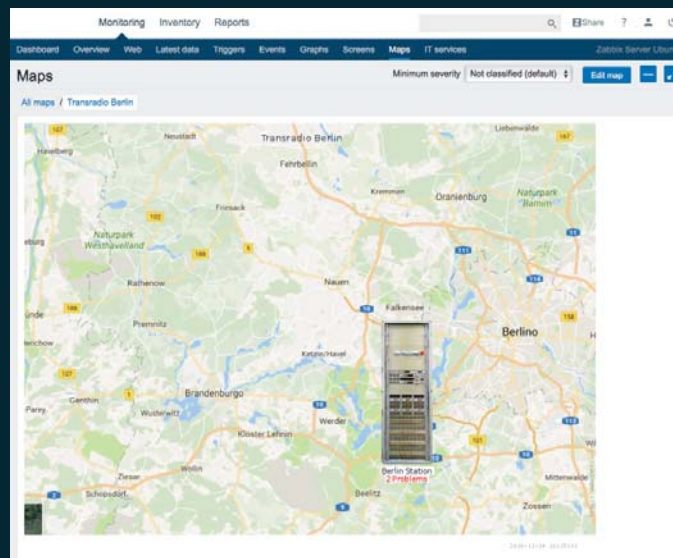


MIRROR NMS

WCU 6+1 and MTX-AUD-6+1
NETWORK MIRROR SYSTEM

Manage all data of your network and store in a Storic Server



General description

The MIRROR NMS control platform is designed to control and manage all the equipment connected to the Internet via the standard SNMP communication protocol and manage an entire network in real time. Its interface is configured at the factory but can be customized by the user to adapt it to the maintenance and expansion needs of the network.

The use of MIRROR NMS does not provide users with the installation of dedicated software but is accessible through any Internet Browser and HW platform such as PC, Tablet or Smartphone. All data and the history are received and processed in the Server computer to which users can access to query and check the status of the equipment.

The Users configuration provides various levels of security and permissions through a dedicated page that is accessible to the system administrator.

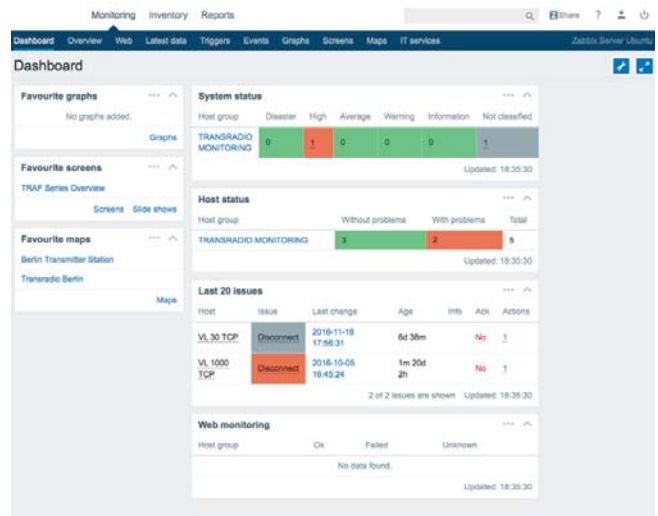
Licenses MIRROR NMS

An unlimited number of licenses is issued after the purchase of the license and the first dedicated and specific configuration for each type of system. The main pages that make up the CTE BLUE Broadcast NMS structure are listed below:

- 1) DASHBOARD: customizable page with tools, charts and maps for general management
- 2) MAPS: customizable maps for a simplified and visual control of the network.
- 3) GRAPH: customizable graphs on all the quantities monitored by the SNMP interface
- 4) SCREEN: customizable menus that collect info from one or more sites
- 5) SYSTEM STATUS: Status of the device alarms and customizable by the user through the Triggers
- 6) TRIGGER: values assigned by the user correlated to the chosen Radio Electric quantities (Power, temperature etc ...) among those available through SNMP.
- 7) EVENTS: Events list such as alarms or status changes
- 8) ADMINISTRATION: Pages for user management, conditional access, sending push email notifications and status of maintenance and repair jobs.

