# Server Installation Manual

Applies to software release v5.4

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**About Sencore**

Sencore is an engineering leader in the development of high-quality signal transmission solutions for the broadcast, cable, satellite, IPTV, and telecommunications markets. The company's world-class portfolio includes video delivery products, system monitoring and analysis solutions, and test and measurement equipment, all designed to support system interoperability and backed by best-in-class customer support. Sencore products meet the rapidly changing needs of modern media by ensuring the efficient delivery of high-quality video from the source to the home. More information about Sencore is available at the company's website, `www.sencore.com`.

# Contents

# 1 INSTALLATION AND ACTIVATION

This manual documents the initial installation procedure for the server-based Sencore VideoBRIDGE software. For details on how to activate and configure the included software products, please refer to the individual User's Manuals.

## 1.1   First-time Installation

Make sure that the server hardware matches the requirements and then follow the procedure outlined below.

1. Obtain the latest installation kickstart image from Sencore.

2. Insert the installation medium into the server:

   - For CD/DVD-based installations, burn the downloaded ISO image to a CD/DVD and insert into the server.

   - For USB-based installation, transfer the downloaded image to a USB mass storage device using a tool such as **dd** (Mac, Unix, Linux) or **USBWriter**[1] (Windows).

   - For installation in a virtualized environment, attach the downloaded ISO image to a virtual DVD-ROM unit.
     **Note:** Please read the advice on how to configure the virtual machine in section 1.2 to ensure optimal performance.

3. Boot the server and make sure that the primary boot device is set appropriately. If the system fails to boot from the medium, you may need to configure the boot loader for 'legacy BIOS mode'.

4. The installer will run, please follow the on-screen prompts to install the system, taking note of the following:

   - **IMPORTANT:**  Leave 'Software selection' at 'Custom software selected'.

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[1]`http://sourceforge.net/projects/usbwriter/`

- **IMPORTANT:** In the 'Installation Destination', the default partitioning will create a large `/home` partition, which is unused. To avoid this, use the 'I will configure partitioning' option. Then use the 'Click here to create them automatically' and manually reduce the size of (or remove) the `/home` partition, instead giving that space to the `/` partition.

- We recommend that you configure network settings (IP address, gateway, DNS) within the installer. Post-installation network configuration can be performed using the **nmtui** utility, please refer to A Appendix: Network configuration for details.

- The default installation does not provide any graphical user interface environment. This can be installed later if desired, please refer to the CentOS Linux[2] or Red Hat Enterprise Linux[3] documentation for more details.

5. At the end of the installation procedure, the server is rebooted. Remove the installation media and ensure that the system boots up properly.

6. Enter the selected IP address in your web browser to access the Software Activation page. If your host is using dynamic addressing, you can log in to the account created during installation and issue the command **ip addr** to display the address assigned to the system.

   Continue to chapter 1.3 for details on how to enable the system.

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The kickstart will install CentOS Linux 7 or Red Hat Enterprise Linux 7 on the server. The disks will be formatted and all contents lost. Make sure that any important data on the server has been backed up before beginning the procedure.

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## 1.2   Deploying in a Virtualized Environment

It is also possible to deploy the software in a virtualized environment. For optimal performance, check the processor configuration of **cores per socket** on your host server and use the same configuration setting of cores per virtual sockets on the virtual machine.

It is also strongly recommended to configure the data network interface card(s) in **pass-through mode** on the host server. This is required for accurate measurements on the Software Probe.

Please follow the steps from chapter 1.1 when installing the software in the virtualized environment. We recommended **disabling** any 'Easy install' or similarly worded option, and *not* selecting the operating system type when initially creating the new virtual machine instance in your virtualization environment. These options may override the installation instructions included in the provided installation image, causing an incomplete installation.

Pre-built images for VMware (vSphere/Workstation/Player) are provided in `OVA` (Open Virtualization Format Archive) format. These images contains a system already installed according to the steps described in the previous chapter, with VMware Tools already installed and activated.

