



Avaya Call Management System

Capacities

Release 16.3
May 2012

Notice

While reasonable efforts were made to ensure that the information in this document was complete and accurate at the time of printing, Avaya Inc. can assume no liability for any errors. Changes and corrections to the information in this document might be incorporated in future releases.

Documentation disclaimer

Avaya Inc. is not responsible for any modifications, additions, or deletions to the original published version of this documentation unless such modifications, additions, or deletions were performed by Avaya. Customer and/or End User agree 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 the Customer or End User.

Link disclaimer

Avaya Inc. is not responsible for the contents or reliability of any linked Web sites referenced elsewhere within this documentation, and Avaya does not necessarily endorse the products, services, or information described or offered within them. We cannot guarantee that these links will work all the time and we have no control over the availability of the linked pages.

Warranty

Avaya Inc. provides a limited warranty on this product. 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 through the Avaya Support Web site:

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

License

USE OR INSTALLATION OF THE PRODUCT INDICATES THE END USER'S ACCEPTANCE OF THE TERMS SET FORTH HEREIN AND THE GENERAL LICENSE TERMS AVAILABLE ON THE AVAYA WEB SITE

<http://www.avaya.com/support/LicenseInfo> ("GENERAL LICENSE TERMS"). IF YOU DO NOT WISH TO BE BOUND BY THESE TERMS, YOU MUST RETURN THE PRODUCT(S) TO THE POINT OF PURCHASE WITHIN TEN (10) DAYS OF DELIVERY FOR A REFUND OR CREDIT.

Avaya grants End User a license within the scope of the license types described below. 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 End User. "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. "Software" means the computer programs in object code, originally licensed by Avaya and ultimately utilized by End User, whether as stand-alone Products or pre-installed on Hardware. "Hardware" means the standard hardware Products, originally sold by Avaya and ultimately utilized by End User.

License type(s)

Designated System(s) License (DS). End User may install and use each copy of the Software on only one Designated Processor, unless a different number of Designated Processors is indicated in the Documentation or other materials available to End User. Avaya may require the Designated Processor(s) to be identified by type, serial number, feature key, 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 Product that permits one user to interface with the Software. Units may be linked to a specific, identified Server.

Copyright

Except where expressly stated otherwise, the Product is protected by copyright and other laws respecting proprietary rights. Unauthorized reproduction, transfer, and/or use can be a criminal, as well as a civil, offense under the applicable law.

Third-party components

Certain software programs or portions thereof included in the Product may contain software distributed under third party agreements ("Third Party Components"), which may contain terms that expand or limit rights to use certain portions of the Product ("Third Party Terms"). Information identifying Third Party Components and the Third Party Terms that apply to them is available on the Avaya Support Web site:

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

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 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 Web site:

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

Trademarks

Avaya and the Avaya logo are either registered trademarks or trademarks of Avaya Inc. in the United States of America and/or other jurisdictions.

All other trademarks are the property of their respective owners.

Downloading documents

For the most current versions of documentation, see the Avaya Support Web site:

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

Avaya support

Avaya provides a telephone number for you to use to report problems or to ask questions about your product. The support telephone number is 1-800-242-2121 in the United States. For additional support telephone numbers, see the Avaya Support Web site:

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

Contents

Avaya CMS capacities	5
Using the capacity limits	5
Capacity descriptions	5
CMS R16.3 Capacities	8
Optimizing CMS reporting efficiency	10
Skill based reporting	10
Recommendations for custom reports.	10
Resources for system performance analysis	11

Avaya CMS capacities

This document describes the supported hardware platforms and capacities for the Avaya Call Management System (CMS) Release 16.3 (R16.3) software that can currently be purchased from Avaya.

This document includes the following topics:

- [Using the capacity limits](#) on page 5
- [Capacity descriptions](#) on page 5
- [CMS R16.3 Capacities](#) on page 8
- [Optimizing CMS reporting efficiency](#) on page 10

Using the capacity limits

The capacities described in the following topics are the maximum limits that can be supported by a particular CMS hardware platform. You must verify that *none* of the capacity limits is exceeded for a particular hardware platform.

If you exceed even one of the capacity limits for a hardware platform, you require the next higher capacity hardware platform. For example, if you have less than 200,000 calls per hour, but between 201 and 400 Supervisors, you must purchase a T5220 with the standard 16GB of memory.

Capacity descriptions

The following topics describe the measurements you must use to determine which CMS hardware platform is required.

Peak busy hour call volume

The busy hour call volume capacity is the call volume during the busy hour.

Calculate the busy hour call volume by adding each trunk seizure or line appearance seized during the busiest hour for calls.

Concurrent supervisors

The concurrent supervisors capacity is the total maximum number of CMS supervisors and CMS terminal emulator logins that exist during the peak busy hour. The concurrent supervisors capacity is not the number of authorized logins, but the number of logins actually used.

Calculate the number of concurrent supervisors by counting the maximum number of supervisor logins and terminal emulator logins that exist during the busy hour period. Each login counts as one. Do not count the number of reports. This calculation must be 800 or less.

Third-party software

The third-party software capacity is the number of external or third party interface applications. Some examples of third-party interfaces are Blue Pumpkin, ODBC, wallboards, Geotel, Operational Analyst, TCS, and IEX.

Calculate the amount of third-party software by counting the number of third party applications used.



Important:

The one exception to this rule is Geotel, which counts as two applications.

