Engineered Computer Appliance Operating System

ECA45

ecaOS 6.2

USER GUIDE

Revision 1.5
23 Nov 2023

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Engineered Computer Appliance (ECA45) Operating System 6.2 User Guide

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1.3	19 April 2023	4th Edition (Bay orientation)	Jemiruddin
1.4	30 May 2023	Updated to ecaOS 6.1	Keong
1.5	23 Nov 2023	Updated to ecaOS 6.2	Keong

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Table of Contents

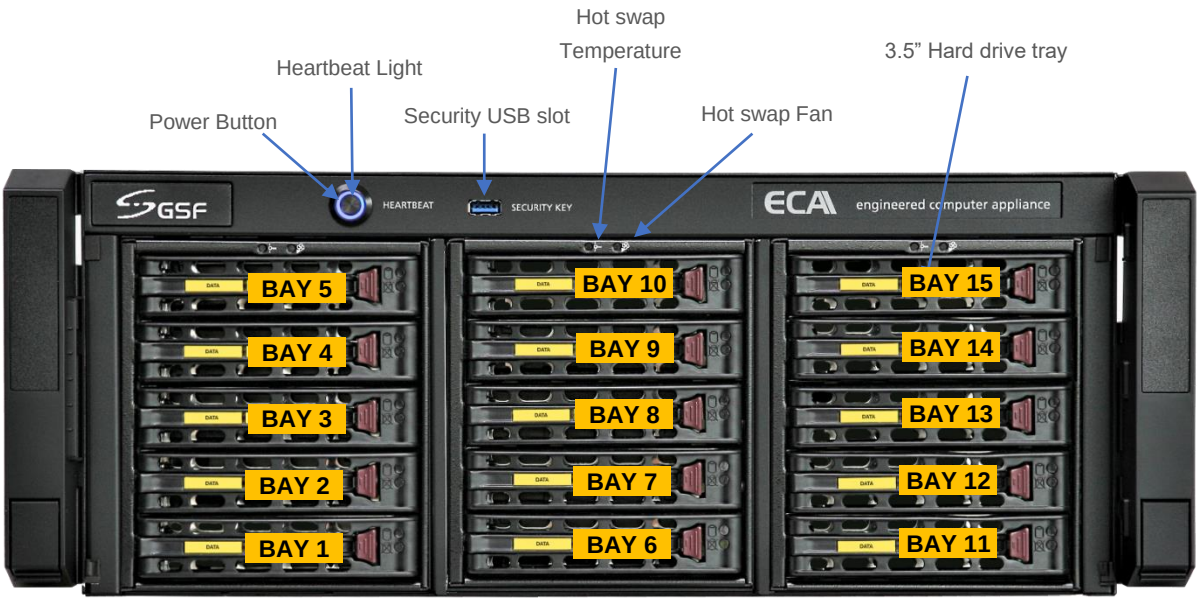
1 ECA4.5 6
1.1 FX series 6
1.2 EX series 7
1.3 DX series 8
1.4 MX series 9
1.5 VW series 10
1.6 Security & Virtual Key 11
2 Heartbeat 12
2.1 What is Heartbeat 12
2.2 Heartbeat Alert 12
3 Rail 14
3.1 Package Content 15
3.2 Sliding Rail Assembly 15
3.3 Installation Steps 16
4 ECA Naming 21
5 ECA Series 22
6 ecaOS 23
1.7 ecaOS Login 24
1.8 ecaOS Locked Out 24
7 Dashboard and Notification 25
7.1 Accessing ecaOS Dashboard 26
7.1.1 Using Virtual Security Key (ECA Access Code) 26
7.1.2 Get Virtual Security Key (ECA Access Code) 27
7.1.3 Remotely Access ecaOS 31
7.2 ecaOS Dashboard ▸ Summary 32
8 System 34
8.1 System Monitor 34
8.2 Service Monitor 35
8.2.1 Add Services 35
8.2.2 Delete Services 38
8.3 Application Monitor 39
8.3.1 Add Application 39
8.3.2 Delete Application 42
8.4 Processor Activity 43
8.5 Memory Activity 44
8.6 Disk Activity 45
8.7 Network Activity 47
8.8 Disk Health 49
8.9 Disk Guard 52
8.9.1 Hard disk change during ECA Power Off 53
8.10 Session Shield 54
8.10.1 Activate Session Shield 54
8.10.2 Deactivate Session Shield 57
8.10.3 Exclusion List 58
8.10.4 Add Exclusion Files or Folder 59
8.10.5 Delete Exclusion Files or folder 60
8.10.6 Add Registry Keys 60
8.10.7 Delete Exclusion Registry Key 62
8.10.8 Status: Warning 62
8.10.9 Status: Critical 62
9 Management 64

9.1 General 64
9.1.1 Authorize Restart 64
9.1.2 Authorize Shutdown 65
9.1.3 Saving & Deploy Layer 66
9.1.3.1 Save Layer 66
9.1.3.2 Soft Reset 68
9.1.3.3 Hard Reset 70
9.1.3.4 Last Saved Layer Information 72
9.1.4 Machine Name 72
9.1.5 Change Dashboard Port 72
9.2 Security Key 73
9.2.1 Register Security Key 73
9.2.2 Delete Security Key 74
9.2.3 Add Virtual Security Key 75
9.2.4 Delete Virtual Security Key 77
9.3 Network 78
9.3.1 Enable DDNS 78
9.3.2 Enable Network Teaming 78
9.3.3 Disable Network Teaming 79
9.4 RSS (Redundant Storage System) 80
9.4.1 Create Storage Pool 80
9.4.2 Delete Storage Pool 82
9.4.3 Extend Storage Pool 83
9.4.4 Repair Storage Pool 84
9.5 Settings 88
9.5.1 Email Recipient Settings 88
9.5.2 Mail Servers 88
9.5.3 Events 88
9.5.3.1 Events List 89
10 Events 95
10.1 Notification 95
10.2 Logs 96
10.2.1 Filtering Log 96
10.2.2 Exporting Log 97
10.3 Report 100
11 Support 102
11.1 TrueBlue Remote Support 102
11.2 Microsoft Remote Desktop 102
11.3 Chrome Remote Desktop 104
11.3.1 Setup ECA into your Chrome Remote Desktop 104
11.3.2 Accessing ECA via Chrome Remote Desktop? 107
12 About 109
12.1 Machine Information 109
12.2 Heartbeat Information 110
13 APPENDIX 111
13.1 Processor Activity 111
13.1.1 CPU activity above limit 111
13.1.2 CPU activity back to normal 112
13.2 Memory Activity 113
13.2.1 Memory usage above limit 113
13.2.2 Memory activity back to normal 114
13.3 Disk Activity 115
13.3.1 Disk read activity above limit 115
13.3.2 Disk read activity back to normal 116

13.3.3 Disk write activity below limit 117
13.3.4 Disk write activity back to normal 118
13.4 Network Activity 119
13.4.1 Network send activity above limit 119
13.4.2 Network send activity back to normal 120
13.4.3 Network receive activity below limit 121
13.4.4 Network receive activity back to normal 122
13.5 Session Shield 123
13.5.1 Warning Status 123
13.5.2 Critical Status 124
13.5.3 Status back to normal 125
13.6 Disk Health 126
13.6.1 Warning Status Disk 126
13.6.2 Critical Status Disk 127
13.7 Disk Guard 128
13.7.1 New disk / Disk Inserted 128
13.7.2 Disk Removed 129
13.7.3 Disk Removed Acknowledge 130
13.7.4 Disk Replaced 131
13.7.5 Disk Replaced Acknowledge 132
13.8 Log 133
13.8.1 ECA reboot more than 3 times 133
13.8.2 AC Power loss 133
13.8.3 Unauthorize ECA Reboot 133
13.8.4 Unauthorize ECA Shutdown 134
13.8.5 Authorize ECA Shutdown 134
13.8.6 Authorize ECA Reboot 134
13.8.7 Power up ECA by pressing power button 134
13.8.8 Force shutdown by pressing power (heartbeat) button 135
13.8.9 Accessing Dashboard using Security Key 135
13.8.10 Accessing Dashboard using Virtual Security Key 135
13.8.11 Add new Security Key 135
13.8.12 Delete paired Security Key 136
13.8.13 Delete Virtual Security Key 136
13.8.14 Add Virtual Security Key 136
13.8.15 Open ECA cover chassis 136
13.8.16 Close ECA cover chassis 136

1 ECA4.5

1.1 FX series



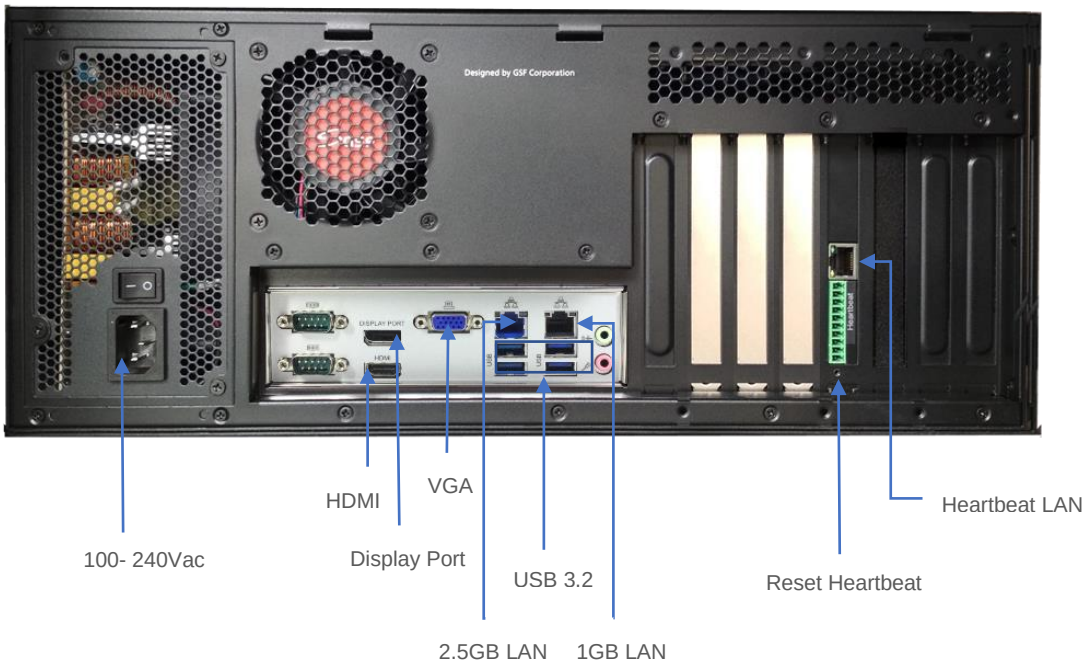
Power Button : Power button ECA

Heartbeat light : ECA operational indication

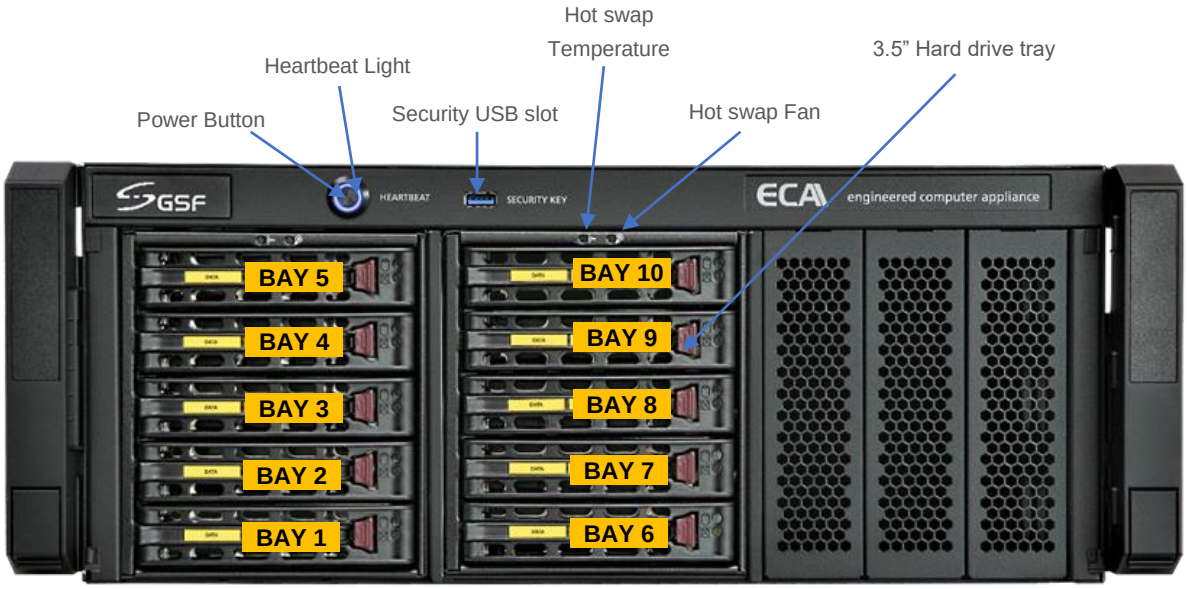
Security USB slot : This port for security key use to call ‘System Manager’

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

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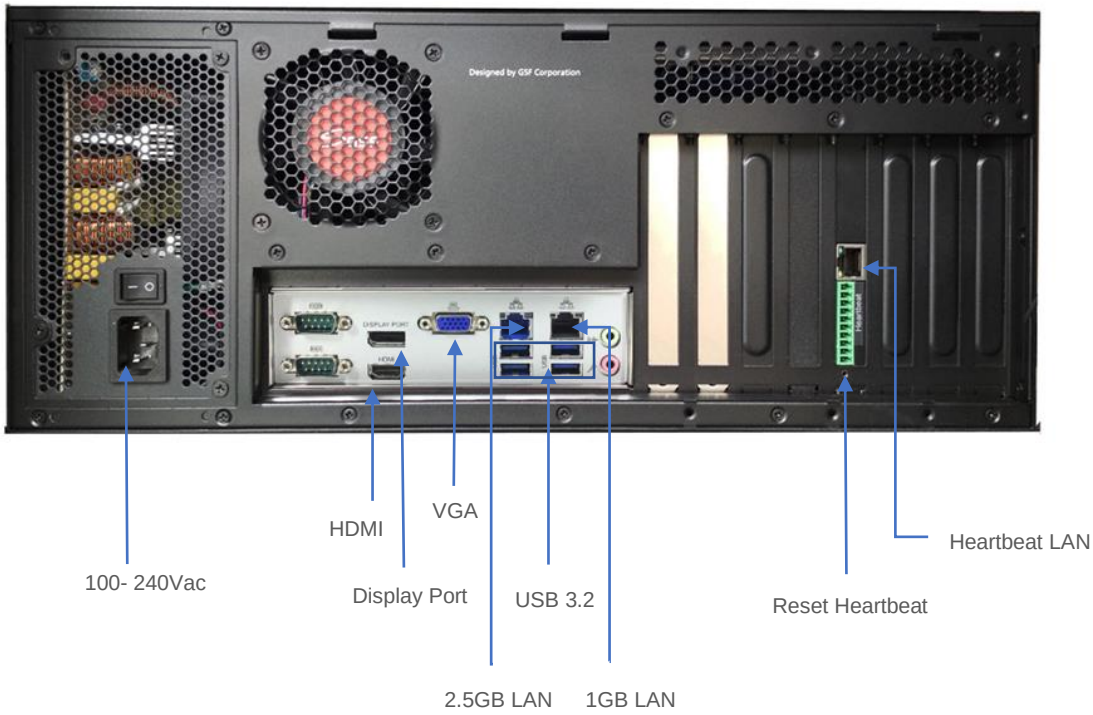
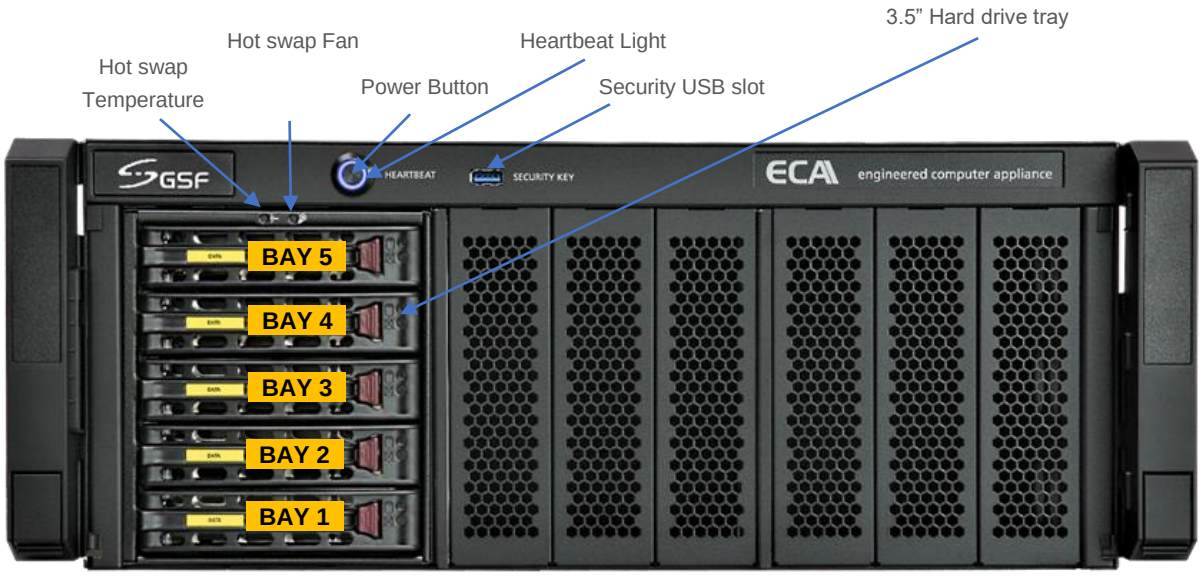
Hot swap fan: The LED will light up if no hot swap fan detected or not functioning



