



# **Avaya Call Management System**

## **Base Load Upgrade**

Release 18.1  
Issue 2  
January 2019

#### Notice

While reasonable efforts have been made to ensure that the information in this document is complete and accurate at the time of printing, Avaya assumes no liability for any errors. Avaya reserves the right to make changes and corrections to the information in this document without the obligation to notify any person or organization of such changes.

#### Documentation disclaimer

"Documentation" means information published by Avaya in varying mediums which may include product information, operating instructions and performance specifications that Avaya may generally make available to users of its products and Hosted Services. Documentation does not include marketing materials. Avaya shall not be responsible for any modifications, additions, or deletions to the original published version of documentation unless such modifications, additions, or deletions were performed by Avaya. End User agrees to indemnify and hold harmless Avaya, Avaya's agents, servants and employees against all claims, lawsuits, demands and judgments arising out of, or in connection with, subsequent modifications, additions or deletions to this documentation, to the extent made by End User.

#### Link disclaimer

Avaya is not responsible for the contents or reliability of any linked websites referenced within this site or documentation provided by Avaya. Avaya is not responsible for the accuracy of any information, statement or content provided on these sites and does not necessarily endorse the products, services, or information described or offered within them. Avaya does not guarantee that these links will work all the time and has no control over the availability of the linked pages.

#### Warranty

Avaya provides a limited warranty on Avaya hardware and software. Refer to your sales agreement to establish the terms of the limited warranty. In addition, Avaya's standard warranty language, as well as information regarding support for this product while under warranty is available to Avaya customers and other parties through the Avaya Support website:

<https://support.avaya.com/helpcenter/getGenericDetails?detailId=C20091120112456651010> under the link "Warranty & Product Lifecycle" or such successor site as designated by Avaya. Please note that if You acquired the product(s) from an authorized Avaya Channel Partner outside of the United States and Canada, the warranty is provided to You by said Avaya Channel Partner and not by Avaya.

"Hosted Service" means a hosted service subscription that You acquire from either Avaya or an authorized Avaya Channel Partner (as applicable) and which is described further in Hosted SAS or other service description documentation regarding the applicable hosted service. If You purchase a Hosted Service subscription, the foregoing limited warranty may not apply but You may be entitled to support services in connection with the Hosted Service as described further in your service description documents for the applicable Hosted Service. Contact Avaya or Avaya Channel Partner (as applicable) for more information.

#### Hosted Service

THE FOLLOWING APPLIES IF YOU PURCHASE A HOSTED SERVICE SUBSCRIPTION FROM AVAYA OR AN AVAYA CHANNEL PARTNER (AS APPLICABLE), THE TERMS OF USE FOR HOSTED SERVICES ARE AVAILABLE ON THE AVAYA WEBSITE, [HTTPS://SUPPORT.AVAYA.COM/LICENSEINFO](https://support.avaya.com/licenseinfo) UNDER THE LINK "Avaya Terms of Use for Hosted Services" OR SUCH SUCCESSOR SITE AS DESIGNATED BY AVAYA, AND ARE APPLICABLE TO ANYONE WHO ACCESSES OR USES THE HOSTED SERVICE. BY ACCESSING OR USING THE HOSTED SERVICE, OR AUTHORIZING OTHERS TO DO SO, YOU, ON BEHALF OF YOURSELF AND THE ENTITY FOR WHOM YOU ARE DOING SO (HEREINAFTER REFERRED TO INTERCHANGEABLY AS "YOU" AND "END USER"), AGREE TO THE TERMS OF USE. IF YOU ARE ACCEPTING THE TERMS OF USE ON BEHALF A COMPANY OR OTHER LEGAL ENTITY, YOU REPRESENT THAT YOU HAVE THE AUTHORITY TO BIND SUCH ENTITY TO THESE TERMS OF USE. IF YOU DO NOT HAVE SUCH AUTHORITY, OR IF YOU DO NOT WISH TO ACCEPT THESE TERMS OF USE, YOU MUST NOT ACCESS OR USE THE HOSTED SERVICE OR AUTHORIZE ANYONE TO ACCESS OR USE THE HOSTED SERVICE. YOUR USE OF THE HOSTED SERVICE SHALL BE LIMITED BY THE NUMBER AND TYPE OF LICENSES PURCHASED UNDER YOUR CONTRACT FOR THE HOSTED SERVICE, PROVIDED, HOWEVER, THAT FOR CERTAIN HOSTED SERVICES IF APPLICABLE, YOU MAY HAVE THE OPPORTUNITY TO USE FLEX LICENSES, WHICH WILL BE INVOICED ACCORDING TO ACTUAL USAGE ABOVE THE CONTRACT LICENSE LEVEL. CONTACT AVAYA OR AVAYA'S CHANNEL PARTNER FOR MORE INFORMATION ABOUT THE LICENSES FOR THE APPLICABLE HOSTED SERVICE, THE AVAILABILITY OF ANY FLEX LICENSES (IF APPLICABLE), PRICING AND BILLING INFORMATION, AND OTHER IMPORTANT INFORMATION REGARDING THE HOSTED SERVICE.

#### Licenses

THE SOFTWARE LICENSE TERMS AVAILABLE ON THE AVAYA WEBSITE, [HTTPS://SUPPORT.AVAYA.COM/LICENSEINFO](https://support.avaya.com/licenseinfo), UNDER THE LINK "AVAYA SOFTWARE LICENSE TERMS (Avaya Products)" OR SUCH SUCCESSOR SITE AS DESIGNATED BY AVAYA, ARE APPLICABLE TO ANYONE WHO DOWNLOADS, USES AND/OR INSTALLS AVAYA SOFTWARE, PURCHASED FROM AVAYA INC., ANY AVAYA AFFILIATE, OR AN AVAYA CHANNEL PARTNER (AS APPLICABLE) UNDER A COMMERCIAL AGREEMENT WITH AVAYA OR AN AVAYA CHANNEL PARTNER. UNLESS OTHERWISE AGREED TO BY AVAYA IN WRITING, AVAYA DOES NOT EXTEND THIS LICENSE IF THE SOFTWARE WAS OBTAINED FROM ANYONE OTHER THAN AVAYA, AN AVAYA AFFILIATE OR AN AVAYA CHANNEL PARTNER; AVAYA RESERVES THE RIGHT TO TAKE LEGAL ACTION AGAINST YOU AND ANYONE ELSE USING OR SELLING THE SOFTWARE WITHOUT A LICENSE. BY INSTALLING, DOWNLOADING OR USING THE SOFTWARE, OR AUTHORIZING OTHERS TO DO SO, YOU, ON BEHALF OF YOURSELF AND THE ENTITY FOR WHOM YOU ARE INSTALLING, DOWNLOADING OR USING THE SOFTWARE (HEREINAFTER REFERRED TO INTERCHANGEABLY AS "YOU" AND "END USER"), AGREE TO THESE TERMS AND CONDITIONS AND CREATE A BINDING CONTRACT BETWEEN YOU AND AVAYA INC. OR THE APPLICABLE AVAYA AFFILIATE ("AVAYA").

Avaya grants You a license within the scope of the license types described below, with the exception of Heritage Nortel Software, for which the scope of the license is detailed below. Where the order documentation does not expressly identify a license type, the applicable license will be a Designated System License. The applicable number of licenses and units of capacity for which the license is granted will be one (1), unless a different number of licenses or units of capacity is specified in the documentation or other materials available to You. "Software" means computer programs in object code, provided by Avaya or an Avaya Channel Partner, whether as stand-alone products, pre-installed on hardware products, and any upgrades, updates, patches, bug fixes, or modified versions thereto. "Designated Processor" means a single stand-alone computing device. "Server" means a Designated Processor that hosts a software application to be accessed by multiple users. "Instance" means a single copy of the Software executing at a particular time: (i) on one physical machine; or (ii) on one deployed software virtual machine ("VM") or similar deployment.

#### License type(s)

**Designated System(s) License (DS).** End User may install and use each copy or an Instance of the Software only on a number of Designated Processors up to the number indicated in the order. Avaya may require the Designated Processor(s) to be identified in the order by type, serial number, feature key, Instance, location or other specific designation, or to be provided by End User to Avaya through electronic means established by Avaya specifically for this purpose.

**Concurrent User License (CU).** End User may install and use the Software on multiple Designated Processors or one or more Servers, so long as only the licensed number of Units are accessing and using the Software at any given time. A "Unit" means the unit on which Avaya, at its sole discretion, bases the pricing of its licenses and can be, without limitation, an agent, port or user, an e-mail or voice mail account in the name of a person or corporate function (e.g., webmaster or helpdesk), or a directory entry in the administrative database utilized by the Software that permits one user to interface with the Software. Units may be linked to a specific, identified Server or an Instance of the Software.

