How to restore a Windows computer from a snapshot backup image.

Snapshot (drive snapshot) is a disk imaging program for creating and restoring Microsoft Windows systems and disks. The backup images along with the snapshot program are kept on an external usb hard drive.

SMAS NCO computers consist of two main systems SMAS1 and AllSky PC's.

Currently 2019 the SMAS1 computer is setup to dual boot Windows 10 and Windows 7, they are on two separate hard drives. However the boot loader is from one drive that asks what system to boot, the default is Windows 10. This has a GigaByte GA-H81MHD3 Rev2 motherboard.

The AllSky computer is a Shuttle DS81 and uses Windows 7. This computer has two SSD drives the system boot drive being an mSATA card that plugs into the motherboard. The other drive is a 2.5 inch SSD that keeps all the camera images and data.

Backups are kept on an external hard drive located on the book shelves in the CD's cardboard box. This disk is NOT bootable. Also in that box are the Windows 10 and 7 installation boot DVD's along with a Windows 10 USB installation thumb drive. This is used to boot when restoring both Windows 7 and 10. It is only needed if the systems won't boot or you are updating the system disk with a new one.

The easiest way to restore a system that can be booted and is running is to run "snapshot" from Windows and over write the system. This is outlined in the <u>SNAPSHOT WINDOWS</u> section.

If the system won't boot or you are replacing the boot drive; use the <u>STANDALONE RESTORE</u> procedure. If you know how to get to the command prompt you can jump to the <u>COMMAND WINDOW</u> section.

STANDALONE RESTORE



SMAS1 Splash Screen (Press F12 for Boot Menu)



AllSky Splash Screen (Press F7 for Boot Menu)

STANDALONE RESTORE

With the computer off insert the backup external usb hard drive into an usb3 (blue) port. Insert the Windows 10 usb stick into any other usb port.

Depending on the computer it may or may not boot the usb stick on power up. If it does not you have to enter the BIOS boot menu when you see the BIOS splash screen by press one of the Function keys. Note each motherboard bios boot menu has a difference function key, this will be shown on the power up splash screen. Sometimes this screen is not seen because the monitor is not yet ready; you have to be fast to catch it.



On AllSky (Shuttle motherboard) press F7 for BBS POPUP then select "Flash".

PO . TS1280MS4370	
P1: TOSHIBA THNSN.1256GC	311
WDC WD10JUCT-63J6SY0020	4
Generic STORAGE DEVICE	9454
Flash	
Enter Setup	
↑ and ↓ to move sel	ection
ENTER to select boot	device
ESC to boot using d	efaults

This will boot the Windows install usb flash thumb drive.

 windows Setup 	
Windows [•]	
Language to install: English (United States)	-
Keyboard or input method: US	<u> </u>
Enter your language and other preferences and click "Next" to conti	nue
© 2019 Microsoft Corporation. All rights reserved.	Next

Select "Next"

🥁 Windows Setup	
Winc	lows [.]
Install no	w
Repair your computer	
© 2019 Microsoft Corporation. All rights reserved.	

Select "Repair your computer"

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Select "Troubleshoot"

Advanced options



Startup Repair Fix problems that keep Windows from loading



System Restore Use a restore point recorded on your PC to restore Windows



System Image Recovery

Recover Windows using a specific system image file



Uninstall Updates Remove recently installed quality or feature updates from Windows

Command Prompt

Use the Command Prompt for

advanced troubleshooting

Select "Command Prompt"



The Command Prompt Window will appear

Enter the commands as indicated in the <u>COMMAND WINDOW</u> section that follows.

COMMAND WINDOW for New or to Wipe the Disk

Use this procedure if installing a new disk drive or to wipe the existing one as if it were new. Items in **red bold** is what you type. For a detailed example see **COMMAND WINDOW Example** at the end of this document.

>diskpart

DISKPART> list disk

Select the disk # you want to restore to, in this example we use 0.

DISKPART> select disk 0

DISKPART> clean

DISKPART> create partition primary

DISKPART> format fs=nts quick label="new"

DISKPART> active

DISKPART> list vol

Note the Volume with the Label of "new" and use its number, in this example we use 0. Next you need to find the drive Ltr of where the backup files are located. This is the external usb drive that you have plugged in. It should have a Label of "SMAS Backup" or something like that.

