Notices

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Safety Notices

CAUTION

A CAUTION notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a CAUTION notice until the indicated conditions are fully understood and met.

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A WARNING notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood and met.
Introduction

This document describes the hardware, software, and network requirements for supporting the Agilent OpenLAB Data Store A.02.02.

Hardware

OpenLAB Data Store is used to store data from different types of instruments. The performance of the system depends on server hardware that can support the number and size of the data files that must be stored on the system.

Use Table 1 on page 6 to calculate the size of your system in relative instruments. Then find your calculated number of instruments in Table 2 on page 6 to determine the server hardware you will need to support your system.
## Table 1  Instrument calculation

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Instrument count to use in Table 2</th>
<th>Typical 5 year load</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 GC (single tower)</td>
<td>1</td>
<td>24/5 lab operation, 100 Files*, 10 MB/Day</td>
</tr>
<tr>
<td>1 GC (dual tower)</td>
<td>2</td>
<td>24/5 lab operation, 200 Files*, 20 MB/Day</td>
</tr>
<tr>
<td>1 LC</td>
<td>1</td>
<td>24/5 lab operation, 100 Files*, 10 MB/Day</td>
</tr>
<tr>
<td>1 LC + DAD</td>
<td>2</td>
<td>24/5 lab operation, 30 Files*, 50 MB/Day Saving only spectrum peaks in a reduced spectrum range (e.g., 200-400, step 1)</td>
</tr>
<tr>
<td>1 SQ LC/MS (CS)</td>
<td>4</td>
<td>24/5 lab operation, 30 samples/day, 600 Files*, 250 MB/Day Routine quantitative work using scan data</td>
</tr>
<tr>
<td>1 ICP-MS</td>
<td>2</td>
<td>24/5 lab operation, 20 samples/day, 300 Files*, 20 MB/Day</td>
</tr>
</tbody>
</table>

* The individual files inside a SSIZIP file are counted as separate files.

## Table 2  Recommended hardware based on system size

<table>
<thead>
<tr>
<th>Hardware*</th>
<th>Small system (1-2 instruments)</th>
<th>Medium system (3-30 instruments)</th>
<th>Large sized system (25-100 instruments)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processor</td>
<td>1 × (Intel Xeon 2.0 GHz, 4 Core)</td>
<td>2 × (Intel Xeon 2.5 GHz, 4 Core)</td>
<td>2 × (Intel Xeon 3.3 GHz, 4 Core)</td>
</tr>
<tr>
<td>Ram</td>
<td>12 GB</td>
<td>24 GB</td>
<td>32 GB</td>
</tr>
<tr>
<td>Disk (OS and software)</td>
<td>1 × (100 GB 7.2 K rpm SATA)</td>
<td>2 × (250 GB 15 K rpm SATA RAID 1)</td>
<td>2 × (500 GB 15 K rpm SATA RAID 1)</td>
</tr>
<tr>
<td>Disk (Data)**</td>
<td>2 × (100 GB 7.2 K rpm SATA H/W RAID 1)</td>
<td>3 × (500 GB 7.2 K rpm SATA H/W RAID 5)</td>
<td>3 × (1TB 7.2 K rpm SATA H/W RAID 5)</td>
</tr>
<tr>
<td>Network</td>
<td>1 GB</td>
<td>1 GB</td>
<td>1 GB</td>
</tr>
</tbody>
</table>

* Agilent recommends a server dedicated to OpenLAB Data Store as the host machine.
** Disk space may need to be adjusted based on planned usage pattern.
Software

Operating system

The OpenLAB Data Store A.02.02 server system is installed on Windows Server 2012 R2 or Windows Server 2008 R2 SP1 and the client system is installed on Windows 7 SP1 and Windows 8.1 (English, Chinese, and Japanese).

Licensing

Agilent OpenLAB Data Store supports the use of a central licensing server for the distribution and tracking of license entitlements. The following software is supported for this purpose:

- Flex-Net Publisher v. 11.12

This software is installed with the installation of OpenLAB Data Store Server components.

Databases

Agilent OpenLAB Data Store manages information using a database. The database is installed and configured automatically during installation.

The following database software are supported:

- SQL Server 2008 R2 SP2
- SQL Server 2012 R2 Standard or Enterprise (64-bit) SP2 (Windows Server 2012 R2 databases only)
- PostgreSQL Server 9.2 that is installed by the OpenLAB software. Agilent does not support the use of a PostgreSQL server, other than the one installed by the OpenLAB software.
Virtual machines

VMWare ESX hosted virtual machines are supported for use as OpenLAB Data Store client systems.

OpenLAB Data Store server installations are not explicitly supported in a virtual environment. Please contact your support representative for details.

