

Infinity VS^X Appliance

Quick Start Guide

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Total Recall VR Infinity Release 20.5.0

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Related Documents:

- [1] Prolancer Pty Ltd, Total Recall VR website. Available from:
<http://www.totalrecallvr.com/>.
- [2] Prolancer Pty Ltd, Prolancer web site. Available from:
<http://www.prolancer.com.au/>.
- [3] Prolancer Pty Ltd, Total Recall VR Infinity Overview User Guide, 2.0, February 2024
- [4] Prolancer Pty Ltd, Total Recall VR Cockpit User Guide, 2.0, February 2024

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1. Preface

1.1. Conventions

Our guides use several conventions to highlight certain words and phrases and draw attention to specific pieces of information.

1.1.1. Notes & Warnings

We use the following visual styles to draw attention to information that might otherwise be overlooked:



Notes are tips, shortcuts or alternative approaches to the task at hand. Ignoring a note should have no negative consequences, but you might miss out on information that makes your life easier.



Important boxes detail things that are easily missed. Ignoring the information will not cause data loss but may cause irritation and frustration.





Warnings should not be ignored. Ignoring warnings will most likely cause data loss or incorrect function.

1.1.2. Typographic Conventions

We use typographic conventions to call attention to specific words and phrases. These conventions and the circumstances they apply to are as follows.

<i>Example</i>	<i>Meaning</i>
Select <u>Guide</u> to display ...	Locate the link named "Guide" on the screen and then either: <ul style="list-style-type: none"> • Position the cursor over the link and then depress the appropriate mouse button to follow the link; or

	<ul style="list-style-type: none"> • Tap on the link with a single finger to follow the link.
Select Add to ...	<p>Locate the button or menu item named "Add" on the screen and then either:</p> <ul style="list-style-type: none"> • Position the cursor over the button or menu item and then depress the appropriate mouse button to initiate an action; or • Press on the button with a single finger to initiate the action.
Select  to ...	<p>Locate the button or menu item with the icon ““ on the screen and then either:</p> <ul style="list-style-type: none"> • Position the cursor over the button or menu item and then depress the appropriate mouse button to initiate an action; or • Press on the button with a single finger to initiate the action.
Enter <i>Commission</i> ... or Set <i>Commission</i> ...	<p>Locate the field named "Commission" on the screen and then either:</p> <ul style="list-style-type: none"> • Position the cursor over the field and then depress the appropriate mouse button to select the field. Once the cursor appears in the field, enter a value; or • Tap on the field with a single finger to select the field. Once the cursor appears in the field, enter a value.
Choose <i>Country</i> ...	<p>Locate the field named "Country" on the screen and then either:</p> <ul style="list-style-type: none"> • Position the cursor over the field and then depress the appropriate mouse button to display the available options. Then position the cursor over the desired option and depress the appropriate mouse button to select it; or • Press on the field with a single finger to display the available options. Then tap with a single finger on the desired option to select it.
Tick <i>Active User</i> ...	<p>Locate the check box named "Active User" on the screen and then either:</p> <ul style="list-style-type: none"> • Position the cursor over the check box and depress the appropriate mouse button to place a visual tick in the box; or • Tap on the check box with a single finger to place a visual tick in the box.

Un-tick <i>Active User</i> ...	Locate the check box named "Active User" on the screen and then either: <ul style="list-style-type: none"> • Position the cursor over the check box and depress the appropriate mouse button to remove the visual tick in the box. • Tap on the check box with a single finger to remove the visual tick in the box.
Enter \$30.95 ...	Enter "\$30.95" using the keys on your physical or on-screen keyboard.

1.1.3. Procedures

We use a numbered sequence of steps to define procedures for performing specific tasks. For example:

Procedure Title

1. This is the first step of the procedure.
2. This is the second step of the procedure.
 - a. This is the first sub-step of step two.
 - b. This is the second sub-step of step two.
3. This is step three.

1.2. We Need Feedback

If you find a typographical error in this guide, or if you have thought of a way to make this guide better, then we would love to hear from you.

Please submit your feedback to <mailto:feedback@prolancer.com.au>.

If you have a suggestion for improving the guide, try to be as specific as possible when describing your suggestion. Otherwise, if you have found an error, please include the section number and some of the surrounding text to help us locate it.

2. Introduction

2.1. Thank You

Congratulations on purchasing the latest generation Total Recall VR Infinity professional audio logging and call recording appliance. Thank you.

Total Recall VR has more than 20 years of history of creating professional audio logging and call recording systems that are self-contained, fully featured and cost-effective. Enterprises and governments worldwide use Total Recall VR products to create electronic records of many forms of audio communication, including telephone, 2-way radio, broadcast radio, public address, intercoms, room microphones and much more.

2.2. About This Guide

This guide contains information intended to get you recording as quickly as possible with your new Total Recall VR appliance.

However, to enjoy the maximum benefit from your purchase, we recommend that you carefully read the following additional documents:

- Total Recall VR Cockpit User Guide [4].

2.3. What is Infinity VS^X?

Total Recall VR Infinity VS^X is an appliance engineered to run on a virtual machine (virtual hardware). It is designed to run as a virtual guest on top of a hardware virtualisation product such as [VMware ESXi](#) or Oracle's [VirtualBox](#).



Avoid using VirtualBox. Substantial configuration changes may be needed to get the virtual machine working after importing the OVA file.

The appliance combines the latest generation Linux operating system and a suite of Total Recall VR Infinity recorder services. Infinity VS^X appliances can be used as recording or archive appliances.

As a recording appliance, Infinity VS^X supports IP (VoIP, RoIP, AoIP, etc.) recording channels and is capable of recording:

- SIP sessions (calls) via UDP/TCP ports.
- SIPrec sessions via UDP/TCP ports.

