



# **Engineered Computer Appliance Operating System**

ECA46

ecaOS 6.9

## **USER GUIDE**

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Engineered Computer Appliance (ECA46) Operating System 6.9 User Guide

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# 1 ECA4.6

## 1.1 FX series

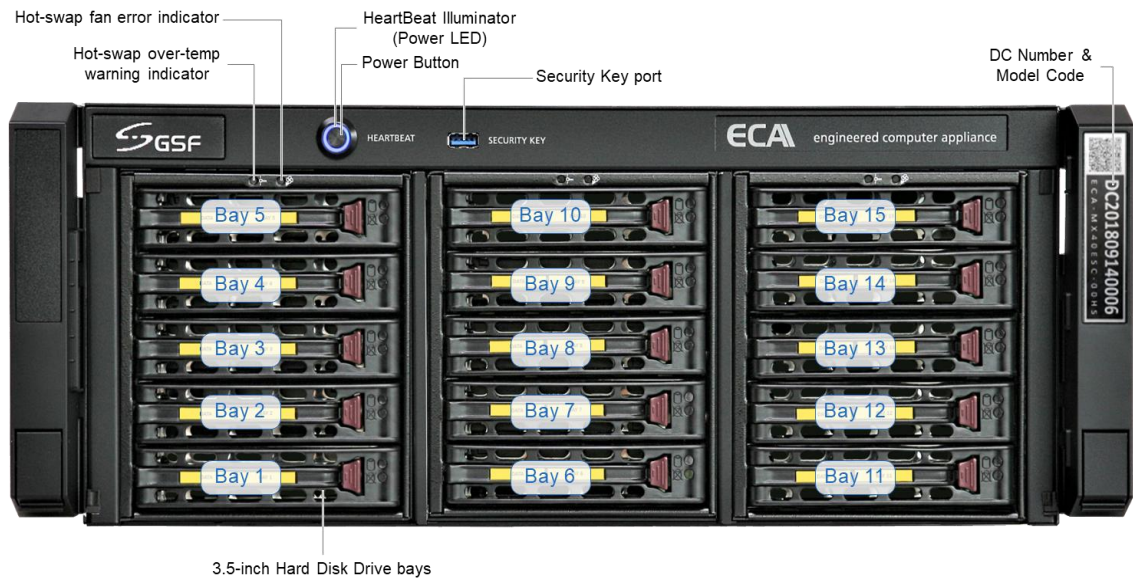


Figure 1: Front view of ECA-FX Series

Power Button	Press to power up the ECA
HeartBeat Illuminator (Power LED)	LED indicator for power and display the status of the ECA operation state
Security Key port	Port for ECA Security Key (USB type), which is used for authentication purposes to access ecaOS Dashboard
Hot-swap over-temp warning indicator	The LED will light up if the temperature in Hard Disk Drive (HDD) bay(s) exceeds 55°C
Hot-swap fan error indicator	The LED will light up if hot the is error with the hot-swap fan, such as: fan not detected or fan failed.
Bay 1 ~ Bay 15	HDD bays for up to 15 units of 3.5-inch SATA HDDs.

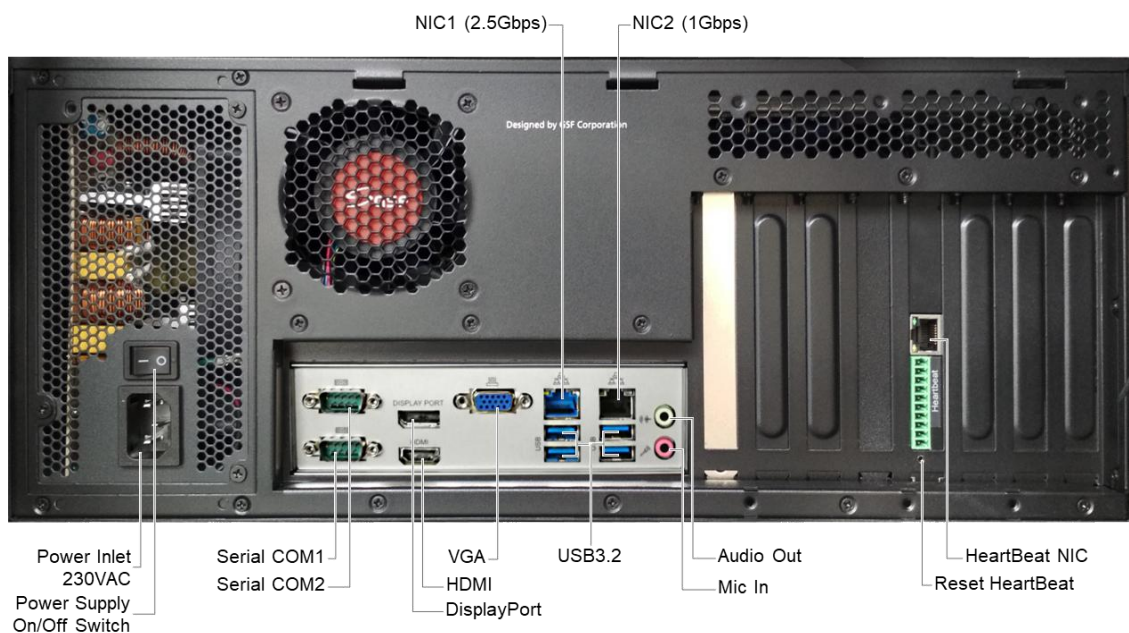


Figure 2: Rear view of ECA-FX Series

## 1.2 EX series

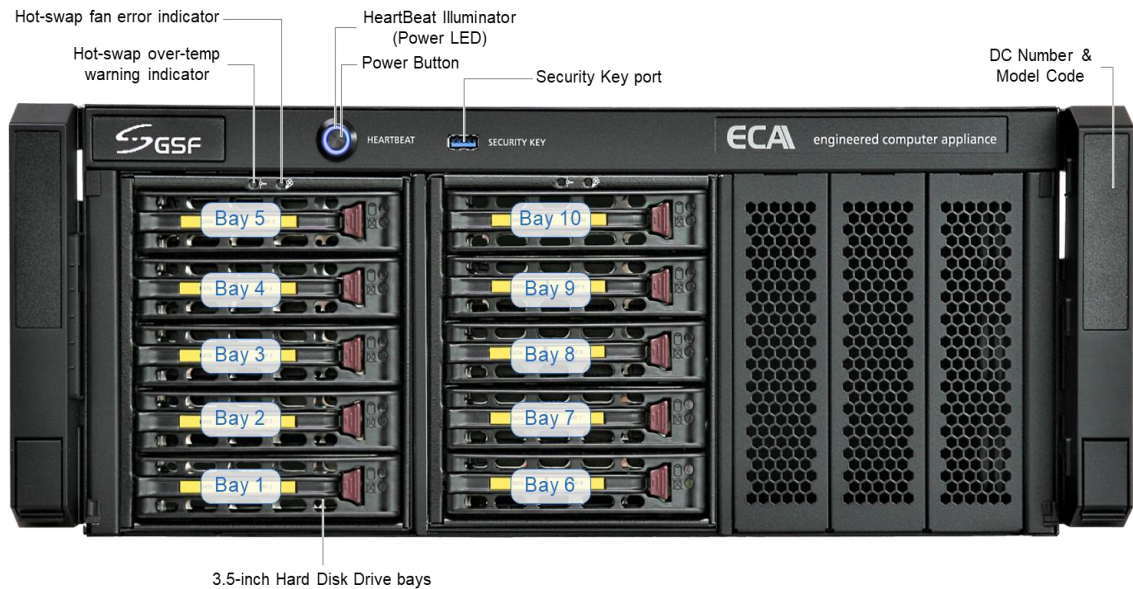


Figure 3: Front view of ECA-EX Series

Power Button	Press to power up the ECA
HeartBeat Illuminator (Power LED)	LED indicator for power and display the status of the ECA operation state
Security Key port	Port for ECA Security Key (USB type), which is used for authentication purposes to access ecaOS Dashboard
Hot-swap over-temp warning indicator	The LED will light up if the temperature in Hard Disk Drive (HDD) bay(s) exceeds 55°C
Hot-swap fan error indicator	The LED will light up if hot the is error with the hot-swap fan, such as: fan not detected or fan failed.
Bay 1 ~ Bay 10	HDD bays for up to 10 units of 3.5-inch SATA HDDs.

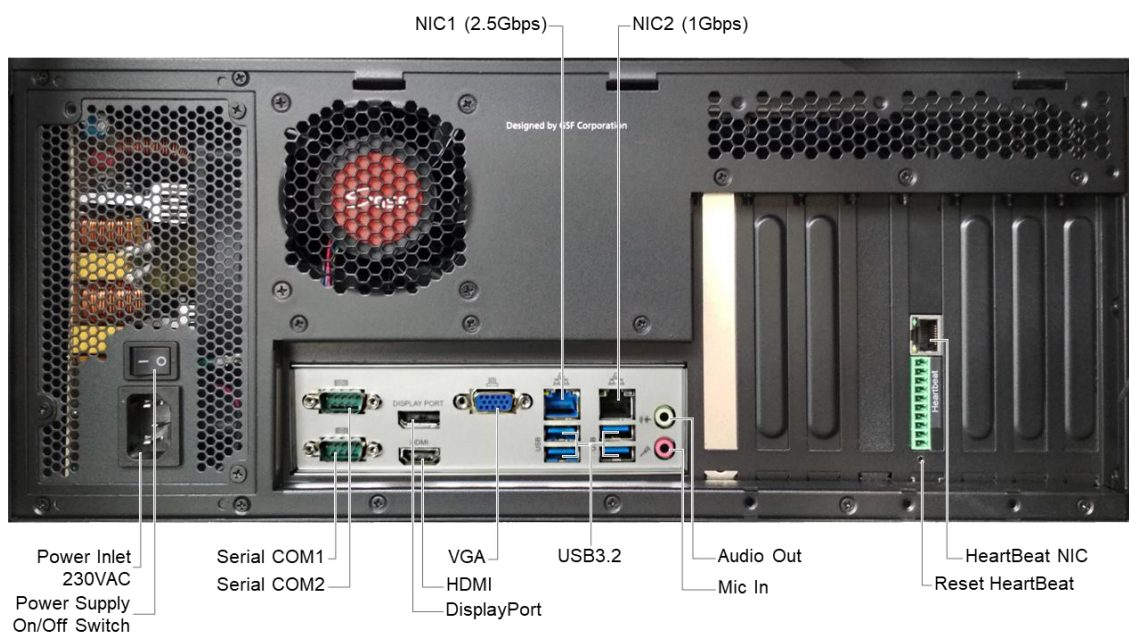


Figure 4: Rear view of ECA-EX Series



### 1.3 DX series

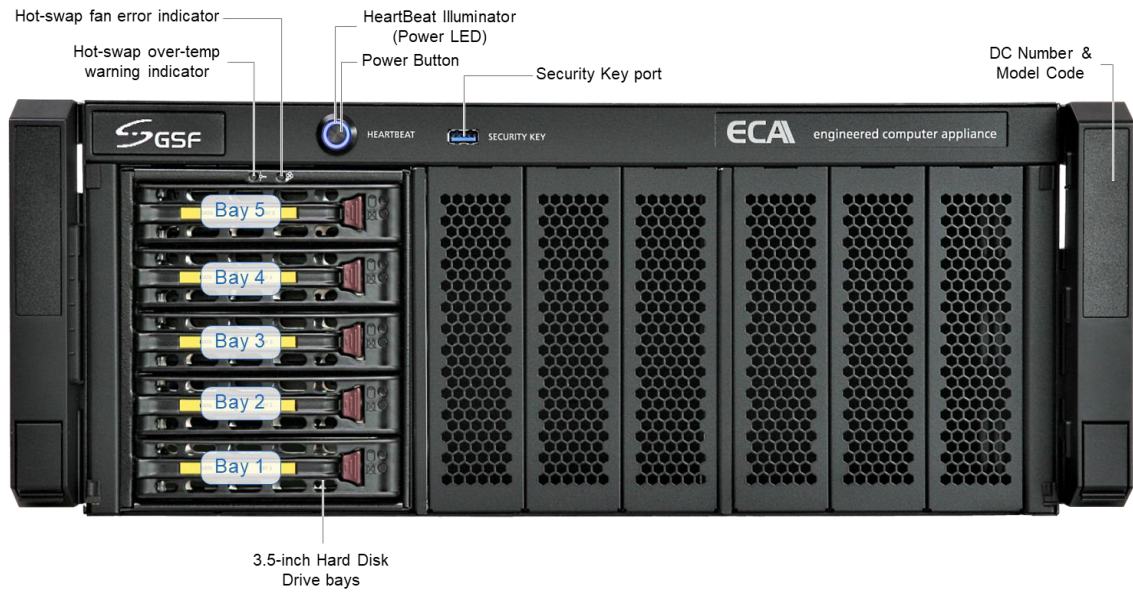


Figure 5: Front view of ECA-EX Series

Power Button	Press to power up the ECA
HeartBeat Illuminator (Power LED)	LED indicator for power and display the status of the ECA operation state
Security Key port	Port for ECA Security Key (USB type), which is used for authentication purposes to access ecaOS Dashboard
Hot-swap over-temp warning indicator	The LED will light up if the temperature in Hard Disk Drive (HDD) bay(s) exceeds 55°C
Hot-swap fan error indicator	The LED will light up if hot the is error with the hot-swap fan, such as: fan not detected or fan failed.
Bay 1 ~ Bay 5	HDD bays for up to 5 units of 3.5-inch SATA HDDs.

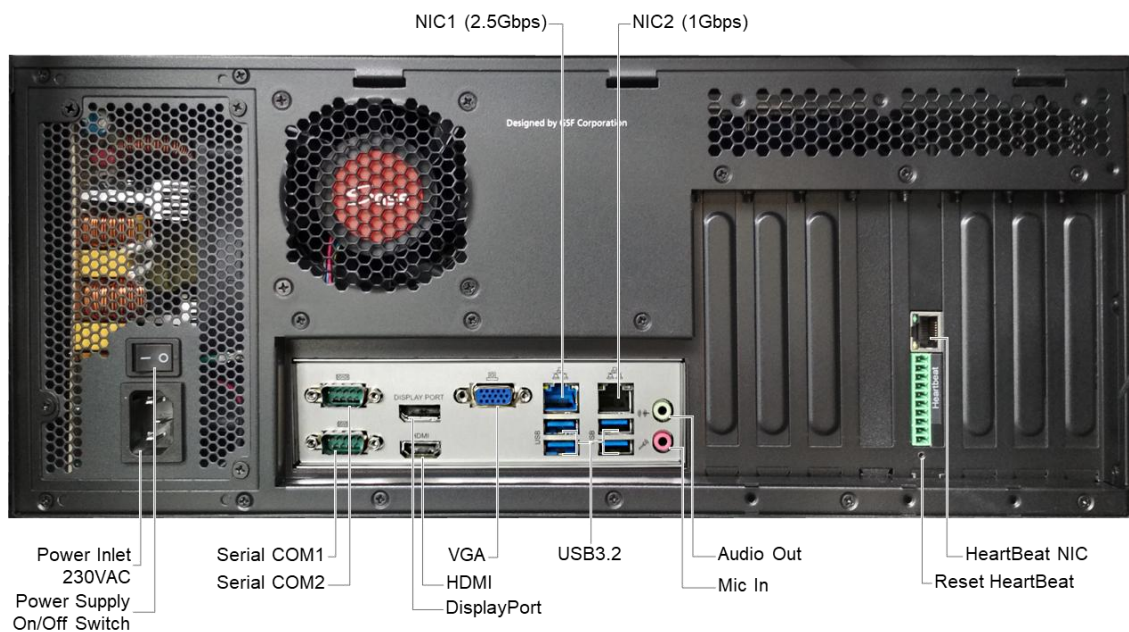


Figure 6: Rear view of ECA-EX Series

## 1.4 MX series

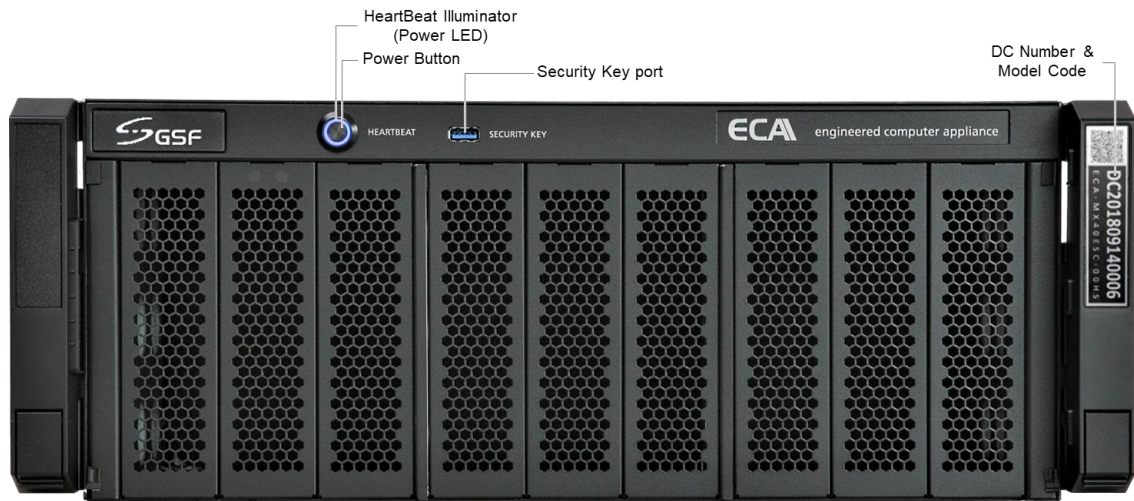


Figure 7: Front view of ECA-MX Series

Power Button	Press to power up the ECA
HeartBeat Illuminator (Power LED)	LED indicator for power and display the status of the ECA operation state
Security Key port	Port for ECA Security Key (USB type), which is used for authentication purposes to access ecaOS Dashboard

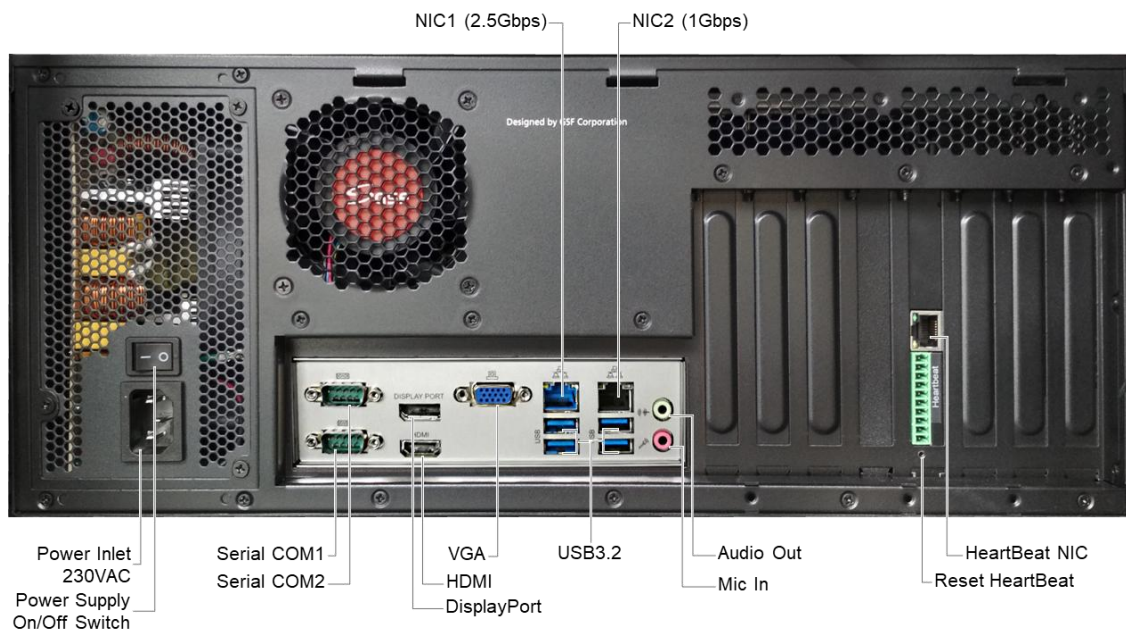


Figure 8: Rear view of ECA-EX Series

## 1.5 VW series



Figure 9: Front view of ECA-MX Series



Figure 10: Front view of ECA-MX Series



## 1.6 ECA with redundant PSU

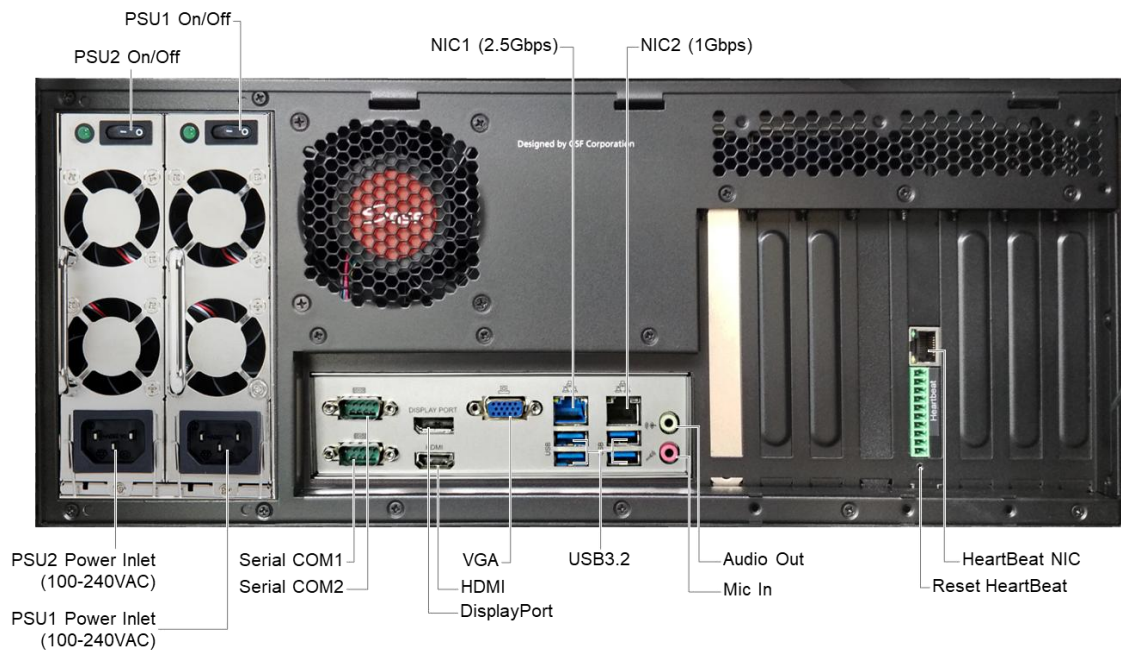


Figure 11: Rear view of ECA-EX Series



## 1.7 Security Keys

Security Keys are required for gaining authenticated access to ecaOS Dashboard.

There are two types of Security Keys:

- USB Security Key
- Virtual Key (Virtual Access Code)

### USB Security Key

Security Key is uniquely designed USB key which is paired to the ECA. It can only be used with the paired ECA. If the key is lost, a new key can be issued by GSF and the paired ECA will automatically reject the usage of the lost key, should they be recovered later.



### Virtual Key

Virtual Access Code is used for gaining authenticated access to ecaOS Dashboard without requiring the use of security key.

Authenticator app, such as Google Authenticator is required to install on your phone or tablet device such as phone.

### When to use Virtual Access code?

1. Accessing ecaOS Dashboard without possession of Security Key
2. Access ecaOS Dashboard remotely from another computer.

## 2 Heartbeat

### 2.1 What is Heartbeat?

HeartBeat is around the clock hardware safeguard. Its micro controller overlooks the whole hardware platform to ensure continuous operation even in the event of critical breakdown.

In the event the server fails, it will send help signal via digital I/O or can be connect to CMS Alarm.

### 2.2 In what event will the HeartBeat react?

Event	HeartBeat's action
Unauthorized Shutdown	Reboot the ECA
Unauthorized Power Unplug	Produce beep tone
ECA not responding	Forces system reboot after 2 minutes
Blue screen of death (BSOD)	Forces reboot after 2 minutes




### 2.3 ECA Power LED Indicator



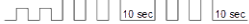



LED Status	ECA Scenario	Description
Slow glow and dim (Breathing pattern)	System in Operating System (OS)	System is running in normal operational state
Blinking	While ECA is OFF While ECA is rebooting While System running is OK	HeartBeat battery charge is low. ECA is in a rebooting state HeartBeat is not ready yet.

To view examples of LED indication demonstration, click the link below:

<https://www.gsfcorp.com/downloads/ece-hb-led.gif>

### 2.4 HeartBeat Alert Tones and Behaviours

Scenario	Beep Tones and Patterns	ECA State	Events	Action Required
1	1 short beep 	Power Up	ECA is booting up	None
2	1 short beep 	ECA is <b>OFF</b>	Authorized shutdown	None
3	1 short beep 	ECA is <b>OFF</b>	AC power cord is removed (planned) Switch OFF power supply (Toggle switch to 'O' position).	None

Scenario	Beep Tones and Patterns	ECA State	Events	Action Required
4	1 short beep 	ECA is <b>OFF</b>	Switch ON Power Supply (Toggle switch to 'I' Position) AC Power resume	None
5	1 short beep 	ECA is <b>ON</b> or <b>OFF</b> state	Closing chassis cover	None
6	2 beeps → 3 high-pitch beeps (repeat after 10 seconds) 	ECA is <b>ON</b> or <b>OFF</b> state	Opening chassis cover	Close the chassis cover
7	4 escalating beeps 	In operating system or Layer Manager	HeartBeat successfully connected to the OS or Layer Manager	None
8	3 high-pitch short beeps (repeat after 10 seconds) 	Booting up; In Operating System	System has shutdown or rebooted 3 times or more within 30 minutes	Shutdown the ECA to mute the alert
9	1 beep, 3 beeps then 2 short beeps x2, followed by 3 beeps (reports after 10 seconds) 	ECA is <b>ON</b>	Power Lost	Power up the ECA
10	1 beep, followed by 2 beeps x2	ECA is <b>OFF</b>	Power supply is switched OFF (Switch is toggled to 'O' position)	None
11	No Beep	ECA is <b>ON</b>	ECA cannot be shutdown using power button or Windows shutdown button	Expected behaviour. Please shutdown the ECA using authorized method

**Note:**

- For Scenario 8, shutting down the ECA will mute the beep (either authorized or unauthorized method).
  - Authorized shutdown : Shutting down the ECA via ecaOS Dashboard
  - Unauthorized shutdown : Shutting down the ECA via shutdown in Windows Start Menu, or Forcing shutdown by long-pressing ECA power button on the front panel.
- For Scenario 6, closing Chassis cover will mute the beep.
- For Scenario 9, resuming the AC power to ECA will mute the beep.

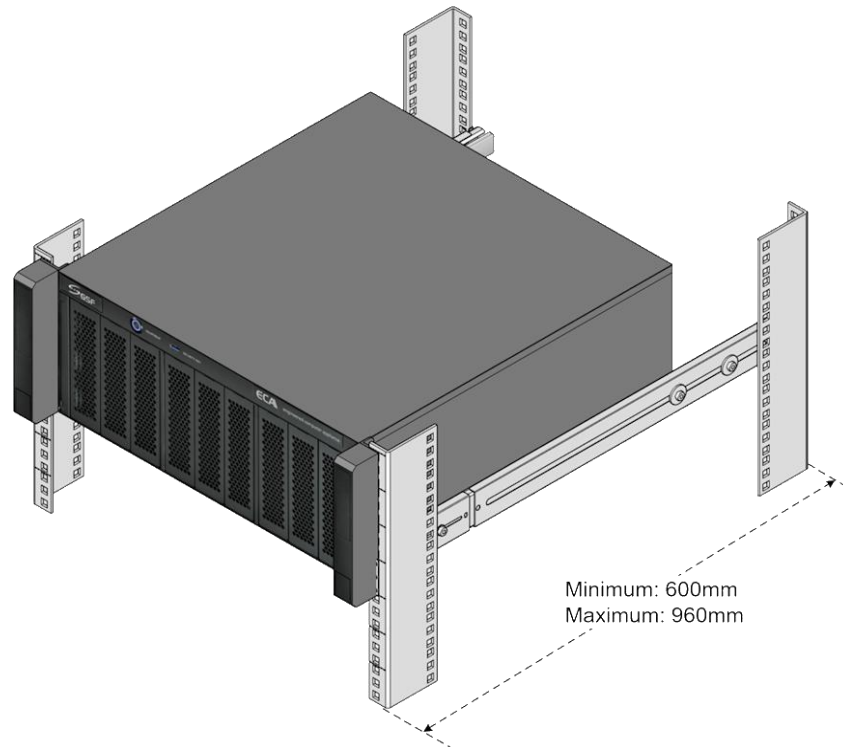
## 3 Rail

### 3.1 Equipment Rack Requirement



Before beginning with the installation, it is important to make sure the equipment rack you are using fulfills the following rack depth. Usage of improper rack size may result in injury.






The depth for equipment rack, shall have its front-to-rear vertical mounting columns, measures at minimum **600mm** gap distance.



To avoid injury, it is strongly recommended that the installation shall be done by two persons.

**\*Note: The above requirement is based on rail part number: King Slide A68-583BPZZ11ED.**

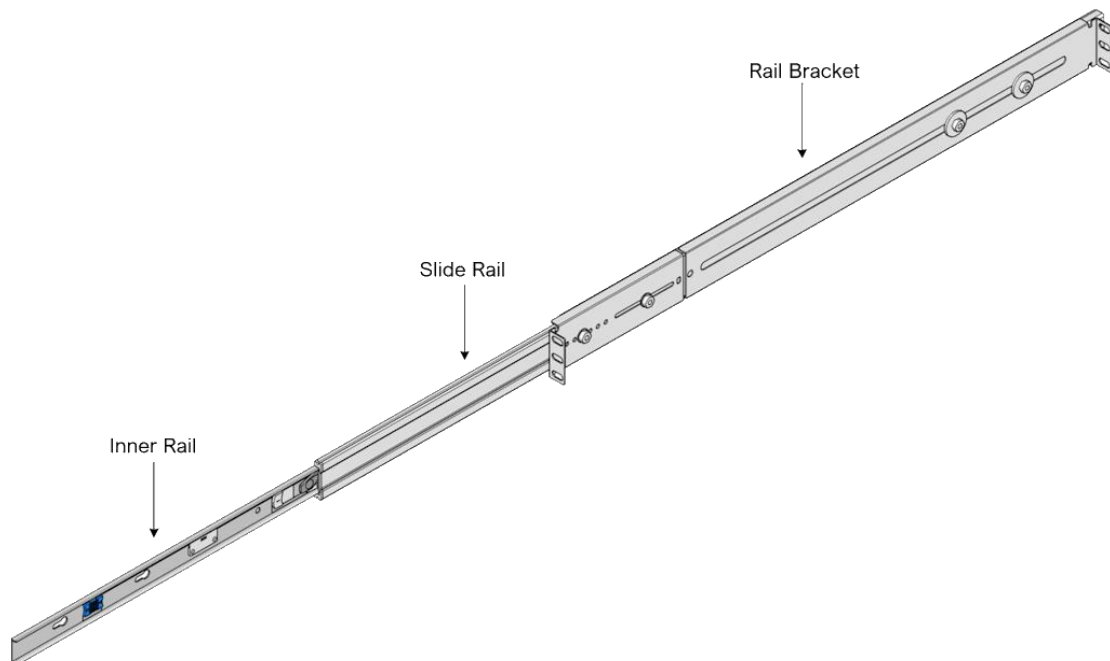
### 3.2 Package Content

Content	Description	Quantity
	Sliding Rail	2
	CH Screw	2
	SL Screw	8
	CL Screw	6
	RK Nut	10

### 3.3 Sliding Rail Assembly

The Sliding Rail assembly is comprised of 3 parts:

- Inner Rail
- Slide Rail
- Rail Bracket

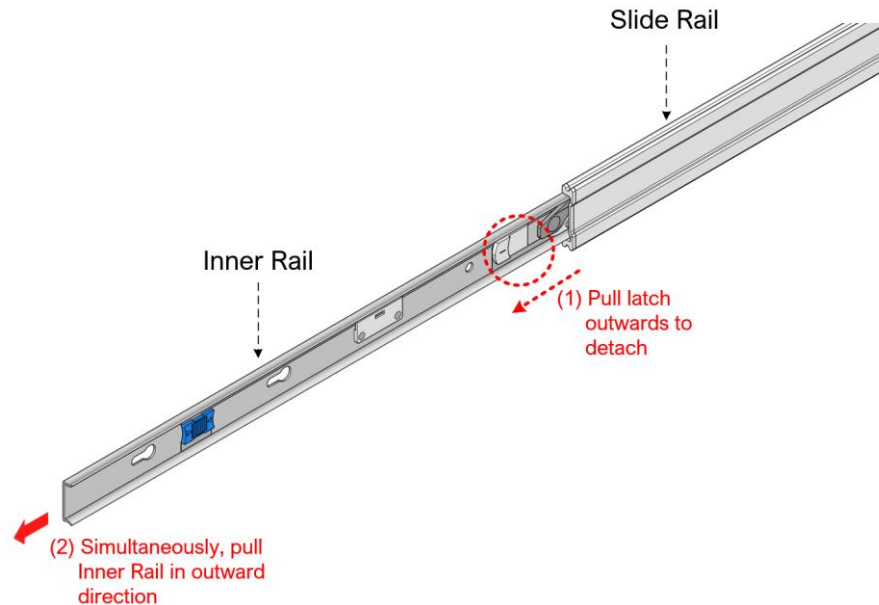


### 3.4 Installation Procedure

**Step 1:** Detach the Inner Rail from the Sliding Rail assembly.

Extend the parts of the Sliding rail to reveal the WHITE color latch on the Inner Rail.

Pull and hold the **WHITE** color latch outwards, while simultaneously pulling the Inner Rail in an outward direction. This shall remove the Inner Rail from the assembly.

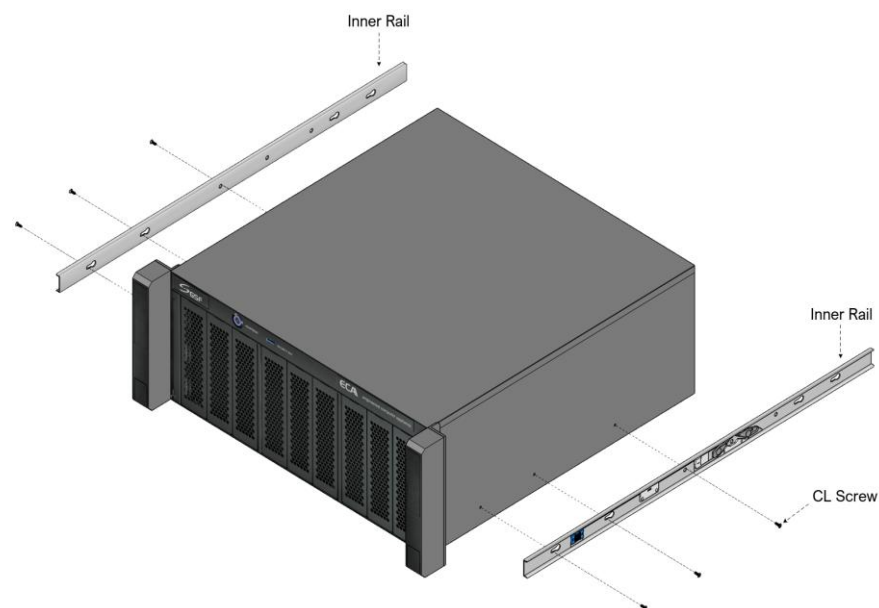


**DO NOT** remove the Slide rail from the Rail assembly. It is **NOT** removable.

**Step 2:** Detach the Inner Rail from the Sliding Rail assembly.

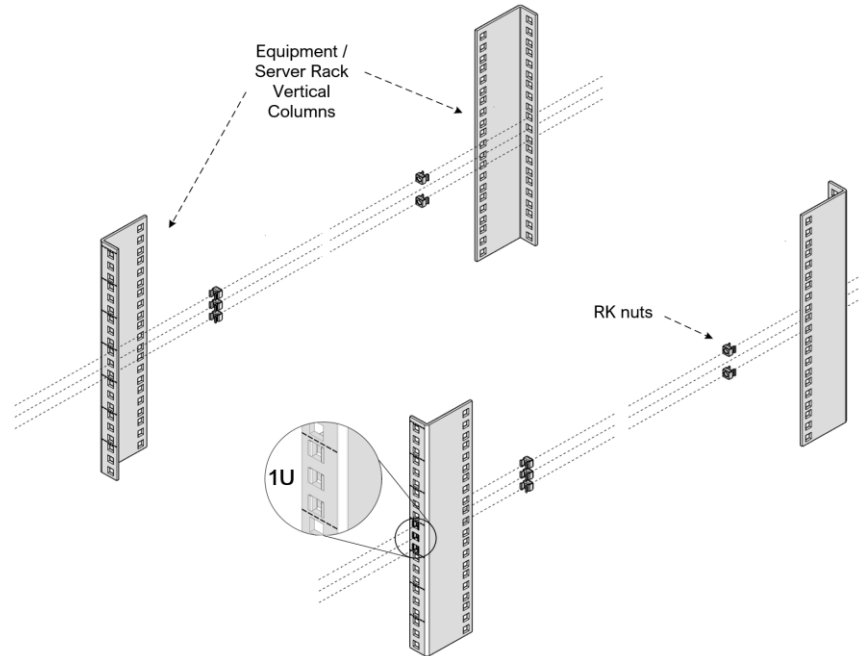
Extend the parts of the Sliding rail to reveal the WHITE color latch on the Inner Rail.

Pull and hold the **WHITE** color latch outwards, while simultaneously pulling the Inner Rail in an outward direction. This shall remove the Inner Rail from the assembly.

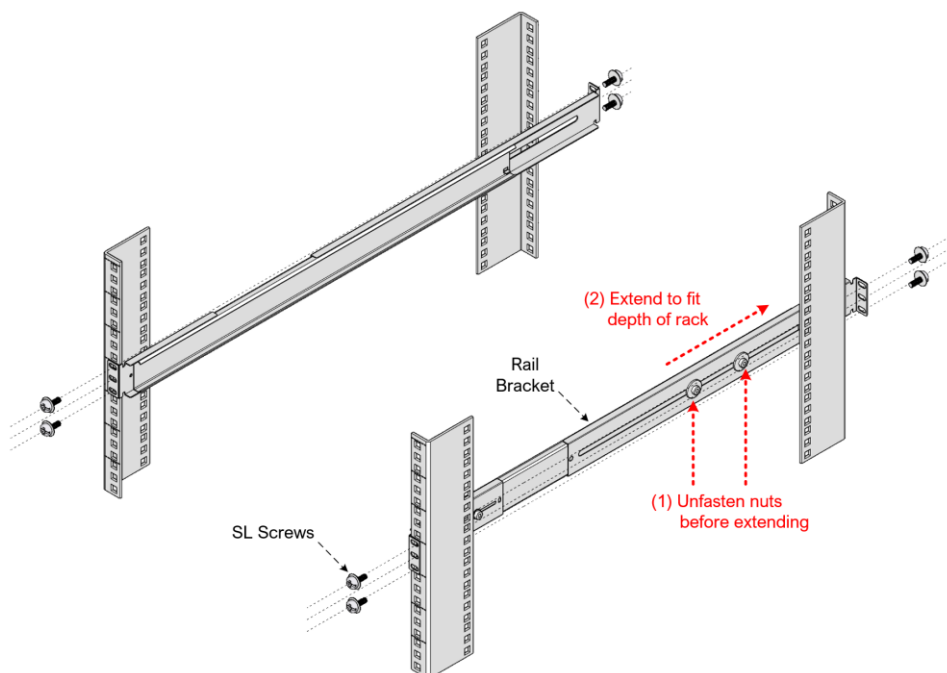


**Step 3:** Insert the RK Nutes to Equipment Rack or Server Rack.

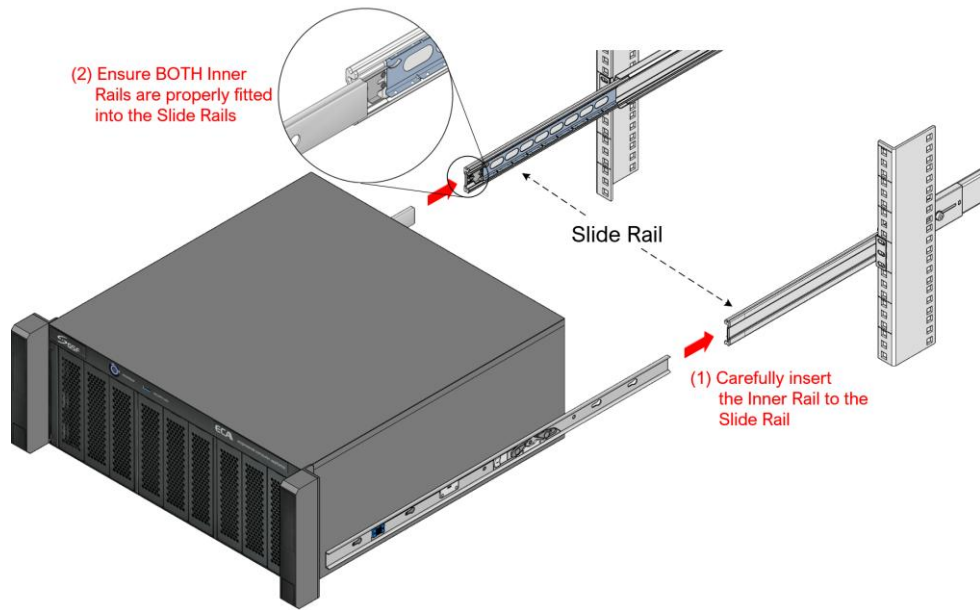
- Before inserting the nuts, make sure to reserve total 4U height and spacing for every ECA.
- The Sliding Rail is attached to the lowest 1U on the ECA.
- Ensure above the sliding rail, there is another 3U clearance space for the ECA.
- Take note of proper and correct spacing for 1U height



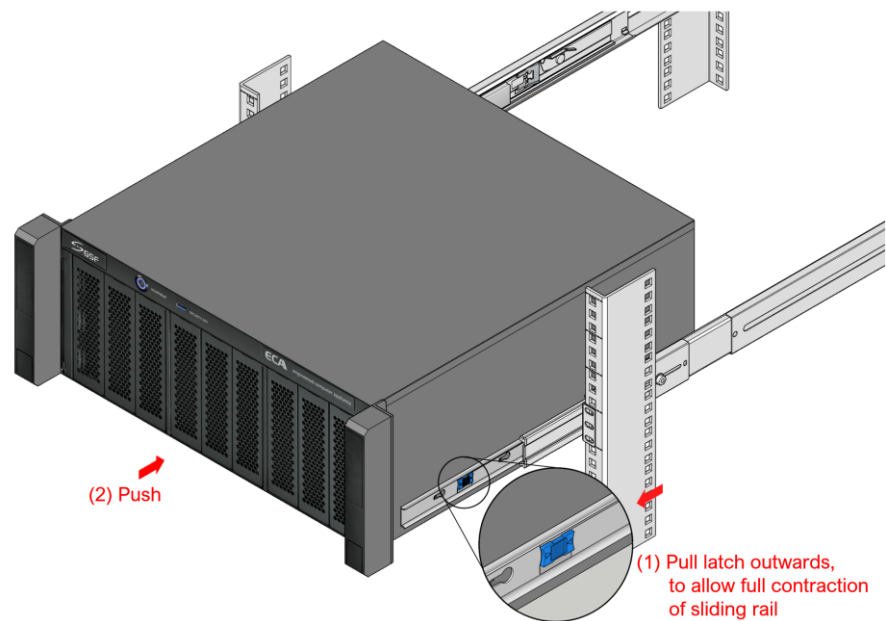
**Step 4:** Install the Rail Brackets to the Equipment rack or Server Rack. Place the Rail Brackets to the same level as the RK nuts, inserted in the previous step. Use SL screws and fasten them to the nuts. For the front, **DO NOT fasten any screw to the middle nut**. The middle nut is reserved for fastening the ECA.



- Step 5:** Carry the ECA, which now has the Inner Rails attached, and ensure both Inner Rails are securely inserted into the Sliding Rail.

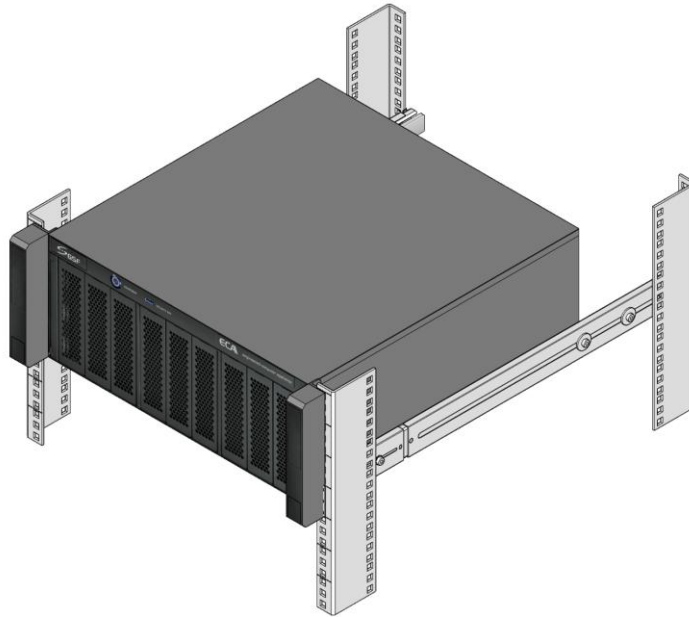


- Step 6:** Push the ECA inwards to the rack until the mounting brackets encounter the slide-rail stop. Then, simultaneously pull and hold the **BLUE** latch on the Inner Rail, while pushing the ECA inwards. This will fully contract the whole Sliding Rail assembly.

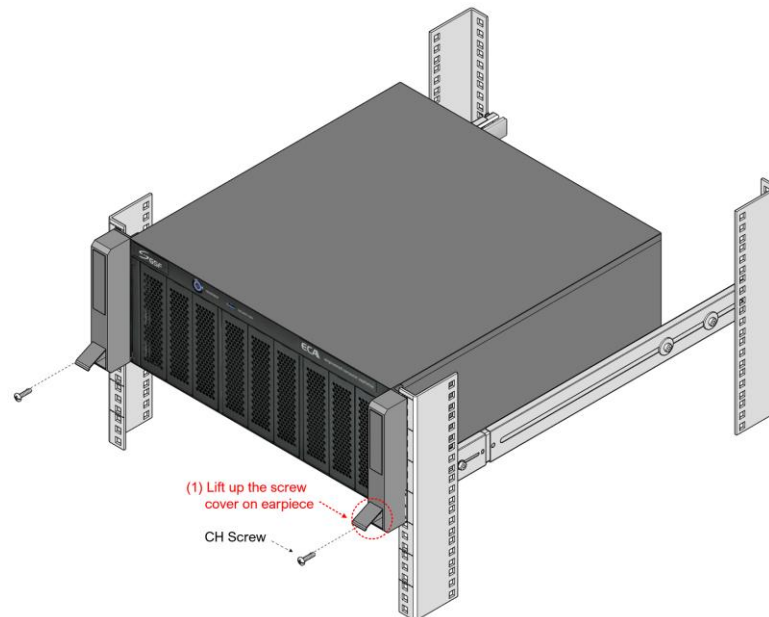




**Step 7:** The ECA, with the Sliding Rail at full contracted position, shall look like this:

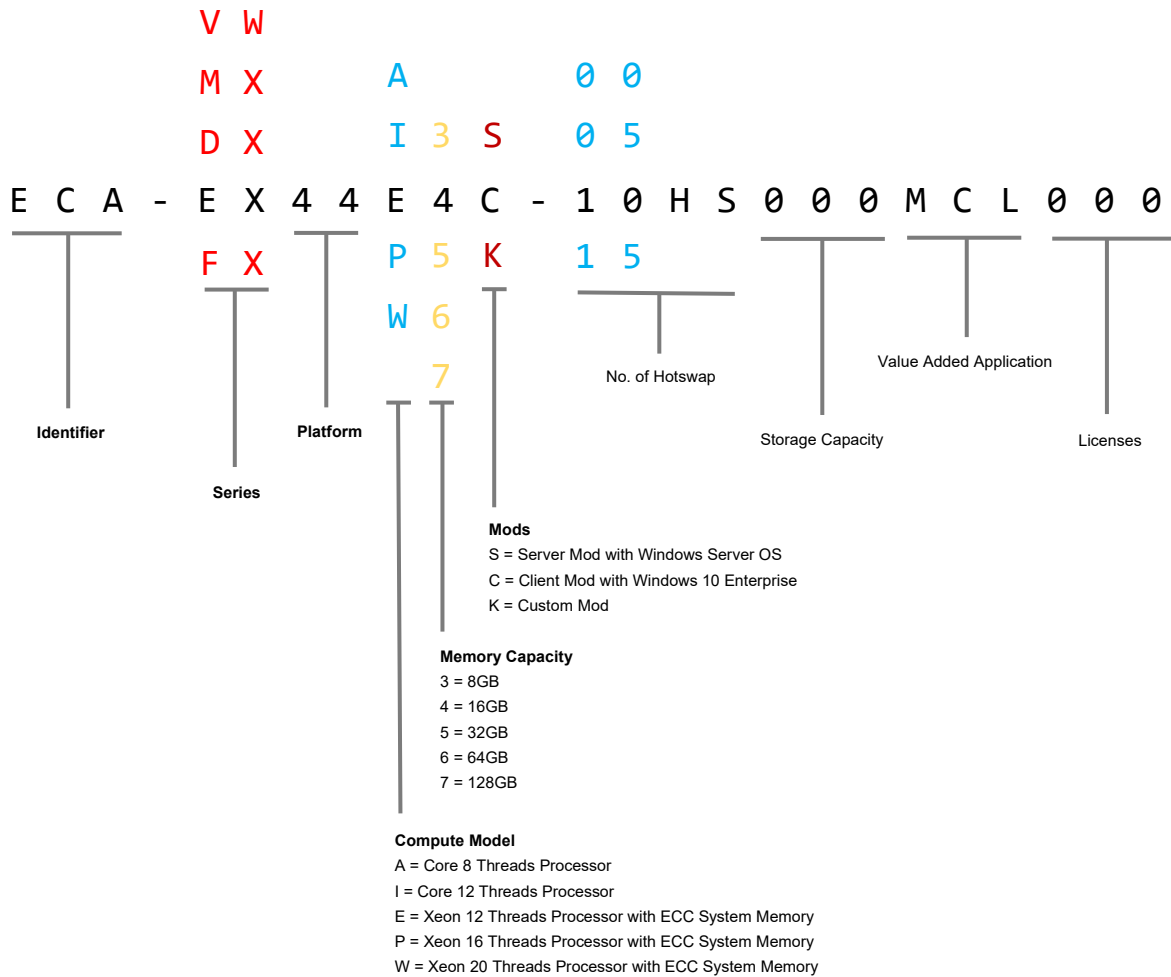


**Step 8:** Lift the screw cover on the earpiece of the ECA. Fasten ECA to the Sliding Rail using the CH Screw.



## 4 ECA Naming

The ECA naming will represent the specification of the platform.



## 5 ECA Series

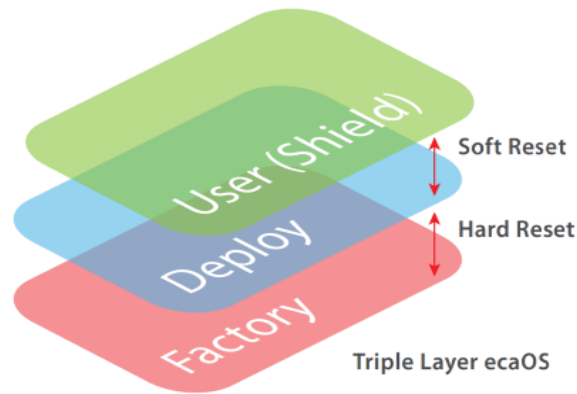


Series	VW	MX	DX	EX	FX
Mount	Tower or Rack	Rack	Rack	Rack	Rack
Storage	Internal: Up to 3 HDDs	Internal: Up to 3 HDDs	Hot-swap: 5 HDDs  Internal: Up to 2 HDDs	Hot-swap: 10 HDDs  Internal: 1 HDD	Hot-swap: 15 HDDs  Internal: None
Hot-swap Bay	None	None	5	10	15
Redundant Storage System (RSS)	No	Yes	Yes	Yes	Yes
Recommended Usage	Video Workstation	Recording Server	Recording Server	Recording Server	Recording Server
HeartBeat	No	Yes	Yes	Yes	Yes

## 6 ecaOS

ecaOS is a protected operating system environment, equipped with a unique and practical feature called Triple Layers, essential for both reliable and secure operation of the ECA.

Its ability to Soft Reset within few minutes significantly reduces system down time in the event of, though rare, system disaster, such as corrupted Video Management Software or misconfiguration.



Layer	Description
<b>User Layer</b> <i>Current working layer</i>	This is a normal user operation layer with a protected OS environment, any system changes without using the Embedded Security Key will be discarded after system reboot (Fast Reset)
<b>Deployment Layer</b> <i>Backup Layer</i>	This is a good working state layer, usually saved by System Integrator with pre-configured NVR & camera settings
<b>Factory Layer</b> <i>Backup Layer</i>	This is a good working state layer, with original default settings shipped from factory

## 6.1 ecaOS Login

Some ECA may be shipped without automatic login, subject to configurations. In such case, the ecaOS prompt for OS login, as follow:

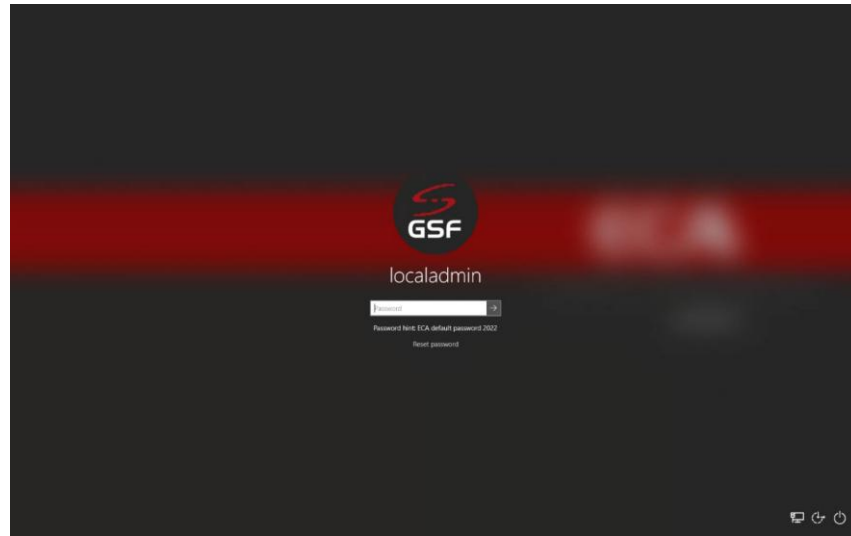


Figure 12: ecaOS Login Screen

Please contact **TrueBlue Support** to obtain the login credentials:

Email : [trueblue@gsfcorp.com](mailto:trueblue@gsfcorp.com)

Contact number : +60-3-80908277

Information to provide:

- Digital Certificate number of the ECA, usually can be found on the front panel of the ECA, and starts with **DC20XXXXXXXXXX** (14-digits)
- End-user's name

## 6.2 ecaOS Locked Out

if the password is incorrect for 3 times consecutively, the login screen will lock for 15 minutes, before allowing retry.



