



MESSAGE FORM

(INSTRUCTION: FILL-UP BOXES INSIDE DOUBLE LINES ONLY)

FOR COMCEN/SIG USE

PRECEDENCE ACTION/PRECEDENCE INFO
"PRIORITY"

FM: CG, PA

TO: All Unit Commanders
Attn: G6/Signal Officer/IS Officer

INTERNAL: All G-Staff, Personal, Special &
Tech Staff, C, AOC/SAGS/XA

INFO: CSAFP
Attn: J6

GROUP:

11 April 2016

SECURITY CLASSIFICATION:

CONFIDENTIAL

ORIGINATOR:

6/CMB 1104-51-2016

1. References:

- a. Command Guidance, and;
- b. VAPT and PANET Monitoring Result.

2. As per above references, forwarded is the Cybersecurity Bulletin Number 053 with topic regarding **The PC Backup and Restore Guide (2 of 2 Parts)**.

3. ITR, all concerned G6/Signal Officers/Information System Officer/NCOs are reminded to include this information as part of TI & E on all of its subordinate units as part of enhancing the Cybersecurity Awareness of the Philippine Army.

4. For information and widest dissemination.

DRAFTER'S NAME AND TITLE

LTC JOEY T FONTIVEROS (INF) PA
Chief, CMB, OG6, PA

PHONE NR:

6630

RELEASER'S NAME AND TITLE

COL VENER ODILON D MARIANO GSC (SC) PA
AC OF S FOR CEIS, G6, PA

Army Vision: By 2028, a world-class Army that is a source of national pride

HEADQUARTERS
PHILIPPINE ARMY
**OFFICE OF THE ASSISTANT CHIEF OF STAFF FOR
COMMUNICATIONS, ELECTRONICS AND INFORMATION SYSTEMS, G6**
Fort Andres Bonifacio, Metro Manila

6/CMB

11 April 2016

CYBERSECURITY BULLETIN

Cybersecurity Bulletin: #54

**The PC Backup & Restore Guide
(2 of 2 Parts)**

Separate Personal Files from Windows Files and Programs

The first and most important advice is to organize your files in such a way that very little is stored on your system drive or partition. Ideally, all your personal data should be stored on a separate partition or hard drive. This strategy has several advantages:

1. Your personal data will be safe if your system fails. Nothing to worry about!
2. Your personal files will live in one location. Simple to backup!
3. When reinstalling your system, you have to restore less data. Faster setup!

To move personal files from your system drive, you either have to install a second hard drive or create an additional partition on your primary hard drive. The latter option is completely free and can be done anytime without installing additional tools.

Info: Skip This Step. *You can skip creating a data partition if you already have a second hard drive or partition installed that you can use to routinely store and access user profiles and personal data. Note that this space cannot double as your future backup location, as it will obviously store original data!*

Create a Data Partition

While it's generally safe to move data around or re-partition a hard drive, things can go wrong and you should rather be safe than sorry. Thus, if you haven't yet prepared a raw backup, please return to the beginning of this chapter and do so now.

For the system partition, i.e. your C: drive, you have to calculate at least 20 GB (20,480 MB), more if you tend to install a lot of software. A minimum of 5 GB (5,120 MB)

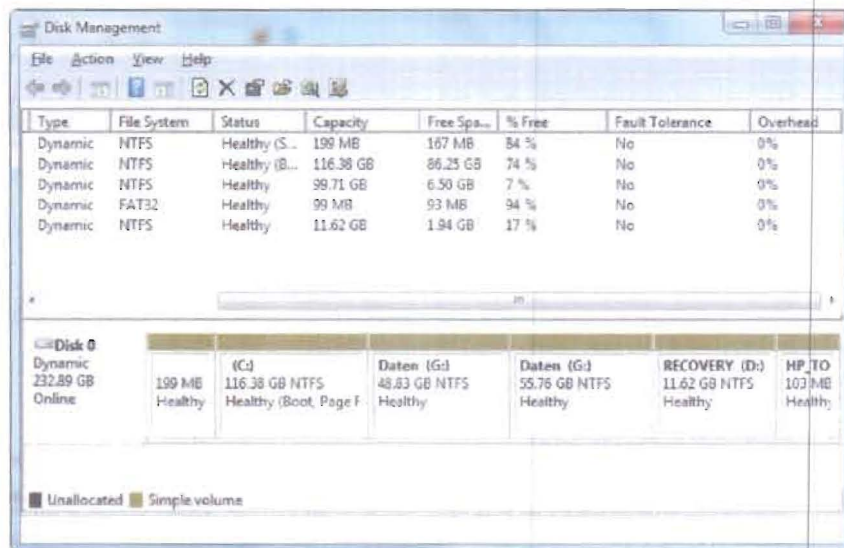
Army Core Purpose: Serving the people. Securing the land.

