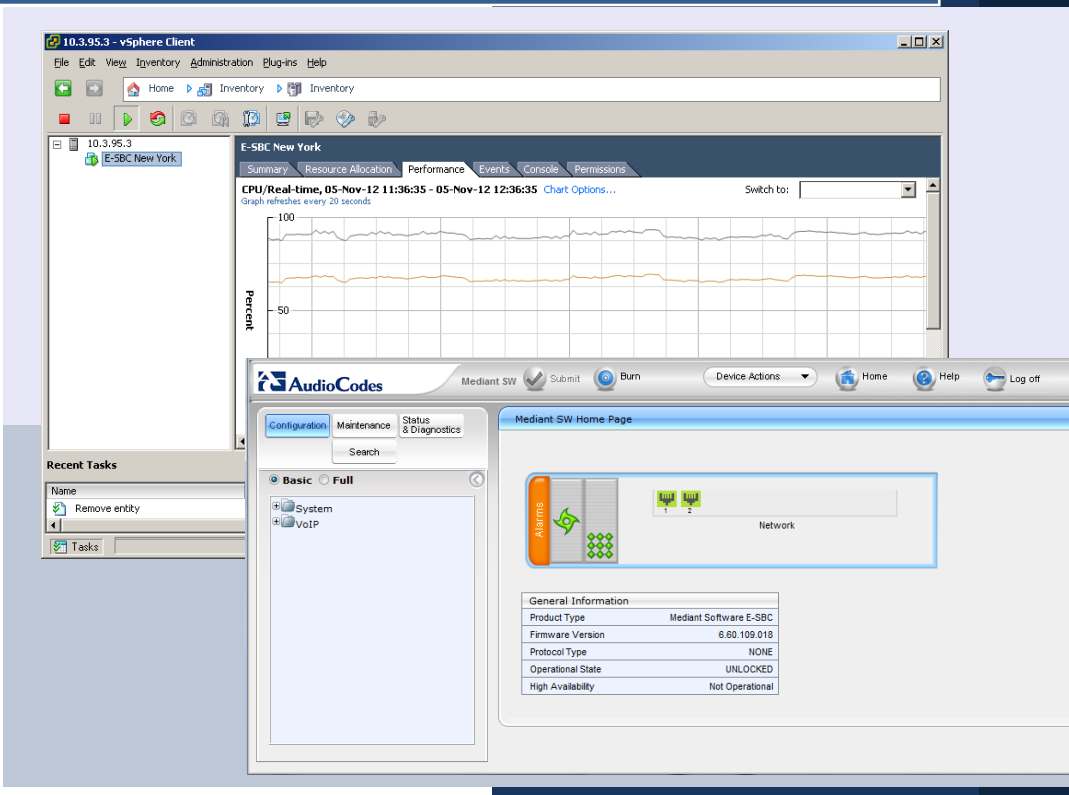
Mediant™ Software E-SBC

Session Border Controllers

Virtual Edition

Installation Manual



HD VoIP Sounds Better

Version 6.6

October 2013

Document #: LTRT-10343

AudioCodes

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Notice

This document describes installation of AudioCodes' Mediant Software E-SBC (Enterprise Session Border Controller) Virtual Edition.

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Date Published: October-07-2013

Trademarks

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Abbreviations and Terminology

Each abbreviation, unless widely used, is spelled out in full when first used.

Documentation Feedback

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Related Documentation

Manual Name
Mediant Software E-SBC User's Manual
SIP Release Notes

Note: The scope of this document does not fully cover security aspects for deploying the product in your environment. Security measures should be done in accordance with your organization's security policies. For basic security guidelines, see *AudioCodes Recommended Security Guidelines*.

1 Introduction

AudioCodes' Mediant Software E-SBC (Enterprise Session Border Controller) Virtual Edition is a software product installed and hosted in a virtual machine environment, enabling connectivity and security between enterprises' and Service Providers' VoIP networks.

The Mediant Software E-SBC Virtual Edition provides perimeter defense as a way of protecting companies from malicious VoIP attacks; voice and signaling mediation and normalization for allowing the connection of any PBX and/or IP-PBX to any Service Provider; and service assurance for service quality and manageability.

The product also offers call "survivability", ensuring service continuity to enterprises served by a centralized SIP-based IP-Centrex server or branch offices of distributed enterprises. Survivability functionality enables internal office communication between SIP clients in the case of disconnection from the centralized SIP IP-Centrex server or IP-PBX.

The product features full management through its HTTP/S-based Web server. This user-friendly Web interface allows remote configuration using any standard Web browser (such as Microsoft™ Internet Explorer™).

The product enables customers to significantly cut costs due to reduced hardware, power and cooling requirements.

1.1 Product Package

The Mediant Software E-SBC Virtual Edition package consists of an Installation CD containing Mediant Software E-SBC Virtual Edition software, AudioCodes utilities and related documentation.

1.2 Recommended Host Server Specifications

Table 1-1 below shows the recommended VMware ESXi Host Server specifications.

Table 1-1: Recommended VMware ESXi Host Server Specifications

Resource	Server
Hypervisor	VMware ESXi version 5.0 or later
Processor	2 Cores or more
Memory	4 GB or more
Disk space	60 GB or more
Network	At least two preconfigured virtual networks

For VMware server and client installation instructions, see the VMware website www.vmware.com.

Reader's Notes

2 Installing the Product

This section shows the installation process of Mediant Software E-SBC on VMware ESXi version 5.0 using the VMware vSphere client.

The installation process might differ for other versions and installation methods.

➢ **To install:**

1. Deploy the OVF Template (see Section 2.1 below).
2. Reconfigure the default IP address to match your network settings (see Section 2.2 on page 13).

2.1 Deploying the OVF Template File

The Mediant Software E-SBC Virtual Edition is distributed in the form of an Open Virtualization Format (OVF) file.

