



Avaya Call Management System

Upgrade Express and Platform Upgrade

Customer Requirements

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Chapter 1: Introduction

Purpose

The document describes procedures customers must do before and after a CMS Upgrade Express (CUE) upgrade or platform upgrade.

Intended audience

This document is intended for implementation engineers and system administrators.

Related resources

Documentation

Table 1: Related documents

Title	Use this document to:	Audience
Planning		
<i>Avaya Call Management System CMS Upgrade Express and Platform Upgrade Customer Requirements</i>	Plan the upgrade to new software and hardware.	Implementation engineers and system administrators
<i>Avaya Call Management System Overview and Specification</i>	Understand the features and capacities of CMS.	All
Implementing		

Table 1: Related documents

Title	Use this document to:	Audience
<i>Deploying Avaya Call Management System in an Avaya Customer Experience Virtualized Environment</i>	Deploy a new CMS VMware installation.	Implementation engineers and system administrators
<i>Avaya Call Management System Dell R620 and R720 Hardware Installation, Maintenance, and Troubleshooting</i>	Deploy a new CMS installation on Dell hardware.	Implementation engineers and system administrators
<i>Avaya Call Management System Dell R220, R630, and R730 Hardware Installation, Maintenance, and Troubleshooting</i>	Deploy a new CMS installation on Dell hardware.	Implementation engineers and system administrators
<i>Avaya Call Management System HP DL 380P G8 and G9 Hardware Installation, Maintenance, and Troubleshooting</i>	Deploy a new CMS installation on HP hardware.	Implementation engineers and system administrators
<i>Avaya Call Management System Software Installation, Maintenance, and Troubleshooting for Linux</i>	Install, maintain, and troubleshoot CMS software on a Linux platform.	Implementation engineers and system administrators
<i>Maintaining and Troubleshooting the Avaya Converged Platform 130 Series</i>	Maintain, and troubleshoot Avaya Converged Platform 130 Series.	Implementation engineers and system administrators
<i>Installing the Avaya Converged Platform 130 Series</i>	Install Avaya Converged Platform 130 Series.	Implementation engineers and system administrators

Avaya Mentor videos

Avaya Mentor is an Avaya-run channel on YouTube that includes technical content on how to install, configure, and troubleshoot Avaya products.

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- Enter a key word in the Search Channel to search for a specific product or topic.
- Scroll down Playlists, and click the name of a topic to see the available list of videos posted on the site.

Documentation websites

All CMS documentation can be found at <http://support.avaya.com>. New issues of CMS documentation will be placed on this website when available.

Support

Visit the Avaya website at <http://support.avaya.com> for the most up-to-date documentation, product notices, and knowledge articles. You can also search for release notes, downloads, and resolutions to issues. Use the online service request system to create a service request. Chat with live agents to get answers to questions, or request an agent to connect you to a support team if an issue requires additional expertise.

Chapter 2: Procedures required before the upgrade

It is the customer's responsibility to ensure that all information and procedures presented in this chapter are understood and completed before the upgrade starts. Use the following checklist to verify that all information is understood and procedures are completed.

Procedure	✓
Upgrade scenarios supported for CMS 18.1 on page 11	
Who must perform upgrades on page 13	
Verify the hardware and media for your upgrade kit on page 13	
Backing up the old system on page 14	
Backing up the old system on page 14	
Collecting third-party and custom software on page 20	

Upgrade scenarios supported for CMS 18.1

CMS R18.1 supports the following upgrade scenarios:

- In-version base load upgrades, where you only upgrade the Linux RPMs and upgrade to the new CMS software.
- Major version CMS upgrade express upgrades, where you replace the disk drives in the old system with blank disks, use software discs to install the Linux OS and CMS software, and migrate the customer data onto the new disk drives.

Note:

Disk drive replacement using CMS upgrade express only applies to existing hardware servers.

- Platform upgrades, where you install the new Linux software and the new CMS software on a new customer-provided VMware system or Avaya-provided Avaya Converged Platform system, and migrate the customer data onto the new system.

