Thank you for purchasing an Agilent system. To get you started and to assure a successful and timely installation of your Agilent **software**, please refer to this specification or set of requirements.

Correct site preparation is the key first step in ensuring that your instruments and software systems operate reliably over an extended lifetime. This document is an **information guide and checklist** prepared for you that outlines the computer hardware, operating environment, network infrastructure and general requirements for your Agilent OpenLab Enterprise Content Management system.

Customer Responsibilities

Make sure your site meets the following prior specifications before the installation date. For details, see specific sections within this checklist, including:

- ❑ The computing environment and the necessary space is made available
- ❑ The computer systems are provided with adequate network connections, electrical power, cooling and physical security
- ❑ That your site meets the software, hardware and networking specifications below
- ❑ Locate your sales order information, software authorization codes and/or software licenses/certificates
- ❑ The necessary software media, disks, etc. are available including upgrade/update disks
- ❑ That a suitable backup solution is identified for your systems and database
- ❑ Availability of a system/network/database administrator as needed
- ❑ Please consult Other Requirements section below for other product-specific information.
- ❑ Complete Final Check: The OpenLab ECM installer includes an Installation Adviser tool that checks the system prerequisites and installs the required roles and features.
- ❑ A network assessment should be performed to ensure adequate network performance between the ECM Servers and the database server and domain controllers.

If Agilent is delivering installation and familiarization services, users of the system should be present throughout these services; otherwise, they will miss important operational, maintenance and safety information.

Important Customer Information

1. If you have questions or problems in providing anything described as a Customer Responsibility above, please contact your local Agilent or partner support/service organization for assistance prior to delivery. In addition, Agilent and/or its partners reserve the right to reschedule the installation dependent upon the readiness of your site.
2. Should your site not be ready for whatever reasons, please contact Agilent as soon as possible to re-arrange any services that have been purchased.
3. Other optional services such as additional training, operational qualification (OQ) and consultation for user-specific applications may also be provided at the time of installation when ordered with the system but should be contracted separately.

Oracle Database Server

❑   **Section Not Applicable**

Complete this section if your system uses an Oracle Database. Otherwise check the box above and continue to the next section.
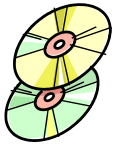
Software Specifications for Oracle Database Servers

Specification Description	Oracle Database Server
Operating system type(s), versions	Refer to the Oracle 12c Release 2 documentation for supported Operating Systems.
Oracle Database Software	Oracle 12c Release 2
ECM Database	Must be dedicated for the ECM application
ECM Database Type	**Must not** be a Container or Pluggable Database
ECM Database Character Set	UTF8 or ALT32UTF8
ECM Database NLS Character Set	UTF8 or ALT16UTF16
ECM Database CURSOR_SHARING	EXACT
Account settings/privileges	• DBA will need access to the Oracle **SYS** account. • The Oracle **CTXSYS** account must be unlocked and accessible.

❑   The database for OpenLab ECM must be created by the (customer) Database Administrator prior to the installation.

❑   The Oracle server and database meet the requirements in the above table.

Computer Hardware Specifications for Oracle Database Servers
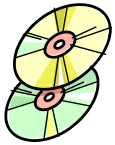
Special Notes

1.   Refer to the Oracle 12c Release 2 documentation for hardware requirements.

❑   It is the (customer) Database Administrator's responsibility to provision and configure the Database server for optimal performance according to the manufacturer's recommended hardware requirements for Oracle 12c Release 2.

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SQL Database Server

❑ **Section Not Applicable**

Complete this section if your system uses a Microsoft SQL Server Database. Otherwise check the box above and continue to the next section.

Software Specifications for SQL Database Servers

Special Notes

1. Refer to Chapter 3 of the *ECM Installation Guide* for further details.
2. The **SQL Server Agent** service must be set to auto start.

Specification Description	SQL Server Database Server
Operating system type(s), versions	Windows 2016 Server Standard or Datacenter Edition
SQL Server Database Software	• SQL Server 2016 or 2016 SP1 Standard or Enterprise Edition • SQL Server 2017 Standard or Enterprise Edition
Additional Software	Microsoft SQL Server Management Studio
Clustering	SQL Server Clustering is not supported
OS Language *	US/English
Regional Setting *	US/English
SQL Server Collation Setting	SQL_Latin1_General_CP1_CI_AS
Account settings/privileges	• SQL Server must be installed in **Mixed Authentication Mode**. • Access to a **sysadmin** account is required.

* Refer to the ECM Installation Guide for registry changes that may need to be checked or updated.

❑ The SQL database server for OpenLab ECM meets the requirements as specified above.

Computer Hardware Specifications for SQL Database Servers

Special Notes

1. Refer to the *OpenLab ECM Software and Hardware Requirements* for additional details.
2. If the database server is virtualized, at least 50% of the minimum specifications must be reserved.

Dedicated Database Server

The following specifications apply when the SQL Database is located on a separate Database Server. This is the recommendation for most ECM installations.

