Archive Shuttle 11.4

Requirements Guide

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Legend

CAUTION: A caution icon indicates potential damage to hardware or loss of data if instructions are not followed.

IMPORTANT, NOTE, TIP, MOBILE OR VIDEO: An information icon indicates supporting information.

Archive Shuttle
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1

Introduction

This guide contains detailed information on the hardware and software requirements for Archive Shuttle.

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Hardware requirements

Hardware requirements for Archive Shuttle servers

The following components are normally installed on separate servers in a production environment:

- The Archive Shuttle Core Server
- The Archive Shuttle Modules
- SQL Server databases

For pilot or demonstration purposes only, some or all of these can be installed on the same server.

NOTE: For performance reasons, this is not supported on a production environment.

Hardware requirements for Archive Shuttle Core server

The table below indicates the requirements for the Archive Shuttle Core Server.

Component	Configuration
Processors (cores)	Minimum 4, Recommended 8
CPU Speed	2 GHz
Memory	Minimum 4 GB, Recommended 8 GB
Hard disk	Minimum 2 GB of free space

The Archive Shuttle Server is supported on an Enterprise-ready virtualization platform. For example, VMware ESX, Microsoft Hyper-V. Desktop products are not supported (for example, VMware Workstation, Oracle Virtualbox).

Hardware requirements for Archive Shuttle modules

Archive Shuttle modules are supported on servers where the software vendor's own minimum requirements are met (for example, Veritas Enterprise Vault / Microsoft Exchange).

Additionally, most export/import modules require a buffer or cache area for temporary storage of exported files. This is called the Staging Area. The minimum recommended size for the Staging Area is 100 GB, and should be on fast, direct attached disk for maximum performance.

NOTE: The size of the Staging Area does not need to match the source data size.

Hardware requirements for Archive Shuttle modules on standalone servers

If the Archive Shuttle modules are installed on separate standalone servers, then the requirements are as follows:

Component	Configuration
Processors (cores)	Minimum 4, Recommended 8
CPU Speed	2 GHz
Memory	Minimum 4 GB, Recommended 8 GB
Hard disk	Minimum 2 GB of free space

NOTE: Improve performance of the Office 365 and Exchange modules by adding more CPUs and memory.

The following are suggested requirements where Exchange / Office 365 modules are installed:

Component	Configuration
Processors (cores)	Minimum 4, Recommended 8
CPU Speed	2 GHz
Memory	Minimum 16 GB, Recommended 32 GB
Hard disk	Minimum 2 GB of free space

Hardware requirements for SQL server

For SQL Server requirements on small (less than 5TB), medium (less than 20TB) and large (more than 20TB) Archive Shuttle migrations, refer to the *Archive Shuttle SQL Best Practices Guide*.

Network requirements

Archive Shuttle can generate a considerable amount of network traffic. For optimal performance, Archive Shuttle recommends a 1 Gbps below 10ms latency network.

For “offline” functionality (offline data shipping), it is still necessary to have a network connection for metadata transmission.

Archive Shuttle recommends that you have at least 2 Mbps below 50ms latency network connection from the Archive Shuttle Modules to the Archive Shuttle Core, and a 100 Mbps below 10ms latency network connection for the Archive Shuttle Core to SQL Server communication.

Storage requirements

The following components of Archive Shuttle require storage:

- Cache for export/import modules
- PST Staging Area
- SQL Server databases, including the Archive Shuttle Directory database and Item databases

Storage requirements for export/import modules cache location

The cache location for export/import modules must be accessible through CIFS (network share) and should be located on an NTFS formatted volume. It should have a minimum capacity of 100 GB. Archive Shuttle recommends that you have fast disks in order to ensure the best migration performance.

NOTE: Export will stop if the free space on the staging area drops to 20 GB or lower. Free disk space can be reviewed on the Health Dashboard.

Storage requirements for PST Staging Area location

If migration is taking place to PST files, then an additional area is needed for that link. This area is where the final PST files will be placed by Archive Shuttle. The size of this area will be dependent on the source data size. For example, if the source data size shown in the Vault Store Usage Report totals 2 TB, then a staging area of approximately twice this size is required.

