

# Configure Repository on ISE

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## Introduction

This document describes how to configure a repository on the Identity Services Engine (ISE).

## Prerequisites

## Requirements

Cisco recommends that you have knowledge of these topics:

- Basic knowledge of the Identity Services Engine (ISE)
- Basic knowledge of File Transfer Protocol (FTP) server & SSH File transfer protocol (SFTP) server

## Components Used

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

- Cisco Identity Service Engine version 2.x
- A functional FTP server and SFTP server

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 allows you to create and delete repositories through the Admin portal. You can create these types of repositories:

- DISK
- FTP
- SFTP
- NFS
- CD-ROM
- HTTP
- HTTPS

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**Note:** It is recommended that you have a repository size of 10 GB for small deployments (100 endpoints or less), 100 GB for medium deployments, and 200 GB for large deployments.

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ISE Repositories can be configured from both the GUI and the CLI of the ISE and can be used for these purposes:

- Backup and Restore of ISE Configuration and Operational data
- Upgrade of ISE nodes
- Patch installation
- Export of data (Reports) from the ISE
- Export of support bundle from the ISE node

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**Note:** Repositories configured from CLI of the ISE node are local to each node and are removed upon reload of the node. Repositories configured from the GUI of the ISE are replicated to all nodes in deployment and are not removed upon reload of the node.

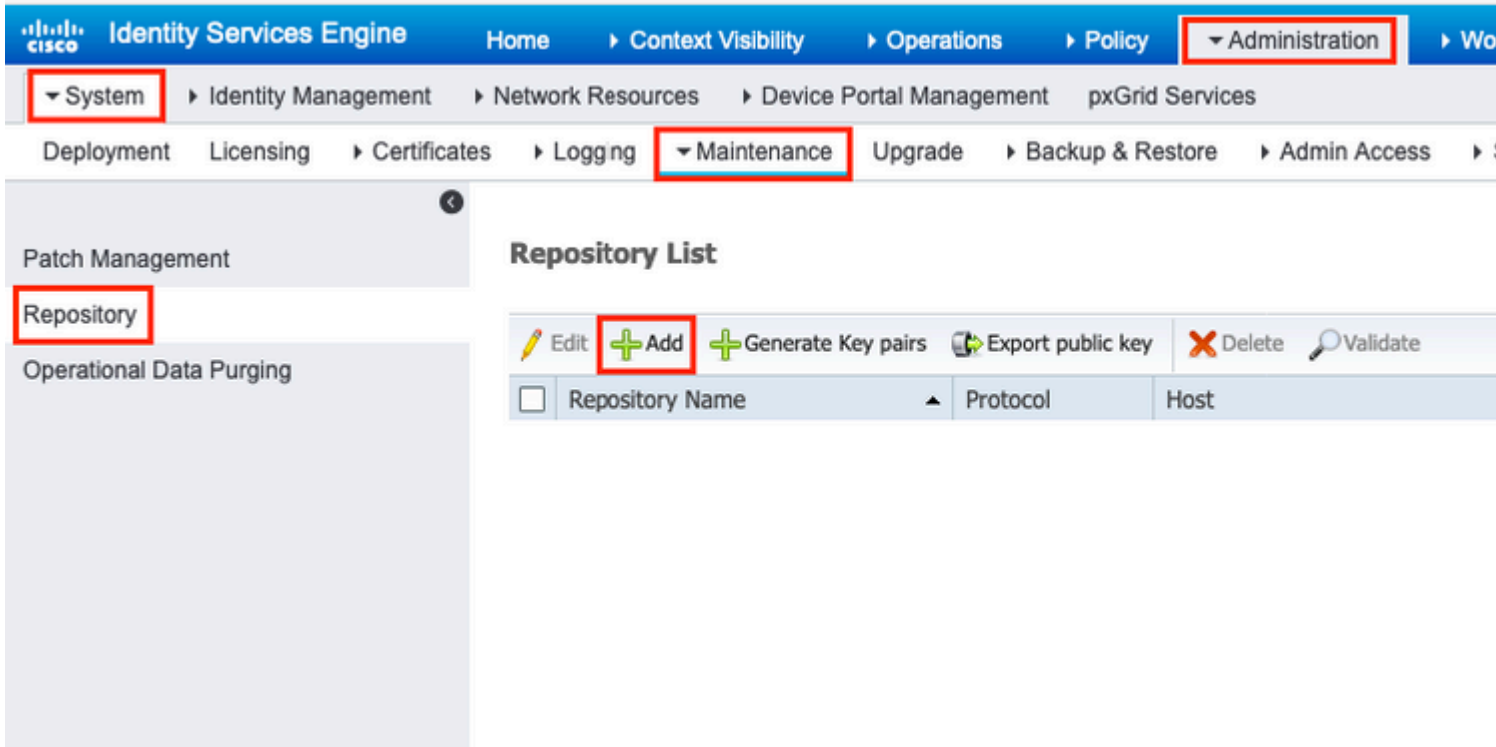
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## Configuration