**Named User License (NU).** You may: (i) install and use each copy or Instance of the Software on a single Designated Processor or Server per authorized Named User (defined below); or (ii) install and use each copy or Instance of the Software on a Server so long as only authorized Named Users access and use the Software. "Named User," means a user or device that has been expressly authorized by Avaya to access and use the Software. At Avaya's sole discretion, a "Named User" may be, without limitation, designated by name, corporate function (e.g., webmaster or helpdesk), an e-mail or voice mail account in the name of a person or corporate function, or a directory entry in the administrative database utilized by the Software that permits one user to interface with the Software.

**Shrinkwrap License (SR).** You may install and use the Software in accordance with the terms and conditions of the applicable license agreements, such as "shrinkwrap" or "clickthrough" license accompanying or applicable to the Software ("Shrinkwrap License").

#### Heritage Nortel Software

"Heritage Nortel Software" means the software that was acquired by Avaya as part of its purchase of the Nortel Enterprise Solutions Business in December 2009. The Heritage Nortel Software is the software contained within the list of Heritage Nortel Products located at <https://support.avaya.com/licenseinfo> under the link "Heritage Nortel Products," or such successor site as designated by Avaya. For Heritage Nortel Software, Avaya grants Customer a license to use Heritage Nortel Software provided hereunder solely to the extent of the authorized activation or authorized usage level, solely for the purpose specified in the Documentation, and solely as embedded in, for execution on, or for

communication with Avaya equipment. Charges for Heritage Nortel Software may be based on extent of activation or use authorized as specified in an order or invoice.

### Copyright

Except where expressly stated otherwise, no use should be made of materials on this site, the Documentation, Software, Hosted Service, or hardware provided by Avaya. All content on this site, the documentation, Hosted Service, and the product provided by Avaya including the selection, arrangement and design of the content is owned either by Avaya or its licensors and is protected by copyright and other intellectual property laws including the sui generis rights relating to the protection of databases. You may not modify, copy, reproduce, republish, upload, post, transmit or distribute in any way any content, in whole or in part, including any code and software unless expressly authorized by Avaya. Unauthorized reproduction, transmission, dissemination, storage, and or use without the express written consent of Avaya can be a criminal, as well as a civil offense under the applicable law.

### Virtualization

The following applies if the product is deployed on a virtual machine. Each product has its own ordering code and license types. Note that each Instance of a product must be separately licensed and ordered. For example, if the end user customer or Avaya Channel Partner would like to install two Instances of the same type of products, then two products of that type must be ordered.

### Third party components

"Third Party Components" mean certain software programs or portions thereof included in the Software or Hosted Service may contain software (including open source software) distributed under third party agreements ("Third Party Components"), which contain terms regarding the rights to use certain portions of the Software ("Third Party Terms"). As required, information regarding distributed Linux OS source code (for those products that have distributed Linux OS source code) and identifying the copyright holders of the Third Party Components and the Third Party Terms that apply is available in the products, Documentation or on Avaya's website at:

<https://support.avaya.com/Copyright> or such successor site as designated by Avaya. The open source software license terms provided as Third Party Terms are consistent with the license rights granted in these Software License Terms, and may contain additional rights benefiting You, such as modification and distribution of the open source software. The Third Party Terms shall take precedence over these Software License Terms, solely with respect to the applicable Third Party Components, to the extent that these Software License Terms impose greater restrictions on You than the applicable Third Party Terms.

The following applies if the H.264 (AVC) codec is distributed with the product. THIS PRODUCT IS LICENSED UNDER THE AVC PATENT PORTFOLIO LICENSE FOR THE PERSONAL USE OF A CONSUMER OR OTHER USES IN WHICH IT DOES NOT RECEIVE REMUNERATION TO (i) ENCODE VIDEO IN COMPLIANCE WITH THE AVC STANDARD ("AVC VIDEO") AND/OR (ii) DECODE AVC VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSED TO PROVIDE AVC VIDEO. NO LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION MAY BE OBTAINED FROM MPEG LA, L.L.C. SEE [HTTP://WWW.MPEGLA.COM](http://www.mpegla.com).

### Service Provider

THE FOLLOWING APPLIES TO AVAYA CHANNEL PARTNER'S HOSTING OF AVAYA PRODUCTS OR SERVICES. THE PRODUCT OR HOSTED SERVICE MAY USE THIRD PARTY COMPONENTS SUBJECT TO THIRD PARTY TERMS AND REQUIRE A SERVICE PROVIDER TO BE INDEPENDENTLY LICENSED DIRECTLY FROM THE THIRD PARTY SUPPLIER. AN AVAYA CHANNEL PARTNER'S HOSTING OF AVAYA PRODUCTS MUST BE AUTHORIZED IN WRITING BY AVAYA AND IF THOSE HOSTED PRODUCTS USE OR EMBED CERTAIN THIRD PARTY SOFTWARE, INCLUDING BUT NOT LIMITED TO MICROSOFT SOFTWARE OR CODECS, THE AVAYA CHANNEL PARTNER IS REQUIRED TO INDEPENDENTLY OBTAIN ANY APPLICABLE LICENSE AGREEMENTS, AT THE AVAYA CHANNEL PARTNER'S EXPENSE, DIRECTLY FROM THE APPLICABLE THIRD PARTY SUPPLIER.

WITH RESPECT TO CODECS, IF THE AVAYA CHANNEL PARTNER IS HOSTING ANY PRODUCTS THAT USE OR EMBED THE G.729 CODEC, H.264 CODEC, OR H.265 CODEC, THE AVAYA CHANNEL PARTNER ACKNOWLEDGES AND AGREES THE AVAYA CHANNEL PARTNER IS RESPONSIBLE FOR ANY AND ALL RELATED FEES AND/OR ROYALTIES. THE G.729 CODEC IS LICENSED BY SIPRO LAB TELECOM INC. SEE [WWW.SIPRO.COM/CONTACT.HTML](http://WWW.SIPRO.COM/CONTACT.HTML). THE H.264 (AVC) CODEC IS LICENSED UNDER THE AVC PATENT PORTFOLIO LICENSE FOR THE PERSONAL USE OF A CONSUMER OR OTHER USES IN WHICH IT DOES NOT RECEIVE REMUNERATION TO: (i) ENCODE VIDEO IN COMPLIANCE WITH THE AVC STANDARD ("AVC VIDEO") AND/OR (ii) DECODE AVC VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSED TO PROVIDE AVC VIDEO. NO LICENSE IS

GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION FOR H.264 (AVC) AND H.265 (HEVC) CODECS MAY BE OBTAINED FROM MPEG LA, L.L.C. SEE [HTTP://WWW.MPEGLA.COM](http://www.mpegla.com).

### Compliance with Laws

Customer acknowledges and agrees that it is responsible for complying with any applicable laws and regulations, including, but not limited to laws and regulations related to call recording, data privacy, intellectual property, trade secret, fraud, and music performance rights, in the country or territory where the Avaya product is used.

### Preventing Toll Fraud

"Toll Fraud" is the unauthorized use of your telecommunications system by an unauthorized party (for example, a person who is not a corporate employee, agent, subcontractor, or is not working on your company's behalf). Be aware that there can be a risk of Toll Fraud associated with your system and that, if Toll Fraud occurs, it can result in substantial additional charges for your telecommunications services.

### Avaya Toll Fraud intervention

If You suspect that You are being victimized by Toll Fraud and You need technical assistance or support, call Technical Service Center Toll Fraud Intervention Hotline at +1-800-643-2353 for the United States and Canada. For additional support telephone numbers, see the Avaya Support website: <https://support.avaya.com>, or such successor site as designated by Avaya.

### Security Vulnerabilities

Information about Avaya's security support policies can be found in the Security Policies and Support section of <https://support.avaya.com/security>. Suspected Avaya product security vulnerabilities are handled per the Avaya Product Security Support Flow (<https://support.avaya.com/css/P8/documents/100161515>).

### Downloading Documentation

For the most current versions of Documentation, see the Avaya Support website: <https://support.avaya.com>, or such successor site as designated by Avaya.

### Contact Avaya Support

See the Avaya Support website: <https://support.avaya.com> for product or Hosted Service notices and articles, or to report a problem with your Avaya product or Hosted Service. For a list of support telephone numbers and contact addresses, go to the Avaya Support website: <https://support.avaya.com> (or such successor site as designated by Avaya), scroll to the bottom of the page, and select Contact Avaya Support.

### Trademarks

The trademarks, logos and service marks ("Marks") displayed in this site, the Documentation, Hosted Service(s), and product(s) provided by Avaya are the registered or unregistered Marks of Avaya, its affiliates, or other third parties. Users are not permitted to use such Marks without prior written consent from Avaya or such third party which may own the Mark. Nothing contained in this site, the Documentation, Hosted Service(s) and product(s) should be construed as granting, by implication, estoppel, or otherwise, any license or right in and to the Marks without the express written permission of Avaya or the applicable third party.