Army Vision: By 2028, a world-class Army that is a source of national pride

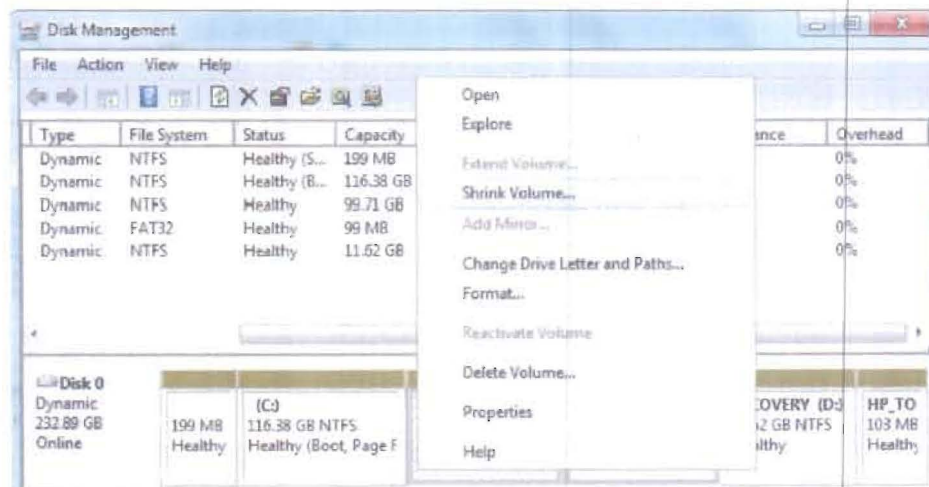
extra should always be available on the C: drive, otherwise Windows will become slow and unresponsive.

Any additional space can be dedicated to the new data partition. To manage your Windows 7 partitions, go to > Start, type > partition in the search field, select the option > Create and format hard disk partitions and hit > Enter.

The Disk Management tool shows all your partitions, their size and how much free space is left. To create a new partition, you first need to shrink the system partition by the respective size. This creates unallocated space that you can subsequently allocate to your data partition.



Right-click the partition you wish to shrink and select > Shrink Volume... The tool will query the volume for available shrink space and then let you specify the amount by which you wish to shrink the volume in MB. Make your entry and click > Shrink to start the process.



Army Core Purpose: Serving the people. Securing the land.

Army Vision: By 2028, a world-class Army that is a source of national pride

Once you have freed up space, it will appear as > Unallocated in your Disk Management tool. You can assign the unallocated space to an existing partition or create a new partition.

To add the space to another partition, right-click the respective partition, select > Extend Volume... and assign all available space to that volume.

To create a new partition from the unallocated disk space, right-click it and select > New Simple Volume... The New Simple Volume Wizard will guide you through the steps of creating a new volume. You can pick the amount of unallocated space you want to assign to the new partition, a drive letter, and the file system in case you want to format the free space.



How often should I run a backup?

In one word: **OFTEN!**

Well, the truth is there are files you don't need to back up every day or even every week. For example, large data collections that barely change only need to be backed up every other week or month, depending on how often you add to them. Files you change daily or weekly, for example emails or work documents on the other hand, should be backed up at least once a week or every other day.

Important files that you access and edit daily, maybe even from different computers, can be stored in one folder and synced with online storage space. This process can be automated, so that you don't even have to think about making the backup.

Let me repeat that you need to run backups regularly. The frequency depends on how often the files change and on how important the changes are. Rule of thumb: the more often you change files in a specific folder and the more important these files are, the more often you need to back up the respective folder.

What are the best backup and restore tools and strategies?

Up to this point you have organized your data to perfection or rather perfect simplicity, you understand how important a backup is, and you know which backup media you can use and where to store them. The question is, how do you make this entire

Army Core Purpose: Serving the people. Securing the land.

process as painless and convenient as possible? The succeeding discussion will show you how to make smart backups and automate the backup process.

Types of Backups

To choose the right backup strategy, it's important to understand that there are different types of backups and how they work:

Full Backup

A full backup is a 100% copy of the original files. It is typically saved to a fresh folder that carries a timestamp. This is the traditional way to back up files. Since every single file is copied, the full backup is the **slowest** of all backup types.

Differential Backup

A differential backup backs up all files that have changed since the last **full backup**. This means it adds all new and updated files to an existing full backup. If other backups were made in the meantime, i.e. another differential or an incremental backup, files that were backed up during these sessions will be backed up again, since differential and incremental backups are not full backups. This is the **safest** way to update an existing backup because you will be able to return to a previous version of a file or in case one of the differential backups was corrupted, you may have another copy that works.

Incremental Backup

Like a differential backup, an incremental backup backs up only changed files. The difference between the two is that the incremental backup simply backs up files that were changed since the previous backup, no matter whether this was a full, differential, or incremental backup. This is the **fastest** way to update an existing backup.

