

Infinity CS^X

Quick Start Guide

February, 2024

Guide Issue 2.0

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

Table of Contents

1. Preface	4
1.1. <i>Conventions</i>	4
1.1.1. Notes & Warnings	4
1.1.2. Typographic Conventions	4
1.1.3. Procedures	6
1.2. <i>We Need Feedback</i>	6
2. Introduction	7
2.1. <i>Thank You</i>	7
2.2. <i>About This Guide</i>	7
2.3. <i>What is Infinity CS^x?</i>	7
3. Start Here	9
3.1. <i>Hardware Requirements</i>	9
3.1.1. Recoding Appliance	9
3.1.2. Archiving Appliance	10
3.2. <i>Installation</i>	10
3.3. <i>Initial Run</i>	13
4. Initial Configuration	16
4.1. <i>Network Configuration</i>	17
4.2. <i>Activation License Request</i>	18
4.3. <i>Activation</i>	18
4.4. <i>Recording</i>	20
5. Basic Operation	21
5.1. <i>Recording Repository Access</i>	21
5.2. <i>Live Monitoring</i>	22
5.3. <i>Automatic Archiving – Web Repository</i>	24
5.4. <i>Automatic Archiving – Network Repository</i>	25
5.5. <i>Automatic Archiving – USB Disk</i>	25
6. Preventative Maintenance	27
6.1. <i>Disks</i>	27
6.2. <i>Disk and Database Space</i>	27
6.3. <i>Orderly Shutdown</i>	28
7. Troubleshooting	29
7.1. <i>Limited Product Warranty</i>	29
7.2. <i>Support Information</i>	29

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 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 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 CS^X?

Total Recall VR Infinity CS^X is an appliance that is based on hardware of your choice and that you can create yourself.

The appliance combines the latest generation Linux operating system and a suite of Total Recall VR Infinity recorder services engineered to run on custom hardware. Infinity CS^X appliances can be used as recording or archive appliances.

As a recording appliance, Infinity CS^X supports only 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 CS^x acts as a repository (archive) for recordings and associated metadata and a repository (archive) for audit events.

In all cases, users access Infinity CS^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.

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

3.1. Hardware Requirements



It is impossible to guarantee the performance of Infinity CS^X appliances as it largely depends on the hardware you selected.

3.1.1. Recoding Appliance

Please use a device with the following minimum specification if you wish to build a Total Recall VR Infinity CS^X recording appliance:

- Intel® Core™ i5-11500 CPU
- 16GiB of memory (RAM)
- One 1TB SATA SSD (or two or four disks for RAID-1 or RAID-5, respectively)
- Two network interfaces
- At least one USB 3.0, or better, port

The above configuration supports the concurrent recording of 30 sessions and concurrent access from up to two Total Recall VR Cockpit instances.

The following table shows the required hardware to record more than 30 sessions simultaneously:

<i>Sessions</i>	<i>CPU</i>	<i>RAM</i>	<i>Disk</i>
Up to 60	Intel® Core™ i7-11700	32 GiB	2TB+ SAS hard disks
Up to 120	Intel® Core™ i9-11900	32 GiB	2TB+ SAS hard disks

Up to 180	Intel® Xeon™ Silver 4210	48GiB	2TB+ NVMe physical disk
Up to 500 (maximum tested)	2 x Intel® Xeon™ Silver 4210	128GiB	4TB+ NVMe physical disk

3.1.2. Archiving Appliance

Please use a device with the following minimum specification if you wish to build a Total Recall VR Infinity CS^X archive appliance:

- Intel® Core™ i9-11900 CPU
- 32GiB of memory (RAM)
- One 2TB SAS disk (or two or four disks for software RAID-1 or RAID-5 configuration, respectively)
- Two network interfaces
- At least one USB 3.0, or better, port

The above configuration supports an archive of 10,000,000 recordings from 4 different recorder appliances and concurrent browsing from up to 4 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

You will need technical skills and a network with Internet access to create a Total Recall VR Infinity CS^X appliance. Do not attempt to create a Total Recall VR Infinity CS^X appliance if you lack the technical skills to build Linux-based servers using advanced bootstrapping techniques.