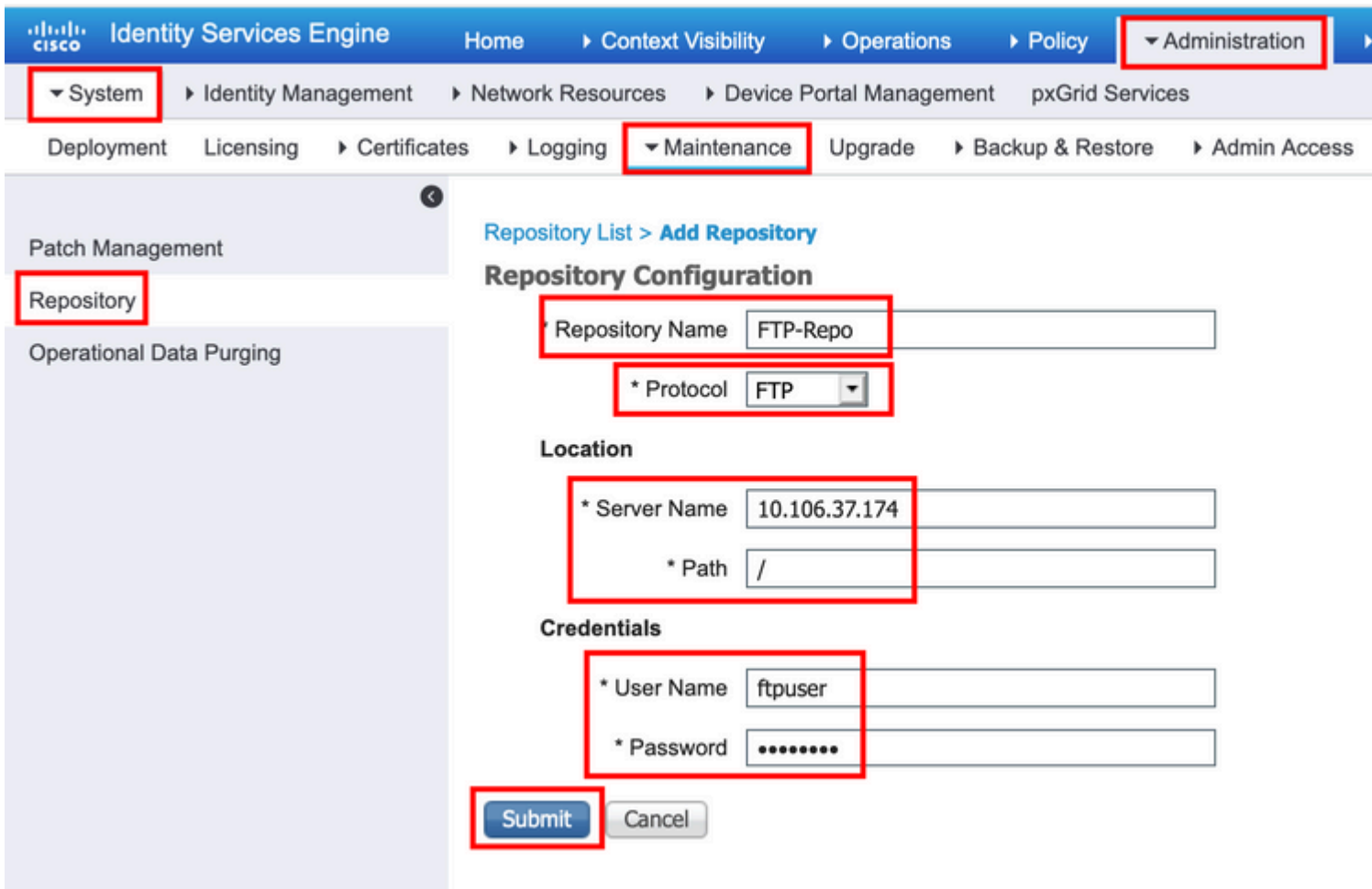
### Configure FTP Repository

#### Configure FTP Repository from the GUI

Step 1. In order to configure a repository on the ISE, log in to the ISE GUI and navigate to **Administration > System > Maintenance > Repository**. Then click Add, as shown in the image.



Step 2. Provide Repository Name and choose FTP as the protocol. Then enter Server Name, Path, User Name, and Password, and click Submit, as shown in the image.



