

## **Mediant Virtual Edition (VE) SBC**

### Deployment in Microsoft Azure

Version 7.2



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## Notice

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Date Published: December-14-2020

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## Abbreviations and Terminology

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

## Related Documentation

Manual Name
Mediant Software SBC User's Manual
SBC-Gateway Series Release Notes

## Document Revision Record

LTRT	Description
10825	Initial document release for Version 7.2
10829	Microsoft Azure installation updates
10830	Update to Section 'Deploying Mediant VE through Azure Portal'

LTRT	Description
10835	Licensing section updated.
10857	Deploying in Azure Marketplace / portal updated; PowerShell commands updated; upgrading software version added
10859	Line added to create new virtual machine from CentOS 8 image.
10861	Typo; update to Rebuild Existing Mediant VE Instance from New Image
10863	Typos

## Documentation Feedback

AudioCodes continually strives to produce high quality documentation. If you have any comments (suggestions or errors) regarding this document, please fill out the Documentation Feedback form on our website at <https://online.audiocodes.com/documentation-feedback>.

# 1 Introduction

This document describes the deployment of AudioCodes' Mediant Virtual Edition (VE) Session Border Controller (SBC), hereafter referred to as *Mediant VE*, in a Microsoft Azure environment.

For detailed instructions on how to install Mediant VE in other virtual environments, for example, VMware, refer to the *Mediant Virtual Edition SBC Installation Manual*.

**Note:**

- The scope of this document does not fully cover security aspects for deploying the product in the Microsoft Azure cloud. Security measures should be done in accordance with Azure security policies and recommendations.
- For configuring the Mediant VE, refer to the *Mediant Software SBC User's Manual*.

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## 2 Deployment Methods

You can deploy Mediant VE as a virtual machine in the Microsoft Azure cloud environment using one of the following methods:

- Microsoft Azure Marketplace / Portal – see Section 3 on page 11
- PowerShell CLI – see Section 4 on page 17

**Notes:**

- Mediant VE currently supports only standalone (non-HA) deployments on Microsoft Azure.
- Mediant VE currently supports only IPv4 addresses (not IPv6) on Microsoft Azure.

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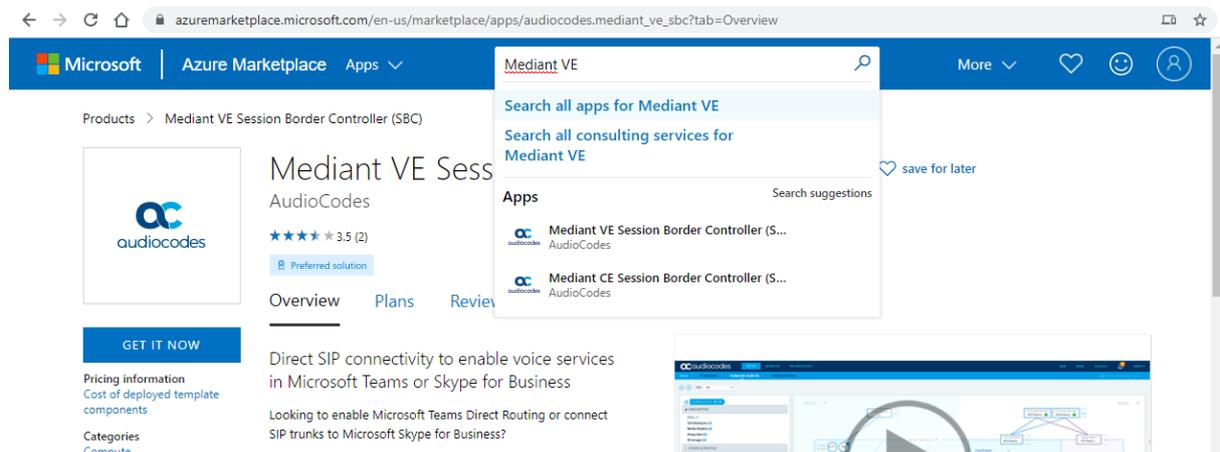
## 3 Deploying Mediant VE via Azure Marketplace / Portal

This section describes the deployment of a standalone Mediant VE through the Azure Marketplace / portal. This deployment method provides graphical user interface and is therefore, most suited if you are not familiar with the Azure cloud environment.

➤ **To deploy a standalone Mediant VE through Azure Marketplace / portal:**

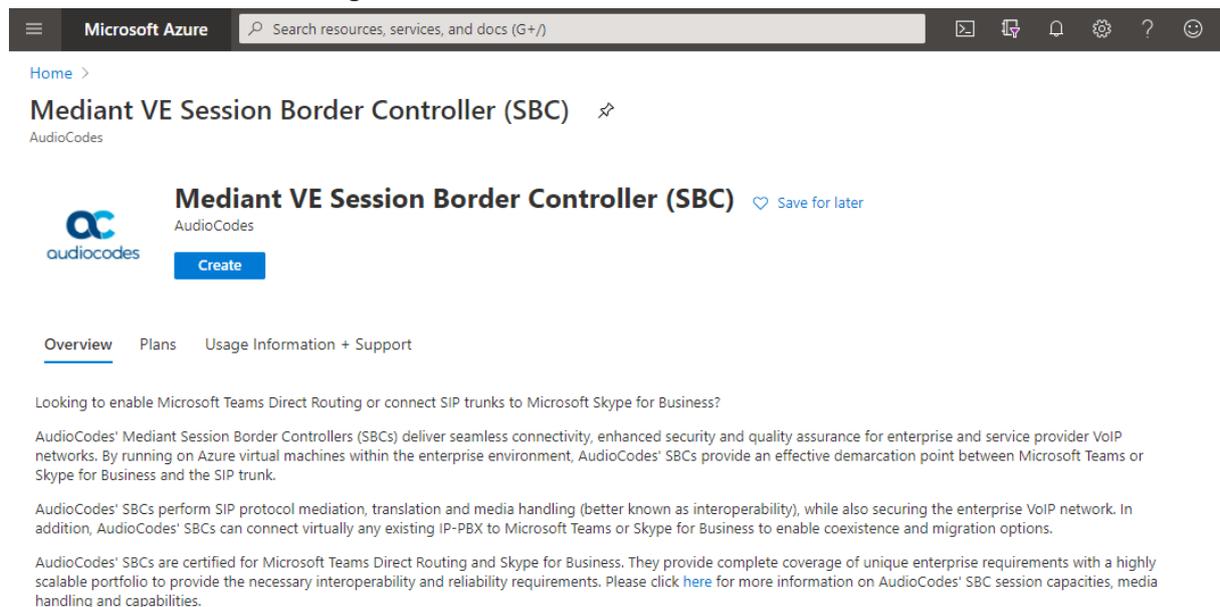
1. Open the Azure Marketplace at <https://azuremarketplace.microsoft.com/>.
2. Search for the product "Mediant VE Session Border Controller (SBC)" published by AudioCodes.