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

To build an Infinity CS^X appliance yourself:

Build an Infinity CS^X appliance

1. Download the CentOS 9 Stream boot ISO image and create a bootable USB drive.
2. Prepare the hardware. Particularly:
 - a. If you intend to use a hardware RAID for the disk configuration, then create the RAID. Note that the Total Recall VR installation process must detect either one, two or four disk drives. If it detects two, then it will create a software-based RAID-1. Alternatively, if it detects four drives, then it will create a software-based RAID-5 configuration (3 + 1 hot spare).
 - b. Connect at least one network interface to a network that has 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 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.

3. Configure the BIOS to boot using its EFI firmware and from the bootable USB drive you created during step 1.
4. Disable all serial and parallel ports in the BIOS, if any.
5. Boot from the bootable USB drive (the CentOS 9 Stream boot ISO). 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
initrdefi /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'

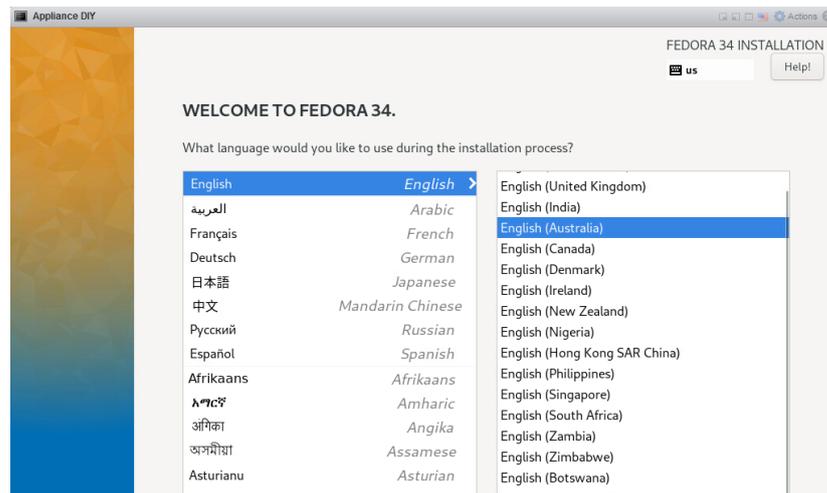
linuxefi /images/pxeboot/vmlinuz inst.stage2=hd:LABEL=CentOS-Stream\
-9-BaseOS-x86_64 inst.ks=http://dnf.totalrecallvr.com/kickstart/trar-cli.x8\
6.64.ks ip=dhcp quiet
initrdefi /images/pxeboot/initrd.img

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.