**Configure FTP Repository from the CLI**

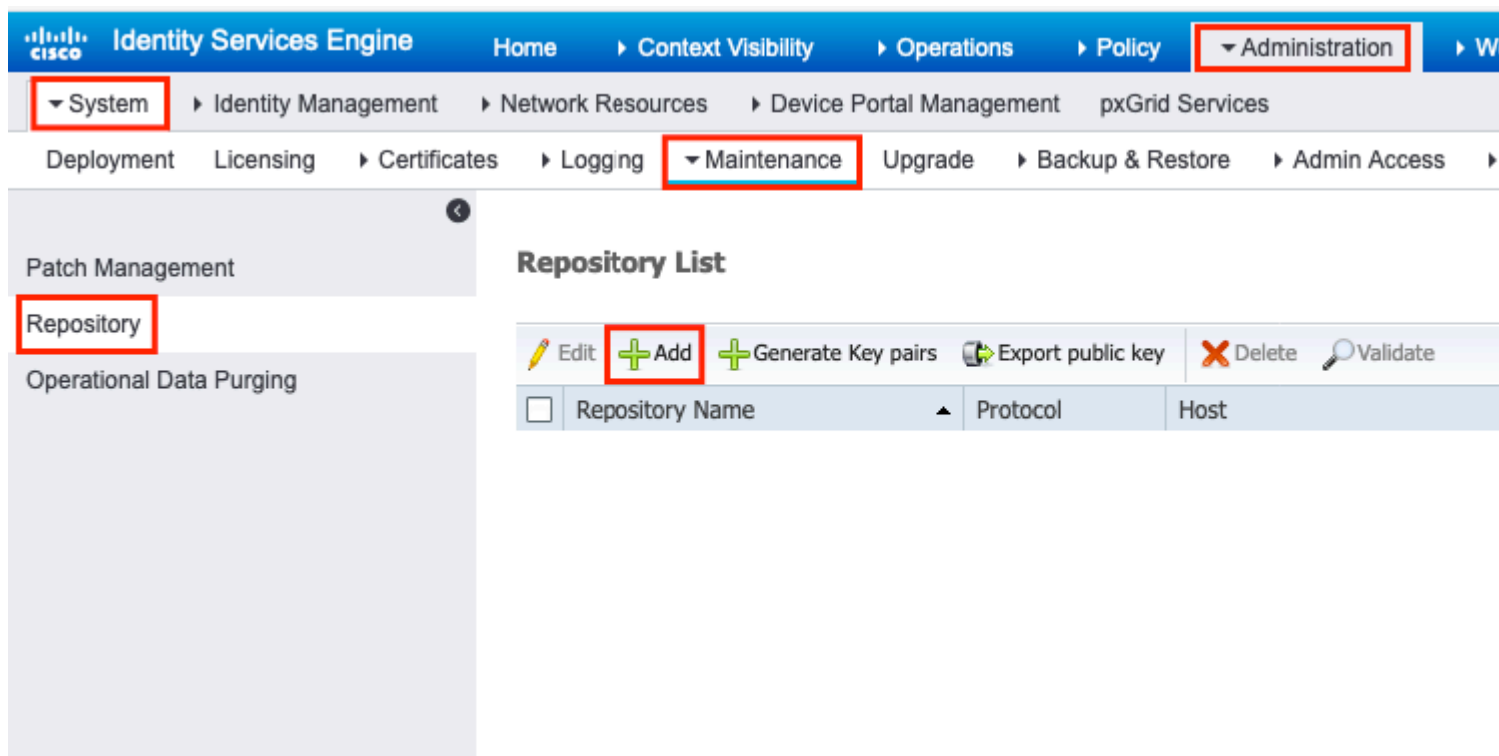
Log in to the CLI of the ISE node via SSH and run these commands.

```
ise/admin#  
ise/admin# configure terminal  
Enter configuration commands, one per line. End with CNTL/Z.  
ise/admin(config)# repository FTP-Repo  
ise/admin(config-Repository)# url ftp://10.106.37.174/  
  
ise/admin(config-Repository)# user <Username> password plain <Password>  
ise/admin(config-Repository)# exit  
ise/admin(config)# exit  
ise/admin#
```

## Configure SFTP Repository

### Configure the SFTP Repository from the GUI

Step 1. In order to configure a repository on the ISE, log in to the ISE GUI and navigate to **Administration > System > Maintenance > Repository**. Then click Add, as shown in the image.



Step 2. Provide Repository Name and choose SFTP as the protocol. Then enter Server Name, Path, User Name, and Password, and click Submit, as shown in the image.

The screenshot shows the Cisco Identity Services Engine (ISE) Administration console. The navigation menu includes 'Administration', 'System', 'Maintenance', and 'Repository List > Add Repository'. The 'Repository Configuration' form is displayed with the following fields:

- \* Repository Name: SFTP-Repo
- \* Protocol: SFTP
- Location**
  - \* Server Name: 10.106.37.34
  - \* Path: /
- Credentials**
  - \* Enable PKI authentication:
  - \* User Name: pan
  - \* Password: .....