Figure 13: Account Locked Out

## 7 Dashboard and Notification

Location of the Dashboard application and ecaOS Notification display area.

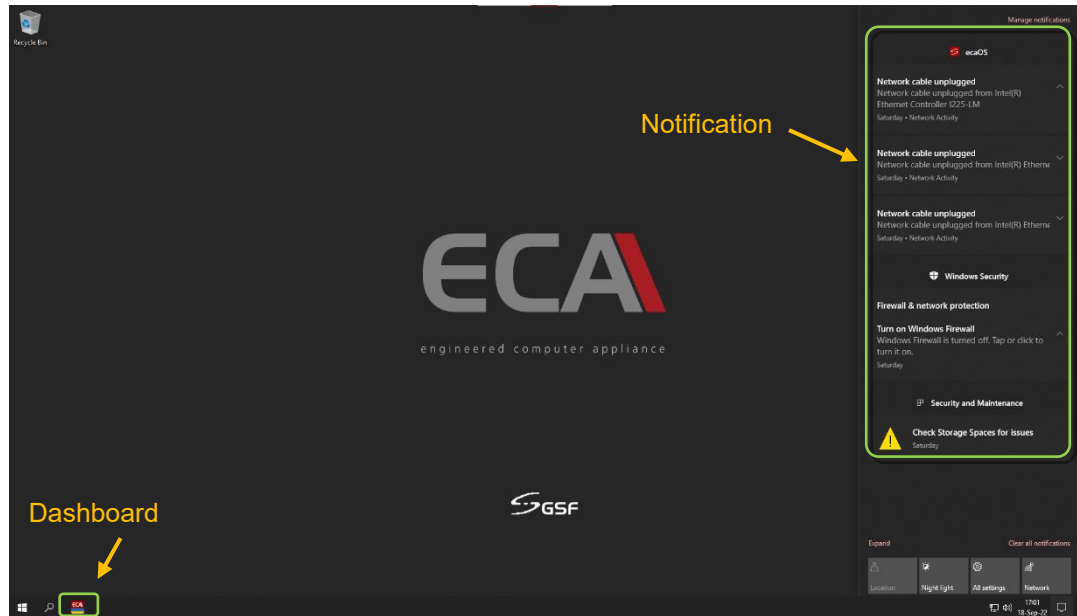


Figure 14: ecaOS Desktop

<b>Notification</b>	Where all the activities within the ECA will be prompted out
<b>Dashboard</b>	A web-based interface displaying overall information and system vitals of the ECA machine status

## 7.1 Accessing ecaOS Dashboard

There are two ways to access ecaOS Dashboard.

1. Security Key (USB type)
2. Virtual Security Key (card with QR code)



Figure 15: Security Key & Virtual Security Key Card

## 7.2 How to use Security Key (USB)

1. Insert Security Key to **SECURITY KEY** port on front panel of ECA.

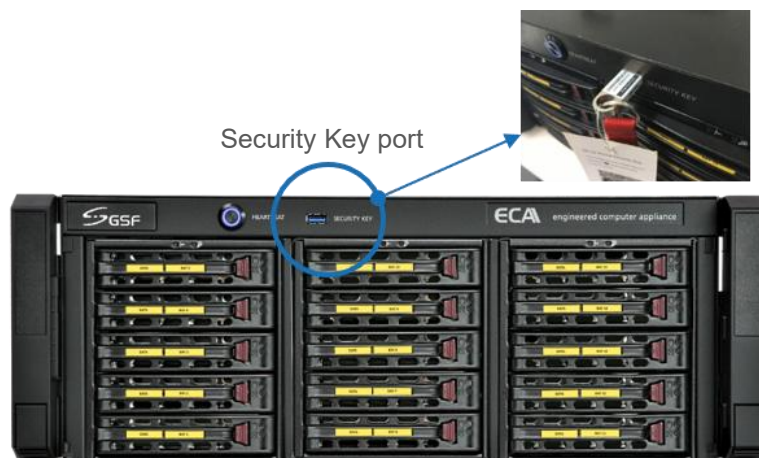



Figure 16: Security Key USB Port Location

2. Run 'ecaOS Dashboard'  from Taskbar.

### 7.3 How to use Virtual Security Key (ECA Access Code)

1. Run 'ecaOS Dashboard'  from Taskbar.
2. Enter **Access Code** from authenticator apps.

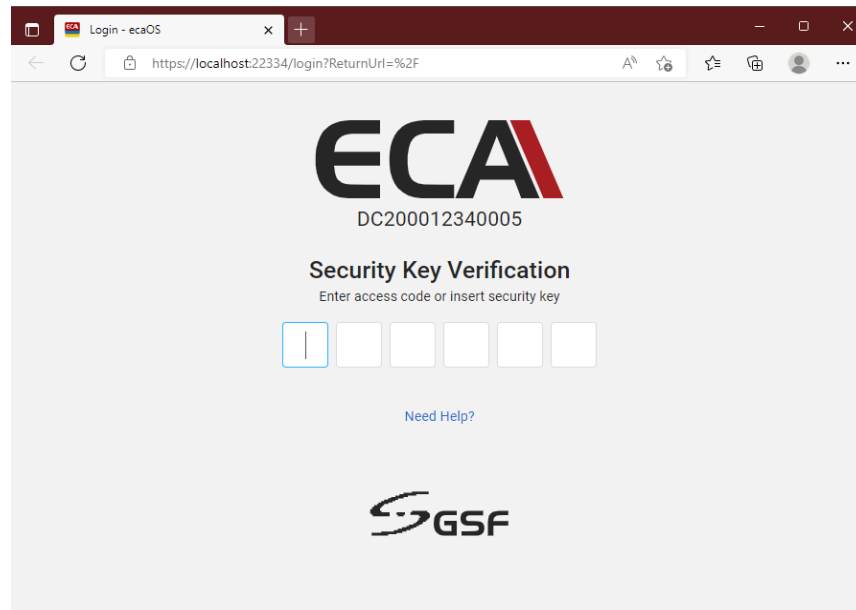


Figure 17: Dashboard Login Page

### 7.4 Get Virtual Security Key (ECA Access Code)

ECA Access code is mandatory for logging into the Dashboard. To obtain the ECA Access code, follow the procedures below:

1. Download an Authenticator app.
  - For **Android** user, go to **Google Play**.
  - For **iOS** user, go to **App Store**.
2. Search for 'authenticator'. Then, **Google Authenticator** or **Microsoft Authenticator** should appear in the result. You can install either one as the authenticator to use with ecaOS for obtaining the Access code.



Figure 18: App search results

3. The following procedure is based on using Google Authenticator.



Before using an authenticator app, ensure that your device's time is synchronized with ECA's time. If it is not, the code may not work correctly



4. Run Google Authenticator on your device. Click **Begin** button.

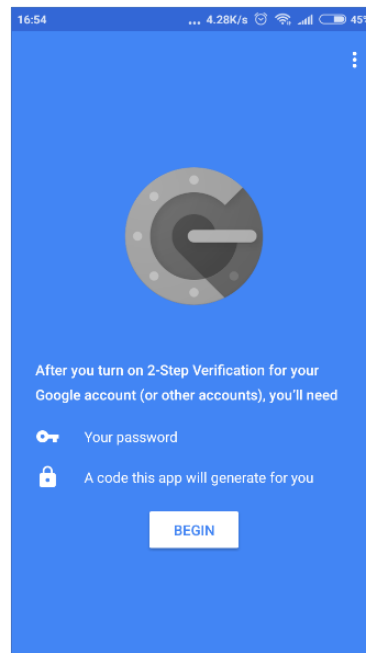


Figure 19: Authenticator Setup

5. Choose **Scan a barcode** to start scanning the QR code found on the Virtual Security Key card.

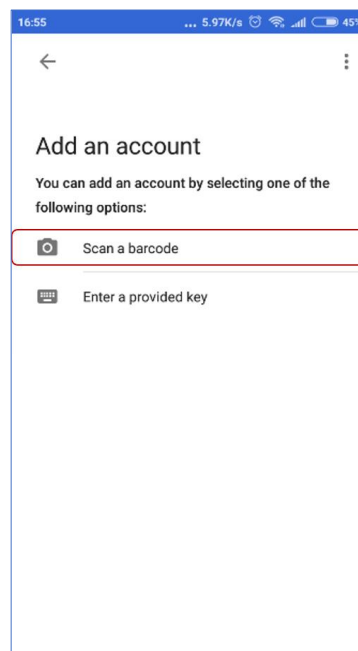


Figure 20: Authenticator Setup

6. Ensure the QR code is positioned correctly within the scanner frame.



Figure 21: Authenticator Setup

7. Once successful, the Access code will display in the app.

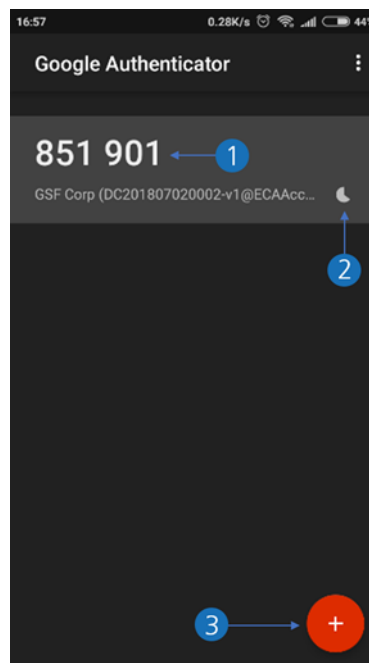


Figure 22: Authenticator Setup (4 of 4)

1. Access Code
2. Access Code will change for every 30 seconds
3. Click here to scan another QR Code for others ECA 'Virtual Security Key'.

8. Enter the 6-digits One-Time-Passcode (OTP) access code into the Security Key Verification page (ecaOS Dashboard login page).

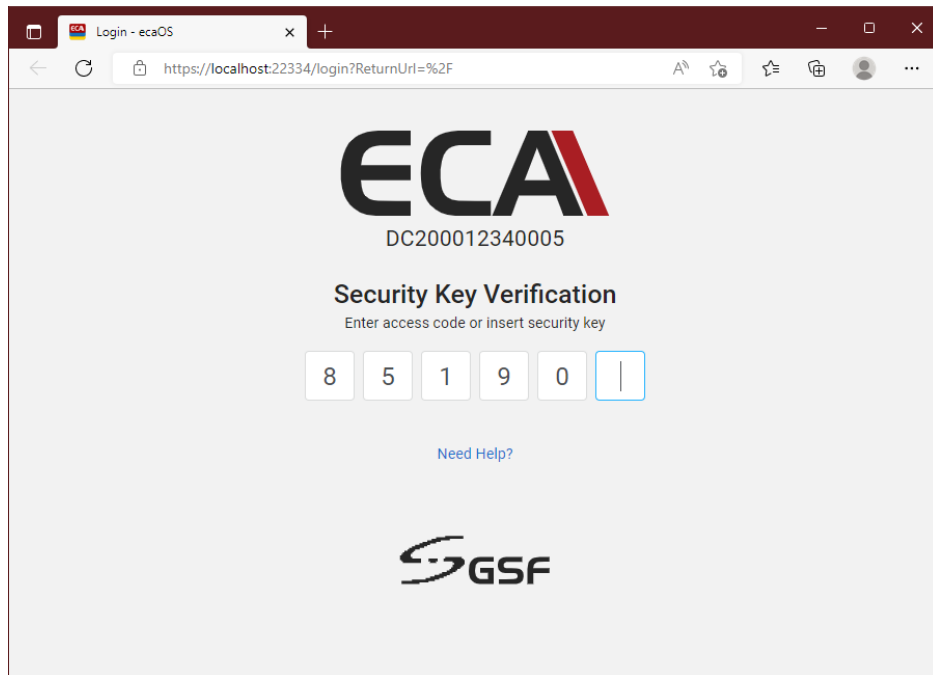


Figure 23: ecaOS Dashboard Login Page

## 7.5 Accessing ecaOS Dashboard Remotely

1. Open web browser on the remote computer.
2. In the web browser's address bar, enter the IP address of the ECA, in this format:

`https://<ipaddress>`

Example: <https://10.0.0.39>

Alternatively, you may also insert the ECA's Digital Certificate (DC number), also known as the serial number, in the following format:

`https://<ECA serial number>`

Example: <https://DC200012340005>



Default access port number for ecaOS Dashboard is **443**. This port number is customizable in the Dashboard configuration.

3. Click **Advanced**.

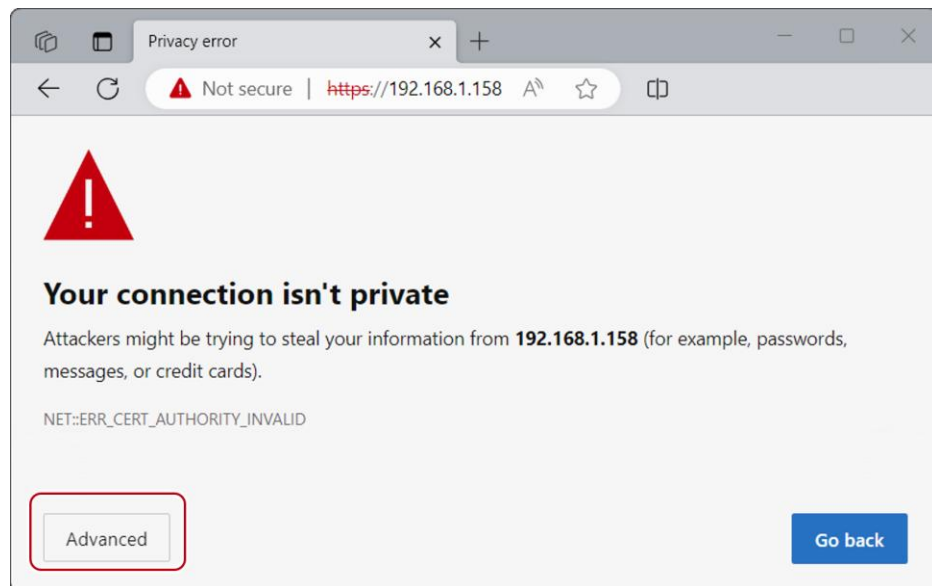


Figure 24: Dashboard Remote Access (1 of 2)

- Click the link **Continue to dcxxxxxxxxxx (unsafe)**

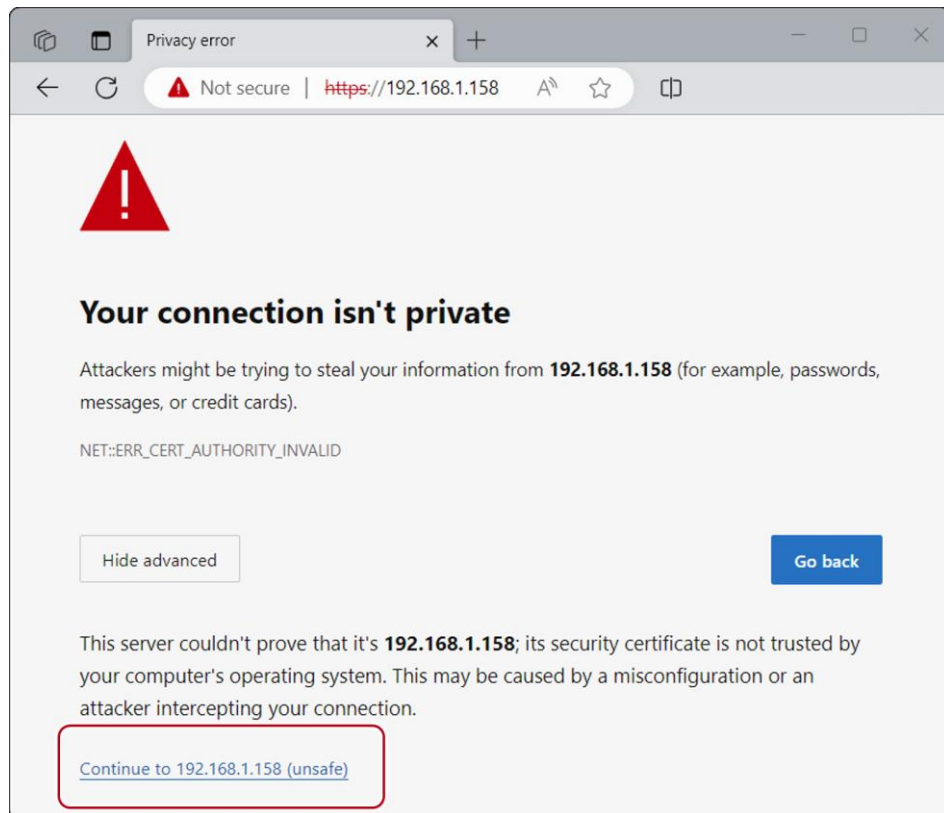


Figure 25: Dashboard Remote Access (2 of 2)

## 7.6 Dashboards

The Dashboards shows overall information about the ECA machine and some of its system vitals. The information is summarized in a card style display.

Example of information and status display in the Dashboards are:

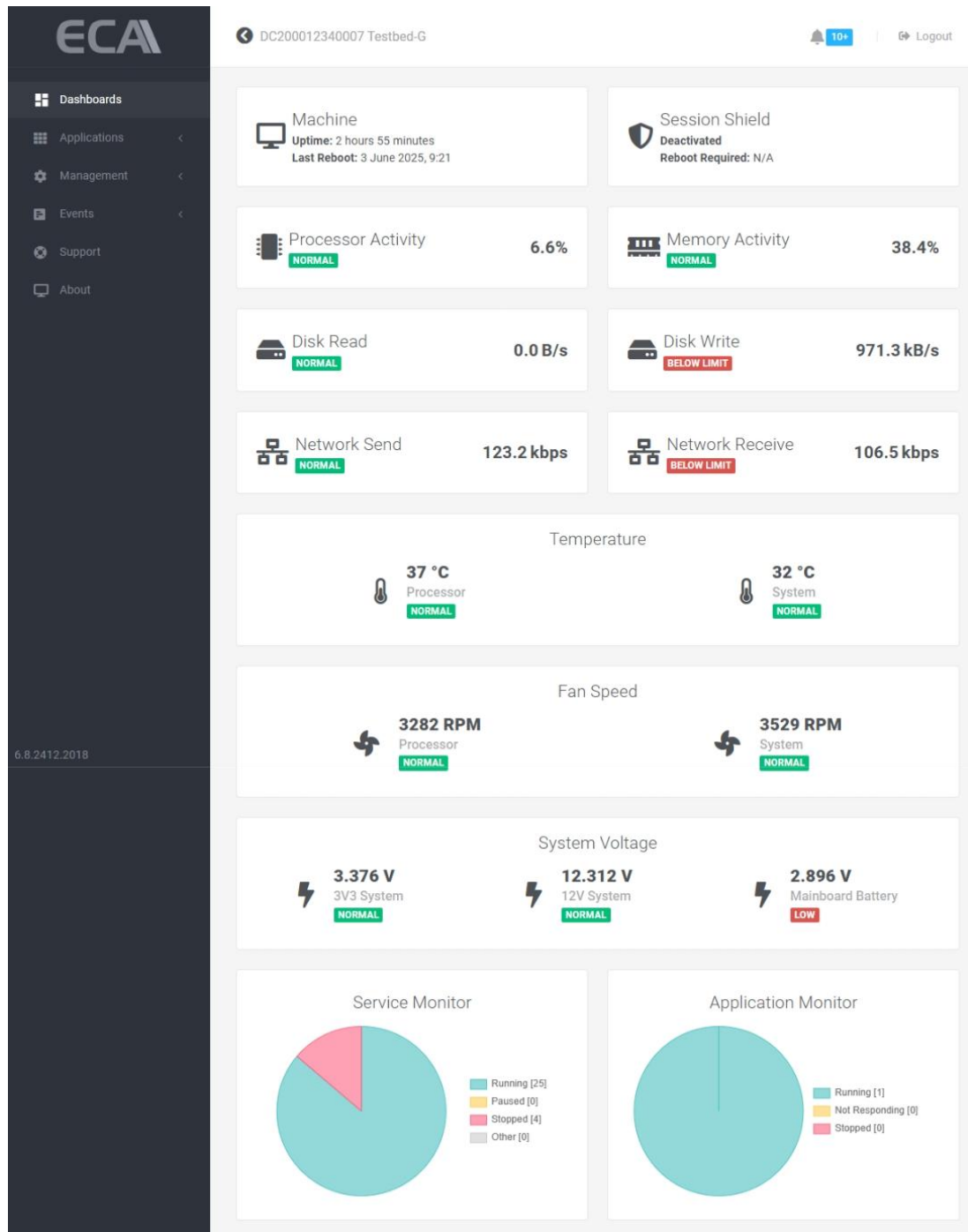


Figure 26: ecaOS Dashboards

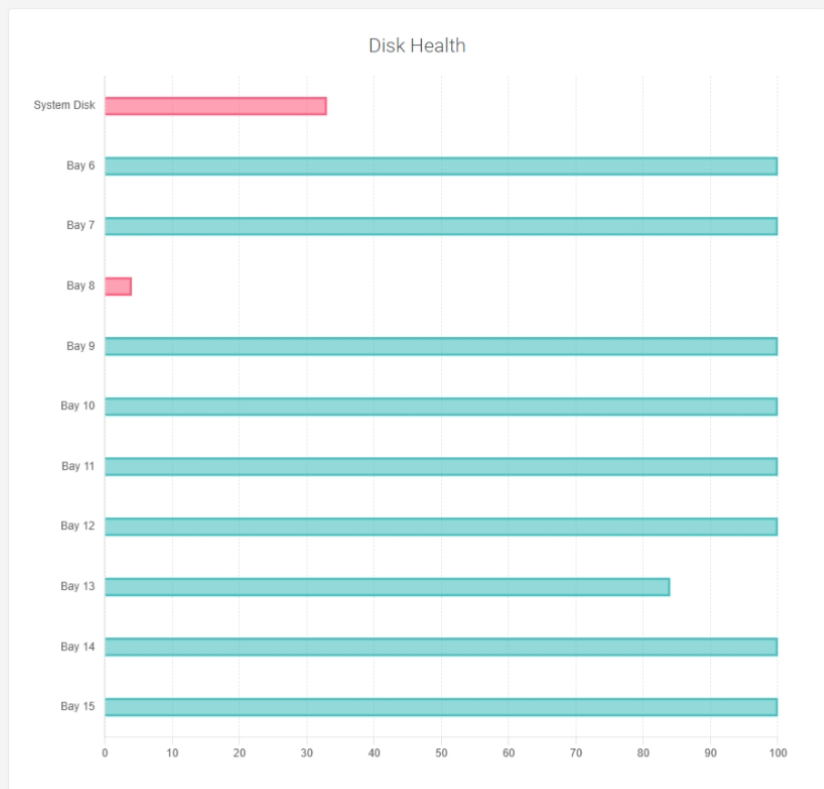


Figure 27: ecaOS Dashboards – Disk Health

Disk Guard


System Disk	Online
Bay 1	No Disk
Bay 2	No Disk
Bay 3	No Disk
Bay 4	No Disk
Bay 5	No Disk
Bay 6	Online
Bay 7	Online
Bay 8	Online
Bay 9	Online
Bay 10	Online
Bay 11	Online
Bay 12	Online
Bay 13	Online
Bay 14	Online
Bay 15	Online

Figure 28: ecaOS Dashboards – Disk Guard

## 8 Applications

### 8.1 System Monitor

System Monitor provides users with real-time information on Processor Temperature, Mainboard Temperature, PSU Temperature\*, Processor and System Fan Speeds, as well as 3.3V System Voltage, 12V System Voltage, and Mainboard Battery Voltage.

 \*Only applicable to ECA4.5 and above, with TBSP-ECAPSE-R600 power supply unit (PSU).

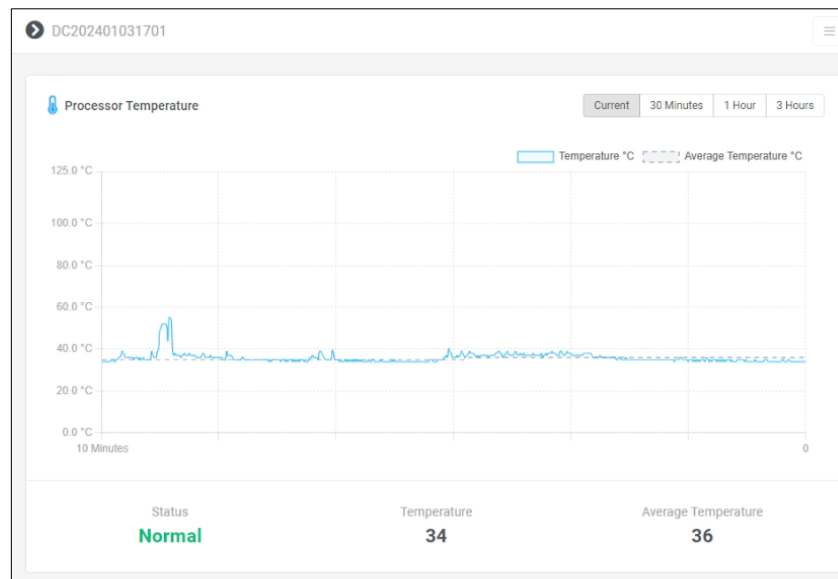


Figure 29: Processor Temperature monitor

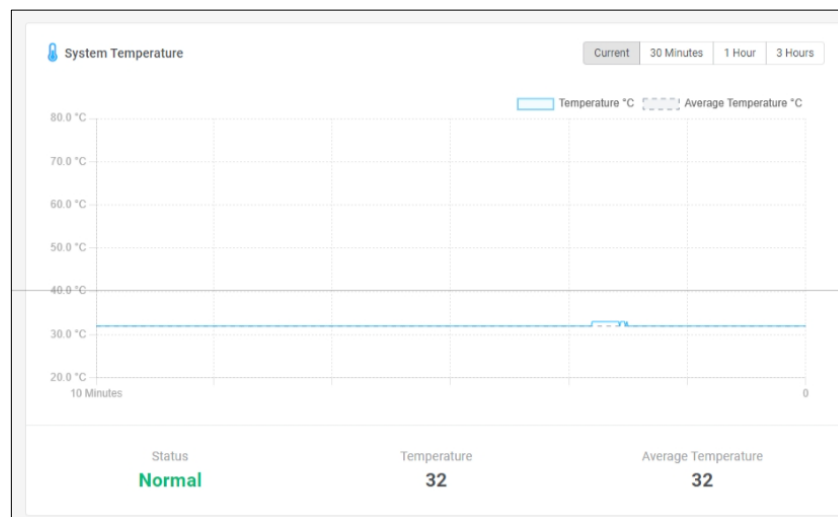


Figure 30: System Temperature monitor



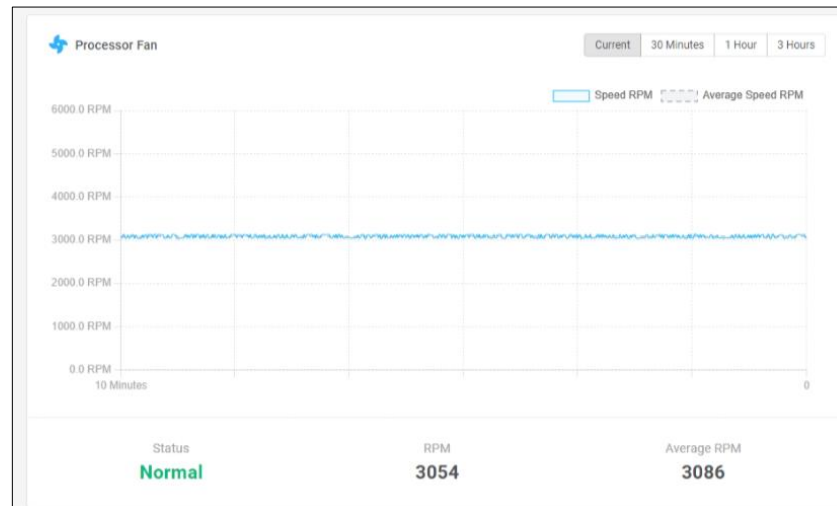


Figure 31: Processor Fan monitor

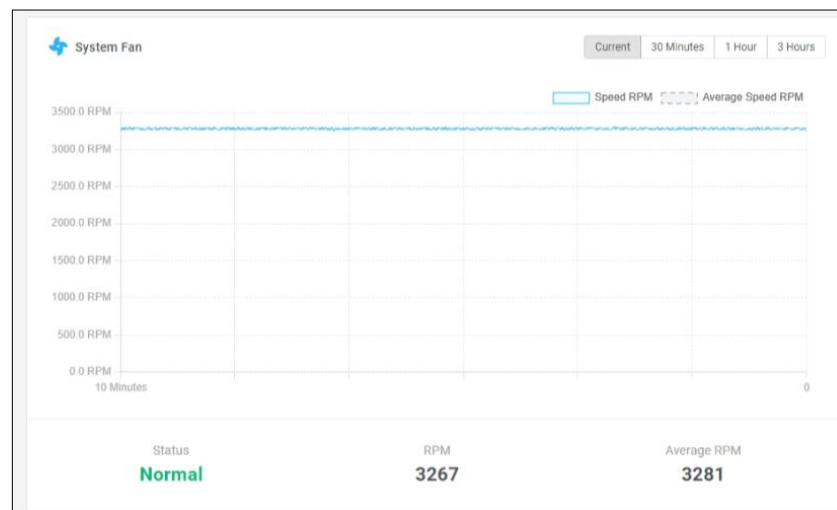


Figure 32: System Fan monitor

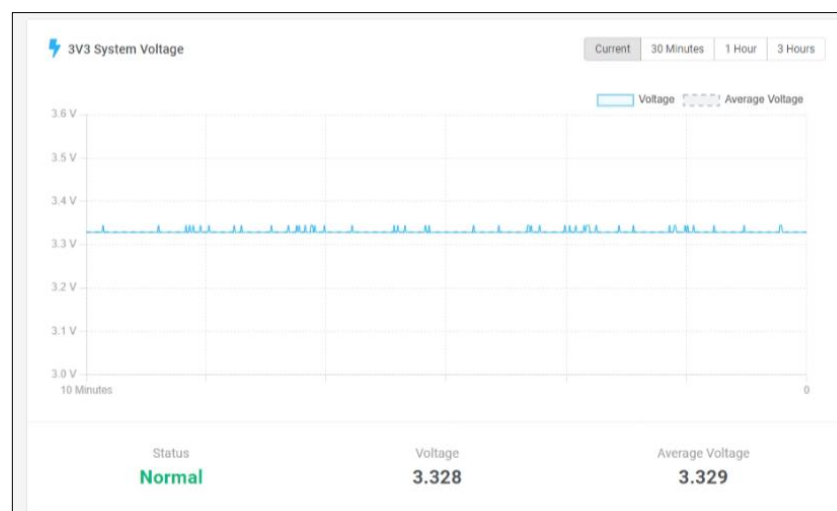


Figure 33: 3V3 System Voltage monitor



Figure 34: 12V System Voltage Monitor

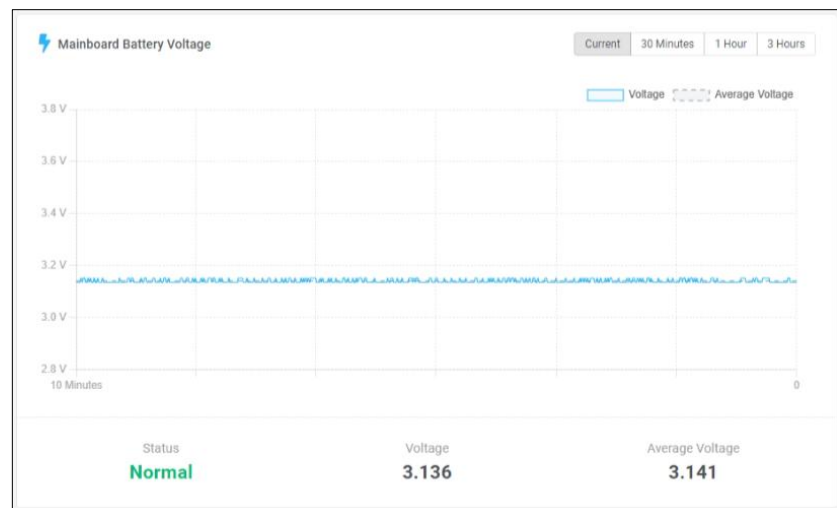


Figure 35: Mainboard Battery Voltage monitor

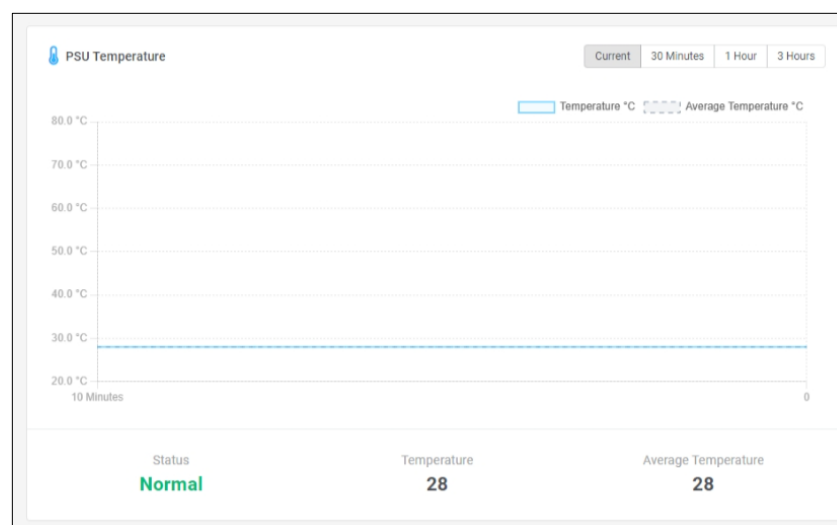


Figure 36: PSU Temperature monitor\* (only applicable with TBSP-ECAPSE-R600 PSU).

## 8.2 App Monitor

The App Monitor displays the status of applications tracked by the Application Monitor, as well as services within ecaOS that have been included in the Service Monitor.

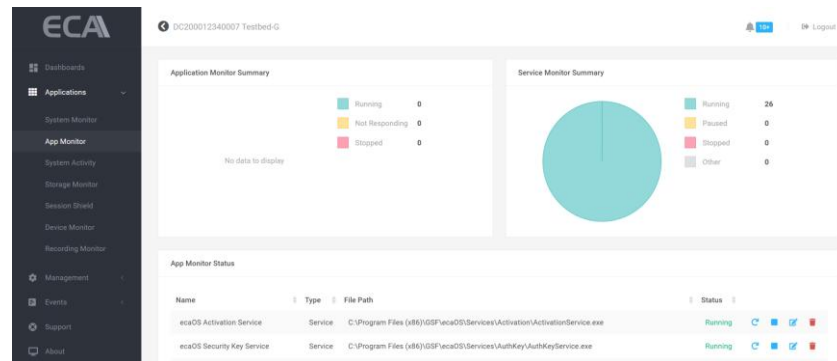


Figure 37: Service Monitor Summary

### 8.2.1 Add Application

1. To add application, click the Add Application button.

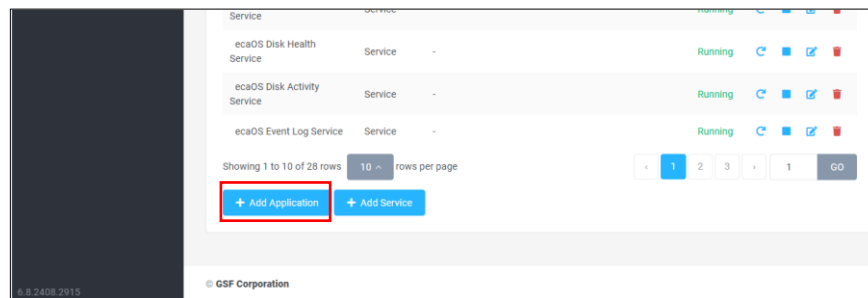


Figure 38: Add Applications

2. Enter the application name

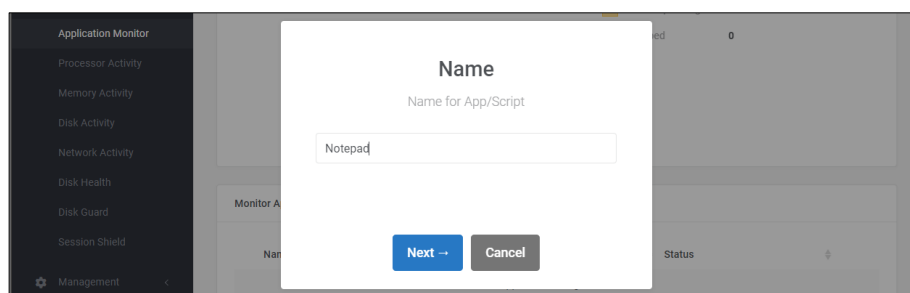


Figure 39: Application Monitor (1 of 4)

3. Insert the path to the application to be added. Then, press **Next**.

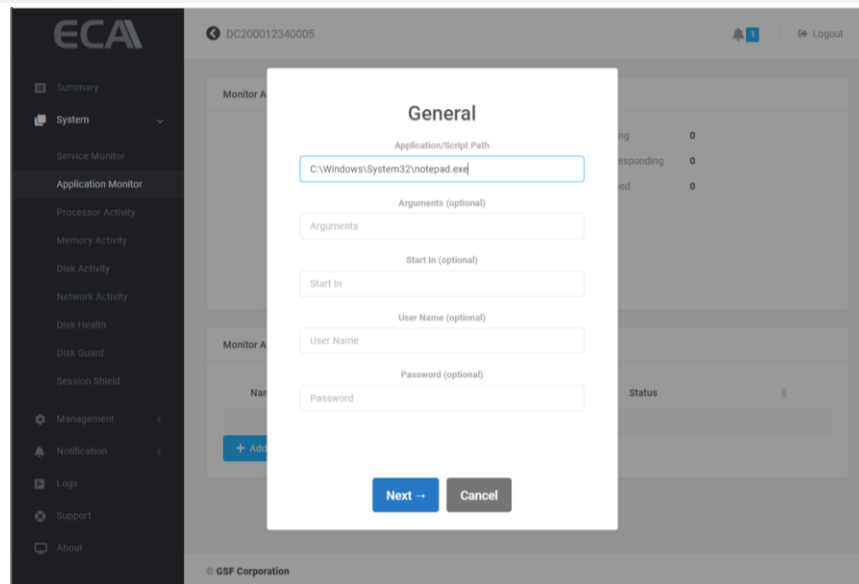


Figure 40: Application Monitor (2 of 4)

#### 4. Apply setting

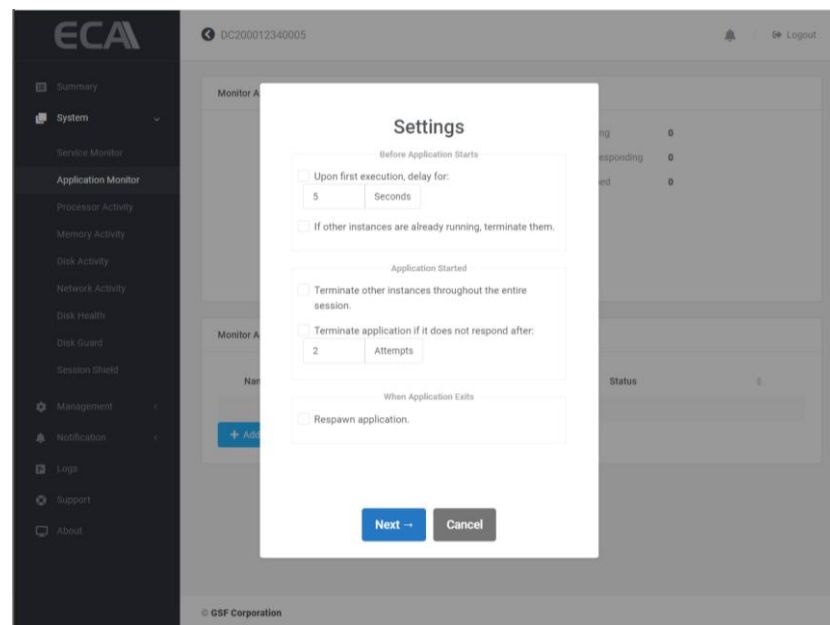


Figure 41: Application Monitor (3 of 4)

Settings	What it does
<b>Upon first execution delay for</b>	Set the delay before starting the application
<b>If other instance(s) are already running, terminate them</b>	If another instance of the same application is already started (not by Application Manager) terminate that instance.
<b>Terminate other instance(s) throughout the entire session</b>	If another instance attempts to start again after the Application Monitor has started the application, terminate it. This prevents duplicated instance.
<b>Terminate application if it does not respond after __ attempts</b>	If the application does not respond after the number of attempts specified, the Application Monitor will terminate it.
<b>Respawn application</b>	The Application Monitor will respawn the application if it is not running, or if it is closed. This ensures the application is always running.

- Once the application has been successfully added, its status will appear on the 'Application Monitor'

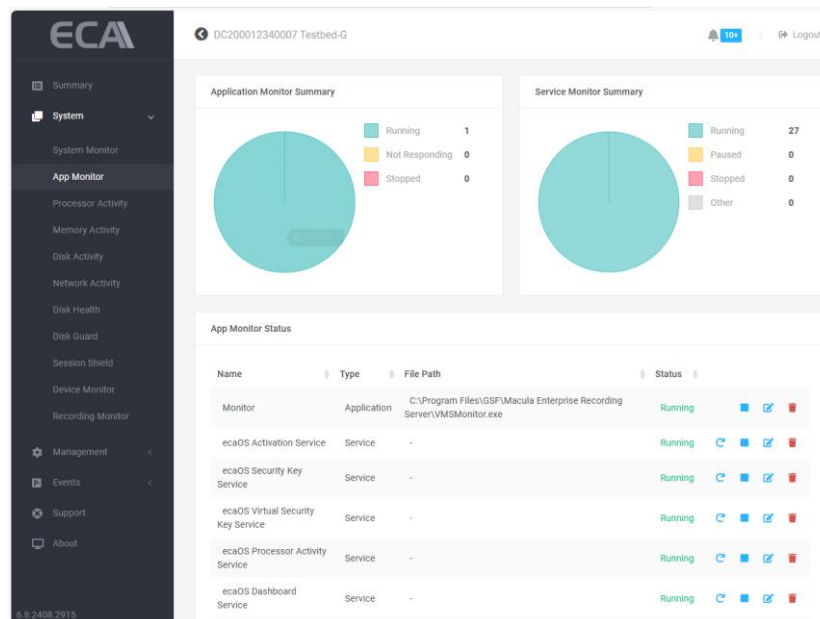


Figure 42: Application Monitor (4 of 4)

## 8.2.2 Delete Application

- To delete application to be monitor, click the  button of the application to be delete

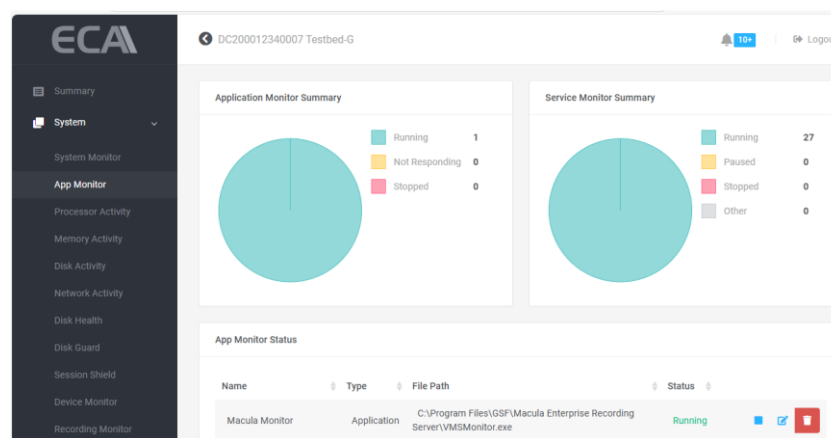


Figure 43: Delete monitored application (1 of 2)

- Click on  to proceed with the deletion

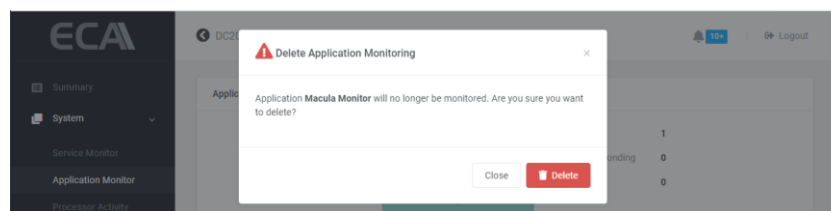


Figure 44: Delete monitored application (2 of 2)

## 8.2.3 Add Services

1. To add services, click the Add Service button.

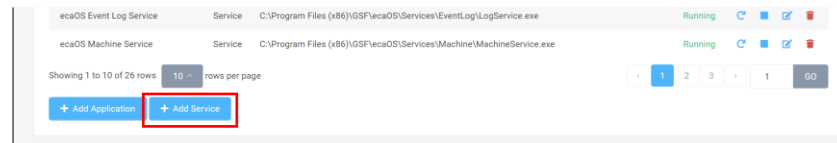


Figure 45: Add Services

2. Click the drop-down button.

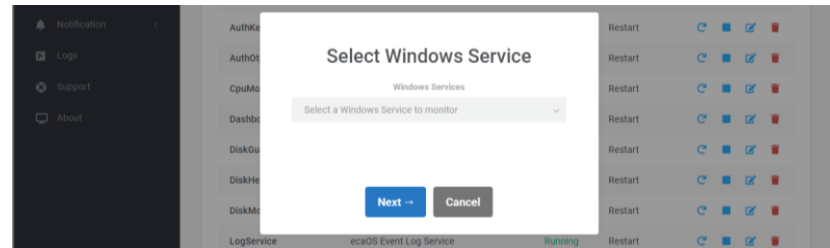


Figure 46: Select Windows Services (1 of 4)

3. Select the services to be added into Service Monitor.

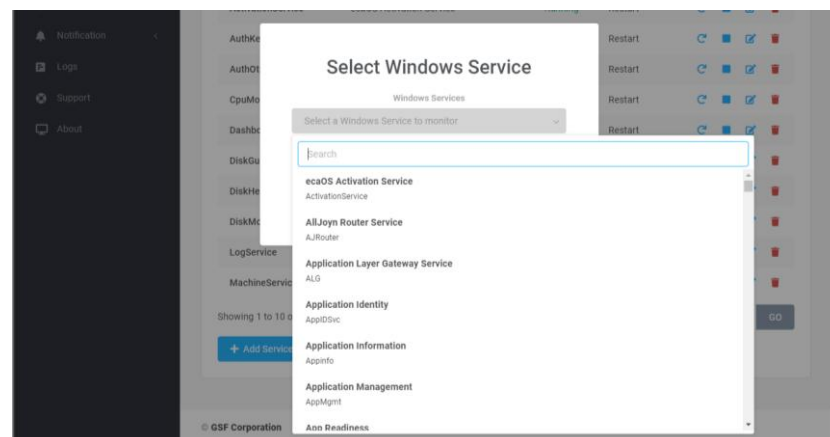
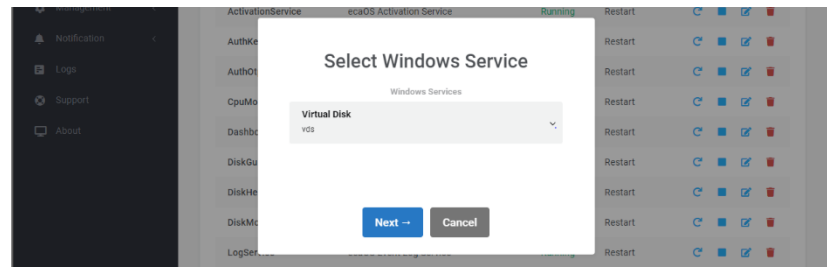


Figure 47: Select Windows Services (2 of 4)

4. Click **Next →** button



5. Select the actions that Service Monitor should perform when the services stop working. Click **Save** to save the setting.

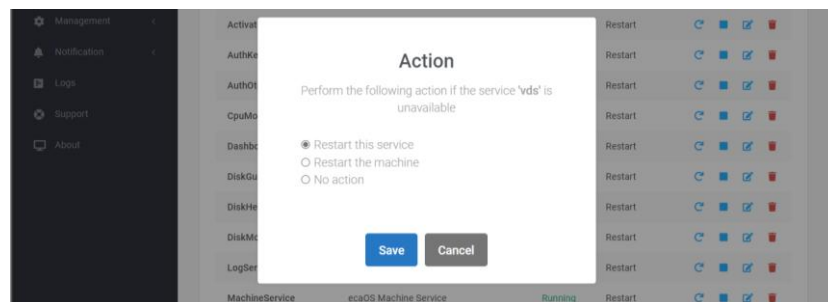


Figure 48: Select Windows Services (4 of 4)



## 8.2.4 Delete Services

1. To delete services, click the  button of the service to be deleted.

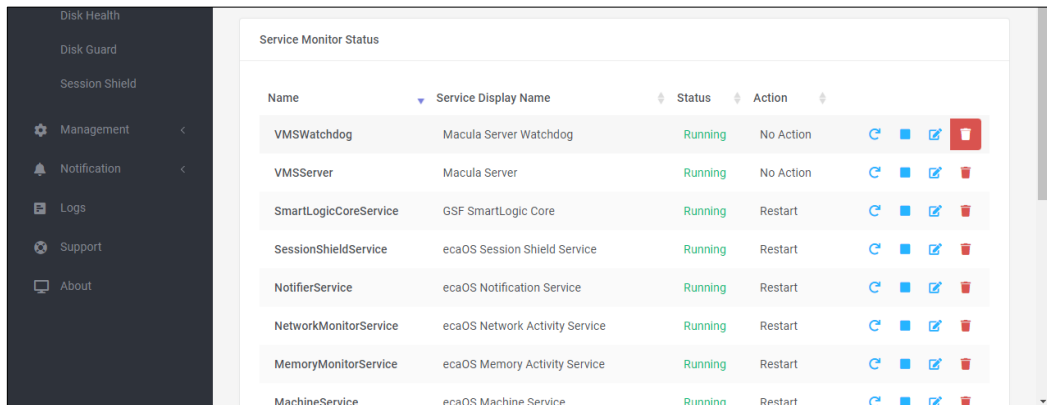


Figure 49: Delete Services (1 of 2)

2. Click on  to proceed with the deletion.

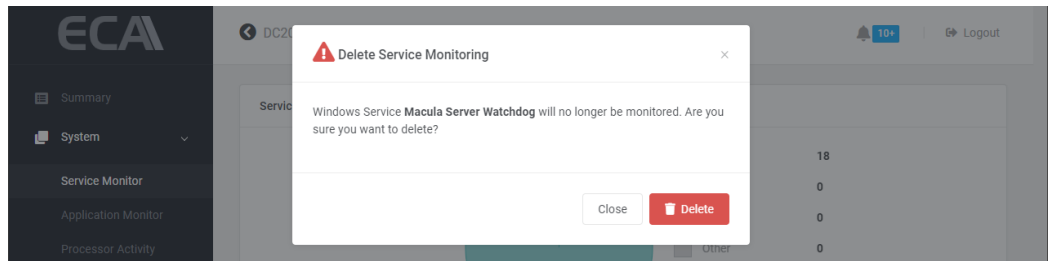


Figure 50: Delete Services (2 of 2)

## 8.3 System Activity

### 8.3.1 Processor Activity

Processor Activity monitors CPU usage and notify via email when the usage above the threshold value.

ecaOS can generate notification to alert users, when ECA CPU Alert utilization goes above the configured threshold for a pre-defined period.

**Average Utilization ①:** The status will be based on Average CPU Utilization. The status will change to **High** if average CPU Utilization exceeds the threshold set under **Processor Activity Monitor ②**.

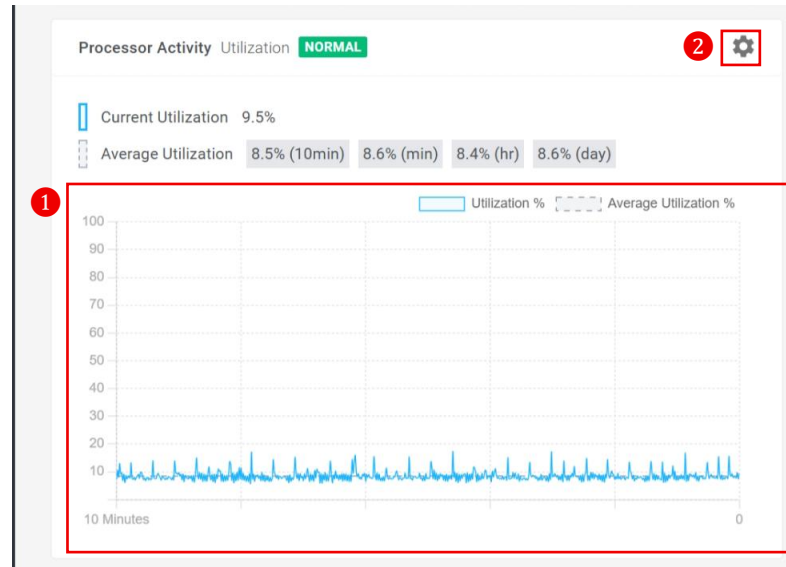


Figure 51: Processor Activity (1 of 2)

The example below demonstrates the Processor Activity Monitor configured with a threshold of 50% over 10 minutes. If the average Processor utilization exceeds 50% for more than 10 minutes, the CPU activity status will change to "High." This event will trigger an email notification and an alert in the notifications panel.



Figure 52: Processor Activity (2 of 2)

#### NOTE:

- Click on **Use Suggested** for recommended value calculated by the system based on real-time usage.

- For email and notification setting, go to [Settings](#)
- Sample email of the Processor activity event can be found in the [Appendix Processor Activity](#)

### 8.3.2 Memory Activity

Monitor the memory usage and notify/email if the usage above the threshold value. ecaOS can generate notification to alert users when ECA Memory utilization goes above the configured threshold for a pre-defined period.

**Memory Activity:** The status will be based on Average Memory Usage. The status will change to High if the Average Memory Usage is higher than threshold set under Memory Activity Monitor.

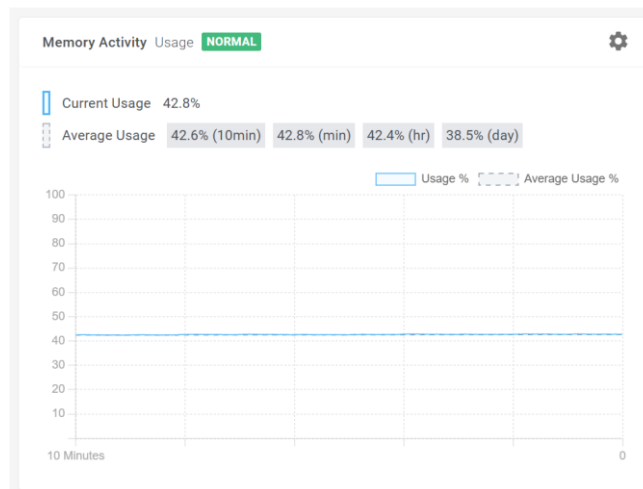


Figure 53: Memory Activity (1 of 2)

The example below to demonstrate that the Memory Activity Monitor set to enable, the threshold set to 50% for 5 minutes. The Memory Activity status will change to High if the Average Memory Utilization is higher than 50% for more than 5 minutes. This event will be notified by email and at the notification.



