



Agile Business Suite

Software Qualification and Support Matrix

Release 7.0

April 2024

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AB Suite 7.0 Software Qualification and Support Matrix

This matrix specifies which software combinations are qualified (completely tested), as well as those that are supported (not yet tested, or partially tested).

Key

- ✓ Combination is Qualified and Supported
- ✓ **ICxxxx** Combination is Qualified and Supported from this IC and higher
- ✓ **s** – Combination is supported and has undergone partial testing
- X**- Combination IS NOT SUPPORTED
- ⁽¹⁾ - Indicates that a foot note applies to this combination

Note 1: Where a date is provided it should be considered a Target only, until an IC or release container has been identified.

Note 2: Minimum Service Pack levels for support are listed. AB Suite is qualified using the latest security patches and updates that are available from Microsoft at the time of qualification. We recommend using the most recent security patches and updates from Microsoft.

Note 3: AB Suite 7.0 hardware requirements are comparable to AB Suite 6.1 requirements; however, revised operating system and database software requirements may require higher specifications than some existing AB Suite deployments. Please refer to the last page of this document for typical production level hardware recommendations.

Note 4: AB Suite 7.0 currently only supports 64 bit Windows 10, Windows Server 2016 (LTSC versions) and Windows Server 2019 (LTSC versions) **32-bit Windows is not supported** for AB Suite 7.0. Windows Server Semi-Annual Channel versions (for example, version 1709, 1803 and 1809) are not currently supported. Please see Additional Third Party Software notes below.

Note 5: AB Suite 7.0 currently only supports SQL Server 2017, Visual Studio 2017 and TFS 2018. **Please contact AB Suite Support if support of an older level of SQL Server or TFS is required.**

Note 6: Engineering will support SQL Server 2017 until the end of extended support or the end of the product's life, whichever is earlier.

AB Suite Developer (including Debugger, Version Control⁽¹¹⁾, ATT and Client Framework)

Operating System ⁽⁶⁾⁽⁷⁾⁽⁸⁾⁽¹⁵⁾	Windows 10 Professional, Enterprise (x64) October 2018 Update 21H1, Windows 11 latest updates (IC 1045) Windows Server 2019 (LTSC) Standard, Datacenter Windows Server 2016 (LTSC) Standard v1607	Windows Server 2016 Datacenter (LTSC) v1607
Database⁽¹²⁾⁽²³⁾⁽²⁵⁾		
SQL Server 2017 Enterprise Edition ⁽¹⁵⁾⁽²⁴⁾⁽²⁷⁾	✓ s	✓
SQL Server 2017 Express, Standard ⁽¹⁵⁾⁽²⁴⁾⁽²⁷⁾	✓ s	✓ s
SQL Server 2019 Standard, Developer Edition	✓ s IC1019	✓ s IC1019
SQL Server 2019 Enterprise Edition	✓ s IC1019	✓ s IC1019
Visual Studio⁽¹⁵⁾		
Visual Studio 2017 Professional ⁽¹⁴⁾ 15.9.13 or higher ⁽¹⁵⁾	✓ s	✓
Azure DevOps Services ⁽²⁶⁾ & Server 2019/2020	✓ s	✓ s
Other Optional Supported Applications		
Enterprise Output Manager 13.0 (32 bit) ⁽⁶⁾	✓ s	✓
Windows Components		
.NET Framework 4.7.2 ⁽⁴⁾ or higher.	✓ s	✓
Microsoft OLE DB Driver for SQL Server ⁽²⁴⁾	✓ s	✓

⁽⁴⁾ .NET Framework 4.7.2 or higher is required (qualification is on .NET Framework 4.7.2)

⁽⁶⁾ AB Suite 7.0 Developer supports virtual machines such as VM Ware, VirtualBox and Hyper-V. Please check additional notes below.

⁽⁷⁾ AB Suite 7.0 currently only supports 64 bit Windows 10, Windows Server 2016 (LTSC versions) and Windows Server 2019 (LTSC versions) **32-bit Windows is not supported for AB Suite 7.0**. Windows Server Semi-Annual Channel versions (for example, version 1709, 1803 and 1809) are not currently supported.

⁽⁸⁾ Visual Studio 2017, EOM and AB Suite Developer are all 32 bit applications. On 64 bit operating systems, they will run in WOW64.

⁽¹¹⁾ Besides Azure DevOps Services 2019/2020, TFS 2018 is also supported.

