



Cloning Utility

for VersaView Industrial Computers

Overview

The Cloning Utility lets you create a backup image of your computer's hard drive. If your system becomes unstable or corrupt, you can restore the hard drive from the backup image. There is no restriction on the number of times you create or restore a backup image.

When using the automated cloning utility, the active system partition of your computer's hard drive can backup to and restore from the recovery partition. The active system partition runs the operating system. The recovery partition stores a backup image of the system. The automated cloning utility creates a recovery partition if one does not exist or resizes the partition if too small. Each time you create a backup image in the recovery partition, the previously archived image is replaced.

The Cloning Utility resides on the VersaView Accessories CD which is shipped with every VersaView Computer.

This document provides instructions on how to:

- create, resize or delete a recovery partition on the hard drive.
- create a backup of the active system image in the recovery partition of the hard drive.
- restore an archived system image from the recovery partition.
- use the Ghost Utility to perform system operations manually and to create a bootable CD or DVD with a backup image.

Topics Covered

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Operating System Considerations

VersaView computers with the Windows XP operating system are shipped with the factory image stored in a recovery partition of the hard drive. This image can be restored at any time in the event of system problems.

Computers with the Windows 2000 operating system are **not** shipped with a factory default image on the hard drive in accordance with the Microsoft Direct License. If the system becomes unstable, you will not be able to recover a factory image unless you first create one. To create the original factory image, you must clone a system image of your computer immediately at the first system startup.

IMPORTANT

If you have a Windows 2000 system, boot from the VersaView Accessories CD when starting your computer for the first time to clone a factory image of the system.

Follow the directions in the sections below in the sequence shown:

1. Prepare to Boot from the Accessories CD (page 3).
 2. Start the Cloning Utility (page 4).
 3. Create a Backup Image (page 7).
-

Prepare to Boot from the Accessories CD

To boot from the Accessories CD, you must load the CD in the CD or DVD-ROM drive before the computer boots the operating system from the hard drive. The time between power on and the operating system boot from the hard drive varies between computers, but can be as little as 3 seconds.

WARNING

The moment the operating system begins to boot from the hard drive, the installed factory image is altered from its original state.

In preparation for booting from your computer's CD or DVD-ROM drive, perform the following tasks:

1. Enter the CMOS setup in BIOS by pressing the Delete key during BIOS POST (when the system memory and hard drive information appears).
2. Verify that the CD-ROM is set to a higher priority than the hard drive. If it is not, change the priority.
3. Eject the CD or DVD-ROM tray.
4. Insert the CD you want to boot from into the CD or DVD-ROM tray.
5. Push the tray in to the operating position.
6. If you set the CD or DVD-ROM boot order priority to a higher priority than the hard drive, Save and Exit CMOS setup. Otherwise, exit without saving changes.

IMPORTANT

Ctrl-Alt-Delete performs a soft boot of the computer but does not retain changes in CMOS setup.

Start the Cloning Utility

1. Insert the VersaView Accessories CD in the CD or DVD-ROM drive of your computer.
2. Power on the computer.

IMPORTANT

You have 10 seconds to boot the Cloning Utility from the CD or DVD-ROM drive once the following screen appears. The timer was installed to allow operating system rebuilds to not have to remove the CD during driver installation requiring reboots.

Microsoft Windows 98 CD-ROM Startup Menu

1. Boot from Hard Disk
2. Boot from CD-ROM

Enter your choice: 1 Time remaining: 10

3. Select Boot from CD-ROM using the arrow keys and press Enter.

Microsoft Windows 98 CD-ROM Startup Menu

1. Boot from Hard Disk
2. Boot from CD-ROM

Enter your choice: 2

4. Select Cloning Utility using the arrow keys and press Enter.

Microsoft Windows 98 Startup Menu

1. Cloning Utility
2. Diagnostic Utility

Enter a choice: 1

5. Select the type of CD/DVD ROM drive you are booting the Accessories CD from using the arrow keys and press Enter.

Choose	If
Internal ATAPI CD/DVD ROM	Booting the Accessories CD from a CD or DVD ROM drive that is built into the computer.
External USB CD/DVD ROM	Booting the Accessories CD from a CD or DVD ROM drive that is attached to the computer's USB port via a USB cable. Important: Not all external USB CD or DVD ROM drives are compatible with the DOS ASPI USB driver used. If your USB CD or DVD ROM drive does not work, try another type of external USB CD or DVD ROM drive.
ATAPI & USB CD/DVD ROM	Booting the Accessories CD from a CD or DVD ROM drive that is built into the computer but you want to burn the Recovery image to a CD or DVD ROM drive that is attached to the computer's USB port via a USB cable using the GHOST utility. Important: Not all external USB CD or DVD ROM drives are compatible with the DOS ASPI USB driver used. If your USB CD or DVD ROM drive does not work, try another type of external USB CD or DVD ROM drive

Microsoft Windows 98 Startup Menu

1. Internal ATAPI CD/DVD ROM
2. External USB CD/DVD ROM
3. ATAPI & USB CD/DVD ROMs

Enter a choice: 1

6. Read the Welcome screen, then press M to display the Main Menu.

IMPORTANT

Any operational interruption could result in data loss. It is important that you operate the computer from a clean, stable, charged uninterruptible power supply to minimize the risk of any power interruption during cloning operations.