Specification Description	Minimum	Recommended (if applicable)
Processor type & speed	2.0 Ghz or higher	Two or more cores recommended
Memory	8GB	16GB recommended
Disk Storage *	100 GB or more	• RAID or SSD recommended • Multiple drives recommended for additional performance
Network Interface	100 Mbps	1 Gbps

* Additional disk space may be required for larger systems.

ECM Workgroup Database Server

The following specifications apply when the SQL Database is located on the ECM Server. This configuration is supported for ECM Workgroup installations.

Specification Description	Minimum	Recommended (if applicable)
Processor type & speed	4.0 Ghz or higher	Two or more cores recommended
Memory	16GB	32 GB recommended
Disk Storage	2TB	• RAID or SSD recommended • Multiple drives recommended for additional performance
Network Interface	1 Gbps	

❑ The SQL database server for OpenLab ECM meets the hardware requirements in one of the above tables.

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ECM Servers

This section applies for all ECM Servers, including ECM Web servers, Application servers, File Transfer servers. and BPM servers.
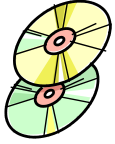
Software Specifications for ECM Servers

Special Notes

1. Refer to the *OpenLab ECM Software and Hardware Requirements* for additional details.

Specification Description	ECM Servers
Operating system type(s), versions	Windows 2016 Server Standard or Datacenter Edition
Database Client	• Microsoft SQL Client will be installed with ECM software • Oracle-based systems require **Oracle 12.2.0.1 32-bit client**
Microsoft .NET Framework *	.NET 3.5 Service Pack 1 and .NET 4.5.2 or higher
Computer Name	Must contain alphanumeric characters (A-Z or 0-9) only **Must not** be named *ECM*
OS Language	US/English
Regional Setting	US/English
Domain	Must be a domain member. **Must not** be a domain controller.

* The required .NET Framework software is installed by the ECM Installation Adviser

❑ The ECM Server or servers meet the requirements as specified above.

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Computer Hardware Specifications for ECM Servers

Special Notes

1. Refer to the *OpenLab ECM Software and Hardware Requirements* for additional details.
2. If the ECM Server is virtualized, at least 50% of the minimum specifications must be reserved.

ECM Web Server

The following specifications apply for ECM Web Servers as well as BPM Servers.

Specification Description	Minimum	Recommended (if applicable)
Processor type & speed	2.0 Ghz or higher	Two or more cores recommended
Memory	4 GB	8 GB recommended
Disk Storage	100 GB	
Network Interface	100 Mbps	1 Gbps

ECM File Transfer Server

The following specifications apply for ECM Web Servers as well as BPM Servers.

Specification Description	Minimum	Recommended (if applicable)
Processor type & speed	2.0 Ghz or higher	Two or more cores recommended
Memory	4 GB	8 GB recommended
Disk Storage *	500 GB	A dedicated volume or partition is required for the file transfer cache.
Network Interface	100 Mbps	1 Gbps

* At least half of this space should be allocated to the file transfer cache.

Application Server

The following specifications apply for ECM Application Servers.

Specification Description	Minimum	Recommended (if applicable)
Processor type & speed	2.0 Ghz or higher	Two or more cores recommended
Memory	4 GB	8 GB recommended
Disk Storage *	500 GB	A dedicated volume or partition is required for file processing.
Network Interface	100 Mbps	1 Gbps

* At least 100 GB of this space should be allocated to TEMP space for file processing.

ECM Workgroup or All-in-one Server

The following specifications apply when all ECM Server roles are installed on the same server.

Specification Description	Minimum	Recommended (if applicable)
Processor type & speed	4.0 Ghz or higher	Two or more cores recommended
Memory	16 GB	32 GB recommended for ECM Workgroup configurations
Disk Storage *	• 500 GB for All-in-one • 2 TB for ECM Workgroup	• RAID or SSD recommended • Multiple drives recommended for additional performance • Dedicated volumes are required for file cache and temp space.
Network Interface	1 Gbps	

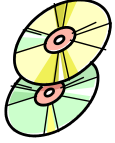** At least 250 GB of this space should be allocated to the file transfer cache.*
* At least 100 GB of this space should be allocated to TEMP space for file processing.

❑   The ECM Server or servers meet the hardware requirements in the above tables.

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ECM Clients

This section applies to all ECM and BPM Clients.

Software Specifications for ECM Clients

Special Notes

1. Refer to the *OpenLab ECM Software and Hardware Requirements* for additional details.
2. ECM Schedulers must use US/English language and regional settings.

Specification Description	ECM Clients
Operating system type(s), versions	Windows 7 with Service Pack 1 (32-bit or 64-bit) Windows 10 (64-bit) Windows 2016 Server Standard or Datacenter Edition
Microsoft .NET Framework	.NET 3.5 Service Pack 1 and .NET 4.5.2 or higher
Internet Explorer	Internet Explorer 11.x (32-bit) is required
OS Language	• US/English or Western European • US/English language and regional settings are required for ECM Schedulers
Domain	Domain membership required for Single Sign-on and ECM Schedulers.