- Cisco BiB sessions via UDP/TCP ports.
- Unicast and multicast RTP streams via SPAN ports.
- Unicast and multicast RTP streams via UDP ports.
- RTSP sessions via UDP/TCP ports.
- ATC recording via ED-137B/C Part 4.
- RoIP (analogue, MPT-IP and DMR networks) recording via Tait VRP.
- RoIP (DMR networks) recording via Hytera HDAP.
- RoIP (analogue, DMR, P25, NXDN ... networks) recording via Omnitronics RTP.
- RoIP (analogue, DMR, P25, NXDN ... networks) recording via Zetron SIP logging interface.

As an archive appliance, Infinity VS^X is a repository (archive) for recordings and associated metadata and a repository (archive) for audit events.

In all cases, users access Infinity VS^X appliances via instances of Total Recall VR Cockpit [4], the user interface for the latest generation Total Recall VR Infinity appliance and custom recorders.

3. Start Here



If a ruling is required on the legality of recording in your country, please seek legal advice from a legal professional in your country.

THIS PRODUCT MUST NOT BE USED FOR ILLEGAL OR UNAUTHORISED RECORDING PURPOSES.

3.1. Virtual Machine Requirements



It is impossible to guarantee the performance of Infinity VS^X instances as it largely depends on the hardware available to the virtualisation layer and the virtual hardware allocated to the Infinity VS^X virtual machines.

3.1.1. Recorder Appliance

The standard Infinity VS^X virtual machine, when it is used as a recording appliance, has the following configuration:

- 4 CPU cores
- 16GB of RAM
- Single 1TB virtual hard disk
- Two network interfaces
- USB 3.1 controller

The above configuration is sufficient to record 60 sessions simultaneously when the virtual CPU uses a physical CPU equivalent to an Intel[®] Core[™] i5-11500 CPU and the virtual hard disk is located on a standard AV-GP SATA physical disk. The following table shows the required virtual machine configuration and physical hardware to record more than 60 sessions simultaneously:

<i>Sessions</i>	<i>Virtual CPU</i>	<i>RAM</i>	<i>Virtual Disk</i>
Up to 120	8 CPU cores (on an i7-11700 equivalent)	32 GiB	2TB+ on a SAS SSD physical disk
Up to 180	12 CPU cores (on an i9-11900 equivalent)	48GiB	2TB+ on an NVMe physical disk
Up to 500 (maximum tested)	24 CPU cores (on an i9-11900 equivalent)	128GiB	4TB+ on an NVMe physical disk

3.1.2. Archive Appliance

The standard Infinity VS^X virtual machine, when it is used as an archive appliance, has the following configuration:

- 4 CPU cores
- 16GB of RAM
- Single 4TB virtual hard disk
- Two network interfaces
- USB 3.1 controller

In most cases, the above configuration is sufficient to maintain an archive of 10,000,000 sessions from four different recorder appliances and support browsing from up to four Total Recall VR Cockpit instances.

However, based on the duration of recordings, you may need additional disk space. As a rule of thumb, each TB of disk space is sufficient for about 30,000 audio hours of recordings.

3.2. Installation – OVF Download

Infinity VS^X open virtualisation format (OVF) packages can be downloaded from our website. We do not ship installation media for Infinity VS^X.



Please visit <http://www.totalrecallvr.com/products/total-recall-vr-infinity-vsx> to download a ZIP package that contains an OVF package for Infinity VS^X. Extract the OVF package from the ZIP package.

After you download an OVF package, please follow the instructions for importing OVF packages in the documentation that came with your virtualisation environment. We recommend configuring the import process to reinitialise the MAC addresses of all network interfaces.

An Infinity VS^X virtual machine will appear in the list of virtual machines on the management console for your virtualisation environment once you import the OVF package. At this point, you should:

- If required, set the guest OS to Linux and the guest OS version to “Other 5.x or later Linux (64-bit)” (or if not available, use “Other 4.x or later Linux (64-bit)”).
- If required, adjust the CPU and RAM configuration for the virtual machine.
- Connect at least one network interface to a virtual network that has DHCP enabled and that can be accessed from at least one device that will run an instance of Total Recall VR Cockpit.

To simplify the initial configuration process, we recommend connecting both network interfaces to a virtual network, either the same or different networks.

At this point, you can power up the virtual machine. However, we recommend that you delay that for a moment until you complete the following:

1. Install and activate an instance of Total Recall VR Cockpit on a device (usually a Windows-based PC) with network access to at least one of the virtual networks to which the virtual machine is connected.

See the Total Recall VR Cockpit User Guide [4] for information on installing and activating a Total Recall VR Cockpit instance.

3.3. Installation – DIY Virtual Machine

You can create an Infinity VS^X virtual machine as an alternative to the preferred installation method that depends on an OVF package you download from our website; see section 3.2 Installation – OVF Download.



We reserve the right to refuse support for Infinity VS^X virtual machines created with this installation method, particularly if your installation procedure is inconsistent with what is described here or the virtual machine does not meet the minimum virtual and physical hardware requirements.

However, this method requires technical skills and a virtual network with Internet access. Only attempt this method if you have the technical skills to create a Linux-based virtual machine using advanced bootstrapping techniques.

To build an Infinity VS^X virtual machine yourself:

Build an Infinity VS^X virtual machine

1. Download the CentOS 9 Stream boot ISO image and place it in a location where it will be accessible by the new virtual machine.
2. Create a virtual machine that meets or exceeds the requirements documented in section 3.1 Virtual Machine Requirements.

In addition, add a CD/DVD drive to the configuration and configure it to use the ISO image you downloaded during step 1.

Tips:

During the process of creating a VM, you may have to set the guest OS family to “Linux” and may have to set the guest OS version to “Other 5.x or later Linux (64-bit)”, as other versions may not support EFI firmware.

Also, do not use the “VMware Paravirtual” SCSI controller. Total Recall VR Cockpit cannot manage the disks if you use this controller.

3. Configure the virtual machine to boot using its EFI firmware and from the CD/DVD drive.
4. Connect at least one of the network interfaces to a virtual network with a DHCP server and Internet access. The installation will download files from the Total Recall VR installation server over the Internet.