1.3 DX series



Power Button : Power button ECA

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

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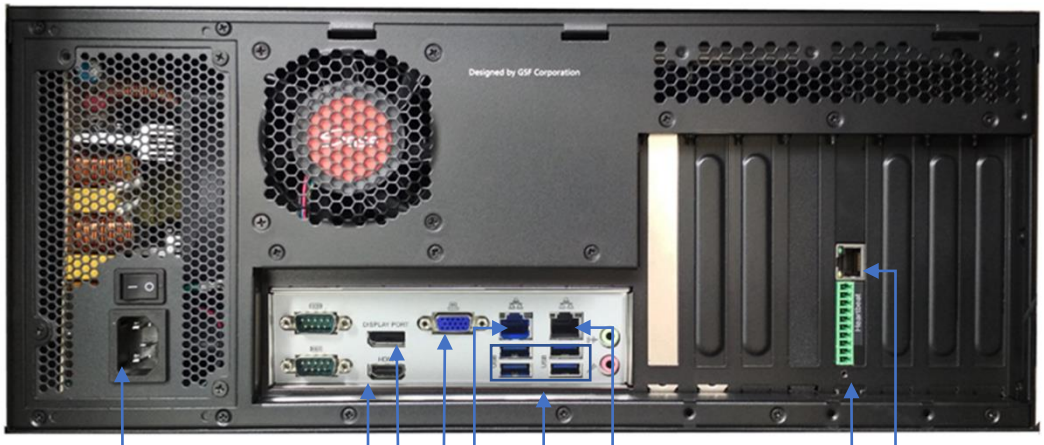
Hot swap fan: The LED will light up if no hot swap fan detected or not functioning



HDMI

VGA

Heartbeat LAN

100- 240Vac

Display Port

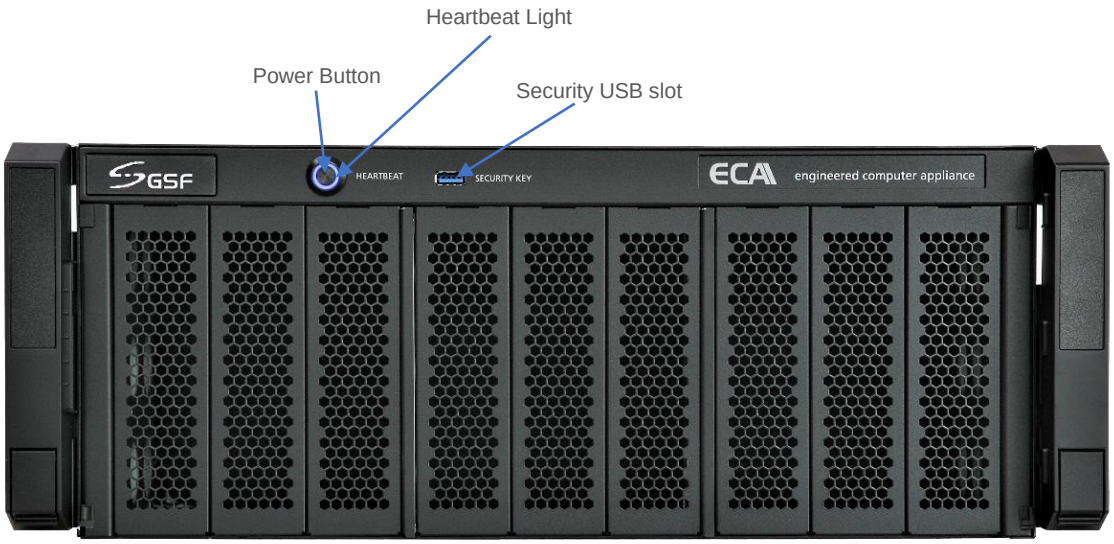
USB 3.2

Reset Heartbeat

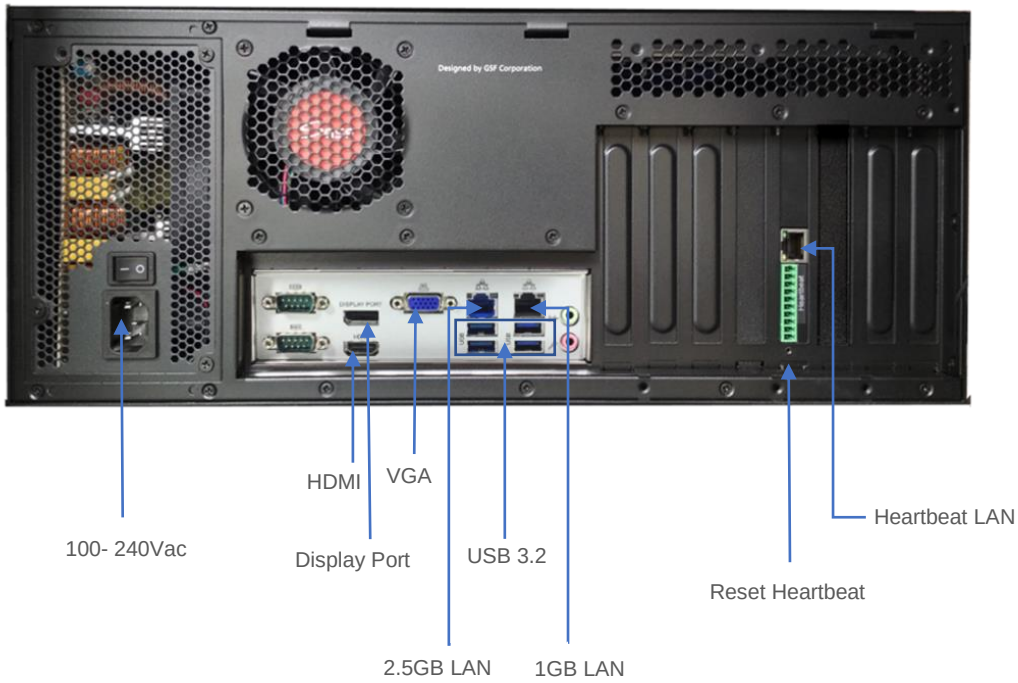
2.5GB LAN

1GB LAN

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?

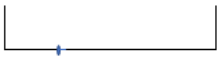
- **Unauthorized Shutdown:** The HeartBeat will reboot the ECA.
- **Unauthorized Power Unplug:** HeartBeat will produce beep tone.
- **ECA not responding:** HeartBeat will force restart the ECA after 2 minutes no respond.
- **Blue screen:** HeartBeat will force restart the ECA after 2 minutes no respond.

ECA power LED indication:

LED STATUS	ECA SCENARIO	DESCRIPTION
Slow glow and dim	System running in OS	HeartBeat operating normally.
Blinking	• ECA OFF • ECA rebooting. • System running in OS	• Low HeartBeat battery • ECA in rebooting status • Heartbeat not ready

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	1. Expected AC power loss. 2. AC power resumed. 3. Authorized shutdown
2		Bad event	No repeat	ECA ON	1. ECA failed to enter ecaOS after 15 minutes. 2. ecaOS not responsive for 2 minutes.

					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	1. Repetitive ECA reboot (more than 3 times within half an hour)[1\] 2. Chassis opened (when not in Authorized Shutdown state)[2] 3. ECA failed to enter ecaOS (3 HB reboot attempts in 45 minutes)[1,3]
				ECA OFF	1. Unexpected AC power loss[4]

NOTE:

[1] 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.

[2] Closing chassis cover will mute the beep tone

[3] Successful entered OS will mute the beep tone

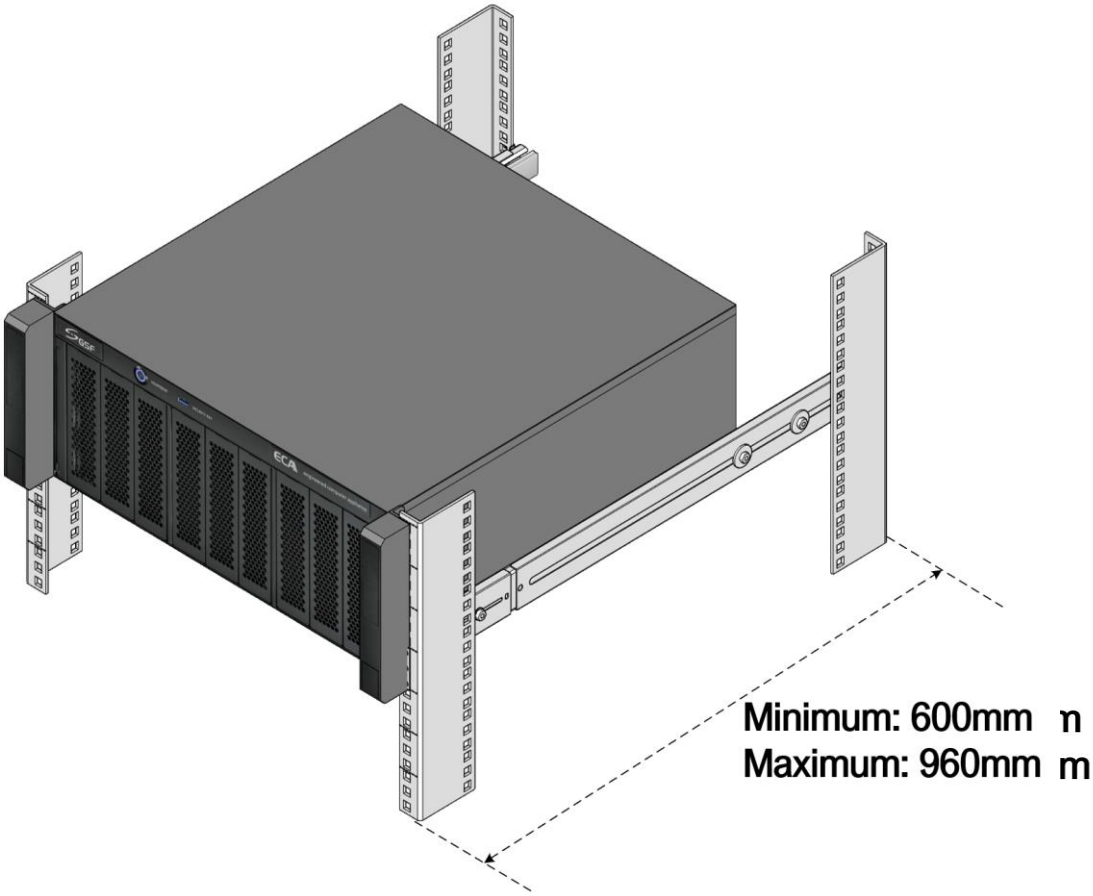
[4] Resumed AC power to ECA will mute the beep tone

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[1] for equipment rack depth, front to rear vertical mounting column, is <u>600mm</u>.