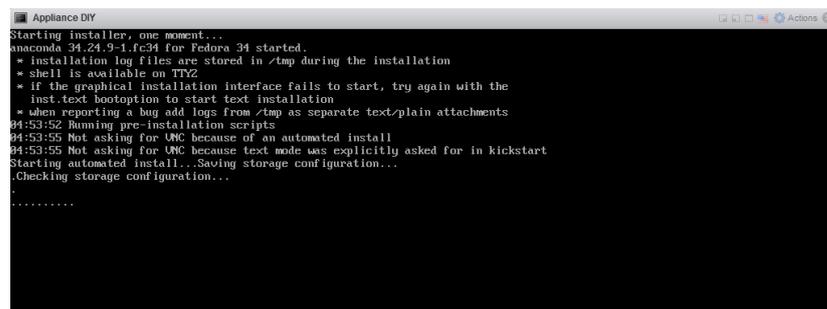
```

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 hardware 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 to the Total Recall VR installation server.
10. When the installation completes, you will be asked to reboot. For example:



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



11. Finally, remove the bootable USB drive.

3.3. Initial Run

You can power your Total Recall VR appliance once you have completed the physical installation of the appliance and connected the appliance to your network. 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 networks to which your Total Recall VR appliance is connected.

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

Once the appliance 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:

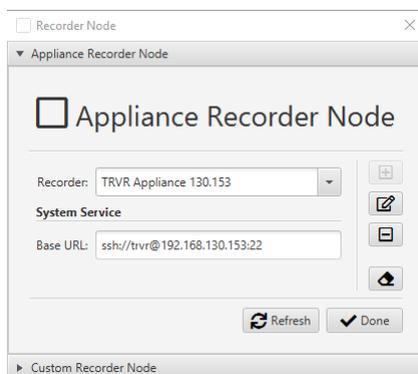
```
Fedora 34 (Thirty Four)
Kernel 5.14.9-200.fc34.x86_64 on an x86_64 (tty1)
LAN1 IP: 192.168.130.153
LAN2 IP: 192.168.130.199
trvr-ox100-002 login: _
```

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 are ready to proceed with the initial configuration.



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 3.3 Initial Run.

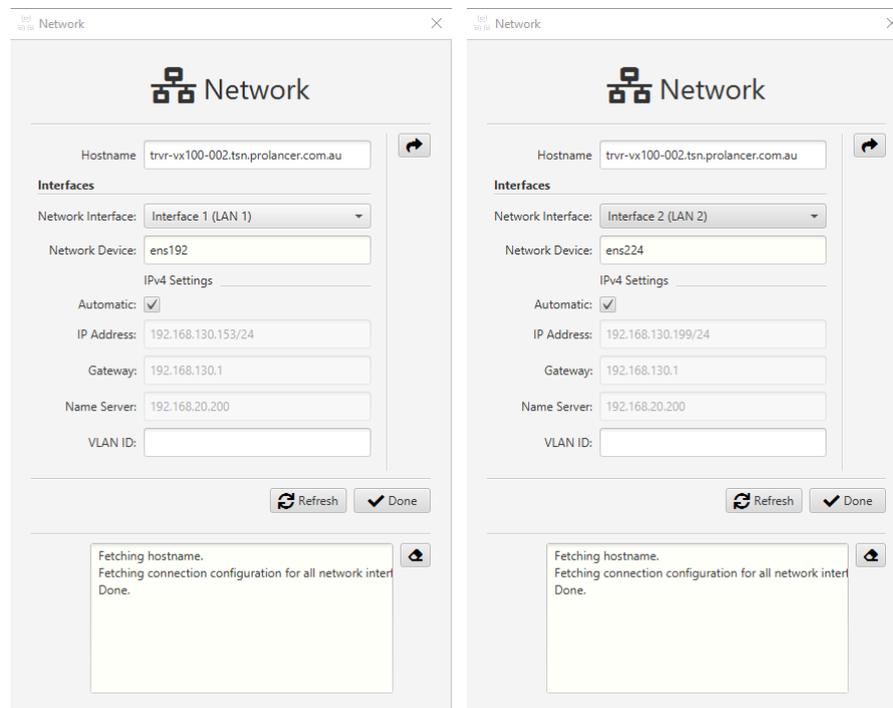
