

**ECA**

# Engineered Computer Appliance Operating System

ECA44

ecaOS 6.0

## USER GUIDE

Revision 1.3  
19 April 2023



Digital Copy

**Document Title**

Engineered Computer Appliance (ECA44) Operating System 6.0 (eca6.0) User Guide
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**Document Revision**

Revision	Date	Description	Author
00	20 Sep 2022	1 <sup>st</sup> Edition	Jemiruddin
01	12 Oct 2022	2 <sup>nd</sup> Edition	Jemiruddin
1.1	22 Nov 2022	2 <sup>nd</sup> Edition with minor cosmetic change	Sengfu
1.2	19 March 2023	3 <sup>rd</sup> Edition	Jemiruddin
1.3	19 April 2023	4 <sup>th</sup> Edition (Bay orientation)	Jemiruddin

## Table of Contents

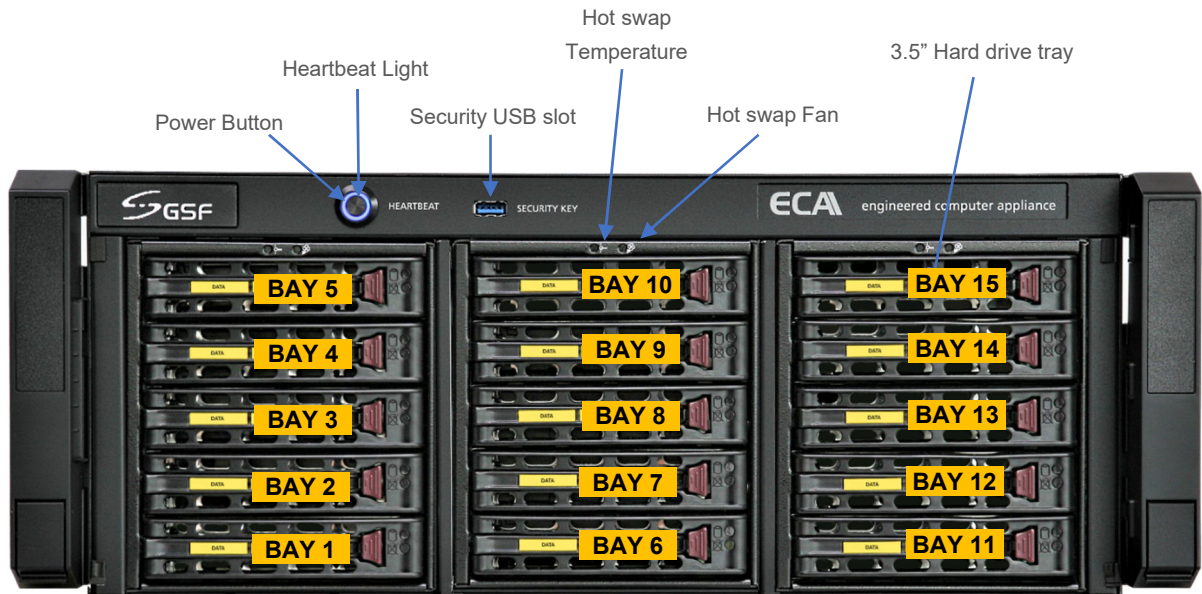
1	ECA4.4 .....	6
1.1	FX series .....	6
1.2	EX series .....	7
1.3	DX series .....	8
1.4	MX series .....	9
1.5	VW series .....	10
2	Security & Virtual Key .....	11
3	Heartbeat .....	12
3.1	What is Heartbeat .....	12
3.2	Heartbeat Alet .....	12
4	Rail .....	14
4.1	Package Content .....	15
4.2	Sliding Rail Assembly .....	15
4.3	Installation Steps .....	16
5	ECA Naming .....	21
6	ECA Series .....	22
7	ecaOS .....	23
1.6	ecaOS Login .....	24
1.7	ecaOS Locked Out .....	24
8	Dashboard and Notification .....	25
8.1	Accessing ecaOS Dashboard .....	26
8.1.1	Using Virtual Security Key (ECA Access Code) .....	26
8.1.2	Get Virtual Security Key (ECA Access Code) .....	27
8.1.3	Remotely Access ecaOS .....	31
8.2	ecaOS Dashboard ▶ Summary .....	32
9	System .....	34
9.1	Service Monitor .....	34
9.1.1	Add Services .....	34
9.1.2	Delete Services .....	37
9.2	Application Monitor .....	38
9.2.1	Add Application .....	38
9.2.2	Delete Application .....	41
9.3	Processor Activity .....	42
9.4	Memory Activity .....	43
9.5	Disk Activity .....	44
9.6	Network Activity .....	46
9.7	Disk Health .....	48
9.8	Disk Guard .....	51
9.8.1	Hard disk change during ECA Power Off .....	52
9.9	Session Shield .....	53
9.9.1	Activate Session Shield .....	53
9.9.2	Deactivate Session Shield .....	56
9.9.3	Exclusion List .....	57
9.9.4	Add Exclusion Files or Folder .....	58
9.9.5	Delete Exclusion Files or folder .....	59
9.9.6	Add Registry Keys .....	60
9.9.7	Delete Exclusion Registry Key .....	61
9.9.8	Status: Warning .....	61
9.9.9	Status: Critical .....	62
10	Management .....	63
10.1	General .....	63

10.1.1	Authorize Restart.....	63
10.1.2	Authorize Shutdown .....	64
10.2	Saving & Deploy Layer.....	65
10.2.1	Save Layer .....	65
10.2.2	Soft Reset.....	67
10.2.3	Hard Reset .....	69
10.2.4	Last Saved Layer Information .....	71
10.3	Change Dashboard Port.....	71
10.4	Security Key .....	72
10.4.1	Register Security Key.....	72
10.4.2	Delete Security Key .....	73
10.4.3	Add Virtual Security Key.....	74
10.4.4	Delete Virtual Security Key.....	76
11	Notification .....	77
11.1	Events.....	77
11.1.1	Events List.....	78
11.2	Settings.....	82
11.2.1	Email Recipient Settings .....	82
11.2.2	Mail Servers.....	82
12	Logs.....	83
12.1	Filtering Log.....	83
12.2	Exporting Log .....	84
13	Support.....	87
13.1	TrueBlue Remote Support.....	87
13.2	Microsoft Remote Desktop .....	88
13.3	Chrome Remote Desktop.....	89
13.3.1	Setup ECA into your Chrome Remote Desktop .....	89
13.3.2	Accessing ECA via Chrome Remote Desktop? .....	92
14	About.....	94
14.1	Machine Information.....	94
14.2	Heartbeat Information.....	94
15	APPENDIX .....	95
15.1	Processor Activity .....	95
15.1.1	CPU activity above limit.....	95
15.1.2	CPU activity back to normal .....	96
15.2	Memory Activity .....	97
15.2.1	Memory usage above limit .....	97
15.2.2	Memory activity back to normal.....	98
15.3	Disk Activity .....	99
15.3.1	Disk read activity above limit.....	99
15.3.2	Disk read activity back to normal.....	100
15.3.3	Disk write activity below limit.....	101
15.3.4	Disk write activity back to normal .....	102
15.4	Network Activity .....	103
15.4.1	Network send activity above limit .....	103
15.4.2	Network send activity back to normal.....	104
15.4.3	Network receive activity below limit.....	105
15.4.4	Network receive activity back to normal.....	106
15.5	Session Shield.....	107
15.5.1	Warning Status .....	107
15.5.2	Critical Status .....	108
15.5.3	Status back to normal.....	109
15.6	Disk Health .....	110

15.6.1 Warning Status Disk .....	110
15.6.2 Critical Status Disk .....	111
15.7 Disk Guard.....	112
15.7.1 New disk / Disk Inserted .....	112
15.7.2 Disk Removed .....	113
15.7.3 Disk Removed Acknowledge.....	114
15.7.4 Disk Replaced .....	115
15.7.5 Disk Replaced Acknowledge .....	116
15.8 Log.....	117
15.8.1 ECA reboot more than 3 times .....	117
15.8.2 AC Power loss .....	117
15.8.3 Unauthorize ECA Reboot .....	117
15.8.4 Unauthorize ECA Shutdown.....	118
15.8.5 Authorize ECA Shutdown.....	118
15.8.6 Authorize ECA Reboot .....	118
15.8.7 Power up ECA by pressing power button .....	118
15.8.8 Force shutdown by pressing power (heartbeat) button .....	119
15.8.9 Accessing Dashboard using Security Key .....	119
15.8.10 Accessing Dashboard using Virtual Security Key .....	119
15.8.11 Add new Security Key .....	119
15.8.12 Delete paired Security Key .....	120
15.8.13 Delete Virtual Security Key.....	120
15.8.14 Add Virtual Security Key.....	120
15.8.15 Open ECA cover chassis .....	120
15.8.16 Close ECA cover chassis .....	120

# 1 ECA4.4

## 1.1 FX series



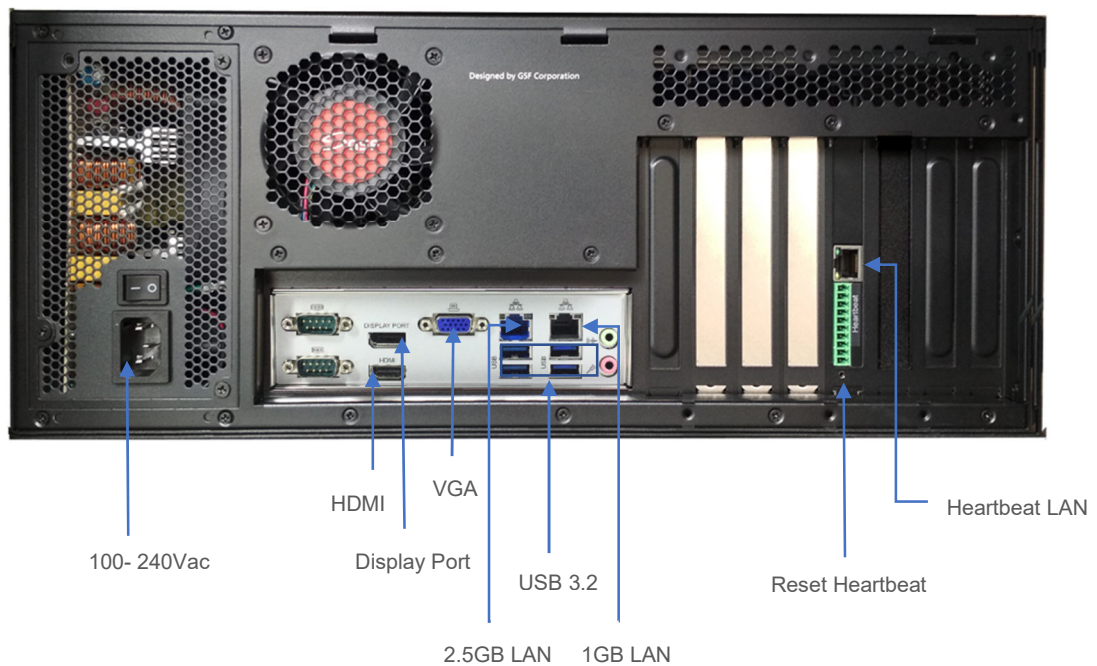
**Power Button :** Power button ECA

**Heartbeat light :** ECA operational indication

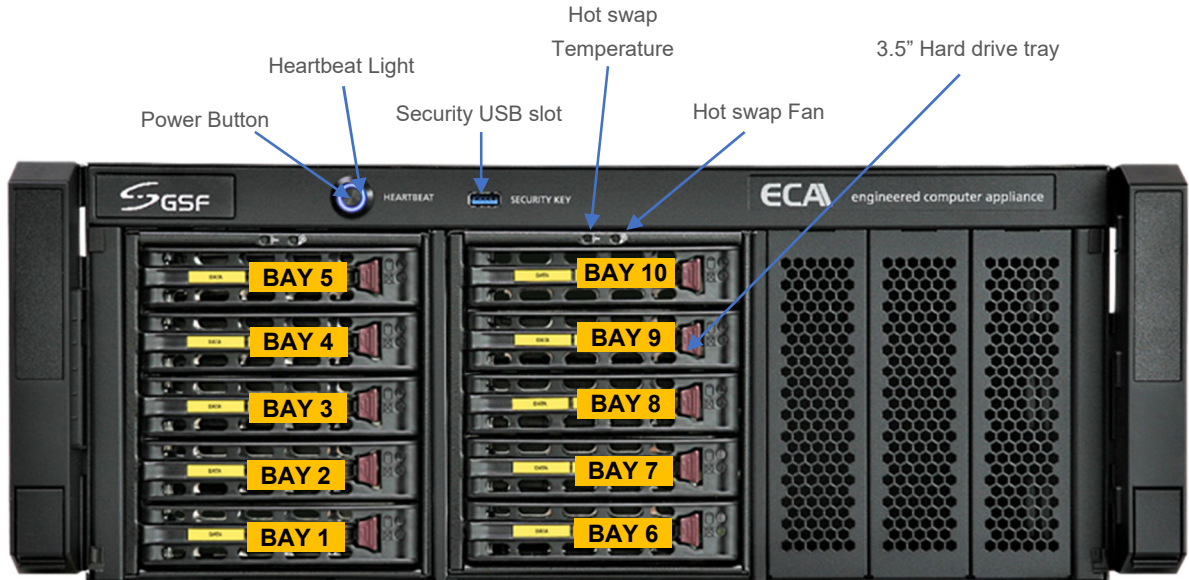
**Security USB slot :** This port for security key use to call 'System Manager'

**Hot swap Temperature:** The LED will light up if the temperature above 55°c

**Hot swap fan:** The LED will light up if no hot swap fan detected or not functioning



## 1.2 EX series



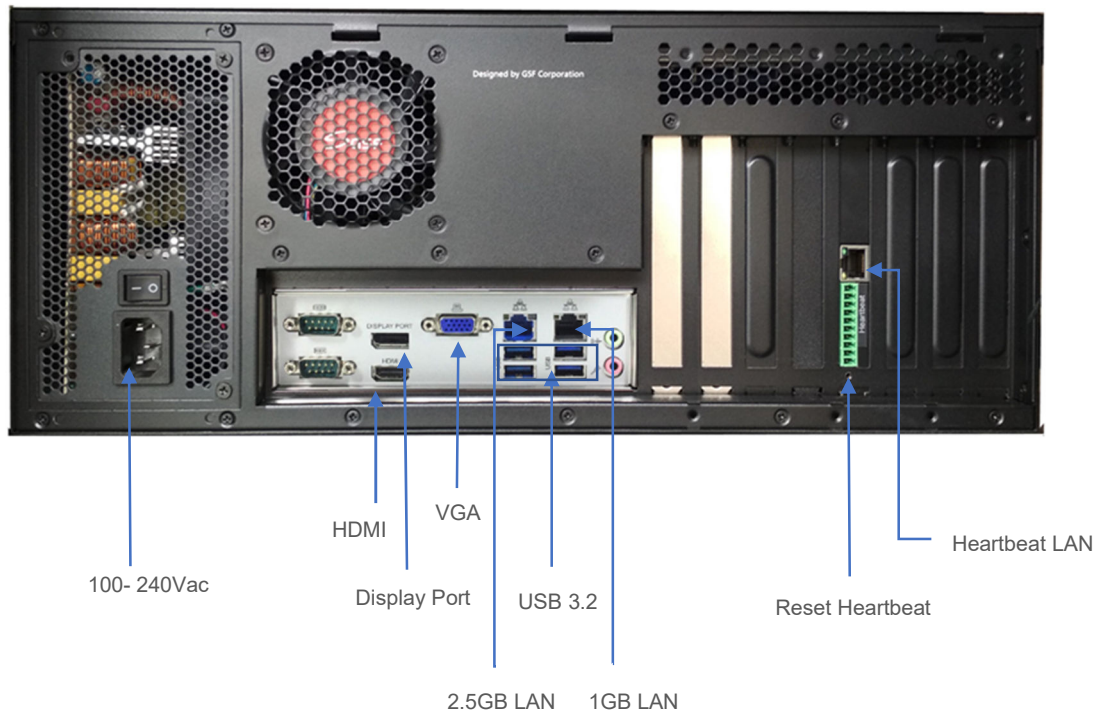
**Power Button :** Power button ECA

**Heartbeat light :** ECA operational indication

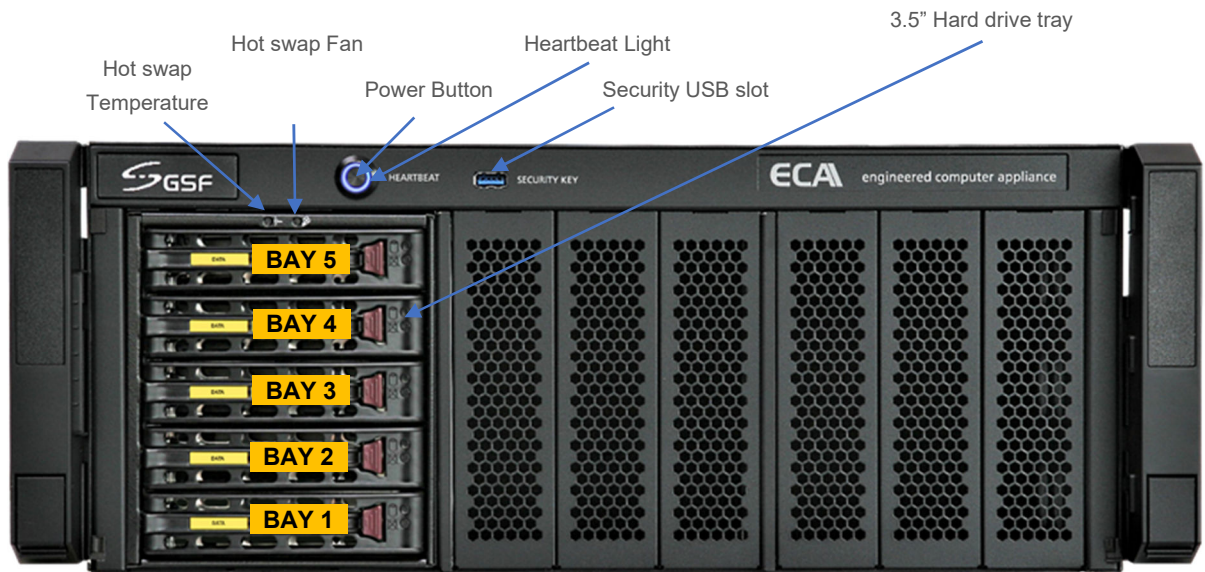
**Security USB slot :** This port for security key use to call 'System Manager'

**Hot swap Temperature:** The LED will light up if the temperature above 55°c

**Hot swap fan:** The LED will light up if no hot swap fan detected or not functioning



## 1.3 DX series



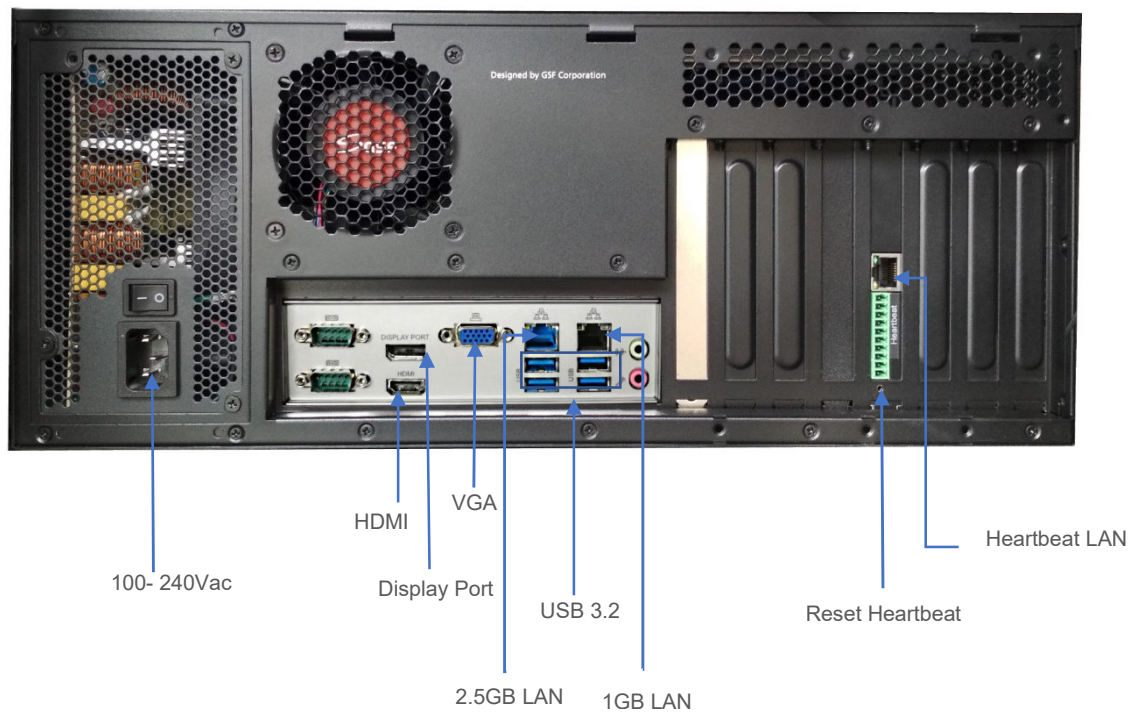
**Power Button :** Power button ECA

**Heartbeat light :** ECA operational indication

**Security USB slot :** This port for security key use to call 'System Manager'

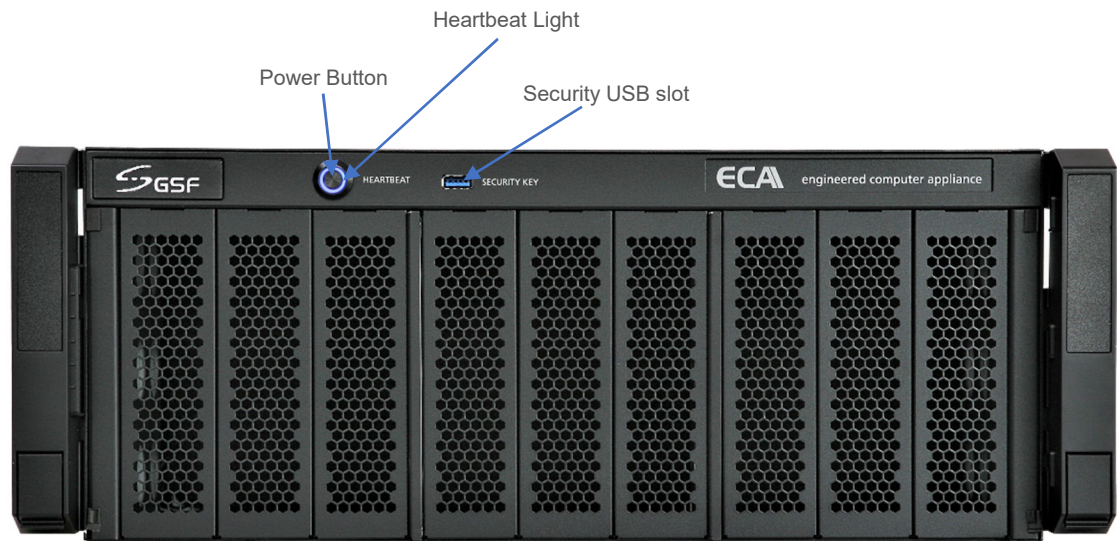
**Hot swap Temperature:** The LED will light up if the temperature above 55°c

**Hot swap fan:** The LED will light up if no hot swap fan detected or not functioning





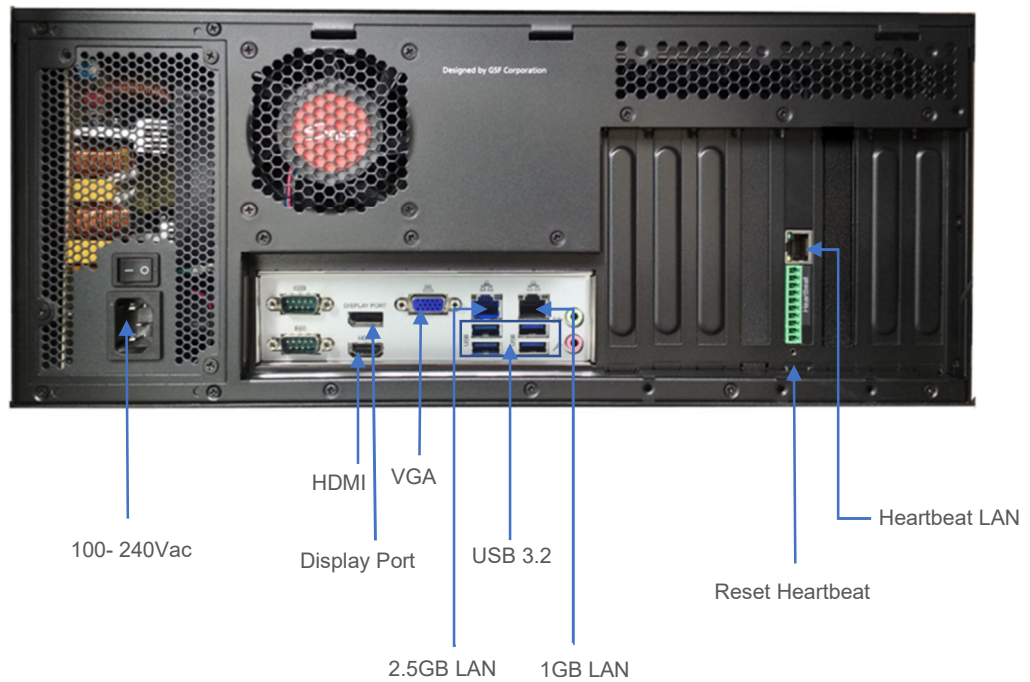
## 1.4 MX series



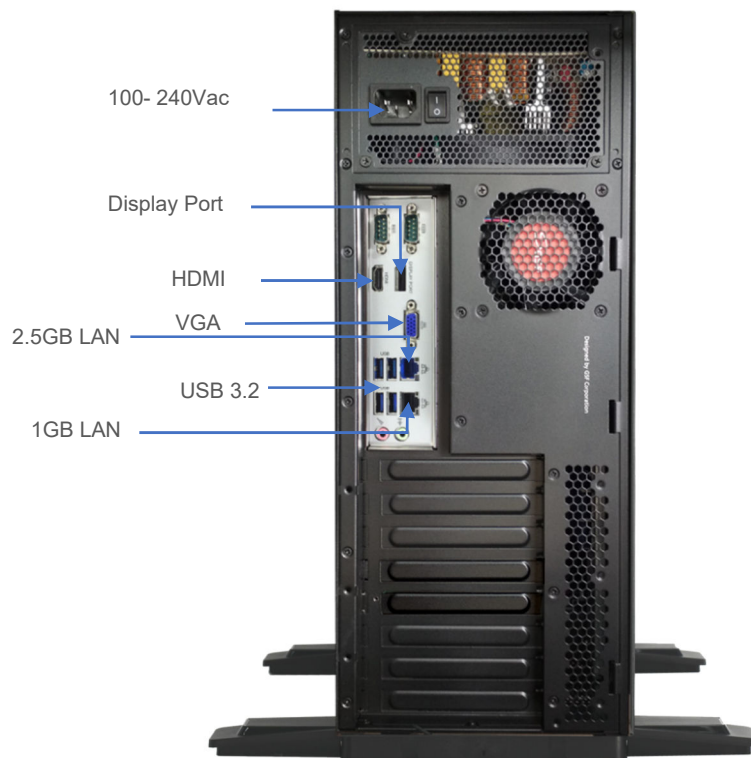
**Power Button :** Power button ECA

**Heartbeat light :** ECA operational indication

**Security USB slot :** This port for security key use to call 'System Manager'



1.5 VW series



## 1.6 Security & Virtual Key



Uniquely designed USB security key which is paired to the ECA. It only can be used with the paired ECA. If the key is lost, 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.

The Security key is used to gain access to 'System Manager'.

### **Virtual Access Code :**

Virtual Access Code gain access to 'System Manager' without need security key. 'Google Authenticator' is required to install on your device such as phone or tablet.

### **When to use Virtual Access Code?**

- Access 'System Manager' but no Security Key.
- Access 'System Manager' remotely access ECA from another desktop

## 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 failed, it will send help signal via digital I/O or can be connect to CMS Alarm.

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


- **Unauthorized Shutdown:** The HeartBeat will reboot the ECA.
- **Unauthorized Power Unplug:** HeartBeat will produce beep tone.
- **ECA not responding:** HeartBeat will force restart the ECA after 2 minutes no respond.
- **Blue screen:** HeartBeat will force restart the ECA after 2 minutes no respond.




#### ECA power LED indication:

LED STATUS	ECA SCENARIO	DESCRIPTION
Slow glow and dim	System running in OS	HeartBeat operating normally.
Blinking	<ul style="list-style-type: none"> <li>• ECA OFF</li> <li>• ECA rebooting.</li> <li>• System running in OS</li> </ul>	<ul style="list-style-type: none"> <li>• Low HeartBeat battery</li> <li>• ECA in rebooting status</li> <li>• Heartbeat not ready</li> </ul>

Click the link to view LED indication demonstration: <https://www.gsfcorp.com/downloads/eca-hb-led.gif>

### 2.2 Heartbeat Alert

	Beep Tone	Tone Description	Repeating Interval	ECA State	Scenario
1		Normal event	No repeat	ECA ON or OFF	Chassis closed.
				ECA ON	ECA powering up
				ECA OFF	<ol style="list-style-type: none"> <li>1. Expected AC power loss.</li> <li>2. AC power resumed.</li> <li>3. Authorized shutdown</li> </ol>
2		Bad event	No repeat	ECA ON	<ol style="list-style-type: none"> <li>1. ECA failed to enter ecaOS after 15 minutes.</li> <li>2. ecaOS not responsive for 2 minutes.</li> </ol>

					1. Unauthorized shutdown
3		linked with ecaOS	No repeat	In ecaOS or Layer Manager	1. Heartbeat established link with ecaOS/Layer Manager.
4		Require human attention	10s	ECA ON	<ol style="list-style-type: none"> <li>1. Repetitive ECA reboot (more than 3 times within half an hour)<sup>1</sup></li> <li>2. Chassis opened (when not in Authorized Shutdown state)<sup>2</sup></li> <li>3. ECA failed to enter ecaOS (3 HB reboot attempts in 45 minutes)<sup>1,3</sup></li> </ol>
				ECA OFF	1. Unexpected AC power loss <sup>4</sup>

**NOTE:**

<sup>1</sup> Shutdown the ECA will mute the beep tone (Authorize or Unauthorize)

- Authorize shutdown: Shutdown the ECA via System Manager menu

- Unauthorize shutdown: Shutdown the ECA via OS shutdown or Force shutdown by long press Power button.

<sup>2</sup> Closing chassis cover will mute the beep tone

<sup>3</sup> Successful entered OS will mute the beep tone

<sup>4</sup> Resumed AC power to ECA will mute the beep tone

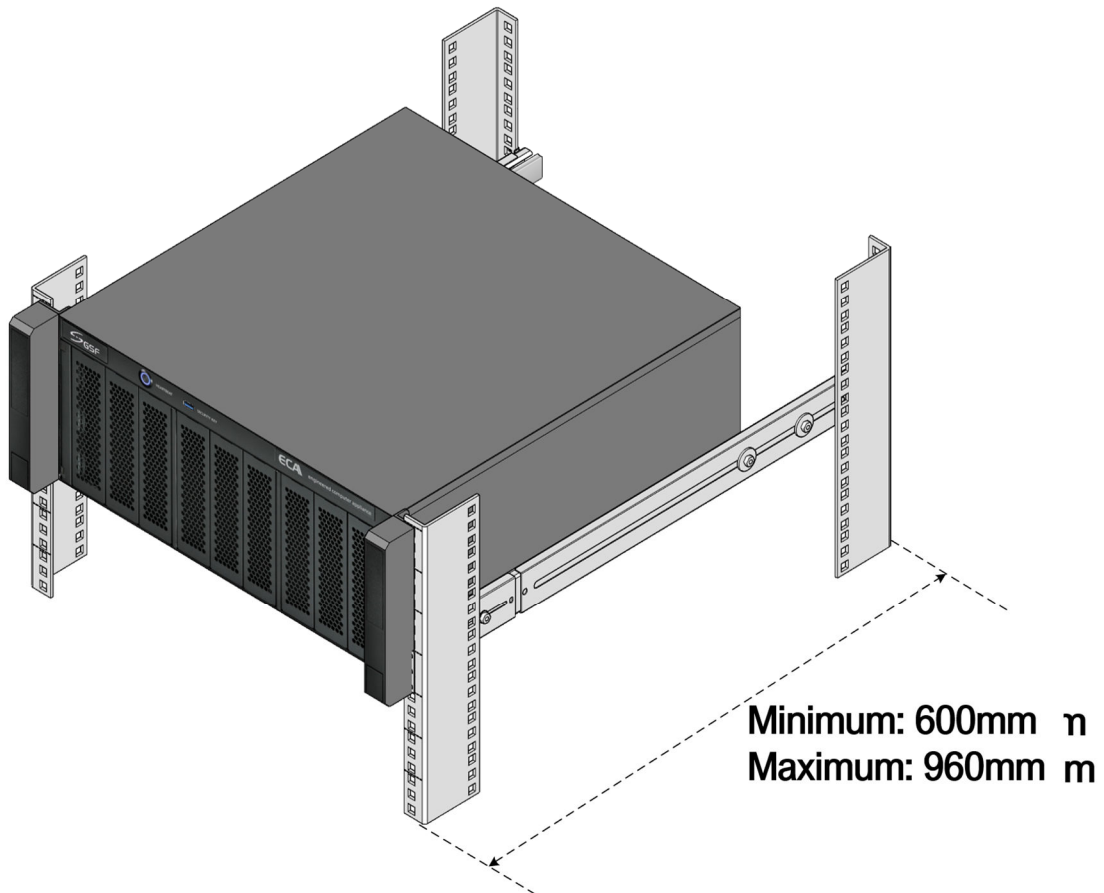
## 3 Rail

### IMPORTANT NOTE



Before beginning with the installation, it is important to make sure that the ECA can fit into the equipment rack you are using. Use of improperly rack size may result in injury.






Minimum requirement<sup>1</sup> for equipment rack depth, front to rear vertical mounting column, is 600mm.



To avoid injury, it is strongly recommended the installation to be done by TWO persons.

<sup>1</sup>Based on slide rail part number: King Slide 3A68-584BPZZ11ED.

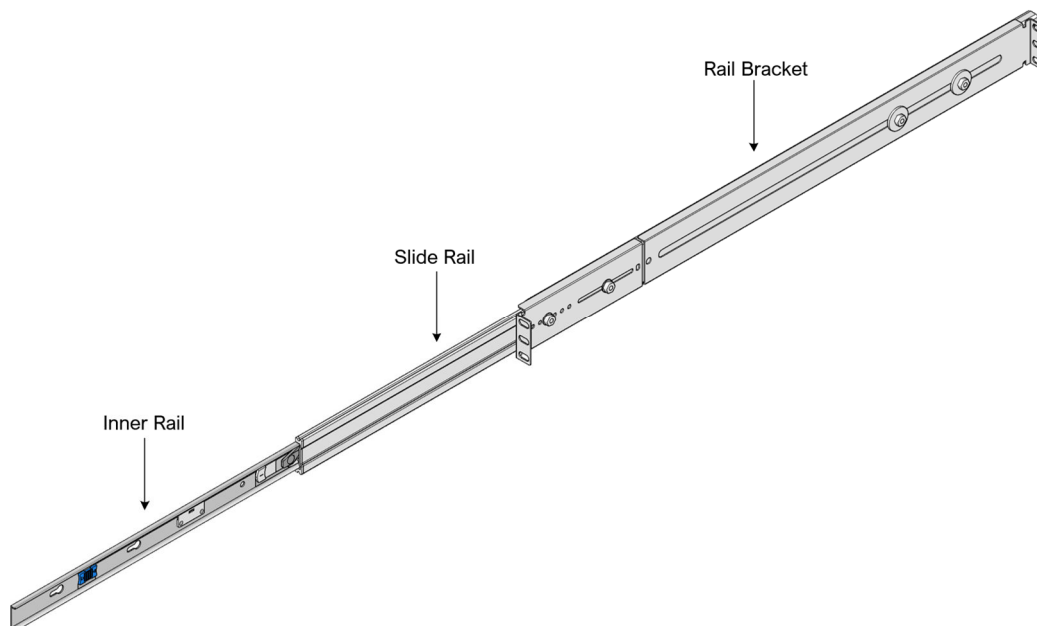
### 3.1 Package Content

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

### 3.2 Sliding Rail Assembly

The Sliding Rail assembly is comprised of 3 parts:

- Inner Rail
- Slide Rail
- Rail Bracket

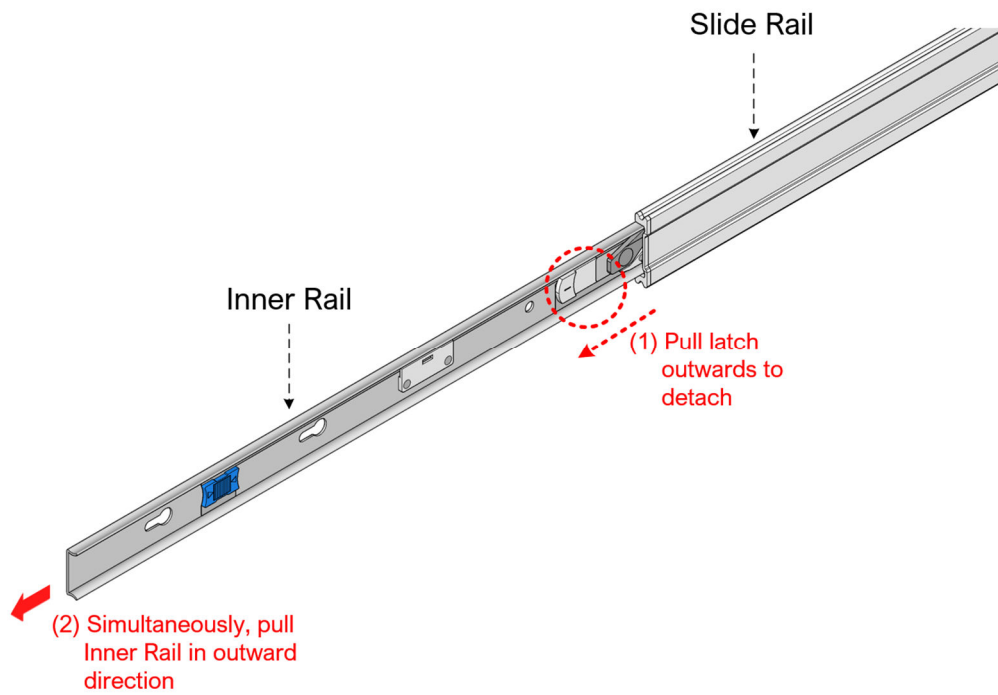


### 3.3 Installation Steps

**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.

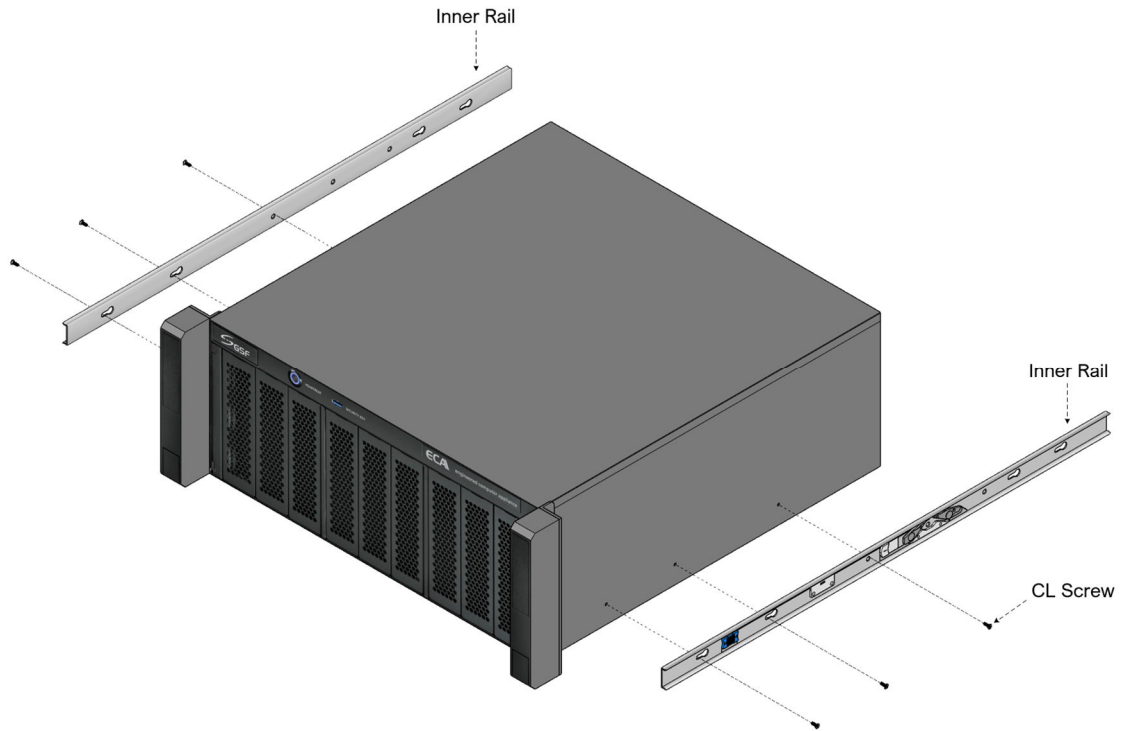
Pull and hold the **WHITE** color latch outwards, while simultaneously pulling the Inner Rail in outward direction. This shall remove the Inner Rail from the assembly.



