

# Transfer Show Tech-Support Files to XR VM on Routers Running eXR

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## Introduction

This document describes how to transfer **show tech-support** files from Admin Virtual Machine (VM) to XR VM on routers running 64-bit Cisco IOS® XR.

## Prerequisites

### Requirements

Cisco recommends that you have knowledge of this topic:

- Router running 64-bit Cisco IOS® XR

### Components Used

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

- ASR 9010 running 64-bits Cisco IOS XR.

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

## Understanding Cisco IOS XR 64-bit Architecture

Cisco IOS XR 64-bit OS runs in two variants:

- VM-based 64-bit software:
  - Supported platforms: ASR 9000, NCS 6000, NCS 5500.
  - VM OS is separate from Host OS.

The architecture includes the next common components:

- **Host (Hypervisor):** The host is the underlying 64-bit operating system that acts as the hypervisor. The XR VM/LXC and the Admin VM/LXC spawn on the hypervisor. It also runs the container/VM daemons like libvirt and docker to spawn the XR and Calvados instances.
- **XR VM:** The Cisco IOS XR control plane processes run within an isolated VM/LXC. This VM/LXC contains the Cisco IOS XR control plane processes (protocol stacks such as BGP, ISIS, OSPF, internal database, APIs, and so on). The XR VM brings its own kernel and runs the libvirt daemon and the docker daemon inside the XR VM. The User LXC/Docker containers are spawned inside XR VM unlike LXC-based platforms where the user containers are spawned on the Host kernel.
- **Admin VM:** Admin VM/LXC, called Calvados, is the first instance that comes up once the Host layer is up. The admin VM/LXC therefore helps handle the lifecycle of the XR VM/LXC. The primary purpose of Calvados is to enable multi-tenancy on the same router by spawning multiple Cisco IOS XR instances. These instances act as separate logical routers (secure domain routers (SDRs)).

Virtual Machines are running on all Router Processors (RP) and Linecards (LC).

## Admin VM and XR VM prompts comparison

XR VM Prompt example:

```
RP/0/RSP1/CPU0:ASR-9010-B-eXR#
```

Admin VM Prompt examples:

First, you need to enter admin mode running **admin** command and then press enter.

```
RP/0/RSP1/CPU0:ASR-9010-B-eXR#admin
```

When you see a prompt that starts with **sysadmin**, it means you are in the Admin VM prompt:

```
sysadmin-vm:0_RSP1#
```

## Creating show tech-support files in XR VM

For this example a **show tech-support install** is used, but this applies to all available **show tech-support** files.

Step 1. Run **show tech-support install** command.

```
RP/0/RSP1/CPU0:ASR-9010-B-eXR#show tech-support install
Wed Sep 27 00:18:42.772 IST
++ Show tech start time: 2023-Sep-27.001843.IST ++
Wed Sep 27 00:18:47 IST 2023 Waiting for gathering to complete
.....
Wed Sep 27 00:22:57 IST 2023 Compressing show tech output
Show tech output available at 0/RSP1/CPU0 : /harddisk:/showtech/showtech-ASR-9010-B-eXR-install-2023-Sep-27.001843.IST.tgz
++ Show tech end time: 2023-Sep-27.002305.IST ++
```

Step 2. Once the router completes the process, you can check the location path of the file.

```
harddisk:/showtech/showtech-ASR-9010-B-eXR-install-2023-Sep-27.001843.IST.tgz
```

The path where the file is **harddisk:/showtech/**

This file can be found running the command **dir harddisk:/showtech**

```
RP/0/RSP1/CPU0:ASR-9010-B-eXR#dir harddisk:/showtech
Wed Sep 27 00:24:23.412 IST
Directory of harddisk:/showtech
 177 -rw-r--r--. 1 24750015 Sep 27 00:22 showtech-ASR-9010-B-eXR-install-2023-Sep-27.001843.IST.tgz
```

For Admin **show tech-support** files you first need to move the file to XR VM and then transfer via FTP/TFTP or USB.