Continuing with the example from the previous sections, where we created an Appliance Recorder Node for the appliance with network interface with IP address 192.168.130.153, the following screen capture shows the Manager view of Total Recall VR Cockpit when it is ready to perform the initial configuration:

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 the selected 'Recording Service'. It shows fields for 'Type' (Recording Service), 'Instance' (trvr.mrs), 'Source' (applianceRecorder), 'Rollover Timer' (00:00:00), and 'Quiet Timer' (00:00:00). There are also checkboxes for logging events.
- System Manager:** A panel with various system management tools, including 'Date & Time', 'Network', 'Network Storage', 'License', 'Support', 'Shutdown', '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 interface. Both screenshots show a 'Hostname' field with the value 'trvr-vx100-002.tsn.prolancer.com.au'. The left screenshot is for 'Interface 1 (LAN 1)', showing a 'Network Device' of 'ens192', 'Automatic' checked, 'IP Address' of '192.168.130.153/24', and 'Gateway' of '192.168.130.1'. The right screenshot is for 'Interface 2 (LAN 2)', showing a 'Network Device' of 'ens224', 'Automatic' checked, 'IP Address' of '192.168.130.199/24', and 'Gateway' of '192.168.130.1'. Both screenshots also show 'Name Server' as '192.168.20.200' and an empty 'VLAN ID' field. At the bottom of each screenshot, there are 'Refresh' and 'Done' buttons, and a status box indicating 'Fetching hostname. Fetching connection configuration for all network interfaces. Done.'

