICE[1158]: [26999]:[info] application:install ci_util.c[3
2020-04-19T15:38:18.878517+05:30 isea ADE-SERVICE[1158]: [26999]:[info] application:install cars_instal
2020-04-19T15:38:18.878712+05:30 isea ADE-SERVICE[1158]: [26999]:[info] application:install cars_instal
2020-04-19T15:38:27.006433+05:30 isea ADE-SERVICE[1158]: [26999]:[info] application:install cars_instal
```

Executing patch install script patchinstall.sh from patch.zip

```
2020-04-19T15:38:27.209692+05:30 isea test: info:[patchinstall.sh] START PATCH INSTALL SCRIPT. PATCHDIR
2020-04-19T15:38:27.211274+05:30 isea test: info:[patchinstall.sh]
```

NEW PATCH VER: 3 PRIOR PATCH VER: 0

```
2020-04-19T15:38:27.213166+05:30 isea test: info:[patchinstall.sh] IRF-RABBITMQ-RUNTIME and IRF-CORE-EN
2020-04-19T15:38:27.214840+05:30 isea test: info:[patchinstall.sh] Remove IRF-Rabbitmq container
2020-04-19T15:38:27.753502+05:30 isea test: info:[patchinstall.sh] IRF-Rabbitmq container id -
2020-04-19T15:38:27.755172+05:30 isea test: info:[patchinstall.sh] No IRF-Rabbitmq container exist to r
2020-04-19T15:38:27.756631+05:30 isea test: info:[patchinstall.sh] Remove IRF-Core-Engine container
2020-04-19T15:38:27.781127+05:30 isea test: info:[patchinstall.sh] IRF-Core-Engine container id -
2020-04-19T15:38:27.783028+05:30 isea test: info:[patchinstall.sh] No IRF-Core-Engine container exist t
2020-04-19T15:38:27.784724+05:30 isea test: info:[patchinstall.sh] IRF-RABBITMQ-RUNTIME and IRF-CORE-EN
2020-04-19T15:38:33.077501+05:30 isea test: info:[application:operation:cpmcontrol.sh] In Stop Monit
2020-04-19T15:38:33.197734+05:30 isea test: Monit daemon with pid [12796] killed
2020-04-19T15:38:34.289656+05:30 isea test: info:[application:operation:cpmcontrol.sh] Done Stop Monit
2020-04-19T15:38:34.671998+05:30 isea ADEOSShell[28278]: ADEAUDIT 2062, type=USER, name=M&T Log Process
2020-04-19T15:38:43.621160+05:30 isea test: info:[application:operation:adprobe.sh] adprobe:Stopping wm
2020-04-19T15:38:43.657769+05:30 isea test: info:[application:operation:adprobe.sh] adprobe:wmi probe i
2020-04-19T15:38:43.989085+05:30 isea test: info:[application:operation:syslogprobe.sh] syslogprobe:Sto
2020-04-19T15:38:44.019674+05:30 isea test: info:[application:operation:syslogprobe.sh] syslogprobe:sys
2020-04-19T15:38:44.367442+05:30 isea test: info:[application:operation:restprobe.sh] restprobe:Stoppin
2020-04-19T15:38:44.400103+05:30 isea test: info:[application:operation:restprobe.sh] restprobe:rest pr
2020-04-19T15:38:44.713844+05:30 isea test: info:[application:operation:agentprobe.sh] agentprobe:Stopp
2020-04-19T15:38:44.753547+05:30 isea test: info:[application:operation:agentprobe.sh] agentprobe:agent
2020-04-19T15:38:46.166418+05:30 isea test: info:[application:operation:appservercontrol.sh] Stopping I
2020-04-19T15:38:46.168374+05:30 isea ADEOSShell[29231]: ADEAUDIT 2062, type=USER, name=Application ser
```

interface=CLI, detail=Application server stopped

<#root>

```
2020-04-19T15:41:37.224949+05:30 isea test: info:[patchinstall.sh] ISE 10.1.0.0
```

patch 3 installFileSystem() INVOKED

```
2020-04-19T15:41:37.245321+05:30 isea test: info:[patchinstall.sh] Updating patched file: /storeddata/I
2020-04-19T15:41:37.251672+05:30 isea test: info:[patchinstall.sh] Updating patched file: /storeddata/I
2020-04-19T15:41:37.258874+05:30 isea test: info:[patchinstall.sh] Updating patched file: /storeddata/I
2020-04-19T15:41:37.265939+05:30 isea test: info:[patchinstall.sh] Updating patched file: /storeddata/I
2020-04-19T15:41:37.273866+05:30 isea test: info:[patchinstall.sh] Updating patched file: /storeddata/I
2020-04-19T15:41:37.280143+05:30 isea test: info:[patchinstall.sh] Updating patched file: /storeddata/I
2020-04-19T15:41:37.288008+05:30 isea test: info:[patchinstall.sh] Updating patched file: /storeddata/I
2020-04-19T15:41:37.295128+05:30 isea test: info:[patchinstall.sh] Updating patched file: /storeddata/I
2020-04-19T15:41:37.302031+05:30 isea test: info:[patchinstall.sh] Updating patched file: /storeddata/I
2020-04-19T15:41:37.308615+05:30 isea test: info:[patchinstall.sh] Updating patched file: /storeddata/I
.0-156.jar
```

<#root>

Broadcast message from root@isea (Sun Apr 19 15:50:40 2020):

Trying to stop processes gracefully. Reload takes approximately 3 mins

Broadcast message from root@isea (Sun Apr 19 15:51:01 2020):

The system is going down for reboot NOW

Session terminated, killing shell... ...killed.