NOC PingGraph v1.8
Manual revision 1

Features

-Up to 25 independent object Monitors running on separate threads
-Multiprotocol support: ICMP and HTTP
-Drawing of graph lines indicating real-time status of devices or web services
-Logging and Email notification
-Two object data sources: Program settings and dynamic Sensor File
-Remote Agent support (first 20 objects)
-Most attributes of program GUI are editable

Requirements

-P4 or Better Computer with 1.5GHz CPU Min
-256 MB RAM Min
-Windows 2000 or better
-NET 2.0 Framework installed (free from MS)
-Display capable of 1280x1024 for full screen view of all Graph panes

Installation

Unpack PingGraph files to any folder on any drive with write access. Unpack Agent files (if using agent) to a remote station. No installation needed. The Agent uses similar routines to gather data - input files used for PingGraph can be used for Agent as well.
Right click a monitor pane or click the "?" button on the top-right side of the program window to access Properties.

Configuration of PingGraph

Both, the PingGraph and the Agent support sensor types of ICMP and HTTP.
The AGENT sensor type is supported in PingGraph and allows the remote agent to send sensor data for each object located at a remote location.
Sensor types are selectable either in program properties or dynamic objects file. The objects data file is your typical data input format, comma separated, editable at runtime in notepad or dynamically updated from your servers or web services.

PingGraph Properties - General Tab

- **Start in Full Screen** – PingGraph will start in the full screen mode with no titlebar or frames.
- **Save Win Position** – Window position will be saved for each instance. A must in multi-monitor configurations at NOC locations.
- **Always on Top** - PingGraph will be the topmost visible app. Task bar balloons will still be visible.
- **Test Interval** -- Frequency (in milliseconds) the PingGraph sends its query for each object.
- **Allowed failures** – Number of tests (ping/inquiry) failed before failed/timeout message is displayed.
- **Randomization** – When ICMP graphing local devices or HTTP graphing the lines drawn will be flat. To make the graph look "live" select a random number range that will be added to the result making graph look 'live'. Values in this combo show max random value and allow different degrees of randomization. Value of 0 disables randomization.
- **Objects File** – The path of the file containing objects (servers/devices/services) to be monitored. Optional. Can be a filename only (located program directory) or a full Path. Please see "Objects File for PingGraph and/or Agent" section of this manual for more info. Program Settings data is overridden by data imported from this file. When running multiple instances of the PingGraph use different filenames. Currently 25 objects are supported. Set Reload Interval to 0 to disable.

- **Reload Interval** -- How frequently (in milliseconds) the program reloads the Objects file. Too frequent reloads will impact system and application performance. Value of 0 will disable reloads.

PingGraph Properties – Sensors Tab

- **No fragmentation** -- Fragmented packets are not allowed as valid reply.
- ***Native WIN32 Ping** -- Use API ping instead of .NET routine.
- **Ping Timeout** -- How long before ping times out. Too small value will result in erratic graphs.
- **Ping TTL** -- Time to live allowed for this PingGraph. Windows default is 128.
- ***HTTP Timeout** -- How long before "ERROR" message is displayed (i.e. in case of 404 error)
- **Remote Agent File** -- File path of the file written by Agent. Optional. Can be a filename only (located in program directory) or a full Path. This file will contain numbers only on 20 lines. Each line represents separate sensor, i.e. a number in line 13 will correspond to Pane #13 (Sensor type has to be set to AGENT in Protocol column in PingGraph application for this data to be retrieved).
- **Reload Interval** -- How frequently (in milliseconds) the program reloads its Agent file. Too frequent reloads will impact system and application performance. This value has to be somewhat synchronized with Write Interval in the Agent Properties otherwise a STALE error will be shown.

PingGraph Properties - Objects Tab

- **HOST/IP/URL Address --** IP, Hostname , Server, Service or URL for each object.
- **Label** -- A label describing PingGraph. If "Show Labels" is unchecked this value will be ignored and the IP, Hostname or URL will be shown instead.
- **Sensor**: -- Sensor type for the object. It can be ICMP for Ping and HTTP for Web. Also AGENT can be selected to read a particular sensor data from Agent file. See Agent setup section.
- **Log** – Check for each object to log to a text file (excel-csv compatible, comma delimited). "Write Log File" setting in General tab must be enabled for the data to be written to file. This also allows for eMail monitoring (if configured).
- **Rand** – Use randomization for the lines drawn for an object. This will prevent "flat" lines. Randomization value is selected at General tab.