⁽¹²⁾ SQL Server Native Client is required for Developer installations that do not already have SQL Server installed locally

⁽¹³⁾ Please refer to <https://www.visualstudio.com/en-us/docs/setup-admin/requirements> for Operating System and SQL Server pairing requirements for supported TFS levels.

⁽¹⁴⁾ **Only Visual Studio 2017 Professional or Enterprise editions are supported.** Community Edition, VS Team Explorer and others are not supported.

⁽¹⁵⁾ AB Suite is qualified using the latest security updates that are available at the time of qualification. We recommend using the most recent security updates from Microsoft. Windows 10 May 2020 Update is qualified and supported. **Please note that there will be a delay in support for the very latest updates (especially Visual Studio 2017).** If support for a specific update is critical, please contact AB Suite support.

⁽²⁴⁾ Microsoft OLE DB Driver 18 for SQL Server is required for AB Suite 7.0 Admin Tool, as previous OLEDB drivers do not support TLS 1.2. Please download 64 bit drivers and install them from <https://www.microsoft.com/en-us/download/details.aspx?id=56730>. **TLS 1.2 or higher is required, earlier TLS and SSL levels are not supported.**

⁽²⁵⁾ AB Suite Developer issues found using **SQL Server Developer Edition** will be analyzed and fixed on the basis of it being equivalent to Enterprise Edition, and assumes Developer Edition usage is in compliance with Microsoft licensing terms and conditions. SQL Server Developer Edition not supported for Production Usage.

⁽²⁶⁾ Testing was done with Windows Server 2016 Datacenter, Visual Studio 2017 Professional 15.9.7 and SQL Server 2017 Enterprise Edition.

⁽²⁷⁾ Microsoft SQL Server Management Studio SSMS 17.x is required, Microsoft Visual Studio 2015 Shell (Isolated) is a mandatory pre-requisite for AB Suite Developer which gets installed automatically as part of SSMS 17.x.

AB Suite Runtime for Windows (x64)

Operating System ⁽¹⁾⁽²⁾⁽⁶⁾⁽⁷⁾⁽⁹⁾⁽¹⁵⁾	Windows Server 2019 (LTSC) Standard, Datacenter Windows Server 2016 (LTSC) Standard v1607	Windows Server 2016 (LTSC) Datacenter Edition v1607
Database⁽²³⁾		
SQL Server 2017 Enterprise Edition ⁽¹⁵⁾	✓ s	✓
SQL Server 2017 Standard ⁽¹⁵⁾	✓ s	✓ s
SQL Server 2017 Express Edition (x64) ⁽³⁾⁽¹⁵⁾	X	X
SQL Server 2019 Standard Edition	✓ s IC1019	✓ s IC1019
SQL Server 2019 Enterprise Edition	✓ s IC1019	✓ s IC1019
Windows Components		
.NET Framework 4.7.2 ⁽⁴⁾	✓ s	✓
Microsoft OLE DB Driver 18 for SQL Server ⁽²⁴⁾	✓ s	✓
Other Optional Supported Applications		
Enterprise Output Manager 13.0 and 14.0 (64 bit)	✓ s	✓
Unisys OpenTI 11.3 (required for the OLTP feature) ⁽⁵⁾	X	X

⁽¹⁾ Windows 10 with 1809 update can be used for testing purposes but it is not supported in AB Suite Windows Runtime production environments. AB Suite Windows Runtime encounters problems with Windows 10 November 2019 Update (1909) and is not supported. Windows 10 May 2020 update is qualified and supported.

⁽²⁾ Other Windows Operating System editions (for example Home or Server Core Editions) are not supported and may not work with AB Suite 7.0 Runtime for Windows.

⁽³⁾ SQL Server Express and Developer Editions can be used for testing purposes only and is not supported in AB Suite Windows Runtime production environments. Latest Updates are still required even for testing.

⁽⁴⁾ .NET Framework 4.7.2 or higher is required for Runtime for Windows. Qualification is on .NET Framework 4.7.2 level.

⁽⁵⁾ Contact your Unisys sales person, or email ABSuite@Unisys.com if you require 64 bit OpenTI 11.3. OLTP Support is currently not available due to 64-bit compatibility issues.

⁽⁶⁾ AB Suite 7.0 Runtime supports virtual machines such as VM Ware, VirtualBox and Hyper-V. Please check additional notes below.

