

Security Management System Configuring 'Tyron Storage Interface' (20.03.06.01)

Introduction

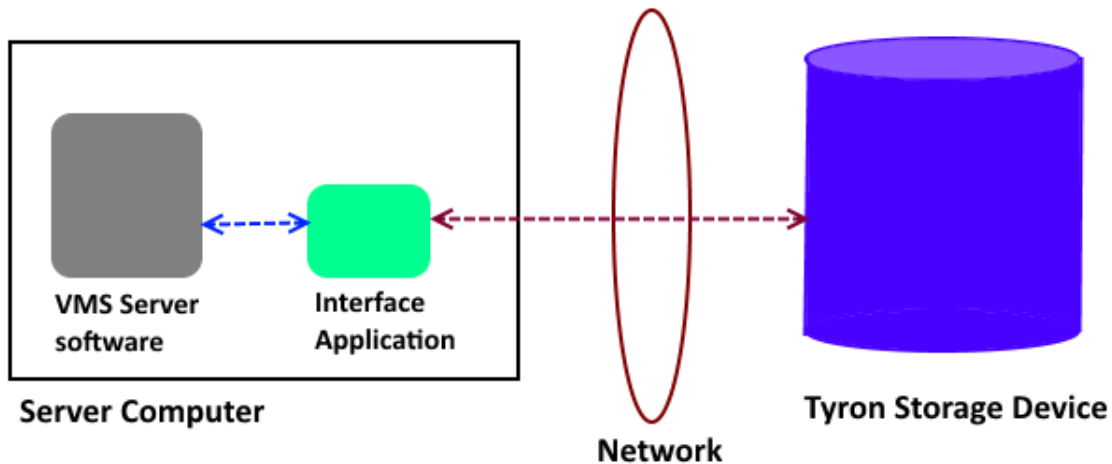
Security Management System software is a true open platform VMS software solution. It provides interface for integration with several cameras, encoders, DVRs, video sources, CCTV keyboards, access control systems, building management systems, fire alarm systems, fence control systems, PLCs, 3rd party video analytics solutions, 3rd party face recognition solutions, 3rd party license plate recognition systems, storage devices etc.

This document describes the steps to configure the integration between 'Security Management System server' software and 'Tyron storage device'.

Note – The 'Tyron storage device' should have specific firmware / patch installed on it, for the integration to work. Please co-ordinate with the 'Tyron storage device' vendor to confirm that the device under test has the required firmware / patch installed

Integrated system design

The integrated system works as follows –



1. Tyron storage device is installed and configured.
2. 'Security Management System server' software is installed on a computer, which is in the same network along with the Tyron storage device
3. 'Security Management System – Tyron Storage Interface Application' is installed on same computer where 'Security Management System server' software is installed.
4. The 'Security Management System – Tyron Storage Interface Application' communicates with the 'Tyron storage device' over network
5. 'Security Management System server' software communicates with the 'Security Management System – Tyron Storage Interface Application'

Finalizing integration parameters

'Security Management System server' software and 'Tyron storage device' integration includes following features –

- (a) Alarms – alarms generated in 'Tyron storage device' are captured by 'Security Management System server' software and are added to 'Security Management System server' software database, similar to any other alarms captured by the 'Security Management System server' software
- (b) Data indicators – status parameters data is periodically queried by the 'Security Management System server' software from 'Tyron storage device', and the latest data values are displayed in the 'Security Management System' software dashboard.

Following types of 'Tyron storage device' alarms are included in this integration –

1. Alarms associated with drive state – drive failure, drive restored
2. Alarms associated with fan state – fan failure, fan restored
3. Alarms associated with power supply state – power supply failure, power supply restored
4. High Processor temperature
5. High Board temperature
6. High RAID temperature
7. High Drive temperature

Following types of 'Tyron storage device' data indicators are included in this integration –

1. Processor temperature
2. Board temperature
3. RAID temperature
4. Drive temperature

A 'Tyron storage device' may have zero or more sources associated with each alarm type listed above, and zero or more sources associated with each data indicator type listed above. Also the names of the sources for alarms and names of the sources for data indicators may vary depending on the configuration of the 'Tyron storage device' being used.

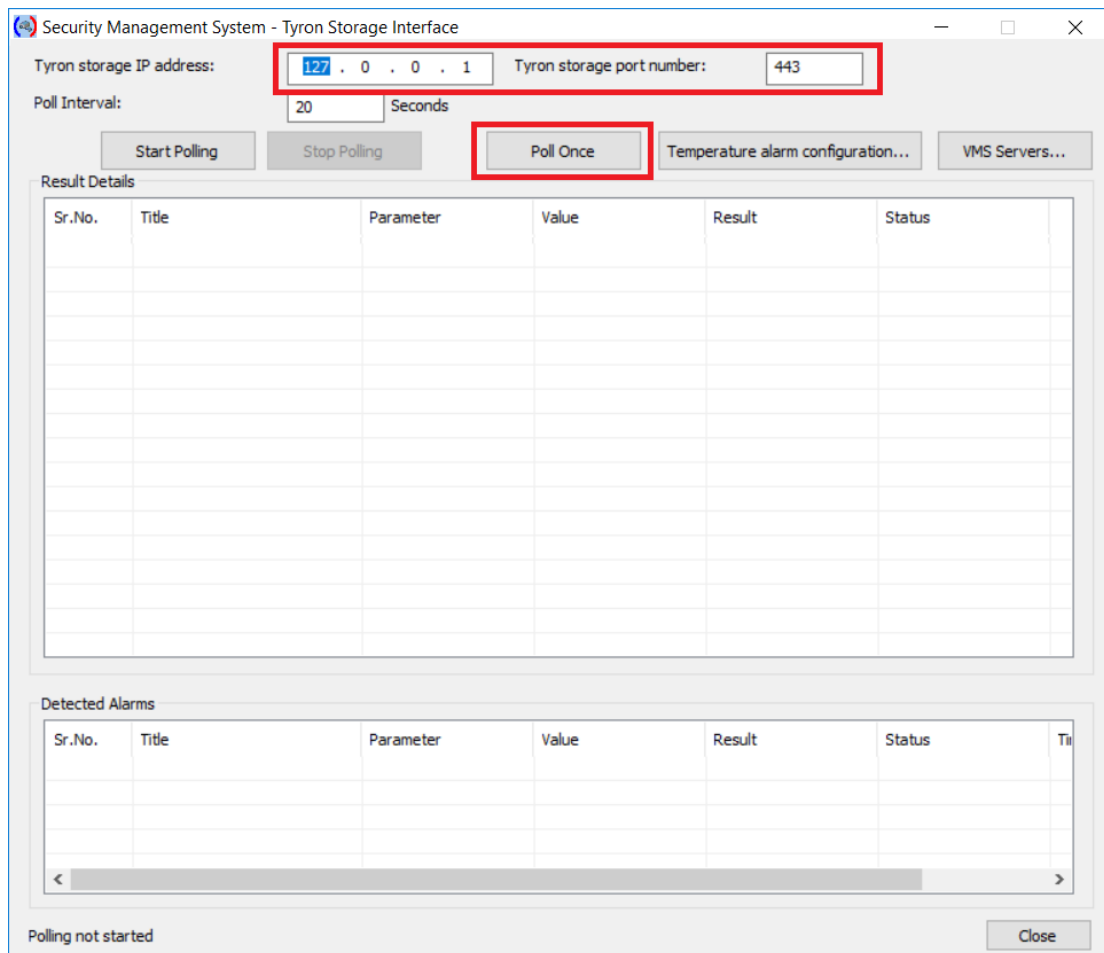
The very first step, during 'Security Management System server' software and 'Tyron storage device' integration configuration is to finalize the alarms and associated sources, and data indicators and associated sources; which are required to be used in the integration.

Following are the steps to search for all supported alarms, alarm sources, data indicators, data indicator sources; supported by a 'Tyron storage device'

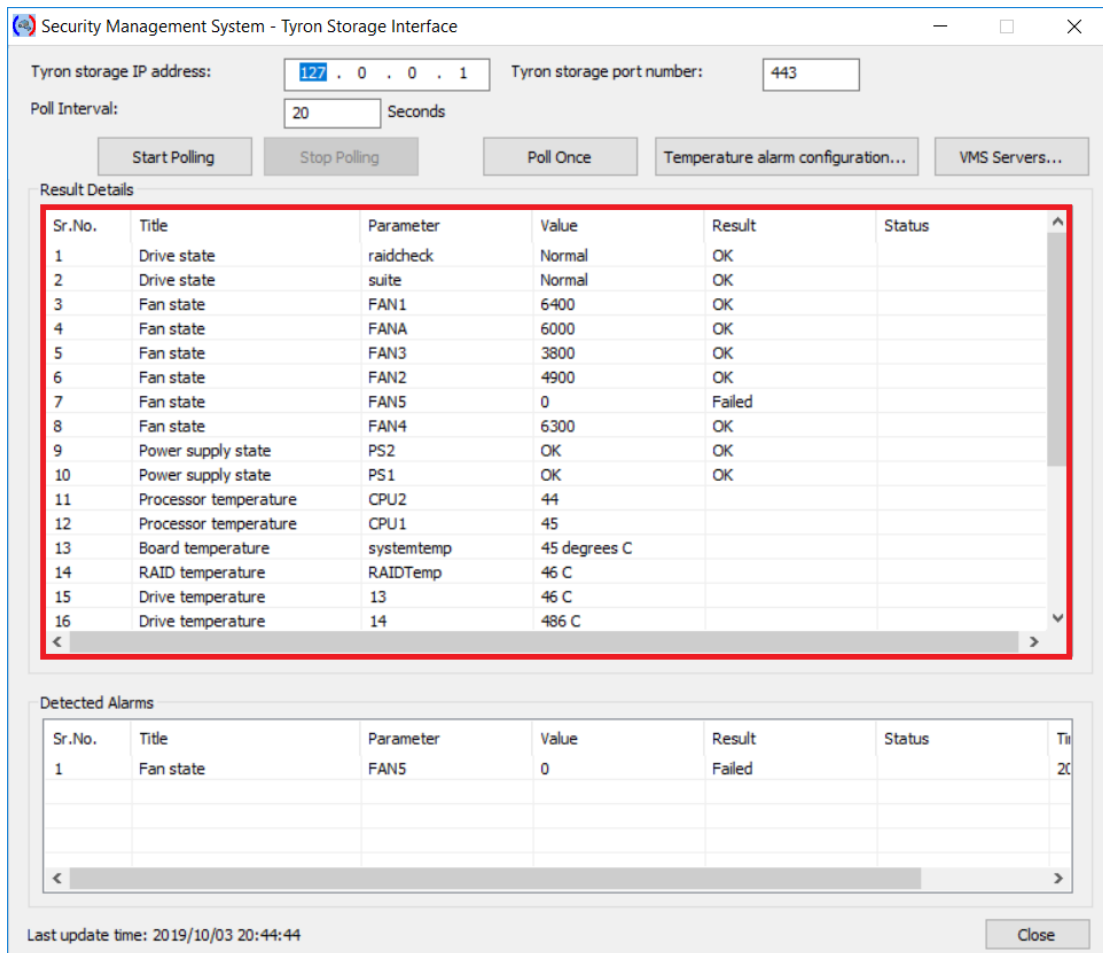
1. Please download the 'Security Management System – Tyron Storage Interface Application' installer.
2. Copy the 'Security Management System – Tyron Storage Interface Application' installer to the server computer where 'Security Management System server software' is installed. If there are