Avaya is a registered trademark of Avaya Inc.

All non-Avaya trademarks are the property of their respective owners.

Linux® is the registered trademark of Linus Torvalds in the U.S. and other countries.

Avaya, the Avaya logo, Avaya one-X® Portal, Communication Manager, Application Enablement Services, Modular Messaging, and Conferencing are either registered trademarks or trademarks of Avaya Inc. in the United States of America and/or other jurisdictions.

All non-Avaya trademarks are the property of their respective owners. Linux® is the registered trademark of Linus Torvalds in the U.S. and other countries.



## Contents

Chapter 1: Introduction . . . . .	7
Purpose. . . . .	7
Upgrade scenarios supported for CMS 18.1 . . . . .	7
Base load upgrades . . . . .	8
CMS Upgrade Express upgrades . . . . .	8
Platform upgrades . . . . .	9
When and how to use this document . . . . .	9
Impacts to CMS service . . . . .	10
Contacting Avaya technical support during upgrade . . . . .	10
Possible customization impacts . . . . .	10
Upgrade kit contents . . . . .	11
Chapter 2: Preparing for a base load upgrade. . . . .	13
Prerequisites . . . . .	13
Verifying the current CMS version and load . . . . .	14
Verifying that your previous backups completed successfully . . . . .	14
Verifying the backup of your CMS system data . . . . .	14
Verifying that your last CMSADM backup completed successfully . . . . .	15
Verifying that your last LAN backup of the system data completed successfully . . . . .	15
Verifying the backup of your CMS data . . . . .	16
Verifying that your previous full or incremental backup completed successfully . . . . .	16
Verifying that your last LAN backup of CMS data completed successfully . . . . .	17
Verifying that the nightly archiver is functioning . . . . .	17
Checking the status of the disk drives . . . . .	18
Checking for memory errors and system panics . . . . .	19
Verifying free space in the root file system . . . . .	20
Rebooting your CMS system . . . . .	20
Backing up the CMS system . . . . .	21
Backing up your CMS system data. . . . .	21
Performing a CMSADM backup to tape . . . . .	21
Performing a full system backup with Tivoli Storage Manager ( IBM Spectrum) . . . . .	23
Performing a full system backup with Netbackup. . . . .	23
Backing up your CMS data . . . . .	23
Performing a full data backup with a tape device . . . . .	24
Performing a full data backup with Tivoli Storage Manager . . . . .	25
Performing a full data backup with Netbackup . . . . .	26
Backing up any new CMS data . . . . .	26

## Contents

<b>Chapter 3: Updating the Linux® operating system . . . . .</b>	<b>27</b>
Prerequisites . . . . .	27
Common procedure for mounting the CMS ISO image on a VMware system . . . . .	27
Stopping CMS Supervisor Web . . . . .	28
Stopping Avaya OA data forwarders . . . . .	28
Installing RHEL (Linux®) rpms . . . . .	28
Installing the Avaya CMS security script. . . . .	33
<b>Chapter 4: Upgrading the CMS base load . . . . .</b>	<b>35</b>
Prerequisites . . . . .	35
Removing the current CMS load . . . . .	36
Installing the new CMS base load . . . . .	37
Installing the new CMS base load on a Linux®-based platform . . . . .	38
Installing the new CMS base load on a Virtual CMS. . . . .	40
Installing CMS patches . . . . .	42
Upgrading Avaya CMS Supervisor Web . . . . .	43
Turning on CMS . . . . .	44
Starting CMS Supervisor Web . . . . .	45
Starting Avaya OA data forwarders. . . . .	45
Installing Access Security Gateway and the CMS Authentication File . . . . .	45
<b>Chapter 5: Completing the base load upgrade process . . . . .</b>	<b>49</b>
Prerequisites . . . . .	49
Performing a backup of the system files. . . . .	49
Performing a backup of the CMS data . . . . .	50

# Chapter 1: Introduction

---

## Purpose

The purpose of this document is to describe the Avaya CMS base load upgrade process. This Avaya CMS base load upgrade is designed to be installed by Avaya CMS customers who either have had problems with an earlier version of the product or would like access to any new features added in the maintenance release. This upgrade provides known software fixes from previous versions. The software is acquired by ordering the latest PCN. The PCN provides a list of all fixes and features added in the maintenance release.

You must install this upgrade as soon as possible as Technical Support Organization only troubleshoots products that have the latest release installed.



### **Important:**

Before installing a base load upgrade, verify that the software discs you received when ordering the PCN are a newer version of the software than your current version of the software. Verify that you are using the proper base load upgrade document for your release of CMS.

### **Note:**

For existing systems on Solaris, you must perform a platform upgrade to get to CMS 18.1.

For a complete list of bug fixes and new features available in the latest CMS load, see the CMS R18.1 release notes on <https://support.avaya.com>.

---

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

---

## CMS Upgrade Express 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 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*.



---

## 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 on 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*.

---

## When and how to use this document

Use this document to upgrade CMS from an older CMS Release 18 base load to a newer CMS R18.1 load. Unless indicated otherwise, all procedures in the *Avaya CMS Base Load Upgrade* document are required.

Avaya recommends that:

- Before performing the upgrade, read through this entire document so that you are familiar with what tasks you will need to perform. If you decide you would like to have Avaya assist you performing the upgrade, see [Contacting Avaya technical support during upgrade](#) on page 10.
- Have a pen or pencil during the upgrade so that you can record any required information.
- During the upgrade, mark each step as it is completed.
- You will be required to enter UNIX commands during the upgrade process. You must enter the command from the UNIX prompt in a terminal window. Press the **Enter** key after you have typed in the command. Use the same capitalization and spacing shown in this document.
- If you encounter problems or have questions during the upgrade, contact Avaya technical support.

---

## Impacts to CMS service



### CAUTION:

This software upgrade is service affecting.

During the Operating System patch installation using `rpm_updates` for Linux®, your system displays an estimate of the amount of time needed to install the Operating System updates. The Operating System update installation is the part of the base load upgrade that usually requires the longest amount of time to complete."

---

## Contacting Avaya technical support during upgrade

You can make arrangements to have Avaya provide remote assistance for this upgrade. This remote assistance must be scheduled at least two weeks before your upgrade. Charges, which will be quoted, vary for this service. Contact the Technical Support Organization at 1-800-242-2121.

If you want Avaya Professional Services to perform the Base Load upgrade contact the accounts team or business partner to obtain a quote for a billable Avaya Professional Services engagement.

If you encounter problems or have questions during the upgrade and are unable to resolve them by following the upgrade instructions, call technical support at 1-800-242-2121. Be ready to provide the number of the Quality Protection Plan you are using.

---

## Possible customization impacts

The software upgrade that you are installing could potentially impact system customization that was performed before this upgrade. For example:

- Custom reports
- LAN printer customization
- Work-force management interfaces
- Operational Analyst

You can schedule an evaluation of your system to determine whether any of your system customizations might be impacted by this upgrade. Schedule this evaluation at least two weeks before your upgrade. Charges, which will be quoted, vary for this service. Contact Avaya CRM at 1-866-282-9266.

---

## **Upgrade kit contents**

All the software you need for the upgrade should be included with your upgrade kit.



# Chapter 2: Preparing for a base load upgrade

This section describes the tasks you must perform before you upgrade your CMS base load. These procedures will help you verify that your CMS system has no existing hardware or software problems before the upgrade. If you do not perform these procedures, your base load upgrade could fail, and your CMS system could be put in a non-functioning state for some time.

This section includes the following topics:

- [Prerequisites](#) on page 13
- [Verifying the current CMS version and load](#) on page 14
- [Verifying that your previous backups completed successfully](#) on page 14
- [Verifying that the nightly archiver is functioning](#) on page 17
- [Checking the status of the disk drives](#) on page 18
- [Checking for memory errors and system panics](#) on page 19
- [Verifying free space in the root file system](#) on page 20
- [Rebooting your CMS system](#) on page 20
- [Backing up the CMS system](#) on page 21

---

## Prerequisites

Before you perform the procedures in this section, you must:

- Read the information in [Introduction](#) on page 7.
- The Avaya CMS software disc will include a readme file called **cms.readme**. Avaya recommends you review this file for any changes that might impact the procedures in this document.
- Log in to the system as **root**.



### Important:

You will not be able to log into the system remotely as **root**. If you are logging into the system remotely, log in as a user and then enter: **su - root**

---

## Verifying the current CMS version and load

To verify the version and load of CMS currently on the machine:

1. Log in to the system as **root**.
2. Enter:

```
rpm -q cms
```

The system displays the currently installed CMS package, including the load number, for example:

```
cms-R18.0.0.0-ca.b.x86_64
```

3. Record the displayed CMS version information for reference later, during the upgrade process.

CMS version: \_\_\_\_\_

---

## Verifying that your previous backups completed successfully

Approximately two days before the CMS base load upgrade, verify that your backups have been completing successfully.