Figure 54: Memory Activity (2 of 2)

#### NOTE:

- Click on 'Use Suggested' for reference value calculated by the system.

- For email and notification setting, go to [Settings](#)
- Example email of the Memory activity event in the [Appendix Memory Activity](#)

### 8.3.3 Disk Activity

Disk Activity provides real-time monitoring of disk usage, tracking average activity per minute, hour, and day. It includes automatic alerts if disk read or write activity deviates above or below predefined threshold limits for a specified duration. This feature is particularly useful for detecting issues such as accidental deactivation of the recording function in VMS software. When recording is turned off, disk writing ceases, prompting the system to alert users of potential CCTV recording interruptions.

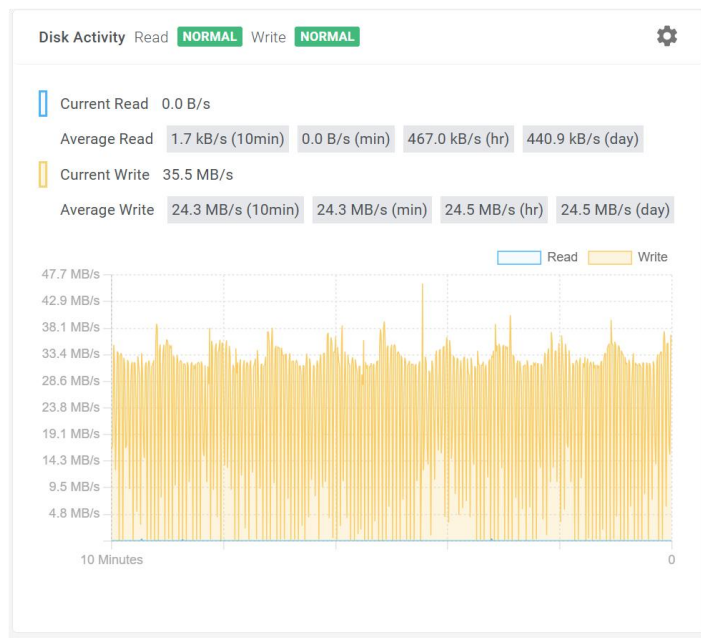


Figure 55: Disk Activity (1 of 2)

The following example demonstrates the configuration of the Disk Activity Monitor for both read and write operations.

The average disk read threshold is set to exceed 1 MB/s for 5 minutes, while the average disk write threshold is configured to drop below 22 MB/s for the same duration. If these thresholds are exceeded, the system will send a notification via email and display an alert in the notification panel.

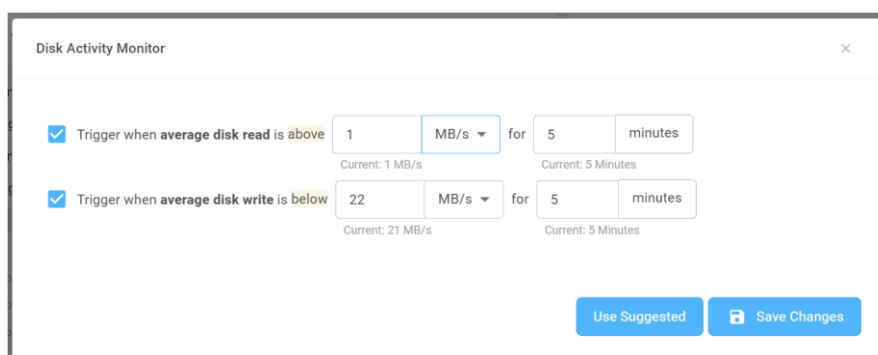


Figure 56: Disk Activity (2 of 2)

#### NOTE:

- Click on 'Use Suggested' for reference value calculated by the system.
- For email and notification setting, go to [Settings](#)
- Example email of the Disk activity event in the [Appendix Disk Activity](#)

### 8.3.4 Network Activity

Network Activity displays real time network usage activity. It can automatically calculate average network utilization per minute, per hour or per day. This average value is important for the estimation and observation of network utilization, as incoming throughput from the network cameras or video sources varies throughout the day, where daytime throughput is usually higher than nighttime.

Automatic alert if network received or sending is fall or raise above threshold limit for a period of time. This is very useful if some of the cameras was accidentally offline due to faulty PoE switch.

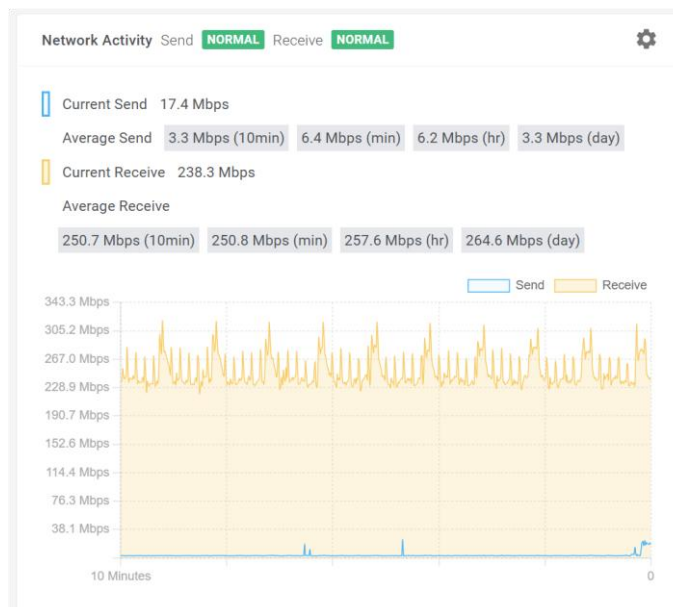


Figure 57: Network Activity (1 of 2)

By the example below to demonstrate that the Network Activity set to trigger email & desktop notifications.

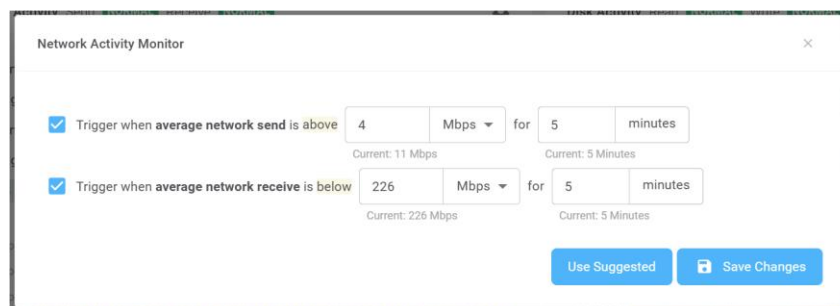


Figure 58: Network Activity (2 of 2)

It will trigger when the data send over network above 4 Mbps for 5 minutes

It will trigger when the data receive below set threshold 226 Mbps for 5 minutes

#### NOTE:

- Click on 'Use Suggested' for reference value calculate by the system.
- For email and notification setting, go to [Settings](#)
- Example email of the Network activity event in the [Appendix Network Activity](#)

## 8.4 Storage Monitor

The "Storage Monitor" can provide details about every disk that is connected to the ECA.

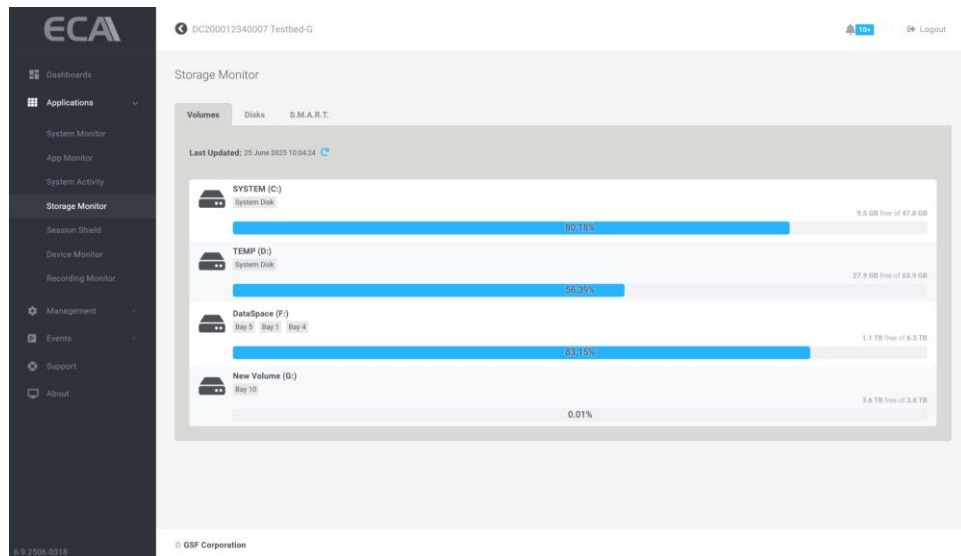


Figure 59: Storage Monitor

### 8.4.1 Volumes

All of the available volumes will be placed here under the Volumes tab.

In figure 60, showing four volumes together with their respective usage bars. DataSpace (F:) is an RSS storage, it spans across Bays 1, 4, and 5, and already consumed 83.15% of its available space. New Volume (G:) is located in Bay 10 and currently unused.

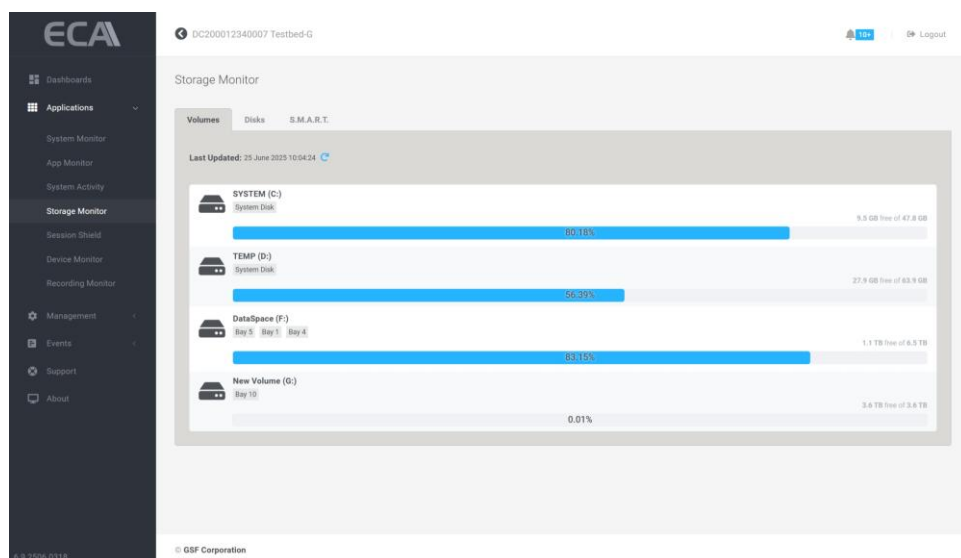


Figure 60: Storage Monitor – Volumes

### 8.4.2 Disks

Display status all connected hard disk to the ECA.

HDD stores important video evidence data. It is important to ensure the data remains intact in the ECA. HDD insertion and removal events on the ECA are tracked by Storage Monitor. Additionally, it keeps track of disk health and alerts users when it falls below a predetermined threshold.

Details about the disk in the Disks tab:

- HDD Model, Serial number, Firmware
- HDD Status, Temperature, Power up time
- HDD volume information
- Disk Guard status
  - **Online:** Hard disk installed. Using by OS
  - **Offline:** Hard disk installed. Not using by OS
  - **No Disk:** No hard disk installed.
  - **Removed:** Previous hard disk has been removed.
  - **Replaced:** Hard disk has been replaced with different serial number.

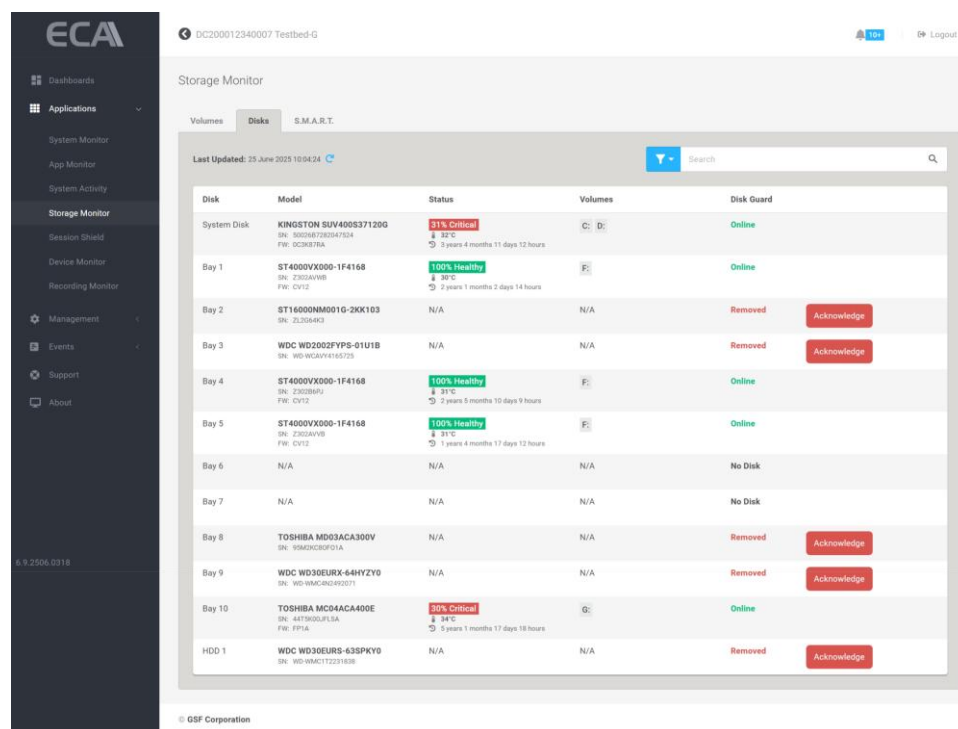


Figure 61: Storage Monitor – Disks

Disk list shown depending on the ECA model:

- ECA-FX46: System Disk, Bay 1 – Bay 15
- ECA-EX46: System Disk, Bay 1 – Bay 10 & HD1
- ECA-DX46: System Disk, Bay 1 – Bay 5, HDD1, HDD 2
- ECA-MX46: System Disk, HDD1, HDD 2
- ECA-VW44: System Disk, HDD1, HDD 2

NOTE:

- System Disk is the drive containing operating system.



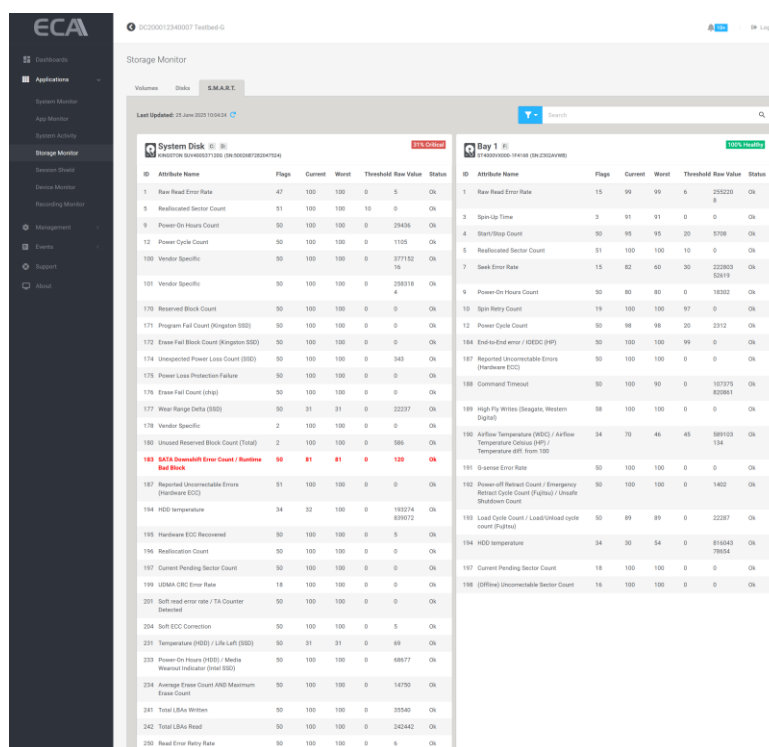
- Hard disks insert in the hotswap bay will label shows as a 'Bay'.
- Internal hard disk will label HDD1 & HDD2 is for the internal hard disk.
- When hard disk removed, the hard disk information still shown with 'Removed' status. Acknowledge the removed hard disk will change to latest status.

Bay 2	ST1600NM001G-2K103 SN: 2L206403	N/A	N/A	Removed	Acknowledge
-------	------------------------------------	-----	-----	---------	-------------

Figure 62: Disk removed

### 8.4.3 S.M.A.R.T.

Under S.M.A.R.T (Self-Monitoring, Analysis and Reporting Technology), will display S.M.A.R.T value. Its primary function is to detect and report various indicators of drive reliability with the intent of anticipating imminent hardware failures.



ID	Attribute Name	Flags	Current	Worst	Threshold	Raw Value	Status
1	Raw Read Error Rate		47	100	100	0	OK
5	Reallocated Sector Count		51	100	100	10	OK
9	Power-On Hours Count		50	100	100	0	29436 OK
12	Power Cycle Count		50	100	100	0	1105 OK
193	Vendor Specific		50	100	100	0	377152 OK
193	Vendor Specific		50	100	100	0	258318 OK
170	Reserved Block Count		50	100	100	0	0 OK
171	Program Fail Count (Kingston SSD)		50	100	100	0	0 OK
172	Erase Fail Block Count (Kingston SSD)		50	100	100	0	0 OK
174	Unsequenced Power Loss Count (SSD)		50	100	100	0	343 OK
175	Power Loss Protection Failure		50	100	100	0	0 OK
176	Erase Fail Count (SSD)		50	100	100	0	0 OK
177	Wear Range Delta (SSD)		50	31	31	0	22237 OK
178	Vendor Specific		2	100	100	0	0 OK
180	Unsequenced Power Loss Count (Total)		2	100	100	0	398 OK
183	SATA Unrecoverable Error Count / Runtime Bad Block		50	81	81	0	128 OK
187	Reported Unrecoverable Errors (Hardware ECC)		51	100	100	0	0 OK
194	HDD temperature		34	52	100	0	193274 OK
195	Hardware ECC Recovered		50	100	100	0	5 OK
196	Reallocation Count		50	100	100	0	0 OK
197	Current Pending Sector Count		50	100	100	0	0 OK
198	UDMA CRC Error Rate		18	100	100	0	0 OK
201	Soft read error rate / TB Counter Detected		50	100	100	0	0 OK
204	Soft ECC Correction		50	100	100	0	5 OK
231	Temperature (HDD) / Life Left (SSD)		50	31	31	0	69 OK
233	Power-On Hours (HDD) / Media Wearout Indicator (HDD)		50	100	100	0	68677 OK
234	Average Error Count AND Maximum Error Count		50	100	100	0	14750 OK
241	Total LBAs Written		50	100	100	0	35540 OK
242	Total LBAs Read		50	100	100	0	242442 OK
250	Read Error Retry Rate		50	100	100	0	6 OK

ID	Attribute Name	Flags	Current	Worst	Threshold	Raw Value	Status
1	Raw Read Error Rate		15	99	99	0	255220 OK
3	Spin-Up Time		3	31	31	0	0 OK
4	Startling Count		50	95	95	20	5108 OK
5	Reallocated Sector Count		51	100	100	10	0 OK
7	Seek Error Rate		15	82	80	30	222853 OK
9	Power-On Hours Count		50	80	80	0	16302 OK
10	Spin Retry Count		19	100	100	97	0 OK
12	Power Cycle Count		50	98	98	20	2312 OK
184	End-to-End error / KCEDC (HIF)		50	100	100	99	0 OK
187	Reported Unrecoverable Errors (Hardware ECC)		50	100	100	0	0 OK
188	Command Timeout		50	100	90	0	107375 OK
189	High Fly Writes (Seagate, Western Digital)		58	100	100	0	0 OK
190	Airflow Temperature (WDC) / Airflow Temperature Celsius (HIF) / Temperature diff. from 150		34	70	46	45	589103 OK
191	0 sense Error Rate		50	100	100	0	0 OK
192	Power-off Retract Count / Emergency Retract Cycle Count (Fujitsu) / Unreliable Shutdown Count		50	100	100	0	1402 OK
193	Load Cycle Count / Load/Unload cycle count (Hifits)		50	89	89	0	22287 OK
194	HDD temperature		34	50	54	0	816543 OK
197	Current Pending Sector Count		18	100	100	0	0 OK
198	(Differs) Unrecoverable Sector Count		16	100	100	0	0 OK

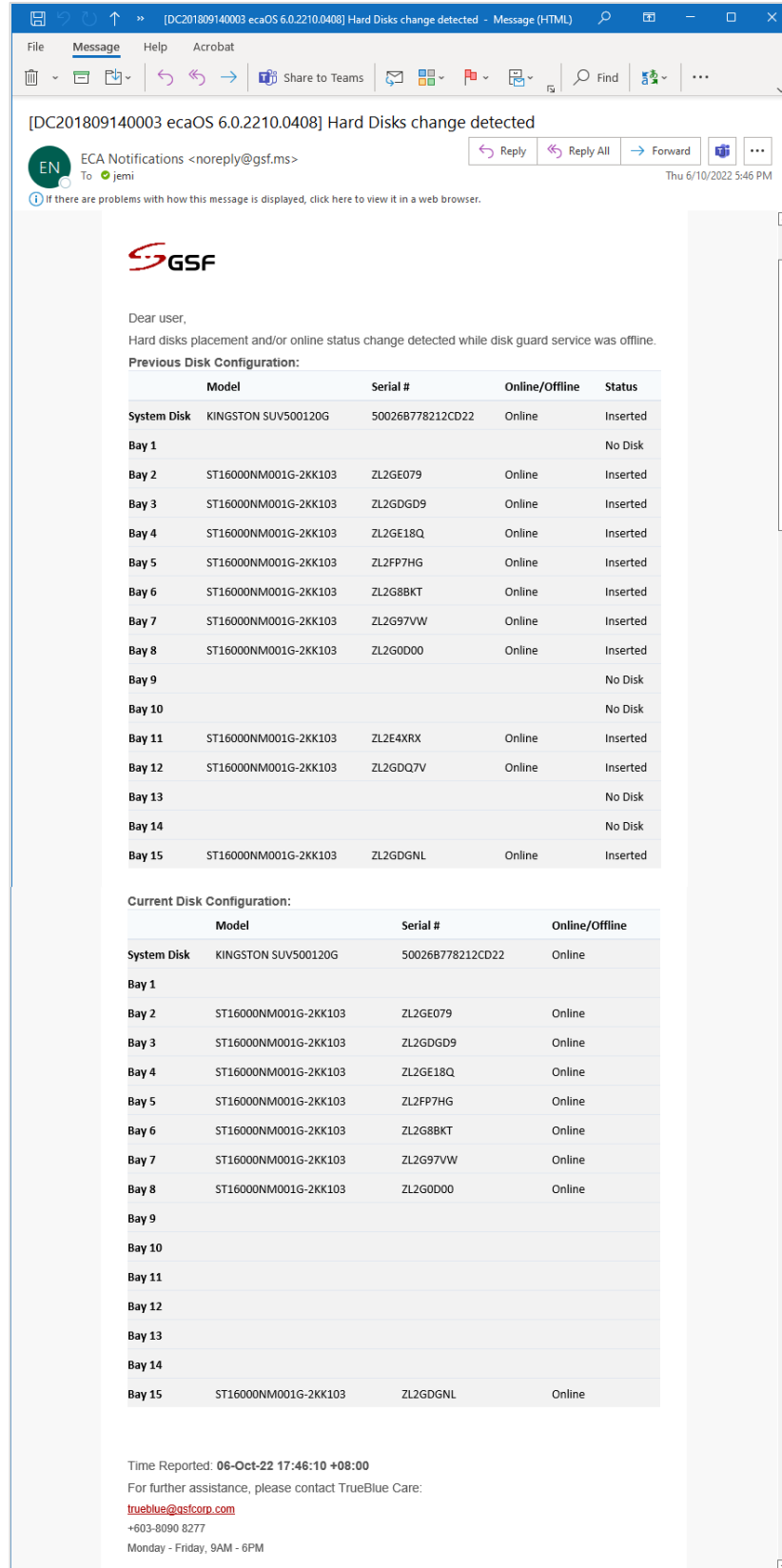
Figure 63: Storage Monitor – S.M.A.R.T.

#### NOTE:

- For email and notification setting, go to [Settings](#)
- Example email of the Disk Health event in the [Appendix Disk Health](#)
- Example email of the Disk Guard event in the [Appendix Disk Guard](#)

#### 8.4.4 Hard disk change during ECA Power Off

Dashboard will be sending notification via email to inform there is hard disk changing during ECA off stage (power off). This feature is part of Disk Guard, to protect the Data/Evidence, ensure the same serial number was in the ECA machine before and after power on.



[DC201809140003 ecaOS 6.0.2210.0408] Hard Disks change detected

ECA Notifications <noreply@gsf.ms>  
To: jemi

Thu 6/10/2022 5:46 PM

If there are problems with how this message is displayed, click here to view it in a web browser.

**GSF**

Dear user,  
Hard disks placement and/or online status change detected while disk guard service was offline.

**Previous Disk Configuration:**

	Model	Serial #	Online/Offline	Status
System Disk	KINGSTON SUV500120G	50026B778212CD22	Online	Inserted
Bay 1				No Disk
Bay 2	ST16000NM001G-2KK103	ZL2GE079	Online	Inserted
Bay 3	ST16000NM001G-2KK103	ZL2GDGD9	Online	Inserted
Bay 4	ST16000NM001G-2KK103	ZL2GE18Q	Online	Inserted
Bay 5	ST16000NM001G-2KK103	ZL2FP7HG	Online	Inserted
Bay 6	ST16000NM001G-2KK103	ZL2G8BKT	Online	Inserted
Bay 7	ST16000NM001G-2KK103	ZL2G97VW	Online	Inserted
Bay 8	ST16000NM001G-2KK103	ZL2G0D00	Online	Inserted
Bay 9				No Disk
Bay 10				No Disk
Bay 11	ST16000NM001G-2KK103	ZL2E4XRX	Online	Inserted
Bay 12	ST16000NM001G-2KK103	ZL2GDQ7V	Online	Inserted
Bay 13				No Disk
Bay 14				No Disk
Bay 15	ST16000NM001G-2KK103	ZL2GDGNL	Online	Inserted

**Current Disk Configuration:**

	Model	Serial #	Online/Offline
System Disk	KINGSTON SUV500120G	50026B778212CD22	Online
Bay 1			
Bay 2	ST16000NM001G-2KK103	ZL2GE079	Online
Bay 3	ST16000NM001G-2KK103	ZL2GDGD9	Online
Bay 4	ST16000NM001G-2KK103	ZL2GE18Q	Online
Bay 5	ST16000NM001G-2KK103	ZL2FP7HG	Online
Bay 6	ST16000NM001G-2KK103	ZL2G8BKT	Online
Bay 7	ST16000NM001G-2KK103	ZL2G97VW	Online
Bay 8	ST16000NM001G-2KK103	ZL2G0D00	Online
Bay 9			
Bay 10			
Bay 11			
Bay 12			
Bay 13			
Bay 14			
Bay 15	ST16000NM001G-2KK103	ZL2GDGNL	Online

Time Reported: 06-Oct-22 17:46:10 +08:00  
For further assistance, please contact TrueBlue Care:  
[trueblue@gsfcorp.com](mailto:trueblue@gsfcorp.com)  
+603-8090 8277  
Monday - Friday, 9AM - 6PM

Figure 64: Hard Disks change detected (1 of 1)

## 8.5 Session Shield

Session shield which permanently stores all modifications into the User Layer. Without doing so, all modifications of settings, software, or Windows, are temporary only, and will be discarded once the ECA is powered off or reboot.

Total size availability will be half of the amount of the RAM.

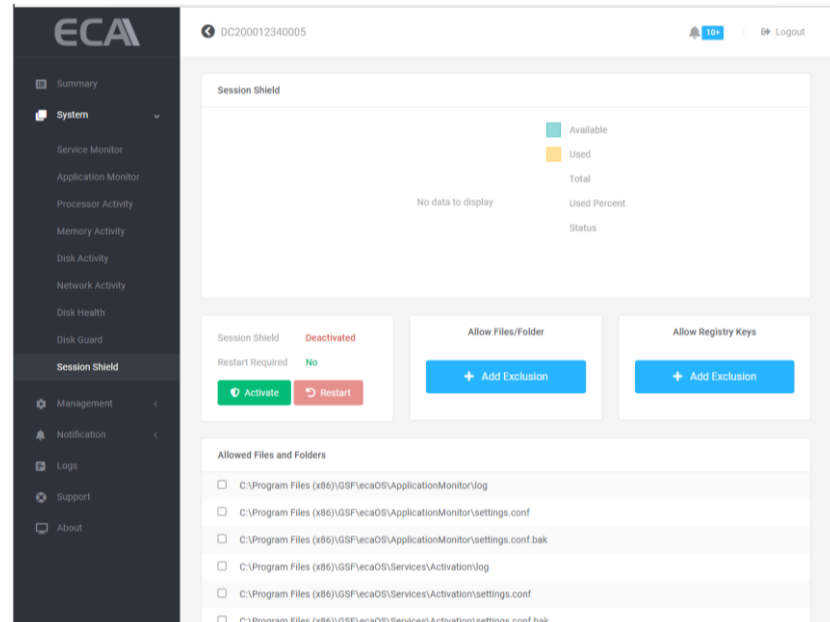


Figure 65: Session Shield

### 8.5.1 Activate Session Shield

All setting/files in the 'C:\' will be protected. All setting/files will be return to its original state after reboot the ECA.

1. Click on 'Activate'

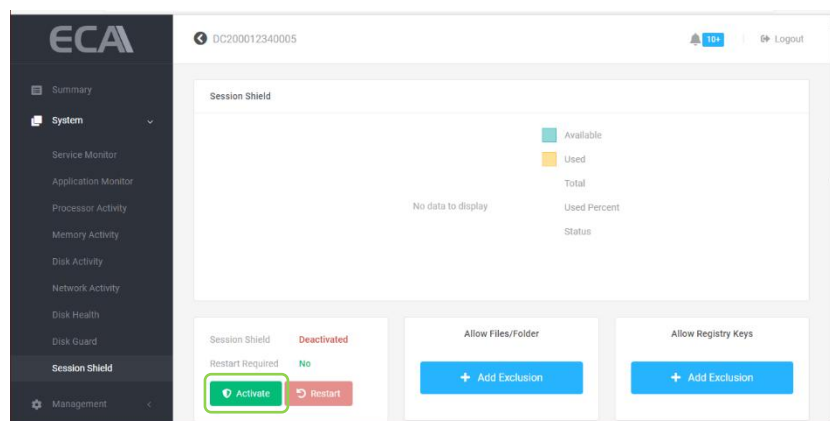


Figure 66: Activate Session Shield (1 of 5)

2. Click 'Change Settings' to save the setting

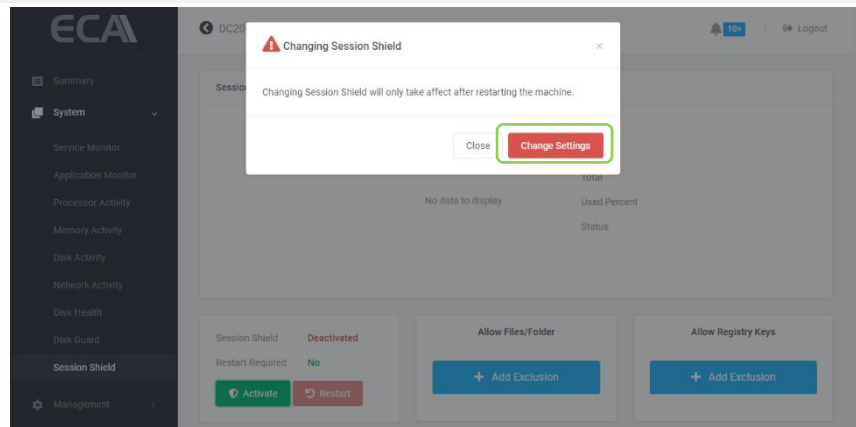


Figure 67: Activate Session Shield (2 of 5)

3. Click 'Restart' to reboot ECA and apply the setting.

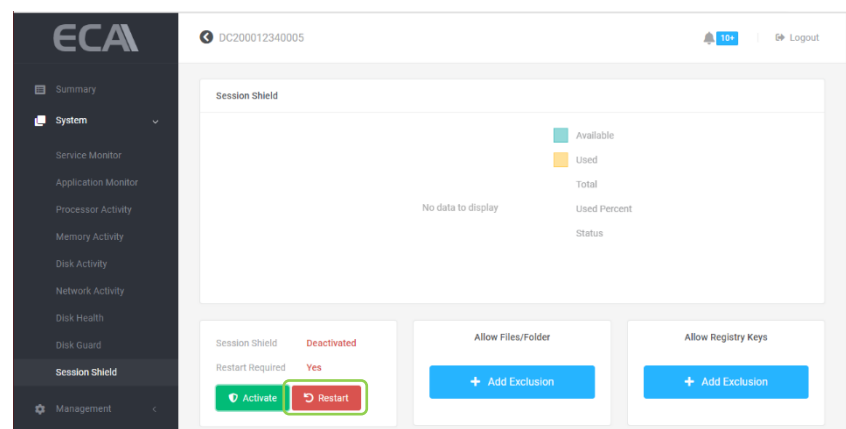


Figure 68: Activate Session Shield (4 of 6)

4. Type Restart then click 'Restart' button

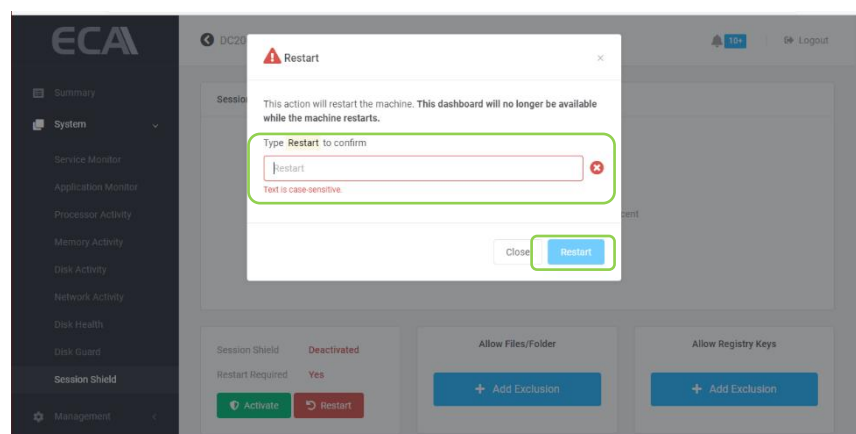


Figure 69: Activate Session Shield (5 of 6)

5. Once the Session Shield successfully activated. The Session Shield information shown as below

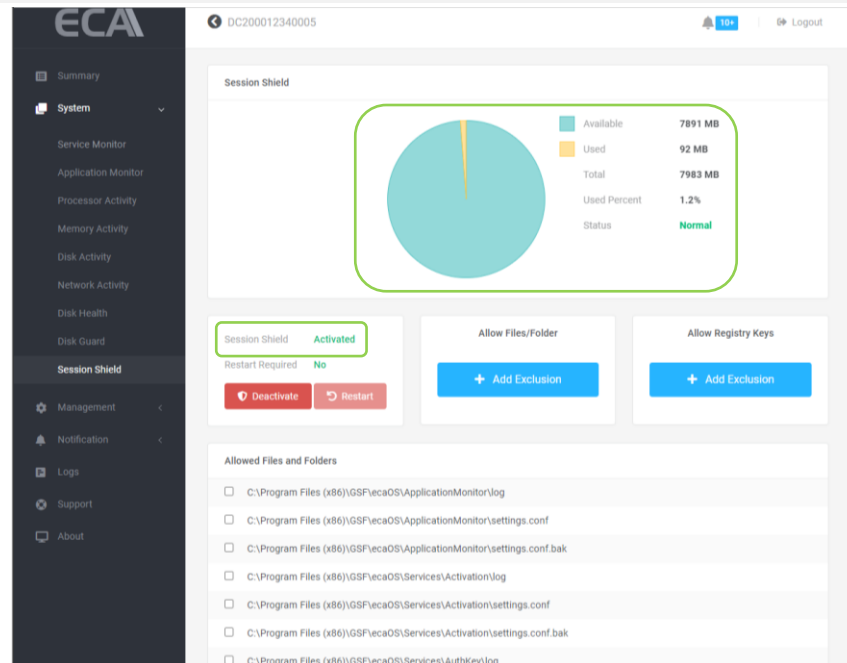


Figure 70: Activate Session Shield (6 of 6)

## 8.5.2 Deactivate Session Shield

All setting/files in the 'C:\' will not be protected. All files setting will be permanently written.

1. Click on 'Deactivate'

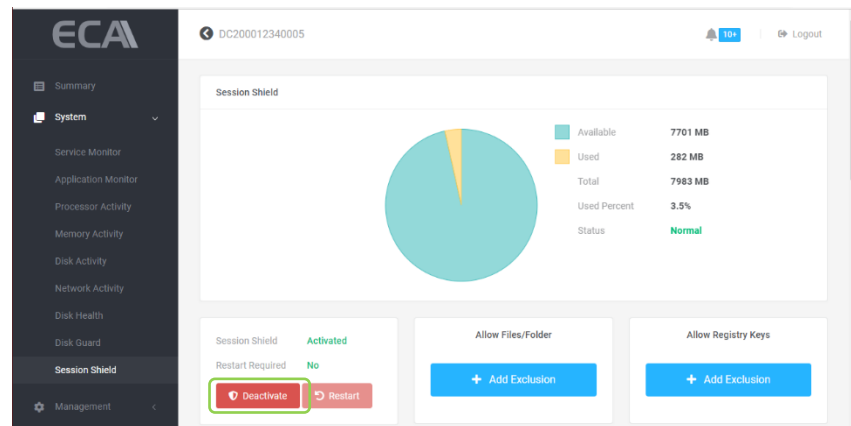


Figure 71: Deactivate Session Shield (1 of 3)

2. Click 'Change Settings' to save the setting

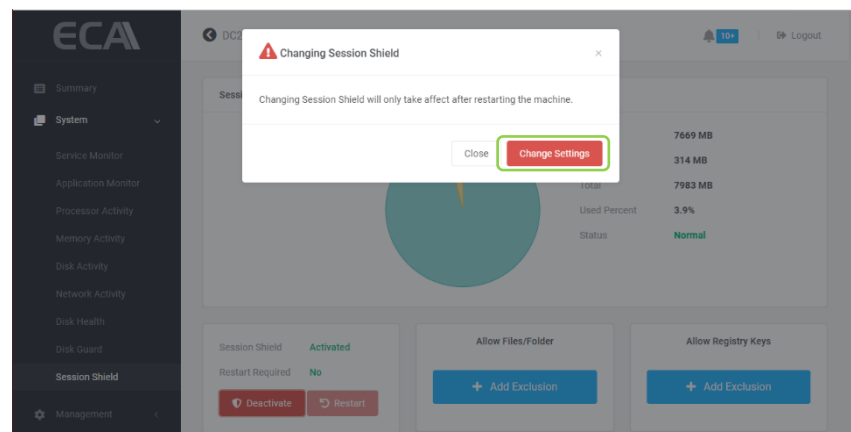


Figure 72: Deactivate Session Shield (2 of 3)

3. Click 'Restart' to reboot ECA and apply the setting

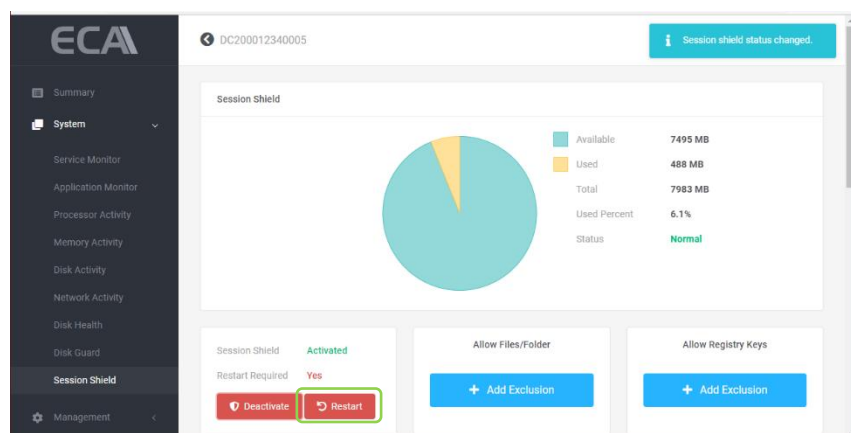


Figure 73: Deactivate Session Shield (2 of )

4. Type Restart then click 'Restart' button

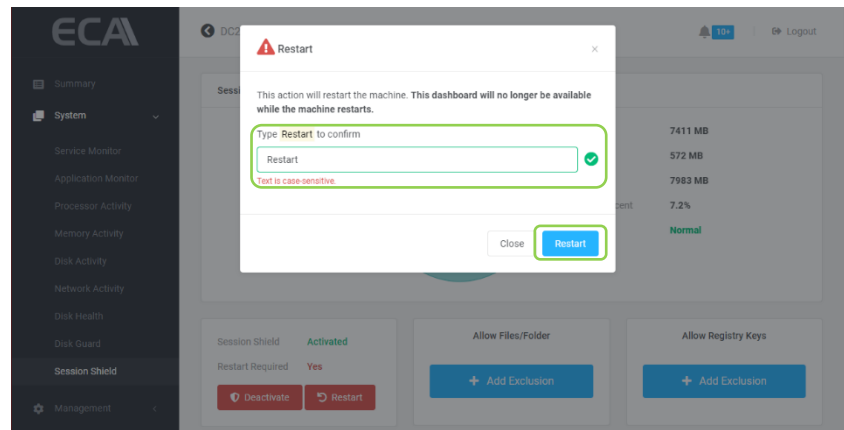


Figure 74: Deactivate Session Shield (3 of 3)

### 8.5.3 Exclusion List

All paths below will not be affected when Session Shield is activated. The data destined to these paths will be able to pass-through and written permanently:

```
C:\Program Files (x86)\GSF\ecaOS\ProcessMonitor\log
C:\Program Files (x86)\GSF\ecaOS\ProcessMonitor\settings.conf
C:\Program Files (x86)\GSF\ecaOS\ProcessMonitor\settings.conf.bak
C:\Program Files (x86)\GSF\ecaOS\Services\Activation\log
C:\Program Files (x86)\GSF\ecaOS\Services\Activation\settings.conf
C:\Program Files (x86)\GSF\ecaOS\Services\Activation\settings.conf.bak
C:\Program Files (x86)\GSF\ecaOS\Services\AuthKey\log
C:\Program Files (x86)\GSF\ecaOS\Services\AuthKey\settings.conf
C:\Program Files (x86)\GSF\ecaOS\Services\AuthKey\settings.conf.bak
C:\Program Files (x86)\GSF\ecaOS\Services\AuthOtp\log
C:\Program Files (x86)\GSF\ecaOS\Services\AuthOtp\settings.conf
C:\Program Files (x86)\GSF\ecaOS\Services\AuthOtp\settings.conf.bak
C:\Program Files (x86)\GSF\ecaOS\Services\HB2Gateway\log
C:\Program Files (x86)\GSF\ecaOS\Services\HB2Gateway\settings.conf
C:\Program Files (x86)\GSF\ecaOS\Services\HB2Gateway\settings.conf.bak
C:\Program Files (x86)\GSF\ecaOS\Services\Log\log
C:\Program Files (x86)\GSF\ecaOS\Services\Log\settings.conf
C:\Program Files (x86)\GSF\ecaOS\Services\Log\settings.conf.bak
C:\Program Files\Microsoft SQL Server\MSSQL15.SQLEXPRESS\MSSQL\DATA
C:\Program Files (x86)\GSF\ecaOS\Services\Machine\log
C:\Program Files (x86)\GSF\ecaOS\Services\Machine\settings.conf
C:\Program Files (x86)\GSF\ecaOS\Services\Machine\settings.conf.bak
C:\Program Files (x86)\GSF\ecaOS\Services\WindowsServiceMonitor\log
C:\Program Files (x86)\GSF\ecaOS\Services\WindowsServiceMonitor\settings.conf
C:\Program Files (x86)\GSF\ecaOS\Services\WindowsServiceMonitor\settings.conf.bak
C:\Program Files (x86)\GSF\ecaOS\Services\SessionShield\log
C:\Program Files (x86)\GSF\ecaOS\Services\SessionShield\settings.conf
C:\Program Files (x86)\GSF\ecaOS\Services\SessionShield\settings.conf.bak
C:\Program Files (x86)\GSF\ecaOS\Services\CPUMonitor\log
C:\Program Files (x86)\GSF\ecaOS\Services\CPUMonitor\Db
C:\Program Files (x86)\GSF\ecaOS\Services\CPUMonitor\appsettings.cpu_activity.json
C:\Program Files (x86)\GSF\ecaOS\Services\MemoryMonitor\log
C:\Program Files (x86)\GSF\ecaOS\Services\MemoryMonitor\Db
C:\Program Files (x86)\GSF\ecaOS\Services\MemoryMonitor\appsettings.memory_activity.json
C:\Program Files (x86)\GSF\ecaOS\Services\NetworkMonitor\log
C:\Program Files (x86)\GSF\ecaOS\Services\NetworkMonitor\Db
C:\Program Files (x86)\GSF\ecaOS\Services\NetworkMonitor\appsettings.network_activity.json
C:\Program Files (x86)\GSF\ecaOS\Services\DiskMonitor\log
C:\Program Files (x86)\GSF\ecaOS\Services\DiskMonitor\Db
C:\Program Files (x86)\GSF\ecaOS\Services\DiskMonitor\appsettings.disk_activity.json
C:\Program Files (x86)\GSF\ecaOS\Services\DiskHealth\log
C:\Program Files (x86)\GSF\ecaOS\Services\DiskHealth\Db
C:\Program Files (x86)\GSF\ecaOS\Services\DiskHealth\appsettings.disk_health.json
C:\Program Files (x86)\GSF\ecaOS\Services\Support\log
C:\Program Files (x86)\GSF\ecaOS\Services\Support\Db
C:\Program Files (x86)\GSF\ecaOS\Services\Support\appsettings.support.json
C:\Program Files (x86)\GSF\ecaOS\Services\DiskGuard\log
C:\Program Files (x86)\GSF\ecaOS\Services\DiskGuard\Db
C:\Program Files (x86)\GSF\ecaOS\Services\Notifier\log
```

```

C:\Program Files (x86)\GSF\eca05\Services\Notifier\Db
C:\Program Files (x86)\GSF\eca05\Services\Dashboard\log
C:\Program Files (x86)\GSF\eca05\Services\Dashboard\Db
C:\Program Files (x86)\GSF\eca05\Services\Dashboard\appsettings.json
C:\Windows\System32\config\systemprofile\AppData\Roaming\smartlogic
C:\Program Files\Windows Defender
C:\ProgramData\Microsoft\Windows Defender
C:\Windows\WindowsUpdate.log
C:\Windows\System32\winevt\Logs
C:\Windows\Logs
C:\Windows\assembly
C:\Windows\SoftwareDistribution
C:\Windows\MEMORY.DMP
C:\Users\localadmin\Desktop
C:\Users\localadmin\Documents
C:\Users\localadmin\Downloads
C:\Users\localadmin\Music
C:\Users\localadmin\Pictures
C:\Users\localadmin\Videos
C:\Program Files (x86)\GSF\eca05\ApplicationMonitor\log
C:\Program Files (x86)\GSF\eca05\ApplicationMonitor\settings.conf
C:\Program Files (x86)\GSF\eca05\ApplicationMonitor\settings.conf.bak
C:\Program Files (x86)\GSF\eca05\Services\Support\settings.conf
C:\Program Files (x86)\GSF\eca05\Services\Support\settings.conf.bak
C:\Program Files (x86)\GSF\eca05\Services\Support\TrueBlue\log
C:\Program Files (x86)\GSF\eca05\Services\Support\TrueBlue\Db
C:\Program Files (x86)\Google\Chrome Remote Desktop
C:\ProgramData\Google\Chrome Remote Desktop

```

#### 8.5.4 Add Exclusion Files or Folder

New files or folder can be added in the Exclusion List will be allowed to be written permanently when the 'Session Shield' is activated.

1. Click 'Add Exclusion' to add new file/folder

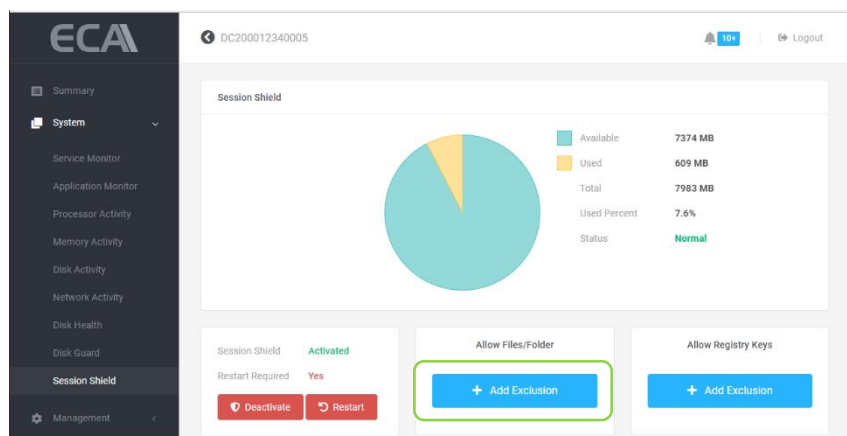


Figure 75: Allow Files/Folder (1 of 3)

2. Type or paste the new files/folder path to be include and click 'Exclude'



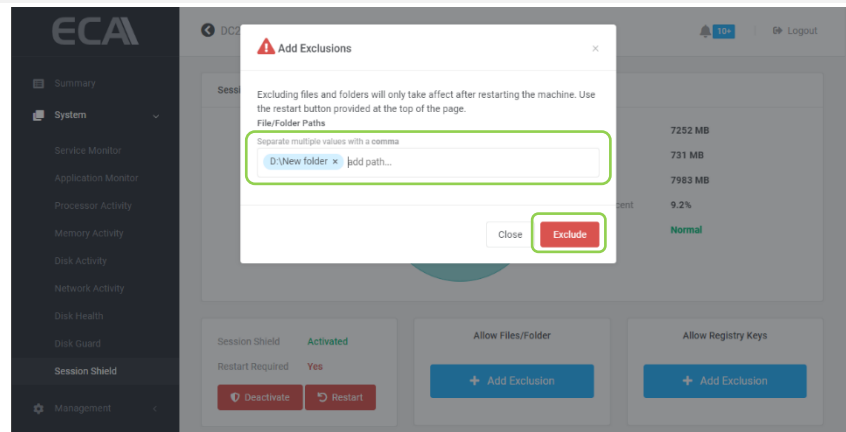


Figure 76: Allow Files/Folder (2 of 3)

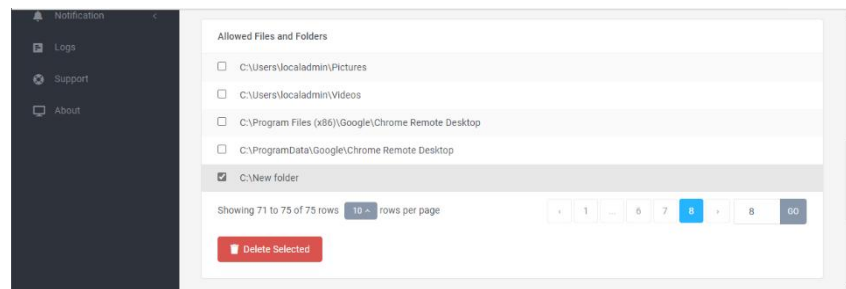


Figure 77: Allow Files/Folder (3 of 3)

### 8.5.5 Delete Exclusion Files or folder

1. Tick the check box which files/folder to be delete from the exclusion list and click 'Delete Selected'

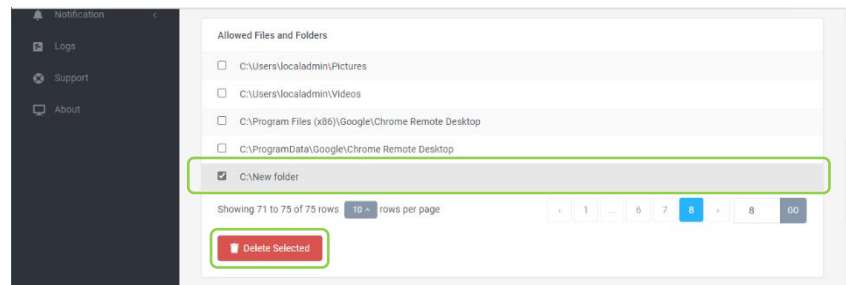


Figure 78: Delete Files/Folder (1 of 3)

2. Click 'Delete Exclusion' to confirm the operation

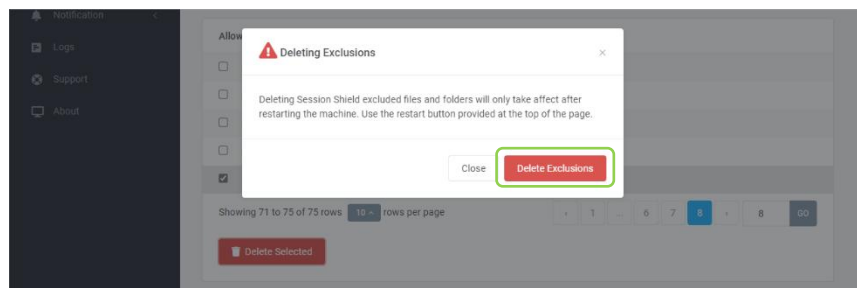


Figure 79: Delete Files/Folder (2 of 2)

### 8.5.6 Add Registry Keys

Allow to be written permanently when the 'Shield' is activated.