multiple server computers where 'Security Management System server software' is installed, please select any one of them. 'Security Management System – Tyron Storage Interface Application' needs to be installed only one of the sever computers and NOT on every server computer.

3. Execute the 'Security Management System – Tyron Storage Interface Application' installer on the target server computer. Follow the installation wizard to complete the installation.
4. From the desktop shortcut or from the programs menu shortcut, execute the 'Security Management System – Tyron Storage Interface' application.



5. Type 'Tyron storage IP address' and 'Tyron storage port Number'. (Note – please use default port number 443 if the port number is not known)
6. Click on 'Poll Once' button. This will update the 'Result Details' list with values received from the 'Tyron storage device'



7. In the 'Result Details' list -
 - (a) 'Title' column displays the alarm type OR data indicator type.
 - (b) The 'Title' text for alarms would be one of the following – 'Drive state', 'Fan state', 'Power supply state'.
 - (c) The 'Title' text for data indicators would be one of the following – 'Processor temperature', 'Board temperature', 'RAID temperature', 'Drive temperature'.
 - (d) 'Parameter' column displays the associated 'source name'

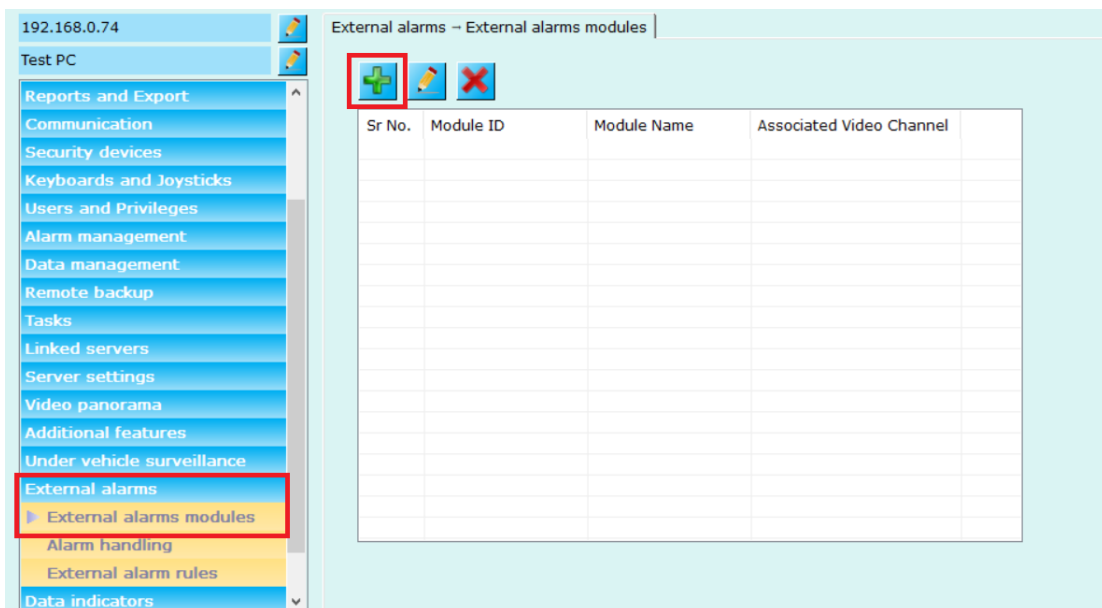
8. Please review the 'Result Details' list and note the target parameters required to be configured in the integration. In this document, we will be using following 2 parameters (one alarm and one data indicator) as example –
 - (a) Alarm type (Title) = 'Drive state', Source (Parameter) = 'raidcheck'
 - (b) Data indicator type (Title) = 'Processor temperature', Source (Parameter) = 'CPU2'

Security Management System server software - Configuring external alarm module

This section describes the configuration required in 'Security Management System' server software for capturing an alarm from 'Tyron storage device'.

This document describes the steps for configuration related to 'Tyron storage device' alarm type 'Drive state' and source 'raidcheck'.

1. In the Security Management System server software, please navigate to the 'External alarms' tab from the left navigation menu bar. Navigate to the 'External alarms modules' sub-tab under it.
2. This will display the External alarms page.



3. Click on 'Add external alarm module...' button, this will open 'Add New External Alarms Module' dialog box

4. Type 'Module Name' and 'Module ID'. Both these can be any text strings. However, it is recommended to use text which helps in identifying the alarm source. For this example, we will be using text string 'raidcheck' which is same as the target 'Tyron storage device' source name.
5. Click on 'OK' button to complete adding the external module.
The new external module will be added to 'External alarm modules' list

| Sr No. | Module ID | Module Name | Associated Video Channel |
|--------|--------------|-------------|--------------------------|
| 1 | EA_raidcheck | raidcheck | |

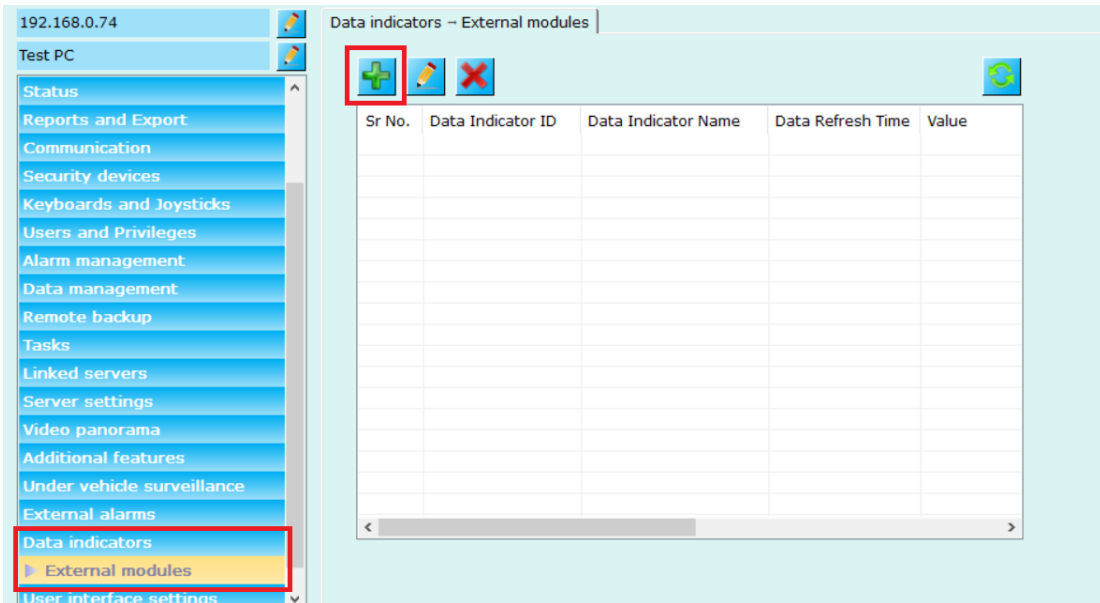
Note – please follow same steps to add more external alarms modules, as per the project requirements.

Security Management System server software – Configuring data indicator

This section describes the configuration required in 'Security Management System' server software for accessing a data indicator from 'Tyron storage device'.

This document describes the steps for configuration related to 'Tyron storage device' data indicator type 'Processor temperature' and source 'CPU2'

1. In the Security Management System server software, please navigate to the 'Data indicators' tab from the left navigation menu bar. Navigate to the 'External modules' sub-tab under it.
2. This will display the External modules page.