Storage requirements for SQL databases

Storage is required for the following SQL databases:

- Archive Shuttle Directory database
- Item databases

The directory database size requirement is 500 MB. However, to allow for temporary transaction log growth, it is recommended to ensure at least 5 GB is available for the database.

Each item database has an initial storage requirement of 2 GB; 1 GB for the data file, and 1 GB for the transaction log.

A basic sizing guide for each item database is 1024 – 1500 bytes for each item collected plus 1 GB for static data, transaction logs and temporary data fluctuations.

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Software requirements

The following sections cover information relating to the minimum tested configurations of Archive Shuttle. If these requirements do not match the environment where Archive Shuttle is being installed, then the differences should first be discussed with Quest Support.

Operating system

For a list of supported operating systems, see the *Archive Shuttle Compatibility Guide*.

Install the components below on this server.

NOTE: The Archive Shuttle installer will check for pre-requisites and assist with information about next steps.

- NTFS file system
- Internet Information Services (IIS) 7.5 or later
- .NET Framework 4.8
- Microsoft Edge
- SQL Server CLR Types
- SQL Server Management Objects
- Standalone SQL Server Integration Services 2017*

*Not part of pre-requisites checks due to the fact this is required for Cargo Bay.

Internet Information Services (IIS) 7.5 or later

IIS 7.5 or later is required on the Archive Shuttle core server.

The Archive Shuttle installer will install two new Web Applications to the Default Website and create two new Application Pools. It is not necessary to configure these manually.

The following Web Server (IIS) Role services are required by Archive Shuttle:

Group	Role / Service
Common HTTP Features	• Static Content • Default Document

Group	Role / Service
	• Directory Browsing • HTTP Errors • HTTP Redirection
Application Development	• ASP.NET • .NET Extensibility • ISAPI Extensions • ISAPI Filters
Health and Diagnostics	• HTTP Logging • Request Monitor
Security	• Windows Authentication • Request Filtering
Performance	• Static Content Compression • Dynamic Content Compression
Management Tools	• IIS Management Console

The simplest way to install these components is to select the options to install:

- Application Server
- Web Server

The details of how to do this for different operating systems is described below:

Windows Server 2012

To ensure the required components are installed, perform the following steps in Server Manager:

- In Server Roles, select “Web Server (IIS)”. When “Web Server (IIS)” is selected, a pop-up will appear describing additional components that will be installed.
- In “Features” ensure that .Net Framework 4.5 > WCF Services > HTTP Activation is selected; a pop-up will appear showing additional components that will also be installed
- For “Web Server Role (IIS)” > “Role Services”, make sure that the following options are selected in addition to those already shown:
  - Common HTTP Features > HTTP Redirection

- Performance > Dynamic Content Compression
- Security > Windows Authentication

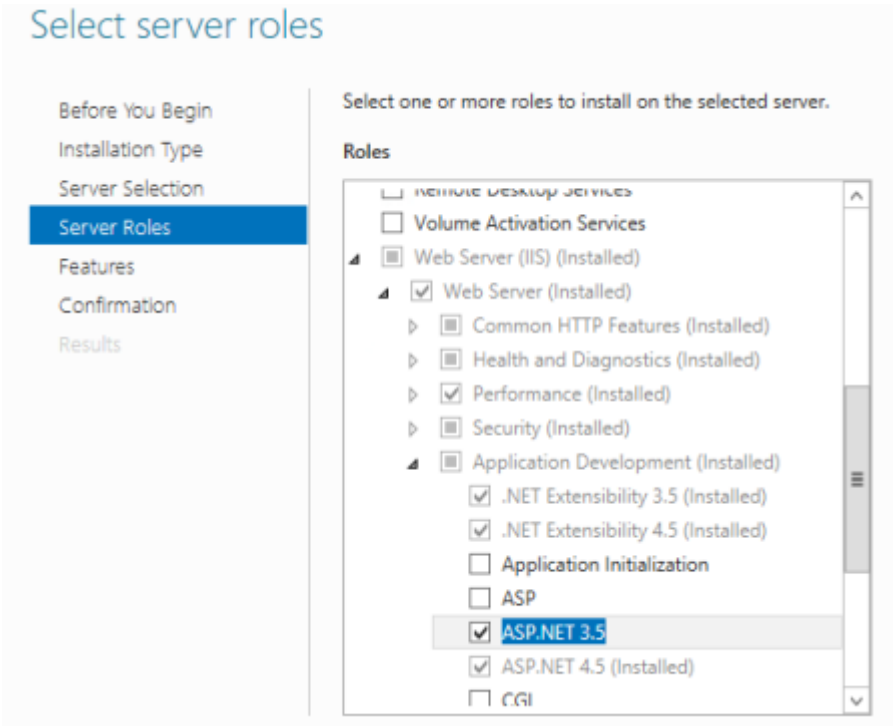
Server Manager will then need to be run a second time in order to add .Net Framework 3.5. This is necessary because the installation path specification for Windows 2012 legacy components is not the same as new Windows 2012 components.

