MonALISA Client User Guide

February 5, 2004

Chapter 1

General Features

The global monitoring service client allows to discover all the active services, and display real-time global views for connectivity and traffic as well as the usage and load of the monitored entities.

It allows to access the configuration of any site and display real-time or historical values for any monitored parameter in the system.

Using the WebStart technology, it can be started from anywhere, with just a single click in a browser window.

1.1 Requirements

In order to run the MonALISA Client, the following program tools must be installed:

- Java 2 Runtime Environment, version 1.4.2. You can download it from http://java.sun.com/j2se/ <http://java.sun.com/j2se/>.
- Java Web Start. You can get the latest version form http://java.sun.com/products/javawebstart/ <http://java.sun.com/products/javawebstart/>.
- Java3D, for the 3D Globe Panel. The MonALISA client can work without this panel, but, for a better experience, it is reccommended that you have it. The Java3D must be installed for the JVM that it is going to be used with the client, and it is available for the following platforms:

  Windows and Solaris <http://java.sun.com/products/java-media/3D/>

  Linux <http://www.blackdown.org/java-linux/java2-status/java-3d-status.html>

  Mac OS X 10.3.1 or later <http://www.apple.com/downloads/macosx/apple/java3dandjavaadva

> NOTE
>
> If you reinstall the JVM, even in the same directory, you should also reinstall the Java3D package!

> NOTE
>
> If you have more JVMs installed on your machine, when you click on the MonALISA jnlp (Web Start) file to start the client using a browser, make sure that the JVM used by the browser has the Java3D package installed!

1.2 Main Window

The main menu of the application has the following items:

File Contains only the Exit command.

Discovery This menu can be used to change the discovery process of the monitored entities. There are two parts regarding this process:

- the Lookup Services hosts - used in the Jini discovery of the Proxy Services. These are fixed for each type of client and should not be changed.
- the available Groups - used in the Jini discovery of the groups to which the monitored entities are subscribed. Usually, the MonALISA Client already comes with all available groups added so adding a new one is necessary only in special situations.

Groups This menu can be used to switch on/off the currently active groups. Usually, different types of monitored entities are grouped in separate groups. You can use this menu to add/eliminate (un)necessary entities from the client views.

Security This can be used to specify a keystore and a password that allows controlling the entities. More on this in the [Node Properties Window] section.

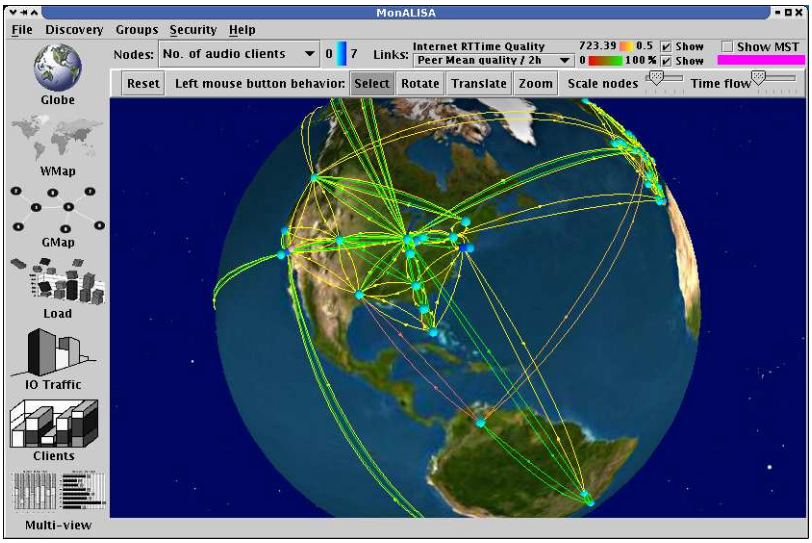
Help This brings a window with some nice screenshots.

On the left side of the main window, there is a list of labelled icons with the active panels. These can operate in two modes:

- single view - each panel is displayed in the main window. When other icon is clicked, the current panel is replaced by the new one.
- multi view - the current panel remains in the main window. Clicking other icon opens the respective panel in a new window. Clicking the icon again closes that window. Clicking the "Multi-view" icon closes all opened windows.