We recommend connecting both network interfaces to a virtual network, either the same or on different networks. If you must connect only one, then connect the one with the lower MAC address, usually the first network interface assigned to the virtual machine.

5. Power on the virtual machine and ensure it boots from the CD/DVD drive (the CentOS 9 Stream boot ISO image). If successful, you should see the boot selection screen:



6. Move the selection to “Install CentOS Stream 9” and then press “e” to edit the boot configuration:

```

GRUB version 2.06

setparams 'Install CentOS Stream 9'

    linuxefi /images/pxeboot/vmlinuz inst.stage2=hd:LABEL=CentOS-Stream\
-9-BaseOS-x86_64 quiet
    initrd /images/pxeboot/initrd.img

Minimum Emacs-like screen editing is supported. TAB lists
completions. Press Ctrl-x or F10 to boot, Ctrl-c or F2 for a
command-line or ESC to discard edits and return to the GRUB menu.

```

7. Modify the boot options to include the following two options to build a recorder appliance:

```
inst.ks=http://dnf.totalrecallvr.com/kickstart/trar-cli.x86_64.ks ip=dhcp
```

Alternatively, use the following two options to build an archive appliance:

```
inst.ks=http://dnf.totalrecallvr.com/kickstart/traa-cli.x86_64.ks ip=dhcp
```

Note that you must place both options before the `quiet` option if present. For example:

```

GRUB version 2.06

setparams 'Install CentOS Stream 9'

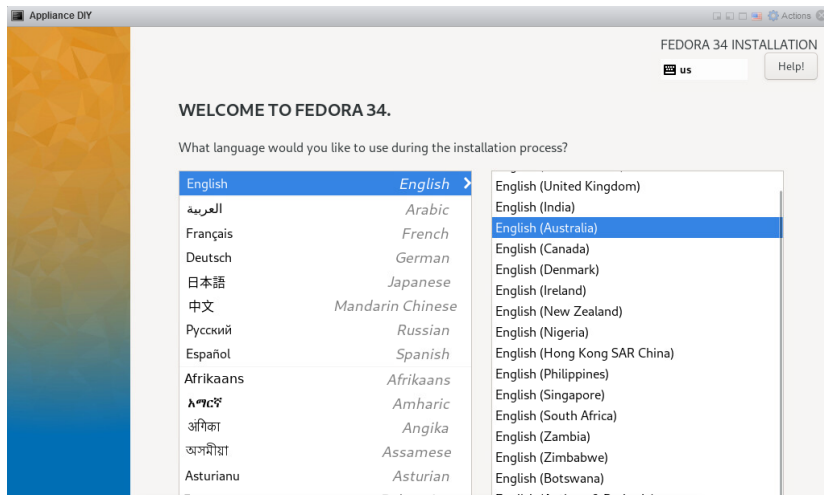
    linuxefi /images/pxeboot/vmlinuz inst.stage2=hd:LABEL=CentOS-Stream\
-9-BaseOS-x86_64 inst.ks=http://dnf.totalrecallvr.com/kickstart/trar-cli.x8
6_64.ks ip=dhcp quiet
    initrd /images/pxeboot/initrd.img

Minimum Emacs-like screen editing is supported. TAB lists
completions. Press Ctrl-x or F10 to boot, Ctrl-c or F2 for a
command-line or ESC to discard edits and return to the GRUB menu.

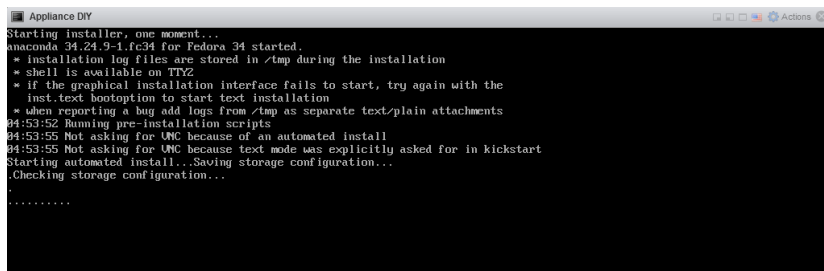
```

8. Press `Ctrl-x` to start the installation. If successful, the automated installation will start.

All of the installation is done in text mode. So if you see the following screen, then you have missed something, and you must power down the virtual machine and start again from step 1:



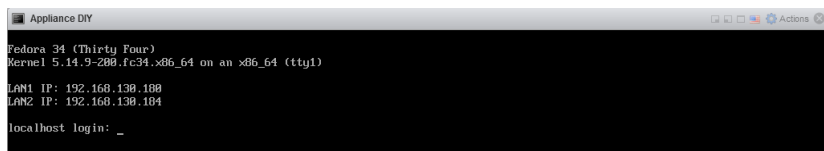
A successful start of the installation process should show the following screen during the initial stages:



9. Wait until the installation is completed. The process is hands-off and fully automatic. However, it may take some time to complete based on the network delays between the virtual machine and the Total Recall VR installation server.
10. You will be asked to reboot the virtual machine when the installation is complete. For example:



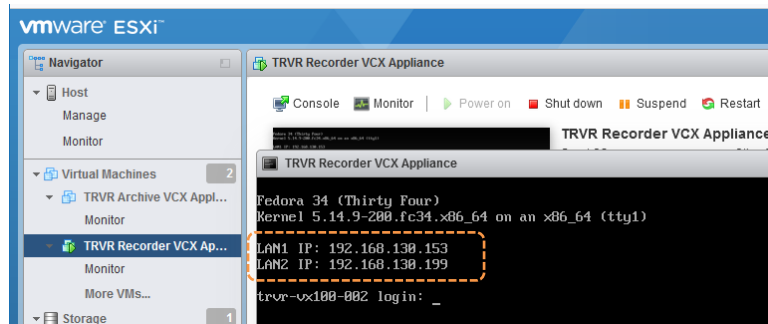
Please reboot the virtual machine (i.e. press ENTER as instructed on the screen). You will have a working Infinity VS^X virtual machine when it completes rebooting. For example:



11. Remove the CD/DVD drive from the virtual machine hardware configuration. The Infinity VS^X virtual machine will not use it.