3. Click on 'Add...' button, this will open 'Add Data Indicator' dialog box.

Module Name: CPU2

Module ID: DI_ CPU2

Refresh time: 30 seconds

Unit:

Enabled

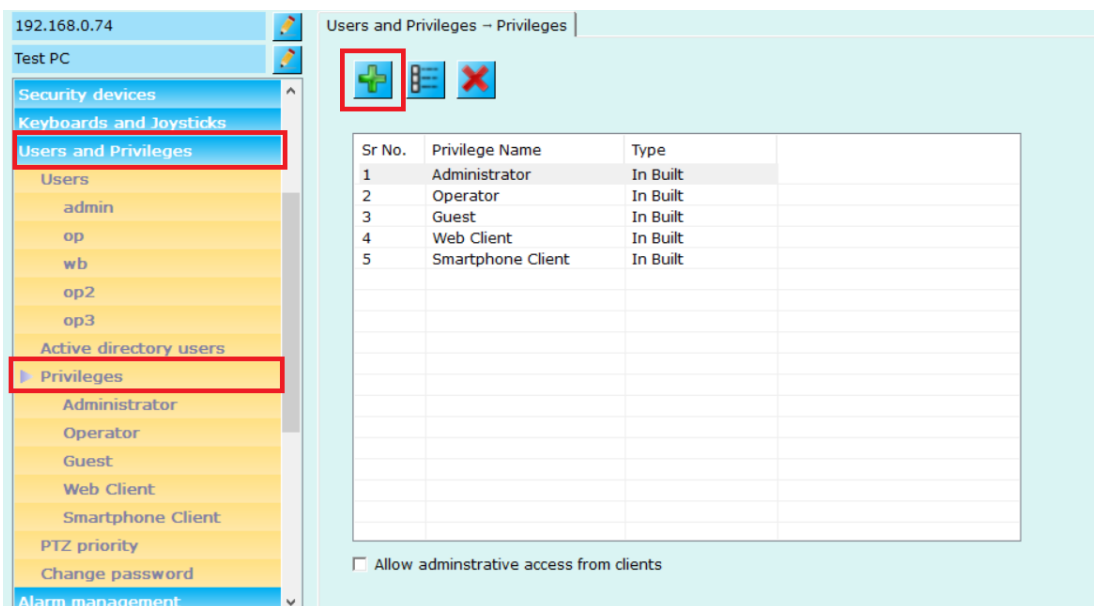
4. Type 'Module Name' and 'Module ID'. Both these can be any text strings. However, it is recommended to use text which helps in identifying the data indicator source. For this example, we will be using text string 'CPU2' which is same as the target 'Tyron storage device' source name.
Type 'Refresh time'. It is recommended to keep it to 30 seconds.
Type 'Unit' text. This can be kept blank string.
Click 'OK' button to complete adding the data indicator.
The new data indicator will be added to the list

| Sr No. | Data Indicator ID | Data Indicator Name | Data Refresh Time | Value |
|--------|-------------------|---------------------|-------------------|-------|
| 1 | DI_CPU2 | CPU2 | 30 second(s) | NA |

Note – please follow same steps to add more data indicators, as per the project requirements.

Security Management System server software – Add new user 1

1. A new user needs to be added to the 'Security Management System server software'. This user will be configured in the 'Tyron storage interface application' (described in next sub-section of this document)
2. In the Security Management System server software, please navigate to 'Users and Privileges' tab from the left navigation menu bar. Navigate to 'Privileges' sub tab.

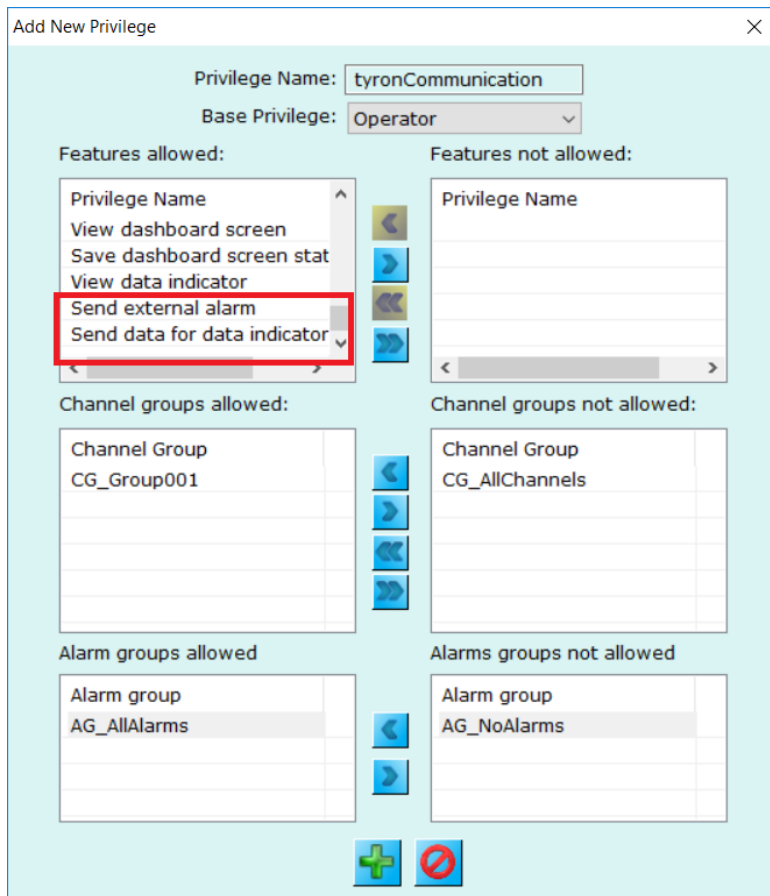


The screenshot shows the 'Users and Privileges - Privileges' tab in the software interface. The left navigation menu has 'Users and Privileges' and 'Privileges' highlighted with red boxes. The main area contains a table of built-in privileges.

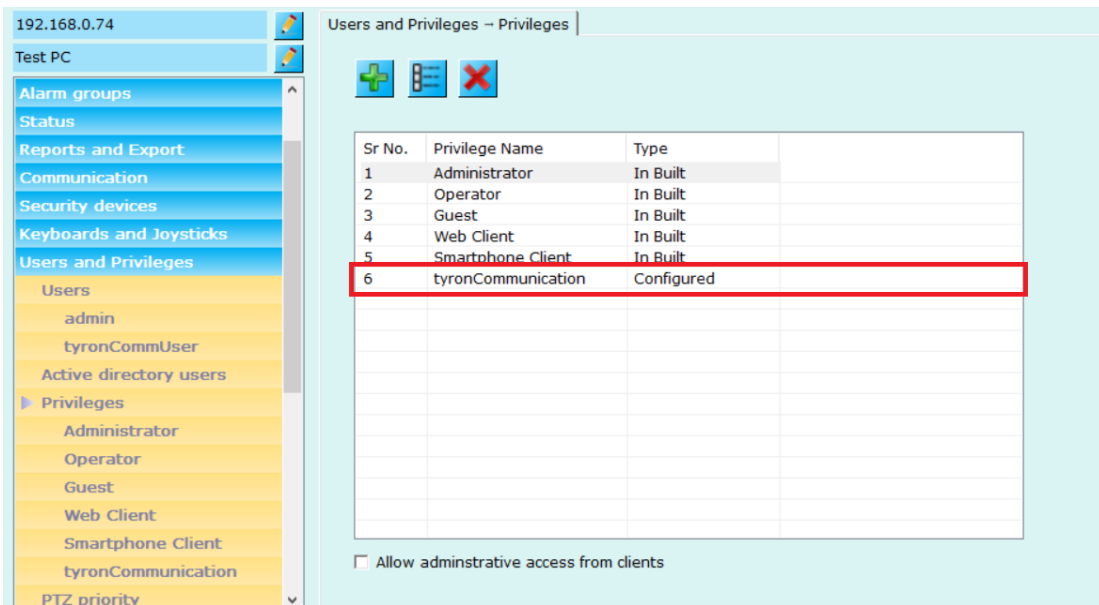
| Sr No. | Privilege Name | Type |
|--------|-------------------|----------|
| 1 | Administrator | In Built |
| 2 | Operator | In Built |
| 3 | Guest | In Built |
| 4 | Web Client | In Built |
| 5 | Smartphone Client | In Built |

Allow administrative access from clients

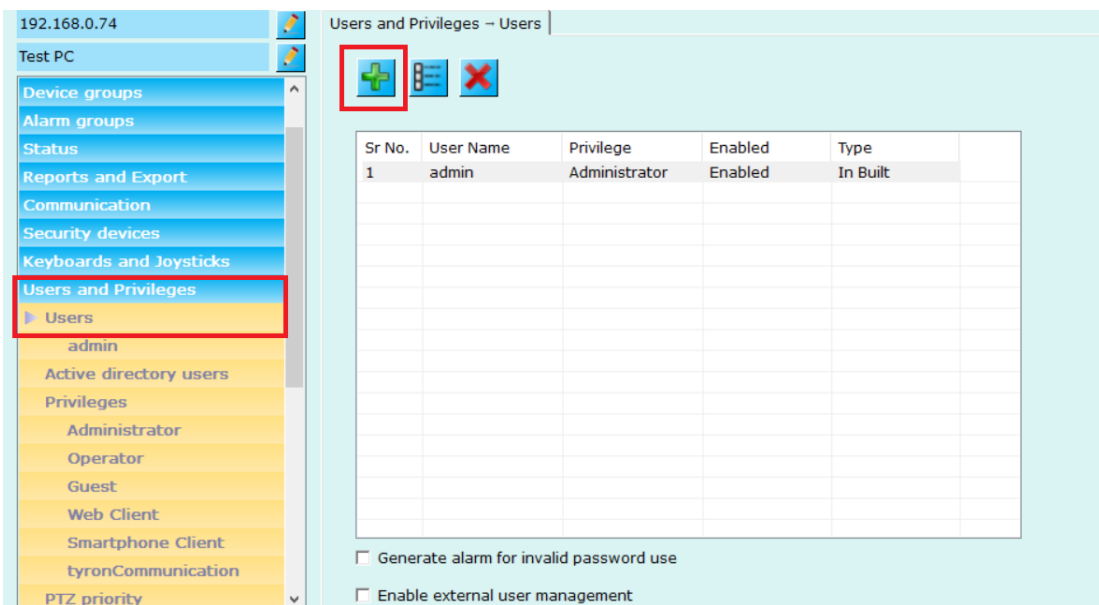
3. Click on the 'Add Privilege...' button. This will pop up the 'Add New Privilege' dialog box.