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[2]`http://wiki.centos.org/Manuals/ReleaseNotes/CentOS7`
[3]`https://access.redhat.com/documentation/en-US/Red_Hat_Enterprise_Linux/7/index.html`

To deploy the image, you need to import it to the virtualization host, please refer to the documentation of your virtualization environment for more details on how to do this.

If installed in a VMware vSphere environment, the machine should report back its network configuration to the host environment. Please allow some time for it to do so, and then continue with the Software Activation procedure as described in the next chapter.

When logging in to the console of the pre-built images, the default password for the **root** user is **elvis**. The same password is also used for logging in remotely using Secure Shell (ssh). **Please change the password for the root user after finishing the install**, log in and use the `passwd` command to do this.

## 1.3   Verifying Correct Initial Setup and Software Activation

Once the software has been installed and restarted all further configuration takes place through the web interface.

1. Launch a web browser application on the management system.

   Any web browser with support for JavaScript can be used to access the Software Activation interface, one of the following are recommended:

   - Google Chrome
   - Mozilla Firefox
   - Microsoft Edge
   - Microsoft Internet Explorer 11 or higher
   - Apple Safari

2. Type the IP address of the server in the browser URL field and press ⎡Enter⎤ .

   The network settings should have been set when the operating system was installed. If the web browser is unable to reach the web server, check the server's network settings in the operating system.

3. The Software Activation view should be displayed inside the browser. Software Activation is password-protected, the user name is **admin** and the default password is **elvis**.

   This password should be changed under the **More options** heading[4].

   The page displayed should look similar to figure 1.1.

4. If you already have an XML file with license keys for your system, click on the **More options** heading and upload this file under the **Import license keys** option. If you have the license key written down or in an e-mail, instead use the product page described below.

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   [4]If you forget the Software Activation password, you can reset it by logging in as root and issuing the command `/opt/btech/ssg/bin/reset_web_password`

Figure 1.1: Software Activation

5. If this is a new server, and you need to obtain license keys for the purchased products, please click the link labeled **export hardware keys as XML** and send the downloaded file to your sales representative as an e-mail attachment.

6. None of the installed products are installed by default on the newly installed server. To enable one, use the link labeled **Not activated** next to its name. This will take you to a page giving you the details of the installed software, such as the installed version and the hardware key. If you have a license key that you want to enable and have not yet done so, enter the key in the field labeled **Apply license key** and click the **Add license** button.

7. Click the button labeled **Activate software** and wait for it to finish.

    Please note that it may take some additional time before the user interface of the activated product becomes available. If you receive an error trying to access it, please wait for a few minutes before trying again.

    Note that it is not possible to activate the Software Probe and the VB7880 Advanced Content Extractor on a single system at the same time.

It is **strongly recommended** that the system time is configured to be synchronized against an external NTP server. Please refer to B Appendix: Enable NTP time synchronization for more information on configuring time synchronization.

## 1.4   Initial Setup Troubleshooting

If you are having trouble bringing up the Software Activation interface:

- Verify that the client machine and the server are configured on the same subnet and that they have different addresses, or, if you use different subnets, verify that the routing and gateways are set correctly on both the client machine and the server.

- Make sure that the IP address of the gateway and the network interface are not the same.

- Verify that the appropriate Ethernet link indicators of the PC and the server are lit.

- Verify that web browser proxy settings are not interfering.

- Verify that local firewall settings on the PC are not interfering.

- Try rebooting the server and make sure all services start as expected.

- Clear the browser's cache.

- Verify that the web server is running, by entering the command

```
systemctl status httpd
```

on the server's command line. If it is not running properly, try issuing the command

```
echo "ServerName localhost" >> /etc/httpd/conf/httpd.conf
```

and then restart the server by issuing the command

```
systemctl restart httpd
```

Please refer to A Appendix: Network configuration for more information on server network configuration.