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

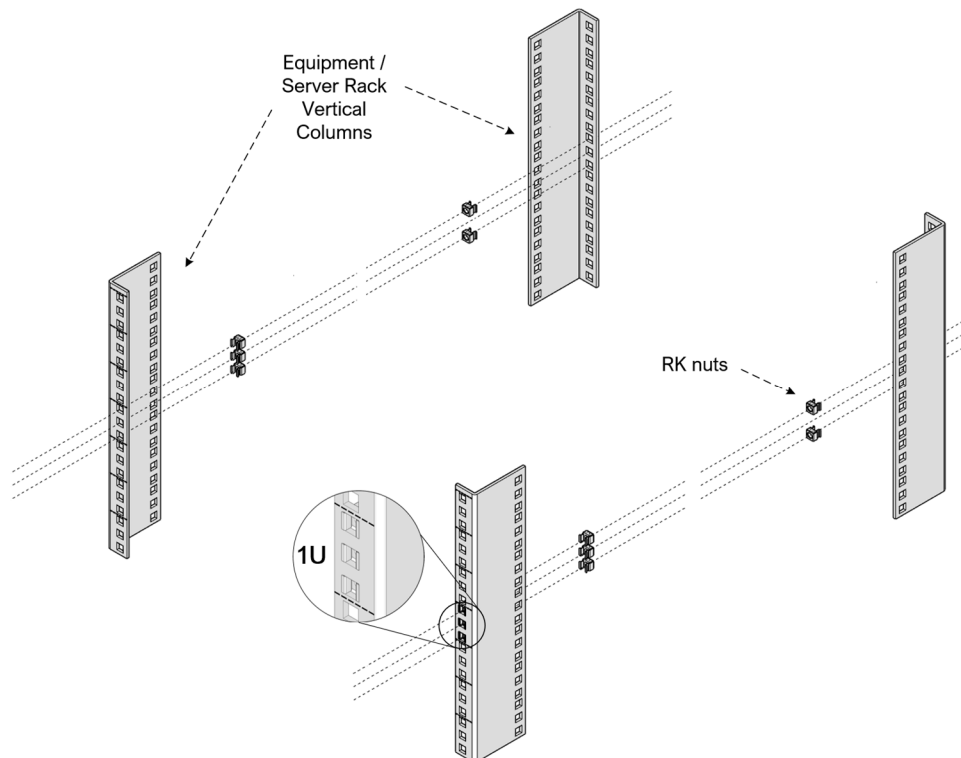
**Step 2:** Attach Inner Rail to ECA Chassis.



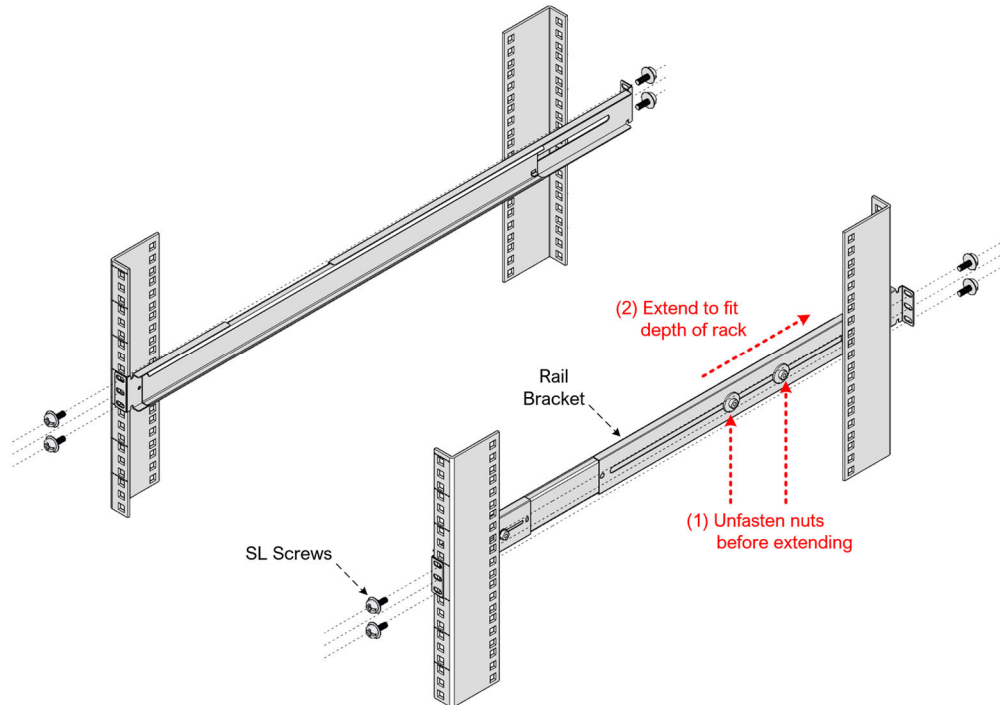


**Step 3:** Insert the RK nuts to Equipment Rack or Server Rack.

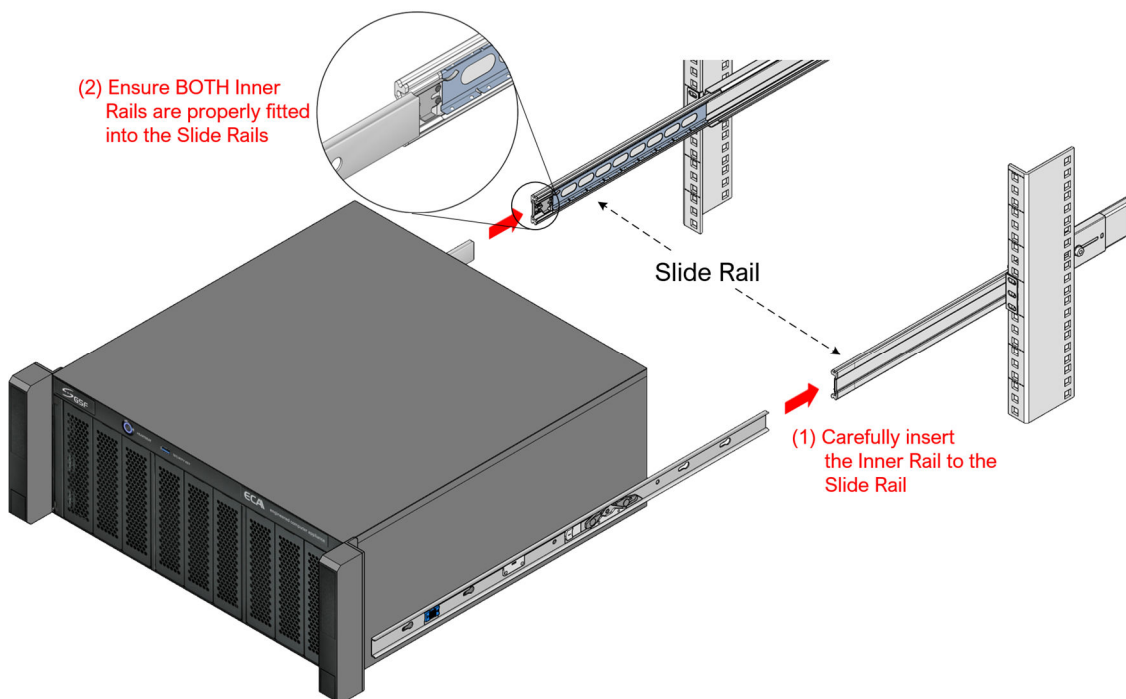
- Before inserting the nuts, make sure to reserve total 4U height and spacing for every ECA.
- The Sliding Rail is attached to the lowest 1U on the ECA.
- Ensure above the sliding rail, there is another 3U clearance space for the ECA.
- Take note of proper and correct spacing for 1U height.



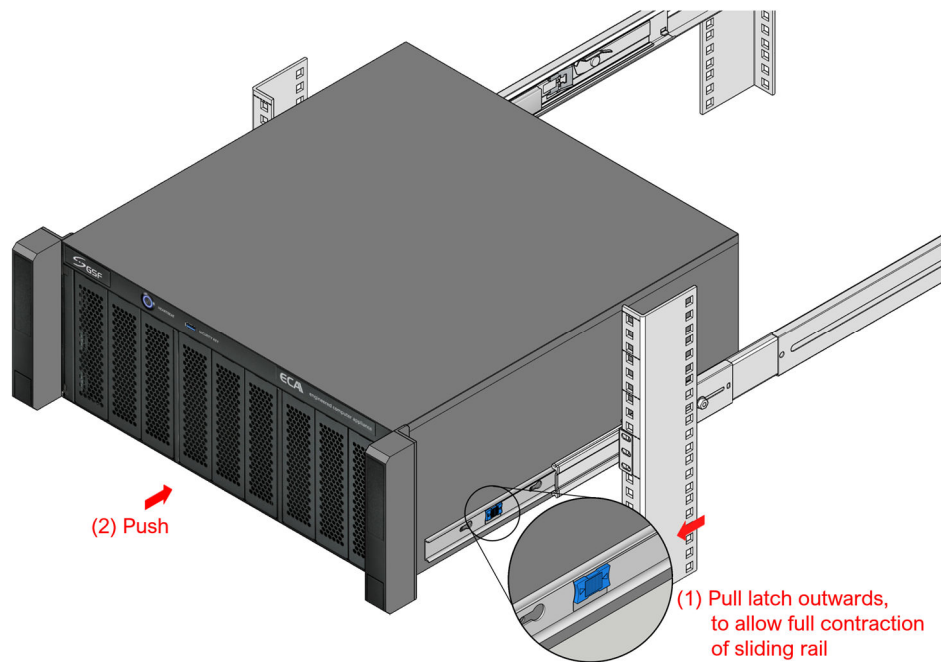
- Step 4:** Install the Rail Brackets to the Equipment rack or Server Rack. Place the Rail Brackets to the same level as the RK nuts, inserted in the previous step. Use SL screws and fasten them to the nuts. For the front, **DO NOT fasten any screw to the middle nut.** The middle nut is reserved for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



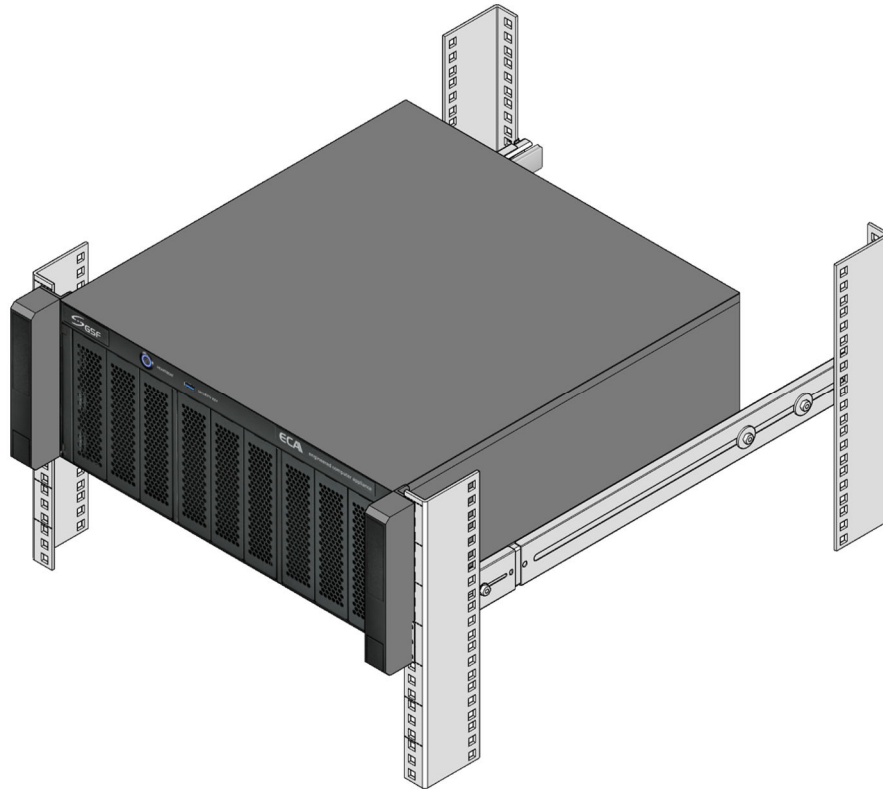
- Step 5:** Carry the ECA, which now has the Inner Rails attached, and ensure both Inner Rails are securely inserted into the Sliding Rail.



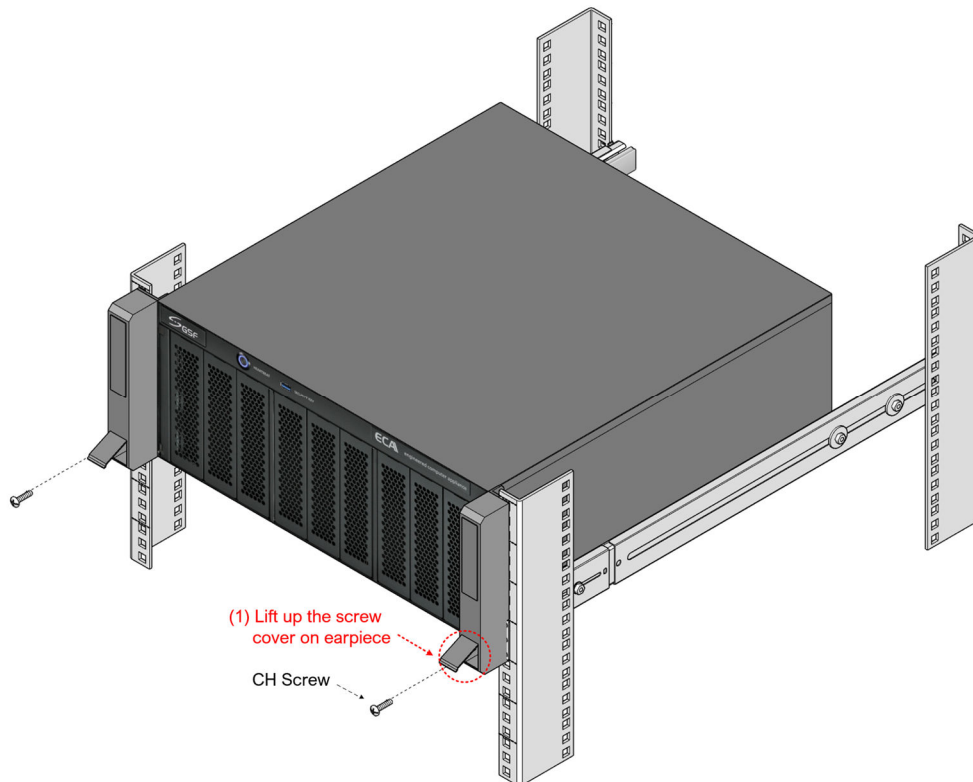
**Step 6:** Push the ECA inwards to the rack until the mounting brackets encounter the slide-rail stop. Then, simultaneously pull and hold the **BLUE** latch on the Inner Rail, while pushing the ECA inwards. This will fully contract the whole Sliding Rail assembly.



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

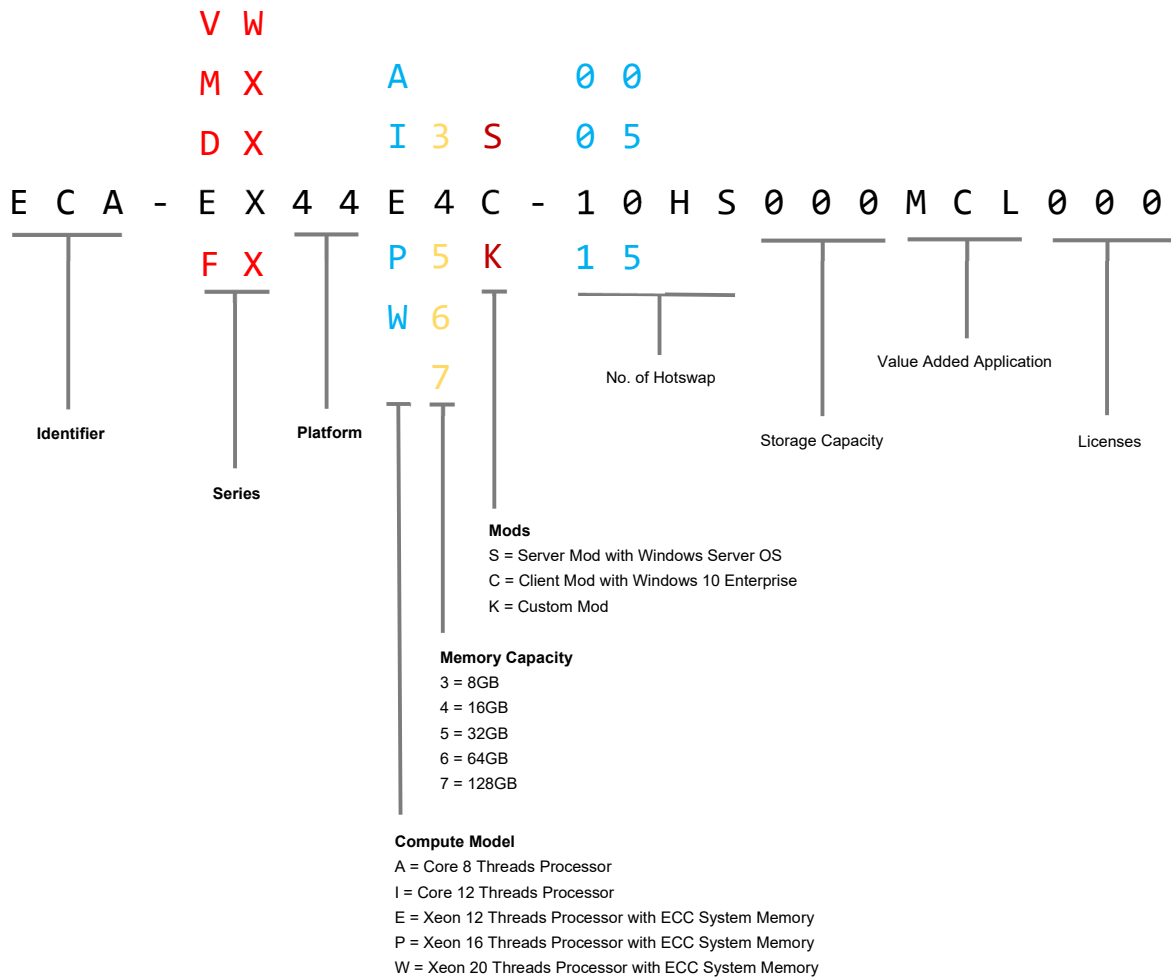


**Step 8:** Lift the screw cover on the earpiece of the ECA. Fasten ECA to the Sliding Rail using the CH Screw.



## 4 ECA Naming

The ECA naming will represent the specification of the platform.



## 5 ECA Series



<b>Mount</b>	Tower / Rack	Rack	Rack	Rack	Rack
<b>Storage</b>	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
<b>Hot-swap Bay</b>	None	None	5	10	15
<b>Redundant Storage System (RSS)</b>	No	Yes	Yes	Yes	Yes
<b>Recommended Usage</b>	Video Workstation	Recording Server	Recording Server	Recording Server	Recording Server
<b>HeartBeat</b>	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

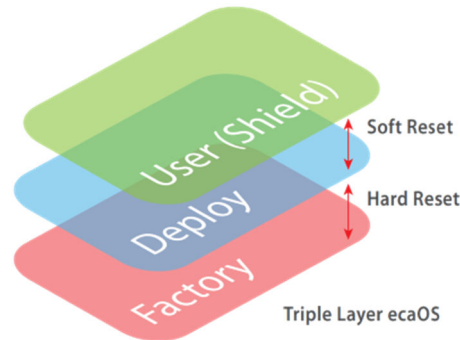


Figure 1: Triple Layers

### **User Layer** (Current working layer)

This is a normal user operation layer with protected OS environment, any system changes without using the Embedded Security Key will be discarded after system reboot (Fast Reset)

### **Deployment Layer** (Backup layer)

This is a good working state layer, usually saved by System Integrator with pre-configured NVR & camera settings

### **Factory Layer** (Backup layer)

This is a good working state layer, with original default settings shipped from factor

## 1.7 ecaOS Login

Some ECA may be shipped without automatic login, subject to configurations. In such case, the ecaOS will boot until the login screen, and the prompt for login will be shown, as follow:

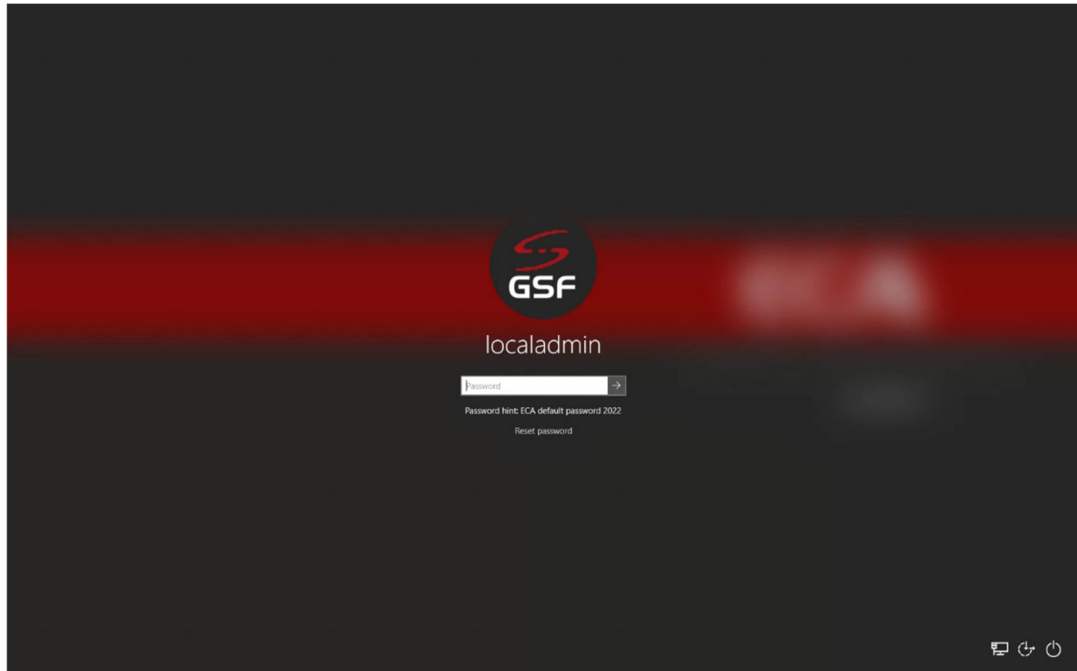


Figure 2: ecaOS Login Screen

Username : **localadmin**

Password : *\*Please contact TrueBlue support*  
[trueblue@gscorp.com](mailto:trueblue@gscorp.com) +60-3-80908277

## 1.8 ecaOS Locked Out

If the password enters in 3 times incorrectly, the logging screen will be lock for 15 minutes before retrying

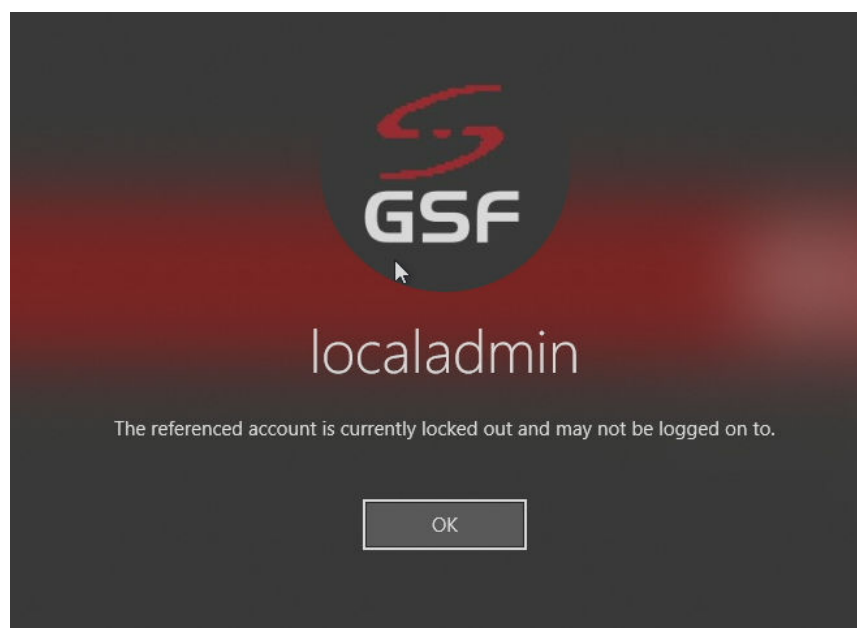


Figure 3: Account Locked Out



## 7 Dashboard and Notification

Location of the Dashboard application and ecaOS Notification display area.

**Notification** area where all the activity within the ECA will be prompt out.

**Dashboard** is web base interface displaying overall information and system vitals of the ECA machine status

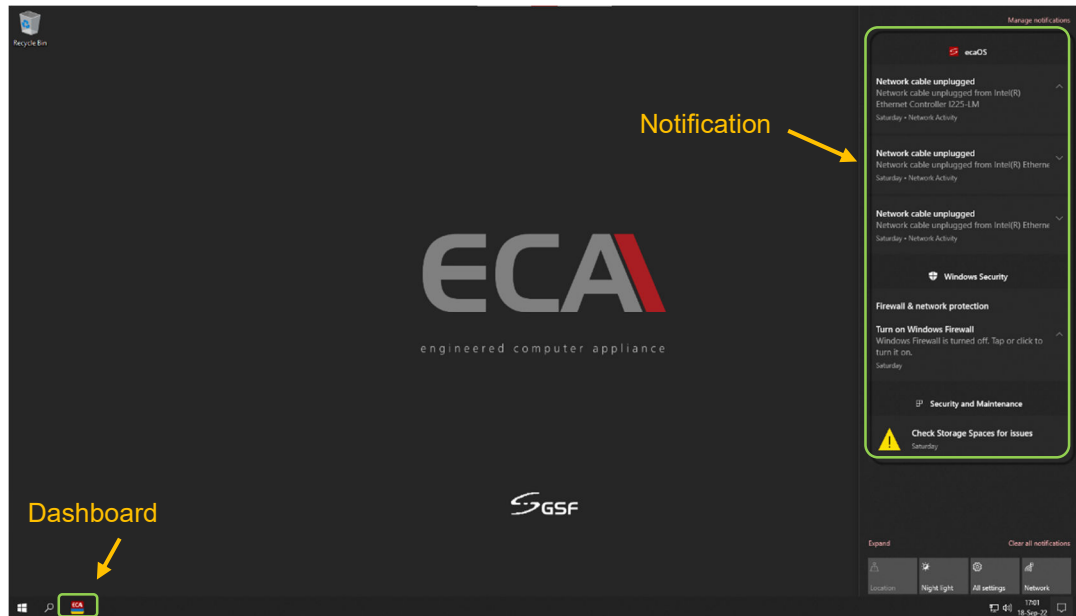


Figure 4: ecaOS Desktop

## 7.1 Accessing ecaOS Dashboard

There are two ways to access ecaOS Dashboard.

1. Security Key (USB)
2. Virtual Security Key card



Figure 5: Security Key & Virtual Security Key Card

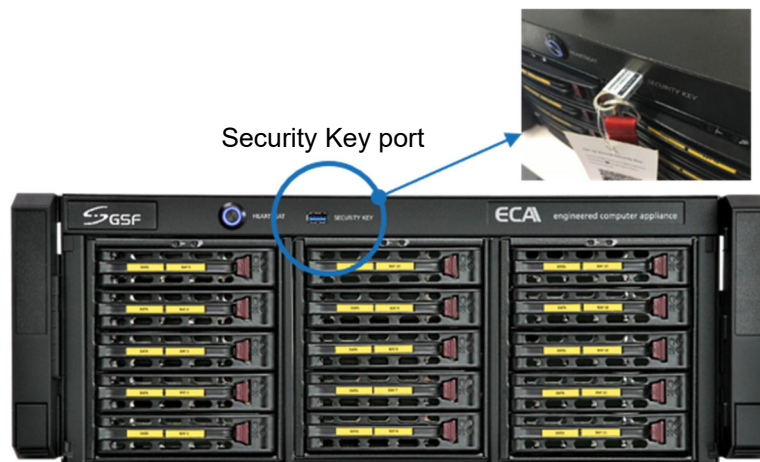



Figure 6: Security Key USB Port Location

1. Insert Security key to Security Key USB port
2. Run 'ecaOS Dashboard'  from the system taskbar.

### 7.1.1 Using Virtual Security Key (ECA Access Code)

Run 'ecaOS Dashboard'  from the desktop taskbar. Enter 'Access Code' from authenticator apps.

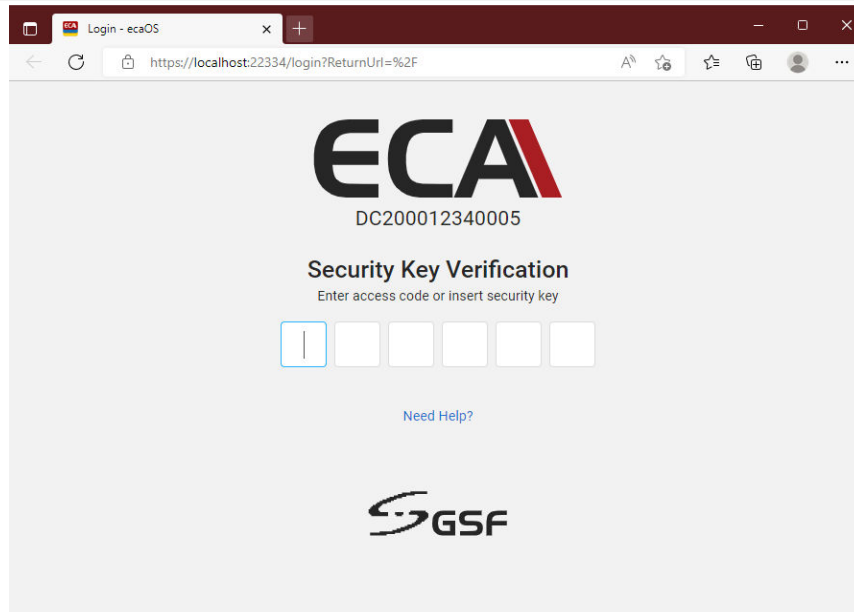


Figure 7: Dashboard Login Page

### 7.1.2 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'. 'Google Authenticator' or 'Microsoft Authenticator' should appear in the search result. You can install either one as the authenticator to use with ecaOS for obtaining the Access code.

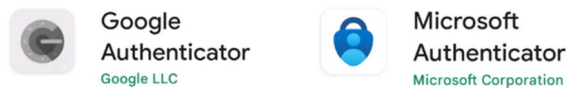


Figure 8: App search results

3. This procedure is based on using Google Authenticator.



**Before using any authenticator app, it is important to check and make sure your device's time is synchronized with ECA's time. Otherwise, it the access code may not work correctly.**

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

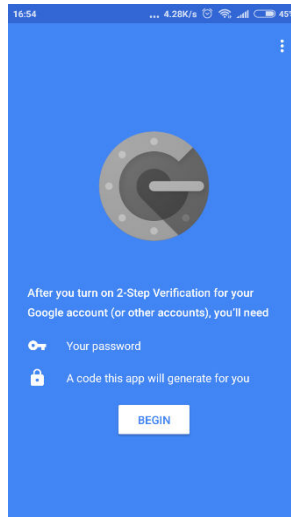


Figure 9: Authenticator Setup

5. Choose 'Scan a barcode' to start scanning the QR code, which can be found on the **Virtual Security card**.

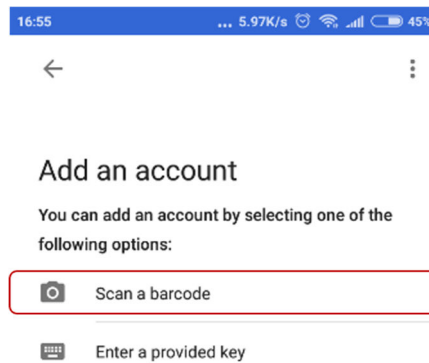


Figure 10: Authenticator Setup

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



Figure 11: Authenticator Setup

7. The Access code will display in the app.

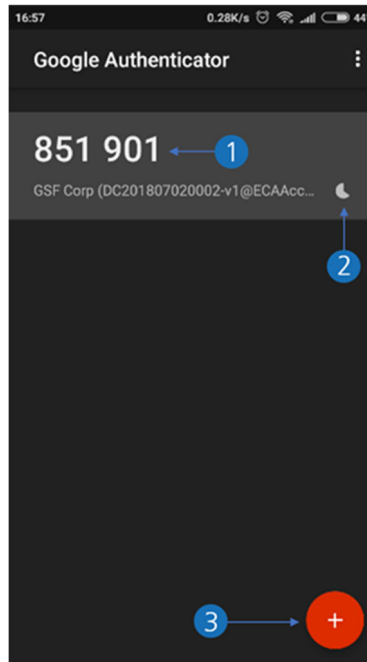


Figure 12: Authenticator Setup (4 of 4)

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 OTP access code into the Security Key Verification

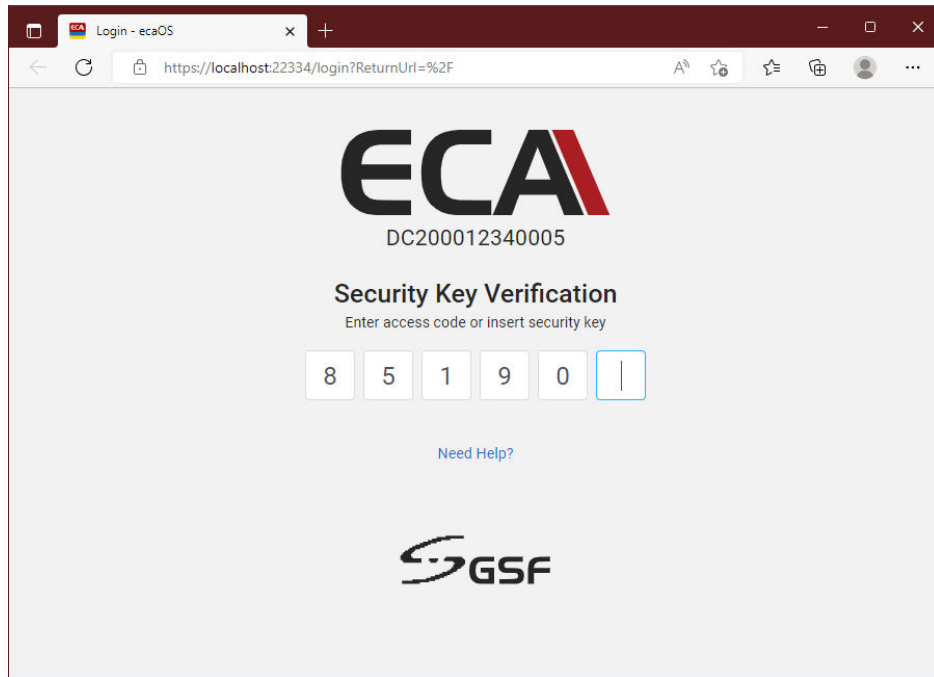


Figure 13: ecaOS Dashboard Login Page

### 7.1.3 Remotely Access ecaOS

Open web browser from remote computer. Enter the IP address of the ECA the address bar, following this URL format:

`https://<ipaddress>:22334`

Example: `https://10.0.0.39:22334`

Alternatively, you may insert the ECA's serial number at the browser's address bar, by following this format:

`https://<ECA serial number>:22334`

Example: `https://DC200012340005:22334`



**Default access port number for the dashboard is '2334'. This port number is changeable in the Dashboard configuration.**

1. Click 'Advanced'

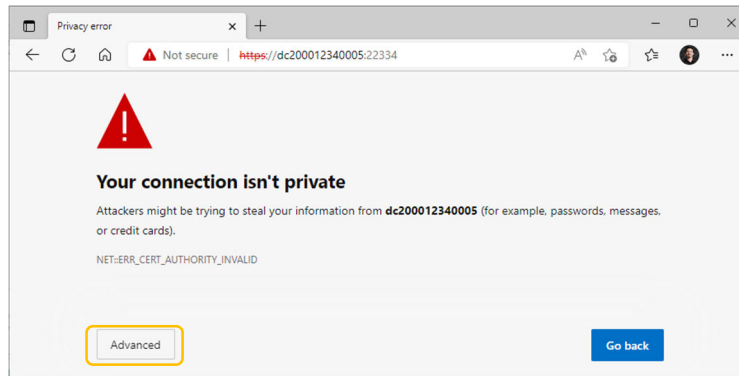


Figure 14: Dashboard Remote Access (1 of 2)

2. Click the link 'Continue to dcxxxxxxx (unsafe)'

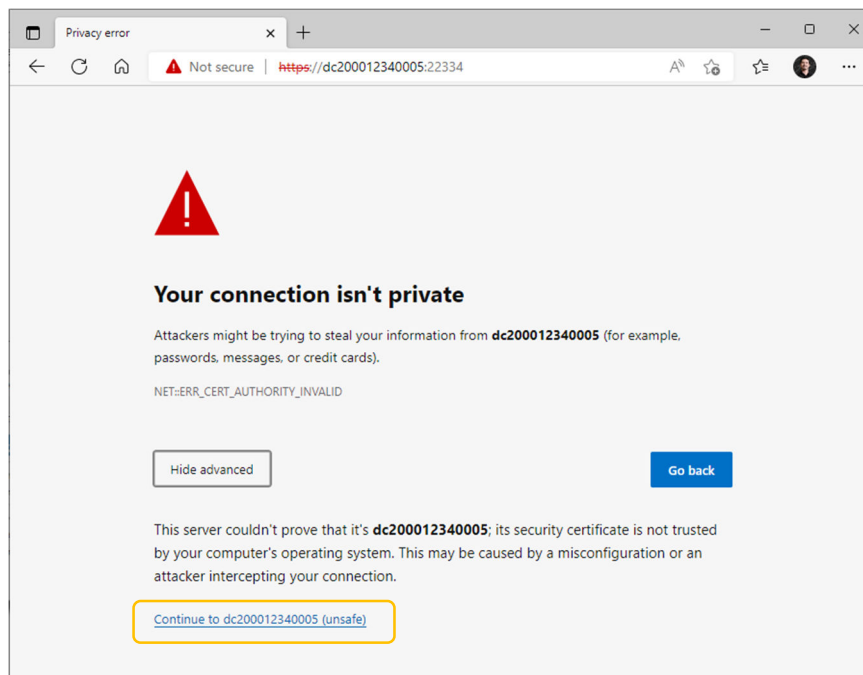


Figure 15: Dashboard Remote Access (2 of 2)

## 7.2 ecaOS Dashboard ▶ Summary

The summary Dashboard page able to offers overall information and system vitals of the ECA machine status. Example of information and status display on the Dashboard are:

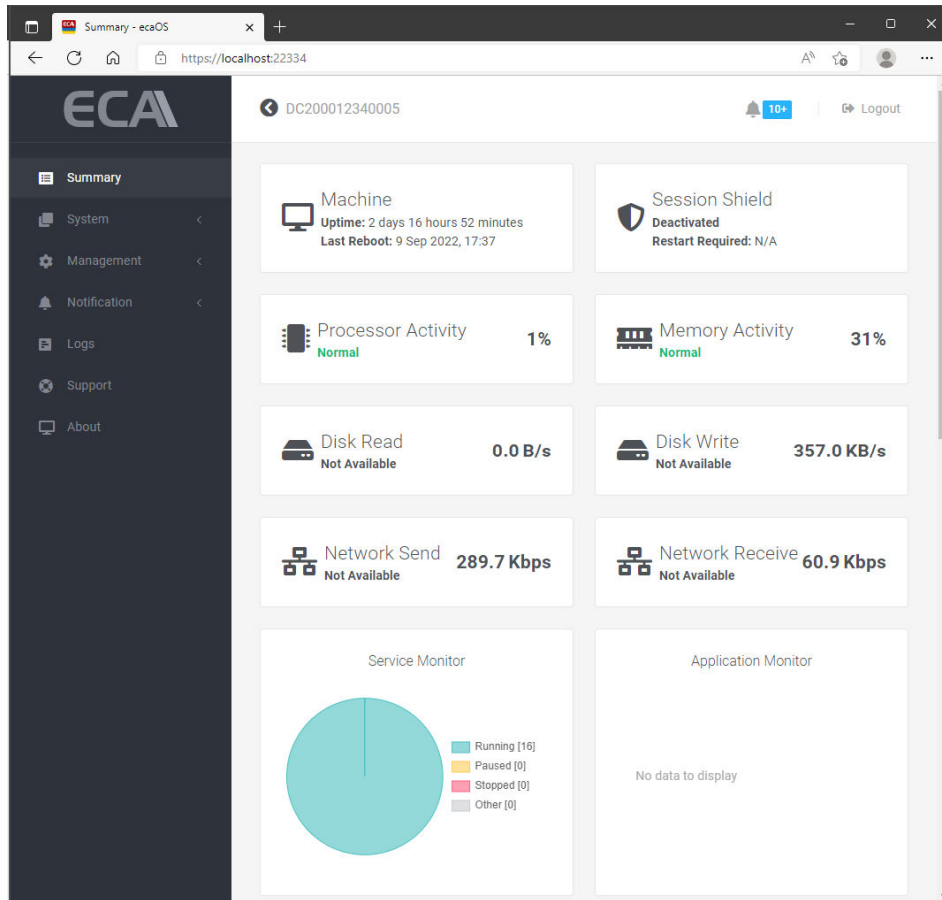


Figure 16: ecaOS Dashboard Summary

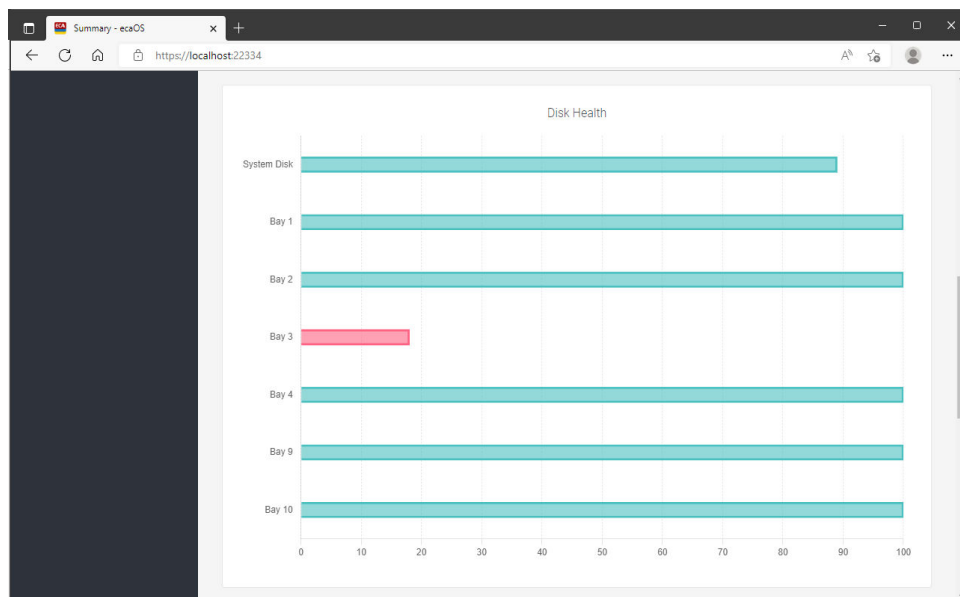
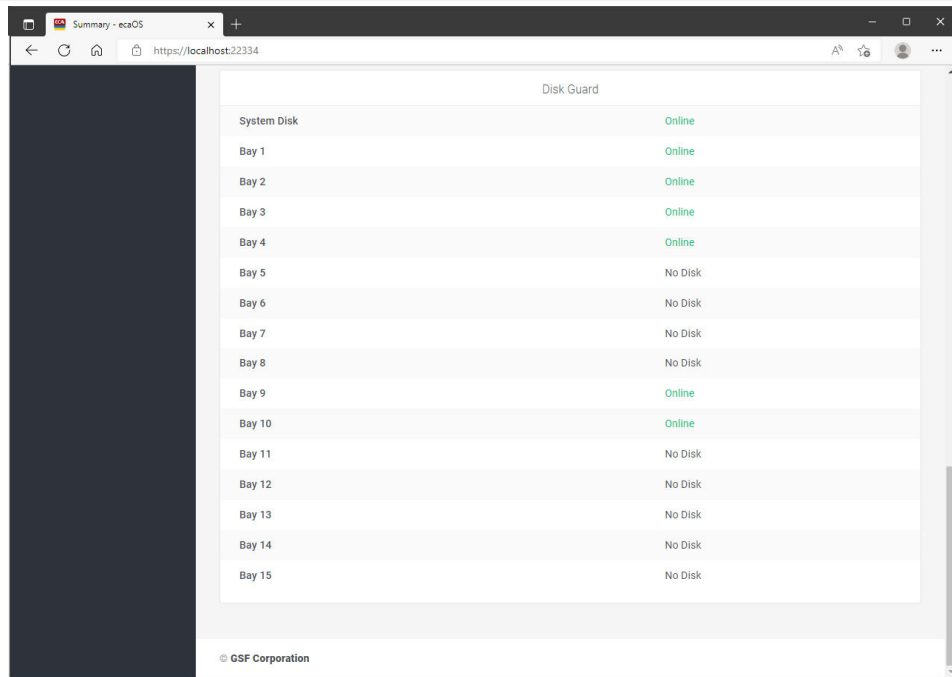


Figure 17: ecaOS Dashboard Summary – Disk Health





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

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Figure 18: ecaOS Dashboard Summary – Disk Guard

## 8 System

### 8.1 Service Monitor

The tools will be displaying the status of all services in the ecaOS that have been added into Service Monitor.