4. Type any text string for privilege name. We are using 'tyronCommunication' text string for this example.
Select 'Operator' option for 'Base Privilege'
Please ensure that 'Send external alarm' and 'Send data for data indicator' features are added to 'Features allowed' list.
Click on the 'Add' button to finish adding new privilege.
5. The new privilege will be added to the privileges list



6. Navigate to 'Users' sub tab under 'Users and Privileges' from the left navigation bar.



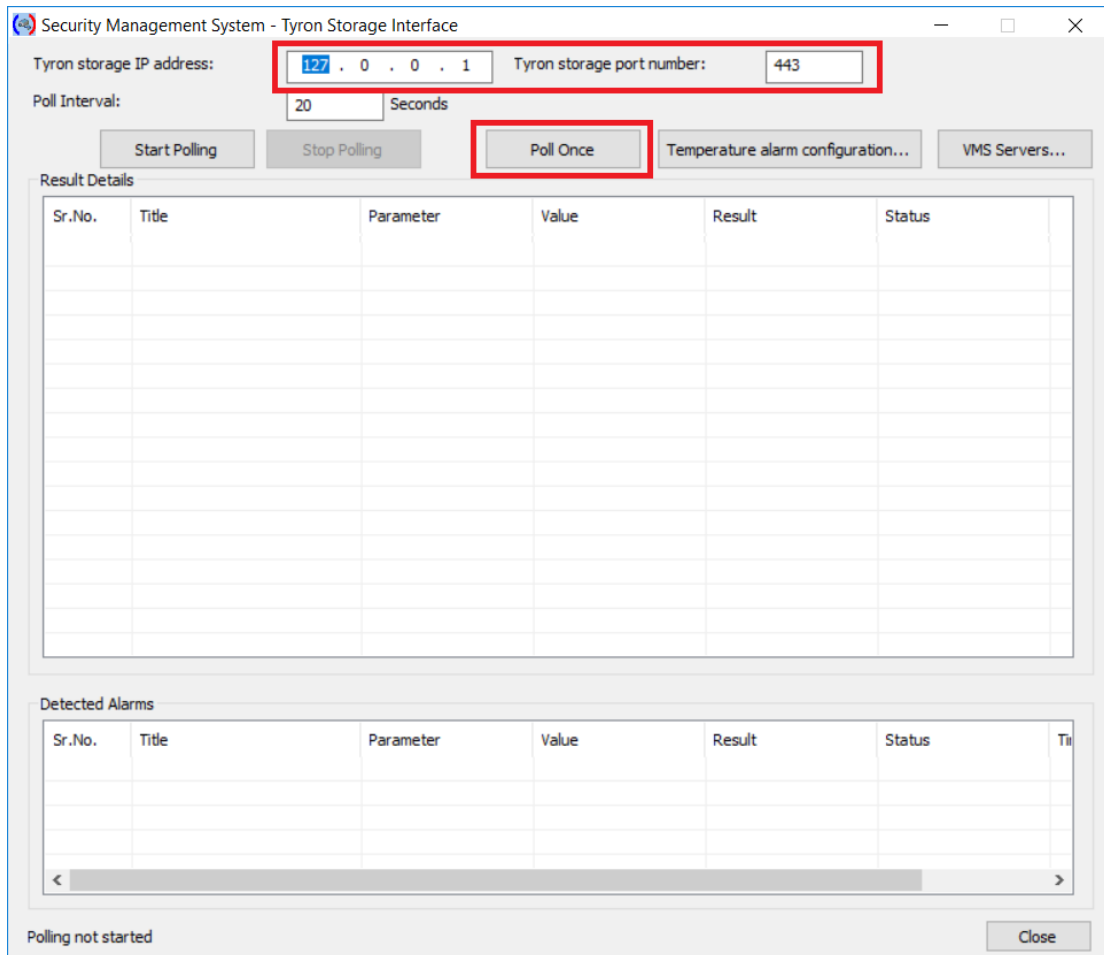
7. Click on 'Add new user...' button, this will open the 'Add New User' dialog box.

8. Type username and password. These can be any valid text strings.
Confirm the password
Select 'Privilege'. This should be the new privilege, recently added to the privileges list.
Click on the 'Add' button to finish adding new user.
9. New user will be added to the users list.

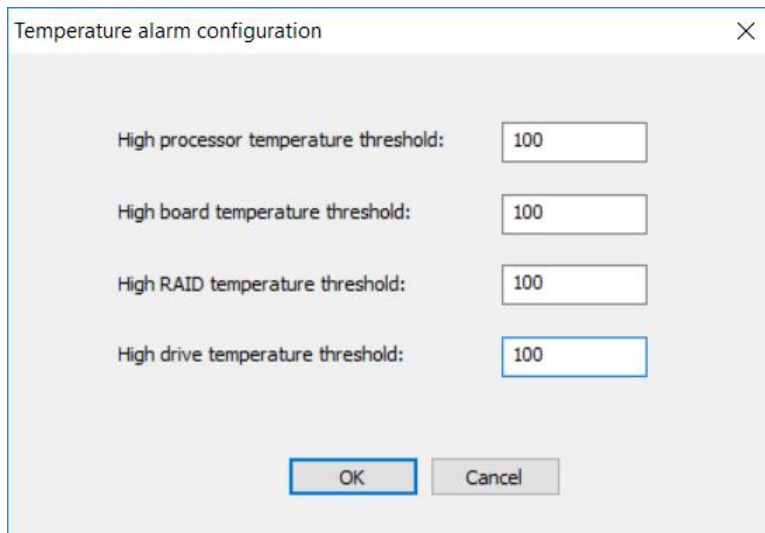
| Sr No. | User Name | Privilege | Enabled | Type |
|--------|---------------|-----------------|---------|------------|
| 1 | admin | Administrator | Enabled | In-Built |
| 2 | tyronCommUser | tyronCommuni... | Enabled | Configured |

Configuring 'Tyron Storage Interface' application

1. Execute 'Security Management System – Tyron Storage Interface' application, from desktop shortcut or from programs menu shortcut



2. Type 'Tyron storage IP address' and 'Tyron storage port Number'. (Note – please use default port number 443 if the port number is not known)
3. To set threshold for temperature values click on 'Temperature alarm configuration...' button.



The image shows a 'Temperature alarm configuration' dialog box with a close button (X) in the top right corner. It contains four rows of configuration options, each with a text label and a text input field containing the value '100':

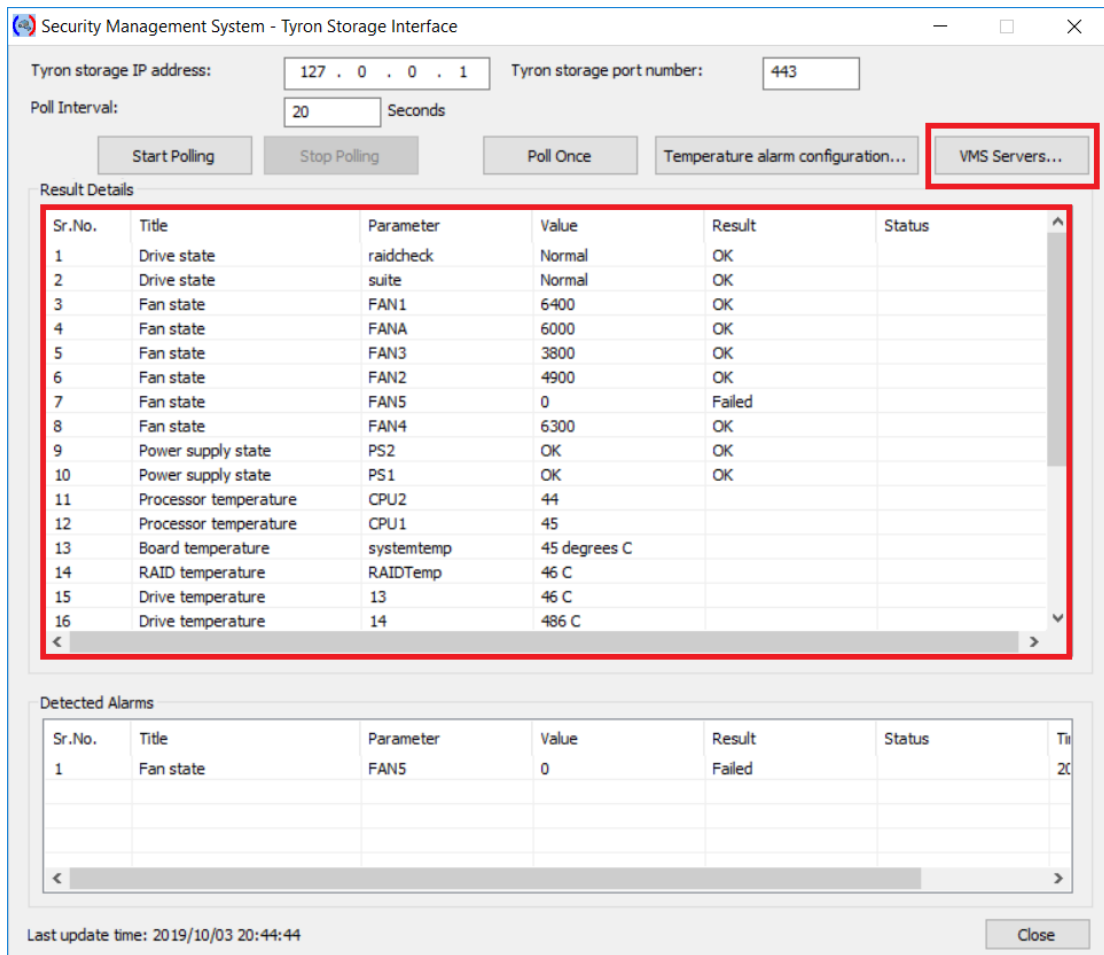
- High processor temperature threshold: 100
- High board temperature threshold: 100
- High RAID temperature threshold: 100
- High drive temperature threshold: 100

At the bottom of the dialog box, there are two buttons: 'OK' and 'Cancel'.

