Hardware and System Software Specification
(Bill of Materials)

Cisco Unified Intelligence Suite Release 7.5(x)

Revision 1.8
Updated for Maintenance Release 7.5(4) on August 10, 2010
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1 Overview

The Cisco Unified Intelligence Suite (Unified IS) consists of two components: the Cisco Unified Intelligence Center (Unified IC) and the Archiver data repository.

Unified IC is installed on one or more dedicated servers. Archiver (which is optional) is installed on a separate, dedicated server.

This document specifies the hardware and software that have been qualified by Cisco Quality Assurance for the Unified IC server and for the Archiver server.

Release 7.5(1) was the first major release for Cisco Unified Intelligence Suite. Release 7.5(2), Release 7.5(3), and Release 7.5(4) are the subsequent maintenance releases. When a statement is true for all these maintenance releases, this document refers to that as Release 7.5(x).

The content of this document is updated periodically for technical clarification and to align with subsequently-qualified hardware and third-party software. Document updates are typically synchronized with major and maintenance releases.

1.1 Unified IS and Unified ICM/CCE/CCH

The 7.5(x) release of Unified Intelligence Suite is designed for use with Cisco Unified Intelligence Contact Management (Unified ICM) and Unified Contact Center Enterprise and Hosted (Unified CCE/CCH). To know the specific version that is compatible with your Unified Intelligence Suite 7.5(x) implementation, see the Cisco Unified Contact Center Enterprise (Unified CCE) Software Compatibility Guide.

Note that:

- The Unified Intelligence Center reporting application can retrieve report data from the Unified ICM AW/HDS database or from the Unified ICM AW/HDS database.
- The Archiver can be downgraded for use with Unified ICM/CCE/CCH.

1.2 Updates in the December 2009 Bill of Materials

Added Link to DocWiki troubleshooting page, page 2.

Added information about newly-available MCS servers:

- MCS-40-011 for Unified IC, page 3
- MCS-013 for small Archiver, page 5
- MCS-016 for large Archiver, page 8
- Added Model column to Table 2, page 3
- Added SP3 to MS SQL Server information, page 3
- Changed MCS-7845-13 to -MCS-7845-I3- in Tables 4 and 5, pages 6 and 8.
- Changes to MCS-7845-16 specification, page 8
2 References

Unified ICM/Contact Center Enterprise and Hosted Editions information can be found on www.cisco.com.

- Product documentation, including planning, upgrade, install, configuration, reporting, reference, and developer documentation, is available at http://www.cisco.com/public/support/tac/documentation.html.

Useful documents include:


Note: The documents listed above are not necessarily updated on the same schedule as this Bill of Materials. For that reason, specification data may differ between this document and the references cited.

Useful web sites include:

- http://developer.cisco.com/web/ccr/home
  This site is designed for customer collaboration and includes tips, utilities, and sample reports contributed by customers and partners. Enjoy this site and participate in it.
  Note that the information on this site has not been developed or tested by Cisco Systems and is not supported by your Cisco Support Provider.

- The DocWiki troubleshooting site, where you can review troubleshooting tips and add your own.
3 Cisco Unified Intelligence Center Server

3.1 Operating System

3.2 Software
Table 1: Software required on the Unified IC Server

<table>
<thead>
<tr>
<th>Application</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>IIS 6.0</td>
<td>Required Ships with Windows Server 2003.</td>
</tr>
<tr>
<td>.NET 2.0 framework</td>
<td>Required</td>
</tr>
<tr>
<td>Microsoft Visual Studio 2005 C++ SP1 Redistributable Package</td>
<td>Required Download from <a href="#">Microsoft Visual C++ 2005 SP1 Redistributable Package</a></td>
</tr>
<tr>
<td>MS SQL Server 2005 Standard SP2 or SP3</td>
<td>Required only for a simple deployment, where the Unified IC database is installed on the Unified Intelligence Center Server.</td>
</tr>
</tbody>
</table>

Qualified Browsers
- Internet Explorer 6, Service Pack 2
- Internet Explorer 7

3.3 Hardware
All servers belonging to an instance (the Unified IC Web server, the database server if any, and the AW/HDS) need to be in the same geographic location, and not separated by the Internet or a Wide Area Network (WAN) of any type.