⁽⁷⁾ AB Suite 7.0 currently only supports 64 bit Windows 10, Windows Server 2016 (LTSC versions) and Windows Server 2019 (LTSC versions) **32-bit Windows is not supported for AB Suite 7.0**. Windows Server Semi-Annual Channel versions (for example, version 1709, 1803 and 1809) are not currently supported.

⁽⁹⁾ AB Suite 7.0 Debugger supports the same combination of operating system and database software when debugging AB Suite 7.0 Runtime Windows applications.

⁽¹⁵⁾ AB Suite is qualified using the latest security updates that are available at the time of qualification. We recommend using the most recent security updates from Microsoft. Windows 10 May 2020 update is qualified and supported.

⁽²³⁾ AB Suite 7.0 Runtime for Windows only currently supports SQL Server 2017. **SQL Server Developer Edition not supported for Production Usage.**

⁽²⁴⁾ Microsoft OLE DB Driver 18 for SQL Server is required for AB Suite 7.0 Admin Tool, as previous OLEDB drivers do not support TLS 1.2. Please download the 64 bit driver and install it from <https://www.microsoft.com/en-us/download/details.aspx?id=56730>

AB Suite Runtime for MCP with LEVEL5 code files (Epsilon)

Operating System ⁽¹⁰⁾	MCP 18 (59.1)	MCP 19 (60.0)	MCP 20 (62.0)
Database			
Enterprise Database Server (DMSII)	X	✓ IC 1006	✓ IC 1023
MCP Components			
Enterprise Transactions Server (COMS), COBOL85, DMALGOL, BINDER and NEWP	X	✓ IC 1006	✓ IC 1023

⁽¹⁰⁾ AB Suite 6.1 Debugger supports the same combination of operating system and database software when debugging AB Suite 6.1 Runtime MCP applications.

AB Suite Runtime for MCP with LEVEL6 code files (ETA)

Operating System ⁽¹⁰⁾⁽²²⁾	MCP 18 (59.1)	MCP 19 (60.0)	MCP 20 (62.0)	MCP 21 (63.0)
Database				
Enterprise Database Server (DMSII)	X	✓ IC 1006	✓ IC 1023	✓ IC 1050
MCP Components				
Enterprise Transactions Server (COMS), COBOL85, DMALGOL, BINDER and NEWP	X	✓ IC 1006	✓ IC 1023	✓ IC 1050

⁽¹⁰⁾ AB Suite 7.0 Debugger supports the same combination of operating system and database software when debugging AB Suite 7.0 Runtime MCP applications.

ETA architecture notes:

- AB Suite 7.0 GCA includes two (2) release packages for MCP Runtime.
 - The EPSILON package contains LEVEL5 code files for hosts running with COMPILERTARGET=LEVEL5. This may be installed on hosts running with COMPILERTARGET=LEVEL5 or COMPILERTARGET=LEVEL6.
 - The ETA package contains LEVEL6 code files and may be installed on hosts running with COMPILERTARGET=LEVEL6.
- Refer to CTB 9157 for the LEVEL5 Code File Deprecation Plan.
- Refer to CTB 10493, CTB 11491 and 11751 for the announcement of end of support for LEVEL5 code files in AB Suite.
- Refer to CTB 11487 and CTB 11643 for the announcement of end of support for AB Suite 7.0. Engineering support for AB Suite 7.0 will end in July 2024.

MCP 21 does not support LEVEL5 code files.

Minimum Software Requirements:

MCP 20/62.0

- MCP – MCP-062.0A.12
- COBOL85 - COBOL85-062.0A.4
- ALGOL – MCP-62 [62.080.000]
- BINDER - MCP-62 [62.080.000]
- DMSII - DMSII-062.0A.4
- FTP – FTP-062.0A.2

MCP 19/60.0

- MCP – MCP-060.0A.21
- COBOL85 - COBOL85-060.0A.9
- ALGOL - ALGOL-060.0A.9
- BINDER - BINDER-060.0A.3
- DMSII - DMSII-060.0A.14
- OLEDB - OLEDB-060.0A.1
- FTP – FTP-060-0A.12