DISKPART> select vol 0

Assign drive letter that is not listed under Ltr in the list, in this example we use C.

DISKPART> assign letter=c

DISKPART> list vol

Note the drive letter of your new disk and of the backup drive where the snapshot files are. DISKPART> exit

DISKPARI > exit

In this example the system drive is "C" and the backup drive is "F"

>**f:**

Select the directory where snapshot64.exe is located on the backup drive.

F:\>cd backup

In this example it is in the "backup" folder, you can do a "dir" to find it.

F:\Backup>snapshot64

Run the backup/restore program this will bring up the snapshot window.

Proceed to the <u>SNAPSHOT WINDOWS</u> section that follows.

COMMAND WINDOW to Overwrite the Disk

This procedure is only needed if you could NOT boot windows and had to use the USB stick to boot. You can run the backup/restore program from windows and overwrite the system by just running snapshot64 from windows and follow the <u>SNAPSHOT WINDOWS</u> procedure section.

Use this procedure to overwrite the existing disk, most of the time you can use this. Items in **red bold** is what you type. For a detailed example see **COMMAND WINDOW Example** at the end of this document.

>diskpart

DISKPART> list vol

Note the Volume with the Ltr of "C" is the one you want to restore to.

Next you need to find the drive Ltr of where the backup files are located. This is the external usb drive that you have plugged in. It should have a Label of "SMAS Backup" or something like that.

DISKPART> exit

In this example the system drive is "C" and the backup drive is "F"

>**f**:

Select the directory where snapshot64.exe is located on the backup drive.

F:\>cd backup

In this example it is in the "backup" folder, you can do a "dir" to find it.

F:\Backup>**snapshot64**

Run the backup/restore program this will bring up the snapshot window.

Proceed to the <u>SNAPSHOT WINDOWS</u> section that follows.

SNAPSHOT WINDOWS

In this example the backup usb drive is "F" and the restore to drive is "C"

💥 Snapshot - Startup	Screen	X
Snapshot V1.47 - Jul 11	2019	Help
Drive Snapshot(TM) Instant Disk	Backup Disk To File	
Imaging for		License Information
2000/XP/7/8/10 2003/2008R2 2012/2012R2	Restore Disk from File	Walter Rison 020517 - 1 Workstation
tom ehlert 2001-2018	Restore complete Disk from Images	
S	View contents of saved Disk Image	Exit

Select "Restore Disk from File"

mage File		Manage FT	P accounts
Computer	Volume	Label	
Filesystem	Harddisk	Part.	
original Size		Saved	
equired Size		free	
Encrypted			

Select "Browse"

Look in:	👔 allsky			•	⇐ 🗈 💣 🗊 ◄	
0.	Name	2	ί.		Date modified	Туре
ecent Places Desktop	system7 d	lrive C 2019	-02-10.sna		10/7/2019 7:33 PM	Snapsho
Computer Computer Network	∢ [File name:	system 7	111 drive C 2019-02	-10.sna		Open
	Files of type:	Snapsho	ot Files (*.SNA) as read-only		•	Cancel
	Computer	MARS	Volume C:	Label	System7	
	Filesystem	NTFS	Harddisk 1	Part.	Primary 1	
	original Size	125.032.444	K=122101MB	Saved	10/7/2019 7:29 F	
	required Size	67.348.544	K=65770MB	free	85.262M	
Ima	, ge encrypted	No	_			

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Navigate to the folder where the backup image is located and select "Open"

(mage File	90 Julia		Mana	age FTP accounts
Computer	MARS	Volume C:	Label	System7
Filesystem	NTFS	Harddisk 1	Part,	Primary 1
original Size	125.032	444K=122101MB	Saved	10/7/2019 7:29
required Size	67.348.	544K=65770MB	free	85.262M
Encrypted	No			

Select "Next"