➢ **To deploy the file:**

1. Log into vSphere client.
2. Select **File** > **Deploy OVF Template** and locate the host server on which to install the OVF Template file.
3. Browse to and select the E-SBC.ovf file supplied by AudioCodes (see Figure 2-1).
4. View the OVF details and click **Next**.
5. Select a name for the deployed template and click **Next** (see Figure 2-2).
6. Select the **Thick Provision Lazy Zeroed** option and click **Next** (see Figure 2-3).
7. Select the Destination Network(s) to which two of the E-SBC virtual Network Interface Cards will be connected. Note that Destination Network(s) name(s) depend on VMware host configuration. The OVF template provides the virtual machine with two NICs of type VMXNET3. After installation of the E-SBC virtual machine, you can change the number of network connections and/or their type (see Appendix A, Configuring the Network, on page 21). Click **Next** (see Figure 2-4).
8. Wait for the deployment process to complete.
9. Locate the new VM in the tree under your host, right-click it and select **Edit Settings;** the E-SBC Virtual Machine Properties screen opens (see Figure 2-5).
10. Click the **Resources** tab, select **CPU** under **Settings,** configure **Reservation** of CPU frequency to double the core CPU speed, for example, for CPU Intel® Xeon™ E3-1220 with a core frequency of 3.1 GHz, reserve 6.2 GHz. Select the **Unlimited** option if it isn't already selected. Click **Finish**.
11. Power-on the VM: Right-click the VM name and select the **Power On** popup menu option.