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

[1]*Based on slide rail part number: King Slide 3A68-584BPZZ11ED.*

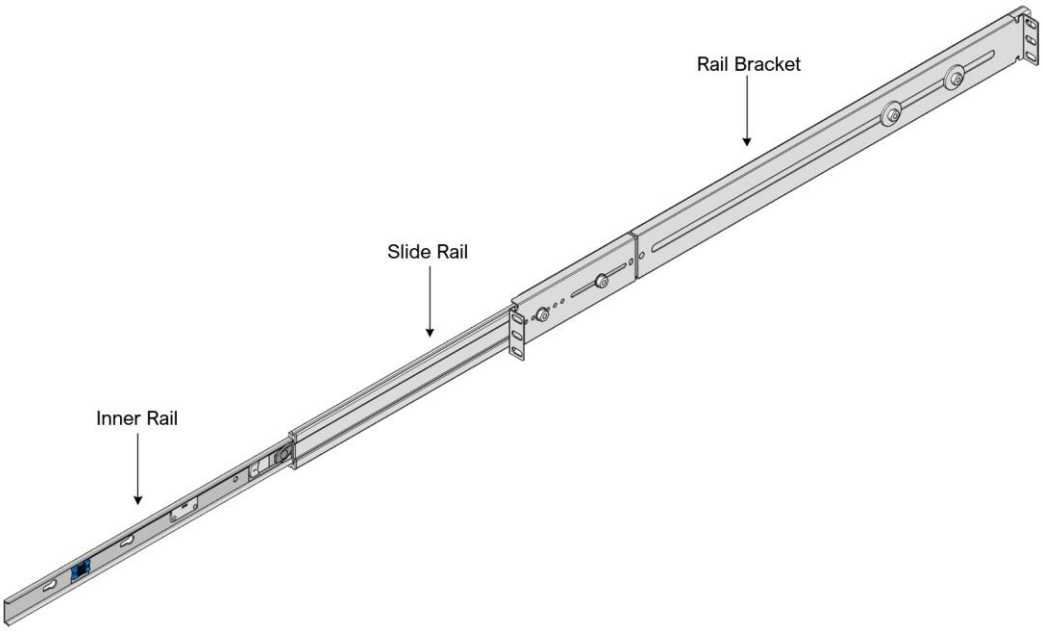
3.1 Package Content

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

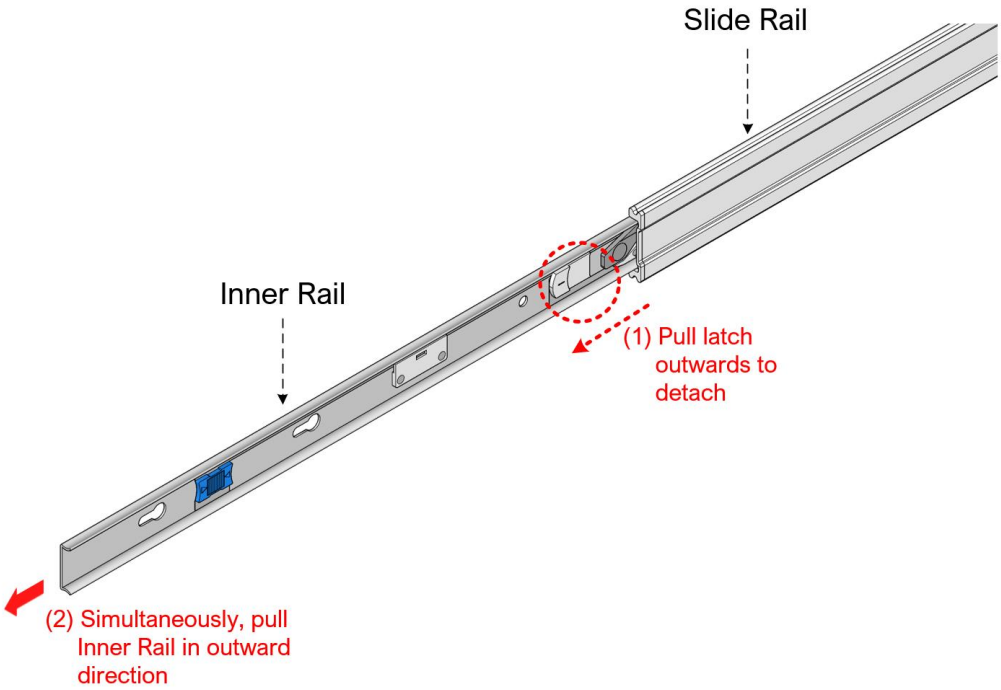


3.3 Installation Steps

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

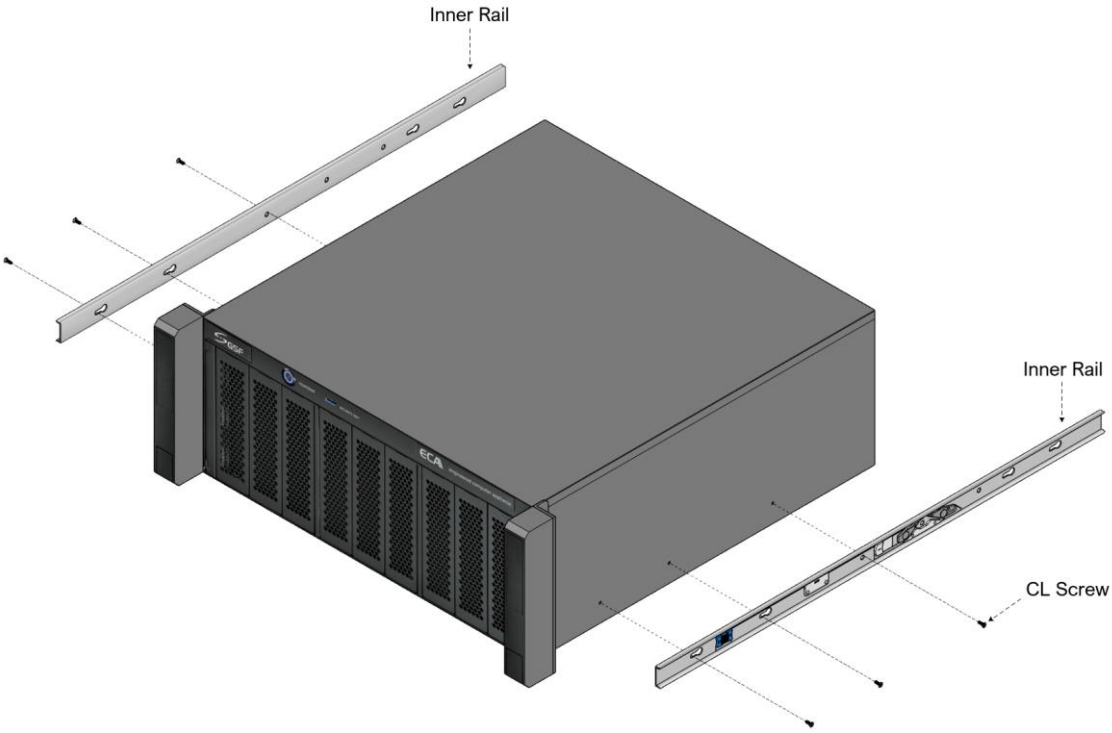
Extend the parts of the Sliding rail to reveal the WHITE color latch on the Inner Rail.

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.



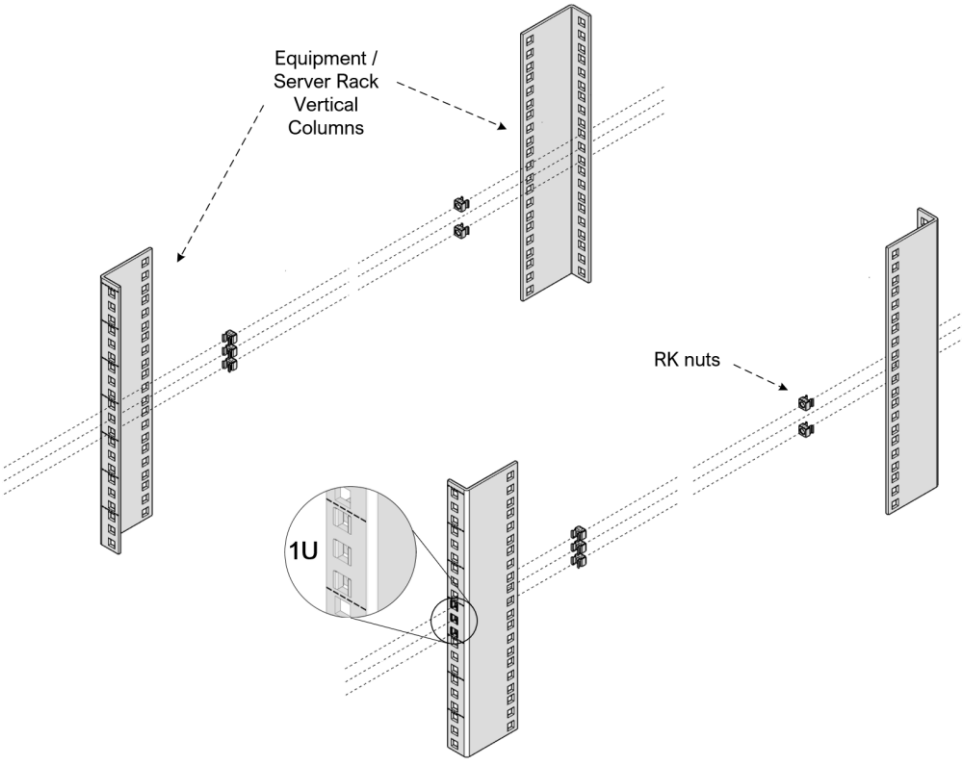
DO NOT remove the Slide rail from the Rail assembly. It is **NOT removable**.

Step 2: Attach Inner Rail to ECA Chassis.

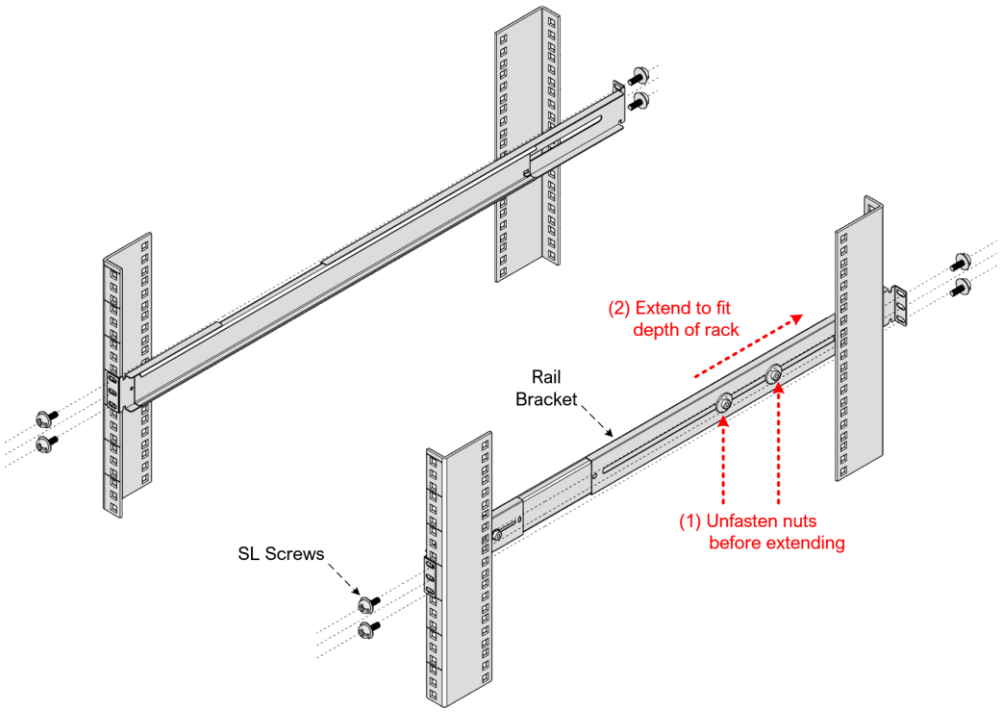


Step 3: Insert the RK nuts to Equipment Rack or Server Rack.

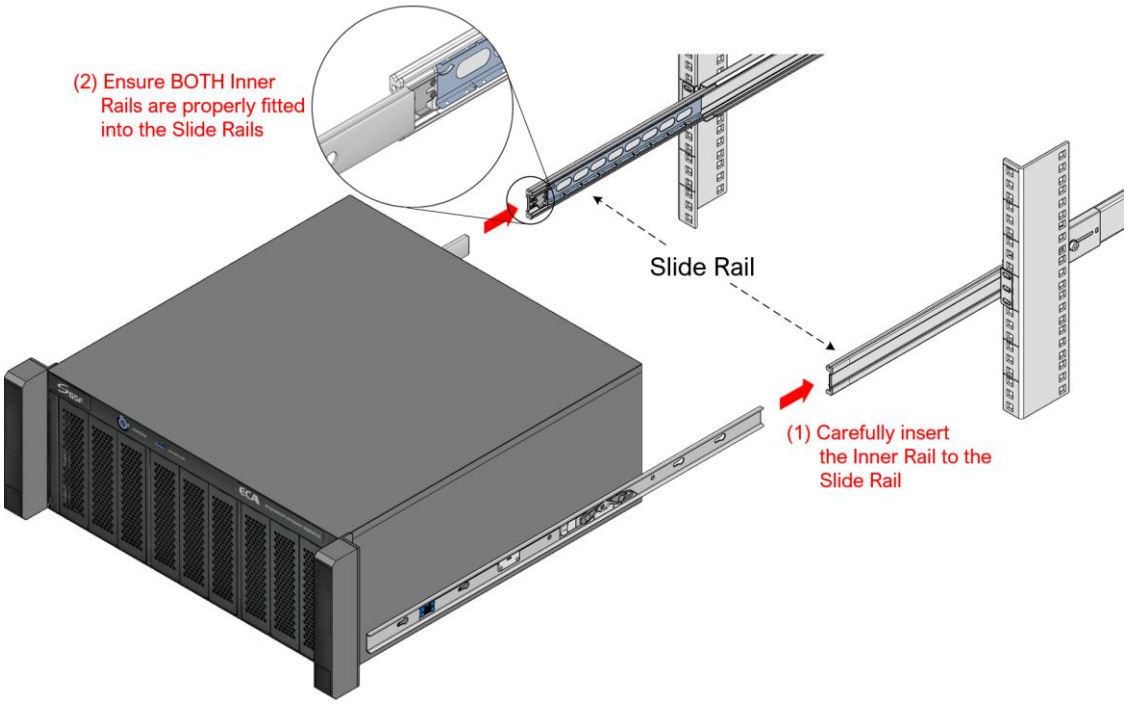
- **Before inserting the nuts, make sure to reserve total 4U height and spacing for every ECA.**
- **The Sliding Rail is attached to the lowest 1U on the ECA.**
- **Ensure above the sliding rail, there is another 3U clearance space for the ECA.**
- **Take note of proper and correct spacing for 1U height.**



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.

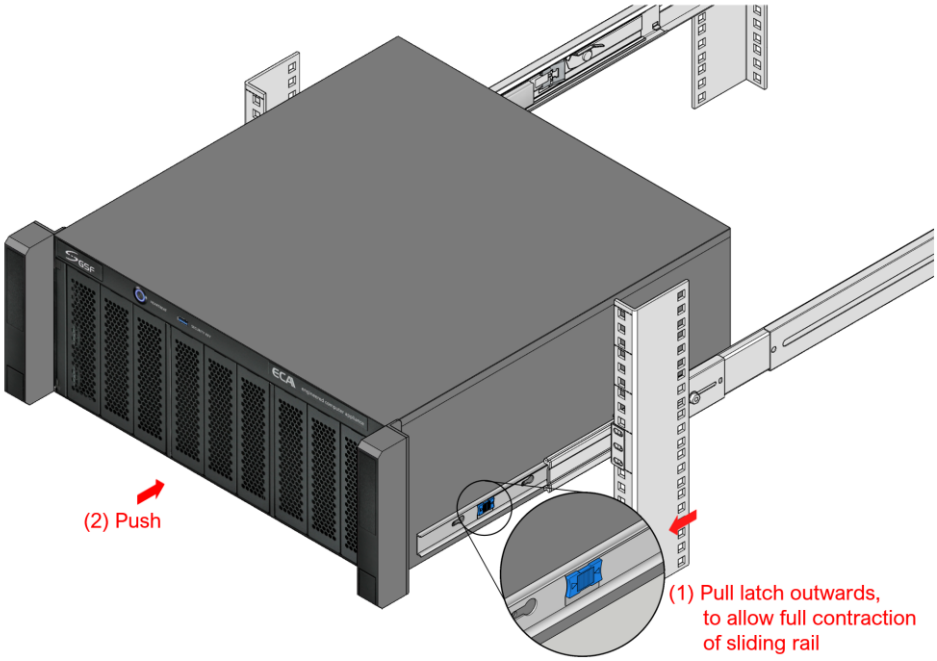


Step 5: Carry the ECA, which now has the Inner Rails attached, and ensure both Inner Rails are securely inserted into the Sliding Rail.

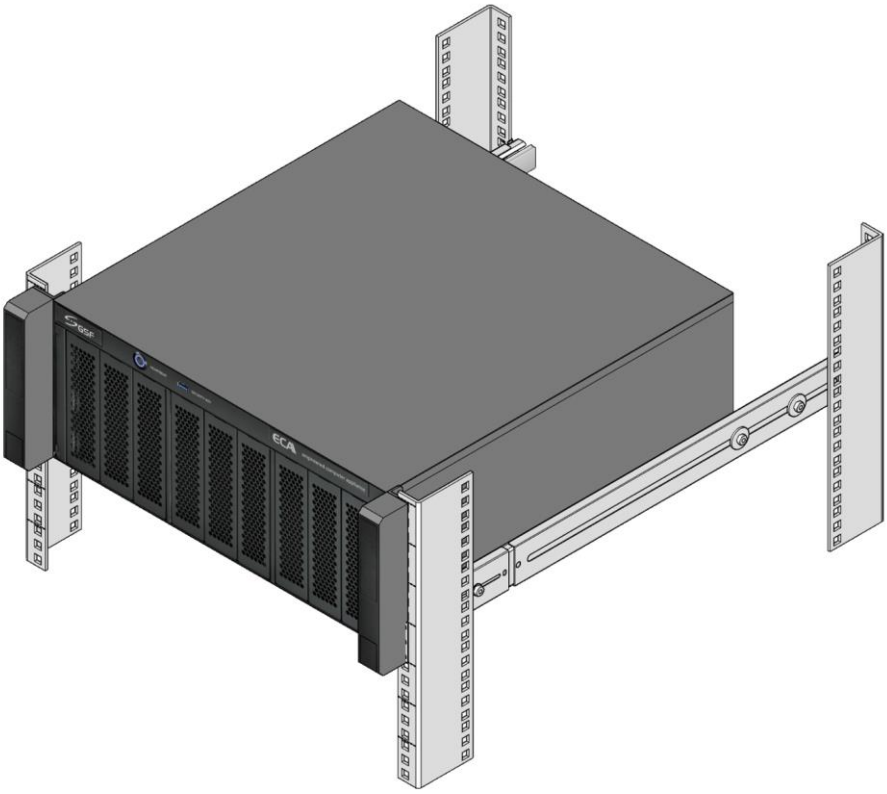


Step 6: Push the ECA inwards to the rack until the mounting brackets encounter the slide-rail stop.