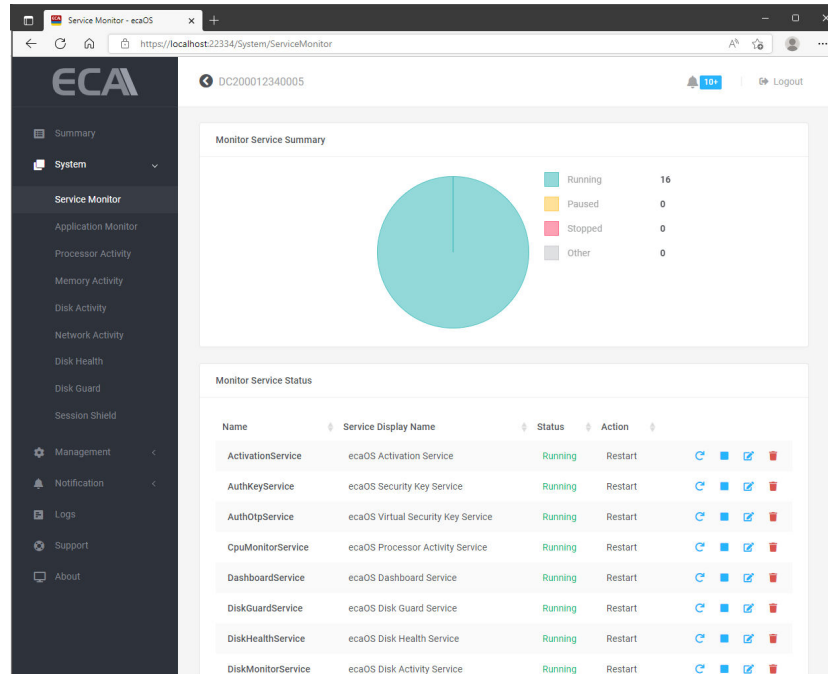


Figure 19: Service Monitor Summary

#### 8.1.1 Add Services

- To add services, click the [+ Add Service](#) button.

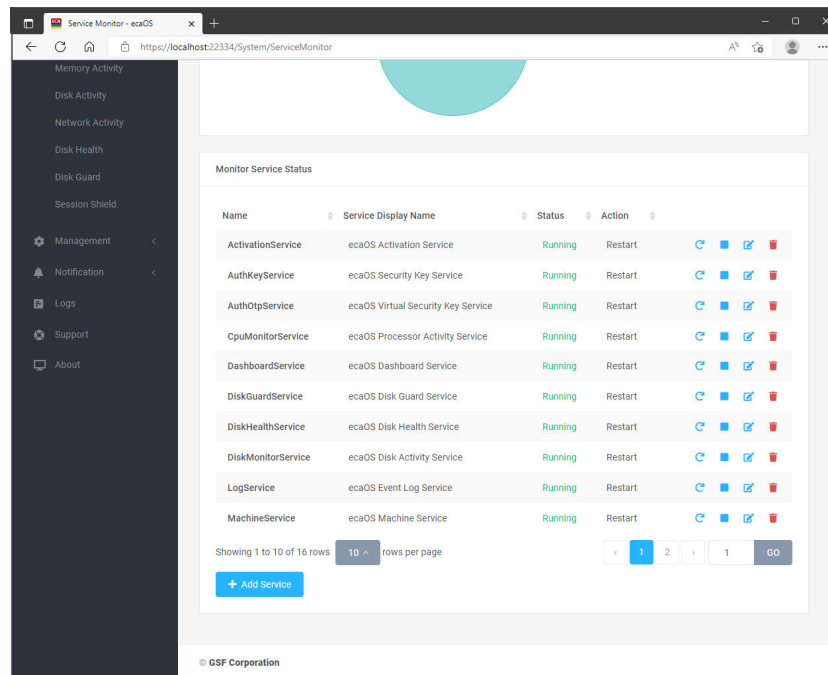


Figure 20: Add Services

2. Click the drop-down button.

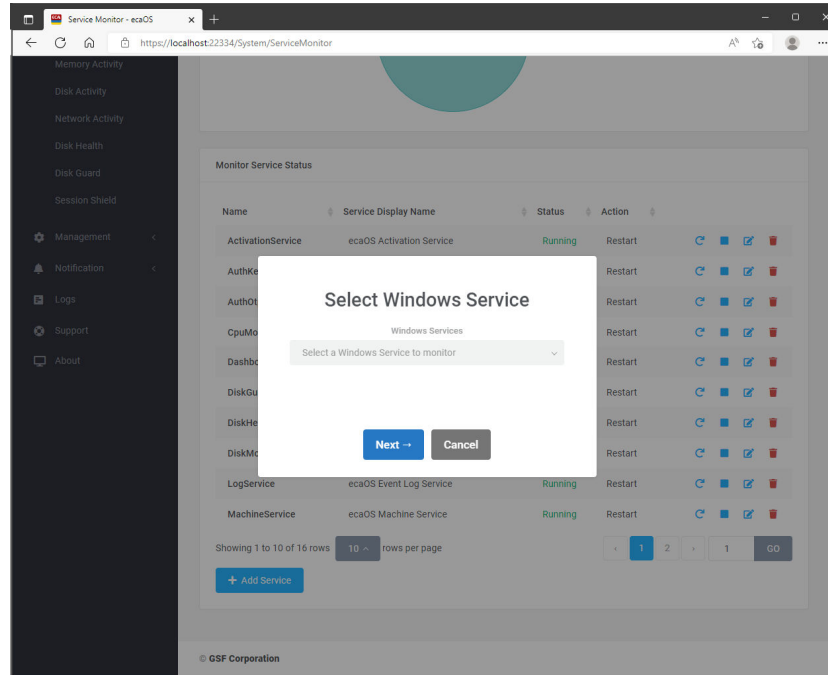


Figure 21: Select Windows Services (1 of 4)

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

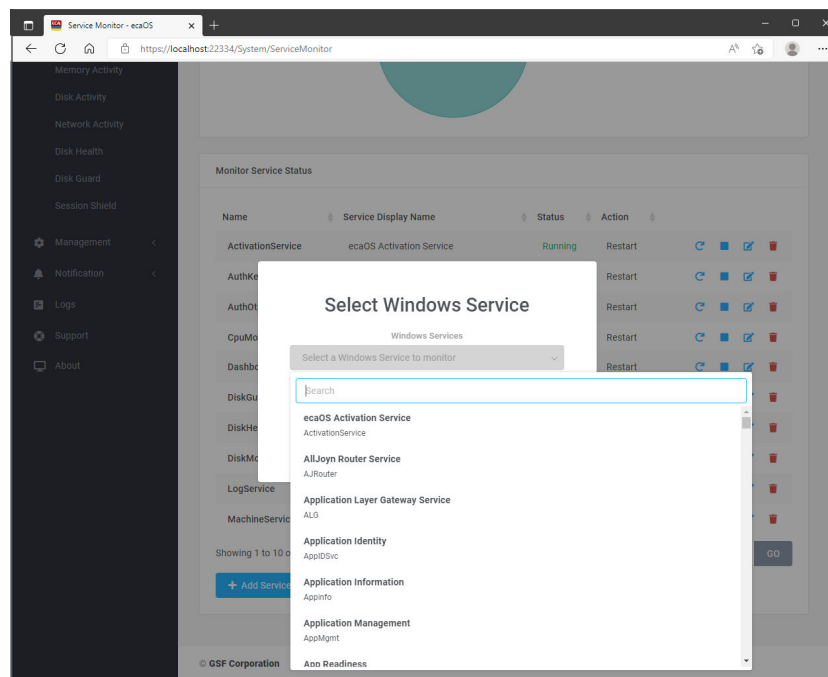


Figure 22: Select Windows Services (2 of 4)

4. Click **Next →** button

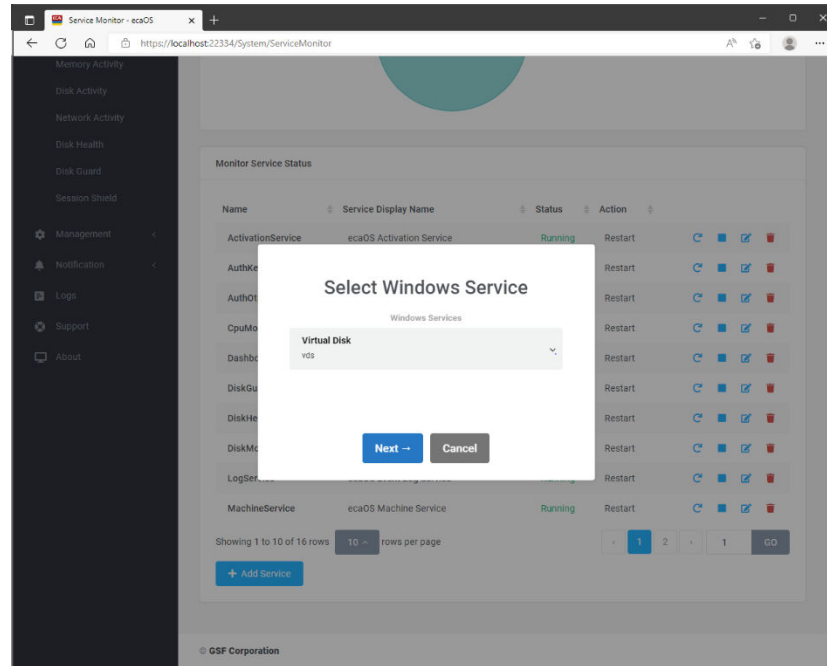


Figure 23: Select Windows services (3 of 4)

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

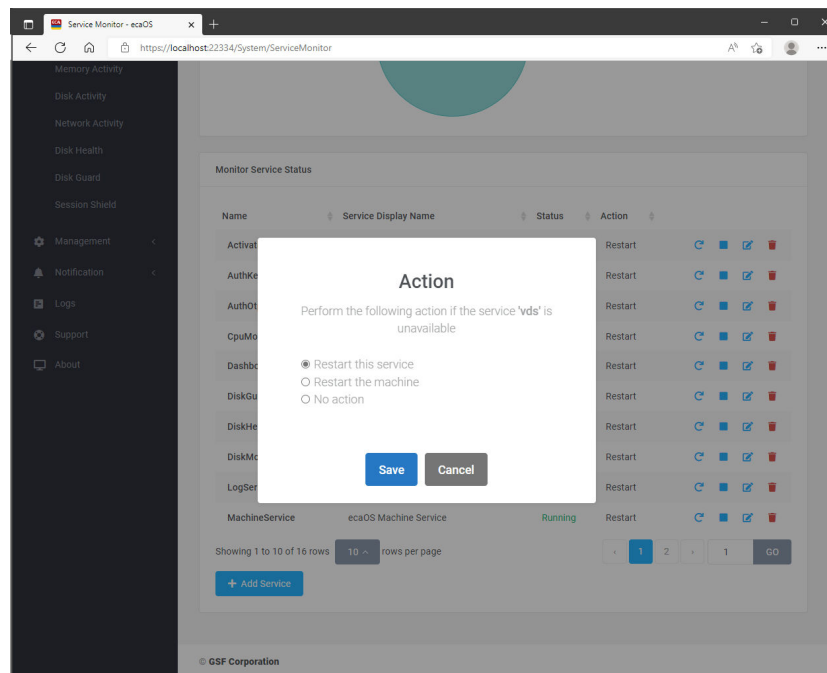


Figure 24: Select Windows Services (4 of 4)

## 8.1.2 Delete Services

- To delete services, click the  button of the service to be delete

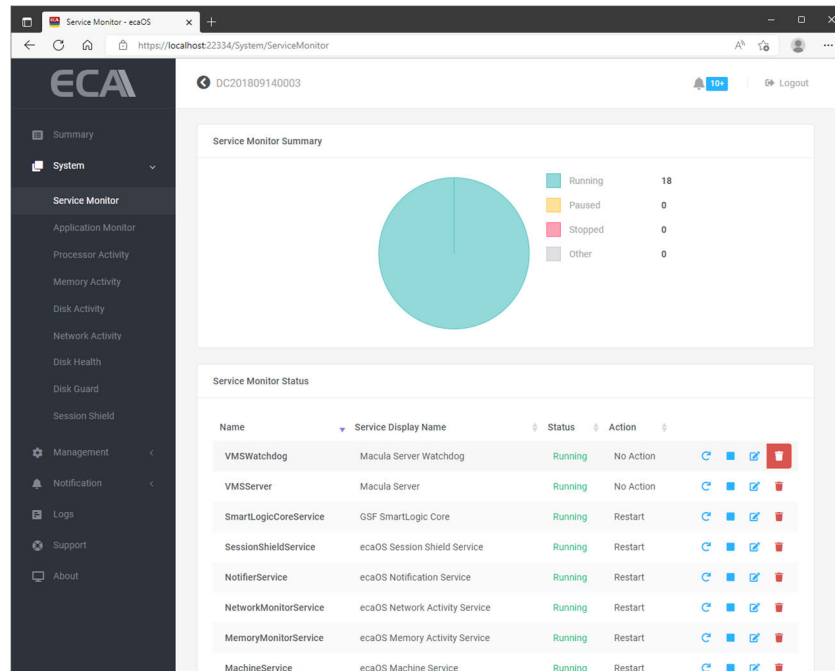



Figure 25: Delete Services (1 of 2)

- Click on  to proceed with the deletion

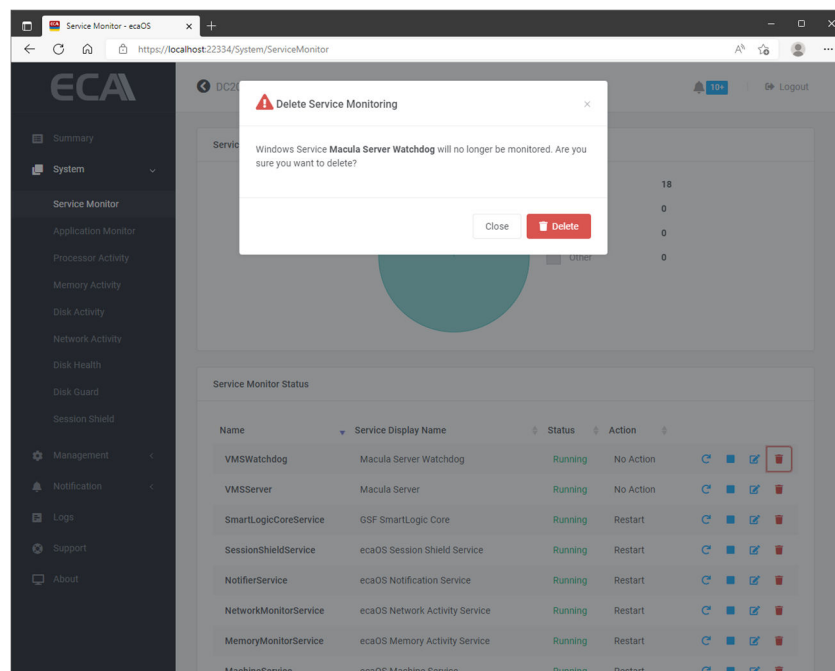


Figure 26: Delete Services (2 of 2)

## 8.2 Application Monitor

The tools will be displaying the status all application that added in 'Application Monitor'. Set the application to auto start after login to OS environment and terminate any instance running at the same time.

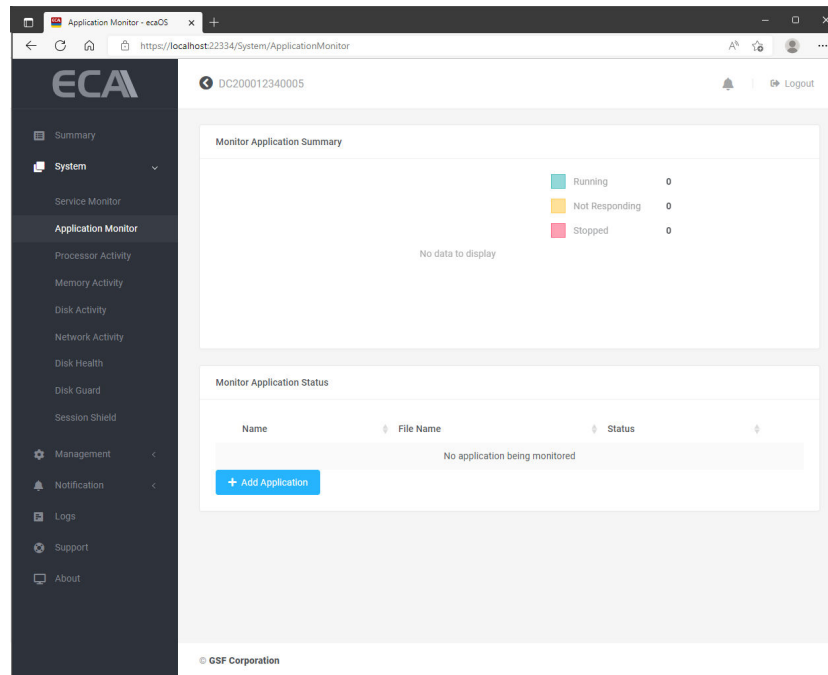


Figure 27: Application Monitor (1 of 5)

### 8.2.1 Add Application

1. To add application, click the **+ Add Application** button.
2. Enter the application name

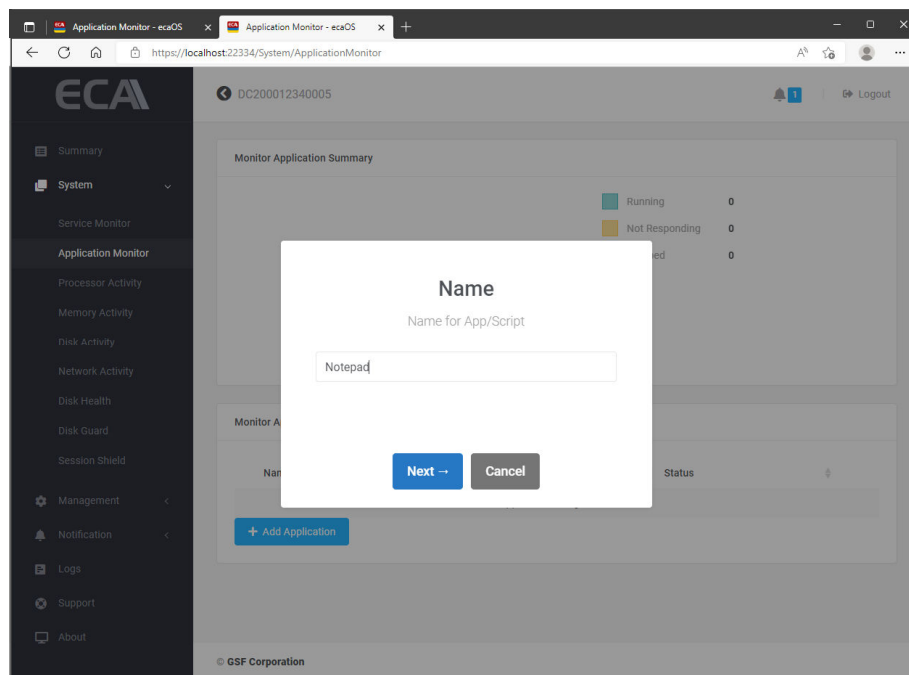


Figure 28: Application Monitor (2 of 5)

3. Paste the path of the application to be added.

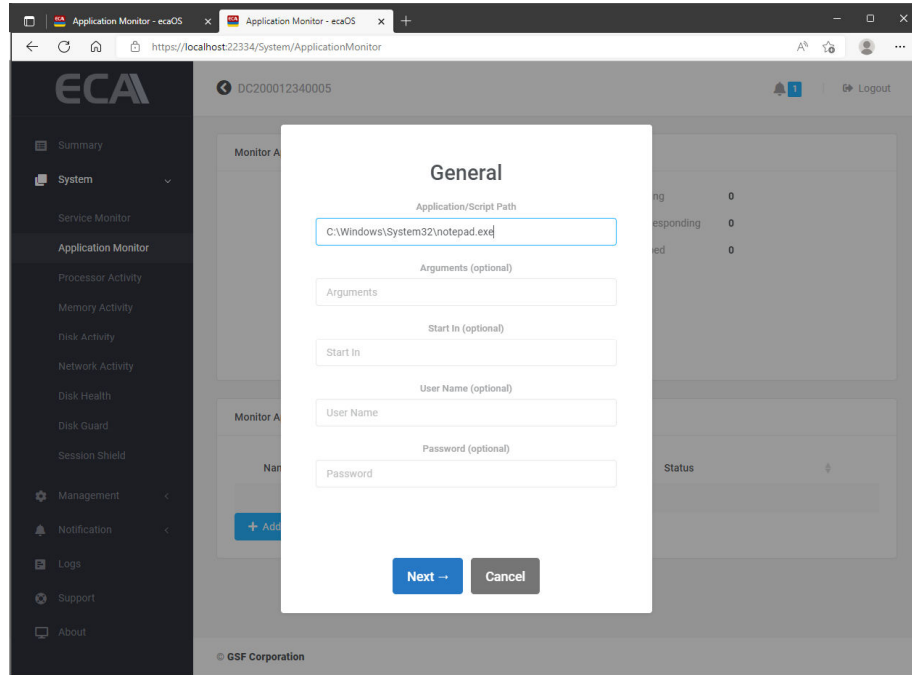


Figure 29: Application Monitor (3 of 5)

4. Apply setting

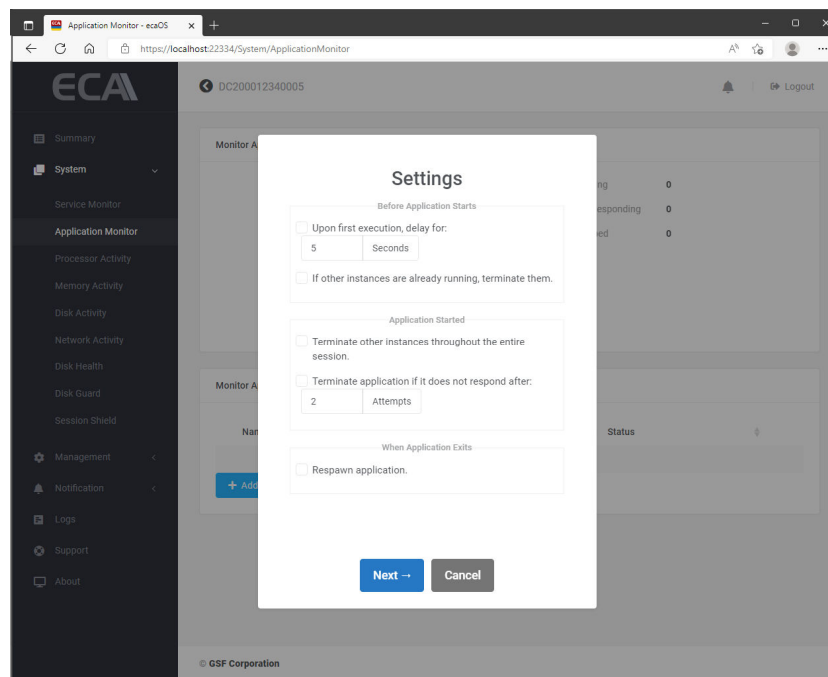


Figure 30: Application Monitor (4 of 5)

### Upon first execution delay for

Set the delay when for application to start.

### If other instance(s) already running, terminate it

Another instance will be terminated before 'Upon First Execution' started.

### Terminate other instance(s) throughout the entire session

Another instance will be terminated

### Terminate application if not responding

Application will terminate after number of attempts

### Respawn Application

The application will respawn if it close

5. After successfully add the application to be monitor. The application status will appear in the 'Application Monitor' page.

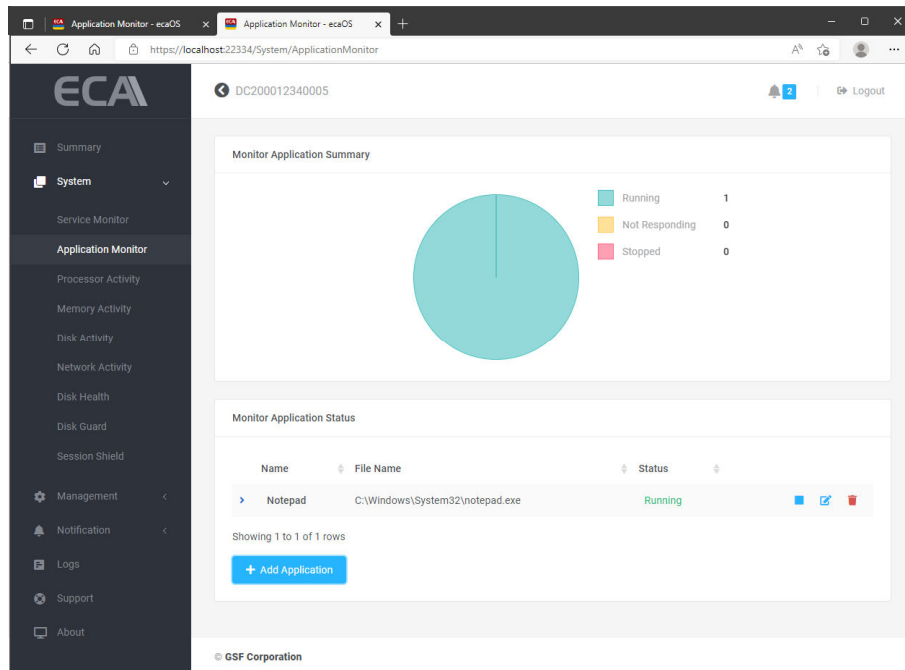



Figure 31: Application Monitor (5 of 5)



## 8.2.2 Delete Application

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

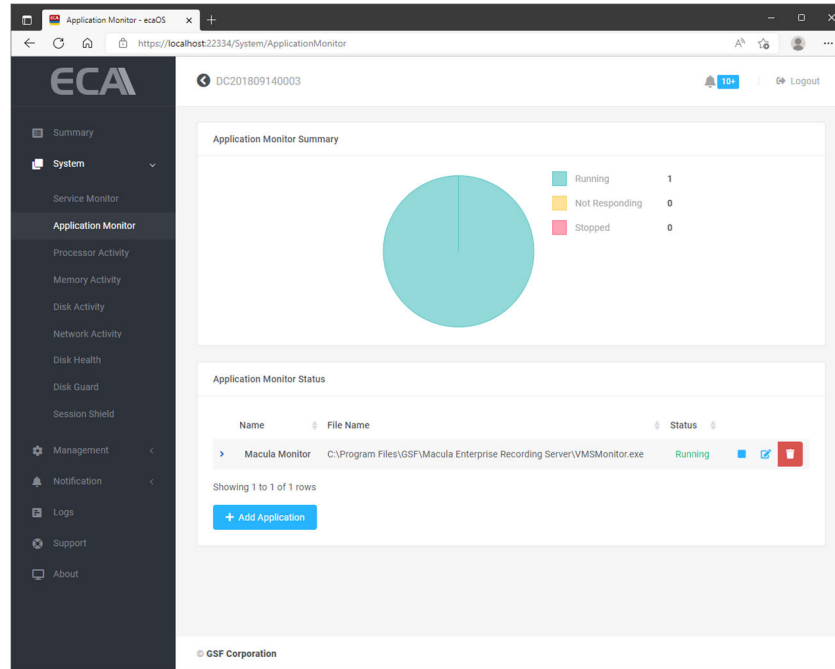



Figure 32: Delete monitored application (1 of 2)

- Click on  to proceed with the deletion

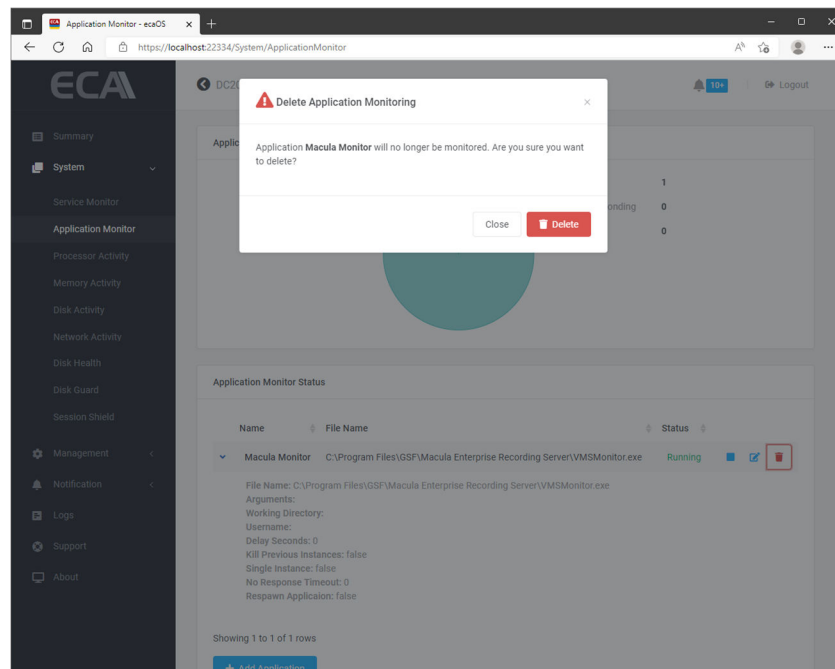


Figure 33: Delete monitored application (2 of 2)

## 8.3 Processor Activity

This application monitors the CPU usage and notify/email if the usage above the threshold value. ecaOS can generate notification to alert user when ECA CPU Alert utilization goes above the configured threshold for a pre-defined period.

**CPU Activity:** The status will base on Average CPU Utilization. The status will change to High if the Average CPU Utilization higher than threshold set under Processor Activity Monitor.

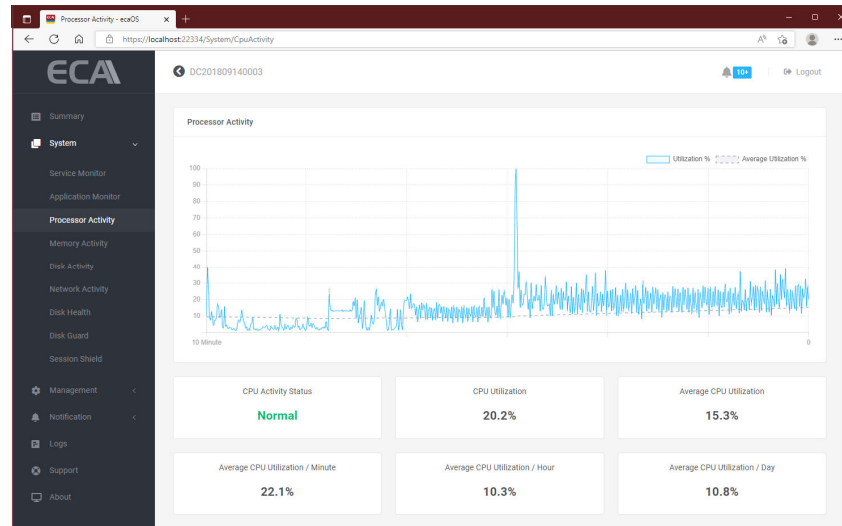


Figure 34: Processor Activity (1 of 2)

By the example below to demonstrate that the Processor Activity Monitor set to enable, the threshold set to 80% for 10 minutes. The CPU Activity status will change to High if the Average CPU Utilization higher than 80% for more than 10 minutes. This event will notify by email and at the notification.

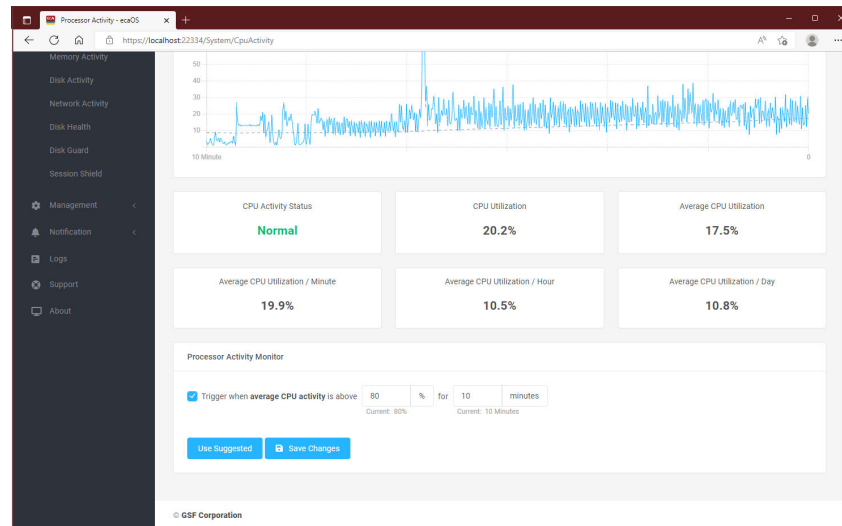


Figure 35: Processor Activity (2 of 2)

### NOTE:

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

## 8.4 Memory Activity

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

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

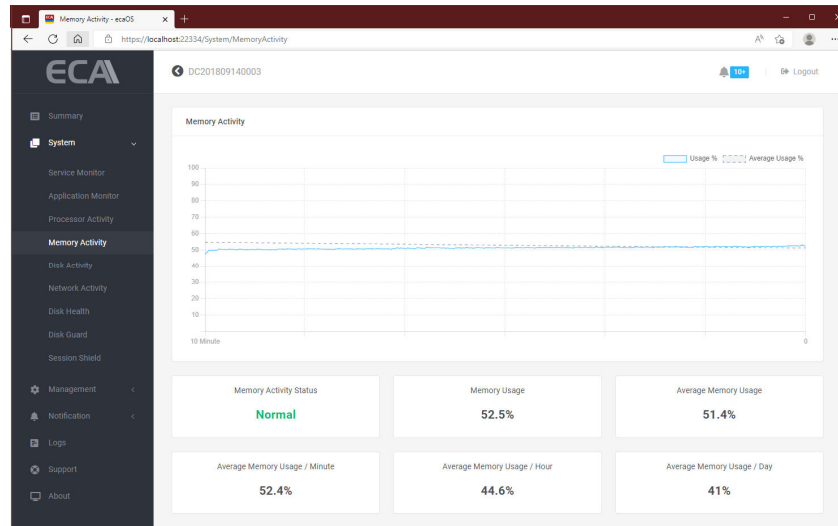


Figure 36: Memory Activity (1 of 2)

By the example below to demonstrate that the Memory Activity Monitor set to enable, the threshold set to 80% for 10 minutes. The Memory Activity status will change to High if the Average Memory Utilization higher than 80% for more than 10 minutes. This event will notify by email and at the notification.

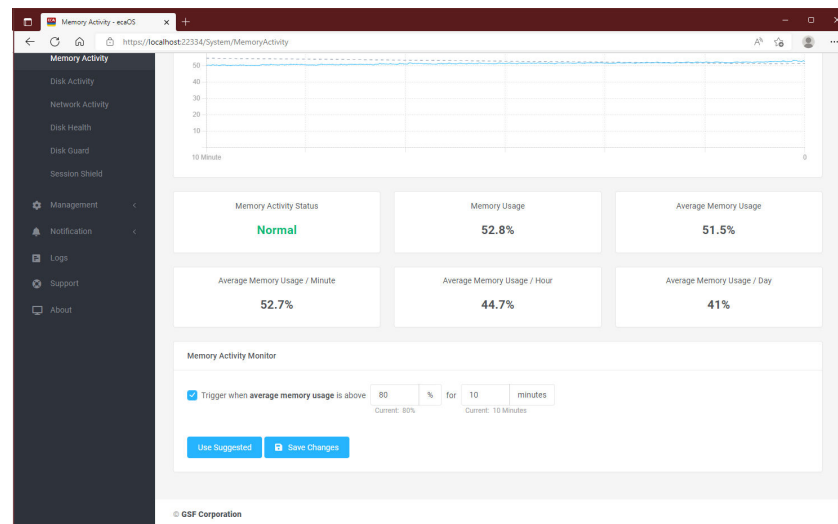


Figure 37: Memory Activity (2 of 2)

### NOTE:

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

## 8.5 Disk Activity

It displays real time disk usage (activity), it also auto calculates average disk usage per minute, per hour and per day. Automatic alert if disk write or read is fall or raise above threshold limit for a period. This is very useful if recording function in the VMS software was accidentally turned off. There will be no disk write activity when recording was turned off, thus the system will auto alert potential CCTV no recording to user.

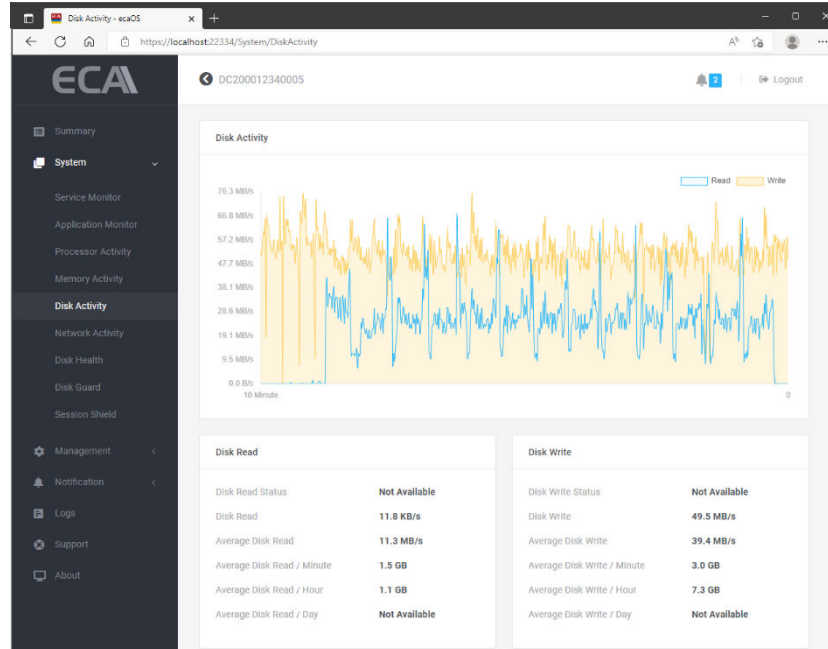


Figure 38: Disk Activity (1 of 2)

By the example below to demonstrate that the Disk Activity Monitor set to enable for both read & write.