Figure 2-1: Deploying the OVF Template – Selecting the OVF Template File

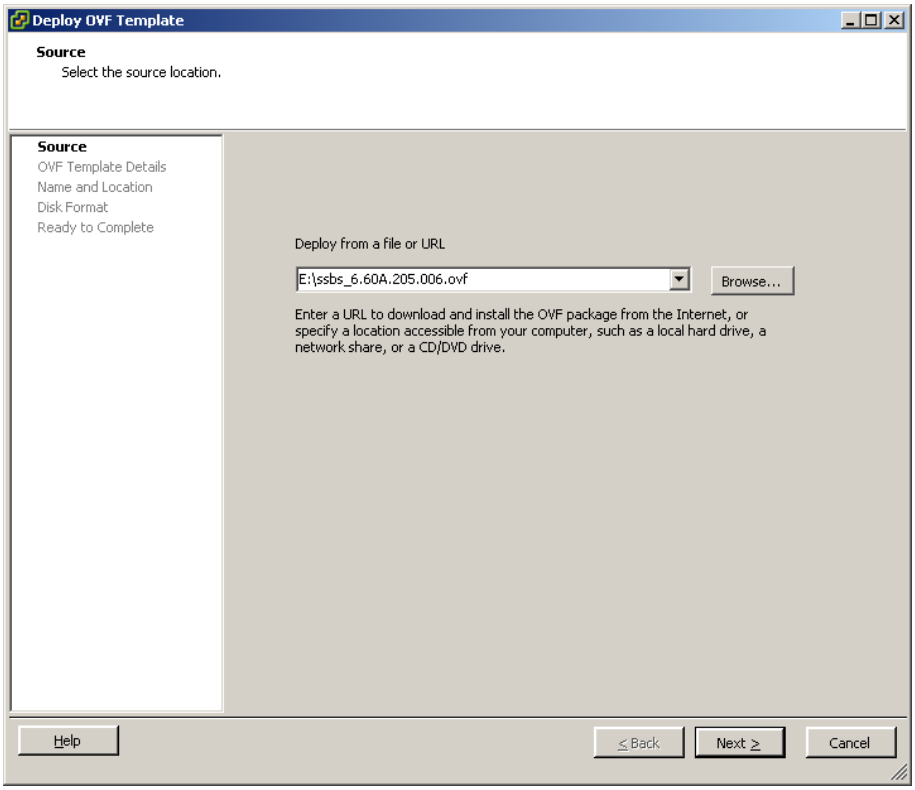


Figure 2-2: Deploying the OVF Template – Selecting VM Name

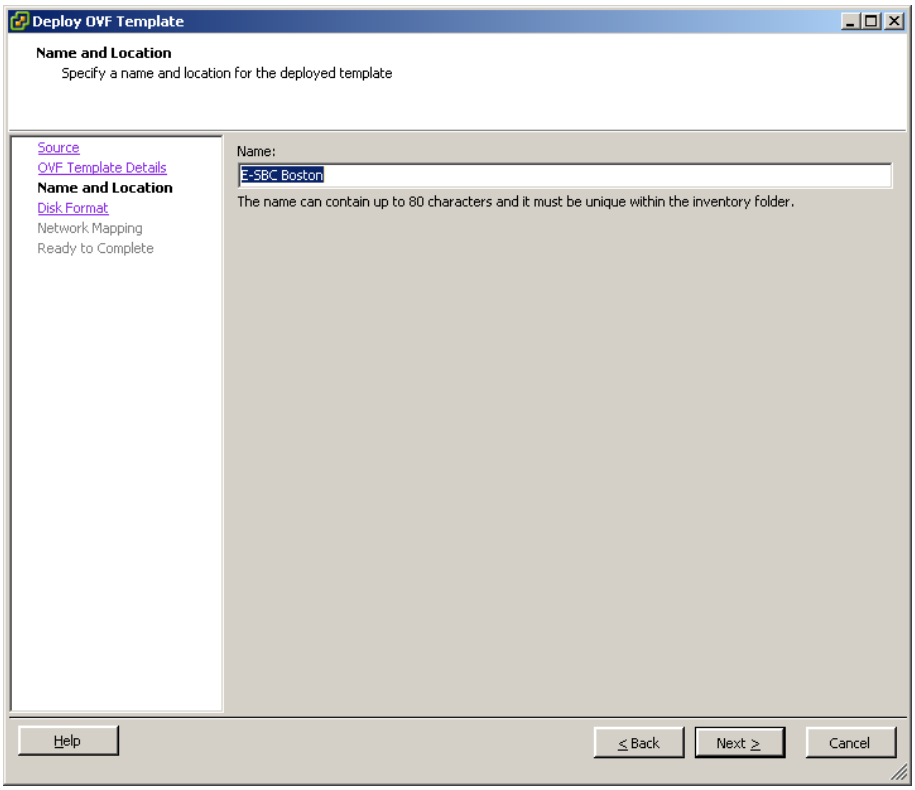


Figure 2-3: Deploying the OVF Template - Selecting Disk Format

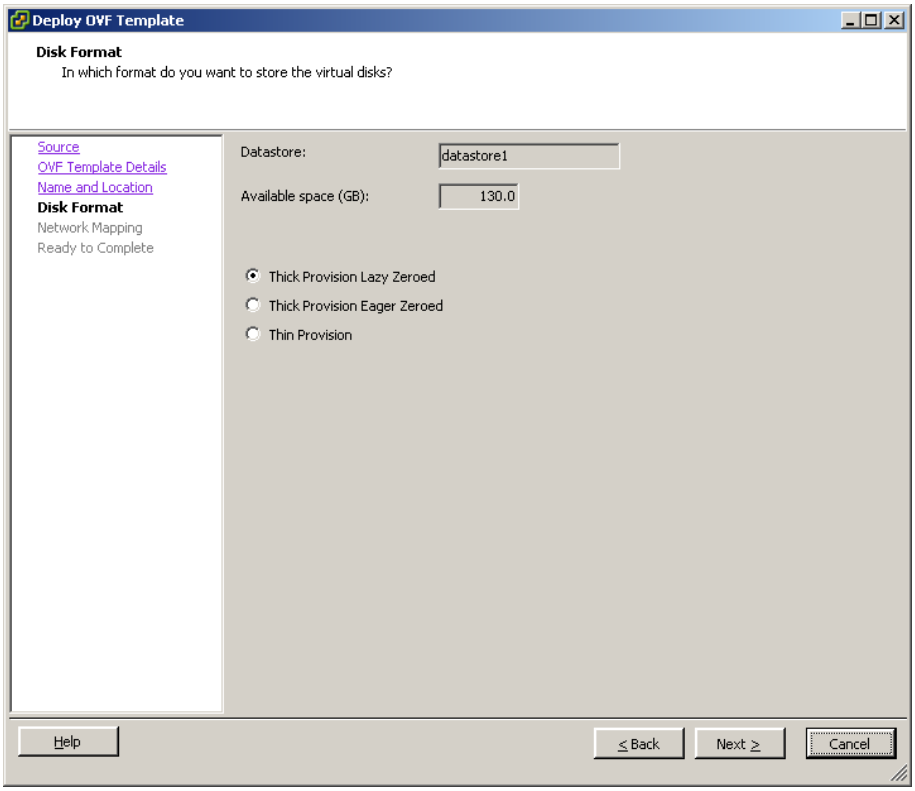


Figure 2-4: Deploying the OVF Template - Selecting the Destination Network (VM Network)

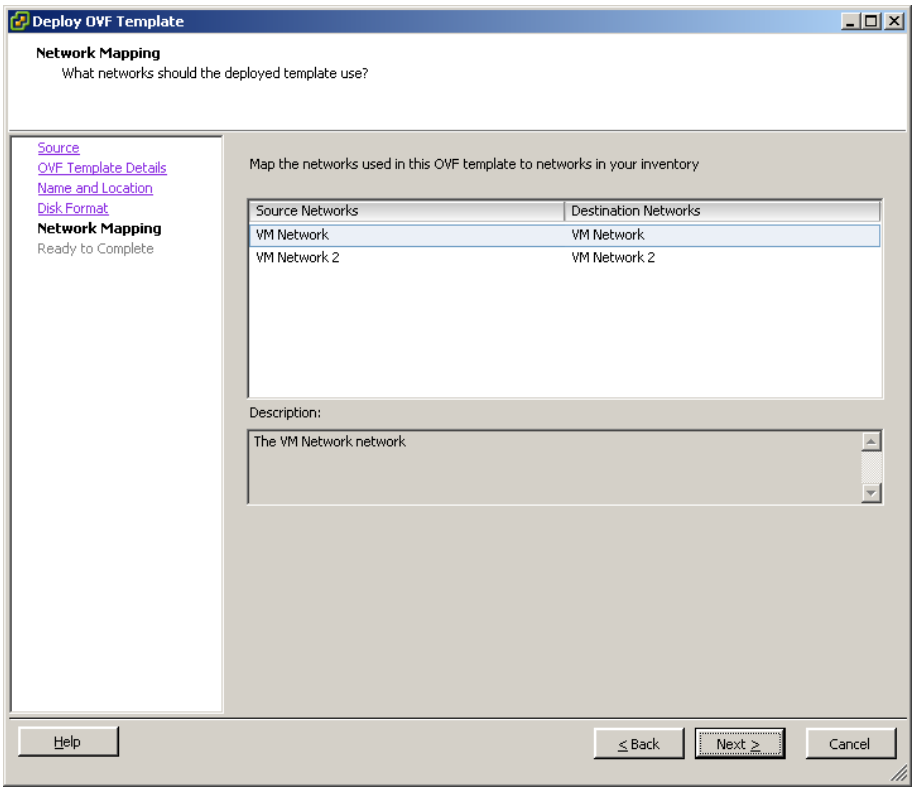
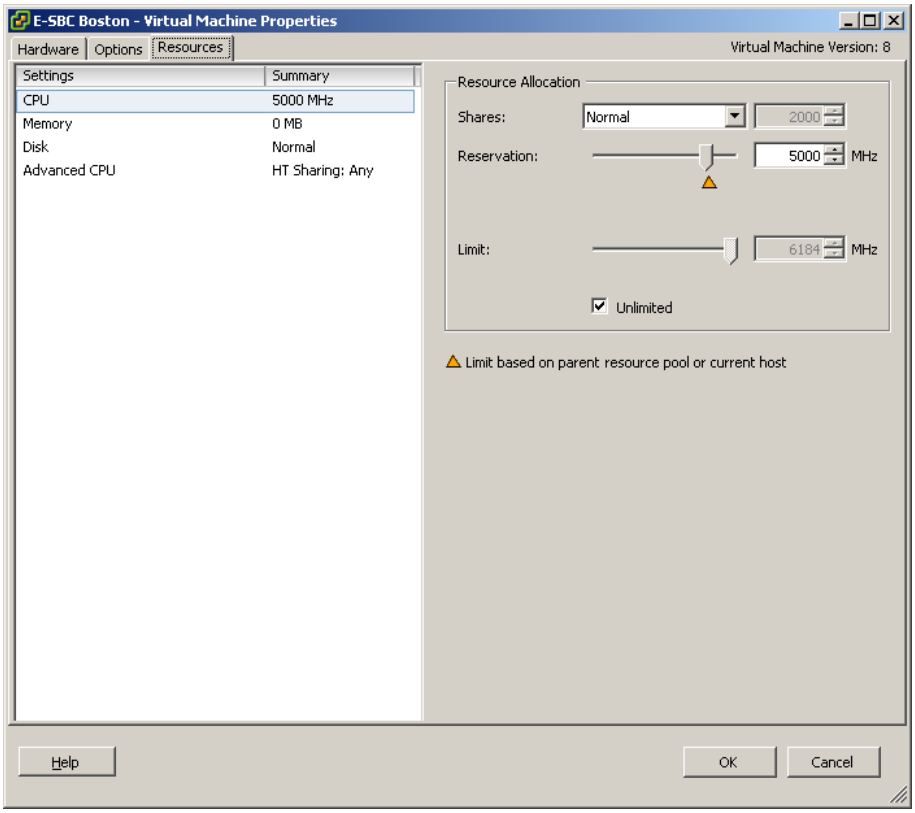


