



# **Avaya Call Management System**

## **Change Description**

Release 16.x  
May 2012

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<http://www.avaya.com/support>

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# Preface

This section contains the following topics:

- [Audience](#) on page 5
- [Documentation Web sites](#) on page 5
- [Support](#) on page 5

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## Audience

Existing call center customers who are upgrading to Avaya Call Management System (CMS) Release (R16.x) and want to know about the new features of the release can use this guide.

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## Documentation Web sites

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

Use the following Web sites to view related support documentation:

- Information about Avaya products and service  
<http://www.avaya.com>
- Sun hardware documentation  
<http://docs.sun.com>

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## Support

### Contacting Avaya technical support

Avaya provides support telephone numbers for you to report problems or ask questions about your product.

## Preface

For United States support:

1- 800- 242-2121

For international support:

See the [Support Directory](#) listings on the Avaya Web site.

### **Escalating a technical support issue**

Avaya Global Services Escalation Management provides the means to escalate urgent service issues.

# New features of CMS R16

CMS R16 supports the following new features:

- [Duplicated Processor Ethernet support](#) on page 7
- [Capacity increases](#) on page 7
- [Full Expanded Dial Plan support](#) on page 8
- [Improved time zone reporting](#) on page 8
- [Internal Call History and Extended Call History](#) on page 9
- [Backup changes](#) on page 9

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## Duplicated Processor Ethernet support

CMS R16.x supports duplicated Processor Ethernet switch port connections when used with Avaya Aura(R) Communication Manager 5.2.1 or later.

The connection to the Processor Ethernet (PE) applies to High Availability, Survivable CMS, and Dual Role CMS. Avaya Professional Services supports all these offers. To configure a solution using the PE interface and any of these offers, contact Avaya Professional Services.

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## Capacity increases

The updated capacities for R16 are as follows:

Capacities	CMS R15	CMS R16
Supervisor logins	400	800
Agent Skill pair	100,000 system wide limits	150,000 system wide limit. The per ACD limit of 100,000 remains the same.

Capacities	CMS R15	CMS R16
VDN system limit	20,000 system wide limit	30,000 system wide limit. The per ACD limit of 20,000 remains the same.
Expanded AUX	Available versions: <ul style="list-style-type: none"> <li>• Standard CMS (0-9 Aux codes)</li> <li>• Expanded AUX (0-99 AUX codes)</li> </ul>	100 AUX codes is the standard for all users. The previous limit for the Expanded AUX load no longer exists. The system now supports 15-minute intervals, and storage has no limits.
Agent login/logout data record	1 million	1.5 million
Agent trace	400 simultaneous traces	600 simultaneous traces
ICH data rows	5000	100,000
Rate of writing to ICH	4000 in 20 minutes	4000 in 20 minutes

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## Full Expanded Dial Plan support

CMS R16 and later supports up to 15 digits with the Expanded Dial Plan (EDP) feature, including EAS Agent IDs and VDNs without truncation. You require Communication Manager 5.2.1 for full EDP support. With Communication Manager 4.0 through 5.2, you need a special application to allow CMS to use full EDP support.

**Note:**  
Communication Manager 5.2 currently supports only 13 digits.

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## Improved time zone reporting

Beginning with CMS R16, CMS Supervisor has a menu that you can use to specify a time zone to display historical interval reports. CMS displays the data according to the time zone that you specify while generating a report. When the system generates the report, the default time zone is the time zone of the Communication Manager server.

The CMS database stores the data that the database receives from the Communication Manager system. This release includes new database items to support UTC time zone reporting.

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## Internal Call History and Extended Call History

The two available Call History Interface formats are Internal Call History (ICH) and Extended Call History (ECH). Beginning with CMS R16, both ICH and ECH use the same call record format, which was known as the Enhanced Format before CMS R16.

You can export data in real time from the CMS system by using an Avaya Professional Services offer. This data is stored by ECH. In addition, ICH and ECH have expanded fields to support EDP and UTC time stamp.

You cannot use both ICH recording and ECH recording at the same time. ICH stores data in a table in the CMS Informix database, which you can gain access to using the ODBC or JDBC interfaces.

**Note:**

You can query upto 10 simultaneous ODBC and JDBC records for Sun Enterprise T5220 and 5 simultaneous ODBC and JDBC records for Sun Enterprise T5120.

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## Backup changes

Due to the higher capacity limits and fewer database restrictions, the maintenance backup time can take longer with CMS R16 than earlier releases. In some cases, the extended amount of time may be unacceptable to customers. In rare cases, maintenance backups can take more than 24 hours.