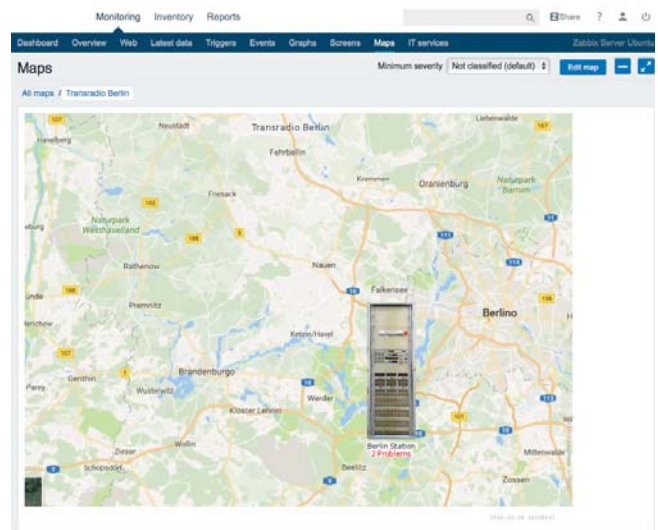
Dashboard:

Through it you can select and customize all the graphical and numerical tools for the simple and immediate management of both the Network and “users or intervention teams”.



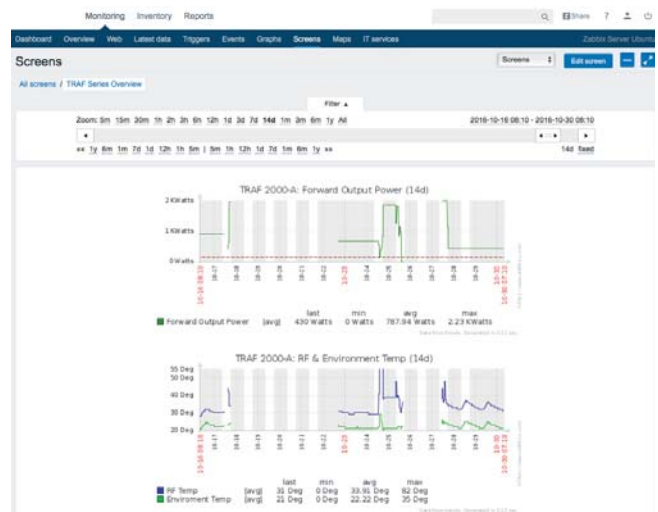
MAPS:

the cartographic maps are displayed where the various transmission devices are installed. The stations can be viewed with images or simple icons that vary if the TX is in an alarm, maintenance, off or unavailable state. Users can add and customize the number of MAPS suitable for the size of the Network.



Screen:

they are user-customizable menus that contain information from a single transmission site or multiple broadcast sites. Inside you can add the graphs of the Radio-Electrical quantities chosen by the user. All the graphs show the quantities referred to the historian from the time of installation.



EVENTS:

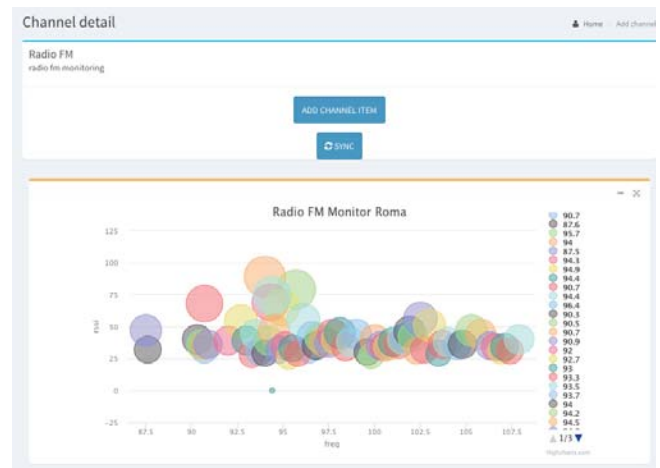
Event list divided by device and selectable from drop-down menu by selecting the group to which it belongs.