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.

License

License

Status: Valid

Expiry: Does not expire

License Text: # Total Recall VR Recorder Node License (id: 1614656732137)
d63007a6583075813499647e6e059ce8a11a554e048f68de89fce,
616a3390b57b3fd5d0af55f83aa77b0aa24d36cc36c0f06ef708738
144561bd4a00d7274c91bdc676cc3c9def382e05d6d51b5b19c0d
40bf827d84218fd59dfd4817d4b958a1fa037548703d6024b93193
64a437e6d41e64d7b0563300368691e4aef52e825a136aaf4a0db6
8b76ab637479ef5e896000f66b173ff5eee1c1168d16bd7c13d2b3
14f5d998c59ab47a7be1647b014ded87717bfa58618edb407d7aa
f89062f502c15a6ef1bc35f3d0e60393b54515f9682cc0c840398d5
664baafe9f081288a96f3931c6fd977eda915318627131ee97457a

Registered To: Total Recall VR R&D

Company: Prolancer Pty Ltd

Name: trvr-ax100-001

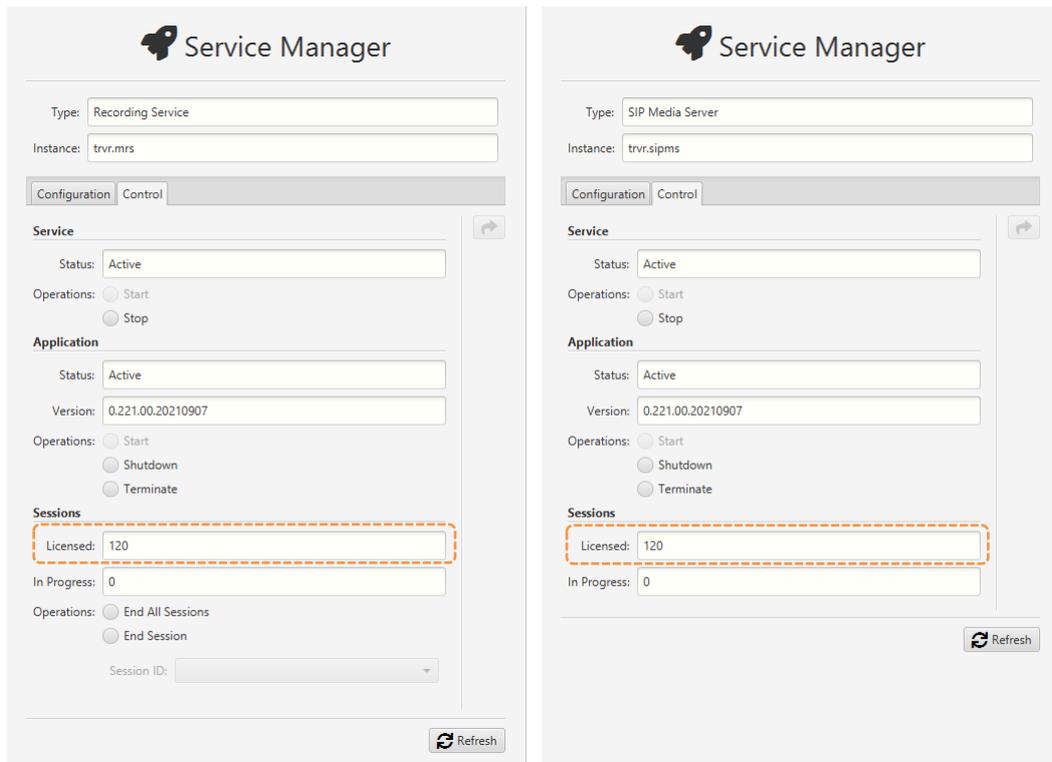
E-Mail: trvr@prolancer.com.au

Refresh Done

Validating specified license:
Stopping all recorder services.
Applying new license.
Starting all recorder services.
Done.
Fetching hardware IDs.
Fetching current license.
Done.

To apply for the license, either set the 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 “Recording Service” configuration.

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

5. Basic Operation



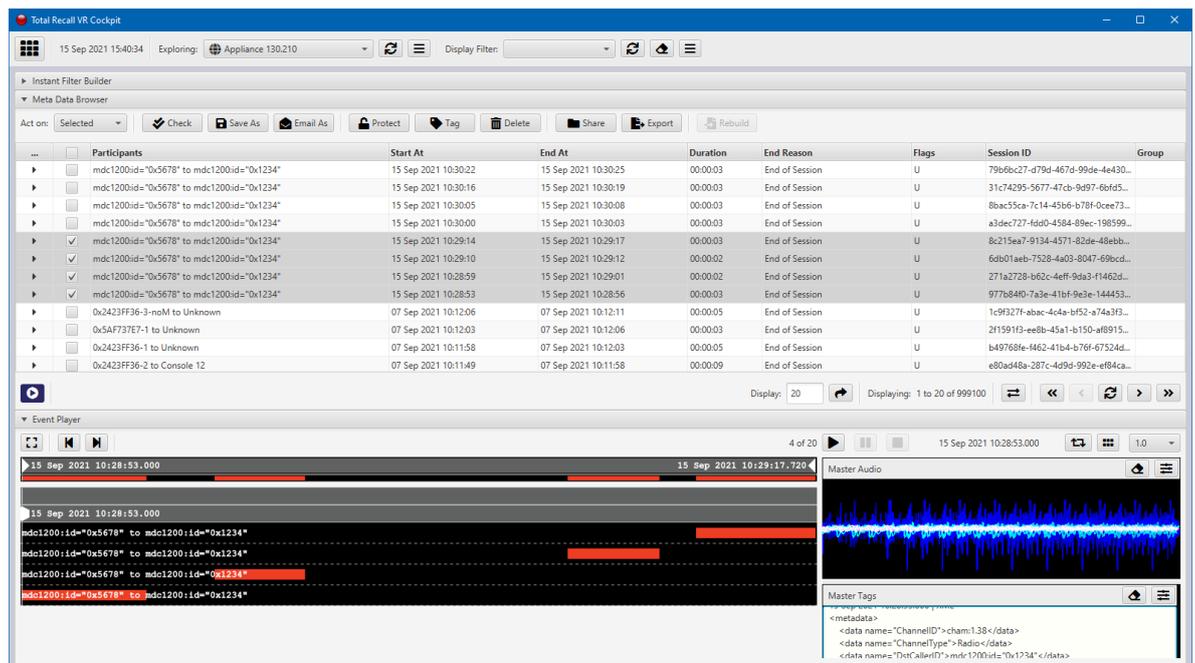
The definitive guide for the information in this section is the Total Recall VR Cockpit User Guide [4].