Do not count each instance of the application. If you use wallboards, count the wallboards as one application. Do not add up the total number of wallboards.

Agent/skill pairs

The agent/skill pairs capacity is the total number of agent/skill pairs.

Calculate this capacity by multiplying the number of agents by the number of skills each agent can log in to. The number of agents and the number of skills are based on the switch administration. For example, if there are 20 agents, and each agent is administered with 5 skills, you would multiply agents by their skills for a value of 100 agent/skill pairs. You must count the total number of skills administered for the agent, not the number of skills used by the agent.

Reports per Supervisor session

The reports per Supervisor session capacity is the average number of simultaneous real-time reports each supervisor will run.

Report elements

The report elements capacity is the average number of report elements.

A report element is an entity that is monitored by an average real-time report. Report elements are not the lines of data rendered on the report but the element that is chosen to run the report against. Some examples of elements are VDNs, skills, and vectors.

Calculate this capacity by counting each element. You would count one element if a report is run for one skill. It does not matter if the report has lines of data for each agent in the skill.

Active agent traces

The active agent traces capacity is the number of agent traces running on the CMS.

Average refresh rate

The average refresh rate capacity is the average refresh rate for real-time reports.

Calculate this capacity by averaging the refresh rates set by your report users. For example, if one-half of the users use a 30-second refresh rate, and the other half use a 10-second refresh rate, you would calculate an average of 20.

Percent refresh rate at three seconds

The percent refresh rate at 3 seconds capacity is the percentage of real-time report users that require a refresh rate of 3 seconds.

CMS R16.3 Capacities

The following tables list the capacities for each hardware platform being sold for new CMS R16.3 installations or for existing platforms being upgraded to CMS R16.3. Only T5120, T5220 and Netra X4270 systems can be upgraded to R16.3.

New ships

Capacity	Netra X4270	Sun SPARC T4-1
Memory	4GB	32GB
Peak busy-hour call volume	200,000	400,000
Concurrent supervisors ¹	200	800
Concurrent Agents	5,000	10,000
Third-party software	3	7
Agent skill pairs ²	150,000	150,000
Reports per Supervisor session	5	10
Report elements	5	12
Active agent traces	200	600
30 seconds Average refresh rate	10% at 3 seconds	100% at 3 seconds

1. The total capacity of concurrent CMS Supervisors is the combined capacity of CMS Supervisor PC clients and CMS Supervisor Web clients.

2. CMS supports a system wide limit of 150,000 agent skill pairs, with a per ACD limit of 100,000 agent skill pairs.

Upgrades

Capacity	Sun Enterprise T5120 4-core	Sun Enterprise T5220 or T5120 8-core	
Memory	4GB or 8GB	16GB	32GB
Peak busy-hour call volume	200,000	250,000	400,000
Concurrent supervisors ¹	200	400	800
Concurrent Agents	5,000	10,000	
Third-party software	3	5	7
Agent skill pairs ²	150,000	150,000	
Reports per Supervisor session	5	8	10
Report elements	5	8	12
Active agent traces	200	400	600
30 seconds Average refresh rate	10% at 3 seconds	50% at 3 seconds	100% at 3 seconds

1. The total capacity of concurrent CMS Supervisors is the combined capacity of CMS Supervisor PC clients and CMS Supervisor Web clients.
2. CMS supports a system wide limit of 150,000 agent skill pairs, with a per ACD limit of 100,000 agent skill pairs.

Optimizing CMS reporting efficiency

Avaya provides a powerful solution with CMS that enables you to create custom reports designed to fit your individual needs. However, the overall capability of the CMS server is limited by the memory and CPU.

This section includes the following topics:

- [Skill based reporting](#) on page 10
- [Recommendations for custom reports](#) on page 10
- [Resources for system performance analysis](#) on page 11

Skill based reporting

The CMS server is optimized for skill based reporting. Avaya recommends that you create and use reports on skills instead of Agent Group reports. Skills that do not receive actual calls can be created on the Communication Manager. You can use these skills to provide reporting for the agents that are placed in that skill.

To use Agent Group reports, follow the recommendations provided in [Recommendations for custom reports](#) on page 10.

Recommendations for custom reports

When you design and use custom Agent Group reports, consider the following recommendations to optimize system performance:

- Agent Groups
 - The size of agent groups should be limited to approximately 30 agents. Any agent groups much larger than 30 agents should be avoided because system performance will be adversely affected.
 - If possible, report on consecutive Agent IDs in the same report
 - If possible, limit Agent Group reports and use skill based reports
- Number of agents or other elements in historical or real time reports
 - Carefully examine the number of agents, skills, VDNs, trunks, or other elements in one report. Limit the number of agents or other elements in a single report as much as possible.
- Custom report design

- A historical report should not allow input for multiple dates when running against the interval database tables. Any report that currently allows input for multiple dates should be modified so only one date can be input, or should be modified to access the appropriate daily/weekly/monthly table instead of the interval table.
- Any historical report that takes longer than a few seconds to complete should be removed or modified to improve performance.
- Any real-time report that takes more than a few milliseconds to refresh should be removed or modified to improve performance.

Resources for system performance analysis

You can work with Avaya to design and use custom reports in a manner that maximizes system performance. The Avaya Professional Services organization provides services that include a performance analysis of custom reports on a CMS system. Avaya Professional Services can also provide recommendations on how to efficiently design current or future reports in a manner that minimizes any impact to CMS performance.

