



GD5209 Hanwell Synergy

Pre-Requisites



Contents

1	Computer Specification	5
1.1	All Operating Systems	5
1.2	Windows 2008 R2 or 2012 R2 Server	5
1.3	Windows 7 Professional or Enterprise, Windows 10 Pro or Enterprise	5
1.4	.Net 3.5.1 pre-requisites	6
1.5	Browser compatibility	6
1.6	Server Details	6
2	Existing Microsoft SQL Instances.....	7
2.1	Synergy W700B / W706B.....	7
2.2	Existing Microsoft SQL Server Requirements	7
2.2.1	User Credentials	7
3	TCP/IP Ports and Addresses	8
4	Email Alerts	10
4.1	Email Acknowledgments.....	10
5	SMS Alerts.....	11
6	Proposed Structure of Synergy	12
6.1	Main Site	12
6.2	Site 1	12
6.3	Site 2.....	12
6.4	Site 3.....	12

Document History

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Issue No.	Issue Date	Change Detail	Made By	Approved By
1	17/04/2013	First issue.	CRB/MM	DJR
2	04/09/2013	Detail added to customer IT requirements section. Information added to cover the case where customer has own SQLExpress instance.	CRB/MM	DJR
3	27/09/2013	Information added to cover Win 7 Pro o/s, .Net and Browser pre-requisites. Host machine configuration.	CRB	DJR
4	20/12/2013	Server detail and host machine configuration sections withdrawn.	CRB	DJR
5	16/04/2014	Information for checking and enabling .Net 3.5.1 on server-based systems referenced out. Browser compatibility updated. Server pre-requisites added. Additional information on existing SQL instances.	CRB	DJR
6	01/05/2014	Minor Updates.	RAB	CRB
7	19/06/2014	SQL Port 1434 added.	RAB	CRB
8	27/10/2014	Port protocols defined.	CRB	DJR
9	23/10/2014	USB Suspend requirement for Windows 7 Professional machines added	RAB	CRB
10	19/02/2015	Warning not to try and install Synergy on a domain controller	RAB	CRB
11	12/06/2015	Correction to Email Heartbeat Time format	RAB	CRB
12	21/08/2015	W700B/W706B explicitly require a separate System login.	CRB	DJR
13	1/10/2015	SMS Alert phone number table	RAB	CRB
14	1/10/2015	(Formatting error, missing information in Table 3)	RAB	CRB
15	06/11/2015	Virtual Machine disk space requirement added. Windows 10 Pro support added.	RAB	CRB
16	15/02/2016	Additional options added to section 6.	LJ	DR
17	01/06/2016	Add WCF Service port.	CRB	DR

Please ensure that the following information is provided and the necessary specifications are met prior to our commissioning visit. We will not be able to attend site without this information.

One of the most important caveats to confirm is that we will require full administrator access to all computers/servers that Synergy components will be installed upon. Where Synergy is going to be used with an existing Microsoft SQL Server, we will require Sys Admin role access to the SQL Server.

If this will be a multi-site system installation, the customer needs to be able to make changes to the corporate firewalls.

Failure to meet computer specifications, restricted server/PC access could result in the engineer not being able to complete the installation task, and in turn costing the customer for a repeat visit.

1 Computer Specification

IMC recommends the computer specifications below as a **minimum** to run Synergy

1.1 All Operating Systems

Ensure that the host machine for Synergy has all the latest Windows updates before installing the Synergy software.

Failure to meet minimum computer specification may result in poor performance and incorrect operation.

The Host machine must NOT be configured as a Web Server (IIS). If the Web Server Role is enabled on the host machine, remove the Role before installation. Instructions on how to configure this setting can be found in the Synergy Installation Manual, doc. no. IM5207.

The Customer should provide a backup system, with Microsoft SQL integration, appropriate to their data protection requirements. The IMC Group strongly recommends the use of an appropriately rated Uninterruptable Power Supply, with automatic shutdown technology.