| Time | Host | Description | Status | Severity | Duration | Ack | Actions |
|---------------------|-----------|-------------|---------|----------------|------------|-----|---------|
| 2016-11-18 17:36:31 | VL_30 TCP | Disconnect | PROBLEM | Not classified | 6d 46m | No | ? |
| 2016-11-18 17:30:29 | VL_30 TCP | Disconnect | OK | Not classified | 6m 5s | No | ? |
| 2016-11-18 17:30:16 | VL_30 TCP | Disconnect | PROBLEM | Not classified | 9s | No | ? |
| 2016-11-18 18:32:32 | VL_30 TCP | Disconnect | OK | Not classified | 2d 23h 17m | No | ? |
| 2016-11-09 20:27:37 | VL_30 TCP | Disconnect | OK | Not classified | 1m 25s | No | ? |
| 2016-11-09 20:27:28 | VL_30 TCP | Disconnect | PROBLEM | Not classified | 5d 22h 3m | No | ? |
| 2016-11-09 20:25:42 | VL_30 TCP | Disconnect | OK | Not classified | 11s | No | ? |
| 2016-11-09 18:38:03 | VL_30 TCP | Disconnect | PROBLEM | Not classified | 44s | No | ? |
| 2016-11-09 19:13:51 | VL_30 TCP | Disconnect | PROBLEM | Not classified | 1d 1h 12m | No | ? |
| 2016-11-09 18:38:03 | VL_30 TCP | Disconnect | OK | Not classified | 25m 48s | No | ? |
| 2016-10-31 20:57:51 | VL_30 TCP | Disconnect | PROBLEM | Not classified | 7d 21h 45m | No | ? |
| 2016-10-31 20:55:07 | VL_30 TCP | Disconnect | OK | Not classified | 22m 44s | No | ? |
| 2016-10-30 14:10:01 | VL_30 TCP | Disconnect | PROBLEM | Not classified | 1d 6h 25m | No | ? |
| 2016-10-27 15:15:47 | VL_30 TCP | Disconnect | OK | Not classified | 2d 23h 54m | No | ? |
| 2016-10-27 15:13:21 | VL_30 TCP | Disconnect | PROBLEM | Not classified | 2m 28s | No | ? |
| 2016-10-27 12:36:07 | VL_30 TCP | Disconnect | OK | Not classified | 2h 17m 14s | No | ? |

Administration:

Page that puts the management of accesses and interventions to be carried out. You can also monitor whether the interventions have been taken over by the operators.

| Name | # | Members | Frontend access | Debug mode | Status |
|---------------------------|---------|--|-----------------|------------|----------|
| CTE administrators | Users 1 | Admin (Daniel Administrator) | System default | Disabled | Enabled |
| Disabled | Users | | System default | Disabled | Disabled |
| Enabled debug mode | Users | | System default | Enabled | Enabled |
| Guests | Users 4 | daniel (daniel.pometti), fulvio (fulvio.petti), guest_jara (jara.Backmann) | System default | Disabled | Enabled |
| No access to the frontend | Users | | Disabled | Disabled | Enabled |



Station Concentrator -I/O Interface to SNMP

Each device that has an interface with Telesignals/Remote controls can be connected to a station concentrator that communicates with a REMOTE I/O card to TCP/IP/SNMP which translates the parallel contacts into the SNMP OID for management through CTE BLUE Broadcast NMS.

In each workstation an indefinite number of interfaces can be installed that can talk to each other in TCP/IP or through the CAN BUS serial bus, bringing in this the inputs/outputs or its OID equivalents to an almost infinite number.

Connections to the tele-monitoring devices

It can be made via a convenient terminal board. This interface converts any type of digital or analog input/output signal into a web-based TCP/IP and SNMP protocol

Thanks to the RS232, RS485, Can Bus or I2C interfaces it is easy to implement a custom protocol to convert from any proprietary protocol to a standard TCP/IP-SNMP protocol or simply to transport any proprietary protocol through an IP interface.

The REMOTE I/O to TCP/IP/SNMP tab has the following characteristics:

- 8 opto-isolated digital inputs
- 8 opto-isolated digital outputs
- 8 galvanically isolated analog inputs
- 2 galvanically isolated analogue outputs
- 2 Can Bus Ports
- 1 USB port
- 1 RS232 serial interface
- 2 RS485 serial interfaces
- 1 I2C interface
- Automatic IP recovery for easy network search
- 3 status LEDs
- TCP / IP protocol
- SNMP V1 / V2 protocol
- SMTP protocol (send and receive emails)
- Built-in Web page with easy-to-customize JSON-based file configuration
- Built in the MIB file easy to customize
- Graphical user interface totally compatible with HTML5, without JAVA required for the browser.