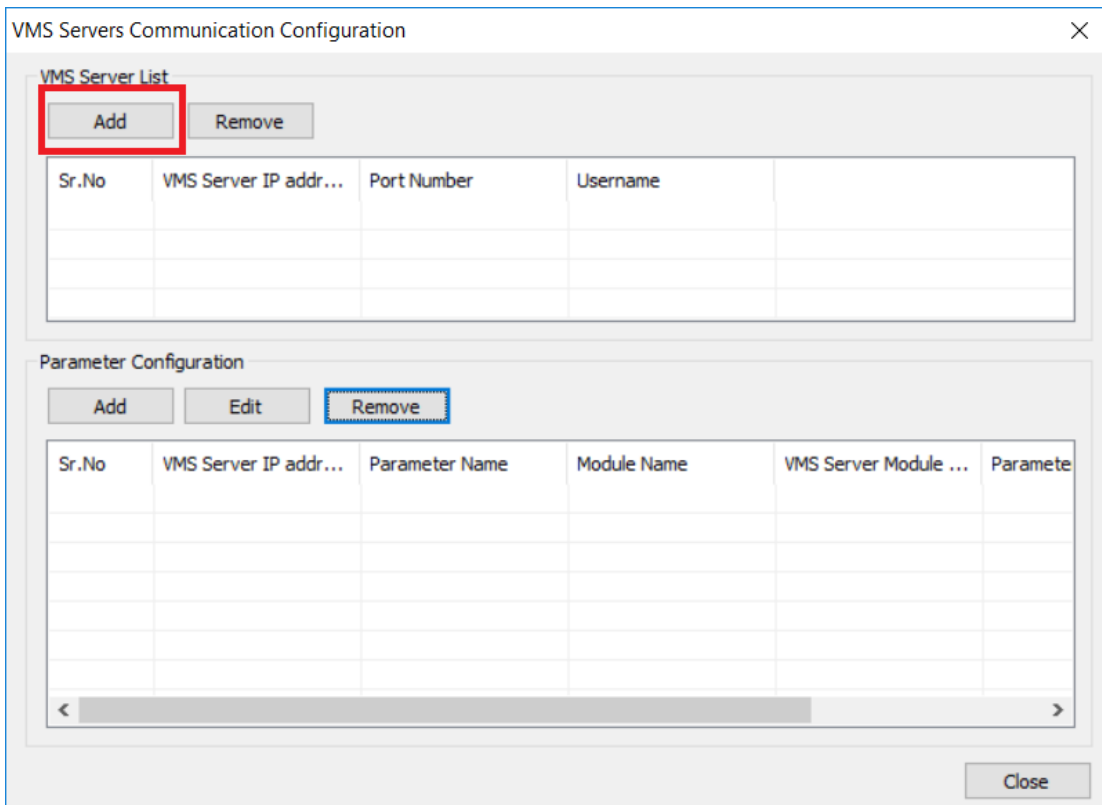
When any value for the temperature parameter crosses the associated threshold, alarm will be generated and will be sent to SMS server.

Note – Just setting thresholds will NOT generate the alarms. The 'High temperature' alarms need to be configured, as described in this section, below.

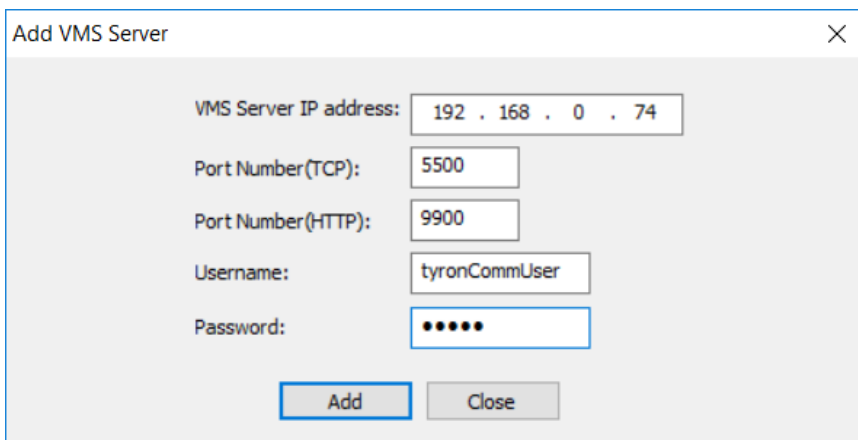
4. Click on 'Poll Once' button. This will update the 'Result Details' list with values received from the 'Tyron storage device'



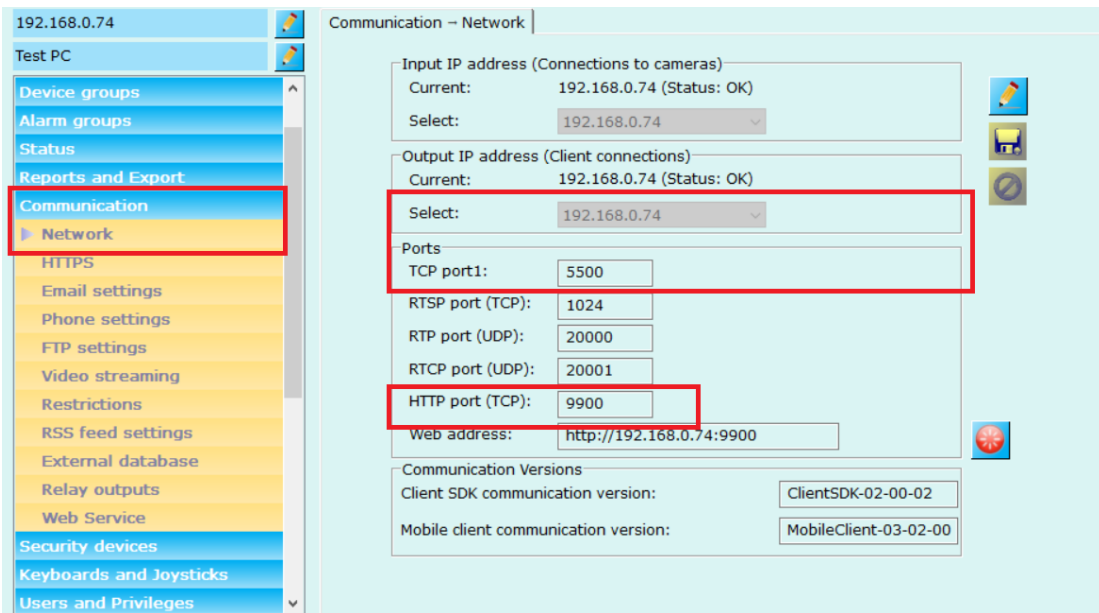
5. Click on 'VMS Servers...' button. This will pop up the 'VMS Servers Communication Configuration' dialog box.



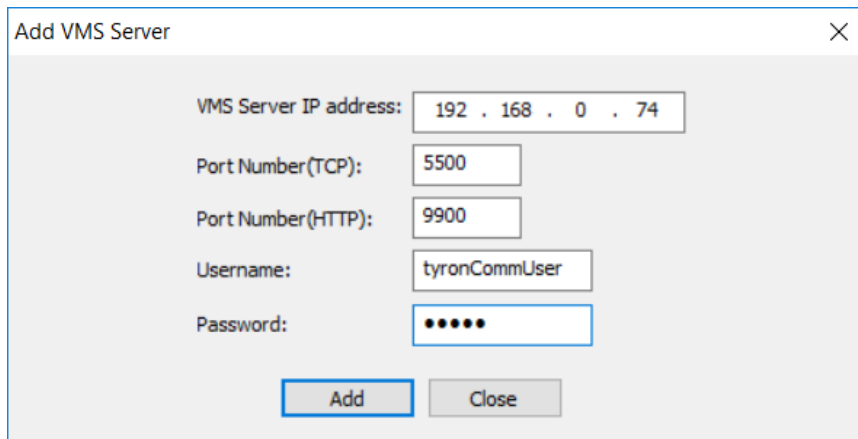
6. Click on 'Add' button from 'VMS Server List'. This will pop up the 'Add VMS server' dialog box.



7. Type VMS server IP address, port number (TCP), port number (HTTP). These parameter values are available in the target Security Management System server software in 'Network' subtab under 'Communication' tab from left navigation bar.



8. Type Username and password. These are related to the new user configured in the 'Security Management System sever software' as per the section 'Security Management System server software – Add new user 1' from this document



9. Click 'Add' button to finish adding the VMS server.

VMS Servers Communication Configuration

VMS Server List

Add Remove

| Sr.No | VMS Server IP addr... | Port Number | Username | |
|-------|-----------------------|-------------|---------------|--|
| 1 | 192.168.0.74 | 5500 | tyronCommUser | |
| | | | | |
| | | | | |