## 1.5   Upgrading From a Previous Version

The kickstart image is only used for first-time installations. For upgrades, please refer to the software documentation for details on how to perform a software upgrade.

If you want or need to re-install the system, please make sure you first make a backup of all the data you want to keep. See the software documentation for more details about how to do a backup. To copy any installed license keys, navigate to the user interface of the installed software, and use the **Export current license and software maintenance keys** link under the **About** — **License** tab, where available.

The XML file you can download there can be imported from Software Activation by using the procedure described in chapter 1.3.

# A Appendix: Network configuration

Changes to network configuration, adding new interface devices and VLANs can be done with the **nmtui** tool. Simply type **nmtui** whilst logged into the server command shell as root. Navigate the nmtui menus using the cursor (arrow) keys and Enter to select. More documentation on using **nmtui** can be found in the Networking Guide[1].

If the **nmtui** tool is not available on your system, you can install it by issuing the command

```
yum install NetworkManager-tui
```

## Editing Network interface configuration

To edit a connection first select **Edit a connection** from the nmtui menu:
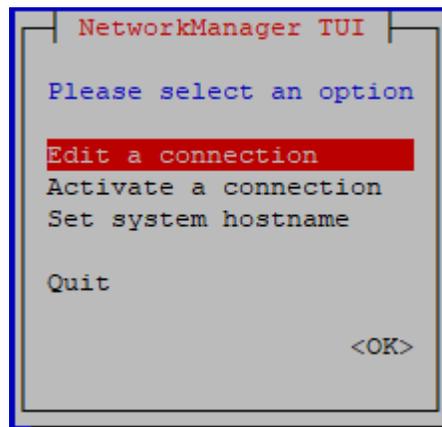


Select the interface to be edited and then select **Edit. . .** from the menu.

---

[1]https://access.redhat.com/documentation/en-US/Red_Hat_Enterprise_Linux/7/html/ Networking_Guide/sec-Networking_Config_Using_nmtui.html

```
    ┌──────────────────────────────────┐
    │                                  │
    │   Ethernet        ↑   <Add>       │
    │       ens10                       │
    │       ens3            <Edit...>   │
    │       ens9                        │
    │       ens8            <Delete>    │
    │       ens11                       │
    │   VLAN                            │
    │       VLAN 1040                   │
    │       VLAN 1030                   │
    │                                  │
    └──────────────────────────────────┘
```