AB Suite Client Tools

Component Enabler Generation

Operating System ⁽⁷⁾	Windows 10 Professional (x64) October 2018 Update 21H1 Windows Server 2019 (LTSC) Standard, Datacenter Windows Server 2016 (LTSC) Standard, Datacenter v1607	Windows 10 Enterprise (x64) October 2018 Update
Component Enabler Generation - Java Generate Environment ^(d)		
Using Java - Oracle Java Plug-in Version 6.0 to 8.0 (32 and 64 bit)	✓ s	✓ s
Java Based Custom Generators ^(d)	✓ s	✓ s
Component Enabler Generation .NET Generate Environment		
Microsoft .NET Framework 4.7.2 ^{(c)(4)}	✓ s	✓
Presentation Client ^(a)	✓ s	✓
ASP.NET Web Forms ^(c)	✓ s	✓
ASP.NET Web Services ^(c)	✓ s	✓
JSP Client ^(a)	✓ s	✓
VB .NET Client ^(c)	✓ s	✓
ePortal 9.0 to 10.0	✓ s	✓
Winforms		
Microsoft .NET Framework 4.7.2 ⁽⁴⁾	✓ s	✓ s
Enterprise Application Environment		
EAE 3.3.3800 or higher	✓ s	✓ s

^(a) Oracle Java Development Kit is needed for Presentation Client and JSP Client generation. Java level applies only to Presentation Client and JSP Client generation

^(b) ePortal supports capabilities of many client technologies, including HTML5, mobile web forms (iOS, Android, Blackberry, Windows Phone), ASP.NET Web Forms, ASP.NET Web Services, WCF Services and REST services. Please see ePortal documentation for the full range of supported capabilities available.

^(c) Microsoft ASP.NET 4.7 and VB.NET 4.7 levels are required for ASP.NET and VB.NET. AJAX extensions are included as part of .NET Framework 4.7.

^(d) 64 bit Java is supported. **Oracle Java 8 is supported, except for custom generators. Oracle Java 6 or higher is now required (including custom generators).**

⁽⁴⁾ .NET Framework 4.7 or higher is required. Qualification is done on .NET Framework 4.7.2.

⁽⁷⁾ AB Suite 7.0 currently only supports 64 bit Windows 10, Windows Server 2016 (LTSC versions) and Windows Server 2019 (LTSC versions) **32-bit Windows is not supported for AB Suite 7.0.** Windows Server Semi-Annual Channel versions (for example, version 1709, 1803 and 1809) are not currently supported.

Browser Clients: ASP.NET Web Forms / JSP Client / ePortal / browser-based Presentation Client

Operating System ⁽⁷⁾	Windows Server 2019 (LTSC) Standard, Datacenter Windows Server 2016 (LTSC) Standard, Datacenter v1607	Windows 10 Professional (x64) October 2018 Update, 21H1	Windows 10 Enterprise (x64) October 2018 Update	MAC OS X 10.9 or higher	iOS 10.3 or higher
ASP.NET Web Forms / JSP Client					
Client Browser – New Microsoft Edge	✓ s	✓ s	✓ s	X	X
Client Browser - (Microsoft Internet Explorer 11)	✓ s	✓ s	✓	X	X
Client Browser – Microsoft Edge	X	X	X	X	X
Client Browser – Firefox/Chrome	✓ s	✓ s	✓ s	✓ s	X
Client Browser – Safari	X	X	X	✓ s	X
Mobile Browser – Internet Explorer	X	X	X	X	X
Mobile Browser – Safari	X	X	X	X	✓ s
Browser-based Presentation Client ⁽¹⁸⁾					
Client Browser - (Microsoft Internet Explorer 11)	✓ s	✓ s	✓ s	X	X
All other browsers including Mobile browsers ⁽²⁰⁾	X	X	X	X	X
ePortal 9.0 to 10.0 Client Runtime					
Microsoft .NET Framework 4.7.2 ⁽⁴⁾	✓ s	✓ s	✓	X	X
ePortal 9.0 to 10.0 Browser					
All ePortal Presentation Types	✓ s		✓ s		

⁽⁴⁾ .NET Framework 4.7.2 or higher is required.

⁽⁷⁾ AB Suite 7.0 currently only supports 64 bit Windows 10, Windows Server 2016 (LTSC versions) and Windows Server 2019 (LTSC versions) **32-bit Windows is not supported for AB Suite 7.0**. Windows Server Semi-Annual Channel versions (for example, version 1709, 1803 and 1809) are not currently supported.

