

CCH® SWORD

Technical Requirements

Measure

Monitor

Manage

This document lists the hardware and software requirements for CCH SWORD Version 8. In particular, it indicates the hardware requirements for the:

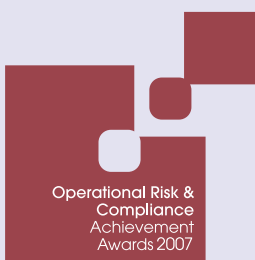
- Web application server
- Database server
- Client side machine

Prerequisite verification procedures are available to enable you to check that your system has the correct software in place prior to a CCH SWORD installation.

CCH SWORD has been designed for use by:

- All types of financial institution
- All roles within an organisation
- All currencies in which an organisation deals
- All languages in which the staff communicate
- All locations in which an institution carries out business

It's use of Microsoft web technologies means that CCH SWORD can easily be deployed over the company Intranet in a robust and scaleable manner. This also results in a low total cost of ownership through minimised user training and software upgrade requirements.



Operational Risk & Compliance Achievement Awards 2007

- #1 Operational Risk Assessment
- #1 Operational Scenario Analysis
- #1 Operational Risk Internal Loss Data



Operational Risk & Compliance Achievement Awards 2008

#1 Overall Winner

Hardware Requirements

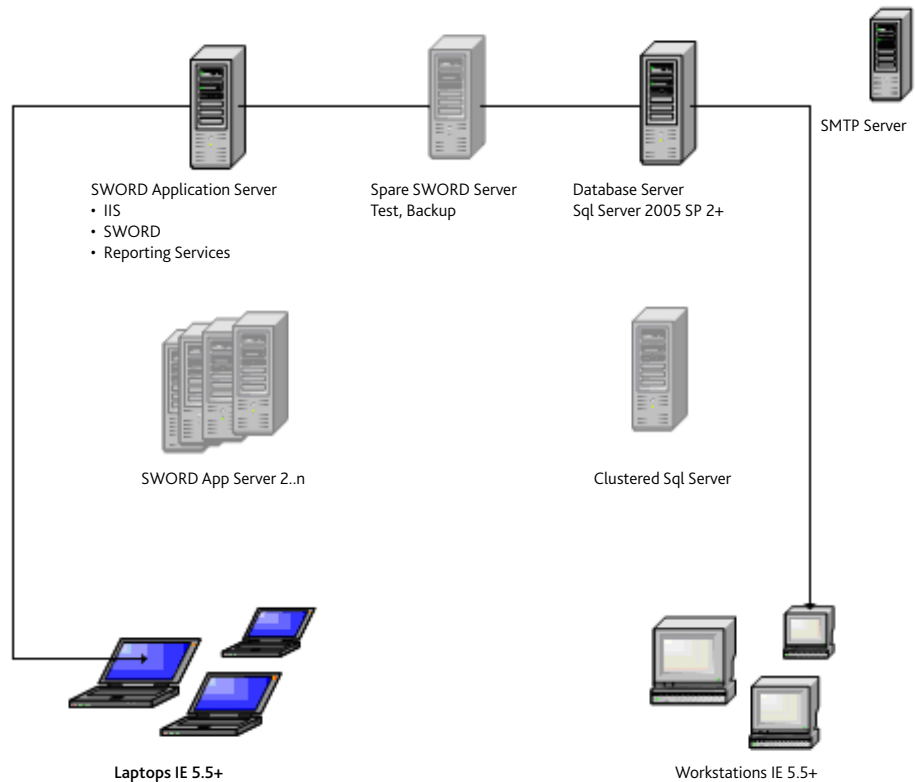
Schematic

This diagram shows the machines involved in a typical CCH SWORD installation. Our recommendation is that the Web Application Server (WAS) ideally be separate to the Database Server (DBS). The WAS will host the CCH SWORD application, and the service side of Microsoft Reporting Services. The DBS will host CCH SWORD and Reporting Services databases.

If resilience is an issue for the WAS, then it can be scaled out using Network load Balanced machines of similar size. This will, as a by-product, give some performance gain. If resilience is an issue for the DBS then a SQL Server cluster should be used.

It is recommended that a separate machine be available to host a test environment. Here the WAS and DBS can reside on one machine. If more than one test environment is required we recommend the use of a virtual machine (using a product such as VMware or Microsoft Virtual Server 2005)

All machines should run Windows Server 2003.



The SMTP Server is included in the diagram for completeness. CCH SWORD requires access to (but not dedicated use of) a mail server in order to send mail alerts to users. The amount of mail generated is not significant enough to warrant the addition of capacity to any organisations existing mail server(s).

Server Specifications

To support up to 1000 users (100 simultaneous).

Web Application Server

Recommended Machines

Up to 1000 users (100 simultaneous).

