

# GNAT

# Box<sup>®</sup>

## SYSTEM SOFTWARE

For Use by  
GTA Authorized Resellers Only  
Not for Distribution

# SYSTEM RECOVERY MANUAL

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**GNAT Box System Recovery Manual**

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# Introduction

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## About the System Recovery CD

The GNAT Box System Recovery CD is a bootable ISO 9660-compliant CD-ROM that a certified GTA Firewall reseller can use to create or re-install GNAT Box System Software on a flash card using a USB flash card reader or an IDE flash card adapter.

### **Note**

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This GNAT Box System Recovery CD cannot be used to make GB-Pro, GNAT Box Demo, or GNAT Box Light floppy disk products. Please use the floppy disk method for these products.

## Requirements

- A USB Flash card reader/writer, such as SanDisk® ImageMate™ or an IDE flash adapter.
- RoBoX, GB-Flash or GB-1000: GTA-certified 16 Mb compact flash card.
- GB-200, GB-500, GB-750, GB-1200 or GB-1500: GTA-certified 64 Mb compact flash card.
- PC-compatible computer system.
- IDE CD-ROM drive.
- USB port (reader) or available IDE port (adapter).
- Video card, monitor and keyboard.
- CMOS BIOS that supports booting off the CD-ROM drive.

## Prepare for System Recovery

Before using the Recovery CD, prepare your GTA Firewall system for re-imaging your system compact flash card. If using a compact flash adapter, If using a flash card adapter, follow the instructions below for installation in the recovery system, then continue with “Set the Boot Sequence.” If using a flash card reader, continue with “Set the Boot Sequence.”

## Save Your Configuration

Always back up your existing firewall configuration to an external file before using the Recovery CD to re-image an existing compact flash card.

When re-imaging a system flash card, this saved configuration can be used to restore the GTA Firewall after re-installation.

## Remove the Compact Flash Card

With your system power off, remove the flash card from your GTA Firewall system.

# System Recovery

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## Set Up the Recovery System

The recovery computer must be configured to boot from the IDE CD-ROM drive. This enables the GNAT Box System Recovery CD to create GNAT Box System flash cards or re-install a GNAT Box System on an existing flash card.

If using a flash card adapter, see Chapter 3 – Using the Flash Adapter for instructions on setting up the recovery system with a flash adapter before setting the boot sequence.

## Set the Boot Sequence

Using the appropriate process for your computer system, change the boot sequence so that the system boots from the IDE CD-ROM drive.

### **Note**

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Setting the boot sequence varies from system to system. Please use your system guide to set the boot sequence on your computer. (Some systems do not support this; see system requirements.)

Boot into CMOS. Set the boot sequence where the IDE CD-ROM is first before any IDE hard drives. This will enable the operating system to boot from the GNAT Box System Recovery CD. Exit and save the settings.

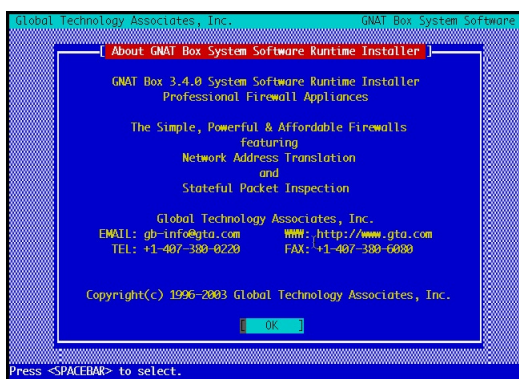
## Restart the System

1. Attach the USB flash card reader and insert the flash card into the device. (If using the flash adapter, skip this step.)
2. Insert the GNAT Box System Recovery CD into the system's CD-ROM drive.
3. Restart the computer using a cold reboot. (In a cold reboot, shut down, turn off, and then turn your computer back on.)

If the boot sequence is correctly set to boot from CD-ROM, the system will boot from the GNAT Box System Recovery CD.

