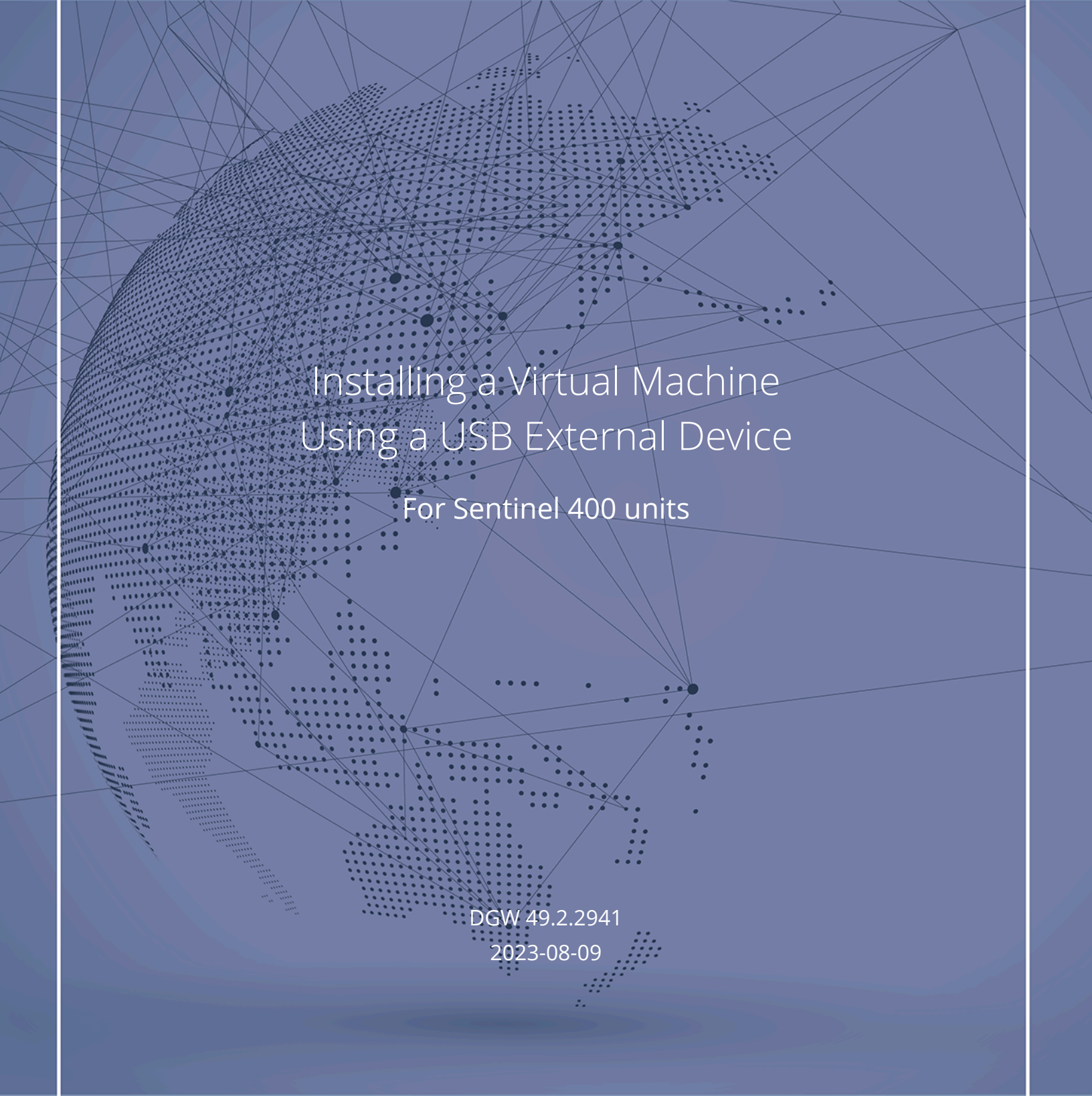


The background of the page is a dark blue gradient with a complex, abstract graphic. It consists of a dense network of thin, light blue lines connecting numerous small, dark blue dots. These dots are arranged in a way that suggests a globe or a network map, with some areas being more densely populated than others. The overall effect is a sense of global connectivity and digital technology.

Installing a Virtual Machine Using a USB External Device For Sentinel 400 units

DGW 49.2.2941
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Virtual Machine (VM) Installation

Configuring a Link as a Virtual Switch

Steps

- 1) Go to **Network/Interfaces**.
- 2) In the **Ethernet Link Configuration** table, from the **Virtual Switch** selection list, select **Enable** located on the same row as the link you wish to enable for the virtual switch.
- 3) Click **Apply**.

Result

Ethernet Link Configuration						
Link	MTU	802.1x Authentication	EAP Username	EAP Certificate Validation	Virtual Switch	
eth1	1500	Disable		Trusted And Valid	Enable	
eth2-5	1500	Disable		Trusted And Valid	Disable	

Next Step

[Adding a Virtual Machine \(p.3\)](#)

Adding a Virtual Machine

Before you start

The **VirtualSwitch** parameter must be configured to enable the link you wish to use to contact the virtual machine. Refer to [Configuring a Link as a Virtual Switch \(p.3\)](#).