3.4. Initial Run

If the virtual machine is not running, power it up and let it go through the boot process. Once the virtual machine is up and running, you can get the IP addresses assigned to its network interfaces by the DHCP servers from a console window. For example:

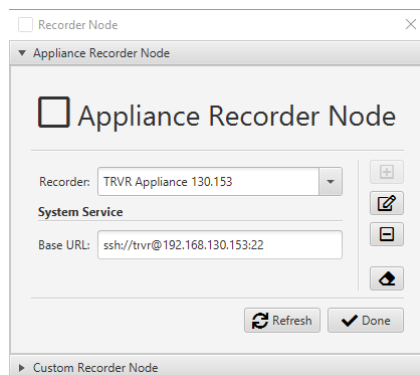


Now, configure an Appliance Recorder Node in the Manager view of the Total Recall VR Cockpit.



For information on configuring an Appliance Recorder Node using the Manager view, see the Total Recall VR Cockpit User Guide [4].

For example, to access the appliance that is shown on the previous screen capture via the interface with IP address 192.168.130.153:



You will gain management and monitoring access to the appliance once you create the node, and you will be ready to proceed with the initial configuration and activation.



To protect the integrity of the Total Recall VR appliance, we do not disclose the password to the root user or any other operating system user.

You must use the Total Recall VR Cockpit to manage and monitor the appliance.

4. Initial Configuration



The definitive guide for the information in this section is the Total Recall VR Cockpit User Guide [4].

This section contains information that will help you complete the initial basic configuration of your Total Recall VR appliance.

Before you proceed with the initial configuration of your Total Recall VR appliance, make sure that:

- The Total Recall VR appliance is up and running;
- You have a running instance of Total Recall VR Cockpit that can access the appliance over your network.
- You have created an Appliance Recorder Node in the Management view of Total Recall VR Cockpit to one of the network interfaces of the appliance – see section 3.4 Initial Run.

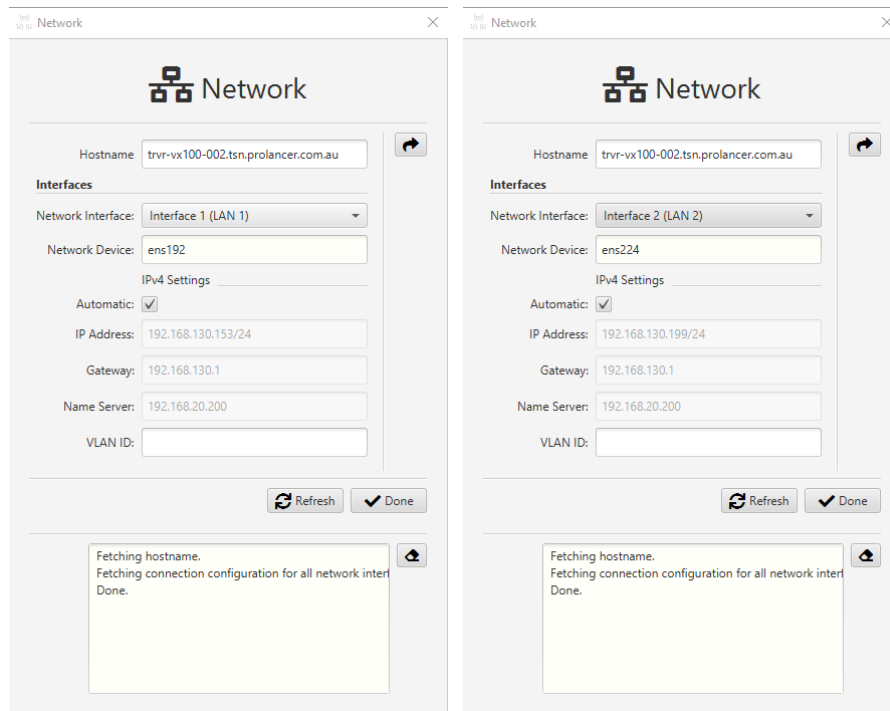
Continuing with the example from the previous sections, where we created an Appliance Recorder Node for the appliance with network interface with IP address 192.168.130.153, the following screen capture shows the Manager view of Total Recall VR Cockpit when it is ready to perform the initial configuration:

The screenshot displays the Total Recall VR Cockpit Manager interface. At the top, the title bar shows 'Total Recall VR Cockpit' and the current date and time '17 Nov 2021 10:24:57'. The main interface is divided into three panels:

- Recorder Services:** A table listing various services and their status. The 'Recording Service' is highlighted.
- Service Manager:** A configuration panel for a 'Recording Service' instance named 'trvr.mrs'. It includes fields for 'Source' (set to 'applianceRecorder'), 'Rollover Timer' (00:00:00), and 'Quiet Timer' (00:00:00). There are also checkboxes for 'Log Events' under 'Session Events', 'Resource Events', and 'Meta Data Events'.
- System Manager:** A panel with several functional buttons: 'Date & Time', 'Network', 'Network Storage', 'License', and 'Support'. Below these are 'Control' buttons for 'Shutdown' and 'Tools' buttons for 'Detach USB', 'Manage Disks', 'Upgrade', 'Get Logs', 'Tail Logs', and 'Request License'.

4.1. Network Configuration

Your Total Recall VR appliance has two network interfaces. Use one (usually the first one) to connect the appliance to the enterprise network and the other (usually the second) for recording.



The image displays two side-by-side screenshots of the 'Network' configuration page in a web interface. Both screenshots show the same configuration fields, but with different interface selections. The left screenshot is for 'Interface 1 (LAN 1)' and the right is for 'Interface 2 (LAN 2)'. Both have 'Automatic' checked, IP addresses in the 192.168.130.x/24 range, and a gateway of 192.168.130.1. A status box at the bottom of each indicates that the configuration is being fetched and is complete.