The Unified IC Server must be MCS-40-011-Class with 4 GB memory and 4 disks.

Table 2: Unified IC Hardware MCS-40-011-Class

<table>
<thead>
<tr>
<th>Model</th>
<th>Disks</th>
<th>Requirements and Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCS-7845-I3-CCE1</td>
<td>Disks 1 – 4:</td>
<td>146GB or greater 2.5” SAS Hot swap 10K RPM RAID10 The following software will be installed: - OS - Unified Intelligence Center - Other 3rd party software</td>
</tr>
</tbody>
</table>

See [Hardware Notes](#).
3.4 Reporting Data Set Capacity

The reporting capacity of the Intelligence Server web application has been qualified with a dedicated Historical Data Server (HDS) where the combined concurrent reporting users do not exceed 200.

The Unified IC hardware requirements for supporting 200 concurrent reporting users are based on usage patterns where the average, individual user is running the following reports against an AW/HDS data source:

- 4 concurrent real time reports
  - Each report returns less than 50 rows.
  - Equivalent to running or monitoring a script via Script Editor or Internet Script Editor.

- 2 HDS historical reports every hour, with each report defined as:
  - Queries working with data set size of 4,000 or less. Data set size is determined by multiplying of entities by two times the number of hours chosen by end-user while running the historical report. See table for calculation of data sets.
  - Queries resulting in less than or equal to 800 rows of data on half hour or daily historical reports

Note: Historical summary reports can be run against the Archiver instead of the HDS as long as the total number of historical reports does not exceed 500 per hour per Unified IC.

- The large Archiver Database will support up to 550 reports per hour.
- The small Archiver Database will support up to 275 reports per hour.

Unified IC Release 7.5(x) supports a maximum of 800 simultaneous real time reports and 500 historical reports per hour.

This load profile is meant as guidance - customer experience may vary. Maximum reporting load is not supported against the HDS during purge or Archiver daily load from the HDS.

No reporting load is supported against the Archiver database during daily load of Archiver.

Determine the size of the HDS data sets by calculating the number of entities times hours multiplied by 2.

Table 3: Reporting Data Set Calculations

<table>
<thead>
<tr>
<th>Report</th>
<th>Calculation</th>
<th>Data Set Size</th>
<th>½ Hr Report Rows Returned</th>
<th>Daily Report Rows Returned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Type Report: 10 Call Types for 20 hours</td>
<td>10 X 20 X 2</td>
<td>400</td>
<td>160</td>
<td>10</td>
</tr>
<tr>
<td>Agent Skill Group Report: 10 Agents, each in 5 Skill Groups for 8 hours</td>
<td>10 X 5 X 8 X 2</td>
<td>800</td>
<td>800</td>
<td>50</td>
</tr>
</tbody>
</table>

Note: Each reporting user is the equivalent of 1 Script Editor monitoring user (using Internet Script Editor or Client AW).
4 Archiver Server

4.1 Operating System

4.2 Software
Microsoft SQL Server 2005, Enterprise Edition, Service Pack 2 or 3 (Customer supplied)

4.3 Memory Settings
The Archiver Configuration sets a flag for /3 GB and for /PAE.
The SQL Server memory setting must be changed from the default (which is dynamic) to a minimum of 2 GB and a maximum of 10 GB.
These settings have been qualified for optimal performance. Changing them can have an impact on operations and on performance.