Rockwell Automation System Cloning Utility 1.01.B1004

Welcome to the Rockwell Automation System Cloning Utility

This utility allows you to backup or restore the system partition.

IMPORTANT...

ANY OPERATIONAL INTERRUPTION DURING A PARTITION MANIPULATION COULD BE CATASTROPHIC TO ANY DATA ON THE HARD DRIVE BEING MANIPULATED.

To continue to the MAIN MENU, ...
press the 'M' key.

Create a Backup Image

This section shows how to start the process that will create a backup image of the active system partition.

During the process, the Cloning Utility checks that the

- recovery partition exists
- recovery partition is large enough to store backup image

If either of the above conditions occur, the utility will inform you so that you can take corrective action.

1. Press C from the Main Menu to display the Clone menu.

```

Rockwell Automation System Cloning Utility

MAIN MENU

Please select from the following list of choices:

C : CLONE the active system partition using a recovery partition
via fully automated processes.

D : DELETE the recovery partition. Then, if both resided on the same
hard drive, resize the active system partition with the freed space.

M : MANUALLY run the cloning utility. Includes advanced read & write
usage for: internal and/or external ATAPI, USB, SATA and FIREWIRE
CD/DVD/R/W drives and other mass storage devices.

To stop and exit,
eject the Accessory / Cloning media and turn the computer off.

To start the System Cloning Process, ... _
press the 'C', 'D', or 'M' key.

```

2. Press C from the Clone Menu to create the backup image.

```

Rockwell Automation System Cloning Utility

System Cloning Process - CLONE MENU

This process allows you to Backup the system to a recovery partition
or Restore the system from the recovery partition.

WARNING...
If you choose to Restore: ALL DATA ON SYSTEM PARTITION WILL BE OVERWRITTEN
If you choose to Create : ANY BACKUP IMAGE WILL BE OVERWRITTEN

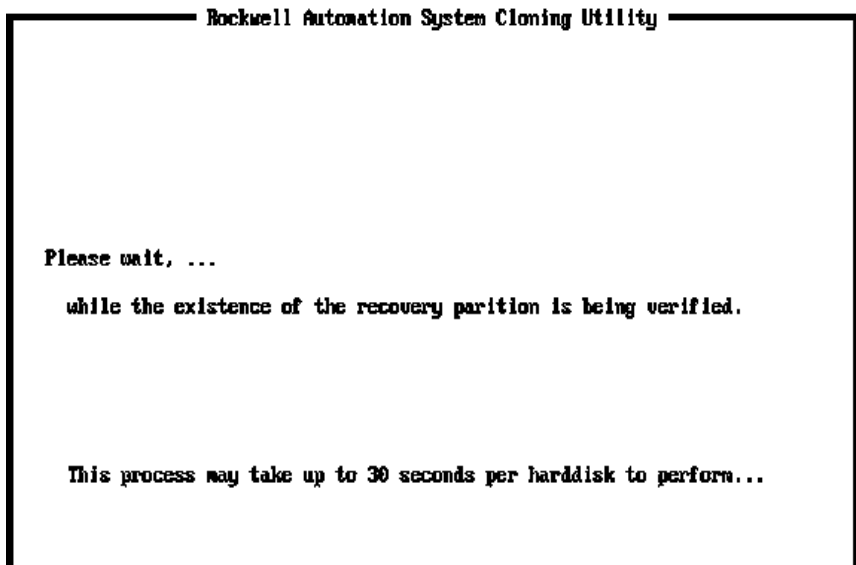
No changes have been performed yet

To stop and exit the system cloning process,
press 'M' to return to MAIN MENU.

To start the System Cloning Procedure, ...
press 'C' to CREATE a backup image of the active system partition.
press 'R' to RESTORE the active system partition from the backup image.

```

The Clone utility searches for the recovery partition.



One of three conditions may occur:

If	Proceed to	Page
The recovery partition is not found, a corresponding message appears.	Recovery Partition Creation	9
The recovery partition is too small for the backup operation, a corresponding message appears.	Recovery Partition Resizing	11
Neither of the above conditions occurs.	Backup Image Creation	12

Recovery Partition Creation

This section creates a partition on your computer's hard drive that is used to store a backup of your active system image. The recovery partition is used only by the Cloning Utility and is not available to other system resources. If the hard drive does not have a recovery partition, the utility displays a screen to inform you of this condition.