A 'Submit' button is highlighted in red.

Step 3. After you **click** Submit, a pop-up message appears. The message prompts you to use CLI to add the host-key of the SFTP server, as shown in the image.

**Warning:** Host key of sftp server must be added through CLI using 'crypto host\_key add' exec command before this repository can be used. Also ensure that the host key string matches the host name used in the URL of the repository configuration.

OK

Step 4. Log in to the CLI of the ISE node via SSH and use the command `crypto host_key add host <ip address of the server>` to add the host key.

```
ise/admin# crypto host_key add host 10.106.37.34
host key fingerprint added
Operating in CiscoSSL FIPS mode

# Host 10.106.37.34 found: line 1
10.106.37.34 RSA SHA256:exFnNITDhafaNPFr35x6kC1pR0iTP6xS+LBmtIXPfnk
ise/admin#
```

## Configure SFTP Repository from the CLI

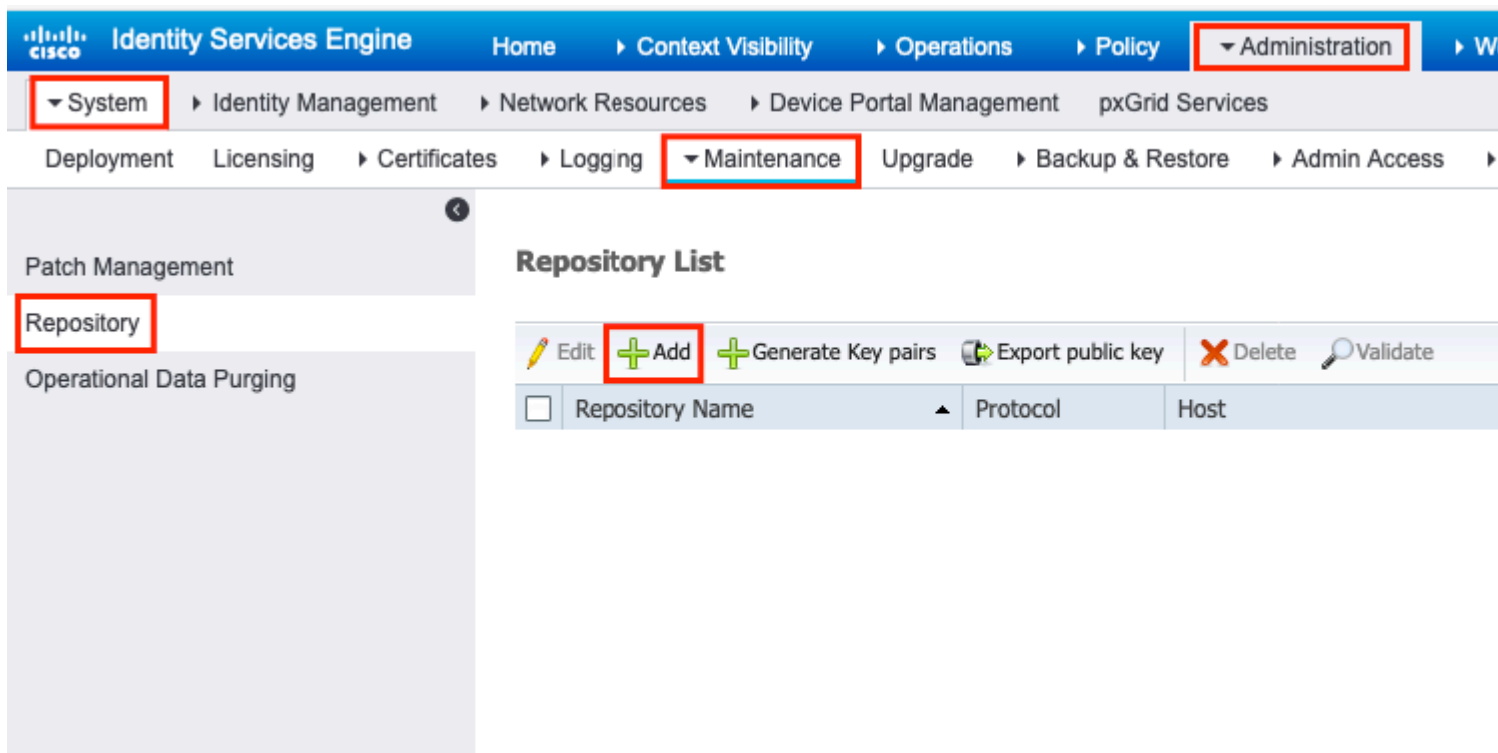
Log in to the CLI of the ISE node via SSH and run these commands:

```
ise/admin#  
  
ise/admin# configure terminal  
Enter configuration commands, one per line. End with CNTL/Z.  
ise/admin(config)# repository SFTP-Repo  
ise/admin(config-Repository)# url sftp://10.106.37.34/  
  
ise/admin(config-Repository)# user <Username> password plain <Password>  
ise/admin(config-Repository)# exit  
ise/admin(config)# exit  
ise/admin#
```