Parameter Configuration

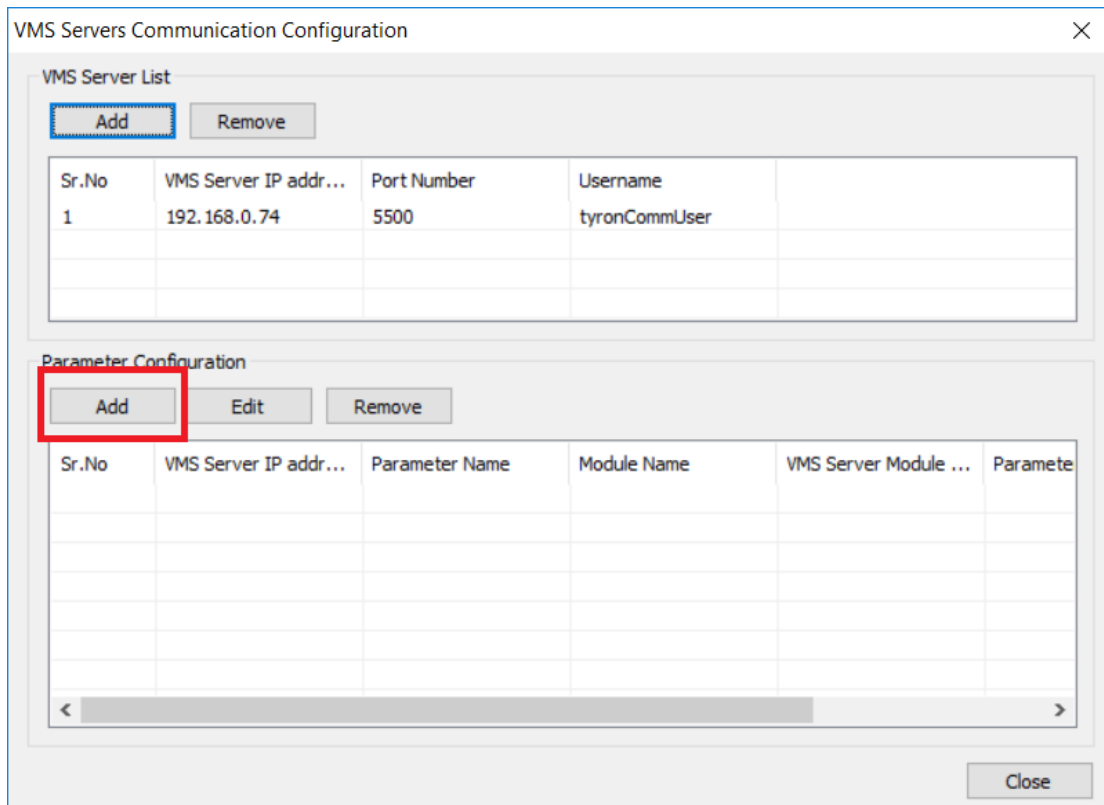
Add Edit Remove

| Sr.No | VMS Server IP addr... | Parameter Name | Module Name | VMS Server Module ... | Paramete |
|-------|-----------------------|----------------|-------------|-----------------------|----------|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

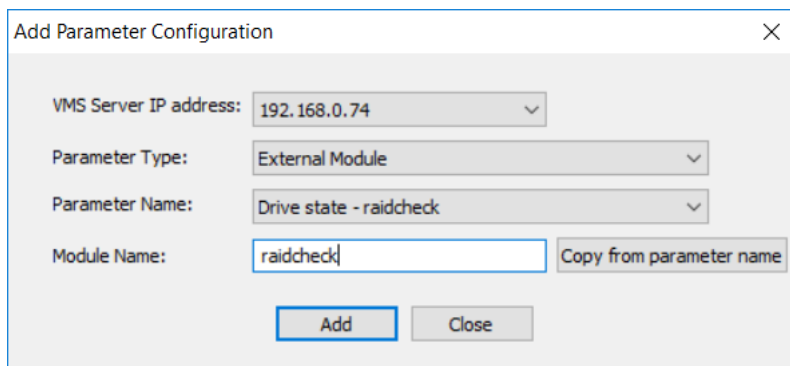
Close

Note – Though it is possible to add more than one VMS servers to the VMS servers list; typically only one VMS server will be added to this list

10. After adding the VMS server to the VMS servers list; click on 'Add' button from 'Parameter Configuration'.



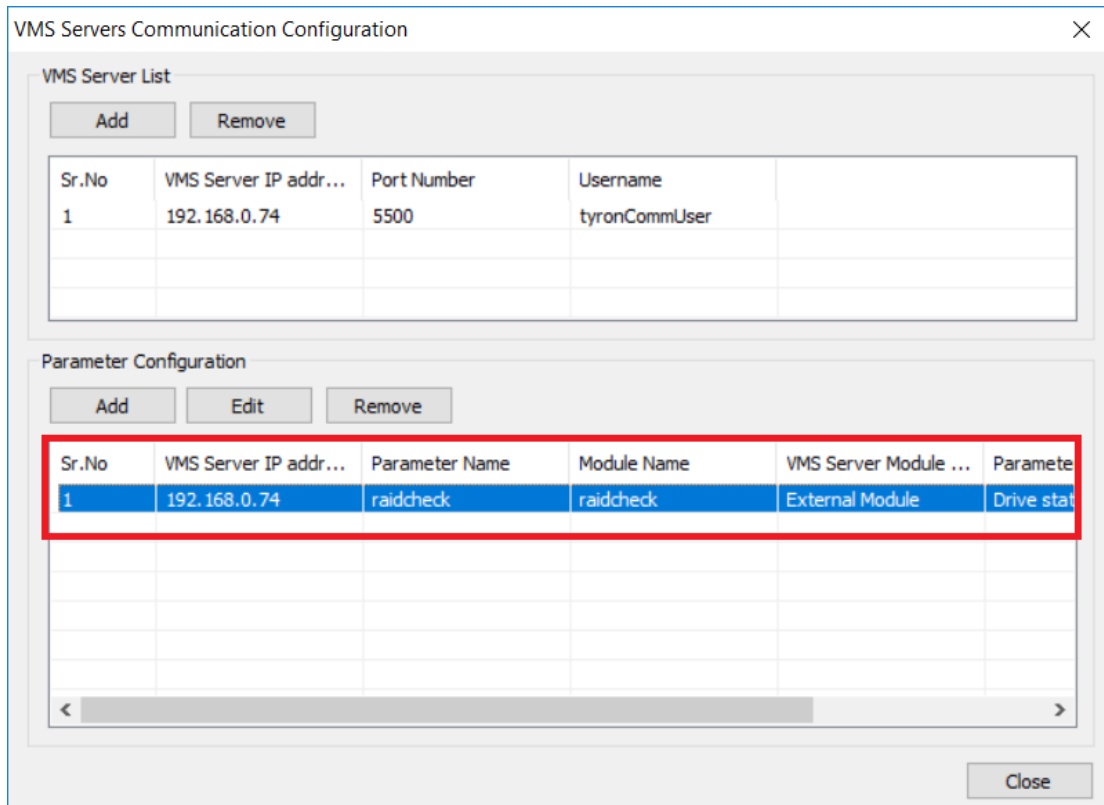
11. This will pop up the 'Add parameter configuration' dialog box



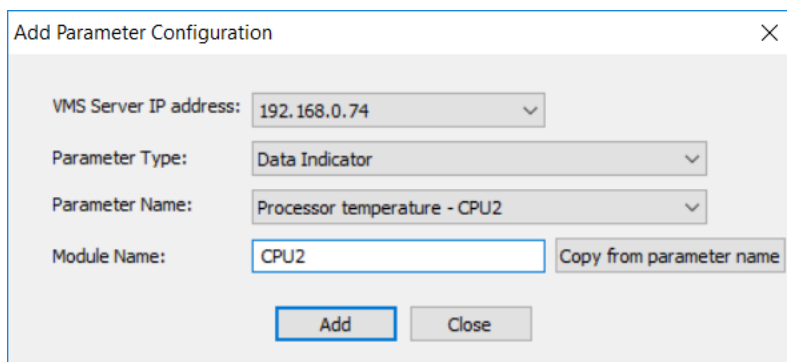
12. Select 'VMS server IP address'. Since only one VMS server is added to the list of VMS servers, only one option will be available for this parameter
 Select 'Parameter type' as 'External Module'.
 The 'Parameter Name' drop-down options will be dynamically updated. The 'Parameter Name' drop-down will display all possible options for the selected 'Parameter Type'. This drop-down will display the relevant parameters available from the target 'Tyron storage device', as queried during the 'Poll once' processing.
 Please select 'Parameter Name'. For this document, since we will be using 'Alarm type' as 'Drive state' and 'Source' as 'raidcheck', 'Drive state – raidcheck' option is selected for 'Parameter Name'.

Type 'Module Name'. This is a text string which should exactly match the 'Module Name' set for the 'External Alarm Module' added to the 'Security Management System server software'; as per the 'Security Management System server software - Configuring external alarm module' section from this document

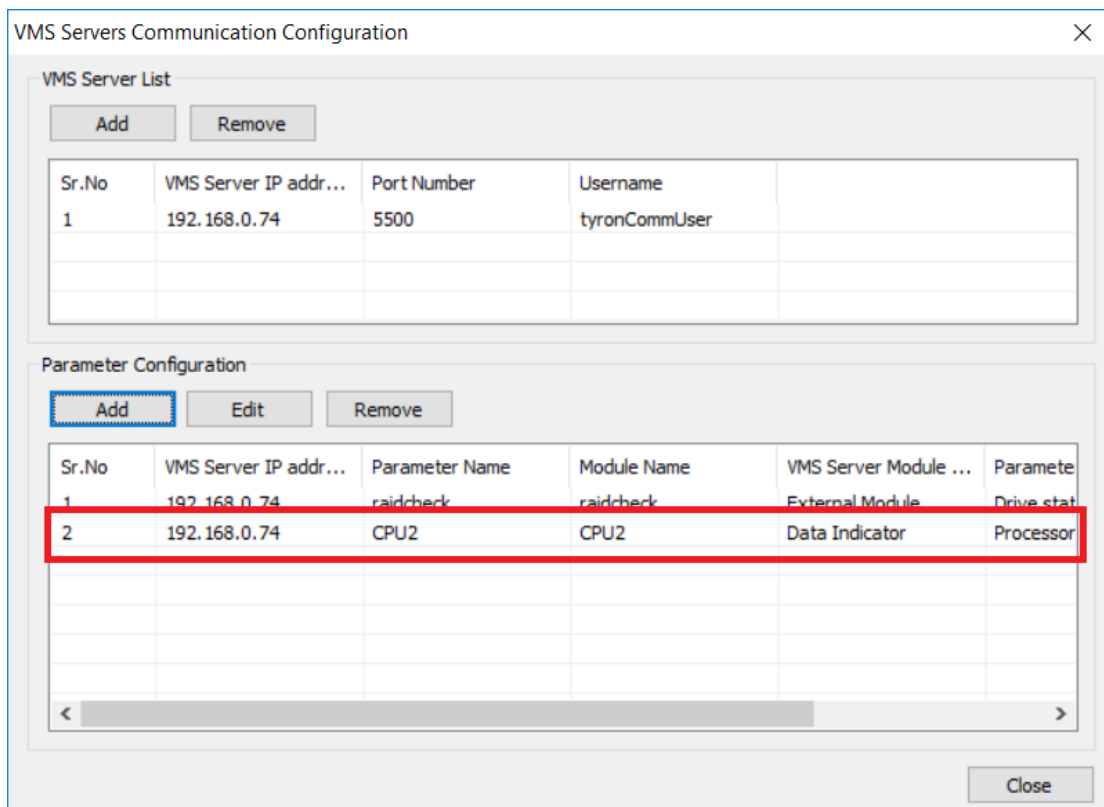
13. Click on the 'Add' button to finish adding the parameter configuration.
14. Parameter configuration will be added to configuration list.