Figure 2-5: Deploying the OVF Template - E-SBC Virtual Machine Properties



2.2 Reconfiguring Default IP Address to Match Network Settings

After installation, the Mediant Software E-SBC Virtual Edition is assigned a default IP address that will most likely be inaccessible from the customer's network.

Table 2-1: Default IP Address

Parameter	Value
IP Address	192.168.0.1
Subnet Mask	255.255.255.0

Reconfigure the IP address in order to connect to the Mediant Software E-SBC Virtual Edition Web based Management Tool (hereafter referred to as 'Web interface'). The IP address corresponds to the first NIC of the virtual machine.

Note: The product orders available NICs in alphabetical order of corresponding MAC addresses.

➢ **To reconfigure the IP address using CLI:**

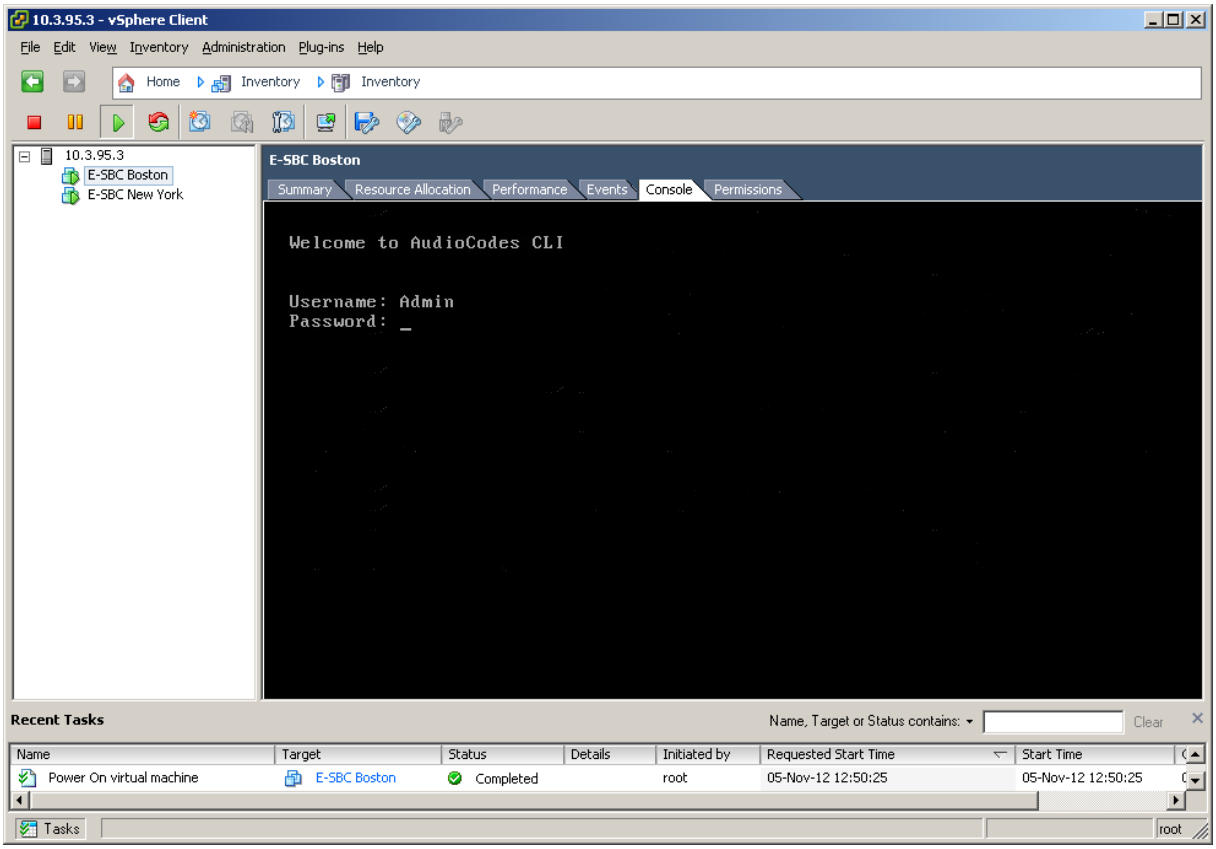
1. Click the VM's **Console** tab to connect to the CLI management interface.
2. At the prompt, type the username (default is **Admin** - case sensitive), and then press ENTER:

```
Username: Admin
```

3. At the prompt, type the password (default is **Admin** - case sensitive), and then press ENTER:

```
Password: Admin
```

Figure 2-6: CLI Management Interface



4. At the prompt, type **enable** and press ENTER:

```
Mediant SW> enable
```

5. At the prompt, type the password again and press ENTER:

```
Password: Admin
```

6. At the prompt, type the following commands to access the network interface configuration:

```
Mediant SW# configure voip
Mediant SW(config-voip)# interface network-if 0
Mediant SW(network-if-0)#
```

Note: Use the Tab key to auto-complete partially entered commands.