4.4 Hardware
The Archiver supports two disk configurations (Small and Large).

4.4.1 Small Archiver System Disk Configuration- MCS 40-013 Class
The Small Archiver System Disk configuration uses the MCS 40-013 class server and requires:
- 8 on-board hard drives
- Dedicated 2 channel RAID Controller for on board storage, minimum 256 MB cache with battery backup.
- 12GB of memory

Supported servers are MCS 7845-I3-CCE1 (see page 6) and MCS 7845-H2-CCE2 (see page 7),

Note that:
Eight on-board hard drives are required. If the MCS base model for the Small System Disk Configuration has only 4 on-board hard drives, additional drives must be purchased separately.
12GB are required. If the MCS base model for the Small System Disk Configuration comes with less than 12GB memory, you must purchase additional memory.
Table 4: MCS 7845-I3-CCE1 Class Server Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Proc. Type</th>
<th>CPU Speed GHz</th>
<th>CPUs</th>
<th>CPU Cores</th>
<th>RAM (GB)</th>
<th>Ethernet Ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCS-7845-I3-CCE1&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Intel XE5540</td>
<td>2.53</td>
<td>1</td>
<td>4</td>
<td>12</td>
<td>2</td>
</tr>
</tbody>
</table>

On-board Disks | Requirements and Remarks
---|---
Disks 1-2 | 2.5" SAS Hot swap 146GB or greater 10K RPM RAID 1
The following software will be installed:
- OS
- Archiver application files
- MS SQL Server
- Other 3rd party software

Disks 3-8 | 2.5" SAS Hot swap 146GB or greater 10K RPM RAID 10

Logical Drives
- One drive 35GB or greater
- One drive 350GB or greater

<sup>1</sup> Preferred.
Table 5: MCS 7845-H2-CCE2 Class Server Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Proc. Type</th>
<th>CPU Speed GHz</th>
<th>CPUs</th>
<th>CPU Cores</th>
<th>RAM (GB)</th>
<th>Ethernet Ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCS-7845-H2-CCE2²</td>
<td>Intel 5140</td>
<td>2.33</td>
<td>2</td>
<td>2</td>
<td>12</td>
<td>2</td>
</tr>
</tbody>
</table>

On-board Disks

<table>
<thead>
<tr>
<th>Disks 1-2</th>
<th>Requirements and Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5&quot; SAS Hot swap 146GB or greater 10K RPM</td>
<td>RAID 1</td>
</tr>
<tr>
<td>The following software will be installed:</td>
<td></td>
</tr>
<tr>
<td>- OS</td>
<td></td>
</tr>
<tr>
<td>- Archiver application files</td>
<td></td>
</tr>
<tr>
<td>- MS SQL Server</td>
<td></td>
</tr>
<tr>
<td>- Other 3rd party software</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Disks 3-8</th>
<th>Requirements and Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5&quot; SAS Hot swap 146GB or greater 10K RPM</td>
<td>RAID 10</td>
</tr>
</tbody>
</table>

Logical Drives

- One drive 35GB or greater
- One drive 350GB or greater

² This server is still supported, but Cisco Systems has posted an End-of-Sale and End-of-Life announcement for it.
4.4.2 Large Archiver System Disk Configuration - MCS-40-016-Class

The Large Archiver System Disk configuration uses the MCS-40-016 class server and requires:

- 12GB of memory
- Dedicated 2 channel RAID Controller for on-board storage, min 256 MB cache with battery backup.
- Dedicated 2 channel RAID Controller for external disk storage, min 512 MB cache, with battery backup. (only needed for MCS-7845-H2-CCE4)

Supported servers are the MCS-7845-I3-CCE2 (see below) and the MCS-7845-H2-CCE4 (see page 9).