When running Server Manager for the second time, make the following selections:

- It is not necessary to make any changes to the Server Roles; Web Server (IIS) should still be selected.
- In “Features”, make sure that “.Net Framework 3.5 Features” is selected, and inside that option, also select “HTTP Activation”. When that option is selected, a pop-up will appear showing additional components that will be installed.

Finally .Net Framework needs to be activated within IIS. To enable this feature, perform the following steps in Server Manager:

- In “Server Roles” navigate to “Web Server (IIS)”, expand that section to locate ASP.NET 3.5, and select it as shown below:



In Windows 2012, it is possible to install these required components using the following PowerShell command:

Install-WindowsFeature Web-Server -Source WIM:D:\Sources\Install.wim:4 ; Install-WindowsFeature Net-Framework-Features, NET-Framework-45-Features -Source D:\Sources\SxS ; Install-WindowsFeature Web-Asp-Net, Web-Net-Ext45, Web-Mgmt-Tools, Web-Windows-Auth, Web-Dyn-Compression, Web-Http-Redirect, NET-HTTP-Activation -Source WIM:D:\Sources\Install.wim:4 ;

NOTE: Ensure you adjust the command line to the correct paths required for the media on your system.

Windows Server 2012 R2

To ensure the required components are installed, perform the following steps in Server Manager:

- In Server Roles, select “Web Server (IIS)”. When “Web Server (IIS)” is selected, a pop-up will appear describing additional components that will be installed.
- In Features, make sure that .Net Framework 4.5 > WCF Services -> HTTP Activation is selected; a pop-up will appear showing additional components that will also be installed
- For Web Server Role (IIS) > Role Services, make sure that the following options are selected in addition to those already shown:Common HTTP Features > HTTP Redirection
  - Performance > Dynamic Content Compression
  - Security > Windows Authentication

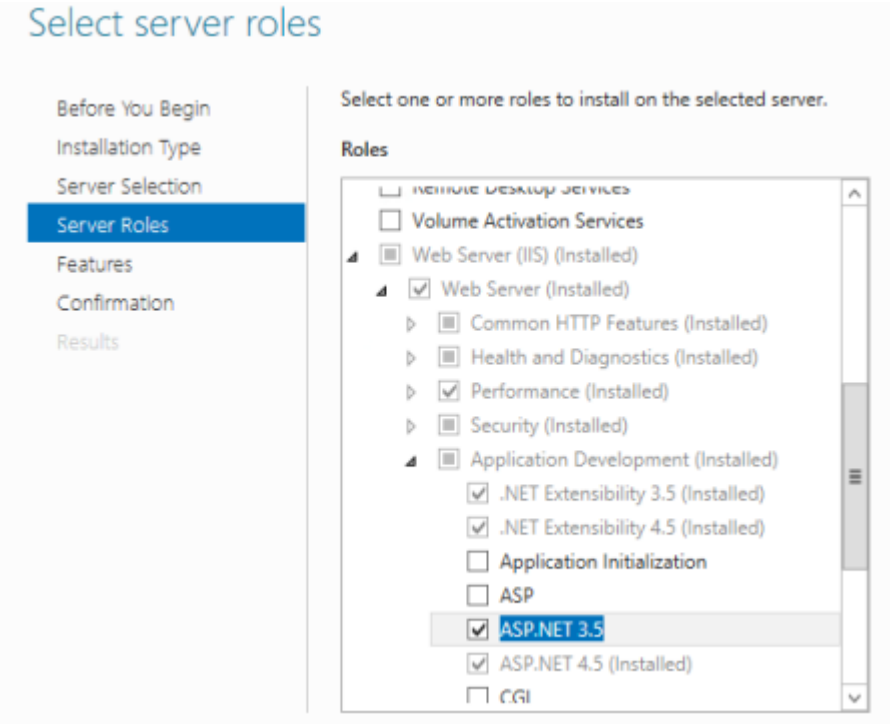
Server Manager will then need to be run a second time in order to add .Net Framework 3.5. This is necessary because the installation path specification for Windows 2012 legacy components is not the same as new Windows 2012 components.