1. Press C from the Recovery Partition Not Found screen.

```
Rockwell Automation System Cloning Utility

RECOVERY PARTITION NOT FOUND

The recovery partition could not be found, therefore,
a recovery partition MUST be created to continue.

No changes have been performed yet

To stop and exit the image creation procedure,
press 'M' to return to the CLONE MENU.

To CREATE a Recovery Partition and continue, ...
press the 'C' key.
```

2. Press Y from the Partition Size Verification screen.

```
Rockwell Automation System Cloning Utility

PARTITION SIZE VERIFICATION

The following are Hard Drive # 1, Partition # 1 statistics in MegaBytes:
  2047 MB : SIZE total
   42 MB : USED space  * Active Partition *
  2004 MB : FREE space

A 52 MB recovery partition must be created to continue.

No changes have been performed yet

To stop and exit the partition creation process,
press 'M' to return to the CLONE MENU.

To proceed with the Partition Creation Process, ... _
press the 'Y' key.
```

The hard drive is partitioned to the values indicated on your actual Partition Size Verification Screen.

```
Script Command = SELECT PARTITION NEXT
Script Command = CREATE /FS=FAT32 /LABEL="RECOVERY"

--- Create Confirmation ---
Partition will be created with the following parameters:

Partition Type: FAT32
New Label: RECOVERY
Size: 2,102.3
Position: Beginning of free space
Bad Sector Checking:OFF

The operation completed successfully.

Script Command = HIDE

--- Hide Partition ---
Hiding partition:RECOVERY (FAT32)

The operation completed successfully.

Ending Script Execution ==> Tue Dec 14 14:05:03 2004
```

3. Proceed to Backup Image Creation on page 12.

Recovery Partition Resizing

This section shows how the recovery partition on your computer's hard drive is resized if it is too small to archive a system backup image. If this condition occurs, the Cloning Utility displays an information screen to alert you of the condition.

1. Press Y from the Partition Resizing Process screen.

```

Rockwell Automation System Cloning Utility

The following are Hard Drive #1, Partition #1 statistics in MegaBytes:
1992 MB : SIZE total
 42 MB : USED space   * Active Partition *
1958 MB : FREE space

The following are Hard Drive #1, Partition #2 statistics in MegaBytes:
  0 MB : SIZE total
2162 MB : USED space   * Recovery Partition *
 25 MB : FREE space

Hard Drive #1, Partition #2 needs to be resized from 0 to 52 MB

No changes have been performed yet

To stop and exit the partition creation process,
press 'N' to return to the CLONE MENU.

To proceed with the Partition Resizing Process, ... _
press the 'Y' key.

```

The hard drive system and recovery partitions are resized to the values indicated on your Partition Resizing Process screen.

```

--- Resize Partition ---
Current partition size: 1,992.4 MB
Free space after: 0.0 MB
Valid range: 0.0 - 1,992.4 (MB)
Current cluster size: 32 KBytes

--- Resize Confirmation ---
New size: 1,937.5 MB
Free space after: 54.9 MB
Cluster size: 32 K

Resizing partition from 1,992.4 MB to 1,937.5 MB

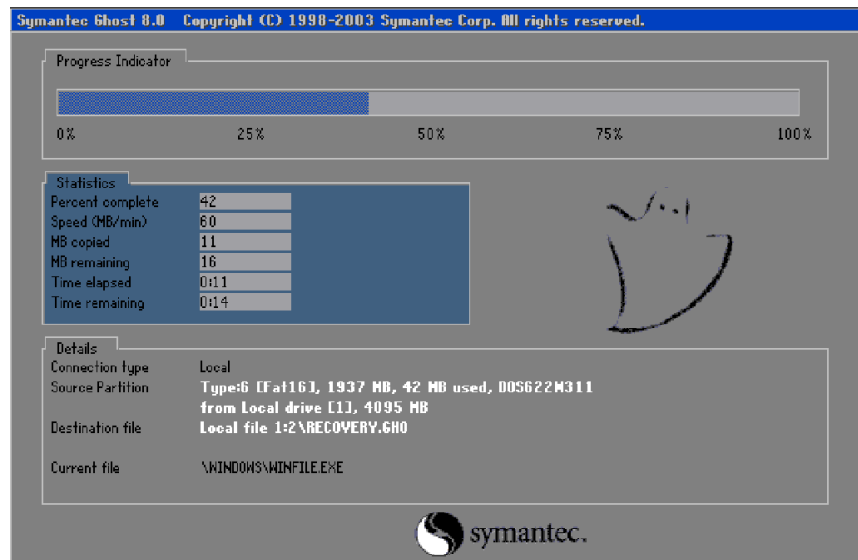
Resizing partition          6%
Checking current integrity_ 97%