As a workaround to reduce the duration of the maintenance backup activity, you can use the following backup options:

- Schedule each ACD to back up at a different time.

For more information, see *Avaya Call Management System Administration* and *Avaya Call Management System Software Installation, Maintenance, and Troubleshooting*.

- Use the new binary backup that CMS R16 provides.

The CMS R16 binary backup procedure can write data to a tape drive or over the network. Similar to the LAN backup and restore processes, the binary backup does not support table-level restore and data migration. For more information, see *Avaya Call Management System Administration* and *Avaya Call Management System Software Installation, Maintenance, and Troubleshooting*.

## **New features of CMS R16**

**Note:**

A binary backup is a good alternative for disaster recovery. Usually, a binary backup of a fully loaded CMS system to a tape device takes approximately 30 minutes. A binary backup over a network varies depending upon the network bandwidth.

# New features of CMS R16.1

CMS R16.1 has the following new features.

- [Capacity increases](#) on page 11
- [Support for new tape drive](#) on page 12
- [Backup changes](#) on page 12
- [Support for IPv6](#) on page 12
- [Support for Communication Manager 5.2 and 6.0 features](#) on page 13
- [Security updates](#) on page 13
- [Database Schema changes](#) on page 13

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## Capacity increases

The capacity increases for CMS R16.1 as compared to R16 are as follows:

Capacities	CMS R16	CMS R16.1
Skills per agent	60	120
Per ACD VDN extensions	20,000	30,000 (system limit is the same at 30,000)
Skills per ACD	2,000 (16,000 system-wide limit)	8,000 (32,000 system-wide limit)
Vectors	2,000 (16,000 system-wide limit)	8,000 (32,000 system-wide limit)
Maximum agents logged in	7,000	10,000

## Support for new tape drive

With CMS R16.1, the system supports the SAS LTO-4 and SCSI LTO-4 tape drive. Only the new R16.1 T5220 systems include the SAS version. You can use the SCSI version to upgrade the existing T5120 or T5220 systems or the new T5120 systems. The LTO-4 has a higher capacity of 800 GB compared to the capacity of 36 GB of the DAT 36/72.

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## Backup changes

As mentioned in [Backup changes](#) on page 9, the time for maintenance backups was degraded in the R16 release. With R16.1, the enhanced maintenance backup time is comparable to what customers experienced on earlier releases of CMS.

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## Support for IPv6

CMS R16.1 supports IPv6 connectivity to provide seamless integration between CMS and Communication Manager. You can use the `cmsadm` or `acd_create` commands to configure the IPv6 Communication Manager (ACD) sources in the same way as IPv4 except for the use of IPv6 addresses instead of IPv4 addresses. CMS also integrates with Supervisor, Terminal Emulator, and Network Reporting over IPv6. The CMS reporting client applications do not require extra configuration to enable the IPv6 capabilities. The system automatically configures the IPv6 protocol and name resolution and connectivity.

The use of IPv6 is transparent to CMS users. All features of CMS work in exactly the same way with IPv6 as they do with IPv4.

The customer must enable IPv6 on Solaris by creating a persistent IPv6-enabled interface. For more information, see *Avaya CMS Software Installation, Maintenance and Troubleshooting*.

By default, Windows 7 and Windows Vista are IPv6 enabled. You can use IPv6 with CMS Supervisor on a computer running these versions of Windows without making any changes on your desktop. Windows XP also supports IPv6, but you must manually enable IPv6 on Windows XP.

## Caveats to using IPv6 with AOM and Visual Vectors

AOM requires a system with a local IPv4 address for the tool to work properly. The IPv4 address does not need to be visible outside the CMS system.

Visual Vectors Server requires an IPv4 network address to be available and used as the connection point for Visual Vectors client. The network may be a hybrid form of IPv4 and IPv6, but you cannot use a network that is exclusively IPv6.

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## Support for Communication Manager 5.2 and 6.0 features

CMS R16.1 supports Communication Manager 6.0. This release has introduced capacity increases in the form of skills per agent, per ACD VDN extension, skills per ACD, vectors, and agents logged in. Communication Manager 5.2 supports features such as interruptible AUX and percent allocation routing. Vector administration continues to be available on CMS, and new vector capabilities are available through CMS R16.1. CMS R16.1 supports the new vector capabilities for higher numbers in the holiday tables, service hour tables, and vector routing tables.

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## Security updates

CMS R16.1 has enhanced security features in the form of password policies, auditing, and enabling TCP connection tracing. Other security features include the ability to

- provide more restrictive permissions for log files and home directories and files
- provide a SSH port number
- set up Basic Audit Reporting Tool (BART) auditing.

