



## NetVanta Unified Communications Technical Note

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# VONaLink TeamRecord Application Notes

## Introduction

VONaLink's ([www.vonalink.com](http://www.vonalink.com)) TeamRecord is a call recording application designed to work with Voice over Internet Protocol (VoIP) phone systems, specifically SIP Protocol based systems. TeamRecord is web server based and centrally records all phone calls for an enterprise. TeamRecord works with NetVanta Unified Communications products.

TeamRecord works by unobtrusively monitoring network packets as they travel between your phone and other VoIP SIP devices. It can record VoIP calls as WAV or MP3, in stereo for clear separation of each party's speech, all digital recording for highest fidelity, adds inaudible watermark to verify if recording has been changed, and contains a Click2Call for standard SIP phones.

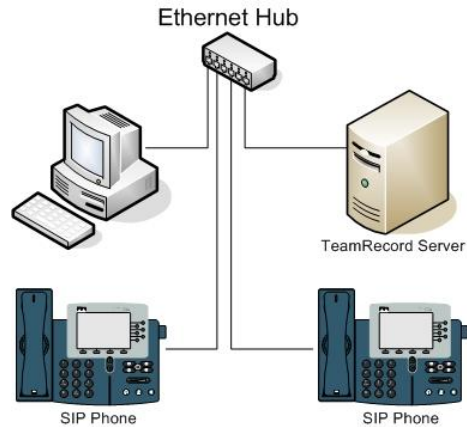
## Network Setup Considerations

TeamRecord records calls by capturing (or monitoring) the network packets from SIP device to SIP device with the network. With the use of an Ethernet hub or the use of a Monitor Port (or Port Mirroring) on an Ethernet switch, the TeamRecord can then capture all of the network traffic of between these SIP devices. By capturing all of this traffic it can then identify the SIP Calls and record the Voice from those SIP calls.

### Basic Setup Using an Ethernet Hub

A network hub is a "dumb" device that allows computers connected to the same hub to read all packets that flow through the hub. Because of this, TeamRecord running on one computer can read the network packets destined for a SIP phone plugged into the same hub. The result of using an Ethernet network hub is for very small and simple application of the TeamRecord call recording application. Keep the number of computers, SIP phones, and other network devices to the absolute minimum.

The caveat: An Ethernet hub is not an efficient or effective network device. One busy device on the hub will cause bandwidth and congestion issues on all of the other devices connected to the hub. In the case of VoIP, a congested hub will cause significant VoIP issues such as long call setup times and poor audio quality.

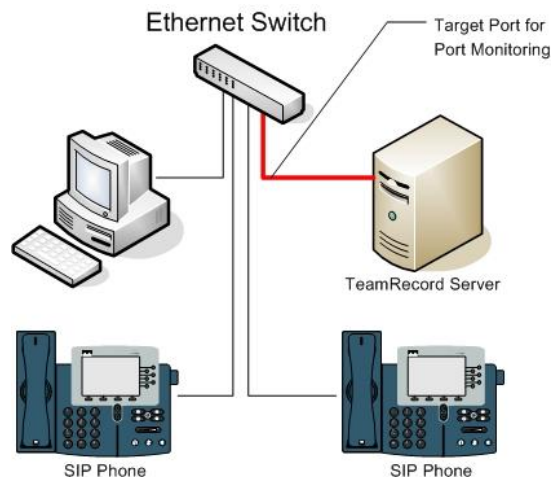


## Port Mirroring on an Ethernet Switch

Port Mirroring/Monitoring refers to the process of copying packets (received and sent) from a specific Ethernet Port (source) to a destination Ethernet port (target) for analysis. Generally, a destination port is connected to a data detect device, which users can use to analyze the mirrored packets for monitoring and troubleshooting the network. In the case of the TeamRecord application, the copied packets on the mirrored port are those of the SIP Phone calls in which the TeamRecord captures and records for playback later.

Managed switches typically have a feature known as port mirroring or port monitoring or switch port analyzer (SPAN). The switch is configured such that all traffic from the port designated as the monitored (source) port is mirrored to the port designated as the analysis (target) port. Each Ethernet switch vendor (Cisco, 3COM, HP and so on) has varying levels of capabilities surrounding this feature.

Bandwidth limitations are always a concern when port mirroring. Keep the following in consideration. The destination port used for the capture of the network traffic is receiving BOTH the sent and received packets of the source port. Which means, if both ports are 100Mb/s and the source port has a bandwidth utilization of 50%, the destination port is at 100% utilization on the transmit path, as the destination port is sending the all of the bidirectional data information from the source port. If the amount of data the destination port exceeds the bandwidth limitation of the port, the switch will be severely affected in its performance.



