

## How to Use Active Recovery Technology (ART)

<https://campus.barracuda.com/doc/53248767/>

With Active Recovery Technology (ART), you can perform basic system configurations and recovery operations outside the Barracuda OS. From the ART menu, you can:

- Reinstall the Barracuda NextGen Firewall F-Series.
- Test the system hardware (CPU, RAM, HDDs).
- Retrieve system hardware information.
- Start a basic command-line interface.
- Change basic system configurations (hostname, management IP address, network routes).

ART is based on a very small Linux system. You can access it via the following methods:

- Serial console – The default connection speed for the serial console is 19200 baud.
- SSH – Use the SSH client in Barracuda NextGen Admin or another SSH client.
- LCD display – On systems with an LCD display and keypad. Before using the LCD display, deactivate serial access. On the **CONFIGURATION > Administrative Settings** page, set **Serial Access** to **no**.

When you first boot the Barracuda NextGen Firewall F-Series after installation or firmware update, you cannot access ART for 10 to 45 minutes (depending on the appliance model) while it generates the system configuration. To see if the according process (buildarttree) is still running, refer to the [Resources Page](#).

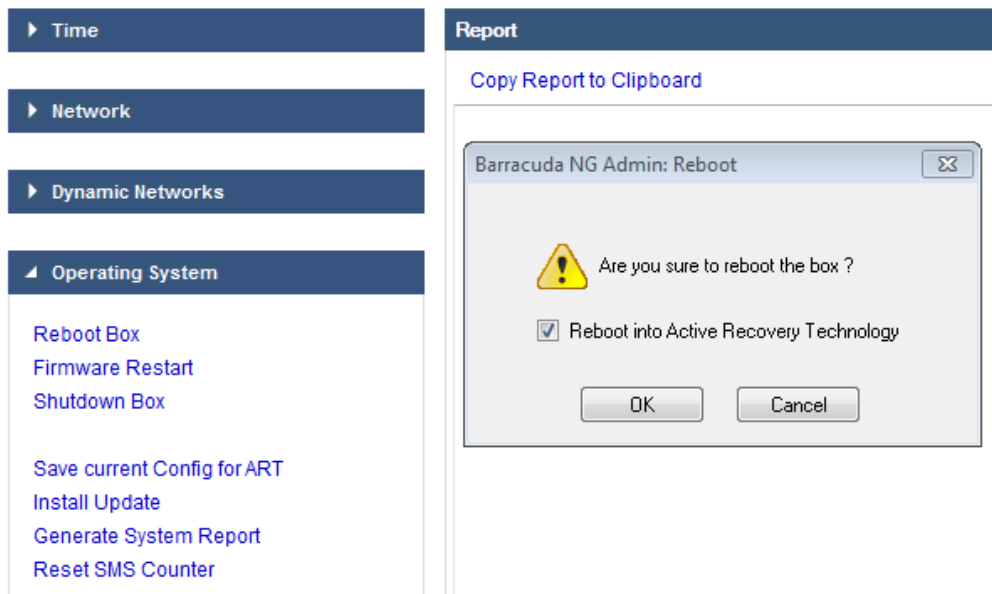
If the process was interrupted by a reboot of the system, it needs to be started manually. Launch the **buildarttree** script in the `/boot/art` directory.

### Entering the ART Menu

You can enter the ART menu after you reboot the Barracuda NextGen Firewall F-Series or while the system boots up.

#### Enter ART After Rebooting the System

1. Go to the **CONTROL > Box** page.
2. In the left navigation pane, expand **Operating System** and click **Reboot Box**.



3. In the **Reboot** window, select the **Reboot into Active Recovery Technology** check box and click **OK**.

To boot the NextGen Firewall F-Series into ART on the [Command-Line Interface](#):

```
touch /boot/art.lock
```

```
reboot
```

### Enter ART While the System Boots Up

1. When the "+++press any key to enter ART+++" message is displayed on the screen, press any key on your keyboard.
2. When prompted, press **1** to enter the ART menu.

```

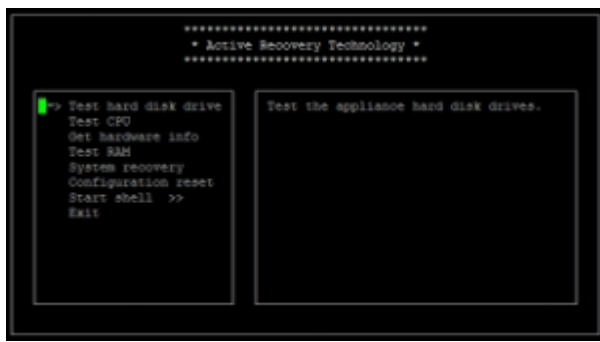
[ 7.513003] sd 4.0.0.0: [sub] Attached s
[ 7.466846] Clocksource tsc unstable (de
[ 7.500349] Switching to clocksource jif
Loading pata_acpi module
Loading ata_generic module
+++ press any key to enter ART +++
Options:
1) Enter ART console
2) Open shell
q) Quit and continue boot sequence
ART># █
  
```

You must enter the ART menu as root.