For more information on security improvements and features, see the *CMS Security* document.

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## Database Schema changes

CMS R16.1 supports the following database schema changes:

- The tables in the CMS R16.1 database contain 20 new data items.
- Changes in the R16.1 database schema have activated the four new internal and external call record items that the R16 database schema supported.
- The schema supports 6 new calculations and 2 new synonyms.

For more information on these changes, see Appendix A in *Avaya CMS Database Items and Calculations*.



# New features of CMS R16.2

CMS R16.2 supports the following new features:

- [Backup changes](#) on page 15
- [Better management of report execution](#) on page 15
- [Support for 64-bit Windows 7 and Vista](#) on page 16

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## Backup changes

CMS R16.2 supports different options for backup and restore than the tape or Tivoli Storage Manager (TSM) LAN backup that CMS supported in the earlier releases. CMS R16.2 supports backup, restore, and migration to and from the following:

- Symantec Netbackup 7.0 Server which is used for LAN backup
- Tivoli Storage Manager 5.5 and 6.2.1 which is used for LAN backup
- USB storage device which is used as a media for nontape backup
- NFS mounted file system which is used as a media for nontape backup

Use the NFS and USB storage devices to perform both CMS Maintenance and CMSADM backups. For more information about NFS mounted directories and USB storage device, see *Avaya CMS Administration*.

**Note:**

The DAT 72 tape drives are not available for purchase. The LTO-4 tape drive is still available as an option for R16.2 systems.

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## Better management of report execution

CMS R16.2 has two new features with which you can manage report execution in a more efficient way. The system has the ability to do the following:

- Terminate any report that exceeds the administered amount of time.
- Terminate any report that is designed to report on more than 30 agents in a single agent group.

## **New features of CMS R16.2**

There are two new query log files using which you can view data about reports prior to enabling the above limits for all report users. In addition, you can implement the above limits in time tables. For more information on how to administer the new limits and monitor logs, see the *Avaya CMS Administration* and *Avaya CMS Software Installation, Maintenance and Troubleshooting* documents.

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## **Support for 64-bit Windows 7 and Vista**

CMS R16.2 supports Supervisor on 64-bit editions of Windows 7 and Windows Vista.

# New features for CMS R16.3

CMS R16.3 supports the following new features:

- [New CMS WebClient](#) on page 17
- [New x86-based platform, Sun Netra X4270](#) on page 18
- [Support for ICR 2.0 with database changes](#) on page 18
- [Upgrade paths](#) on page 20

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## New CMS WebClient

CMS R16.3 supports a Web-based client called CMS Supervisor Web that has the following features:

- CMS Supervisor Web does not require additional server hardware. CMS server supports the CMS Supervisor Web client.
- You can use the same log-in IDs for CMS Supervisor Web that you used for the CMS Supervisor PC client.

CMS Supervisor Web client supports browsers such as Microsoft Internet Explorer and Mozilla Firefox. Although CMS Supervisor Web client can work with any browser that supports Adobe Flash, CMS Supervisor Web client has been tested and verified to work only with the following browsers:

- Internet Explorer
  - Version 7 on Windows XP.
  - Version 8 and 9 on Windows Vista and Windows 7.
- Firefox
  - Version 3.6.23 and 7.0.1 on Windows XP, Windows Vista, and Windows 7.
- Safari
  - Version 5.1.1 on Mac OS X 10.6 and 10.7.

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## Limitations with this release

- CMS Supervisor Web supports only real-time and historical reports.

## New features for CMS R16.3

CMS Supervisor Web does not support:

- Administrative tasks that are possible using CMS Supervisor PC client.
- Integrated reports.
- Report designer. However, you can view any customer report designed in CMS Supervisor PC client in CMS Supervisor Web client.
- Localization.

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## New x86-based platform, Sun Netra X4270

CMS R16.3 supports the Sun Netra X4270 platform based on Solaris x86. This platform replaces the T5120 4-core which Oracle does not distribute anymore.

The Netra X4270 is a mirrored system but does not support RAID 10 since the platform supports only two disk drives. This platform can support the same capacities as the T5120 4-core.

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## Support for ICR 2.0 with database changes



### Important:

Reporting about new ICR 2.0 data items requires a combination of CM 6.2 and CMS R16.3 functionality. Since ICR 2.0 interacts directly with CM, the new features in ICR 2.0 require a minimum release of CM 6.2 in order to provide the proper call details to CMS R16.3.