This section includes the following topics:

- [Verifying the backup of your CMS system data](#) on page 14
- [Verifying the backup of your CMS data](#) on page 16

---

## Verifying the backup of your CMS system data

To verify that your previous CMS data backup completed successfully, choose one of the following procedures:

- If you backup your data directly to tape, a USB storage device or a network mount point, go to [Verifying that your last CMSADM backup completed successfully](#) on page 15.

You are responsible for backing up your CMS system unless you engage Avaya to perform the backups in conjunction with this base load upgrade.

- If you use the CMS LAN backup feature, go to [Verifying that your last LAN backup of the system data completed successfully](#) on page 15

You are responsible for backing up your CMS system. Avaya is not responsible for performing LAN backups. For more information about the CMS LAN backup feature, see *Avaya Call Management System LAN Backup User Guide*. This document provides: information about using the CMS LAN backup feature, hardware requirements, software requirements, and support guidelines.

## Verifying that your last CMSADM backup completed successfully

To verify that your last CMSADM backup completed successfully:

1. Enter:

```
tail /cms/install/logdir/backup.log
```

2. Verify that the previous CMSADM backup completed successfully.

An example of a successful CMSADM backup message is:

```
==== Begin backup <timestamp>

Converter started <timestamp>
Converter completed successfully <timestamp>

Testing tape on /dev/rmt/0...

Tape test on /dev/rmt/0 is okay...

2873600 blocks

==== Finished backup <timestamp>
```

3. Choose one of the following actions:

- If your previous backup was successful, go to [Verifying the backup of your CMS data](#) on page 16.
- If your previous backup was *not* successful, contact your Avaya CMS support representative.

## Verifying that your last LAN backup of the system data completed successfully

If you use the CMS LAN backup feature, perform the following procedure:

1. Enter:

```
cat /cms/install/logdir/backup.log | more
```

2. Press **Enter** to continue the display. It might be necessary to repeat this step several times.

3. Verify that the previous system backup completed successfully.

An example of a successful system backup message is:

```
===== LAN SYSTEM BACKUP SUCCESSFULLY FINISHED Date and time
```

4. Choose one of the following actions:
  - If your previous backup was successful, go to [Verifying the backup of your CMS data](#) on page 16.
  - If your previous backup was *not* successful, contact your Avaya CMS support representative.

---

## Verifying the backup of your CMS data

To verify that your previous CMS data backup completed successfully, choose one of the following procedures:

- If you backup your data directly to a tape device, go to [Verifying that your previous full or incremental backup completed successfully](#) on page 16.
- If you use the CMS LAN backup feature, go to [Verifying that your last LAN backup of CMS data completed successfully](#) on page 17.

For more information about the CMS LAN backup feature, see *Avaya Call Management System LAN Backup User Guide*. This document provides: information about using the CMS LAN backup feature, hardware requirements, software requirements, and support guidelines.

## Verifying that your previous full or incremental backup completed successfully

To verify that your previous full or incremental backup completed successfully:

1. Verify that you are logged in as **root**.



### Important:

If at anytime during the upgrade process you need to verify that you are logged in as the root user, you can enter the command: **id**

2. Enter:

```
tail /cms/maint/backup/back.log
```



3. Verify that the previous full or incremental backup completed successfully.

An example of a successful full or incremental backup message is:

```
1711 <timestamp> 2 1 INFO
      BACKUP INFO: The backup has completed successfully.
      Please label the volume CMS-030415-01-LSAC-00-F-01-r3milcms
```

4. Choose one of the following actions:
  - If your previous backup was successful go to [Verifying that the nightly archiver is functioning](#) on page 17.
  - If your previous backup was *not* successful, contact your Avaya CMS support representative.

## Verifying that your last LAN backup of CMS data completed successfully

To verify that your last LAN backup of CMS data completed successfully:

1. Enter:

```
cat /cms/install/logdir/backup.log | more
```
2. Press **Enter** to continue the display. It might be necessary to repeat this step several times.
3. Verify that the previous data backup completed successfully.

An example of a successful data backup message is:

```
+++++ ON-Bar BACKUP SUCCESSFULLY FINISHED Date and time
```

4. Choose one of the following actions:
  - If your previous backup was successful, go to [Verifying that the nightly archiver is functioning](#) on page 17.
  - If your previous backup was *not* successful, contact your Avaya CMS support representative.

---

## Verifying that the nightly archiver is functioning

To verify that nightly archiver is functioning correctly:

1. Verify that you are logged in to the system as **root**.

2. Enter:

```
su cms cms
```

The system displays the CMS main menu.

3. Press **Enter** to accept the default terminal type.
4. Select `Maintenance > Error Log Report`.
5. Enter **2600** in the `Error codes` field.
6. Leave all of the other fields blank.
7. Press **Enter** to select the `Run` option.
8. Press **Enter**.

The system displays an archive history report.

9. Verify that the nightly archiver is functioning correctly for all ACDs administered on the system.

An example of a successful nightly archiver message is:

```
2600 <timestamp> 2 1 INFO
      ARCHIVER status: Daily Archive for (Mon)
      <timestamp> Successful
```

10. Select `Exit` to return to the previous menu.
11. Choose one of the following actions:
  - If the nightly archiver is functioning correctly, go to [Checking the status of the disk drives](#) on page 18.
  - If the nightly archiver is *not* functioning correctly, contact your Avaya CMS support representative.

---

## Checking the status of the disk drives

### Note:

This procedure is for non-VMware deployments only. You can skip this procedure if your system is a VMware deployment.

1. To verify the disk or disk volume, run the following command:

```
# /olds/chkDisks
```

- If this command returns to the prompt without generating any output, there are no errors and you can continue with the upgrade.

- If this command returns the following output:

```
SEVERE ERROR: Enclosure 32, RAID Drive Slot X is in state Failed (where X is  
the slot number)  
Possible Disk Errors! Please check /olds/log/err.log for details
```

then you must contact Avaya Services and resolve the issue before continuing with the upgrade.

---

## Checking for memory errors and system panics

1. Check for memory errors and system panics. Enter:

```
egrep -i "panic | memory error" /var/log/messages* | more
```

**Note:**

It might be necessary to press **Enter** to continue the display.

An example of a panic error message is:

```
messages-20121223:<timestamp> trex Kernel panic - not syncing: : Port x halting  
system due to client process failure
```

2. Choose one of the following actions, depending on the message that is displayed:
  - If the system displays no memory error or panic messages, go to [Verifying free space in the root file system](#) on page 20.
  - If the system displays any memory error or panic messages, your system requires maintenance. Contact your Avaya CMS support representative.

---

## Verifying free space in the root file system

To verify that sufficient free space is available in your root file system to accomplish the base load upgrade:

1. Enter:

```
df -k /
```

The system displays a message similar to the following:

Filesystem	1K-blocks	Used	Available	Use%	Mounted on
/dev/sda2	9842412	2709148	6633288	29%	/

2. Check the disk capacity.
3. Choose one of the following actions:
  - If the disk Use% is less than 85%, go to [Rebooting your CMS system](#) on page 20.
  - If the disk Use% is 85% or greater, contact your Avaya CMS support representative.

---

## Rebooting your CMS system

You must reboot your CMS system and verify that the system is functioning properly. Reboot the CMS system before you backup your data.

To reboot your CMS system:

1. Enter the following command from the pound (#) prompt:

```
shutdown -r now
```

The system reboots.

2. Log in to the system as **root**.
3. Choose one of the following actions:
  - If the system does not boot correctly or if any error messages are displayed, contact your Avaya CMS support representative.
  - If the system boots correctly, go to [Backing up the CMS system](#) on page 21.

---

## Backing up the CMS system

Before beginning a CMS base load upgrade, you must backup your CMS system data and CMS data.

This section includes the following topics:

- [Backing up your CMS system data](#) on page 21
- [Backing up your CMS data](#) on page 23
- [Backing up any new CMS data](#) on page 26

---

## Backing up your CMS 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 backup your data directly to a tape device, go to [Performing a CMSADM backup to tape](#) on page 21.
- If you backup 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 backup your data to a network mount point, refer to the section *Performing a CMSADM backup to a network mount point* of the *Avaya CMS Software Installation, Maintenance, and Troubleshooting for Linux®* document for information on how to perform CMSADM backups to a network mount point.
- If you use the CMS LAN backup feature, go to [Performing a full system backup with Tivoli Storage Manager \(IBM Spectrum\)](#) on page 23.

For more information about the CMS LAN backup feature, see *Avaya Call Management System LAN Backup User Guide*. This document provides information about using the CMS LAN backup feature, hardware requirements, software requirements, and support guidelines.