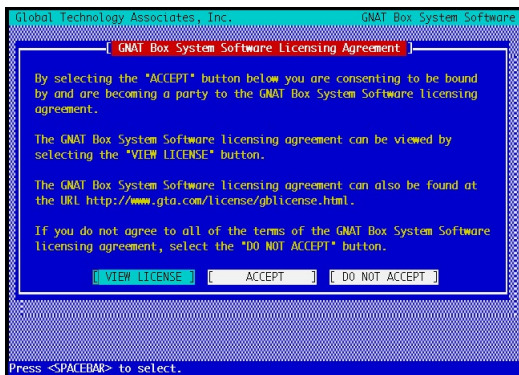
## Using the System Recovery CD

After the system boot is complete, you will see the **About GNAT Box System Software Runtime Installer** screen for the Recovery CD. Press the **<SPACE BAR>** or **<ENTER>** to continue.



### *About GNAT Box System Software Runtime Installer*

The **GNAT Box System Software Licensing Agreement** will appear. Select **VIEW LICENSE** to read the terms of the GTA software and hardware license, and if you agree, select **ACCEPT** to continue the installation. The **DO NOT ACCEPT** selection cancels system installation and closes the installer program. Use the **<TAB>** key or an **<ARROW>** key to move to your selection. Press the **<SPACE BAR>** or **<ENTER>** to select the button.



### *GNAT Box System Software Licensing Agreement*



## Select a Runtime

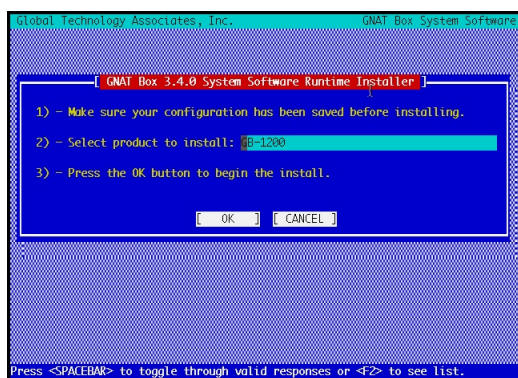
The **GNAT Box System Software Runtime Installer** screen will appear. Any information currently on the flash disk will be over-written during the installation, so verify that your configuration has been saved.

Select the desired system runtime from the list of products in step 2. Use the **<SPACE BAR>** to cycle through available options, or use the **<F2>** key to display a list of runtimes and the **<ARROW>** keys to move through the list. Once you have selected the desired product, use the **<TAB>** key to move to the **OK** selection and press the **<SPACE BAR>** to begin the installation.

Your selections will include the current GTA Firewall products, GB-200, GB-500, GB-750, GB-1200 and GB-1500, as well as legacy flash products.

In addition, the selection list includes the BootManager SIO, which allows the user to change console output from video to serial (SIO) during boot, and BootManager Video, which allows the user to change console output from serial (SIO) to video during boot.

Finally, the selection list includes the Erase Disk function. This allows the user to clear all the disk data from the selected disk. *Use with care!*



*GNAT Box System Software Runtime Installer*

## Select the Device

The system will ask you to select a drive onto which to install the GNAT Box System Software. (The compact flash card, once mounted, is considered a drive by the system.) From the list of available devices, select the flash card device. Press the **<SPACE BAR>** to cycle through available options, or use the **<F2>** key to display runtimes and the **<ARROW>** keys to move through the list.

The flash card reader device will be designated `da0`; the flash card adapter device will be designated `ad0`, `1`, `2`, etc., depending on whether a hard drive is attached to the system. (See the section “Using the Flash Card Adapter” on page 11 for more detail on identifying the correct drive.)

Depending on the product, you will see one of the following displayed when using a flash card reader. The numbers in brackets represent the number of cylinders, heads and sectors (CHS).