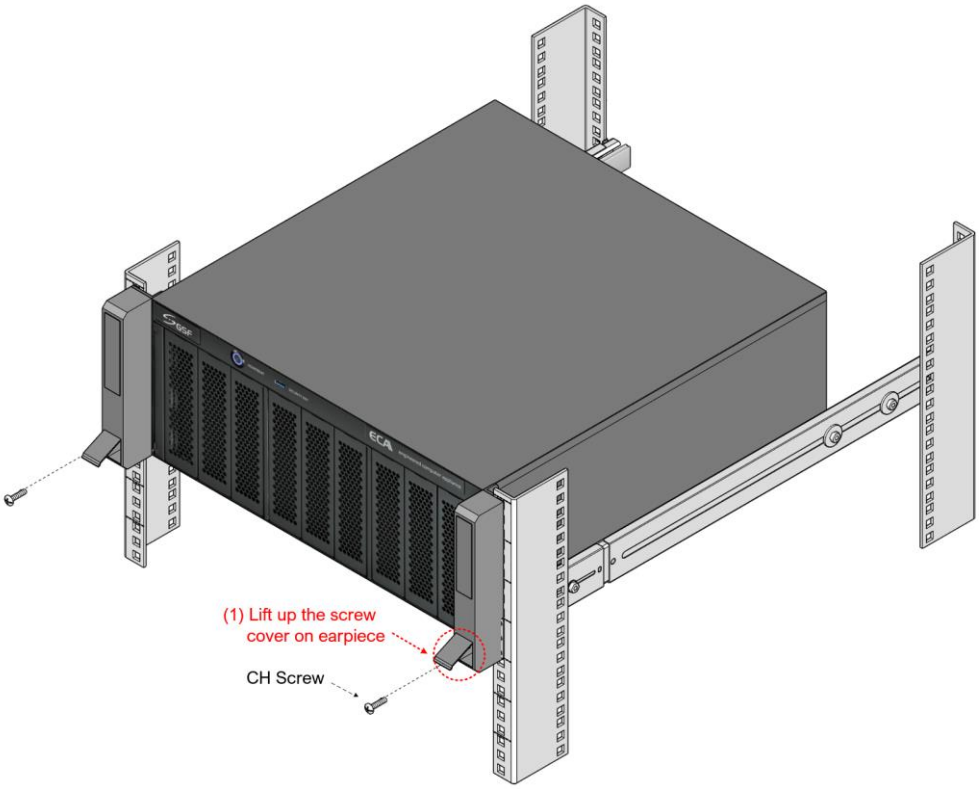
Then, simultaneously pull and hold the **BLUE** latch on the Inner Rail, while pushing the ECA inwards. This will fully contract the whole Sliding Rail assembly.



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

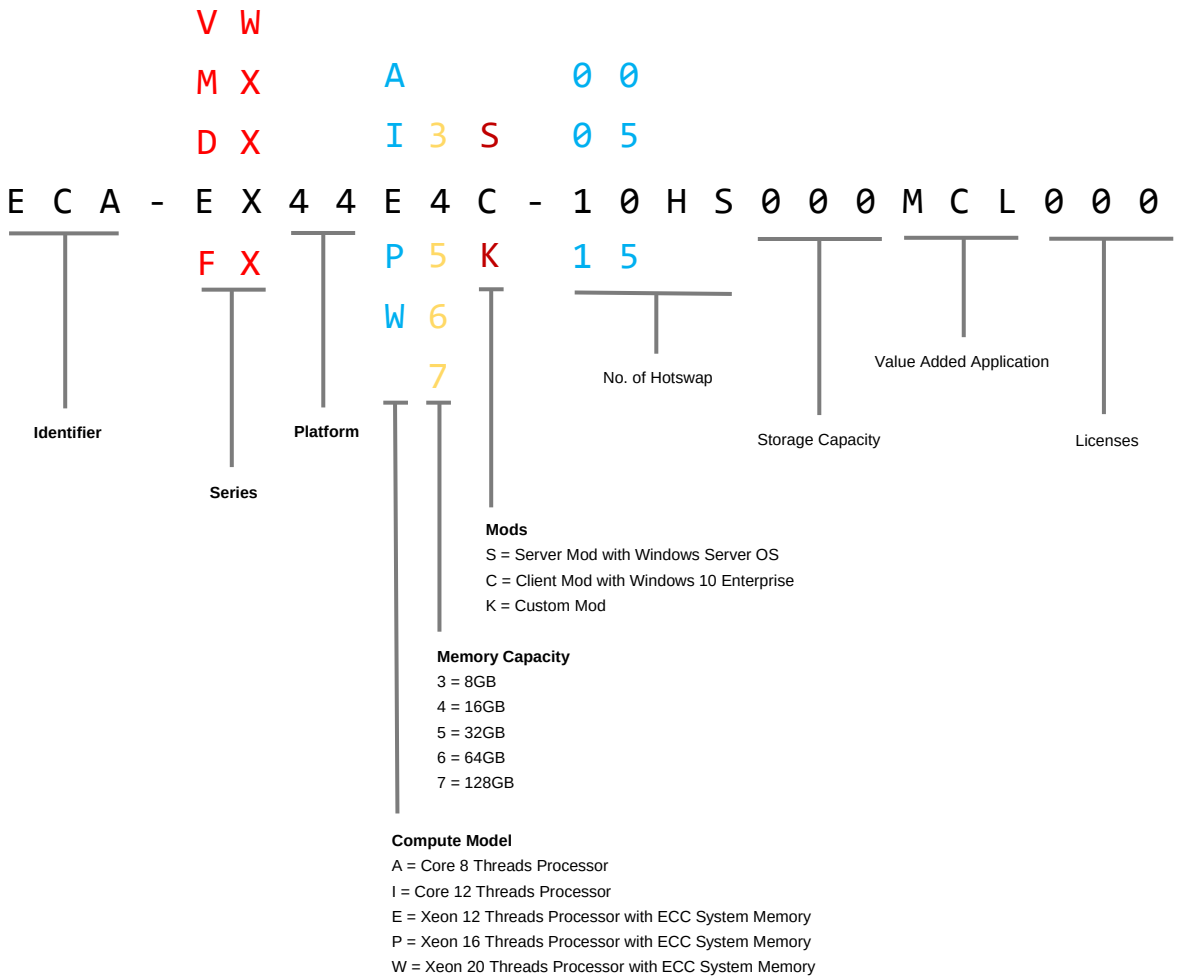


Step 8: Lift the screw cover on the earpiece of the ECA. Fasten ECA to the Sliding Rail using the CH Screw.



4 ECA Naming

The ECA naming will represent the specification of the platform.



5 ECA Series

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

6 ecaOS

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

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

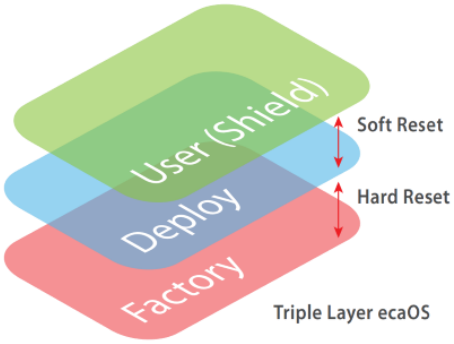


Figure 1: Triple Layers

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:

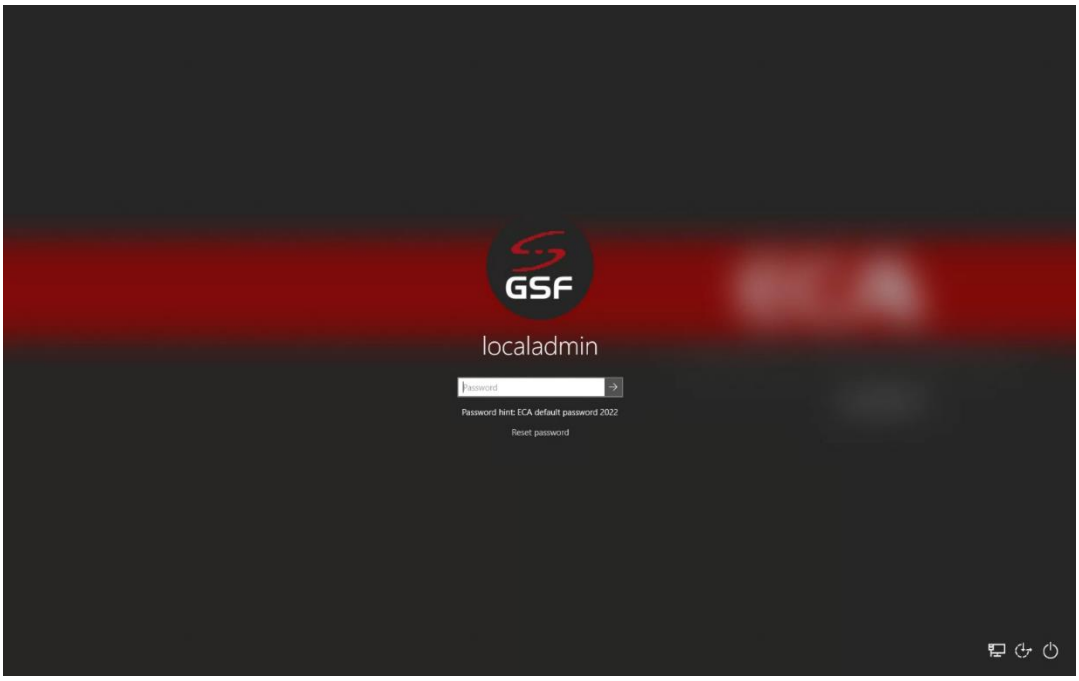


Figure 2: ecaOS Login Screen

Username : **localadmin**

Password : **Please contact TrueBlue support*

trueblue@gsfcorp.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

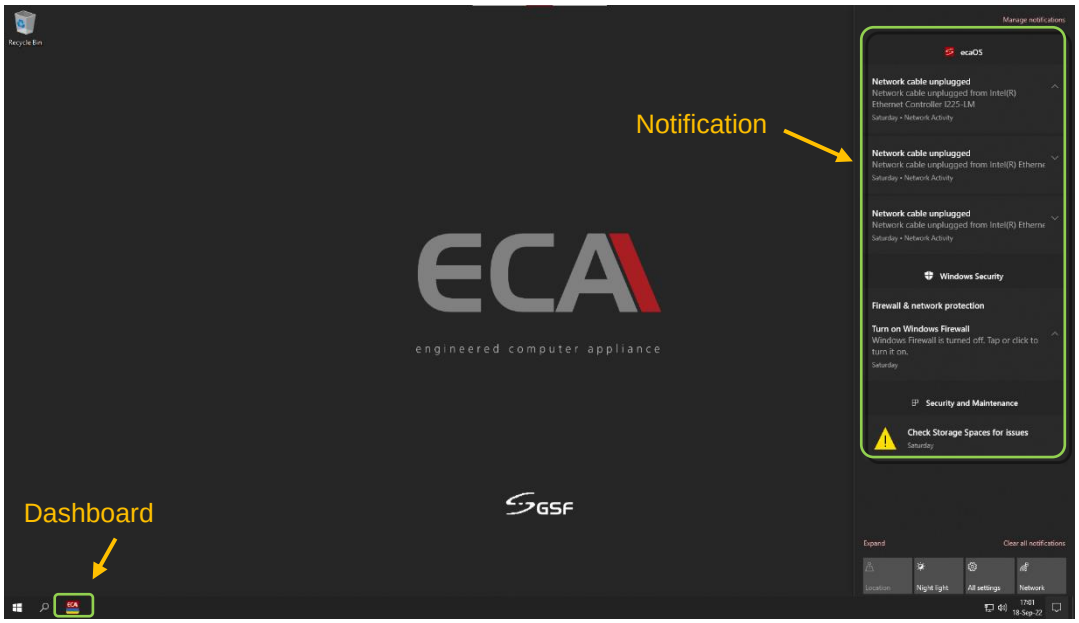


Figure 4: ecaOS Desktop

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

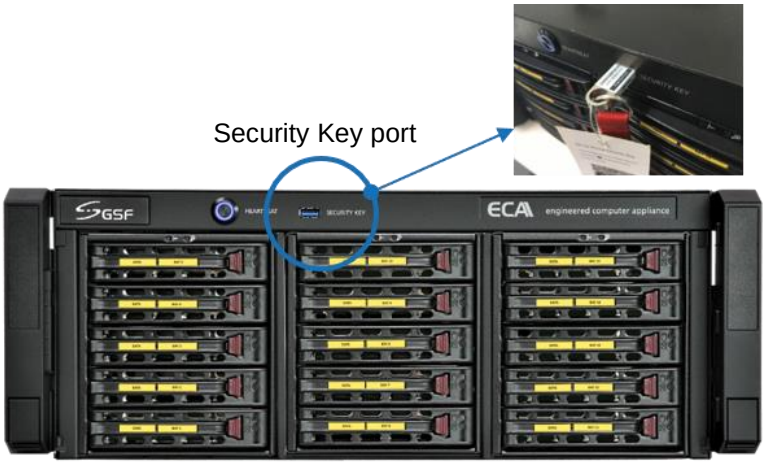


Figure 6: Security Key USB Port Location

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.

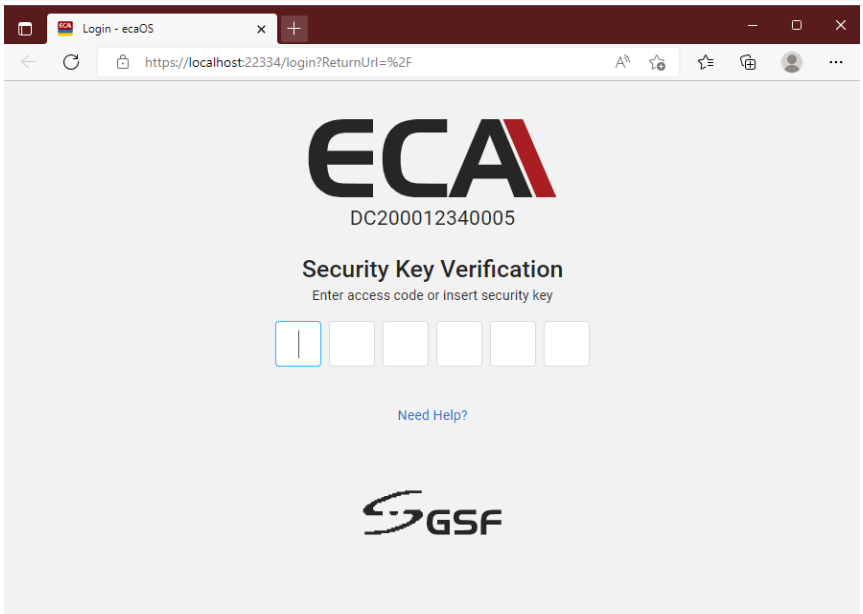


Figure 7: Dashboard Login Page

7.1.2 Get Virtual Security Key (ECA Access Code)

ECA Access code is mandatary 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.

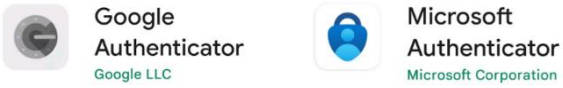


Figure 8: App search results

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.