1. Click 'Add Exclusion' to add registry keys

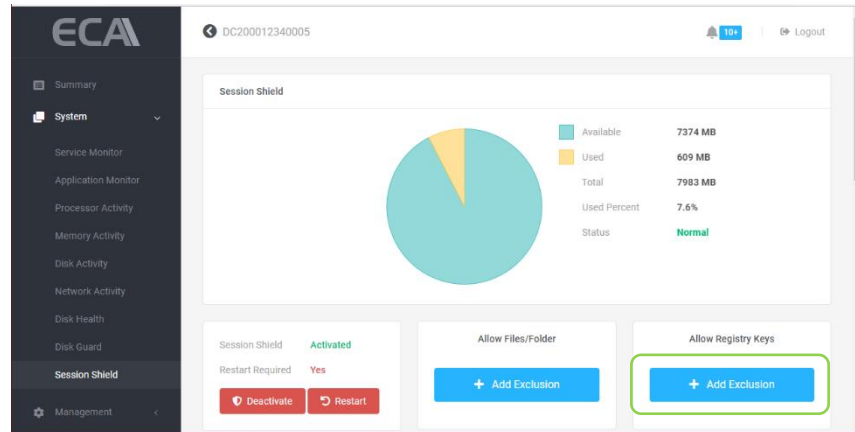


Figure 80: Allow Registry Keys (1 of 2)

2. Type or paste the registry key to be include and click 'Exclude'

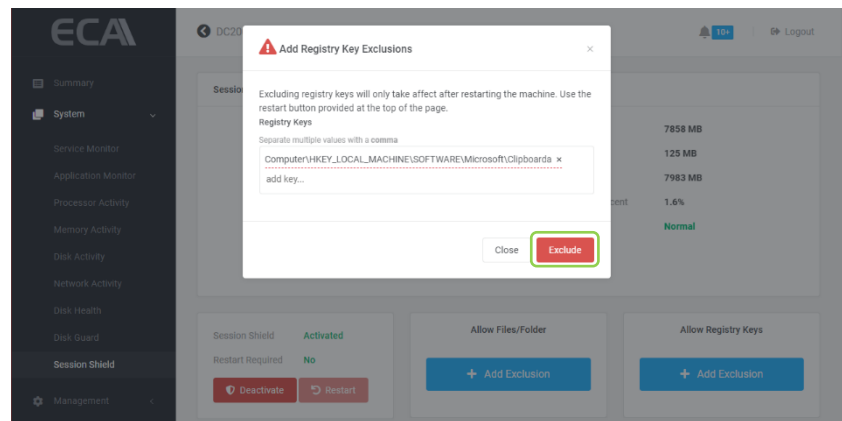


Figure 81: Allow Registry Keys (1 of 2)

### 8.5.7 Delete Exclusion Registry Key

1. Tick the check box which registry key to be delete from the exclusion list and click 'Delete Selected'

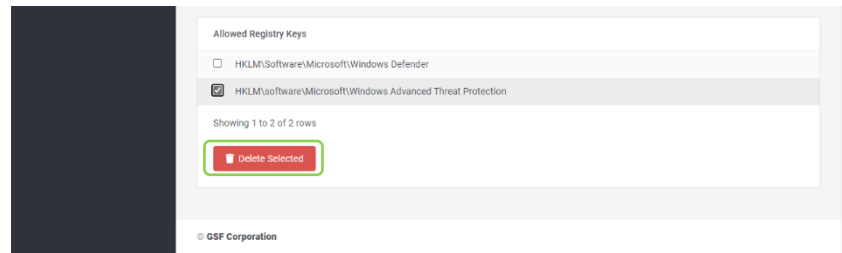


Figure 82: Delete Registry Key (1 of 2)

2. Click 'Delete Exclusion' to confirm the operation

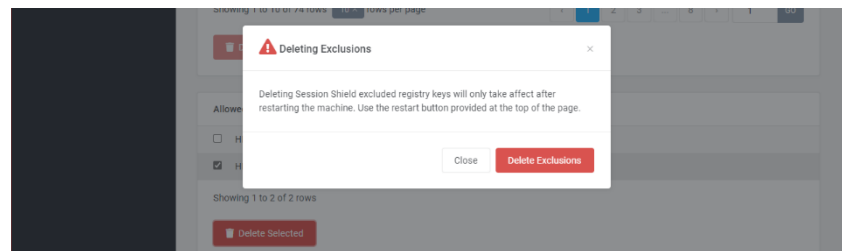


Figure 83: Delete Registry Key (2 of 2)

### 8.5.8 Status: Warning

Session shield status will turn to 'Warning' state when the used amount of space exceeds 80% of total space.

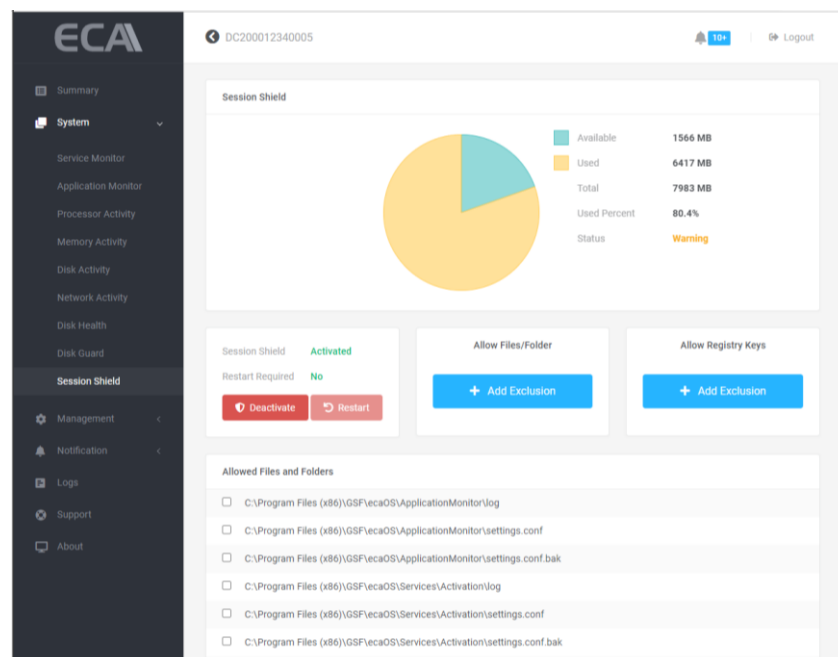


Figure 84: Warning Status

### 8.5.9 Status: Critical

Session shield status will turn to 'Critical state when the used amount of space exceeds 90% of total space. The ECA will be start the counter and restart in few minutes.

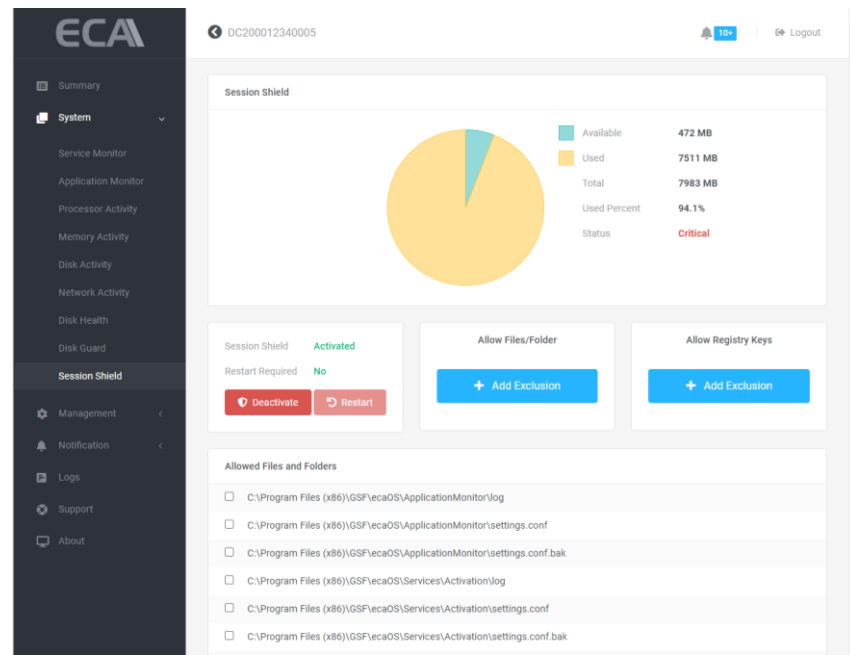


Figure 85: Critical Status

## 8.6 Device Monitor

Device Monitor is a tool to monitor the uptime percentage of a device of interest using HTTP, Keyword, Port or Ping methods.

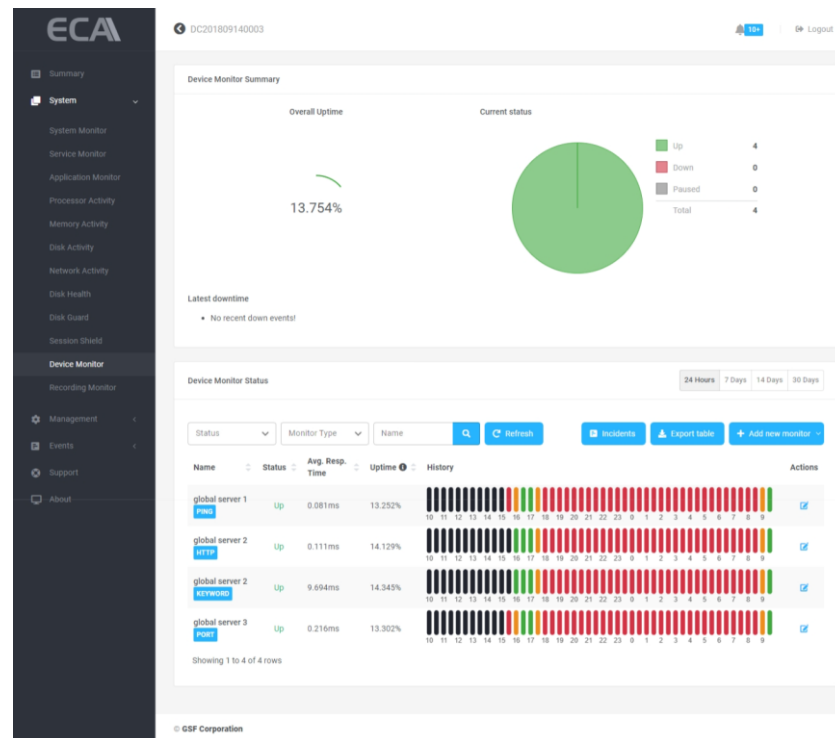


Figure 86: Device Monitor

### 8.6.1 Add New Monitor

1. Click the 'Add new monitor'.

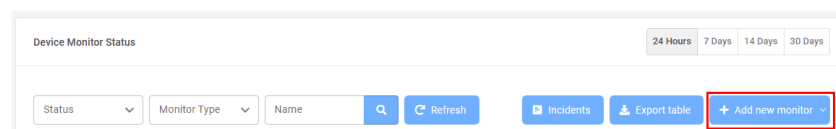


Figure 87: Add new monitor

2. Choose the desired monitor type under "Add monitor details."
3. HTTP – monitors a web server using HTTP or HTTPS. GET, POST, HEAD, and OPTIONS are supported HTTP methods.
  - a. Type in the hostname or IP and monitor name.
  - b. Pick the appropriate HTTP Method. (GET Method by default)
  - c. Set the Monitoring Interval. (by default, five minutes)
  - d. Press the Submit button.

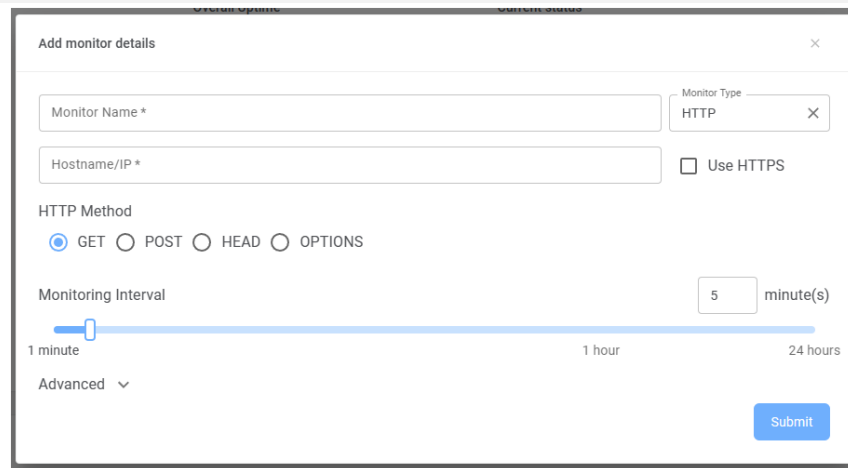


Figure 88: Monitor type - HTTP

4. Keyword – monitors a web server (HTTP or HTTPS) using keyword.
  - a. Type in the hostname or IP and monitor name.
  - b. Enter a keyword to monitor. (Case-sensitive by default)
  - c. Set the Monitor Up when keyword “Found or “Not Found” (default: Found)
  - d. Set the Monitoring Interval. (by default, five minutes)
  - e. Press the Submit button.

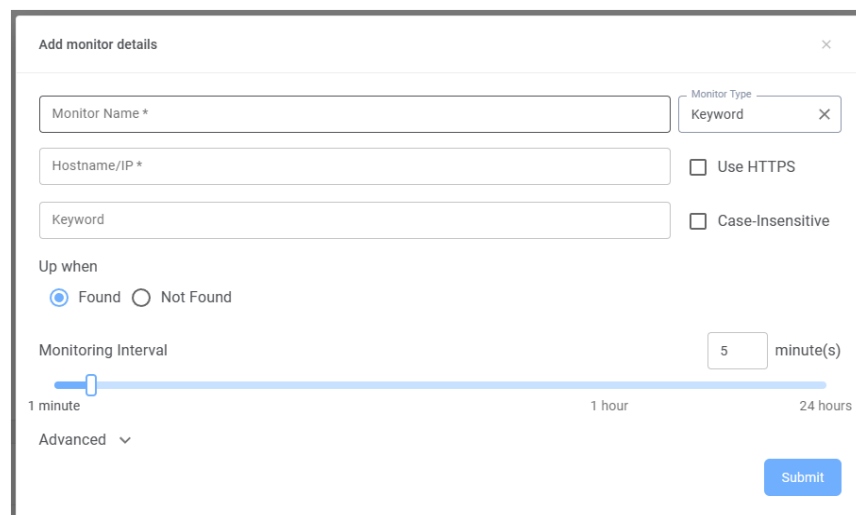
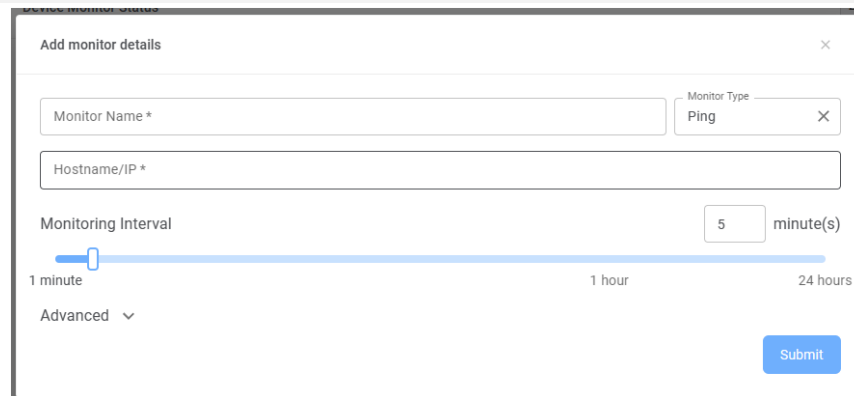


Figure 89: Monitor type - Keyword

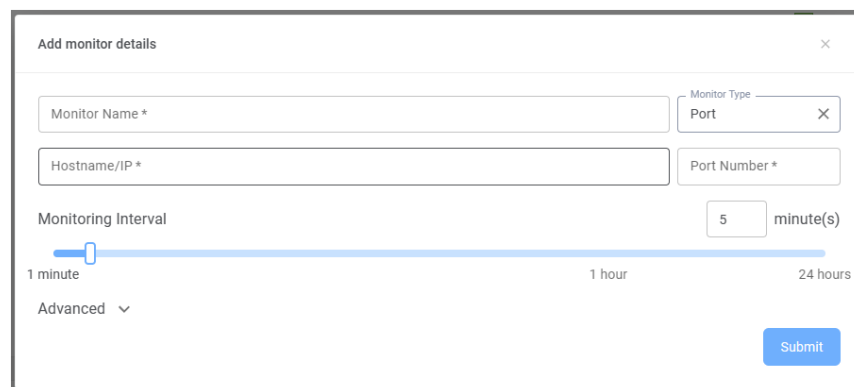
5. Ping - sends an “ICMP” echo request ("ping") to the device to monitor its availability.
  - a. Type in the Monitor name & Hostname/IP
  - b. Set the Monitoring Interval. (by default, five minutes)
  - c. Press the Submit button.



The screenshot shows the 'Add monitor details' form for a Ping monitor. It includes fields for 'Monitor Name \*', 'Hostname/IP \*', and a 'Monitoring Interval' slider set to 5 minutes. The 'Monitor Type' dropdown is set to 'Ping'. A 'Submit' button is at the bottom right.

Figure 90: Monitor type - Ping

6. Port - monitors a network service by connecting to its port.
  - a. Type in the Monitor name, Hostname/IP & Port number.
  - b. Set the Monitoring Interval. (by default, five minutes)
  - c. Press the Submit button.



The screenshot shows the 'Add monitor details' form for a Port monitor. It includes fields for 'Monitor Name \*', 'Hostname/IP \*', 'Port Number \*', and a 'Monitoring Interval' slider set to 5 minutes. The 'Monitor Type' dropdown is set to 'Port'. A 'Submit' button is at the bottom right.

Figure 91: Add Device Monitor – Port type

## 8.6.2 Delete Monitor

1. Click 'v' icon and select 'Delete monitors'.

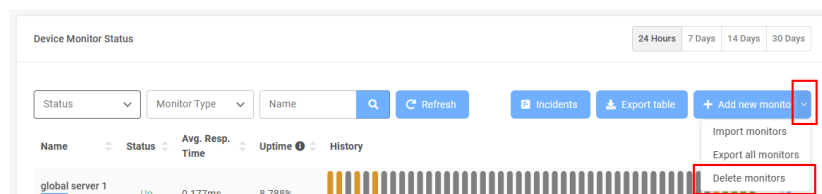


Figure 92: Delete Device Monitors (1 of 2)

2. Select the monitor to delete and type 'Delete'.
3. Press the 'Delete' button.

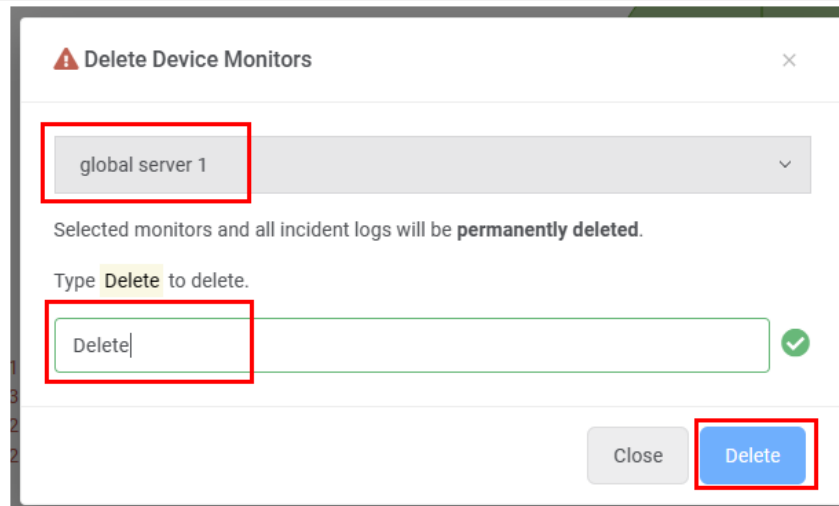


Figure 93: Delete Device Monitors (2 of 2)

## 8.7 Recording Monitor

The Recording Monitor is a tool for monitoring the channels recording status of the Macula VMS.

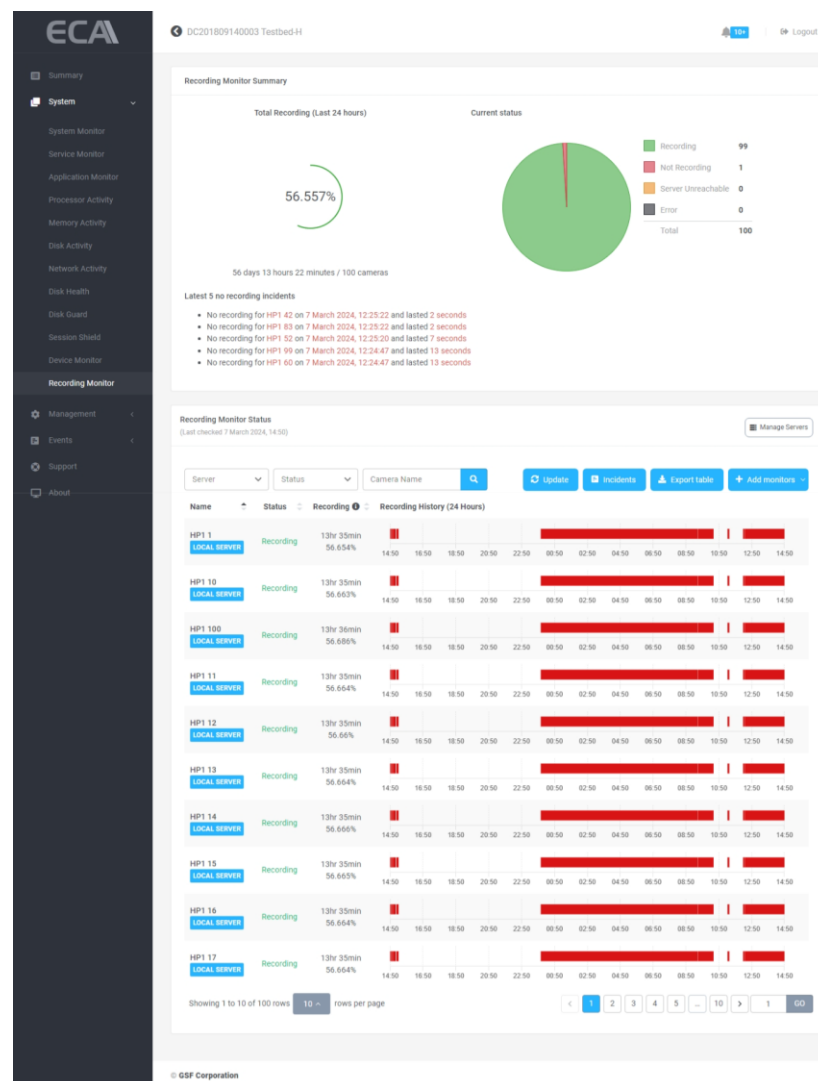


Figure 94: Device Monitor



### 8.7.1 Add New Monitor

1. Click 'Manage Servers' button.

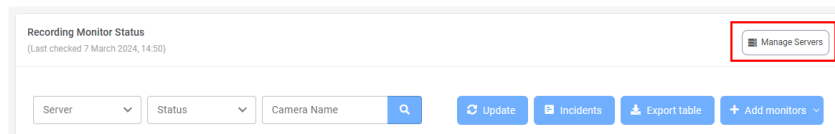


Figure 95: Add VMS server (1 of 3)

2. Click 'Add Server'.

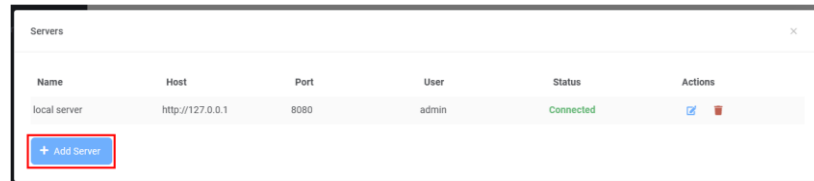


Figure 96: Add VMS server (2 of 3)

3. Enter VMS's hostname/IP, port, and login information. Please ensure that the user has the channel's 'video playback' and 'Login via HTTP' permissions.

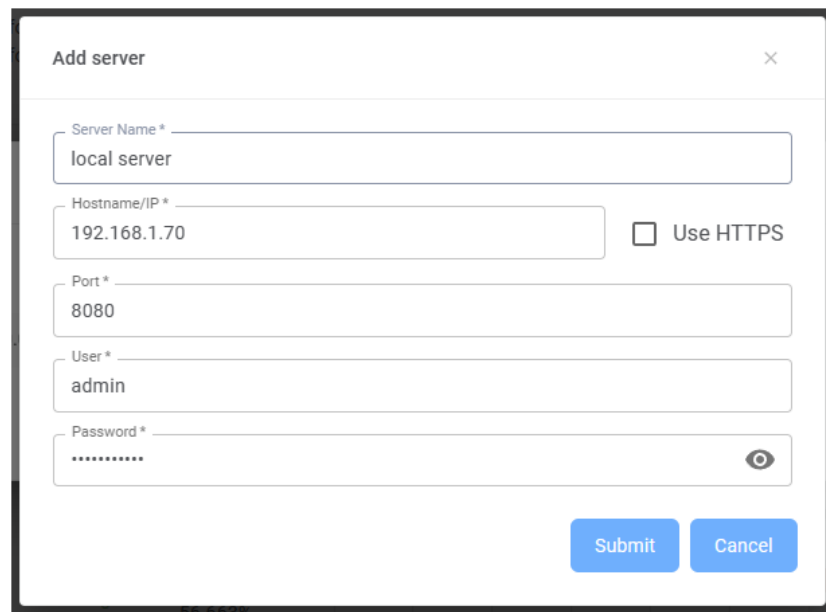


Figure 97: Add VMS server (3 of 3)

4. Click 'Add monitors'.

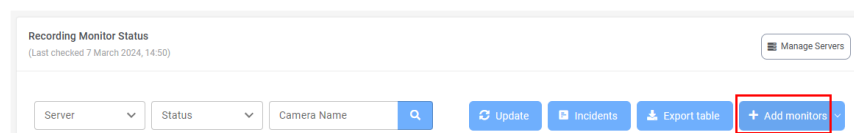


Figure 98: Add monitors (1 of 2)

5. In 'Add monitor', choose a server and channels to monitor. Then press 'Add' button.

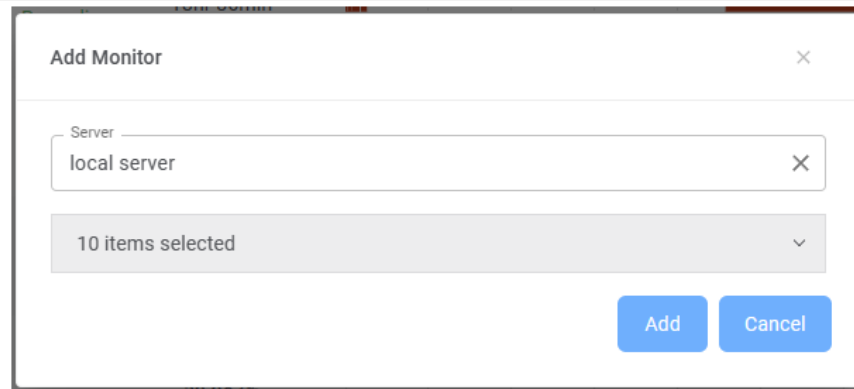


Figure 99: Add monitors (2 of 2)

### 8.7.2 Delete Monitors

1. Click 'v' icon and select 'Delete monitors'.

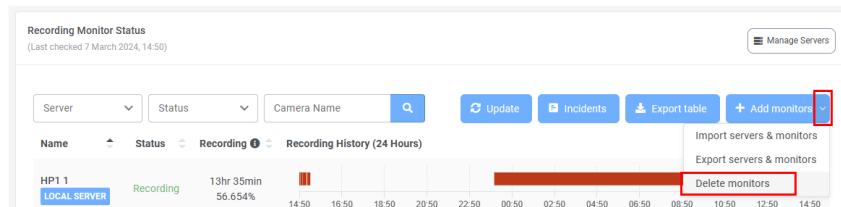


Figure 100: Delete Recording Monitors (1 of 2)

2. Select the monitor(s) to delete and type 'Delete'.
3. Press the 'Delete' button.

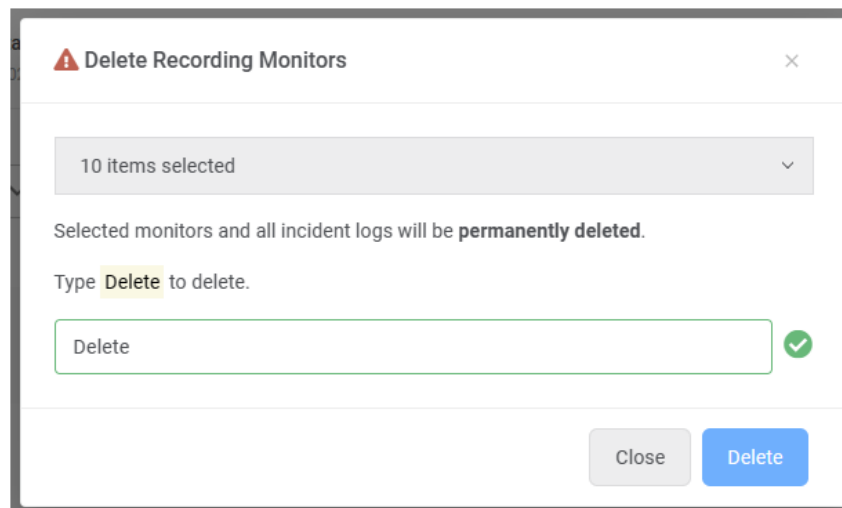


Figure 101: Delete Recording Monitors (2 of 2)

## 9 Management

### 9.1 Machine

Under Machine Control to Reboot or Shutdown ECA. Layer Management to save current layer as a backup layer. Backup layer can be deployed (Soft Reset & Hard Reset) in the future to restore previous setting.

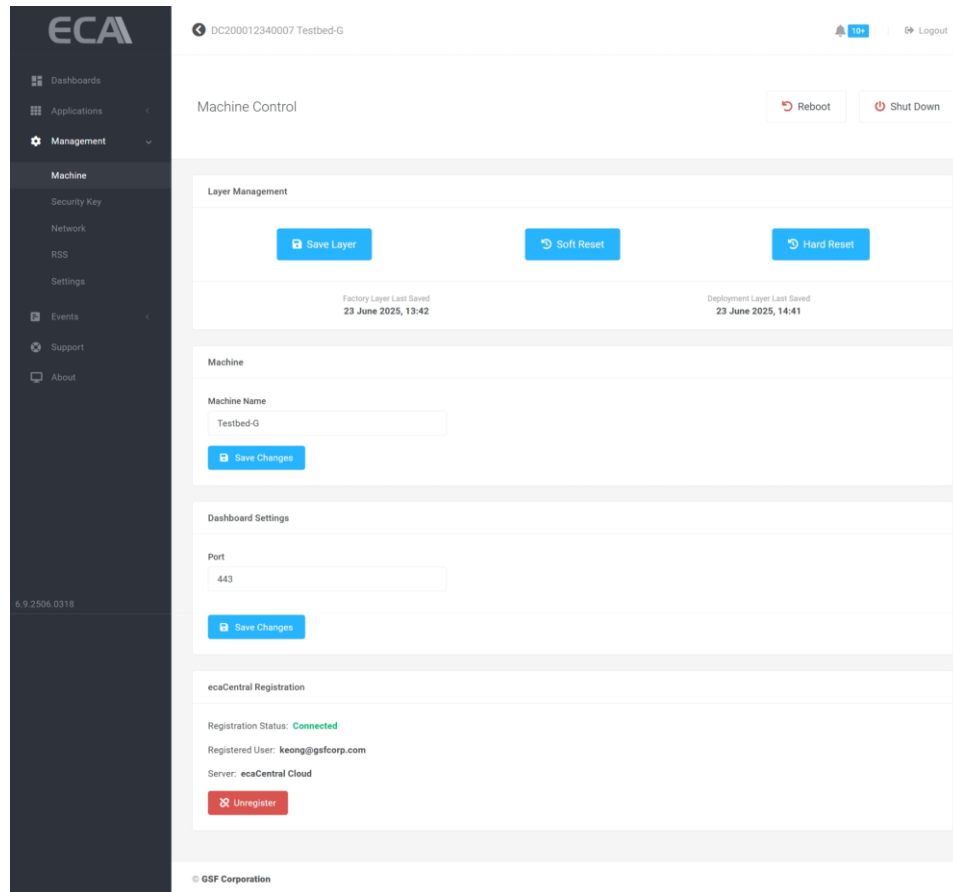


Figure 102: Machine

#### 9.1.1 Authorize Restart

Only restart through the Dashboard will consider as authorize restart.

1. Click on 'Restart'

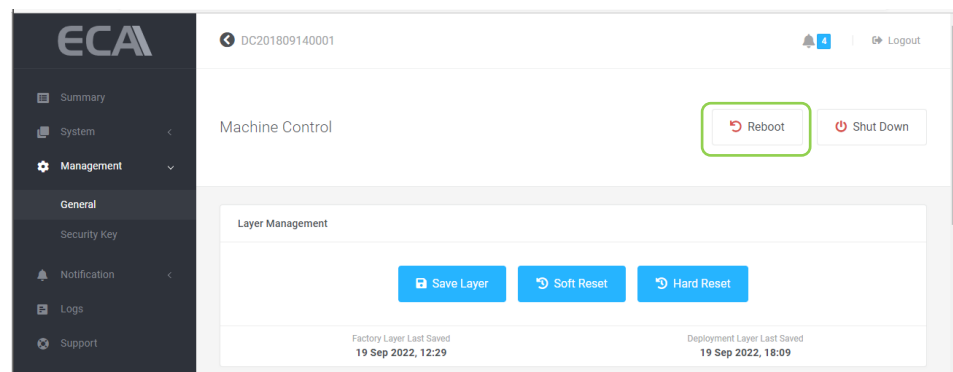


Figure 103: Authorize Restart (1 of 2)

2. Type **Restart** then click 'Restart' button

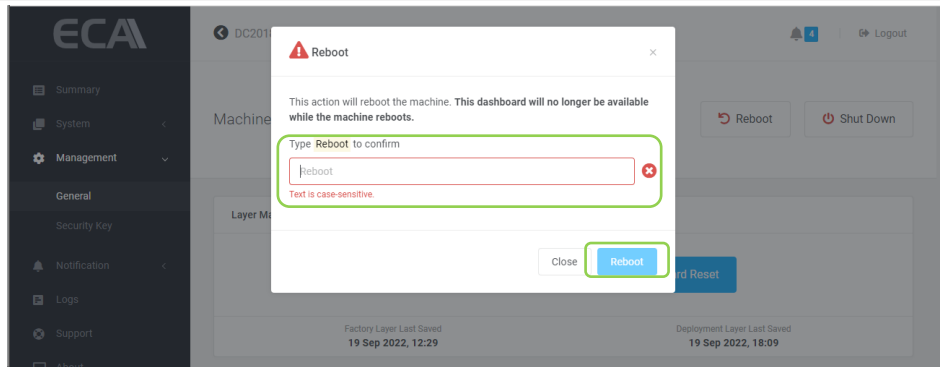


Figure 104: Authorize Restart (2 of 2)

### 9.1.2 Authorize Shutdown

To shutdown ECA, only through the Dashboard will consider as authorize restart. Shutdown ECA not via dashboard will consider as unauthorize shutdown. HB will reboot the ECA.

1. Click on 'Shut Down'

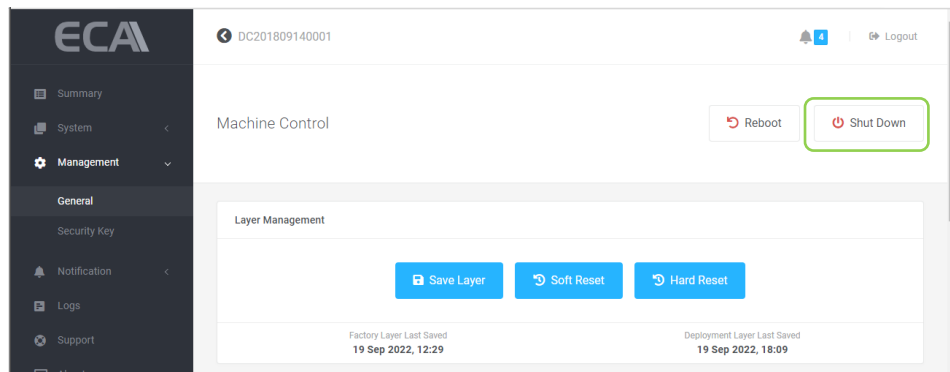


Figure 105: Authorize Shut Down (1 of 2)

2. Type **Shutdown** then click 'shutdown' button

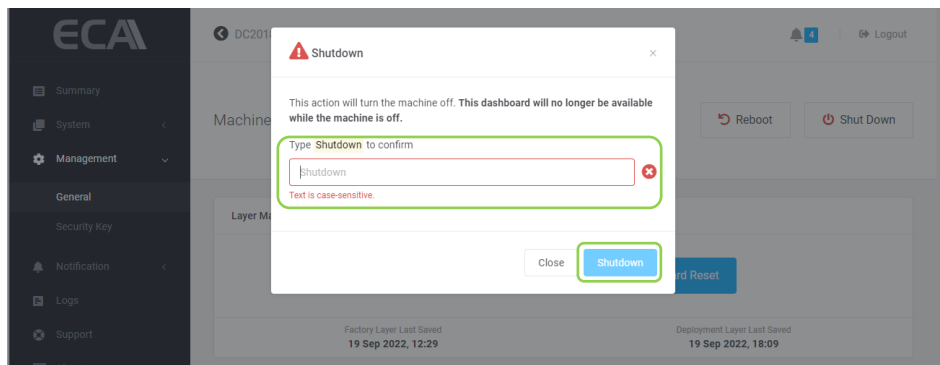


Figure 106: Authorize Shut Down (2 of 2)

### 9.1.3 Saving & Deploy Layer

It is recommended to perform 'Save Layer' for any changes under system including video management software such as added new camera.

#### 9.1.3.1 Save Layer

Save current user working layer as a deployment layer. This layer will content all current working setting. If in the future suddenly the OS corrupt, this layer can recall (Soft Reset) to deploy previous working state.

NOTE:

Performing Save Layer, Soft Reset & Hard Reset will cause the downtime of the ECA means there will no recording & accessing to Dashboard not available during this period until the ECA complete the layer saving and reboot back to ecaOS.

1. Click on 'Save Layer'

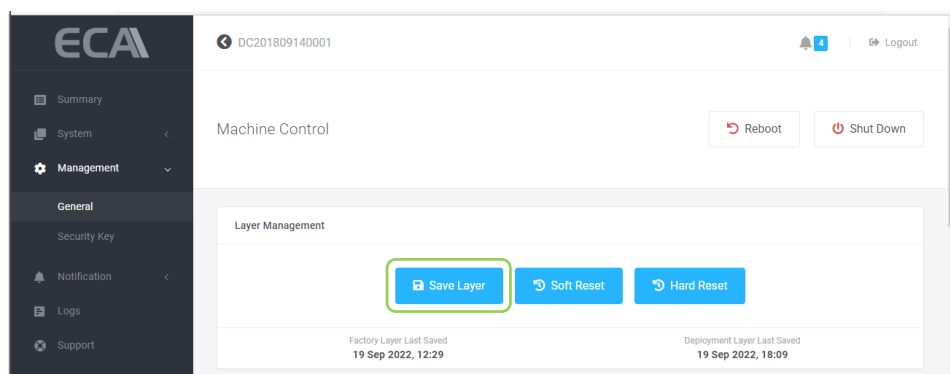


Figure 107: Save Layer (1 of 5)

2. ECA will reboot and go to Layer Manager.



Figure 108: Save Layer (2 of 5)

3. Saving layer will be start after 10 seconds countdown. To cancel the operation, click on Cancel

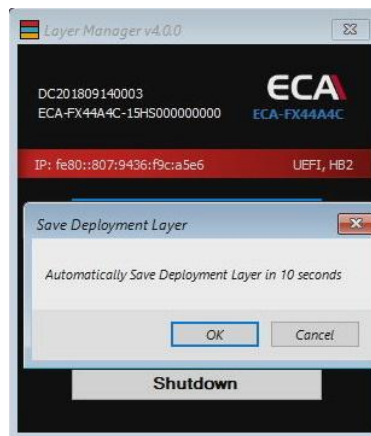


Figure 109: Save Layer (3 of 5)

4. Saving layer in progress show with percentage

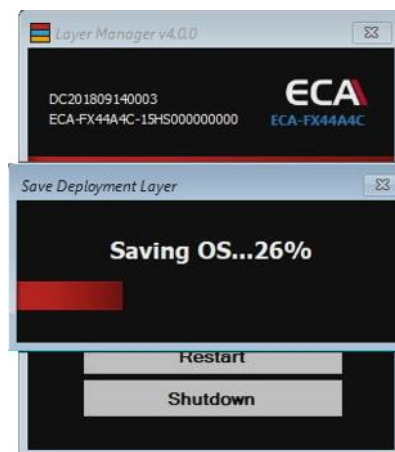


Figure 110: Save Layer (4 of 5)

5. ECA will reboot to ecaOS after complete saving layer.



Figure 111: Save Layer (5 of 5)

### 9.1.3.2 Soft Reset

Deploy deployment layer and replace current working with previous save setting.

1. Click on 'Soft Reset'

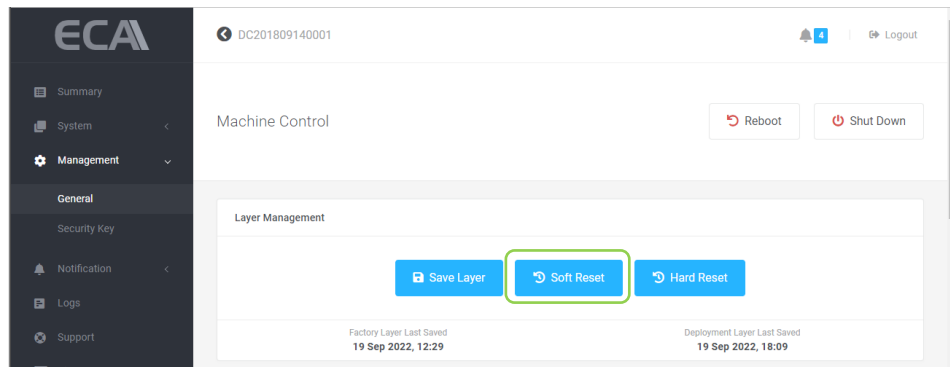


Figure 112: Soft Reset (1 of 5)

6. ECA will reboot and go to Layer Manager.



Figure 113: Save Layer (2 of 5)

7. Restoring Deployment layer will be start after 10 seconds countdown. To cancel the operation, click on Cancel

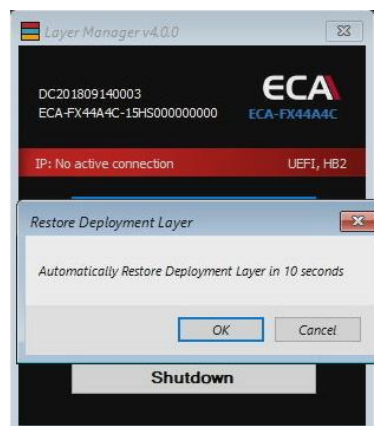


Figure 114: Save Layer (3 of 5)

8. Restoring layer in progress show with percentage

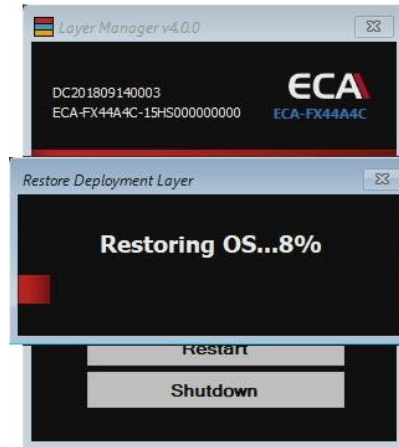


Figure 115: Save Layer (4 of 5)

9. ECA will reboot to ecaOS after complete saving layer.



Figure 116: Save Layer (5 of 5)



### 9.1.3.3 Hard Reset

Deploy default layer saved from factory.

**NOTE:** All setting previously done on site will not available after Hard Reset. Only perform Hard Reset when Soft Reset failed.

1. Click on 'Hard Reset'

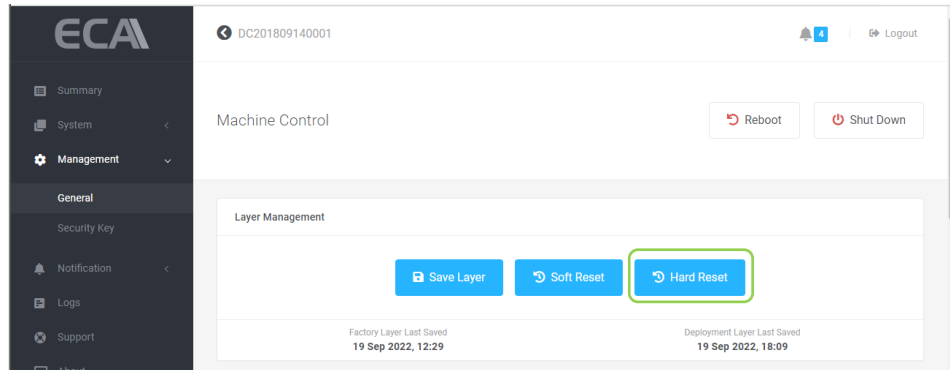


Figure 117: Soft Reset (1 of 2)

10. ECA will reboot and go to Layer Manager.



Figure 118: Save Layer (2 of 5)

11. Restoring Factory layer will be start after 10 seconds countdown. To cancel the operation, click on Cancel

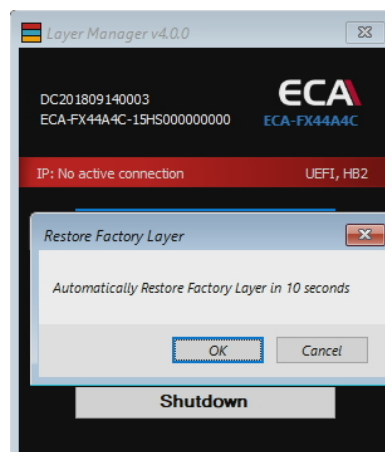


Figure 119: Save Layer (3 of 5)

12. Restoring layer in progress show with percentage

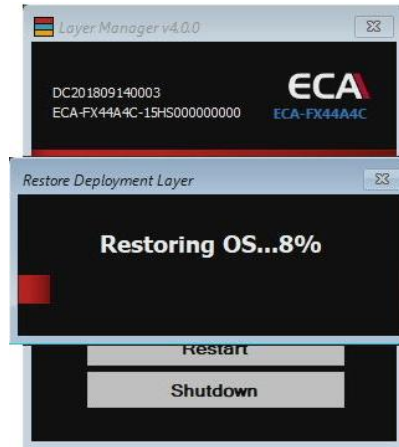


Figure 120: Save Layer (4 of 5)

13. ECA will reboot to ecaOS after complete saving layer.



Figure 121: Save Layer (5 of 5)

### 9.1.3.4 Last Saved Layer Information

Display the last date and time of the layer last saved

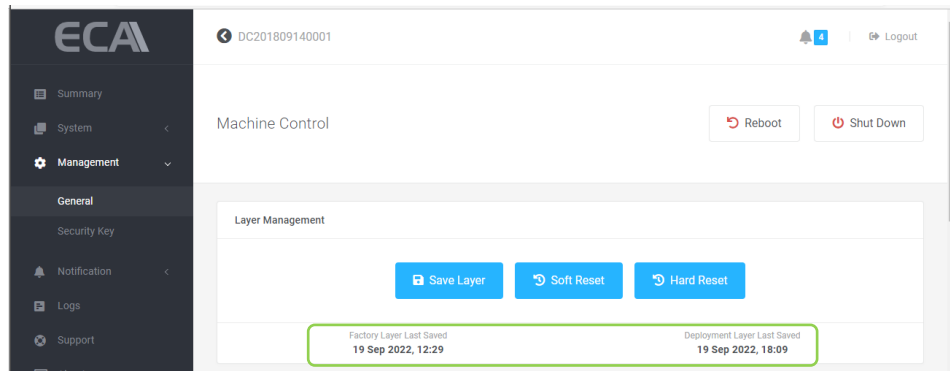


Figure 122: Information about the last saved layer

### 9.1.4 Machine Name

Assign your ECA a friendly name to make it easier to identify.

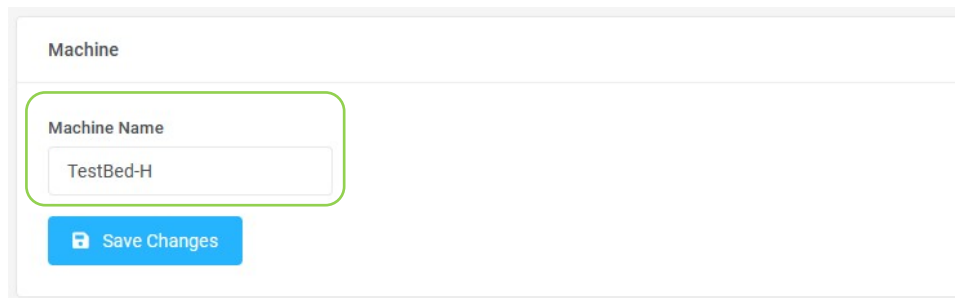


Figure 123: Machine name for ECA

### 9.1.5 Change Dashboard Port

By default, port 443 is used by ECA to access the dashboard remotely from a different computer connected to the same local area network. If the default ports are already being used, change this port.

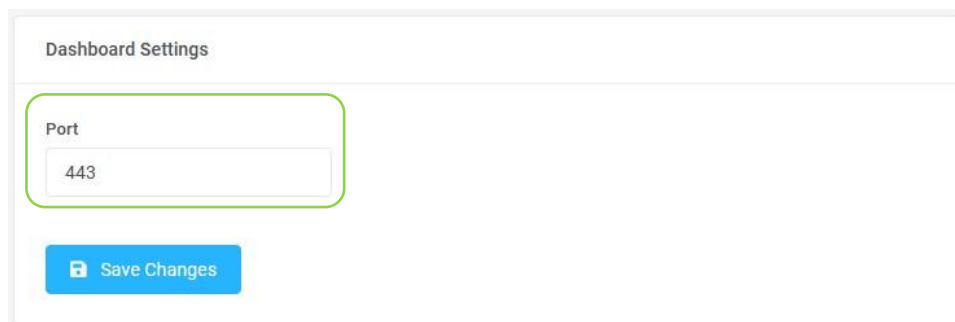


Figure 124: Port settings for Dashboard

### 9.1.6 ecaCentral Registration

ecaCentral is a dedicated dashboard for monitoring the health and performance of multiple ECAs using a registered email address. If any registered ECAs have anomalies, you will be notified via the ecaCentral dashboard.

Before using ecaCentral, go to the ecaOS dashboard for the ECA you want to monitor: Management > Settings > ecaCentral Registration, and enter your registered account information.

To register your ECA for this service:

- Enter the central IP address or hostname.
- Enter your registered email address.
- Click the Next button.
- Enter the access code generated from your virtual security key to verify and complete the registration.

If you have successfully connected the ecaCentral, you will see the connection status as connected.

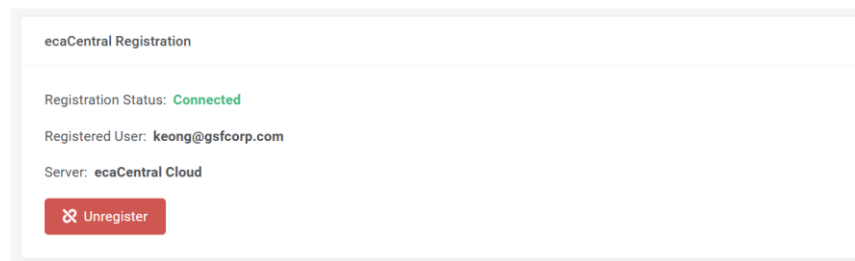


Figure 125: ecaOS Central Registration

## 9.2 Security Key

Each ECA will come with 1 unit of Security key. Any extra Security key or replacement unit require to register the Security Key to access Dashboard.

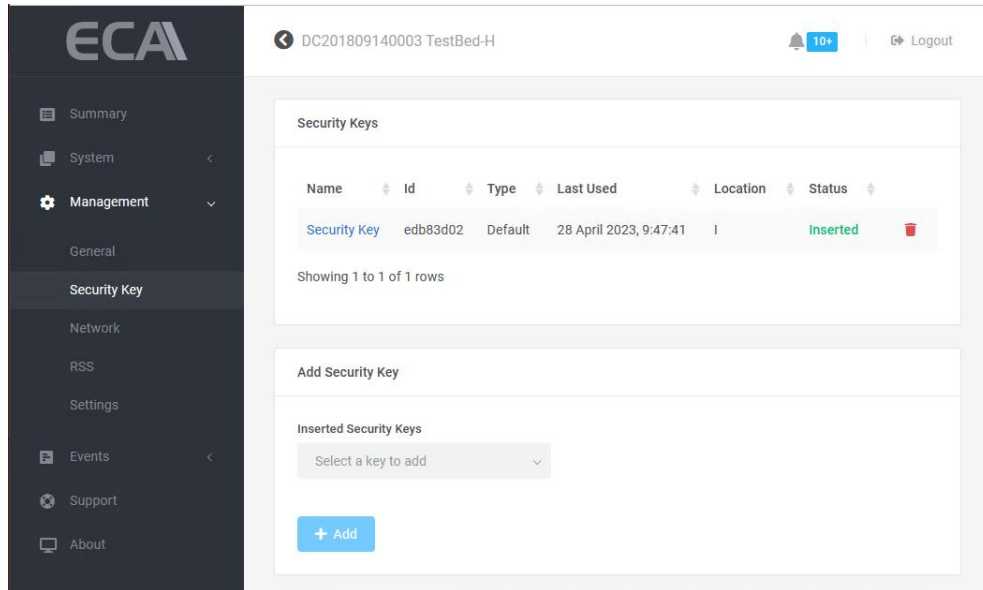


Figure 126: Security Key

### 9.2.1 Register Security Key

1. Insert valid Security Key in the USB on the ECA
2. Click on the drop-down list and select the key to register.

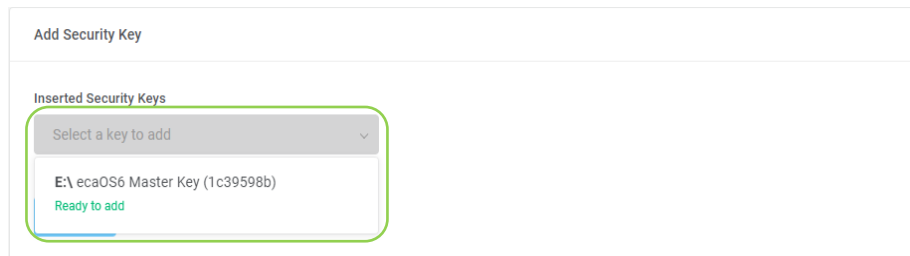


Figure 127: Register security key (1 of 3)

3. Click Add to register

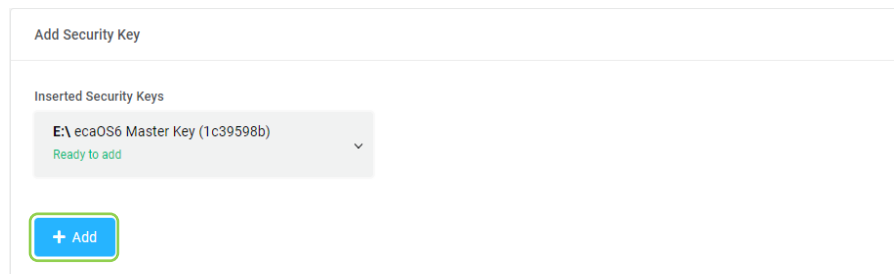


Figure 128: Register security key (2 of 3)

- Once successfully added the Security Key. The new security key will show under 'Security keys'


Security Keys						
Name	Id	Type	Last Used	Location	Status	
<a href="#">ecaOS6 Master Key</a>	1c39598b	Master	N/A	E	Inserted	
Showing 1 to 1 of 1 rows						

Figure 129: Register security key (3 of 3)

## 9.2.2 Delete Security Key

- Click on the dustbin icon of the Security key to be delete



Security Keys						
Name	Id	Type	Last Used	Location	Status	
<a href="#">ecaOS6 Master Key</a>	1c39598b	Master	25 Aug 2022, 12:47:26	E	Inserted	
Showing 1 to 1 of 1 rows						

Figure 130: Delete security key (1 of 2)

- Type in the field Security Key name and click 'Delete Security Key'

 Delete Security Key

Security key **ecaOS6 Master Key** will not be able to access this machine after deletion.