5.1. Recording Repository Access

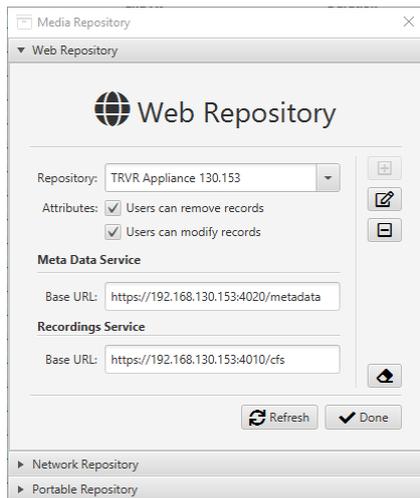
Your Total Recall VR appliance has a built-in recording repository to store the recordings it creates. This repository provides a REST interface via the “Meta Data REST Service” and the “Recordings REST Service”.

The Explorer view of Total Recall VR Cockpit has a built-in browser for recordings stored in repositories with different types of access. The browser has a suite of recording management and productivity tools that work on recording files and metadata.

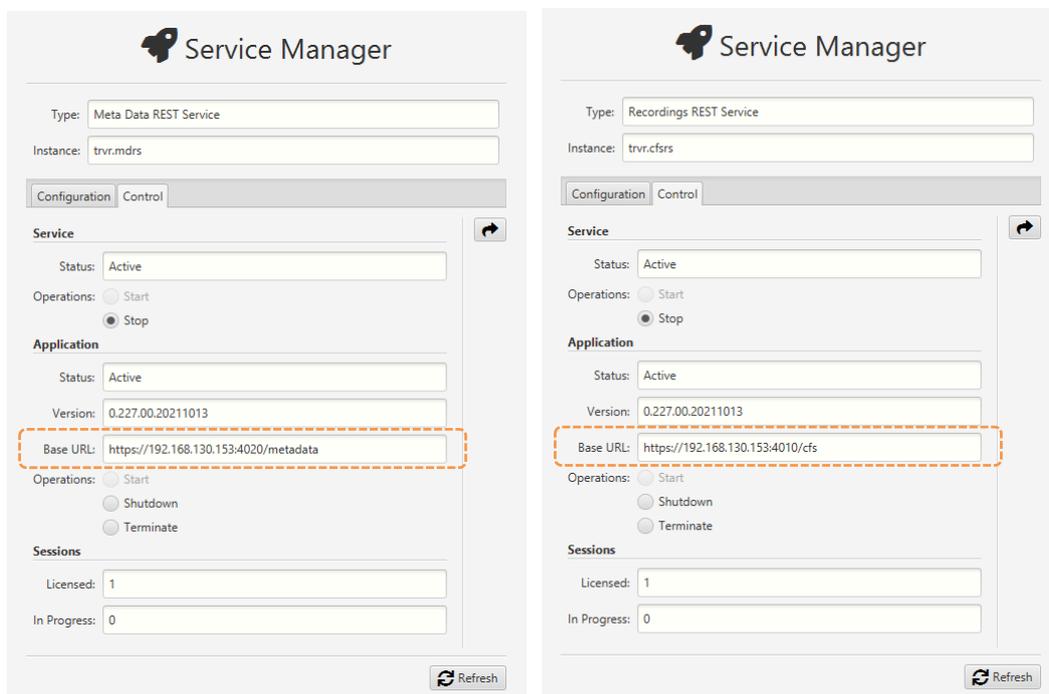
In addition, the Explorer view of Total Recall VR Cockpit has a built-in event player capable of processing multiple recordings in the correct time order. Use the event player to reconstruct the timeline of events (incidents) and listen to the events as they happened in time.



You need to create a Media Repository record, particularly a Web (Media) Repository record, in the Explorer view to access the recordings in the recording repository of your Total Recall VR appliance. For example:



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:

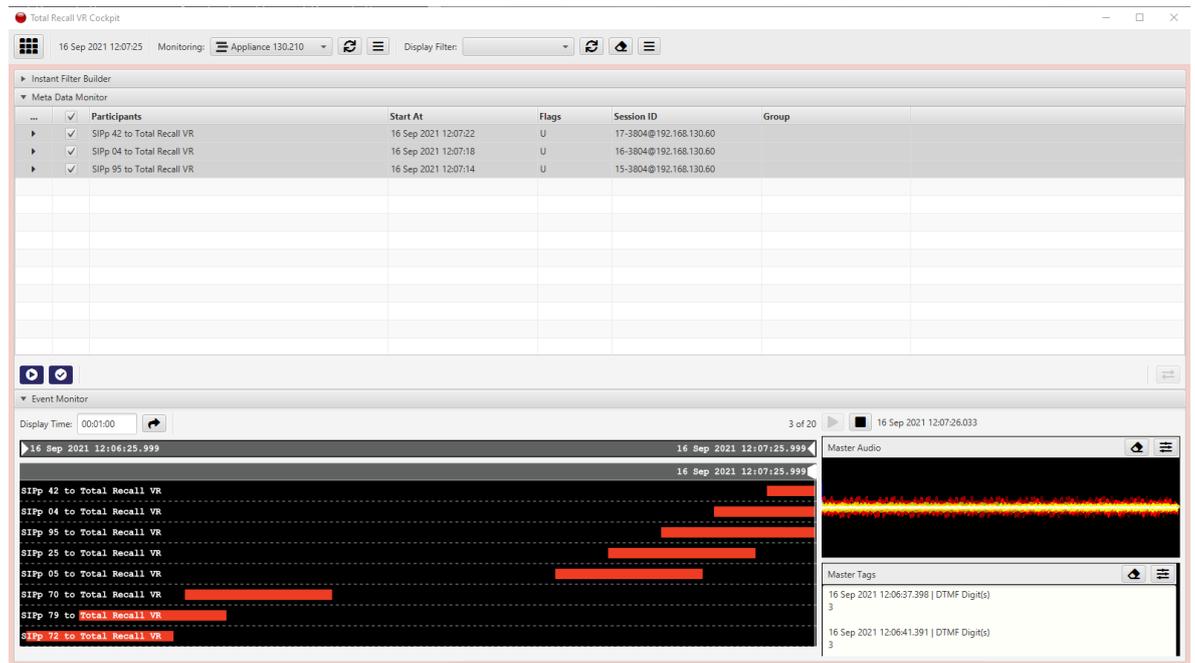


5.2. Live Monitoring

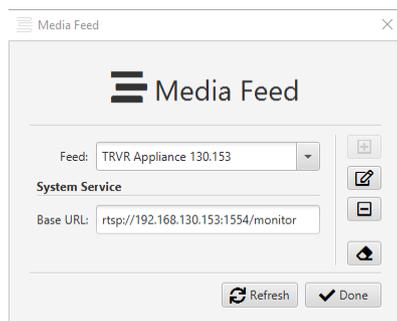