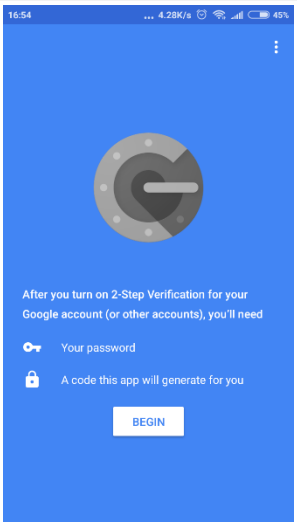


Figure 9: Authenticator Setup

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

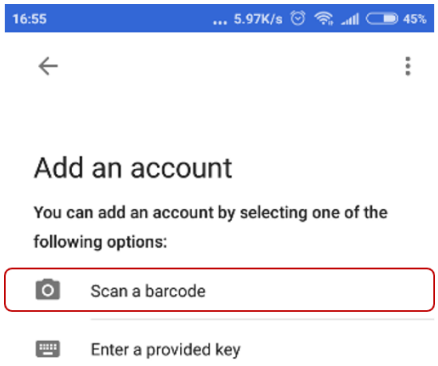
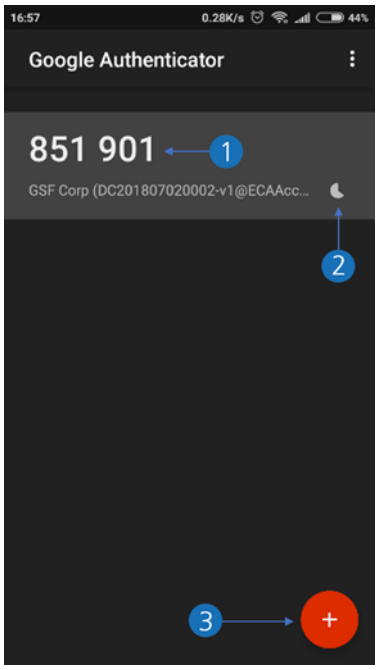


Figure 10: Authenticator Setup

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.



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'.

Figure 12: Authenticator Setup (4 of 4)

8. Enter the 6-digits OTP access code into the Security Key Verification

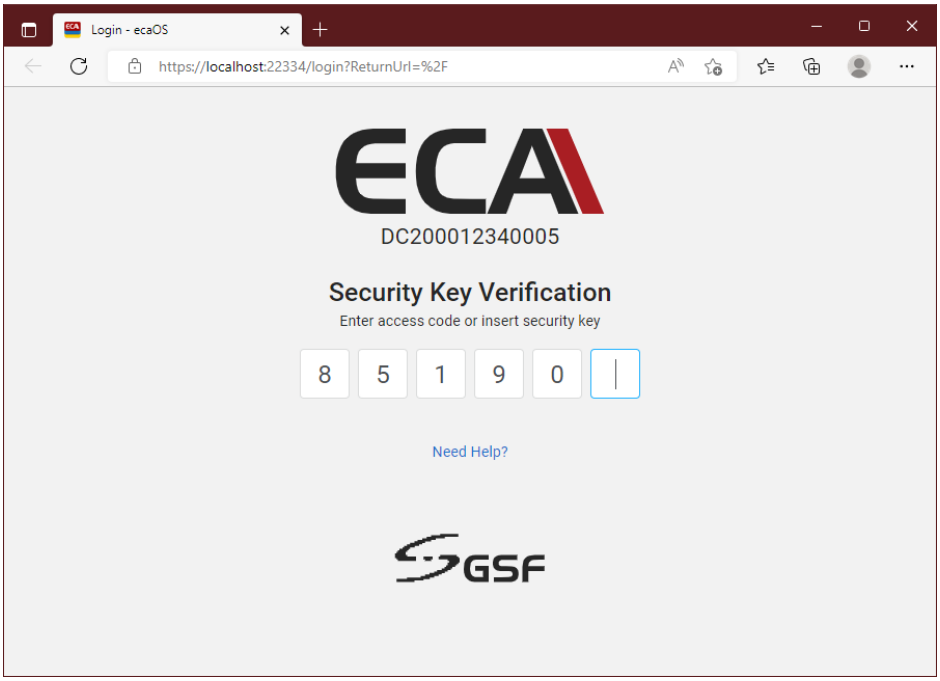


Figure 13: ecaOS Dashboard Login Page

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>`

Example: `https://10.0.0.39`

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

`https://<ECA serial number>`

Example: `https://DC200012340005`

> ***Default access port number for the dashboard is '443. This port number is changeable in the Dashboard configuration.***

1. Click 'Advanced'

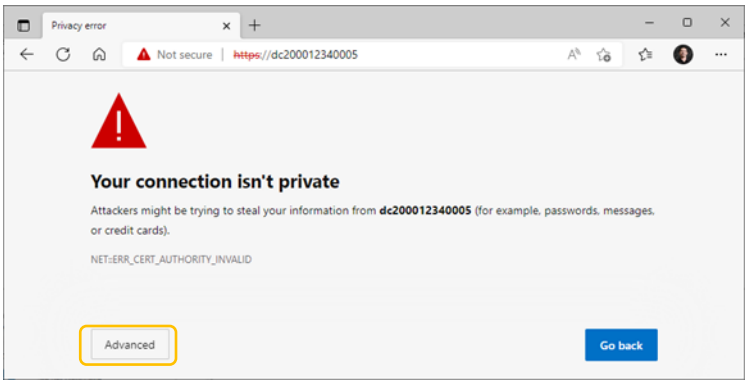


Figure 14: Dashboard Remote Access (1 of 2)

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

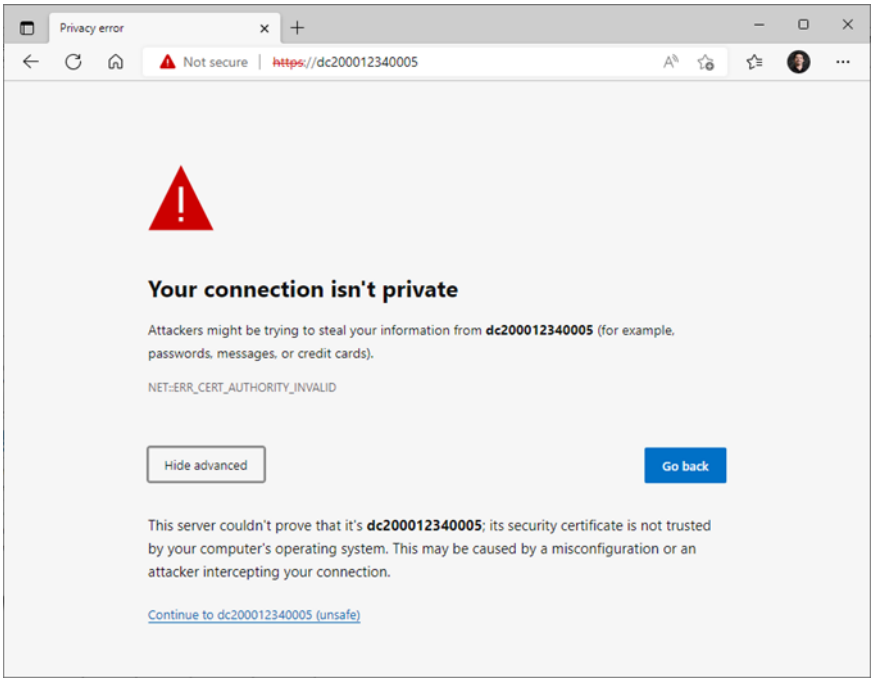


Figure 15: Dashboard Remote Access (2 of 2)

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:

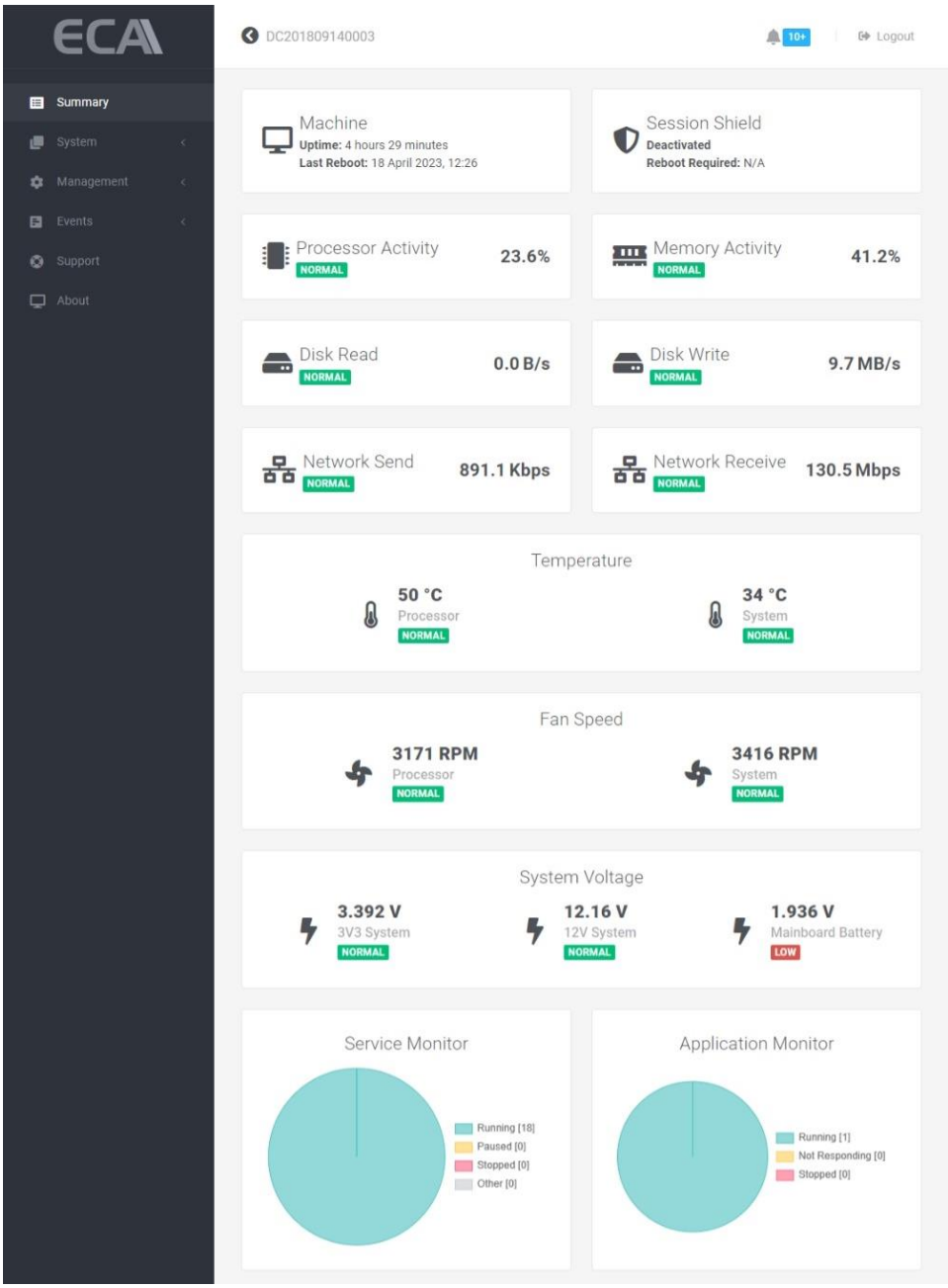


Figure 16: ecaOS Dashboard Summary

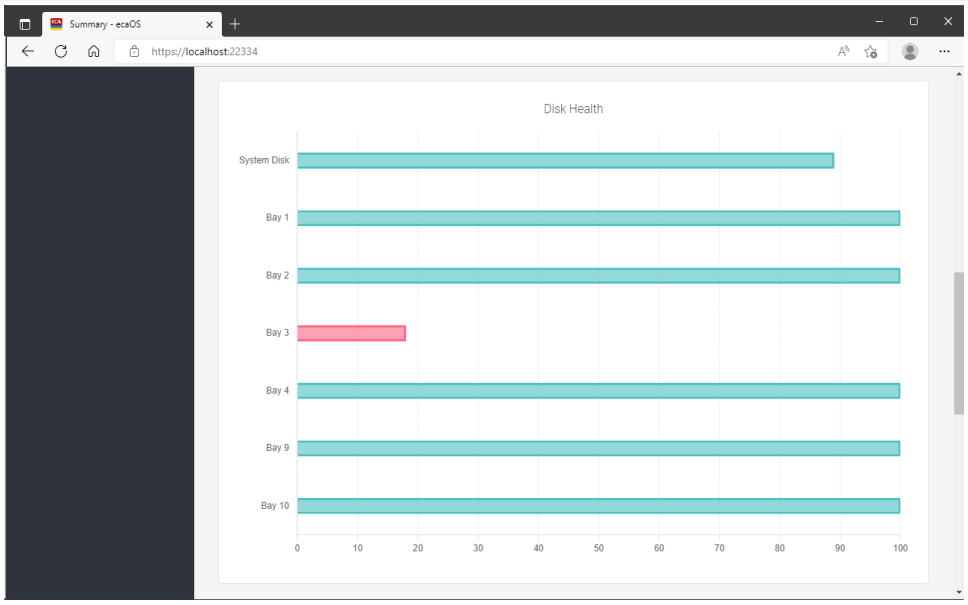


Figure 17: ecaOS Dashboard Summary – Disk Health

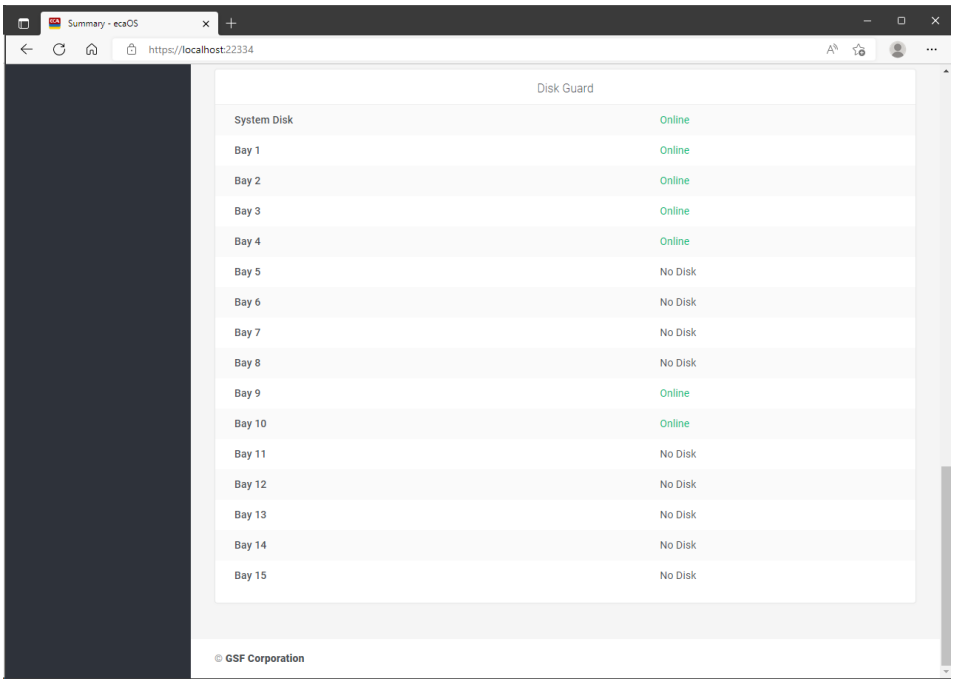


Figure 18: ecaOS Dashboard Summary – Disk Guard

8 System

8.1 System Monitor

With System Monitor, users can view a list of current Processor Temperature, Mainboard Temperature, Processor Fan speed, System Fan speed, 3V3 System Voltage, 12V System Voltage & Mainboard Battery Voltage.