# Configuring Port Mirroring on a Switch

Follow the steps in the user guide for your network switch to enable port mirroring. Many of today's switches allow configuration via a web browser. For the source port, choose the port that connects to your Gateway or broadband ITSP. For the target port, choose the port that connects to the TeamRecord server. Where required, ensure to mirror both send and receive packets.

# Configuring the TeamRecord

Connect the network adapter LAN port of the computer/server to the monitoring (target) port of the switch. If the computer/server has 2 network adapters, TeamRecord will monitor both of them.

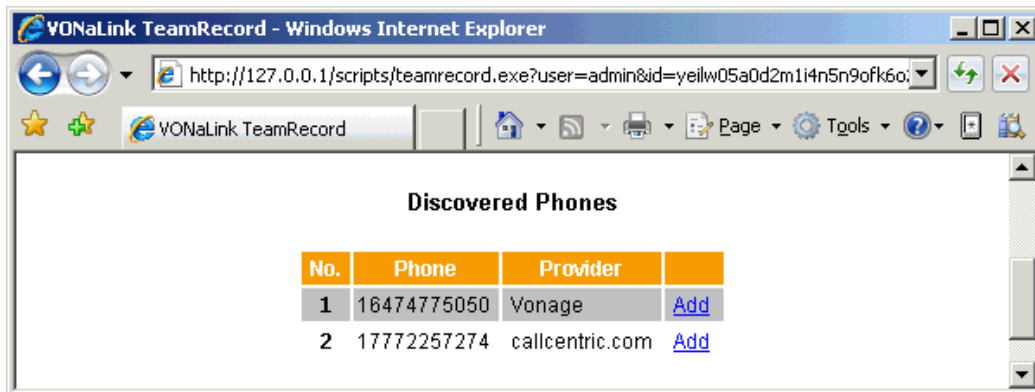
Log into TeamRecord as admin, click on Administration link. For security reasons, phone management is available only if you access TeamRecord from the local machine:

http://<IP Address>/scripts/teamrecord.exe

## Discovering Phones

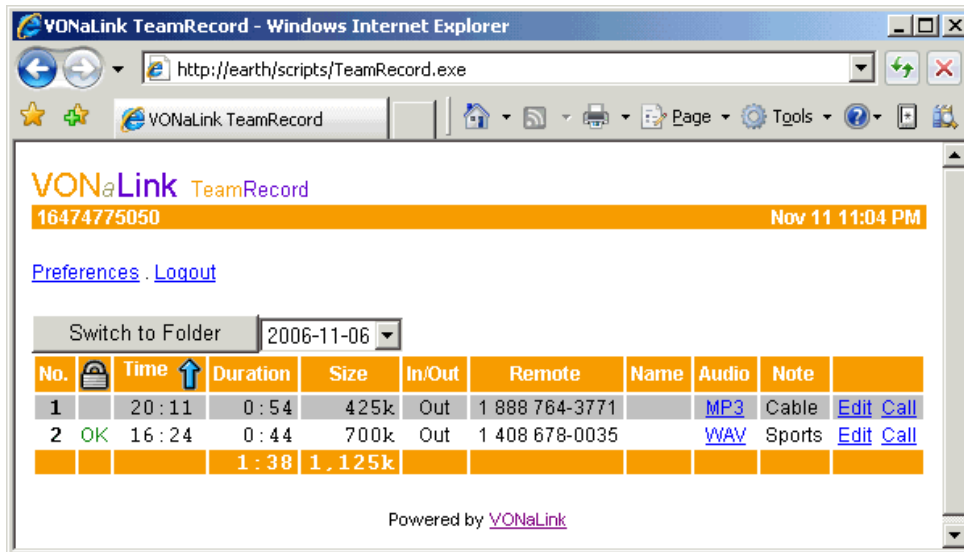
To show the list of discovered phones on your network, click on Discover link. If a connected phone is not displayed, make an outbound call on that phone and then refresh the web page.

Click on the Add link to add a discovered phone.