Sync

Technically, syncing is a form of backup. The difference is that it works in multiple directions. For example you can sync files between two computers; when the file is edited on one computer, the latest copy is synced to the second computer and vice versa. As you may have guessed, this method is interesting if you access and edit files from different locations, e.g. your home and your work computer.

Backup Strategies

You can either back up everything as you did with the raw backup at the beginning of this manual, or you can revert to smart backups using the backup types above. A smart backup saves time, hard drive space, and preserves energy. The smart backup strategy is to create different types of backups, depending on what you are backing up, and creating automatic schedules that will help you not to forget or skip a backup.

Army Core Purpose: Serving the people. Securing the land.

Online Backup or Sync

Backing up files online has the advantage that you can access them from anywhere, provided you have an internet connection. Since the servers that store your data are generally backed up themselves, this is also the safest way to back up your files. Since server space is expensive, you should only back up your most heavily accessed files online.

What keeps many people from storing data online or 'in the cloud' is the notion that it's easy to access, copy, and abuse data stored online. However, the risk of being hacked is the same for any device that is connected to the internet. Besides, servers are typically secured better than the average home computer.

Documents

For documents differential backup is recommended. This way you can return to previous versions of a document in case something went wrong. Depending on how often your documents change, a daily or weekly backup should be set up.

Application Profiles and Files

In Windows 7 it's your best bet to back up the entire AppData folder in your user profile. Due to the complexity of this folder, it is recommended to make a full backup once a week. If you don't want to back up anything and everything in the AppData folder, you can also use tools to back up and restore profiles of specific applications.

Collections

For large file collections, i.e. music and movies, you only need to keep one full backup that you update regularly. For this purpose it is recommended to set up a weekly or monthly incremental backup that runs on a set schedule. Remember that if you edit the original collection, files deleted will still be present in your backup. Hence you should make a full backup after removing files or folders from the original copy.

Seasonal

A seasonal backup is recommended to set up for files and folders you don't change often. For example when you return from a vacation you probably upload photos from your digital camera to your computer and sort them into respective folders. This is when you should run an incremental backup to add these files to your backup. You can do the same for music or movie downloads and run those backups whenever you feel it's necessary.

Online Sync: Dropbox

Dropbox is the most convenient solution for backing up and syncing your files. You can install Dropbox on several devices and sync files or folders by adding them to the Dropbox folder. If you're at a computer that isn't yours, you can access your personal Dropbox folder via the web interface. The basic free plan is limited to 2GB storage.

Further reading: [Using the Magic Pocket: A Dropbox Guide](#), [How To Easily Synchronize Folders Outside Dropbox Using Symlinks](#), [5 Cool Apps That Make Dropbox Even More Useful](#)

Backing Up Other Devices

You likely have data not only on your computer, but also on your mobile phone or even stored in online accounts like Facebook or Google Mail. Did you ever consider backing up this data? Below is a list of articles that will shed some light.

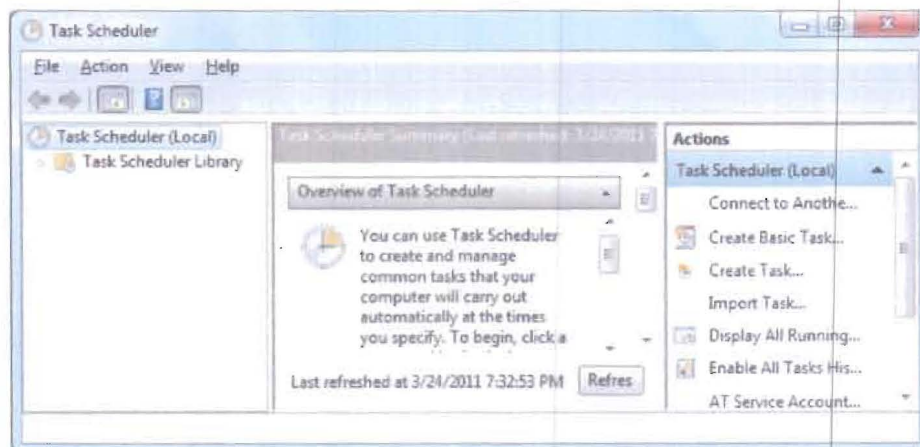
Further reading: [How To Backup & Archive Your Facebook Data](#), [4 Tools to Backup your Mobile Phone](#), [How To Backup Your Gmail Account To YOUR Hard Drive](#), [The 2 Best Non-Techie Ways To Backup Your WordPress Blog](#)

More articles on: [Backup](#)