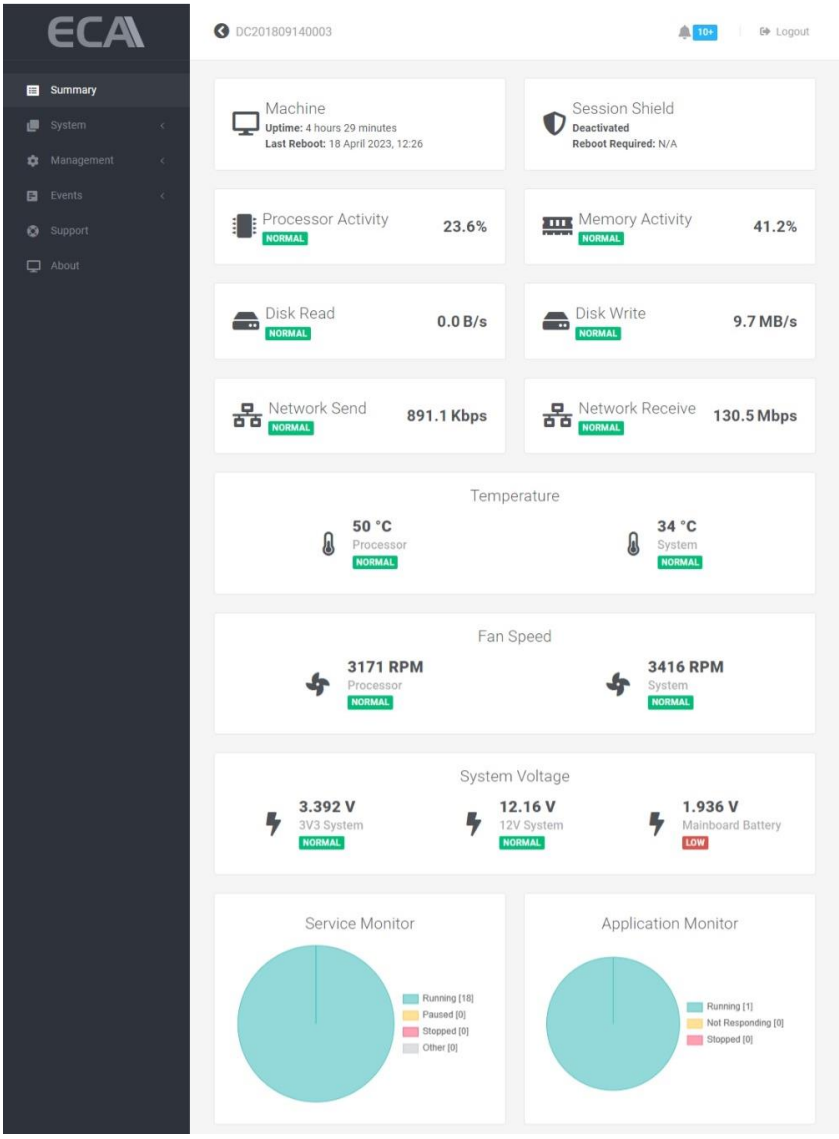


Figure 19: System Monitor Summary

8.2 Service Monitor

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

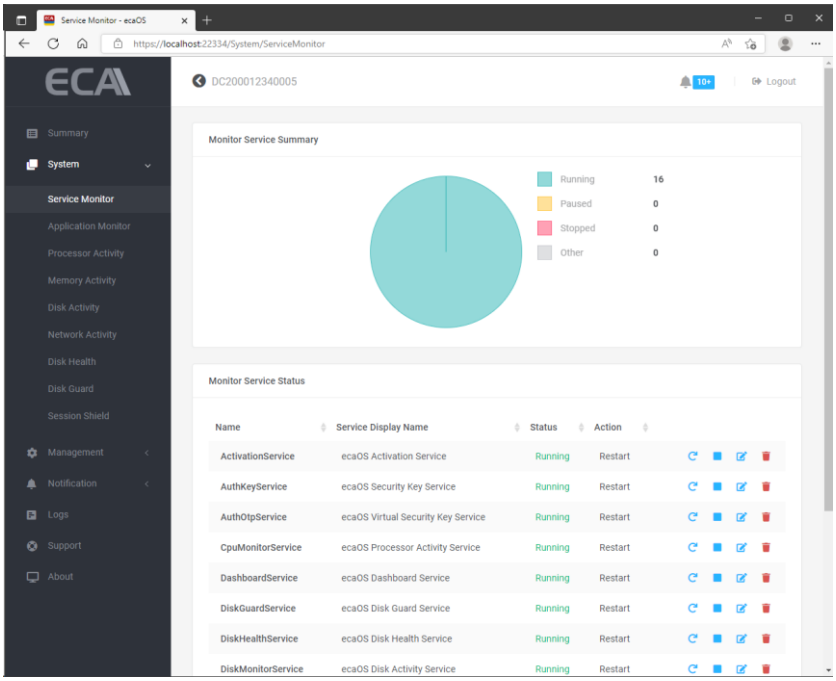
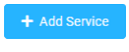


Figure 20: Service Monitor Summary

8.2.1 Add Services

1. To add services, click the 

button.

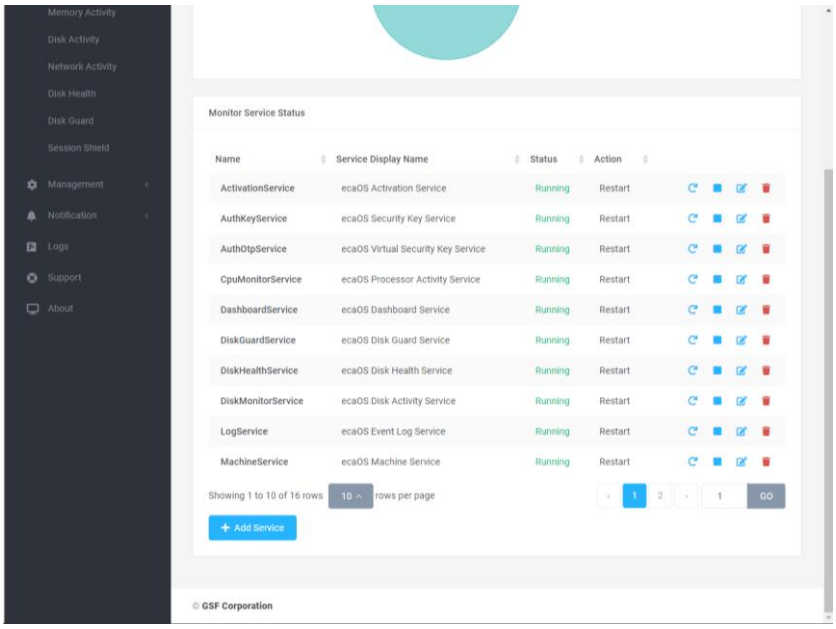


Figure 21: Add Services

2. Click the drop-down button.

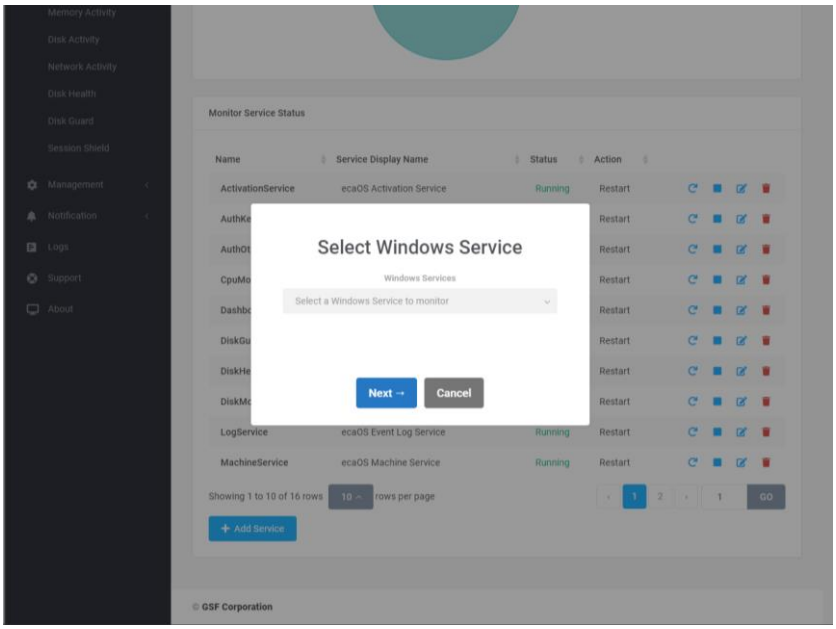


Figure 22: Select Windows Services (1 of 4)

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

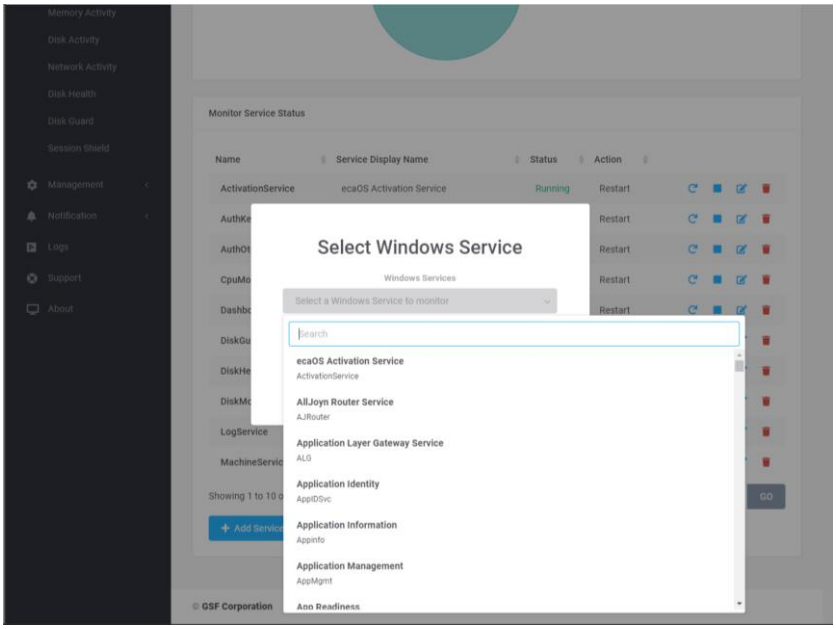


Figure 23: Select Windows Services (2 of 4)

4. Click Next → button

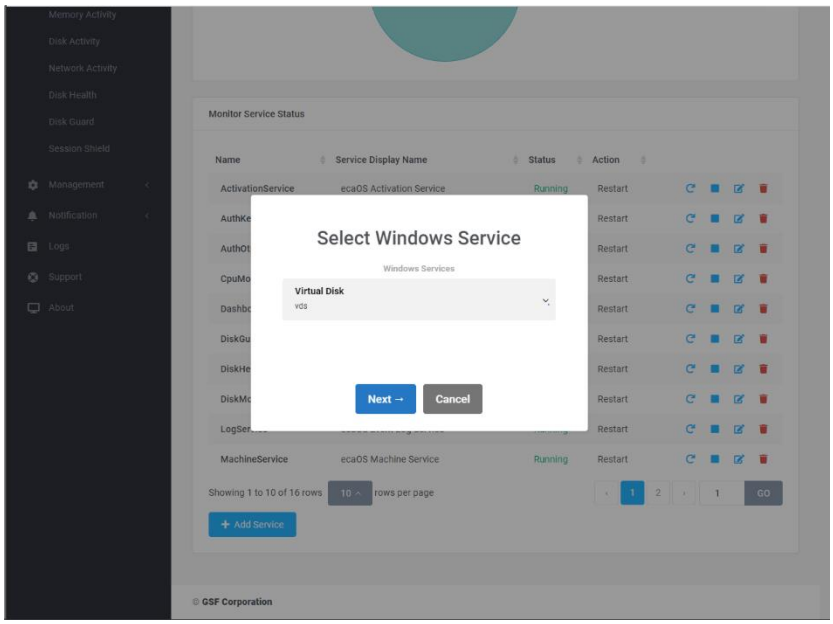


Figure 24: Select Windows services (3 of 4)

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

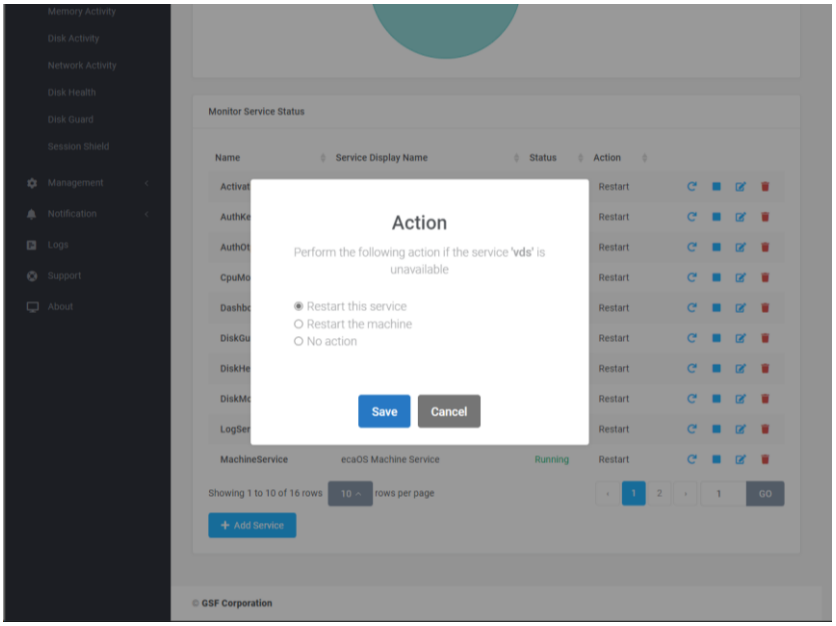


Figure 25: Select Windows Services (4 of 4)

8.2.2 Delete Services

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

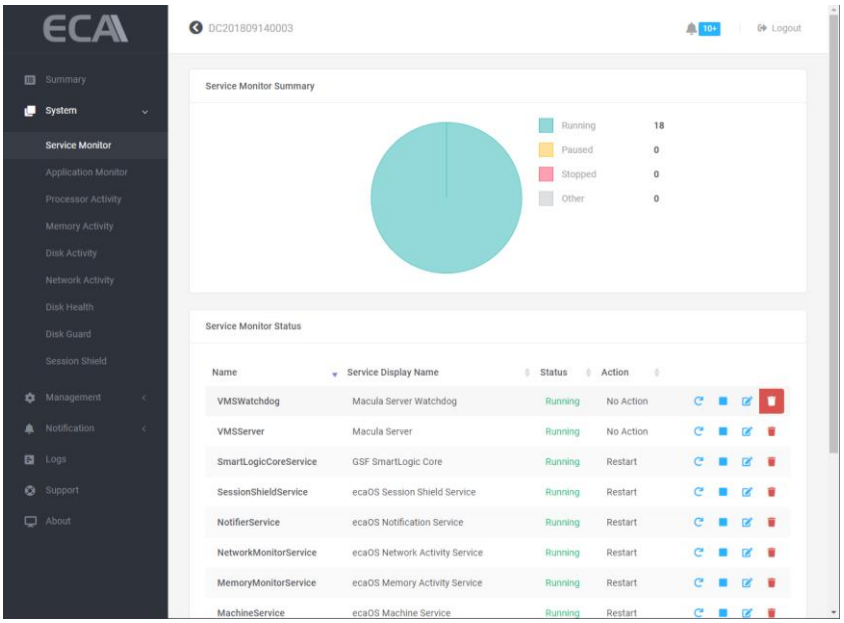


Figure 26: Delete Services (1 of 2)

1. Click on Delete to proceed with the deletion

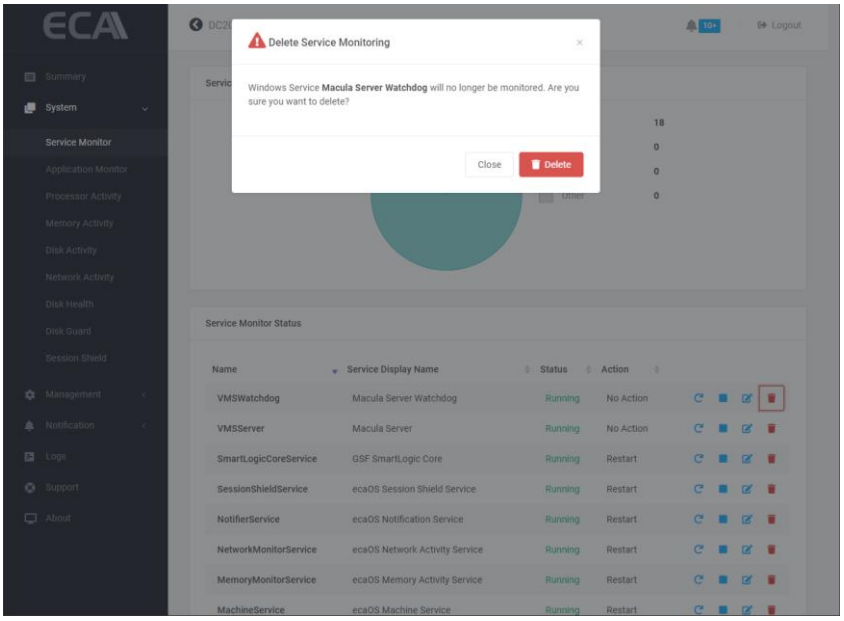


Figure 27: Delete Services (2 of 2)

8.3 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.