15. Click on 'Add' button from 'Parameter Configuration' again, to add one more parameter.



16. Select 'VMS server IP address'. Since only one VMS server is added to the list of VMS servers, only one option will be available for this parameter
 Select 'Parameter type' as 'Data Indicator'.
 The 'Parameter Name' drop-down options will be dynamically updated. The 'Parameter Name' drop-down will display all possible options for the selected 'Parameter Type'. This drop-down will display the relevant parameters available from the target 'Tyron storage device', as queried during the 'Poll once' processing.
 Please select 'Parameter Name'. For this document, since we will be using 'Data indicator type' as 'Processor temperature' and 'Source' as 'CPU2', 'Processor temperature – CPU2' option is selected for 'Parameter Name'.
 Type 'Module Name'. This is a text string which should exactly match the 'Module Name' set for the 'Data indicator' added to the 'Security Management System server software'; as per the 'Security Management System server software – Configuring data indicator' section from this document
17. Click on the 'Add' button to finish adding the parameter configuration.
18. Parameter configuration will be added to configuration list.



19. Click 'Close' button to close configuration dialog box.
20. Click on 'Start Polling' button. This will start periodic polling at specified 'Poll interval'. The 'Tyron storage device' will be queried for the parameter status values, and the response will be

parsed and status values will be sent to the 'Security Management System server software', as per the 'Parameters configuration' done in the 'Tyron storage interface' application.

Security Management System - Tyron Storage Interface

Tyron storage IP address: 127 . 0 . 0 . 1 Tyron storage port number: 443

Poll Interval: 20 Seconds

Start Polling Stop Polling Poll Once Temperature alarm configuration... VMS Servers...

Result Details

| Sr.No. | Title | Parameter | Value | Result | Status |
|--------|-----------------------|------------|--------------|--------|------------------------|
| 1 | Drive state | raidcheck | Failed | Failed | Success |
| 2 | Drive state | suite | Normal | OK | |
| 3 | Fan state | FAN1 | 6400 | OK | |
| 4 | Fan state | FANA | 6000 | OK | |
| 5 | Fan state | FAN3 | 3800 | OK | |
| 6 | Fan state | FAN2 | 4900 | OK | |
| 7 | Fan state | FAN5 | 0 | Failed | |
| 8 | Fan state | FAN4 | 6300 | OK | |
| 9 | Power supply state | PS2 | OK | OK | |
| 10 | Power supply state | PS1 | OK | OK | |
| 11 | Processor temperature | CPU2 | 42 | | Success |
| 12 | Processor temperature | CPU1 | 01 | | Error - Not Configured |
| 13 | Board temperature | systemtemp | 02 degrees C | | Error - Not Configured |
| 14 | RAID temperature | RAIDTemp | 02 C | | Error - Not Configured |
| 15 | Drive temperature | 13 | 02 C | | Error - Not Configured |
| 16 | Drive temperature | 14 | 912 C | | Error - Not Configured |

Detected Alarms

| Sr.No. | Title | Parameter | Value | Result | Status | Time |
|--------|-------------|-----------|--------|--------|------------------------|------|
| 1 | Fan state | FAN5 | 0 | Failed | | 20 |
| 2 | Fan state | FAN5 | 0 | Failed | Error - Not Configured | 20 |
| 3 | Drive state | raidcheck | Failed | Failed | Success | 20 |

Last update time: 2019/10/04 08:42:00 Close

21. 'Status' column indicates communication status with VMS server.
'Success' indicates values or alarms are sent successfully to VMS server.
'Error – Not Configured' indicates modules for this data indicator or alarm is not configured in VMS Server.
22. The alarms will be listed under 'Detected Alarms' list. The list also shows 'Status' related to communication with VMS server to send the alarm to VMS server
23. From the desktop shortcut or from the programs menu shortcut, please execute 'Security Management System – Tyron Storage Interface watchdog'. The watchdog application monitors the 'Security Management System – Tyron Storage Interface' application.

Security Management System server software – Add new user 2

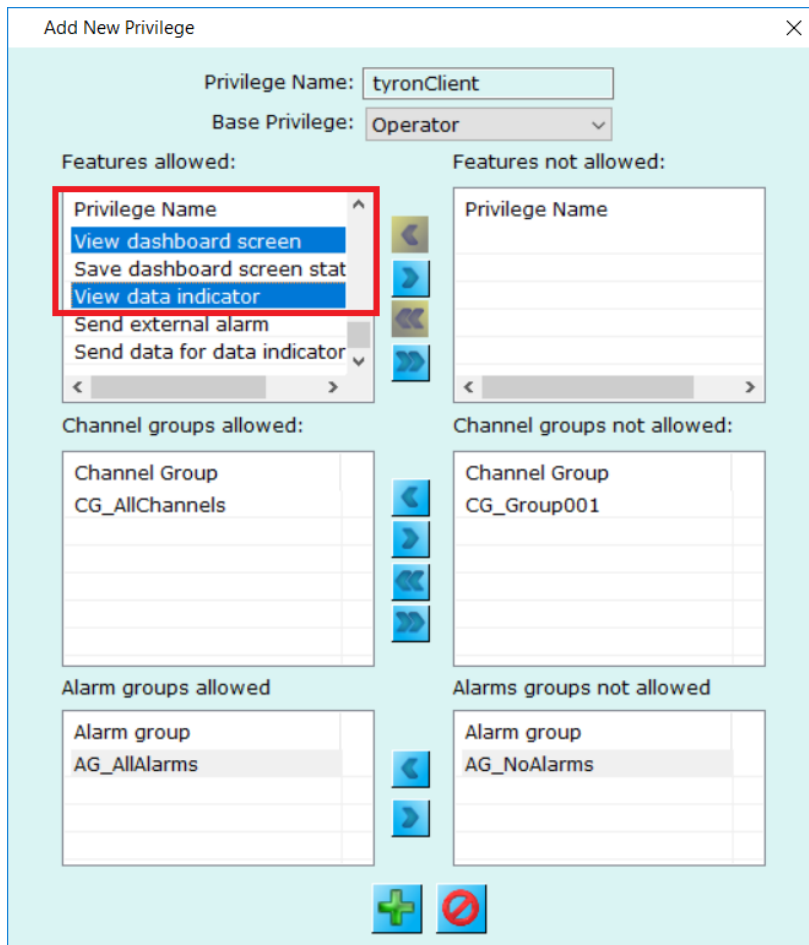
1. A new user needs to be added to the 'Security Management System server software'. This user will be used for login from the 'Security Management System client software' for displaying the alarms and status values queried from the 'Tyron storage device' (described in next sub-section of this document)
2. In the Security Management System server software, please navigate to 'Users and Privileges' tab from the left navigation menu bar. Navigate to 'Privileges' sub tab.

The screenshot shows the 'Users and Privileges - Privileges' interface. The left navigation menu has 'Users and Privileges' and 'Privileges' highlighted with red boxes. The main area shows a table of built-in privileges and an 'Add Privilege...' button.

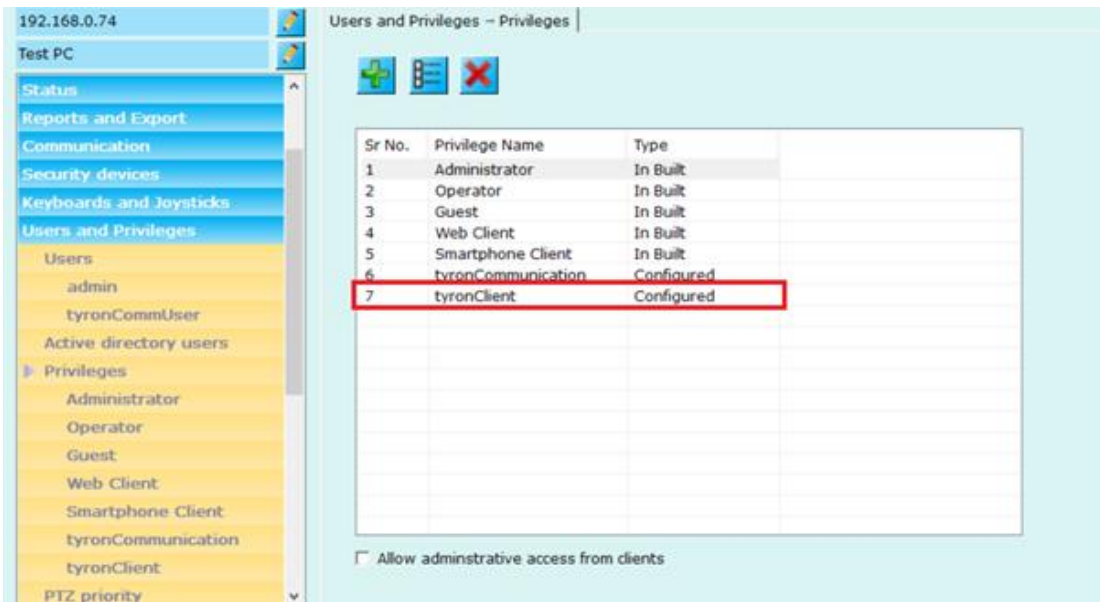
| Sr No. | Privilege Name | Type |
|--------|-------------------|----------|
| 1 | Administrator | In Built |
| 2 | Operator | In Built |
| 3 | Guest | In Built |
| 4 | Web Client | In Built |
| 5 | Smartphone Client | In Built |