**Figure 3-1: Azure Marketplace**



3. Click **GET IT NOW**; the Azure portal and Mediant VE SBC Product Overview screen appears:

**Figure 3-2: Mediant VE SBC Product Overview**



4. Click **Create** to start a new Mediant VE deployment; the Create AudioCodes Mediant VE SBC for Microsoft Azure dialog appears. The dialog contains multiple steps. Complete each step according to the description below.

- In the **Basics** step, do the following:

**Figure 3-2: Basics Step**

The screenshot shows the 'Basics Step' of the Azure portal for creating a Mediant VE Session Border Controller (SBC). The breadcrumb navigation is 'Home > Mediant VE Session Border Controller (SBC) >'. The main heading is 'Create Mediant VE Session Border Controller (SBC)'. Below the heading are four tabs: 'Basics' (selected), 'Virtual Machine Settings', 'Network Settings', and 'Review + create'. Under 'Project details', there is a description: 'Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.' The form fields are: 'Subscription \*' with a dropdown menu showing 'SBC Lab'; 'Resource group \*' with a dropdown menu showing '(New) sbc-test1' and a 'Create new' link below it; 'Instance details' section with 'Region \*' (dropdown: 'West US 2'), 'Virtual Machine name \*' (text: 'sbc-test1'), 'Username \*' (text: 'sbcadmin'), 'Authentication type \*' (radio buttons: 'Password' selected, 'SSH Public Key'), 'Password \*' (masked text), and 'Confirm password \*' (masked text). At the bottom, there are three buttons: 'Review + create' (blue), '< Previous' (grey), and 'Next : Virtual Machine Settings >' (grey).

- In the 'Subscription' field, select a proper subscription for your deployment.
- In the 'Resource group' field, click **Create new** and then enter a unique name for the new resource group. Alternatively, you may select an existing empty resource group from the list.
- In the 'Region' field, select a proper region for your deployment.
- In the 'Virtual Machine name' field, enter a unique name for the new VM.
- In the 'Username' field, enter a username.
- For 'Authentication type', select **Password**.
- In the 'Password' field, enter a password, and then enter it again in the 'Confirm password' field.

These credentials are used to connect to the management interface of the deployed Mediant VE (instead of the default **Admin/Admin** credentials, as used in other environments).



**Note:** Azure imposes some limitations on username and password. For example, it prohibits the use of "Admin" for username and requires the use of strong passwords that meet the following policy:

- A minimum of 12 characters
- Use of three out of four of the following: lowercase characters, uppercase characters, numbers, and symbols

- h. Click **OK**.
6. In the **Virtual Machine Settings** step, do the following:
    - a. Choose the virtual machine size. For a list of supported virtual machine sizes and corresponding capacity figures, refer to the *SBC-Gateway-MSBR Series Release Notes*.
    - b. Choose the disk type for the virtual machine. As SBC software typically doesn't perform extensive disk activity, **Standard HDD** disk type is adequate for most deployments.
    - c. Choose the OS version for the deployed SBC software:
      - ◆ **6** – this version corresponds to the 7.20A stream, which is based on CentOS 6.
      - ◆ **8** – this version corresponds to the new 7.20CO stream, which is based on CentOS 8 and provides significantly better performance and capacity (refer to the *SBC-Gateway Series Release Notes* for details).
    - d. Choose whether to enable virtual machine's boot diagnostics.
    - e. Optionally, provide Mediant VE automatic configuration script (cloud-init file). For more information, refer to the *Automatic Provisioning of Mediant VE SBC via Cloud-Init Configuration Note*.
    - f. Click **OK**.

**Figure 3-3: Virtual Machine Settings Step**

The screenshot shows the Microsoft Azure portal interface for creating a Mediant VE Session Border Controller (SBC). The page title is "Create Mediant VE Session Border Controller (SBC)". The navigation tabs are "Basics", "Virtual Machine Settings", "Network Settings", and "Review + create". The "Virtual Machine Settings" tab is active.

The settings shown are:

- Virtual machine size \***: 1x Standard DS1 v2 (1 vcpu, 3.5 GB memory). A "Change size" link is available.
- Disk type**: Standard HDD (selected from a dropdown menu).
- OS version**: 6 (selected with a radio button). Option 8 is also available.
- Boot diagnostics**: Enable (selected with a radio button). Option Disable is also available.
- SBC cloud-init file**: Select a file (with a file upload icon).

At the bottom, there are three buttons: "Review + create" (highlighted in blue), "< Previous", and "Next : Network Settings >".

7. In the **Network Settings** step, do the following:
  - a. Choose the number of network interfaces for the new virtual machine. Deployment via Azure Marketplace supports up to two network interfaces. If you need more interfaces, perform deployment via the PowerShell CLI, as described in Chapter 4.
  - b. Configure the virtual network where the new VM will be deployed. You may either create a new virtual network or select an existing one. Azure virtual machine is always connected to a single virtual network, regardless of the number of its network interfaces.
  - c. Configure the subnet for each network interface. You may either create a new subnet (for new virtual network) or select an existing one.
    - ◆ If you choose two network interfaces, you must connect each interface to a different subnet. This is a limitation of Azure Marketplace UI and may be overcome by performing the deployment via the PowerShell CLI, as described in Chapter 4.
    - ◆ If you choose two network interfaces, you can access the SBC management interfaces (Web and SSH) through the 1<sup>st</sup> network interface only.
  - d. Configure the virtual machine's Public IP Address. You may either create a new Public IP Address or select an existing one.
    - ◆ If you create a new Public IP Address, select **Static Assignment**. This ensures that the IP address remains unchanged if you stop the virtual machine.
    - ◆ If you choose two network interfaces, the public IP address will be attached to the 1<sup>st</sup> network interface.
  - e. Click **OK**

**Figure 3-4: Network Settings Step**

The screenshot shows the 'Network Settings' step in the Azure portal for creating a Mediant VE Session Border Controller (SBC). The page is titled 'Create Mediant VE Session Border Controller (SBC)' and has tabs for 'Basics', 'Virtual Machine Settings', 'Network Settings', and 'Review + create'. The 'Network Settings' tab is active.

Configuration options include:

- Number of network interfaces:** Radio buttons for 1 (selected) and 2.
- Configure virtual networks:**
  - Virtual network:** Dropdown menu showing 'VnetWestUS2' with a 'Create new' link below it.
  - Subnet:** Dropdown menu showing 'oam (10.23.0.0/24)' with a 'Manage subnet configuration' link below it.
  - Public IP Address:** Dropdown menu showing '(new) sbc-test1-ip' with a 'Create new' link below it.
  - Public DNS Prefix:** Text input field containing 'sbc-test1-9e3f9d360c' with a green checkmark on the right.