```

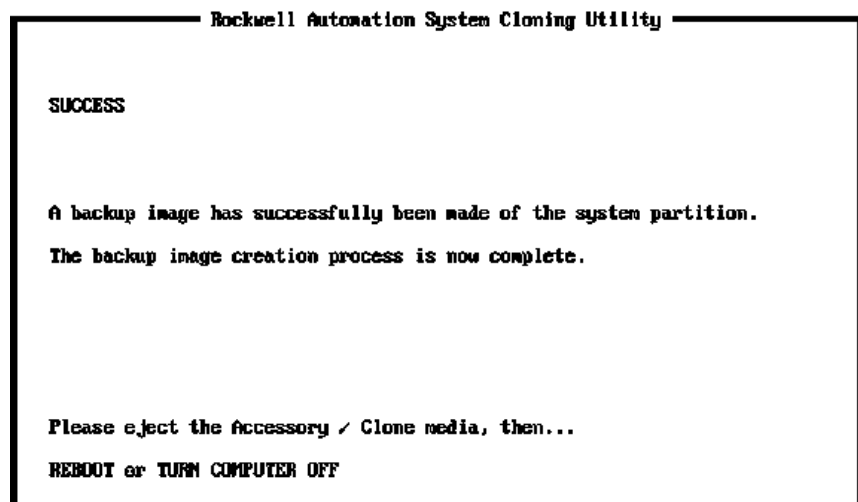
2. Proceed to Backup Image Creation on page 12.

Backup Image Creation

This section clones the active system image partition and stores it in an archive file on the recovery partition on your computer's hard drive. The GHOST cloning program launches automatically to perform the process.



When the GHOST cloning process is complete, the cloning program displays the Success Screen.



Restore the Backup Image

This section shows how to restore a system image from the backup image located in the recovery partition of your computer's hard drive.

1. Press C from the Main Menu to enter the Clone Menu.

```
Rockwell Automation System Cloning Utility

MAIN MENU

Please select from the following list of choices:

C : CLONE the active system partition using a recovery partition
via fully automated processes.

D : DELETE the recovery partition. Then, if both resided on the same
hard drive, resize the active system partition with the freed space.

M : MANUALLY run the cloning utility. Includes advanced read & write
usage for: internal and/or external ATAPI, USB, SATA and FIREWIRE
CD/DVD/R/RW drives and other mass storage devices.

To stop and exit,
eject the Accessory / Cloning media and turn the computer off.

To start the System Cloning Process, ... _
press the 'C', 'D', or 'M' key.
```

2. Press R from the Clone Menu to restore the backup image.

```
Rockwell Automation System Cloning Utility

System Cloning Process - CLONE MENU

This process allows you to Backup the system to a recovery partition
or Restore the system from the recovery partition.

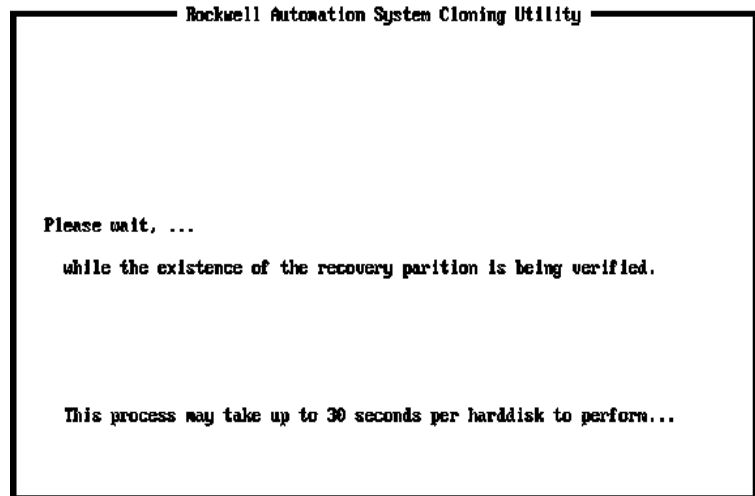
WARNING...
If you choose to Restore: ALL DATA ON SYSTEM PARTITION WILL BE OVERWRITTEN
If you choose to Create : ANY BACKUP IMAGE WILL BE OVERWRITTEN

No changes have been performed yet

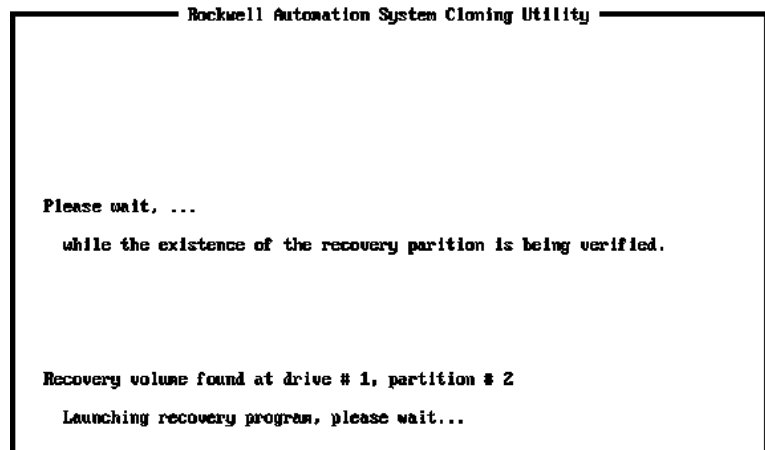
To stop and exit the system cloning process,
press 'M' to return to MAIN MENU.

To start the System Cloning Procedure, ...
press 'C' to CREATE a backup image of the active system partition.
press 'R' to RESTORE the active system partition from the backup image.
```