⁽¹⁸⁾ Browser-based Presentation Client runs in a browser as a Java Applet. Java Applet support has been officially terminated for Chrome (45 onwards), Edge and most other modern browsers via the end of support of NPAPI on those browsers. **Therefore, Browser-Based Presentation Client is being deprecated, and will only run on IE11 until Microsoft terminates support for it (Java applets or IE11 itself)**. It is recommended that customers consider the ASP.NET and JSP clients as browser based Component Enabler client alternatives, or look at distributing the desktop based Presentation Client, which continues to be supported.

Desktop Clients: VB.NET / Winform Client / Presentation Client

Operating System ⁽⁷⁾	Windows 10 Professional (x64) October 2018 Update, 21H1 Windows Server 2019 (LTSC) Standard, Datacenter Windows Server 2016 (LTSC) Standard, Datacenter v1607	Windows 10 Enterprise (x64) October 2018 Update
Winform (VB.NET)		
VB.NET Client	✓ s	✓
Winform (C#)		
Winform C# Client	✓ s	✓ s
Microsoft .NET Framework 4.7.2 ⁽⁴⁾	✓ s	✓ s
Java		
Presentation Client	✓ s	✓
Standalone Client – Oracle JRE 6 to 8.0	✓ s	✓

⁽⁴⁾ .NET Framework 4.7.2 or higher is required. Qualification is done on .NET Framework 4.7.2.

⁽⁷⁾ AB Suite 7.0 currently only supports 64 bit Windows 10, Windows Server 2016 (LTSC versions) and Windows Server 2019 (LTSC versions) **32-bit Windows is not supported for AB Suite 7.0**. Windows Server Semi-Annual Channel versions (for example, version 1709, 1803 and 1809) are not currently supported.

Component Enabler Runtime

Operating System ⁽⁷⁾	Windows 10 Professional (x64) October 2018 Update, 21H1 Windows Server 2019 (LTSC) Standard, Datacenter Windows Server 2016 (LTSC) Standard, Datacenter v1607	Windows 10 Enterprise (x64) October 2018 Update	MAC OS X 10.9 or higher
Component Enabler Runtime			
Oracle Java Runtime 6 to 8 ^(d)	✓ s	✓ s	✓ s
.NET Runtime 4.7.2 ⁽⁴⁾	✓ s	✓	X

^(d) 64 bit Oracle Java is supported

⁽⁴⁾ .NET Framework 4.7.2 or higher is required. Qualification is done on .NET Framework 4.7.2.

⁽⁷⁾ AB Suite 7.0 currently only supports 64 bit Windows 10, Windows Server 2016 (LTSC versions) and Windows Server 2019 (LTSC versions) **32-bit Windows is not supported for AB Suite 7.0**. Windows Server Semi-Annual Channel versions (for example, version 1709, 1803 and 1809) are not currently supported.

Host Servers: ASP.NET Web Forms / ASP.NET Web Services / JSP Client

Operating System ⁽⁷⁾	Windows 10 Professional, Enterprise (x64) October 2018 Update, 21H1 Windows Server 2019 (LTSC) Standard, Datacenter Windows Server 2016 (LTSC) Standard v1607	Windows Server 2016 (LTSC) Datacenter v1607
ASP.NET Web Forms		
Microsoft .NET Framework 4.7.2 ⁽⁴⁾	✓ s	✓
IIS (Version depends on the platform)	✓ s	✓
ASP.NET Web Services		
Microsoft .NET Framework 4.7.2 ⁽⁴⁾	✓ s	✓
IIS (Version depends on the platform)	✓ s	✓
JSP Client		
Tomcat 6.0 and 7.0	✓ s	✓

⁽⁴⁾ .NET Framework 4.7.2 or higher is required. Qualification is done on .NET Framework 4.7.2.

⁽⁷⁾ AB Suite 7.0 currently only supports 64 bit Windows 10, Windows Server 2016 (LTSC versions) and Windows Server 2019 (LTSC versions) 32-bit Windows is not supported for AB Suite 7.0. Windows Server Semi-Annual Channel versions (for example, version 1709, 1803 and 1809) are not currently supported.