Note:

Upgrades from an older major version of CMS on VMware to a newer major version of CMS on VMware are like platform upgrades. The new CMS OVA is installed on VMware, and the CMS data is migrated from the old system to the new OVA installation. For more information about upgrades on VMware systems, see *Deploying CMS in an Avaya Customer Experience Virtualized Environment*.



Important:

You cannot use a base load upgrade or a CMS upgrade express upgrade if the current platform is using Solaris software on Oracle or Sun hardware. You must do a platform upgrade and move to a customer-provided VMware system or Avaya Converged Platform system.

Base load upgrades

The base load upgrade process is used when upgrading from CMS 18.0.x to 18.1 on existing CMS 18.0.x systems.

For information about the base load upgrade process, see *Avaya Call Management System Base Load Upgrades*.

CUE upgrades

The CMS upgrade express upgrade process reuses existing CMS hardware that can support the new CMS 18.1 software. The following models of hardware can support CMS 18.1, regardless of their current CMS release:

- Dell R220
- Dell R630
- Dell R730
- HPE DL20 G9
- HPE DL380 G9

For information about CMS upgrade express, see *Avaya Call Management System CMS Upgrade Express and Platform Upgrades Customer Requirements* and *Avaya Call Management System CMS Upgrade Express and Platform Upgrades*.

Platform upgrades

CMS R18.1 supports platform upgrades from CMS 15.x, 16.x and 17.x, regardless of what hardware the CMS software currently resides.

Note:

Contact your Avaya account team if you need to upgrade from CMS releases older than 15.x.

For information about platform upgrades, see *Avaya Call Management System CMS Upgrade Express and Platform Upgrades Customer Requirements* and *Avaya Call Management System CMS Upgrade Express and Platform Upgrades*.

Who must perform upgrades

Avaya-approved business partners, with Avaya Support Professional Specialist (ASPS) certification, are authorized to perform CMS implementation and upgrades. Only Avaya-authorized personnel can enable CMS licenses.



Important:

If these procedures are performed by nonauthorized personnel, the following consequences might occur:

- You might permanently lose data.
- The CMS system might be put in a nonfunctioning state for some time.
- You might be billed additional time and material expenses by Avaya.

Verify the hardware and media for your upgrade kit

Software-only upgrades

A CUE software-only upgrade kit includes new blank hard disks and CMS R18.1 software media.

Use the new blank hard disks to replace the hard disks in your existing platform. Verify that you have the proper number and type of disks for your platform.

The software media includes the CUE software disc used to perform the upgrade procedures. The kit also includes a bootable disc for your OS that is used to create the CMS R18.1 instance on the new hard disks. For Linux platforms, the disc is the CMS R18.1 Kickstart disc.

Platform upgrades

A platform upgrade kit includes CMS R18.1 software media for Linux systems. For a platform upgrade, the customer must provide a new VMware system or order a new Avaya Converged Platform VMware system. You will then download and install CMS R18.1 software for VMware.

Backing up the old system

This section includes the following topics:

- [Overview](#) on page 14
- [Cleaning the tape drive](#) on page 15
- [Performing a CMSADM backup to tape](#) on page 15
- [Performing a full maintenance backup to tape](#) on page 18
- [Performing an incremental maintenance backup](#) on page 19

Overview

To move data from the old system to the new system, the customer must either back up the old system on tape or use NFS backup. NFS backup is supported on CMS R16.2 or later.



Important:

When using NFS for backups on CMS 18.0.2 or later, you must use NFS Version 4 (v4). When upgrading from an older version of CMS that supports an older version of NFS, you must upgrade your NFS setup to NFS v4 after you upgrade your system.



Important:

All tape backups must be completed before calling CMS provisioning. LAN backups cannot be used for data migration in this procedure.

This section includes the following topics:

- [Cleaning the tape drive](#) on page 15

- [Performing a CMSADM backup to tape](#) on page 15

The CMSADM backup is usually done the night before the upgrade.