When running Server Manager for the second time, make the following selections:

- It is not necessary to make any changes to the Server Roles; Web Server (IIS) should still be selected.
- In Features, make sure that .Net Framework 3.5 Features is selected, and inside that option, also select HTTP Activation. When that option is selected, a pop-up will appear showing additional components that will be installed.

Finally .Net Framework needs to be activated within IIS. To enable this feature, perform the following steps in Server Manager:

- In Server Roles, navigate to Web Server (IIS), expand that section to locate ASP.NET 3.5, and select it as shown below:



In Windows 2012 R2, it is possible to install these required components using the following PowerShell command:

Install-WindowsFeature Web-Server -Source WIM:D:\Sources\Install.wim:4 ; Install-WindowsFeature Net-Framework-Features, NET-Framework-45-Features -Source D:\Sources\SxS ; Install-WindowsFeature Web-Asp-Net, Web-Net-Ext45, Web-Mgmt-Tools, Web-Windows-Auth, Web-Dyn-Compression, Web-Http-Redirect, NET-HTTP-Activation -Source WIM:D:\Sources\Install.wim:4 ;

NOTE: Ensure you adjust the command line to the correct paths required for the media on your system.

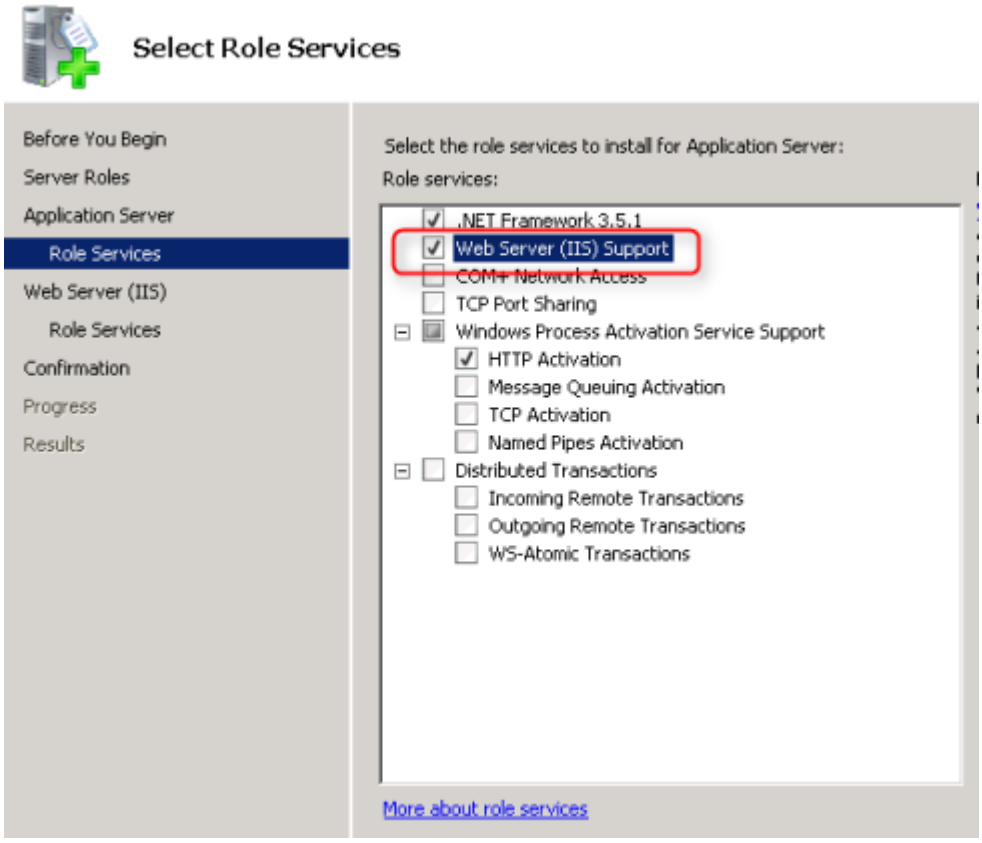
Windows Server 2008 R2

To ensure the required components are installed, perform the following steps in Server Manager:

- In Roles, add the following:
  - Application Server
  - Web Server (IIS)

When “Application Server” is selected, a pop-up will appear that lists some additional components and features that will be installed.

- For the Application Server “Role Services”, make sure “Web Server (IIS)” is selected.



When Web Server (IIS) is selected, a pop-up will appear which lists some additional components and features that will be installed. After that selection is confirmed, “HTTP Activation” will be automatically selected under “Windows Process Activation Service Support”.

- For the Web Server (IIS) “Role Services”, no additional selections are needed.

Note: When installing the required Windows 2008 R2 components, make sure that you have the installation media available and configured/specified in Server Manager if required.

.Net Framework 4.5 or later should then be installed. A link to this is provided in the Archive Shuttle Core installer.

Following the installation of these components on Windows 2008 R2, a system restart may be needed.

Microsoft Edge

Archive Shuttle recommends that you have Microsoft Edge installed in order to successfully configure and use Archive Shuttle.

NOTE: If Internet Explorer is to be used to manage Archive Shuttle, then the machine names and IP addresses that will be used should be added to the Internet Explorer Trusted Sites.