As you may already know, the default configuration of both interfaces is automatic (via DHCP).



We recommend a static configuration for both network interfaces.



Exercise extreme caution when changing the configuration of the network interfaces – you may lose connection to the appliance if you misconfigure the network interface used for the current connection to the appliance.

To use static configuration, untick **Automatic**, specify **IP Address** and **Gateway**, and optionally, **Name Server** and **VLAN ID**.

If you lose the connection to the appliance while configuring the network interfaces, remember that you can get the current IP addresses assigned to the appliance's interfaces from a console. Once you know the IP addresses, you can create a new or update an existing Appliance Recorder Node in the Manager view of Total Recall VR Cockpit to regain access to the appliance.

4.2. Activation License Request

The Total Recall VR recorder services that run on your Total Recall VR appliance require a valid activation license.

You must purchase one if you have not received an activation license from us. To do so, you need to create a license request file.

Use the Request License tool to create the license request file. The tool allows you to specify the license ownership information as shown on the following screen capture:



You must send us the license request file with your order for a new license. We cannot process your order without the license request file.

4.3. Activation

The Total Recall VR recorder services that run on your Total Recall VR appliance require a valid activation license.

If you received an activation license from us, use the License tool to activate the recorder services on your Total Recall VR appliance.


The screenshot shows a 'License' window with the following details:

- Status:** Valid
- Expiry:** Does not expire
- License Text:**

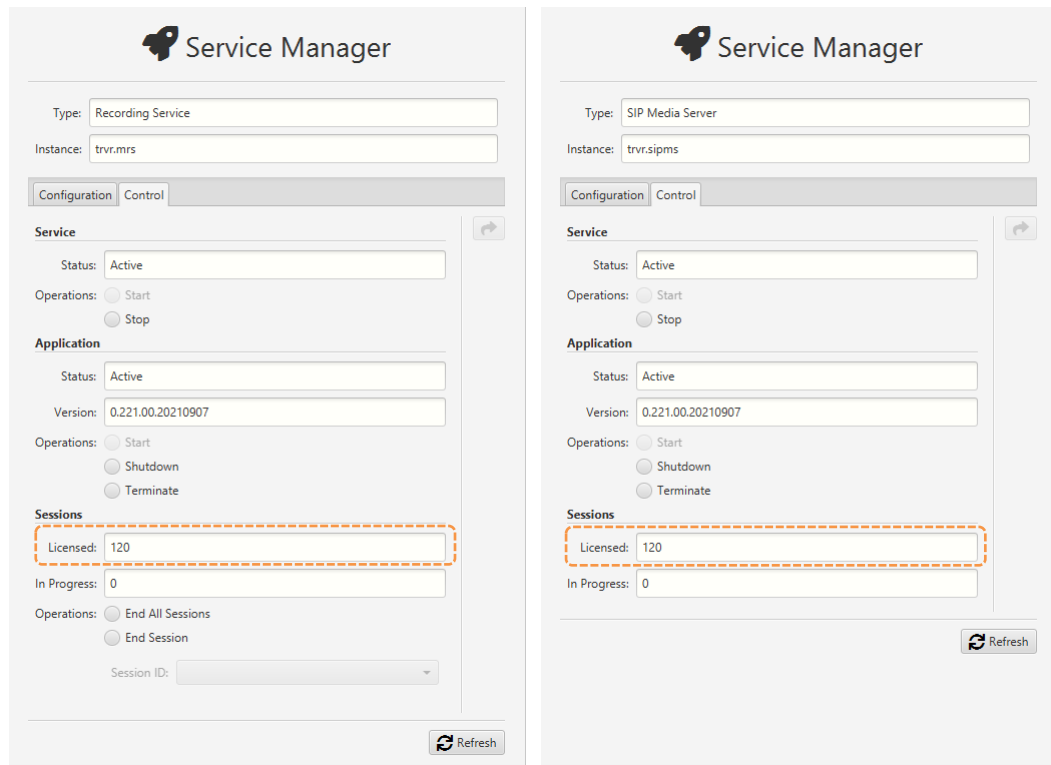
```
# Total Recall VR Recorder Node License (id: 1614656732137)
d63007a6583075813499647e6e059cef8a11a554e048f68de89fce;
616a3390b57b3fd5d0af5f83aa77b0aa24d36cc36c0f06ef708738
144561bd4a00d7274c91bdc676cc3c9def382e05d6d51b5b19c0d
40bf827d84218fd59dfd4817d4b958a1fa037548703d6024b93193
64a437e6d41e64d7b0563300368691e4ae52e825a136aa440db6
8b76ab637479ef5e896000f66b173ff5ee1c1168d16bd7c13d2b3
14f5d998c59ab47a7be1647b014ded87717bfa58618edb407d7aa
f89062f502c15a6ef1bc35f3d0e60393b54515f9682cc0c840398d5
664baafe9f081288a96f3931cf6fd977eda915318627131ee97457a
```
- Registered To:** Total Recall VR R&D
- Company:** Prolancer Pty Ltd
- Name:** trvr-ax100-001
- E-Mail:** trvr@prolancer.com.au

At the bottom, there is a 'Refresh' button and a 'Done' button. A log window at the bottom shows the following messages:

```
validating specific license.
Stopping all recorder services.
Applying new license.
Starting all recorder services.
Done.
Fetching hardware IDs.
Fetching current license.
Done.
```

To apply the license, either set **License Text** to the text of the new license you received by cutting and pasting, or select  to load the license text from a license file you received from us.