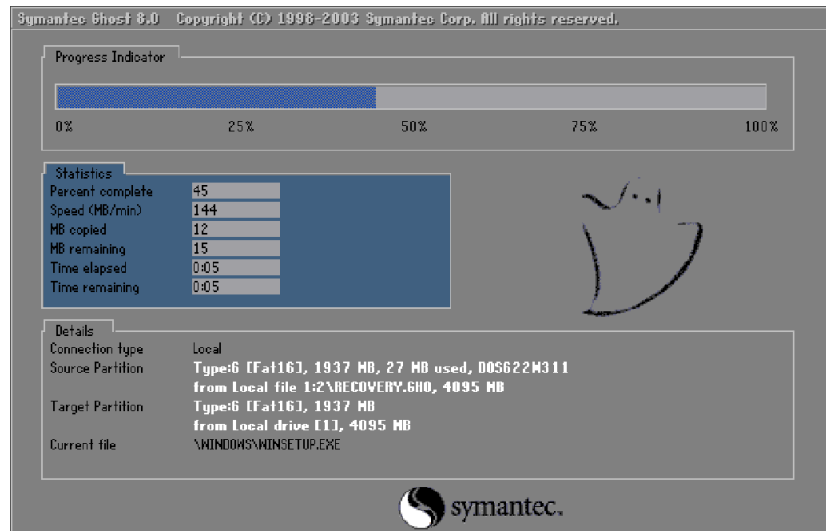
The Cloning Utility searches for the recovery partition.



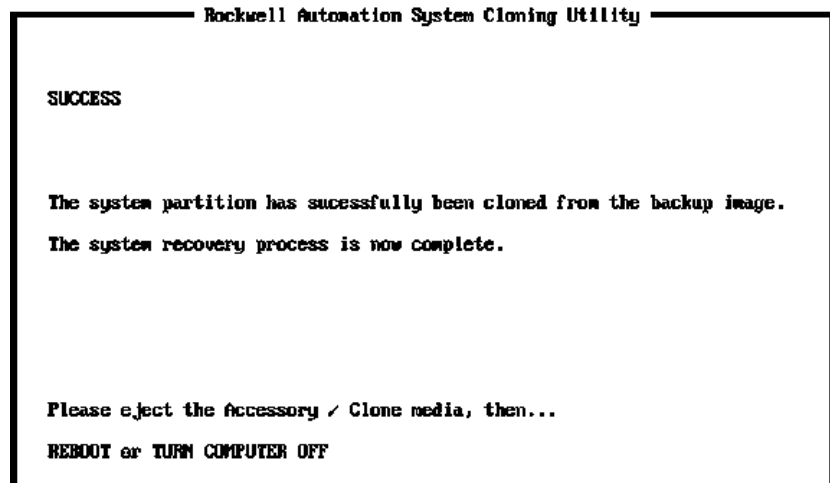
When the recovery partition is found, the following screen appears.



The Ghost cloning program launches and restores the contents of the active system partition from an archive file located in the recovery partition of the hard drive.



When the GHOST cloning process is complete, a Success screen appears.



Delete the Recovery Partition

This section shows how to delete a recovery partition from your computer's hard drive. The recovery partition is reserved by the Cloning Utility for system backups and is not available to other system resources.

IMPORTANT

If you delete the recovery partition, you cannot create a backup of the system image using the Cloning Utility unless you recreate the partition at a later time.