- > 2 X Pentium IV 2+ GHz processors
- > 2 GB RAM
- > 80 GB Disk Space

Database Server

Recommended Machines

To support up to 1000 users (100 simultaneous).

- > 2 X Pentium IV 2+ GHz processors
- > 2 GB RAM
- > 120 GB Disk Space

Client Specifications

Client Machine

Recommended Machine

We do not recommend a client side machine but a client machine should be capable of supporting Microsoft Internet Explorer 5.5+.

Software Requirements

Server Specifications

Web Application Server

IIS 7.X

CCH SWORD

Microsoft .NET Framework version 2.0

Microsoft Data Access Components (MDAC) 2.8 SP1 or greater

Microsoft XML 3.0

Database Server

Microsoft Reporting Services

SQL Server 2005 Sp2+

Client Specifications

Client Machine

Software

There is no client side installation with CCH SWORD although the following is necessary:

- Internet Explorer 5.5 or greater on all Client PCs
- Virus checker on Web Server (if any) must allow the exclusion of specified directories.
- Excel Macro Security on client PCs should be set to 'Medium' to allow reports delivered in Excel (universal reports, for example) be opened.
- Kerberos delegation when it is proposed to use CCH SWORD in "single sign on" mode and when the Web and Reporting Servers are different physical machines.
- If 'drill through' functionality is required in Enterprise Reports which have been exported to PDF format, then Adobe Acrobat Version 7 is required on the Client PC.

Appendix 1 Detailed Software Prerequisites

The following server software prerequisites apply for CCH SWORD Version 8:

Server Requirements	Web Server	MRS Server	DB Server										
<p>Windows Server 2000 – Service Pack 4 or greater OR Windows Server 2003 – Service Pack 1 or greater</p> <ul style="list-style-type: none"> (Date Format set to dd/mm/yy) <p>Prerequisite Verification:</p> <ul style="list-style-type: none"> Open Windows Explorer Right-click on My Computer Select Properties Open the General tab – this will display the Operating System and Service Pack level in use. 	Yes	Yes	Yes										
<p>IIS (5.x/6.x) Installed</p> <p>Prerequisite Verification:</p> <ul style="list-style-type: none"> Open Internet Information Services. From the Help menu, select the About Internet Information Services option to display the version number. 	Yes	Yes	No										
<p>Microsoft .NET Framework version 2.0</p> <p>Prerequisite Verification:</p> <ul style="list-style-type: none"> Navigate to: %systemroot%\Microsoft.NET\Framework Version 2 of the .NET Framework is contained in the folder v2.0.50727 <p>Note: If you see other directories with a vN.N.NXXXX format not listed here, it may be a beta, pre-released or earlier version of the .NET Framework.</p> <ul style="list-style-type: none"> From the folder listed above, locate the Mscorlib.dll file Right-click on this file and access its Properties. Open the Version tab to see the version of the Framework running on the server and compare to the list below: <table border="1"> <thead> <tr> <th>.NET Framework version</th> <th>Revision</th> <th>Version</th> </tr> </thead> <tbody> <tr> <td>2.0</td> <td>Original RTM</td> <td>2.0.50727.42</td> </tr> </tbody> </table> <p>Note: Ensure that ASP.Net is registered with IIS. This is done automatically when .Net is installed. It can also be done / repaired after the .NET install by running aspnet_regiis.exe from the directory %windir%\Microsoft.NET\Framework\v2.0.50727</p> <p>Note: In IIS 6.x, select 'Web Service Extensions' and verify that 'Active Server Pages' and 'ASP.Net' pages of all versions have the status of 'Allowed'. If this is the case and you are experiencing problems displaying pages in CCH SWORD, or if you are using IIS 5.x (where Web Service Extensions are not configurable) and are experiencing problems displaying pages in CCH SWORD, contact a member of your Network Support team for further assistance.</p>	.NET Framework version	Revision	Version	2.0	Original RTM	2.0.50727.42	Yes	Yes	Yes				
.NET Framework version	Revision	Version											
2.0	Original RTM	2.0.50727.42											
<p>Microsoft Data Access Components (MDAC) 2.8 SP1 or greater.</p> <p>Prerequisite Verification:</p> <ul style="list-style-type: none"> From within Windows explorer, locate the file: ...\Program Files\Common Files\System\Ole DB\msdadc.dll Right-click on this file and access its Properties. Open the Version tab to see the version of MDAC running on the server. 	Yes	No	Yes										
<p>Microsoft XML 3.0 (Typically installed with server OS)</p> <p>Prerequisite Verification:</p> <ul style="list-style-type: none"> Navigate to: ..\Windows\system32 Locate the file msxml3.dll Right-click on this file and access its Properties. <p>Open the version tab to see the version of XML running on the server and compare to the list below:</p> <table border="1"> <tbody> <tr> <td>8.20.8730.1</td> <td>XML OM</td> </tr> <tr> <td>8.30.9926.0</td> <td>MSXML 3.0 SP 3</td> </tr> <tr> <td>8.40.9419.0</td> <td>MSXML 3.0 SP 4</td> </tr> <tr> <td>8.50.2162.0</td> <td>MSXML 3.0 SP 5</td> </tr> <tr> <td>8.70.1104.0</td> <td>MSXML 3.0 SP 7</td> </tr> </tbody> </table>	8.20.8730.1	XML OM	8.30.9926.0	MSXML 3.0 SP 3	8.40.9419.0	MSXML 3.0 SP 4	8.50.2162.0	MSXML 3.0 SP 5	8.70.1104.0	MSXML 3.0 SP 7	Yes	Yes	Yes
8.20.8730.1	XML OM												
8.30.9926.0	MSXML 3.0 SP 3												
8.40.9419.0	MSXML 3.0 SP 4												
8.50.2162.0	MSXML 3.0 SP 5												
8.70.1104.0	MSXML 3.0 SP 7												