You may have noticed that the number of licensed channels, sessions, etc., does not appear on the License form (see previous screen capture). To determine the actual number of licensed channels, sessions, etc., visit the **Control** tab for each of the services in the Service Manager, for example:



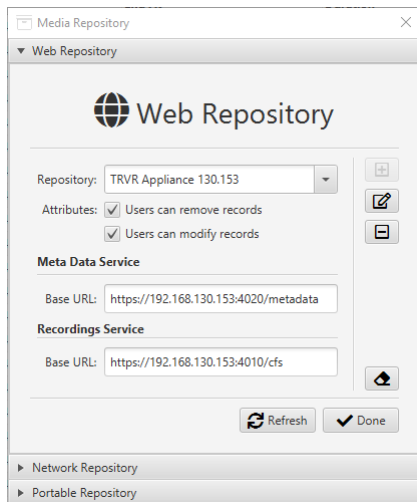
4.4. Recording

To start recording with your Total Recall VR appliance, you may have to change the configuration of some or all of the following Total Recall VR recording services:

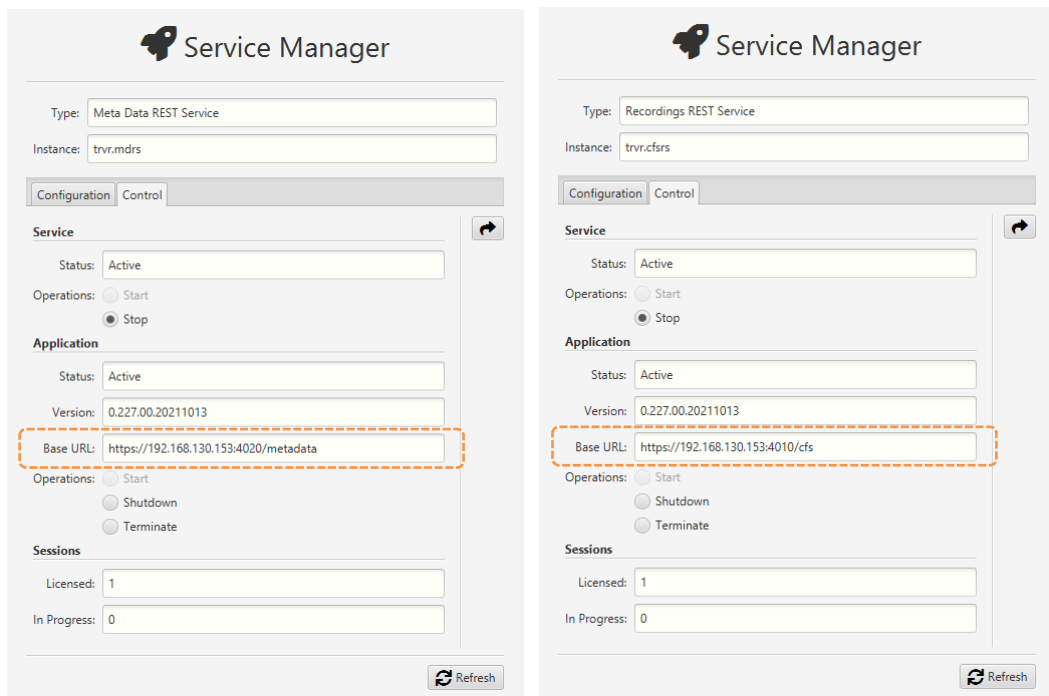
- “RTP Media Server”
- “RTSP Media Server”
- “SIP Media Server”
- “Tait VP Media Server”

In addition, although less likely, you may have to change the configuration of the “Recording Service”.

Finally, you may need to define address transforms and recording policies via the “Profile REST Service”.



As you may have already noticed, to configure a Web (Media) Repository, you need the base REST URLs for both the “Meta Data REST Service” and the “Recordings REST Service”. You can get the base URLs from the service runtime status, for example:

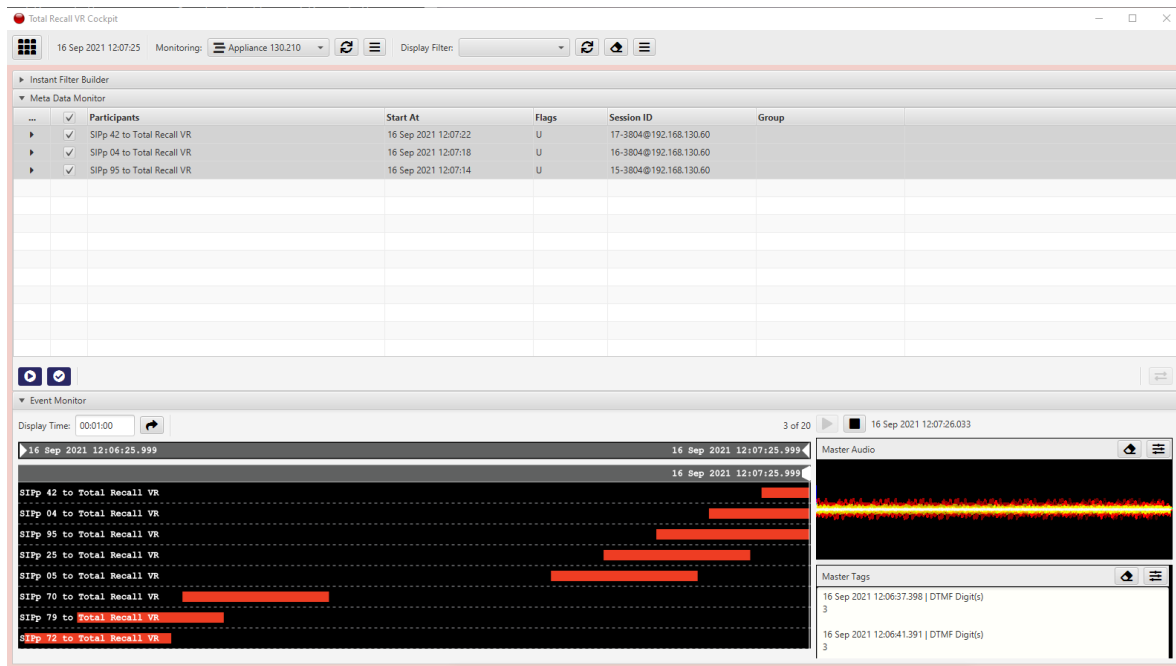


5.2. Live Monitoring

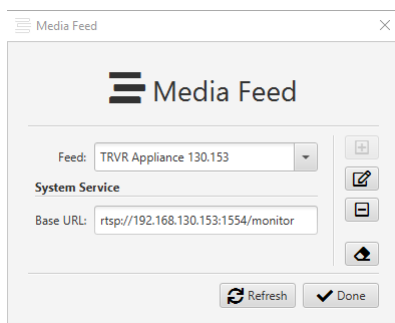
Your Total Recall VR appliance has a built-in media and metadata streaming interface (media feed). This interface is provided by the “Monitoring Service”, which can stream both media and metadata of recordings as they are recorded in real time.