1.2.1 Globe Panel

The monitored entities are displayed on a 3D Globe that can be manipulated with the mouse. You can left-click on an entity to open the corresponding property window (See [Node Properties Window] section for more details.) You can zoom in/out using the mouse wheel. Right-clicking and dragging rotates the globe. Middle-clicking and dragging moves the globe. These operations can also be performed with the left button by selecting one of the buttons above the panel (Translate, Rotate, Zoom).

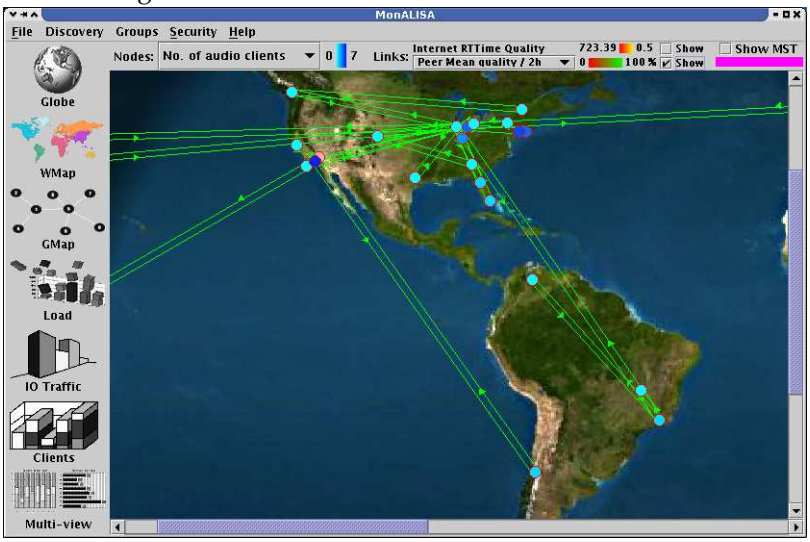


If the mouse is moved over a node or arrow of a link, a short text is displayed, showing status information. The information shown on the nodes and links can be changed using other buttons above the panel.

For a description of the values shown for each node and link please see the client specific details in [Farm Client] and [VRVS Client] sections.

1.2.2 Wold Map Panel

The monitored entities are displayed on a flat world map. Left-clicking a node brings the corresponding property window. Using mouse wheel you can incrementally zoom in/out the respective area of the map. You can also zoom in by selecting a region with the right mouse button. Right-clicking the map restores the original zoom state.



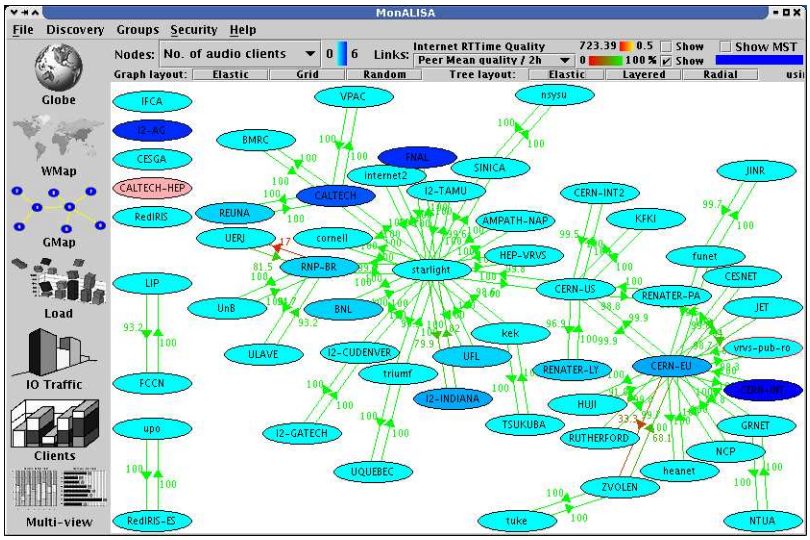
If the mouse is moved over a node, after one second a tooltip will be displayed, showing information about the node. The information in the node can be changed by the buttons and combo boxes on top of the panel.