1.2 Windows 2008 R2 or 2012 R2 Server

Table 1

Processor	2.5GHz or faster
Ram	8GB
Hard Disk Drive: Physical Machine Virtual Machine	X2 250GB setup as RAID 70GB
Media	DVD-ROM drive
USB	USB ports minimum 2 spare
Network	1GB Ethernet network port

Note: Synergy W700A or W706A must NOT be installed on a Domain Controller. SQL Server security restrictions mean that the installation will usually fail.

1.3 Windows 7 Professional or Enterprise, Windows 10 Pro or Enterprise

Note: Synergy will not run on Windows 7 Starter or Home Premium, or Windows 10 Home or Mobile due to the lack of access regarding network rights and user accounts.

Table 2

Processor	2.5GHz or faster
Ram	2GB (32-bit) 4GB (64-bit)
Hard-drive	250GB
Media	DVD-ROM drive
USB	USB ports minimum 2 spare
Network	1GB Ethernet network port

Note: If connecting a CR2 or AW04 device through USB, then USB Suspend must be disabled in Advanced Power Settings on all machines that the CR2(s) or AW04 are connected to.

1.4 .Net 3.5.1 pre-requisites

The installer include a bootstrappers for the Microsoft .Net 3.5.1 and .Net4.5 Frameworks, and will install automatically throughout the install process.

However, on machines running Windows Server 2008 onwards, the customer must enable .Net 3.5.1 manually on the server, prior to Synergy installation.

See IM5207 *Hanwell Synergy Installation Manual* for checking and enabling .Net 3.5.1 on server-based systems.

1.5 Browser compatibility

The Synergy system is a scalable browser based SQL database, and will be used through a browser.

The Host machine, and client machines **MUST** have either one of the below browsers installed;

- Internet Explorer 8,9, 10 or 11
- Microsoft Edge (Windows 10)
- Google Chrome version 29 or later
- Mozilla Firefox version 23, 24, 25, 26, or later

1.6 Server Details

Please complete Table 3 below. Where applicable, select the appropriate options. This section **MUST** be completed.

Table 3

Windows Operating System (e.g. Server 2008 R2)	
Server is a virtual machine ¹	Yes <input type="radio"/> No <input type="radio"/>
Server is NOT IIS or other non-Apache 2.2 HTTP server ²	Yes <input type="checkbox"/>
Server is hosting non-Synergy Apache 2.2 website	Yes <input type="radio"/> No <input type="radio"/>
Server is NOT hosting a database server, other than Microsoft SQL ³	Yes <input type="checkbox"/>
Server is up to date with latest Windows updates	Yes <input type="checkbox"/>

Notes:

1. AW04 use is NOT recommended with virtual machines.
2. IMC does NOT support Synergy use in a mixed webserver environment; and Synergy should not be installed.
3. IMC Recommends against running Synergy in a mixed database server environment.

2 Existing Microsoft SQL Instances

If the target server does NOT have an existing Microsoft SQL server instance and you do not wish to use / have an appropriate Microsoft SQL server available on the LAN, please select and order **Synergy W700A / W706A**, and move onto Section 3.

If there is an existing Microsoft SQL server, on the target server or LAN, that you wish to use for Synergy, then please mark & order **Synergy W700B / W706B**, and fill out the **Synergy W700B / W706B** section below.

Select one product option: **Synergy W700A/W706A** ☐ **Synergy W700B / W706B** ☐

In any case, do **NOT** attempt to install **Synergy W700A / W706A** on a machine with an existing Microsoft SQL server instance, unless the SQL server is MS SQL Express 2008 R2.

2.1 Synergy W700B / W706B

If ordering **Synergy W700B / W706B**, this section **MUST** be completed.

Table 4

SQL Type	Server name	Instance name	SQL Version
Single Instance:			
Cluster:			

We confirm that the target Microsoft SQL Server uses the default SQL port 1433 – Please select ☐

SQL port 1434 enables the Synergy Management Tool to work on client installs.