7. At the prompt, type the following commands to configure the IP address, prefix length and default gateway:

```
Mediant SW(network-if-0)# set ip 10.4.212.155
Mediant SW(network-if-0)# set prefix-length 16
Mediant SW(network-if-0)# set gateway 10.4.0.1
```

Note: The IP and gateway addresses above are *by way of example* only. Use IP and gateway addresses appropriate to your network configuration.

8. If Mediant Software E-SBC Virtual Edition is connected to the IP network that uses VLAN ID, type the following command to configure it:

```
Mediant SW(network-if-0)# set vlan-id 10
```

9. At the prompt, type **exit** twice to complete the configuration:

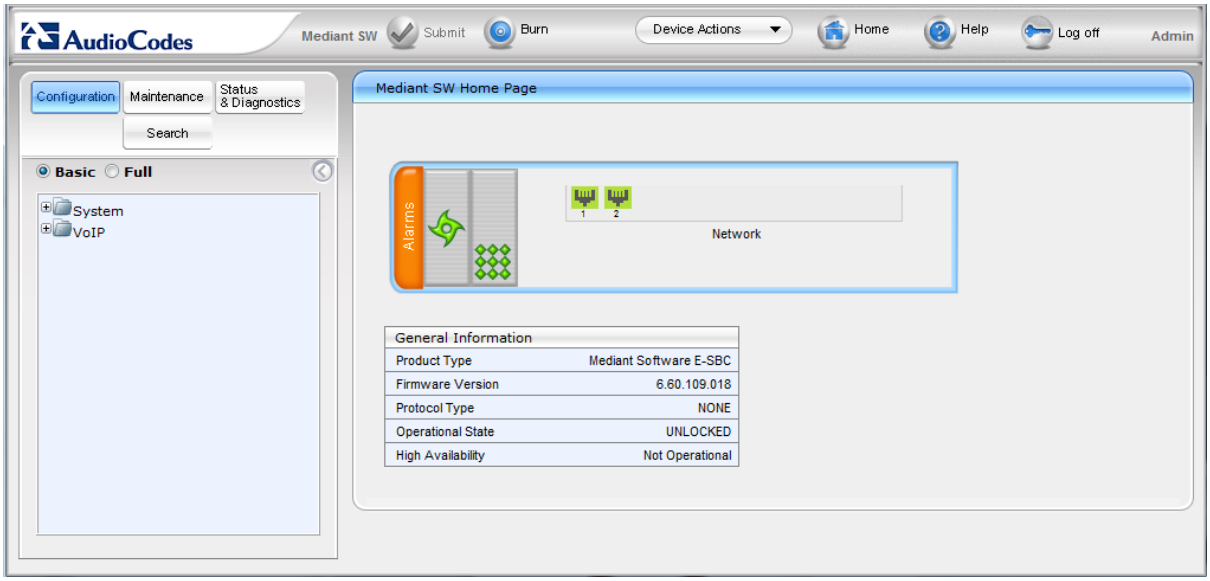
```
Mediant SW(network-if-0)# exit
Mediant SW(config-voip)# exit
```

10. At the prompt, type **reload now** to reset the product and activate the new configuration:

```
Mediant SW# reload now
```

After the Mediant Software E-SBC Virtual Edition restarts, connect to its Web interface to continue the provisioning (see the *Mediant Software E-SBC User's Manual* for details).

Figure 2-7: Web Interface



2.2.1 Licensing the Mediant Software E-SBC

The device is shipped by default with a pre-installed Software License Key that enables only one call session. After installation has completed successfully, you need to load an encrypted Software License Key file, supplied in the package, to enable the call capacity and features that you ordered.

Note: If you didn't receive this Software License Key file with your installation disk, contact your AudioCodes sales representative to obtain it (see Section 2.2.1.1 below).

2.2.1.1 Obtaining the Software License Key

If you didn't receive a Software License Key file with your installation disk, you must obtain one.

➢ **To obtain the Software License Key:**

1. Make a note of the serial number of the product:
   a. In the Web interface open the Device Information page (**Status & Diagnostics** tab > **System Status** menu > **Device Information**).
   b. The serial number is displayed in the "Serial Number" field.
2. Send the serial number to your AudioCodes representative when requesting the required Software License Key.
3. When you receive the new Software License Key file, check it as follows:
   a. Open the file with any text-based program such as Notepad.
   b. Verify that the first line displays "[LicenseKeys]".
   c. Verify that the file contains a line in the following format:
      "S/N<serial number of the device> = <Software Upgrade Key string>" (see Figure 8 below).

Figure 8: Software License Key File with S/N Line

```
[LicenseKeys]
;Board Type 29
S/N241182 =
okRTr5topwYMblZd4NN2a3Qhm4NJfidaagUyehso94APbBF85hF4by0cmQZf2B8bMcze7JQ9kMSa5h641R1aOkeEb9AddF894Zx
S/N242519 = tmxTr5to0mlMblZdoPd2a3Qh9zJfidafilyehsogOQPbBF8pjl4by0c9jxf2B8eOoze7JQgywSa5h6o391aOkeTlAddF8c6Fx
S/N226403 = tmxTr5to0lsMblZdoOB2a3Qh9yJfidafilyehsogN4PbBF8piZ4by0c9ixf2B8eOoze7JQgxgSa5h6o2x1aOkeTJlAddF8c6Fx
S/N226417 = r6xTr5to25sMblZdfiB2a3Qh5OJJfida92lyehsoix4PbBF8eOZ4by0c52xf2B88yoze7JQiNgSa5h6fyx1aOkeXZlAddF8amFx
```

   d. Verify that the "S/N" value reflects the serial number of your product.