Type **ecaOS6 Master Key** to confirm

Text is case-sensitive.

Close

Delete Security Key

Figure 131: Delete security key (1 of 2)

### 9.2.3 Add Virtual Security Key

1. Click on the 'Add' button under Virtual Security key

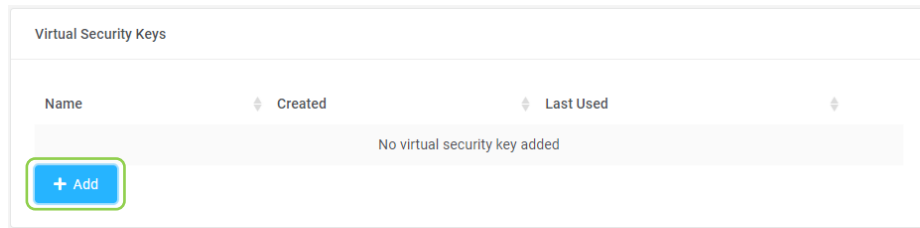


Figure 132: Add virtual security key (1 of 5)

2. Click 'Next' button

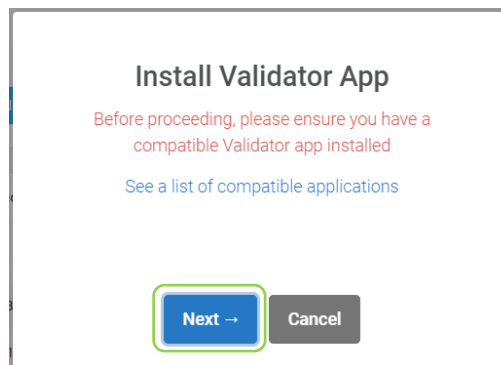


Figure 133: Add virtual security key (2 of 5)

3. Give the new virtual security key a name

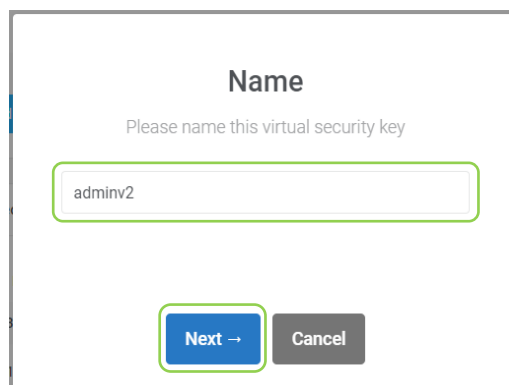
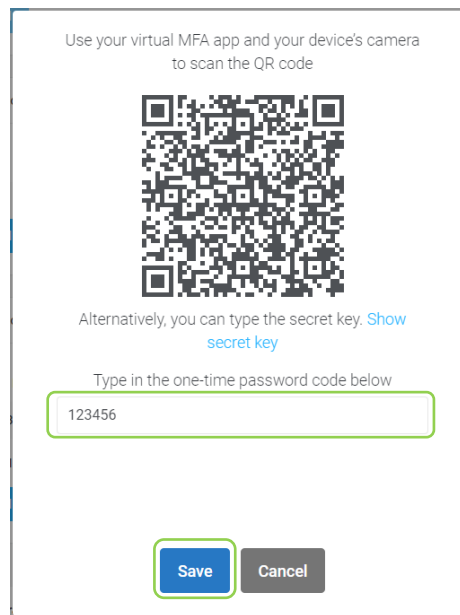



Figure 134: Add virtual security key (3 of 5)

4. Scan the QR code using authenticator application on the phone. Type the in the field and click 'Save' button one-time password for example 123456



Use your virtual MFA app and your device's camera to scan the QR code



Alternatively, you can type the secret key. [Show secret key](#)

Type in the one-time password code below

[Save](#) [Cancel](#)

Figure 135: Add virtual security key (4 of 5)

5. The new virtual security key will show under 'Virtual Security keys'


Virtual Security Keys			
Name	Created	Last Used	
adminv2	25 Aug 2022, 12:56:45	N/A	
Showing 1 to 1 of 1 rows			
<a href="#">+ Add</a>			

Figure 136: Add virtual security key (5 of 5)



**9.2.4****Delete Virtual Security Key**

1. Click on the dustbin icon the Virtual key to be delete

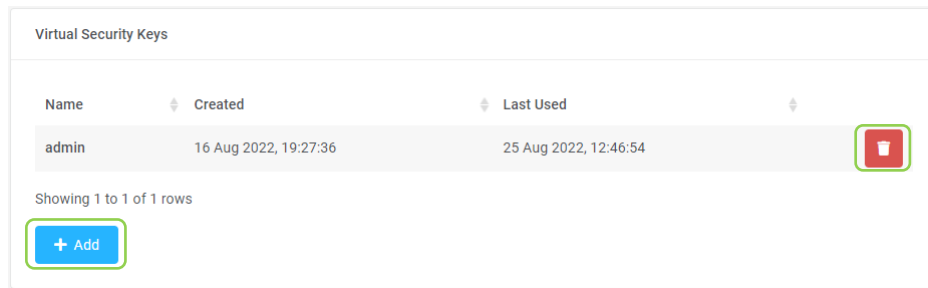


Figure 137: Delete Virtual Security Key (1 of 2)

2. Type 'admin' and click on 'Delete Virtual Security Key' button

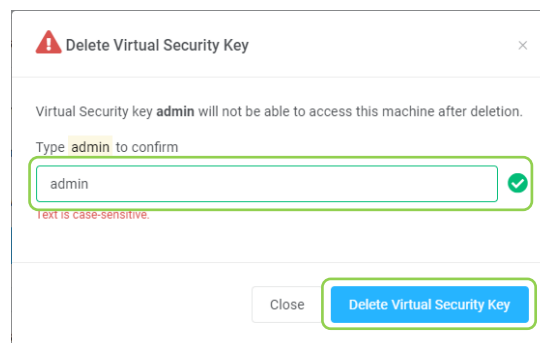


Figure 138: Delete Virtual Security Key (2 of 2)

## 9.3 Network

All ECA come with GSF DDNS. Network teaming groups multiple physical adapters together to provide better network fault tolerance.

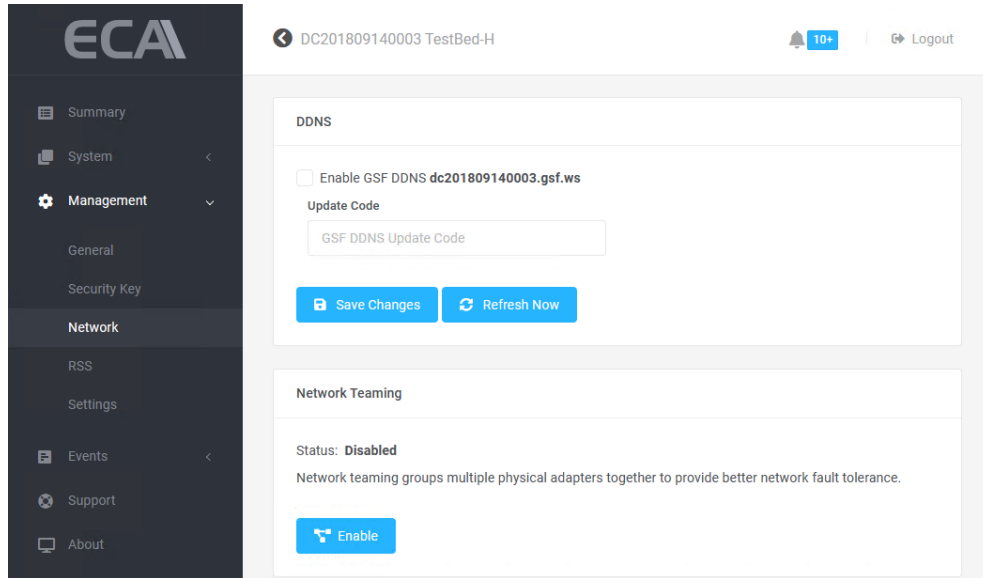


Figure 139: DDNS and Network Teaming

### 9.3.1 Enable DDNS

1. Enable GSF DDNS.
2. Enter the correct Update Code and click on 'Save Changes'. Please contact GSF to obtain your update code.

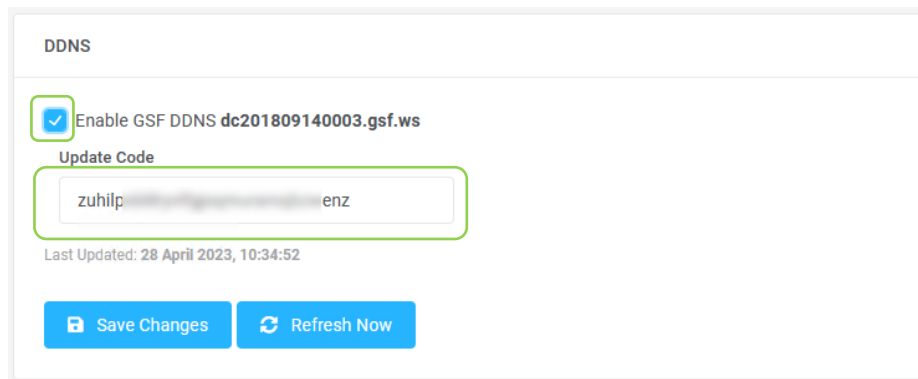


Figure 140: Enable DDNS

### 9.3.2 Enable Network Teaming

1. Click on the 'Enable' button to enable Network Teaming.

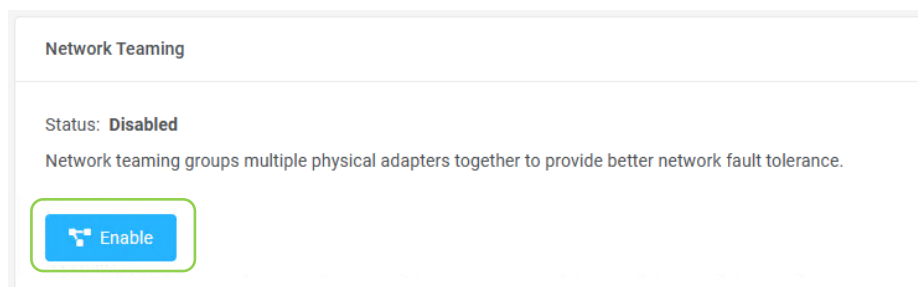
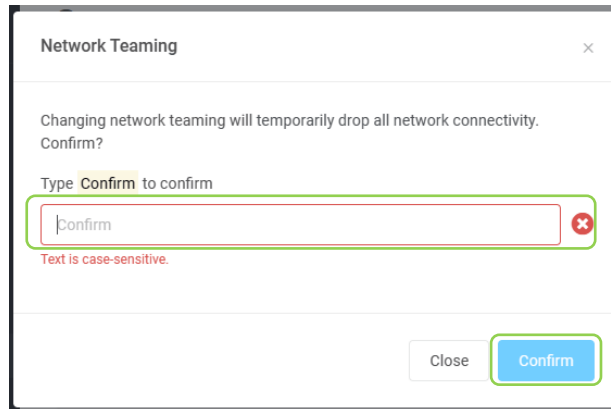


Figure 141: Enable Network Teaming

2. Type 'Confirm' and click on 'Confirm' button

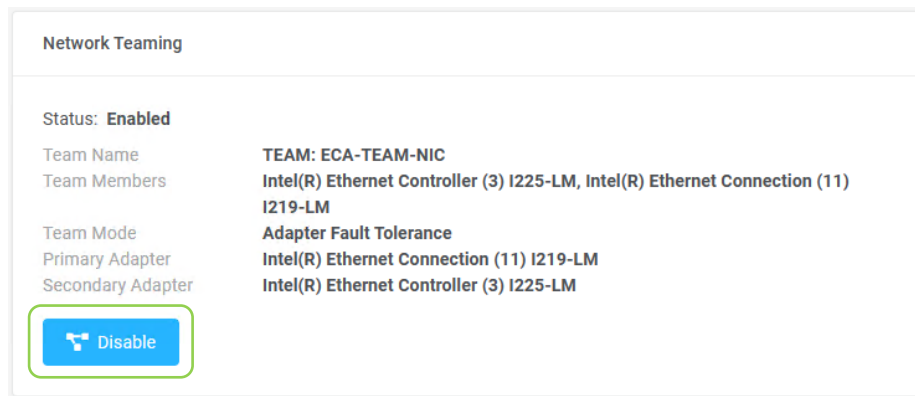


A dialog box titled "Network Teaming" with a close button (X) in the top right corner. The text inside reads: "Changing network teaming will temporarily drop all network connectivity. Confirm?". Below this, it says "Type **Confirm** to confirm". There is a text input field containing the word "confirm", which is highlighted with a green border and a red 'X' icon on the right. Below the input field, a red error message states "Text is case-sensitive.". At the bottom right, there are two buttons: "Close" and "Confirm".

Figure 142: Confirm to enable network teaming

### 9.3.3 Disable Network Teaming

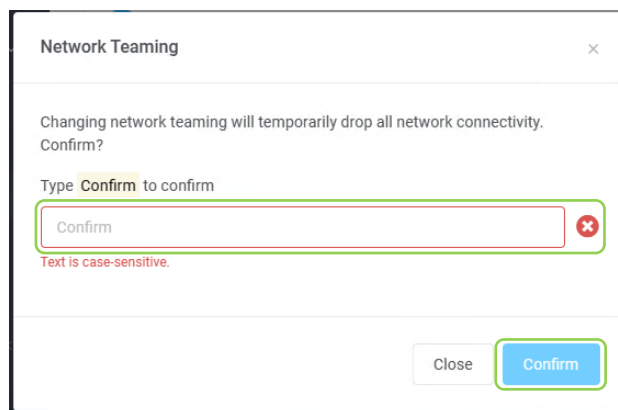
1. Click on the 'Disable' button to disable Network Teaming.



A panel titled "Network Teaming" showing the current status and configuration. The status is "Enabled". The team name is "TEAM: ECA-TEAM-NIC". The team members are "Intel(R) Ethernet Controller (3) I225-LM, Intel(R) Ethernet Connection (11) I219-LM". The team mode is "Adapter Fault Tolerance". The primary adapter is "Intel(R) Ethernet Connection (11) I219-LM" and the secondary adapter is "Intel(R) Ethernet Controller (3) I225-LM". At the bottom left, there is a blue button with a red 'X' icon and the text "Disable", which is highlighted with a green border.

Figure 143: Disable Network Teaming

2. Type 'Confirm' and click on 'Confirm' button



A dialog box titled "Network Teaming" with a close button (X) in the top right corner. The text inside reads: "Changing network teaming will temporarily drop all network connectivity. Confirm?". Below this, it says "Type **Confirm** to confirm". There is a text input field containing the word "Confirm", which is highlighted with a green border and a red 'X' icon on the right. Below the input field, a red error message states "Text is case-sensitive.". At the bottom right, there are two buttons: "Close" and "Confirm".

Figure 144: Confirm to disable network teaming

## 9.4 RSS (Redundant Storage System)

RSS can help protect your data from drive failures. It's a technology in ECA and is conceptually similar to redundant array of independent disks (RAID), implemented in software. You can use RSS to group three or more drives into a storage pool and then use capacity from that pool to create Storage Spaces. These drives typically store extra copies of your data, so if one of your drives fails, you still have an intact copy of your data.

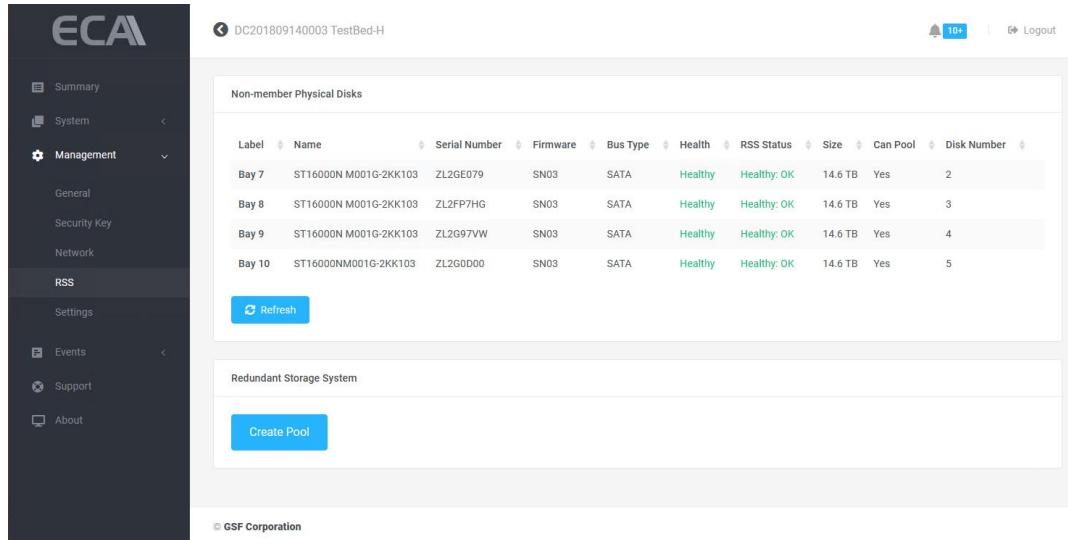


Figure 145: RSS – Redundant Storage System

### 9.4.1 Create Storage Pool

1. Click on the 'Create Pool' button to create pool.

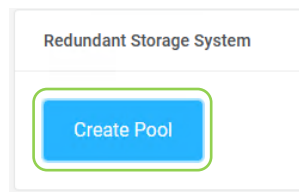


Figure 146: Create Pool

2. Name the storage pool and click on the 'Next' button.

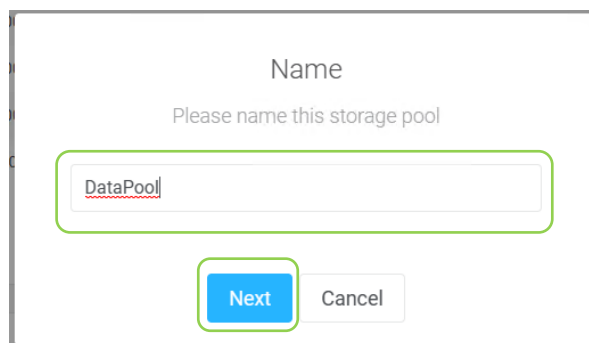


Figure 147: Name storage pool

3. Select the non-member physical disks and click on the 'Next' button to create pool.

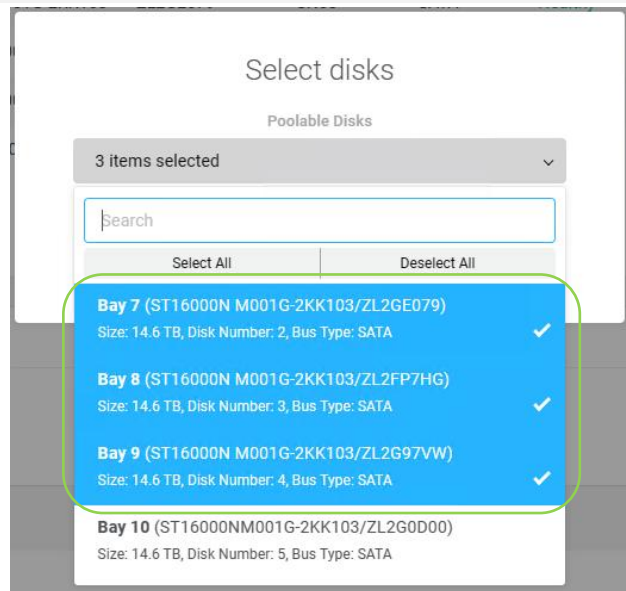


Figure 148: Select disks

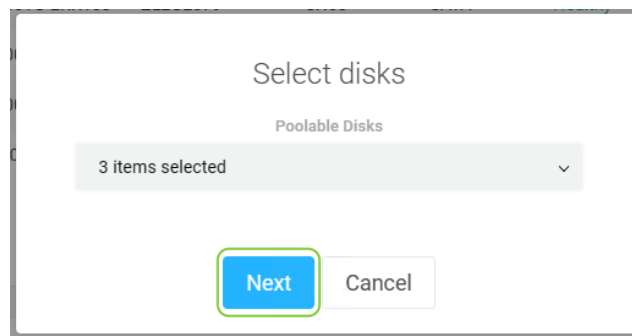
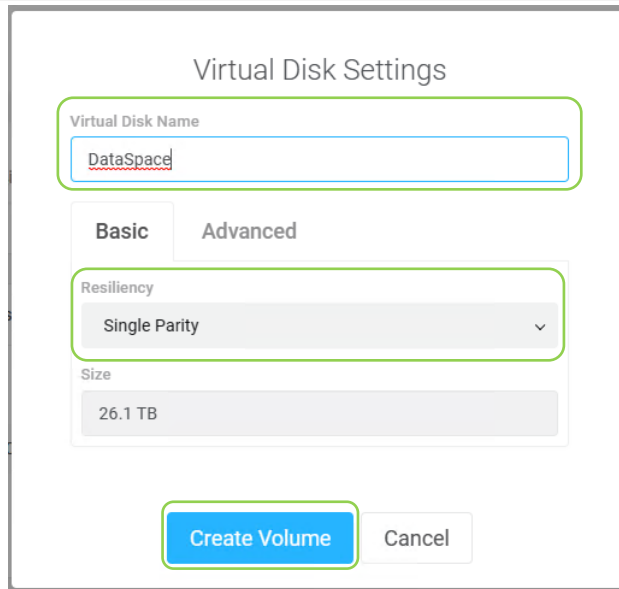


Figure 149: Select disks

- In Virtual Disk Settings, name the virtual disk and select the Resiliency type. Click on the 'Create Volume' to create volume.

Resiliency type	Fault-tolerance for each storage pool	Minimum number of disks	Disk space efficiency
Simple	0 Disk	1	100%
Two-way Mirror	1 Disk	2	50%
Three-way Mirror	2 Disks	5	33%
Single Parity	1 Disk	3 (recommended 5disk for optimized performance)	$\frac{Disk\ Count - 1}{Disk\ Count}$
Dual Parity	2 Disks	5 (recommended 10disk for optimized performance)	$\frac{Disk\ Count - 2}{Disk\ Count}$

Figure 150: Resiliency type table



Virtual Disk Settings

Virtual Disk Name  
DataSpace

Basic Advanced

Resiliency  
Single Parity

Size  
26.1 TB

Create Volume Cancel

Figure 151: Create volume

## 5. Storage pool and virtual disk health status in RSS.

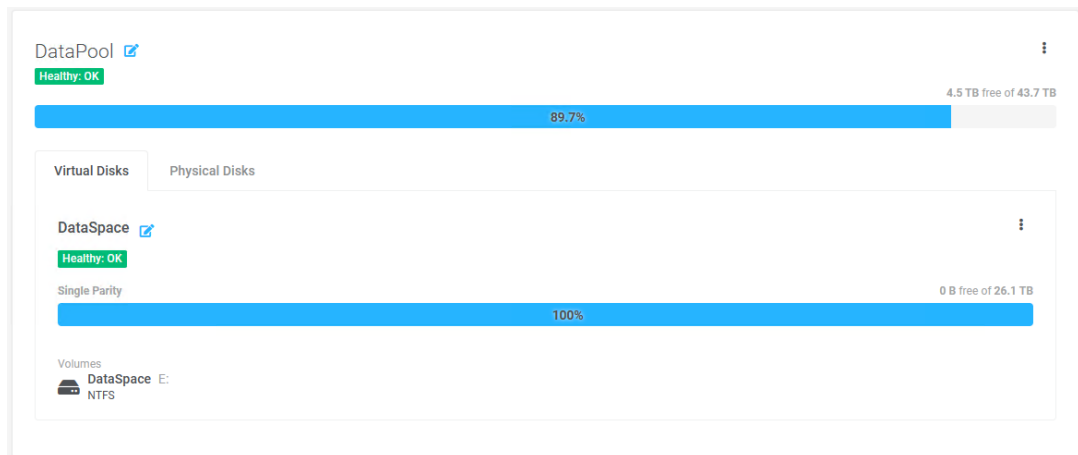


Figure 152: View storage pool, virtual disk health status

### 9.4.2 Delete Storage Pool

1. Click on the '⋮' and select 'Delete Pool' to delete the pool.

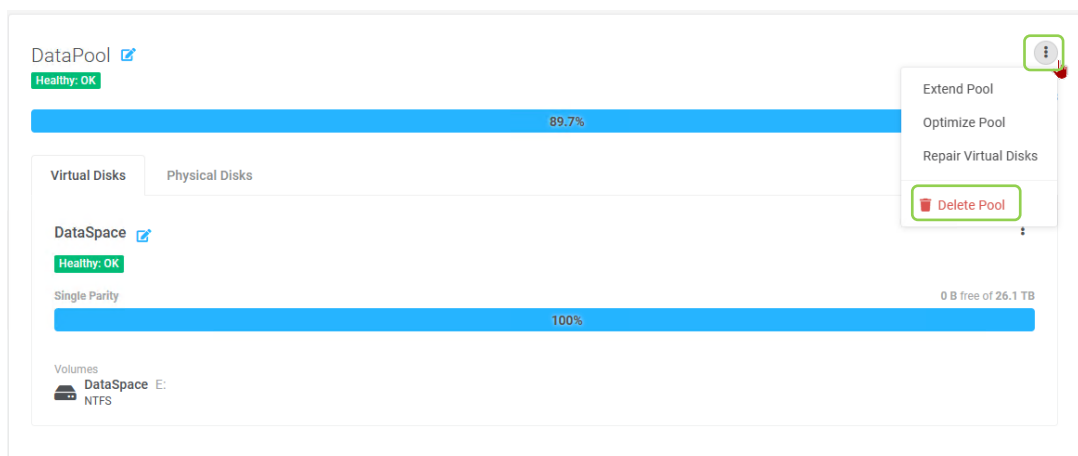


Figure 153: Delete pool

2. Enter storage pool name and click on the 'Delete Pool and Volumes' to delete the pool.

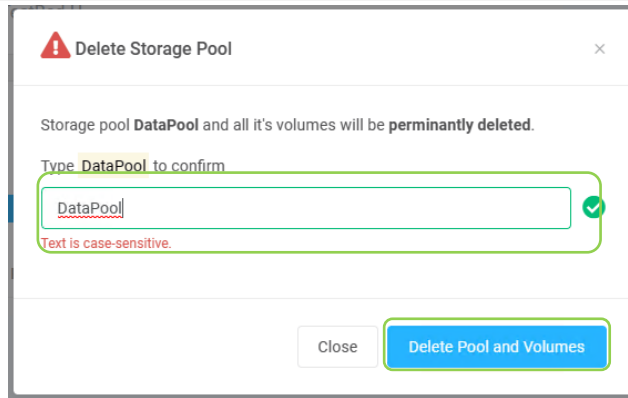


Figure 154: Confirm delete pool

### 9.4.3 Extend Storage Pool

Add a new non-member disk to extend the storage pool.

1. Insert a new clean disk into the ECA, it will appear under the Non-member Physical Disks list.

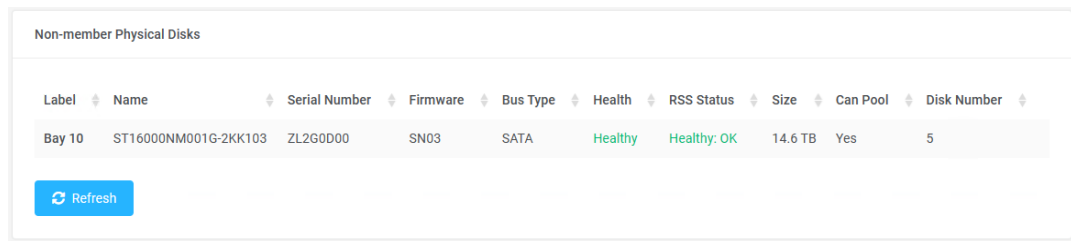


Figure 155: RSS non-member physical disks

2. Click on the 'i' and select 'Extend Pool' to extend the pool.

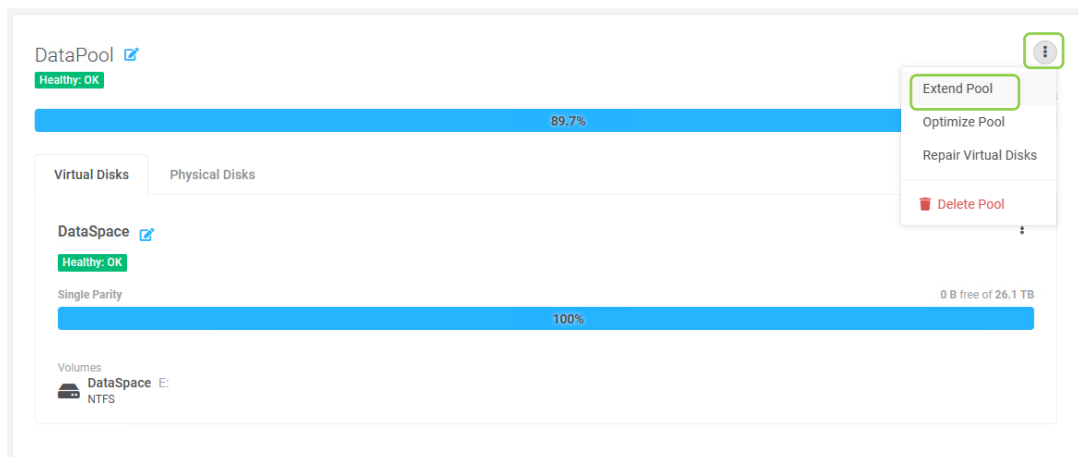


Figure 156: Extend storage pool

3. Enable Optimize storage pool and click on the 'Extend' button to extend the pool.

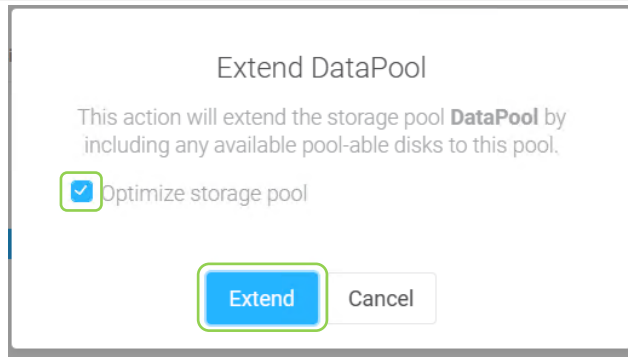


Figure 157: Optimize and extend storage pool

- Please wait for the ECA to complete the optimization process.

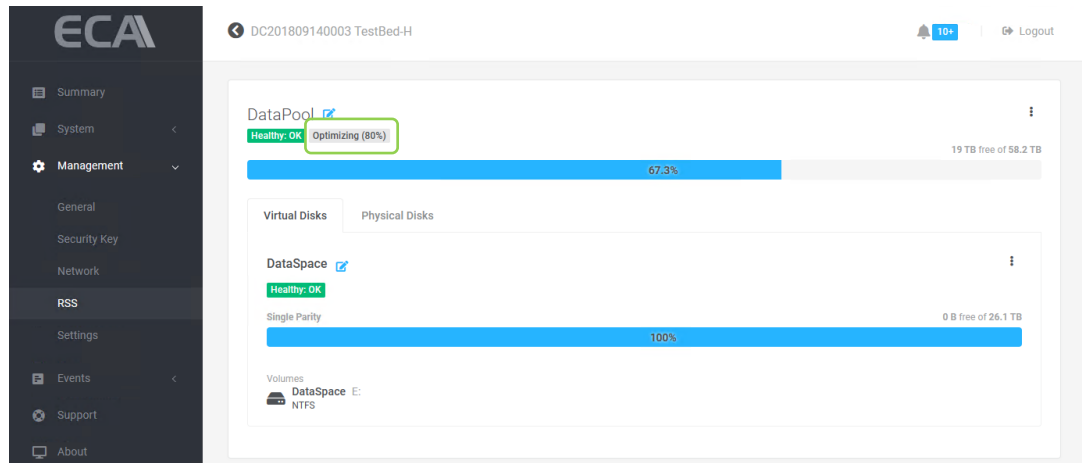


Figure 158: Optimizing storage pool

- After the RSS optimization process is complete, go to Windows Device Manager to expand the RSS volume.

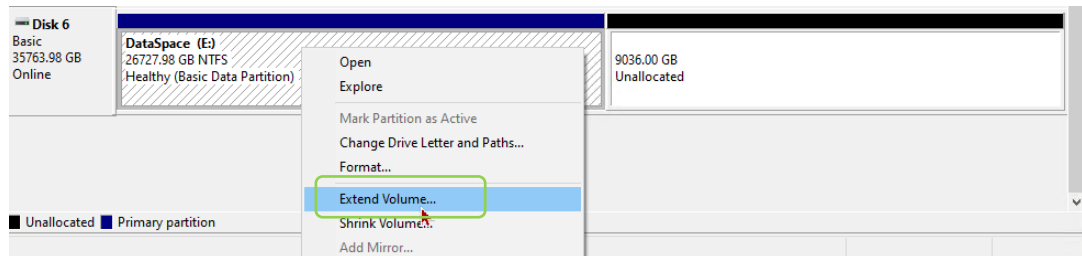


Figure 159: Extend volume in Disk Management (1 of 2)

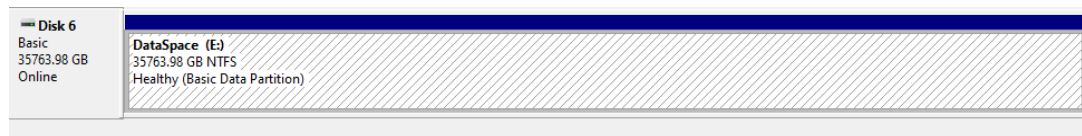


Figure 160: Extend volume in Disk Management (2 of 2)

#### 9.4.4 Repair Storage Pool

If any of the RSS member disks are missing or faulty, ecaOS will notify you via email or desktop notification. To repair the storage pool, replace the missing or faulty disk with a new non-member disk.



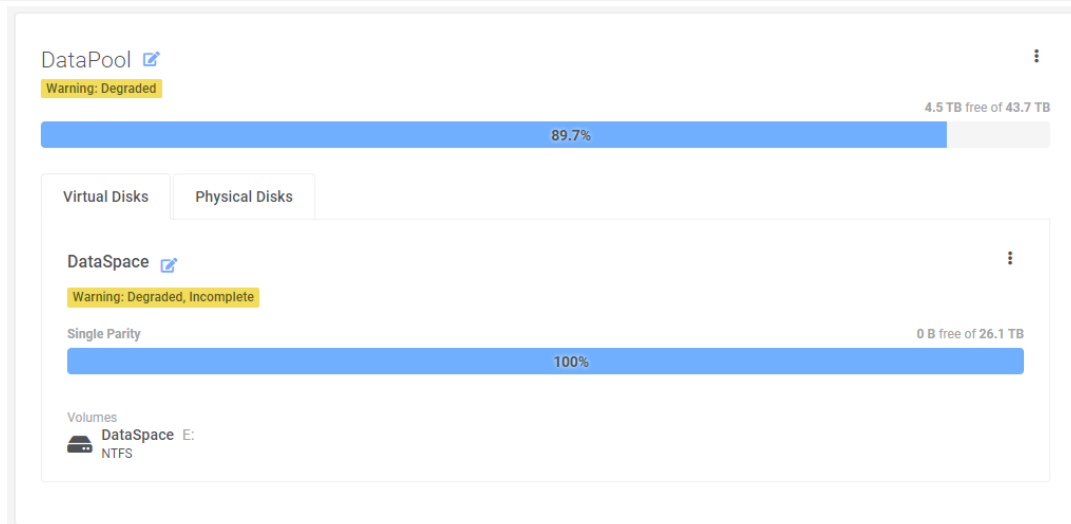


Figure 161: RSS Degraded

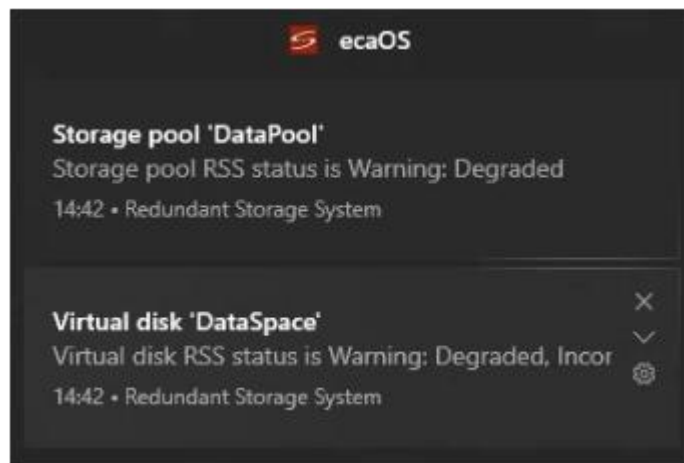


Figure 162: RSS Degraded Desktop notifications

1. To determine which member disks are 'Warning: lost communication,' go to the 'Physical Disks' tab. Then remove the faulty disk from the ECA.

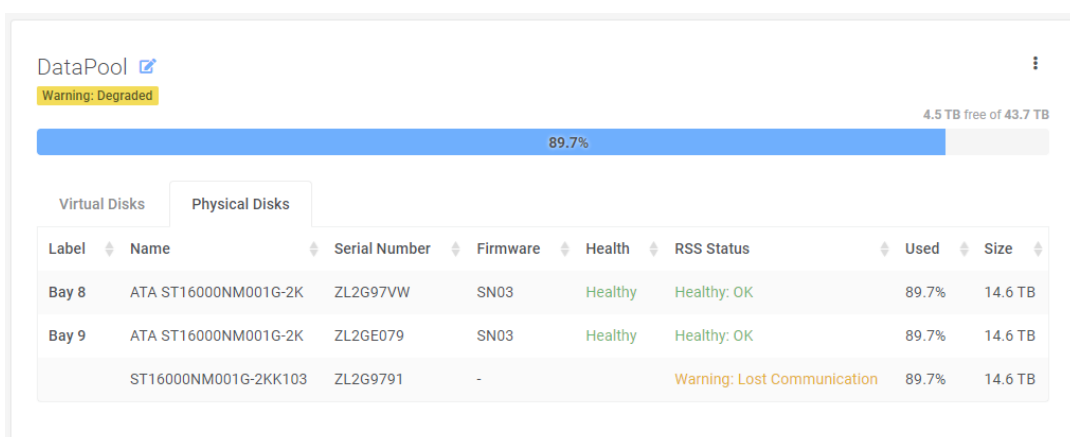


Figure 163: RSS member disk lost communication

2. Insert a new clean disk into the ECA, and then navigate to 'System > Disk Guard' to 'Acknowledge' the new replaced disk.

Bay 10	ST16000NM001G-2KK103	ZL2G0D00	Replaced	Acknowledge
--------	----------------------	----------	----------	-------------

Figure 164: Acknowledge the replacement disk

- Go to Management > RSS, the new replacement disk will be listed under Non-member Physical Disks.

Label	Name	Serial Number	Firmware	Bus Type	Health	RSS Status	Size	Can Pool	Disk Number
Bay 10	ST16000NM001G-2KK103	ZL2G0D00	SN03	SATA	Healthy	Healthy: OK	14.6 TB	Yes	5

[Refresh](#)

Figure 165: RSS non-member physical disks

- Click on the '⋮' and select 'Repair Virtual Disks' to repair the virtual disk.

DataPool [ⓘ](#)

**Warning: Degraded**

89.7%

Virtual Disks Physical Disks

DataSpace [ⓘ](#)

**Warning: Degraded, Incomplete**

Single Parity 0 B free of 26.1 TB

100%


Volumes

DataSpace E: NTFS

- Extend Pool
- Optimize Pool
- Repair Virtual Disks**
- Delete Pool

Figure 166: RSS non-member physical disks

- Enter storage pool name and click on the 'Repair' button to start repair.


**Repair Virtual Disks**

This will start the process of repairing the virtual disks belonging to storage pool **DataPool**. Unhealthy physical disks will be removed and new pool-able physical disks will be added to this pool.

Type **DataPool** to confirm

Text is case-sensitive.

[Close](#) [Repair](#)

Figure 167: Confirm delete pool

- After the RSS repair process is complete, the health of the storage pool and virtual disk will return to normal.

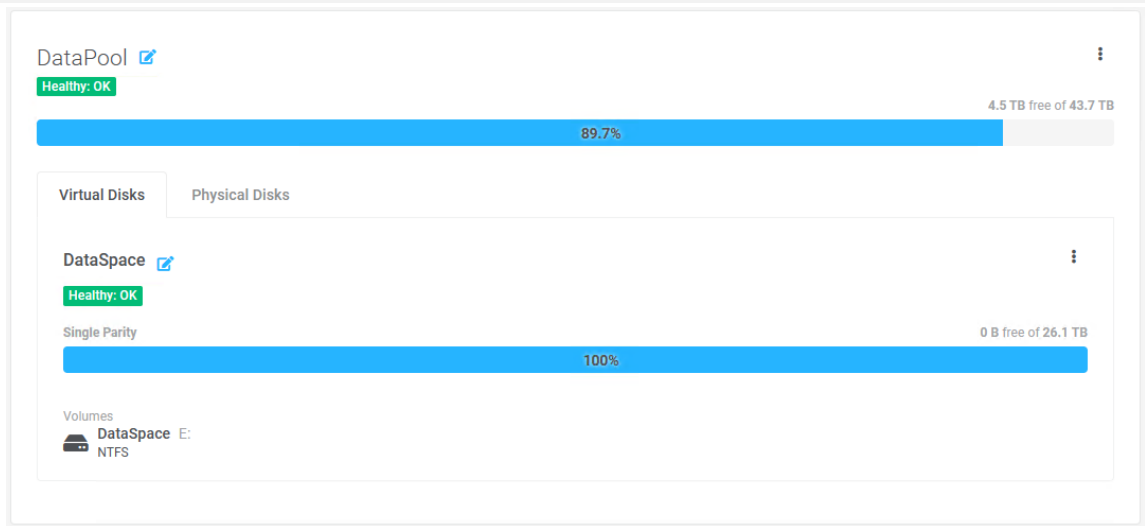
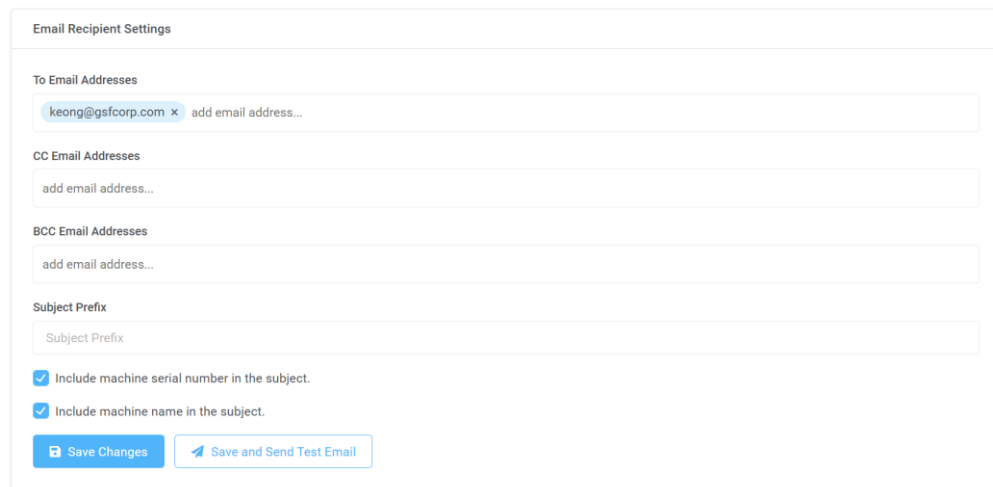


Figure 168: RSS healthy storage pool and virtual disk

## 9.5 Settings

Any event trigger can be set send email to respective personnel for any abnormal event.

### 9.5.1 Email Recipient Settings



**Email Recipient Settings**

**To Email Addresses**

keong@gsfcorp.com x add email address...

**CC Email Addresses**

add email address...

**BCC Email Addresses**

add email address...

**Subject Prefix**

Subject Prefix

☒ Include machine serial number in the subject.

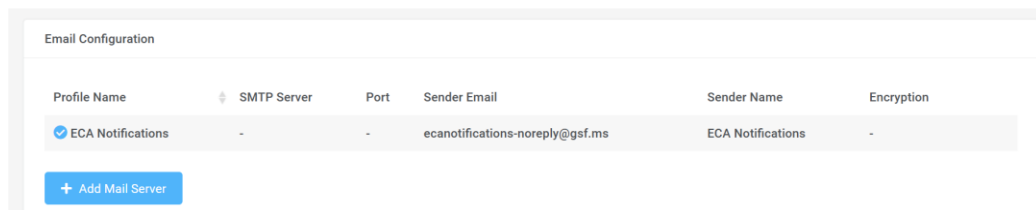
☒ Include machine name in the subject.

[Save Changes](#) [Save and Send Test Email](#)

Figure 169: Email Setting (1 of 2)

### 9.5.2 Mail Servers

Click "+ Add Mail Server" and then follow the wizard to add a new SMTP server to add a new mail server.



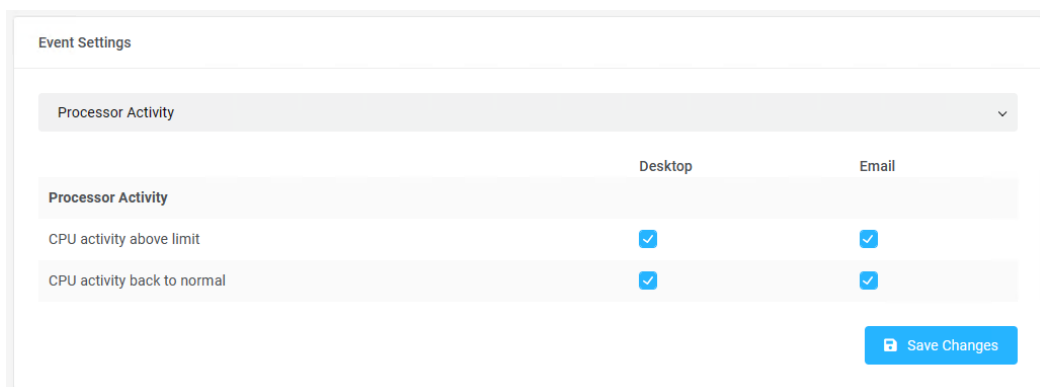
Profile Name	SMTP Server	Port	Sender Email	Sender Name	Encryption
<input checked="" type="checkbox"/> ECA Notifications	-	-	ecanotifications-noreply@gsf.ms	ECA Notifications	-

[+ Add Mail Server](#)

Figure 170: Email Setting (2 of 2)

### 9.5.3 Events

All monitoring application under System able to set notify in the desktop, send the email or both.



**Event Settings**

Processor Activity

	Desktop	Email
<b>Processor Activity</b>		
CPU activity above limit	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CPU activity back to normal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

[Save Changes](#)

Figure 171: Events

1. Select event to be set by click drop down.

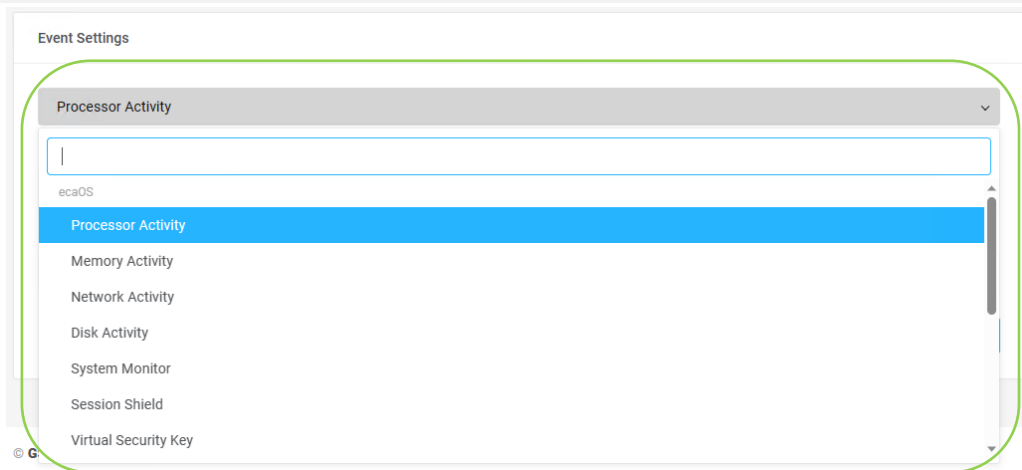


Figure 172: Select event (1 of 2)

2. Check the box to enable notification on the desktop or email and click 'Save Changes'
3. Setting below will notify user via Desktop notification and email if the memory usage above threshold limit. The user also will notify when the memory usage return to normal state

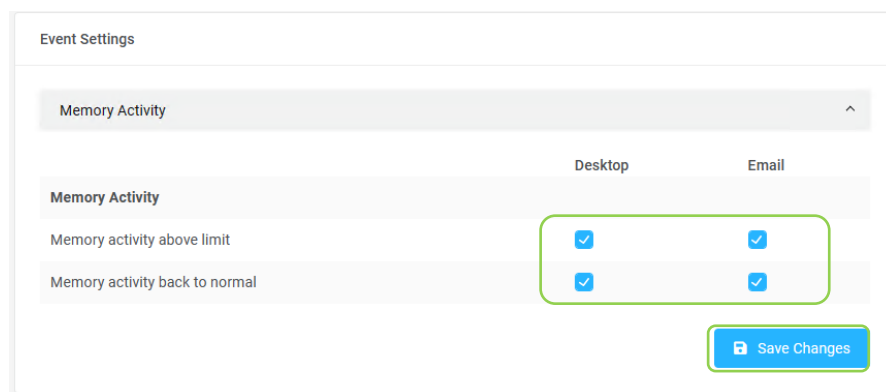


Figure 173: Select event (2 of 2)

### 9.5.3.1 Events List

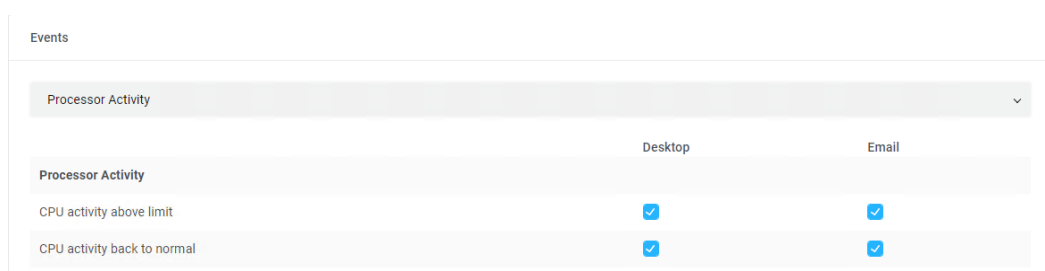


Figure 174: Processor Activity events notify setting

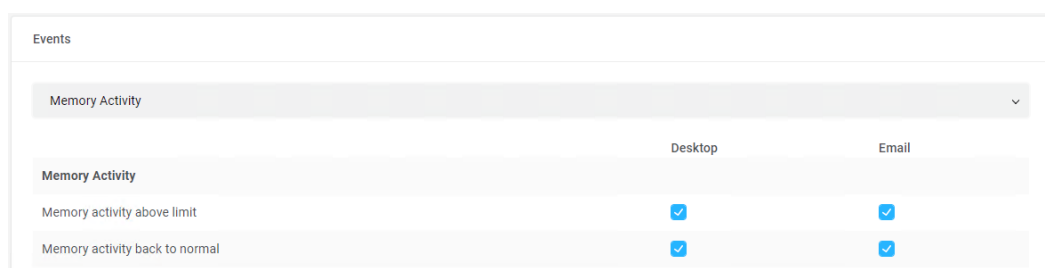


Figure 175: Memory Activity events notify setting

Event Settings

Network Activity

	Desktop	Email
<b>Network Activity</b>		
Network send activity above limit	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Network send activity back to normal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Network receive activity below limit	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Network receive activity back to normal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Network cable plugged	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Network cable unplugged	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Network available	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Network unavailable	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Network Teaming Enabled	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Network Teaming Disabled	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>


 Save Changes

Figure 176: Network Activity events notify setting

Events

Disk Activity

	Desktop	Email
<b>Disk Activity</b>		
Disk read activity above limit	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Disk read activity back to normal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Disk write activity below limit	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Disk write activity back to normal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Figure 177: Disk Activity events notify setting

Event Settings

System Monitor

	Desktop	Email
<b>System Monitor</b>		
High CPU Temperature	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CPU temperature back to normal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
High System Temperature	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
System temperature back to normal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CPU fan speed below limit	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
CPU fan speed back to normal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
System fan speed below limit	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
System fan speed back to normal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3V3 System above limit	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3V3 System back to normal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3V3 System below limit	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3V3 System back to normal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
12V System above limit	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
12V System back to normal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
12V System below limit	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
12V System back to normal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Mainboard Battery Low	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Mainboard Battery back to normal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Save Changes

Figure 178: System Monitor events notify setting

Events

Session Shield

	Desktop	Email
<b>Session Shield</b>		
Session Shield at warning state	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Session Shield at critical state	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Session Shield back to normal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Session Shield rebooting system	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Figure 179: Session Shield events notify setting

Events

Virtual Security Key

	Desktop	Email
<b>Virtual Security Key</b>		
Virtual security key added	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Virtual security key deleted	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Figure 180: Virtual Security Key events notify setting

Events		
Security Key		
	Desktop	Email
Security Key		
Security key added	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Security key deleted	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Security key renamed	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Figure 181: Security Key events notify setting

Events		
Support		
	Desktop	Email
Support		
Remote support enabled	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Remote support disabled	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Remote support setup successful	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Remote support setup failed	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Figure 182: Support events notify setting



Events

Disk Guard

	Desktop	Email
<b>Disk Guard</b>		
Disk Removed	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Disk Remove Acknowledged	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Disk Inserted	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
New Disk	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Disk Replaced	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Disk Replace Acknowledged	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Disk Online	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Disk Offline	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Disks Changed	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Figure 183: Disk Guard events notify setting

Events

Disk Health

	Desktop	Email
<b>Disk Health</b>		
Disk health warning	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Disk health critical	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Figure 184: Disk Health events notify setting

Event Settings

Redundant Storage System

	Desktop	Email
<b>Redundant Storage System</b>		
Storage pool status is healthy	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Storage pool status is warning	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Storage pool status is unhealthy	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Virtual disk status is healthy	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Virtual disk status is warning	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Virtual disk status is unhealthy	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Physical disk status is healthy	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Physical disk status is warning	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Physical disk status is unhealthy	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>


 Save Changes

Figure 185: Redundant Storage System notify setting

Events		
Firmware		
Firmware	Desktop	Email
Firmware update success	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Firmware update failed	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Figure 186: Heartbeat firmware events notify setting

Events		
ECA Layer		
ECA Layer	Desktop	Email
Saving layer successful	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Saving layer failed	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Restoring layer successful	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Restoring layer failed	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Figure 187: ECA Layer events notify setting

Event Settings		
ECA Power Supply		
ECA Power Supply	Desktop	Email
Power supply fault	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Power supply back to normal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="button" value="Save Changes"/>

Figure 188: ECA Power Supply events notify setting (ONLY applies to ECA45 with TBSP-ECAPSU-R600 power supply unit)

### 9.5.4 SNMP Settings

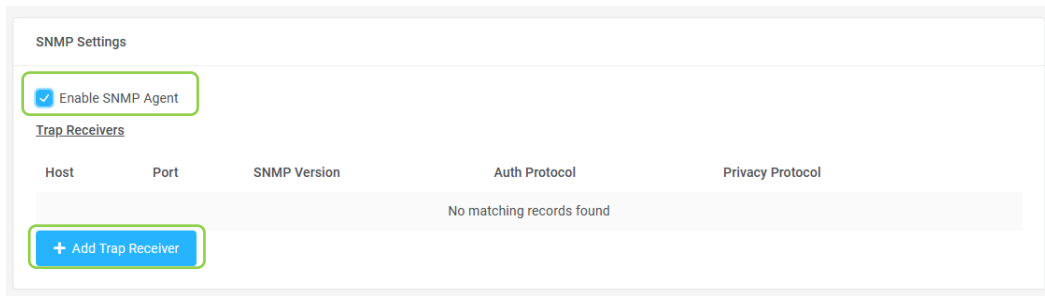
Users can monitor ECA with network management software by using SNMP (Management > Settings > SNMP Settings). The following protocols are currently supported: SNMPv1, SNMPv2c, and SNMPv3.