Your Total Recall VR appliance has a built-in media and metadata streaming interface (media feed). This interface is provided by the “Monitoring Service”, which can stream both media and metadata of recordings as they are recorded in real time.

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

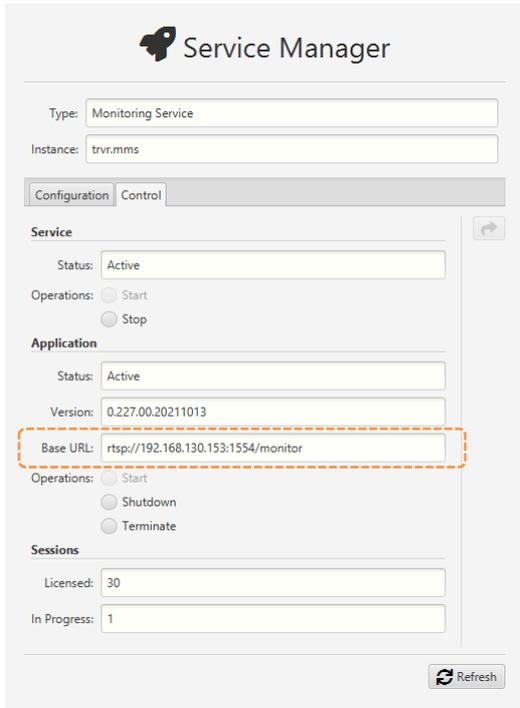
representation of a running timeline of the recordings in progress and play the media being recorded for the recordings appearing on the timeline.



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. At the top, there is a logo and the text "Service Manager". Below that, there are input fields for "Type: Monitoring Service" and "Instance: trvr.mms". There are two tabs: "Configuration" and "Control". The "Configuration" tab is active. Under the "Service" section, there is a "Status: Active" field and "Operations: Start" and "Stop" radio buttons. Under the "Application" section, there is a "Status: Active" field, a "Version: 0.227.00.20211013" field, and a "Base URL: rtsp://192.168.130.153:1554/monitor" field which is highlighted with a dashed orange box. There are also "Operations: Start", "Shutdown", and "Terminate" radio buttons. Under the "Sessions" section, there is a "Licensed: 30" field and an "In Progress: 1" field. At the bottom right, there is a "Refresh" button.

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 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 – 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.