The Monitor view of Total Recall VR Cockpit can connect to such media feeds and show the metadata of recordings in progress, automatically construct a visual

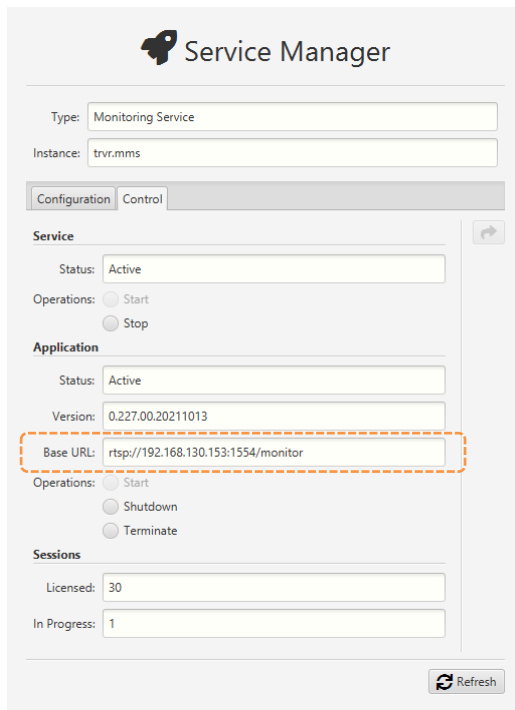
representation of a running timeline of the recordings in progress and play the media being recorded for the recordings appearing on the timeline.



You need to create a Media Feed record in the Monitor view to access the media feed on the Total Recall VR appliance. For example:



As you may have already noticed, to configure a Media Feed, you need the base RTSP URL of the feed. You can get the base URL from the runtime status of the “Monitoring Service”, for example:



The screenshot shows the Service Manager interface for a Monitoring Service. The 'Type' is 'Monitoring Service' and the 'Instance' is 'trvr.mms'. The 'Configuration' tab is active. Under the 'Service' section, the status is 'Active' and there are 'Start' and 'Stop' operations. Under the 'Application' section, the status is 'Active', the version is '0.227.00.20211013', and the 'Base URL' is 'rtsp://192.168.130.153:1554/monitor', which is highlighted with a red dashed box. There are also 'Start', 'Shutdown', and 'Terminate' operations. Under the 'Sessions' section, there are 'Licensed: 30' and 'In Progress: 1' fields. A 'Refresh' button is at the bottom right.

5.3. Automatic Archiving – Web Repository

Ideally, you will configure your Total Recall VR appliance to archive recordings to a Total Recall VR archive appliance.



A working archiving strategy must be implemented to avoid losing recordings due to auto-cleaning. See section 6.2 Disk and Database Space.

However, to do so, you must first purchase a Total Recall VR Infinity archive appliance and then configure the “Media Repository Archiving Connector” service to use it.



For complete and detailed instructions on how to set up automatic archiving to a Web Repository, see the Total Recall VR Cockpit User Guide [4].

If you do not own a Total Recall VR Infinity archive appliance, your next best option is to archive to a Network Repository – see the following section.

5.4. Automatic Archiving – Network Repository

If you do not own a Total Recall VR Infinity archive appliance, we recommend configuring your Total Recall VR appliance to archive recordings to a Network Repository.



A working archiving strategy must be implemented to avoid losing recordings due to auto-cleaning. See section 6.2 Disk and Database Space.

However, to do so, you must first create a Network Repository (possibly on another VM) and then configure the “Media Repository Archiving Connector” service to use it.



For complete and detailed instructions on how to set up automatic archiving to a Network Repository, see the Total Recall VR Cockpit User Guide [4].

5.5. Automatic Archiving – Physical USB Disk

If you do not own a Total Recall VR Infinity archive appliance and cannot create a Network Repository (see previous two sections), you can archive to a USB disk attached to your Total Recall VR appliance.



A working archiving strategy must be implemented to avoid losing recordings due to auto-cleaning. See section 6.2 Disk and Database Space.

Of course, to use a physical USB disk with a virtual machine, it must be possible to physically attach a USB disk to the VM server, the server used by the virtualisation layer, which is used to run the Infinity VS^X virtual machine. In addition, attaching the USB disk to the Infinity VSX virtual machine must be possible.



Assuming that it is, for complete and detailed instructions on how to set up automatic archiving to a Portable Repository, see the Total Recall VR Cockpit User Guide [4].

Generally, you can use any USB disk that you can attach to your Total Recall VR appliance recorder, however:

- Prefer brand new and unused disks.
- Prefer USB 3.1 or USB 3.0 disks. Avoid USB 2.0 disks at all costs.
- Disks with less than 128GiB capacity are unlikely to have enough capacity for a Portable Repository with the maximum allowed occupancy. At the same time, much space may be wasted on disks with more than 500GiB. This, of course, depends on the length of your recordings; shorter recordings have smaller file sizes, while longer ones have larger file sizes.

USB disks, in particular thumb drives, generally come preformatted with an NTFS file system, and as a result, they can be used straight out of the box. However, you can use unformatted disks and disks with a FAT32 and an exFAT file system.

6. Preventative Maintenance

All Total Recall VR appliances require minimal preventive maintenance to ensure maximum performance.

6.1. Disks

The physical disks in all Total Recall VR appliances are the hardest working component. Information is constantly written to and read from the disks.

The average life expectancy of any type of disk is about four years. However, as with any electronic and mechanical technology, the disks in your recorder may last much longer or much shorter.