### Flash Device Designations

16 MB     `da0` – Generic Storage Device [245/4/32]

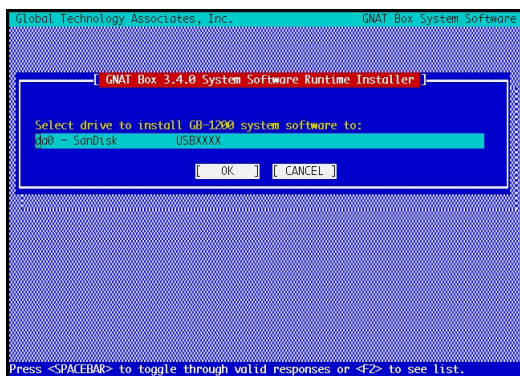
64 MB     `da0` – Generic Storage Device [978/4/32]

The designation “`da`” indicates a direct access USB device. Your computer’s hard drive, if attached will likely be designated “`ad0`.” “`ad`” indicates an ATA disk.

Once you have selected the desired device, tab to **<OK>**, then press the **<SPACE BAR>** or **<ENTER>** to continue.

### Caution

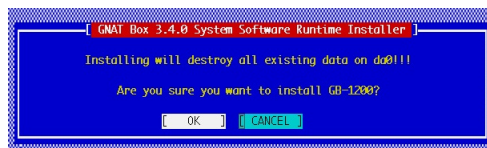
Different types and sizes of cards may display differently. Carefully select the correct storage device.



*Device Selection*

## Install the Runtime

The next dialog will display the warning: ***Installing will destroy all existing data on da0!!!! Are you sure you want to install xxxxxx?*** (where “xxxxxx” is the runtime you have selected). Tab to **<OK>**, then press **<SPACE BAR>** or **<ENTER>** if you are ready to install the runtime.



### Warning

It may take several minutes for the runtime to install on your flash card. A slash indicator (/) will be active while the system installs.

## GB-200, GB-500, GB-750, GB-1200, and GB-1500

If you are installing a GB-200, GB-500, GB-750, GB-1200, and GB-1500, the following will display when the system installation is complete:

```
Loading runtime image for XXXXXX - succeeded
Initializing disklabel for da0 - succeeded
Initializing runtime slice 2 - succeeded
Initializing runtime slice 1 - succeeded
```

## Legacy Products

If you are installing a GB-Flash, RoBoX or GB-1000, the following will display when the system installation is complete. Note that legacy products do not utilize runtime slices.

```
Loading runtime image for XXXXXX - succeeded
Initializing runtime for da0 -succeeded
Updating bootstrap code to 19200 -succeeded
(This line only displays for RoBoX systems.)
```

## Installation Complete

Remove the GNAT Box System Recovery CD and compact flash, then press **<ENTER>** to reboot. Your flash disk should now be re-imaged and ready to place in the GTA Firewall system.

Both slice and 1 and slice 2 of the disk image have been written and are, at this point, identical. The first time the GNAT Box System is loaded, slice 1 will boot up by default.

# Using the Flash Adapter

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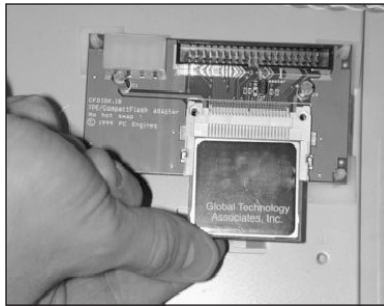
## Install the Flash Module

This flash adapter installation example uses an IDE cable, compact flash card and flash adapter board, and illustrates how to install these components in order to re-image a compact flash card. Assemble the components and target system. **Do not** turn on system power while installing the flash adapter.

### **Warning**

The flash module is NOT hot-swappable. Never install or remove the flash adapter while the system power is on.

Holding the flash card with the label up, slide the card into the slot on the adapter board, pinholes in, until firmly and evenly seated.



*Insert the flash module into the adapter board*

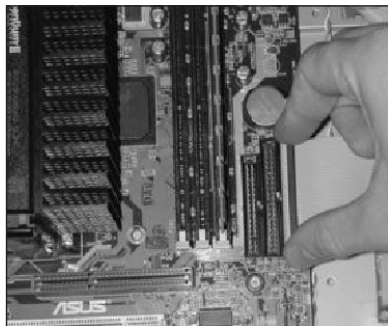
Open the case of your target machine. Please contact the case manufacturer if you have additional questions on how to complete this step.