Server Requirements	Web Server	MRS Server	DB Server								
<p>Windows Script 5.5 or greater (Typically installed with server OS)</p> <p>Prerequisite Verification:</p> <ul style="list-style-type: none"> Open a command prompt and run the command cscript Verify the version from the output. 	Yes	Yes	Yes								
<p>SQL Server 2005 Enterprise Edition - Service Pack 2 or Greater.</p> <p>Note: Enterprise Edition SQL Server is required to support custom extensions developed by CCH to fully integrate CCH SWORD with Reporting Services. One such extension is designed to enforce the CCH SWORD security model in reports produced using Reporting Services technology. There is also an extension for Reporting Services Authentication through CCH SWORD. If these extensions are not being used, then SQL server 2005 Standard edition will suffice.</p> <p>Note the following, for either SQL Server edition;</p> <ul style="list-style-type: none"> The MRS component must be installed. In the event that MRS is running on a server separate to the DB Server, it is sufficient to install the MRS Component and the Client Component on the MRS server. In this case MRS should be installed using the "Install but do not configure the server" option and then use the Reporting Services Configuration tool to create the requisite virtual directories and SQL Server databases. The collation in use must be a Case Insensitive one.¹ Security must be set to SQL Server and Windows. Users with specific privileges are required on the instance where the CCH SWORD Database and Encyclopedia will be hosted to perform the install or upgrade procedure. The exact privileges required for these users are described in the relevant sections of this document. <p>Prerequisite Verification:</p> <ul style="list-style-type: none"> To verify the edition of SQL Server installed on the DB Server, connect to SQL Server 2005 by using SQL Server Management Studio, and then run the following command: <pre>Select serverproperty ('productlevel'), serverproperty ('edition')</pre> The output from this command should show the Service Pack level and Edition of SQL Server 2005 in use To verify the edition of Reporting Services Report Manager in use and to verify that the Report Server component is fully operational, navigate to <a href="http://<servername>/<reportserver>">http://<servername>/<reportserver>, where <servername> is the name of the machine hosting the MRS component (which may be a separate server to the DB Server) and <reportserver> is the name assigned to the report server virtual directory. The version in use should be presented towards the bottom of the page and should be compared to the table below: <table border="1"> <thead> <tr> <th>Release</th> <th>Sqlservr.exe</th> </tr> </thead> <tbody> <tr> <td>RTM</td> <td>2005.90.1399</td> </tr> <tr> <td>SQL Server Reporting Services Service Pack 1</td> <td>2005.90.2047</td> </tr> <tr> <td>SQL Server Reporting Services Service Pack 2</td> <td>2005.90.3042</td> </tr> </tbody> </table> <p>To verify that the Report Manager is operational, navigate to <a href="http://<servername>/<reports>">http://<servername>/<reports>, where <servername> is the name of the machine hosting the MRS component (which may be a separate server to the DB Server) and <reports> is the name assigned to the report manager virtual directory</p>	Release	Sqlservr.exe	RTM	2005.90.1399	SQL Server Reporting Services Service Pack 1	2005.90.2047	SQL Server Reporting Services Service Pack 2	2005.90.3042	No	Yes ²	Yes
Release	Sqlservr.exe										
RTM	2005.90.1399										
SQL Server Reporting Services Service Pack 1	2005.90.2047										
SQL Server Reporting Services Service Pack 2	2005.90.3042										

NOTE: Where two or all three of the Web, Report (MRS) Server and Database Server components are combined on one machine then the required software for each logical server must be installed on the machine.

For further details or to organise a demonstration, please contact your local CCH SWORD sales office.

Details of CCH SWORD sales offices are available at: www.swordrisk.com

¹ All Databases and their Instances should have the same collation. Otherwise the ability to transfer databases between servers (Test / Production systems etc.) will be severely hampered.

² The RS Service, Report Manager and Database components may be installed on one machine or on various machines.