Sudheer Parameswaran & Ria Roy, Pixelmetrix Corporation.

*Providing effective alarm notification methods by monitoring equipment is essential to expedite recovery processes. Instant messages can be employed as an alarm notification method on the DVStation. This application note describes how the DVStation can be set up to send instant message alarm notifications.*

## Background

The DVStation allows for different types of alarm notifications and alarm actions to suit user needs, like file logging, Message Popup on the local display, Transport Stream Capture, SNMP Trap notification, e mail notification etc. There are also provisions on the DVStation for adding alarm action scripts which perform a user specified action.

The instant message action is an action script which gets executed on an alarm condition. DVStation sends instant messages using jabber protocol. Jabber is a set of streaming XML protocols and technologies that enable any two entities on the net to exchange messages, presence, and other structured information in close to real time.
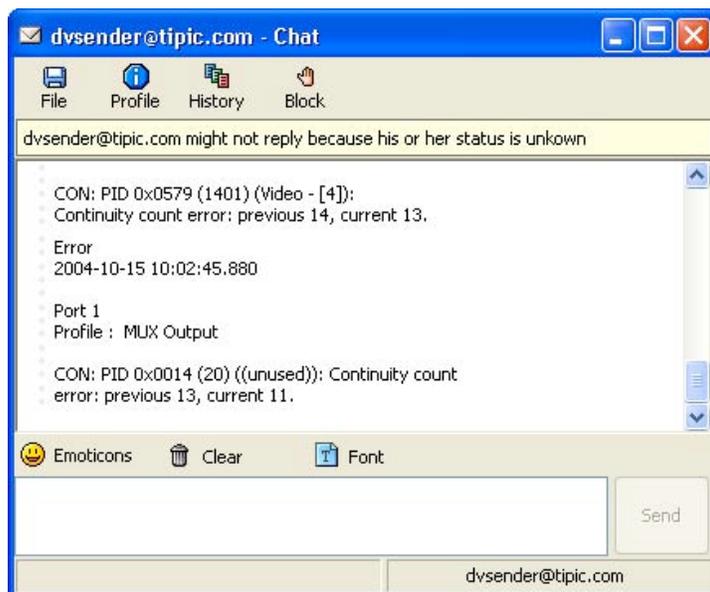


## Setting Up Instant Message Notification

The DVStation software architecture can be extended through by adding alarm scripts to provide almost unlimited flexibility in how the system notifies you in the event of alarms or system faults.

There are three steps required to implement instant messaging for alarms – namely install the DVStation software, create a suitable instant messenger account, and configure the instant messenger client on the target PC.

## Account Setup

A jabber account has to be set up on a jabber server. Select a suitable public or commercial server as per your requirement and create the account. Account creation process may vary from server to server. Some of the public jabber servers will not give any direct interface to create the account. Instead you need to use a jabber client to register an account.

For example we can use the jabber client like *Gaim* (http://gaim.sourceforge.net/download.php) to setup an account at a public jabber server like jabber.org. To do this, download and install Gaim on a PC.

Start the Gaim messenger client and in start-up screen, select the Accounts button which will open the Accounts window. Press the Add button which will ask for few details for registering an account. You need to provide the details below.

Protocol: Select *Jabber* as the protocol.

Screen Name: Enter your desired  account name as the screen name.

Server: Select jabber.org as the server.

Resource: Select the default option.

Password: Enter your  required password.

Alias: Use the screen name as the alias.

Once these details are entered, click the *Register* button to register the account.  Note that the account name may already be taken by another user, in which case repeat the above procedure with a new account name.

Alternatively, you can even create your own jabber server and create accounts there, but that is outside the scope of this application note.

## Client Setup

Lastly, you need to set up a suitable jabber client on the other end (PC, PDA or mobile phone etc) for receiving messages from the DVStation.  You can install freely available jabber clients like *Gaim* on a Windows and Linux machines.  If you want to install the *Gaim* IM client, download it from http://gaim.sourceforge.net and follow the installation instructions.

## DVStation Setup

On the DVStation side,  install the dvstation-instMessage rpm, which is available from the Pixelmetrix support website.

On the DVStation, the router (gateway) address and the address of a DNS server must be configured.

Use the *Network* area under the DVStation System Configuration menu to configure the router/gateway address.
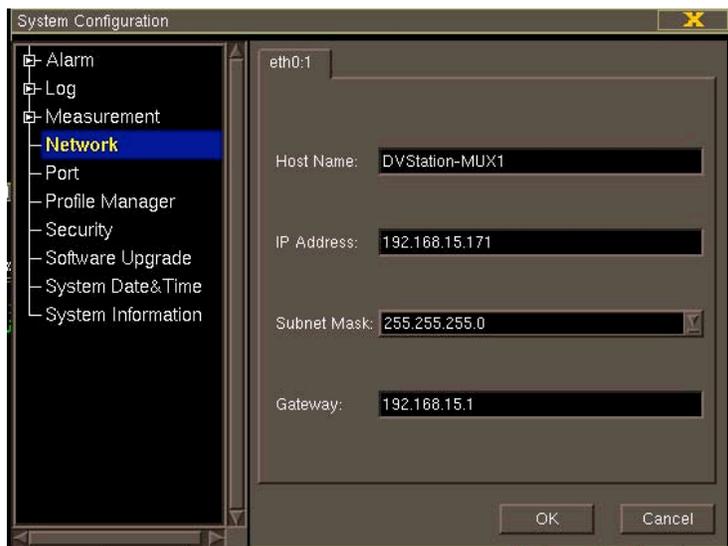


Secondly, for the DVStation to be able to translate domain name addresses within an instant messager script to IP addresses the IP address of a DNS server must be provided.