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and and a	-			Courses	Construction and the second	Longer 1	[market	T T
Drive HD 1	PartNo	PartSt	PartSize	Label	Filesystem	Size	Used	Free
. 3	Pri 1 Pri 1	1	122102	System/	07-NTES	953867	36303	85/98 241751
	FH 1	1	30001	Ехт_раскирз	07-101-5	90007	/12110	241/01
0.0.4	1							
HD 1								
HD 1 ATA M4-C	C: Sys	tem7						
HD 1 ATA M4-C 119.24 GB	C: Sys 119.24	tem7						
HD 1 ATA M4-C 119.24 GB	C: Sys 119.24 (NTFS)	tem7 I GB) Active						
HD 1 ATA M4-C 119.24 GB Online	C: Sys 119.24 (NTFS)	item7 4 GB) Active					_	
HD 1 ATA M4-C 119.24 GB Online	C: Sys 119.24 (NTFS)	tem7 I GB) Active						
HD 1 ATA M4-C 119.24 GB Online HD 3	C: Sys 119.24 (NTFS)	tem7 I GB) Active						
HD 1 ATA M4-C 119.24 GB Online HD 3 TOSHIBA Ext	C: Sys 119.24 (NTFS) F: Ext	tem7 I GB) Active Backup3]		
HD 1 ATA M4-C 119.24 GB Online HD 3 TOSHIBA Ext 931.51 GB	C: Sys 119.24 (NTFS) F: Ext 931.51	tem7 GB) Active Backup3 GB						
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Click the Drive to restore to from the list, then select "Next"

The next window will only appear if you are restoring from a activate system. It will not appear if you booted from the Windows USB stick.



Select "Automatic reboot on success" then select "Yes" to start the restore.

WHAT IF THE SYSTEM WON'T BOOT!

There are two options if the restored drive won't boot.

- 1. Reboot with the Windows USB stick and get to the command prompt and enter the following command:
 - a. bootrec /rebuildbcd
 - b. Then remove the Windows USB stick and reboot.
- Reboot with the Windows USB stick and install windows on the drive you are restoring to. Do a new install wiping everything from the drive. Do not enter a registration key, just select "Skip". After Windows installs insert the USB backup drive and run "snaphost64". Then follow the <u>SNAPSHOT WINDOWS</u> to Restore Example from above.

If this does not work you may have to look in the BIOS and see if the boot order and drives are correct, sometimes Windows changes them.

COMMAND WINDOW Example

Items in **red bold** is what you type.

Microsoft Windows [Version 10.0.18362.365]
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X:\Sources>diskpart

Microsoft DiskPart version 10.0.19362.1

Copyright (C) Microsoft Corporation. On computer: MININT-DSFVL9M

DISKPART> list disk

Disk ###	Status	Size	Free	Dyn	Gpt
Disk O	Online	119 GB	0 В		
Disk 1	Online	238 GB	0 В		
Disk 2	No Media	0 В	0 В		
Disk 3	Online	931 GB	0 B		
Disk 4	Online	7689 MB	0 B		

Note most of the time disk 0 is the system boot drive you will restore to.

DISKPART>select disk 0

Disk 0 is now the selected disk.

DISKPART> clean

DiskPart succeeded in cleaning the disk. Note this just deleted the partition so you have a blank disk.

DISKPART> create partition primary

DiskPart succeeded in creating the specified partition.

DISKPART> format fs=ntfs quick label="new"

100 percent completed

DiskPart succeefuly formatted the volume.

DISKPART> active

DiskPart marked the current partition as active.

DISKPART> DISKPART> **list vol**

Volume ###	Ltr	Label	Fs	Туре	Size	Status	Info
Volume O		new	NTFS	Partition	119 GB	Healthy	
Volume 1	D	Data1	NTFS	Partition	238 GB	Healthy	
Volume 2	E			Removable	0 B	No Media	
Volume 3	F	SMAS Backup	NTFS	Partition	1862 GB	Healthy	
Volume 4	G	W10INSTAL	FAT32	Removable	7679 MB	Healthy	

Note select the volume with the label of "new". DISKPART>**select vol 0**

Volume 0 is the selected volume.

DISKPART> assign letter=C

DiskPart successfully assigned the drive letter or mount point.

DISKPART> exit

Leaving DiskPart...

Note make a note of the "SMAS Backup" drive letter; this is used in the following steps. In this example it is "F".

X:\Sources>F:
F:\>cd backup
F:\backup>snapshot64

This runs the snapshot program to restore the disk image. See the $\underline{\rm SNAPSHOT~WINDOWS}$ section to complete the restore.