Make the necessary changes to IPv4 and IPv6 configuration.

```
┌───────────────────┤ Edit Connection ├──────────────────────┐
│                                                             │
│        Profile name ens8                                    │
│              Device ens8 (0C:C4:7A:EB:16:0B)                │
│                                                             │
│  = ETHERNET                                         <Show>  │
│                                                             │
│  ═ IPv4 CONFIGURATION <Manual>                      <Hide>  │
│            Addresses 40.40.40.40/24        <Remove>         │
│                      <Add...>                               │
│              Gateway 40.40.40.1                             │
│          DNS servers <Add...>                               │
│       Search domains <Add...>                               │
│                                                             │
│              Routing (No custom routes) <Edit...>           │
│    [X] Never use this network for default route             │
│    [ ] Ignore automatically obtained routes                 │
│                                                             │
│    [ ] Require IPv4 addressing for this connection          │
│                                                             │
│                                                             │
│  = IPv6 CONFIGURATION <Automatic>                   <Show>  │
│                                                             │
│  [X] Automatically connect                                  │
│  [X] Available to all users                                 │
│                                                             │
│                                         <Cancel> <OK>       │
│                                                             │
└─────────────────────────────────────────────────────────────┘
```
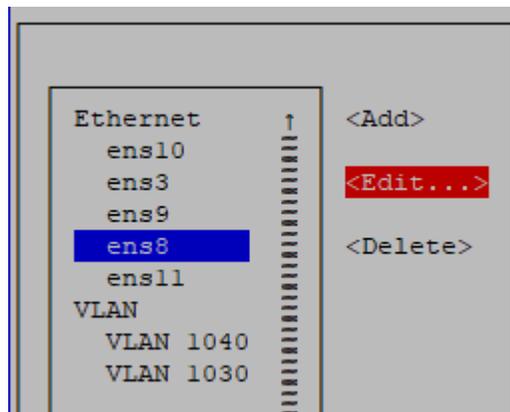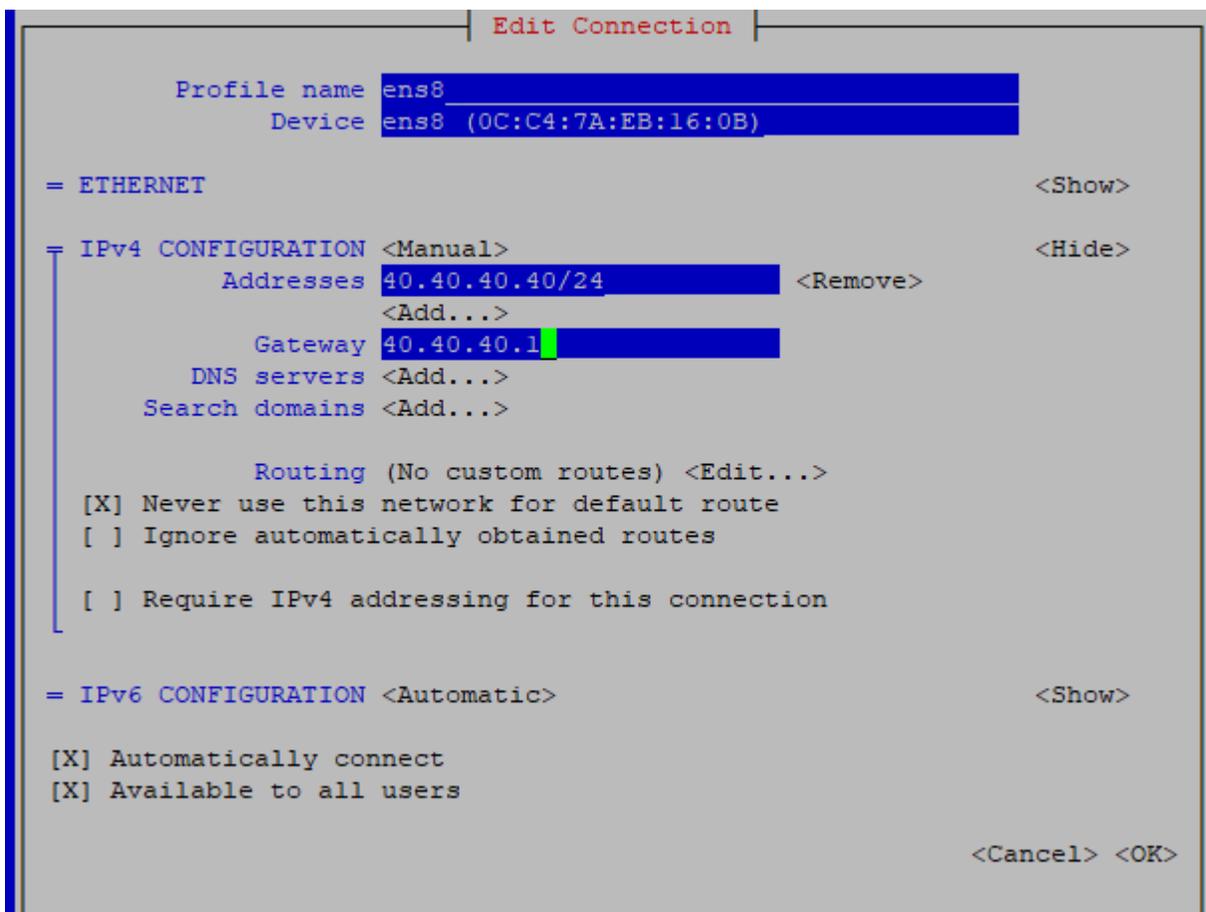
Selecting **Automatically connect** will ensure the interface is connected next time the system boots.