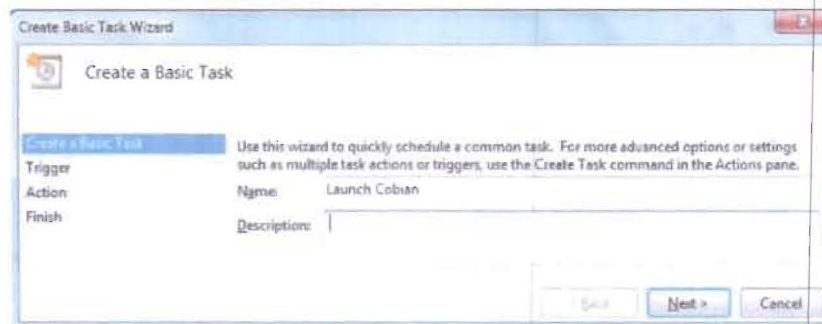
Scheduling

Some of the tools above do not provide a scheduling option. Or you may not want to run the tools in the background all the time. In either case, an easy way to automate the backup or at least remind yourself is to create a scheduled task in Windows.

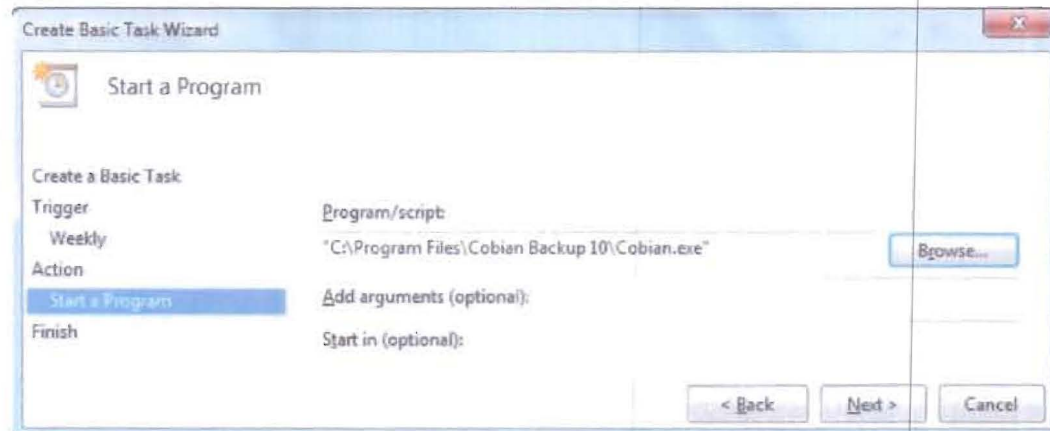
Go to > Start and type > schedule into the search field. Under > Programs open the result > Task Scheduler.



Click > Action and > Create Basic Task.



Enter a > Name and > Description if you want, then click > Next to switch to the > Trigger tab. Pick your schedule preference and enter the details. In the > Action tab select > Start a program, click > Next and > Browse for the program's .exe file.



In the next tab review your changes and click > Finish.

Further reading: [Schedule a task](#), [Configure a Scheduled Task Item](#)
More articles on: [Scheduled Tasks](#)

Where should I back up to?

You can back up your files in many different ways. The most common backup media include CDs, DVDs, Blu-ray discs, hard drives, flash drives, and online server space. They all have advantages and disadvantages, which we will review below. It is recommended that you maximize the advantages and thus pick different storage methods for different purposes.

Comparison of Different Backup Media

	Advantages	Disadvantages
Local Hard Drive	cheap large storage space medium transfer speed	not portable not safe from local events medium lifetime (3-5 years)
External Hard Drive	cheap portable large storage space medium transfer speed safe if stored separately	easily damaged short lifetime (2-5 years)
CD or DVD	super cheap ultra portable very robust good lifetime (10-50 years) safe if stored separately	very limited storage space typically not rewritable easily lost or forgotten slow burning process
Blu-ray	ultra portable reasonable storage space very robust long lifetime (50+ years) safe if stored separately	expensive typically not rewritable easily lost or forgotten slow burning process
Flash Drive	super portable reasonable storage space robust fast transfer speed safe if stored separately	limited read/write cycles lifetime based on above easily lost or forgotten
Online Server Space	unlimited storage space available everywhere off-site, cannot be damaged typically backed up indefinite lifetime almost 100% safe	expensive requires internet connection slow upload potential security risks

Which Backup Medium to Choose

First of all, it's important to realize that it's a good idea to use different backup media for different purposes. The more important your files are, the more conservative and secure the backup medium should be (CD, DVD, Blu-ray). Files that are changed frequently should be backed up often to a location that allows frequent re-writes (hard drive). If you want to access files from more than one location, you should consider backing them up to portable media (external hard drive, flash drive) or online.

Where to Store Backup Media

Army Core Purpose: Serving the people. Securing the land.

The physical storage location is often a neglected point. While you may choose to back your files up to an external drive, what good is that backup if the external drive is stored right next to your computer and the house burns down? There is no easy solution to this problem, but below are some suggestions.