1. Press D from the Main Menu to delete recovery partition.

```
Rockwell Automation System Cloning Utility

MAIN MENU

Please select from the following list of choices:

C : CLONE the active system partition using a recovery partition
via fully automated processes.

D : DELETE the recovery partition. Then, if both resided on the same
hard drive, resize the active system partition with the freed space.

M : MANUALLY run the cloning utility. Includes advanced read & write
usage for: internal and/or external ATAPI, USB, SATA and FIREWIRE
CD/DVD/R/W drives and other mass storage devices.

To stop and exit,
eject the Accessory / Cloning media and turn the computer off.

To start the System Cloning Process, ... _
press the 'C', 'D', or 'M' key.
```

The cloning utility searches for the recovery partition.

```
Rockwell Automation System Cloning Utility

Please wait, ...

while the existence of the recovery partition is being verified.

This process may take up to 30 seconds per harddisk to perform...
```


2. Press Y from the Deletion Verification screen to delete the recovery partition.

```

Rockwell Automation System Cloning Utility

System Cloning Process - DELETION VERIFICATION

WARNING...
Deleting the recovery partition will erase any recovery image and all
information on the recovery partition as well as the partition itself.

No changes have been performed yet

To stop and exit the partition deletion procedure,
press 'N' to return to the MAIN MENU.

To CONTINUE the Recovery Partition Deletion Procedure, ... _
press 'Y' to confirm and commence.

```

The recovery partition is deleted and the active system partition is resized with the available space.

```

PowerQuest Disk Partitioning Tool
Version 7.0.9999

Powered by PartitionMagic Version 7.0 Technology

Copyright (c) 1994-2002 PowerQuest Corporation.

Beginning Script Execution ==> Tue Dec 14 15:10:54 2004

Script Command = SELECT DRIVE 1
Script Command = SELECT PARTITION 2
Script Command = DELETE "RECOVERY"

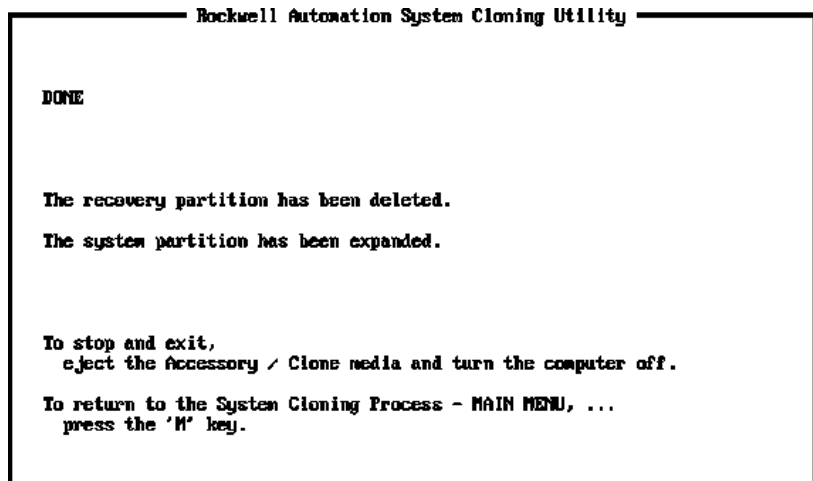
-- Delete Partition --
Deleting partition with volume label: "RECOVERY"

Deleting partition          3%
Updating system information 100%
-

```

3. Press M to return to the Main Menu.

When the recovery partition is removed and the active system partition expanded, the following screen appears.

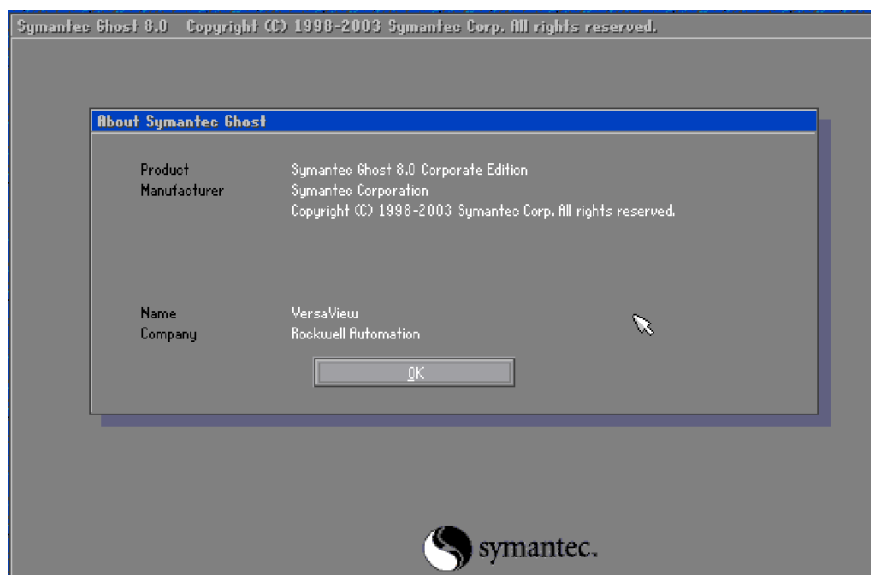
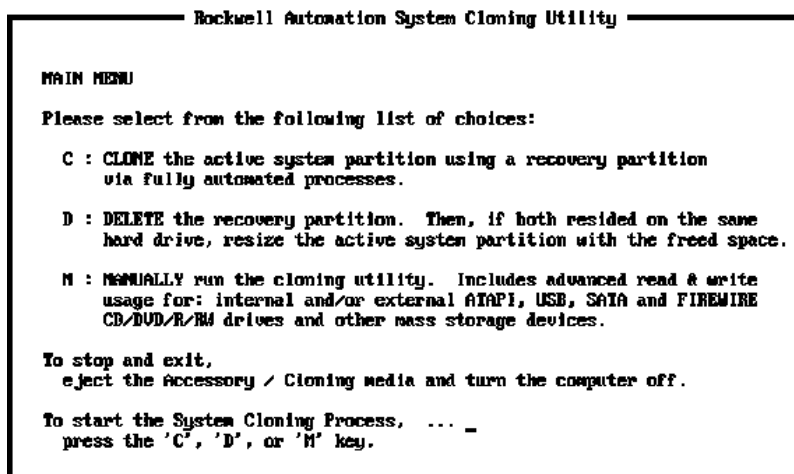