Sometimes it is desirable to select **Never use this interface for default route**, particularly if additional interfaces are only used for monitoring multicast traffic or when setting up a native interface for adding VLANs.

After making changes select **OK** to return the previous menu. Generally, network configuration changes will take effect the next time the interface is activated. This can be done by deactivating and reactivating the interface from the **Activate a connection** menu in nmtui or with the command line **ifdown ifname** followed by **ifup ifname**.

# Adding new and VLAN interfaces

To add a new interface, in the nmtui main menu select **Edit a connection** followed by **Add** and select the interface type from the menu. Typically this is **Ethernet** but may also be used to create VLAN interfaces. Advanced configurations such as Bond and Bridge may be selected if they are required.

To find the system assigned name for a newly added hardware device use the command line **ifconfig** or search in the output of the **dmesg** tool. It can be helpful to keep the nmtui **Profile name** for the device the same as the device name itself, for example:



To add a VLAN interface from nmtui main menu select **Edit a connection** followed by **Add**. Scroll to the bottom of the list and select VLAN:



**Server Installation Manual version 5.4**

Edit the settings for the VLAN interface. The Device field should contain the name of the physical interface to be used for this VLAN and the VLAN number, for example `ens8.1040` means VLAN *1040* on interface *ens8*. The parent and VLAN ID fields should correspond to the values in the name field. In our example *ens8* is the parent and *1040* is the VLAN. Other settings are the same as for normal IPv4/6 interfaces.

```
                     ┤ Edit Connection ├

            Profile name VLAN 1040_____
                  Device ens8.1040_____

  = VLAN                                                    <Hide>
                  Parent ens8_____
                 VLAN id 1040_____

       Cloned MAC address _____
                     MTU _____  (default)


  = IPv4 CONFIGURATION <Manual>                             <Hide>
               Addresses 10.0.40.163/24_____    <Remove>
                         <Add...>
                 Gateway _____
             DNS servers <Add...>
          Search domains <Add...>

                         Routing (No custom routes) <Edit...>
       [X] Never use this network for default route
       [ ] Ignore automatically obtained routes

       [ ] Require IPv4 addressing for this connection


  = IPv6 CONFIGURATION <Automatic>                          <Show>

  [X] Automatically connect
  [X] Available to all users

                                                  <Cancel> <OK>
```

After entering the configuration for the VLAN interface select **OK** to return the previous menu, then select **Back** and finally **Activate a connection** to activate the newly created VLAN interface.

# B Appendix: Enable NTP time synchronization

It is strongly recommended that the server running the Sencore VideoBRIDGE software be synchronized against an external NTP server.

If not set up correctly, alarms may be displayed with incorrect timestamps and out out alignment with other monitoring devices in the system.

NTP synchronization against public servers on the Internet is usually enabled automatically if they were detected during the operating system installation. It is possible to change the servers to use, for instance to set it to use a local NTP server, by changing the configuration in the file `/etc/chrony.conf` manually.

The VideoBRIDGE Controller will also act as NTP server, if available. Please refer to the individual User's Manuals for information on how to set up the Sencore VideoBRIDGE software and hardware to synchronize towards the VBC server.

For more details on configuring the date and time settings, please refer to the System Administrator's Guide, chapters *Configuring the Date and Time*[1] and *Using chrony*[2].

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[1]`https://access.redhat.com/documentation/en-US/Red_Hat_Enterprise_Linux/7/html/System_Administrators_Guide/chap-Configuring_the_Date_and_Time.html`

[2]`https://access.redhat.com/documentation/en-us/red_hat_enterprise_linux/7/html/system_administrators_guide/sect-using_chrony`