Other software

The following software must be installed on any supported operating system prior to installing OpenLAB Data Store components:

- Internet Explorer 10 or 11 (Active scripting needs to be enabled for accessing Data Store website.)
- Windows Installer 4.5
- Adobe Flash Player 11.9 or later
- PDF reader (You can install Adobe Reader from the OpenLAB Data Store installation DVDs).

Language compatibility

Localized versions of OpenLAB Data Store are supported on localized language versions of Windows, using default system fonts for English, Chinese, and Japanese.
Network

OpenLAB Data Store uses standard TCP/IP protocols to communicate between the server and client computers. For optimum performance, the network must meet the design criteria for available bandwidth, IP address assignment, name resolution, and appropriate isolation of the lab subnet from the corporate network.

TCP/IP networking is required for all products. WANs (wide area networks) are not supported.

LAN communications

Communication method

Connect Data Store clients to the Data Store server using one of these LAN communication methods:

- Directly connect the instrument using a crossover CAT-5 cable
- Connect with an isolate switch (see “Network isolation” on page 12) using standard CAT-5 network cabling

Use 100/1000 mbps speed capable LAN communication hardware. Do not team LAN cards for system communications.

LAN power management

Avoid data capture or transfer interruptions in your data acquisition system by making LAN communication cards available for instrument and system component communications.

Windows may be set to turn instrument/components off to save power while sleeping or hibernating.

To change the setting:

2. Select the Power Management tab.
3. Un-check Allow the computer to turn off this device to save power.
**Firewall settings**

If you are using a third party firewall or antivirus software on the network where OpenLAB Data Store is installed, open these firewall ports to allow communication between the system components of OpenLAB Data Store.

The OpenLAB installer will automatically open these ports on an enabled Windows firewall during installation.

**Port 21**: Agilent OpenLAB Data Store FTP

**Port 67 and 68**: used for the receipt and response, respectively, of BootP server communications

**Port 80**: used by OpenLAB Data Store

**Port 443**: Agilent OpenLAB Data Store HTTPS

**Port 2886**: used for buffered upload and monitoring service

**Port 3424**: used for the transfer of diagnostics information between system components and OpenLAB shared services

**Port 6570**: (default) used for the active retrieval and release of product licenses

**Port 6577**: used for the communications of all shared services related information. This includes instrument and run status, active trace data, and global communications.

**Port 8081**: used by Agilent OpenLAB Data Store support

**Port 8084**: used by Agilent OpenLAB Licensing support

**Ports 8085-8089**: used as an alternative to port 8084 if that port is in use by another page or process

**Port 8090**: used to host the viewing page of current license grants and consumptions found in the OpenLAB Control Panel administration interface

**Dynamic Ports**: used for temporary communications between clients. The ports used depend on the operating system in use and are configurable. Refer to the operating system documentation for more information.

The OpenLAB installer will automatically open these ports on an enabled Windows firewall during installation.
Domain requirements

Domains support the flow of information and user access rights across machines in the network. This means that all machines within the networked OpenLAB Data Store system must reside within the same domain or have the appropriate cross domain trusts to allow name based communications between the client and server.

When installing the OpenLAB Data Store server on the Windows Server 2012 R2 system, you must log into the machine as a domain user that is a local administrator. This allows the OpenLAB installer to apply network exceptions to the Windows firewall under the domain profile resulting in a functional system.

The components necessary to support OpenLAB Data Store on a domain are:

- **Domain controller**- broadcasts the domain name and negotiates access to machines
- **Domain name server (DNS)**- maintains records of what host names belong to which IP on the network. This component is always required for effective components communications in networked systems.
- **Active directory**- maintains the list of users and their access rights on the domain

**NOTE**

OpenLAB Data Store components may not be installed on the same machine as the domain controller.

The domain components above host a variety of services and settings that must be configured appropriately to allow communication across machines. The following services and settings will need to be configured to fit your domain. Your internal IT group is responsible for proper configuration of any custom domain solution. These include settings for:

- Lookup zones and hostnames
- Group and security policies
- Subnet masks and virtual LANs
Network isolation

An OpenLAB Data Store system should be isolated from network systems that experience frequent failures due to faulty switching, viruses, or worms. If network isolation is not possible, client computers should be reconfigured and disconnected from the problem network until these issues can be resolved. On an isolated network, name resolution services must be hosted by a separate machine to enable proper communications between system components by name.

An isolated network is completely physically isolated, so that no LAN switch connections on the network are shared with the corporate network infrastructure. Figure 1 shows a simple client/server topology.

Figure 1  Sample client/server topology: Network Isolation