The Average Disk read set to above 10GB/s for 10 minutes. The average disk write is below 15GB/s for 10 minutes. This event will notify by email and at the notification if exceed the set threshold.

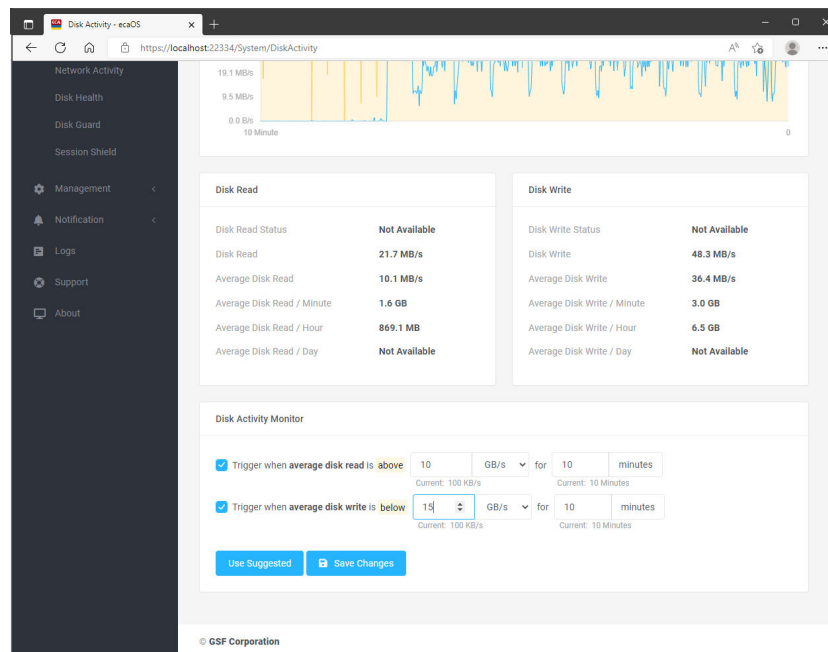


Figure 39: Disk Activity (2 of 2)

**NOTE:**

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

## 8.6 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.

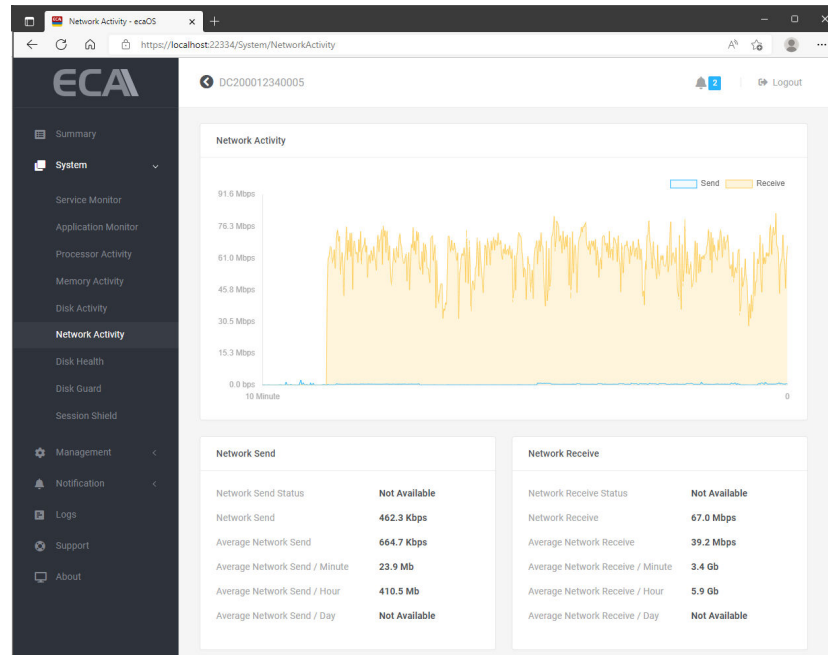


Figure 40: Network Activity (1 of 2)

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

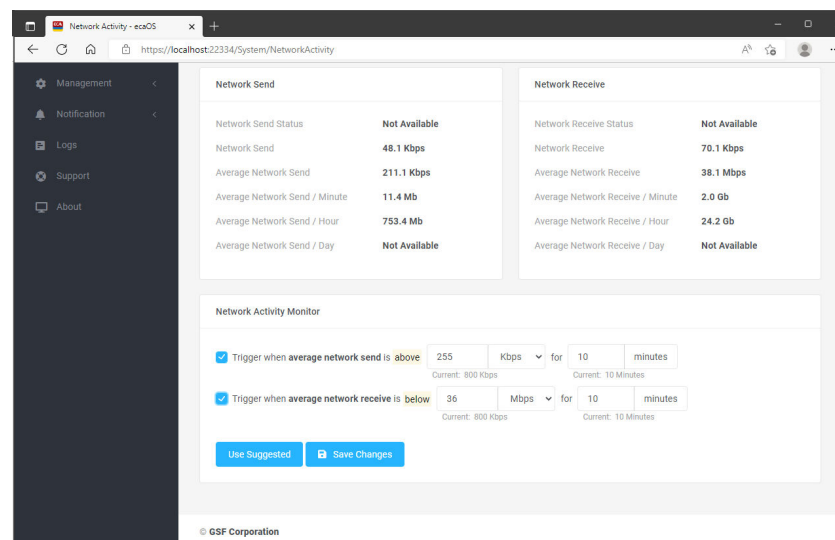


Figure 41: Network Activity (2 of 2)

It will trigger when the data send over network above 255Kbps for 10 minutes

It will trigger when the data receive below set threshold 36Mbps for 10 minutes

**NOTE:**

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

## 8.7 Disk Health

'Disk Health' able to show information of individual disk connected to ECA. 'Disk Health' also monitor disk status and notify whenever detected the health below certain threshold.

Oversee disk information and health such as, disk health, SMART value, temperature, drive wear level, power up hours, capacity, model and serial numbers, etc.

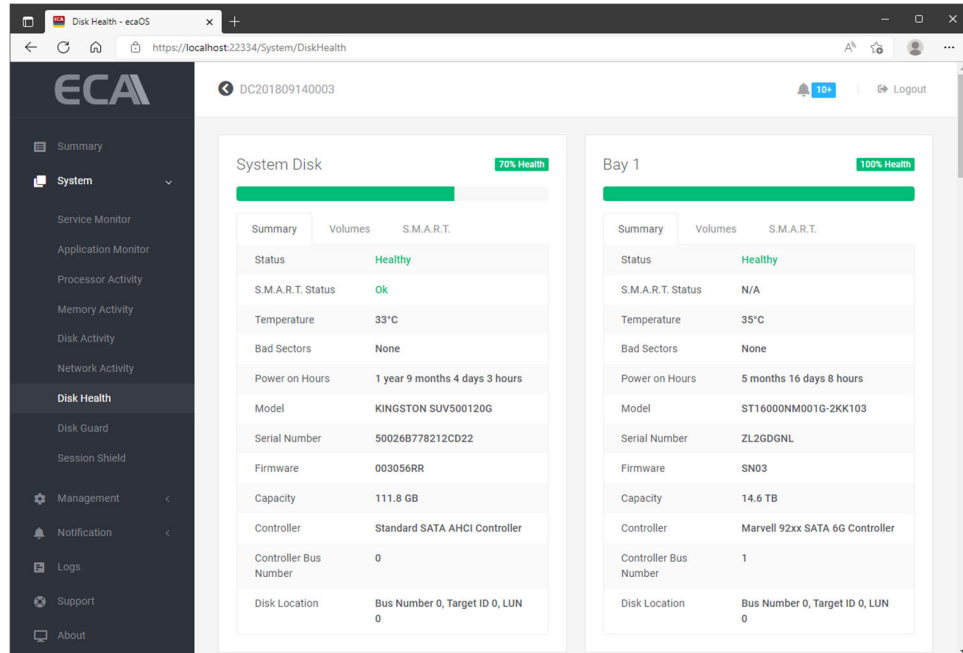


Figure 42: Disk Health (1 of 3)

Under Summary tab, can found drive information such health status, bad sector, temperature, model etc.

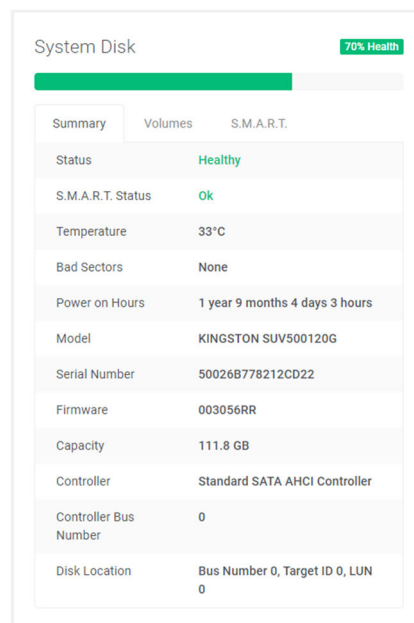


Figure 43: Disk Health – Healthy Disk (2 of 3)



System Disk <span style="background-color: #ffc107;">67% Health</span>	
Summary	Volumes S.M.A.R.T.
Status	<span style="color: #ffc107;">Warning</span>
S.M.A.R.T. Status	<span style="color: #28a745;">Ok</span>
Temperature	34°C
Bad Sectors	None
Power on Hours	1 year 9 months 19 days 4 hours
Model	KINGSTON SUV500120G
Serial Number	50026B778212CD22
Firmware	003056RR
Capacity	111.8 GB
Controller	Standard SATA AHCI Controller
Controller Bus Number	0
Disk Location	Bus Number 0, Target ID 0, LUN 0

Figure 44: Disk Health – Warning Status Disk (2 of 3)

Bay 15 <span style="background-color: #dc3545;">23% Health</span>	
Summary	Volumes S.M.A.R.T.
Status	<span style="color: #dc3545;">Critical</span>
S.M.A.R.T. Status	<span style="color: #28a745;">Ok</span>
Temperature	32°C
Bad Sectors	<span style="color: #dc3545;">200</span>
Power on Hours	1 year 4 months 8 days 9 hours
Model	TOSHIBA MC04ACA400E
Serial Number	44T5K00GFLSA
Firmware	FP1A
Capacity	3.6 TB
Controller	Standard SATA AHCI Controller
Controller Bus Number	0
Disk Location	Bus Number 3, Target ID 0, LUN 0

Figure 45: Disk Health – Critical Status Disk with Bad Sectors (2 of 3)

Under Volume, display partition & free space available information

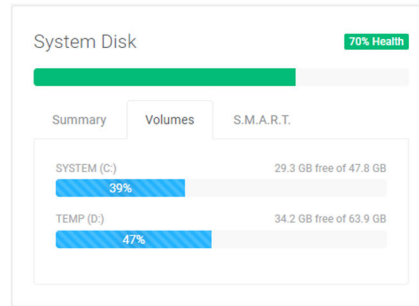
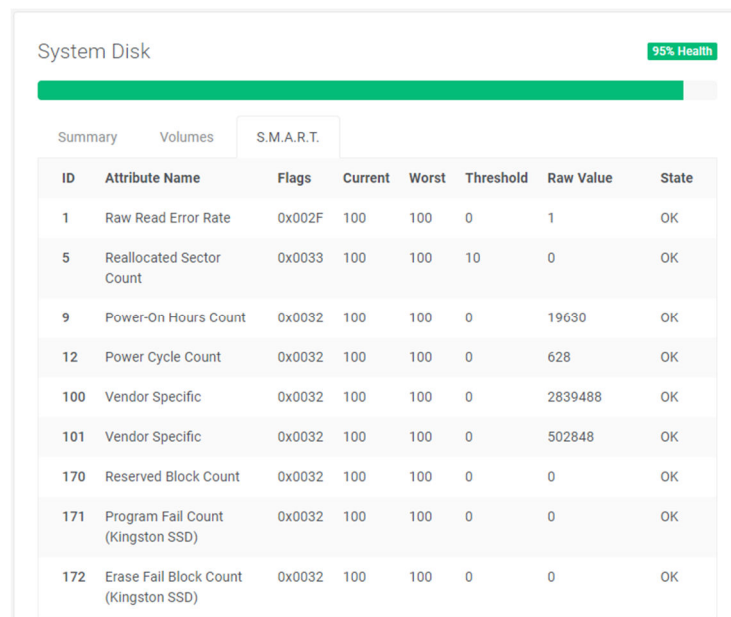


Figure 46: Disk Health (3 of 3)

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	State
1	Raw Read Error Rate	0x002F	100	100	0	1	OK
5	Reallocated Sector Count	0x0033	100	100	10	0	OK
9	Power-On Hours Count	0x0032	100	100	0	19630	OK
12	Power Cycle Count	0x0032	100	100	0	628	OK
100	Vendor Specific	0x0032	100	100	0	2839488	OK
101	Vendor Specific	0x0032	100	100	0	502848	OK
170	Reserved Block Count	0x0032	100	100	0	0	OK
171	Program Fail Count (Kingston SSD)	0x0032	100	100	0	0	OK
172	Erase Fail Block Count (Kingston SSD)	0x0032	100	100	0	0	OK

Figure 47: Disk Health (3 of 3)

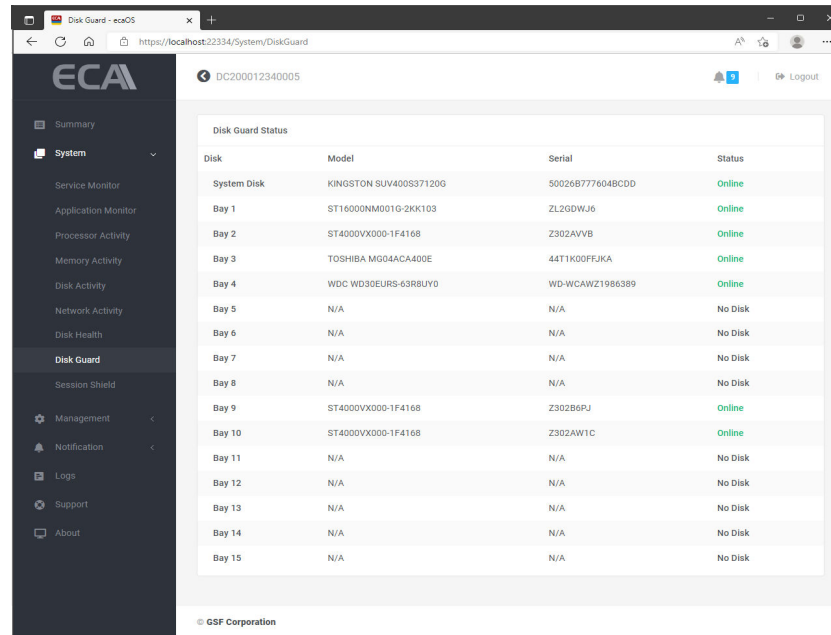
**NOTE:**

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

## 8.8 Disk Guard

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. Disk Guard monitors HDD insertion and removal events on the ECA.



Disk	Model	Serial	Status
System Disk	KINGSTON SUV400S37120G	5002687776048C0D	Online
Bay 1	ST1600NM001G-2KK103	ZL2GDWJ6	Online
Bay 2	ST4000VX000-1F4168	Z302AVVB	Online
Bay 3	TOSHIBA MG04ACA400E	44T1K00FFJKA	Online
Bay 4	WDC WD30EURS-63R8UY0	WD-WCAWZ1986389	Online
Bay 5	N/A	N/A	No Disk
Bay 6	N/A	N/A	No Disk
Bay 7	N/A	N/A	No Disk
Bay 8	N/A	N/A	No Disk
Bay 9	ST4000VX000-1F4168	Z302B6PJ	Online
Bay 10	ST4000VX000-1F4168	Z302AW1C	Online
Bay 11	N/A	N/A	No Disk
Bay 12	N/A	N/A	No Disk
Bay 13	N/A	N/A	No Disk
Bay 14	N/A	N/A	No Disk
Bay 15	N/A	N/A	No Disk

Figure 48: Disk Guard

Disk list shown depending on the ECA model:

- ECA-FX44: System Disk, Bay 1 – Bay 15
- ECA-EX44: System Disk, Bay 1 – Bay 10 & HD1
- ECA-DX44: System Disk, Bay 1 – Bay 5, HDD1, HDD 2
- ECA-MX44: System Disk, HDD1, HDD 2
- ECA-VW44: System Disk, HDD1, HDD 2

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.

**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.



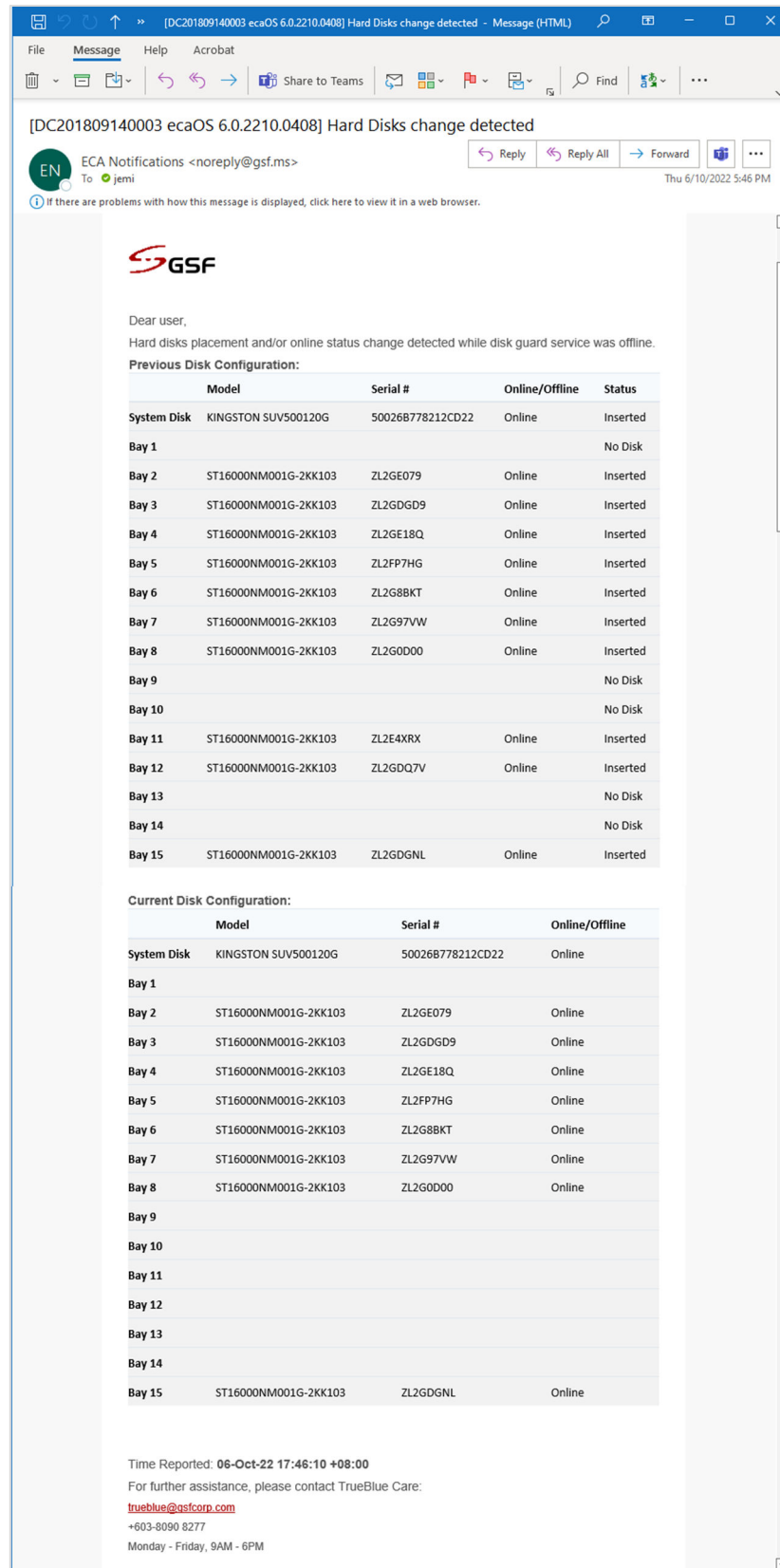
Bay 12	ZL2GDQ7V	ST1600NM001G-2KK103	Removed	Acknowledge
--------	----------	---------------------	---------	-------------

Figure 49: Disk removed

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

## 8.8.1 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

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	500268778212CD22	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	ZL2E4XRK	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	500268778212CD22	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 50: Hard Disks change detected (1 of 1)

## 8.9 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.

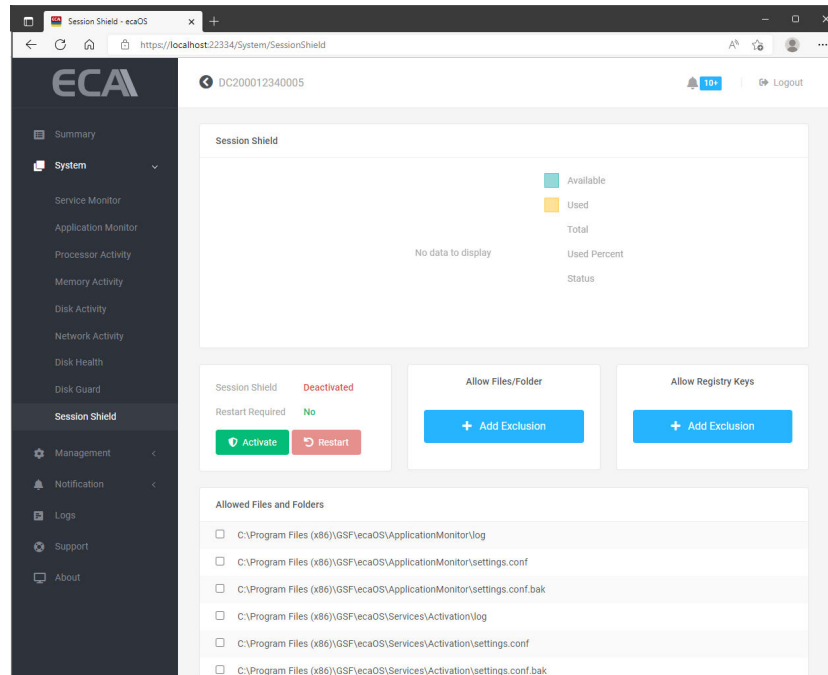


Figure 51: Session Shield

### 8.9.1 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'

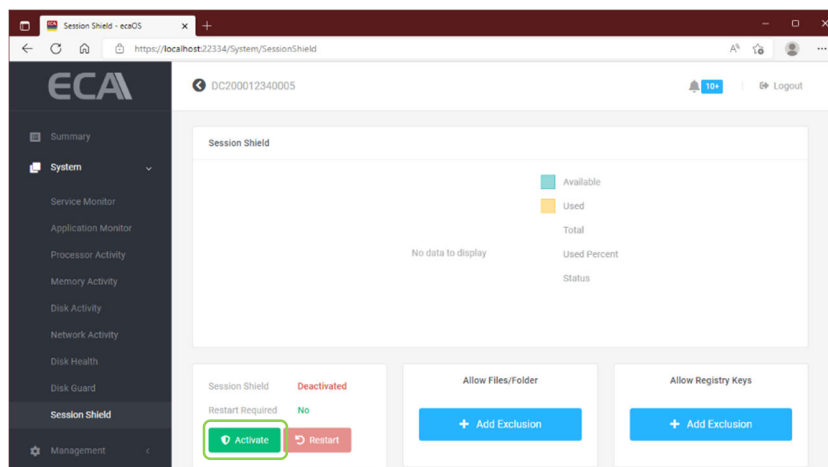


Figure 52: Activate Session Shield (1 of 5)

2. Click 'Change Settings' to save the setting

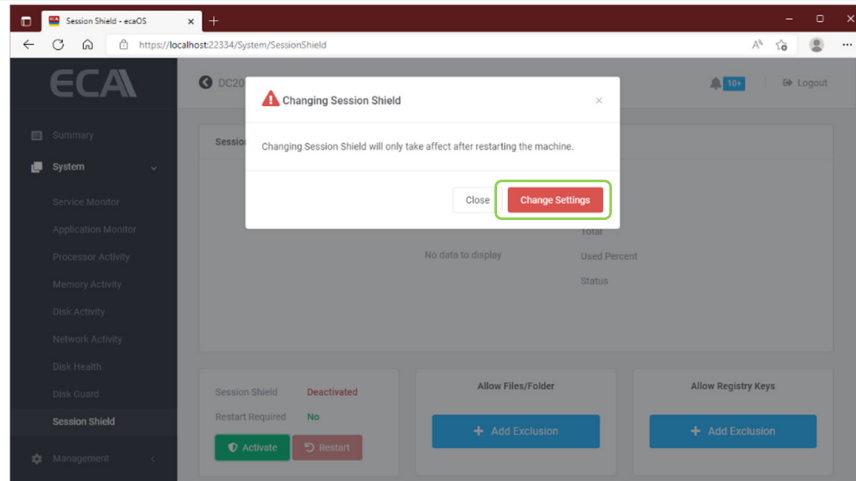


Figure 53: Activate Session Shield (2 of 5)

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

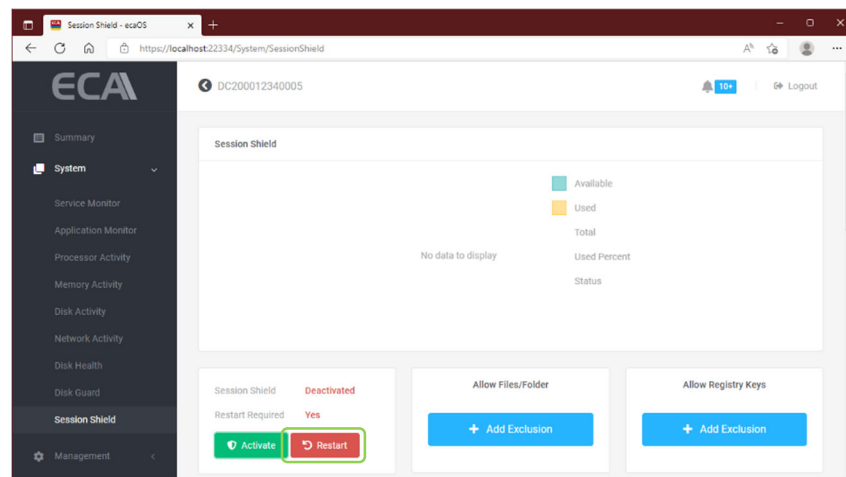


Figure 54: Activate Session Shield (4 of 6)

- Type Restart then click 'Restart' button

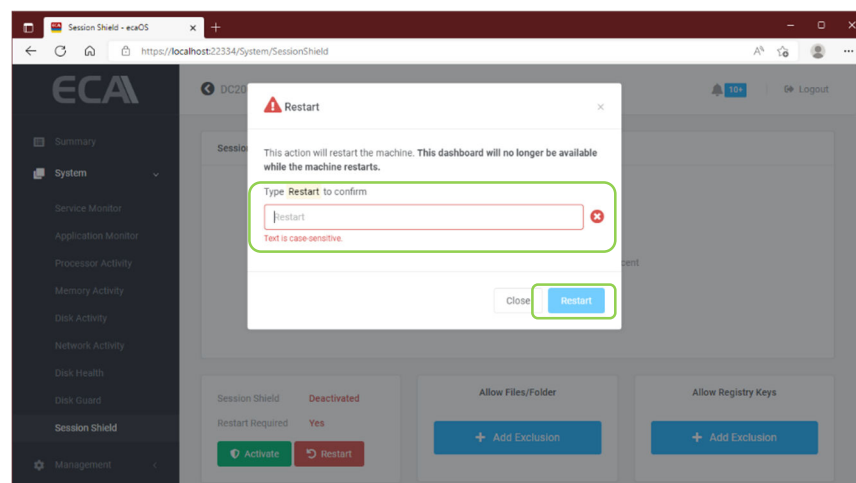
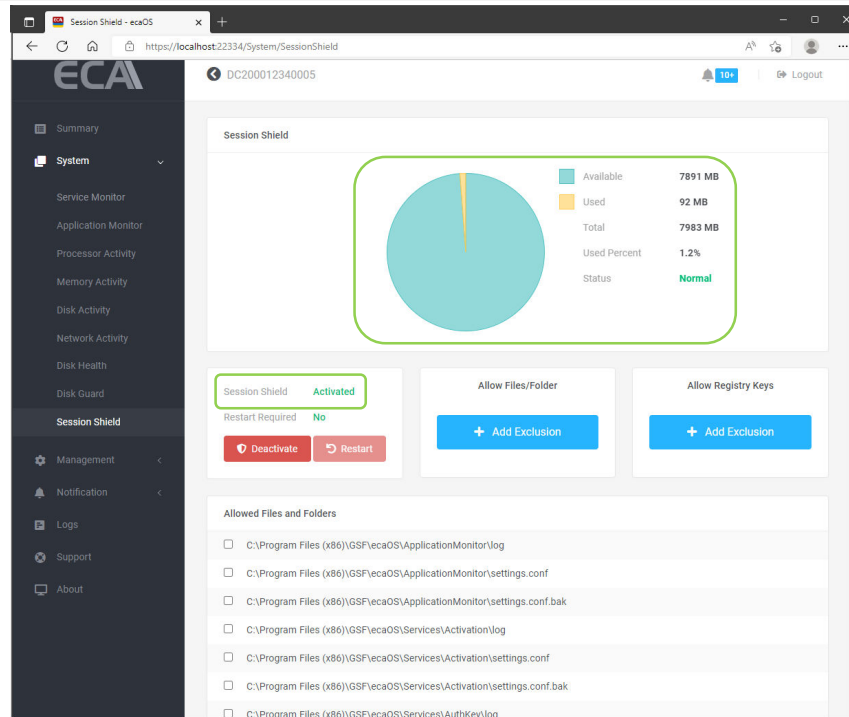


Figure 55: Activate Session Shield (5 of 6)

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



The screenshot displays the ECA Session Shield web interface. The left sidebar contains navigation options: Summary, System (expanded), Service Monitor, Application Monitor, Processor Activity, Memory Activity, Disk Activity, Network Activity, Disk Health, Disk Guard, Session Shield (selected), Management, Notification, Logs, Support, and About. The main content area shows the Session Shield status as 'Activated'. A pie chart displays memory usage: Available (7891 MB), Used (92 MB), Total (7983 MB), Used Percent (1.2%), and Status (Normal). Below the chart are three configuration panels: 'Session Shield' (Activated) with 'Restart Required' set to 'No' and buttons for 'Deactivate' and 'Restart'; 'Allow Files/Folder' with an 'Add Exclusion' button; and 'Allow Registry Keys' with an 'Add Exclusion' button. A table titled 'Allowed Files and Folders' lists several file paths with checkboxes, including logs and settings files for Application Monitor and Services Activation.

File/Folder Path	Allowed
C:\Program Files (x86)\GSF\ecaOS\ApplicationMonitor\log	<input type="checkbox"/>
C:\Program Files (x86)\GSF\ecaOS\ApplicationMonitor\settings.conf	<input type="checkbox"/>
C:\Program Files (x86)\GSF\ecaOS\ApplicationMonitor\settings.conf.bak	<input type="checkbox"/>
C:\Program Files (x86)\GSF\ecaOS\Services\Activation\log	<input type="checkbox"/>
C:\Program Files (x86)\GSF\ecaOS\Services\Activation\settings.conf	<input type="checkbox"/>
C:\Program Files (x86)\GSF\ecaOS\Services\Activation\settings.conf.bak	<input type="checkbox"/>
C:\Program Files (x86)\GSF\ecaOS\Services\AuthKey\log	<input type="checkbox"/>

Figure 56: Activate Session Shield (6 of 6)

## 8.9.2 Deactivate Session Shield

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

1. Click on 'Deactivate'

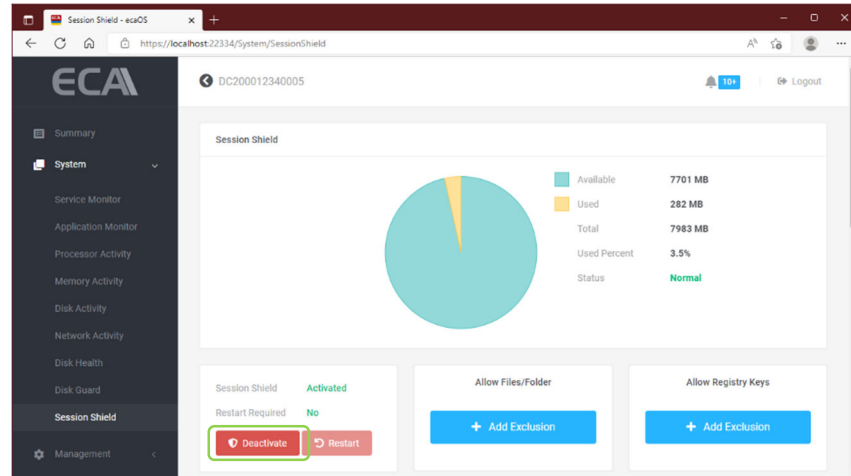


Figure 57: Deactivate Session Shield (1 of 3)

2. Click 'Change Settings' to save the setting

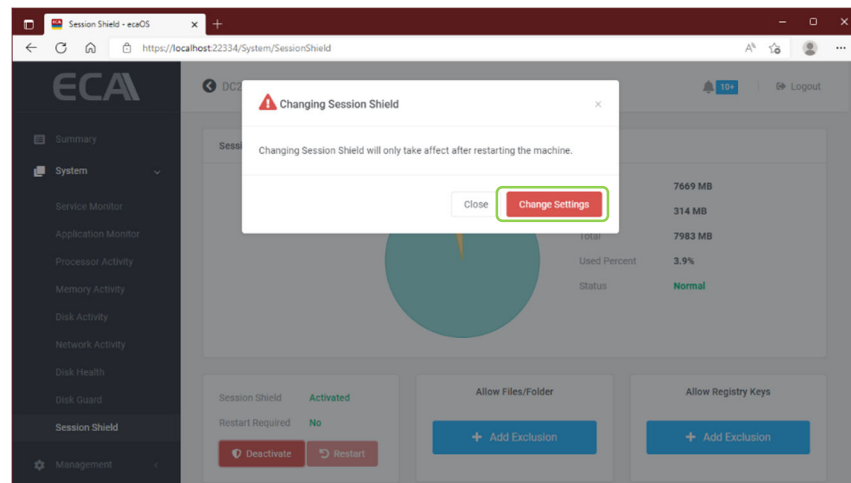


Figure 58: Deactivate Session Shield (2 of 3)

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

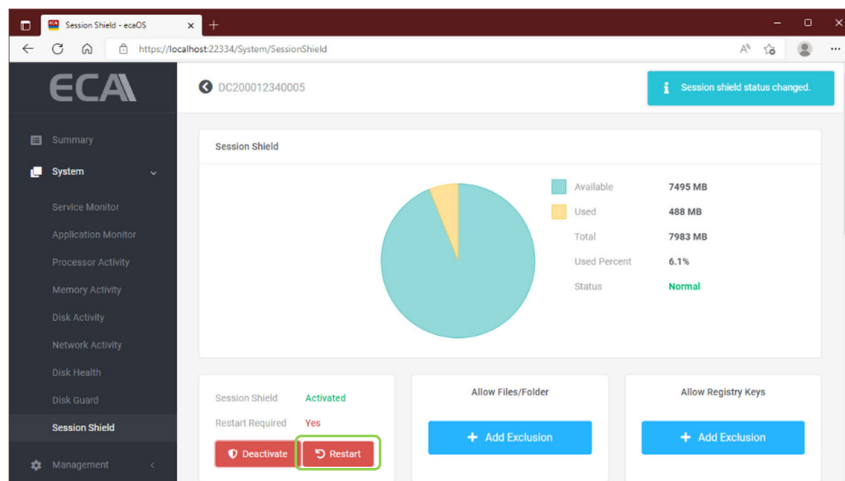


Figure 59: Deactivate Session Shield (2 of )



#### 4. Type Restart then click 'Restart' button

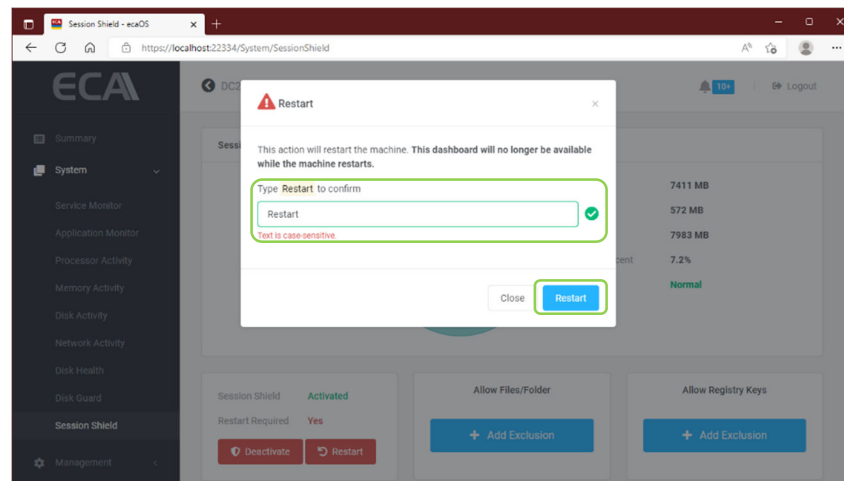


Figure 60: Deactivate Session Shield (3 of 3)

