



.: www.totalrecallvr.com :.

Total Recall VR SNMP Agent

User Guide

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Related Documents:

- [1] Prolancer Pty Ltd, Total Recall VR web site. 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 Overview User Guide, 16.0, May 2017
- [4] Prolancer Pty Ltd, Total Recall VR Remote Manager User Guide, 16.0, May 2017

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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 a trick that makes your life easier.



Important boxes detail things that are easily missed: configuration changes that only apply to the current session, or services that need restarting before an update will apply. 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.

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.

Example	Meaning
Select <u>Guide</u> to display ...	Locate the link named "Guide" on the screen, position the cursor over the link and then depress the appropriate mouse button to follow the link.
Select Add to create a new ...	Locate the button or menu item named "Add" on the screen, position the cursor over the button or menu item and then depress the appropriate mouse button to initiate an action.

Enter <i>Commission</i> ...	Locate the field named "Commission" on the screen, 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.
Choose <i>Country</i> ...	Locate the field named "Country" on the screen, 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.
Tick <i>Active User</i> ...	Locate the check box named "Active User" on the screen, position the cursor over the check box and depress the appropriate mouse button to place a visual tick in the box.
Un-tick <i>Active User</i> ...	Locate the check box named "Active User" on the screen, position the cursor over the check box and depress the appropriate mouse button to remove the visual tick in the box.
Enter \$30.95 ...	Enter "\$30.95" using the keys on your keyboard.

1.1.3. Procedures

We use numbered sequence of steps to define procedures for performing certain 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 2.
 - b. This is the second sub-step of step 2.
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, we would love to hear from you.

Please submit your feedback using the feedback form on our web site:

<http://www.prolancer.com.au/contact/feedback>.

If you have a suggestion for improving the guide, then 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 so we can find it easily.

2. Introduction

2.1. About This Guide

This guide describes the Total Recall VR SNMP Agent. The SNMP Agent makes provisions for the management and monitoring of Total Recall VR with a Network Management System (NMS) that supports the Simple Network Management Protocol (SNMP).

The guide is intended for Total Recall VR systems and network administrators. It shows how to configure and enable the Total Recall VR SNMP Agent and how to interpret Total Recall VR events.

Please keep a copy of this guide handy for quick reference.

2.2. What is Total Recall VR?



Total Recall VR is a professional audio logging and call recording system which is self-contained, fully featured and cost-effective. Enterprises and governments worldwide use it to create electronic records of many forms of audio communication including telephone, 2-way radio, broadcast radio, public address, room microphones and much more.

Total Recall VR is the ideal solution for:

- Recording business telephone conversations;
- Recording agent calls in contact centres;
- Logging emergency response communication;
- Logging business operations communication;
- Logging radio broadcasts;
- Logging public announcements;
- Creating audio records of meetings, legal proceedings, public enquiries and similar events; and
- Creating compliance records to meet duty of care and legal requirements.

Total Recall VR captures all audio in digital format and stores it in a proprietary, secure and tamper proof file format in its on-board hard drive storage. The file format preserves

the originality of the audio that it stores and has a number of built-in mechanisms that aid quick and reliable detection of tampering. However, for ease of access, Total Recall VR client applications can generate copies of recordings in a number of popular and everyday formats such as Microsoft's Wave (.wav) and MPEG Layer-3 (.mp3).

Storing audio by itself does not help when looking for one recording in a store that can hold hundreds of thousands of recordings. That is why, in addition to audio, Total Recall VR captures and then stores information related to each recording and audio source in its database such as start time, end time and duration of recordings, calling and called numbers on telephone calls, DTMF digits during calls, user configurable notes and much more. This information is the backbone of a powerful search capability which can pin point a single recording in a set of hundreds of thousands of recordings which reside either on the on-board hard drives of a Total Recall VR or in one of many types of off-system archives of recordings.

In addition to the audio recorder and the on-board storage, each Total Recall VR system comes with a built-in media player with comprehensive player controls (start, stop, fast-forward, rewind ...). The player can play audio stored in files directly on the system or stream audio to a remote client application which then outputs the sound to the PC speakers of the PC that it runs on.

While audio recording, storage and re-play are the main functions of Total Recall VR, every Total Recall VR offers many more advanced, professional-grade features. For example:

- Ability to capture audio from different types of audio sources (analogue, VoIP, RoIP, AoIP and ISDN), at the same time – hybrid recording.
- Live and real-time monitoring (listening) of recordings in progress on the system itself or on a remote PC with the aid of a PC client application.
- Feature-rich archiver which can create searchable archives of recordings on CD, DVD or BD discs, USB keys or drives and network drives, either automatically or on-demand.
- Automated self-cleaning mechanism that removes obsolete recordings automatically and on regular intervals to keep the system operating endlessly.
- Automated transcoder which compresses audio to free space on the on-board hard drives.
- SNMP agent capable of generating SNMP alarms (traps).
- SMDR integration for a number of popular PBXes.
- Fully internationalised user interface; all menus and software available in multiple languages.
- Role based access control.
- On-board LCD display and control keypad on selected models.
- A number of PC client applications with unrestricted use license.

When audio records are critical to your operations, Total Recall VR delivers. It is professional, reliable and fully self-contained solution for audio logging and call recording that comes at an affordable price.



The Total Recall VR Overview [1] guide contains a comprehensive description and overview of Total Recall VR.

2.3. What is an SNMP Agent?

It is beyond the scope of this manual to explain SNMP Agents in detail.

In summary, SNMP Agents expose management data on managed systems (Total Recall VR in this case) as variables which an NMS can access using the SNMP. In addition, SNMP Agents can send asynchronous notifications (a.k.a. traps) and/or acknowledged asynchronous notifications (a.k.a. inform messages) to an NMS.

The Total Recall VR SNMP Agent is compatible with SNMPv1, SNMPv2c and SNMPv3. It can generate SNMP v1 and v2c traps and inform messages.