- [Performing a full maintenance backup to tape](#) on page 18

The full maintenance backup is usually scheduled to run overnight the night before the upgrade. However, if an incremental backup is not being done, run the full maintenance backup just before the upgrade.

- [Performing an incremental maintenance backup](#) on page 19

The incremental backup, if required, is done just prior to the old system being turned over to the technician and remote engineering support personnel. Any data collected after this incremental backup will *not* be migrated to the new system.

Cleaning the tape drive

See your computer documentation for instructions on how to clean the tape drive if you are using a tape drive for backup.

Backing up system data

A backup of the system data must be performed approximately one day before the CMS base load upgrade.

To take a back up of your current system files, choose one of the following procedures:

- If you back up your data directly to a tape device, continue with [Performing a CMSADM backup to tape](#) on page 15.
- If you back up your data to a USB storage device, refer to the section *Performing a CMSADM backup to a USB storage device* of the *Avaya CMS Software Installation, Maintenance, and Troubleshooting for Linux* document for information on how to perform CMSADM backups to a USB storage device.
- If you back up your data to a network mount point, refer to the section *Performing a CMSADM backup to a network mount point* in the *Avaya CMS Software Installation, Maintenance, and Troubleshooting for Linux* document for information on how to perform CMSADM backups to a network mount point.

Performing a CMSADM backup to tape

The CMSADM backup is not service affecting. However, CMS users who are not logged in when the backup starts must wait for the backup to complete before logging in to CMS.

To do a CMSADM backup:



WARNING:

If you are backing up using tape, verify that you are using the correct tape for the tape drive on your system. Many of the tape cartridges look alike, and using the wrong tape can damage the tape drive mechanism and tape heads.

1. Log in as root.
2. Enter:

cmsadm

The system displays the CMS Administration menu.

3. Enter: **3**

Depending on the configuration of your system, the system displays one of the following options.

- a. If only one tape drive is available on the system, the system displays the following message:

```
Please insert the first cartridge tape into <device name>.  
Press ENTER when ready or Del to quit:
```

Continue with Step [5](#).

- b. If more than one tape drive is available for use by the system, the system displays a list of the tape drives.
4. Enter a tape drive selection from the displayed list.

The system displays the following message:

```
Please insert the first cartridge tape into <device name>.  
Press ENTER when ready or Del to quit:
```

5. Press **Enter**.

The backup process starts. If more than one tape is required, the system displays the following message:

```
End of medium on "output".  
Please remove the current tape, number it, insert tape number x, and press Enter
```

6. If the system displays the message in Step 5, insert the next tape and allow it to rewind. When it is properly positioned, press **Enter**.
7. When the backup is completed, the system displays information according to the number of tapes that are required for the backup:

- If the number of tapes required is one, the system displays the following message:

```
xxxxxxx blocks
Tape Verification
xxxxxxx blocks
WARNING: A CMS Full Maintenance Backup in addition to this cmsadm backup must be done
to have a complete backup of the system. . . . .
Please label the backup tape(s) with the date and the current CMS version (R3VXxx.x)
```

Continue with Step [10](#).

- If the number of tapes required is more than one, the system displays the following message:

```
xxxxxxx blocks
Tape Verification
Insert the first tape
Press Return to proceed :
```

8. Insert the first tape to be used in the backup and press **Enter**. Wait for the LED on the tape drive to stop blinking before you remove the tape.
9. When prompted, repeat Step [8](#) for any additional tapes generated by the backup process. When the final tape is verified, the program displays the following message:

```
xxxxxxx blocks
Tape Verification
xxxxxxx blocks
WARNING: A CMS Full Maintenance Backup in addition to this cmsadm backup must be done
to have a complete backup of the system. . . . .
Please label the backup tape(s) with the date and the current CMS version (R3VXxx.x)
```

10. Label all tapes with the:
 - Tape number
 - Date of backup
 - Current version of CMS
11. Set the tape write-protect switch to read-only.

Backing up CMS data

Your CMS data must be backed up approximately one day before the CMS base load upgrade is performed.