### 8.9.3 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\eca05\ProcessMonitor\log
C:\Program Files (x86)\GSF\eca05\ProcessMonitor\settings.conf
C:\Program Files (x86)\GSF\eca05\ProcessMonitor\settings.conf.bak
C:\Program Files (x86)\GSF\eca05\Services\Activation\log
C:\Program Files (x86)\GSF\eca05\Services\Activation\settings.conf
C:\Program Files (x86)\GSF\eca05\Services\Activation\settings.conf.bak
C:\Program Files (x86)\GSF\eca05\Services\AuthKey\log
C:\Program Files (x86)\GSF\eca05\Services\AuthKey\settings.conf
C:\Program Files (x86)\GSF\eca05\Services\AuthKey\settings.conf.bak
C:\Program Files (x86)\GSF\eca05\Services\AuthOtp\log
C:\Program Files (x86)\GSF\eca05\Services\AuthOtp\settings.conf
C:\Program Files (x86)\GSF\eca05\Services\AuthOtp\settings.conf.bak
C:\Program Files (x86)\GSF\eca05\Services\HB2Gateway\log
C:\Program Files (x86)\GSF\eca05\Services\HB2Gateway\settings.conf
C:\Program Files (x86)\GSF\eca05\Services\HB2Gateway\settings.conf.bak
C:\Program Files (x86)\GSF\eca05\Services\Log\log
C:\Program Files (x86)\GSF\eca05\Services\Log\settings.conf
C:\Program Files (x86)\GSF\eca05\Services\Log\settings.conf.bak
C:\Program Files\Microsoft SQL Server\MSSQL15.SQLEXPRESS\MSSQL\DATA
C:\Program Files (x86)\GSF\eca05\Services\Machine\log
C:\Program Files (x86)\GSF\eca05\Services\Machine\settings.conf
C:\Program Files (x86)\GSF\eca05\Services\Machine\settings.conf.bak
C:\Program Files (x86)\GSF\eca05\Services\WindowsServiceMonitor\log
C:\Program Files (x86)\GSF\eca05\Services\WindowsServiceMonitor\settings.conf
C:\Program Files (x86)\GSF\eca05\Services\WindowsServiceMonitor\settings.conf.bak
C:\Program Files (x86)\GSF\eca05\Services\SessionShield\log
C:\Program Files (x86)\GSF\eca05\Services\SessionShield\settings.conf
C:\Program Files (x86)\GSF\eca05\Services\SessionShield\settings.conf.bak
C:\Program Files (x86)\GSF\eca05\Services\CPUMonitor\log
C:\Program Files (x86)\GSF\eca05\Services\CPUMonitor\Db
C:\Program Files (x86)\GSF\eca05\Services\CPUMonitor\appsettings.cpu_activity.json
C:\Program Files (x86)\GSF\eca05\Services\MemoryMonitor\log
C:\Program Files (x86)\GSF\eca05\Services\MemoryMonitor\Db
C:\Program Files (x86)\GSF\eca05\Services\MemoryMonitor\appsettings.memory_activity.json
C:\Program Files (x86)\GSF\eca05\Services\NetworkMonitor\log
C:\Program Files (x86)\GSF\eca05\Services\NetworkMonitor\Db
C:\Program Files (x86)\GSF\eca05\Services\NetworkMonitor\appsettings.network_activity.json
C:\Program Files (x86)\GSF\eca05\Services\DiskMonitor\log
C:\Program Files (x86)\GSF\eca05\Services\DiskMonitor\Db
C:\Program Files (x86)\GSF\eca05\Services\DiskMonitor\appsettings.disk_activity.json
C:\Program Files (x86)\GSF\eca05\Services\DiskHealth\log
C:\Program Files (x86)\GSF\eca05\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\ecaOS\Services\Notifier\Db
C:\Program Files (x86)\GSF\ecaOS\Services\Dashboard\log
C:\Program Files (x86)\GSF\ecaOS\Services\Dashboard\Db
C:\Program Files (x86)\GSF\ecaOS\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\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\Support\settings.conf
C:\Program Files (x86)\GSF\ecaOS\Services\Support\settings.conf.bak
C:\Program Files (x86)\GSF\ecaOS\Services\Support\TrueBlue\log
C:\Program Files (x86)\GSF\ecaOS\Services\Support\TrueBlue\Db
C:\Program Files (x86)\Google\Chrome Remote Desktop
C:\ProgramData\Google\Chrome Remote Desktop

```

## 8.9.4 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

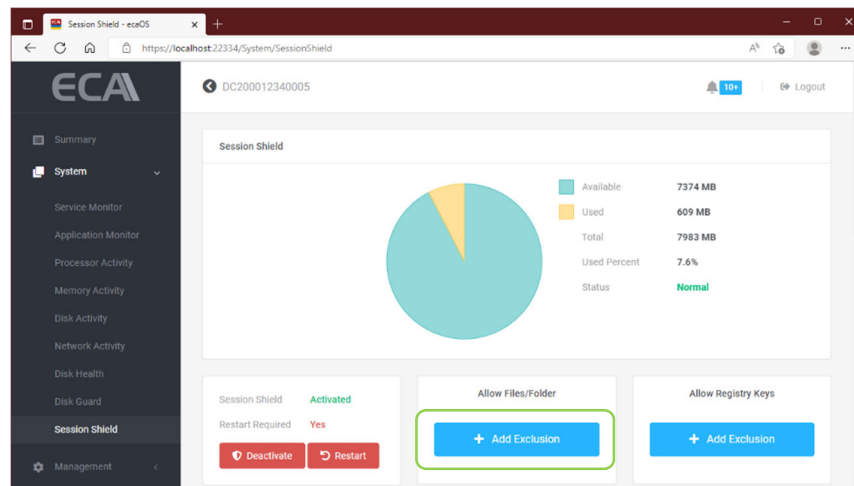


Figure 61: Allow Files/Folder (1 of 3)

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

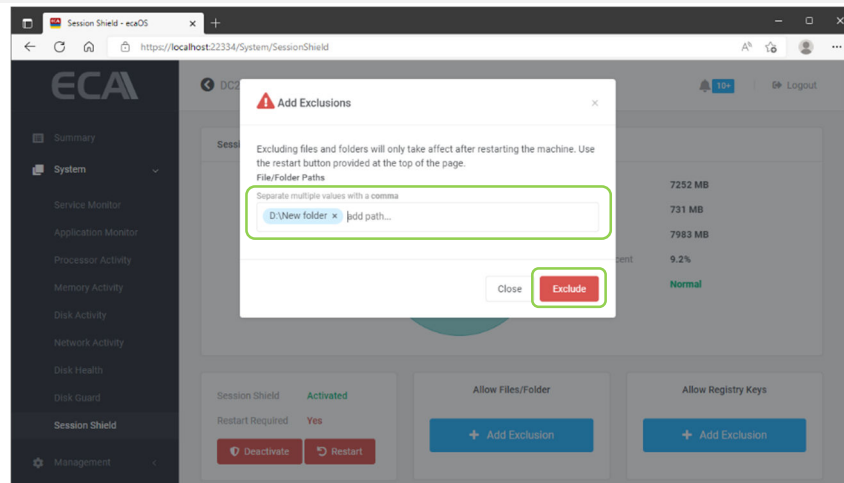


Figure 62: Allow Files/Folder (2 of 3)

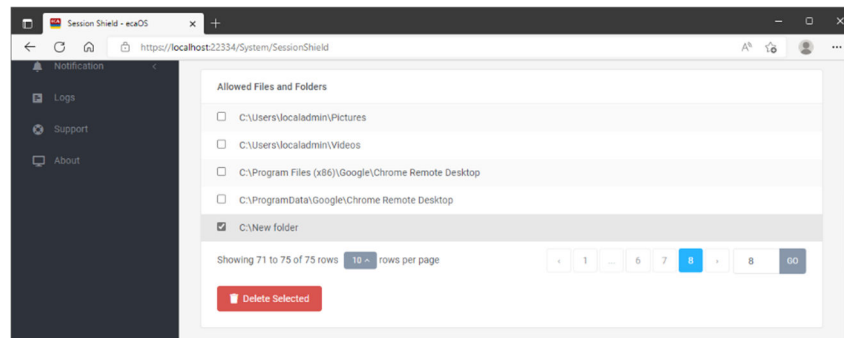


Figure 63: Allow Files/Folder (3 of 3)

## 8.9.5 Delete Exclusion Files or folder

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

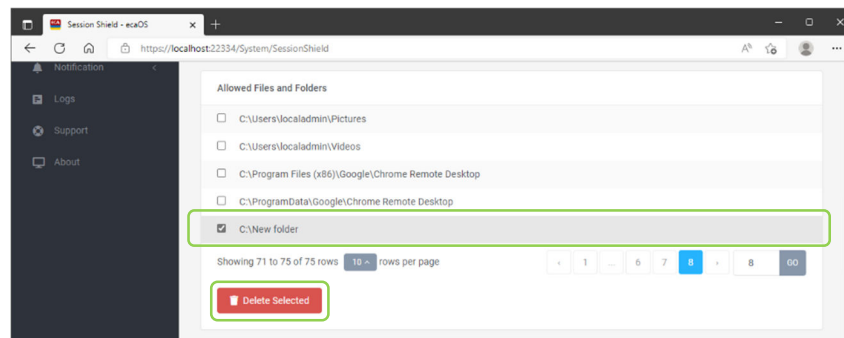


Figure 64: Delete Files/Folder (1 of 3)

2. Click 'Delete Exclusion' to confirm the operation

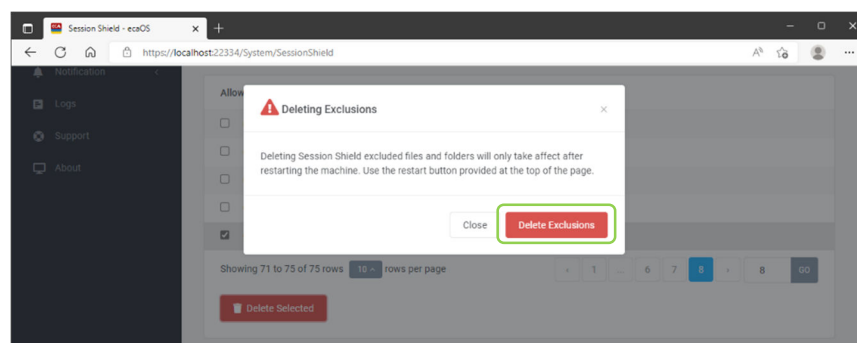


Figure 65: Delete Files/Folder (2 of 2)

## 8.9.6 Add Registry Keys

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

1. Click 'Add Exclusion' to add registry keys

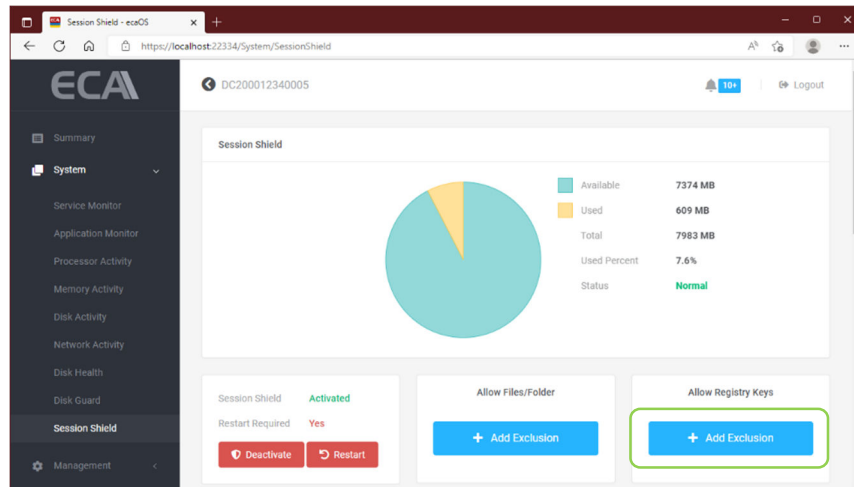


Figure 66: Allow Registry Keys (1 of 2)

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

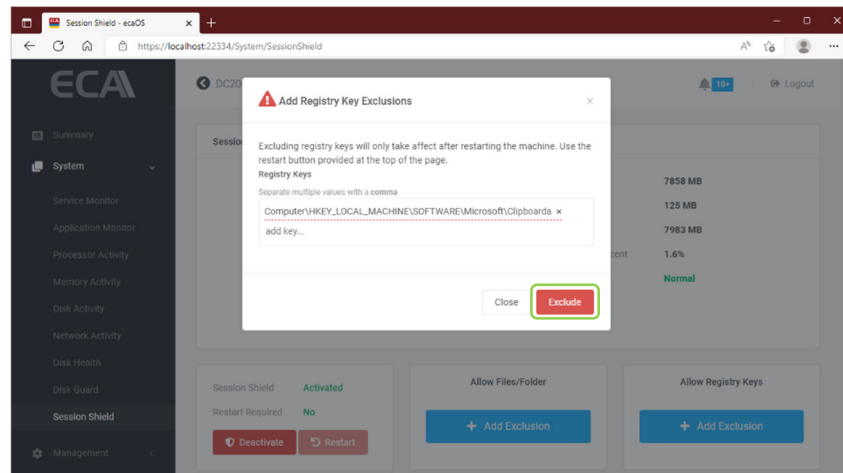


Figure 67: Allow Registry Keys (1 of 2)

## 8.9.7 Delete Exclusion Registry Key

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

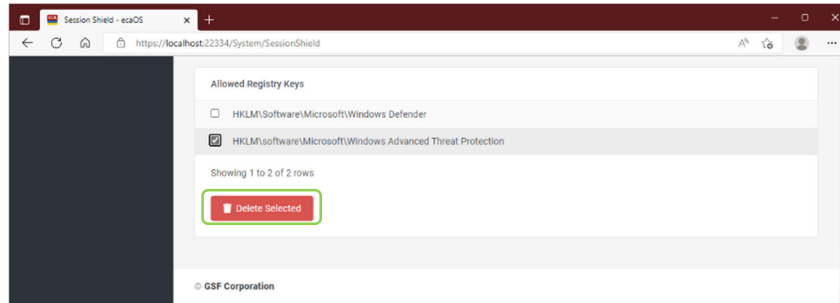


Figure 68: Delete Registry Key (1 of 2)

2. Click 'Delete Exclusion' to confirm the operation

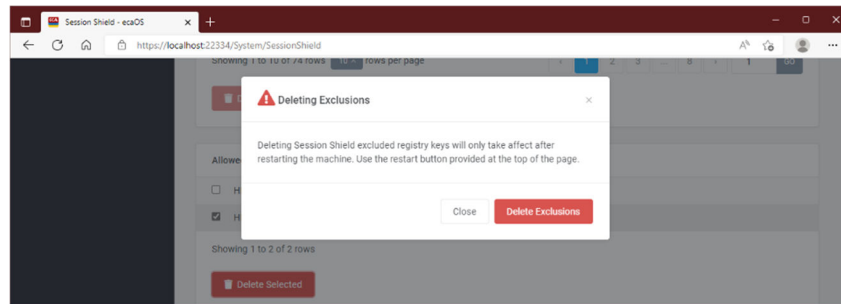


Figure 69: Delete Registry Key (2 of 2)

## 8.9.8 Status: Warning

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

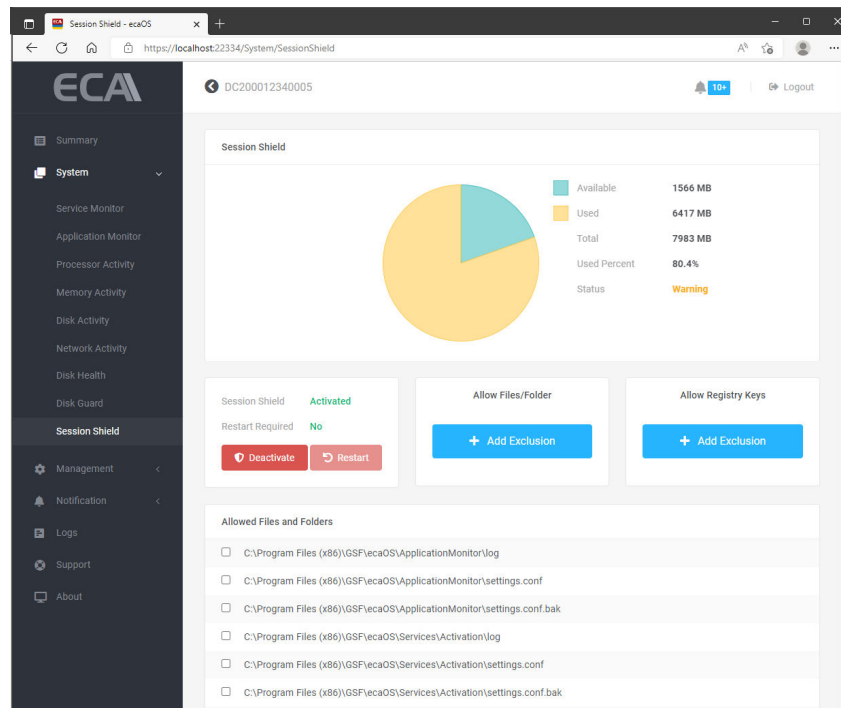


Figure 70: Warning Status

## 8.9.9 Status: Critical

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

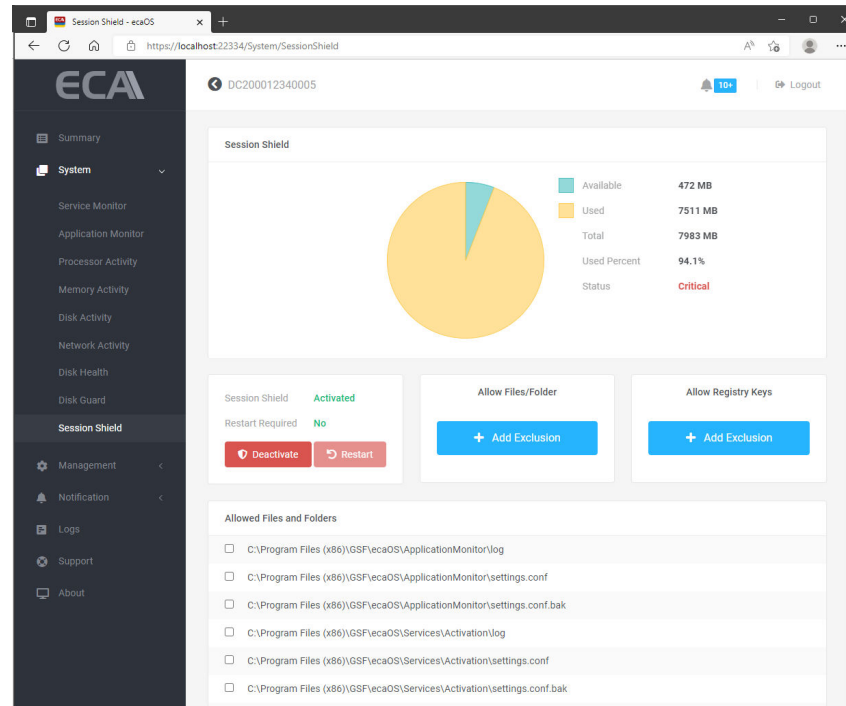


Figure 71: Critical Status

## 9 Management

### 9.1 General

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

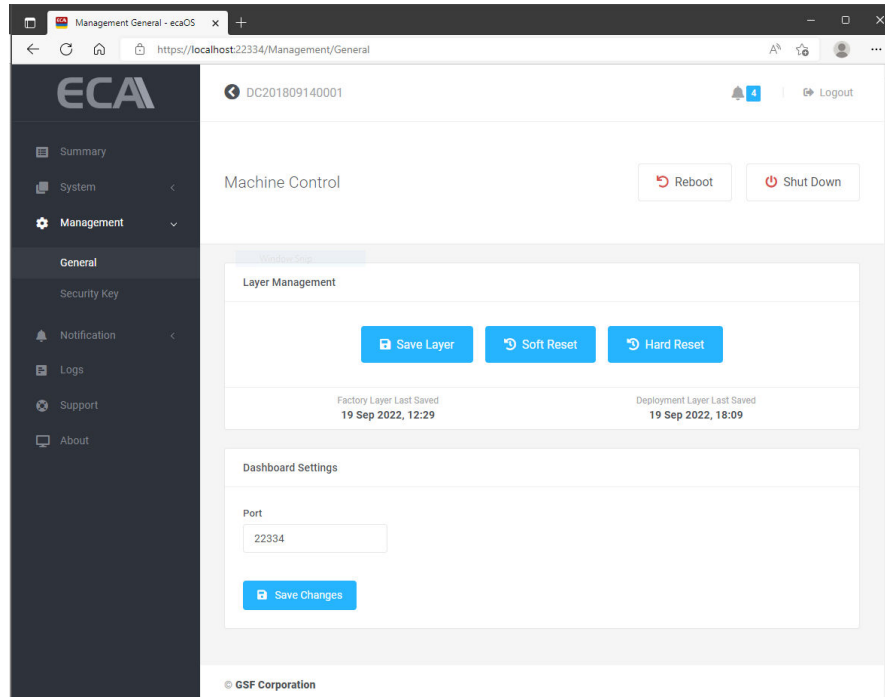


Figure 72: General

#### 9.1.1 Authorize Restart

Only restart through the Dashboard will consider as authorize restart.

1. Click on 'Restart'

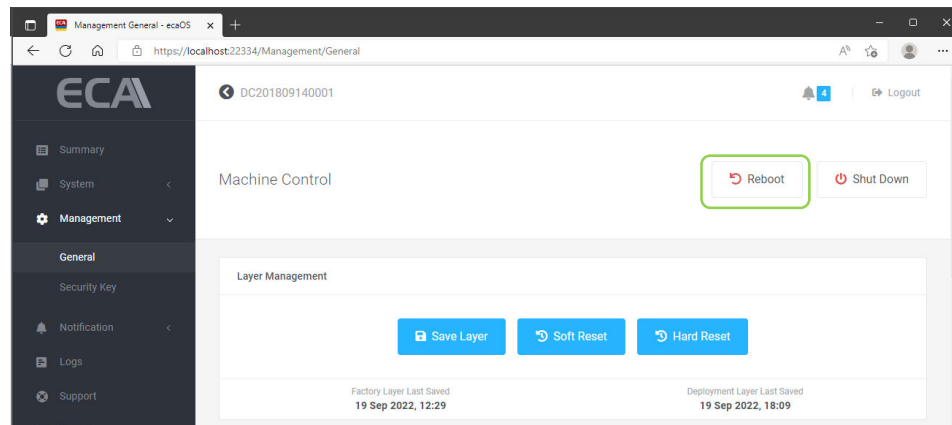


Figure 73: Authorize Restart (1 of 2)

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

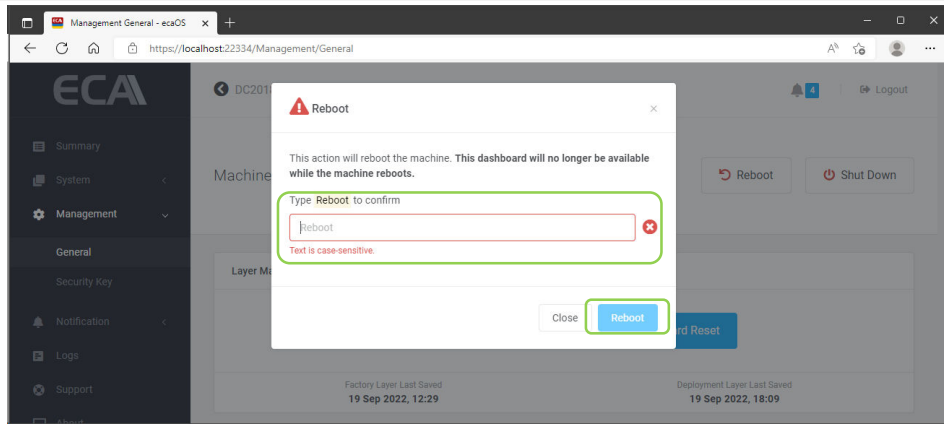


Figure 74: Authorize Restart (2 of 2)

## 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'

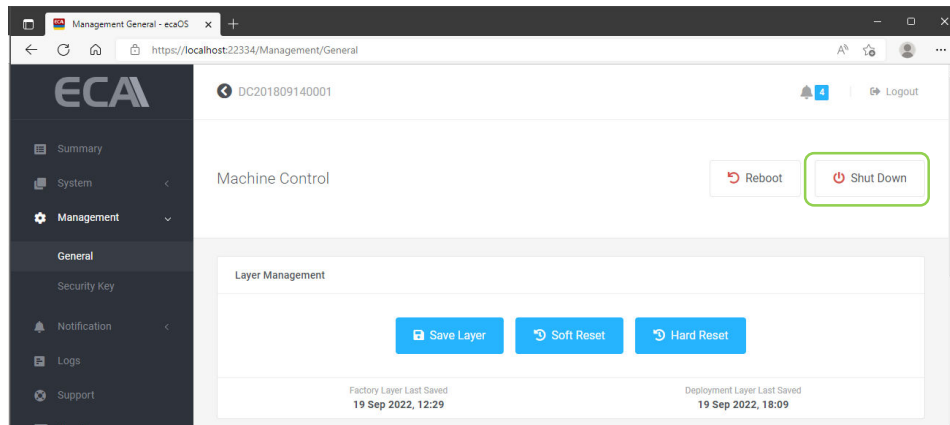


Figure 75: Authorize Shut Down (1 of 2)

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

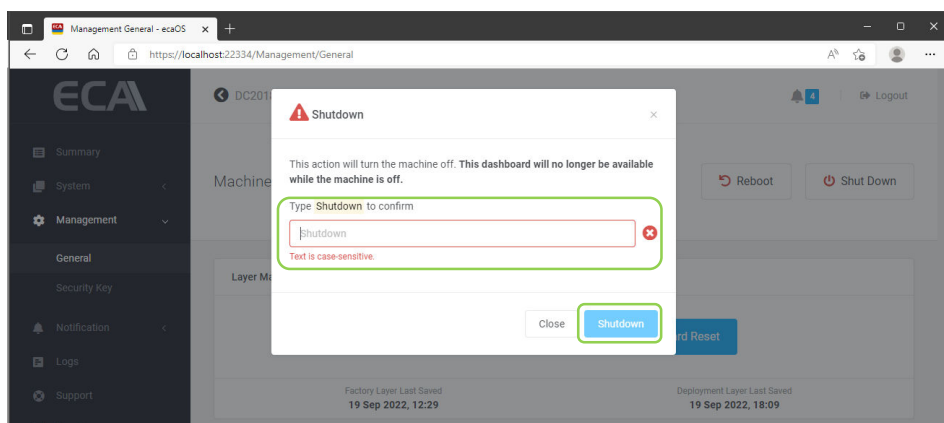


Figure 76: Authorize Shut Down (2 of 2)



## 9.2 Saving & Deploy Layer

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

### 9.2.1 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'

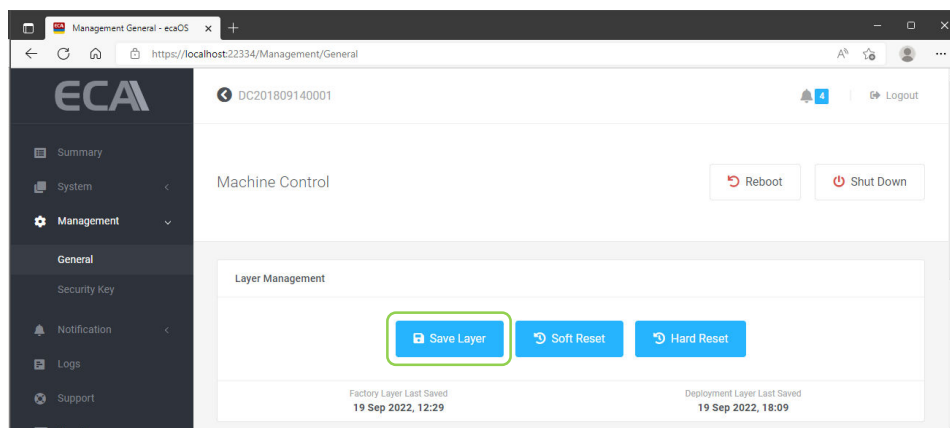


Figure 77: Save Layer (1 of 5)

1. ECA will reboot and go to Layer Manager.

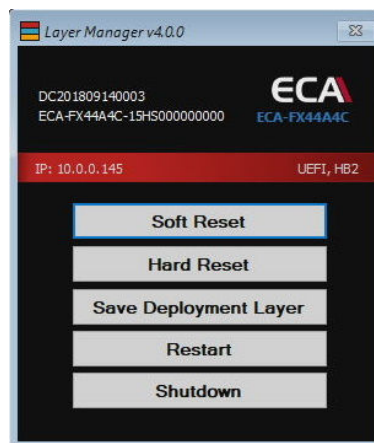


Figure 78: Save Layer (2 of 5)

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

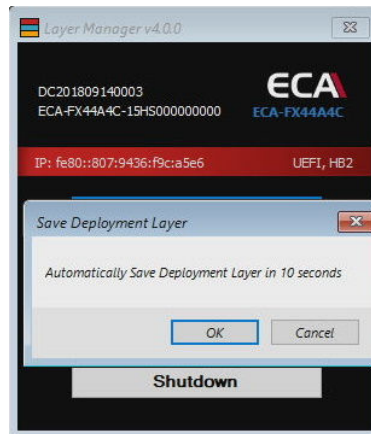


Figure 79: Save Layer (3 of 5)

- Saving layer in progress show with percentage

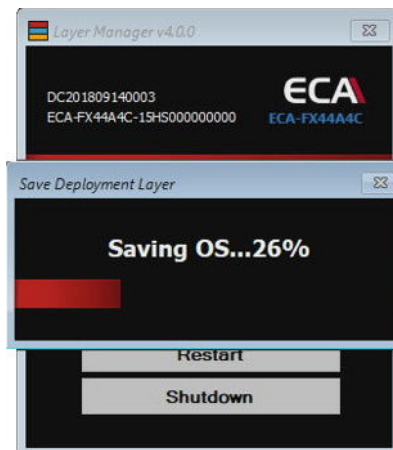


Figure 80: Save Layer (4 of 5)

- ECA will reboot to ecaOS after complete saving layer.

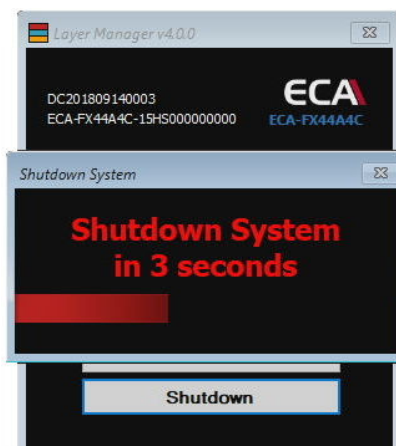


Figure 81: Save Layer (5 of 5)

## 9.2.2 Soft Reset

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

1. Click on 'Soft Reset'

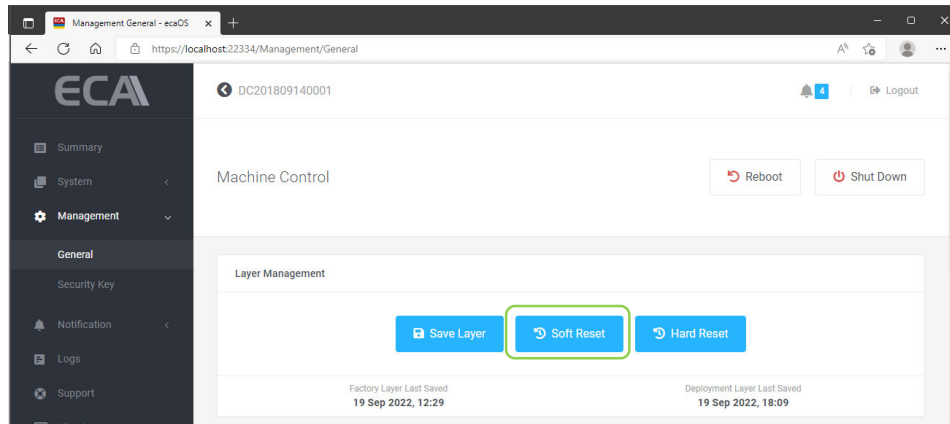


Figure 82: Soft Reset (1 of 5)

3. ECA will reboot and go to Layer Manager.

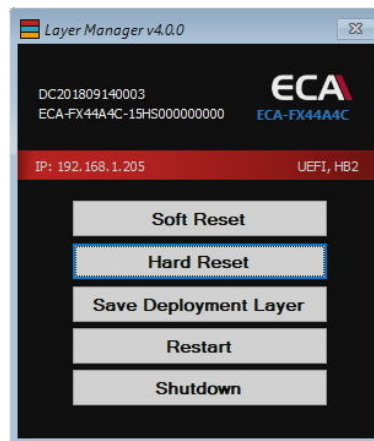


Figure 83: Save Layer (2 of 5)

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

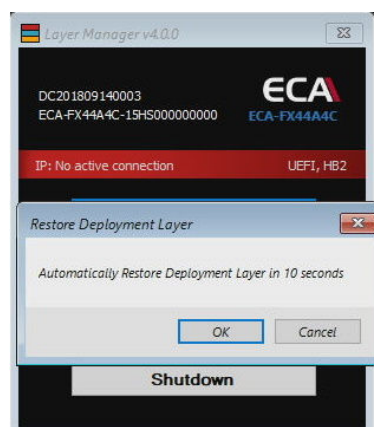


Figure 84: Save Layer (3 of 5)

- Restoring layer in progress show with percentage

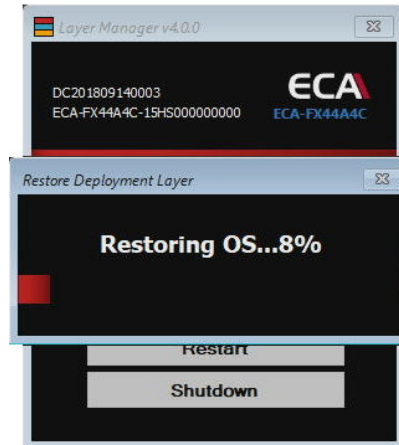


Figure 85: Save Layer (4 of 5)

- ECA will reboot to ecaOS after complete saving layer.



Figure 86: Save Layer (5 of 5)

### 9.2.3 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'

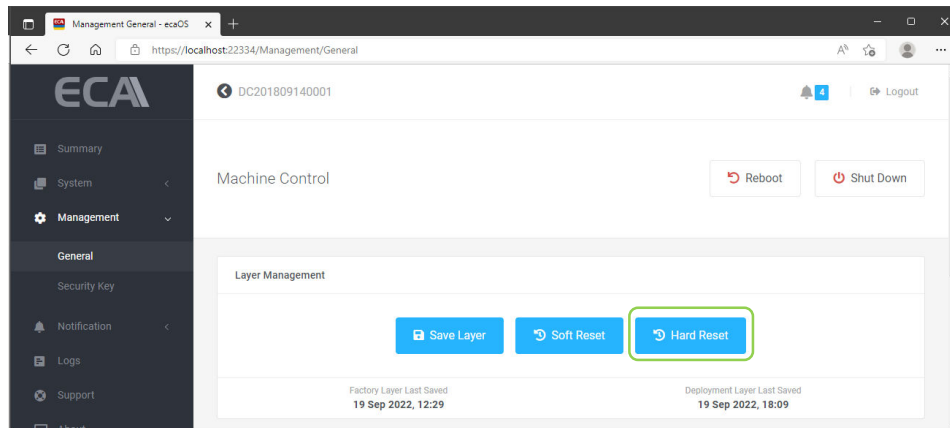


Figure 87: Soft Reset (1 of 2)

5. ECA will reboot and go to Layer Manager.

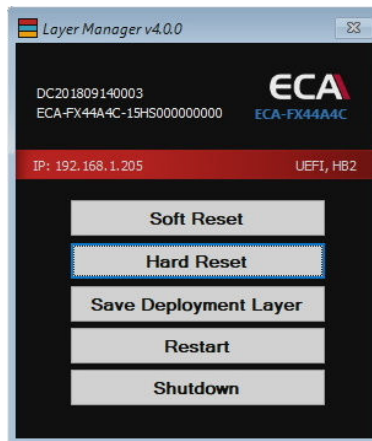


Figure 88: Save Layer (2 of 5)

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

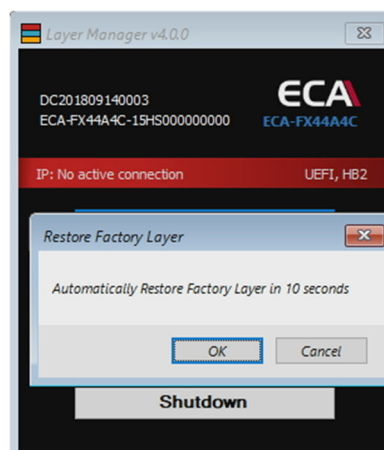


Figure 89: Save Layer (3 of 5)

7. Restoring layer in progress show with percentage

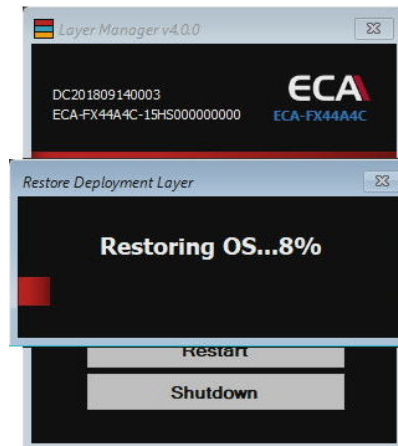


Figure 90: Save Layer (4 of 5)

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

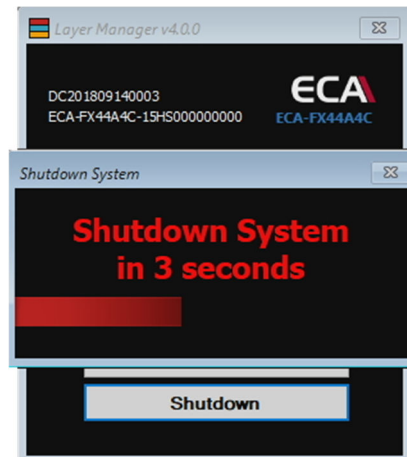


Figure 91: Save Layer (5 of 5)

## 9.2.4 Last Saved Layer Information

Display the last date and time of the layer last saved

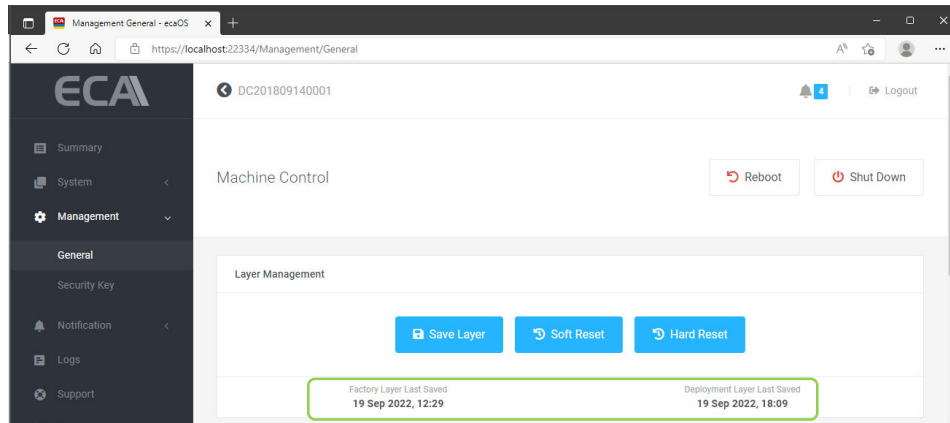


Figure 92: Information about the last saved layer

## 9.3 Change Dashboard Port

By default, port 22334 is use ECA for remotely access Dashboard from another machine via local LAN. Modify this port if the default ports already in use.

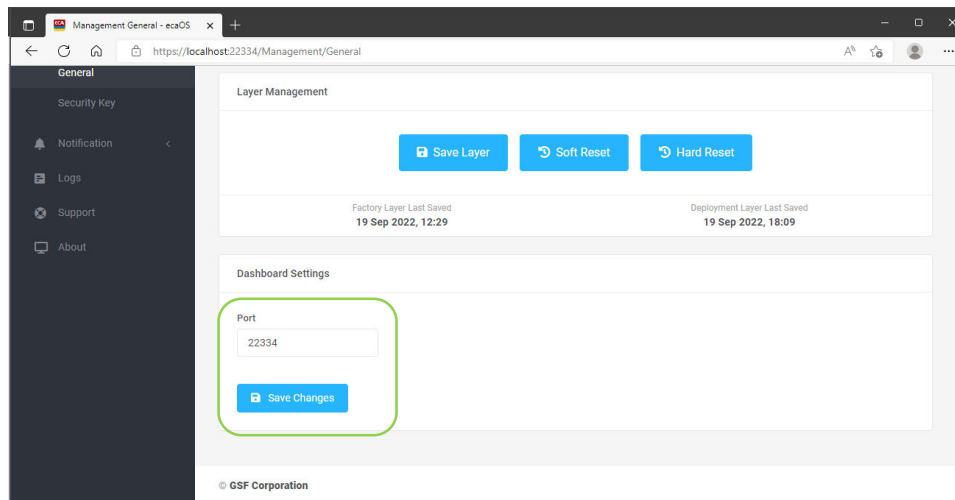


Figure 93: Port settings for Dashboard

## 9.4 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

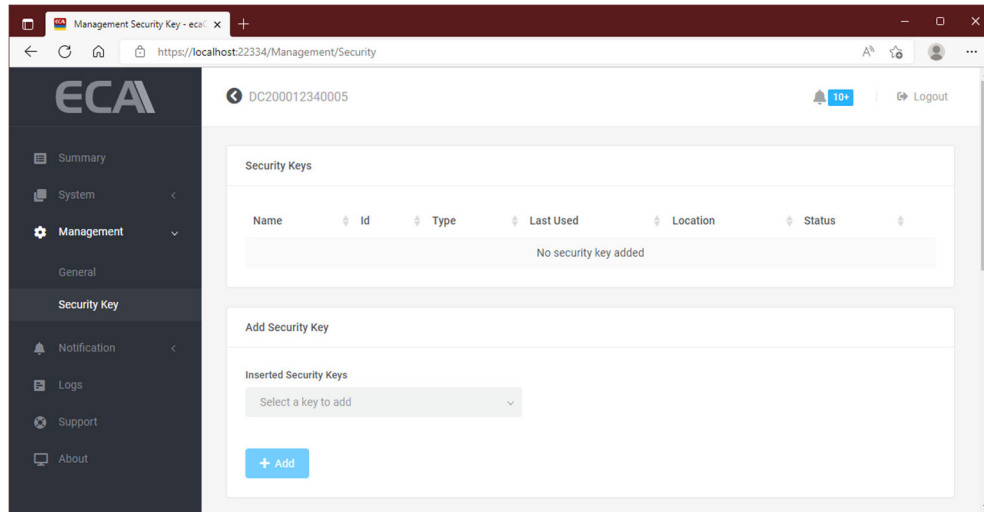


Figure 94: Security Key

### 9.4.1 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.

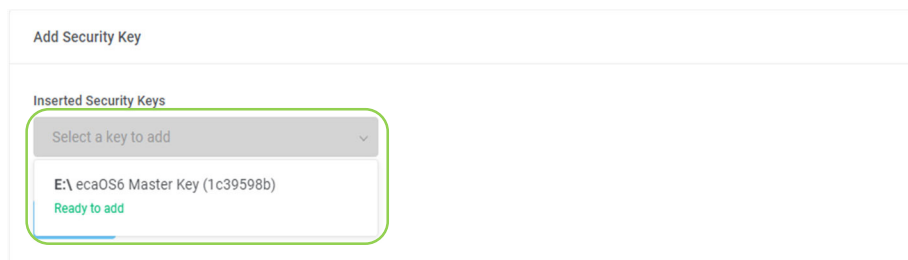


Figure 95: Register security key (1 of 3)

3. Click Add to register

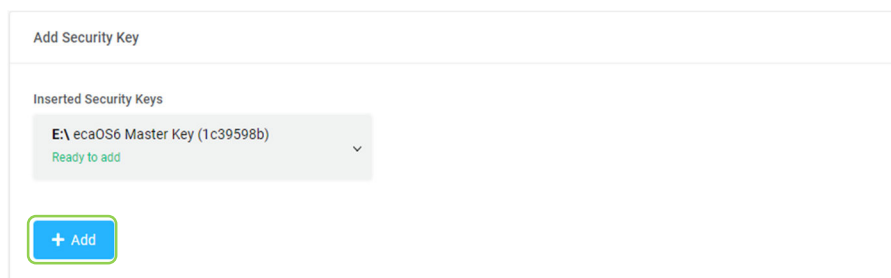


Figure 96: Register security key (2 of 3)



- Once successfully added the Security Key. The new security key will show under '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 97: Register security key (3 of 3)

## 9.4.2 Delete Security Key

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

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 98: 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 99: Delete security key (1 of 2)

### 9.4.3 Add Virtual Security Key

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

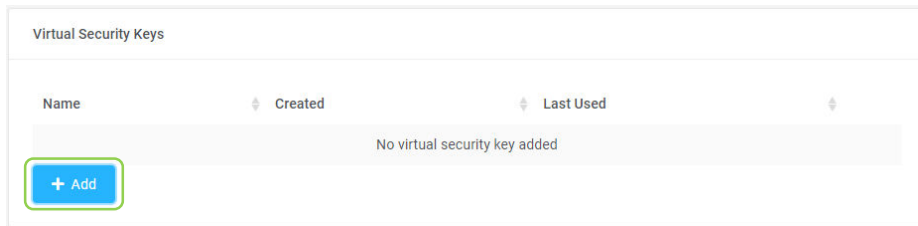


Figure 100: Add virtual security key (1 of 5)

2. Click 'Next' button

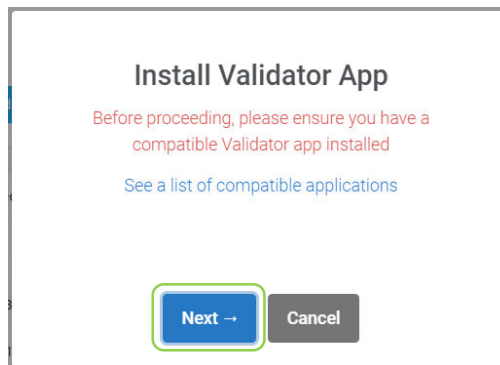


Figure 101: Add virtual security key (2 of 5)

3. Give the new virtual security key a name

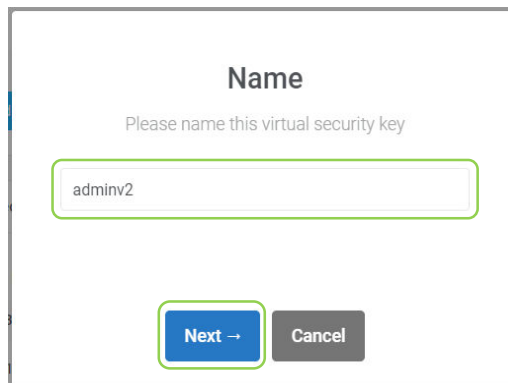
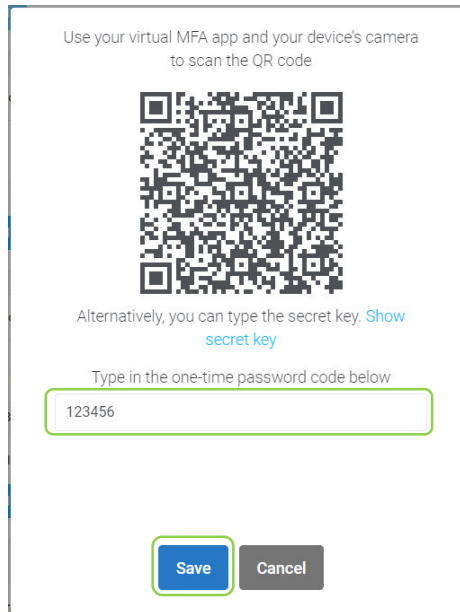



Figure 102: Add virtual security key (3 of 5)

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

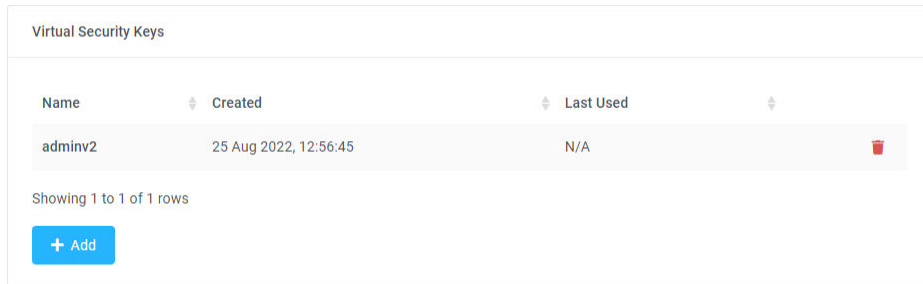



Alternatively, you can type the secret key. [Show secret key](#)

Type in the one-time password code below

Figure 103: Add virtual security key (4 of 5)

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



Name	Created	Last Used	
adminv2	25 Aug 2022, 12:56:45	N/A	

Showing 1 to 1 of 1 rows

Figure 104: Add virtual security key (5 of 5)

## 9.4.4 Delete Virtual Security Key

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

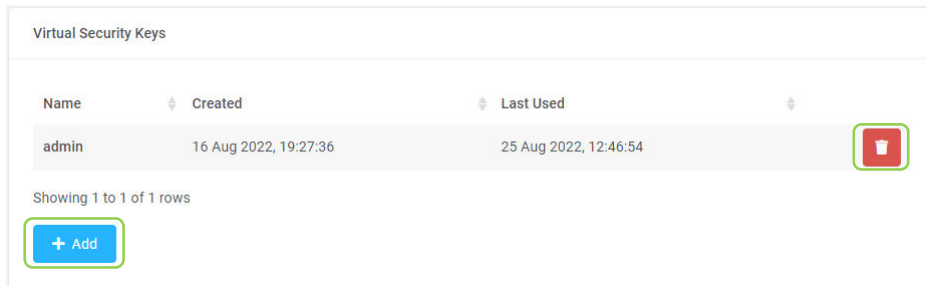


Figure 105: Delete Virtual Security Key (1 of 1)

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

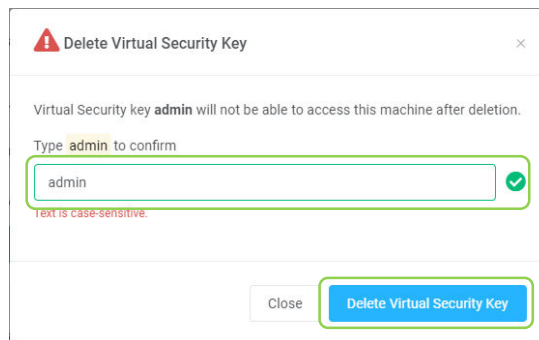


Figure 106: Delete Virtual Security Key (2 of 2)

## 10 Notification

### 10.1 Events

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

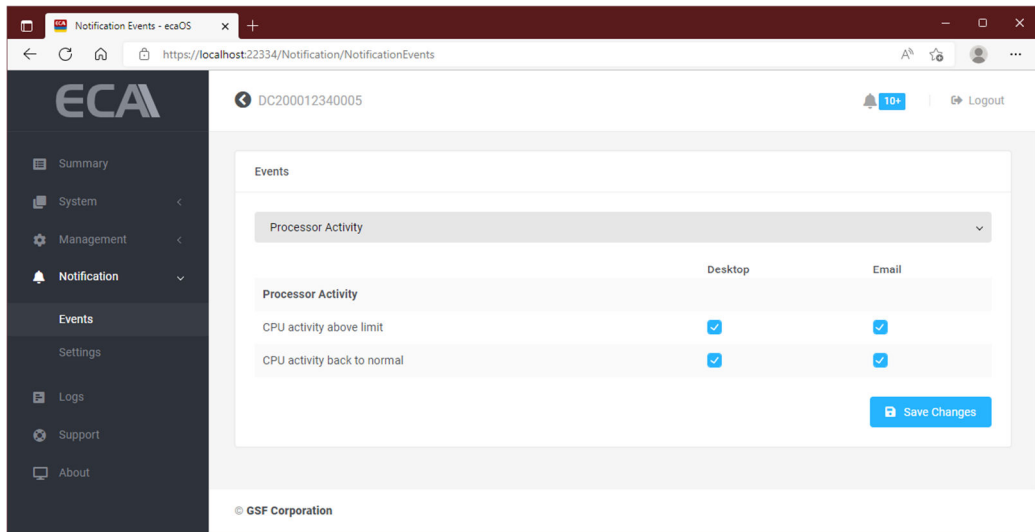


Figure 107: Events

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

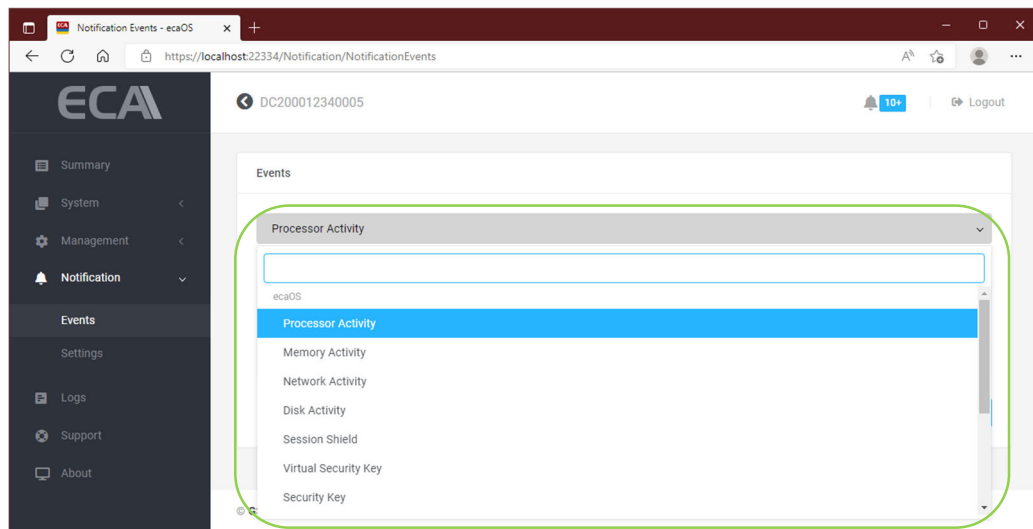


Figure 108: Select event (1 of 2)

2. Check the box to enable notification on the desktop or email and click 'Save Changes'

- 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

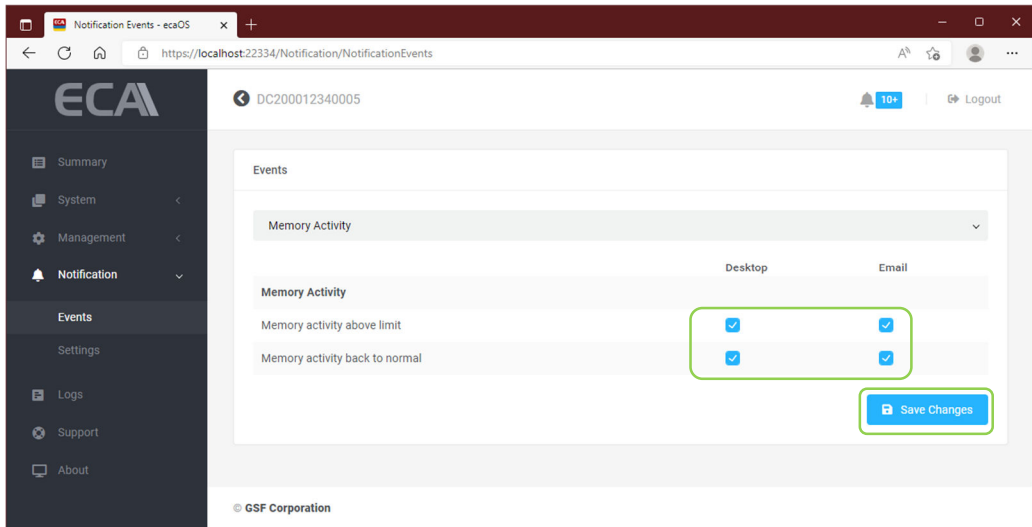


Figure 109: Select event (2 of 2)

### 10.1.1 Events List

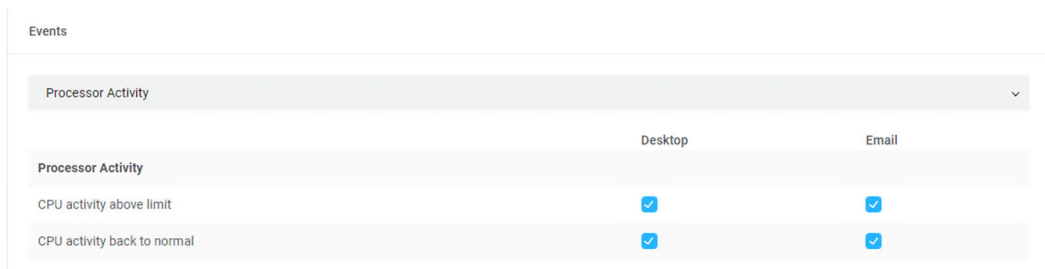


Figure 110: Processor Activity events notify setting



Figure 111: Memory Activity events notify setting

Events		
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"/>

Figure 112: 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 113: Disk Activity 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 114: 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 115: Virtual Security Key events notify setting

Events		
Security Key		
	Desktop	Email
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 116: Security Key events notify setting

Events		
Support		
	Desktop	Email
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 117: 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 118: 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 119: Disk Health events notify setting

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

Figure 120: Heartbeat firmware events notify setting

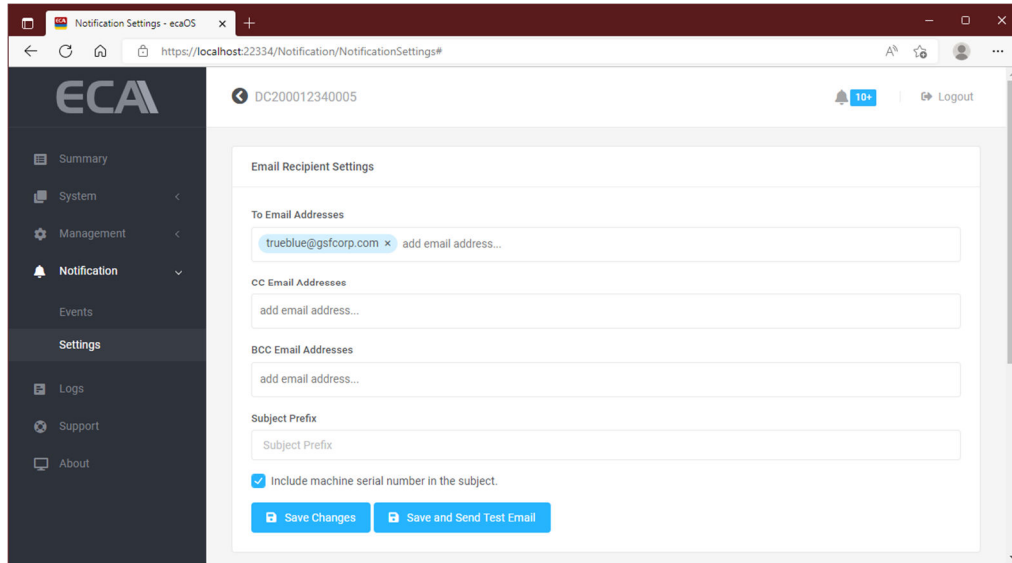
Events		
ECA Layer		
	Desktop	Email
<b>ECA Layer</b>		
Saving layer successful	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Saving layer failed	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Restoring layer successful	<input checked="" type="checkbox"/>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

Figure 121: ECA Layer events notify setting

## 10.2 Settings

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

### 10.2.1 Email Recipient Settings

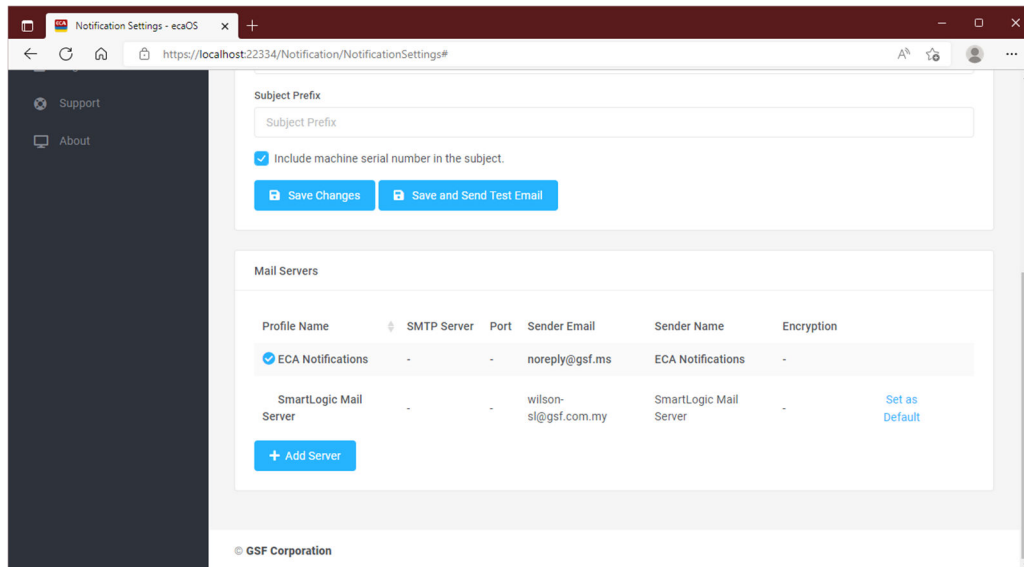


The screenshot shows the 'Email Recipient Settings' page in the ECA web interface. The page is titled 'Email Recipient Settings' and is located at the URL 'https://localhost:22334/Notification/NotificationSettings#'. The page includes a sidebar with navigation options: Summary, System, Management, Notification, Events, Settings, Logs, Support, and About. The main content area contains the following fields and options:

- To Email Addresses:** A text input field containing 'trueblue@gscorp.com' and a placeholder 'add email address...'.
- CC Email Addresses:** A text input field with a placeholder 'add email address...'.
- BCC Email Addresses:** A text input field with a placeholder 'add email address...'.
- Subject Prefix:** A text input field with a placeholder 'Subject Prefix'.
- Include machine serial number in the subject:** A checked checkbox.
- Buttons:** 'Save Changes' and 'Save and Send Test Email'.

Figure 122: Email Setting (1 of 2)

### 10.2.2 Mail Servers



The screenshot shows the 'Mail Servers' page in the ECA web interface. The page is titled 'Mail Servers' and is located at the URL 'https://localhost:22334/Notification/NotificationSettings#'. The page includes a sidebar with navigation options: Support and About. The main content area contains the following fields and options:

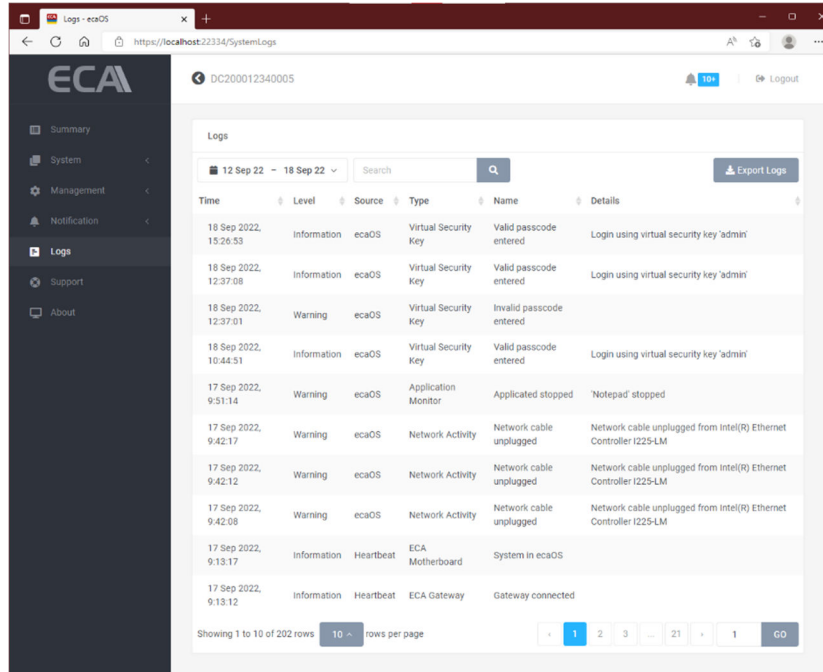
- Subject Prefix:** A text input field with a placeholder 'Subject Prefix'.
- Include machine serial number in the subject:** A checked checkbox.
- Buttons:** 'Save Changes' and 'Save and Send Test Email'.
- Mail Servers Table:**

Profile Name	SMTP Server	Port	Sender Email	Sender Name	Encryption
<input checked="" type="checkbox"/> ECA Notifications	-	-	noreply@gsf.ms	ECA Notifications	-
<input type="checkbox"/> SmartLogic Mail Server	-	-	wilson-sl@gsf.com.my	SmartLogic Mail Server	-
- Buttons:** '+ Add Server' and 'Set as Default' (next to SmartLogic Mail Server).

Figure 123: Email Setting (2 of 2)

## 11 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).



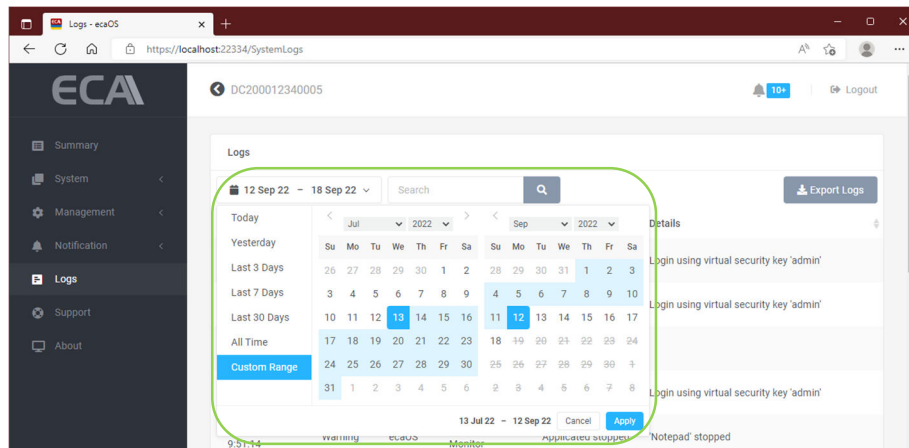
Time	Level	Source	Type	Name	Details
18 Sep 2022, 15:26:53	Information	ecaOS	Virtual Security Key	Valid passcode entered	Login using virtual security key 'admin'
18 Sep 2022, 12:37:08	Information	ecaOS	Virtual Security Key	Valid passcode entered	Login using virtual security key 'admin'
18 Sep 2022, 12:37:01	Warning	ecaOS	Virtual Security Key	Invalid passcode entered	
18 Sep 2022, 10:44:51	Information	ecaOS	Virtual Security Key	Valid passcode entered	Login using virtual security key 'admin'
17 Sep 2022, 9:51:14	Warning	ecaOS	Application Monitor	Applicated stopped	'Notepad' stopped
17 Sep 2022, 9:42:17	Warning	ecaOS	Network Activity	Network cable unplugged	Network cable unplugged from Intel(R) Ethernet Controller I225-LM
17 Sep 2022, 9:42:12	Warning	ecaOS	Network Activity	Network cable unplugged	Network cable unplugged from Intel(R) Ethernet Controller I225-LM
17 Sep 2022, 9:42:08	Warning	ecaOS	Network Activity	Network cable unplugged	Network cable unplugged from Intel(R) Ethernet Controller I225-LM
17 Sep 2022, 9:13:17	Information	Heartbeat	ECA Motherboard	System in ecaOS	
17 Sep 2022, 9:13:12	Information	Heartbeat	ECA Gateway	Gateway connected	

Figure 124: Log

### 11.1 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.



Filter	Calendar	Log Entry
Today	12 Sep 22	Login using virtual security key 'admin'
Yesterday	11 Sep 22	Login using virtual security key 'admin'
Last 3 Days	10, 11, 12 Sep 22	Login using virtual security key 'admin'
Last 7 Days	5, 6, 7, 8, 9 Sep 22	Login using virtual security key 'admin'
Last 30 Days	10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30 Sep 22	Login using virtual security key 'admin'
All Time	17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31 Sep 22	Login using virtual security key 'admin'
Custom Range	24, 25, 26, 27, 28, 29, 30 Sep 22	Notepad' stopped

Figure 125: Filter log

## 11.2 Exporting Log

1. Click on the 'Export Logs' button

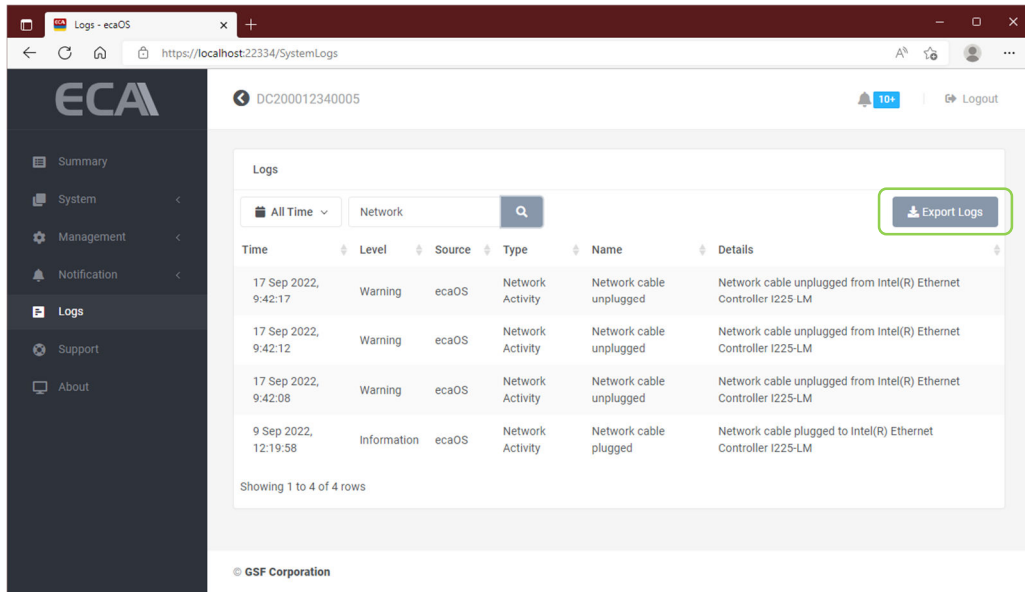


Figure 126: Export Log (1 of 8)

2. Click OK to start export the current log

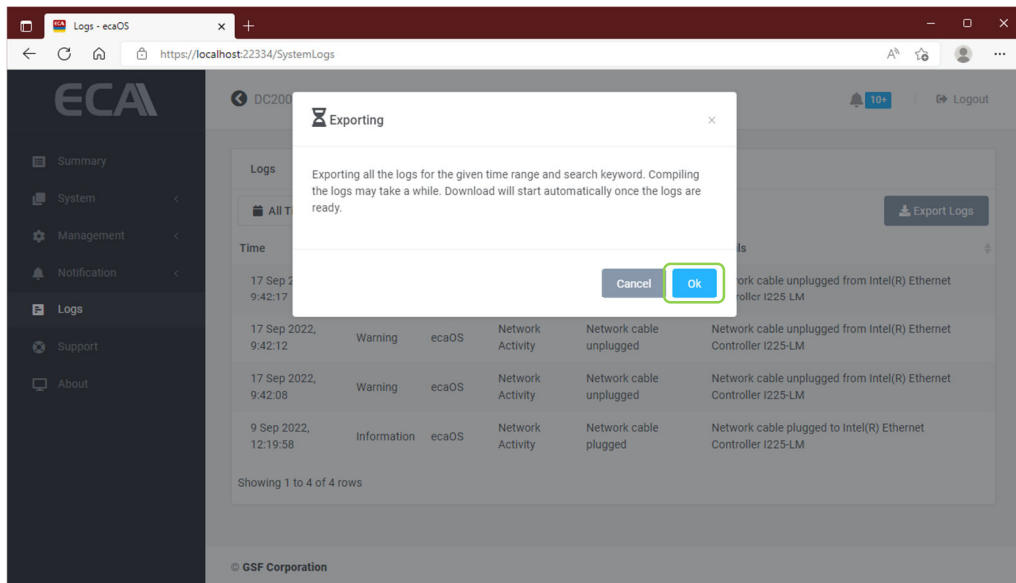


Figure 127: Export Log (2 of 8)

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

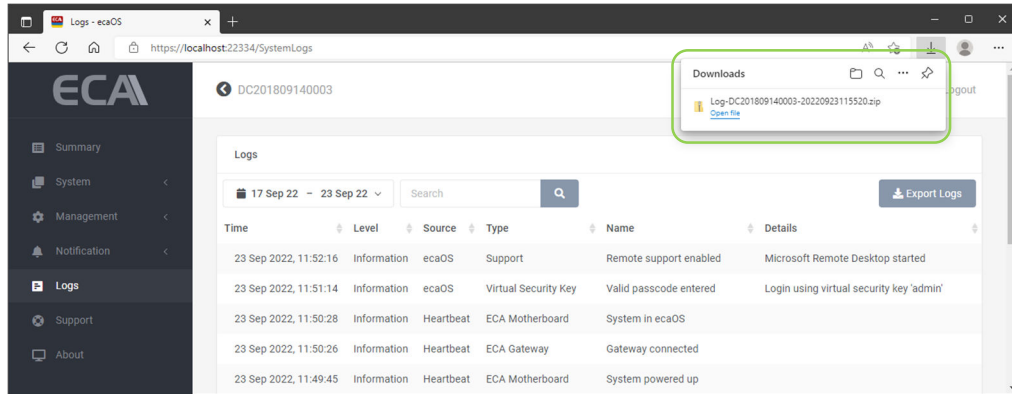


Figure 128: Export Log (3 of 8)

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

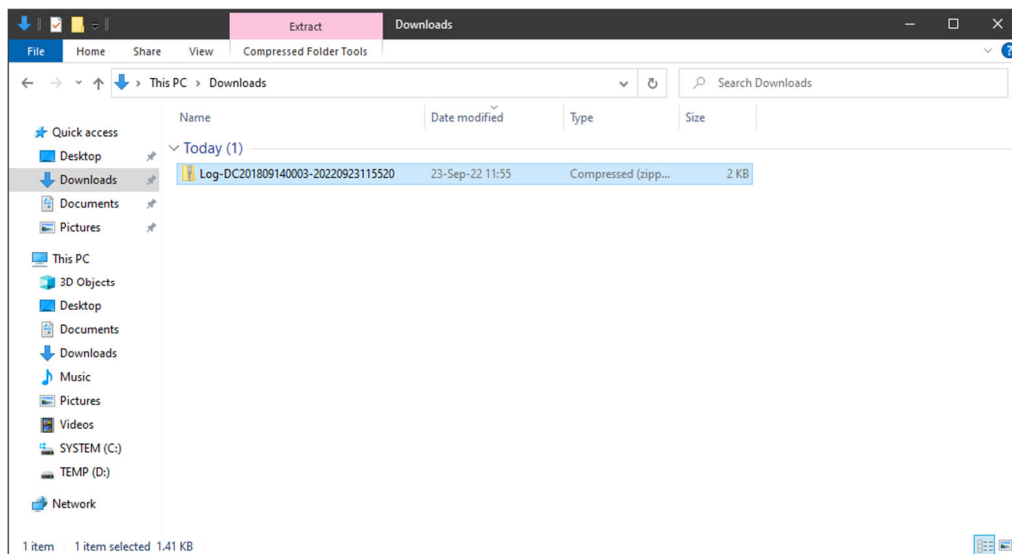


Figure 129: Exporting log (4 of 8)

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

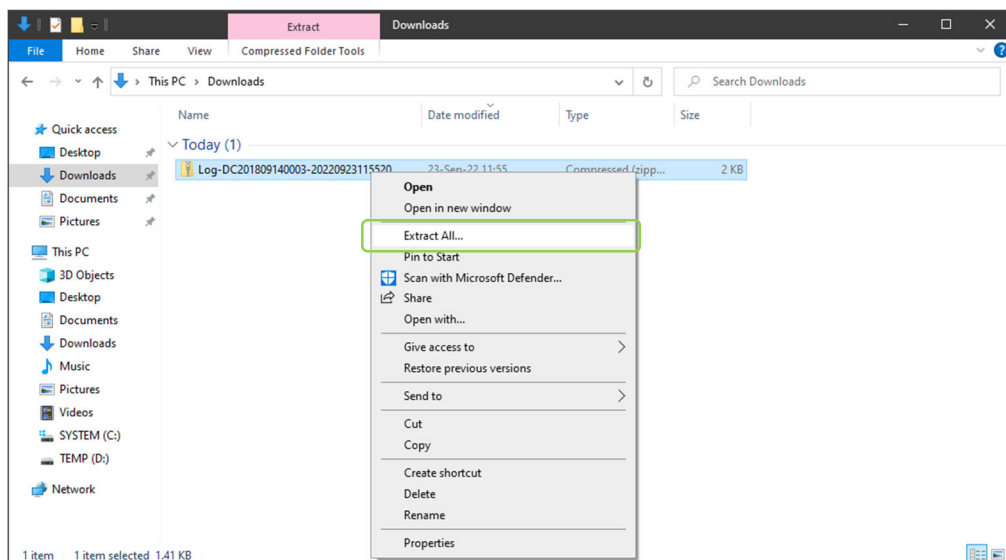


Figure 130: Exporting log (5 of 8)

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

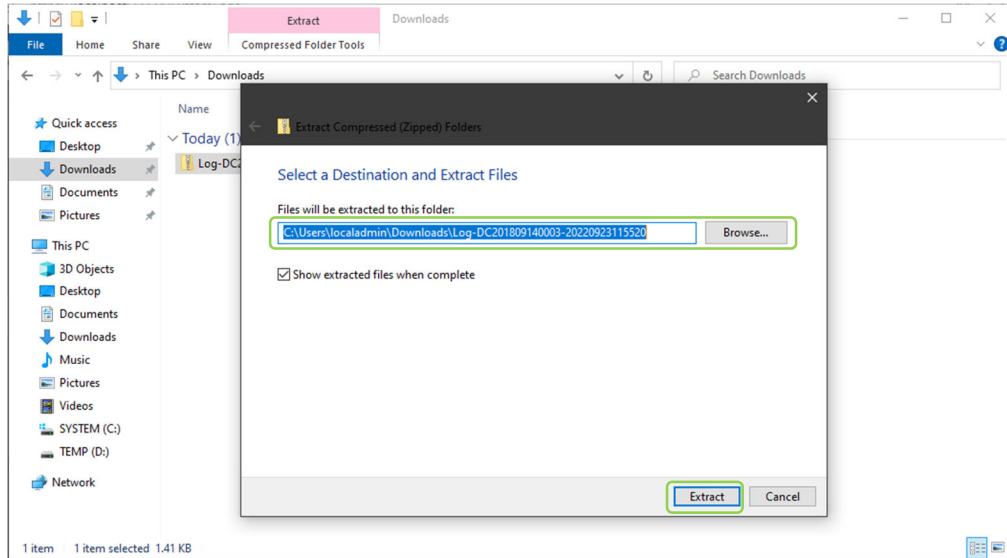


Figure 131: Exporting log (6 of 8)

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

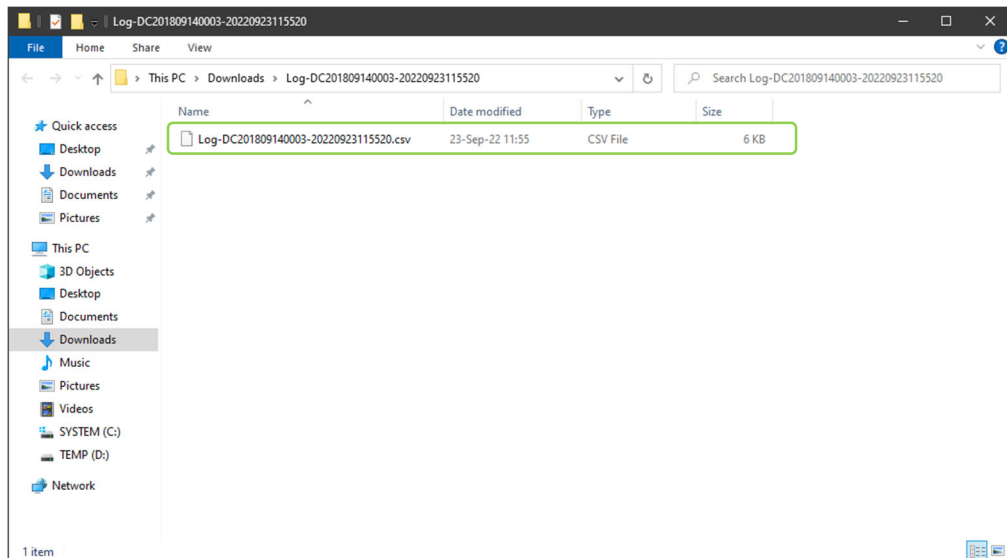
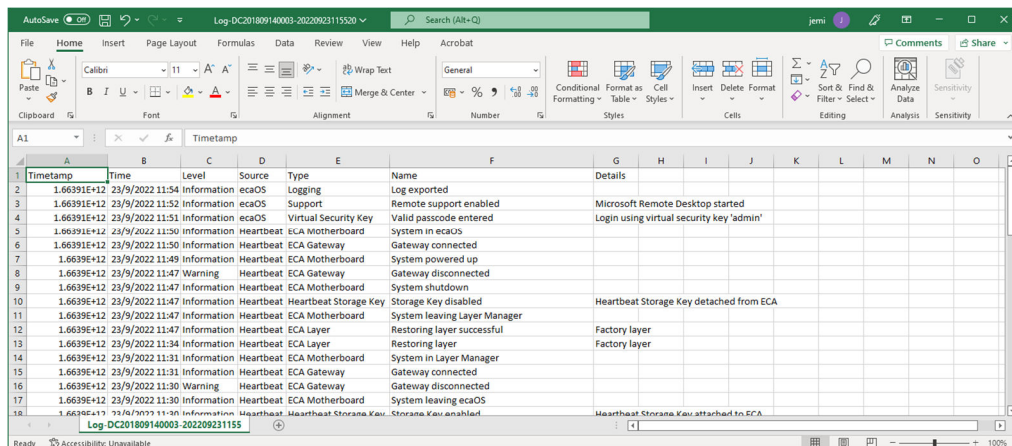


Figure 132: Exporting log (7 of 8)

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 attached to ECA	

Figure 133: Exporting log (8 of 8)

## 12 Support

### 12.1 TrueBlue Remote Support

TrueBlue Remote Support is an online live support service backed by the professional TrueBlue Support team. This service allows our TrueBlue Engineer to remotely access the targeted ECA, and gain full control for troubleshooting, usually on software and OS related issues. Internet must be connected for support via internet.

1. To Start Trueblue Remote Support, click on 'Start' button

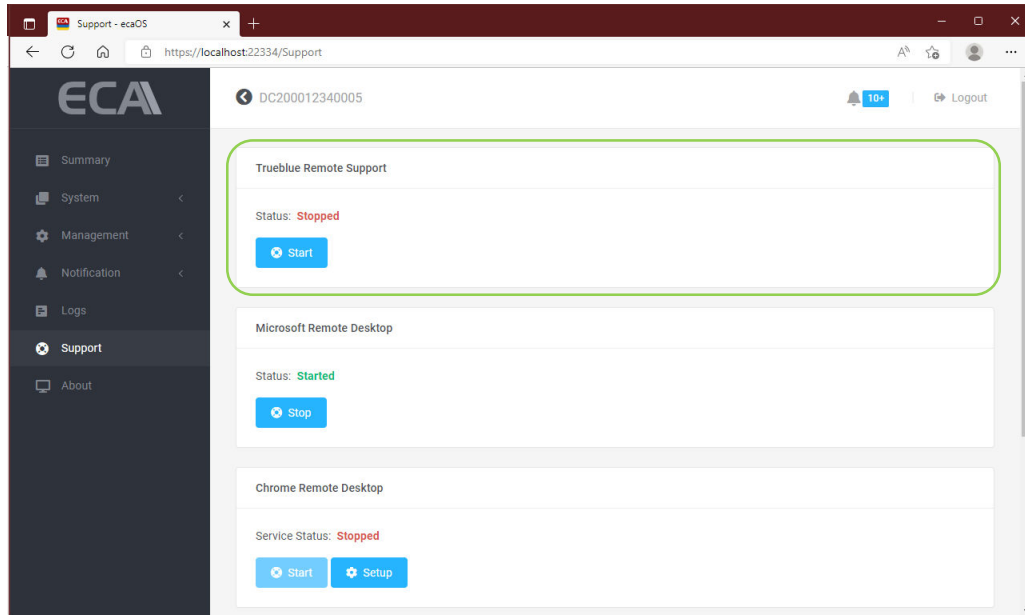