ASP.NET State Service

The ASP.NET State Service needs to be set to “Automatic” start. The default setting for this service is manual.

SQL Server

For a list of supported versions of SQL Server, see the Archive Shuttle Compatibility Guide.

NOTE: It is recommended to have the latest SQL Server service pack installed..

SQL Server editions

Although Enterprise Edition of Microsoft SQL Server is recommended, Standard Edition may be used if the SQL instance uses the recommended (not minimum) resources associated with the size of migration you are performing. Planning for additional time will be required to accommodate regularly required offline maintenance.

SQL collation

The collation for the SQL Server installation must be case-insensitive, accent-sensitive (CI, AS); case-sensitive and accent-insensitive installations are not supported.

Archive Shuttle recommends using latin1_General_CI_AS.

SQL server CLR types

Install a supported version of the Microsoft SQL Server CLR Types (64-bit) using the Microsoft supplied installation files. The Archive Shuttle installer has a download option for a supported version.

The download link used in the installer is:

http://go.microsoft.com/fwlink/?LinkID=239644&clcid=0x409

SQL Server Management Objects

Install a supported version of the Microsoft SQL Server Management Objects (64-bit) using the Microsoft supplied installation files. The Archive Shuttleinstaller has a download option for a supported version.

The download link used in the installer is:

http://go.microsoft.com/fwlink/?LinkID=239659&clcid=0x409

NOTE: The links are given in the sections above in case the files are to be downloaded to a staging area. For example, when the Archive Shuttle server will not have direct internet access.

SQL Server Software Configuration

Both Windows Authentication mode and Mixed Mode Authentication are supported.

The SQL installation must be case-insensitive; case-sensitive SQL installations are not supported.

PowerShell module requirements

Before installing the PowerShell Module the following requirements need to be met:

- .Net Framework 4.0
- Exchange Online PowerShell module
  - Minimum: v3.0.0
  - Recommended: v3.2.0

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Supported browsers

The following table shows the browsers that can be used to access the Archive Shuttle interface:

Browser	Supported?
Microsoft Edge	Yes
Internet Explorer	No
Firefox	No
Chrome	No
Opera	No
Chromium	No
Opera	No
Safari	No

NOTE: Microsoft Edge requires that the Compatibility View for local intranet sites setting to be deactivated.