Use one of the following procedures to perform a full maintenance backup:

- If you back up your data directly to a tape device, continue with [Performing a full maintenance backup to tape](#) on page 18.

- If you back up your data to a USB storage device, refer to the section *Performing a CMS Maintenance Back Up of data to a USB storage device* of the *Avaya CMS Software Installation, Maintenance, and Troubleshooting for Solaris* document for information on how to perform CMS data backups to a USB storage device.
- If you back up your data to a network mount point, refer to the section *Performing a CMS Maintenance Back Up of data to a network mount point* of the *Avaya CMS Software Installation, Maintenance, and Troubleshooting for Solaris* document for information on how to perform CMS data backups to a network mount point.
- If you use a CMS LAN backup feature, refer to the *Avaya Call Management System LAN Backup User Guide* for information on how to perform CMS data backups using a CMS LAN backup feature.

Performing a full maintenance backup to tape

A full maintenance backup provides the majority of migration data for the new system. The full maintenance backup is usually scheduled to run overnight the night before the upgrade. However, if an incremental backup is not being done, run the full maintenance backup just before you start the upgrade.

To do a full maintenance backup:

1. Log on to CMS.
2. Select **Maintenance > Back Up Data** from the CMS main menu.

The **Maintenance: Backup Data** window is displayed.

3. In the Backup Data window, enter the values and select the options that are indicated in the following table:

Field	Value to enter or option to select
Device name	The device name
Verify tape can be read after backup?	y
ACD(s) to back up	All ACDs
Data to back up	Local system administration data CMS system administration data ACD-specific administration data Historical data - Full Non-CMS data (if needed)

4. Press **Enter** to access the action list, and select **Run**.
5. Label all tapes with the tape number and the date of the backup.

Backing up new CMS data

You must back up any new CMS data that has been generated since your last CMS data backup. If no new CMS data was collected from the switch since the full maintenance backup was performed, an incremental backup is not required.

If new CMS data has been generated since your last CMS data backup, continue with [Performing an incremental maintenance backup](#) on page 19.

Performing an incremental maintenance backup

Perform the incremental maintenance backup just prior to the old system being turned over to the technician and remote engineering support personnel. Any data collected after this incremental backup will not be migrated to the new system.

Perform an incremental maintenance backup, using one of the following procedures:

- If you back up your data directly to a tape device, continue with Step [1](#).
- If you back up your data to a USB storage device, refer to the section *Performing a CMS Maintenance Back Up of data to a USB storage device* of the *Avaya CMS Software Installation, Maintenance, and Troubleshooting for Solaris* document for information on how to perform CMS data backups to a USB storage device.
- If you back up your data to a network mount point, refer to the section *Performing a CMS Maintenance Back Up of data to a network mount point* of the *Avaya CMS Software Installation, Maintenance, and Troubleshooting for Solaris* document for information on how to perform CMS data backups to a network mount point.
- If you use a CMS LAN backup feature, refer to the *Avaya Call Management System LAN Backup User Guide* for information on how to perform CMS data backups using a CMS LAN backup feature.

To perform an incremental maintenance backup:

1. Log on to CMS.
2. Select **Maintenance > Back Up Data** from the CMS main menu.

The **Maintenance: Backup Data** window is displayed.

3. In the Backup Data window, enter the values and select the options that are indicated in the following table:

Field	Value to enter or option to select
Device name	The device name
Verify tape can be read after backup?	y

Field	Value to enter or option to select
ACD(s) to back up	All ACDs
Data to back up	Local system administration data CMS system administration data ACD-specific administration data Historical data - Incremental Non-CMS data (if needed)

4. Press **Enter** to access the action list, and select **Run**.
5. Label all tapes with the tape number and the date of the backup.

Collecting third-party and custom software

If third-party, custom software, or other Avaya products are installed on the system, the customer must gather that software so it will be available for installation after the upgrade. This can include software such as Operational Analyst or information about pseudo-ACDs. After the upgrade, either Avaya Provisioning or Avaya Professional Services will reinstall the software.