SNMP Settings				
<input type="checkbox"/> Enable SNMP Agent				
<u>Trap Receivers</u>				
Host	Port	SNMP Version	Auth Protocol	Privacy Protocol
No matching records found				
<input type="button" value="+ Add Trap Receiver"/>				

Figure 189: SNMP Settings

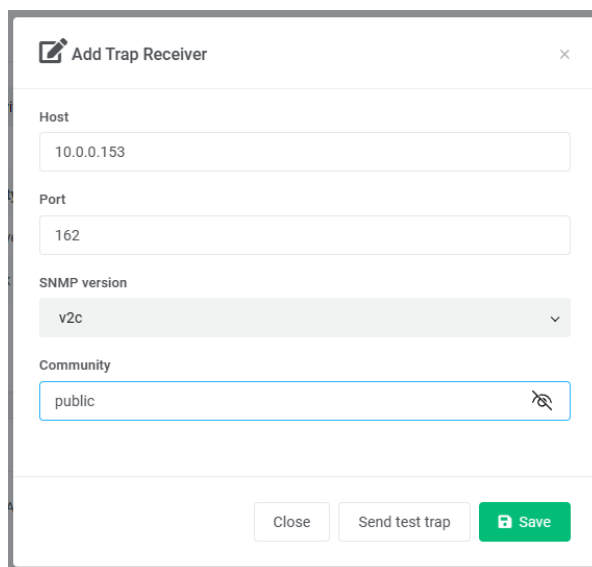
### 9.5.4.1 Enable SNMP

1. Tick Enable SNMP Agent, click the Add Trap Receiver button and follow the steps below.
  - a. Enter the host IP address.
  - b. Enter the port number of the host.
  - c. Select the SNMP version.
  - d. Enter a community name.
  - e. Click the Save button.



The image shows the 'SNMP Settings' window. At the top, there is a checkbox labeled 'Enable SNMP Agent' which is checked. Below this is a section titled 'Trap Receivers'. It contains a table with columns: Host, Port, SNMP Version, Auth Protocol, and Privacy Protocol. The table is currently empty, displaying 'No matching records found'. At the bottom of the 'Trap Receivers' section, there is a blue button labeled '+ Add Trap Receiver'.

Figure 190: Enable SNMP



The image shows the 'Add Trap Receiver' dialog box. It has a title bar with a pencil icon and the text 'Add Trap Receiver'. The dialog contains the following fields:
 

- Host:** A text input field containing '10.0.0.153'.
- Port:** A text input field containing '162'.
- SNMP version:** A dropdown menu with 'v2c' selected.
- Community:** A text input field containing 'public'.

 At the bottom right, there are three buttons: 'Close', 'Send test trap', and a green 'Save' button with a floppy disk icon.

Figure 191: Add SNMP Trap Receiver

### 9.5.4.2 Download ECA MIB Files

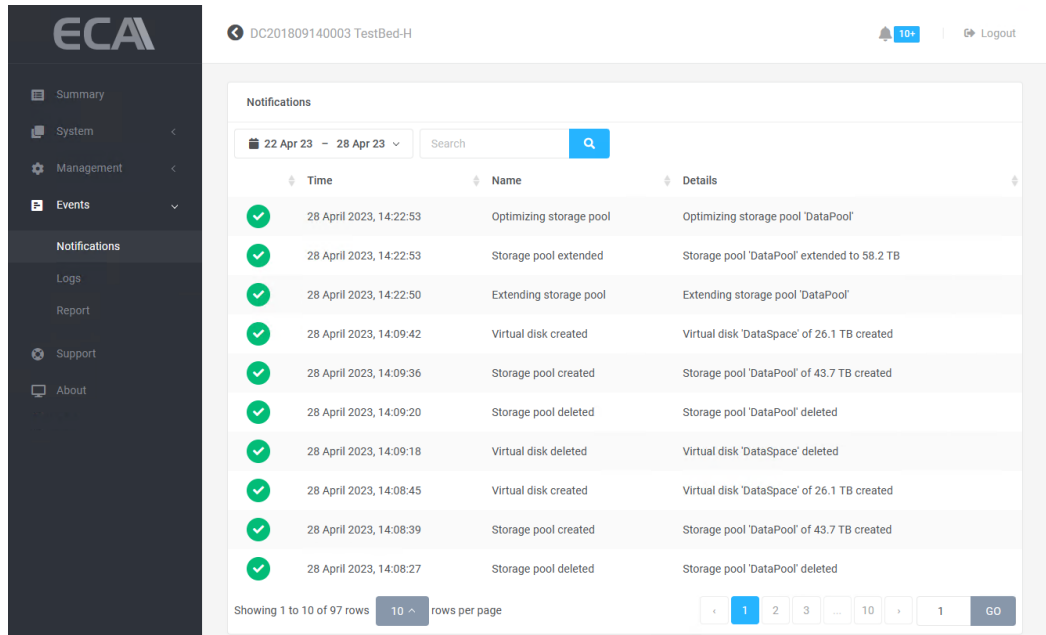
GSF provides management information base (MIB) of ECA, which allows users to monitor ECA using network management systems, such as system, disk, and network statuses.

Please obtain the ECA MIB files from

“C:\Program Files (x86)\GSF\ecaOS\Services\MqttSnmpAgent\MiB.zip”.

# 10 Events

## 10.1 Notification



The screenshot displays the ECA user interface. On the left is a dark sidebar with the ECA logo and a menu containing: Summary, System, Management, Events (selected), Notifications (highlighted), Logs, Report, Support, and About. The main content area shows the 'Notifications' page for 'DC201809140003 TestBed-H'. At the top right of the main area are a notification bell icon with '10+' and a 'Logout' link. The 'Notifications' section includes a date range selector set to '22 Apr 23 - 28 Apr 23', a search bar, and a table of events. Each event row starts with a green checkmark icon. The table has three columns: Time, Name, and Details. Below the table, it indicates 'Showing 1 to 10 of 97 rows' and '10 rows per page'. At the bottom right is a pagination control with page numbers 1, 2, 3, ..., 10, and a 'GO' button.

Time	Name	Details
28 April 2023, 14:22:53	Optimizing storage pool	Optimizing storage pool 'DataPool'
28 April 2023, 14:22:53	Storage pool extended	Storage pool 'DataPool' extended to 58.2 TB
28 April 2023, 14:22:50	Extending storage pool	Extending storage pool 'DataPool'
28 April 2023, 14:09:42	Virtual disk created	Virtual disk 'DataSpace' of 26.1 TB created
28 April 2023, 14:09:36	Storage pool created	Storage pool 'DataPool' of 43.7 TB created
28 April 2023, 14:09:20	Storage pool deleted	Storage pool 'DataPool' deleted
28 April 2023, 14:09:18	Virtual disk deleted	Virtual disk 'DataSpace' deleted
28 April 2023, 14:08:45	Virtual disk created	Virtual disk 'DataSpace' of 26.1 TB created
28 April 2023, 14:08:39	Storage pool created	Storage pool 'DataPool' of 43.7 TB created
28 April 2023, 14:08:27	Storage pool deleted	Storage pool 'DataPool' deleted

Figure 192: Notification

## 10.2 Logs

An event log is a file that contains information about usage, operations and activity of the ECA system. The log can be filtered by specifying data range and/or inserting keyword(s).

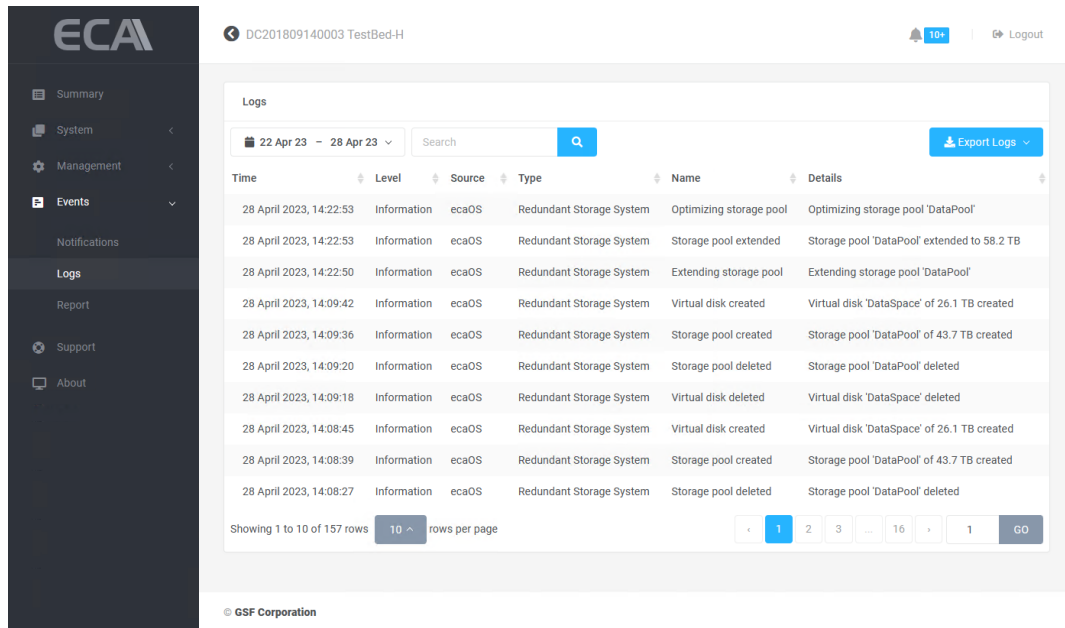


Figure 193: Log

### 10.2.1 Filtering Log

Filter by can choose by Today, Yesterday, Last 3 days, Last 7 Days, Last 30 Days or Custom data range.

Type any keyword and click on magnetify glass icon to start filtering. Click 'Apply' to filter the Logs.

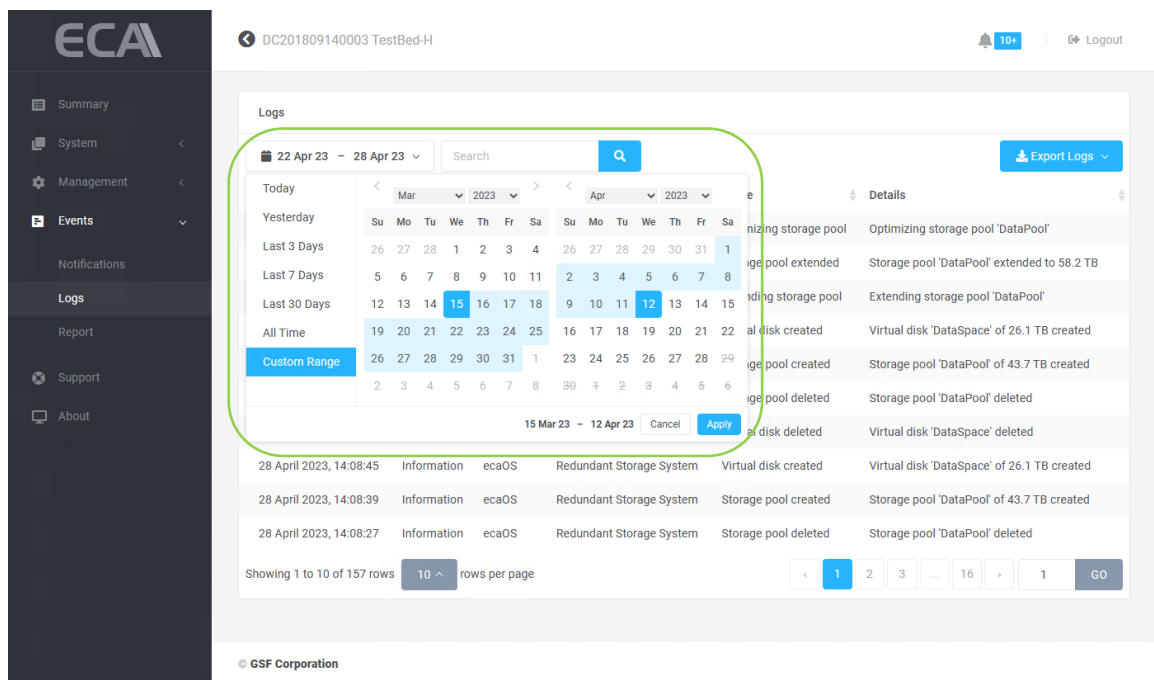


Figure 194: Filter log

### 10.2.2 Exporting Log

1. Click on the 'Export Logs' button

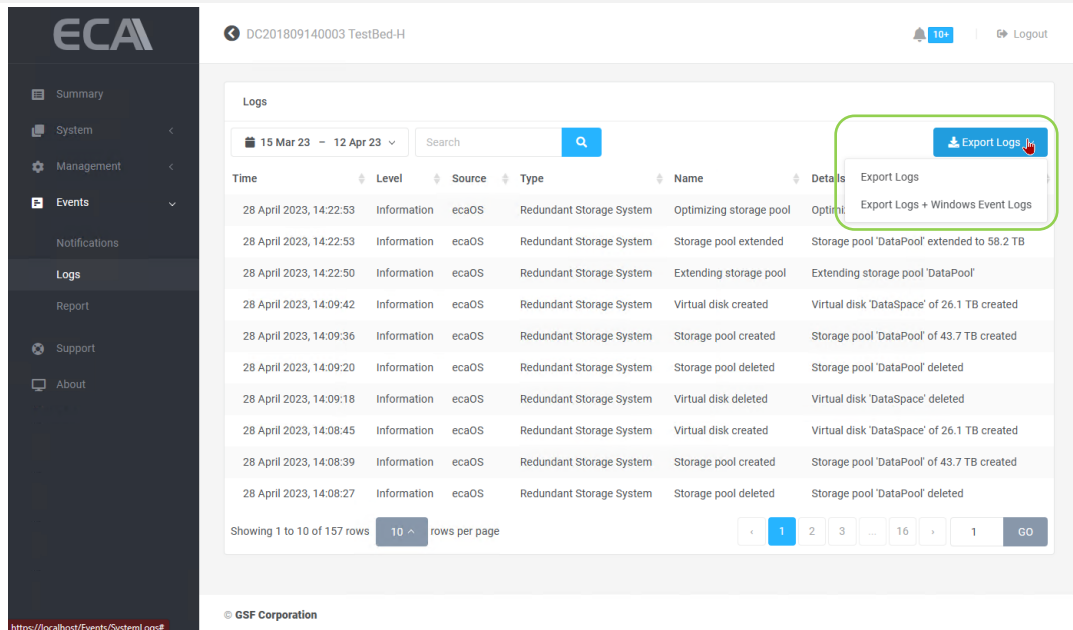


Figure 195: Export Log (1 of 8)

## 2. Click OK to start export the current log

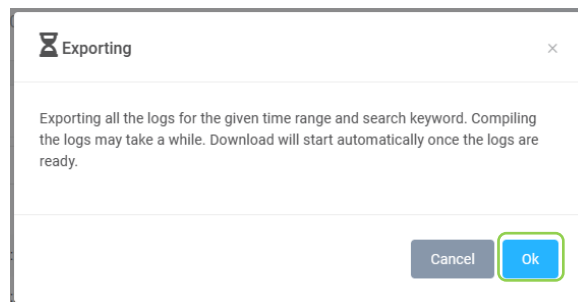


Figure 196: Export Log (2 of 8)

## 3. The log will export to Downloads folder in compress format

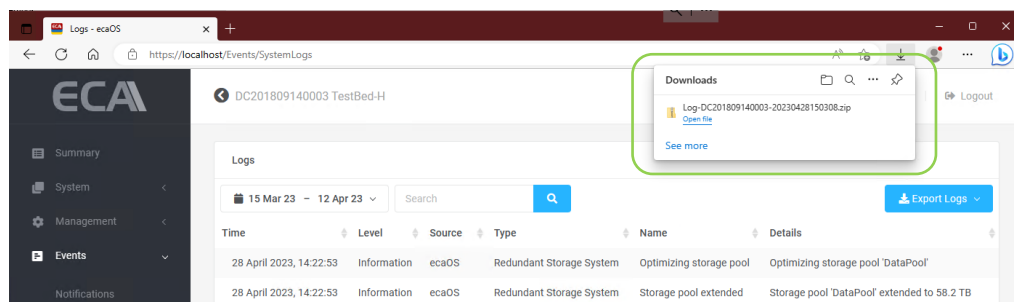


Figure 197: Export Log (3 of 8)

4. The log will be export to under Downloads. The exported log can be retrieved via Explorer.

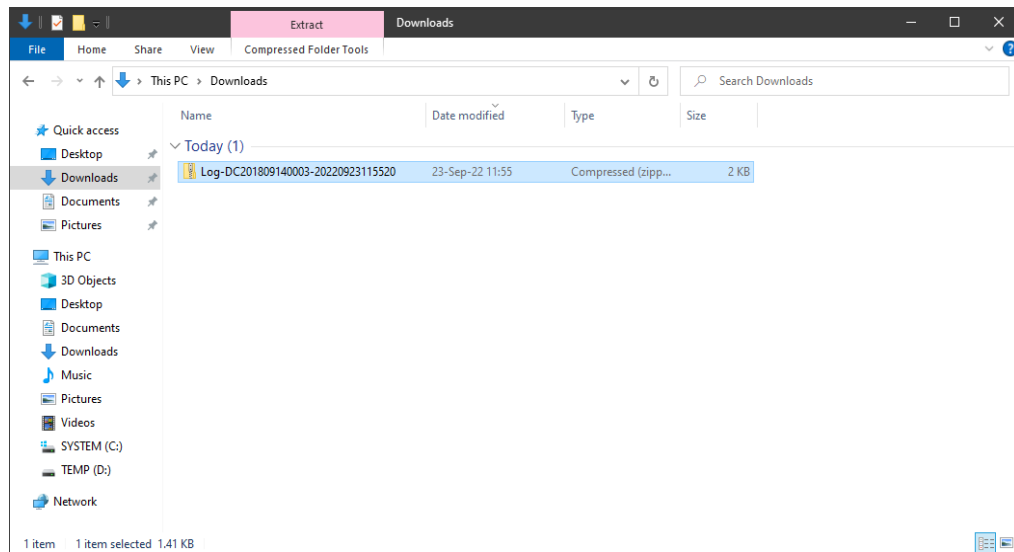


Figure 198: Exporting log (4 of 8)

5. Extract the file by right click on the file and select Extract All.

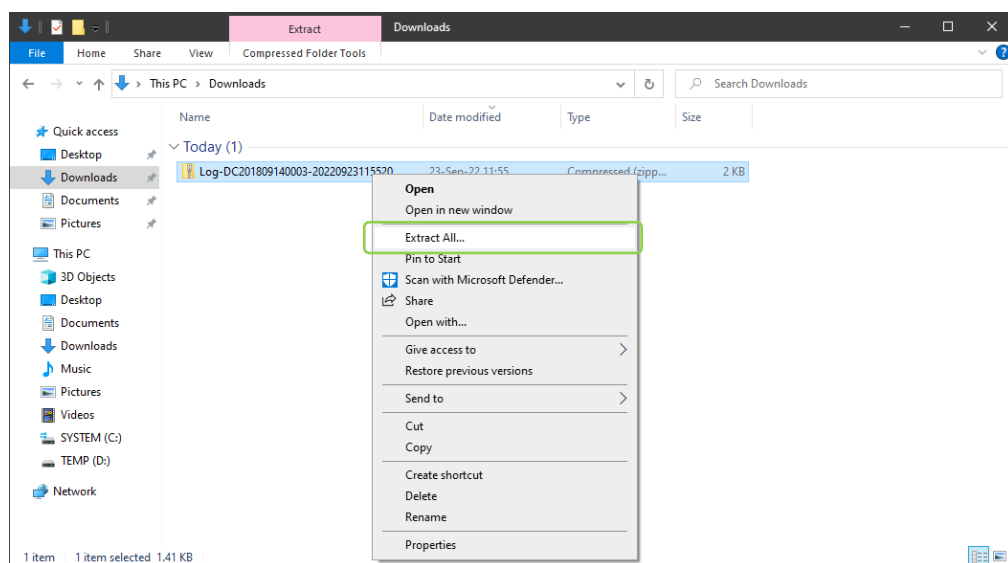


Figure 199: Exporting log (5 of 8)

6. Choose the location to extra the file and click Extract button.

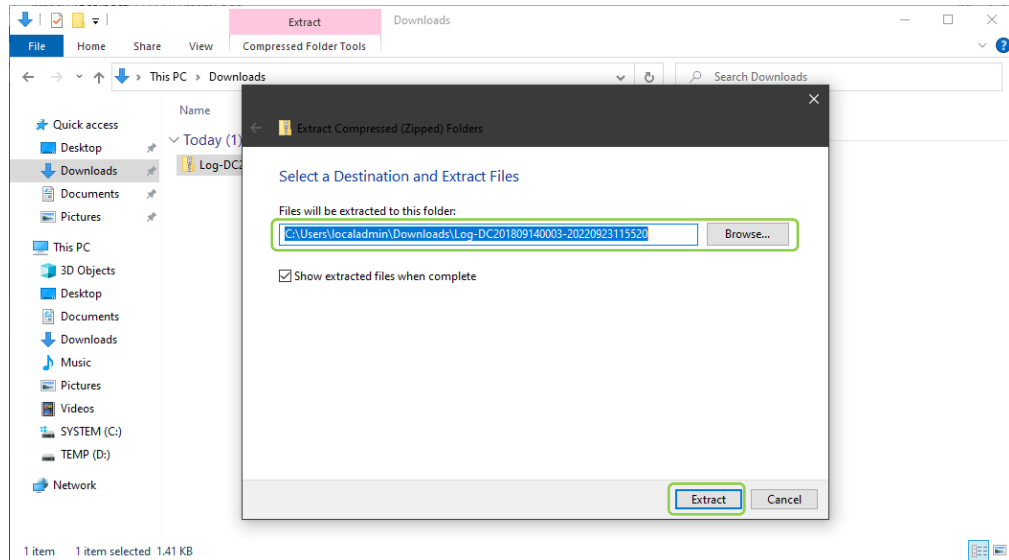


Figure 200: Exporting log (6 of 8)

7. The log file saved in comma-separated values (CSV) format.

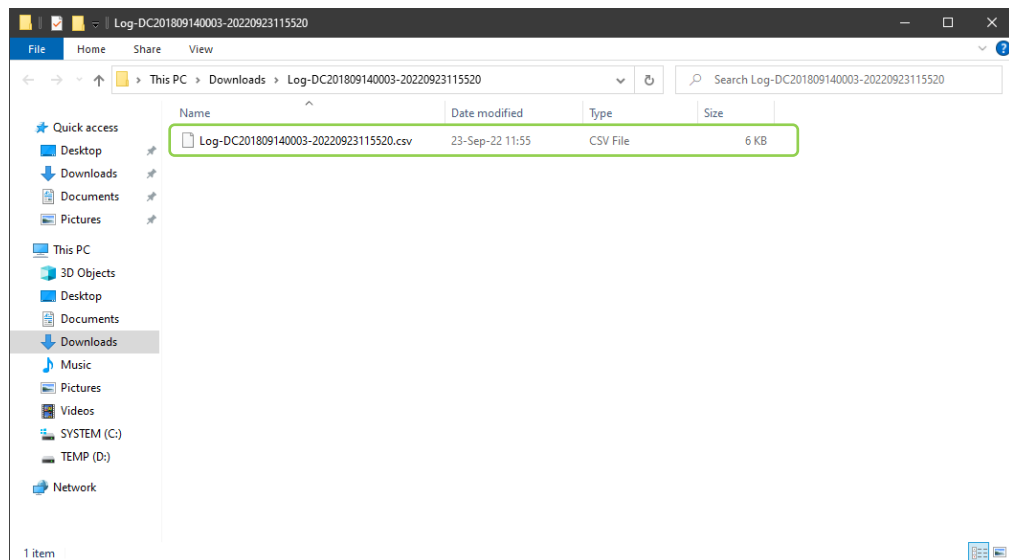
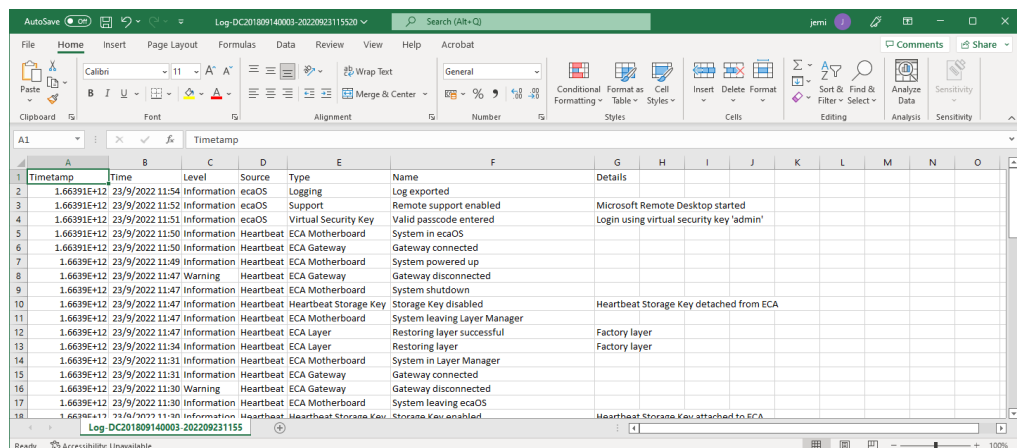


Figure 201: Exporting log (7 of 8)

8. Use Spreadsheet program to open the log file.



Timestamp	Time	Level	Source	Type	Name	Details
1.66391E+12	23/9/2022 11:54	Information	ecaOS	Logging	Log exported	
1.66391E+12	23/9/2022 11:52	Information	ecaOS	Support	Remote support enabled	Microsoft Remote Desktop started
1.66391E+12	23/9/2022 11:51	Information	ecaOS	Virtual Security Key	Valid passcode entered	Login using virtual security key 'admin'
1.66391E+12	23/9/2022 11:50	Information	Heartbeat	ECA Motherboard	System in ecaOS	
1.66391E+12	23/9/2022 11:50	Information	Heartbeat	ECA Gateway	Gateway connected	
1.66391E+12	23/9/2022 11:49	Information	Heartbeat	ECA Motherboard	System powered up	
1.66391E+12	23/9/2022 11:47	Warning	Heartbeat	ECA Gateway	Gateway disconnected	
1.66391E+12	23/9/2022 11:47	Information	Heartbeat	ECA Motherboard	System shutdown	
1.66391E+12	23/9/2022 11:47	Information	Heartbeat	Heartbeat Storage Key	Storage Key disabled	Heartbeat Storage Key detached from ECA
1.66391E+12	23/9/2022 11:47	Information	Heartbeat	ECA Motherboard	System leaving Layer Manager	
1.66391E+12	23/9/2022 11:47	Information	Heartbeat	ECA Layer	Restoring layer successful	Factory layer
1.66391E+12	23/9/2022 11:34	Information	Heartbeat	ECA Layer	Restoring layer	Factory layer
1.66391E+12	23/9/2022 11:31	Information	Heartbeat	ECA Motherboard	System in Layer Manager	
1.66391E+12	23/9/2022 11:31	Information	Heartbeat	ECA Gateway	Gateway connected	
1.66391E+12	23/9/2022 11:30	Warning	Heartbeat	ECA Gateway	Gateway disconnected	
1.66391E+12	23/9/2022 11:30	Information	Heartbeat	ECA Motherboard	System leaving ecaOS	
1.66391E+12	23/9/2022 11:30	Information	Heartbeat	Heartbeat Storage Key	Storage Key enabled	Heartbeat Storage Key attached to ECA

Figure 202: Exporting log (8 of 8)



## 10.3 Report

Report will be auto generated and sent to all recipients daily at: 23:55 or manually download by click on the 'Download System Report' button.

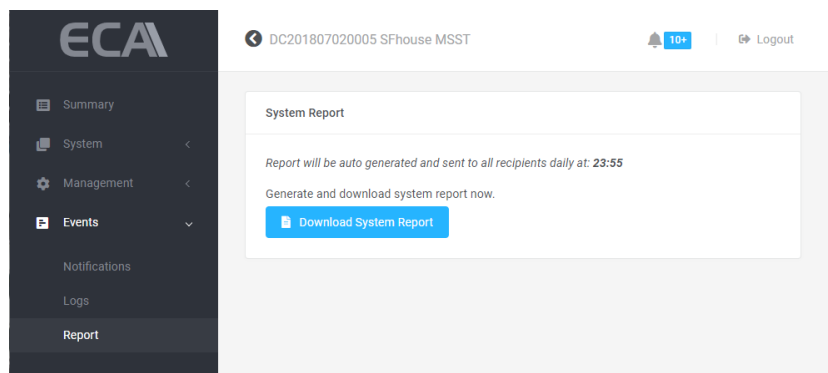


Figure 203: Manual Report Download at Events > Report section

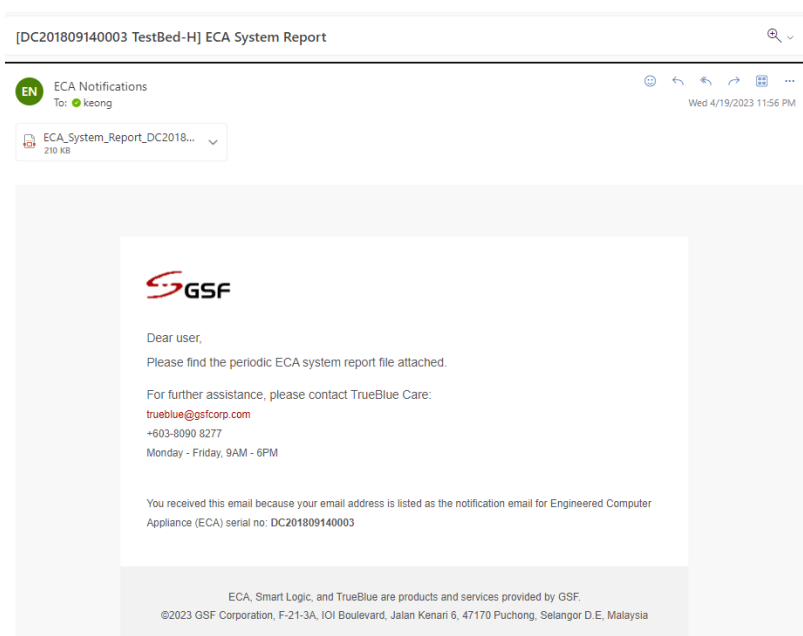


Figure160A: ECA email an ECA report

ECA System Report: DC201809140003 | TestBed-H | 18 Apr 2023, 23:55 (+08:00)

### Disks

	Model	Serial #	Health Status	Temperature	Disk Guard
System Disk	KINGSTON SUV400S37120G	50026B777C01AC30	94% <span>HEALTHY</span>	32 °C	<span>ONLINE</span>
Bay 1	ST4000VX000-1F4168	Z30286PJ	100% <span>HEALTHY</span>	30 °C	<span>ONLINE</span>
Bay 2	ST16000NM001G-2KK103	ZL2G64K3	100% <span>HEALTHY</span>	32 °C	<span>ONLINE</span>
Bay 3	ST16000NM001G-2KK103	ZL2E4XRK	100% <span>HEALTHY</span>	31 °C	<span>ONLINE</span>
Bay 4	ST16000NM001G-2KK103	ZL2E4XGM	100% <span>HEALTHY</span>	30 °C	<span>ONLINE</span>
Bay 5	ST16000NM001G-2KK103	ZL2GDQ7V	100% <span>HEALTHY</span>	31 °C	<span>ONLINE</span>
Bay 6	ST4000VX000-1F4168	Z302AVWB	100% <span>HEALTHY</span>	30 °C	<span>ONLINE</span>
Bay 7			-	-	NO DISK
Bay 8			-	-	NO DISK
Bay 9			-	-	NO DISK
Bay 10			-	-	NO DISK
Bay 11			-	-	NO DISK
Bay 12			-	-	NO DISK
Bay 13			-	-	NO DISK
Bay 14	ST31000S28ASQ	5VP4QVVK	30% <span>CRITICAL</span>	31 °C	<span>ONLINE</span>
Bay 15			-	-	NO DISK

Figure 204B: Example ECA report in PDF format

# 11 Support

## 11.1 Microsoft Remote Desktop

Microsoft Remote Desktop app to connect to a remote PC or virtual apps and desktops made available by your admin.

Click on 'Start' button under Microsoft Remote Desktop

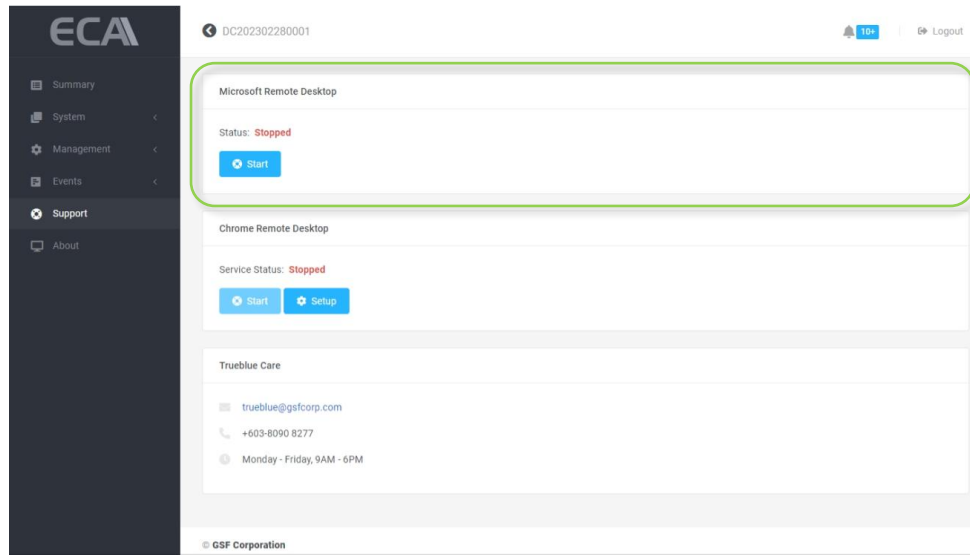


Figure 205: Microsoft Remote Support

From local PC. Enter computer name or IP address of the remote ECA.

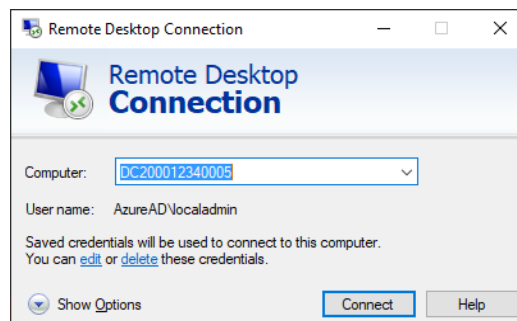


Figure 206: Trueblue Remote Support (1 of 2)

NOTE: You will require to port forward in your router to allowed Remote Desktop to be accessible via internet. Default port is 3389

## 11.2 Chrome Remote Desktop

This option allows you to access your ECA remotely from your PC/Laptop using your own Google account without require any port forwarding setting in the router. Before begin, Chrome Remote Desktop work in both Google Chrome or Microsoft Edge Browser, at the address bar type: <https://remotedesktop.google.com/access> then follow the directions to enabled Chrome Remote Desktop in your browser.

### 11.2.1 Setup ECA into your Chrome Remote Desktop

In your PC/Laptop, run Chrome/Edge and enter <https://remotedesktop.google.com/headless>

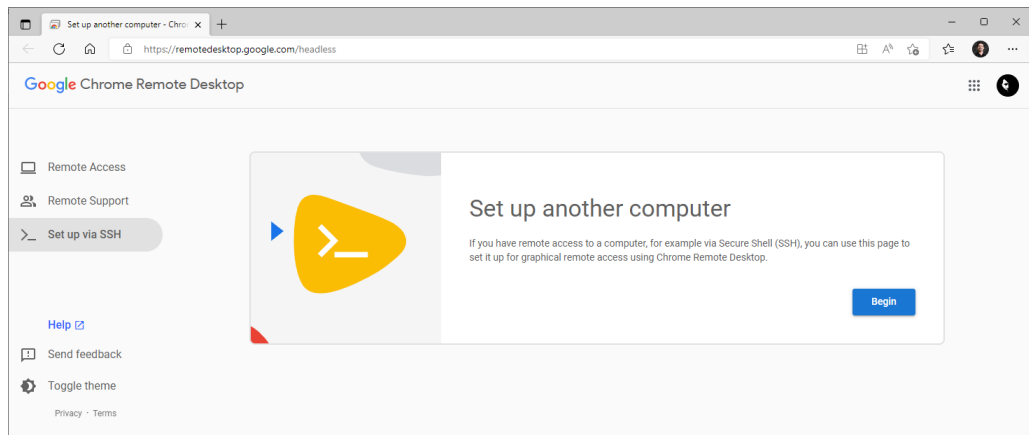


Figure 207: Chrome Remote Desktop (1 of 6)

#### 1. Click 'Begin'

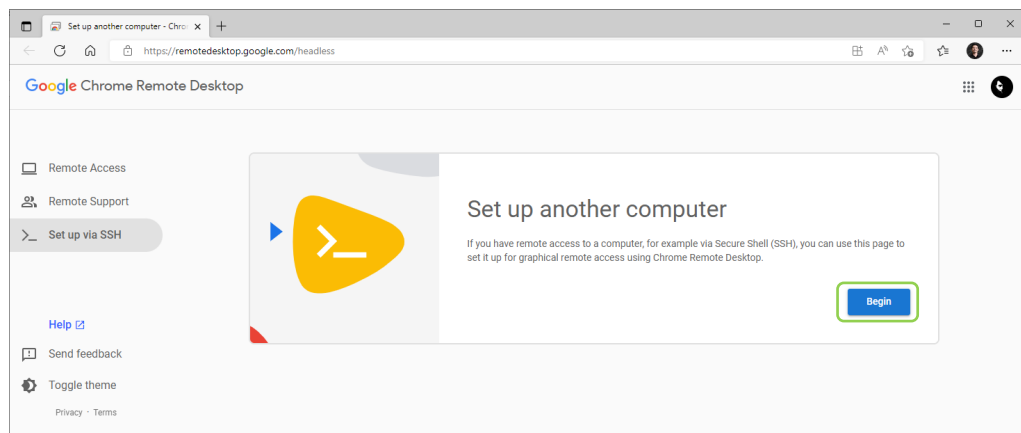


Figure 208: Chrome Remote Desktop (2 of 6)

## 2. Click 'Next'

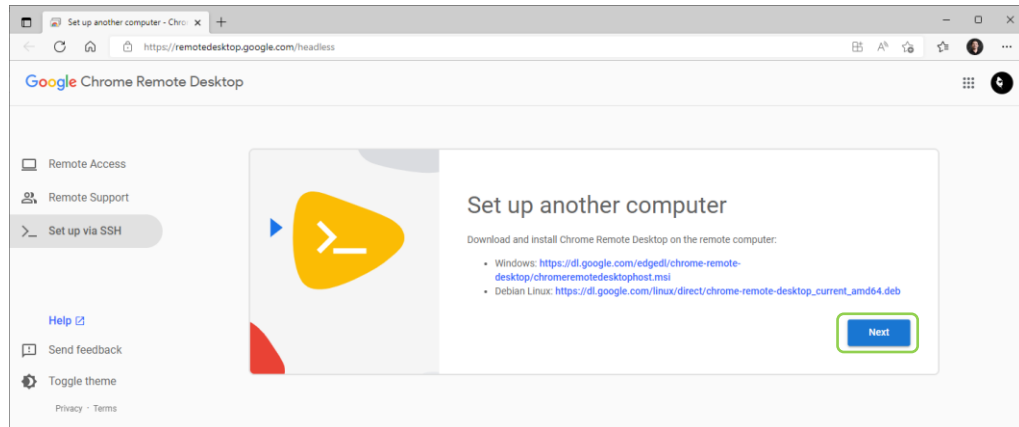


Figure 209: Chrome Remote Desktop (3 of 6)

## 3. Click 'Authorize'

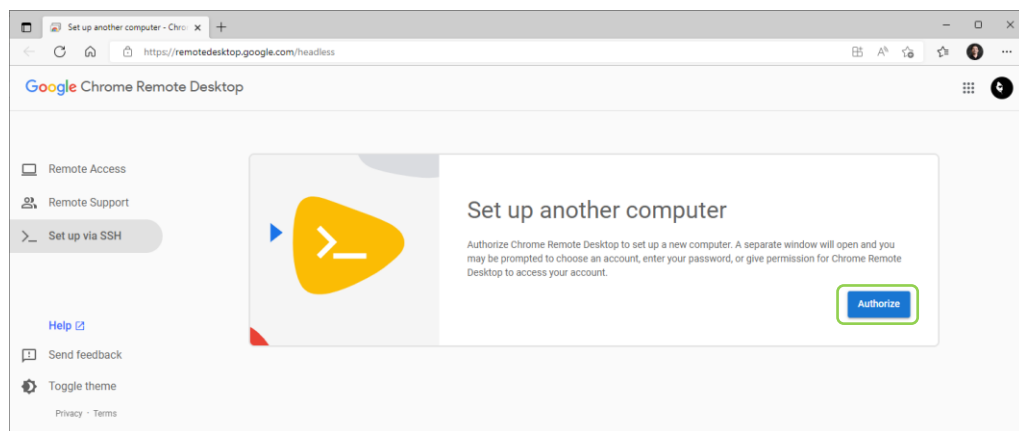


Figure 210: Chrome Remote Desktop (3 of 6)

## 4. Copy command for Windows (Cmd)

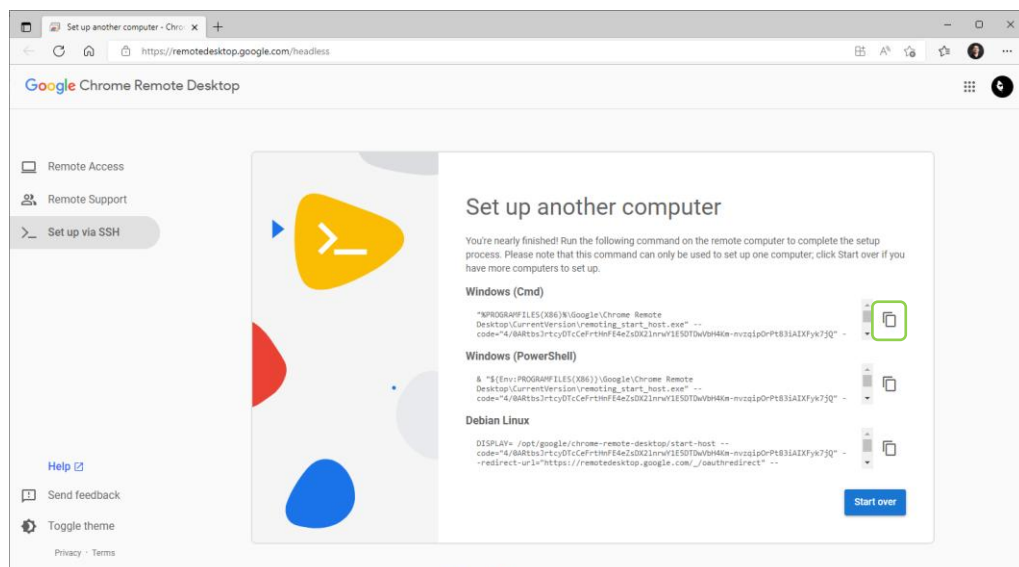


Figure 211: Chrome Remote Desktop (4 of 6)

## 5. From the ECA machine, go to Support. Under 'Chrome Remote Desktop', click setup

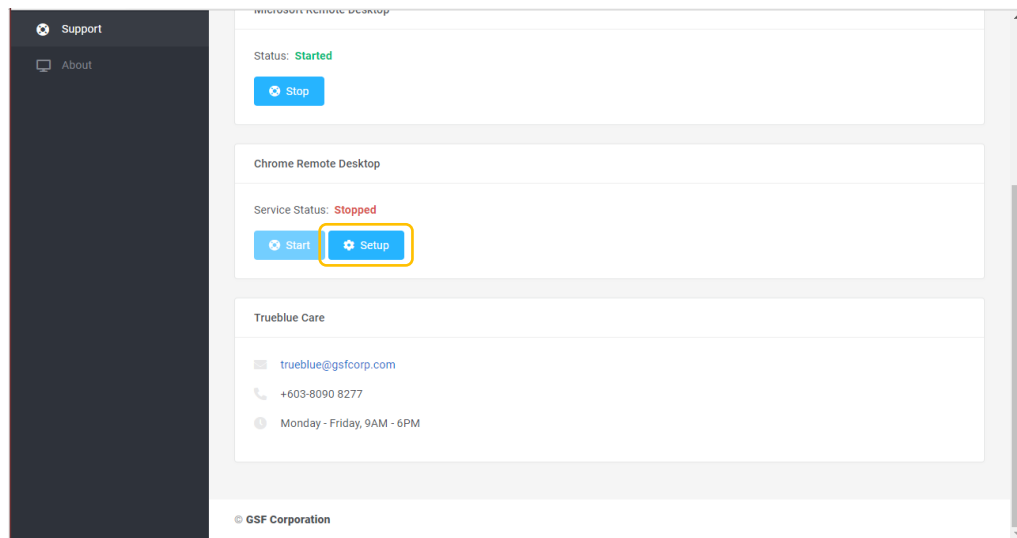


Figure 212: Chrome Remote Desktop (5 of 6)

6. Paste the command and enter 6-digit PIN number as a password.

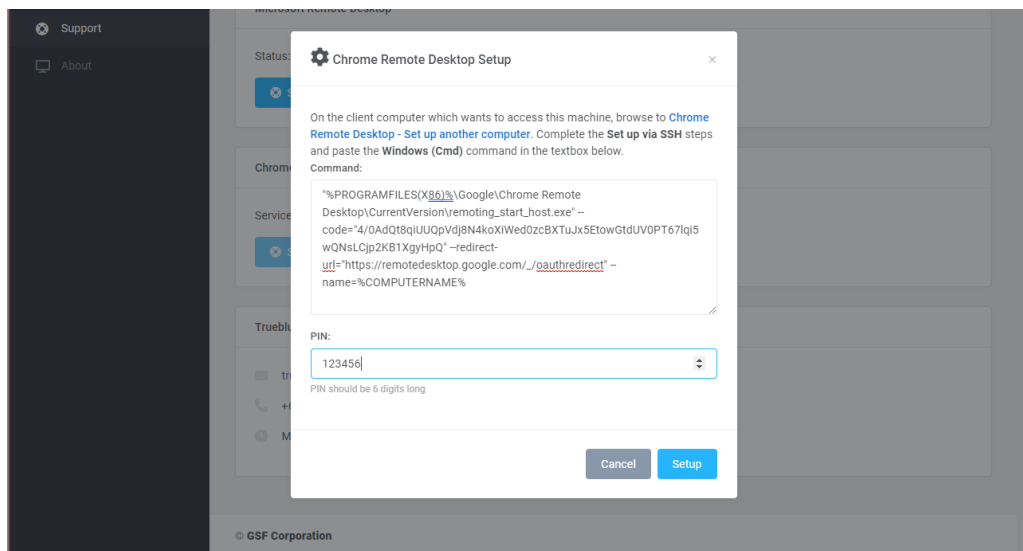


Figure 213: Chrome Remote Desktop (6 of 6)

## 11.2.2 Accessing ECA via Chrome Remote Desktop?

1. From the ECA will be remote. Make sure the service status Started

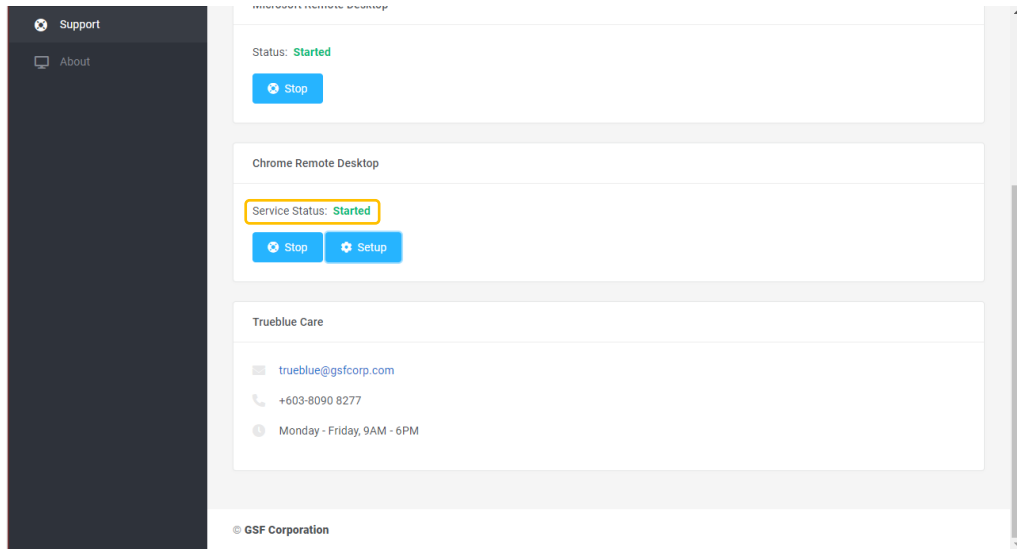


Figure 214: Accessing ECA via Chrome Remote Desktop (1 of 4)

2. From remote machine. Run web browser enter <https://remotedesktop.google.com/access/>. Click on remote devices.

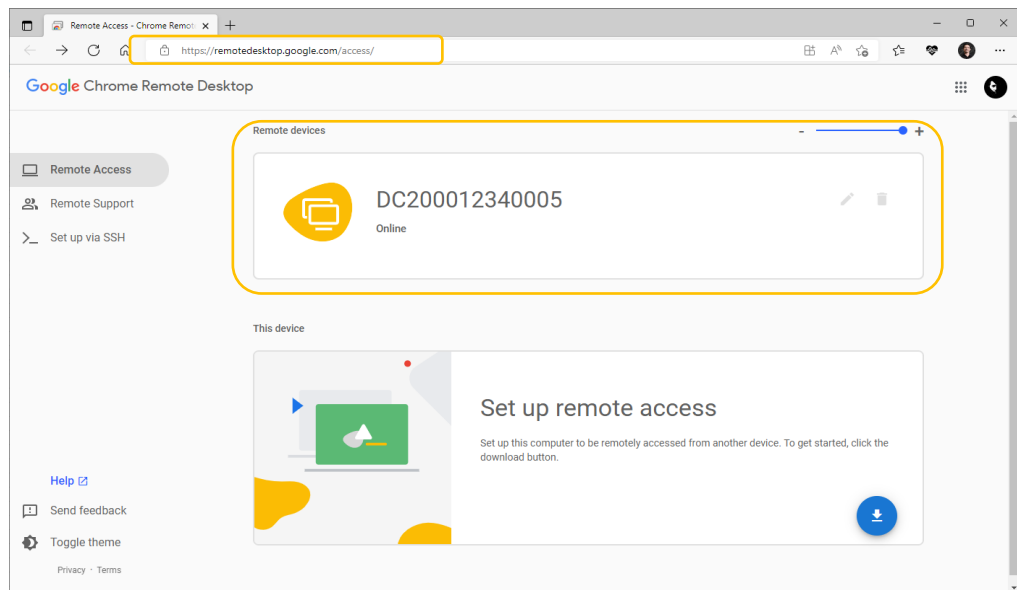


Figure 215: Accessing ECA via Chrome Remote Desktop (2 of 4)

3. Enter 6-digit PIN previously set during setup to start login

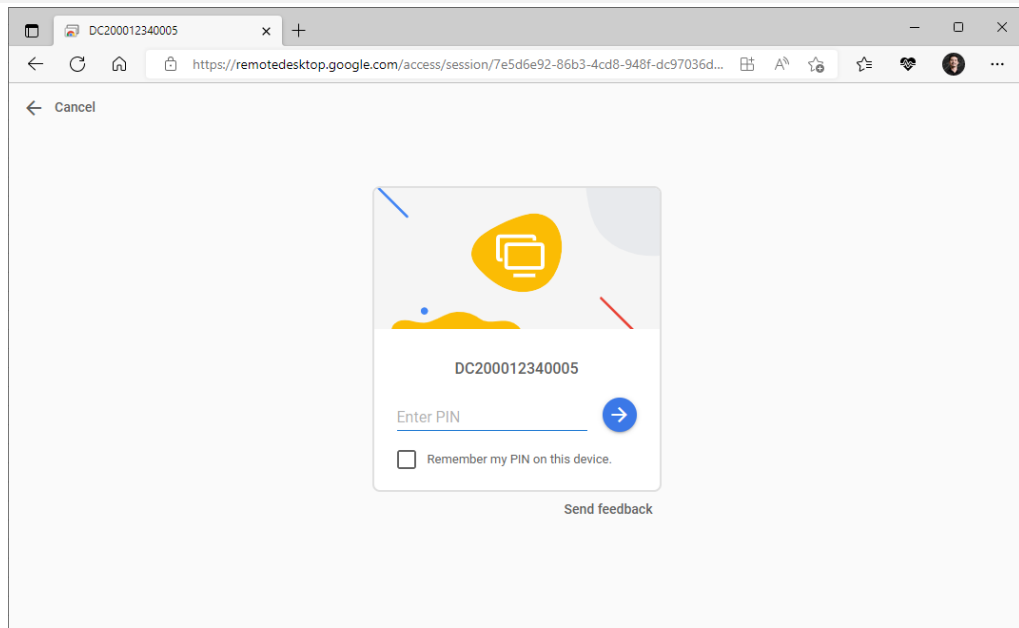


Figure 216: Accessing ECA via Chrome Remote Desktop (3 of 4)

#### 4. Access the ECA

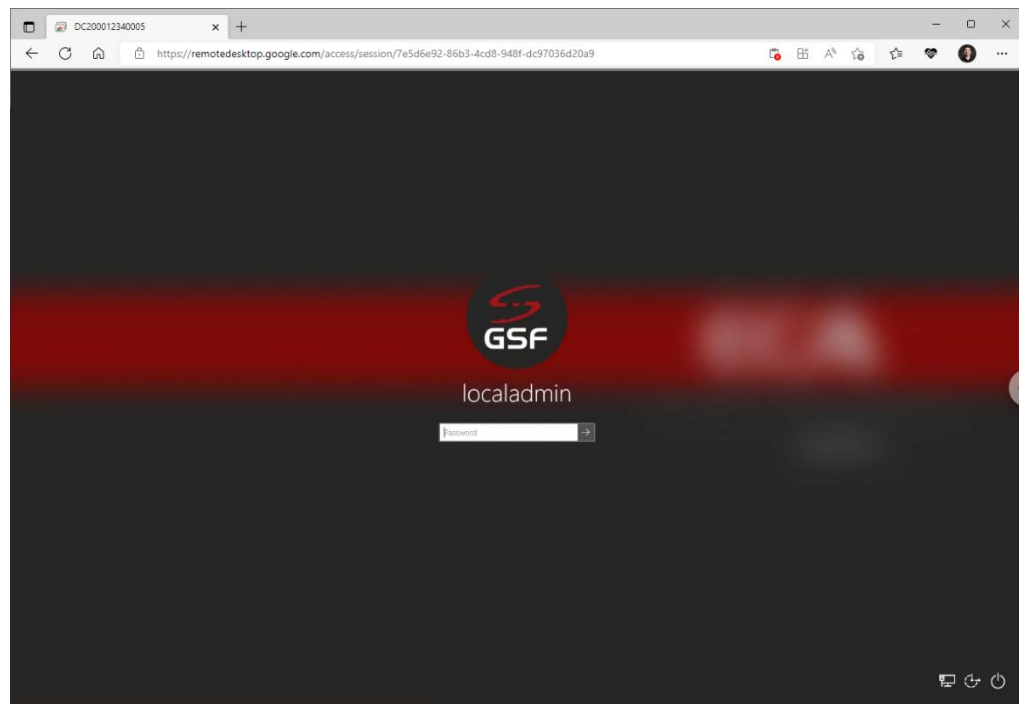


Figure 217: Accessing ECA via Chrome Remote Desktop (4 of 4)

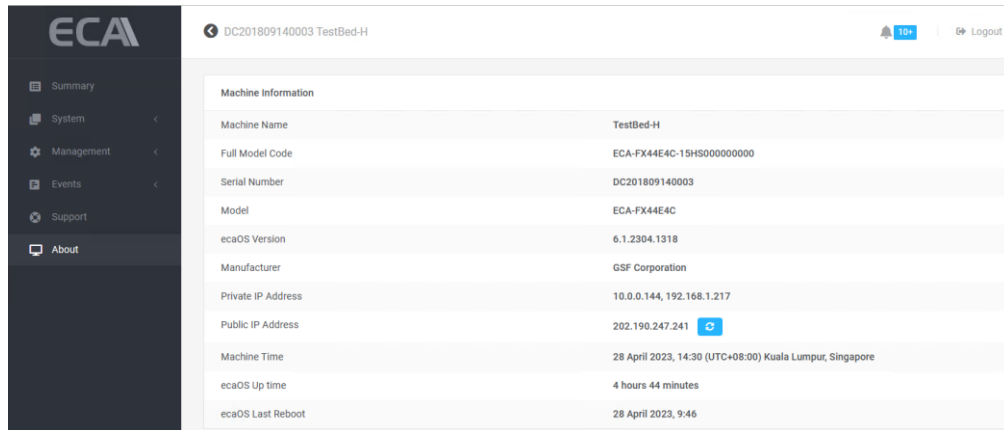


## 12 About

### 12.1 Machine Information

The ECA information display here such as Model, Serial Number, ecaOS version, Up time, when last reboot.