Figure 134: Trueblue Remote Support (1 of 2)

2. Once the connection establishes, inform our Trueblue Support Engineer to let support remotely.

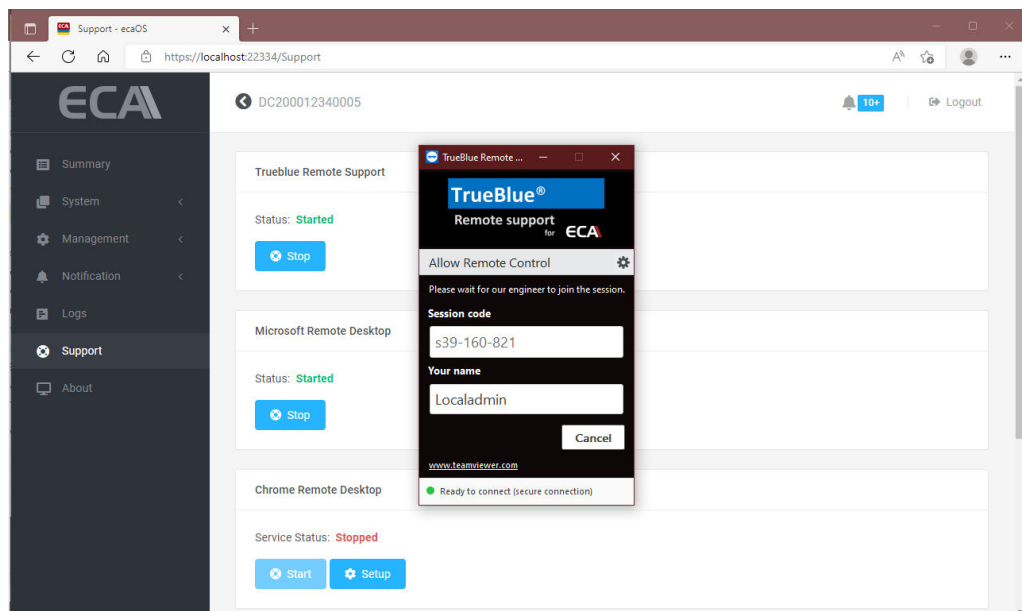


Figure 135: Trueblue Remote Support (2 of 2)

## 12.2 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

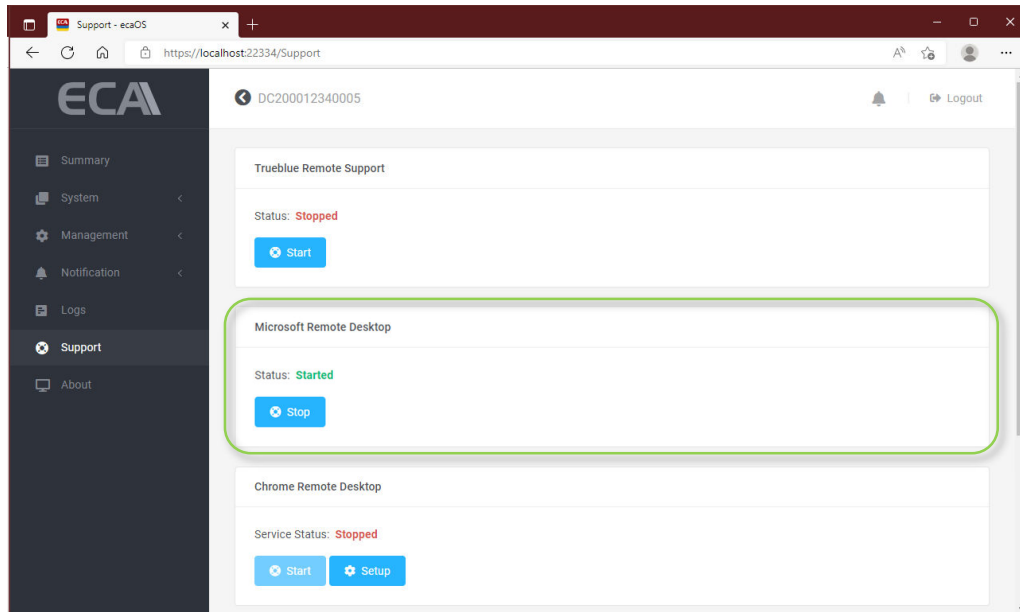


Figure 136: Microsoft Remote Support

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

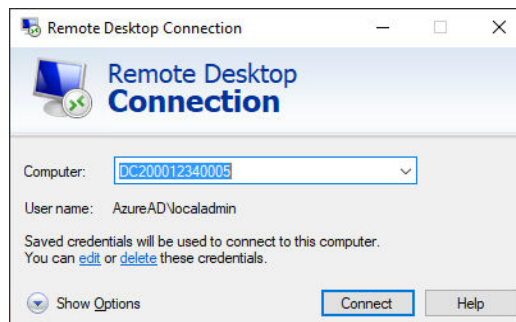


Figure 137: Trueblue Remote Support (1 of 2)

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



## 12.3 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.

### 12.3.1 Setup ECA into your Chrome Remote Desktop

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

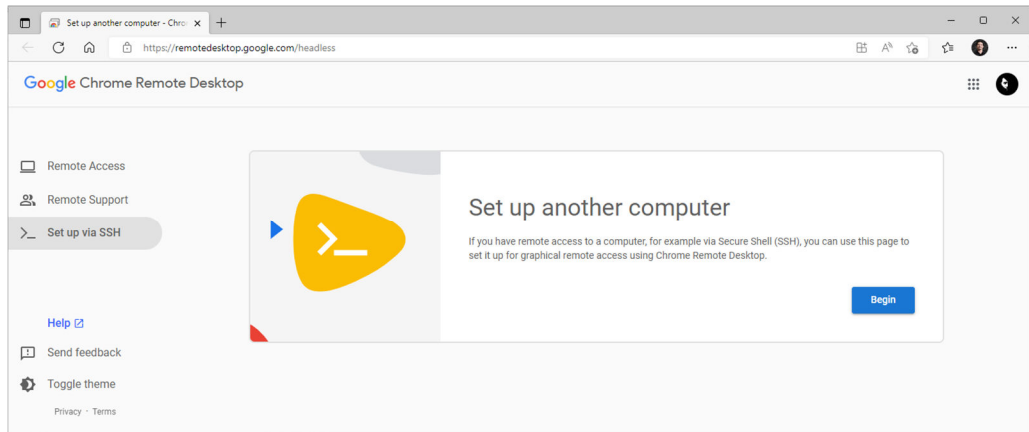


Figure 138: Chrome Remote Desktop (1 of 6)

#### 1. Click 'Begin'

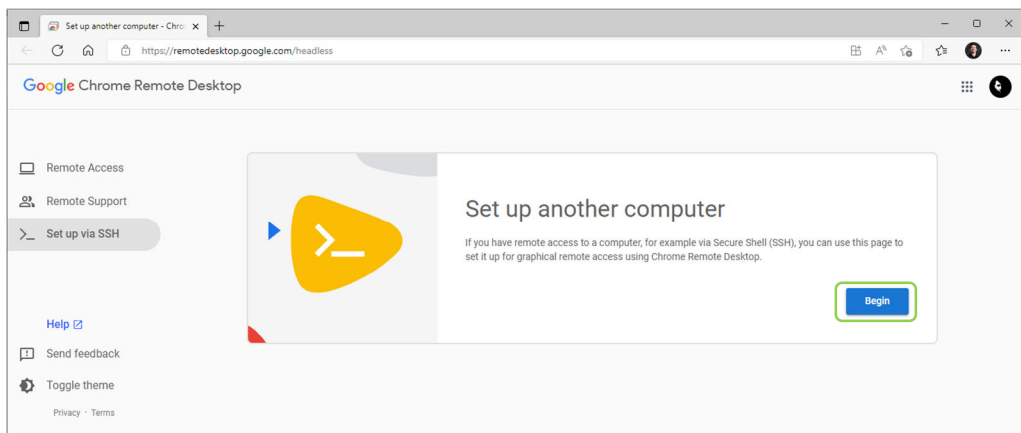


Figure 139: Chrome Remote Desktop (2 of 6)

## 2. Click 'Next'

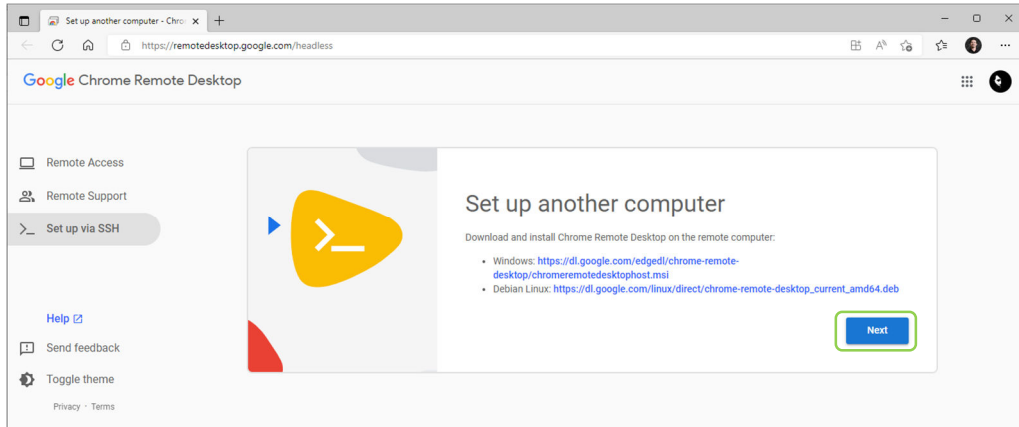


Figure 140: Chrome Remote Desktop (3 of 6)

## 3. Click 'Authorize'

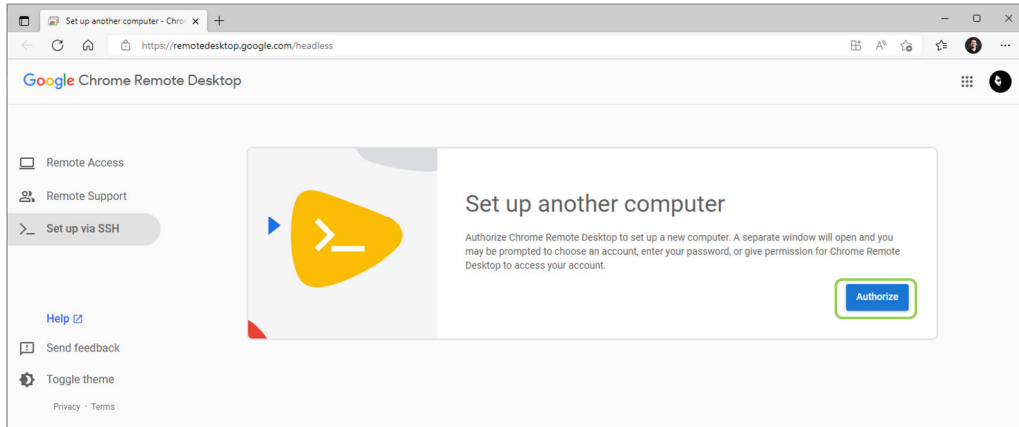


Figure 141: Chrome Remote Desktop (3 of 6)

## 4. Copy command for Windows (Cmd)

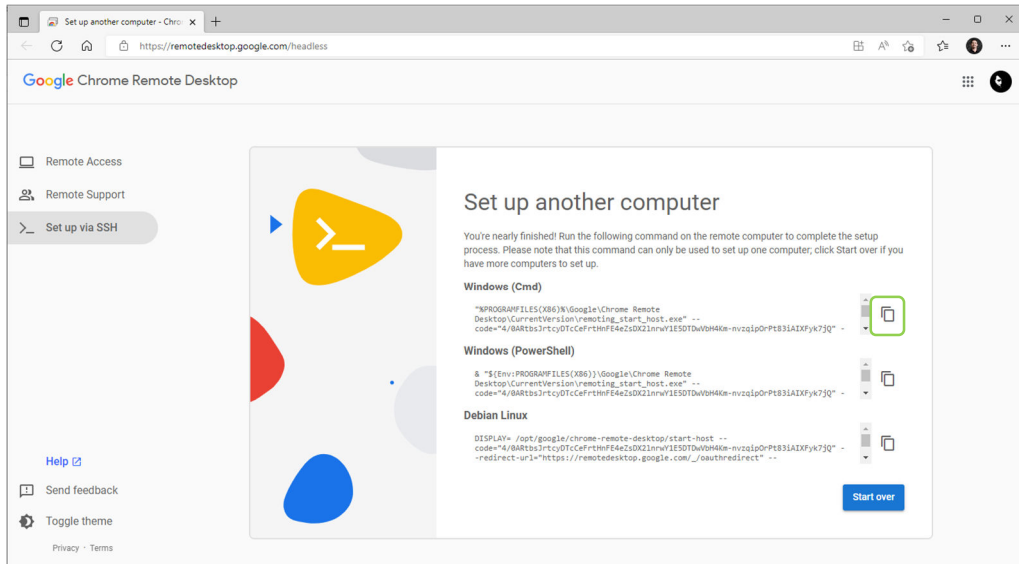


Figure 142: Chrome Remote Desktop (4 of 6)

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

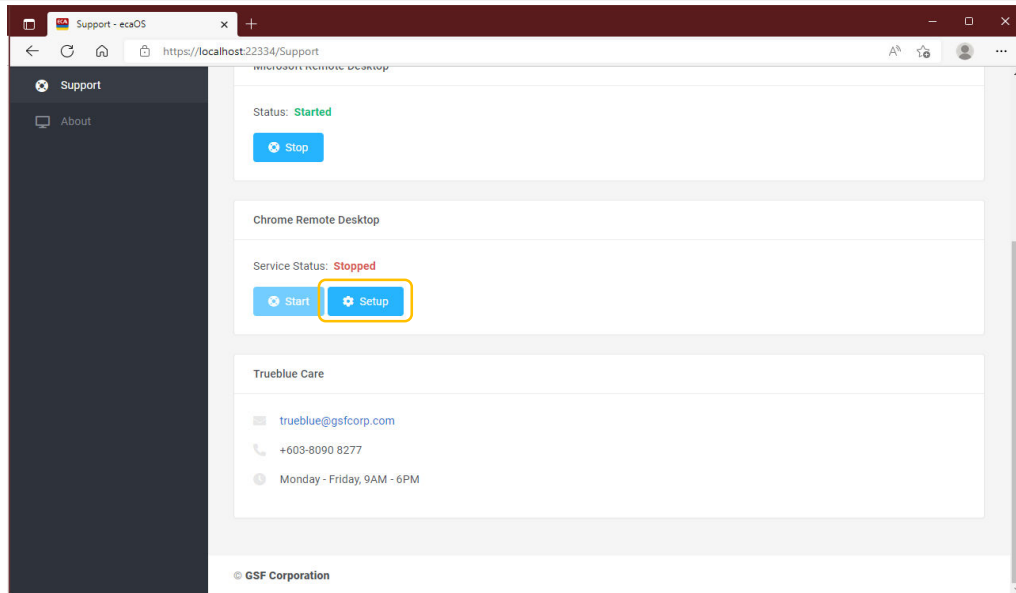


Figure 143: Chrome Remote Desktop (5 of 6)

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

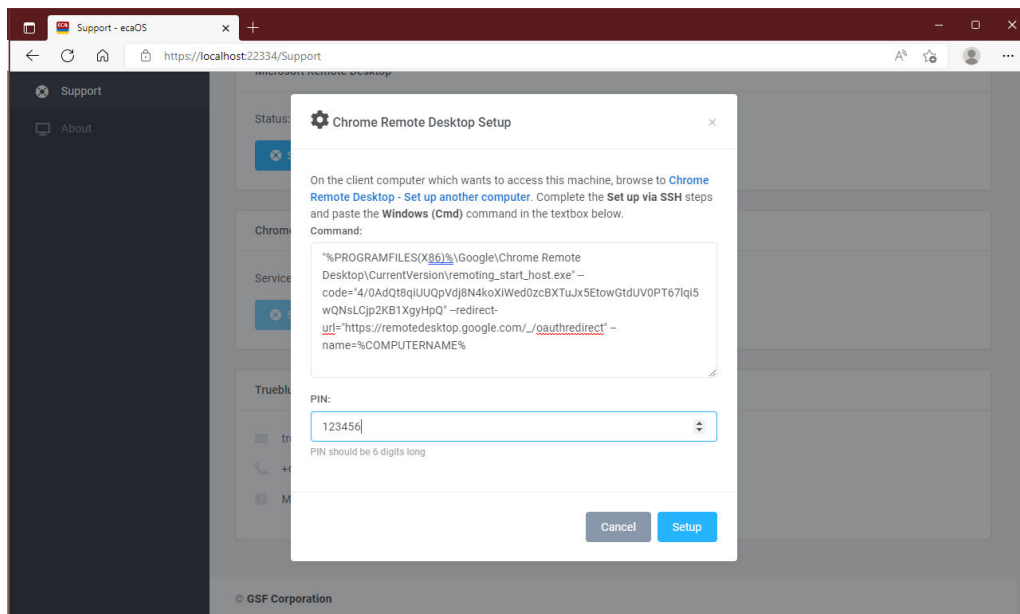


Figure 144: Chrome Remote Desktop (6 of 6)

### 12.3.2 Accessing ECA via Chrome Remote Desktop?

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

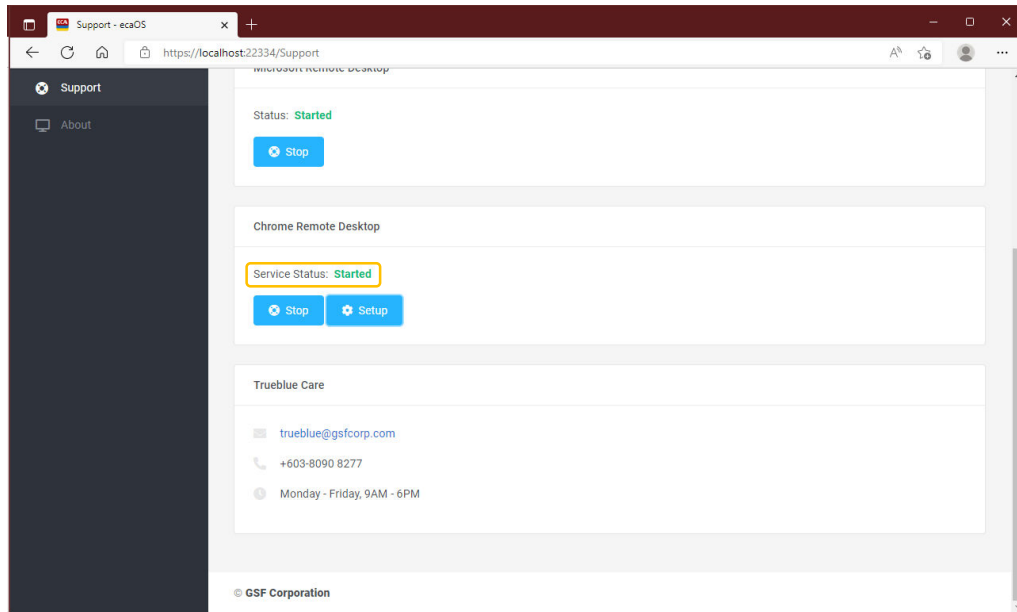


Figure 145: Accessing ECA via Chrome Remote Desktop (1 of 4)

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

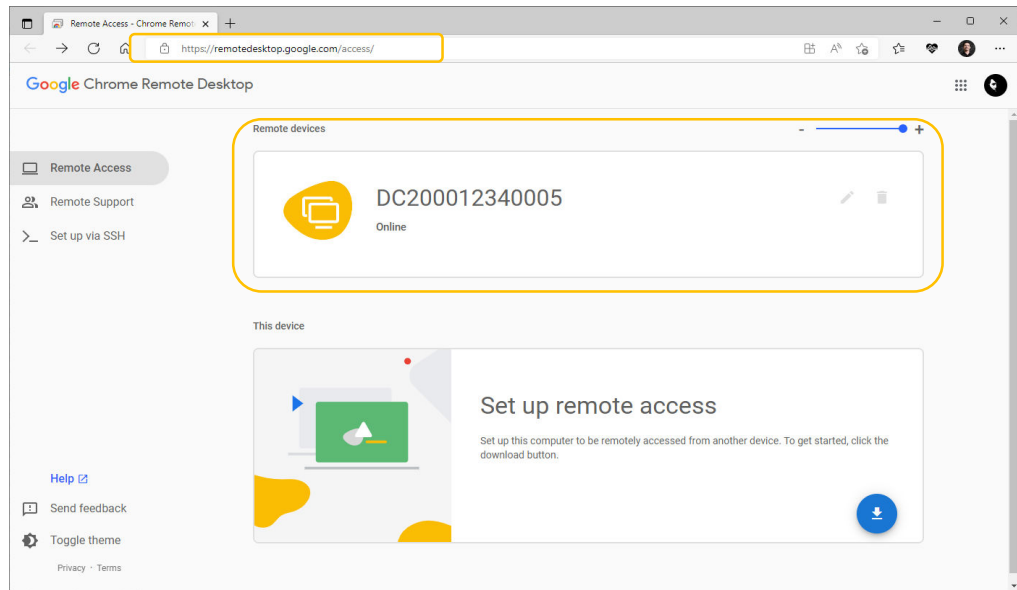


Figure 146: Accessing ECA via Chrome Remote Desktop (2 of 4)

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

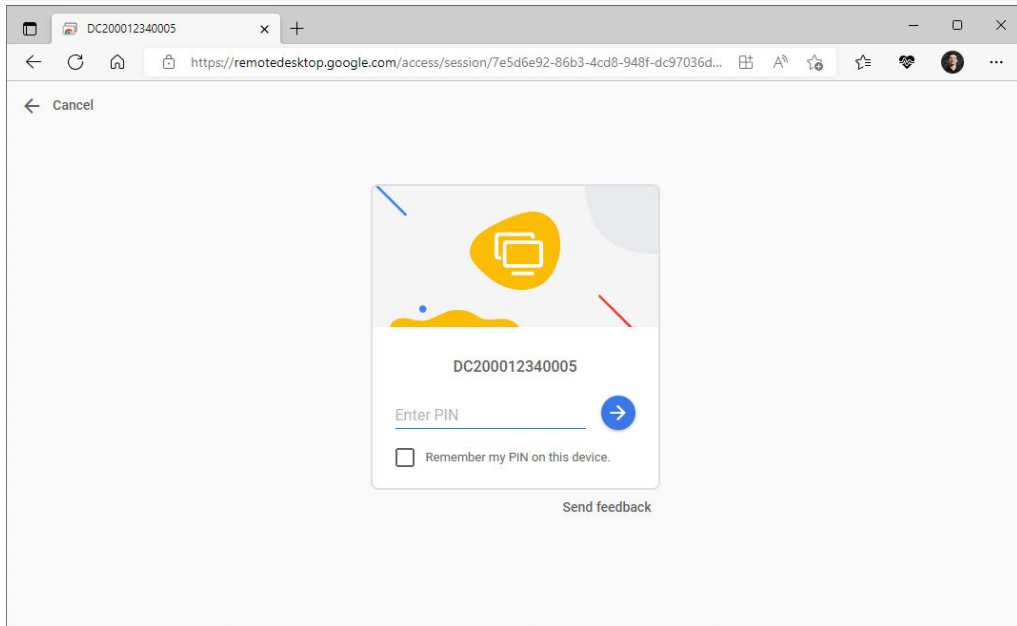


Figure 147: Accessing ECA via Chrome Remote Desktop (3 of 4)

#### 4. Access the ECA

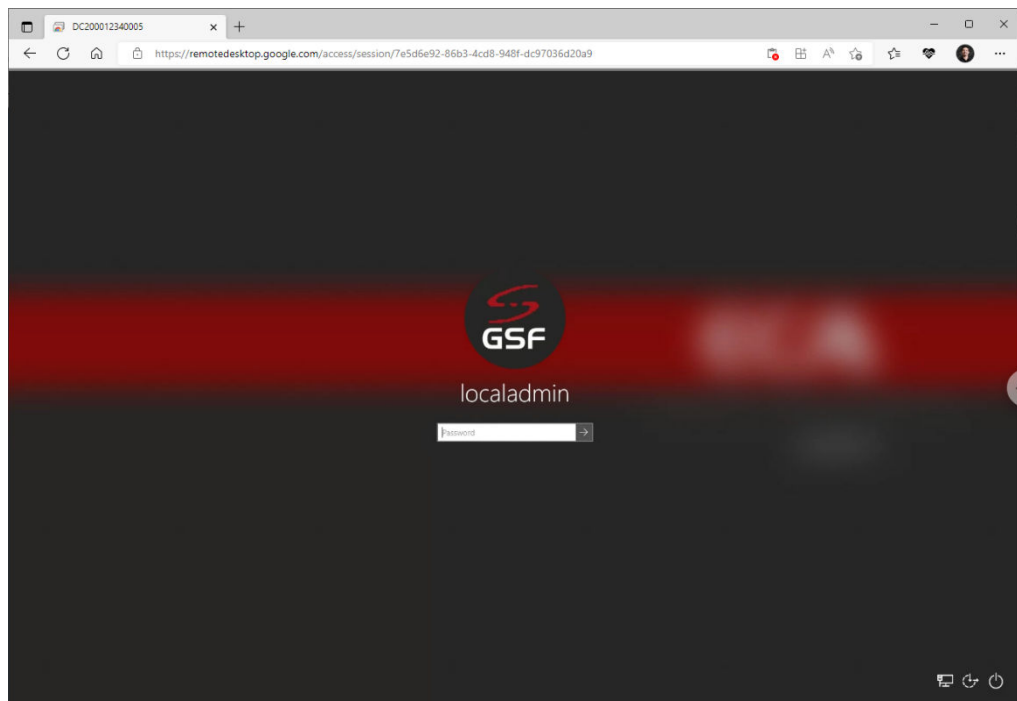


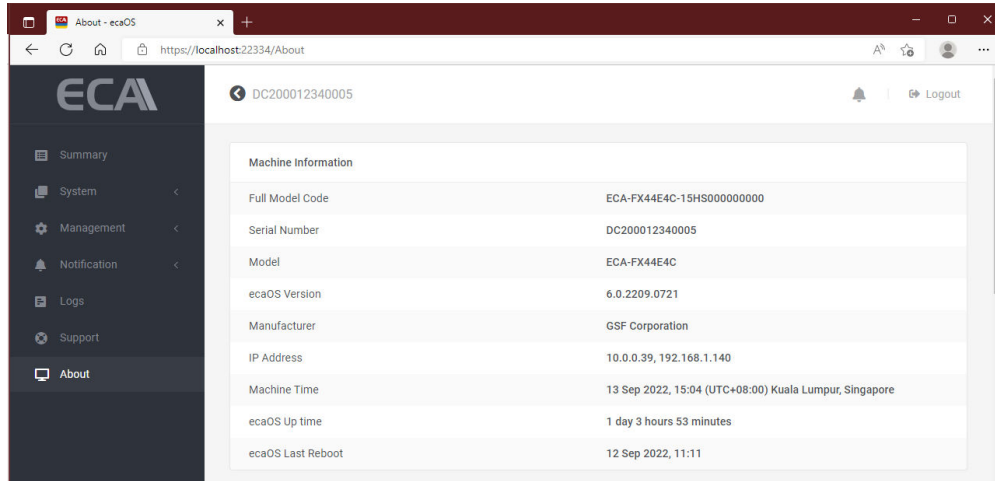
Figure 148: Accessing ECA via Chrome Remote Desktop (4 of 4)

## 13 About

### 13.1 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.



The screenshot shows a web browser window with the URL `https://localhost:22334/About`. The page displays the ECA logo and a navigation menu on the left. The main content area is titled "Machine Information" and contains a table with the following data:

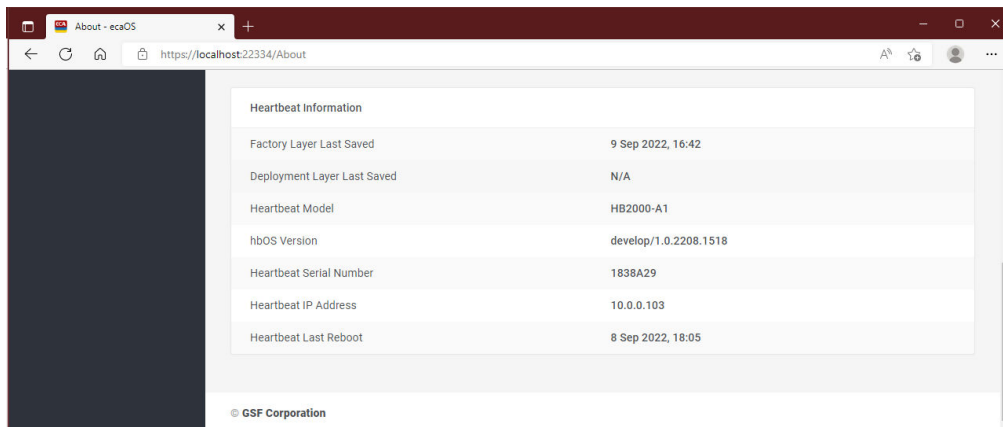
Machine Information	
Full Model Code	ECA-FX44E4C-15HS000000000
Serial Number	DC200012340005
Model	ECA-FX44E4C
ecaOS Version	6.0.2209.0721
Manufacturer	GSF Corporation
IP Address	10.0.0.39, 192.168.1.140
Machine Time	13 Sep 2022, 15:04 (UTC+08:00) Kuala Lumpur, Singapore
ecaOS Up time	1 day 3 hours 53 minutes
ecaOS Last Reboot	12 Sep 2022, 11:11

Figure 149: Machine Information

### 13.2 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.



The screenshot shows a web browser window with the URL `https://localhost:22334/About`. The page displays the ECA logo and a navigation menu on the left. The main content area is titled "Heartbeat Information" and contains a table with the following data:

Heartbeat Information	
Factory Layer Last Saved	9 Sep 2022, 16:42
Deployment Layer Last Saved	N/A
Heartbeat Model	HB2000-A1
hbOS Version	develop/1.0.2208.1518
Heartbeat Serial Number	1838A29
Heartbeat IP Address	10.0.0.103
Heartbeat Last Reboot	8 Sep 2022, 18:05

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Figure 150: Heartbeat Information

# 14 APPENDIX

## 14.1 Processor Activity

### 14.1.1 CPU activity above limit

<p><b>Dashboard</b></p>	<p>The screenshot shows the ECA Processor Activity dashboard. At the top, there's a navigation menu with options like Summary, System, Service Monitor, Application Monitor, Processor Activity (selected), Memory Activity, Disk Activity, Network Activity, Disk Health, Disk Guard, Session Shield, Management, Notification, Logs, Support, and About. The main area features a line graph titled 'Processor Activity' showing 'Utilization %' (solid blue line) and 'Average Utilization %' (dashed blue line) over a 10-minute period. Below the graph is a summary table:</p> <table border="1"> <tr> <td>CPU Activity Status</td> <td>CPU Utilization</td> <td>Average CPU Utilization</td> </tr> <tr> <td>High</td> <td>97.5%</td> <td>94.7%</td> </tr> <tr> <td>Average CPU Utilization / Minute</td> <td>Average CPU Utilization / Hour</td> <td>Average CPU Utilization / Day</td> </tr> <tr> <td>94.3%</td> <td>39.8%</td> <td>24.8%</td> </tr> </table>	CPU Activity Status	CPU Utilization	Average CPU Utilization	High	97.5%	94.7%	Average CPU Utilization / Minute	Average CPU Utilization / Hour	Average CPU Utilization / Day	94.3%	39.8%	24.8%
CPU Activity Status	CPU Utilization	Average CPU Utilization											
High	97.5%	94.7%											
Average CPU Utilization / Minute	Average CPU Utilization / Hour	Average CPU Utilization / Day											
94.3%	39.8%	24.8%											
<p><b>Notification</b></p>	<p><b>CPU activity above limit</b>          CPU activity has been above the set limit 80% for more than 10 minutes. Average CPU activity is 93%          17:10 + Processor Activity</p>												
<p><b>Log</b></p>	<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>13 Oct 2022, 17:10:14</td> <td>Warning</td> <td>ecaOS</td> <td>Processor Activity</td> <td>CPU activity above limit</td> <td>CPU activity has been above the set limit 80% for more than 10 minutes. Average CPU activity is 93%</td> </tr> </tbody> </table>	Time	Level	Source	Type	Name	Details	13 Oct 2022, 17:10:14	Warning	ecaOS	Processor Activity	CPU activity above limit	CPU activity has been above the set limit 80% for more than 10 minutes. Average CPU activity is 93%
Time	Level	Source	Type	Name	Details								
13 Oct 2022, 17:10:14	Warning	ecaOS	Processor Activity	CPU activity above limit	CPU activity has been above the set limit 80% for more than 10 minutes. Average CPU activity is 93%								
<p><b>Email</b></p>	<p>The screenshot shows an email notification from 'ECA Notifications &lt;noreply@gsf.ms&gt;' to 'jemi'. The subject is '[DC201809140003] High CPU Usage Detected'. The email body contains the following text:</p> <p><b>GSF</b></p> <p>Dear user,      Average CPU usage has been reported above the predetined limit of <b>80%</b> for more than <b>10 minutes</b>.      Average CPU usage: <b>93%</b>      Time Reported: <b>13-Oct-22 17:10:14 +08:00</b>      For further assistance, please contact TrueBlue Care:  <a href="mailto:trueblue@gsfcorp.com">trueblue@gsfcorp.com</a>      +603-8090 8277      Monday - Friday, 9AM - 6PM</p> <p>You received this email because your email address is listed as the notification email for Engineered Computer Appliance (ECA) serial no. DC201809140003</p> <p><small>ECA, Smart Logic, and TrueBlue are products and services provided by GSF.      ©2022 GSF Corporation, F-21-3A, IOI Boulevard, Jalan Kenari 6, 47170 Puchong, Selangor D.E, Malaysia</small></p>												

## 14.1.2 CPU activity back to normal

<p><b>Dashboard</b></p>	<p>The screenshot shows the ECA Processor Activity dashboard for device DC201809140003. It features a line graph titled 'Processor Activity' showing 'Utilization %' (solid blue line) and 'Average Utilization %' (dashed grey line) over a 10-minute period. Below the graph, several key metrics are displayed:</p> <ul style="list-style-type: none"> <li><b>CPU Activity Status:</b> Normal (highlighted in a yellow box)</li> <li><b>CPU Utilization:</b> 16.3%</li> <li><b>Average CPU Utilization:</b> 13.3%</li> <li><b>Average CPU Utilization / Minute:</b> 13.4%</li> <li><b>Average CPU Utilization / Hour:</b> 42.7%</li> <li><b>Average CPU Utilization / Day:</b> 24.5%</li> </ul>												
<p><b>Notification</b></p>	<p><b>CPU activity back to normal</b>          CPU activity has returned to normal (after 0 hours 15 minutes). Average CPU activity is 40%          17:25 • Processor Activity</p>												
<p><b>Log</b></p>	<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>13 Oct 2022, 17:25:54</td> <td>Information</td> <td>ecaOS</td> <td>Processor Activity</td> <td>CPU activity back to normal</td> <td>CPU activity has returned to normal (after 0 hours 15 minutes). Average CPU activity is 40%</td> </tr> </tbody> </table>	Time	Level	Source	Type	Name	Details	13 Oct 2022, 17:25:54	Information	ecaOS	Processor Activity	CPU activity back to normal	CPU activity has returned to normal (after 0 hours 15 minutes). Average CPU activity is 40%
Time	Level	Source	Type	Name	Details								
13 Oct 2022, 17:25:54	Information	ecaOS	Processor Activity	CPU activity back to normal	CPU activity has returned to normal (after 0 hours 15 minutes). Average CPU activity is 40%								
<p><b>Email</b></p>	<p>The screenshot shows an email notification from ECA Notifications (noreply@gsf.ms) to 'jemil'. The subject is '[DC201809140003 ecaOS 6.0.2210.0408] CPU Usage Returned to Normal'. The email body contains the following text:</p> <p>Dear user,      Previously reported high CPU usage has <b>returned to normal</b>. Average CPU usage had been reported above the predefined limit of 80% for more than 0 hours and 15 minutes      Average CPU usage: <b>40%</b>      Return normal time: <b>13-Oct-22 17:25:54 +08:00</b>      For further assistance, please contact TrueBlue Care:  <a href="mailto:trueblue@gsfcorp.com">trueblue@gsfcorp.com</a>      +603-8090 8277      Monday - Friday, 9AM - 6PM</p> <p>You received this email because your email address is listed as the notification email for Engineered Computer Appliance (ECA) serial no: DC201809140003</p> <p>ECA, Smart Logic, and TrueBlue are products and services provided by GSF.      ©2022 GSF Corporation, F-21-3A, IOI Boulevard, Jalan Kenari 6, 47170 Puchong, Selangor D.E, Malaysia</p>												



## 14.2 Memory Activity

### 14.2.1 Memory usage above limit

<p><b>Dashboard</b></p>													
<p><b>Notification</b></p>	<p><b>Memory usage above limit</b>          Memory usage has been above the set limit 50% for more than 10 minutes. Average memory usage is 55%          17:52 • Memory Activity</p>												
<p><b>Log</b></p>	<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>13 Oct 2022, 17:52:29</td> <td>Warning</td> <td>ecaOS</td> <td>Memory Activity</td> <td>Memory activity above limit</td> <td>Memory activity has been above the set limit 50% for more than 10 minutes. Average Memory activity is 55%</td> </tr> </tbody> </table>	Time	Level	Source	Type	Name	Details	13 Oct 2022, 17:52:29	Warning	ecaOS	Memory Activity	Memory activity above limit	Memory activity has been above the set limit 50% for more than 10 minutes. Average Memory activity is 55%
Time	Level	Source	Type	Name	Details								
13 Oct 2022, 17:52:29	Warning	ecaOS	Memory Activity	Memory activity above limit	Memory activity has been above the set limit 50% for more than 10 minutes. Average Memory activity is 55%								
<p><b>Email</b></p>													

## 14.2.2 Memory activity back to normal

<p><b>Dashboard</b></p>													
<p><b>Notification</b></p>	<p><b>Memory usage back to normal</b>          Memory usage has returned to normal (after 1 hours 17 minutes). Average memory usage is 35%          19:01 • Memory Activity</p>												
<p><b>Log</b></p>	<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>22 Oct 2022, 19:01:59</td> <td>Information</td> <td>ecaOS</td> <td>Memory Activity</td> <td>Memory activity back to normal</td> <td>Memory activity has returned to normal (after 1 hours 17 minutes). Average Memory activity is 35%</td> </tr> </tbody> </table>	Time	Level	Source	Type	Name	Details	22 Oct 2022, 19:01:59	Information	ecaOS	Memory Activity	Memory activity back to normal	Memory activity has returned to normal (after 1 hours 17 minutes). Average Memory activity is 35%
Time	Level	Source	Type	Name	Details								
22 Oct 2022, 19:01:59	Information	ecaOS	Memory Activity	Memory activity back to normal	Memory activity has returned to normal (after 1 hours 17 minutes). Average Memory activity is 35%								
<p><b>Email</b></p>													

## 14.3 Disk Activity

### 14.3.1 Disk read activity above limit

<p><b>Dashboard</b></p>	<p><b>Disk Activity</b></p> <table border="1"> <thead> <tr> <th>Metric</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Disk Read Status</td> <td>Above Limit</td> </tr> <tr> <td>Disk Read</td> <td>19.6 KB/s</td> </tr> <tr> <td>Average Disk Read</td> <td>2.0 MB/s</td> </tr> <tr> <td>Average Disk Read / Minute</td> <td>213.4 MB</td> </tr> <tr> <td>Average Disk Read / Hour</td> <td>Not Available</td> </tr> <tr> <td>Average Disk Read / Day</td> <td>Not Available</td> </tr> <tr> <td>Disk Write Status</td> <td>Normal</td> </tr> <tr> <td>Disk Write</td> <td>16.1 MB/s</td> </tr> <tr> <td>Average Disk Write</td> <td>21.5 MB/s</td> </tr> <tr> <td>Average Disk Write / Minute</td> <td>1.0 GB</td> </tr> <tr> <td>Average Disk Write / Hour</td> <td>Not Available</td> </tr> <tr> <td>Average Disk Write / Day</td> <td>Not Available</td> </tr> </tbody> </table>	Metric	Value	Disk Read Status	Above Limit	Disk Read	19.6 KB/s	Average Disk Read	2.0 MB/s	Average Disk Read / Minute	213.4 MB	Average Disk Read / Hour	Not Available	Average Disk Read / Day	Not Available	Disk Write Status	Normal	Disk Write	16.1 MB/s	Average Disk Write	21.5 MB/s	Average Disk Write / Minute	1.0 GB	Average Disk Write / Hour	Not Available	Average Disk Write / Day	Not Available
Metric	Value																										
Disk Read Status	Above Limit																										
Disk Read	19.6 KB/s																										
Average Disk Read	2.0 MB/s																										
Average Disk Read / Minute	213.4 MB																										
Average Disk Read / Hour	Not Available																										
Average Disk Read / Day	Not Available																										
Disk Write Status	Normal																										
Disk Write	16.1 MB/s																										
Average Disk Write	21.5 MB/s																										
Average Disk Write / Minute	1.0 GB																										
Average Disk Write / Hour	Not Available																										
Average Disk Write / Day	Not Available																										
<p><b>Notification</b></p>	<p><b>Disk read activity above limit</b>          Average disk read activity has been above the set limit 100 KB for more than 10 minutes.          Current average disk read activity is 785.1 KB          15:28 - Disk Activity</p>																										
<p><b>Log</b></p>	<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>13 Oct 2022, 15:28:21</td> <td>Warning</td> <td>ecaOS</td> <td>Disk Activity</td> <td>Disk read activity above limit</td> <td>Average disk read activity has been above the set limit 100 KB for more than 10 minutes. Current average disk read activity is 785.1 KB</td> </tr> </tbody> </table>	Time	Level	Source	Type	Name	Details	13 Oct 2022, 15:28:21	Warning	ecaOS	Disk Activity	Disk read activity above limit	Average disk read activity has been above the set limit 100 KB for more than 10 minutes. Current average disk read activity is 785.1 KB														
Time	Level	Source	Type	Name	Details																						
13 Oct 2022, 15:28:21	Warning	ecaOS	Disk Activity	Disk read activity above limit	Average disk read activity has been above the set limit 100 KB for more than 10 minutes. Current average disk read activity is 785.1 KB																						
<p><b>Email</b></p>	<p><b>[DC201809140003 ecaOS 6.0.2210.0408] Disk read activity above limit</b></p> <p>ECA Notifications &lt;noreply@gsf.ms&gt;      To: jemi      Thu 13/10/2022 3:28 PM</p> <p>Dear user,      Average disk read activity have been <b>above</b> the set limit <b>100 KB</b> for more than <b>10 minutes</b>.      Time Reported: <b>13-Oct-22 15:28:21 +08:00</b>      High data read limit: 100 KB for 10 minutes      Data read: 785.1 KB      For further assistance, please contact TrueBlue Care:  <a href="mailto:trueblue@gsfcorp.com">trueblue@gsfcorp.com</a>      +603-8090 8277      Monday - Friday, 9AM - 6PM</p> <p>You received this email because your email address is listed as the notification email for Engineered Computer Appliance (ECA) serial no. DC201809140003</p> <p>ECA, Smart Logic, and TrueBlue are products and services provided by GSF.      ©2022 GSF Corporation, F-21-3A, IOI Boulevard, Jalan Kenari 6, 47170 Puchong, Selangor D.E, Malaysia</p>																										

### 14.3.2 Disk read activity back to normal

<p><b>Dashboard</b></p>													
<p><b>Notification</b></p>	<p><b>Disk read activity back to normal</b>          Average disk read activity has returned to normal (after 0 hours 16 minutes). Current average disk read activity is 99.9 KB          16:31 • Disk Activity</p>												
<p><b>Log</b></p>	<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>13 Oct 2022, 16:31:26</td> <td>Information</td> <td>ecaOS</td> <td>Disk Activity</td> <td>Disk read activity back to normal</td> <td>Average disk read activity has returned to normal (after 0 hours 16 minutes). Current average disk read activity is 99.9 KB</td> </tr> </tbody> </table>	Time	Level	Source	Type	Name	Details	13 Oct 2022, 16:31:26	Information	ecaOS	Disk Activity	Disk read activity back to normal	Average disk read activity has returned to normal (after 0 hours 16 minutes). Current average disk read activity is 99.9 KB
Time	Level	Source	Type	Name	Details								
13 Oct 2022, 16:31:26	Information	ecaOS	Disk Activity	Disk read activity back to normal	Average disk read activity has returned to normal (after 0 hours 16 minutes). Current average disk read activity is 99.9 KB								
<p><b>Email</b></p>													

### 14.3.3 Disk write activity below limit

<p><b>Dashboard</b></p>													