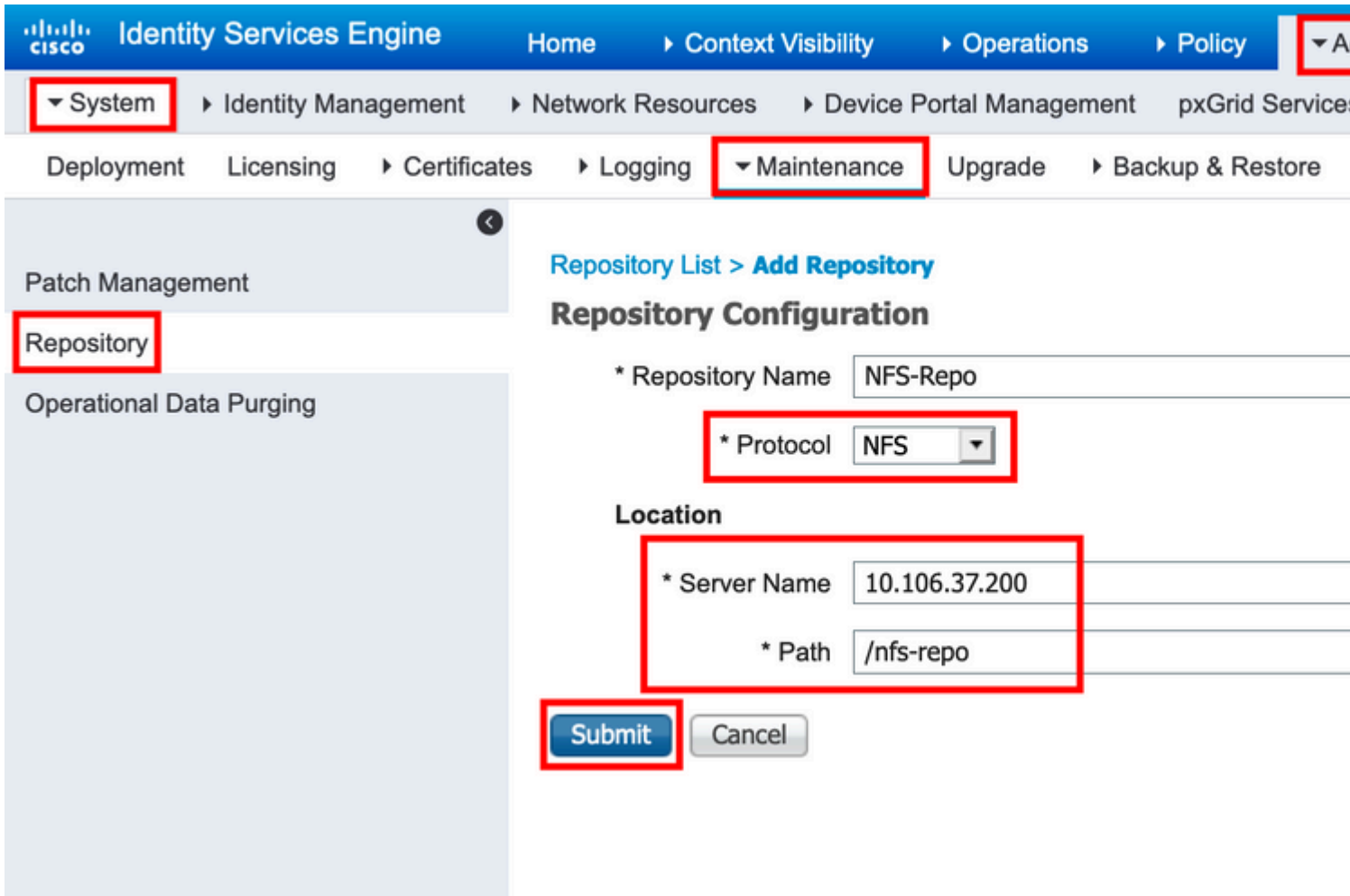
## Configure NFS Repository

### Configure NFS Repository from the GUI

Step 1. In order to configure a repository on the ISE, log in to the ISE GUI and navigate to **Administration > System > Maintenance > Repository**. Then click Add, as shown in the image.



Step 2. Provide Repository Name and choose NFS as the protocol. Then enter Server Name and Path, and click Submit, as shown in the image.