You must have a virtual machine licence and the VM service must be started.



Caution: It is a best practice to create the Virtual Machine in a test environment. If not enough memory is allocated and swap is disabled, the Virtual Machine will stop, and the installation will need to be restarted from the beginning.

Steps

- 1) Go to **System/VM**.
- 2) In the **Virtual Machine Creation** table, complete the **Vm Name** field.

Note: Vm names must be unique.

- 3) In the **Ram(Mb)** field, enter the amount of RAM required to run the virtual machine.



Caution: To reduce the wear-and-tear of the Solid State Drive, make sure to allocate the maximum amount of RAM possible to the virtual machine.

Note: For instance, 87.5% of the actual available RAM, or 1.5 Gb for units with 2 Gb of RAM, 3.5 Gb with 4 Gb of RAM and for 7 Gb with 8 Gb of RAM.

- 4) Complete the **Storage(Gb)** field.

Note: 10 Gb is the maximum value one can allocate in a typical Sentinel equipped with a 16 Gb Solid State Drive.

- 5) From the **Image Format** selection list, choose the format of the image.

Note:

- Use QCOW2 for space efficiency and flexibility.
- Use RAW for improved performance

- 6) From the **Nb Cores** selection list, select the number of cores the virtual machine will be using.

IMPORTANT: It is not possible to modify the settings (RAM, name, etc.) once the virtual machine has been created. The only way to change the settings, is to delete the virtual machine and to create it once again.

- 7) Click .

Note: A maximum of 2 virtual machines can be added.

Result

The virtual machine will be displayed in both the **Virtual Machine Configuration** and the **Virtual Machine Status** tables.

Virtual Machine Creation					
Vm Name	Ram (Mb)	Storage (Gb)	Image Format	Nb Cores	
unique_Vm_Name	xxx(Mb)	Storage(Gb)	raw ▾	1 ▾	+

Next Step

[Configuring the VM Network Adapter \(VirtIO\) \(p.5\)](#)

Configuring the VM Network Adapter (VirtIO)

Before you start

Configuring the Network Adapter is optional. By default, it is set to E 1000 (Intel 82545EM emulated network interface card). However, for enhanced network performance, the network adapter can be set to VirtIO, provided it is supported by the guest OS as paravirtualised drivers are required.

Steps

- 1) Go to **System/VM**.
- 2) From the Network Adapter drop down list, select **VirtIO**.

Note: Please refer to the OS documentation for specific information regarding VirtIO.

- 3) Click **Apply**.

Result

The virtual machine Network Adapter will be set to **VirtIO**.

Virtual Machine Configuration								
Vm Name	Iso Name	MAC Address	Vnc Id	Usb	Network Adapter	Startup	Actions	
Kali		12:2e:7f:c2:c4:d2	0	None ▾	virtio ▾	Manual ▾	▶ ■ ▶ ⏸ ◀	

Next Step

[Installing the Virtual Machine OS using a USB External Device \(p.5\)](#)

Installing the Virtual Machine OS using a USB External Device

Before you start

Make sure your USB external device contains the Operating System installation media, is bootable, and is connected. When downloading an OS that provides architecture choices you need to choose either AMD64 (64 bit OS) or i386/i686 (32 bit OS). Basically you need to choose the architecture for an INTEL processor.

Steps

- 1) Go to **System/VM**.

- 2) In the **Virtual Machine Configuration** table, in the **Vnc Id** field, indicate the unique id of the virtual machine.
- 3) From the **Usb** field, select **All**.
- 4) Click .
- 5) Open the VNC Client located on a computer of the network connected to the unit.

Note: UltraVNC Viewer, TightVNC Viewer and VNC Viewer are presently supported.

- 6) Enter the **IPAddressOftheUnit:VNCid**

Note: For example 192.168.0.12:1

- 7) From the VNC client, wait for the following message to display "Press F12 for boot menu". If too late, restart the VM by clicking the  button.
- 8) Press F12, then select the USB device.
- 9) Follow the on-screen instructions.



Caution:

To reduce the wear-and-tear of the Solid State Drive:

- On Linux OS, disable memory swapping or at least set swappiness to 0.
- On Windows OS, disable the virtual memory.

Note: If the Solid State Drive fails because it is inadequately used by a third party software or the operating system, the warranty of the Mediatrix unit will no longer be valid.

Note: The installation can take more than an hour depending on the image you are installing.

Result

The virtual machine will be started only if it is started manually

Virtual Machine Configuration							
Vm Name	Iso Name	MAC Address	Vnc Id	Usb	Network Adapter	Startup	Actions
VirtualMachine_1		Unit MAC address	Unique ID	All 	e1000 	Manual 	    

Next Step

[Disabling Swap on Linux \(p.6\)](#)

Disabling Swap on Linux

Information

Disabling swapping in the Operating System will optimise the virtual machine in such a way to reduce the wear-and-tear of the Solid State Drive.