Chapter 3: Procedures required after the upgrade

After the upgrade is completed, the customer must do the following procedures to restore the system to normal operation:

Procedure	✓
Checking the manual merge files on page 21	
Verifying CMS security on page 22	
Migrating historical data on page 22	
Restoring non-CMS files (optional) on page 23	
Access Security Gateway considerations on page 25	
ECH public key file considerations on page 25	
Installing and administering unpreserved software on page 26	
Doing CMSADM and maintenance backups on page 27	

The customer can contract with Avaya Professional Services to do any or all of these procedures.

Checking the manual merge files

All files that must be manually merged are saved in the `/manual_merge` directory. Since CUE supports upgrades from Solaris to Linux, some files might not exist on the target machine. If you do not see the files on the target machine, you can ignore the need for manual merges.

For more information about manual merge discrepancies, see your Avaya upgrade representative.

Verifying CMS security

If you had previously applied CMS security procedures to your system, those procedures must be redone for the new version of the OS. Contact your Avaya account representative or support organization to request assistance.

Migrating historical data

After migrating the system administration data and the agent and call center administration data, you must migrate the historical data. If you have a full and incremental backup of your data, you must migrate the historical data twice or more. Use the full backup tape first, followed by the incremental backup tapes.

To migrate historical data:

1. Log on to CMS.

The CMS main menu is displayed.

2. Verify that the maintenance backup tape is in the tape drive. Use the most recent full backup first, followed by the most recent incremental backup.
3. From the CMS main menu, select **System Setup > R3 Migrate Data**.

The **R3 Migrate Data** window is displayed.

4. In the **R3 Migrate Data** window, select the options and enter the values that are indicated in the following table:

Field	Value to enter or option to select
Device name	The tape drive device name
Data Type	Historical data
Stop date	Leave blank
Stop time	11:59 PM
Specify ACD(s)	All ACDs

5. Press **Enter** to access the action list in the top right corner.

6. Select **Run** and press **Enter**.

The progress of the migration is displayed in the `Status` field. When the migration ends, the system indicates the success or failure of the migration in this field.

Note that a full historical migration can take several hours. It runs in the background, however, so you can exit the migration window and perform other tasks. If you do that, bring up the migration window periodically to check on the progress.

7. Press **F3** and select the UNIX option to display the UNIX prompt.

8. Enter:

```
pg /cms/migrate/r3mig.log
```

The customer migration log is displayed.

9. Look at the contents of the customer migration log and take any necessary corrective action. For help with interpreting the log, contact technical support or your customer representative.

10. To exit the UNIX window, enter:

```
exit
```

Restoring non-CMS files (optional)

The customer might want specific non-CMS files copied from the pre-upgrade CMSADM backup tape to the upgraded system. The procedures are different whether you have a tape drive or do not have a tape drive.

Restoring non-CMS files using tape

1. Insert the most recent CMSADM backup tape from the old system into the tape drive.
2. Enter:

```
cd /
```

3. Enter the following command for each file you want to copy:

```
cpio -icmudv -C 10240 -I /dev/rmt/X -M "Remove current tape, insert  
tape number %d, press ENTER" "Path/FileName"
```

The **Path/FileName** is the relative path to the file being copied.

The **x** is either 0 or 1, depending on how many tape drives are connected to the system. If you have only one tape drive, use 0. If you have more than one tape drive, use the following commands to determine which tape drive can be used:

```
mt -f /dev/rmt/0 status
```

```
mt -f /dev/rmt/1 status
```

The tape drive that contains the CMSADM backup tape reports a status similar to the following example:

```
<tape drive model name>:  
sense key(0x6)= Unit Attention      residual= 0    retries= 0  
file no= 0    block no= 0
```

For example, a command to copy the file **/accounting/invoices** is:

```
cpio -icmudv -C 10240 -I /dev/rmt/X -M "Remove current tape, insert  
tape number %d, press ENTER" "accounting/invoices"
```

Restoring non-CMS files using secure copy

To restore files using secure copy, both the old system and the new system must be on the network and SSH must be running on both systems.