## Configure NFS Repository from the CLI

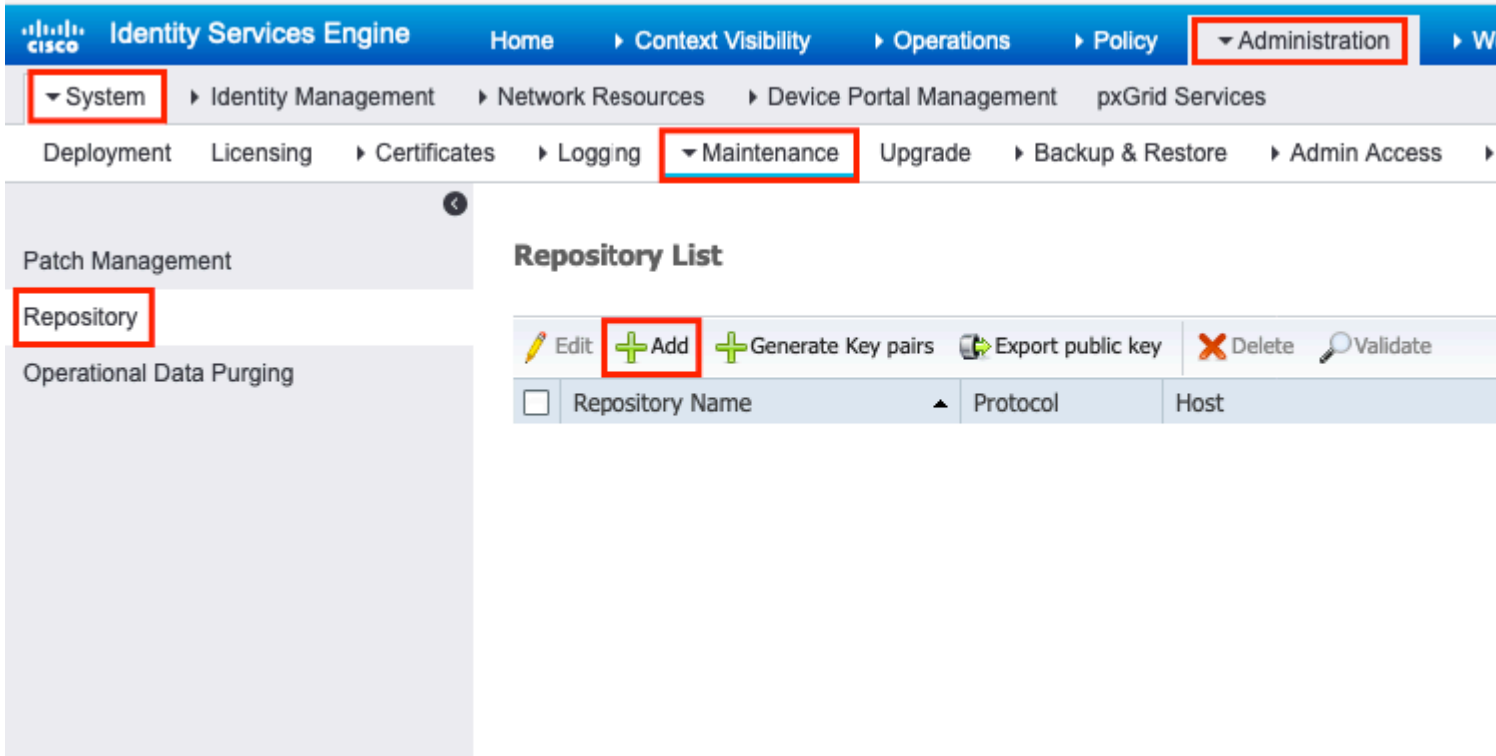
Log in to the CLI of the ISE node via SSH and run these commands:

```
ise/admin#  
  
ise/admin# configure terminal  
Enter configuration commands, one per line. End with CNTL/Z.  
ise/admin(config)# repository NFS-Repo  
ise/admin(config-Repository)# url nfs://10.106.37.200:/nfs-repo  
ise/admin(config-Repository)# exit  
ise/admin(config)# exit  
ise/admin#
```