### **Caution**

Before opening the system case, be sure that you are grounded to prevent static electricity discharge. Improper grounding can damage your system or flash card. (Follow the system manufacturer's recommendations for proper grounding of your computer system.)

## Locate IDE Ports

Locate the IDE ports on the motherboard. (Refer to the motherboard's user guide if you cannot locate the IDE ports.)



*Locate your system's primary IDE port*

## Detach Hard Drives

GTA recommends temporarily removing all hard drives by detaching both the IDE cable and the power cable from the drive, attaching only the IDE flash adapter. This prevents overwriting the hard drive by ensuring that the target IDE flash adapter and flash card are the only “ad” device listed during system installation. (See page 9.)

Before detaching any drives, note the exact position of the IDE cable pins in relation to the hard drive. When reattaching, match pin #1 on the IDE cable, identified by a color stripe, to pin #1 on the hard drive IDE connection port. The #1 pin on the hard drive is sometimes labeled, and is on the end of the IDE port closest to the power plug.

## Secure the Flash Module

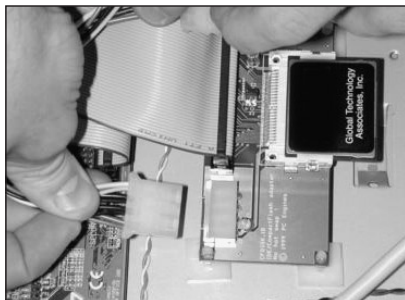
Secure the adapter board inside the system's case; finding a place where the components fit easily, and where the IDE cable can easily reach from the adapter board to the primary IDE port. **Do not** mount the adapter board onto or near other electronic components inside the case.

## Connect the IDE Cable

Insert one end of the IDE cable into the primary IDE port with the striped side of the cable lined up with pin #1 of the IDE port. Insert the other end of the cable into the IDE port of the adapter board with the striped side nearest to the 4-pin power port.

## Connect Power Supply

Locate a 4-pin connector on your system's power supply, and connect a cable from it to the 4-pin power port of the adapter board. Close the system case.



*Connect the power supply to the 4-pin power port on the adapter board*

## Detect IDE from System BIOS

Next, enter the system BIOS to detect the IDE settings. Typically, you can enter the BIOS by pressing **<DELETE>** or **<F1>** **immediately** after power on.

### Note

Steps vary depending on the manufacturer. Consult documentation from the motherboard manufacturer for specific instructions.

Locate and run IDE Auto-Detection. A 64 Mb flash module should be auto-detected on the primary IDE port with the following values:

CHS Capacity	64 Mb
Cylinders	978
Heads	4
Sectors	32

If the flash module was not auto-detected, or the values are incorrect, find the manual setup and enter the values listed above. Use defaults for any other values listed.

If you have an older system, e.g., Compaq PII 450 686T3 and Desk Pro EN, try setting the PIO mode to 0, then retry auto-detect. If there is no manual setup, try using the auto-detected settings. Select Save.

Disable all other IDE devices, then continue setting up the system BIOS to boot from the CD-ROM drive. (See "Set the Boot Sequence," next page.)

# Troubleshooting

## **My computer is not booting from CD.**

Make sure you are using the Recovery CD; that the boot sequence is set properly; and that you are using an IDE CD-ROM.

## **My recovery system does not see USB flash card.**

Make sure you are using a GTA-certified flash card and that the USB flash card reader is properly connected to your PC. (See the GTA Partners website for more information about tested USB flash card readers.)

Check the USB cabling. Older hubs may not function properly with newer USB readers.

## **The warning dialog “Initializing runtime slice 2 (or 1) failed; No space left on device” is displayed.**

1. The flash card is too small; make sure the card is the required size.
2. The flash card no longer functions correctly; use another flash card.

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