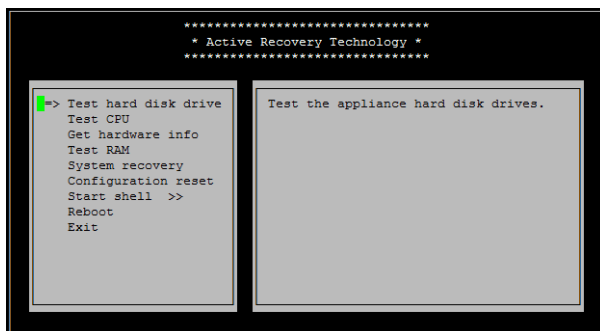
## The ART Menu

If you are not using the SSH client in Barracuda NextGen Admin, make sure that your SSH client correctly forwards all functions keys to the serial console. If you are using PuTTY, enable Xterm R6 support in the PuTTY keyboard settings.

To navigate through the ART menu options, use the arrow and **Esc** keys. To select options, press the **Enter** key. You can select any of the following ART menu options via the serial console:



When accessed via SSH, the ART menu additionally features a **Reboot** option:



- **Test hard disk drive** – Evokes a hard disk check tool. If bad blocks are found, you can only repair the hard disk file system with the command-line interface.
- **Test CPU** – Performs a load test of all available CPUs.
- **Get hardware info** – Displays all system information that is stored in a hidden partition, such as the serial number, initial installation date, etc.
- **Test RAM** – Evokes a RAM checking utility. The entire RAM cannot be tested because the ART OS is stored on a part of the RAM.
- **System recovery** – Reinstalls the system with a previously saved system configuration. For systems with a hard disk drive, an installation \*.iso image and PAR file on a dedicated partition of the disk drive are used. Optionally, an \*.iso image on a USB flash drive can also be used. For flash-only systems, a USB flash drive is required.

- **Configuration reset**
- **Start shell**
- **Reboot** – Only available via SSH; use this option instead of **Exit** to save your configuration changes and reboot the unit.
- **Exit** – Save and exit ART. Will only reboot the unit when accessed via the serial console. When accessed via SSH, use **Reboot** instead.

### Saving and Recovering a System Configuration with ART

It is highly recommended that you save a working configuration of the Barracuda NextGen Firewall F-Series for ART. When you recover the system with ART, this configuration will be used.

Flash-based systems like the Barracuda NextGen Firewall F-Series F10 and F10x do not have a partition that is dedicated to storing the files required for recovering the system. For these systems, you must use a USB flash drive to save and recover your system configuration with ART. On the USB flash drive, save and rename the required PAR file as *box.par*. Save and rename the required firmware ISO image as *netfence.iso*.

### Save a System Configuration for ART

1. Log into the Barracuda NextGen Firewall F-Series.
2. Go to the **CONTROL > Box** page.
3. In the left navigation pane, expand **Operating System** and click **Save Current Config for ART**.

### Recover a System Configuration with ART

If you did not save a system configuration for ART, the Barracuda NextGen Firewall F-Series will be reinstalled with the default factory settings.

1. Enter the ART menu.
2. Select **System recovery**.

The Barracuda NextGen Firewall F-Series will be reinstalled with the firmware version that it was shipped with.

### Setting Only Basic Configuration Parameters using ART

Use this function with care. Modifying these important basic system configuration parameters is a massive operational modification and may prevent you from accessing your unit via Barracuda NextGen Admin and/or SSH.

It is possible to set a few important basic configuration parameters using the ART Basic Configuration menu. To enter this menu, perform the following steps:

1. At the command line, enter: `setip`

Note that the command is indeed spelled **setip**, not *setup*.

2. An ART screen appears as shown in the figure below. Now, using the arrow keys and **Enter**, select **Basic Configuration**.



3. Modify the **Hostname**, **Management IP**, **Netmask**, and/or **Default Gateway** fields as needed followed by pressing **F3** to save the changed values.
4. Select **Reboot** to reboot the unit so that the changed values become effective.

### Changing the Firmware Version Used by ART

ART always uses the firmware version that is shipped with the Barracuda NextGen Firewall F-Series. After reinstalling your system with a new firmware version, you must update ART to use the same firmware version. Use the command line via the SSH client:

1. At the command line, change to the `/art` directory. Enter: `cd /art`
2. Upload the required firmware ISO image to the firewall.
3. Remove the existing netfence ISO file and rename the uploaded ISO to `netfence.iso`  
`rm -f netfence.iso && mv your-uploaded-iso-file netfence.iso`
4. Change the file permission: enter `chmod 755 netfence.iso`.

### Using ART with the Barracuda NextGen Control Center

You must enable ART before using it with the Barracuda NextGen Control Center. Go to the **CONFIGURATION > Box Properties** page. In the left menu, expand **Configuration** and click **Operational**. From the **ART Network Activation** list, select **yes**.

For NextGen Firewall F-Series units managed by the Barracuda NextGen Control Center, you can

initiate remote management tunnels from the ART menu. You can also access the management IP address, VIP, default route, and remote management tunnel. If the system has an Internet connection, you can also connect to the management IP address and VIP via SSH.

ART only makes the default route and the route's dynamic network link available. ISDN or WWAN links are not available.

Use this function with care. Modifying these important basic system configuration parameters is a massive operational modification and may prevent you from accessing your unit via Barracuda NextGen Admin and/or SSH.

## Figures

1. art\_reboot.png
2. enter\_art.png
3. art\_recover.jpg.png
4. art\_reboot1.jpg
5. basic\_conf.png

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