Allow administrative access from clients

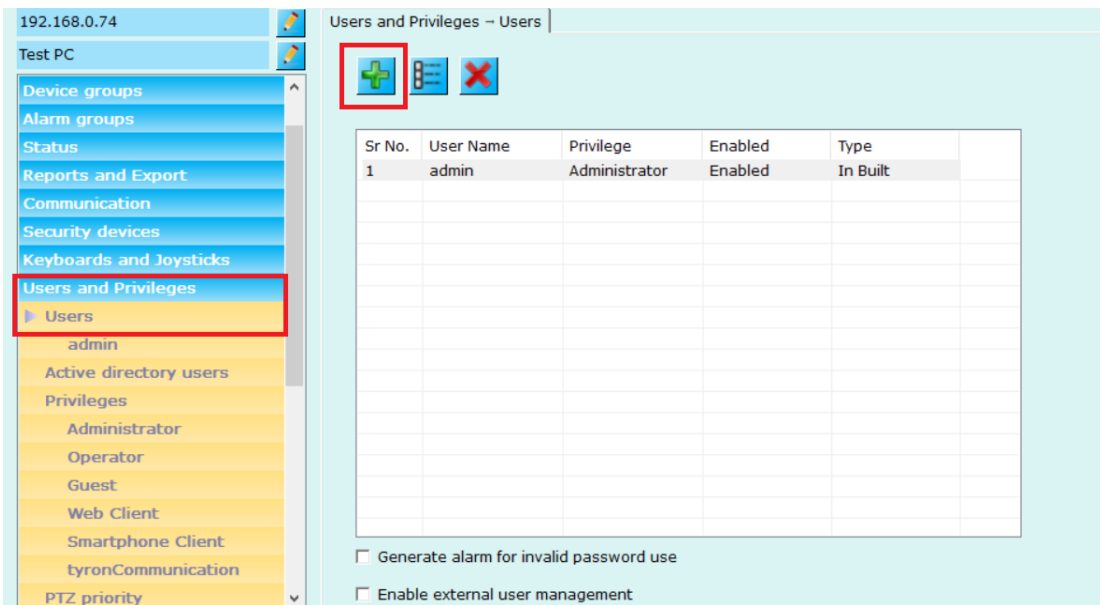
3. Click on the 'Add Privilege...' button. This will pop up the 'Add New Privilege' dialog box.



4. Type any text string for privilege name. We are using 'tyronClient' text string for this example. Select 'Operator' option for 'Base Privilege'. Please ensure that 'View dashboard screen' and 'View data indicator' features are added to 'Features allowed' list. Click on the 'Add' button to finish adding new privilege.
5. The new privilege will be added to the privileges list



6. Navigate to 'Users' sub tab under 'Users and Privileges' from the left navigation bar.



7. Click on 'Add new user...' button, this will open the 'Add New User' dialog box.

8. Type username and password. These can be any valid text strings.
Confirm the password
Select 'Privilege'. This should be the new privilege, recently added to the privileges list.
Click on the 'Add' button to finish adding new user.
9. New user will be added to the users list.

| Sr No. | User Name | Privilege | Enabled | Type |
|--------|-----------------|-----------------|---------|------------|
| 1 | admin | Administrator | Enabled | In Built |
| 2 | tyronCommUser | tyronCommuni... | Enabled | Configured |
| 3 | tyronClientUser | tyronClient | Enabled | Configured |

Security Management System client software – Alarm and status display

1. On client workstation computer, execute the 'Security Management System client software'
2. This will display the login screen.
Type the Security Management System server software IP address.
Type the user name and password. These are related to the new user recently added to the 'Security Management System server software' as per the 'Security Management System server software – Add new user 2' section from this document

Security Management System Login

V 15.02.10.79

Connect Using: IP Address By Domain Name

Site/Server IP: 192 . 168 . 0 . 74

User Name: tyronClientUser

Password: ••

Live Video Access

From server

'Port Forwarding' Enabled At Server

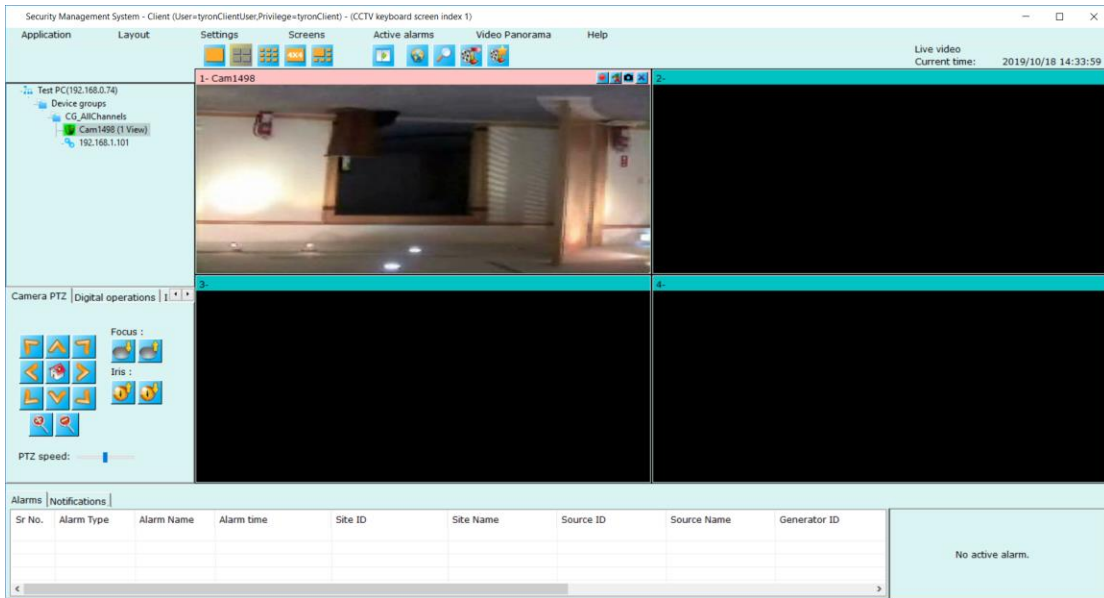
TCP Port 1: 5500 RTSP Port(TCP): 1024

HTTP Port(TCP): 9900 RTP Port(UDP): 20000

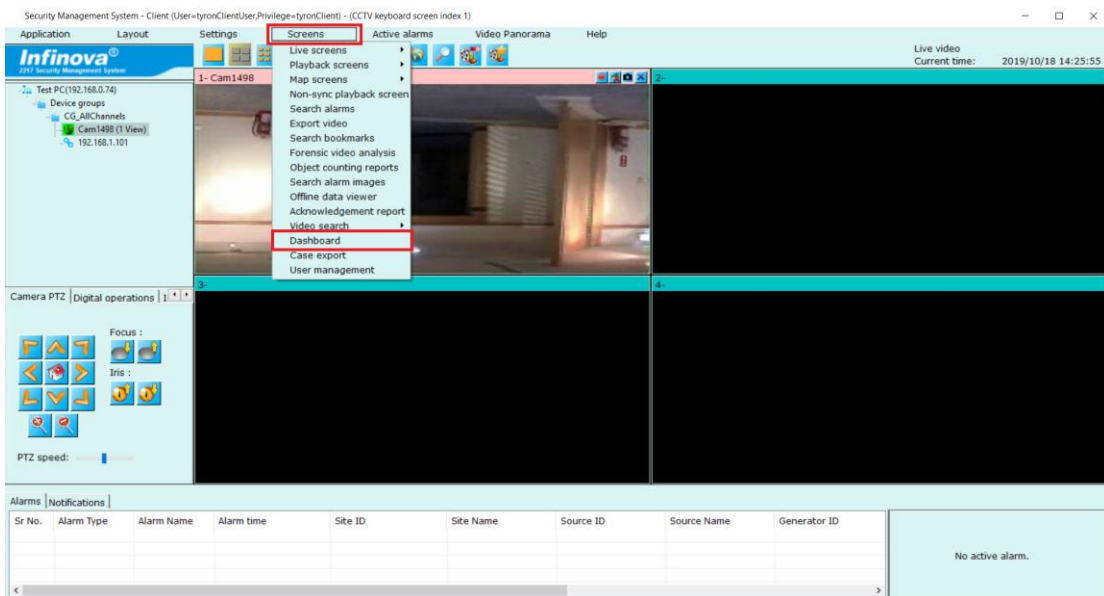
RTCP Port(UDP): 20001

Repair Configuration

3. The 'Security Management System client software' will connect to server software, and the main screen will be displayed.



4. Click on the 'Screens' menu from top menu bar and click on the 'Dashboard' sub-menu



5. This will pop up the 'Dashboard' screen. The dashboard screen displays all the 'Alarms' generated in the 'Security Management System' and also displays the 'Data Indicator' values

Dashboard

Offline devices list

0 cameras offline out of 1

Data indicators

| Sr No. | Name | Value |
|--------|------|-------|
| 1 | CPU2 | 50 |

Notifications

| Notification Type | Notification Time | Site Name | Type Of Application | Details |
|------------------------|---------------------|-----------|---------------------|-----------------------------------|
| Watchdog applicatio... | 2019/10/04 08:00:00 | Test PC | Server Application | Watchdog application is not av... |

Offline servers list

| Sr No. | Server IP Address | Server Type |
|----------------|-------------------|-------------|
| All Servers OK | | |

All servers OK

Alarms

| Sr No. | Alarm type | Alarm name | Alarm time | Site Name | Source ID | Source |
|--------|------------------|------------------|---------------------|-------------------|--------------|----------|
| 1 | External Alar... | External Alar... | 04/10/2019 08:42:02 | Site_18DBF20FCF04 | EA_raidcheck | raidc... |

Total 1 alarms

Auto refresh Refreshing in 20 seconds