Business Integrator and ePortal Runtime

Operating System ⁽⁷⁾	Windows 10 Professional, Enterprise (x64) October 2018 Update, 21H1 Windows Server 2019 (LTSC) Standard, Datacenter Windows Server 2016 (LTSC) Standard v1607	Windows Server 2016 (LTSC) Datacenter v1607
Business Integrator⁽²⁸⁾		
Microsoft Management Console (MMC) 1.2	✓ s	✓ s
ePortal Runtime		
ClearPath Specialty Engine	✓ s	✓ s
ePortal Software Edition 9.0 to 10.0	✓ s	✓ s
.NET Framework 4.7.2	✓ s	✓ s

⁽⁷⁾ AB Suite 7.0 currently only supports 64 bit Windows 10, Windows Server 2016 (LTSC versions) and Windows Server 2019 (LTSC versions) 32-bit Windows is not supported for AB Suite 7.0. Windows Server Semi-Annual Channel versions (for example, version 1709, 1803 and 1809) are not currently supported.

⁽²⁸⁾ Business Integrator is supported with HTTPS (Hypertext Transfer Protocol Secure).

AB Suite Client Framework for AB Suite on Windows

Operating System ⁽⁷⁾	Windows 10 Professional (x64) October 2018 Update, 21H1 Windows Server 2019 (LTSC) Standard, Datacenter Windows Server 2016 (LTSC) Standard, Datacenter v1607	Windows 10 Enterprise (x64) October 2018 Update
Client Infrastructure⁽¹⁶⁾		
WPF Containers	✓ s	✓
ASP.NET MVC clients	✓ s	✓ s
ASP.NET WebAPI clients	✓ s	✓ s

⁽⁷⁾ AB Suite 7.0 currently only supports 64 bit Windows 10, Windows Server 2016 (LTSC versions) and Windows Server 2019 (LTSC versions) 32-bit Windows is not supported for AB Suite 7.0. Windows Server Semi-Annual Channel versions (for example, version 1709, 1803 and 1809) are not currently supported.

⁽¹⁶⁾ Currently supported client types are listed in this table. While many other client project types can work with Client Framework, they may not work as intended when used with AB Suite 7.0. Please contact AB Suite Support, if support for an unlisted client type is required.

Third Party Software notes

Windows Server Semi Annual Channel releases (for example version 1709, 1803 and 1809) is currently only available in Server Core mode, and is therefore not supported. This is considered a separate release stream from the Windows Server 2016 and Windows Server 2019 (Long Term Servicing Channel) release stream.

See <https://docs.microsoft.com/en-us/windows-server/get-started/windows-server-release-info>

Windows operating system Service Packs, Updates and applicable KB patches belong to the base release level to which these patches apply.

Visual Studio 2017 Updates belong to the Visual Studio 2017 release and are not considered separate releases. However, AB Suite 7.0 will only work with specific tested and qualified Visual Studio 2017 update levels. If you require support for a specific VS 2017 level aside from the ones listed, please contact AB Suite support.

Internet Explorer support is determined by the operating system, see notes above and <http://support.microsoft.com/gp/microsoft-internet-explorer> Microsoft Edge support is available, but limited testing has been conducted.

AB Suite Developer issues found using **SQL Server Developer Edition** will be analyzed and fixed on the basis of it being equivalent to Enterprise Edition, and assumes Developer Edition usage is in compliance with Microsoft licensing terms and conditions. SQL Server Developer Edition not supported for Production Usage.

In general, qualification and support tests will be run with the latest critical updates belonging to a particular release level.

Hardware recommendations for typical production systems

AB Suite production systems have been deployed on a wide range of hardware configurations, some as small as single CPU, dual core servers with 4GB RAM, and some as large as 128 core servers with 256GB RAM. AB Suite 7.0 hardware requirements are similar to previous AB Suite release hardware requirements, although upgraded hardware is recommended to match upgraded OS, SQL Server and Visual Studio requirements.

Additional CPU, Memory and Disk resources will be required if other applications will also run on the hardware platform, and for buffer to handle peak processing and future additional processing loads.

Machine Role Definitions:

CLR Runtime Servers are dedicated AB Suite Windows Runtime host servers or Runtime Database servers.

Developer Workstations represent standalone workstations that contain System Modeler with a local SQL Server instance.

Build Servers are servers, from which system builds are initiated, typically also hosting SQL Server and the Model.

If you are using a machine in multiple roles (for example using a Developer workstation to also host SQL Server for Debugging or for Builds), use the highest set of hardware recommendations from the relevant roles.

AB Suite is supported on Unisys ClearPath *Forward!*, but only on Operating Systems and software levels listed in this qualification matrix document.