Documents Your Life or Business Depends On

Since you are going to save very important files on an ultra portable backup medium like a DVD, Blu-ray disc, or a USB flash drive, you can easily store them away from your computer. Keep them in a fire proof safe, give them to someone you trust, put them into your drawer or locker at work or school, or hide them in your car. If these documents contain sensitive information, be sure to encrypt the backup!

Personal Files

Photos, scanned documents (i.e. digital backups), emails, address books and other personal files that you cannot retrieve once lost should be stored as safely as possible. Consider storing them online or back them up to an external drive that you store away from home.

Large Collections

Most of us hoard data. Whether it is music, YouTube videos, or movies, we have hundreds of gigabytes of data that we spent days and weeks to collect. These files should be stored on a portable hard drive and if you have the chance, store that drive in a different room. If your entire house burns down, those files will be the least of your worries, but if only your computer blows up, you wish you would have been smart enough to keep the external drive elsewhere.

How can I back-up and restore my operating system?

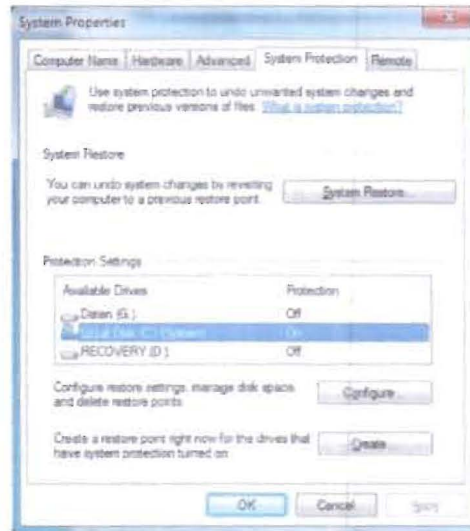
At this point your data should be safely backed up. However, you can go one step further and back up your entire operating system. While installing an operating system nowadays is pretty simple, it still takes a lot of time. Below are two strategies that can save you the hassle of setting up your entire operating system.

System Restore Points

With system restore points, Windows provides an easy solution for undoing changes made to the operating system. You should create a restore point before every major Windows update, updating drivers, or changing system settings. When things go wrong, you can easily return to a working version of Windows without having to waste hours on troubleshooting or even reinstalling the system.

Create a Restore Point

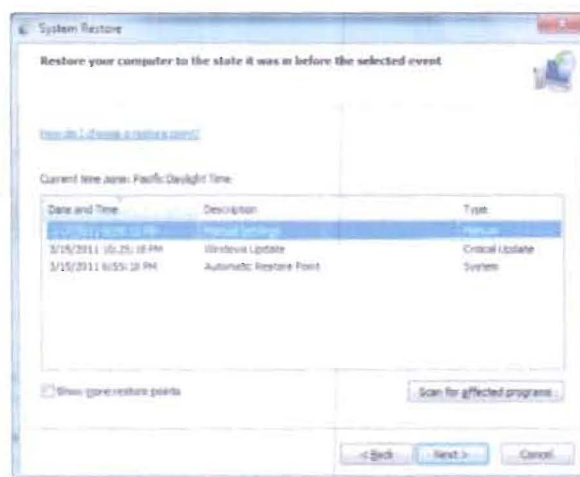
Go to > Start and type > restore point into the search field. Under > Control Panel open the entry > Create a restore point. A window called > System Properties will open and show the tab > System Protection. Under > Protection Settings make sure that > Local Disk (C:) (System) is > On. Otherwise select > Local Disk and click > Configure to change the settings accordingly.



For a new Restore Point click > Create..., add a description and click the > Create button.

Use a Restore Point

In the event that you need to restore settings, go to > Start and type > restore into the search field. Under > Programs click > System Restore. In the window that comes up click > Next, select your previously created restore point, click > Next again, and if you are sure you want to proceed click > Finish.