3. Start Here

3.1. Total Recall VR MIB Files

The Total Recall VR MIB files are supplied on the software CD that is included in the box with your Total Recall VR system. The file is located in the MIB folder on the CD as shown on the subsequent screen capture.

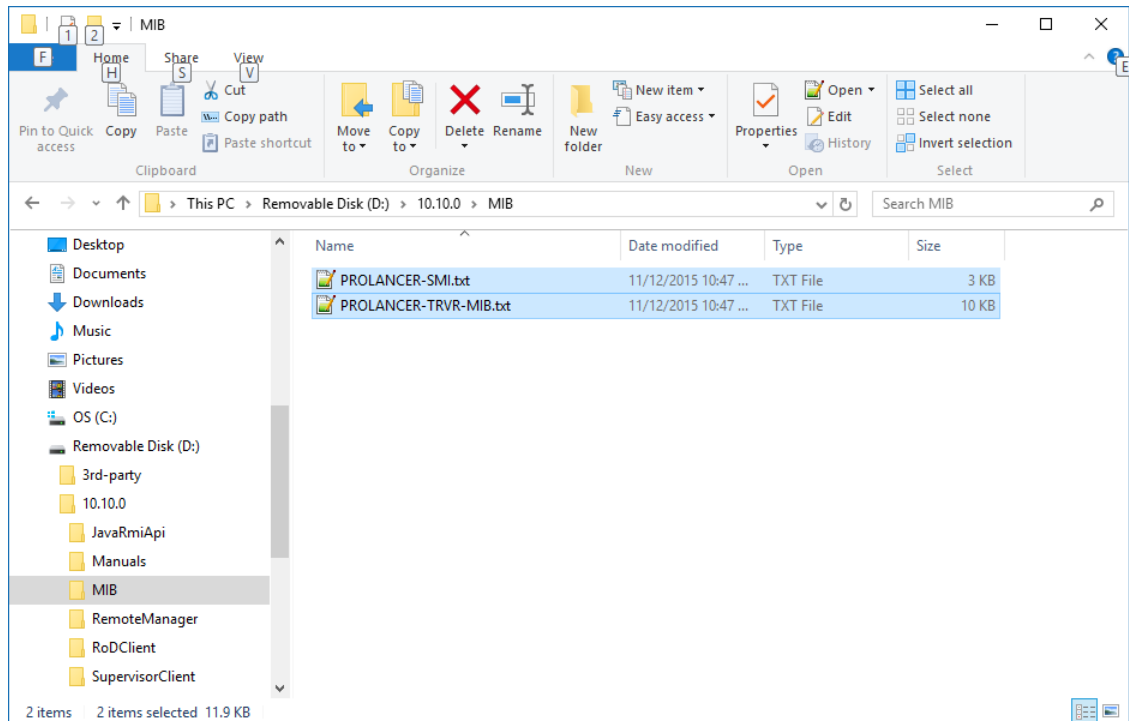


Figure 1: Total Recall VR MIB Files Location on the Software CD



If you have misplaced the software CD that came with your Total Recall VR, then go to <http://www.totalrecallvr.com/downloads> to download the MIB files.

3.2. Total Recall VR Configuration

You must configure and enable the SNMP Agent in order to use it with your NMS. The configuration includes:

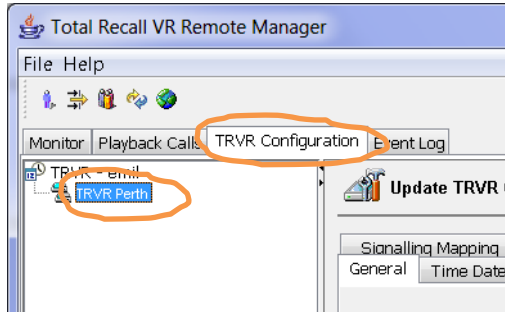
- SNMP Agent (use Remote Manager [4]).
- SNMP Traphost(s) (use Remote Manager [4]).
- Signalling Mapping and Internal Dial Plan (use Remote Manager [4]).
- Extension Event Policies (use Remote Manager [4]).



3.2.1. SNMP Agent

The SNMP Agent is disabled by default. To configure and enable the SNMP Agent:

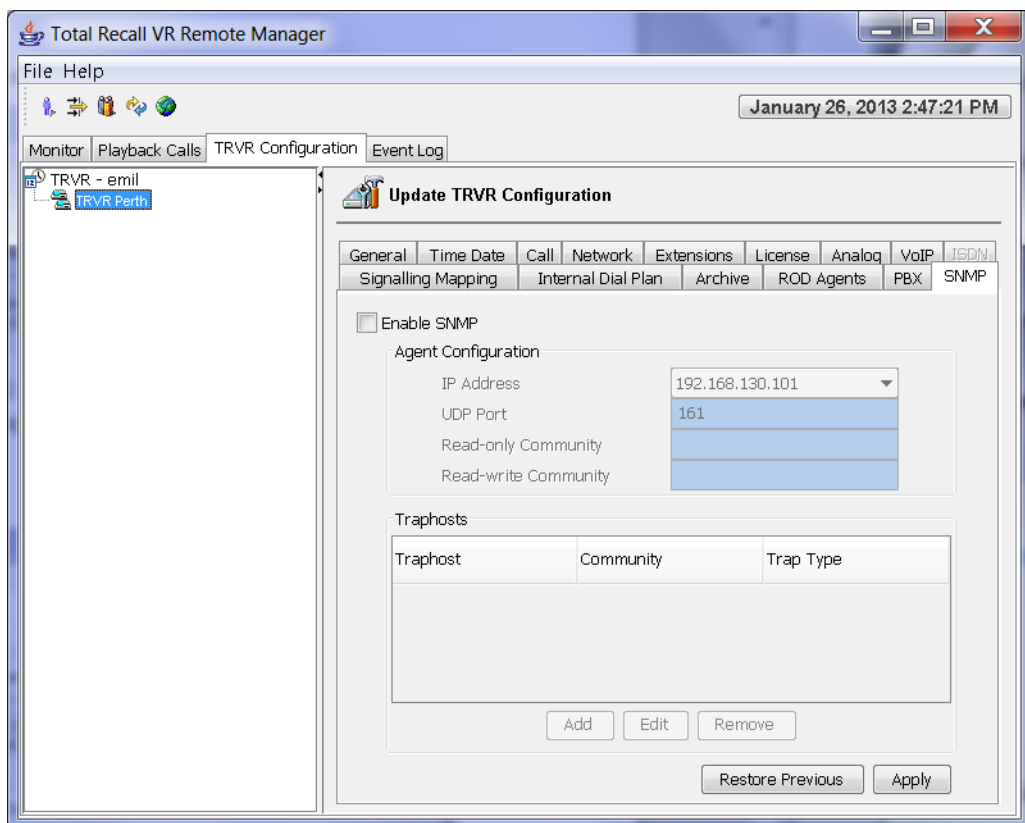
Configure & Enable the SNMP Agent

1. Select the **TRVR Configuration** tab and select a Total Recall VR:



Note that you can only select a Total Recall VR if the connection icon is: . If the icon is: , then Remote Manager is not able to connect to the Total Recall VR.

2. Navigate to the **SNMP** tab:



3. Tick **Enable SNMP**.
4. Select **IP Address**. This will be the IP address that the SNMP Agent will use to communicate with your NMS.

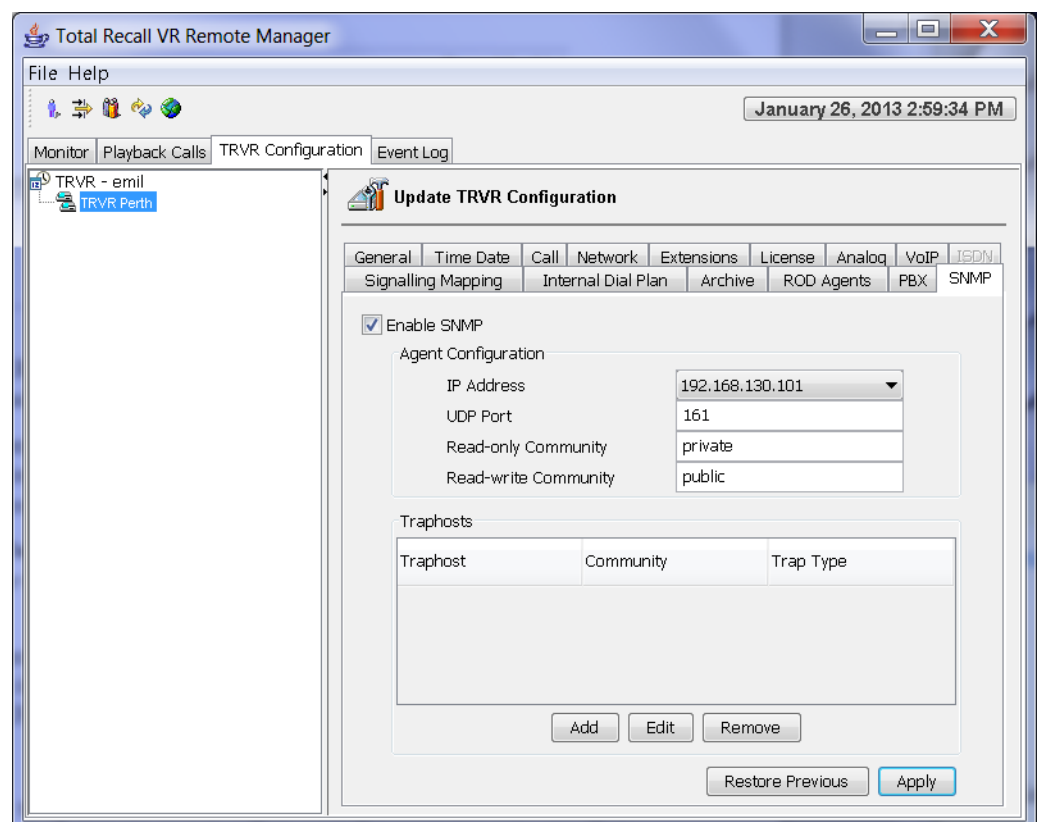
If your Total Recall VR is a Classic Desktop, then you must select the IP address that is assigned to the LAN 1 interface.

We also recommend that you use the LAN 1 interface on other Total Recall VR models for SNMP communication as well. This allows use of the LAN 2 interface for recording VoIP calls.

5. Enter **UDP Port**. This is the UDP port that the SNMP Agent will use to communicate with your NMS. By default this is the standard SNMP port, 161.
6. Optionally, enter passwords for the read-only and the read-write communities in **Read-only Community** and **Read-write Community** respectively.

If you do, then make sure to use the correct password when configuring your NMS to talk to Total Recall VR.