Once you have the IP address of your DNS server, enter those details in the file /etc/resolv.conf.

nameserver DNS_SERVER_IP_ADDRESS

For example, if your DNS service is located at 192.168.1.1 then the /etc/resolv.conf file would contain:

nameserver 192.168.1.1

## IM Server

The DVStation uses an open source, royalty free technology called Jabber. The jabber server acts as a broker and transfers information between devices.

There are a number of publicly accessible jabber servers, or you can select a machine on your own network to run your own private, jabber network. (Setting your own jabber server is out of the scope of this application note, but more information is available in the references section below)

Before creating an account on the jabber server, the server must be accessible from the network. Confirm network connectivity with the jabber serve using the ping command:

ping <jabber_server>

For example, if your jabber server is running on 192.168.10.20:

ping 192.168.10.20

Alternatively, if the jabber server has a name:

ping jabber.org

## Customizing the Instant Message Scripts

After installing the dvstation-instMessage rpm an IM alarm action script called Inst-Message will be installed in the directory /usr/local/dvstation/bin/scripts. This script requires some simple customization.

The following fields in the script need to be configured:

SERVER
Set to the jabber server where the account was registered.  For example, if you created an account at jabber.org, enter 'jabber.org' as the account.

SENDER_ID
The account name used during registration. If you have registered an account called  'dvstation-mux1', use it here.

SENDER_PASSWORD
Password used to register jabber account.

RECEIVER_ADDR
The address of the recipient.

By default, the receiver address is set  to the sender  address. In this case,  you can receive messages by logging to the IM client using the same SENDER_ID and SENDER_PASSWORD.  If you want to sent it to a different recipient, enter that address in the RECEIVER_ADDR field.

(Note: If you want to sent messages to the popular IM systems like MSN, Yahoo!, ICQ etc, you should register your jabber account with a compatible server which can sent messages to these IM systems, in which case you may need to register with a commercial provider. If  the jabber server you are using is capable of sending messages to other  IM systems like MSN, Yahoo! Etc, can use that address in RECEIVER_ADDR field. (eg. john.smith@yahoo.com).  A list of jabber servers is available at the jabber website - http://www.jabber.org/user/publicservers.php).

## Script Source Code

```bash
#!/bin/bash
##########################################
#### Customization Part #
##########################################

# The following lines need to be customized according to the
# user requirement. Before doing any customization please
# read the instant-messenger help available at your
# DVStation.

# The document is available at http://your_dvstation/instMsg.html

# The server where you have created the account
SERVER=jabber.org

# User Id for the account
SENDER_ID=dvstation-mux1

# Password for the account
SENDER_PASSWORD=secretpassword

# Receiver address - It can be same address as the sender.
# Those who connected to the SERVER with this ID will get
# the messages.
RECEIVER_ADDR=$SENDER_ID@$SERVER

#-End of customization part
```

## Receiving Alarms

Once the setup is finished, Instant Message Alarm action can be enabled from anywhere within the DVStation user interface. When an alarm condition occurs, DVStation will send alarm as an Instant Message to those IM clients connected with the SENDER_ID entered in the alarm script.

## Configuring Multiple Destinations

Upon installation, the dvstation-instMessage rpm installs only on alarm action script called Inst-Message.

It is possible to configure multiple alarm action scripts to send messages to different people depending on what alarm occurred. For example, to have different alarm actions for IM_EngMgr, IM_ProdOperator, IM_ChiefEng, etc.

To implement multiple alarm action scripts, simply duplicate the original Inst-Message script in the same directory, give it a new name (ie. IM_EngMgr), and customize it with the desired destination address.

## Further References

http://www.jabber.org/user/publicservers.php – Contains a list of public jabber servers.

http://www.jabber.org/software/clients.php – Recommended Jabber Clients

http://www.jabber.org/admin/ - Running a Jabber Server.

## For More Information

To learn more about the DVStation, request a demo, or learn how Pixelmetrix might help you optimize video network integrity, contact us today!

On the Internet: sales@pixelmetrix.com www.pixelmetrix.com

North America: 1-866-PIXEL-US

Europe: +41-79742-7454

Asia Pacific: +65-547-4935

## DVStation

Monitoring content, MPEG TS, and RF within an easy-to-use and integrated environment, the system has the highest port density in the industry. Ideal in environments with many signals in one place – such as satellite uplink centers, DTH operators, or cable head ends.

## DVStation-Remote

Ideal for remote deployments with a few signals in many places, the system consists of a 1U control unit and up to four interface adaptors. Remote diagnostics can be conducted simultaneously from several locations, or alternatively staff can access telemetry directly by attaching a standard keyboard and CRT.

## Corporate History

Founded in 1999, Pixelmetrix is a privately held limited company based in Singapore.

Following the development and launch of the first prototype DVStation, the company pursued external funding and today is backed by several private, VC, and institutional investors including OCBC Wearnes Walden, UOB Ventures, Enspire Capital, as well as the Singapore Economic Development Board's Technopreneur Investment Fund.

Revenues have demonstrated continuous growth and the company has been profitable for the last several years.