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.

Once you attach a USB disk to your Total Recall VR appliance, configure the “Media Repository Archiving Connector” service to use it as a Portable Repository.



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

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.



Your Total Recall VR appliance may be fitted with a hardware RAID controller. If so, use the hardware manufacturer management tools to manage the system disks and the RAID.

Total Recall VR Cockpit cannot be used to manage the system disks and the RAID on your Total Recall VR appliance.

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.



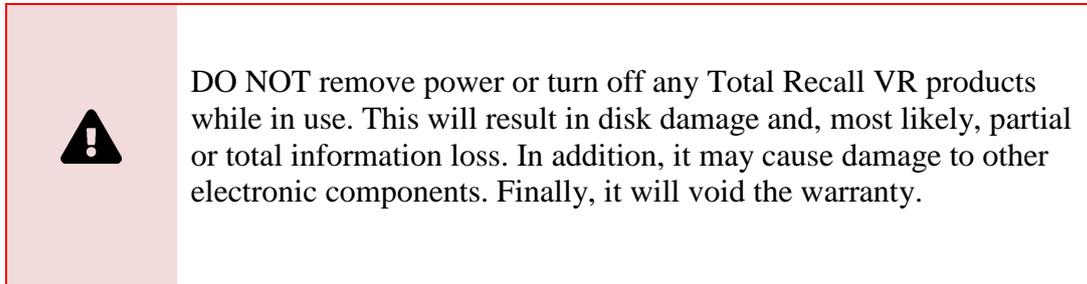
A working archiving strategy must be implemented to avoid losing recordings due to auto-cleaning.

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%.

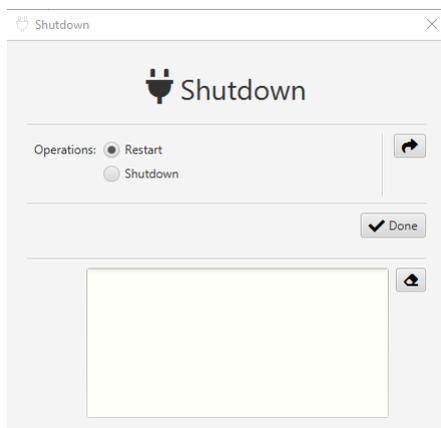
However, you may be using different limits on your appliance, so check the configuration of the “Media Repository House Keeper” service.

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.



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.



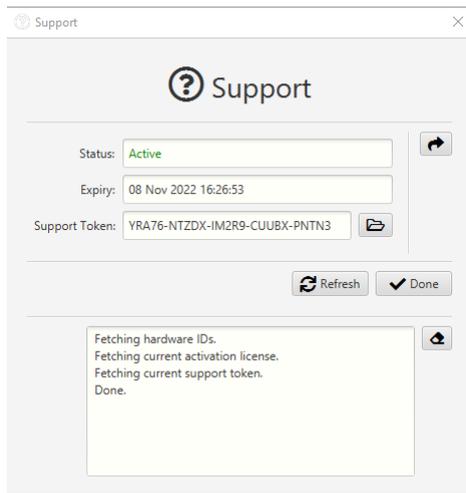
If you continue to experience problems, then in all cases, you should seek support from the point of purchase first.

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]