The IP address will be display if the ECA connected to local LAN.




Machine Information	
Machine Name	TestBed-H
Full Model Code	ECA-FX44E4C-15HS000000000
Serial Number	DC201809140003
Model	ECA-FX44E4C
ecaOS Version	6.1.2304.1318
Manufacturer	GSF Corporation
Private IP Address	10.0.0.144, 192.168.1.217
Public IP Address	202.190.247.241 
Machine Time	28 April 2023, 14:30 (UTC+08:00) Kuala Lumpur, Singapore
ecaOS Up time	4 hours 44 minutes
ecaOS Last Reboot	28 April 2023, 9:46

Figure 218: Machine Information

## 12.2 Heartbeat Information

The Heartbeat is around the clock hardware safeguard. Its micro controller overlooks the whole hardware platform to ensure continuous operation even in the event of critical breakdown.

'Factory Layer Last Saved' (Hard Reset) & Deployment Layer Last Saved' (Soft Reset) it shows the date of the layer saved.



Heartbeat Information	
Factory Layer Last Saved	19 April 2023, 16:23
Deployment Layer Last Saved	19 April 2023, 17:35
Heartbeat Model	HB2000-A1
hbOS Version	1.0.2302.1709
Heartbeat Serial Number	1838B29
Heartbeat Private IP Address	10.0.0.102
Heartbeat Last Reboot	28 April 2023, 9:05

© GSF Corporation

Figure 219: Heartbeat Information

13 APPENDIX

13.1 Processor Activity

13.1.1 CPU activity above limit

Dashboard

Processor Activity

Utilization

ABOVE LIMIT

Current Utilization

68.3%

Average Utilization

71.3% (10min)

66.0% (min)

21.7% (hr)

9.1% (day)

Utilization %

Average Utilization %

Notification

CPU activity above limit

Average CPU activity has been above the set limit of 50% for more than 5 minutes. The current average CPU activity is 71.9%  
15:51 - Processor Activity

Log

Time	Level	Source	Type	Name	Details
24 June 2025, 15:51:54	Warning	ecaOS	Processor Activity	CPU activity above limit	Average CPU activity has been above the set limit of 50% for more than 5 minutes. The current average CPU activity is 71.9%

Email

[DC200012340007 Testbed-G] High CPU usage detected

ECA Notifications

To: keong

Dear user,  
The average CPU usage has been reported above the set limit of 50% for more than 5 minutes.  
Current average CPU usage: 71.9%  
Time reported: 24-Jun-25 15:51:54 +08:00  
For further assistance, please contact TrueBlue Care:  
trueblue@gstcorp.com  
+603-8090 8277  
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13.1.2 CPU activity back to normal

Dashboard

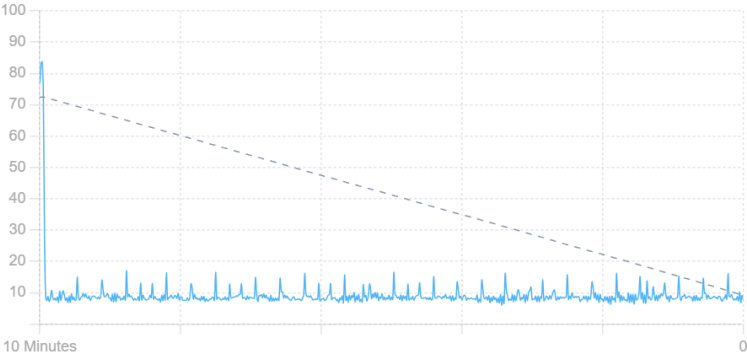
Processor Activity Utilization NORMAL

Current Utilization 7.7%

Average Utilization 9.1% (10min) 8.8% (min) 46.4% (hr) 10.3% (day)

Utilization %

Average Utilization %



10 Minutes 0

Notification

CPU activity returned to normal

CPU activity has returned to normal (after 32 minutes 40 seconds). The current average CPU activity is 18.3%

16:24 - Processor Activity

Log

Time	Level	Source	Type	Name	Details
24 June 2025, 16:24:35	Information	ecaOS	Processor Activity	CPU activity returned to normal	Average CPU activity has returned to normal (after 32 minutes 40 seconds). The current average CPU activity is 18.3%


Email

[DC200012340007 Testbed-G] CPU usage returned to normal

EN ECA Notifications

To: veong

Tue 6/24/2025 4:24 PM



Dear user,

The previously reported high CPU usage has returned to normal. The average CPU usage had been reported above the set limit of 50% for more than 32 minutes 40 seconds.

Current average CPU usage: 18.3%

Return normal time: 24-Jun-25 16:24:35 +08:00

For further assistance, please contact TrueBlue Care:

trueblue@gsfcorp.com

+603-8090 6277

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13.2 Memory Activity

13.2.1 Memory usage above limit

Dashboard

Memory Activity Usage

ABOVE LIMIT

Current Usage 61.4%

Average Usage 55.7% (10min) 62.7% (min) 45.3% (hr) 39.2% (day)

Usage %

Average Usage %

Notification

Memory activity above limit

Average memory activity has been above the set limit of 50% for more than 5 minutes. The current average memory activity is 55.6%  
16:47 • Memory Activity

Log

Time	Level	Source	Type	Name	Details
24 June 2025, 16:47:24	Warning	ecaOS	Memory Activity	Memory activity above limit	Average memory activity has been above the set limit of 50% for more than 5 minutes. The current average memory activity is 55.6%

Email

DC200012340007 Testbed-GJ High memory usage detected

EN ECA Notifications

To: keong

Reply

Reply all

Forward

Tue 5/24/2025 4:47 PM

Dear user,  
The average memory usage has been reported above the set limit of **50%** for more than **5 minutes**.  
Current average memory usage: **55.6%**  
Time reported: **24-Jun-25 16:47:24 +08:00**  
For further assistance, please contact TrueBlue Care:  
**trueblue@gscorp.com**  
**+603-8090 8277**  
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13.2.2 Memory activity back to normal

Dashboard

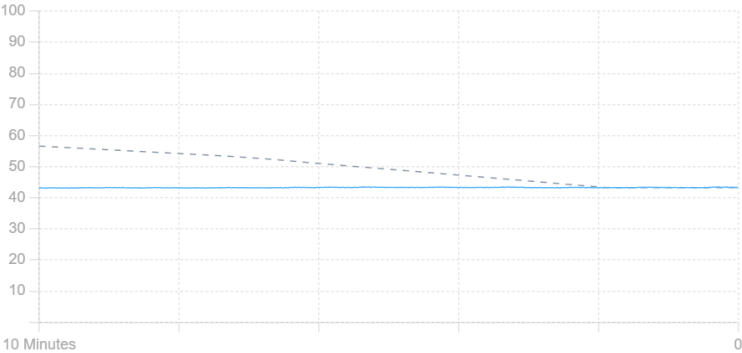
Memory Activity Usage NORMAL

Current Usage 43.3%

Average Usage 43.3% (10min) 43.3% (min) 46.5% (hr) 39.7% (day)

Usage %

Average Usage %



Notification

Memory activity returned to normal

Memory activity has returned to normal (after 15 minutes 20 seconds). The current average memory activity is 43.3%

17:02 • Memory Activity

Log

Time	Level	Source	Type	Name	Details
24 June 2025, 17:02:44	Information	ecaOS	Memory Activity	Memory activity returned to normal	Average memory activity has returned to normal (after 15 minutes 20 seconds). The current average memory activity is 43.3%


Email

[DC200012340007 Testbed-G] Memory usage returned to normal

ECA Notifications

To: keong

Tue 6/24/2025 5:02 PM



Dear user,

The previously reported high memory usage has **returned to normal**. Average memory usage had earlier been reported to be above the set limit of 50% for more than **15 minutes 20 seconds**.

Current average memory usage: **43.3%**

Return normal time: **24-Jun-25 17:02:44 +08:00**

For further assistance, please contact TrueBlue Care:

[trueblue@gsfcorp.com](mailto:trueblue@gsfcorp.com)

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13.3 Disk Activity

13.3.1 Disk read activity above limit

Dashboard

Disk Activity

Read **ABOVE LIMIT** Write **NORMAL**

Current Read

2.9 MB/s

Average Read

1.9 MB/s (10min)

2.0 MB/s (min)

1.1 MB/s (hr)

470.1 kB/s (day)

Current Write

238.7 kB/s

Average Write

24.2 MB/s (10min)

24.0 MB/s (min)

24.5 MB/s (hr)

24.9 MB/s (day)

57.2 MB/s

47.7 MB/s

38.1 MB/s

28.6 MB/s

19.1 MB/s

9.5 MB/s

10 Minutes

0

Read

Write

Notification

Disk read activity above limit

Average disk read activity has been above the set limit of 1.0 MB/s for more than 5 minutes. The current average disk read activity is 1.9 MB/s

17:20 • Disk Activity

Log

Time	Level	Source	Type	Name	Details
24 June 2025, 17:20:05	Warning	ecaOS	Disk Activity	Disk read activity above limit	Average disk read activity has been above the set limit of 1.0 MB/s for more than 5 minutes. The current average disk read activity is 1.9 MB/s

Email

[DC200012340007 Testbed-G] High disk read activity

ECA Notifications

To: keong

Tue 6/24/2025 5:20 PM

Dear user,

The average disk read activity has been above the set limit 1.0 MB/s for more than 5 minutes.

Current average disk read: 1.9 MB/s

Time reported: 24-Jun-25 17:20:05 +08:00

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[trueblue@gsfcorp.com](mailto:trueblue@gsfcorp.com)

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13.3.2 Disk read activity back to normal

Dashboard

Disk Activity

Read NORMAL Write NORMAL

Current Read 0.0 B/s

Average Read 6.9 kB/s (10min) 0.0 B/s (min) 861.3 kB/s (hr) 474.7 kB/s (day)

Current Write 31.1 MB/s

Average Write 24.2 MB/s (10min) 24.1 MB/s (min) 24.4 MB/s (hr) 25.1 MB/s (day)

42.9 MB/s

38.1 MB/s

33.4 MB/s

28.6 MB/s

23.8 MB/s

19.1 MB/s

14.3 MB/s

9.5 MB/s

4.8 MB/s

10 Minutes

0

Read Write

Notification

Disk read activity returned to normal

Average disk read activity has returned to normal (after 24 minutes 12 seconds). The current average disk read activity is 29.7 KB/s

17:44 • Disk Activity

Log

Time	Level	Source	Type	Name	Details
24 June 2025, 17:44:17	Information	ecsOS	Disk Activity	Disk read activity returned to normal	Average disk read activity has returned to normal (after 24 minutes 12 seconds). The current average disk read activity is 29.7 KB/s

Email

[DC200012340007 Testbed-G] Disk read activity returned to normal

ECA Notifications

To: keong

Tue 6/24/2025 5:44 PM

Dear user,

The previously reported high average disk read activity has returned to normal. The average disk read activity had earlier been reported to be above the set limit of 1.0 MB/s for more than 24 minutes 12 seconds.

Current average disk read: 29.7 KB/s

Return to normal time: 24-Jun-25 17:44:17 +08:00

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13.3.3 Disk write activity below limit

Dashboard

Disk Activity

Read NORMAL Write BELOW LIMIT

Current Read 0.0 B/s

Average Read 2.7 kB/s (10min) 1.1 kB/s (min) 13.0 kB/s (hr) 508.8 kB/s (day)

Current Write 882.6 kB/s

Average Write 534.5 kB/s (10min) 526.5 kB/s (min) 16.6 MB/s (hr) 40.7 MB/s (day)

1.9 MB/s

1.7 MB/s

1.5 MB/s

1.3 MB/s

1.1 MB/s

976.6 kB/s

781.3 kB/s

585.9 kB/s

390.6 kB/s

195.3 kB/s

10 Minutes

0

Read Write

Notification

Disk write activity below limit

Average disk write activity has been below the set limit of 22.0 MB/s for more than 5 minutes. The current average disk write activity is 10.1 MB/s

09:20 • Disk Activity

Log

Time	Level	Source	Type	Name	Details
25 June 2025, 9:20:41	Warning	ecaOS	Disk Activity	Disk write activity below limit	Average disk write activity has been below the set limit of 22.0 MB/s for more than 5 minutes. The current average disk write activity is 10.1 MB/s

Email

[DC200012340007 Testbed-G] Low disk write activity

ECA Notifications

To: O keong

Wed 6/25/2025 9:20 AM

Dear user,

The average disk write activity has been below the set limit 22.0 MB/s for more than 5 minutes.

Current average disk write: 10.1 MB/s

Time reported: 25-Jun-25 09:20:41 +08:00

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13.3.4 Disk write activity back to normal

Dashboard

Disk Activity

Read NORMAL Write NORMAL

Current Read 0.0 B/s

Average Read 5.2 kB/s (10min) 46.3 kB/s (min) 15.2 kB/s (hr) 508.9 kB/s (day)

Current Write 10.7 MB/s

Average Write 24.1 MB/s (10min) 23.8 MB/s (min) 14.8 MB/s (hr) 41.0 MB/s (day)

66.8 MB/s

57.2 MB/s

47.7 MB/s

38.1 MB/s

28.6 MB/s

19.1 MB/s

9.5 MB/s

10 Minutes

0

Read Write

Notification

Disk write activity returned to normal

Average disk write activity has returned to normal (after 32 minutes). The current average disk write activity is 24.1 MB/s

09:52 • Disk Activity

Log

Time	Level	Source	Type	Name	Details
25 June 2025, 9:52:41	Information	ecaOS	Disk Activity	Disk write activity returned to normal	Average disk write activity has returned to normal (after 32 minutes). The current average disk write activity is 24.1 MB/s

Email

[DC200012340007 Testbed-G] Disk write activity returned to normal

ECA Notifications

To: keong

Wed 6/25/2025 9:52 AM

Dear user,

The previously reported low average disk write activity has returned to normal. The average disk write activity had earlier been reported to be above the set limit of 22.0 MB/s for more than 32 minutes.

Current average disk write: 24.1 MB/s

Return to normal time: 25-Jun-25 09:52:41 +08:00

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13.4 Network Activity

13.4.1 Network send activity above limit

Dashboard

Network Activity

Send

ABOVE LIMIT

Receive

NORMAL

Current Send

23.3 Mbps

Average Send

19.9 Mbps (10min)

20.3 Mbps (min)

12.9 Mbps (hr)

3.6 Mbps (day)

Current Receive

238.9 Mbps

Average Receive

251.1 Mbps (10min)

251.3 Mbps (min)

257.7 Mbps (hr)

268.8 Mbps (day)

343.3 Mbps

305.2 Mbps

267.0 Mbps

228.9 Mbps

190.7 Mbps

152.6 Mbps

114.4 Mbps

76.3 Mbps

38.1 Mbps

10 Minutes

0

Send

Receive

Notification

Network send activity above limit

Average network send activity has been above the set limit of 11.0 Mb/s for more than 5 minutes. The current average network send activity is 19.6 Mb/s

17:19 • Network Activity

Log

Time	Level	Source	Type	Name	Details
24 June 2025, 17:19:28	Warning	ecaOS	Network Activity	Network send activity above limit	Average network send activity has been above the set limit of 11.0 Mb/s for more than 5 minutes. The current average network send activity is 19.6 Mb/s

Email

[DC200012340007 Testbed-G] High outgoing network traffic

ECA Notifications

To: keong

Reply

Reply all

Forward

Tue 6/24/2025 5:19 PM

GSF

Dear user,

The average outgoing network traffic has been above the set limit 11.0 Mb/s for more than 5 minutes.

Current average network send: 19.6 Mb/s

Time reported: 24-Jun-25 17:19:28 +08:00

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13.4.2 Network send activity back to normal

Dashboard

Network Activity

Send NORMAL Receive NORMAL

Current Send 3.0 Mbps

Average Send 2.9 Mbps (10min) 3.3 Mbps (min) 10.6 Mbps (hr) 3.6 Mbps (day)

Current Receive 261.5 Mbps

Average Receive 250.6 Mbps (10min) 249.9 Mbps (min) 251.5 Mbps (hr) 271.1 Mbps (day)

343.3 Mbps

305.2 Mbps

267.0 Mbps

228.9 Mbps

190.7 Mbps

152.6 Mbps

114.4 Mbps

76.3 Mbps

38.1 Mbps

10 Minutes

0

Notification

Network send activity returned to normal

Average network send activity has returned to normal (after 25 minutes 13 seconds). The current average network send activity is 2.8 Mb/s

T744 • Network Activity

Log

Time	Level	Source	Type	Name	Details
24 June 2025, 17:44:41	Information	ecaOS	Network Activity	Network send activity returned to normal	Average network send activity has returned to normal (after 25 minutes 13 seconds). The current average network send activity is 2.8 Mb/s

Email

[DC200012340007 Testbed-G] Outgoing network traffic returned to normal

ECA Notifications

To: keong

Tue 6/24/2025 5:44 PM

Dear user,

The previously reported high average outgoing network traffic has returned to normal. The average outgoing network traffic had earlier been reported to be above the set limit of 11.0 Mb/s for more than 25 minutes 13 seconds.

Current average network send: 2.8 Mb/s

Return to normal time: 24-Jun-25 17:44:41 +08:00

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13.4.3 Network receive activity below limit

Dashboard

Network Activity

Send NORMAL Receive BELOW LIMIT

Current Send 133.9 kbps

Average Send 235.0 kbps (10min) 199.8 kbps (min) 1.9 Mbps (hr) 5.5 Mbps (day)

Current Receive 112.1 kbps

Average Receive 144.4 kbps (10min) 237.8 kbps (min) 154.5 Mbps (hr) 432.4 Mbps (day)

19.1 Mbps

15.3 Mbps

11.4 Mbps

7.6 Mbps

3.8 Mbps

0

Send

Receive

10 Minutes

Notification

Network receive activity below limit

Average network receive activity has been below the set limit of 226.0 Mb/s for more than 5 minutes. The current average network receive activity is 100.5 Mb/s

09:20 • Network Activity

Log

Time	Level	Source	Type	Name	Details
25 June 2025, 9:20:34	Warning	ecaOS	Network Activity	Network receive activity below limit	Average network receive activity has been below the set limit of 226.0 Mb/s for more than 5 minutes. The current average network receive activity is 100.5 Mb/s

Email

[DC200012340007 Testbed-G] Low incoming network traffic

ECA Notifications

To: keong

Wed 6/25/2025 9:20 AM

Dear user,

The average incoming network traffic has been below the set limit 226.0 Mb/s for more than 5 minutes.

Current average network receive: 100.5 Mb/s

Time reported: 25-Jun-25 09:20:34 +08:00

For further assistance, please contact TrueBlue Care:

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13.4.4 Network receive activity back to normal

Dashboard

Network Activity

Send NORMAL Receive NORMAL

Current Send 2.8 Mbps

Average Send 2.9 Mbps (10min) 3.4 Mbps (min) 1.9 Mbps (hr) 5.5 Mbps (day)

Current Receive 261.9 Mbps

Average Receive 250.8 Mbps (10min) 251.1 Mbps (min) 151.3 Mbps (hr) 434.9 Mbps (day)

305.2 Mbps

267.0 Mbps

228.9 Mbps

190.7 Mbps

152.6 Mbps

114.4 Mbps

76.3 Mbps

38.1 Mbps

10 Minutes

0

Notification

Network receive activity returned to normal

Average network receive activity has returned to normal (after 31 minutes 52 seconds). The current average network receive activity is 250.9 Mb/s

09:52 • Network Activity

Log

Time	Level	Source	Type	Name	Details
25 June 2025, 9:52:26	Information	ecaOS	Network Activity	Network receive activity returned to normal	Average network receive activity has returned to normal (after 31 minutes 52 seconds). The current average network receive activity is 250.9 Mb/s

Email

[DC200012340007 Testbed-G] Incoming network traffic returned to normal

ECA Notifications

To: keong

Wed 6/25/2025 9:52 AM

Dear user,

The previously reported low average incoming network traffic has returned to normal. The average incoming network traffic had earlier been reported to be below the set limit of 226.0 Mb/s for more than 31 minutes 52 seconds.

Current average network receive: 250.9 Mb/s

Return to normal time: 25-Jun-25 09:52:26 +08:00

For further assistance, please contact TrueBlue Care:

[trueblue@gsfcorp.com](mailto:trueblue@gsfcorp.com)

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Monday - Friday, 9AM - 6PM

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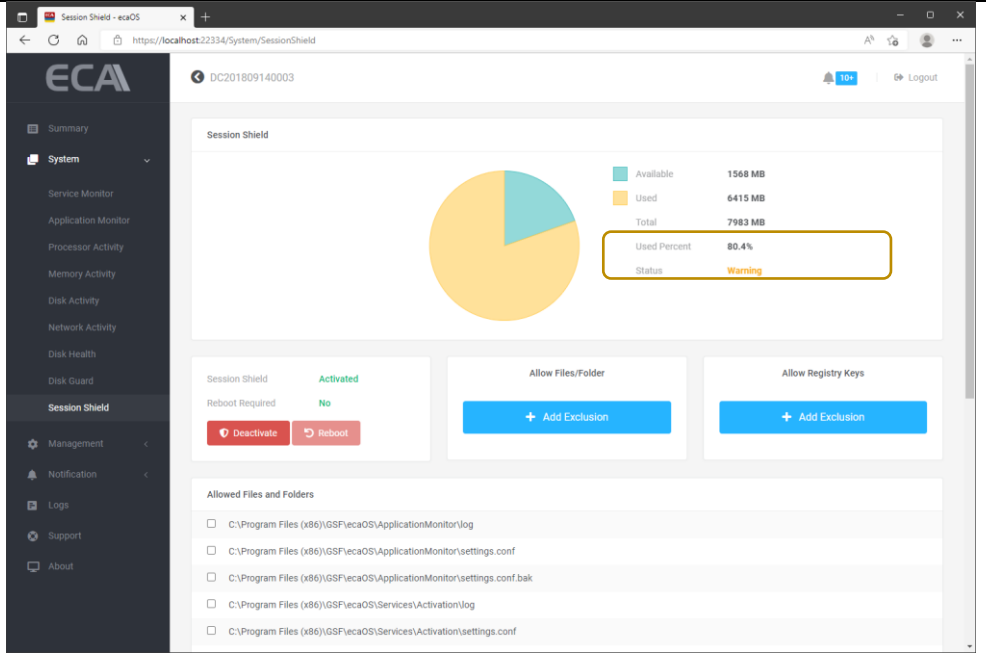
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## 13.5 Session Shield

### 13.5.1 Warning Status

Dashboard



The dashboard shows the Session Shield status for device DC201809140003. It features a pie chart indicating storage usage: Available (1568 MB), Used (6415 MB), and Total (7983 MB). The Used Percent is 80.4%, and the status is 'Warning'. Below the chart, there are buttons for 'Deactivate', 'Reboot', 'Add Exclusion' for files/folders, and 'Add Exclusion' for registry keys. A list of allowed files and folders is also displayed.

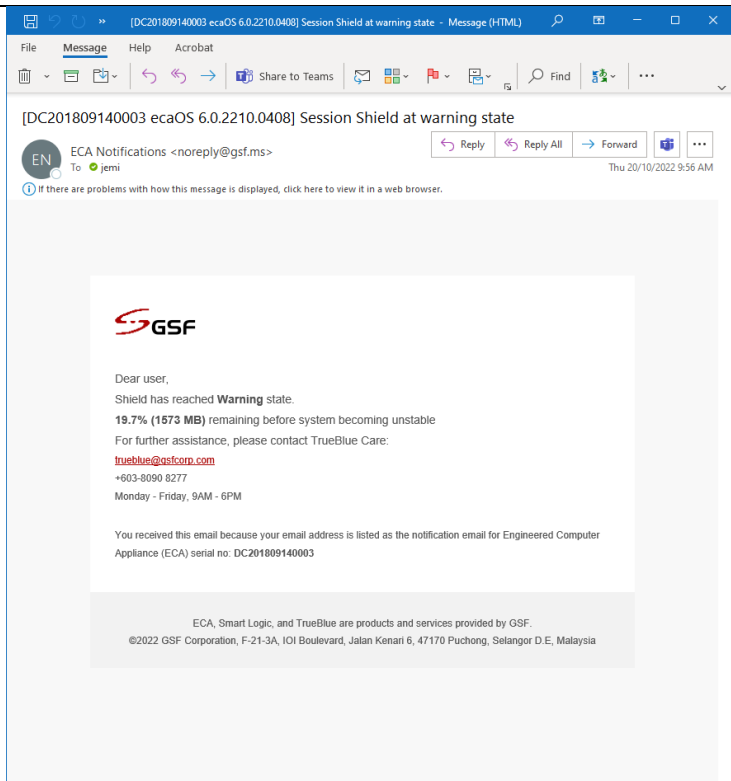
Notification

**Session Shield at warning state**  
Shield has reached Warning state. 19.7% (1573 MB) remaining before system becoming unstable  
09:56 • Session Shield

Log

Time	Level	Source	Type	Name	Details
20 Oct 2022, 9:56:07	Warning	ecaOS	Session Shield	Session Shield at warning state	Shield has reached Warning state. 19.7% (1573 MB) remaining before system becoming unstable

Email



The email screenshot shows a message from 'ECA Notifications <noreply@gsf.ms>' to 'jemii' on Thu 20/10/2022 9:56 AM. The subject is '[DC201809140003 ecaOS 6.0.2210.0408] Session Shield at warning state'. The body contains the GSF logo, a warning message about the shield reaching a warning state with 19.7% (1573 MB) remaining, and contact information for TrueBlue Care. It also mentions the user received the email because their address is listed as the notification email for the ECA appliance.

## 13.5.2

## Critical Status

Dashboard

Session Shield - ecaOS

https://localhost:22334/System/SessionShield

DC201809140003

Logout

ECA

Summary

System

Service Monitor

Application Monitor

Processor Activity

Memory Activity

Disk Activity

Network Activity

Disk Health

Disk Guard

Session Shield

Management

Notification

Logs

Support

About

Session Shield

DC201809140003

Available638 MB

Used7345 MB

Total7983 MB

Used Percent92%

StatusCritical

Session ShieldActivated

Reboot RequiredNo

DeactivateReboot

Allow Files/FolderAdd Exclusion

Allow Registry KeysAdd Exclusion

Allowed Files and Folders

C:\Program Files (x86)\GSF\ecaOS\ApplicationMonitor\log

C:\Program Files (x86)\GSF\ecaOS\ApplicationMonitor\settings.conf

C:\Program Files (x86)\GSF\ecaOS\ApplicationMonitor\settings.conf.bak

C:\Program Files (x86)\GSF\ecaOS\Services\Activation\log

C:\Program Files (x86)\GSF\ecaOS\Services\Activation\settings.conf

Notification

Session Shield at critical state

Shield has reached Critical state. 8.0% (638 MB) remaining before system becoming unstable. System will reboot in 3 minutes

11:45 • Session Shield

Log

Time	Level	Source	Type	Name	Details
20 Oct 2022, 11:45:30	Critical	ecaOS	Session Shield	Session Shield at critical state	Shield has reached Critical state. 8% (638 MB) remaining before system becoming unstable. System will reboot in 3 minutes

Email

[DC201809140003] Session Shield at critical state - Message (HTML)

File Message Help Acrobat

Share to Teams

Find

[DC201809140003] Session Shield at critical state

EN

ECA Notifications <noreply@gsf.ms>

To jemi

Thu 20/10/2022 11:46 AM

Reply

Reply All

Forward

If there are problems with how this message is displayed, click here to view it in a web browser.

GSF

Dear user,

Shield has reached **Critical** state.

8.0% (638 MB) remaining before system becoming unstable. System will reboot in **3 minutes**

For further assistance, please contact TrueBlue Care:

[trueblue@gsfcorp.com](mailto:trueblue@gsfcorp.com)

+603-8090 8277

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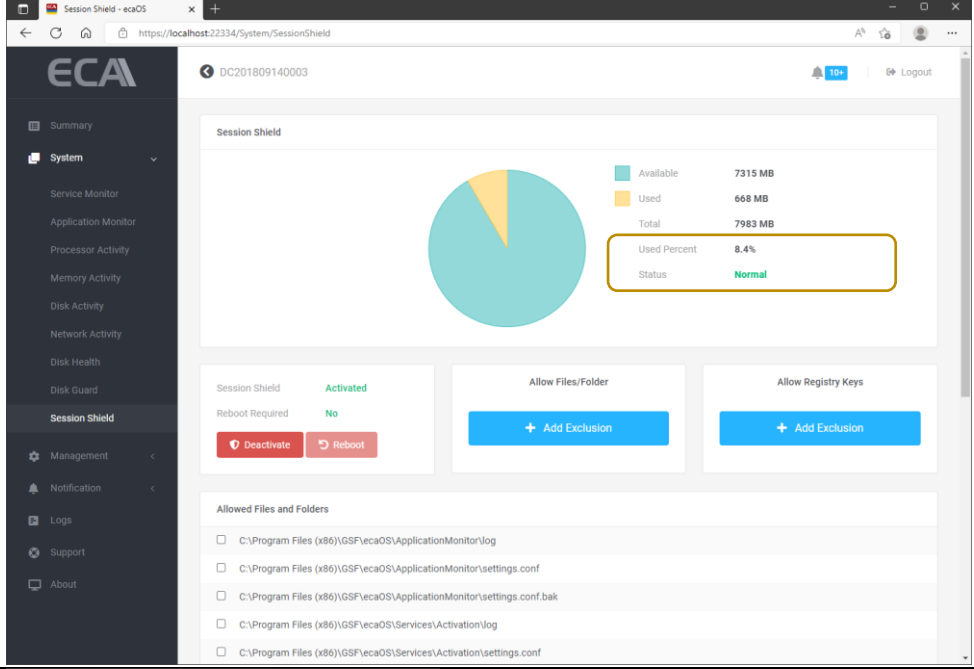
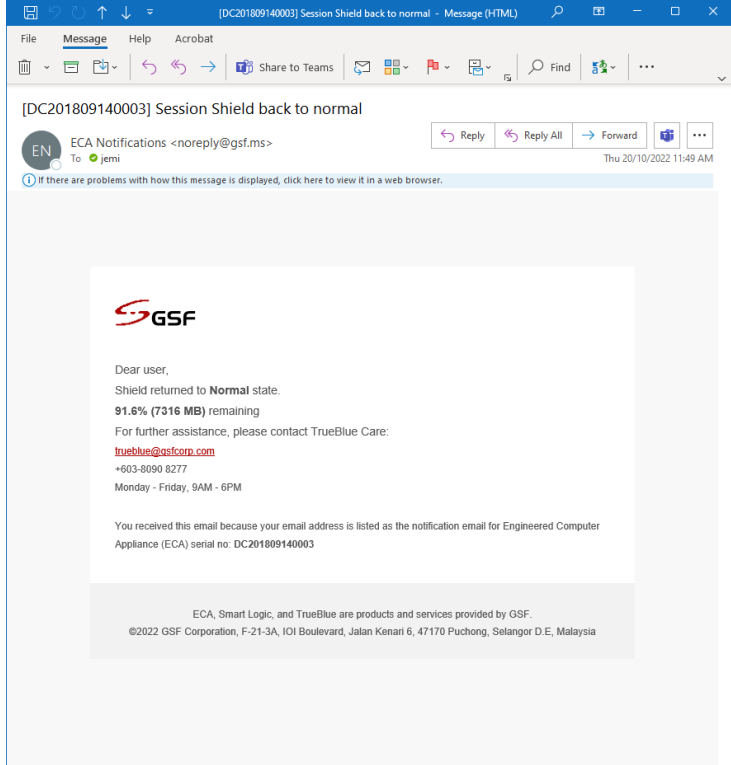
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## 13.5.3

## Status back to normal

Dashboard													
Notification	<p><b>Session Shield back to normal</b>          Shield returned to Normal state. 91.6% (7316 MB) remaining          11:48 • Session Shield</p>												
Log	<table border="1"> <thead> <tr> <th>Time</th><th>Level</th><th>Source</th><th>Type</th><th>Name</th><th>Details</th></tr> </thead> <tbody> <tr> <td>20 Oct 2022, 11:48:52</td><td>Information</td><td>ecaOS</td><td>Session Shield</td><td>Session Shield back to normal</td><td>Shield returned to Normal state. 91.6% (7316 MB) remaining</td></tr> </tbody> </table>	Time	Level	Source	Type	Name	Details	20 Oct 2022, 11:48:52	Information	ecaOS	Session Shield	Session Shield back to normal	Shield returned to Normal state. 91.6% (7316 MB) remaining
Time	Level	Source	Type	Name	Details								
20 Oct 2022, 11:48:52	Information	ecaOS	Session Shield	Session Shield back to normal	Shield returned to Normal state. 91.6% (7316 MB) remaining								
Email													

13.6 Disk Health

13.6.1 Warning Status Disk

Dashboard

Storage Monitor

VolumesDisksS.M.A.R.T.

Last Updated: 25 June 2025 11:01:20

Search

Disk	Model	Status	Volumes	Disk Guard
System Disk	KINGSTON SUV400S37120G SN: 5002687282047924 FW: 0C3K379A	31% Critical 32 °C 3 years 4 months 11 days 13 hours	C: D:	Online
Bay 1	WDC WD20EVD5-63T3B0 SN: WD-WCAVY6145989 FW: 01.00A01	60% Warning 34 °C 3 years 3 months 26 days 5 hours	O:	Online
Bay 2	ST4000VX000-1F4168 SN: Z3026497C FW: CV12	100% Healthy 30 °C 2 years 13 days 4 hours	P:	Online
Bay 3	ST4000VX000-1F4168 SN: Z3026498H FW: CV12	100% Healthy 31 °C 8 months 23 days 5 hours	E:	Online
Bay 4	WDC WD30EURS-63R8UY0 SN: WD-WC4RZ1983951 FW: 80.00A80	18% Critical 33 °C 1 years 11 months 18 days 23 hours	E:	Online

Notification

Disk health warning

Disk Bay 1 is down to 60% health

11:01 • Disk Health

Log

Time	Level	Source	Type	Name	Details
25 June 2025, 11:01:06	Warning	ecaOS	Disk Health	Disk health warning	Disk Bay 1 is down to 60% health

Email

[DC200012340007 Testbed-G] Hard Disk health is at warning level

EN ECA Notifications

To: keong

Wed 6/25/2025 11:00 AM

Dear user,  
Hard disk drive Bay 1 is down to 60% health  
  
Time reported: 25-Jun-25 11:00:36 +08:00  
Model: WDC WD20EVD5-63T3B0  
Serial Number: WD-WCAVY6145989  
Size: 1.8TB  
Current Disk Status: Warning - 60% health  
Temperature: 34 °C  
Bad Sectors: 0  
Power on hours: 29069 Hours  
  
For further assistance, please contact TrueBlue Care:  
trueblue@gsfcorp.com  
+603-8090 8277  
Monday - Friday, 9AM - 6PM  
  
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13.6.2 Critical Status Disk

Dashboard

Bay 9	ST4000VX000-1F4168 SN: Z302B6FJ FW: CV12	100% Healthy 30°C 2 years 5 months 10 days 10 hours	F:	Online
Bay 10	TOSHIBA MC04ACA400E SN: 44T5K00JFLSA FW: FP1A	30% Critical 35°C 5 years 1 months 17 days 19 hours	G:	Online
Bay 11	N/A	N/A	N/A	No Disk
Bay 12	N/A	N/A	N/A	No Disk
Bay 13	N/A	N/A	N/A	No Disk
Bay 14	N/A	N/A	N/A	No Disk
Bay 15	N/A	N/A	N/A	No Disk

Notification

Disk health critical  
Disk Bay 10 is down to 30% health  
11:01 • Disk Health

Log

Time	Level	Source	Type	Name	Details
25 June 2025, 11:01:07	Warning	ecaOS	Disk Health	Disk health critical	Disk Bay 10 is down to 30% health

Email

[DC200012340007 Testbed-G] Hard Disk is about to fail

EN

ECA Notifications

To: keong

Wed 6/25/2025 11:01 AM

Dear user,

Hard disk drive Bay 10 is about to fail

Time reported: 25-Jun-25 11:01:07 +08:00  
Model: TOSHIBA MC04ACA400E  
Serial Number: 44T5K00JFLSA  
Size: 3.6TB  
Current Disk Status: Warning - 30% health  
Temperature: 35 °C  
Bad Sectors: 48  
Power on hours: 44947 Hours

For further assistance, please contact TrueBlue Care:  
[trueblue@gsfcorp.com](mailto:trueblue@gsfcorp.com)  
+603-8090 8277  
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13.7 Disk Guard

13.7.1 New disk / Disk Inserted

Dashboard

Storage Monitor

VolumesDisksS.M.A.R.T.

Last Updated: 25 June 2025 11:32:30

Search

Disk	Model	Status	Volumes	Disk Guard
System Disk	KINGSTON SUV400S37120G SN: 5002687282047524 FW: 0C3K878A	31% Critical 32°C 3 years 4 months 11 days 13 hours	C: D:	Online
Bay 1	WDC WD20EVD5-63T3B0 SN: WD-WCAVY6145989 FW: 01.00A01	60% Warning 31°C 3 years 3 months 26 days 5 hours	O:	Online
Bay 2	WDC WD2500AAKX-75U6AA0 SN: WD-WMAC2F0265775 FW: 19.01H19	100% Healthy 29°C 1 years 7 months 26 days 14 hours	H:	Online
Bay 3	ST4000VX000-1F4168 SN: Z302AV4H1 FW: CV12	100% Healthy 30°C 8 months 23 days 6 hours	I:	Online

Notification

Disk inserted

Disk WDC WD20EVD5-63T3B0 (WD-WCAVY6145989) placed in Bay 1

11:32 • Disk Guard

Log

Time	Level	Source	Type	Name	Details
25 June 2025, 11:32:20	Information	ecaOS	Disk Guard	Disk inserted	Disk WDC WD20EVD5-63T3B0 (WD-WCAVY6145989) placed in Bay 1

Email

[DC200012340007 Testbed-G] Hard disk have been inserted

ECA Notifications

To: keong

Wed 6/25/2025 11:32 AM

Dear user,

Hard disk WDC WD20EVD5-63T3B0 (WD-WCAVY6145989) inserted in Bay 1.

Time reported: 25-Jun-25 11:32:20 +08:00

Model: WDC WD20EVD5-63T3B0

Serial Number: WD-WCAVY6145989

Online/Offline: Online

Size: 1.8TB

For further assistance, please contact TrueBlue Care:  
trueblue@gsfcorp.com  
+603-8090 8277  
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13.7.2 Disk Removed

Dashboard

Storage Monitor

VolumesDisksS.M.A.R.T.

Last Updated: 25 June 2025 11:26:07

Filter

Search

Disk	Model	Status	Volumes	Disk Guard
System Disk	KINGSTON SUV400S37120G SN: 5002687282047524 FW: 0C3K87RA	31% Critical 32°C 3 years 4 months 11 days 13 hours	C: D:	Online
Bay 1	WDC WD20EVD5-63T3B0 SN: WD-WCAVY6145989	N/A	N/A	Removed Acknowledge
Bay 2	WDC WD2500AAKX-75U6AA0 SN: WD-WMAC2F0265775 FW: 19.01H19	100% Healthy 26°C 1 years 7 months 26 days 14 hours	H:	Replaced Acknowledge
Bay 3	ST4000VX000-1F4168 SN: Z302AV4H1 FW: CV12	100% Healthy 30°C 8 months 23 days 5 hours	I:	Online

Notification

Disk removed

Disk WDC WD20EVD5-63T3B0 (WD-WCAVY6145989) removed from Bay 1  
11:25 • Disk Guard

Log

Time	Level	Source	Type	Name	Details
25 June 2025, 11:25:37	Warning	ecaOS	Disk Guard	Disk removed	Disk WDC WD20EVD5-63T3B0 (WD-WCAVY6145989) removed from Bay 1

Email

[DC200012340007 Testbed-G] Hard disk have been removed

EN ECA Notifications

To: keong

Wed 6/25/2025 11:25 AM

Dear user,  
A hard disk have been removed from Bay 1.  
Time reported: 25-Jun-25 11:25:37 +08:00  
Model: WDC WD20EVD5-63T3B0  
Serial Number: WD-WCAVY6145989  
Size: 1.8TB  
  
For further assistance, please contact TrueBlue Care:  
[trueblue@gsfcorp.com](mailto:trueblue@gsfcorp.com)  
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13.7.3 Disk Removed Acknowledge

Dashboard

Storage Monitor

VolumesDisksS.M.A.R.T.

Last Updated: 25 June 2025 11:26:07

Search

Disk	Model	Status	Volumes	Disk Guard
System Disk	KINGSTON SUV400S37120G SN: 5002687282047524 FW: DC3K87BA	31% Critical 32°C 3 years 4 months 11 days 13 hours	C: D:	Online
Bay 1	N/A	N/A	N/A	No Disk
Bay 2	WDC WD2500AAKX-75U6AA0 SN: WD-WMC2F0265775 FW: 19.01H19	100% Healthy 26°C 1 years 7 months 26 days 14 hours	H:	Online
Bay 3	ST4000VX000-1F4168 SN: Z302AV4H FW: CV12	100% Healthy 30°C 8 months 23 days 5 hours	I:	Online

Notification

Disk remove acknowledged

Disk WDC WD20EVD5-63T3B0 (WD-WCAVY6145989) removal from Bay 1 acknowledged

11:30 - Disk Guard

Log

Time	Level	Source	Type	Name	Details
25 June 2025, 11:30:32	Information	ecaOS	Disk Guard	Disk remove acknowledged	Disk WDC WD20EVD5-63T3B0 (WD-WCAVY6145989) removal from Bay 1 acknowledged

Email

[DC200012340007 Testbed-G] Hard disk remove acknowledged

ECA Notifications

To: keong

Wed 6/25/2025 11:30 AM

Dear user,

Removal of hard disk WDC WD20EVD5-63T3B0 (WD-WCAVY6145989) from Bay 1 has been acknowledged.

Time reported: 25-Jun-25 11:30:32 +08:00

Model: WDC WD20EVD5-63T3B0

Serial Number: WD-WCAVY6145989

Size: 1.8TB

For further assistance, please contact TrueBlue Care:  
trueblue@gsfcorp.com  
+603-8090 8277  
Monday - Friday, 9AM - 6PM

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13.7.4 Disk Replaced

Dashboard

Storage Monitor

Volumes

Disks

S.M.A.R.T.

Last Updated: 25 June 2025 11:26:07

Search

Disk	Model	Status	Volumes	Disk Guard
System Disk	KINGSTON SUV400S37120G SN: 5002687282047524 FW: 0C3K87RA	31% Critical 32°C 3 years 4 months 11 days 13 hours	C: D:	Online
Bay 1	WDC WD20EVD5-63T3B0 SN: WD-WCAVY6145989	N/A	N/A	Removed Acknowledge
Bay 2	WDC WD2500AAKX-75U6AA0 SN: WD-WMC2F0265775 FW: 19.01H19	100% Healthy 26°C 1 years 7 months 26 days 14 hours	H:	Replaced Acknowledge
Bay 3	ST4000VX000-1F4168 SN: Z302AV4H1 FW: CV12	100% Healthy 30°C 8 months 23 days 5 hours	I:	Online

Notification

Disk replaced

Disk (WD-WMC2F0265775) have replaced previous disk (Z302AW1C) in Bay 2  
11:25 - Disk Guard

Log

Time	Level	Source	Type	Name	Details
25 June 2025, 11:25:57	Warning	ecaOS	Disk Guard	Disk replaced	Disk (WD-WMC2F0265775) have replaced previous disk (Z302AW1C) in Bay 2

Email

[DC200012340007 Testbed-G] A hard disk have been replaced with a new hard disk

ECA Notifications

To: keong

Wed 6/25/2025 11:26 AM

Dear user,

Hard disk with serial number WD-WMC2F0265775 have replaced previous disk with serial number (Z302AW1C) in Bay 2

Time reported: 25-Jun-25 11:25:57 +08:00

New Hard Disk Details:  
Model: WDC WD2500AAKX.75U6AA0  
Serial Number: WD-WMC2F0265775  
Online/Offline: Online  
Size: 232.9GB  
Previous Hard Disk Details:  
Model: ST4000VX000-1F4168  
Serial Number: Z302AW1C  
Size: 3.7TB

For further assistance, please contact TrueBlue Care.  
trueblue@gsfcorp.com  
+603-8090 8277  
Monday - Friday, 9AM - 6PM

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13.7.5 Disk Replaced Acknowledge

Dashboard

Storage Monitor

Volumes

Disks

S.M.A.R.T.

Last Updated: 25 June 2025 11:26:07

Search

Disk	Model	Status	Volumes	Disk Guard
System Disk	KINGSTON SUV400S37120G SN: 50026B7282047524 FW: OC3K87RA	31% Critical 32°C 3 years 4 months 11 days 13 hours	C: D:	Online
Bay 1	WDC WD20EVD5-63T3B0 SN: WD-WCAVY6145989	N/A	N/A	Removed Acknowledge
Bay 2	WDC WD2500AAKX-75U6AA0 SN: WD-WMC2F0265775 FW: 19.01H19	100% Healthy 26°C 1 years 7 months 26 days 14 hours	H:	Online
Bay 3	ST4000VX000-1F4168 SN: Z302AV4H FW: CV12	100% Healthy 30°C 8 months 23 days 5 hours	I:	Online

Notification

Disk replace acknowledged

Disk WDC WD2500AAKX-75U6AA0 (WD-WMC2F0265775) now default disk in Bay 2

11:28 • Disk Guard

Log

Time	Level	Source	Type	Name	Details
25 June 2025, 11:28:16	Information	ecaOS	Disk Guard	Disk replace acknowledged	Disk WDC WD2500AAKX-75U6AA0 (WD-WMC2F0265775) now default disk in Bay 2

Email

[DC200012340007 Testbed-G] Hard disk replace acknowledged

ECA Notifications

Tor • keong

Wed 6/25/2025 11:28 AM

Dear user,  
Replacement of old disk with hard disk WDC WD2500AAKX-75U6AA0 (WD-WMC2F0265775) in Bay 2 has been acknowledged.  
Time reported: 25-Jun-25 11:28:16 +08:00  
Model: WDC WD2500AAKX-75U6AA0  
Serial Number: WD-WMC2F0265775  
Size: 232.9GB  
  
For further assistance, please contact TrueBlue Care:  
[trueblue@gsfcorp.com](mailto:trueblue@gsfcorp.com)  
+603-8090 8277  
Monday - Friday, 9AM - 6PM  
  
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## 13.8 Log

### 13.8.1 ECA reboot more than 3 times

Figure 220 Show chronological events in log when ECA reboot more than 3 times within 1 hour

Time	Level	Source	Type	Name	Details
21 Oct 2022, 17:15:16	Information	Heartbeat	I/O	DO0 output set to high	
21 Oct 2022, 17:15:15	Warning	Heartbeat	ECA Controller	Unauthorized system reboot	
21 Oct 2022, 17:15:14	Warning	Heartbeat	ECA Controller	Alert on: System repetitive reboot	

Figure 220

### 13.8.2 AC Power loss

Figure 221 Show chronological events in log when AC power loss.

Time	Level	Source	Type	Name	Details
21 Oct 2022, 17:10:44	Information	Heartbeat	ECA Motherboard	System in ecaOS	
21 Oct 2022, 17:10:43	Information	Heartbeat	ECA Gateway	Gateway connected	
21 Oct 2022, 17:10:24	Information	Heartbeat	I/O	DO0 output set to low	
21 Oct 2022, 17:10:23	Information	Heartbeat	ECA Controller	Alert off: Unexpected system power loss	
21 Oct 2022, 17:10:23	Information	Heartbeat	ECA Motherboard	System powered up	
21 Oct 2022, 17:10:21	Information	Heartbeat	Battery	Battery charging	
21 Oct 2022, 17:10:18	Information	Heartbeat	Battery	Charger power resumed	
21 Oct 2022, 17:10:18	Information	Heartbeat	ECA Motherboard	AC power resumed	
21 Oct 2022, 17:10:17	Warning	Heartbeat	ECA Gateway	Gateway disconnected	
21 Oct 2022, 17:10:16	Warning	Heartbeat	Battery	Charger power loss	
21 Oct 2022, 17:10:15	Information	Heartbeat	Battery	Battery discharging	
21 Oct 2022, 17:10:10	Information	Heartbeat	I/O	DO0 output set to high	
21 Oct 2022, 17:10:09	Warning	Heartbeat	ECA Controller	Alert on: Unexpected system power loss	
21 Oct 2022, 17:10:09	Warning	Heartbeat	ECA Motherboard	AC power loss	
21 Oct 2022, 17:05:32	Warning	Heartbeat	ECA Controller	Unauthorized system reboot	

Figure 221

### 13.8.3 Unauthorize ECA Reboot

Figure 222 Show chronological events in log when ECA reboot does not through Dashboard.

Time	Level	Source	Type	Name	Details
21 Oct 2022, 17:05:32	Warning	Heartbeat	ECA Controller	Unauthorized system reboot	
21 Oct 2022, 17:05:27	Information	Heartbeat	ECA Motherboard	System in ecaOS	
21 Oct 2022, 17:05:25	Information	Heartbeat	ECA Gateway	Gateway connected	
21 Oct 2022, 17:05:11	Warning	Heartbeat	ECA Gateway	Gateway disconnected	
21 Oct 2022, 17:04:59	Information	Heartbeat	ECA Motherboard	System leaving ecaOS	

Figure 222

### 13.8.4 Unauthorized ECA Shutdown

Figure 223 Show chronological events in log when ECA shutdown does not through Dashboard.

Time	Level	Source	Type	Name	Details
21 Oct 2022, 17:00:06	Information	Heartbeat	ECA Motherboard	System in ecaOS	
21 Oct 2022, 17:00:03	Information	Heartbeat	ECA Gateway	Gateway connected	
21 Oct 2022, 16:59:49	Information	Heartbeat	ECA Motherboard	System powered up by Heartbeat	
21 Oct 2022, 16:59:43	Warning	Heartbeat	ECA Controller	Unauthorized system shutdown	
21 Oct 2022, 16:59:43	Information	Heartbeat	ECA Motherboard	System shutdown	
21 Oct 2022, 16:59:42	Warning	Heartbeat	ECA Gateway	Gateway disconnected	
21 Oct 2022, 16:59:32	Information	Heartbeat	ECA Motherboard	System leaving ecaOS	

Figure 223

### 13.8.5 Authorize ECA Shutdown

Figure 224 Show chronological events in log when ECA shutdown through Dashboard.

Time	Level	Source	Type	Name	Details
21 Oct 2022, 16:53:08	Information	Heartbeat	ECA Motherboard	System shutdown	
21 Oct 2022, 16:53:07	Warning	Heartbeat	ECA Gateway	Gateway disconnected	
21 Oct 2022, 16:52:56	Information	Heartbeat	ECA Motherboard	System leaving ecaOS	
21 Oct 2022, 16:52:50	Information	ecaOS	System	Shutdown system	

Figure 224

### 13.8.6 Authorize ECA Reboot

Figure 225 Show chronological events in log when ECA reboot through Dashboard.