Recommended Hardware Levels for Large Systems

Large scale production environments typically need much greater levels of hardware resources, as a greater number of parallel processes are normally needed to handle heavy loads. This applies to both Developer and Builder environments, as well as Runtime environments. Since each AB Suite application is unique, the hardware demands tend to vary widely as well. One guide is to consider the typical resource needs of a single user, and multiply it out by the number of expected concurrent users of the system. The example below illustrates the process behind resource estimates:

Example of sizing RAM for a large production AB Suite Runtime for Windows application server:

AB Suite 7.0 Runtime for Windows is 64 bit, so previous assumptions on the number of users hosted per dllhost will no longer have the same restrictions. With a 64-bit address space, each dll host is likely to host many more than 20 users, and can be expected to well exceed the previous 800 MB size limit. It is conceivable for all of the users to be hosted on a single, large dllhost in some cases. Nevertheless, the amount of memory needed to sustain the transaction load will be similar, perhaps a bit higher due to the use of 64-bit memory addresses.

Using previous AB Suite 4.0 data, we will assume around 40MB is needed to service one user's session. So, for 1200 users, the application server will need about 48 GB. Additional overhead is needed to handle processes which are in recycling state, so a 20% overhead is added, bringing the total up to 58GB.

If extra reports are also being run concurrently, then additional RAM is also needed on top of the 58GB. Assuming about 300MB per report, and 10 reports running in the background, then that adds up to 3 GB. If there are multiple instances of these 12 reports running (let's assume 14 instances), then you need to multiply it by the number of instances. In our example, this totals up to 42 GB.

So far, our RAM estimate about 100GB, and you will also need enough RAM to host the Operating System itself (4GB).

This brings a total RAM needed to 104GB, so typically this will be **rounded up to 128GB RAM**. And this is just for the application server. If you need to host SQL Server, then you will need to add further resources based on how much RAM SQL Server would need to host the database. Resources required may also be much lower, if you are certain that the number of *concurrent* users or report instances is also much lower.

The following example recommendations are based on typical, large production sized AB Suite production systems (for example a 500 ispec system with 10 to 20 developers). Actual hardware requirements may vary significantly depending on the nature of the AB Suite system, development environment configuration, and usage scenarios. The recommended number of cores can be made up of multiple multi-core processors where multiple processor sockets are available. These recommendations are for **Physical** cores, rather than the Logical cores available through hyper-threading.

Note, a centralized model database configuration is no longer recommended due to performance issues. It is recommended that each client has its own model database instance instead, synchronized through version control such as with TFS.

AB Suite CLR Runtime Servers

CPU: 32 core configuration Intel Xeon (3 GHz) (equivalent or better) [More cores are required for high transaction throughput systems]
RAM: 128 GB RAM or higher [More RAM is required to support large number of systems]
HDD: 2TB Operating System Drive, additional SANs are recommended to host runtime databases
Active Directory domain membership

AB Suite Developer Workstation (per developer)

CPU: Quad Core Intel Core i7 (equivalent or better)
RAM: 16 GB or higher
HDD: 500GB SSD

AB Suite Build Server

CPU: 6 core Intel Core i7 / Xeon (3 GHz) (equivalent or better), per application instance being built in parallel.
RAM: 32 GB RAM or higher [More RAM is required to build larger systems], per application instance being built in parallel
HDD: 1TB
64-bit Server operating system

Recommended Hardware Levels for Medium Sized Systems

The following recommendations are based on typical, medium sized AB Suite production systems (around 100 ispecs). Actual hardware requirements may vary significantly depending on the nature of the AB Suite system, development environment configuration, and usage scenarios. The recommended number of cores can be made up of multiple multi-core processors where multiple processor sockets are available. These recommendations are for **Physical** cores, rather than the Logical cores available through hyper-threading.

AB Suite CLR Runtime / Database Servers

CPU: 8 core configuration Intel Xeon (3 GHz) (equivalent or better) [More cores are required for high transaction throughput systems]
RAM: 64 GB RAM (Minimum) or higher [More RAM is required to support large number of systems]
Disk Storage: 500GB Operating System Drive, additional SANs are recommended to host runtime databases
64-bit Server operating system
Active Directory domain membership

AB Suite Developer Workstation

CPU: Quad Core Intel Core i7 (equivalent or better)
RAM: 16 GB or higher
HDD: 500GB SSD

AB Suite Build Server

CPU: Quad Core Intel Core i7 / Xeon (3 GHz) (equivalent or better)
RAM: 16 GB RAM (Minimum) or higher [More RAM is required to build larger systems]
Disk Storage: 500GB
64-bit Server operating system

Recommended Hardware Levels for Small Sized Systems

Smaller systems consisting of less than 100 concurrent Runtime users and less than 5 Developer users, or those requiring only a low transaction rate can be accommodated on lower specification hardware levels. Higher specifications (approaching those for Medium Sized Systems), may be needed to achieve performance requirements. These recommendations are for **Physical** cores, rather than the Logical cores available through hyper-threading.