Table 6: MCS-7845-I3-CCE2 Class Server Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Proc. Type</th>
<th>CPU Speed GHz</th>
<th>CPUs</th>
<th>CPU Cores</th>
<th>RAM (GB)</th>
<th>Ethernet Ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCS-7845-I3-CCE2(^3)</td>
<td>Intel XE5540</td>
<td>2.53</td>
<td>2</td>
<td>4</td>
<td>12</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>On-board Disks</th>
<th>Requirements and Remarks</th>
</tr>
</thead>
</table>
| Disks 1-4      | 2.5” SAS Hot swap 300GB or greater 10K RPM RAID 10
|                | Two logical drives;
|                |   - One 35+GB for OS and Archiver application files, MS SQL Server,
|                |     and other 3rd party software
|                |   - Another drive of size 400+GB for data |
| Disks 5-8      | 2.5” SAS Hot swap 300GB or greater 10K RPM RAID 10
|                | Two logical drives (one 190GB for data; another drive of size 400GB for data) |

\(^3\) Preferred. Does not require external disk storage and disk controller.
Table 7: MCS-7845-H2-CCE4 Class Server Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Proc. Type</th>
<th>CPU Speed GHz</th>
<th>CPUs</th>
<th>CPU Cores</th>
<th>RAM (GB)</th>
<th>Ethernet Ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCS-7845-H2-CCE4</td>
<td>Intel E5345</td>
<td>2.33</td>
<td>2</td>
<td>4</td>
<td>12</td>
<td>2</td>
</tr>
</tbody>
</table>

### On-board Disks

<table>
<thead>
<tr>
<th>Disks 1-2</th>
<th>Requirements and Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.5” SAS Hot swap 146GB or greater 10K RPM OS</td>
</tr>
<tr>
<td></td>
<td>Archiver application files</td>
</tr>
<tr>
<td></td>
<td>MS SQL Server and other 3rd party software</td>
</tr>
<tr>
<td></td>
<td>RAID 1</td>
</tr>
<tr>
<td>Disks 3-8</td>
<td>Requirements and Remarks</td>
</tr>
<tr>
<td></td>
<td>2.5” SAS Hot swap 146GB or greater 10K RPM RAID 10</td>
</tr>
</tbody>
</table>

### External Disks

<table>
<thead>
<tr>
<th>Disks 9-14</th>
<th>Requirements and Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.5” SAS Hot swap 146GB or greater 15K RPM RAID 10</td>
</tr>
<tr>
<td>Disks 15-20</td>
<td>Requirements and Remarks</td>
</tr>
<tr>
<td></td>
<td>2.5” SAS Hot swap 146GB or greater 15K RPM RAID 10</td>
</tr>
</tbody>
</table>

### Logical Drives

- One drive 35GB or greater
- One drive 190GB or greater
- Two drives 400GB or greater

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4 This server is still supported, but Cisco Systems has posted an End-of-Sale and End-of-Life announcement for it.
Note that:

**Memory**: 12GB are required. If the MCS base model for the Large System Disk Configuration comes with less than 12GB memory, you must purchase additional memory.

**External Disk Storage**: Eight on-board hard drives and 12 drives in an external disk array are required for the MCS-7845-H2-CCE4. The base model comes with 8 on-board drives. External disk storage and disk controller must be purchased separately. The HP StorageWorks Modular Smart Array 60 - Storage enclosure - 12 x SAS HD 146 GB 15K RPM with the HP Smart Array P800 Storage Controller has been tested and qualified for this configuration,

## 5 Hardware Notes

1. Enable processor Hyper-Threading (if possible)
2. The disk should have the specified amount of available disk space for the application.
3. Cisco has qualified and now supports dual-core or quad-core Intel processors on its full range of products.
   
   Each individual core in a multi-core processor does not count as a processor towards server requirements given in Appendix A - Server Classes of the Hardware and System Software Specification (Bill of Materials) for Cisco Unified ICM / Contact Center Enterprise & Hosted, located online at this Cisco.com page. A processor is considered a single physical CPU, regardless of the number of cores.

## 6 Untested/Unqualified Hardware

SAN controllers have not been tested and qualified by Cisco Systems Quality Assurance.

MCS machines from IBM (e.g. MCS-7845-I2-CCE4 and MCS-7845-I2-CCE2) have also not been qualified for Archiver. They may or may not be compatible with external disk storage.