<p><b>Notification</b></p>	<p><b>Disk write activity below limit</b>          Average disk write activity has been above the set limit 35 MB for more than 10 minutes. Current average disk write activity is 26 MB          15:32 - Disk Activity</p>												
<p><b>Log</b></p>	<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>13 Oct 2022, 15:32:31</td> <td>Warning</td> <td>ecaOS</td> <td>Disk Activity</td> <td>Disk write activity below limit</td> <td>Average disk write activity has been below the set limit 35 MB for more than 10 minutes. Current average disk write activity is 26 MB</td> </tr> </tbody> </table>	Time	Level	Source	Type	Name	Details	13 Oct 2022, 15:32:31	Warning	ecaOS	Disk Activity	Disk write activity below limit	Average disk write activity has been below the set limit 35 MB for more than 10 minutes. Current average disk write activity is 26 MB
Time	Level	Source	Type	Name	Details								
13 Oct 2022, 15:32:31	Warning	ecaOS	Disk Activity	Disk write activity below limit	Average disk write activity has been below the set limit 35 MB for more than 10 minutes. Current average disk write activity is 26 MB								
<p><b>Email</b></p>													

### 14.3.4 Disk write activity back to normal

<p><b>Dashboard</b></p>	<p>The screenshot shows the ECA dashboard for device DC201809140003. The 'Disk Activity' section features a line graph showing Read (blue) and Write (orange) activity over 10 minutes. Below the graph, two summary tables are displayed:</p> <table border="1"> <thead> <tr> <th colspan="2">Disk Read</th> <th colspan="2">Disk Write</th> </tr> </thead> <tbody> <tr> <td>Disk Read Status</td> <td>Above Limit</td> <td>Disk Write Status</td> <td>Normal</td> </tr> <tr> <td>Disk Read</td> <td>43.7 KB/s</td> <td>Disk Write</td> <td>47.3 MB/s</td> </tr> <tr> <td>Average Disk Read</td> <td>20.5 KB/s</td> <td>Average Disk Write</td> <td>35.7 MB/s</td> </tr> <tr> <td>Average Disk Read / Minute</td> <td>4.7 MB</td> <td>Average Disk Write / Minute</td> <td>2.1 GB</td> </tr> <tr> <td>Average Disk Read / Hour</td> <td>Not Available</td> <td>Average Disk Write / Hour</td> <td>Not Available</td> </tr> <tr> <td>Average Disk Read / Day</td> <td>Not Available</td> <td>Average Disk Write / Day</td> <td>Not Available</td> </tr> </tbody> </table>	Disk Read		Disk Write		Disk Read Status	Above Limit	Disk Write Status	Normal	Disk Read	43.7 KB/s	Disk Write	47.3 MB/s	Average Disk Read	20.5 KB/s	Average Disk Write	35.7 MB/s	Average Disk Read / Minute	4.7 MB	Average Disk Write / Minute	2.1 GB	Average Disk Read / Hour	Not Available	Average Disk Write / Hour	Not Available	Average Disk Read / Day	Not Available	Average Disk Write / Day	Not Available
Disk Read		Disk Write																											
Disk Read Status	Above Limit	Disk Write Status	Normal																										
Disk Read	43.7 KB/s	Disk Write	47.3 MB/s																										
Average Disk Read	20.5 KB/s	Average Disk Write	35.7 MB/s																										
Average Disk Read / Minute	4.7 MB	Average Disk Write / Minute	2.1 GB																										
Average Disk Read / Hour	Not Available	Average Disk Write / Hour	Not Available																										
Average Disk Read / Day	Not Available	Average Disk Write / Day	Not Available																										
<p><b>Notification</b></p>	<p><b>Disk write activity back to normal</b>                  Average disk write activity has returned to normal (after 0 hours 21 minutes). Current average disk write activity is 35.7 MB                  15:53 • Disk Activity</p>																												
<p><b>Log</b></p>	<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>13 Oct 2022, 15:53:46</td> <td>Information</td> <td>ecaOS</td> <td>Disk Activity</td> <td>Disk write activity back to normal</td> <td>Average disk write activity has returned to normal (after 0 hours 21 minutes). Current average disk write activity is 35.7 MB</td> </tr> </tbody> </table>	Time	Level	Source	Type	Name	Details	13 Oct 2022, 15:53:46	Information	ecaOS	Disk Activity	Disk write activity back to normal	Average disk write activity has returned to normal (after 0 hours 21 minutes). Current average disk write activity is 35.7 MB																
Time	Level	Source	Type	Name	Details																								
13 Oct 2022, 15:53:46	Information	ecaOS	Disk Activity	Disk write activity back to normal	Average disk write activity has returned to normal (after 0 hours 21 minutes). Current average disk write activity is 35.7 MB																								
<p><b>Email</b></p>	<p>The screenshot shows an email notification with the subject "[DC201809140003] Disk write activity back to normal". The email content includes:</p> <p><b>[DC201809140003] Disk write activity back to normal</b></p> <p>ECA Notifications &lt;noreply@gsf.ms&gt;      To: jemi      Thu 13/10/2022 3:54 PM</p> <p>If there are problems with how this message is displayed, click here to view it in a web browser.</p> <p><b>Dear user,</b>      Previously reported low average disk write activity have <b>returned to normal</b>. Disk write activity previously fell below the limit of 35 MB for more than 10 minutes</p> <p>Time Reported: <b>13-Oct-22 15:53:46 +08:00</b>      Low write activity limit: 35 MB in 10 minutes      Data written: 35.7 MB      Stayed below the limit for: 0 Hours and 21 minutes</p> <p>For further assistance, please contact TrueBlue Care:  <a href="mailto:trueblue@gsfcorp.com">trueblue@gsfcorp.com</a>      +603-8090 8277      Monday - Friday, 9AM - 6PM</p> <p>You received this email because your email address is listed as the notification email for Engineered Computer Appliance (ECA) serial no: DC201809140003</p> <p>ECA, Smart Logic, and TrueBlue are products and services provided by GSF.      ©2022 GSF Corporation, F-21-3A, IOI Boulevard, Jalan Kenari 6, 47170 Puchong, Selangor D.E, Malaysia</p>																												

## 14.4 Network Activity

### 14.4.1 Network send activity above limit

<p><b>Dashboard</b></p>	<p>The screenshot shows the ECA Network Activity dashboard for device DC201809140003. It features a line graph of network activity over 10 minutes, with 'Send' activity (blue) and 'Receive' activity (orange). Below the graph are two summary tables:</p> <table border="1"> <thead> <tr> <th colspan="2">Network Send</th> <th colspan="2">Network Receive</th> </tr> </thead> <tbody> <tr> <td>Network Send Status</td> <td>Above Limit</td> <td>Network Receive Status</td> <td>Normal</td> </tr> <tr> <td>Network Send</td> <td>221.3 Mbps</td> <td>Network Receive</td> <td>270.2 Mbps</td> </tr> <tr> <td>Average Network Send</td> <td>63.0 Mbps</td> <td>Average Network Receive</td> <td>348.2 Mbps</td> </tr> <tr> <td>Average Network Send / Minute</td> <td>4.9 Gb</td> <td>Average Network Receive / Minute</td> <td>20.2 Gb</td> </tr> <tr> <td>Average Network Send / Hour</td> <td>48.8 Gb</td> <td>Average Network Receive / Hour</td> <td>1.1 Tb</td> </tr> <tr> <td>Average Network Send / Day</td> <td>Not Available</td> <td>Average Network Receive / Day</td> <td>Not Available</td> </tr> </tbody> </table>	Network Send		Network Receive		Network Send Status	Above Limit	Network Receive Status	Normal	Network Send	221.3 Mbps	Network Receive	270.2 Mbps	Average Network Send	63.0 Mbps	Average Network Receive	348.2 Mbps	Average Network Send / Minute	4.9 Gb	Average Network Receive / Minute	20.2 Gb	Average Network Send / Hour	48.8 Gb	Average Network Receive / Hour	1.1 Tb	Average Network Send / Day	Not Available	Average Network Receive / Day	Not Available
Network Send		Network Receive																											
Network Send Status	Above Limit	Network Receive Status	Normal																										
Network Send	221.3 Mbps	Network Receive	270.2 Mbps																										
Average Network Send	63.0 Mbps	Average Network Receive	348.2 Mbps																										
Average Network Send / Minute	4.9 Gb	Average Network Receive / Minute	20.2 Gb																										
Average Network Send / Hour	48.8 Gb	Average Network Receive / Hour	1.1 Tb																										
Average Network Send / Day	Not Available	Average Network Receive / Day	Not Available																										
<p><b>Notification</b></p>	<p><b>Network send activity above limit</b>                  Average network send activity has been above the set limit 8 Mb for more than 10 minutes. Current average network sent activity is 27.4 Mb                  16:10 - Network Activity</p>																												
<p><b>Log</b></p>	<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>13 Oct 2022, 16:10:16</td> <td>Warning</td> <td>ecaOS</td> <td>Network Activity</td> <td>Network send activity above limit</td> <td>Average network send activity has been above the set limit 8 Mb for more than 10 minutes. Current average network sent activity is 27.4 Mb</td> </tr> </tbody> </table>	Time	Level	Source	Type	Name	Details	13 Oct 2022, 16:10:16	Warning	ecaOS	Network Activity	Network send activity above limit	Average network send activity has been above the set limit 8 Mb for more than 10 minutes. Current average network sent activity is 27.4 Mb																
Time	Level	Source	Type	Name	Details																								
13 Oct 2022, 16:10:16	Warning	ecaOS	Network Activity	Network send activity above limit	Average network send activity has been above the set limit 8 Mb for more than 10 minutes. Current average network sent activity is 27.4 Mb																								
<p><b>Email</b></p>	<p>The screenshot shows an email notification from ECA Notifications (noreply@gsf.ms) to 'jemi' on Thu 13/10/2022 4:10 PM. The subject is '[DC201809140003] High Network Outgoing Traffic'. The body of the email contains the following text:</p> <p>Dear user,      Average outgoing network traffic have been <b>above</b> the set limit <b>8 Mb</b> for more than <b>10 minutes</b>.      Time Reported: <b>13-Oct-22 16:10:16 +08:00</b>      High data transmission limit: 8 Mb for 10 minutes      Data Transmitted: 27.4 Mb      For further assistance, please contact TrueBlue Care:  <a href="mailto:trueblue@gscorp.com">trueblue@gscorp.com</a>      +603-8090 8277      Monday - Friday, 9AM - 6PM</p> <p>You received this email because your email address is listed as the notification email for Engineered Computer Appliance (ECA) serial no: DC201809140003</p> <p>ECA, Smart Logic, and TrueBlue are products and services provided by GSF.      ©2022 GSF Corporation, F-21-3A, IOI Boulevard, Jalan Kenari 6, 47170 Puchong, Selangor D.E, Malaysia</p>																												

### 14.4.2 Network send activity back to normal

<p><b>Dashboard</b></p>													
<p><b>Notification</b></p>	<p><b>Network send activity back to normal</b>          Average network send activity has returned to normal (after 0 hours 21 minutes). Current average network send activity is 3 Mb          16:31 • Network Activity</p>												
<p><b>Log</b></p>	<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>13 Oct 2022, 16:31:52</td> <td>Information</td> <td>ecaOS</td> <td>Network Activity</td> <td>Network send activity back to normal</td> <td>Average network send activity have returned to normal (after 0 hours 21 minutes). Current average network send activity is 3 Mb</td> </tr> </tbody> </table>	Time	Level	Source	Type	Name	Details	13 Oct 2022, 16:31:52	Information	ecaOS	Network Activity	Network send activity back to normal	Average network send activity have returned to normal (after 0 hours 21 minutes). Current average network send activity is 3 Mb
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13 Oct 2022, 16:31:52	Information	ecaOS	Network Activity	Network send activity back to normal	Average network send activity have returned to normal (after 0 hours 21 minutes). Current average network send activity is 3 Mb								
<p><b>Email</b></p>													



### 14.4.3 Network receive activity below limit

<p><b>Dashboard</b></p>	<p>The screenshot shows the ECA Network Activity dashboard. It features a line graph titled 'Network Activity' with 'Send' (blue) and 'Receive' (orange) data series. Below the graph are two summary tables:</p> <table border="1"> <thead> <tr> <th colspan="2">Network Send</th> <th colspan="2">Network Receive</th> </tr> </thead> <tbody> <tr> <td>Network Send Status</td> <td>Above Limit</td> <td>Network Receive Status</td> <td>Below Limit</td> </tr> <tr> <td>Network Send</td> <td>2.9 Mbps</td> <td>Network Receive</td> <td>133.8 Mbps</td> </tr> <tr> <td>Average Network Send</td> <td>2.9 Mbps</td> <td>Average Network Receive</td> <td>170.1 Mbps</td> </tr> <tr> <td>Average Network Send / Minute</td> <td>182.8 Mb</td> <td>Average Network Receive / Minute</td> <td>9.9 Gb</td> </tr> <tr> <td>Average Network Send / Hour</td> <td>64.9 Gb</td> <td>Average Network Receive / Hour</td> <td>1.0 Tb</td> </tr> <tr> <td>Average Network Send / Day</td> <td>Not Available</td> <td>Average Network Receive / Day</td> <td>Not Available</td> </tr> </tbody> </table>	Network Send		Network Receive		Network Send Status	Above Limit	Network Receive Status	Below Limit	Network Send	2.9 Mbps	Network Receive	133.8 Mbps	Average Network Send	2.9 Mbps	Average Network Receive	170.1 Mbps	Average Network Send / Minute	182.8 Mb	Average Network Receive / Minute	9.9 Gb	Average Network Send / Hour	64.9 Gb	Average Network Receive / Hour	1.0 Tb	Average Network Send / Day	Not Available	Average Network Receive / Day	Not Available
Network Send		Network Receive																											
Network Send Status	Above Limit	Network Receive Status	Below Limit																										
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Average Network Send / Day	Not Available	Average Network Receive / Day	Not Available																										
<p><b>Notification</b></p>	<p><b>Network received activity below limit</b>                  Average network receive activity has been below the set limit 330 Mb for more than 10 minutes. Current average network receive activity is 242 Mb                  16:24 • Network Activity</p>																												
<p><b>Log</b></p>	<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>13 Oct 2022, 16:24:22</td> <td>Warning</td> <td>ecaOS</td> <td>Network Activity</td> <td>Network receive activity below limit</td> <td>Average network receive activity has been below the set limit 330 Mb for more than 10 minutes. Current average network receive activity is 242 Mb</td> </tr> </tbody> </table>	Time	Level	Source	Type	Name	Details	13 Oct 2022, 16:24:22	Warning	ecaOS	Network Activity	Network receive activity below limit	Average network receive activity has been below the set limit 330 Mb for more than 10 minutes. Current average network receive activity is 242 Mb																
Time	Level	Source	Type	Name	Details																								
13 Oct 2022, 16:24:22	Warning	ecaOS	Network Activity	Network receive activity below limit	Average network receive activity has been below the set limit 330 Mb for more than 10 minutes. Current average network receive activity is 242 Mb																								
<p><b>Email</b></p>	<p>The screenshot shows an email notification from ECA Notifications. The subject is '[DC201809140003] One or more CCTVs might not be streaming'. The body of the email contains the following text:</p> <p>Dear user,      Average incoming network traffic have been <b>below</b> the set limit <b>330 Mb</b> for more than <b>10 minutes</b>. This could be because one or more CCTVs are not streaming.      Time Reported: <b>13-Oct-22 16:24:22 +08:00</b>      Low data reception limit: 330 Mb in 10 minutes      Data received: 242 Mb      For further assistance, please contact TrueBlue Care:  <a href="mailto:trueblue@gscorp.com">trueblue@gscorp.com</a>      +603-8090 8277      Monday - Friday, 9AM - 6PM</p> <p>You received this email because your email address is listed as the notification email for Engineered Computer Appliance (ECA) serial no: DC201809140003</p> <p>ECA, Smart Logic, and TrueBlue are products and services provided by GSF.      ©2022 GSF Corporation, F-21-3A, IOI Boulevard, Jalan Kenari 6, 47170 Puchong, Selangor D.E, Malaysia</p>																												

### 14.4.4 Network receive activity back to normal

<p><b>Dashboard</b></p>	<p>The screenshot shows the ECA Network Activity dashboard. At the top, there's a navigation menu with options like Summary, System, Service Monitor, Application Monitor, Processor Activity, Memory Activity, Disk Activity, Network Activity, Disk Health, Disk Guard, Session Shield, Management, Notification, Logs, Support, and About. The main content area features a 'Network Activity' line graph showing 'Send' (blue) and 'Receive' (orange) activity over a 10-minute period. Below the graph are two summary tables:</p> <table border="1"> <thead> <tr> <th colspan="2">Network Send</th> <th colspan="2">Network Receive</th> </tr> </thead> <tbody> <tr> <td>Network Send Status</td> <td>Normal</td> <td>Network Receive Status</td> <td>Normal</td> </tr> <tr> <td>Network Send</td> <td>5.2 Mbps</td> <td>Network Receive</td> <td>506.8 Mbps</td> </tr> <tr> <td>Average Network Send</td> <td>5.3 Mbps</td> <td>Average Network Receive</td> <td>347.4 Mbps</td> </tr> <tr> <td>Average Network Send / Minute</td> <td>319.7 Mb</td> <td>Average Network Receive / Minute</td> <td>20.2 Gb</td> </tr> <tr> <td>Average Network Send / Hour</td> <td>64.7 Gb</td> <td>Average Network Receive / Hour</td> <td>1.0 Tb</td> </tr> <tr> <td>Average Network Send / Day</td> <td>Not Available</td> <td>Average Network Receive / Day</td> <td>Not Available</td> </tr> </tbody> </table>	Network Send		Network Receive		Network Send Status	Normal	Network Receive Status	Normal	Network Send	5.2 Mbps	Network Receive	506.8 Mbps	Average Network Send	5.3 Mbps	Average Network Receive	347.4 Mbps	Average Network Send / Minute	319.7 Mb	Average Network Receive / Minute	20.2 Gb	Average Network Send / Hour	64.7 Gb	Average Network Receive / Hour	1.0 Tb	Average Network Send / Day	Not Available	Average Network Receive / Day	Not Available