Warning: Do not modify the contents of the Software License Key file.

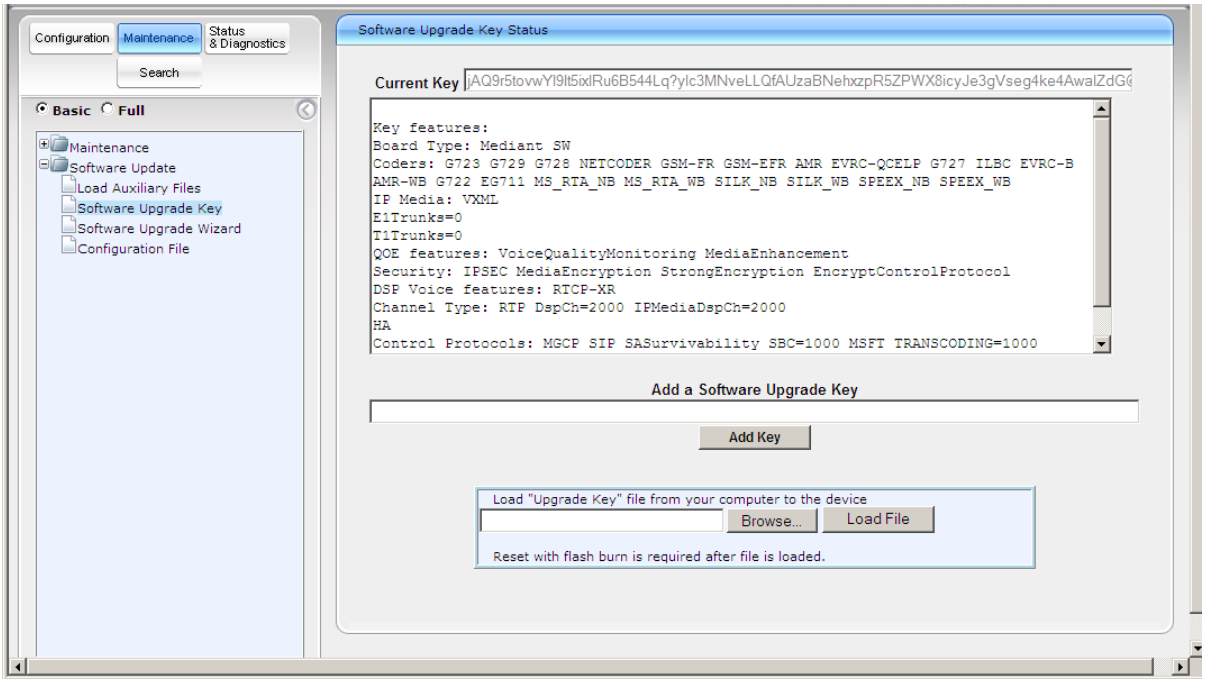
2.2.1.2 Installing the Software License Key

The procedure below describes how to install the received Software License Key.

➢ **To install the Software License Key:**

1. Open the Software Upgrade Key Status page (**Maintenance** tab > **Software Update** menu > **Software Upgrade Key**):

Figure 9: Software Upgrade Key Status Page



2. Back up the key currently installed on the product, as a precaution. You can reload this backup to restore the product's original capabilities if the new key does not comply with your requirements.
   a. In the 'Current Key' field, select the entire text string and copy it to any standard text file (e.g., Notepad).
   b. Save the text file with any file name and file extension (e.g., key.txt) to a folder on your computer.
3. Open the Software License Key file using a text-based program such as Notepad.
4. Copy-and-paste the string from the file to the 'Add a Software Upgrade Key' field.
5. Click the **Add Key** button; the key is installed on the device and displayed in the 'Current Key' field.
6. Verify that the key was successfully installed:
   In the Software Upgrade Key Status page, check that the listed features and capabilities activated by the installed key match those that were ordered.
7. Reset the product; the new capabilities and resources enabled by the key are activated.

2.3 Installing an HA System

Users can configure two Virtual Machines, running on different servers or on the same server, to function in a High Availability (HA) configuration.

➢ **To configure an HA system:**

- Reconfigure a temporary IP address for each device, according to the instructions under Section 2.2.
- Follow the instructions described in the section 'High Availability System' in the *Mediant Software E-SBC for User's Manual*, and configure each device accordingly using the Web interface.

2.4 Upgrading the Product

Users can update the Mediant Software E-SBC Virtual Edition in order to (for example) implement software fixes. For details, see the *Mediant Software E-SBC User's Manual*.

3 Returning the System to a Previous State

Taking a System Snapshot captures a complete state of the Mediant Software E-SBC Virtual Edition, including:

- installed Mediant Software E-SBC Virtual Edition
- the current configuration
- auxiliary files
- the Software License Key

The first snapshot is automatically taken when initial installation is performed. Up to 10 additional snapshots may be taken (see Section 3.1 below).

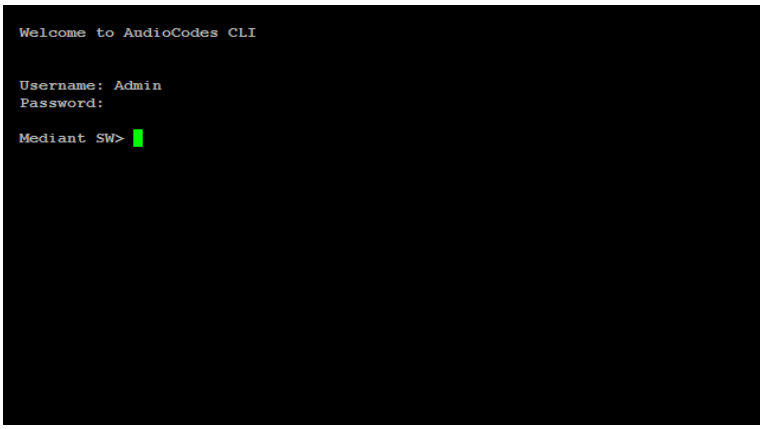
The Mediant Software E-SBC Virtual Edition can then be returned to a snapshot (see Section 3.2 below).