AB Suite CLR Runtime Servers

CPU: Quad core configuration Intel i7/ Xeon (3 GHz) (equivalent or better)
RAM: 16 GB RAM (Minimum) or higher
Disk Storage: 400GB Operating System drive
Active Directory domain membership

AB Suite Developer Workstation

CPU: Quad Core Intel Core i7 (equivalent or better)
RAM: 16 GB or higher
HDD: 500GB SSD

AB Suite Build Server

CPU: Dual Core Intel Core i7 (equivalent or better)
RAM: 8 GB (Minimum) RAM
Disk Storage: 400GB

Minimum Hardware Levels

Minimum hardware levels are much lower, but are only suitable for small systems or testing environments with a few Runtime users, or a single Developer user. Performance of minimal specification machines will not be adequate for most production level scenarios. Additional capacity may also be required for other software if they are running on the same machine. These recommendations are for **Physical** cores, rather than the Logical cores available through hyper-threading.

AB Suite CLR Runtime Servers

CPU: 4 core, 2 GHz
RAM: 8 GB RAM
Disk Storage: 200 GB

AB Suite Developer Workstation

CPU: 2 core, 2 GHz (x86)
RAM: 4 GB RAM
Disk Storage: 200 GB

AB Suite Build Server

CPU: 2 core, 2 Ghz (x86)

RAM: 4 GB RAM
Disk Storage: 200 GB

Virtual Machines

AB Suite 7.0 supports the use of virtual machines as workstation and server environments. Note that qualification tests are performed using a limited set of VMWare, VirtualBox and Hyper-V configurations, so behavior on other virtual machine configurations may vary according to resources allocated to those machines.

Regardless of the virtualization management software being used, virtual machine performance **will directly affect** the performance characteristics of AB Suite applications running in a virtualized environment. There should be no assumption of equivalent performance of an AB Suite application running in a virtualized environment as compared to that same application running on a physical server. Please ensure that virtual machines are allocated with sufficient minimum resources.

Azure

AB Suite Runtime for Windows may be hosted in an Azure cloud, limited to where the application and database are hosted on the same virtual machine. The recommended VM configuration for Azure hosted AB Suite applications will depend on the transaction processing throughput that is expected. It is highly recommended that transaction simulations are conducted to assess the appropriate rate of usage of Azure resources.

AB Suite Developer supports the use of Azure DevOps Services for source control and for building and deploying applications. Azure DevOps Services provide an integrated set of services and tools to manage your software projects.

AWS

AB Suite Runtime for Windows may be hosted in an AWS cloud, provided the application and database are hosted on the same Virtual Private Cloud (VPC). The recommended VM configuration for AWS hosted AB Suite applications will depend on the transaction processing throughput that is expected. It is highly recommended that a transaction simulation is conducted to assess the appropriate rate of usage of AWS resources.

Solid State Drives

Solid State Drives (SSDs) can significantly improve performance of AB Suite 7.0 activities which rely on access to the hard drive. Examples include using SSDs to host an operating system paging file, for high volume extract file read/write operations or hosting a SQL Server database instance for Model or Runtime. Memory or CPU dependent operations (for example running a Debugger session after it has started), will experience less of an improvement from using SSDs, but overall system performance may still benefit as file access speeds by the OS and other processes are likely to improve.

Network Recommendations

Traffic between AB Suite components are typically high, particularly in high volume transaction or development scenarios. If you are implementing a distributed configuration, please ensure that network bandwidth is high enough not to impact cross component performance. An example is to ensure 1Gbps network segments between the Developer workstations and the Model server, to avoid delays during Debugger sessions.

Support

For further support and questions regarding AB Suite Hardware Requirements, please see support details below.

Online Services

- 1 For information about registering for Support Online services, please contact your local CSC or visit <http://www.service.unisys.com/>.
- 2 You need to be registered for Support Online services to access the following links:
 - For localization information, please visit: <http://www.support.unisys.com/common/ShowWebPage.aspx?id=4940&pla=ABS&nav=ABS>