At the bottom, there are three buttons: 'Review + create' (highlighted in blue), '< Previous', and 'Next : Review + create >'.

8. In the **Review + create** step, review the Mediant VE SBC terms of use and virtual machine configuration, and then click **Create**.

**Figure 3-5: Review + Create Step**

The screenshot displays the Microsoft Azure portal interface for creating a Mediant VE Session Border Controller (SBC). At the top, there is a search bar and a navigation menu. The breadcrumb trail shows 'Home > Mediant VE Session Border Controller (SBC) >'. The main heading is 'Create Mediant VE Session Border Controller (SBC)'. A green banner indicates 'Validation Passed'. Below this, there are four navigation tabs: 'Basics', 'Virtual Machine Settings', 'Network Settings', and 'Review + create', with the latter being the active step. The 'PRODUCT DETAILS' section identifies the offering as 'Mediant VE Session Border Controller (SBC)' by AudioCodes, with links for 'Terms of use' and 'Privacy policy'. The 'TERMS' section contains a legal disclaimer. At the bottom, there is a 'Create' button, a '< Previous' button, a 'Next' button, and a link to 'Download a template for automation'.

- Wait until the virtual machine deployment is complete, and then determine the IP address that is assigned to your virtual machine that can be used to access management interface:
  - If you assigned a public IP address to the VM, you may use it to access the management interface.
  - Alternatively, you may use a private IP address of the 1<sup>st</sup> network interface.

**Figure 3-6: Determining IP Address of Deployed VM**

The screenshot shows the Azure portal interface for a virtual machine named 'sbc-test1'. The 'Essentials' section displays the following properties:

Resource group (change)	: sbc-test1	Operating system	: Linux (centos 6.10)
Status	: Running	Size	: Standard D51 v2 (1 vcpu, 3.5 GiB memory)
Location	: West US 2	Public IP address	: 52.183.121.152
Subscription (change)	: SBC Lab	Virtual network/subnet	: VnetWestUS2/oam
Subscription ID	: 4ad554cf-0b4e-0b4e-0b4e-0b4e0b4e0b4e	DNS name	: sbc-test1-9e3f9d360c.westus2.cloudapp.azure.com
Tags (change)	: Click here to add tags		

The 'Networking' section is highlighted with an orange box and shows the following IP addresses:

Public IP address	: 52.183.121.152
Public IP address (IPv6)	: -
Private IP address	: 10.23.0.80
Private IP address (IPv6)	: -
Virtual network/subnet	: VnetWestUS2/oam

- Log in to the management interface (through Web or SSH) using the credentials that you configured during the virtual machine set up.

## 3.1 Deleting the Mediant VE Deployment

To delete the Mediant VE deployed through the Azure Portal, simply delete the corresponding Resource Group.

## 4 Deploying Mediant VE through PowerShell CLI

This section describes the deployment of a standalone Mediant VE through the Azure PowerShell CLI. This deployment method provides maximum flexibility and is therefore, most suited for advanced Azure users who want to exercise full control over their deployment.

### 4.1 Installing Azure PowerShell CLI

Before you can use the Azure PowerShell CLI, you need to install it.

➤ **To install Azure PowerShell CLI:**

1. Run PowerShell with Administrator privileges.
2. Install Azure PowerShell CLI, using the following commands:

```
Install-Module PowerShellGet -Force
Install-Module -Name Az -AllowClobber
```

### 4.2 Deploying a Mediant VE

This section describes how to deploy a standalone Mediant VE.

➤ **To deploy a Mediant VE:**

1. Run PowerShell.
2. Sign in to your Azure account, and then select the appropriate subscription:

```
Login-AzAccount -Subscription "<Name>"
```

3. Get the parameters of the pre-configured virtual network and subnet:

```
$VNetResourceGroupName = "SbcWestUS2"
$VNetName = "VnetWestUS2"
$SubnetName = "oam"

$VNet = Get-AzVirtualNetwork -Name $VNetName `
        -ResourceGroupName $VNetResourceGroupName

$Subnet = Get-AzVirtualNetworkSubnetConfig `
        -Name $SubnetName -VirtualNetwork $VNet
```

4. Accept Marketplace terms for Mediant VE SBC offer:

```
$Publisher = "audiocodes"
$Product = "mediantsessionbordercontroller"
$Sku = "mediantvirtualsbcazure"
# for CentOS 8 image use $Sku = "mediantvesbcazure" instead

$Terms = Get-AzMarketplaceTerms -Publisher $Publisher `
        -Product $Product -Name $Sku

Set-AzMarketplaceTerms -Publisher $Publisher `
        -Product $Product -Name $Sku -Terms $Terms -Accept
```

5. Create the new Resource Group:

```
$VMName = "sbc-test1"
$Location = "WestUS2"

$ResourceGroupName = $VMName + "-rg"

New-AzResourceGroup -Name $ResourceGroupName `
        -Location $Location
```

6. Create the new virtual machine configuration:

```
$VMSize = "Standard_DS1_v2"

$VM = New-AzVMConfig -VMName $VMName -VMSize $VMSize
```

7. Create the new public IP address:

```
$PublicIPName = $VMName + "-ip"

$PublicIP = New-AzPublicIpAddress -Name $PublicIPName `
        -ResourceGroupName $ResourceGroupName `
        -Location $Location -AllocationMethod Static
```

8. Create the first network interface:

```
$Interface1Name = $VMName + "-eth0"

$Interface1 = New-AzNetworkInterface -Name $Interface1Name `
        -ResourceGroupName $ResourceGroupName `
        -Location $Location -SubnetId $Subnet.id `
        -PublicIpAddressId $PublicIP.id

Add-AzVMNetworkInterface -VM $VM -Id $Interface1.Id -Primary
```

9. Create the second network interface:

```
$Interface2Name = $VMName + "-eth1"

$Interface2 = New-AzNetworkInterface -Name $Interface2Name `
  -ResourceGroupName $ResourceGroupName `
  -Location $Location -SubnetId $Subnet.id

Add-AzVMNetworkInterface -VM $VM -Id $Interface2.Id
```

10. Configure the source image:

```
Set-AzVMSourceImage -VM $VM -PublisherName $Publisher `
  -Offer $Product -Skus $Sku -Version latest

Set-AzVMPlan -VM $VM -Publisher audiocodes `
  -Product $Product -Name $Sku
```

11. Configure the managed disk:

```
$DiskName = $VMName + "-disk"

Set-AzVMOSDisk -VM $VM -Name $DiskName `
  -StorageAccountType "Standard_LRS" `
  -CreateOption fromImage -Linux
```

12. Configure the Admin user credentials:

```
$AdminUsername = "sbcadmin"
$AdminPassword = "Admin#123456"

$Credential = New-Object PSCredential $AdminUsername, `
  ($AdminPassword | ConvertTo-SecureString -AsPlainText -Force)

Set-AzVMOperatingSystem -VM $VM -Linux `
  -ComputerName $VMName -Credential $Credential
```

13. Create the new virtual machine:

```
New-AzVM -ResourceGroupName $ResourceGroupName `
  -Location $Location -VM $VM
```

14. Find the public IP address of the new Mediant VE instance:

```
$PublicIP = Get-AzPublicIpAddress -Name $PublicIPName `
  -ResourceGroupName $ResourceGroupName
Write-Output $PublicIP.IpAddress
```

15. Use this IP address to connect to the Mediant VE's management interface through the Web or SSH.

## 4.3 Deleting a Deployed Mediant VE

To delete the Mediant VE deployed through the PowerShell CLI, simply delete the corresponding Resource Group:

```
Remove-AzResourceGroup -Name $ResourceGroupName
```

## 5 Changing Network Configuration After Deployment

During the initial deployment Mediant VE automatically discovers all network interfaces and public IP addresses attached to it and populates corresponding network configuration tables accordingly.