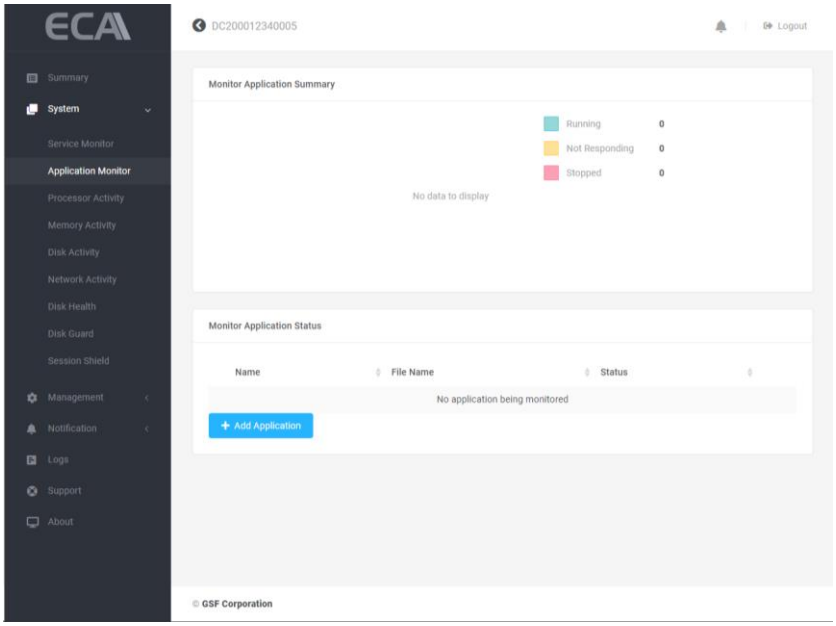
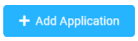


Figure 28: Application Monitor (1 of 5)

8.3.1 Add Application

1. To add application, click the  button.
2. Enter the application name

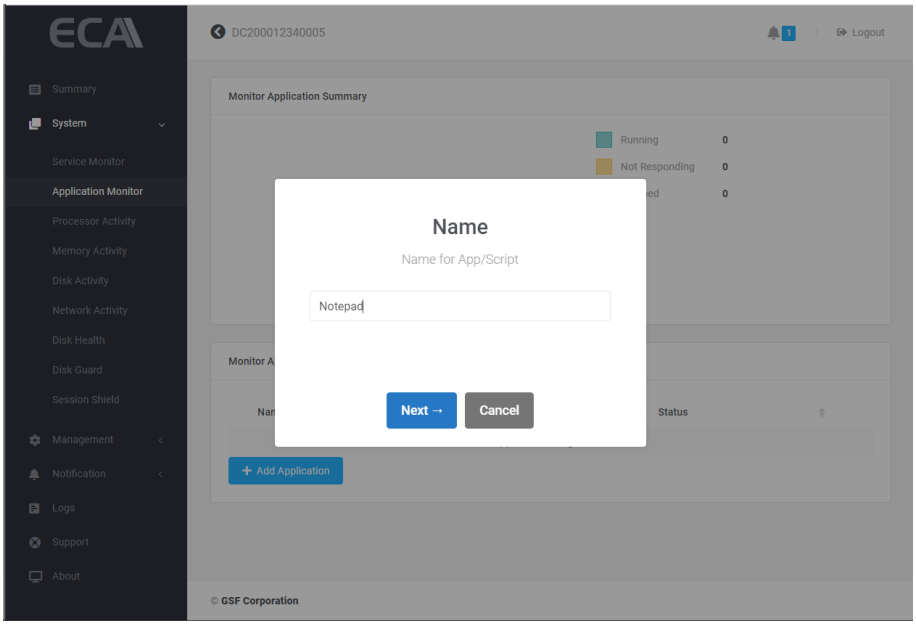


Figure 29: Application Monitor (2 of 5)

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

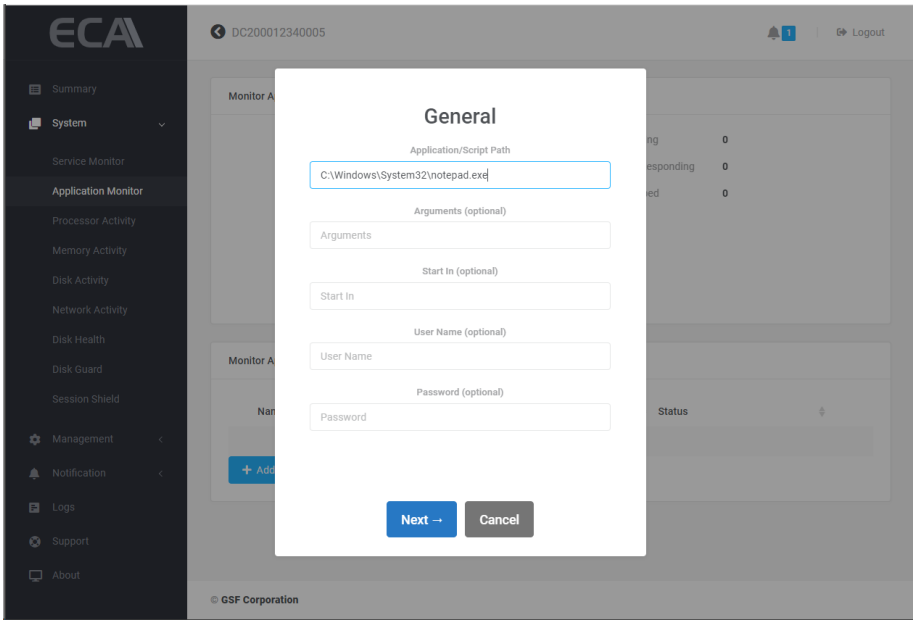


Figure 30: Application Monitor (3 of 5)

4. Apply setting

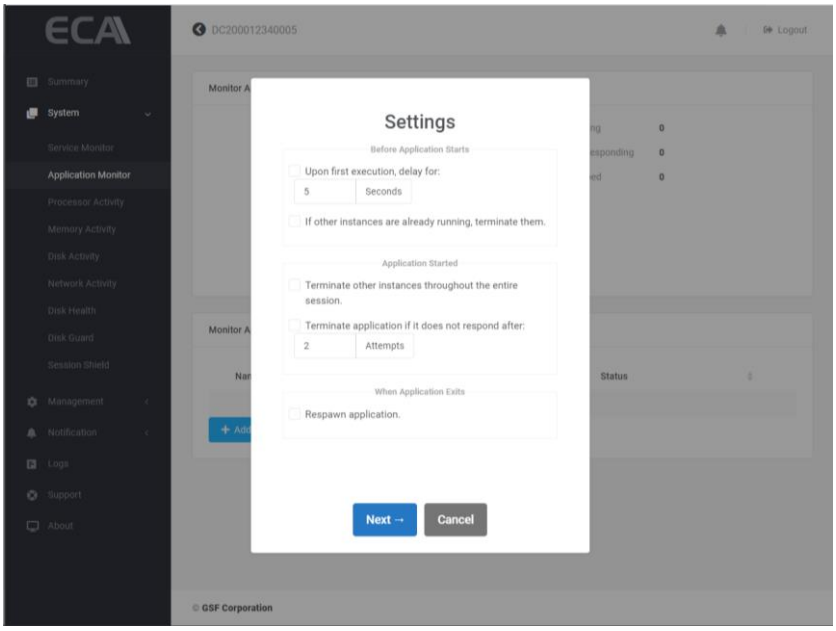


Figure 31: Application Monitor (4 of 5)

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.

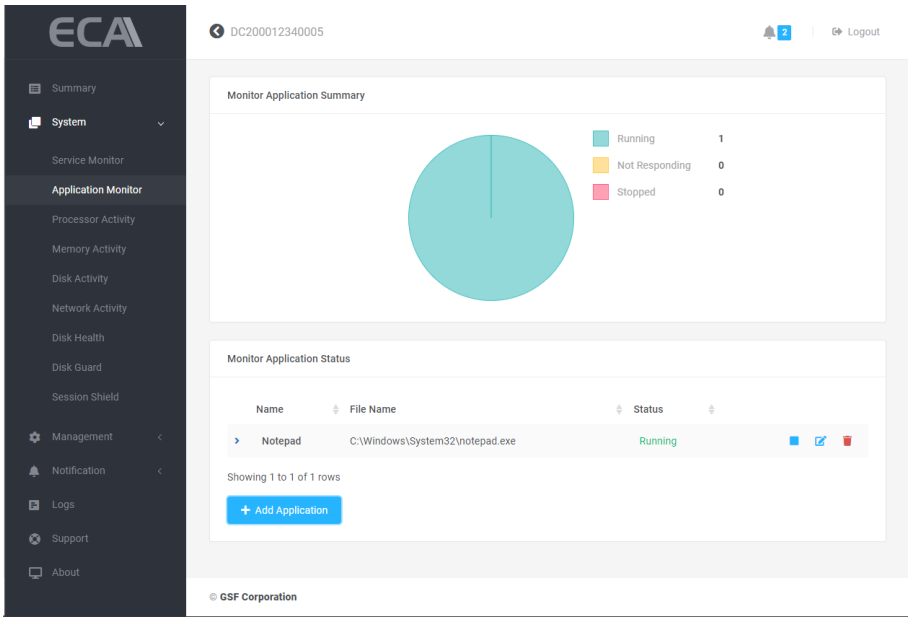


Figure 32: Application Monitor (5 of 5)

8.3.2 Delete Application

2. To delete application to be monitor, click the button of the application to be delete

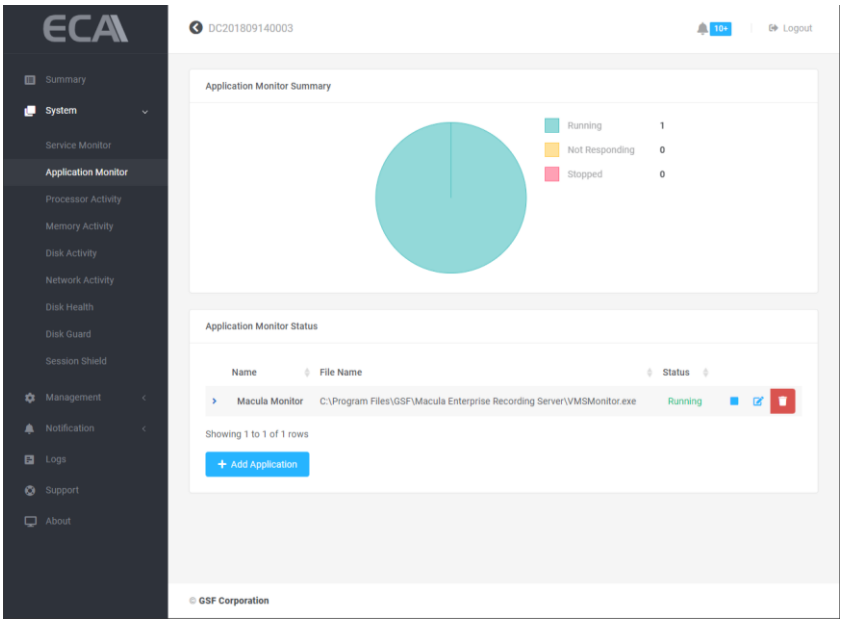


Figure 33: Delete monitored application (1 of 2)

2. Click on to proceed with the deletion

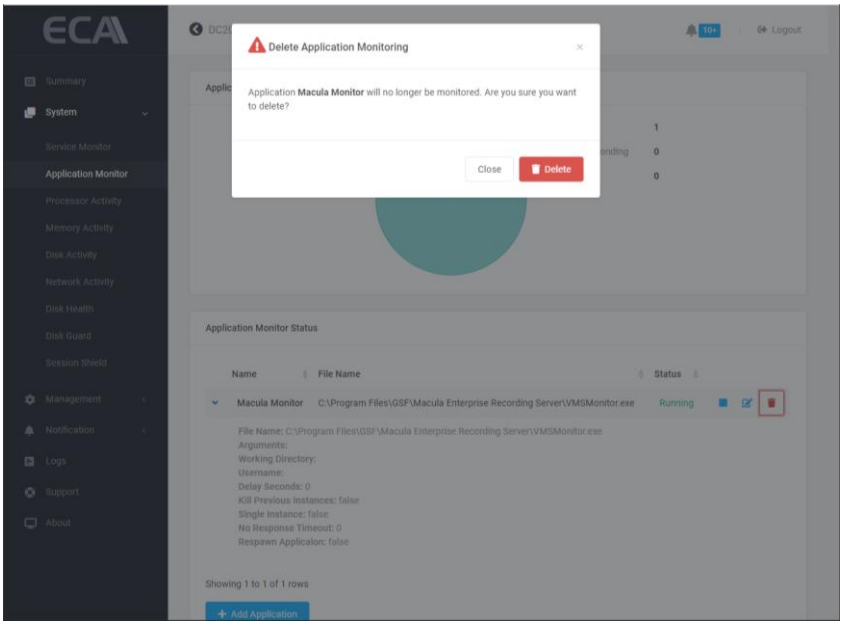


Figure 34: Delete monitored application (2 of 2)

8.4 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.

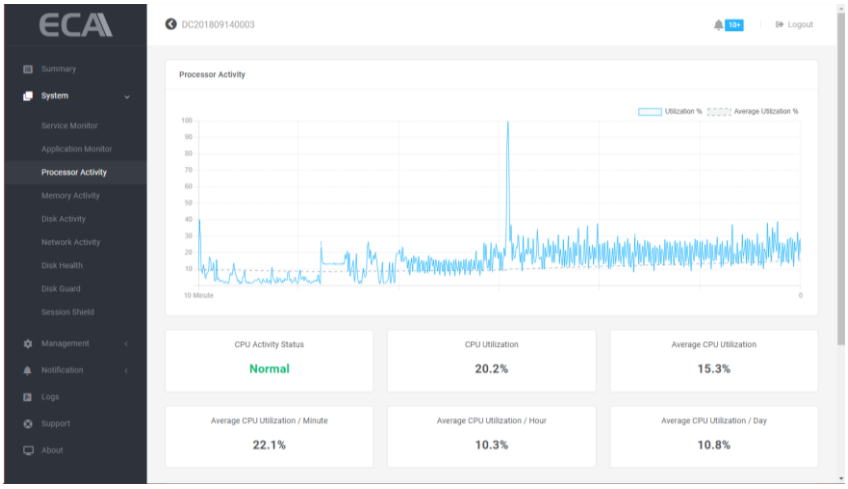


Figure 35: Processor Activity (1 of 2)

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.