5

Permissions requirements

In general, requirements relating to permissions can be split into two categories:

- Accounts / Permissions needed for running the Core
- Accounts / Permissions needed for running the modules

Each of those can use independent permissions. In fact, if required, each module can use independent permissions from each other module. And that account can be different from the one running the Core.

Installing the Core typically requires a plain domain service account with Local Admin permissions on the machine and the dbcreator role on SQL. Installing Modules requires a plain domain service account with Local Admin permissions (for the install only) and then different permissions, depending on the role of the module.

- Core: Local Admin
- Module: Local Admin
- SQL: DBCreator
- Staging: Full rights for Module users

Sources/targets:

- Enterprise Vault: EV Service Account
- Exchange / Office 365: Domain service account with Local Admin rights (to run the module)
- Exchange: Multiple accounts with Application Impersonation will be added to our Credential Editor
- Office 365: 5 Office 365 service accounts will be added to our Credential Editor. All 5 accounts need Application Impersonation rights and 1 needs a custom admin role.

Minimum permissions for migrations to Office 365

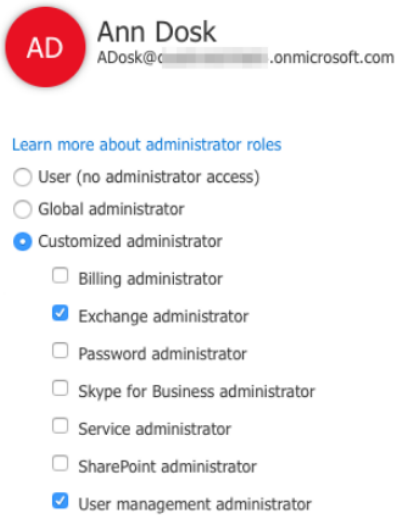
NOTE: Basic authentication has been deprecated from Archive Shuttle 11.0. For authentication under modern authentication (OAuth) in Archive Shuttle, go to the *Archive Shuttle Planning Guide*.

In some organizations using a user with Global Admin rights is not desirable. This topic describes an alternative approach.

For Archive Shuttle, a user can be giving a ‘customized administrator’ role, containing:

- Exchange Administrator
- User Management Administration

This is shown in the screenshot below:



With those options enabled, the required permissions will be available. When entering this user information into the Credential Editor, the check box should be enabled next to Global Administrator.

NOTE: The global administrator account needs to be able to authenticate using basic authentication.

Additional requirements for imports to Exchange

NOTE: This section is for ingesting data into Exchange 2010 SP 2 or later.

Additional Permissions (Exchange 2010 SP 2 or later)

The Archive Shuttle Exchange Import module ingests data in to Exchange mailboxes or Personal Archives using MAPI. However, certain messages may fail to ingest using this mechanism even after a number of retries. By default the module will fall back to use Exchange Web Services (EWS) when this situation arises.

In order to support this failback, the service account that is being used to ingest the data must be granted an additional role within Exchange.

An example of the PowerShell command that can be used to grant this extra permission is shown below:

[PS] C:\>New-ManagementRoleAssignment -Name:VaultAdminImpersonization -Role:ApplicationImpersonation -User: ADomain\TheUser

Additional Permissions (Exchange 2010 SP1 or earlier)

Ingestion to versions of Exchange 2010 SP 1 or earlier can be done by using EWS only. This means that the ingest provider order, on the System Configuration page, should be updated to show just EWS.

In order to support this feature, the service account that is being used to ingest the data must be granted an additional role within Exchange.An example of the PowerShell command that can be used to grant this extra permission is shown below:

[PS] C:\>New-ManagementRoleAssignment -Name:VaultAdminImpersonization -Role:ApplicationImpersonation -User: ADomain\TheUser

Recommended Bitness

It is recommended to use 64 bit modules when ingesting data into Microsoft Exchange. In many environments an ingest bridgehead server is used to perform the ingest, and whilst the machine (physical or virtual) may have 16 Gb or more RAM, out of memory errors may be observed from time to time if the regular, 32 bit modules are used.

To use the 64 bit modules it will be necessary to install 64 bit Outlook, and then the 64 bit modules. These modules will utilize RAM beyond the normal 2 Gb Windows process limit allow for faster and more reliable migrations to take place.