3.1 Taking a Snapshot

➢ **To take a snapshot using the CLI:**

1. Connect to the CLI interface as described under Section 2.2.

Figure 3-1: CLI Management Interface



2. At the prompt, type **enable** and press ENTER:

```
Mediant SW> enable
```

3. At the prompt, type the password and press ENTER:

```
Password: Admin
```

4. At the prompt, type the following commands to take a snapshot:

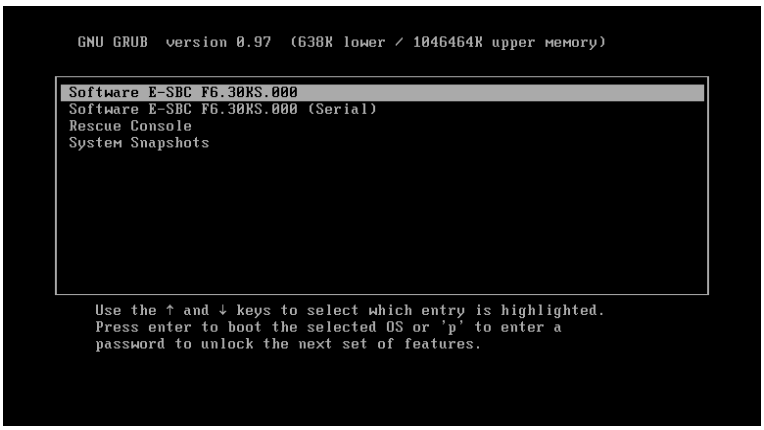
```
Mediant SW# configure system
Mediant SW# startup-n-recovery
Mediant SW# create-system-snapshot <snapshot name>
```

3.2 Returning to a Snapshot State

➢ **To return to a snapshot state:**

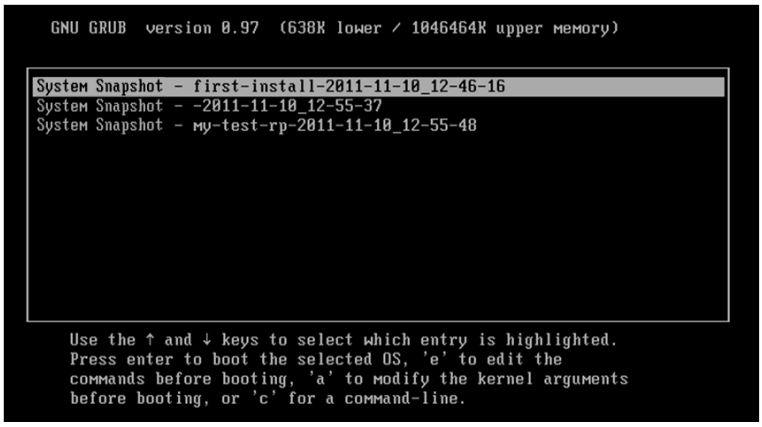
1. Reboot the VM.
2. In the GRUB menu, displayed for 5 seconds during the start-up, press the Down ↓ key to prevent the E-SBC software from starting.

Figure 3-2: GRUB Menu



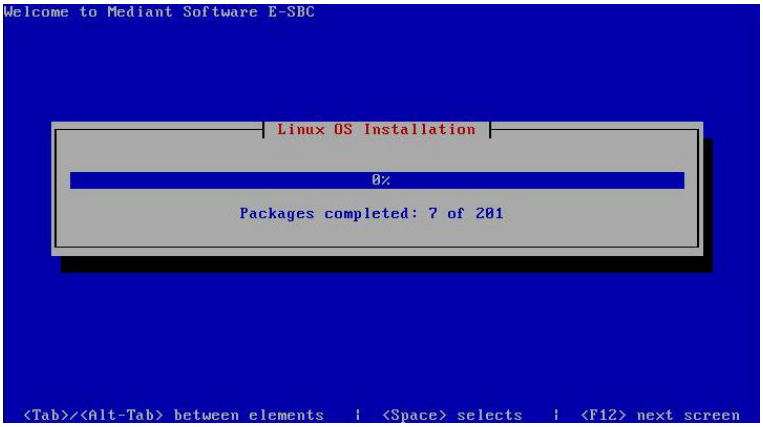
3. Select 'Snapshots' and press ENTER; you're prompted to select a snapshot.

Figure 3-3: Selecting a Snapshot



4. Select a snapshot and press ENTER; the system returns to the snapshot state; it may take up to 10 minutes to complete (see Figure 3-4).

Figure 3-4: System Returning to Snapshot State



5. The system will automatically reboot after the return is complete.

A Configuring the Network

A.1 Virtual NIC Adapter Types

The OVF template of the Mediant Software E-SBC Virtual Edition contains two virtual NICs of type VMXNET3. This configuration provides optimal network and CPU performance. If you add additional virtual NICs, make sure that they are of the same VMXNET3 type.

Mediant Software E-SBC Virtual Edition also supports passthrough NICs. This option gives the best network and CPU performance but requires allocation of a NIC to a specific VM without the capability of sharing it with other VMs. For details, refer to the VMware documentation at www.vmware.com.

Warning: All NICs must be configured to the type **VMXNET3** (i.e., not any other type such as E1000).