For example:



7. Select **Apply** to update the SNMP Agent configuration and start the agent.

The SNMP Agent will now respond to your NMS if your NMS forwards SNMP queries to the IP address and port set in step 4 and 5 respectively. For example:

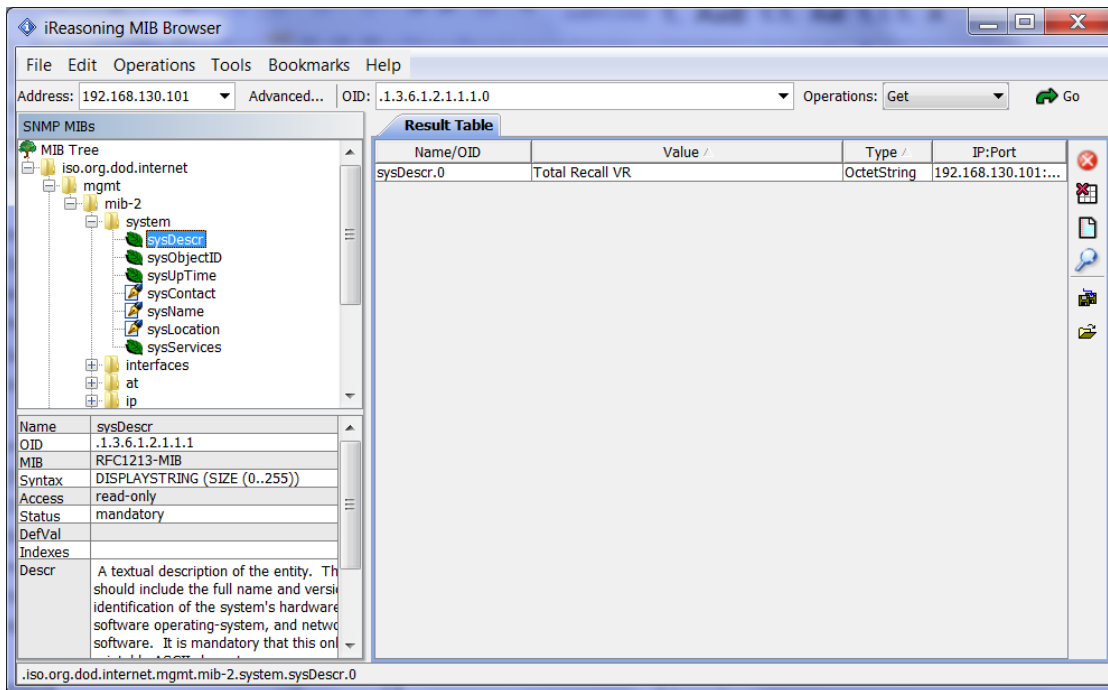


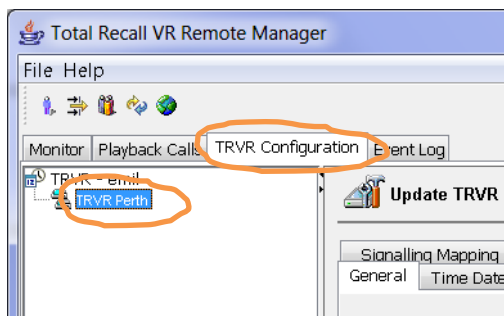
Figure 2: SNMP Agent Response to an SNMP Query



3.2.2. SNMP Traphost(s)

If you wish to receive SNMP events (traps and/or inform messages) from Total Recall VR, then you need to configure one or more traphosts.

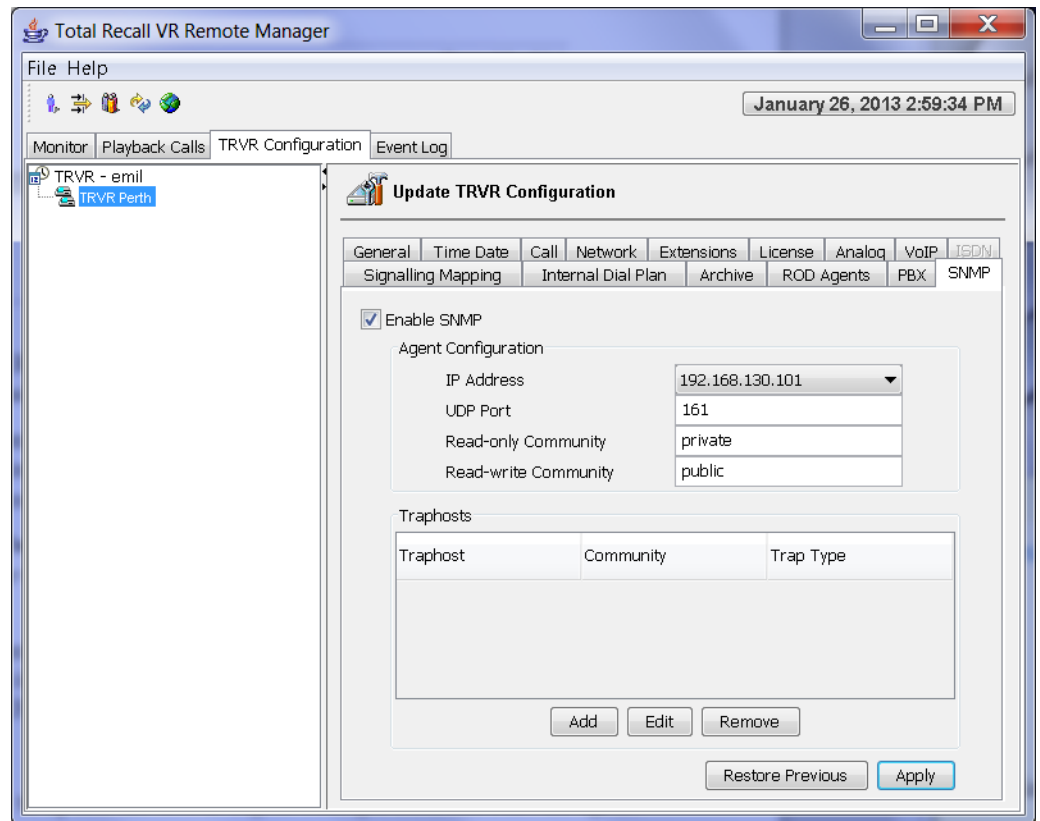
Configure SNMP Traphosts

1. Select the **TRVR Configuration** tab and select a Total Recall VR:

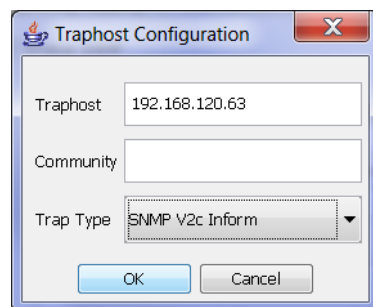


Note that you can only select a Total Recall VR if the connection icon is: . If the icon is: , then Remote Manager is not able to connect to the Total Recall VR.

