Windows System State Backup Set

Last modified: 2019/08/21 (Note: Content written for AhsayCBS v7+v8, and still generally apply to latest product release)

AhsayOBM allows you to back up the Windows System State with the Windows System State Backup Set. ×

Windows System State backup and restore operations include all system state data, and you cannot choose to backup or restore individual components due to dependencies among the system state components. System State data are comprised of the following files:

- Boot files, including the system files, and all files protected by Windows File Protection (WFP)
- Active Directory (on a domain controller only)
- SYSVOL (on a domain controller only)
- Certificate Services (on certification authority only)
- Cluster database (on a cluster node only)
- Component Services Class registration database
- Performance counter configuration information
- Microsoft Internet Information Services (IIS) meta directory (on an IIS server only)
- Registry

The size of a set of system state backup data is dependent on the role installed on the server. Please refer to the following article for more details:

- For Windows XP and Windows Server 2003:
  https://msdn.microsoft.com/en-us/library/windows/desktop/aa381498
- For Windows 2008 and newer releases:
  https://msdn.microsoft.com/en-us/library/windows/desktop/bb968830

Preparation

Hardware Requirement

To achieve the optimal performance when AhsayOBM is running on your machine, refer to the following link for the list of hardware requirements for AhsayOBM: Ahsay Hardware Requirement List (HRL) for version 8.1 or above

Software Requirement

Make sure the operating system where you need the Windows System State to be backed up is compatible with the AhsayOBM. Refer to the following link for the list of compatible operating systems and application versions.
[public:8001_faq:ahsay_software_compatibility_list_scl_for_version_8.1_or_above|Ahsay Software Compatibility List (SCL) for version 8.1 or above]]

Antivirus Exclusion Requirement

To optimize performance of AhsayOBM on Windows, and to avoid conflict with your antivirus software, refer to the following link for the list of processes and directory paths that should be added to all antivirus software white-list / exclusion list: Suggestion on antivirus exclusions to improve performance of Ahsay software on Windows

Requirements and Limitation

For Windows XP and Windows Server 2003

Please be noted that:

1. Windows XP home is not supported for the system state backup and restore by AhsayOBM.
2. As Windows XP and Windows 2003 are no longer supported by Microsoft any more, Ahsay will provide best effort support for backup and restore for these 2 Windows platforms.

AhsayOBM Installation

Make sure that the latest version of AhsayOBM is installed on the computer to be backed up. User should also stay up-to-date when newer version of AhsayOBM is released.

Add-on Module Requirement

Make sure that the Windows System State add-on module is enabled for your AhsayOBM user account.

Backup Quota Requirement

Make sure that your AhsayOBM user account has sufficient quota assigned to accommodate the storage for the system state backup for the new backup set and retention policy.

AhsayOBM Licenses

AhsayOBM licenses are calculated on a per device basis:

- To backup users with 1 backup client computer (e.g. 1 AhsayOBM installed), 1 AhsayOBM license is required.
- To backup users with multiple backup client computers, the number of AhsayOBM licenses required is equal to the number of devices. For example, if there are 10 users to be backup with 3 backup client computers, then 3 AhsayOBM licenses are required.

Restore to Alternate Computer

You can restore a system state backup to the same physical computer from which the system state backup was created, or to a different computer that has the same make, model, and configuration (identical hardware). Microsoft does not support restoring a system state backup from one computer to a second computer of a different make, model, or hardware configuration.

Please refer to the following article for more details: http://support.microsoft.com/kb/249694

NTBackup

NTBackup must be installed on the computer to be backed up. This can be confirmed either by searching if ntbackup.exe is found under C:\WINDOWS, or running the following command in an

administrative command prompt:

```
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\support>ntbackup
```

You can verify if ntbackup is installed or not by the following interface pop out or not.

System Volume

The system volume must be formatted with NTFS.