- Intelligent Customer Routing (ICR) exists on Voice Portal and was developed to interact with a CM call center. It provides accurate routing to the CM with the shortest expected wait time over SIP trunking to place a call in a queue for distribution to an agent.
- With ICR 2.0, CM can pull back calls for various reasons. You can then resubmit the call to the same CM, or a different CM. ICR 2.0 can also set a new queue priority called Redirect.
- The system supports a new call disposition called icr-pulled.
- The system supports the counts and times associated with icr-pulled calls in the interval, daily, weekly, and monthly real time and historical database tables for agent, split/skill, VDN, vector, trunk, and trunk group.
- The system tracks the new queue priority called Redirect in the split/skill tables.

- The system supports two new fields in Call History (ECH and ICH): one field to track when a call was resubmitted and another field to hold the reason code for a pulled back call. You can use existing fields for call disposition and call priority to allow the new values for disposition and queue priority.
- The new database items are available for use in custom reports. The system does not update standard reports.
- The system does not update agent trace or exceptions for the ICR pulled calls.
- Database Updates - Summary Tables
  - Agent Tables: The affected tables are the real-time tables cagent and pagent and the historical tables hagent, dagent, wagent, and magent.  
ICRPULLCALLS, ICRPULLTIME, DA\_ICRPULLCALLS, DA\_ICRPULLTIME
  - Split/Skill Tables: The affected tables are the real-time tables csplit and psplit and the historical tables hsplit, dsplit, wsplit, and msplit.  
ICRPULLCALLS, ICRPULLTIME, ICRPULLRINGCALLS, REDIRECTCALLS
  - VDN Tables: The affected tables are the real-time tables cvdn and pvdn and the historical tables hvdn, dvdn, wvdn, and mvdn  
ICRPULLCALLS, ICRPULLTIME, ICRPULLRINGCALLS, ICRPULLQUEECALLS
  - Vector Tables: The affected tables are the real-time tables cvector and pvector and the historical tables hvector, dvector, wvector, and mvector.  
ICRPULLCALLS, ICRPULLTIME, ICRPULLRINGCALLS, ICRPULLQUEECALLS
  - Trunk-Group Tables: The affected tables are the real-time tables ctkgrp and ptkgrp and the historical tables htkgrp, dtkgrp, wtkgrp, and mtkgrp.  
ICRPULLCALLS, ICRPULLVECCALLS, ICRPULLRINGCALLS, ICRPULLQUEECALLS
  - Trunk Tables: The affected tables are the real-time tables ctrunk and ptrunk and historical tables htrunk, dtrunk, wtrunk, and mtrunk.  
ICRPULLCALLS
- Call History Updates - ECH and ICH or the call\_rec database table.
  - The fields added are ICRRESENT and ICRPULLREASON.
  - The existing fields with new values are DISPPRIORITY and CALL\_DISP.

For more information on the new database items, see *Avaya CMS 16.x Database Items and Calculations*.

## Upgrade paths

The following table shows the different upgrade paths to upgrade from earlier CMS versions to CMS R16.3:

Earlier version	Upgraded version	Process	Document
R14.x and earlier	R16.3 on SPARC	Platform Upgrade	Avaya CMS Platform Upgrade
R15.x on T5120 and T5220	R16.3 on SPARC	CUE	Avaya CMS CUE for Sun computers
R15.x on Netra210 and V890	R16.3 on SPARC	Platform Upgrade	Avaya CMS Platform Upgrade
R16.0 and R16.1 (if using LAN Backup) LAN Backup allows you to back up CMS data and system information over a local area network (LAN) to a Network Backup server, which manages the number of backups and their location.	R16.3 on SPARC	CUE	Avaya CMS CUE for Sun computers
R16.0 (if using a backup procedure other than LAN) Other backup procedures include NFS mount, tape drive, Tivoli or Netbackup	R16.3 on SPARC	Database Upgrade and Data Migration	Avaya CMS Database Upgrade and Data Migration

<b>Earlier version</b>	<b>Upgraded version</b>	<b>Process</b>	<b>Document</b>
R16.1 and R16.2 (if using a backup procedure other than LAN) Other backup procedures include NFS mount, tape drive, Tivoli or Netbackup	R16.3 on SPARC	Base Load Upgrade	Avaya CMS Base Load Upgrade
R14.x and earlier, R15.x, R16.0, R16.1 and R16.2	R16.3 on x86	Platform Upgrade	Avaya CMS Platform Upgrade



# CMS support information

This section describes related support information for Avaya CMS R16.x and includes the following topics:

- [Hardware platform support](#) on page 23
- [Serial connectivity](#) on page 23
- [Supported CMS software](#) on page 24
- [CMS Supervisor and other desktop software](#) on page 24
- [Supported communication servers](#) on page 26
- [Cross-product interactions](#) on page 27

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## Hardware platform support

CMS R16.x supports the following platforms:

- Sun Enterprise T5120 4-core and T5120 8-core
- Sun Enterprise T5220
- Netra X4270

**Note:**

Oracle Corporation owns Sun Microsystems. Instead of rebranding references to Sun Microsystems with the Oracle name, all occurrences of Sun and Sun Microsystems will remain as is in this document.