Launch the Ghost Cloning Utility Manually

The Ghost Cloning Utility provides advanced read/rewrite operations for internal/external drives and other mass storage devices. Refer to the manual provided by Symantec™ for GHOST operating instructions and information. This pdf version of this manual is located on the Accessories CD. Browse to the following folder on a Windows 9x, NT, 2000 or XP system, to locate manual:

\OTHER\UTILITY\GHOST

- Press M from Main Menu to manually launch the Ghost Cloning Utility.



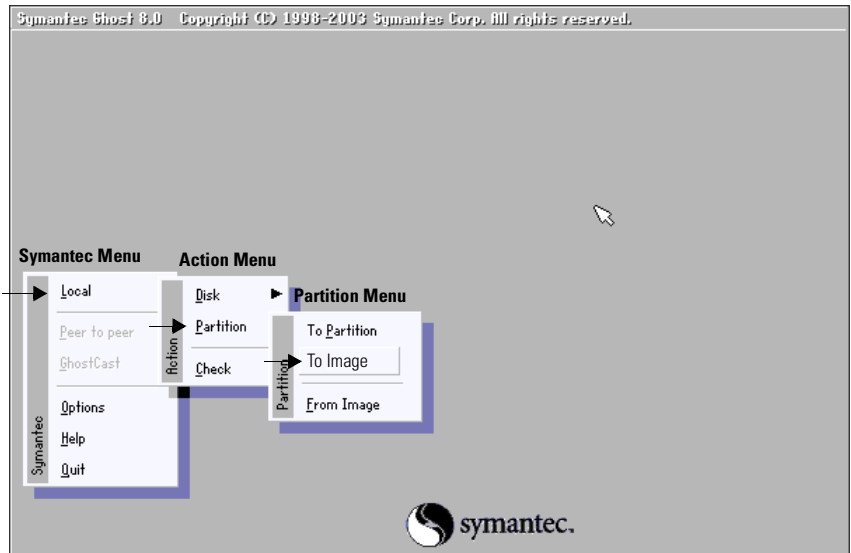
TIP

Use a PS2 or USB mouse to operate pointer.

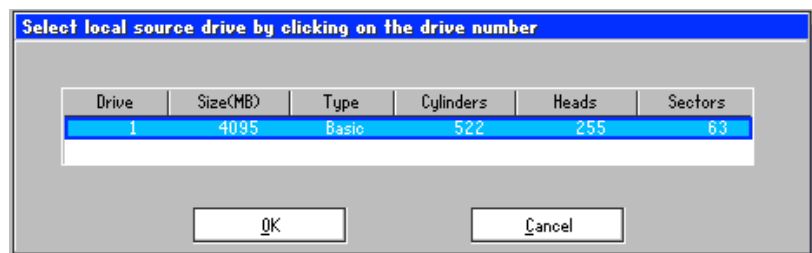
Create a Backup Image on a Bootable CD or DVD using the Ghost Cloning Utility

This section shows how to clone the active system image to a bootable CD or DVD.

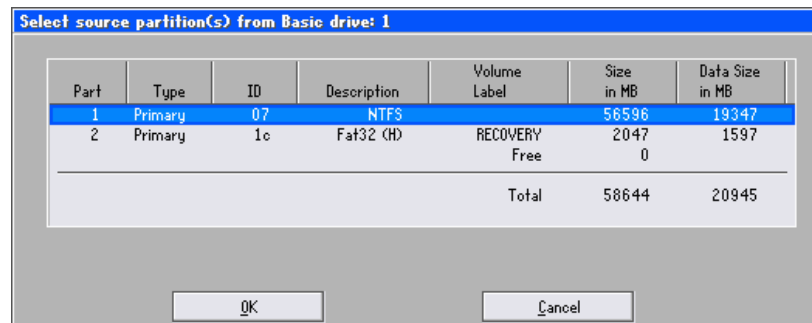
1. Make menu selections as follows:
 - From the Symantec menu, select Local.
 - From the Action menu, select Partition.
 - From the Partition menu, select To Image.