ECM Client Options

If any of the optional ECM Client optional software will be used, check the option and confirm the additional software requirements.

❑ ECM Desktop
  ❑ Requires Microsoft Office 2010, 2013 or 2016 (32-bit)
❑ BPM Workflow Designer Plugin for Microsoft Visio
  ❑ Requires Microsoft Visio 2010, 2013 or 2016 (32-bit)
❑ ECM Integration Plugin for Adobe Acrobat
  ❑ Requires Adobe Acrobat 2015, 2017, 2018 or Acrobat DC (Continuous)
❑ PDF Template Plugin for Adobe Acrobat
  ❑ Requires Adobe Acrobat 2015, 2017, 2018 or Acrobat DC (Continuous)
❑ eSignature Plugin for Adobe Acrobat
 ❑ Requires Adobe Acrobat 2015, 2017, 2018 or Acrobat DC (Continuous)

❑ ECM Print Services
   ❑ User Account Control must be disabled to add ECM Printers
   ❑ Adobe Acrobat 2015, 2017, 2018 or Acrobat DC (Continuous) only required
      to use Acrobat Distiller printers.

Confirm ECM Client Software Requirements

❑ The ECM Clients meet the requirements as specified above for ECM Client and options.
❑ The system includes ECM Schedulers.
   ❑ ECM Schedulers meet the additional domain, language and regional requirements as specified
      above.
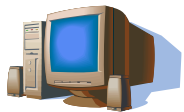
Computer Hardware Specifications for ECM Clients

Special Notes
1. Refer to the *OpenLab ECM Software and Hardware Requirements* for additional details.
2. If an ECM Client or ECM Scheduler is virtualized, at least 50% of the minimum specifications
   must be reserved.

ECM Client
The following specifications apply for ECM Clients and ECM Schedulers.

Specification Description	ECM Client	ECM Scheduler
Processor type & speed	1.5 Ghz or higher	2.5 Ghz or higher - Dual core
Memory	4 GB - Windows 7 8 GB - Windows 10 8 GB - Windows 2016 Server	4 GB - Windows 7 8 GB - Windows 10 8 GB - Windows 2016 Server
Disk Storage *	100 GB	500 GB
Network Interface	100 Mbps	1 Gbps
Graphics Resolution	1280x1024 or higher	1280x1024 or higher

* On schedulers, at least 250 GB of this space should be allocated to the Protected Folder.
* On schedulers, at least 50 GB of this space should be allocated to TEMP space for file processing.

❑ The ECM Clients meet the requirements as specified above.
❑ The system includes ECM Schedulers.
   ❑ ECM Schedulers meet the hardware requirements as specified above.

Domain and Networking Specifications

Domain
- ❑ All ECM servers are members of the same domain.
- ❑ Any ECM Schedulers are also members of the same domain.
- ❑ All domain users are members of this same domain or a bi-directionally trusted domain.
- ❑ All domain groups for organizing ECM user security are Global security groups.

Network Service User Account
- ❑ A Network Service User was created in the domain.
    - ❑ This account is able to query users and groups within the domain
    - ❑ This account **is not** a domain administrator account
    - ❑ This account is configured as a local administrator on all ECM Servers
    - ❑ This account has a non-expiring password. If this is not permitted, a secondary Network Service User must also be provided.

Network Performance
A Network Performance Assessment should be performed to measure performance between the ECM servers and the database server and preferred domain controller. DNS resolution and user/group LDAP lookup tests should also be performed.

Specification Description	Minimum
Network bandwidth	100 Mbps
Subnet hops	< 5
Latency	< 11 ms
Packet Loss	< 6%
DNS Resolution time	< 20 ms
LDAP domain user/group lookup time	< 1 second

- ❑ The Site Domain and Network infrastructure meet the requirements as specified above.
- ❑ A Network Service User account has been created with the required attributes.
    - ❑ The Network Service User has a non-expiring password.
      or
    - ❑ A secondary Network Service User has also been created with the required attributes.

Other Requirements

Please see the following important links:

1. Important web links
   Microsoft Hardware Compatibility Lists
   http://www.microsoft.com/whdc/hcl/default.mspx

   Links to specific O/S fixes, updates needed
   http://support.microsoft.com/

2. For information on upgrading ECM from prior software revisions please consult the *ECM Upgrade Guide*.

Important Customer Web Links

❑ For additional information about our solutions, please visit our web site at
   http://www.chem.agilent.com/en-US/Pages/HomePage.aspx

❑ Need to get information on your product?
   Literature Library - http://www.agilent.com/chem/library

❑ Need to know more?
   Customer Education – http://www.chem.agilent.com/en-US/Training-Events/Pages/default.aspx

❑ Need technical support, FAQs? – http://www.chem.agilent.com/en-US/Technical-Support/Pages/default.aspx

❑ Need supplies? – http://www.chem.agilent.com/en-US/Products-Services/Parts-Supplies/Pages/default.aspx