Drive or System Image

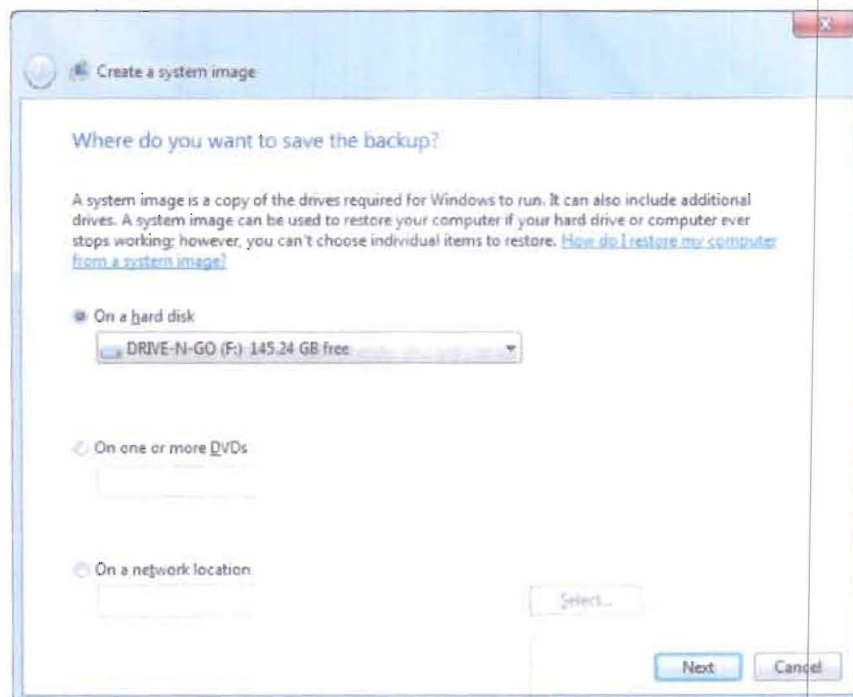
With a drive image you can create a copy of an entire hard drive, including your operating system. The system image allows you to quickly restore an operating system, for example after a hard drive failure. You could also copy the perfect setup from one computer to another. If you have a good drive image, you will never have to install Windows again, as you can use your backup to restore the entire system.

A drive image can be prepared anytime, but should preferably be taken from a stable system. Ideally, a drive image contains a complete setup including all the programs you use routinely and your personal settings, e.g. internet connection, theme, wallpaper etc. A drive image should not contain any personal data as they take up a lot of space and might be outdated by the time you use the image.

Create a System Image

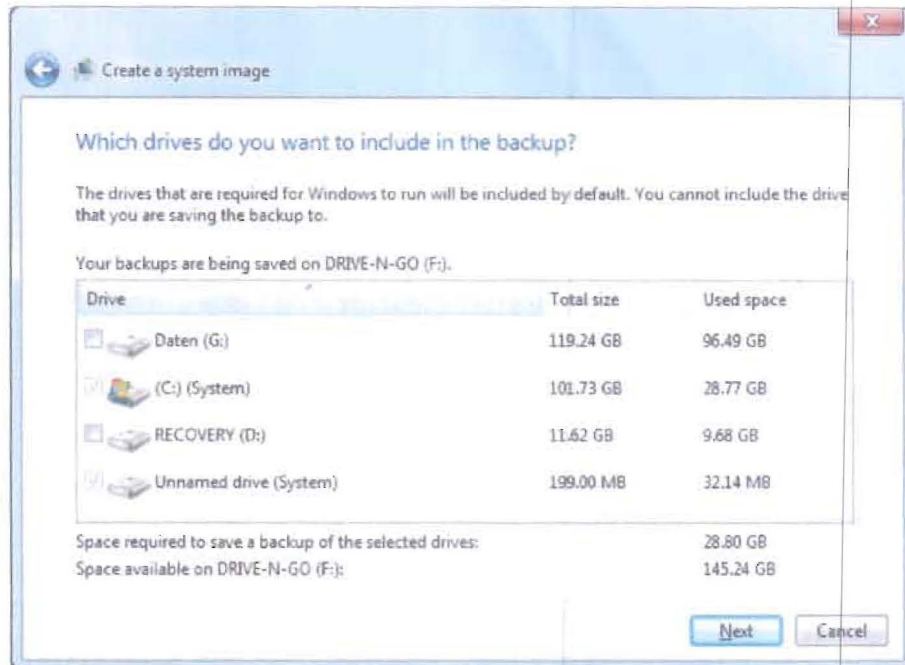
Go to > Start and type > backup into the search field. Under > Programs click > Backup and Restore. In the window that opens click > Create a system image in the top left.

A new window will come up. Note that the destination for the system image has to be the same size or bigger than the drive you want to back up. Select where you want to save the system image and click > Next.

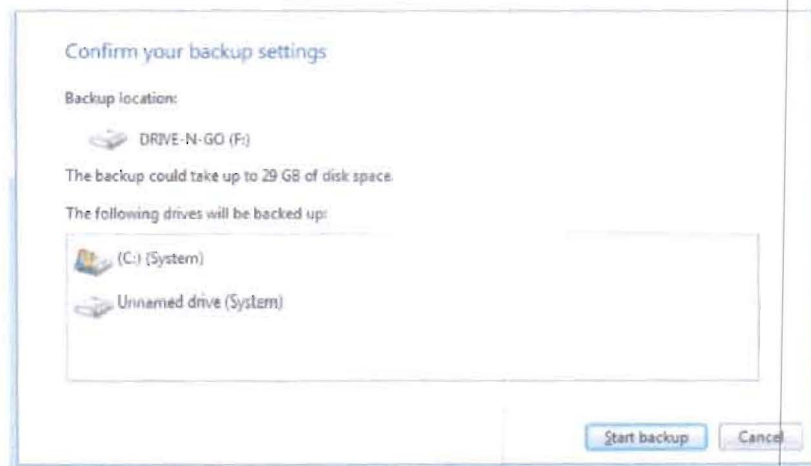


Army Vision: By 2028, a world-class Army that is a source of national pride

Pick the drives you want to include in the backup. System drives are selected automatically. Click > Next to proceed.