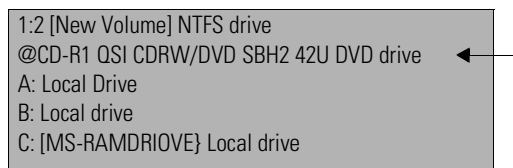
2. Select the local hard drive on your computer; then select OK.



3. Select the active system partition on the hard drive and then select OK.



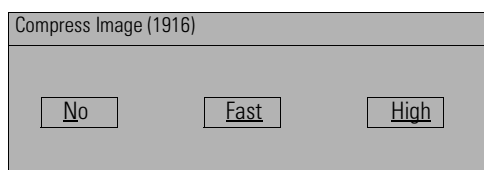
- In the dialog that opens, select the target device (from the Look-in list) to save the active system image.



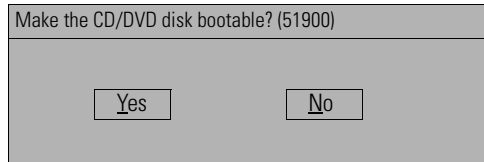
After selecting the CDRW/DVD drive, the file name CDR00001.GHO and file type *.GHO are automatically entered.

Select Save to continue.

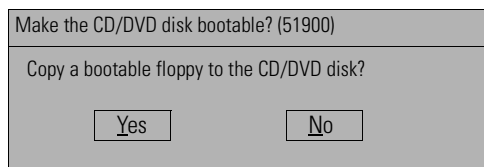
- Select High from the Compress Image dialog.



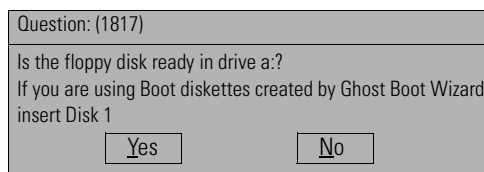
- Select Yes to make the CD/DVD disk bootable.



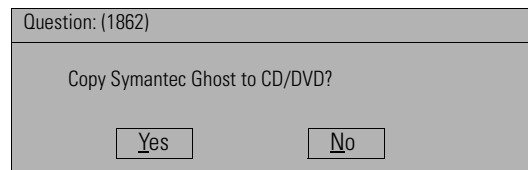
- Select Yes to copy a bootable floppy to the CD/DVD. You are not required to physically insert a floppy disk. Selecting Yes automates the process.



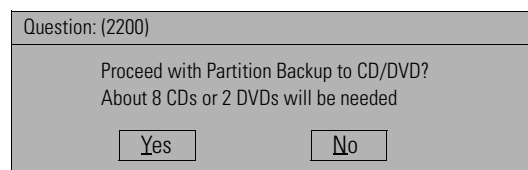
- Select Yes to indicate that the floppy disk is ready in the drive.



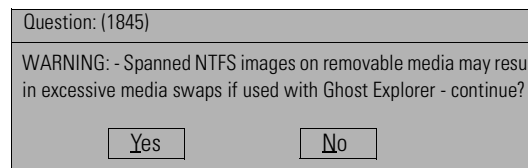
9. Select Yes to copy the Symantec Ghost utility to the CD/DVD.



10. Select Yes to proceed with the partition backup to the CD/DVD drive. The active system image of your hard drive will be archived to CD/DVD.



11. Select Yes after reading the following warning message.



When the process is complete, you will have a bootable CD or DVD with the newly archived system image. You can use this CD or DVD if necessary to restore the archived system image to the active system partition on your hard drive.

Rockwell Automation Support

Rockwell Automation provides technical information on the web to assist you in using its products. At <http://support.rockwellautomation.com>, you can find technical manuals, a knowledge base of FAQs, technical and application notes, sample code and links to software service packs, and a MySupport feature that you can customize to make the best use of these tools.

For an additional level of technical phone support for installation, configuration and troubleshooting, we offer TechConnect Support programs. For more information, contact your local distributor or Rockwell Automation representative, or visit <http://support.rockwellautomation.com>.

Installation Assistance

If you experience a problem with a hardware module within the first 24 hours of installation, please review the information that's contained in this manual. You can also contact a special Customer Support number for initial help in getting your module up and running:

United States	1.440.646.3223 Monday – Friday, 8am – 5pm EST
Outside United States	Please contact your local Rockwell Automation representative for any technical support issues.

New Product Satisfaction Return

Rockwell tests all of its products to ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned:

United States	Contact your distributor. You must provide a Customer Support case number (see phone number above to obtain one) to your distributor in order to complete the return process.
Outside United States	Please contact your local Rockwell Automation representative for return procedure.

www.rockwellautomation.com

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