

## System State Backup Considerations and Recommendations

<https://campus.barracuda.com/doc/73701373/>

### General Considerations

This option lets you back up the computer's system state data.

A System State Backup is a backup of operating system configuration files and is recommended as part of a server disaster recovery plan. System State Backups include the:

- System Registry
- Active Directory; backs up only if you have the specified services installed
- COM + Database
- SysVol
- Certificate Services; backs up only if you have the specified services installed
- IIS Metabase; backs up only if you have the specified services installed

System State Backups are meant only for recovery to the same server, or to another server with the identical operating system and hardware. Microsoft does not support restoring System State to different hardware as referenced in the Knowledge Base article, <http://support.microsoft.com/kb/249694>.

### How the Intronis Backup Agent System State Backup Works

The Barracuda System State plug-in leverages the built-in Windows backup tools to create a System State Backup.

Windows 2008 however requires the Windows Backup utility to be installed, that does not come natively with the operating system.

You must add the Windows Server Backup utility through the Programs and Features section of the Control Panel.

If you are on a Server 2008 installation and System State is not displayed as an option in the ECHOplatform agent software, then you do not have Windows Backup installed.

With the above Windows utilities installed, set the schedule in the ECHOplatform agent software and the number of weeks of backup you would like to keep. The ECHOplatform agent software calls these utilities to create the backup file on the system before the ECHOplatform agent backs up the file to Barracuda servers.

In accordance with Microsoft best practices, System State is scheduled by default to run once weekly. However, you can run the System State Backup every day if you desire.

NTBackup generates a .bak file that the ECHOplatform agent software backs up to the remote servers. To restore the information, select the file with the ECHOplatform agent software to restore the file to your computer.

Windows Server Backup creates a number of small files that the ECHOplatform agent packages and bundles into a .tar file. After you restore the .tar file using the ECHOplatform agent software, you can unzip the files, and point Windows Backup to the directory to restore the files.

The ECHOplatform agent Intelliblox technology saves block-level differentials from backup to backup, frequently however there are too many changes between the files to save. Allot more space in your backup plan based on the number of System State Backups you are planning to keep.

## Specific Restrictions and Recommendations

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System state backups for Server 2008 are done with the Windows Server Backup program that does not come pre-packaged with Windows.

In Server 2008, Microsoft requires that you perform the System State Backup on a non-critical volume. A critical volume is a drive that contains files and programs that the operating system uses. The Windows Backup utility creates the backup file on this non-critical volume and then Barracuda backs up the file using the ECHOplatform agent software. One option with Server 2008 is to create a new partition with 15 – 20 Gbs free and use that for the System State Backup.

Microsoft uses its own criteria to determine what a critical drive is, so the ECHOplatform agent does not have the ability to create the backup file on a drive that is marked as critical by the operating system. If you only have one hard drive, use a portable hard drive to create the backup file. This portable drive can be used as temporary space for other backup sets or as your local vault.

If you do not have another drive or the ability to use a portable drive, Microsoft does have a work around in this Knowledge Base article, <http://support.microsoft.com/kb/944530>. The article details making modifications to the registry to use a critical drive to create the backup file and works for local system state backups but not ones run with the ECHOplatform agent software.

Windows 2008 system state backups do not adequately function as disaster recovery. The backups are designed for snapshot reversion only. Because of limitations in the Windows Backup feature, you may only recover to the exact same installation of Windows on the exact same hardware. If you try to restore to a different installation of Windows, even if it has identical hardware, the restore fails. See <http://support.microsoft.com/default/kb/249694> for more detail.

System State Backups for Server 2008 can be up to five or more Gbs in size. These sizes are dependent on the machine backing up and are determined by the Windows backup utility.

**System State backups can only recover to the same server or to another with the identical operating system and hardware. Microsoft does not support restoring System State to different hardware.**

For more information as to why the backup size is larger for Server 2008, review this article:

<http://blogs.technet.com/b/filecab/archive/2008/03/03/volume-shadow-copy-service-vss-writer-update-s-in-windows-server-2008-and-vista-sp1.aspx>.

### System State Backup Failing on Server 2008

The Intronis Backup agent calls the Windows Server Backup utility to create the backup, and then bundle the files into a single zip file for upload.

Windows Server Backup needs to be installed. You need 7 to 10 GB of free space on a local drive.

Backups must be written to a non-critical drive (Microsoft requirement), and this drive cannot not contain operating system files or registry entries in the backup set.

If your temporary folder is also on this non-critical drive, you need free space at least two times the size of the system state backup file to back up the file successfully.

### Resolution

- Use Intronis Backup logs to view errors: Activity > Browse Previous Actions. Double-click a job to view logs.
- Search the Barracuda Knowledge Base for one of the common exit codes (2 & 3)
- Check Windows Event Viewer Application Logs for more information.
- When in doubt, run a command line backup in Windows using the Wbadmin. If the command runs, the issue is isolated to the Intronis Backup agent software: `wbadmin start systemstatebackup -backuptarget:G: (Where G is target drive)`

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