Note: If the Solid State Drive fails because it is inadequately used by a third-party software or the operating system, the warranty of the Mediatrix unit will no longer be valid.

Steps

- 1) Open the VNC Client located on a computer of the network connected to the unit.

Note: UltraVNC Viewer, TightVNC Viewer and VNC Viewer are presently supported.

- 2) Open .../etc/sysctl.conf file
- 3) Add vm.swappiness = 0 to the file.
- 4) Open ... /etc/fstab.
- 5) Add noatime to the following lines
 - a) § UUID=32b414c0-This-is-an-example / ext4 defaults, noatime 1 1
 - b) § UUID=b4598e44-This-is-an-example /boot ext4 defaults, noatime 1 2
- 6) Comment out
 - a) § # UUID=72355f7a-497d-This-is-an-example swap swap defaults 0 0
- 7) Use the Shutdown command and then restart the Virtual Machine.

IMPORTANT: Do not use the Linux reboot command as the filesystem may not get mounted properly.

Next Step

[Setting the Virtual Machine to Automatic Start \(p.7\)](#)

[Setting the Virtual Machine to Manual Start \(p.8\)](#)

Setting the Virtual Machine to Automatic Start

Information

If the virtual machine you wish to start requires resources equivalent to the available resources on the unit, then it will not be possible to start another virtual machine. It is only possible to start a virtual if there are enough resources on the unit.

Steps

- 1) Go to **System/VM**.
- 2) In the **Virtual Machine Configuration** table, from the **Startup** dropdown list, select **Auto**.
- 3) Click **Apply**.

Result

When the Vm Service is started, the virtual machine will also be started.

Virtual Machine Configuration								
Vm Name	Iso Name	MAC Address	Vnc Id	Usb	Network Adapter	Startup	Actions	
VirtualMachine_1		12:d8:38:0a:9e:8d	0	None	e1000	Auto	▶ ◻ ▶ ◻ ▶ ◻ ◻ ◻	

Setting the Virtual Machine to Manual Start

Information

Manually starting the virtual machine can be useful when installing the virtual machine to check if the installation was done properly. However, on a day to day usage, the virtual machine should be set to start automatically. Refer to [Setting the Virtual Machine to Automatic Start](#) (p.7).

Note: If the virtual machine you wish to start requires resources equivalent to the available resources on the unit, then it will not be possible to start another virtual machine. It is only possible to start a virtual machine if there are enough resources available on the unit.

Steps

- 1) Go to **System/VM**.
- 2) In the **Virtual Machine Configuration** table, from the **Startup** dropdown list, select **Manual**.
- 3) Click **Apply**.

Result

The virtual machine will be started only if it is started manually. In the **Virtual Machine Status**, **Started** will be displayed under the **State** column.

Virtual Machine Configuration								
Vm Name	Iso Name	MAC Address	Vnc Id	Usb	Network Adapter	Startup	Actions	
VirtualMachine_1		12:d8:38:0a:9e:8d	0	None	e1000	Manual	▶ ◻ ▶ ◻ ▶ ◻ ◻ ◻	

Online Help

If you are not familiar with the meaning of the fields and buttons, click **Show Help**, located at the upper right corner of the Web page. When activated, the fields and buttons that offer online help will change to green and if you hover over them, the description will be displayed.

DGW Documentation

Mediatrix devices are supplied with an exhaustive set of documentation.

Mediatrix user documentation is available on the [Media5 Documentation Portal](#).

Several types of documents were created to clearly present the information you are looking for. Our documentation includes:

- **Release notes:** Generated at each GA release, this document includes the known and solved issues of the software. It also outlines the changes and the new features the release includes.
- **Configuration notes:** These documents are created to facilitate the configuration of a specific use case. They address a configuration aspect we consider that most users will need to perform. However, in some cases, a configuration note is created after receiving a question from a customer. They provide standard step-by-step procedures detailing the values of the parameters to use. They provide a means of validation and present some conceptual information. The configuration notes are specifically created to guide the user through an aspect of the configuration.
- **Technical bulletins:** These documents are created to facilitate the configuration of a specific technical action, such as performing a firmware upgrade.
- **Hardware installation guide:** They provide the detailed procedure on how to safely and adequately install the unit. It provides information on card installation, cable connections, and how to access for the first time the Management interface.
- **User guide:** The user guide explains how to customise to your needs the configuration of the unit. Although this document is task oriented, it provides conceptual information to help the user understand the purpose and impact of each task. The User Guide will provide information such as where and how TR-069 can be configured in the Management Interface, how to set firewalls, or how to use the CLI to configure parameters that are not available in the Management Interface.
- **Reference guide:** This exhaustive document has been created for advanced users. It includes a description of all the parameters used by all the services of the Mediatrix units. You will find, for example, scripts to configure a specific parameter, notification messages sent by a service, or an action description used to create Rulesets. This document includes reference information such as a dictionary, and it does not include any step-by-step procedures.

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