2. Navigate to the **SNMP** tab:



3. Select **Add** to display the Traphost Configuration dialog:



4. Enter **Traphost**. The format of the value can be:

[<transport>:]<ip address>[:<port>]

For example:

- 192.168.3.186
Specifies a traphost at IP address 192.168.3.186 which expects SNMP communication on port 162 via UDP.
- tcp:192.168.3.186
Specifies a traphost at IP address 192.168.3.186 which expects SNMP communication on port 162 via TCP.
- udp:192.168.3.186:162
Specifies a traphost at IP address 192.168.3.186 which expects SNMP communication on port 162 via UDP.

5. Optionally, enter **Community** for SNMP v1 and v2c transactions (tarps).
6. Select **Trap Type** based on what is expected by the traphost.
7. Select **OK** to add the traphost to the list. Remote Manager does not update the configuration of the Total Recall VR at this stage.
8. Optionally, repeat steps 3 to 7 to add additional traphosts.
9. Select **Apply** to update the SNMP Agent configuration.

This will also re-start the agent which will result in events to the traphosts. For example:

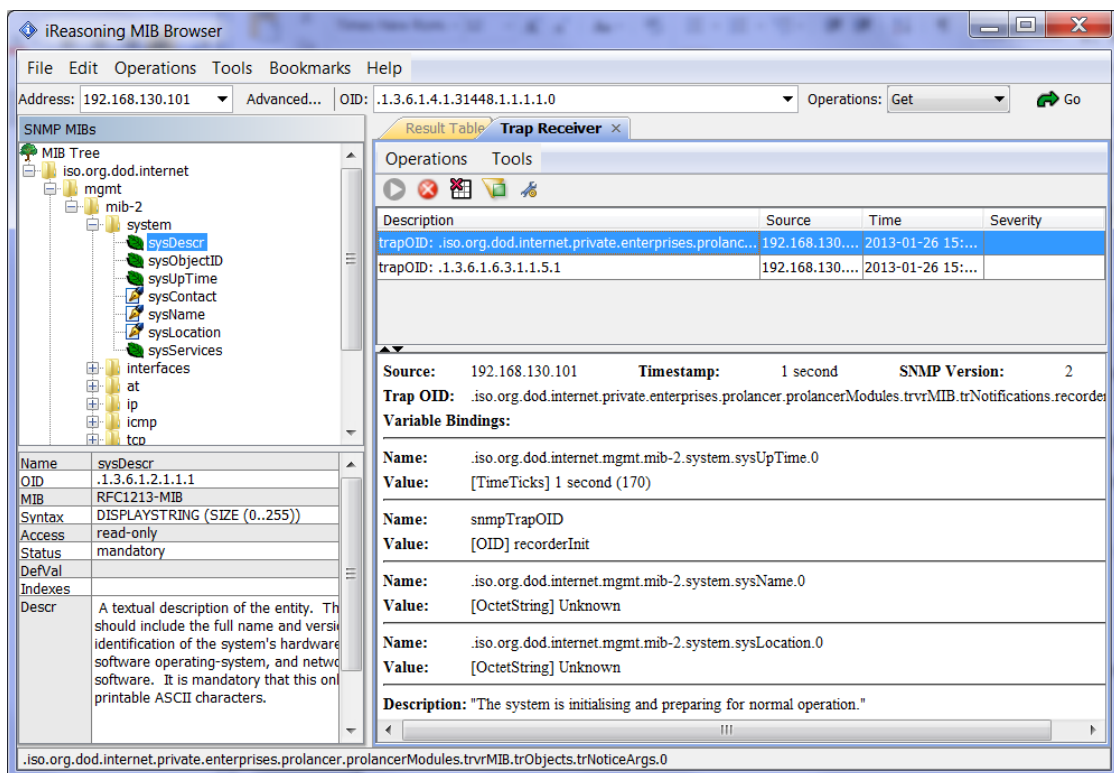


Figure 3: Traps Generated by Total Recall VR

3.2.3. Signalling Mapping & Internal Dial Plan

The Total Recall VR Remote Manager User Guide [4] explains the concept of Total Recall VR Extensions. In addition it explain how Total Recall VR uses its configuration (in particular Signalling Mapping and Internal Dial Plan) to classify identifiers for the source and the destination of recordings as Total Recall VR Extensions.

Total Recall VR Extensions are fundamental to extension events. If a recording is not assigned a Total Recall VR Extension, then extension events will not be generated.

Consequently, it is important to configure Signalling Mapping and Internal Dial Plan correctly. For details on how see the Total Recall VR Remote Manager User Guide [4].

3.2.4. Extension Event Policies

Total Recall VR can generate one or all of the following extension specific events in the form of an Event Log entry and an SNMP trap:

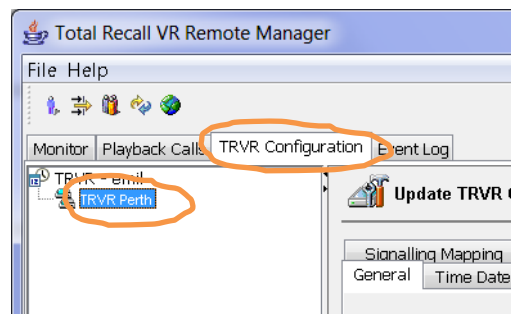
1. Call Start Event – every time when recording starts on a specified extension.
2. Call End Event – every time when recording ends on a specified extension.
3. Quiet Extension – when there is a lack of activity (new recordings) on a specified extension for a specified period of time.



The extension event policies define what events, if any, to generate for specific extensions. By default, Total Recall VR does not generate any extension events.