If network configuration is changed after the deployment (during normal Mediant VE operation) corresponding Mediant VE network configuration tables must be manually updated by user to match the updated Azure configuration.

The following chapters describe most common network configuration changes to the deployed Mediant VE instance and provide detailed instructions on how to perform them. We use Azure PowerShell CLI to perform the changes, however the same actions may be performed via the Azure portal as well.



**Note:** Mediant VE's "write factory" CLI command restores configuration to factory settings and triggers automatic network discovery upon the following reboot. It may be used as an alternative to online network configuration, as described below, in cases where you do not care about losing current Mediant VE configuration.

### 5.1 Adding network interface

➤ **To add network interface to the deployed Mediant VE:**

1. Stop the virtual machine:

```
$VMName = "sbc-test1"
$ResourceGroupName = $VMName + "-rg"

Stop-AzVM -Name $VMName -ResourceGroupName $ResourceGroupName
```

2. Get parameters of pre-configured virtual network and subnet:

```
$VNetResourceGroupName = "SbcWestUS2"
$VNetName = "VnetWestUS2"
$SubnetName = "oam"

$VNet = Get-AzVirtualNetwork -Name $VNetName `
    -ResourceGroupName $VNetResourceGroupName

$Subnet = Get-AzVirtualNetworkSubnetConfig `
    -Name $SubnetName -VirtualNetwork $VNet
```

3. Create the new network interface and attach it to the virtual machine:

```
$InterfaceName = $VMName + "-eth1"

$Interface = New-AzNetworkInterface -Name $InterfaceName `
    -ResourceGroupName $ResourceGroupName `
    -Location $Location -SubnetId $Subnet.id
```

```
$VM = Get-AzVM -Name $VMName `
    -ResourceGroupName $ResourceGroupName

Add-AzVMNetworkInterface -VM $VM -Id $Interface.Id

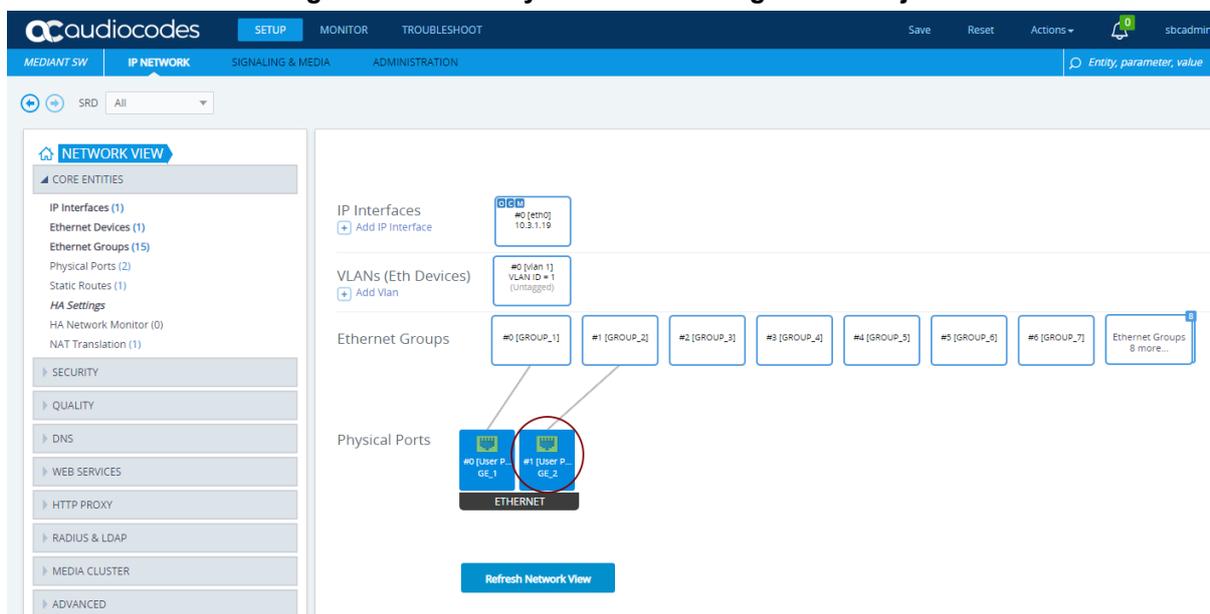
Update-AzVM -ResourceGroupName $ResourceGroupName -VM $VM
```

4. Start the virtual machine:
 

```
Start-AzVM -Name $VMName -ResourceGroupName $ResourceGroupName
```
5. Find the IP address of the created network interface
 

```
Write-Output $Interface.IpConfigurations.PrivateIpAddress
```
6. Connect to the Mediant VE management interface through Web
7. Navigate to **SETUP > IP NETWORK**.
8. Note that Mediant VE detected new network interface and created corresponding Physical Ports configuration object. The object is already attached to the corresponding Ethernet Group. However, Ethernet Device (VLAN) and IP Interface configuration is missing and must be manually created.

**Figure 5-1: New Physical Ports Configuration Object**



9. Click the **Add Vlan** link to create a new Ethernet Device (VLAN) configuration object; configure it as follows:
  - Configure 'VLAN ID' as the next unused VLAN number.
  - Configure "Tagging" as **Untagged**.

- Configure 'Name' with some unique value (e.g., **vlan <VLAN ID>**)
- Configure 'Underlying Interface' to reference the Ethernet Group associated with the new physical port.