Network Send		Network Receive																											
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Average Network Send / Day	Not Available	Average Network Receive / Day	Not Available																										
<p><b>Notification</b></p>	<p><b>Network received activity back to normal</b>                  Average network receive activity has returned to normal (after 0 hours 24 minutes). Current average network receive activity is 346.6 Mb                  16:48 • Network Activity</p>																												
<p><b>Log</b></p>	<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>13 Oct 2022, 16:48:31</td> <td>Information</td> <td>ecaOS</td> <td>Network Activity</td> <td>Network receive activity back to normal</td> <td>Average network receive activity has returned to normal (after 0 hours 24 minutes). Current average network receive activity is 346.6 Mb</td> </tr> </tbody> </table>	Time	Level	Source	Type	Name	Details	13 Oct 2022, 16:48:31	Information	ecaOS	Network Activity	Network receive activity back to normal	Average network receive activity has returned to normal (after 0 hours 24 minutes). Current average network receive activity is 346.6 Mb																
Time	Level	Source	Type	Name	Details																								
13 Oct 2022, 16:48:31	Information	ecaOS	Network Activity	Network receive activity back to normal	Average network receive activity has returned to normal (after 0 hours 24 minutes). Current average network receive activity is 346.6 Mb																								
<p><b>Email</b></p>	<p>The screenshot shows an email notification from ECA Notifications. The subject is '[DC201809140003] Incoming Network Traffic Returned to Normal'. The email body contains the following text:</p> <p>Dear user,      Previously reported low average incoming network traffic have <b>returned to normal</b>. Incoming network traffic previously fell below the limit of 330 Mb for more than 10 minutes      Time Reported: <b>13-Oct-22 16:48:31 +08:00</b>      Low data reception limit: 330 Mb in 10 minutes      Data received: 346.6 Mb      Stayed below the limit for: 0 Hours and 24 minutes      For further assistance, please contact TrueBlue Care:  <a href="mailto:trueblue@gscorp.com">trueblue@gscorp.com</a>      +603-8090 8277      Monday - Friday, 9AM - 6PM</p> <p>You received this email because your email address is listed as the notification email for Engineered Computer Appliance (ECA) serial no: DC201809140003</p> <p>ECA, Smart Logic, and TrueBlue are products and services provided by GSF.      ©2022 GSF Corporation, F-21-3A, IOI Boulevard, Jalan Kenari 6, 47170 Puchong, Selangor D.E., Malaysia</p>																												

## 14.5 Session Shield

### 14.5.1 Warning Status

<p><b>Dashboard</b></p>													
<p><b>Notification</b></p>	<p><b>Session Shield at warning state</b>          Shield has reached Warning state. 19.7% (1573 MB) remaining before system becoming unstable          09:56 • Session Shield</p>												
<p><b>Log</b></p>	<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, 9:56:07</td> <td>Warning</td> <td>ecaOS</td> <td>Session Shield</td> <td>Session Shield at warning state</td> <td>Shield has reached Warning state. 19.7% (1573 MB) remaining before system becoming unstable</td> </tr> </tbody> </table>	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
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								
<p><b>Email</b></p>													

14.5.2 Critical Status

<p><b>Dashboard</b></p>													
<p><b>Notification</b></p>	<p><b>Session Shield at critical state</b>          Shield has reached Critical state. 8.0% (638 MB) remaining before system becoming unstable. System will reboot in 3 minutes          11:45 • Session Shield</p>												
<p><b>Log</b></p>	<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, 11:45:30</td> <td>Critical</td> <td>ecaOS</td> <td>Session Shield</td> <td>Session Shield at critical state</td> <td>Shield has reached Critical state. 8% (638 MB) remaining before system becoming unstable. System will reboot in 3 minutes</td> </tr> </tbody> </table>	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
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								
<p><b>Email</b></p>													

14.5.3 Status back to normal

<p><b>Dashboard</b></p>													
<p><b>Notification</b></p>	<p><b>Session Shield back to normal</b> Shield returned to Normal state. 91.6% (7316 MB) remaining 11:48 • Session Shield</p>												
<p><b>Log</b></p>	<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								
<p><b>Email</b></p>													

## 14.6 Disk Health

### 14.6.1 Warning Status Disk

**Dashboard**

- 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

The screenshot shows the ECA dashboard for device DC201809140003. The 'System Disk' section shows a warning status with 67% health. The 'Bay 1' section shows a healthy status with 100% health. The System Disk details include: S.M.A.R.T. Status: Ok, Temperature: 34°C, Bad Sectors: None, Power on Hours: 1 year 9 months 19 days 4 hours, Model: KINGSTON SUV500120G, Serial Number: 50026B778212CD22, Firmware: 003056RR, Capacity: 111.8 GB, Controller: Standard SATA AHCI Controller, Controller Bus Number: 0, and Disk Location: Bus Number 0, Target ID 0, LUN 0.

**Notification**

**Disk health warning**  
Disk System Disk is down to 67% health  
17:46 • Disk Health

**Log**

Time	Level	Source	Type	Name	Details
20 Oct 2022, 17:46:16	Warning	ecaOS	Disk Health	Disk health warning	Disk System Disk is down to 67% health

**Email**

The email notification is titled "[DC201809140003] Hard Disk health is at warning level". It is addressed to "jemi" and was received on Thu 20/10/2022 5:46 PM. The body of the email contains the following information:

Dear user,  
Hard disk drive **System Disk** is down to 67% health

Time Reported: 20-Oct-22 17:46:16 +08:00  
Model: KINGSTON SUV500120G  
Serial Number: 50026B778212CD22  
Size: 111.8GB  
Current Disk Status: **Warning - 67% health**  
Temperature: 33 °C  
Bad Sectors: 0  
Power on hours: 15583 Hours

For further assistance, please contact TrueBlue Care:  
[trueblue@gscorp.com](mailto:trueblue@gscorp.com)  
+603-8090 8277  
Monday - Friday, 9AM - 6PM

You received this email because your email address is listed as the notification email for Engineered Computer Appliance (ECA) serial no: DC201809140003

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14.6.2 Critical Status Disk

<p><b>Dashboard</b></p>	<p>The screenshot shows the ECA web interface. On the left is a navigation menu with 'Disk Health' selected. The main content area displays two disk health panels. The 'System Disk' panel shows a 'Warning' status with a 57% health indicator. The 'Bay 1' panel shows a 'Critical' status with a 30% health indicator. Both panels list S.M.A.R.T. attributes such as Status, S.M.A.R.T. Status, Temperature, Bad Sectors, Power on Hours, Model, Serial Number, Firmware, Capacity, Controller, and Disk Location.</p>												
<p><b>Notification</b></p>	<p>The notification is a dark grey box with white text. It reads: "Disk health critical", "Disk Bay 1 is down to 30% health", and "17:55 - Disk Health".</p>												
<p><b>Log</b></p>	<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, 17:55:57</td> <td>Warning</td> <td>ecaOS</td> <td>Disk Health</td> <td>Disk health critical</td> <td>Disk Bay 1 is down to 30% health</td> </tr> </tbody> </table>	Time	Level	Source	Type	Name	Details	20 Oct 2022, 17:55:57	Warning	ecaOS	Disk Health	Disk health critical	Disk Bay 1 is down to 30% health
Time	Level	Source	Type	Name	Details								
20 Oct 2022, 17:55:57	Warning	ecaOS	Disk Health	Disk health critical	Disk Bay 1 is down to 30% health								
<p><b>Email</b></p>	<p>The email is from SmartLogic Mail Server (wilson-sl@gsf.com.my) to jemi. The subject is "[DC201809140003] Hard Disk is about to fail". The body contains the following information:</p> <ul style="list-style-type: none"> <li>Time Reported: 20-Oct-22 18:11:27 +08:00</li> <li>Model: ST31000528ASQ</li> <li>Serial Number: 5VP4QVNK</li> <li>Size: 931.5GB</li> <li>Current Disk Status: Warning - 30% health</li> <li>Temperature: 31 °C</li> <li>Bad Sectors: 4015</li> <li>Power on hours: 5573 Hours</li> </ul> <p>For further assistance, please contact TrueBlue Care: trueblue@gstcorp.com, +603-8090 8277, Monday - Friday, 9AM - 6PM.</p> <p>You received this email because your email address is listed as the notification email for Engineered Computer Appliance (ECA) serial no: DC201809140003</p>												

## 14.7 Disk Guard

### 14.7.1 New disk / Disk Inserted

**Dashboard**

- 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

Disk	Model	Serial	Status
System Disk	KINGSTON SUV500120G	500268778212CD22	Online
Bay 1	ST16000NM001G-2KK103	ZL2GE07E	Online
Bay 2	N/A	N/A	No Disk
Bay 3	N/A	N/A	No Disk
Bay 4	N/A	N/A	No Disk
Bay 5	N/A	N/A	No Disk
Bay 6	N/A	N/A	No Disk
Bay 7	N/A	N/A	No Disk
Bay 8	N/A	N/A	No Disk
Bay 9	N/A	N/A	No Disk
Bay 10	N/A	N/A	No Disk
Bay 11	N/A	N/A	No Disk
Bay 12	N/A	N/A	No Disk
Bay 13	N/A	N/A	No Disk
Bay 14	N/A	N/A	No Disk
Bay 15	N/A	N/A	No Disk

**Notification**

**Disk Inserted**  
 Disk ST16000NM001G-2KK103 (ZL2GE07E)  
 placed in Bay 1  
 12:32 • Disk Guard

**Log**

Time	Level	Source	Type	Name	Details
20 Oct 2022, 12:32:46	Information	ecaOS	Disk Guard	Disk Inserted	Disk ST16000NM001G-2KK103 (ZL2GE07E) placed in Bay 1

**Email**

[DC201809140003] Hard Disk have been inserted - Message (HTML)

**[DC201809140003] Hard Disk have been inserted**

From: ECA Notifications <noreply@gsf.ms>  
 To: jemi  
 Thu 20/10/2022 12:33 PM

Dear user,  
 Hard disk ST16000NM001G-2KK103 (ZL2GE07E) **inserted in Bay 1.**  
 Time Reported: 20-Oct-22 12:32:46 +08:00  
 Model: ST16000NM001G-2KK103  
 Serial Number: ZL2GE07E  
 Online/Offline: **Online**  
 Size: **14.6TB**

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

You received this email because your email address is listed as the notification email for Engineered Computer Appliance (ECA) serial no: DC201809140003

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14.7.2 Disk Removed

<p><b>Dashboard</b></p>	<table border="1"> <thead> <tr> <th>Disk</th> <th>Model</th> <th>Serial</th> <th>Status</th> </tr> </thead> <tbody> <tr> <td>System Disk</td> <td>KINGSTON SUV500120G</td> <td>50026B778212CD22</td> <td>Online</td> </tr> <tr style="background-color: #ffe0b2;"> <td>Bay 1</td> <td>ST16000NM001G-2KK103</td> <td>ZL2GE07E</td> <td>Removed</td> </tr> <tr> <td>Bay 2</td> <td>N/A</td> <td>N/A</td> <td>No Disk</td> </tr> <tr> <td>Bay 3</td> <td>N/A</td> <td>N/A</td> <td>No Disk</td> </tr> <tr> <td>Bay 4</td> <td>N/A</td> <td>N/A</td> <td>No Disk</td> </tr> <tr> <td>Bay 5</td> <td>N/A</td> <td>N/A</td> <td>No Disk</td> </tr> <tr> <td>Bay 6</td> <td>N/A</td> <td>N/A</td> <td>No Disk</td> </tr> <tr> <td>Bay 7</td> <td>N/A</td> <td>N/A</td> <td>No Disk</td> </tr> <tr> <td>Bay 8</td> <td>N/A</td> <td>N/A</td> <td>No Disk</td> </tr> <tr> <td>Bay 9</td> <td>N/A</td> <td>N/A</td> <td>No Disk</td> </tr> <tr> <td>Bay 10</td> <td>N/A</td> <td>N/A</td> <td>No Disk</td> </tr> <tr> <td>Bay 11</td> <td>N/A</td> <td>N/A</td> <td>No Disk</td> </tr> <tr> <td>Bay 12</td> <td>N/A</td> <td>N/A</td> <td>No Disk</td> </tr> <tr> <td>Bay 13</td> <td>N/A</td> <td>N/A</td> <td>No Disk</td> </tr> <tr> <td>Bay 14</td> <td>N/A</td> <td>N/A</td> <td>No Disk</td> </tr> <tr> <td>Bay 15</td> <td>N/A</td> <td>N/A</td> <td>No Disk</td> </tr> </tbody> </table>	Disk	Model	Serial	Status	System Disk	KINGSTON SUV500120G	50026B778212CD22	Online	Bay 1	ST16000NM001G-2KK103	ZL2GE07E	Removed	Bay 2	N/A	N/A	No Disk	Bay 3	N/A	N/A	No Disk	Bay 4	N/A	N/A	No Disk	Bay 5	N/A	N/A	No Disk	Bay 6	N/A	N/A	No Disk	Bay 7	N/A	N/A	No Disk	Bay 8	N/A	N/A	No Disk	Bay 9	N/A	N/A	No Disk	Bay 10	N/A	N/A	No Disk	Bay 11	N/A	N/A	No Disk	Bay 12	N/A	N/A	No Disk	Bay 13	N/A	N/A	No Disk	Bay 14	N/A	N/A	No Disk	Bay 15	N/A	N/A	No Disk
Disk	Model	Serial	Status																																																																		
System Disk	KINGSTON SUV500120G	50026B778212CD22	Online																																																																		
Bay 1	ST16000NM001G-2KK103	ZL2GE07E	Removed																																																																		
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<p><b>Notification</b></p>	<p><b>Disk Removed</b>                  Disk ST16000NM001G-2KK103 (ZL2GE07E)                  removed from Bay 1                  12:36 • Disk Guard</p>																																																																				
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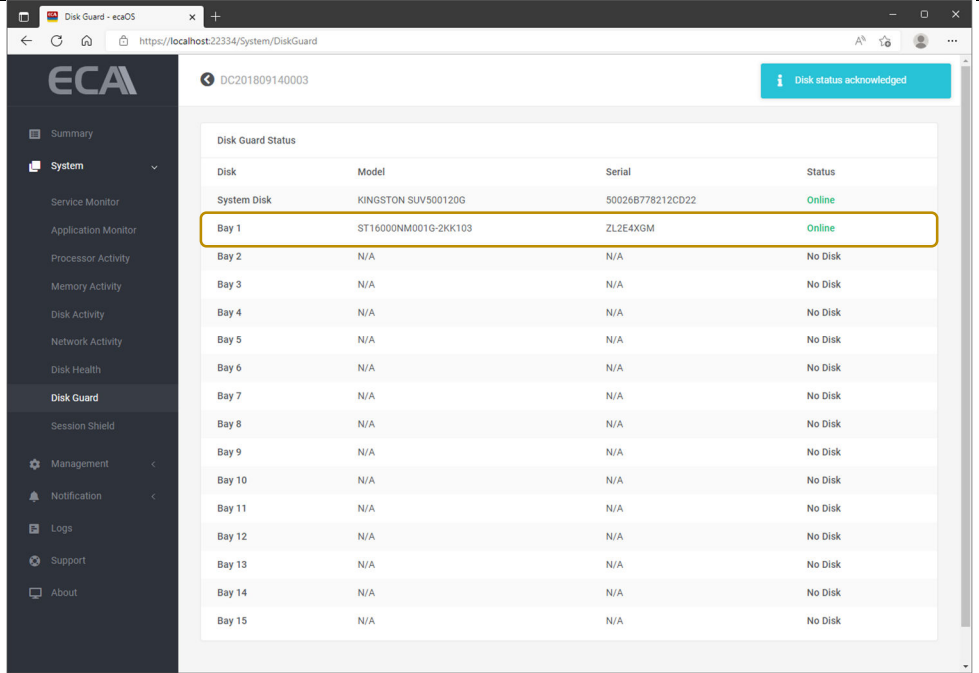
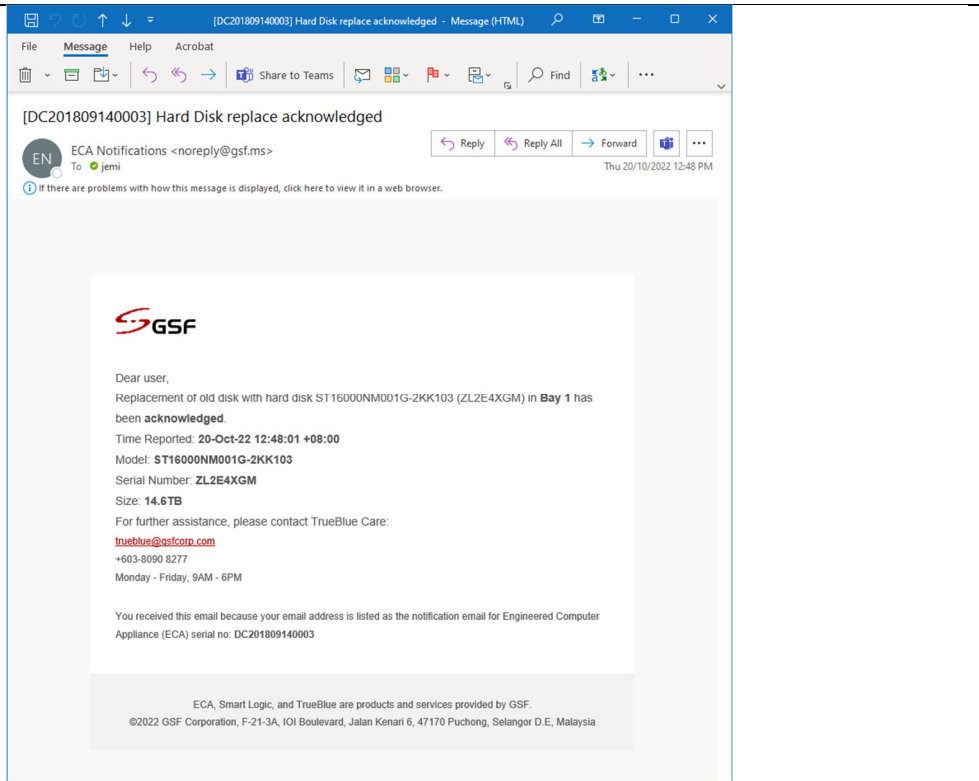
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<p><b>Email</b></p>	<p>[DC201809140003] Hard Disk remove acknowledged</p> <p>ECA Notifications - &lt;noreply@gsf.ms&gt;          To: jemi          Thu 20/10/2022 12:38 PM</p> <p>Dear user,          Removal of hard disk ST16000NM001G-2KK103 (ZL2GE07E) from <b>Bay 1</b> has been <b>acknowledged</b>.          Time Reported: 20-Oct-22 12:38:08 +08:00          Model: ST16000NM001G-2KK103          Serial Number: ZL2GE07E          Size: 14.6TB          For further assistance, please contact TrueBlue Care:  <a href="mailto:trueblue@gscorp.com">trueblue@gscorp.com</a>          +603-8090 8277          Monday - Friday, 9AM - 6PM</p> <p>You received this email because your email address is listed as the notification email for Engineered Computer Appliance (ECA) serial no: DC201809140003</p> <p>ECA, Smart Logic, and TrueBlue are products and services provided by GSF.          ©2022 GSF Corporation, F-21-3A, IOI Boulevard, Jalan Kenari 6, 47170 Puchong, Selangor D.E., Malaysia</p>																																																																				

## 14.7.4 Disk Replaced

<p><b>Dashboard</b></p>													
<p><b>Notification</b></p>	<p><b>Disk Replaced</b>          Disk (ZL2E4XGM) have replaced previous disk (ZL2GE07E) in Bay 1          12:44 • Disk Guard</p>												
<p><b>Log</b></p>	<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, 12:44:13</td> <td>Warning</td> <td>ecaOS</td> <td>Disk Guard</td> <td>Disk Replaced</td> <td>Disk (ZL2E4XGM) have replaced previous disk (ZL2GE07E) in Bay 1</td> </tr> </tbody> </table>	Time	Level	Source	Type	Name	Details	20 Oct 2022, 12:44:13	Warning	ecaOS	Disk Guard	Disk Replaced	Disk (ZL2E4XGM) have replaced previous disk (ZL2GE07E) in Bay 1
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<p><b>Email</b></p>													

## 14.7.5 Disk Replaced Acknowledge

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<p><b>Notification</b></p>	<p><b>Disk Replace Acknowledged</b>          Disk ST16000NM001G-2KK103 (ZL2E4XGM)          now default disk in Bay 1          12:48 • Disk Guard</p>																																																																				
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<p><b>Email</b></p>	 <p>[DC201809140003] Hard Disk replace acknowledged</p> <p>ECA Notifications &lt;noreply@gsf.ms&gt;      To: jemi      Thu 20/10/2022 12:48 PM</p> <p>If there are problems with how this message is displayed, click here to view it in a web browser.</p> <p><b>GSF</b></p> <p>Dear user,      Replacement of old disk with hard disk ST16000NM001G-2KK103 (ZL2E4XGM) in <b>Bay 1</b> has been <b>acknowledged</b>.      Time Reported: 20-Oct-22 12:48:01 +08:00      Model: ST16000NM001G-2KK103      Serial Number: ZL2E4XGM      Size: 14.6TB      For further assistance, please contact TrueBlue Care:  <a href="mailto:trueblue@gsfcorp.com">trueblue@gsfcorp.com</a>      +603-8090 8277      Monday - Friday, 9AM - 6PM</p> <p>You received this email because your email address is listed as the notification email for Engineered Computer Appliance (ECA) serial no: DC201809140003</p> <p>ECA, Smart Logic, and TrueBlue are products and services provided by GSF.      ©2022 GSF Corporation, F-21-3A, IOI Boulevard, Jalan Kenari 6, 47170 Puchong, Selangor D.E., Malaysia</p>																																																																				

## 14.8 Log

### 14.8.1 ECA reboot more than 3 times

Figure 151 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 151

### 14.8.2 AC Power loss

Figure 152 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 152

### 14.8.3 Unauthorize ECA Reboot

Figure 153 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 153

#### 14.8.4 Unauthorize ECA Shutdown

Figure 154 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 154

#### 14.8.5 Authorize ECA Shutdown

Figure 155 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 155

#### 14.8.6 Authorize ECA Reboot

Figure 156 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 156

#### 14.8.7 Power up ECA by pressing power button

Figure 157 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 157

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

Figure 158 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 158

## 14.8.9 Accessing Dashboard using Security Key

Figure 159 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 159

## 14.8.10 Accessing Dashboard using Virtual Security Key

Figure 160 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 160

## 14.8.11 Add new Security Key

Figure 161 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 161

### 14.8.12 Delete paired Security Key

Figure 162 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 162

### 14.8.13 Delete Virtual Security Key

Figure 162 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 163

### 14.8.14 Add Virtual Security Key

Figure 162 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 164

### 14.8.15 Open ECA cover chassis

Figure 161 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 165

### 14.8.16 Close ECA cover chassis

Figure 161 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 166





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