1. Log on to the old system and confirm SSH is running:

For Linux, enter:

```
service sshd status
```

2. Log on to the new system and enter the following command for each file you want to copy:

```
scp UserName@OldSystemIP:OldSystemPath/OldSystemFileName  
NewSystemPath/NewSystemFileName
```

Where:

- **UserName** is the valid root user on the old system.
- **OldSystemIP** is the IP address of the old system.
- **OldSystemPath** is the path to the file you want to copy.
- **OldSystemFileName** is the name of the file you want to copy.
- **NewSystemPath** is the path to where you want to copy the file to the new system.

- ***NewSystemFileName*** is the name of the file you are copying to the new system.

Access Security Gateway considerations

CUE supports Access Security Gateway (ASG) installations. ASG requires an Authentication File System (AFS) file. To obtain an AFS authentication file, refer to the section *Installing Access Security Gateway and the CMS Authentication File* in the *Avaya CMS Software Installation, Maintenance, and Troubleshooting for Linux* document. If you get a new AFS authentication file prior to the upgrade, save it to a non-CMS destination.



Important:

If the customer is currently using ASG, the AFS authentication file will not be preserved as part of the `cvue_extract` process.

- If the customer currently uses ASG, Avaya recommends that you obtain a new AFS authentication file. However, instructions for preserving the current AFS authentication file from the original CMS system are provided in the *CMS Upgrade Express* document.
- If the customer does not currently use ASG but plans to use ASG after the upgrade, you must obtain an AFS authentication file prior to performing the upgrade. Do not save the AFS authentication file on the current CMS system of the customer. Save the AFS authentication file at a non-CMS location that is accessible after the `cvue_activate` procedure has been executed.
- If the customer does not currently use ASG and does not plan to use ASG after the upgrade, skip this procedure.

ECH public key file considerations

ECH uses a public key file on the CMS server. The information in the file gets put in the `authorized_keys` file in the home directory of the SFTP user on the receiving ECH system. This file is located on the CMS server at:

`/root/.ssh/id_rsa.pub`

When the CMS server is upgraded using CUE on a Linux system, the upgrade changes the public key. You must provide the new public key to the vendor or customer. The vendor or customer must put the new public key file on the receiving ECH server so that the SFTP connection will work.

Work with Avaya to make sure this public key is installed after the CUE upgrade.

Installing and administering unpreserved software

After the upgrade, you must contract with Avaya to install any unpreserved software and administer any new features or services. The following table lists several of these features and services and the Avaya organizations that are responsible for completing the work.

Feature or service	Responsible ¹
Operational Analyst, including restarting forwarders	Avaya Professional Services
Network information names service, such as NIS or NISplus	Avaya Professional Services
Network printers	Avaya Professional Services
Pseudo-ACDs. Pseudo-ACDs must be added and data must be migrated from the old system.	Avaya Professional Services
Applications such as workforce management software.	Avaya Professional Services
Wallboards	Avaya Professional Services
Mounted file systems that were in the customer's <code>/etc/fstab</code> (Linux) file before the upgrade. See the copy of the file that is saved in <code>/var/log/cvuelog</code> . Have your administrator verify that your new configuration is correct.	Provisioning
Common Desktop Environment options such as screen layout and password protection	Provisioning
Add, change, or remove ACDs	Provisioning
Add Supervisor logins	Provisioning
Install new feature packages (if purchased)	Provisioning
Change authorizations	Provisioning
Update security options such as <code>rsh</code> and <code>rlogin</code> .	Avaya Professional Services or Customer
Access Security Gateway (ASG)	Provisioning

1. Outside the United States, Avaya distributors are responsible for these items, with assistance from the COE.

Doing CMSADM and maintenance backups

Do a CMSADM and maintenance backup on the system as described in the *Avaya CMS Software Installation, Maintenance, and Troubleshooting for Linux* document. If LAN Backup is being used on the new system, see the *Avaya CMS LAN Backup User Guide* document.

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