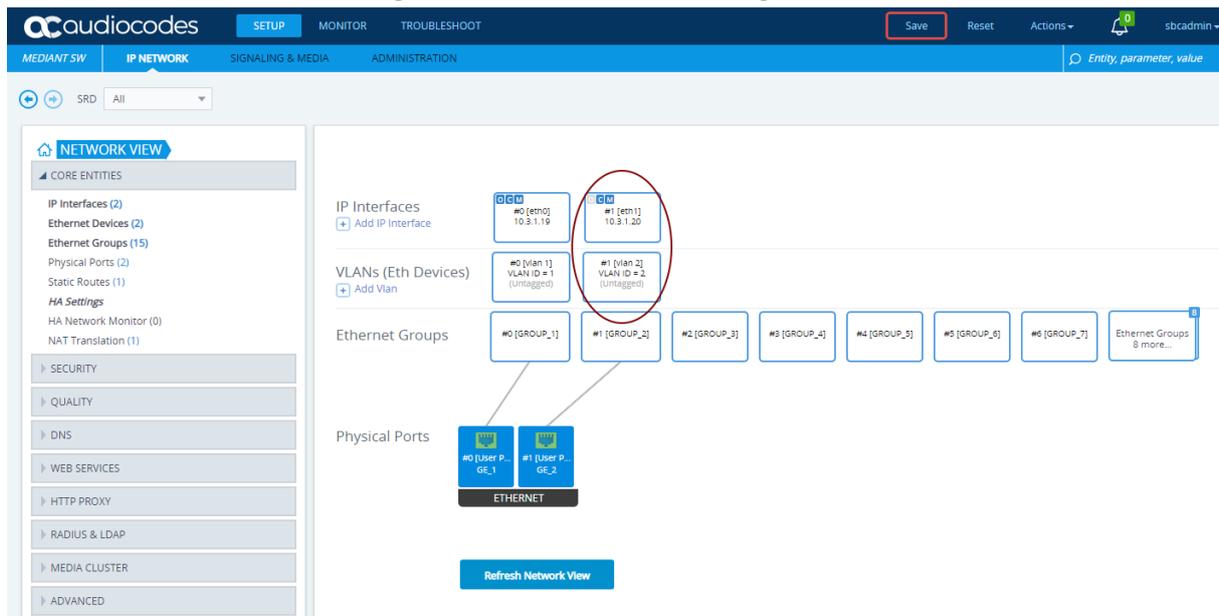
**Figure 5-2: New Ethernet Device (VLAN) Configuration**

10. Click the **Add IP Interface** link to create a new IP Interface configuration object and configure it as follows:
  - Configure 'IP Address' with the IP address of the created network interface (as determined in step 5).
  - Configure 'Prefix Length' with the prefix length of the corresponding subnet.
  - Configure 'Default Gateway' with the corresponding default gateway.
  - Configure 'Name' with some unique value (e.g., **eth<id>**).
  - Configure 'Application Type' as **Media + Control**.
  - Configure 'Ethernet Device' to reference the Ethernet Device (VLAN) created in the previous step.

**Figure 5-3: New IP Interface Configuration**

11. Review the updated network configuration.

Figure 5-4: New Network Configuration



12. Click the **Save** button located on the toolbar to save the updated configuration.

## 5.2 Deleting the Network Interface

- To delete network interface from the deployed Mediant VE:

1. Stop the virtual machine:

```
$VMName = "sbc-test1"
```

```
$ResourceGroupName = $VMName + "-rg"
```

```
Stop-AzVM -Name $VMName -ResourceGroupName $ResourceGroupName
```

2. Detach the network interface from the virtual machine and delete it:

```
$InterfaceName = $VMName + "NetworkInterface2"
```

```
$Interface = Get-AzNetworkInterface -Name $InterfaceName `
             -ResourceGroupName $ResourceGroupName
```

```
$VM = Get-AzVM -Name $VMName `
      -ResourceGroupName $ResourceGroupName
```

```
Remove-AzVMNetworkInterface -VM $VM -Id $Interface.Id
```

```
Update-AzVM -ResourceGroupName $ResourceGroupName -VM $VM
```

```
Remove-AzNetworkInterface -Name $InterfaceName `
                          -ResourceGroupName $ResourceGroupName
```

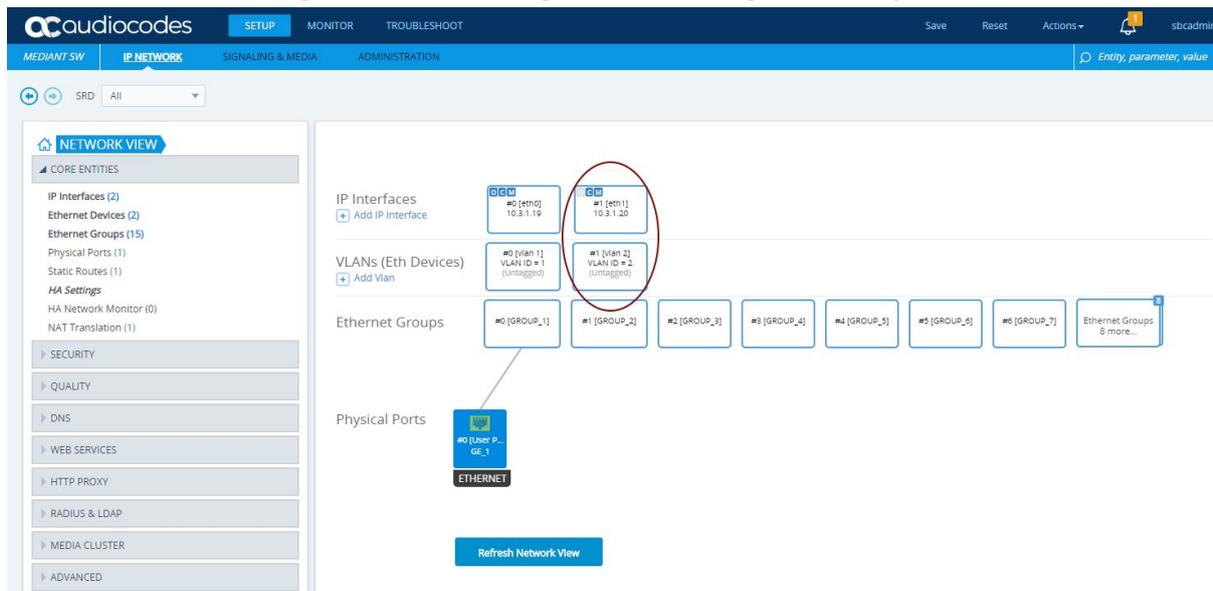
3. Start the virtual machine:

```
Start-AzVM -Name $VMName -ResourceGroupName $ResourceGroupName
```

4. Connect to the Mediant VE management interface through the Web interface.

5. Navigate to **SETUP > IP NETWORK**.
6. Locate the remaining network configuration objects that correspond to the deleted network interface.