To enable extension events you must create one or more extension event policies:

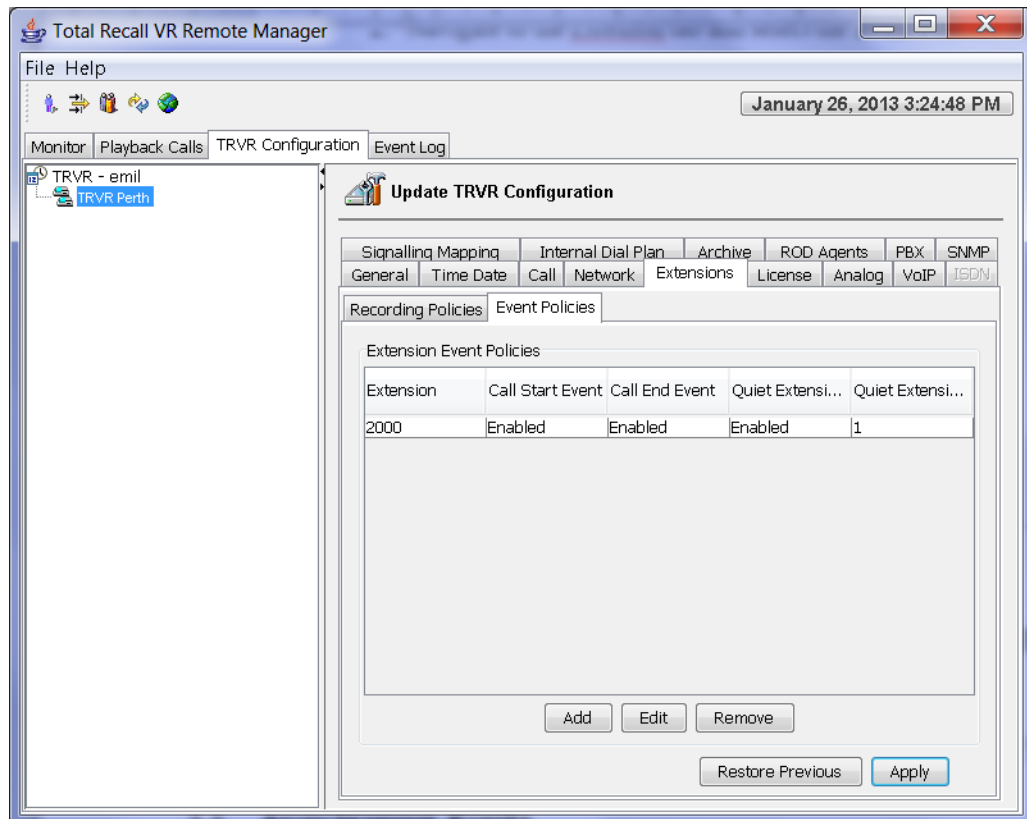
Create Extension Event Policy

1. Select the **TRVR Configuration** tab and select a Total Recall VR:

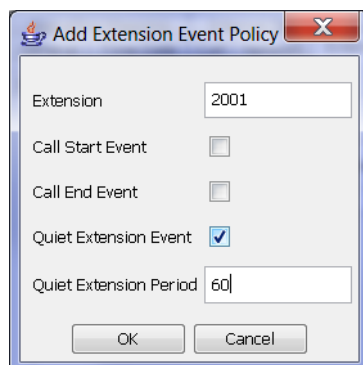


Note that you can only select a Total Recall VR if the connection icon is: . If the icon is: , then Remote Manager is not able to connect to the Total Recall VR.

2. Navigate to the **Extension** tab and select the **Event Policies** tab:



3. Select **Add** to display the Extension Event Policy dialog:



4. Enter ***Extension***.

This can be a specific Total Recall VR Extension as determined by Total Recall VR.

Or, it can be a regular expression which matches one or more Total Recall VR Extension as determined by Total Recall VR. For example: 21[0-9]{2} will match extensions 2100 to 2199.

5. Optionally, tick ***Call Start Event*** if you wish to receive an event every time recording start for the specified extension.
6. Optionally, tick ***Call End Event*** if you wish to receive an event every time recording ends for the specified extension.

7. Optionally, tick *Quiet Extension Event* if you wish to receive an event if new recordings are not detected on the specified extension for a specified period of time.
8. If you tick *Quiet Extension Event*, then enter *Quiet Extension Period* (in minutes).
9. Select **OK** to add the policy to the list of policies. Remote Manager does not actually update the configuration of the Total Recall VR at this stage. It only remembers the new policy.
10. Optionally, repeat steps 3 to 9 to create additional policies.
11. Select **Apply** to update the configuration of the Total Recall VR.

The new or amended policies become active immediately. Events will be sent to SNMP traphosts, if configured. For example:

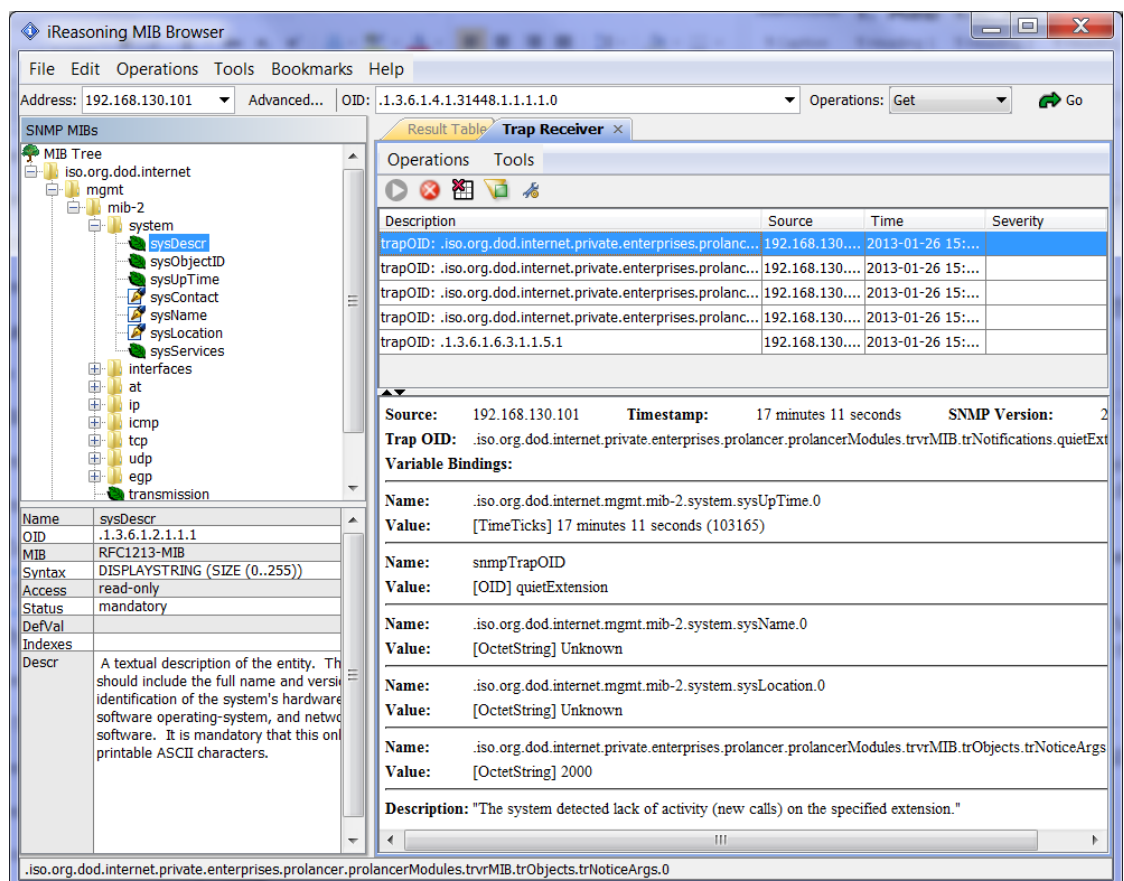


Figure 4: Extension Event as Received by a Traphost

In addition, extension events appear in the Total Recall VR log. For example:

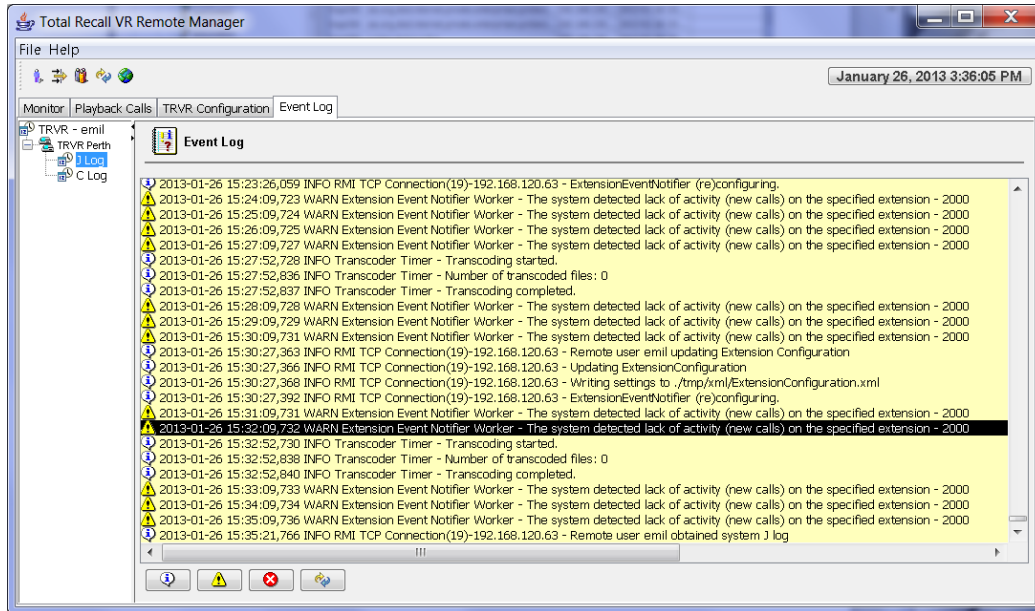


Figure 5: Extension Event in the System Log

4. Total Recall VR Events

4.1. Event Types

Total Recall VR can generate 3 types of events as SNMP v1 and v2c traps:

Information

Information events are standard system events and do not require any further action.

Warnings

Warnings are events that may indicate possible future problems, and should be investigated – for example, failure to archive and power failures.










Errors















Errors are events that must be investigated immediately, such as database rebuild failures and hardware issues.






The PROLANCER-TRVR-MIB contains the SNMP object identifiers (OIDs) for all traps. In general the root of all trap OIDs is “PROLANCER-TRVR-MIB::trNotifications” or .1.3.6.1.4.1.31448.1.1

In addition to the traps that are defined in the PROLANCER-TRVR-MIB, the SNMP Agent generates a SNMPv2-MIB::coldStart trap on start-up and a NET-SNMP-AGENT-MIB:nsNotifyShutdown on shutdown.