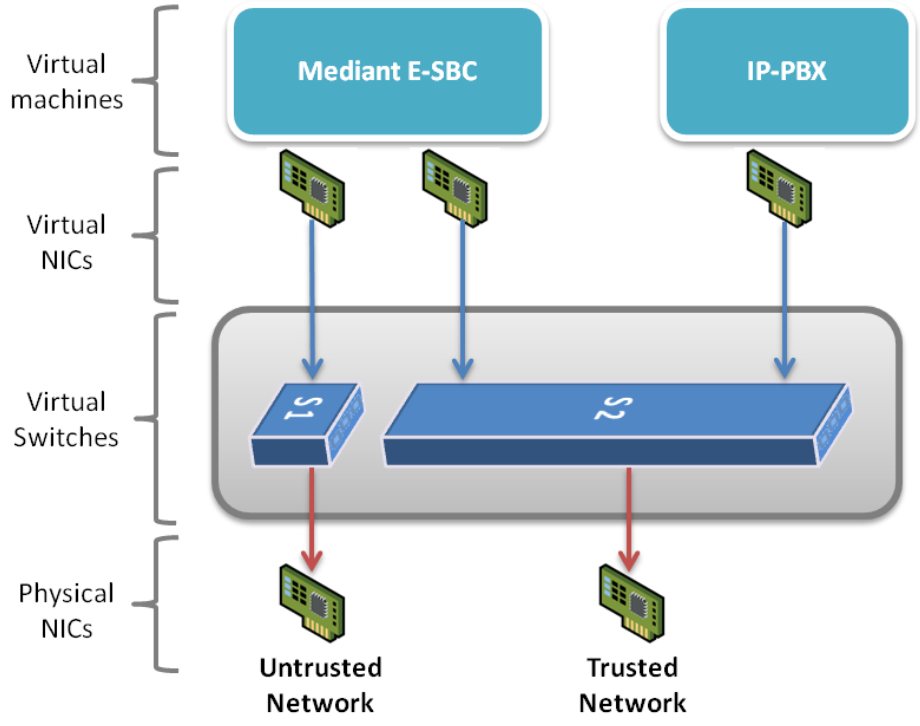
A.2 Number of Virtual NIC Adapters

You can add/remove virtual adapters to the Mediant Software E-SBC Virtual Edition. When adding/removing a NIC, shutdown is required (refer to the VMware documentation at www.vmware.com for instructions). It's recommended to take a System Snapshot before you add/remove a NIC (see Section 3 on page 19).

A.3 Network Configuration Example

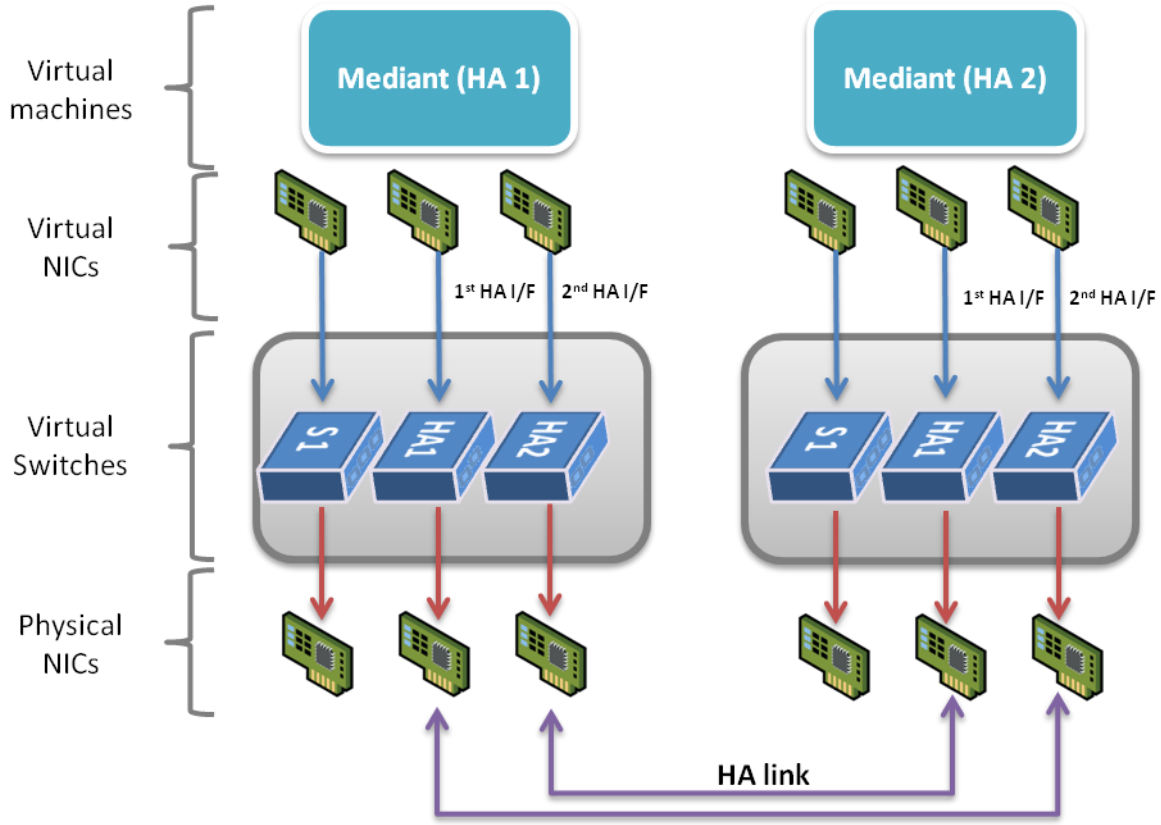
The network can be configured in various configurations depending on your implementation, number of virtual machines, physical adapters, network security requirements, VLANs topology, etc.

Figure A-1: Network Configuration Example



If you implement an HA system, it's important to provide a reliable and redundant link between the two HA instances of the Mediant Software E-SBC Virtual Edition. It's recommended to locate the HA instances on different servers, to use a separated virtual switch for an HA link connection, and to provide NIC redundancy (refer to the VMware documentation at www.vmware.com for configuration instructions).

Figure A-2: Two HA Instances of the Mediant Software E-SBC Virtual Edition



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