



Network Performance Configuration

Application Note AN252
Revision v1.3
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AN252 Configuring network diagnostics

1 Overview

This Application Note shows you how to create virtual ports that can monitor the loss and jitter across a network.

You will need to create a Network Performance menu entry, on the multiplexer at each end of the network, to make use of the network performance feature.

Knowing the loss and jitter across a network will allow you to optimise the configuration of your jitter buffers to suit actual network performance.

CAUTION: Increasing the system jitter tolerance to the peak jitter detected introduces latency to tributary operation that may itself introduce problems for the service being operated over the tributary ports.

2 Configuration

The Network Performance menu leads to two separate menus – one to configure this unit to initiate network performance tests to peer units and another to present the results of network performance monitoring tests that have been initiated from other units towards this unit.

The **Network Performance > Config menu** presents the options for setting up network performance tests to peer units. Note that for the network performance monitoring to work, both units must be configured to run network performance monitoring to each other (although there is no restriction that they both need to be in manual/auto mode).

By default, there are no entries in the network performance configuration table.

Name	Node	Mode	CallTime(s)	IdleTime(s)	Bandwidth	
tonode200	200	<input type="radio"/> AUTO <input checked="" type="radio"/> MAN	120	60	800	DELETE

Figure 1 Diagnostics > Network Performance > Config menu - Node 100

The <ADD ENTRY> button allows a new entry to be configured. Each entry takes a single line on the menu. (There is no limit to the number of entries that can be configured, if necessary multiple pages are presented with <NEXT PAGE> and <PREV PAGE> page buttons to move between them.)

For each node being measured the following parameters can be configured:

- Name – text entry that is used in the corresponding statistics page to help identify the target node.
- Node – node number of the peer node against which to run a network performance monitoring test.



- Mode – AUTO or MAN.

In AUTO mode this unit will automatically attempt to make network performance monitoring connections to the remote unit. Each connection will last for up to the configured call time and then will go idle before attempting to reconnect following the configured idle time.

In MAN mode this unit will only attempt to make a network performance monitoring connection when the <TEST NOW> button is selected. The connection will then last for up to the specified call time. The connection period may be shorter than the configured call time if network problems are too severe for the connection to remain established. The default mode is MAN.

- CallTime – the amount of time for which the network performance test connection will remain active. The default call time is 120 seconds.
- IdleTime – the amount of time for which the network performance test connection will remain idle, in automatic mode. The default idle time is 3600 seconds.
- Bandwidth – the amount of bandwidth required to run network performance monitoring. This bandwidth is reserved (non-DBA) in both directions, but the bandwidth is only used in one direction. The minimum amount of bandwidth required (and the default setting) is 800bps. More bandwidth can be configured if you need the network performance test to simulate the loading of a voice call, up to 64000bps.

The <TEST NOW> button forces a network performance monitoring connection to be made immediately. The button is only presented if the network performance monitor is available to initiate a connection. Note: The results for the network performance monitoring can only be seen in the diagnostics menus of the peer unit.

3 Statistics

The Network Performance > Statistics menu presents the measured packet loss and jitter seen between the network performance ports. It is assumed that the loss and jitter seen by these network performance monitoring ports will be comparable with the loss and jitter seen by the actual trib services that are attempting to use the network.

STATISTICS									
Name	From Node	Current Loss (%)	Current Jitter (ms)	Average Loss (%)	Average Jitter (ms)	Peak Loss (%)	Time Since Peak Loss	Peak Jitter (ms)	Time Since Peak Jitter
tonode100	100	0.000	20	0.000	20	0.000	0h:9m	20	0h:9m

Auto-refresh enabled

Figure 2 Diagnostics > Network Performance > Statistics menu - Node 200

The following statistics are provided:

- Current Loss % — the number of packets sent from the peer node that did not arrive at this node during the current (if still connected) or last (if disconnected) test. Accurate to 1 in 10000 packets.
- Current Jitter ms — the maximum jitter detected in the packet stream from the peer for the current (if still connected) or last (if disconnected) test.
- Average Loss % — the average percentage of packets lost from the peer since the unit was restarted or the statistics last reset. When a test connection is disconnected the packet arrival and loss statistics are added to an overall average.
- Average Jitter ms — the average peak jitter value across all network performance



monitoring connections from the peer.

- Peak Loss % — the largest percentage of packet loss detected in any one period of 1000 received packets from the peer.
- Peak TimeSince PeakLoss — the time since this peak loss occurred is displayed.
- Peak Jitter ms — the largest amount of jitter detected in the packet stream received from the peer.
- Peak TimeSince PeakJitter — the time since this peak jitter occurred is displayed.

The <RESET STATS> button clears the statistics for all network performance monitoring.

4 **General Notes**

When the network performance monitoring ports are connected, data is sent from the controlling unit to the monitoring unit. These packets are sent every 20ms. The amount of time that the monitoring unit has to wait for a packet (assuming packets are not dropped) is used to measure the jitter.

A single line is presented for each peer from which this unit is expecting network performance monitoring tests. (If necessary, multiple pages are presented with <NEXT PAGE> and <PREV PAGE> buttons.) Each line shows packet loss and jitter statistics for network performance monitoring connections from a single peer.

5 **About Application Notes**

Application Notes are intended as a supplement to, rather than a substitute for, your User Manual. Should you have queries which are not answered by our current documentation, your local Vocality support team would be happy to hear from you.
E-mail support@vocality.com.