4.2. Event Table

Event	Type	Description	Suggested Action
RECORDER_INIT		The system is initialising and preparing for normal operation.	
RECORDER_FINI		The system is shutting down. Recording ceased and the system is preparing to power down.	
START_RECORDING		The system is now recording.	
STOP_RECORDING		The system stopped recording. This can be due a recovery operation (such as database rebuilding) or due to recording period configuration.	
PURGING_STALE		The system is removing recordings, which are older than the lifetime specified in the configuration, to free disk and/or database space.	
PURGING_LOCKED		The system is removing LOCKED recordings to free disk and/or database space.	If necessary, review your locking strategy and train users to lock recordings only when needed.
PURGING_UNLOCKED		The system is removing unlocked recordings to free disk and/or database space.	
QUICK_REBUILD		The system is performing a quick check of the database after a dirty shutdown.	Wait for the activity to complete. If normal activity does not commence after the check, attempt a full rebuild of the database.
FULL_REBUILD		The system is rebuilding its	Wait for the activity to

Event	Type	Description	Suggested Action
		database. This activity may take some time. Recording is not possible while the activity is in progress.	complete. If normal operation does not commence after the rebuild, you may need to replace the disks.
DB_CORRUPT		The system database is corrupt or in a state which prevents normal operation.	Attempt a full rebuild of the database. If that fails, you may need to service the system.
START_ARCHIVE		The system started a new archiving session.	
STOP_ARCHIVE		The system completed an archiving session.	
ARCHIVE_REMINDER		The hard disk occupancy has reached a level (set in the system configuration) which triggers a reminder to archive recordings.	Perform a manual archive.
MEDIA_FULL		The system attempted to archive recordings onto a disc; however, it found that the disc in the disc drive is full.	Insert a new disc in the disc drive.
MEDIA_BAD		The system attempted to archive recordings onto a disc; however, it detected an unsupported media or media that has problems.	Replace the disc in the disc drive.
SHARE_FULL		The system attempted to archive recordings onto a Network Share; however, it found that there is no free disk space on the share.	Free up space on the share, or configure a new share.
SHARE_ACCESS		The system attempted to archive recordings onto a Network Share; however, it found that cannot connect to the share, or it cannot write to the share.	Check the configuration on the system and the share make sure that the share allows the system write access.
FILTER_REMINDER		It is time to clean or replace the air intake filter.	Clean or replace the air filter to prevent overheating.
LICENSE_EXPIRED		The channel license has expired.	Renew your channel license.
NO_CHANNEL		The system is not able to start a new recording because all recorder channels are busy.	Review the channel capacity and/or purchase a license for more channels.
LONG_CALL		The system stopped recording a VoIP call because it exceeded the maximum call duration specified in the configuration.	Increase the maximum call duration and/or make sure that there are no networking problems which prevent the recorder from "seeing" all VoIP signalling messages.
CALL_START		Recording started on the specified extension. The trap carries the extension number in the PROLANCER-TRVR-MIB::trObject::trNoticeArgs element.	
CALL_END		Recording ended on the specified extension. The trap carries the extension number in the PROLANCER-TRVR-MIB::trObject::trNoticeArgs	

Event	Type	Description	Suggested Action
		element.	
QUIET_EXTENSION		The system detected lack of activity (new calls) on the specified extension for a configured period of time. The trap carries the extension number in the PROLANCER-TRVR-MIB::trObject::trNoticeArgs element.	
USB_ACCESS		The system attempted to archive recordings onto a USB stick or disk drive; however, it found that cannot mount the device, or it cannot write to the device.	Check the USB stick or disk drive.
USB_FULL		The system attempted to archive recordings onto a USB stick or disk drive; however, it found that there is no free disk space on it.	Free up space on the USB disk, or attach a new USB stick or disk drive.
USB_RESERVED_DIRNAME		The system attempted to archive recordings onto a USB stick or disk drive; however, it found that there is a file with the same name as the name for the directory that is used to create system archives.	Remove the file or directory named "trvr-archive" from the USB stick or disk drive
PURGING_ARCHIVED		The system is removing recordings after completing an archive.	This may be desired behaviour as users can opt to remove recordings after archiving them. If it is not, then review your archiving practices.

5. Glossary

Our guides use certain terms and abbreviations.

5.1.1. Terms

Extensions

Extensions are a Total Recall VR concept that helps identify the source and the destination of recordings. Extensions can be numbers or any free format text. For example calling and called numbers can be classified as extensions if they match an entry in the Internal Dial Plan.

Extension Mapping

Extension mapping is a process used by the Total Recall VR to convert raw identifies of sources and destinations of recordings to user friendly identifiers. For example, when recording VoIP calls the 'From' and 'To' identifiers may be rather cryptic, say 'ext122@sip.myenterprise.com'. The extension mapping process can convert this identifier to '122' or 'Extension 122'.

Remote Manager

A powerful Java™ based client application for Total Recall VR systems. It installs on Windows™ PCs and can be used to securely configure and manage multiple Total Recall VR systems over a TCP/IP network. In addition, it can be used to monitor recordings in progress in real time as well as search for and then play past recordings.

Total Recall VR

The system that is the subject of this manual.

5.1.2. Abbreviations



Most definitions courtesy of "[Wikipedia, the free encyclopaedia](https://en.wikipedia.org/)".

IP: Internet Protocol

A data-oriented protocol used for communicating data across a packet-switched internetwork.

IP is a network layer protocol in the internet protocol suite and is encapsulated in a data link layer protocol (e.g., Ethernet). As a lower layer protocol, IP provides the service of communicable unique global addressing amongst computers.

LAN: Local Area Network

A computer network covering a small geographic area, like a home, office, or group of buildings.

NMS: Network management System

A combination of hardware and software used to monitor and administer a computer network or networks.

SNMP: Simple Network Management Protocol

The Internet-standard protocol for managing devices on IP networks. It is used mostly in network management systems to monitor network-attached devices for conditions that warrant administrative attention.

TCP: Transmission Control Protocol

One of the core protocols of the Internet protocol suite, often simply referred to as TCP/IP. Using TCP, applications on networked hosts can create connections to one another, over which they can exchange streams of data using Stream Sockets.

TRVR: Total Recall VR

A professional voice logging and call recording system.

UDP: User Datagram Protocol

UDP is one of the core protocols of the Internet protocol suite. Using UDP, programs on networked computers can send short messages sometimes known as datagrams (using Datagram Sockets) to one another. UDP is sometimes called the Universal Datagram Protocol.

[End of Document]