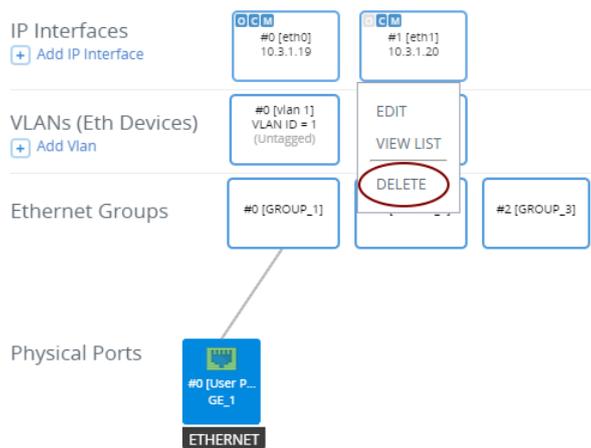
**Figure 5-5: Remaining Network Configuration Objects**



In the above example, the remaining network configuration objects include:

- IP Interface #1 [eth1]
  - VLAN #1 [vlan 2]
7. Delete the remaining configuration objects -- first the IP interface and then the VLAN -- by clicking them and then from the shortcut menu, choosing **Delete**.

**Figure 5-6: Deleing Remaining IP Interface**



8. Click the **Save** button located on the toolbar to save the updated configuration.

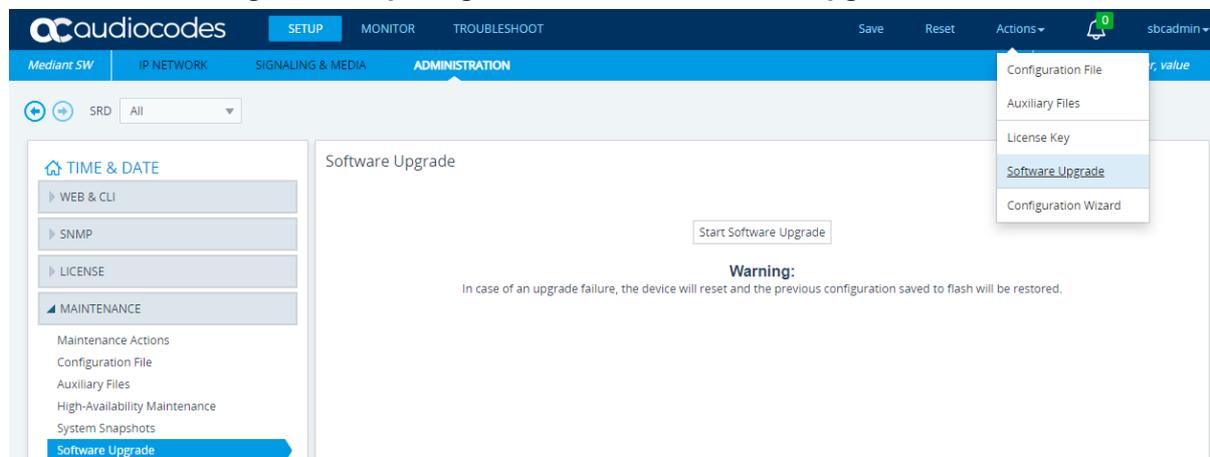
**Figure 5-7: Saving the updated configuration**



## 6 Upgrading the Software Version

You may upgrade the software version of the deployed Mediant VE software using the software version file (.cmp) through the Web or CLI interface. For example, open the Web interface, and then click **Action > Software Upgrade** on the toolbar to open the Software Upgrade wizard.

**Figure 6-1: Opening Web Interface's Software Upgrade Wizard**



Upgrading the Mediant VE using the software version file (.cmp) may be performed only within the same OS version stream. For example, if your Mediant VE is currently running Software Version 7.20A.256.396 (i.e., 7.20A stream, based on CentOS 6), you may use the 7.20A.258.010 .cmp file to upgrade it to a later version (also based on CentOS 6). However, you may not use 7.20CO.258.011 .cmp file to perform a similar upgrade to a version from the 7.20CO stream (based on CentOS 8).

If you want to upgrade Mediant VE deployed with a version from 7.20A stream (based on CentOS 6) to a version from 7.20CO stream (based on CentOS 8), use one of the following methods:

- Method 1: Deploy a new Mediant VE instance from Marketplace (using CentOS 8 software image), configure it, and then switch live traffic to the new instance. Refer to Section 6.1 for detailed instructions.
- Method 2: Rebuild the existing Mediant VE instance from the new CentOS 8 image. Refer to Section 6.2 for detailed instructions.

Advantages and disadvantages of each method are listed in the following table:

Method	Advantages	Disadvantages
<b>Method 1</b>	<ul style="list-style-type: none"> <li>■ Can be performed using the Web interface (Azure dashboard and Mediant VE Web interface) and doesn't require use of PowerShell CLI.</li> <li>■ If any problems with the new software version (based on CentOS 8), live traffic may be switched back to the old instance (running CentOS 6).</li> <li>■ Traffic may gradually be moved to a new instance (assuming that VoIP equipment that sent the traffic towards the SBC supports such functionality), thereby providing better control over the</li> </ul>	<ul style="list-style-type: none"> <li>■ Requires the use of additional Azure resources for the duration of the upgrade.</li> <li>■ Requires a change of IP addresses (both public and private) and therefore, requires reconfiguration of VoIP equipment that communicates with the SBC.</li> <li>■ Requires a new License Key for the new Mediant VE instance.</li> </ul>

Method	Advantages	Disadvantages
	upgrade process and minimizing service downtime.	
<b>Method 2</b>	<ul style="list-style-type: none"> <li>Doesn't require additional Azure resources.</li> <li>Preserves public and private IP addresses of the deployed SBC instance.</li> </ul>	<ul style="list-style-type: none"> <li>Requires the use of PowerShell CLI.</li> <li>Requires a new License Key after the upgrade (because SBC serial number changes).</li> <li>Service is unavailable while the instance is rebuilt (typically for 10-15 minutes).</li> </ul>

## 6.1 Method 1 – Side-By-Side Deployment of New Version

This section describes the upgrade of the Mediant VE instance running software version from the 7.20A stream (based on CentOS 6) to a version from the 7.20CO stream (based on CentOS 8) via side-by-side installation of a new Mediant VE instance and gradual migration of a live traffic from the old to the new instance.