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## Serial connectivity

Avaya CMS R16.x does not support serial connections using a Network Terminal Server (NTS). Customers who previously used an NTS for serial connections must start using network connections.

## Supported CMS software

Avaya CMS R16.x uses the following software packages:

- Solaris 10 U6 SPARC
- Informix SQL
- Informix IDS
- Informix ESQL SDK
- Informix ILS
- Avaya CMS Supplemental Services
- Avaya Call Management System
- ODBC and JDBC
- Avaya Visual Vectors Server (optional)

**Note:**

For specific software version information, see the *CMS Software Installation, Maintenance, and Troubleshooting* document for this release.

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## CMS Supervisor and other desktop software

This section includes the following topics:

- [Maintenance release](#) on page 24
- [Service packs and patches](#) on page 25
- [Supported OS and software combinations](#) on page 25
- [Non-supported software](#) on page 26
- [Third-party royalty-free license agreements](#) on page 26

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## Maintenance release

Avaya CMS Supervisor R16.3 is a maintenance release for:

- Avaya CMS Supervisor R12

**Note:**

Although CMS supports connectivity of Supervisor to the server, with CMS R16.3, this connectivity is considered Permissive Use. For more information on Permissive Use, see "CMS permissive use support policy" in *CMS Security*.

- Avaya CMS Supervisor R13

**Note:**

Although CMS supports connectivity of Supervisor to the server, with CMS R16.3, this connectivity is considered Permissive Use. For more information on Permissive Use, see "CMS permissive use support policy" in *CMS Security*.

- Avaya CMS Supervisor R14
- Avaya CMS Supervisor R15
- Avaya CMS Supervisor R16

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## Service packs and patches

To ensure compatibility and security, you must install the latest service packs and security patches for your supported Microsoft operating system prior to installing Avaya CMS R16.x Supervisor and Network Reporting.

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## Supported OS and software combinations

CMS Supervisor, Network Reporting, and Terminal Emulator support the following OS and software combinations:

- Windows XP Professional
- Windows Vista
- Windows 7
- Citrix XenApp 6.5 Enterprise on Windows 2008 R2 Enterprise 64-bit SP1
- Citrix XenApp 6.5 Enterprise on Windows 2008 R2 Enterprise 64-bit
- Citrix XenApp 6.0 Enterprise on Windows 2008 R2 Enterprise 64-bit SP1
- Citrix XenApp 6.0 Enterprise on Windows 2008 R2 Enterprise 64-bit
- Citrix XenApp 5.0 Enterprise on Windows 2003 R2 Enterprise 32-bit SP2
- Citrix XenApp 5.0 Enterprise on Windows 2003 R2 Enterprise 32-bit

**Note:**

A new silent installer supports the *push type* installation to the desktop on CMS Supervisor only. For more information, see *Avaya CMS Supervisor Installation and Getting Started*.

## Non-supported software

CMS Supervisor, Network Reporting, or Terminal Emulator does not support the following software and OSs:

- Windows XP Tablet PC Edition
- Windows Vista Tablet PC
- Windows 98
- Windows 2000
- Windows 7 with tablet extensions
- Windows 95
- Windows NT
- Windows ME

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## Third-party royalty-free license agreements

For details on all third-party software in CMS, see <http://support.avaya.com/copyright>.

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## Supported communication servers

Avaya CMS R16.1, R16.2, and R16.3 support the following communication server releases:

- Communication Manager 2.x
- Communication Manager 3.x
- Communication Manager 4.x
- Communication Manager 5.x
- Communication Manager 6.0

**Note:**

Avaya CMS R16.0 supports all the above Communication Manager releases up to 5.x.

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## Cross-product interactions

CMS R16.x supports and can connect to the following Avaya products:

### **NICE Analyzer**

NICE Analyzer was discontinued in late 2007. Therefore, any current use of NICE Analyzer is considered Permissive Use by Avaya. For more information on Permissive Use, see "CMS permissive use support policy" in *CMS Security*.

### **Operational Analyst**

Currently available versions of OA do not support the expanded field data on CMS R16.x due to the implementation of EDP support. A future release of OA will be provided to operate fully with CMS R16.x.

### **Avaya IQ**

CMS R16.x continues to support parallel implementations with Avaya IQ.



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