Time	Level	Source	Type	Name	Details
21 Oct 2022, 16:58:11	Information	Heartbeat	ECA Motherboard	System in ecaOS	
21 Oct 2022, 16:58:09	Information	Heartbeat	ECA Gateway	Gateway connected	
21 Oct 2022, 16:57:54	Warning	Heartbeat	ECA Gateway	Gateway disconnected	
21 Oct 2022, 16:57:42	Information	Heartbeat	ECA Motherboard	System leaving ecaOS	
21 Oct 2022, 16:57:39	Information	ecaOS	System	Reboot system	

Figure 225

### 13.8.7 Power up ECA by pressing power button

Figure 226 Show chronological events in log when ECA power up by pressing power button

Time	Level	Source	Type	Name	Details
21 Oct 2022, 16:53:41	Information	Heartbeat	ECA Motherboard	System in ecaOS	
21 Oct 2022, 16:53:39	Information	Heartbeat	ECA Gateway	Gateway connected	
21 Oct 2022, 16:53:25	Information	Heartbeat	ECA Motherboard	System power button released	
21 Oct 2022, 16:53:24	Information	Heartbeat	ECA Motherboard	System powered up	
21 Oct 2022, 16:53:19	Information	Heartbeat	ECA Motherboard	System power button pressed	

Figure 226

### 13.8.8 Force shutdown by pressing power (heartbeat) button

Figure 227 Show chronological events in log when force shutdown by long pressed power button

Time	Level	Source	Type	Name	Details
21 Oct 2022, 16:51:40	Information	Heartbeat	ECA Motherboard	System in ecaOS	
21 Oct 2022, 16:51:37	Information	Heartbeat	ECA Gateway	Gateway connected	
21 Oct 2022, 16:51:22	Information	Heartbeat	ECA Motherboard	System powered up by Heartbeat	
21 Oct 2022, 16:51:19	Warning	Heartbeat	ECA Gateway	Gateway disconnected	
21 Oct 2022, 16:51:12	Warning	Heartbeat	ECA Controller	Unauthorized system shutdown	
21 Oct 2022, 16:51:12	Information	Heartbeat	ECA Motherboard	System power button released	
21 Oct 2022, 16:51:12	Information	Heartbeat	ECA Motherboard	System forced shutdown	

Figure 227

### 13.8.9 Accessing Dashboard using Security Key

Figure 228 Show chronological events in log when accessing dashboard using security key

Time	Level	Source	Type	Name	Details
21 Oct 2022, 16:46:02	Information	ecaOS	Security Key	Paired security key inserted	Paired security key 'Security Key' (56a30456) was inserted
21 Oct 2022, 16:46:02	Information	ecaOS	Security Key	Security key inserted	Security key 'Security Key' (56a30456) was inserted

Figure 228

### 13.8.10 Accessing Dashboard using Virtual Security Key

Figure 229 Show chronological events in log when accessing dashboard using Virtual security key

Time	Level	Source	Type	Name	Details
21 Oct 2022, 16:29:32	Information	ecaOS	Virtual Security Key	Valid passcode entered	Login using virtual security key 'admin'

Figure 229

### 13.8.11 Add new Security Key

Figure 230 Show chronological events in log when add new security key.

Time	Level	Source	Type	Name	Details
21 Oct 2022, 15:47:38	Information	ecaOS	Security Key	Security key added	New security key 'Security Key' (56a30456) was added

Figure 230

### 13.8.12 Delete paired Security Key

Figure 231 Show chronological events in log when paired Security Key deleted.

Time	Level	Source	Type	Name	Details
21 Oct 2022, 15:47:29	Information	ecaOS	Security Key	Security key deleted	Security key 'Security Key' (56a30456) was deleted

Figure 231

### 13.8.13 Delete Virtual Security Key

Figure 231 Show chronological events in log when existing Virtual Security Key deleted.

Time	Level	Source	Type	Name	Details
21 Oct 2022, 15:53:02	Information	ecaOS	Virtual Security Key	Virtual security key deleted	Virtual security key 'admin' was deleted

Figure 232

### 13.8.14 Add Virtual Security Key

Figure 231 Show chronological events in log when new Virtual Security Key added.

Time	Level	Source	Type	Name	Details
25 Aug 2022, 12:56:45	Information	ecaOS	Virtual Security Key	Virtual security key added	New virtual security key 'adminv2' was added

Figure 233

### 13.8.15 Open ECA cover chassis

Figure 230 Show chronological events in log when ECA top cover open.

Time	Level	Source	Type	Name	Details
21 Oct 2022, 15:57:58	Information	Heartbeat	I/O		DO0 output set to high
21 Oct 2022, 15:57:58	Warning	Heartbeat	ECA Controller		Alert on: Unauthorized chassis opened
21 Oct 2022, 15:57:58	Warning	Heartbeat	ECA Motherboard		System chassis opened

Figure 234

### 13.8.16 Close ECA cover chassis

Figure 230 Show chronological events in log when ECA top cover close.

Time	Level	Source	Type	Name	Details
21 Oct 2022, 16:38:20	Information	Heartbeat	I/O		DO0 output set to low
21 Oct 2022, 16:38:15	Information	Heartbeat	ECA Controller		Alert off: Unauthorized chassis opened
21 Oct 2022, 16:38:15	Information	Heartbeat	ECA Motherboard		System chassis closed

Figure 235

13.8.17 PSU Status

Figure 230 Show chronological events in the log when a power supply fault is detected and the power supply is restored to normal.

Time	Level	Source	Type	Name	Details
22 Jan 2024, 12:11:02	Warning	Heartbeat	ECA Power Supply	Power supply fault	PSU 2 fault detected
22 Jan 2024, 12:10:02	Information	Heartbeat	ECA Power Supply	Power supply back to normal	
22 Jan 2024, 12:09:02	Warning	Heartbeat	ECA Power Supply	Power supply fault	PSU 1 fault detected
22 Jan 2024, 12:08:02	Information	Heartbeat	ECA Power Supply	Power supply back to normal	

Figure 236

## 13.9 ecaOS SNMP Notification

### 13.9.1 CPU Activity

- CPU activity above limit

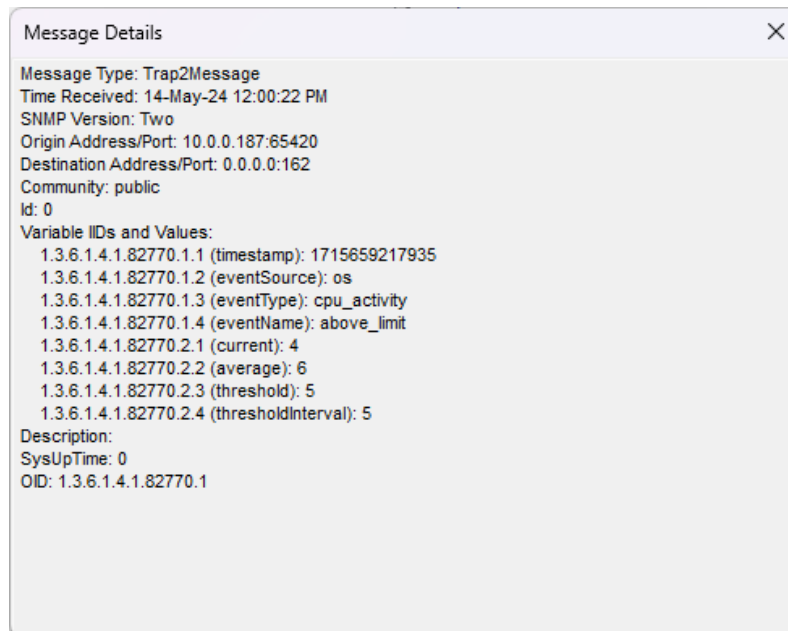


Figure 237

- CPU activity back to normal

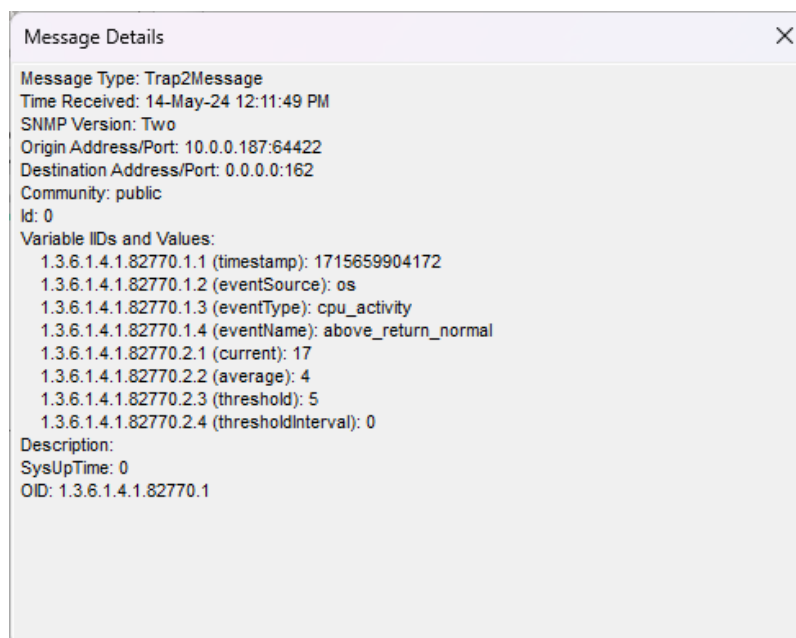


Figure 238

## 13.9.2

## Memory Activity

- Memory activity above limit



Figure 239

- Memory activity back to normal

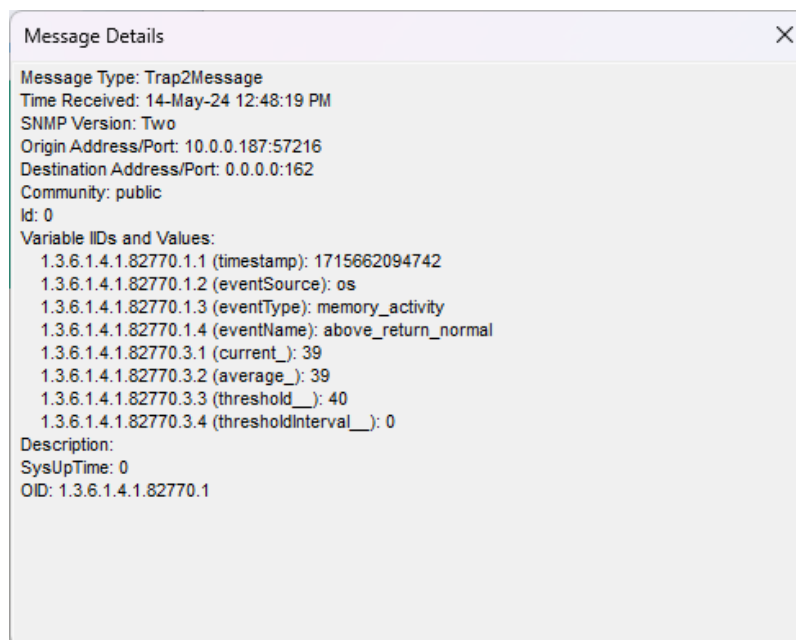


Figure 240

## 13.9.3

## Disk Activity

- Disk read activity above limit

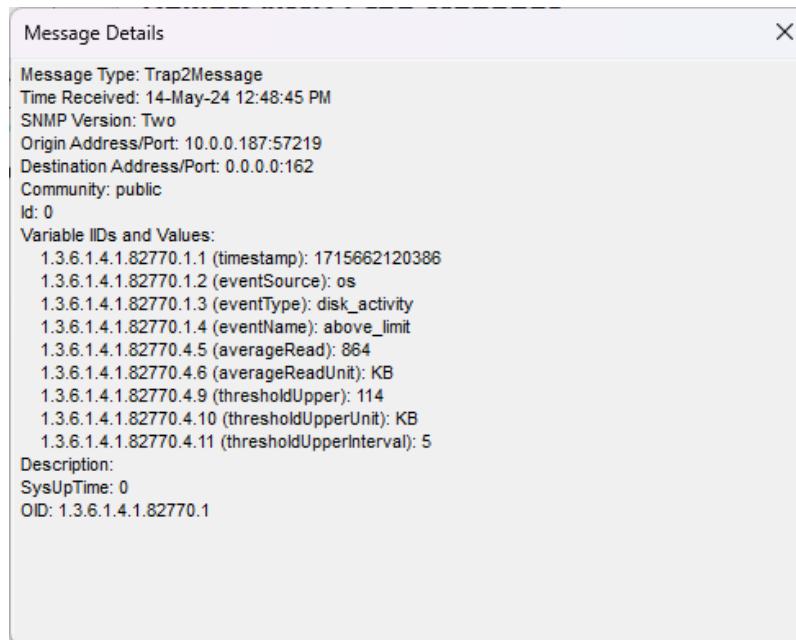


Figure 241

- Disk read activity back to normal

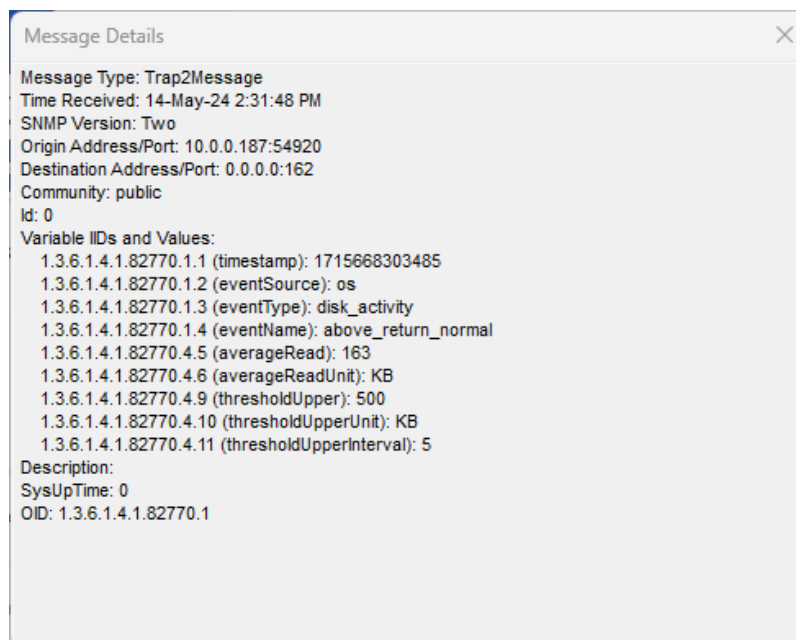


Figure 242



- Disk write activity above limit

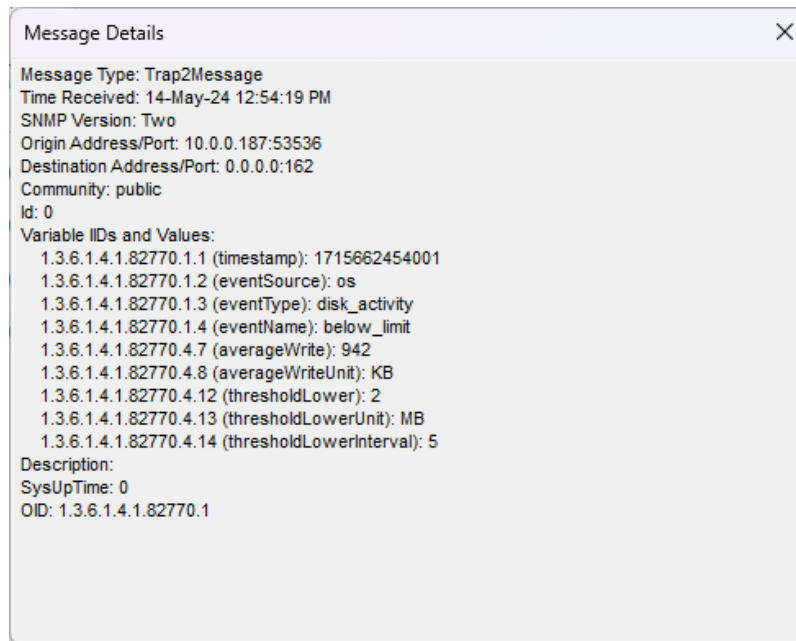


Figure 243

- Disk write activity back to normal

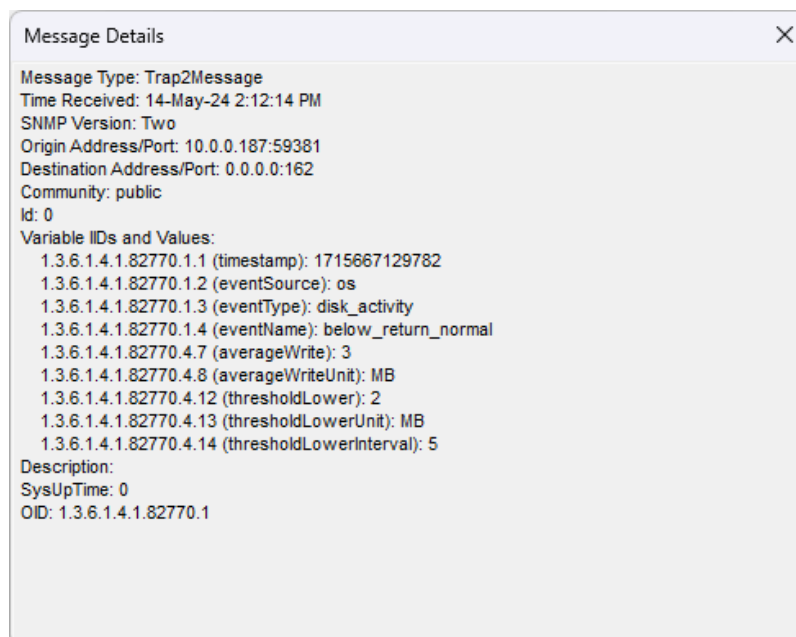


Figure 244

## 13.9.4

## Network Activity

- Network send activity above limit

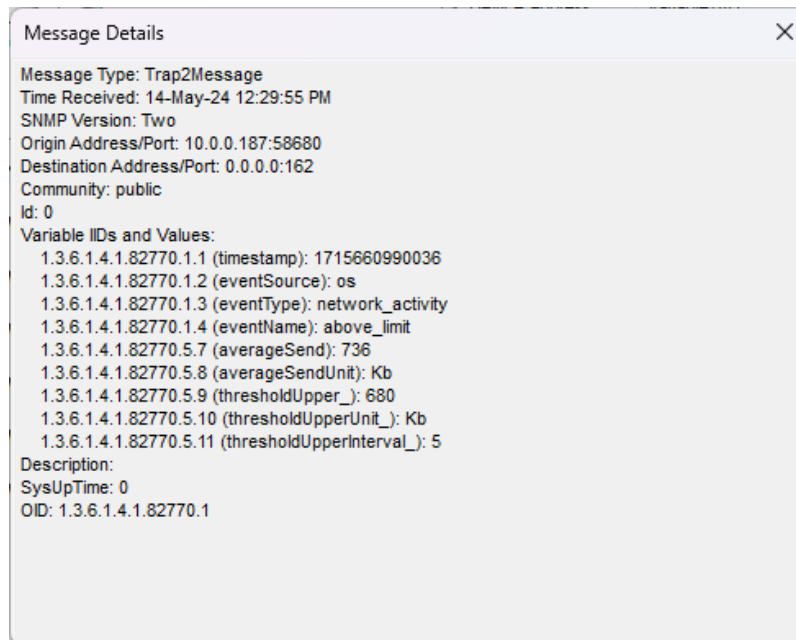


Figure 245

- Network send activity back to normal

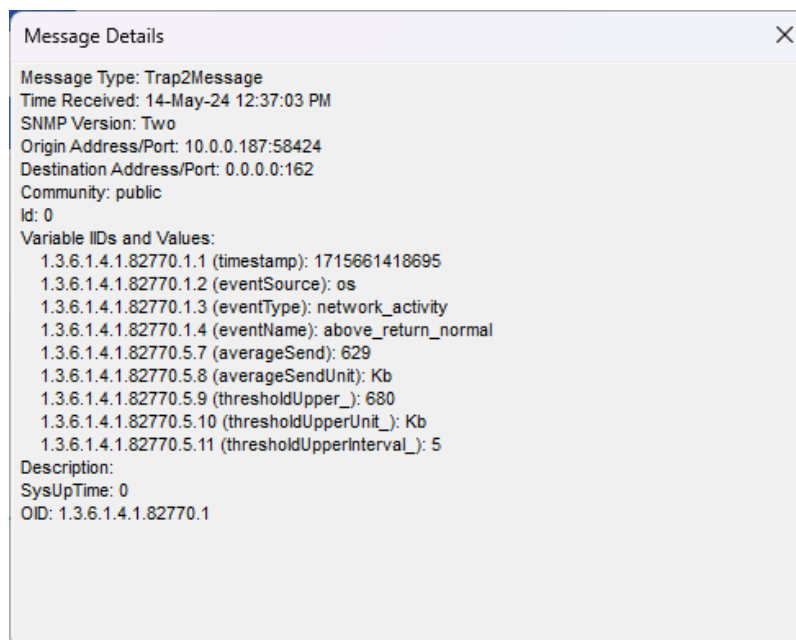


Figure 246

- Network receive activity above limit

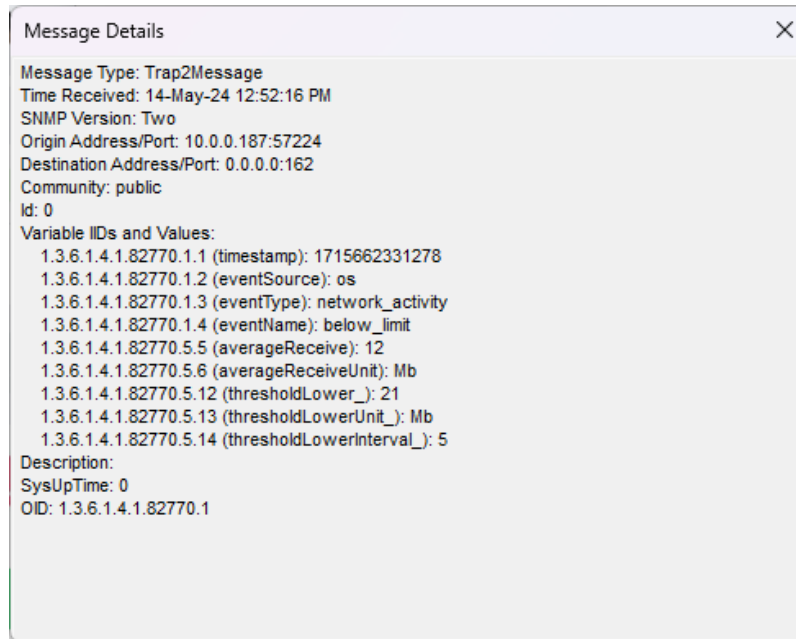


Figure 247

- Network receive activity back to normal



Figure 248

- Network cable unplugged

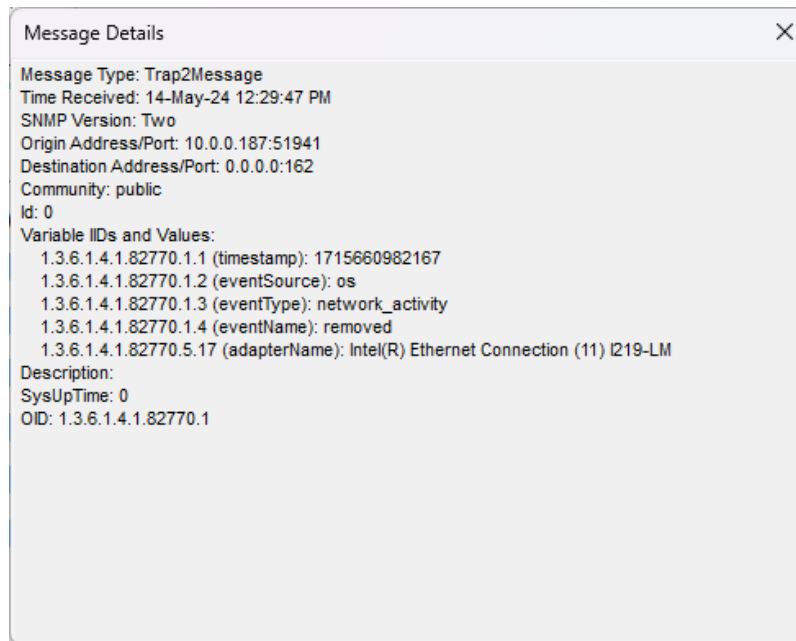


Figure 249

- Network cable plugged

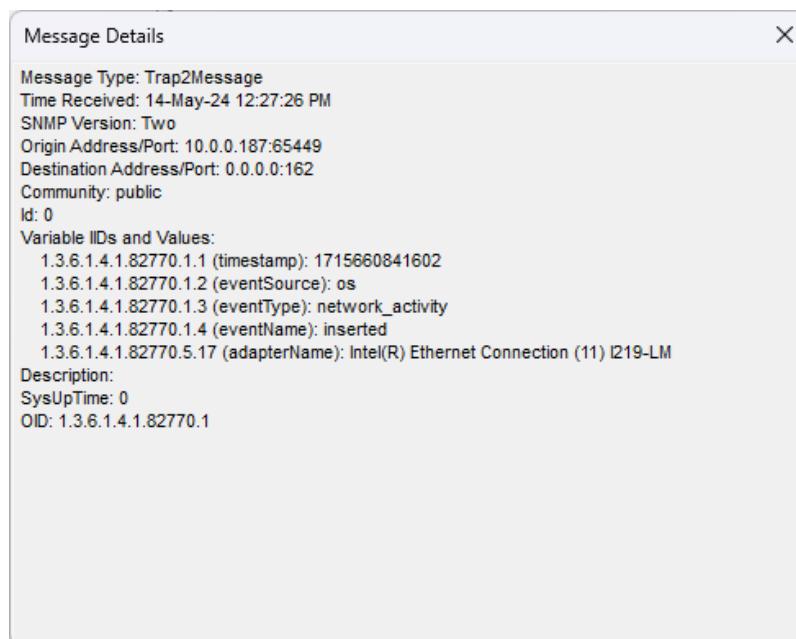


Figure 250

## 13.9.5

## Disk Guard

- Disk removed

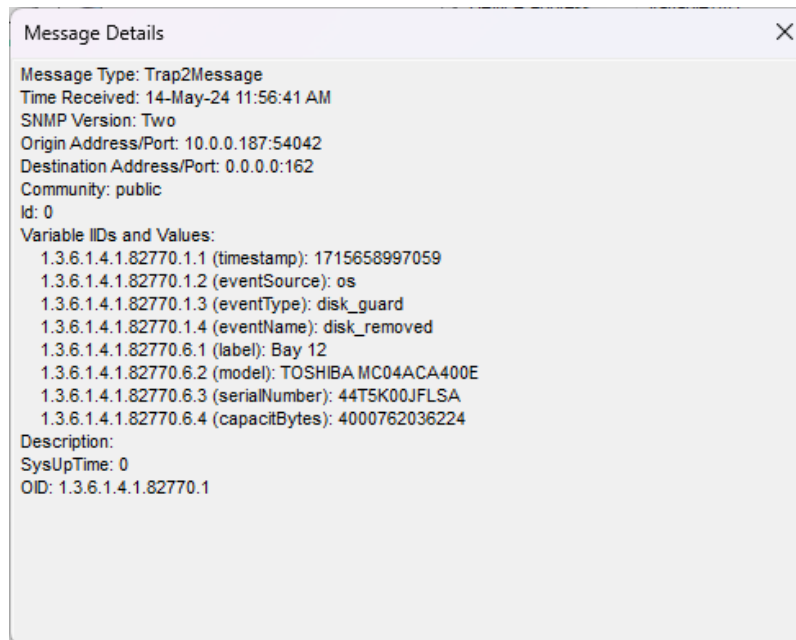


Figure 251

- Disk remove acknowledged

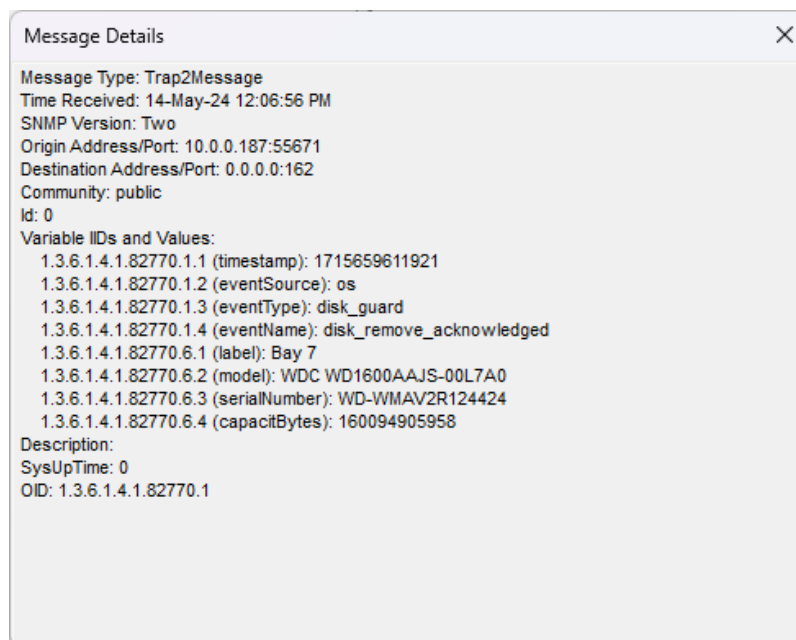


Figure 252

- Disk replaced

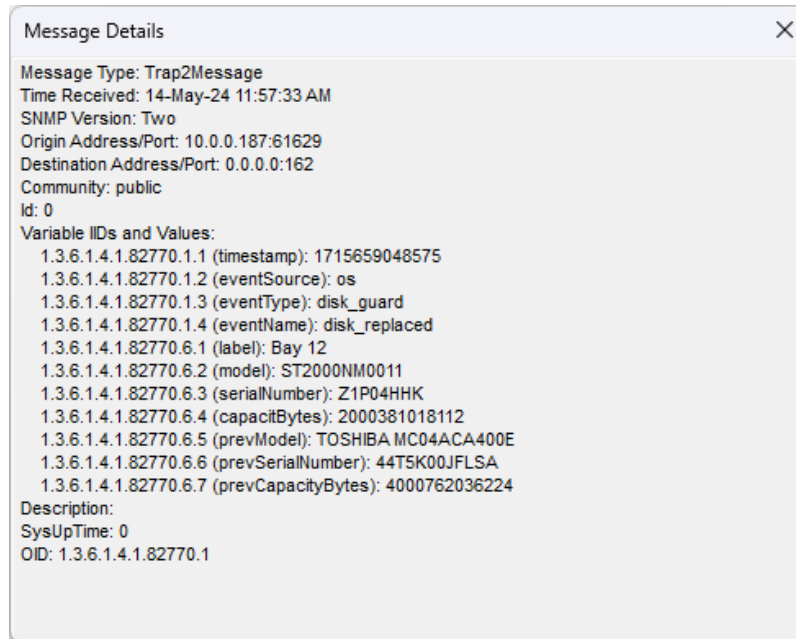


Figure 253

- Disk replace acknowledged

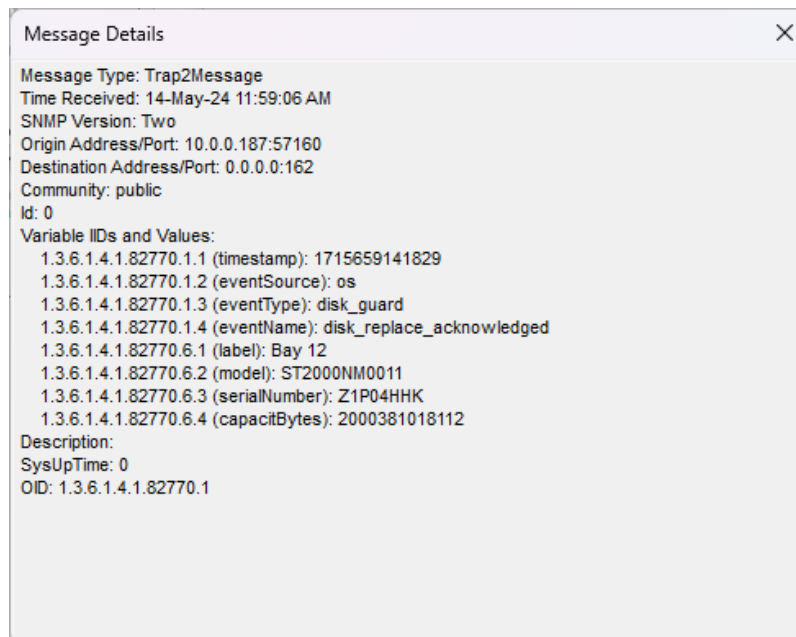


Figure 254

- Disk inserted



Figure 255

## 13.9.6

## Disk Health

- Disk health status is warning

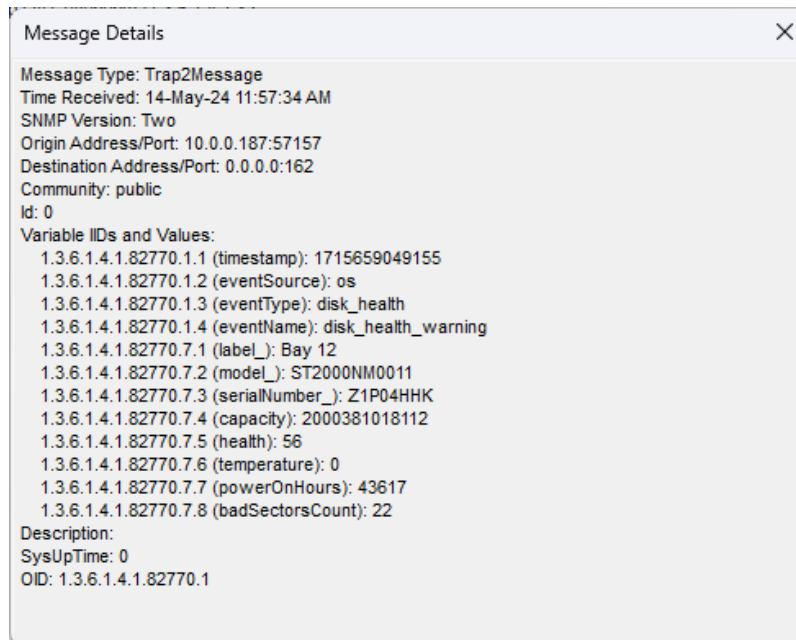


Figure 256

- Disk health status is critical

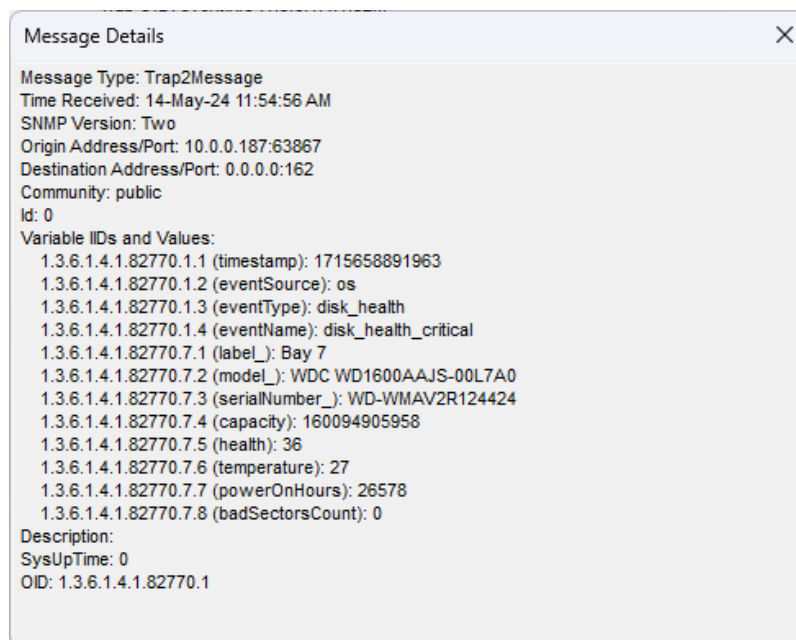


Figure 257



## 13.9.7

## Hardware Monitor

- Fan status below limit

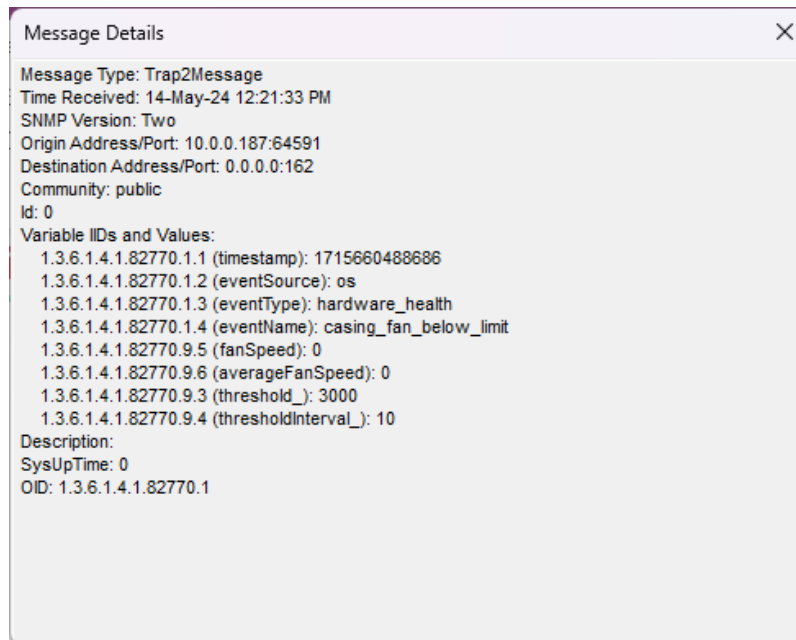


Figure 258

- Mainboard battery status below limit

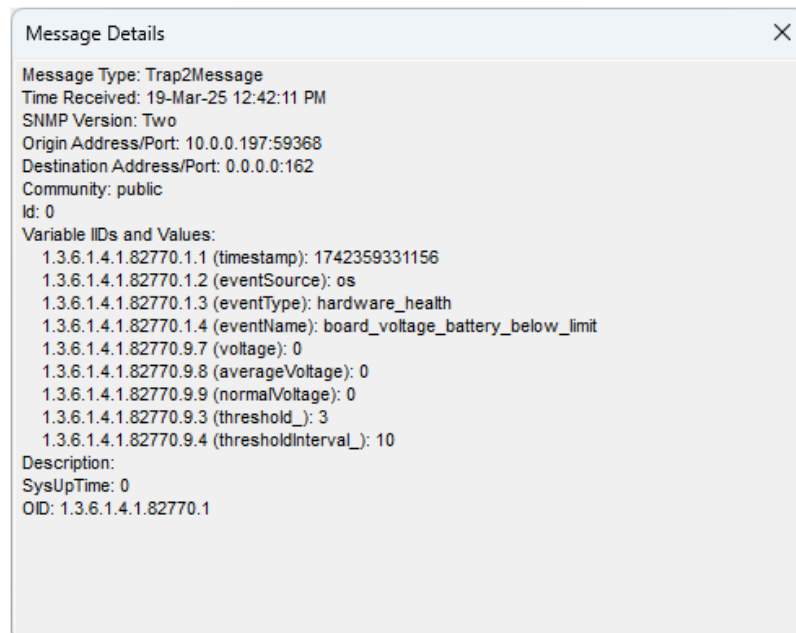


Figure 259

## 13.9.8

## Session Shield [Only available in Windows Client]

- Session Shield status is warning

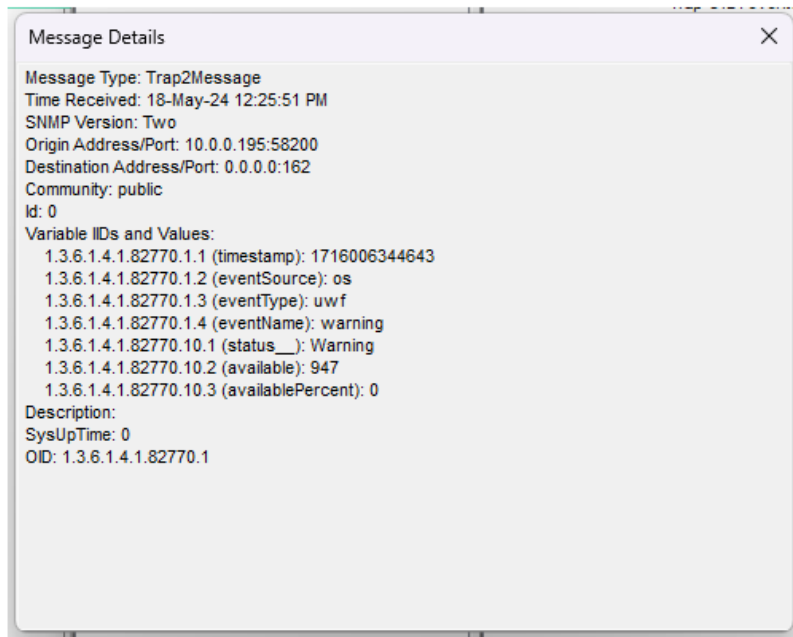


Figure 260

- Session Shield status is critical

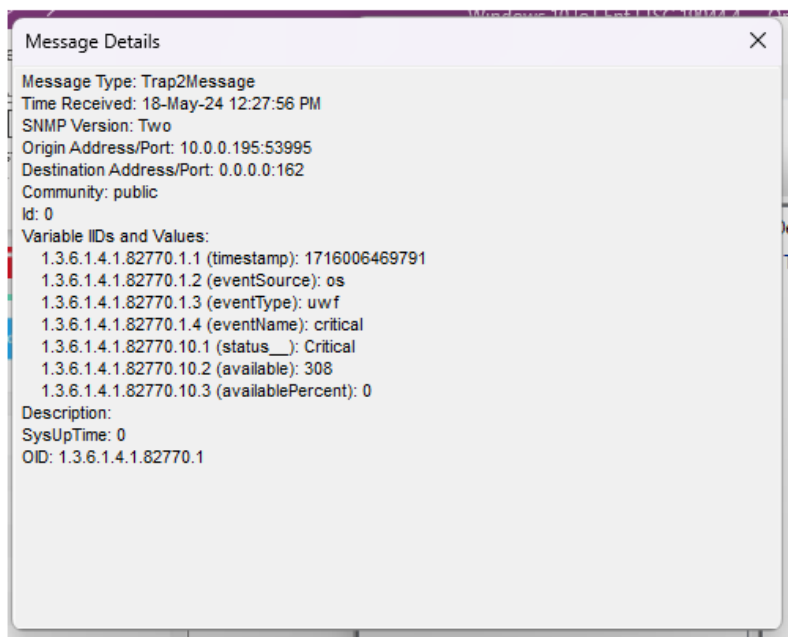


Figure 261

### 13.9.9 Application Monitor

- Application started

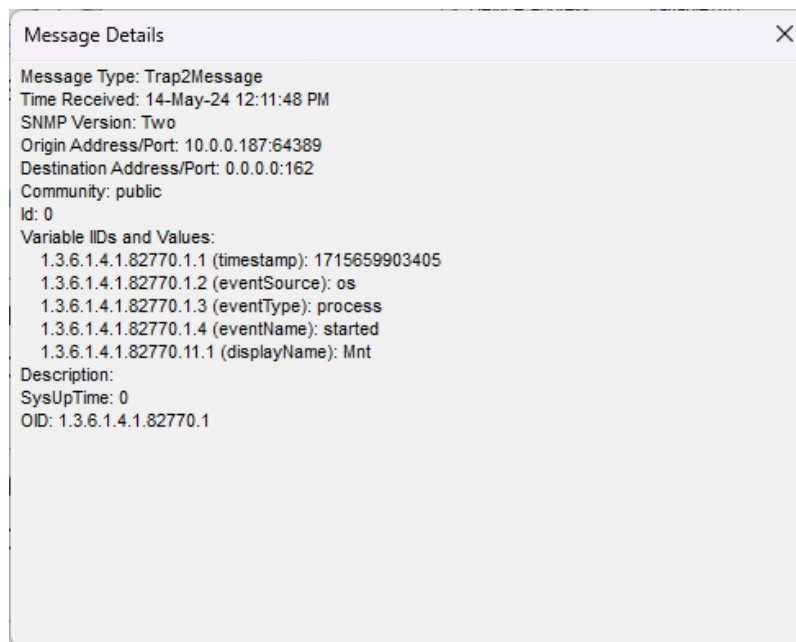


Figure 262

- Application stopped

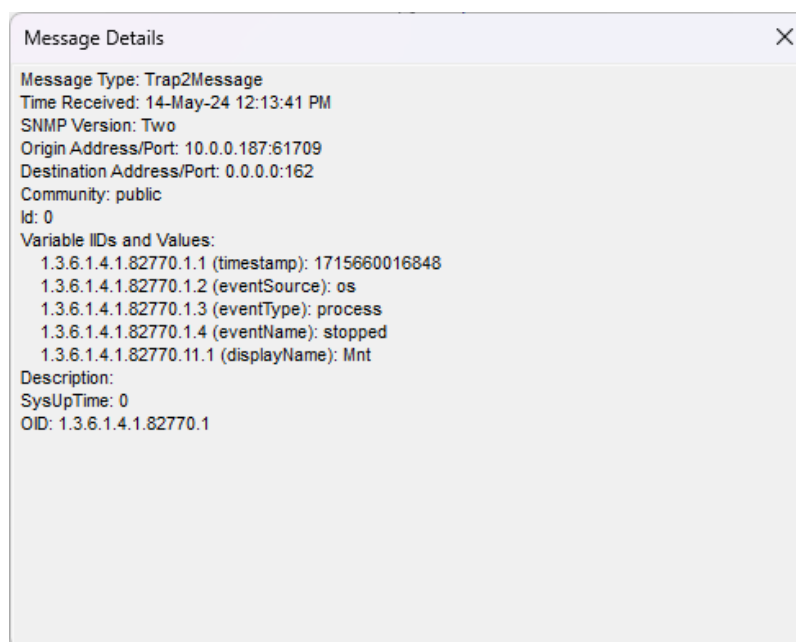


Figure 263

### 13.9.10 Redundant Storage System

- Storage pool status is healthy

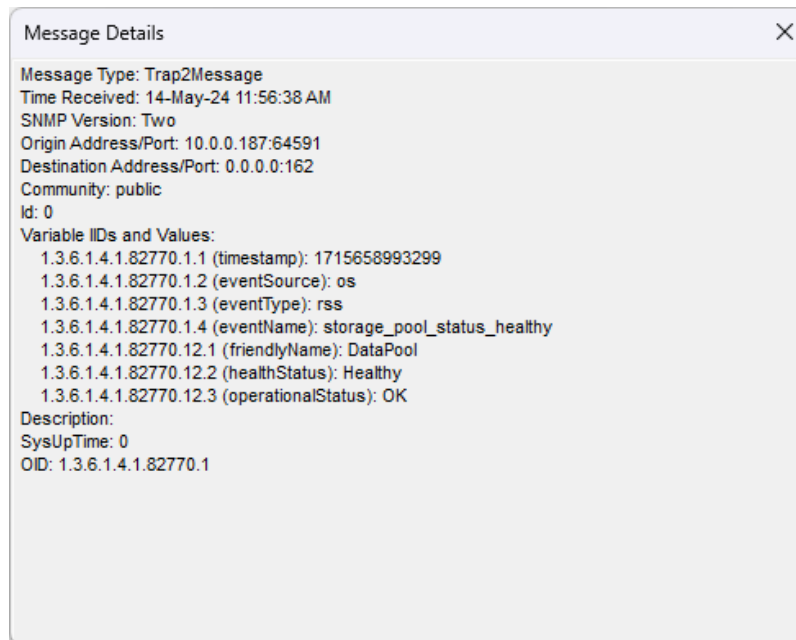


Figure 264

- Storage pool status is warning

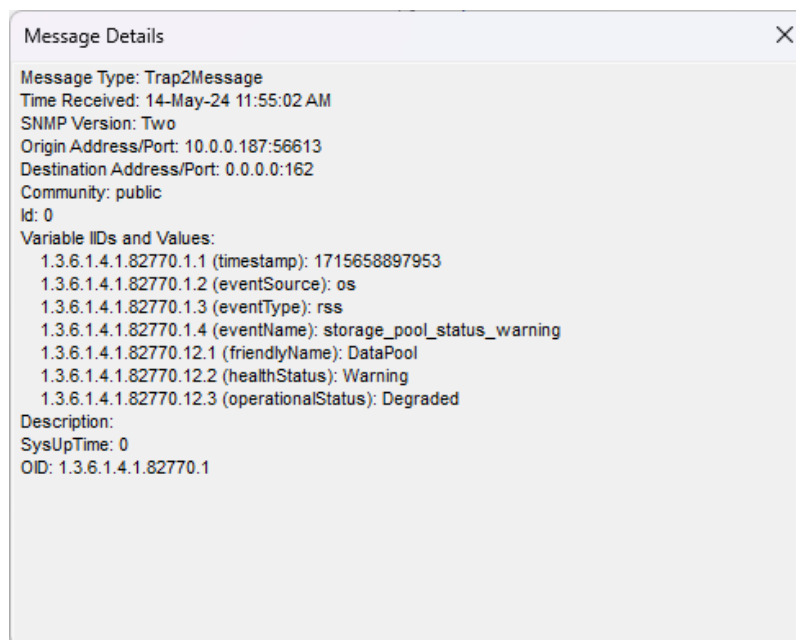


Figure 265

- Storage pool status is unhealthy

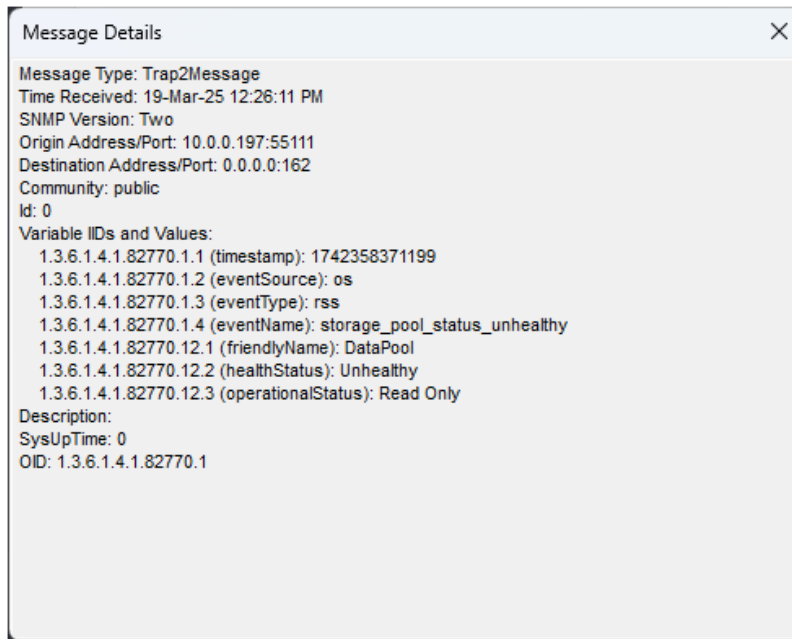


Figure 266

- Virtual disk status is healthy

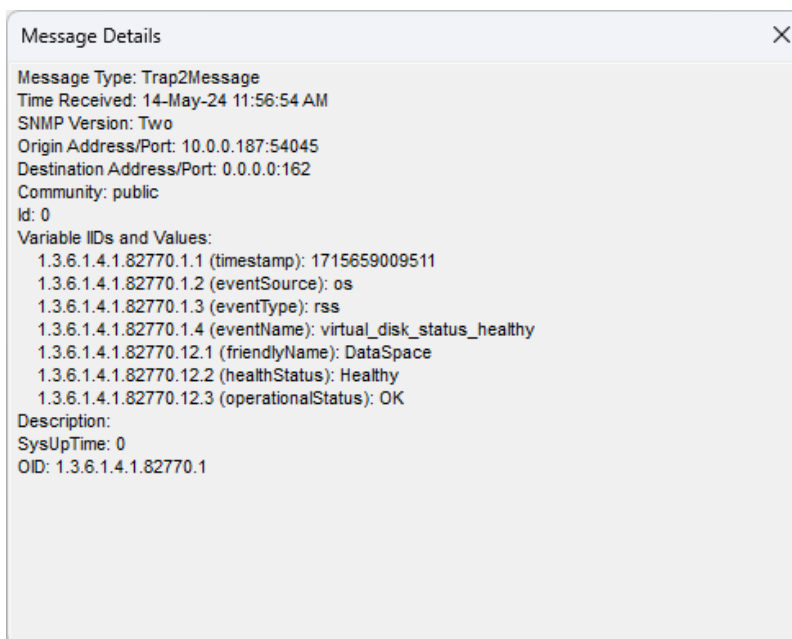


Figure 267

- Virtual disk status is warning

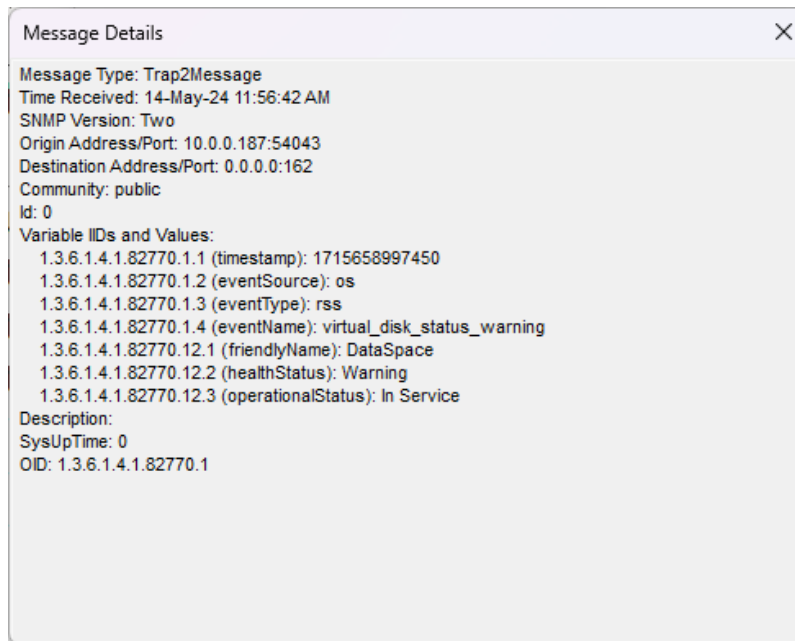


Figure 268

- Virtual disk status is unhealthy

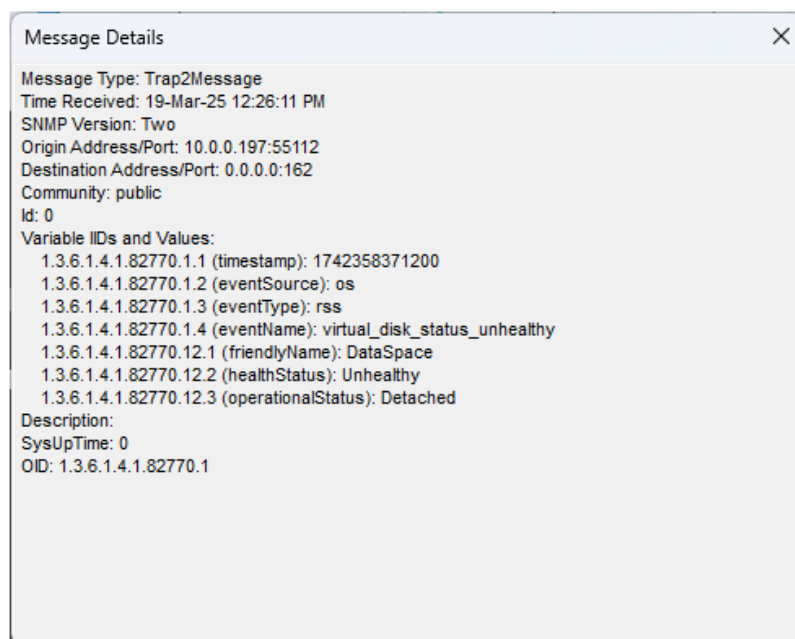


Figure 269



*Trust our passion that brings us forward. Keep going!*



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