➤ **To perform upgrade via "side-by-side deployment" method:**

1. Deploy a new Mediant VE instance using Azure Marketplace / portal (as described in Section 3) or PowerShell CLI (as described in Section 4). Choose **OS Version = 8** during the deployment. Connect the new Mediant VE instance to the same Virtual Network and Subnets as the existing Mediant VE instance.
2. Download the configuration file (.ini) from the existing Mediant VE instance (**Actions > Configuration File > Save INI File**).
3. Remove all networking configuration from the downloaded file, using one of the following methods:
  - Manually: Open the file in a text editor (e.g. Notepad++), and then remove the following configuration tables: PhysicalPortsTable, EtherGroupTable, DeviceTable, and InterfaceTable.
  - Using ini\_cleanup.py script from the *Mediant VE Installation Kit*, which is available on [www.audiocodes.com](http://www.audiocodes.com) portal.

```
# python ini_cleanup.py old.ini new.ini
```

4. Load the "cleaned up" configuration file to the new Mediant VE instance as an incremental INI file (**SETUP > ADMINISTRATION > MAINTENANCE > Auxiliary Files > INI file (incremental)**).
5. Obtain, activate and apply the license to the new Mediant VE instance as described in Section 7.
6. Switch live traffic from the old Mediant VE instance to the new one. This typically requires a change in the SBC's IP address in the VoIP equipment that communicates with the SBC. Consider performing gradual traffic migration if your VoIP equipment supports it. For example, switch 10% of your live traffic to the new Mediant VE instance first, verify that it is processed as expected, and only then switch the rest of the traffic.
7. After all live traffic is switched to the new Mediant VE instance and service operates normally, delete the old Mediant VE instance as described in Section 3.1 or 4.3.

## 6.2 Method 2 – Rebuild Existing Mediant VE Instance from New Image

This chapter describes upgrade of Mediant VE instance running software version from 7.20A stream (based on CentOS 6) to a version from 7.20CO stream (based on CentOS 8) via a rebuild of existing Mediant VE instance from a new image.

The described process preserves all IP addresses (private and public) assigned to the Mediant VE instance, as well as most of the SBC configuration. However, the following configuration elements will be lost and must be manually restored afterwards:

- TLS Contexts configuration (certificates and private keys)
- Auxiliary files (e.g., pre-recorded tone files)
- License keys (due to the fact that the serial number of rebuilt instances changes)

### ➤ To perform upgrade via “rebuild from a new image” method:

1. Download configuration package from the Mediant VE instance: **Actions > Configuration File > Save Configuration Package**

2. Stop the virtual machine:

```
$VMName = "sbc-test1"
$ResourceGroupName = $VMName + "-rg"

Stop-AzVM -Name $VMName -ResourceGroupName $ResourceGroupName
```

3. Get parameters of virtual machine:

```
$VM = Get-AzVM -Name $VMName `
    -ResourceGroupName $ResourceGroupName
```

4. Update virtual machine's network interfaces to use static private IP addresses:

```
$Eth0Id = $VM.NetworkProfile.NetworkInterfaces[0].Id
$Eth0 = Get-AzNetworkInterface -ResourceId $Eth0Id
$Eth0.IpConfigurations[0].PrivateIpAllocationMethod = "Static"
Set-AzNetworkInterface -NetworkInterface $Eth0

# if you don't have second network interface,
# skip the next block of commands
$Eth1Id = $VM.NetworkProfile.NetworkInterfaces[1].Id
$Eth1 = Get-AzNetworkInterface -ResourceId $Eth1Id
$Eth1.IpConfigurations[0].PrivateIpAllocationMethod = "Static"
Set-AzNetworkInterface -NetworkInterface $Eth1
```

5. Accept marketplace terms for new Mediant VE SBC offer:

```
$Publisher = "audiocodes"
$Product = "mediantsessionbordercontroller"
$Sku = "mediantvesbcazure"

$Terms = Get-AzMarketplaceTerms -Publisher $Publisher `
    -Product $Product -Name $Sku
```

```
Set-AzMarketplaceTerms -Publisher $Publisher `
    -Product $Product -Name $Sku -Terms $Terms -Accept
```

6. Remove existing virtual machine:

```
$VMName = $VM.Name
$DiskName = $VM.StorageProfile.OsDisk.Name

Remove-AzVM -Name $VMName -ResourceGroupName $ResourceGroupName
Remove-AzDisk -Name $DiskName `
    -ResourceGroupName $ResourceGroupName
```

7. Create new virtual machine from CentOS 8 image:

```
$Location = $VM.Location
$VMSize = $VM.HardwareProfile.VmSize

$VM = New-AzVMConfig -VMName $VMName -VMSize $VMSize

Add-AzVMNetworkInterface -VM $VM -Id $Eth0.Id -Primary
# if you don't have second network interface,
# skip the next command
Add-AzVMNetworkInterface -VM $VM -Id $Eth1.Id

Set-AzVMSourceImage -VM $VM -PublisherName $Publisher `
    -Offer $Product -Skus $Sku -Version latest

Set-AzVMPlan -VM $VM -Publisher audiocodes `
    -Product $Product -Name $Sku

Set-AzVMOSDisk -VM $VM -Name $DiskName `
    -StorageAccountType "Standard_LRS" `
    -CreateOption fromImage -Linux

$AdminUsername = "sbcadmin"
$AdminPassword = "Admin#123456"

$Credential = New-Object PSCredential $AdminUsername, `
    ($AdminPassword | ConvertTo-SecureString -AsPlainText -Force)

Set-AzVMOperatingSystem -VM $VM -Linux `
    -ComputerName $VMName -Credential $Credential

New-AzVM -ResourceGroupName $ResourceGroupName `
    -Location $Location -VM $VM
```

8. Wait until the new Mediant VE instance fully starts (it may take up to 5 minutes) and connect to its Web management interface. Login using credentials provided during new VM instance creation above (e.g. sbcadmin / Admin#123456).
9. Load configuration package saved in step 1 back to the device: **Actions > Configuration File > Load Configuration Package**
10. Restore parts of the Mediant VE configuration that have been lost during the rebuild (namely, TLS Contexts configuration - certificates / private keys - and auxiliary files).
11. Obtain, activate and apply the license to the new Mediant VE instance as described in Section 7.
12. Your Mediant VE is now running CentOS 8 based load and is fully operational

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## 7 Licensing the Product

Once you have successfully completed Mediant VE deployment, you need to obtain, activate and then install your purchased SBC license.



**Note:** By default, the product software installation provides a free license for up to three concurrent sessions (signaling and media) and three user registrations (far-end users). This allows you to evaluate the product prior to purchasing it with your required capacity and features. To allow call transcoding with this free license, you need to configure the 'SBC Performance Profile' parameter to **Optimize for Transcoding** (for more information, refer to the *User's Manual*).

### 7.1 Obtaining and Activating a Purchased License Key

For the product to provide you with all your capacity and feature requirements, you need to purchase a new License Key that allows these capabilities. The following procedure describes how to obtain and activate your purchased License Key.



**Note:**

- License activation is intended **only** for first-time software activation upon product purchase (or if your License Key is "lost", due to whatever reason). For subsequent software feature upgrades, the License Key file is e-mailed to you after your Purchase Order has been processed.
- For HA, each unit has its own Serial Number, Product Key and License Key. Therefore, the instructions in this section must be done for each unit.

➤ **To obtain and activate the License Key:**

1. Open AudioCodes Web-based Software License Activation tool at <http://www.audiocodes.com/swactivation>:

**Figure 7-1: Software License Activation Tool**

#### License Activation

Please enter your Product Key received from AudioCodes and the fingerprint (e.g. Serial Number or Server Signature) that was generated as a result of your installation.  
For technical assistance, please contact AudioCodes support at [support@audiocodes.com](mailto:support@audiocodes.com).