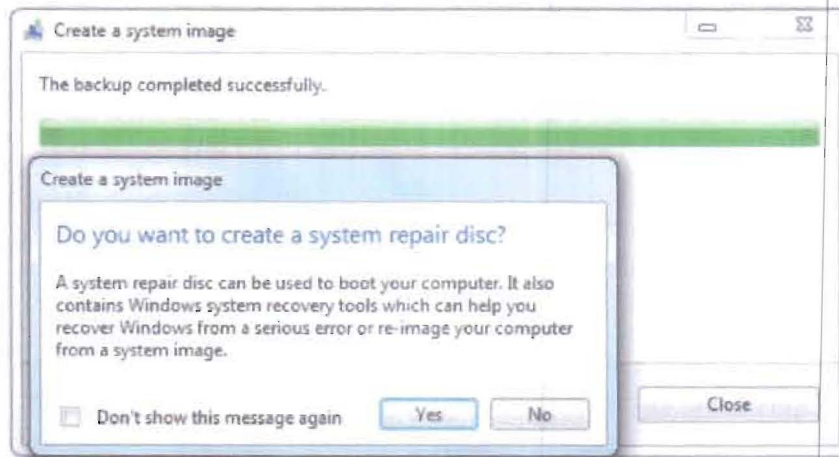
The last step provides an overview of your settings. Click > Start backup if everything is ok. Otherwise click the blue arrow in the top left to go back and make changes.



Army Core Purpose: Serving the people. Securing the land.

Army Vision: By 2028, a world-class Army that is a source of national pride

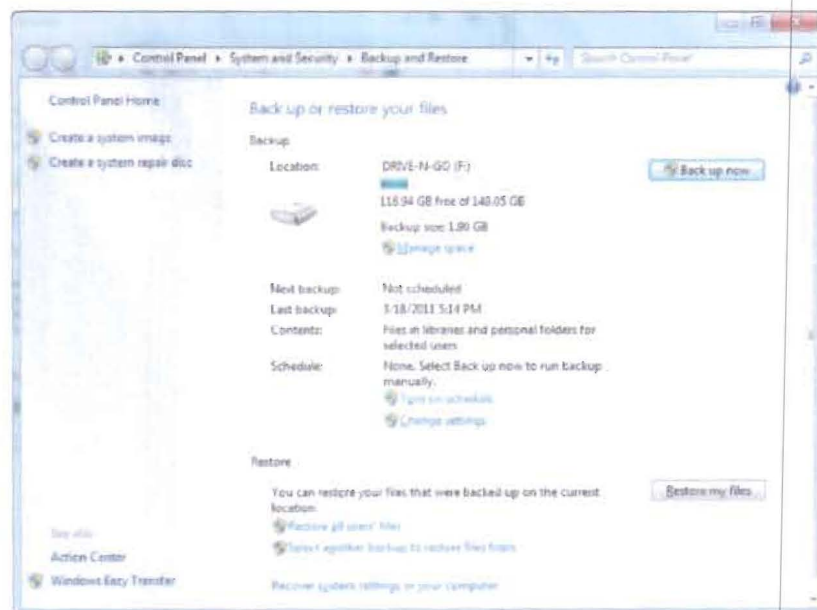
After the system image is completed, you can create a system repair disc. The disc will help you to repair the operating system in case you can no longer boot into Windows.



Use a System Image

Windows 7 is a very stable and reliable operating system. While there are scenarios in which it fails completely and won't boot at all, you will typically be able to at least log into Safe Mode.

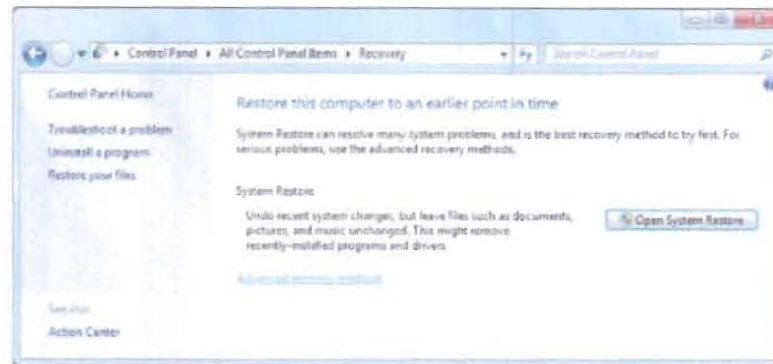
In order to restore a buggy or unstable system from a system image, go to > Start and type > backup into the search field. Under > Programs click > Backup and Restore. In the window that opens click > Recover settings or your computer at the very bottom.