For a description of the values shown for each node and link please see the client specific details in [Farm Client] and [VRVS Client] sections.

1.2.3 Graph Panel

This view represents the entities in a graph-like form. The nodes can be moved with the middle mouse button. Left-clicking a node brings up the corresponding property window. Right-clicking a node makes the selected node a ”source” node. Starting from that point the client will compute a path

towards the other reachable nodes. There are several layout modes for the nodes, modes that can be changed selecting one of the buttons above the graph panel. If a tree can be computed, the "Tree layout" modes will be available.

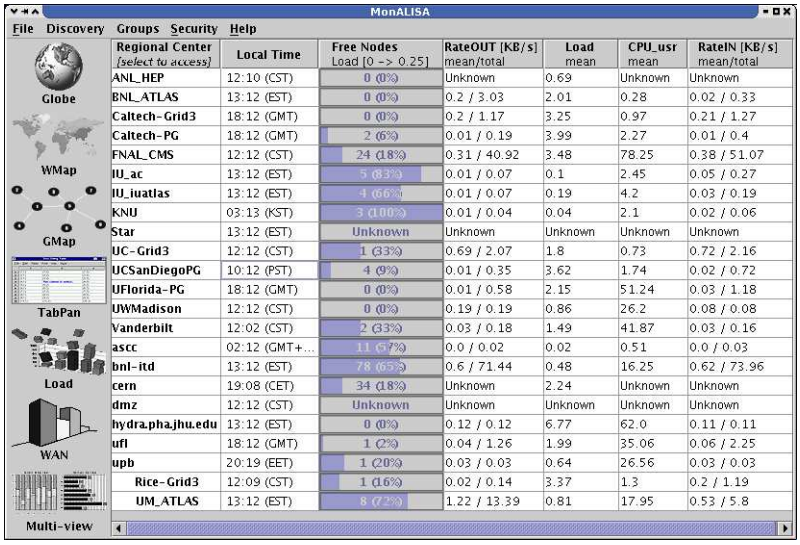


The information shown for each node can be changed with the combo-boxes above the graphical area of the panel.

For a description of the values shown for each node and link please see the client specific details in [Farm Client] and [VRVS Client] sections.

1.2.4 Table Panel

This panel shows a table with various details for each entity.