## Performing a CMSADM backup to tape

To take a back up of your current system files, perform the following procedure:

1. Verify that you are using the correct tape for the tape drive for your system. Many of the tape cartridges look alike, and using the wrong tape can damage the tape drive mechanism and tape heads.

2. Log in as **root**.
3. Enter:

**cmsadm**

The Avaya Call Management System Administration Menu (CMSADM Menu) is displayed.

4. Enter the number associated with the `backup` option.

Depending on the number of tape drives connected to your system, one of the following messages will be displayed by your system.

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

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

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

An example of a tape device list is:

```
Select the tape drive:  
1) SCSI 2 tape drive: /dev/st0  
2) SCSI 2 tape drive: /dev/st1  
Enter choice (1-2):
```

**Note:**

If the system fails to identify the tapes by manufacturer name, tape devices are displayed according to their system device names, such as `/dev/st0`.

5. Press **Enter**.

The backup process is initiated.

When the backup is complete, 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 (rXXXXXX.X)
```

6. Write protect the tape and store the tape in a secure location until the next backup is performed.
7. Go to [Backing up your CMS data](#) on page 23.

## Performing a full system backup with Tivoli Storage Manager ( IBM Spectrum)

If you use the Tivoli Storage Manager ( IBM Spectrum) backup feature, perform the following procedure:

1. Log in as **root**.
2. Enter:  

```
/cms/LANbkup/bin/backup.tivoli 0
```
3. Verify that the backup has completed successfully by entering:  

```
cat /cms/install/logdir/backup.log
```
4. Go to [Backing up your CMS data](#) on page 23.

## Performing a full system backup with Netbackup

If you use the CMS Netbackup feature, perform the following procedure:

1. Log in as **root**.
2. Enter:  

```
/cms/LANbkup/bin/backup.netbackup 0
```
3. Verify that the backup has completed successfully by entering:  

```
cat /cms/install/logdir/backup.log
```
4. Continue with [Backing up your CMS data](#) on page 23.

---

## Backing up your CMS data

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

To backup your CMS data, choose one of the following procedures:

- If you backup your data directly to a tape device, go to [Performing a full data backup with a tape device](#) on page 24.
- If you backup 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 Linux®* document for information on how to perform CMSADM backups to a USB storage device.

- If you backup 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 Linux®* document for information on how to perform CMSADM backups to a network mount point.
- If you use the CMS LAN backup feature, go to [Performing a full data backup with Tivoli Storage Manager](#) on page 25.

For more information about the CMS LAN backup feature, see *Avaya Call Management System LAN Backup User Guide*. This document provides: information about using the CMS LAN backup feature, hardware requirements, software requirements, and support guidelines.

### Performing a full data backup with a tape device

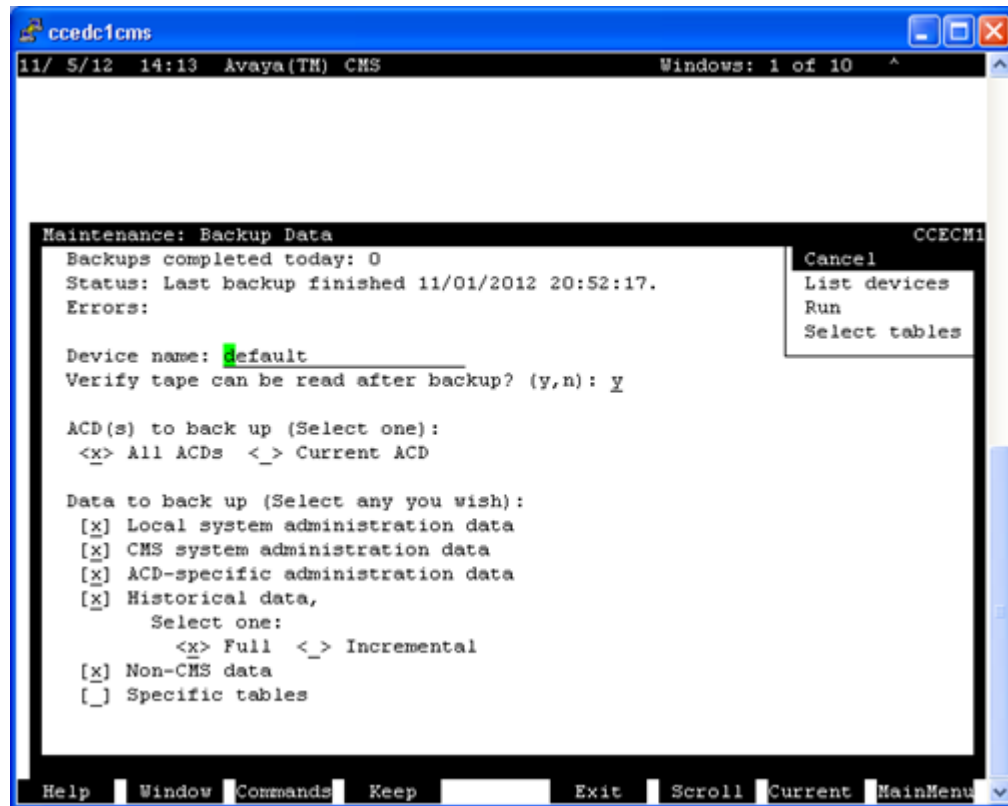
To perform a full backup of CMS data:

1. Verify that you are using the correct tape for the tape drive for your system. Many of the tape cartridges look alike, and using the wrong tape can damage the tape drive mechanism and tape heads.
2. Verify that you are logged in as **cms**.
3. Enter **cms**.



4. From the main menu, select Maintenance > Back Up Data.

The system displays the Back Up Data window, as shown below. Do not change any of the default selections.



5. Press **Enter** to access the action list in the upper right corner of the window.
6. Select **Run** and press **Enter**.
7. Wait for the backup to complete. If the backup does not complete successfully, contact your Avaya CMS support representative.
8. Write protect the tape and store the tape in a secure location until the next backup is performed.
9. Go to [Backing up any new CMS data](#) on page 26.

## Performing a full data backup with Tivoli Storage Manager

If you use the Tivoli Storage Manager backup feature, perform the following procedure:

1. Verify that you are logged in as **root**.
2. Enter:

```
/cms/LANbkup/bin/onbar_backup.tivoli 0
```

3. Verify that the backup has completed successfully by entering the following commands:

```
cat /cms/install/logdir/backup.log  
cat /cms/install/logdir/bar_act.log
```

4. Go to [Backing up any new CMS data](#) on page 26.

### Performing a full data backup with Netbackup

If you use the CMS Netbackup feature, perform the following procedure:

1. Verify that you are logged in as root.
2. Enter:

```
/cms/LANbkup/bin/onbar_backup.netbackup 0
```

3. Verify that the backup has completed successfully by entering the following commands:

```
cat /cms/install/logdir/backup.log  
cat /cms/install/logdir/bar_act.log
```

4. Continue with [Backing up any new CMS data](#) on page 26.

---

### Backing up any new CMS data

You must back up any CMS data that has been generated since your last CMS data backup. Choose one of the following options:

- If no new CMS data has been generated since your last CMS data backup, continue with [Updating the Linux® operating system](#) on page 27.
- If new CMS data has been generated since your last CMS data backup, perform one of the following procedures immediately before the upgrade:
  - [Performing a full data backup with a tape device](#) on page 24
  - [Performing a full data backup with Tivoli Storage Manager](#) on page 25

Once the new CMS data has been backed up, continue with [Updating the Linux® operating system](#) on page 27.

For more information about the CMS LAN backup feature, see *Avaya Call Management System LAN Backup User Guide*. This document provides information about using the CMS LAN backup feature, hardware requirements, software requirements, and support guidelines.

# Chapter 3: Updating the Linux® operating system

This section contains procedures for updating your operating system. You must complete the procedures in this section before upgrading your CMS base load.

---

## Prerequisites

Before you perform the procedures in this section, you must:

- Read the information in [Introduction](#) on page 7.
- Perform all of the required procedures in [Preparing for a base load upgrade](#) on page 13.
- Verify that you are logged in to the system as `root`.

---

## Common procedure for mounting the CMS ISO image on a VMware system

This procedure is referenced from several other procedures within this chapter. You must not implement this procedure independent of other procedures.

1. Copy the Avaya Call Management System software iso image for the new CMS load that has been downloaded to the PC where the vSphere client is installed.
2. Using the vSphere client, perform the following:
  - a. Upload the Avaya Call Management System software iso image from the PC to a datastore storage area on VMware server.
  - b. Access the Virtual CMS.
  - c. Access Edit Settings.
  - d. Expand Connect the CD/DVD Drive.
  - e. From the drop-down list, select Datastore ISO File.
  - f. Select the Avaya Call Management System software iso image file.
  - g. Click **OK**.

- h. Click **Connected**.
- i. Click **OK**.

**Note:**

If you have already executed steps 1 and 2 do not execute it again. The Avaya Call Management System software iso image already exists on the VMware server.

3. Use vSphere client to access the Virtual CMS and establish a CD/DVD connection to the Avaya Call Management System software iso image in the storage directory.
4. On the Virtual CMS, execute:

```
mount /dev/cdrom /mnt
```

---

## Stopping CMS Supervisor Web

To stop the CMS Supervisor Web, enter:

```
cmsweb stop
```

---

## Stopping Avaya OA data forwarders

If the CMS configuration includes data collection by Avaya OA, turn off all Avaya OA forwarders on the CMS server using the **pa stop all** command. For more information about Avaya OA forwarders, see *Avaya OA Maintenance and Troubleshooting*.

---

## Installing RHEL (Linux®) rpms

1. Choose one of the following paths:
  - If on a non-VMware system, continue with step 2.
  - If on a VMware system, perform the steps in [Common procedure for mounting the CMS ISO image on a VMware system](#) on page 27. After completion of this procedure, continue with Step 5.
2. Load the Avaya Call Management System software disc into the disk drive.

3. Change to the root directory, enter:

```
cd /
```

4. Mount the DVD drive. Enter:

```
mount /dev/dvd /mnt
```

The system displays the following message:

```
mount: block device /dev/sr0 is write-protected, mounting read-only
```

**CAUTION:**

You must turn off CMS in order to install the RHEL Linux® rpms.

5. Enter:

```
cmssvc
```

The system displays the Avaya Call Management System Services Menu or CMSSVC Menu.

6. Enter the number associated with the **run\_cms** option.
7. Enter the number associated with the Turn off both **CMS and IDS** option.  
The system returns to the command prompt.

8. Run the rpm update script. Enter:

```
/mnt/rpm_update
```

The system displays one of the following messages:

- If there are Linux® rpms to install,, the execution starts and when complete the system will automatically be rebooted. The system displays the following messages:

```
RPM Updates (for R18.1 r18pa.e) started: Tue Jul 17 10:55:37 EDT 2018

Updating RPMs.
Loaded plugins: security
Setting up Update Process
Resolving Dependencies
--> Running transaction check
---> Package abrt.x86_64 0:2.0.8-43.el6 will be updated
---> Package abrt.x86_64 0:2.0.8-44.el6 will be an update
---> Package abrt-addon-ccpp.x86_64 0:2.0.8-43.el6 will be updated
---> Package abrt-addon-ccpp.x86_64 0:2.0.8-44.el6 will be an update
---> Package abrt-addon-kerneloops.x86_64 0:2.0.8-43.el6 will be updated
...
yum-utils.noarch 0:1.1.30-41.el6

Complete!
kernel update successfully verified.
**if warnings exist, IGNORE them**
All RPM updates successfully applied.
package hmaccalc exists, add not required.
package dracut-fips exists, add not required.

Removing rpcbind package
warning: erase unlink of /var/cache/rpcbind failed: No such file or directory
remove rpcbind package successfully executed.
**if warnings exist, IGNORE them**

RPM updates finished: Tue Jul 17 10:58:33 EDT 2018
Rebooting the system now.

Example for page 31:
RPM updates started: Thu Aug 2 11:56:02 EDT 2018
RPM Updates for CMS R18.0.1.0 created 04/20/2017

No rpm updates are required. Quitting rpm_update.
```

**Note:**

The rpm installation takes at least the amount of time that was estimated. Various configuration conditions can exist that produce warning messages. Ignore the warning messages, the rpms are completely installed. After the rpms are installed, the system reboots into multi-user mode and displays a login prompt.

**Important:**

Do not halt the system. You need to monitor the system during the rpm installation process to ensure that the installation of the rpms does not halt. When the rpm installation process completes, the system automatically reboots into multiuser mode and displays the graphical login screen.

- If there are no RHEL (Linux®) rpms to install, the system displays the following message:

```
RPM Updates (for R18.0.2.0) started: Thu Nov  9 12:07:34 MST 2017

No rpm updates are required.
package hmaccalc exists, add not required.
package dracut-fips exists, add not required.
package rpcbind does not exist, remove not required.

RPM updates finished: Thu Nov  9 12:07:45 MST 2017
```

9. If there are no Linux® rpms to install, continue with Step [12](#).
10. To install the RHEL (Linux®) rpms, enter `y`.

The system displays the following messages:

```
Loaded plugins: security
Setting up Update Process
Resolving Dependencies
--> Running transaction check
---> Package NetworkManager.x86_64 1:0.8.1-33.el6 will be updated
---> Package NetworkManager.x86_64 1:0.8.1-34.el6_3 will be an update
.
.
.
Transaction Summary
=====
Install      1 Package(s)
Upgrade     129 Package(s)

Total download size: 166 M
Downloading Packages:
.
.
.
Complete!
All RPM updates applied successfully
Stopping sshd:                [ OK ]
Starting sshd:                [ OK ]
post-update changes for SAL/ASG support completed.
Rebooting the system now.
```

**Note:**

The rpm installation takes at least the amount of time that was estimated earlier in the procedure. After the rpms are installed, the system reboots into multi-user mode and displays a login prompt.



**Important:**

Do not halt the system.

11. Log in to the system as **root**.
12. Verify that all the Linux® rpms are installed. Enter:

```
tail -10 /var/cms/spatches/rpm_update.log
```

Verify that the system displays the following message:

```
Update the message box to include:  
RPM updates finished: Thu Nov 9 11:56:39 MST 2017  
Rebooting the system now.
```

**Note:**

If the installation procedure fails for any of the rpms, the system displays one or more of the following message:

```
- Error running the RPM check-update command. Exiting.  
- Errors detected executing yum update command, Exiting.  
- WARNING: cannot add hmaccalc/dracut-fips package, not found in /mnt/rpm_updates. If  
the FIPS feature will be utilized, consult Avaya Support. The hmaccalc/dracut-fips  
package must be installed for FIPS operations. Continuing.  
- WARNING: hmaccalc/dracut-fips add failed. If the FIPS feature will be utilized,  
consult Avaya Support. The hmaccalc/dracut-fips package must be installed for FIPS  
operations. Continuing.
```

If the system displays one or more of these messages, continue with this procedure and the remaining CMS base load upgrade procedures. When the upgrade is complete, if message 1 or 2 is displayed, notify your Avaya CMS support organization. If message 3 or 4 is displayed, notify your Avaya CMS support organization if you plan to use FIPS security operations.

13. Verify that IDS is running. Enter:

```
cmssvc
```

The system displays the **CMSSVC** menu. If the system first displays the following text, then IDS is not running:

```
cmssvc: Warning IDS off-line. It will take approx 45 seconds to  
start cmssvc. IDS can be turned on with the run_ids command on the  
cmssvc menu
```



14. Select the **run\_ids** option.
  - If IDS is running, the system displays the following:

IDS is already up and running

Continue with Step [15](#).

- If IDS is not running, select the **Turn IDS on** option.  
The system starts IDS and returns to the command prompt.
15. Continue with [Installing the Avaya CMS security script](#) on page 33.

---

## Installing the Avaya CMS security script



### Important:

You can log in to the console only as **root** after you run the Avaya CMS security script. If you are logging into the system remotely, log in as another user and then use `su` to log in as root.

1. Verify that you are logged in to the system as **root**.
2. Verify the current services running on the system and save the list for comparison with the listing after the security script run.

### Note:

It is necessary to find out which services in the list of differences are used by the customer.

3. To capture the current services and preserve the output to a file, enter:

```
chkconfig --list > /tmp/current_chkconfig.txt
```

4. Choose one of the following paths:

- If on a non-VMware system, continue with step 2.
- If on a VMware system, perform the steps in [Common procedure for mounting the CMS ISO image on a VMware system](#) on page 27.

5. Enter:

```
cmssvc
```

The system displays the Avaya Call Management System Services Menu or CMSSVC Menu.

### Note:

If the system has mounted the Avaya Call Management System software disc, continue with Step [9](#).

6. Insert the Avaya Call Management System software disc into the disk drive.

7. Change to the root directory. Enter:

```
cd /
```

8. Mount the Avaya Call Management System software disc. Enter:

```
mount /dev/dvd /mnt
```

9. Enter:

```
/mnt/security/cms_sec
```

The system configures your security settings and displays the following message when the process is complete:

```
Avaya CMS security configuration completed: date
```

**Note:**

If the system displays a configuration failed message, contact your Avaya services representative.

10. To capture the new services and preserve the output to a different file, enter:

```
chkconfig --list > /tmp/new_chkconfig.txt
```

11. Run the `diff` command against the two listings files and search for services that need to be re-enabled.