## Creating admin show tech File in Admin VM and Transferring to XR VM

Step 1. Enter admin mode.

```
RP/0/RSP1/CPU0:ASR-9010-B-eXR#admin
Wed Sep 27 00:25:07.481 IST
```

Step 2. Once the Admin VM prompt is displayed, you need to create the **show tech-support install** file.

```
sysadmin-vm:0_RSP1# show tech-support install
Tue Sep 26 18:55:16.993 UTC+00:00
```

```
++ Show tech start time: 2023-Sep-26.185517.UTC ++
Waiting for gathering to complete
.....
Compressing show tech output
Show tech output available at /misc/disk1//showtech/showtech-install-admin-2023-Sep-26.185517.UTC.tgz
Please collect show tech-support ctrace in addition to any sysadmin show-tech-support collection
++ Show tech end time: 2023-Sep-26.185646.UTC ++
```

As you can see from the outputs when a **show tech-support** file is created from admin mode is using a different path.

```
/misc/disk1//showtech/showtech-install-admin-2023-Sep-26.185517.UTC.tgz
```

It is also located at the **/showtech** folder but in **/misc/disk1/** partition. This is basically the same as the **harddisk:** partition for XR VM, it is just called different and also is in a different location since Admin VM is different from XR VM.

If you run the command **dir harddisk:/showtech** from the Admin VM prompt, you can find the **show tech-support** file.

```
sysadmin-vm:0_RSP1# dir harddisk:/showtech
Tue Sep 26 18:57:45.356 UTC+00:00
total 11468
129557 -rw-r--r--. 1 11012583 Sep 26 18:56 showtech-install-admin-2023-Sep-26.185517.UTC.tgz
129552 -rw-r--r--. 1 727473 Sep 22 02:07 showtech-fpd-admin-2023-Sep-22.020621.UTC.tgz
9553016 kbytes total (3916872 kbytes free)
```

Step 3. Now that you have found the file under the **harddisk:/showtech** path of the Admin VM you need to copy to XR VM.

The file can be transferred to the root of the **harddisk:** of the XR VM or, if you prefer to the same location as the first file created **harddisk:/showtech**.

You need to use the command **copy <source path> <destination path>**.

```
sysadmin-vm:0_RSP1# copy harddisk:/showtech/showtech-install-admin-2023-Sep-26.185517.UTC.tgz harddisk:
Tue Sep 26 19:04:54.193 UTC+00:00
Copying harddisk:/showtech/showtech-install-admin-2023-Sep-26.185517.UTC.tgz to harddisk:/showtech/
showtech-install-admin-2023-Sep-26.185517.UTC.tgz
File copied successfully
```



**Note:** For this case the file can be copied to the **harddisk:/showtech** path but using the VM1 location of RSP1 that is the active Route Switch Processor (RSP) of the router.

You can check which RSP is the active from the XR VM prompt **RP/0/RSP1/CPU0:ASR-9010-B-eXR#** or the Admin VM prompt **sysadmin-vm:0\_RSP1**.

VM1 is always XR VM.

This also applies to routers that uses Route Processor(RP) instead of RSP.

You just need to replace RSP1 to RP1, in case RSP1 or RP1 is the active. If the active is the RSP0 or RP0 then you need to change the last part of command, like the next examples:

Location 0/RSP0/CPU0/VM1 - When the active RSP is the RSP0

Location 0/RSP1/CPU0/VM1 - When the active RSP is the RSP1

Location 0/RP0/CPU0/VM1 - When the active RP is the RP0

Location 0/RP1/CPU0/VM1 - when the active RP is the RP1

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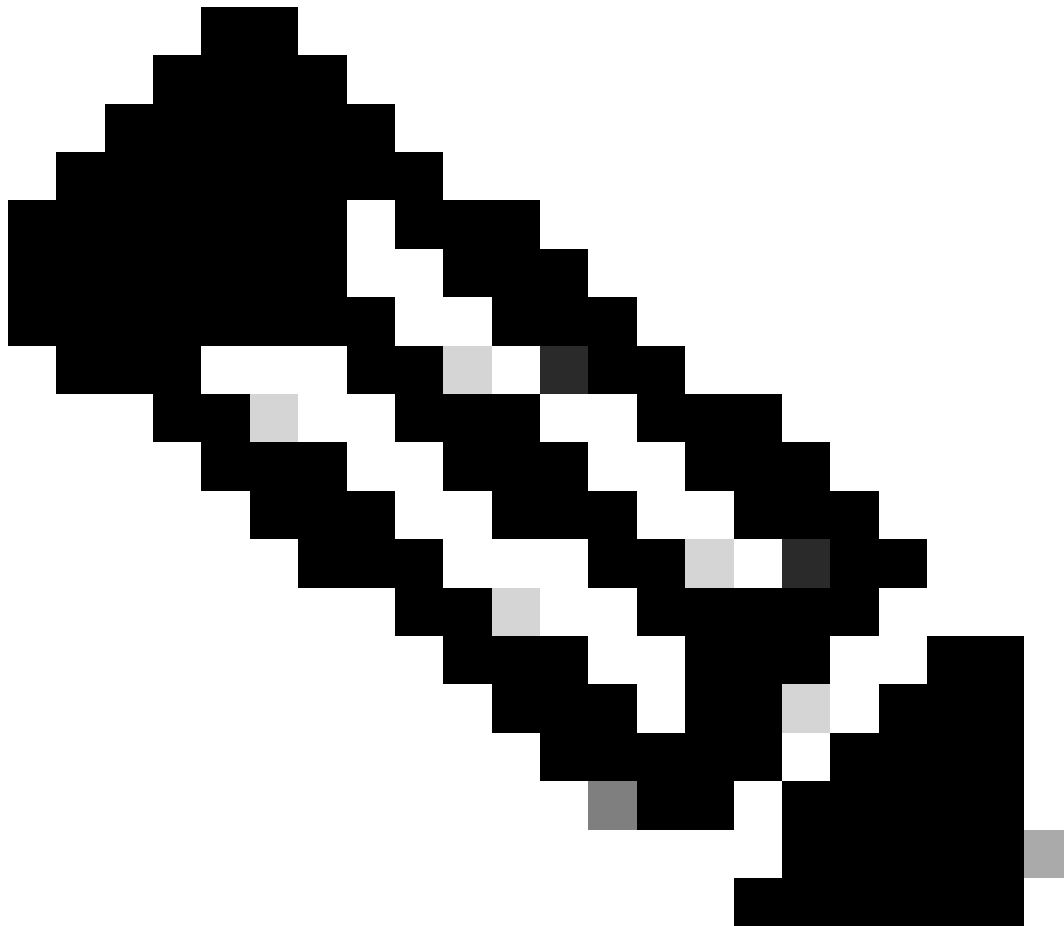
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Step 4. Once the file has been copied, you can exit admin mode and then check the **harddisk:/showtech** directory to confirm the file exists there.

```
RP/0/RSP1/CPU0:ASR-9010-B-eXR#dir harddisk:/showtech
Wed Sep 27 00:36:51.042 IST
Directory of harddisk:/showtech
 177 -rw-r--r--. 1 24750015 Sep 27 00:22 showtech-ASR-9010-B-eXR-install-2023-Sep-27.001843.IST.tgz
 179 -rw-r--r--. 1 11012583 Sep 27 00:36 showtech-install-admin-2023-Sep-26.185517.UTC.tgz
```

Now that the file was successfully copied to XR VM you can transfer it using the FTP/TFTP server or USB media.

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**Note:** Not all show tech files can have an Admin variant. You can check which **show techs** are available running the command **show tech-support** and then the question mark “?” as in this next example:

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sysadmin-vm:0\_RSP1# show tech-support ?

Possible completions:

HBloss	Show tech for Heartbeat loss
aaa	show debug information for aaa
alarm_mgr	Show tech of alarm_mgr process
canbus	Show tech of canbus
cflow	Dump code coverage data from admin/FCs/SCs
cm	Show tech of cm process
confd	show debug information for confd
control-ethernet	Show tech of control ethernet subsystem
ctrace	Show tech of ctrace
ds	Show tech of ds process
envmon	Show tech of envmon process
fpd	Show tech of fpd process
install	show debug information for install
issu	Show tech for ISSU
obfl	Show tech of obfl process
os	Show tech for OS
pam	Show tech for PAM
pcie	Show tech of pcie
pm	Show tech of pm process
sdr_mgr	Show tech of sdr_mgr process
shelf_mgr	Show tech of shelf_mgr process
syslog	Show tech of syslog process
tacacs-server	show debug information for tacacs-server

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## Related Information

- [Cisco Technical Support & Downloads](#)