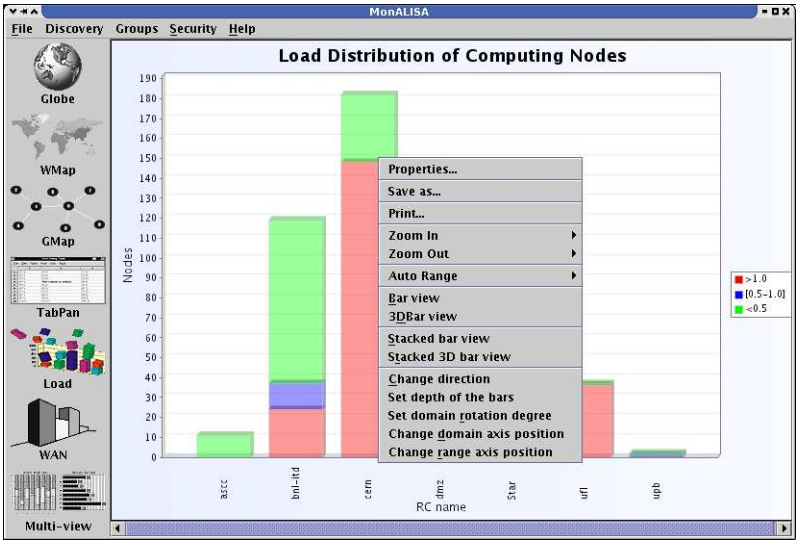


Regional Center [select to access]	Local Time	Free Nodes Load [0 -> 0.25]	RateOUT [KB/s] mean/total	Load mean	CPU_usr mean	RateIN [KB/s] mean/total
ANL_HEP	12:10 (CST)	0 (0%)	Unknown	0.69	Unknown	Unknown
BNL_ATLAS	13:12 (EST)	0 (0%)	0.2 / 3.03	2.01	0.28	0.02 / 0.33
Caltech-Grid3	18:12 (GMT)	0 (0%)	0.2 / 1.17	3.25	0.97	0.21 / 1.27
Caltech-PG	18:12 (GMT)	2 (6%)	0.01 / 0.19	3.99	2.27	0.01 / 0.4
FNAL_CMS	12:12 (CST)	24 (18%)	0.31 / 40.92	3.48	78.25	0.38 / 51.07
IU_ac	13:12 (EST)	5 (83%)	0.01 / 0.07	0.1	2.45	0.05 / 0.27
IU_iuatlas	13:12 (EST)	4 (66%)	0.01 / 0.07	0.19	4.2	0.03 / 0.19
KNU	03:13 (KST)	3 (100%)	0.01 / 0.04	0.04	2.1	0.02 / 0.06
Star	13:12 (EST)	Unknown	Unknown	Unknown	Unknown	Unknown
UC-Grid3	12:12 (CST)	1 (33%)	0.69 / 2.07	1.8	0.73	0.72 / 2.16
UCSanDiegoPG	10:12 (PST)	4 (9%)	0.01 / 0.35	3.62	1.74	0.02 / 0.72
UFlorida-PG	18:12 (GMT)	0 (0%)	0.01 / 0.58	2.15	51.24	0.03 / 1.18
UWMadison	12:12 (CST)	0 (0%)	0.19 / 0.19	0.86	26.2	0.08 / 0.08
Vanderbilt	12:02 (CST)	2 (33%)	0.03 / 0.18	1.49	41.87	0.03 / 0.16
ascc	02:12 (GMT+...	11 (57%)	0.0 / 0.02	0.02	0.51	0.0 / 0.03
bnl-itd	13:12 (EST)	78 (65%)	0.6 / 71.44	0.48	16.25	0.62 / 73.96
cern	19:08 (CET)	34 (18%)	Unknown	2.24	Unknown	Unknown
dmz	12:12 (CST)	Unknown	Unknown	Unknown	Unknown	Unknown
hydra.pha.jhu.edu	13:12 (EST)	0 (0%)	0.12 / 0.12	6.77	62.0	0.11 / 0.11
ufl	18:12 (GMT)	1 (2%)	0.04 / 1.26	1.99	35.06	0.06 / 2.25
upb	20:19 (EET)	1 (20%)	0.03 / 0.03	0.64	26.56	0.03 / 0.03
Rice-Grid3	12:09 (CST)	1 (16%)	0.02 / 0.14	3.37	1.3	0.2 / 1.19
UM_ATLAS	13:12 (EST)	8 (72%)	1.22 / 13.39	0.81	17.95	0.53 / 5.8

This table can be sorted by clicking the caption of table's columns.

1.2.5 Histogram Panels

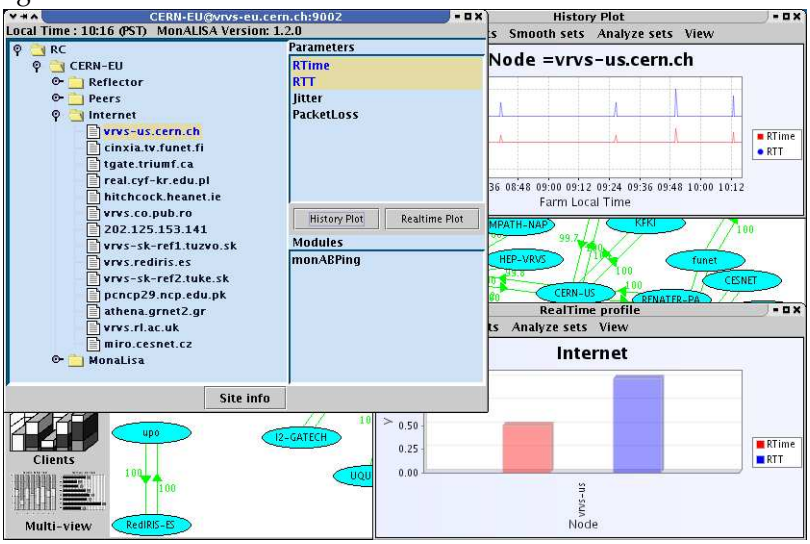
In these panels a bar chart with different values is drawn for all entities. If there are more values for each entity, the histogram can be drawn as a stacked bar.