For Windows Server 2008 and Newer Releases

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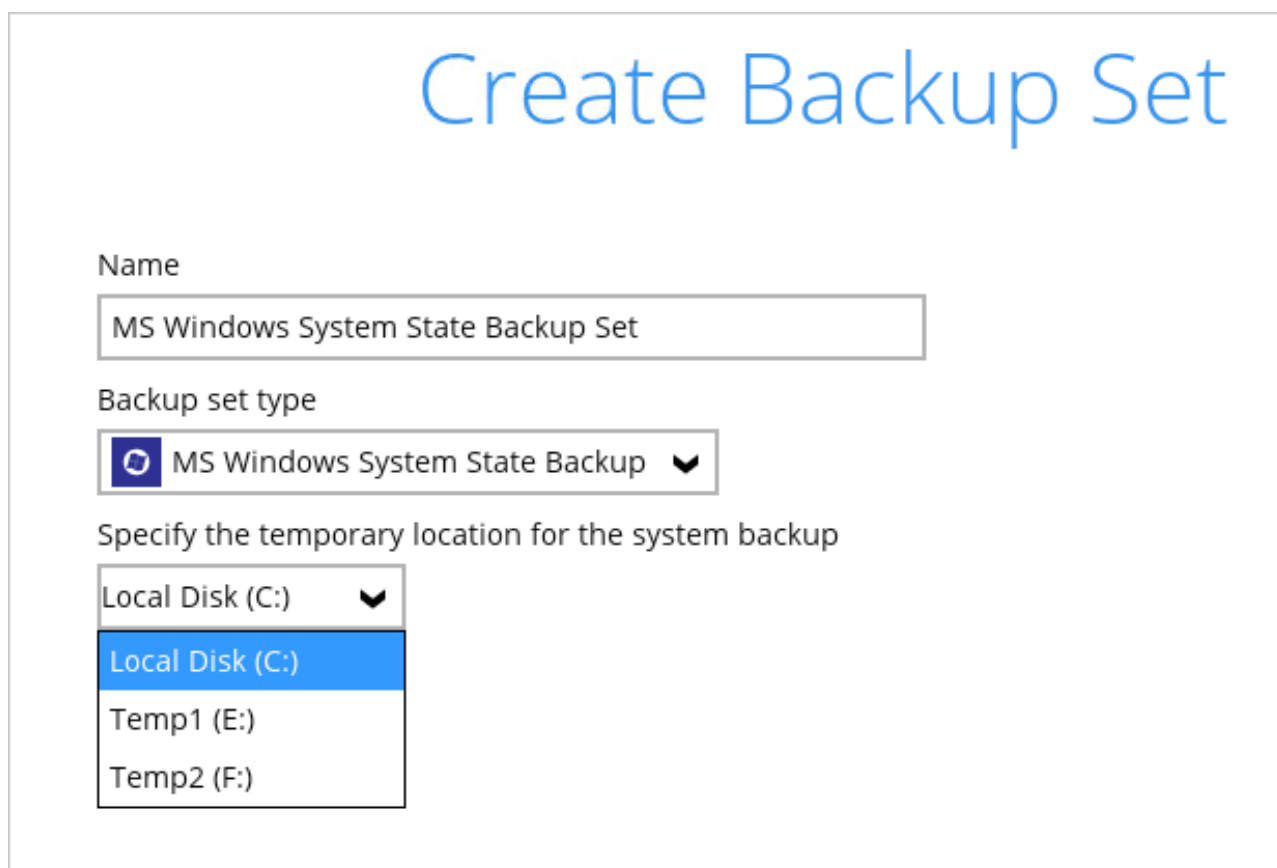
Memory Setting

The default Java heap size setting of AhsayOBM is 2048MB. For Windows System State backup, it is highly recommended to increase the Java heap size setting to at least 4096MB to improve

backup and restore performance. The actual heap size used will be dependent on amount of free memory available on the machine with AhsayOBM installed (machine that is running the backup).

For best performance, consider increasing the memory allocation setting for AhsayOBM (Java heap space). Refer to this link for more details about how to modify of the java heap size setting for AhsayOBM.

Temporary Volume

Make sure that the storage location configured for the system image is set to a supported location.

The temporary storage location is required by the WBADMIN utility to temporary store the image file during the backup set.

The machine requires an additional drive to accommodate the spooling of the System State image file. As you can on our sample screen shot above, we have three (3) drives in total, Local Disk C:, Temp1 E:, and Temp2 F:

If by any chance the machine has only one (1) drive and it is his/her Local Disk C:, then one of the following options will need to be implemented

- An extra physical drive will need to be installed
- The existing C: drive will need to be repartitioned to create an additional drive, i.e. D:
- A USB drive needs to be connected
- Setup a network drive

Please refer to the following link for details on the Restrictions on the temporary storage location for the Windows System State and System backup image file

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Windows Server Backup (WSB) Features

The following Windows Server Backup feature must be installed on the computer to be backed up:

- Windows Server Backup
- Command line Tool
- Windows PowerShell

This can be confirmed in the Server Manager. These features can be added by selecting Add Roles and Features.
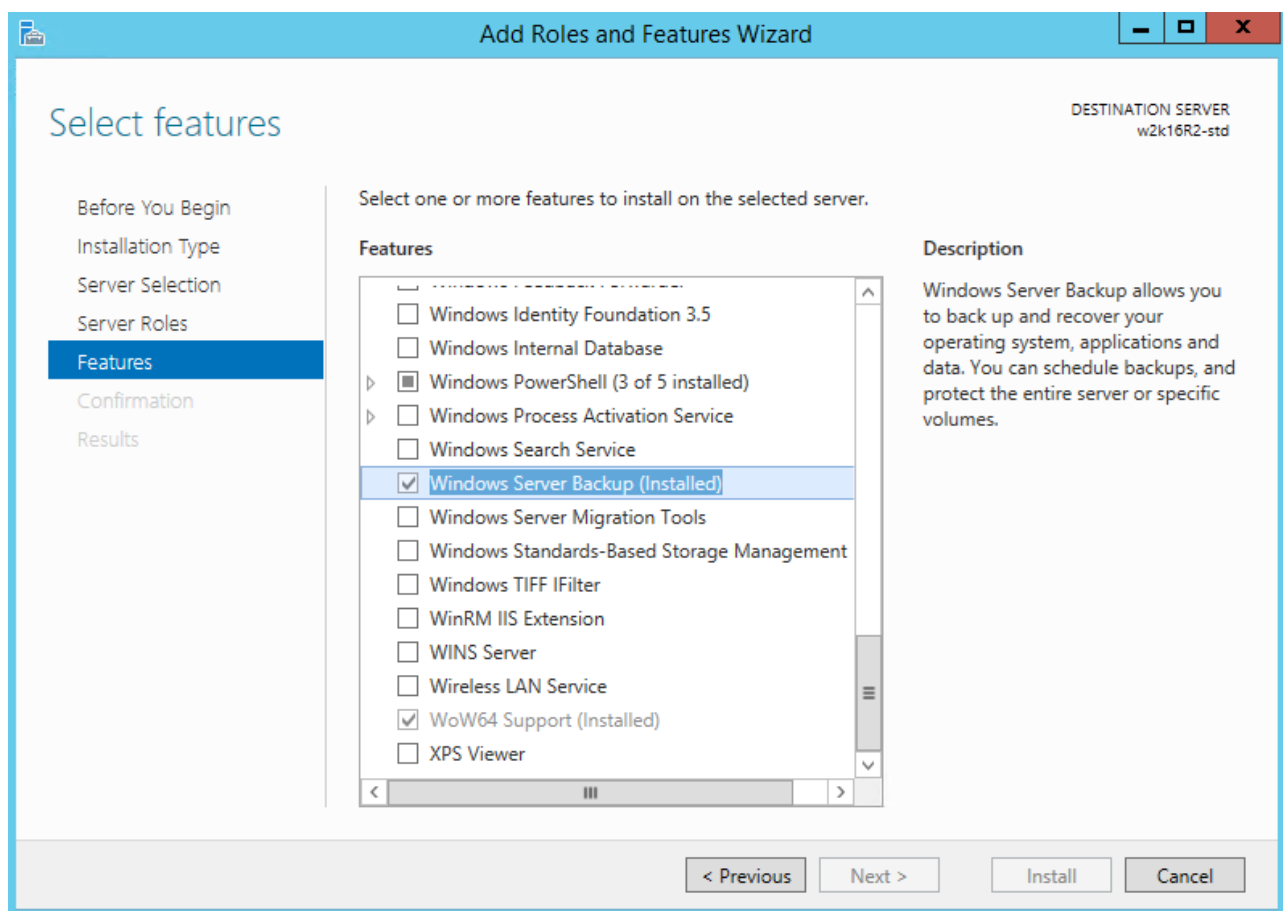
Windows Account Permission

To perform recovery using Windows Server Backup, the operating system account that you use must be a member of the Backup Operators or Administrators group.

Latest Service Packs from Microsoft

Make sure that you have the latest service packs installed on the computer to be backed up. Update to the Windows operating system improve its performance and resolve known issues with Windows Server Backup.

System Volume

The system volume must be formatted with NTFS.

Best Practice and Recommendation

The following are some best practices or recommendations that we strongly recommend, before you start any Microsoft System State backup and restore:

Temporary Directory Folder Location

Temporary directory folder is used by AhsayOBM for storing backup set index files and any incremental or differential backup files generated during a backup job. To ensure optimal backup/restoration performance, it is recommended that the temporary directory folder is set to a local drive with sufficient free disk space.

> NOTE Kindly noted that for Windows Server 2008 or newer releases, the restriction on temporary volume (Ch2.3.2) must also be considered.

Backup Destination

To provide maximum data protection and flexible restore options, it is recommended to configure:

- At least one offsite or cloud destination
- At least one local destination for fast recovery

Backup Frequency

MS Windows System State backup should be performed at least once per week.

Performance Recommendations

Consider the following best practices for optimized performance of the backup operations:

- Enable schedule backup jobs when system activity is low to achieve the best possible performance.
- Perform test restores periodically to ensure your backup is set up and performed properly. Performing recovery test can also help identify potential issues or gaps in your recovery plan. It's important that you do not try to make the test easier, as the objective of a successful test is not to demonstrate that everything is flawless. There might be flaws identified in the plan throughout the test and it is important to identify those flaws.

Documentation

- Windows System (Bare Metal) Backup and Restore

FAQs

- Difference between Windows System and System State backup sets
- Restriction on the temporary storage location for the Windows System State and System backup

Issues

- Cannot start a MS Windows System or System State backup job after a failed backup (Another backup job is still running)
- Incorrect error message 'Another backup job is still running' is displayed (MS Windows System / System State backup)
- MS Windows System / System State backup job cannot run to completion (for backup set with backup schedule disabled)