```
diff /tmp/current_chkconfig.txt /tmp/new_chkconfig.txt
```

12. View the output from the `diff` command and re-enable the services that are displayed.

To re-enable any customer used services, enter:

```
chkconfig [--level levels] <Service name> <on|off|reset>
```

Service name is the first column of the output from the `chkconfig --list` command.

Example:

```
chkconfig --level 2345 rpcbind on
```

**Note:**

The files in `/tmp` directory are not saved during the reboot process. If you need to keep a copy of the files, move them to a directory whose contents are not erased during a reboot.

13. Reboot the system. Enter:

```
shutdown -r now
```

Log in to the system as **root**.

14. Continue with [Upgrading the CMS base load](#) on page 35.

# Chapter 4: Upgrading the CMS base load

You must complete the procedures in the previous sections before upgrading your CMS base load. Use the procedures in this section to upgrade an older CMS base load to a newer CMS base load.

This section includes the following topics:

- [Prerequisites](#) on page 35
- [Removing the current CMS load](#) on page 36
- [Removing the current CMS load](#) on page 36
- [Installing the new CMS base load on a Linux®-based platform](#) on page 38
- [Installing the new CMS base load on a Virtual CMS](#) on page 40
- [Installing CMS patches](#) on page 42
- [Upgrading Avaya CMS Supervisor Web](#) on page 43
- [Turning on CMS](#) on page 44
- [Starting CMS Supervisor Web](#) on page 45
- [Starting Avaya OA data forwarders](#) on page 45
- [Installing Access Security Gateway and the CMS Authentication File](#) on page 45

---

## Prerequisites

Before you perform the procedures in this section, you must:

- Read the information in [Introduction](#) on page 7.
- Perform all of the required procedures in [Preparing for a base load upgrade](#) on page 13.
- Perform all of the required procedures in [Updating the Linux® operating system](#) on page 27.
- Verify that you are logged in to the system as `root`.

---

## Removing the current CMS load

1. Load the Avaya Call Management System software disc into the disk drive.
2. Enter:

**cmssvc**

The system displays the following message:

```
Avaya(TM) Call Management System Services Menu

Select a command from the list below.
 1) auth_display Display feature authorizations
 2) auth_set     Authorize capabilities/capacities
 3) run_ids      Turn Informix Database on or off
 4) run_cms      Turn Avaya CMS on or off
 5) setup        Set up the initial configuration
 6) swinfo       Display switch information
 7) swsetup      Change switch information
 8) uninstall    Remove the CMS rpm from the machine
 9) patch_rmv    Backout an installed CMS patch
10) back_all     Backout all installed CMS patches from machine
Enter choice (1-10) or q to quit: 8
```

3. Select the **uninstall** option.

The system displays the following message:

```
The following package is currently installed

Avaya(TM) Call Management System R18.0.0.0
    cms-R18.0.0.0-ca.b.x86_64

Do you want to remove this package? [y,n,?] ?
```

4. Enter **y**.

The system displays the following message:

```
Proceeding with the removal of CMS...
Do you want to preserve CMS data? [y,n,?] ?
```

**WARNING:**

If you select **n** in response to this question, *all* your CMS data is deleted from the system, so you should answer **y** to preserve the data.

5. Enter **y**.

The system displays the following message:

```
CMS will be removed from this machine; the data will be preserved
Are you sure this is correct? [y,n,?] ?
```

6. Enter **y**.

The system displays the following message:

```
All file systems should be backed up before continuing.
See the Maintenance chapter in the CMS
Installation and Maintenance Manual for instructions.

Have you backed up the file systems? [y,n,?] ?
```

7. Enter **y**.

The system displays the following message:

```
Proceeding with removal of CMS...

warning: /var/elog/elog_if saved as /var/elog/elog_if.rpmsave
warning: /var/elog/elog saved as /var/elog/elog.rpmsave
warning: /usr/lib/cms/Sname saved as /usr/lib/cms/Sname.rpmsave
warning: /usr/lib/cms/Pname saved as /usr/lib/cms/Pname.rpmsave
warning: /usr/lib/cms/Aname saved as /usr/lib/cms/Aname.rpmsave
warning: /cms/pbx/master saved as /cms/pbx/master.rpmsave
warning: /cms/pbx/acd1/xln.log saved as /cms/pbx/acd1/xln.log.rpmsave
.
.
.
Removal of Avaya(TM) Call Management System (cms) is complete
```

8. Continue with [Installing the new CMS base load](#) on page 37.

---

## Installing the new CMS base load

- If the system is a Dell or a HP platform, continue with [Installing the new CMS base load on a Linux®-based platform](#) on page 38.

- If the system is a customer-provided VMware system or an Avaya-provided Avaya Converged Platform system, continue with [Installing the new CMS base load on a Virtual CMS](#) on page 40.

---

### Installing the new CMS base load on a Linux®-based platform

1. Verify the Avaya Call Management System software disc is in the disk drive.
2. Mount the Avaya Call Management System software disc by running the following command:

```
mount /dev/dvd /mnt
```

3. Enter the following command to update the CMS related Informix files:

```
/mnt/update_ids
```

The system displays the following message when IDS updates are applied:

```
/mnt/update_ids successfully finished
```

4. Enter the following command to update the security files:

```
/mnt/security/cms_sec
```

The system displays the following message when IDS updates are applied:

```
Avaya CMS security configuration completed: Thu Aug  2 16:30:41 MDT 2018
```

5. Install CMS. Enter:

```
/mnt/cms.bin
```

The system displays the following message:

```
Unpacking files please wait...
Extracting the tar....

Installing Avaya(TM) Call Management System R18.1.0.0 (cms) version r18pa.e
This is an upgrade

In order to install CMS, the existing version must be removed.
The following package is currently installed:

    Avaya(TM) Call Management System R18.1.0.0
    cms-R18.1.0.0-pa.e.x86_64

Do you want to remove this package?  [y,n,?] ?
```

- If CMS is turned on and you want to continue with the installation of the new CMS base load, enter **y**.

- If CMS is turned on and you want to cancel the installation of the new CMS base load, enter **n**.
- If CMS is not running, the installation process continues without prompting the user for an input.

When CMS is installed, the system displays the following message:

```
Customer CMS data successfully upgraded.
CMS is installed.
```

**Note:**

If the installation procedure fails for any reason, the system displays the following message:

```
- Customers in the US should call the CMS Technical Services
Organization at 1-800-242-2121
- Customers outside the US should contact your Avaya representative or
distributor.
```

If the system displays the message shown in this example, notify your Avaya CMS support organization as prompted by the system.

6. Enter:

```
cat /cms/install/logdir/admin.log | more
```

The system displays part of the CMS administration log.

7. Verify that there were no errors during the installation.
8. Press **Enter** to continue the display. It might be necessary to repeat this step several times.
9. Reboot the system. Enter:

```
shutdown -r now
```

The system reboots.

10. Log in to the system as **root**.
11. Verify that IDS is running. Enter:

```
cmssvc
```

The system displays the **CMSSVC** menu. If the system first displays the following text, then IDS is not running:

```
cmssvc: Warning IDS off-line. It will take approx 45 seconds to
start cmssvc. IDS can be turned on with the run_ids command on the
cmssvc menu
```

12. Select the **run\_ids** option.

- If IDS is running, the system displays the following:

```
IDS is already up and running
```

Continue with Step [13](#).

- If IDS is not running, select the **Turn IDS on** option.

The system starts IDS and returns to the command prompt.

13. Continue with [Installing CMS patches](#) on page 42.

---

## Installing the new CMS base load on a Virtual CMS

1. Execute the steps in [Common procedure for mounting the CMS ISO image on a VMware system](#) on page 27.
2. Enter the following command to update the CMS related Informix files:

```
/mnt/update_ids
```

The system displays the following message:

```
<timestamp> Updating dbinit.sh and env files
```

3. Enter the following command to update the security files.

```
/mnt/security/cms_sec
```

The system displays the following message when IDS updates are applied:

```
Avaya CMS security configuration completed: Thu Nov 9 13:48:01 MST 2017
```



## 4. Install CMS. Enter:

```
/mnt/cms.bin
```

The system displays the following message:

```
Unpacking files please wait...
Extracting the tar....