PingGraph Properties – Monitor Tab

- **Enable Failure Logging** – Checking this box allow the program to log changes (failure, error, restore) to a file. There is no limit imposed on the file therefore large files can occur on unstable networks. This file is comma delimited and viewable not only in text editor, but in Excel as well. Each sensor you wish to log must have the Log option checked in Sensors tab.
- **Log Spikes –** This option allows logging of each failure. Huge log files will result therefore we recommend that it remains disabled unless troubleshooting a specific sensor. Do not enable if email monitoring is enabled.
- **Failure Threshold** – How many consecutive failures before an entry is written to a Log file and (if enabled) email notification sent. If your network/devices experience flapping set this value to a higher number.
- **Failure Log File** – File path of the Log file. Can be a filename only (to place log in program directory) or a full Path.
- **Enable Notification (eMail)** – emails will be sent to the contact email specified in the settings if a failure/restore occurs. Logging must be enabled and each object you wish to be notified about must be check-marked for logging at the Objects tab.
  Use Test button TWICE to test email settings. For some servers the first test is not reliable. Reload button retrieves the last known email settings. . Emails will not be sent for failures occurring within first 60 intervals after the program is started.

PingGraph Properties - GUI Tab

- **Show Labels** – Show the LABEL value of objects. If unchecked the URL, IP or DNS will show
- **Show Host on Timeout** - The URL, IP or DNS name will be shown on timeout
- **Show MS** - Show response time in object panes

PROGRAM RESTART IS NEEDED for some setting changes to take effect.

Configuration of Agent

There are common settings for both the PingGraph and Agent. These however pertain exclusively to the Agent:

- **Agent Write Interval** – how frequently the agent will write its file to be retrieved by the PingGraph. This needs to be somewhat synchronized with the Agent file Reload Interval in PingGraph.
- **Agent File Path** – This is the filename and location that the Agent will write. Preferably a share with write privileges on your network where the PingGraph software resides. Can be in either *\\10.10.10.10\share\pg_agent.txt* or *C:\PGData\pg_agent.txt*. Use "Test Write" button to see if a file can be written to the location you have specified. For new shares please make sure you login to first from Windows Explorer. Once directory access error is generated the Agent must be restarted.

The "Show Live" button on main dialog will show current results being written to file. Please refer to "Sensor Result Values" in this manual to compare. Please see error tables in this manual as well for values to return if you want to write/use your own agent.

Objects File for PingGraph and/or Agent

The first 25 lines (objects) of the Objects file will be read and assigned accordingly, i.e. line 5 of this file will be assigned to PingGraph pane #5. Any text pass line #25 will be ignored. The Agent is limited to 20 objects.
Empty lines in this file will cause program errors. Please make sure there are none before saving the file.
Format of this file is the following:

SERVER, LABEL, SENSOR

Where SERVER is an IP address or DNS name of a server or interface for ICMP, or a URL of a web service containing ID# of a device/service if needed. . This value is ignored when AGENT is selected for sensor type.
LABEL is how you want to label this object in PingGraph - if "Use Labels" is unchecked in Properties the server/url address of an object will be shown instead. SENSOR is one of the currently supported: ICMP, HTTP or AGENT . Case and trailing spaces are ignored.
For example; to graph the ping results of a connection to internet you may want to ping yahoo.com, therefore specify:

YAHOO.COM, Public Internet, ICMP

For a web device/service Graphing you will need to write an ASP or PHP script checking the device status and returning a number between 10 and 120 or -1 if not accessible. For a HTTP sensor select "Randomization" setting, i.e. 25. This will create a 'wiggly' line instead of a 'static' flatline. Select 0 for no randomization. For example to PingGraph a pda #1 status your Objects file should contain:

http://71.11.22.33/devicePingGraph.aspx?id=1,PDA01,http

To show data retrieved for host REMHOST via Agent use the following:

REMHOST, Remote Server, AGENT

Since the Agent is providing results, the host name/IP is being ignored.
If you do not wish to create or dynamically update a text file these Objects can be set up in program properties.

Sensor Result Values

- -4: Stale Error = old data.
- -3: Protocol Error = wrong/misspelled sensor type.
- -2: Error = general error. Program process failure, wrong (or unreachable) hostname, IP, etc.
- -1: Timeout = no valid response in specified time frame.
- 0-5000: Valid response times (ms). Values over 400 are drawn on the very top of a pane.
- 99999: Object disabled. In versions prior to 1.6 program restart is needed or Error (-2) will be shown due to a thread still running. Versions 1.6+ allow thread restarts.

Some values may not be applicable to certain sensor type

PingGraph Errors - ICMP

Display	Value	Explanation
Timeout	-1	Timeout was returned, the host is offline or not responding to ICMP
Error	-2	The host is either mistyped or unreachable
Protocol	-3	Sensor type was misspelled or wrong type selected

PingGraph Errors - HTTP

Display	Value	Explanation
Timeout	-1	Value of -1 was returned by your script
Error	-2	The URL is either mistyped or doesn't return numeric values
Protocol	-3	Sensor type was misspelled or wrong type selected

PingGraph Errors - AGENT

Display	Value	Explanation
Timeout	-1	Timeout (value of -1) was returned by Agent
Error	-2	Value of -2 was returned form Agent = host mistyped or unreachable
Protocol	-3	Sensor type was misspelled or wrong type selected
Stale	-4	Data received from agent has not been refreshed in # of allowed failures * 2. Make sure the share is accessible. Increase write interval at Agent or lower reload interval at PingGraph.

Support

Please email us at support@eftechusa.com or post in the forums at www.eftechusa.com

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