Right-clicking on the panel brings up a menu from where you can change the colors, the type of the chart (simple, stacked), appearance (plain or 3D), orientation etc. You can also save the chart in a `.png` file.

1.2.6 Node Properties Window

Left-click on a node in Globe, Graph or World Map views, brings up a window that shows Node's local time, IP address, MonALISA version that runs there and various site information. However, the most important information is a tree view containing the monitored clusters and nodes. For each node and cluster on the right side is an available parameters view. On the lower-right part the modules list that gather that information is shown.



You can select a node, or a cluster from the tree view and some parameters from the right panel and click on History or Realtime Plot buttons. A plot window will pop-up and soon the requested data will be drawn.

You can right-click on the graphs to change different properties (line width, graph background, axis labels etc.), print or save the graph in a file. Using the options in the window's menu, you can change the appearance (3d/2d, stacked/simple, direction), manage the displayed graph sets (add, remove, change colors) and analyze sets (integrate, compute median value etc.).

Chapter 2

Farm Client

We will present here only the particular features of the MonALISA Farm Client. For a larger view, please see the [Main Window] section.

Each node represents a computing farm and is drawn as a pie chart. The values to be shown in the chart can be selected from the combo-box that appears above the graphical part of the panels.

There are two types of links in this client:

- ping links - ranging from red to yellow, represent the quality of the links as computed by the ABPing module (taking into account the round trip time, packet loss, and jitter) for each peer of a node.
- wan links - ranging from light blue to dark blue, represent the traffic on the WAN links.

Based on the ping links values, in the Graph panel you can right-click a farm to compute a path from that node to all reachable nodes. The client will use the Dijkstra algorithm and the selected links will be drawn in blue. Note that this will form a tree and the tree layout modes will be available.

Chapter 3

VRVS Client

We will present here only the particular features of the MonALISA Farm Client. For a larger view, please see the [Main Window] section.

Each node is drawn in a specific color, representing the selected value in the combo-box on top of the graphic panel. For example, if in the combo-box the selected value is that of the Total Traffic, the application will compute a minimum and maximum value for all VRVS reflectors. Beside the combo box, a color scale will be drawn, representing lower traffic with a light blue and higher traffic with a darker blue. All the nodes on the Globe, World Map and Graph Panels will be coloured with a blue nuance according to their own traffic.

When there is no data coming from the reflector for the currently selected item in the combo box, the node will be drawn in pink in the panels. If there is no data from a reflector (no information about ping or peer links, no data about the number of clients, virtual rooms, traffic or load), the node will be painted in red. However, this doesn't mean that the node is down - you may be able to open node's properties window and plot different parameters from other clusters.

There are two types of links between the reflectors:

- peer links - ranging from red to green - represent the quality of the links between the reflectors, as it is measured by the reflector software. You can choose from the Peer links combo-box the value to be displayed (mediated for 2, 12 or 24 hours).
- ping links - ranging from red to yellow, represent the quality of the links as computed by the ABPing module (taking into account the round trip time, packet loss, and jitter) for each peer of a node.
- mst links - represent the links that should be used as peer links for the reflectors. These are dynamically computed by the client based on the values of the ping links and the status of the reflectors.

You can hide or show the links using the checkboxes above the graphical area of the panels.

Note that both peer links and mst links connect the nodes in a tree structure. You can use each of those in the Graph Panel to generate various tree layouts.