We confirm that the target Microsoft SQL Server uses the default SQL port 1434 – Please select ☐

Note: Synergy does **NOT** support the use of non-default port numbers for SQL connections; and cannot be installed.

2.2 Existing Microsoft SQL Server Requirements

SQL Instance must be set to SQL login and Windows Authentication mode.

The installing user Windows login should be a member of the system admin role, and must have full administrative privileges on the SQL Instance.

SQL Server Browser service must be running during Synergy install and Synergy Config Utility operation.

SQL Server Management Studio, (SSMS), must be installed.

2.2.1 User Credentials

If **Synergy W700B / W706B** is to operate a Microsoft SQL server running on a separate machine then Synergy will require Windows network login credentials to operate. The login used for Synergy **MUST** have password set to Never expire. This login **MUST not** be the login used to install Synergy, using the same login causes database creation to fail (and would in any case result in a worse security situation post install, as the Synergy services would be left running as Administrator on the local system, and as an SQL Administrator on the SQL server).

Customers should **not** add this Synergy System login to their SQL Server. The login will be added automatically during Synergy installation (allowing the installation to add the Synergy service logins to the SQL server gives the best security situation, because the service login will only be granted access to the databases created for Synergy, with the minimum roles required to operate the system).

IMC recommends that customers create a network user login specifically for the Synergy system.

3 TCP/IP Ports and Addresses

If the Customer wishes to connect to remote SR2 or CR2 USB units where no intranet is in place, then the Customer must ensure that all Firewalls are configured to allow connections between the remote networks over the requisite TCP/IP ports.

For completeness, the following table lists all default Hanwell Service port numbers; not all are included with Synergy.

There are no IANA registered Port numbers for Synergy; instead, it uses unassigned port numbers, (Ref: <http://www.iana.org/assignments/service-names-port-numbers/service-names-port-numbers.xml> as of 17/12/2012).

If a conflict arises on the host machine, Synergy TCP/IP ports can be configured during installation; for the majority of systems the default ports will suffice.

Where port numbers need to be changed, care should be taken to avoid well known & assigned port numbers; consult the IANA website and do not use port numbers below 1024. If port numbers are altered, make a note of any changes, and then modify the matching service data during database configuration. Where Hardware Services are installed on distributed machines, port numbers can be shared amongst the distributed machines.

The Synergy IP Address / hostname and Port number can be set during installation of the Hardware Services; this must match the address of the Synergy server and the Data Service Port No. set for the hardware services during initial system configuration.

The Hardware Service command listening ports will be automatically updated by the Data Service, when each Hardware Service initially makes contact; so these can be altered without manually updating the database.

The Debug ports are solely used by the Service Debug Viewer for IMC maintenance purposes; so again these can be altered without modifying the database. Debug port numbers are altered by editing the Hardware Services *setup.xml* file, found in the services Common Application Data Folder.

Pre-Requisites

Table 5

Service	Data	Data*	Command	Command*	Debug	Debug*
SynergySR2Service	n/a	n/a	10992		11002	
SynergyCR2Service	n/a	n/a	10993	Future option	11003	Future option
SynergyDataService	10991(DB set)		n/a	n/a	11004	
Synergy WCF Connection	8081					
SynergyArchiveService	n/a	n/a	8080		11010	
SynergyCR2USBService	n/a	n/a	10996		11007	
IMC SMS Module	10997(DB set)		n/a	n/a	n/a	n/a

*If one of the ports included above is unavailable please provide an alternative in the right hand column.

The system will also require port 1433 and 1434 for the Microsoft SQL server. Port 80 (http) is required for the Apache Server. These ports are all IANA registered port numbers, and should be available).

If using iSense or CR2GPRS, Synergy will connect to the IMC Remote Data service to collect data on port 8081.

For Firewall rules purposes, the SQL ports require TCP and UDP, all other ports are TCP; see Synergy Install Manual for full details when installing Synergy.