Product Key\*

Fingerprint\*

Email\*  +

Validation 3ECF8

Please enter the characters shown in the image. To refresh the image, click here.

Send

2. Enter the following information:
  - **Product Key:** The Product Key identifies your specific Mediant VE SBC purchase for the purpose of subsequent communication with AudioCodes (for example, for support and software upgrades). The Product Key is provided in the Order Confirmation e-mail sent to you by AudioCodes upon your purchase, as shown in the example below:

**Figure 7-2: Product Key in Order Confirmation E-mail**



- **Fingerprint:** The fingerprint is the Mediant VE SBC's Serial Number. The Serial Number uniquely identifies the software installation. The Serial Number is displayed in the 'Serial Number' field on the Device Information page (**Monitor** menu > **Monitor** menu > **Summary** tab > **Device Information**).
  - **Email:** Provide one or more e-mail addresses to where you want the License Key to be sent.
3. Click **Send** to submit your license activation request.
  4. Once AudioCodes processes and completes your license activation, you will receive an e-mail notification with the License Key file attached. Open the file with any text-based program (such as Notepad) and make sure that the serial number ("**S/N**") in the License Key is correct and reflects the Serial Number of your Mediant VE SBC.



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

## 7.2 Installing the License Key



**Note:** The License Key installation process includes a device reset and is therefore, traffic-affecting. To minimize the disruption of current calls, it is recommended to perform this procedure during periods of low traffic.

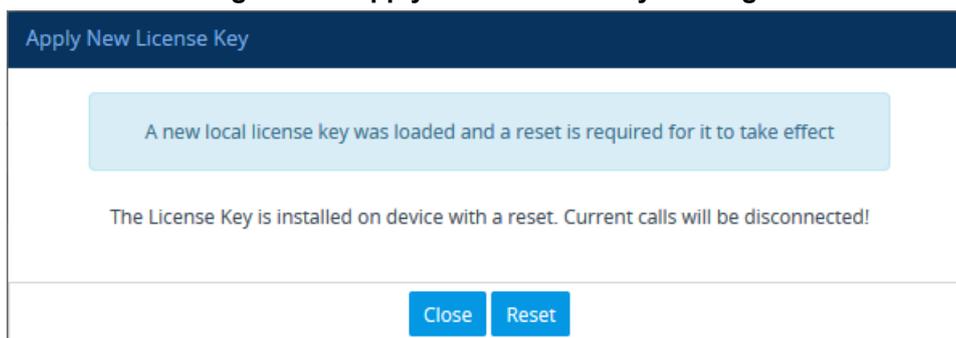
- **To install a License Key file for standalone devices through Web interface:**
1. Open the License Key page (**Setup** menu > **Administration** tab > **License** folder > **License Key**).
  2. Back up the currently installed License Key, as a precaution. If the new License Key does not comply with your requirements, you can re-load this backed-up License Key to restore the device's original capabilities. To back up the License Key, click  icon and save it as file on your PC.
  3. Click the **Load File** button, navigate to the License Key file on your computer, and then select the file to load to the device; the **Apply New License Key** button appears. The License Key page uses color-coded icons to indicate the changes between the previous License Key and the newly loaded License Key.



**Note:** If want to cancel installation, reset the device without a save to flash. For more information, see Resetting the Device.

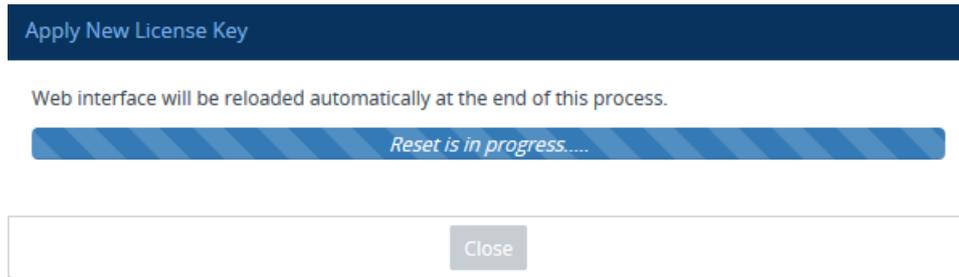
4. Click **Apply New License Key**; the following message box appears:

**Figure 7-3: Apply New License Key Message**



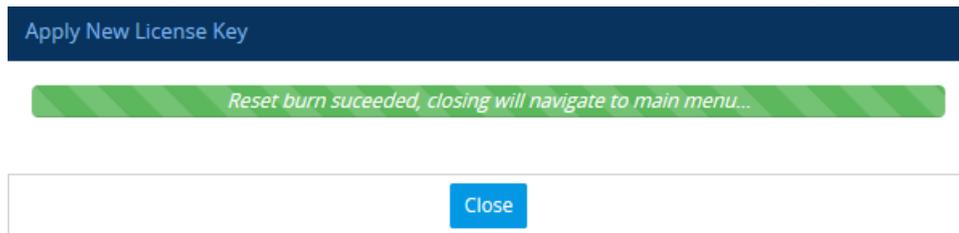
- Click **Reset**; the device begins to save the file to flash memory with a reset and the following progress message box appears:

**Figure 7-4: Reset in Progress for License Key**



When installation completes, the following message box appears:

**Figure 7-5: Reset and Save-to-Flash Success Message**



- Click **Close** to close the message box; you are logged out of the Web interface and prompted to log in again. The features and capabilities displayed on the License Key page now reflect the newly installed License Key.

## 7.3 Product Key

The Product Key identifies a specific purchase of your device installation for the purpose of subsequent communication with AudioCodes (e.g., for support and software upgrades). The Product Key is provided in the order-confirmation email sent to you upon your product purchase and is used for activating your license through AudioCodes Software License Activation tool.

The Product Key is included in the License Key. Once the License Key is installed, you can view the Product Key in the following Web pages:

- License Key page (**Setup** menu > **Administration** tab > **License** folder > **License Key**). The Product Key is displayed in the read-only 'Product Key' field, as shown in the example below:

**Figure 7-6: Viewing Product Key**



- Device Information page (**Monitor** menu > **Monitor** tab > **Summary** folder > **Device Information**).

If your License Key was purchased in an earlier version (for example, 7.0), the 'Product Key' field may appear empty. In such a scenario, request the Product Key from your AudioCodes sales representative. Once received, do the following:

1. Open the License Key page.
2. Locate the Product Key group:

**Figure 7-7: Empty Product Key Field**



3. Click "empty"; the following appears:

**Figure 6-7-8: Entering Product Key**



4. In the field, enter the Product Key, and then click **Submit**  (or **Cancel**  to discard your entry).

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Document #: LTRT-10863