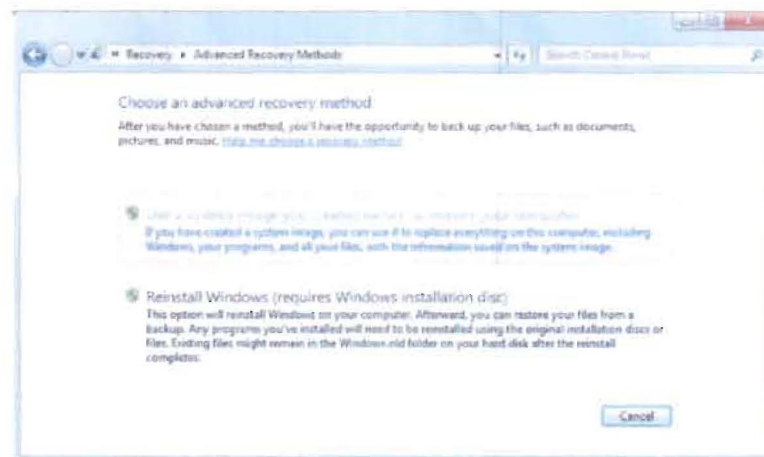
Army Core Purpose: Serving the people. Securing the land.

Army Vision: By 2028, a world-class Army that is a source of national pride

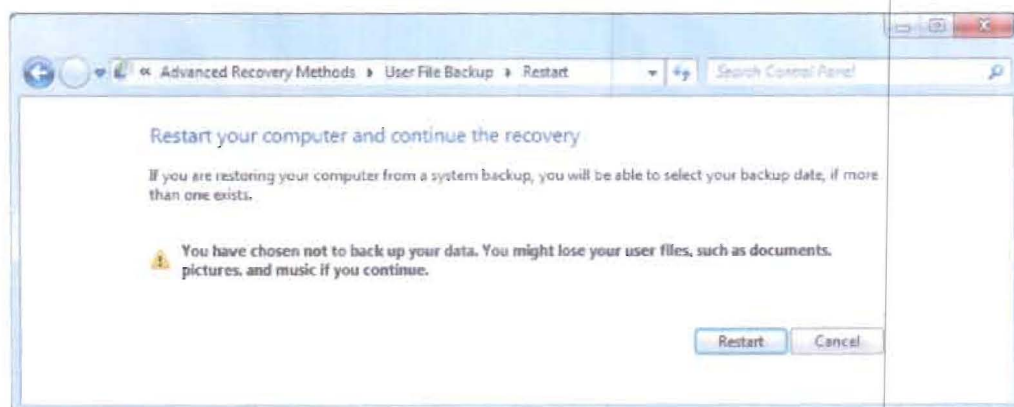
In the window that opens select > Advanced recovery methods at the bottom.



Next click > Use a system image your created earlier to recover your computer.



You will be asked to back up your personal files before preparing a system restore. If you have a current backup of your data, > Skip this step. In the following window you will be asked to > Restart the computer for the system recovery to advance.



All following steps and other recovery scenarios are explained in detail and with

Army Core Purpose: Serving the people. Securing the land.

excellent screenshots in the [Windows 7 – System Image Recovery](#) article on SevenForums.

Summary

Bad things do happen. Operating systems stop working, hard drives fail beyond repair, files get damaged or deleted accidentally, and data get destroyed in disasters. The best you can do is to be prepared. Backups are an easy way to secure your work, but they can only help you if done regularly and stored safely.

This guide outlined all the essential steps required to keep your data safe from system failure and back it up to prevent a loss during other threatening events. After reading this manual, you should have a very good understanding of the options you have to secure your data. While some of the procedures may seem complicated and tedious, once set up they don't require a lot of maintenance.

This manual is as simple and straightforward strategies as possible if you run Windows and don't want to spend money. If you desire a completely hassle-free solution, buying a Mac with Time Machine or looking into commercial software for Windows is another good option.

In the meantime, be sure to make a backup! It will be worth your time.

References:

This was cross posted from:

<https://www.makeuseof.com/tag/download-stuff-happens-the-backup-restore-guide>.

DO YOU WANT TO KNOW MORE? TALK TO US.

POCs:

a. **LTC JOEY T FONTIVEROS (INF) PA** – Chief, Cyberspace Management Branch, OG6, PA at Landline Telephone Nr: 02-845-9555 Local 6630 and Mobile Telephone Nr: 0917-628-1057. Email: fontiverosjt@army.mil.ph.

b. **Sgt Mark Dave M Tacadena (SC) PA** – Branch NCO, Cyberspace Management Branch, OG6, PA at Landline Telephone Nr: 02-845-9555 Local 6630 and Mobile Telephone Nr: 0998-534-2877. Email: tacadenamdm@army.mil.ph.