Customer MUST enable inbound connections for the above ports on any server firewall prior to installation. If using iSense or CR2GPRS, customer MUST also enable outbound connections on port 8081 on server and corporate firewall(s) prior to installation.

Synergy WCF Connection is local to the Synergy server.

Connections open **Yes** ☒ **No** ☐

4 Email Alerts

If the customer requires IMC to commission Email Alerts, then please complete the following table:

Table 6

SMTP Server and port No. if not 25	
Sender Email Address (e.g. <i>Synergy@yourmailserver.com</i>)	
SMTP Username	
SMTP Password	
BCC Email Address (e.g. <i>UsersSupervisor@yourmailserver.com</i>)	
Heartbeat Enable (Yes or No)	Yes <input type="radio"/> No <input type="radio"/>
Email Alert Heartbeat Time (e.g. 12:15)	
Contact Name 1 (e.g. <i>SynergyUser1</i>)	
Contact Email address (e.g. <i>SynergyUser1@yourmailserver.com</i>)	
Contact Name 2 (e.g. <i>SynergyUser2</i>)	
Contact Email address 2 (e.g. <i>SynergyUser2@yourmailserver.com</i>)	
Contact Name 3 (e.g. <i>SynergyUser3</i>)	
Contact Email address 3 (e.g. <i>SynergyUser3@yourmailserver.com</i>)	

4.1 Email Acknowledgments

If the customer requires IMC to commission Email acknowledgements, please complete the following table:

Table 7

Email Receiving Protocol – Please select option	IMAP <input type="radio"/> POP3 <input type="radio"/>
IMAP/POP3 Mail Server and port No. if NOT default port	
Receive Email over SSL? – Please select option	Yes <input type="radio"/> No <input type="radio"/>
IMAP/POP3 User Name	
IMAP/POP3 User Password	

5 SMS Alerts

Note: the customer must have purchased an AW04 device to able to receive SMS Alerts.

If the customer requires SMS Alerts, then please complete the following tables:

Table 8

Available USB Port? <i>(Yes or No)</i>	Yes	<input type="radio"/>	No	<input type="radio"/>
Will you be providing your own SIM? <i>(Yes or No)</i>	Yes	<input type="radio"/>	No	<input type="radio"/>
[If not, has a SIM contract been signed? <i>(Yes or No)</i>	Yes	<input type="radio"/>	No	<input type="radio"/>

Table 9

Phone numbers for SMS alerts for AW04 Communications Failure or Mains Failure.

Number

Table 10

Phone numbers for Synergy alarm alerts.

Number

6 Proposed Structure of Synergy

Answering the next set of questions will help us to understand the proposed typology of the system you wish to create.

Table 11

1. Is a network and power point available for each SR2?	Yes <input type="radio"/> No <input type="radio"/>
2. Is a power point available for each Repeater Unit, if required?	Yes <input type="radio"/> No <input type="radio"/>
3. Full admin access provided on all machines to be installed with Synergy software?	Yes <input type="radio"/> No <input type="radio"/>
4. Synergy W700B / W706B installs only: System Admin role on the target Microsoft SQL server?	Yes <input type="radio"/> No <input type="radio"/> N/A <input type="radio"/>
5. Do you wish to view the data via the internet?	Yes <input type="radio"/> No <input type="radio"/>
6. If the data collection occurs from Multiple sites, is there a network connection between sites?	Yes <input type="radio"/> No <input type="radio"/> N/A <input type="radio"/>
7. If yes to 6, but there is no VPN connection, are you able to modify all associated firewalls?	Yes <input type="radio"/> No <input type="radio"/>

6.1 Main Site

LAN Synergy Server IP address:	
LAN IP Address for Base Unit (SR2):	

6.2 Site 1

LAN Synergy Server IP address:	
LAN IP Address for Base Unit (SR2):	

6.3 Site 2

LAN Synergy Server IP address:	
LAN IP Address for Base Unit (SR2):	

6.4 Site 3

LAN Synergy Server IP address:	
LAN IP Address for Base Unit (SR2):	