We recommend replacing the physical disks used by your Total Recall VR appliance every four years.

6.2. Disk and Database Space

All Total Recall VR appliances manage disk and database space automatically. An integrated auto-cleaning function ensures enough free disk and database space to record endlessly.



A working archiving strategy must be implemented to avoid losing recordings due to auto-cleaning.

The “Media Repository House Keeper” service performs the auto-cleaning function. By default, it automatically starts deleting recordings when the database occupancy reaches 100% or the disk occupancy reaches 95%, whichever occurs first. It removes the oldest first recordings until the database occupancy is at or below 85% and the disk occupancy is at or below 80%.

However, you may be using different limits on your appliance, so check the configuration of the “Media Repository House Keeper” service.

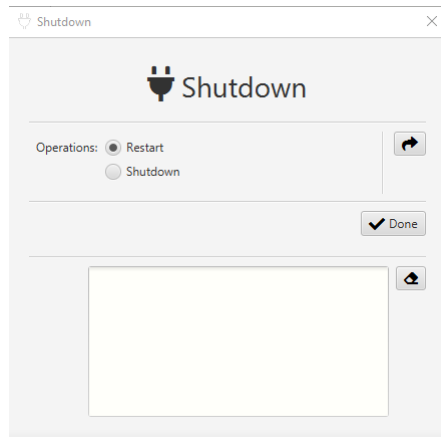
6.3. Orderly Shutdown

You must power down your Total Recall VR appliance in an orderly fashion to prevent damage to its electronic components, particularly its disks, and prevent partial or total information loss.



DO NOT remove power or turn off any Total Recall VR products while in use. This will result in disk damage and, most likely, partial or total information loss. In addition, it may cause damage to other electronic components. Finally, it will void the warranty.

To shut down or restart a Total Recall VR appliance in an orderly fashion, use the **Shutdown** control:



7. Troubleshooting

7.1. Limited Product Warranty

To view the full details of the limited product warranty for this Total Recall VR product, please visit our website: <http://www.totalrecallvr.com/warranty>.

7.2. Support Information

If, after using this manual and other related Total Recall VR manuals and in particular, the Total Recall VR Cockpit User Guide [4], you still have questions about the operation of your Total Recall VR products and applications or you are experiencing problems with your Total Recall VR products and applications, then:

1. Please visit the Total Recall VR online forums, <http://www.totalrecallvr.com/forum>, to find answers to common problems you may experience when installing and using Total Recall VR products.
2. Please browse the Total Recall VR online articles and tutorials, <http://www.totalrecallvr.com/articles-and-tutorials>, where you may find information on how to use Total Recall VR products combined with products from other manufacturers.



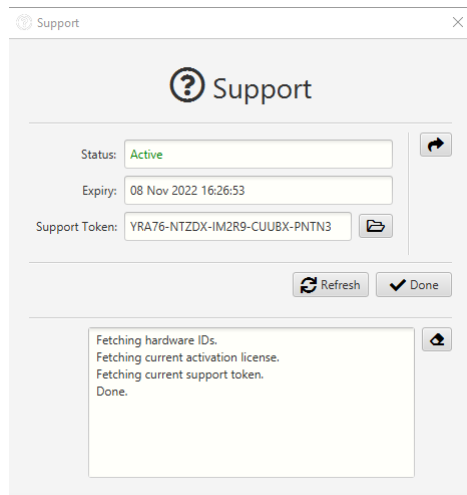
If you continue to experience problems, then in all cases, you should seek support from the point of purchase first.

If you need to contact us directly and require remote support, please write to itsupport@prolancer.com.au to book a remote support session.



You need to provide a valid and active support token when you seek support to receive support directly from us for your Total Recall VR product.

Use the Support tool to determine the status of your support token as shown on the following screen capture:



If the *Status* of the support token is not *Active* or it has expired, then you will need to renew the support token or purchase a new one before you can receive support from us.

Please note the following regarding the support token:-

- a. You do not need to purchase support tokens for any of your Total Recall VR products if you do not wish to receive support directly from us. Please discuss your support options with a representative from the point of purchase. They may and should offer support options that are likely to be tailored to your case compared to the remote support we provide as the manufacturer of the products.
- b. Support tokens are valid for one (1) year starting from the date that is exactly one (1) month after the date when the product that it relates to was shipped from our factory. Support for the first month after the shipment date is free and does not require a valid support token. So, during the first year, if you purchase a support token for a product at the same time when you purchase the product, then you will receive thirteen (13) months of support from the shipment date of the related product. You will receive twelve (12) months each subsequent year if you renew the support token.
- c. Each token relates to one instance of a Total Recall VR product and cannot be transferred to another instance of the same Total Recall VR product or used to get support for an instance of another Total Recall VR product.
- d. On expiry, support tokens can be renewed on a back-charging basis. You must pay for years missed and the current year when you renew an expired token. For example:

Suppose you purchased a support token when purchasing an instance of a Total Recall VR appliance. Further, let's take the fact that you did not renew the token or buy a new one after it expired at the end of the first year. If you request support in year 3 of ownership, you must pay for two years of support (to cover support for years 2 and 3) to renew your existing token or purchase a new one. The purchase will give you a token expiring at the end of year 3.
- e. You can purchase a support token anytime on a back-charging basis for any Total Recall VR product instance. For example:

Let's assume you did NOT purchase a support token when you purchased an instance of a Total Recall VR appliance. If you request support in year 3 of ownership, you must pay for three years of support (to cover support for years 1, 2 and 3) to purchase a new support token. The purchase will give you a token expiring at the end of year 3.



In summary, if you wish to receive support directly from us for an instance of a Total Recall VR product, then you need a valid and active support token for the instance of the Total Recall VR product.

However, you do not need to purchase support from us. Instead, please discuss your support options with a representative from the point of purchase. They may and should offer support options that will likely be tailored to your case compared to the remote support we provide as the manufacturer of Total Recall VR products.

[End of Document]