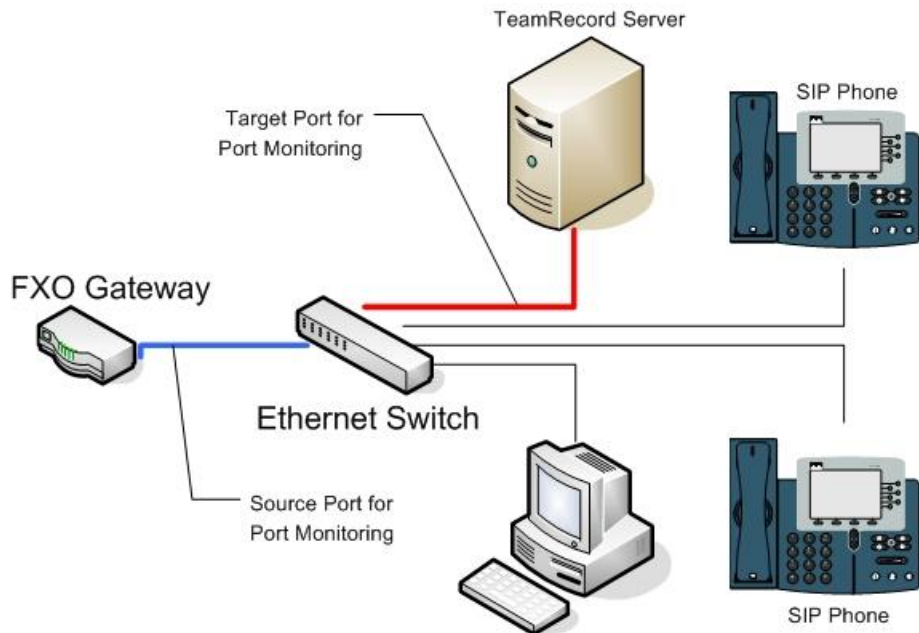
## Listening to Recording

To hear a recording, click on a link under the Audio column. The default media player will be launched.



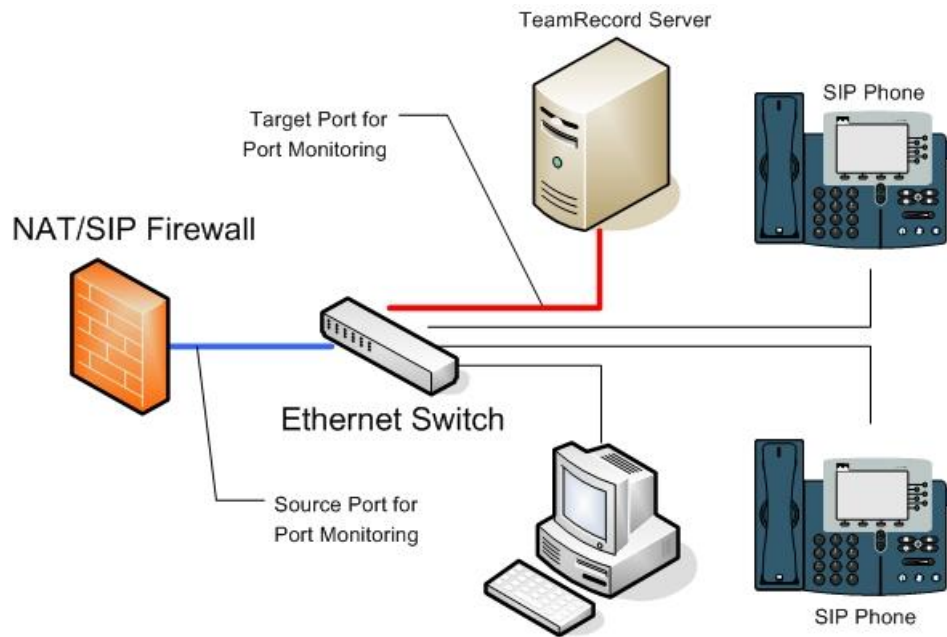
## Monitoring Gateway Calls

This simply comes down to monitoring the Ethernet port of the gateway. Set up port mirroring on an Ethernet switch to mirror the activity of the gateway. This will allow the TeamRecord to be able to record all of the incoming and outgoing phone traffic from the enterprise phone network and the FXO gateways.



## Monitoring ITSP Calls

This simply comes down to monitoring the Ethernet port of the LAN port of the network firewall. Set up port mirroring on an Ethernet switch to mirror the activity of the LAN port of the network firewall. This will allow the TeamRecord to be able to record all of the incoming and outgoing phone traffic from the enterprise phone network and the FXO gateways.



## Transfer & Conferencing

Be sure then when transferring or conferencing, the port monitor is able to capture the SIP signaling and audio of the other destinations phones.

## Software Setup

Information on devices used for ensuring TeamRecord functionality.

Manufacturer	Variant	Software Revision
VONaLink	TeamRecord	Version 1.1 [Build 2007-01-13]
ADTRAN	UC Server	Version 4.0.5
Polycom	SoundPoint IP 430 SIP	1.6.6.0042
Aastra	480i	1.4.1.1077
AudioCodes	Mediant 1000	4.80A.033.004