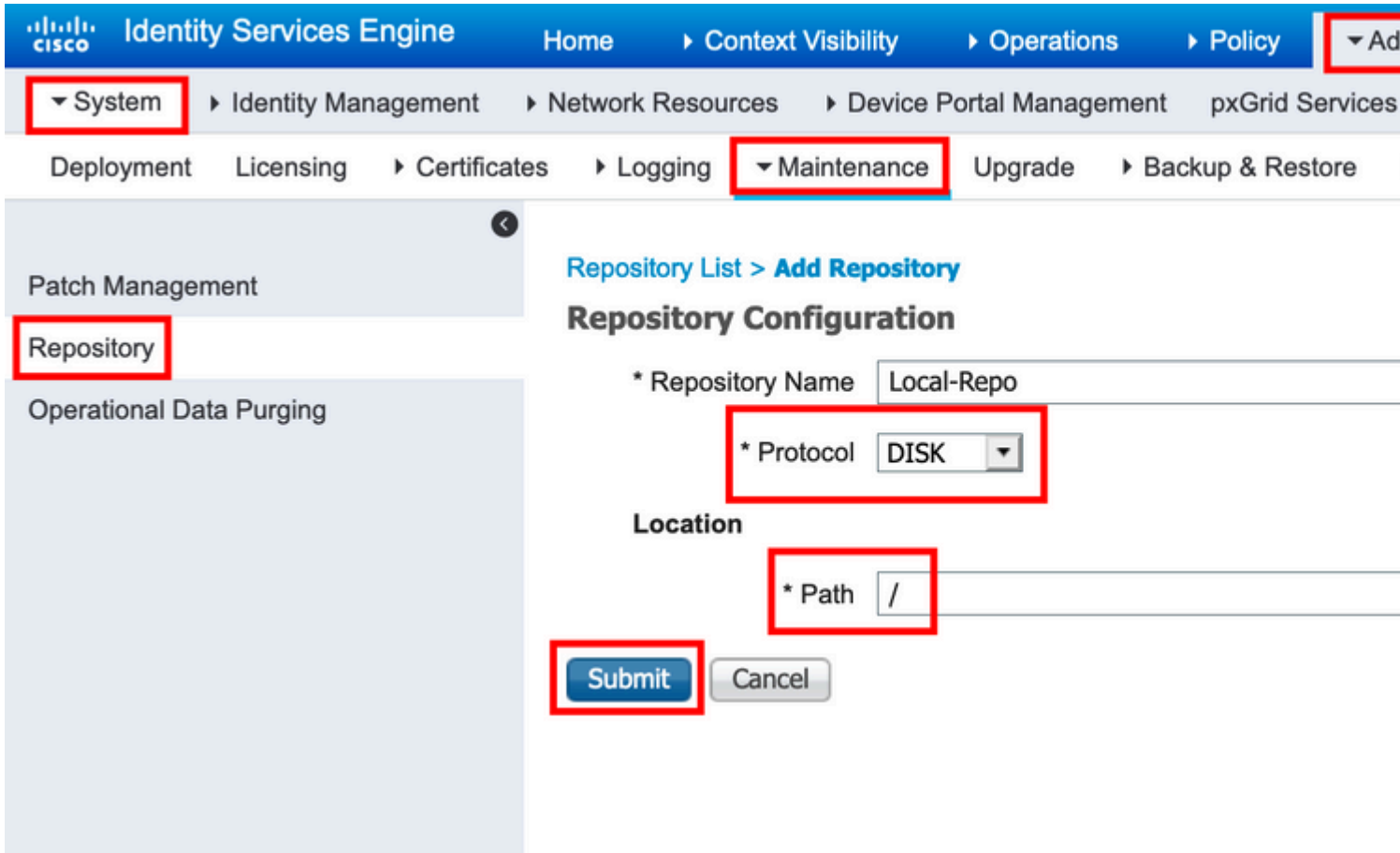
## Configure ISE Local Repository

### Configure Local Repository from the GUI

Step 1. In order to configure a repository on the ISE, log in to the ISE GUI and navigate to **Administration > System > Maintenance > Repository**. Then click Add, as shown in the image.



Step 2. Provide Repository Name and choose DISK as the protocol. Then enter the Path and click Submit, as shown in the image.



### Configure Local Repository from the CLI

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



```
ise/admin#
```

```
ise/admin# configure terminal
```

Enter configuration commands, one per line. End with CNTL/Z.

```
ise/admin(config)# repository Local-Repo
```

```
ise/admin(config-Repository)# url disk:/
```

```
ise/admin(config-Repository)# exit
```

```
ise/admin(config)# exit
```

```
ise/admin#
```

---

**Note:** Local repository store data locally on ISE disk.

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## Verify

The repository can be verified from both GUI and CLI of the ISE server.

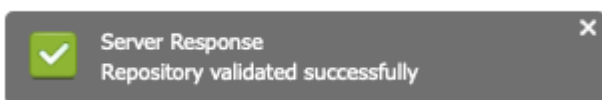
### Verify with GUI

In order to use GUI to validate the repository, navigate to **Administration > System > Maintenance > Repository**, select the repository, and click **Validate**, as shown in the image.

The screenshot shows the Cisco Identity Services Engine (ISE) GUI. The navigation path is: **System** > **Maintenance** > **Repository**. The 'Repository List' table is displayed with the following data:

Repository Name	Protocol	Host
FTP-Repo	ftp	10.106.37

After you click **Validate**, you must get the **Repository validated successfully** response on the GUI, as shown in the image.