Installing Avaya(TM) Call Management System R18.1.0.0 (cms) version r18pa.e
This is an upgrade

In order to install CMS, the existing version must be removed.
The following package is currently installed:

    Avaya(TM) Call Management System R18.1.0.0
    cms-R18.1.0.0-pa.e.x86_64

Do you want to remove this package? [y,n,?] ?
```

- If CMS is turned on and you want to continue with the installation of the new CMS base load, enter **y**.
- If CMS is turned on and you want to cancel the installation of the new CMS base load, enter **n**.
- If CMS is not running, the installation process continues without prompting the user for an input.

When CMS is installed, the system displays the following message:

```
Customer CMS data successfully upgraded.
CMS is installed.
```

**Note:**

If the installation procedure fails for any reason, the system displays the following message:

```
- Customers in the US should call the CMS Technical Services
  Organization at 1-800-242-2121
- Customers outside the US should contact your Avaya representative or
  distributor.
```

If the system displays the message shown in this example, notify your Avaya CMS support organization as prompted by the system.

## 5. Enter:

```
cat /cms/install/logdir/admin.log | more
```

The system displays part of the CMS administration log.

## 6. Verify that there were no errors during the installation.

7. Press **Enter** to continue the display. It might be necessary to repeat this step several times.
8. Use vSphere client to access the Virtual CMS and reset CD/DVD to Client and not connected.
9. Enter

```
umount /mnt
```

**Note:**

You must execute steps 10 and 11 only when use of ISO is completed, that is, base load upgrade, rpm\_updates, and cms\_sec have all been executed.

10. Reboot the system. Enter:

```
shutdown -r now
```

The system reboots.

11. Log in to the system as **root**.
12. Verify that IDS is running. Enter:

```
cmssvc
```

The system displays the **CMSSVC** menu. If the system first displays the following text, then IDS is not running:

```
cmssvc: Warning IDS off-line. It will take approx 45 seconds to
start cmssvc. IDS can be turned on with the run_ids command on the
cmssvc menu
```

13. Select the **run\_ids** option.

- If IDS is running, the system displays the following:

```
IDS is already up and running
```

Continue with Step [14](#).

- If IDS is not running, select the **Turn IDS on** option.

The system starts IDS and returns to the command prompt.

14. Continue with [Installing CMS patches](#) on page 42.

---

## Installing CMS patches

The initial release of CMS R18.1 running on RHEL (Linux®) will not require any CMS patches. This section will be updated when CMS patches are available for installation.

For a complete list of bug fixes and new features available in the latest CMS load, see the CMS R18.1 release notes on <https://support.avaya.com>.

---

## Upgrading Avaya CMS Supervisor Web

Perform this procedure to upgrade CMS Supervisor Web.

1. Verify the Avaya Call Management System software disc for your specific platform architecture (Linux®), is loaded in the disk drive.

2. Mount the DVD drive, enter:

```
mount /dev/dvd /mnt
```

The system displays the following message:

```
mount: block device /dev/sr0 is write-protected, mounting read-only
```

3. Determine if CMS Supervisor Web is installed on the system. Enter:

```
rpm -q cmsweb
```

The system displays the following output:

```
cmsweb-R18.0.0.0-ca.b.x86_64
```

4. Determine the CMS Supervisor Web version on the Avaya Call Management System software disc. Enter:

```
strings /mnt/cmsweb.bin | grep MINOR=
```

The system displays the following output:

```
MINOR=web18ca.j
```

Compare the version portion of CMS Supervisor Web on the cdrom, web18ca.j, to the version portion of CMS Supervisor Web currently installed on the CMS system, cmsweb-R18.0.0.0-ca.b.x86\_64.

Since ca.j of web18ca.j is a later version than ca.b of cmsweb-R18.0.0.0-ca.b.x86\_64, an update is needed.

- If the CMS Supervisor Web version on the Avaya Call Management System disc is newer than the CMS Supervisor Web version on the CMS system, then you need to upgrade CMS Supervisor Web. Continue with Step [5](#).

- If the CMS Supervisor Web version on the Avaya Call Management System disc is same or older than the CMS Supervisor Web version on the CMS system, then you do not need to upgrade CMS Supervisor Web, continue with [Turning on CMS](#) on page 44.
5. Remove the current CMS Supervisor Web package. Enter:  
**rpm -e cmsweb**  
The system removes the CMS Supervisor Web package.
  6. To install the CMS Supervisor Web package, enter:  
**/mnt/cmsweb.bin**  
The system displays the following messages:

```
Unpacking files please wait...
Extracting the rpm....

Installing (cmsweb) version
Proceeding with install...

Preparing...                               ##### [100%]
 1:cmsweb                                ##### [100%]
```

The system installs the new CMS Supervisor Web package.

7. Continue with [Turning on CMS](#) on page 44.

---

## Turning on CMS

To turn on CMS:

1. Enter:  
**cmsadm**  
The system displays the CMSADM Menu.
2. Enter the number associated with the `run_cms` option.  
The system displays the following message:

```
Select one of the following
 1) Turn on CMS
 2) Turn off CMS but leave IDS Running
 3) Turn off CMS
Enter choice (1-3):
```

3. Enter: **1**  
The system starts CMS and returns to the command prompt.

4. Restart CMS data collection if data collection was turned off at the beginning of the upgrade.
5. Manually run the appropriate Archiver from System Setup if CMS was off during the time your Archiver normally runs.

---

## Starting CMS Supervisor Web

To start the CMS Supervisor Web, enter:

```
cmsweb start
```



**Important:**

Do not start CMS Supervisor Web if the customer does not plan on using CMS Supervisor Web to access CMS reports. Starting CMS Supervisor Web opens ports that the customer may not want opened.

---

## Starting Avaya OA data forwarders

If the CMS configuration includes data collection by Avaya OA, turn on all Avaya OA forwarders on the CMS server using the **pa start all** command. For more information about Avaya OA forwarders, see *Avaya OA Maintenance and Troubleshooting*.

---

## Installing Access Security Gateway and the CMS Authentication File

Access Security Gateway (ASG) is an authentication interface used to protect the system logins associated with Avaya CMS. ASG uses a challenge and response protocol to validate the user and reduce unauthorized access.

To install ASG on your CMS server, perform the following steps:

**Note:**

*System* in the following steps refers to the CMS server.

1. Log in as `root`.

2. Verify that CMS is installed on the system. Enter:

```
rpm -q cms
```

If CMS is installed, the system displays the following:

```
cms-R18.0.0.0-ca.b.x86_64
```

3. Insert the Avaya Call Management System disc into the disk drive.
4. To install the ASG package, enter:

```
mount /dev/dvd /mnt
```

```
/mnt/cmslxsag.bin
```

The system displays a list of status messages at the time of installation. It takes less than a minute to install the ASG package.

- If the system successfully installs the ASG package, the system displays the following message at the end of the installation process:

```
INFO:Install ASG on CMS complete.  
Review output on screen above
```

- If the system does not install the ASG package successfully, the system displays the error on the screen and at the end of the installation, the installer displays a message to review the output on the screen.
5. From your PC, go to the following URL:  
<https://rfa.avaya.com/rfa-docs/index.jsp>
  6. Click on the **Start the AFS Application** button to access the Authentication File System (AFS) application.
  7. Select **Avaya CMS** as the product and then select the appropriate release from the drop down list.
  8. Navigate to the download page by following the instructions in the intermediate pages and pressing **Next**.
  9. Download the CMS Authentication File (AF) file to your PC.

**Note:**

You can download the AF file to your PC prior to CMS installation.

10. Transfer the AF file from your PC to the CMS server.

11. Install the AF file. If you transferred the AF file from your PC to the `/tmp` directory of the CMS server, run the following command to install the AF file:

```
/opt/cmsasg/usr/local/bin/loadauth -af -l /tmp/  
AF-7000009669-11.xml
```

Replace `/tmp` in this example with the actual location of the AF file. Replace the AF file name in this example with the name that corresponds to the AF file that was transferred to the CMS server. Each AF file has a unique name. The `-l` option in the `loadauth` command is a lower case L.

**Note:**

For information regarding administering FIPS and firewall, refer to *Avaya Call Management System Software Installation, Maintenance, and Troubleshooting for Linux®*.





# Chapter 5: Completing the base load upgrade process

You must perform the procedures in this section to complete the CMS base load upgrade process.

This section includes the following procedures:

- [Prerequisites](#) on page 49
- [Performing a backup of the system files](#) on page 49
- [Performing a backup of the CMS data](#) on page 50

---

## Prerequisites

Before you perform the procedures in this section, you must:

- Read the information in [Introduction](#) on page 7.
- If your operating system is RHEL (Linux®), you must:
  - Perform all of the required procedures in [Preparing for a base load upgrade](#) on page 13.
  - Perform all of the required procedures in [Updating the Linux® operating system](#) on page 27.
  - Perform all of the required procedures in [Upgrading the CMS base load](#) on page 35.

---

## Performing a backup of the system files

After the base load upgrade has completed successfully, perform a backup to create a reliable copy of the computer system files. For instructions on how to backup the system files, see [Backing up your CMS system data](#) on page 21.

---

## Performing a backup of the CMS data

After the base load upgrade has completed successfully, perform a backup to create a reliable copy of the computer CMS data files. For instructions on how to backup the CMS data, see [Backing up your CMS data](#) on page 23.