### Verify with CLI

In order to validate the repository from the CLI, log in to the ISE node via SSH and run the command `show repository <name of the repository>`. The output of the command lists the files present in the repository.

```
ise/admin#
ise/admin# show repository FTP-Repo
Config-Backup-CFG10-200307-1043.tar.gpg
ise/admin#
```

## Troubleshoot

In order to debug the repository on ISE, use these debugs:

```
<#root>

ise-1/pan#

debug copy 7

ise-1/pan#

debug transfer 7

ise-1/pan#
ise-1/pan# 6 [25683]:[info] transfer: cars_xfer.c[220] [system]: ftp dir of repository FTP-Repo requested
7 [25683]:[debug] transfer: cars_xfer_util.c[2017] [system]: ftp get dir for repos FTP-Repo
7 [25683]:[debug] transfer: cars_xfer_util.c[2029] [system]: initializing curl
7 [25683]:[debug] transfer: cars_xfer_util.c[2040] [system]: full url is ftp://10.106.37.174/ISE/
7 [25683]:[debug] transfer: cars_xfer_util.c[1928] [system]: initializing curl
7 [25683]:[debug] transfer: cars_xfer_util.c[1941] [system]: full url is ftp://10.106.37.174/ISE/Config-Backup-CFG10-200307-1043.tar.gpg
7 [25683]:[debug] transfer: cars_xfer_util.c[1962] [system]: res: 0
7 [25683]:[debug] transfer: cars_xfer_util.c[1966] [system]: res: 0-----filetime Config-Backup-CFG10-200307-1043.tar.gpg
7 [25683]:[debug] transfer: cars_xfer_util.c[1972] [system]: filetime Config-Backup-CFG10-200307-1043.tar.gpg
7 [25683]:[debug] transfer: cars_xfer_util.c[1976] [system]: filesize Config-Backup-CFG10-200307-1043.tar.gpg
6 [25683]:[info] transfer: cars_xfer.c[130] [system]: ftp copy out of /opt/backup/backup-Config-Backup-1043.tar.gpg
6 [25683]:[info] transfer: cars_xfer_util.c[787] [system]: curl version: libcurl/7.29.0 OpenSSL/1.0.2s zlib/1.2.8
7 [25683]:[debug] transfer: cars_xfer_util.c[799] [system]: full url is ftp://10.106.37.174/ISE/Config-Backup-CFG10-200307-1043.tar.gpg
```

Debugs are disabled as shown here:

```
ise-1/pan#
ise-1/pan# no debug copy 7
ise-1/pan# no debug transfer 7
ise-1/pan#
```

To ensure that there is proper communication between the ISE and the configured repository server, set up a packet capture from the ISE GUI:

1. Navigate to **Operations > Troubleshoot > Diagnostic tools > TCP Dump**.
2. Enter the appropriate value in Filter and select Format.
3. Click Start.

The screenshot displays the Cisco Identity Services Engine (ISE) interface. The top navigation bar includes 'Home', 'Context Visibility', 'Operations', 'Policy', and 'Administration'. Under 'Operations', 'Troubleshoot' is selected, leading to 'Diagnostic Tools'. The 'TCP Dump' tool is highlighted in the left sidebar. The main content area shows the 'TCP Dump' configuration page with the following details:

- Status:** Stopped (with a red stop icon) and a blue 'Start' button.
- Host Name:** ise-1
- Network Interface:** GigabitEthernet 0
- Promiscuous Mode:** On (selected with a blue radio button) and Off (unselected with a white radio button).
- Filter:** ip host 10.106.37.174. Below the filter field, an example is provided: 'Example: 'ip host helios and not iceberg''.
- Format:** Raw Packet Data

In order to trigger some traffic to the repository which needs to be tested, navigate to **Administration > System > Maintenance > Repository**, select the repository, and click **validate**. Then navigate to **Operations > Troubleshoot > Diagnostic tools > TCP Dump**, click **Stop**, and download the packet capture as shown in the image.



General Tools

RADIUS Authentication Trouble...

Execute Network Device Comm...

Evaluate Configuration Validator

Posture Troubleshooting

EndPoint Debug

TCP Dump

Session Trace Tests

TrustSec Tools

### TCP Dump

Monitor the packet headers on the network and save to a file (up to 5 Minutes)

Status Stopped Start

Host Name ise-1

Network Interface GigabitEthernet 0

Promiscuous Mode  On  Off

Filter ip host 10.106.37.174

Example: 'ip host helios and not iceberg'

Format Raw Packet Data

### Dump File

Last created on Tue Apr 21 07:37:24 IST 2020

FileSize : 9062 bytes

Format : Raw Packet Data

Host Name : ise-1

Network Interface : GigabitEthernet 0

Promiscuous Mode : On

Filter : ip host 10.106.37.174

Download

Delete