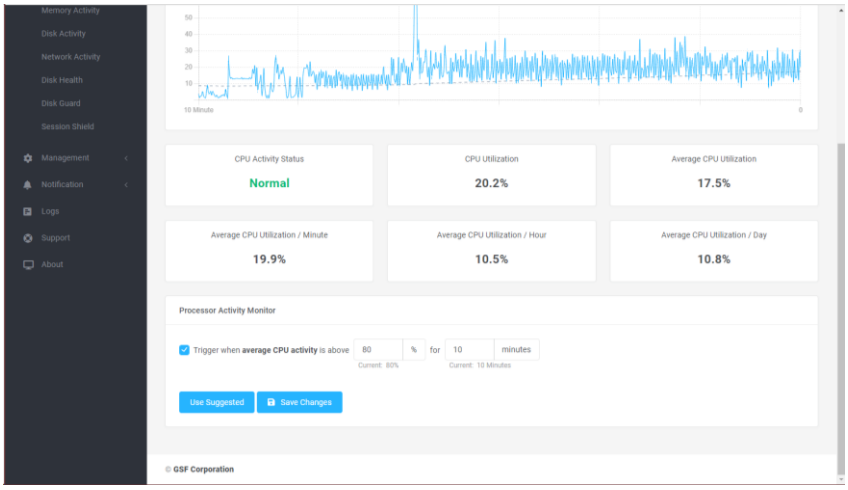


Figure 36: Processor Activity (2 of 2)

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

8.5 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.

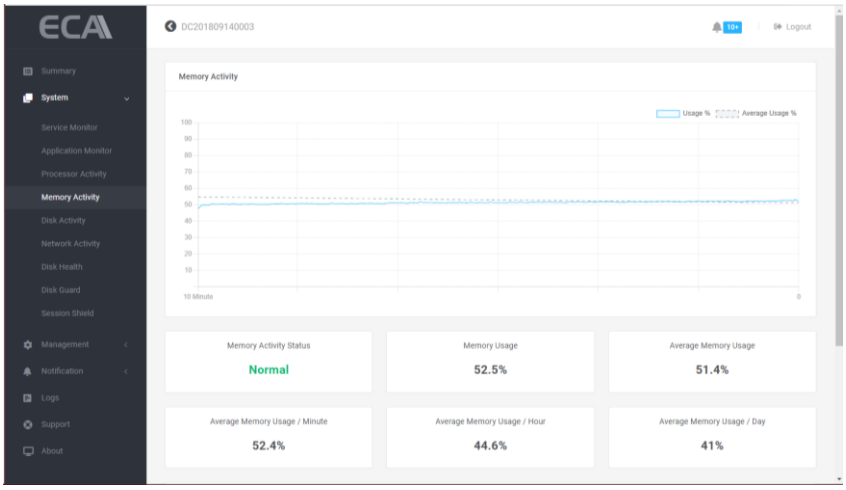


Figure 37: Memory Activity (1 of 2)

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.

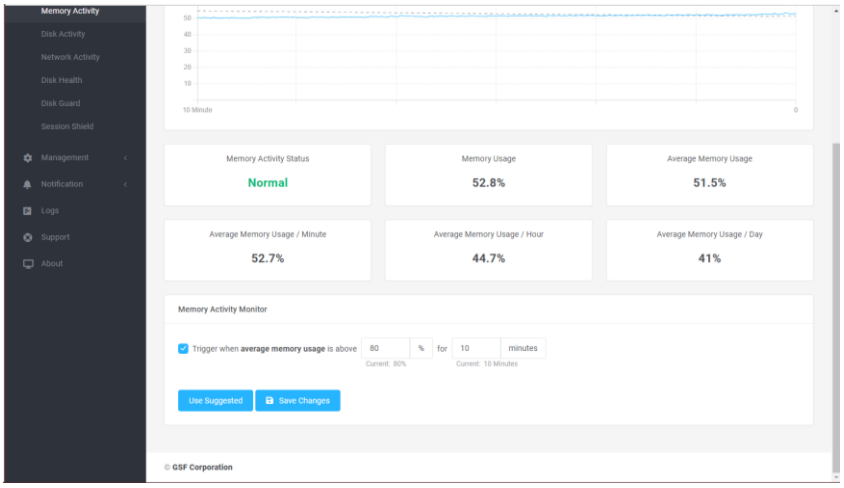


Figure 38: Memory Activity (2 of 2)

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

8.6 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.

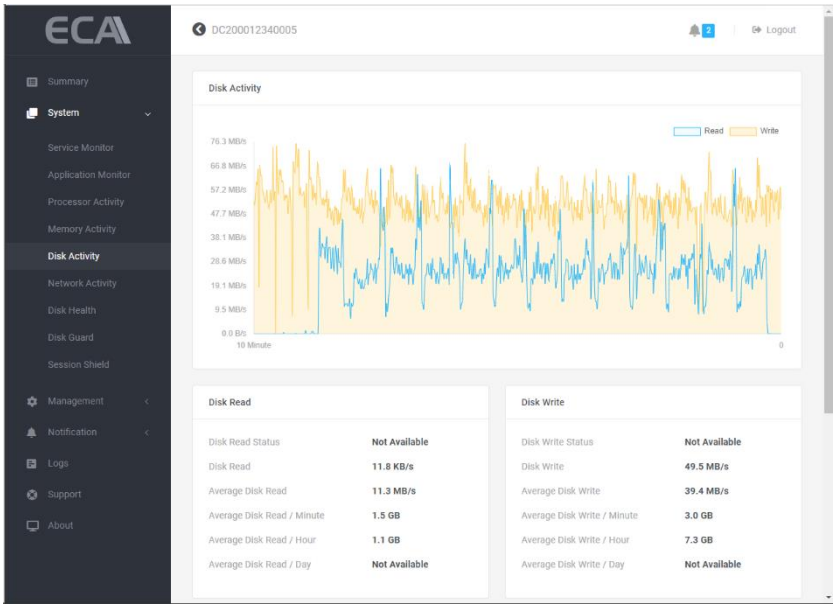


Figure 39: Disk Activity (1 of 2)

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.

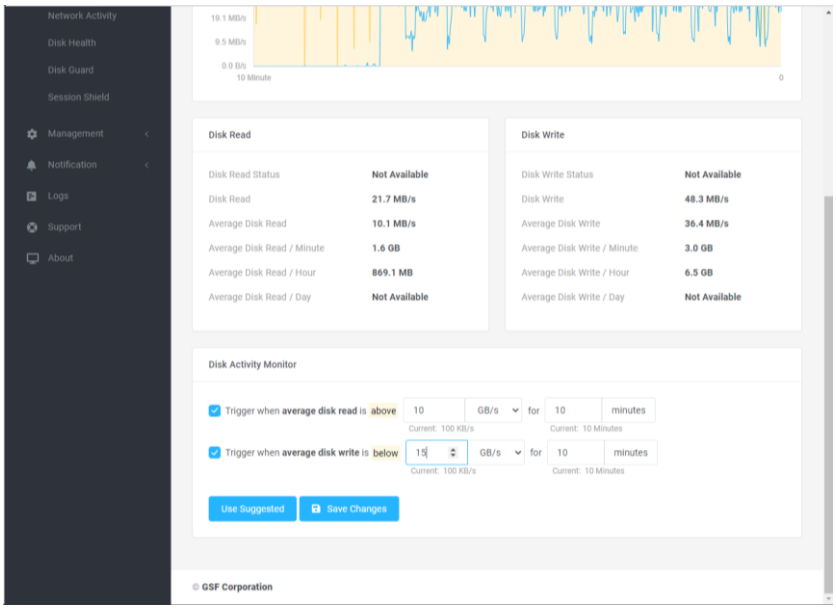


Figure 40: Disk Activity (2 of 2)

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

8.7 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.

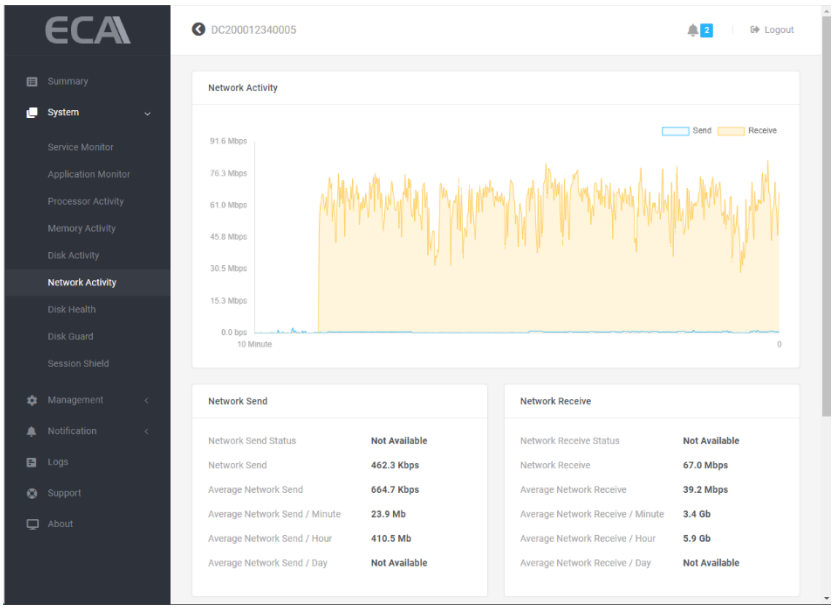


Figure 41: Network Activity (1 of 2)

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

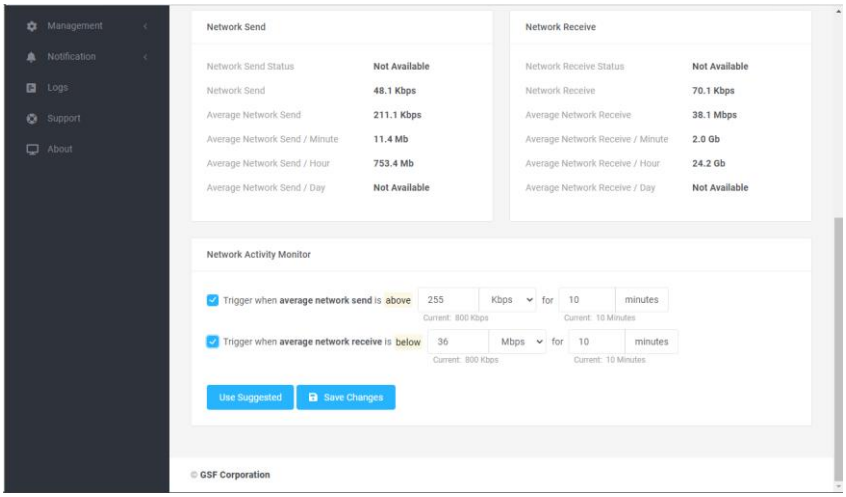


Figure 42: Network Activity (2 of 2)

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

8.8 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 ware level, power up hours, capacity, model and serial numbers, etc.

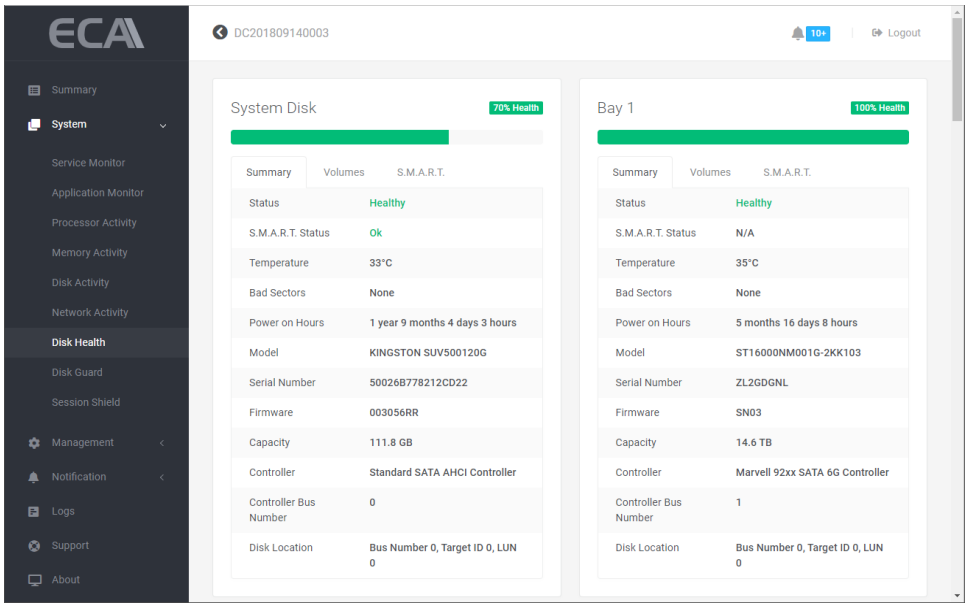


Figure 43: Disk Health (1 of 3)

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

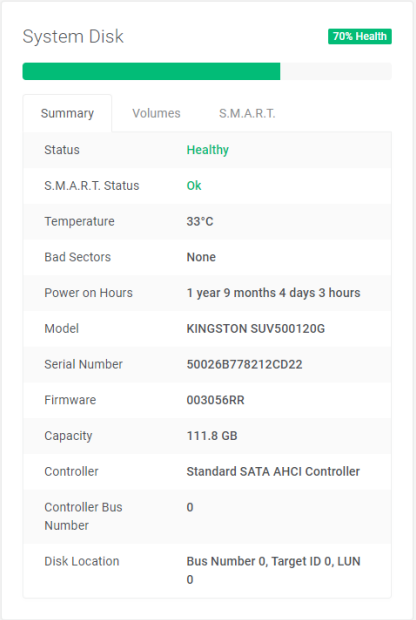


Figure 44: Disk Health – Healthy Disk (2 of 3)

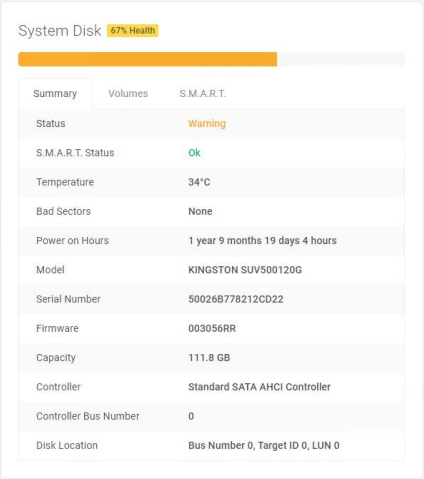


Figure 45: Disk Health – Warning Status Disk (2 of 3)

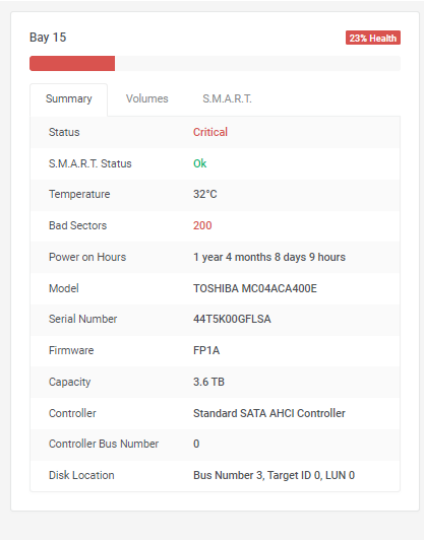


Figure 46: Disk Health – Critical Status Disk with Bad Sectors (2 of 3)

Under Volume, display partition & free space available information

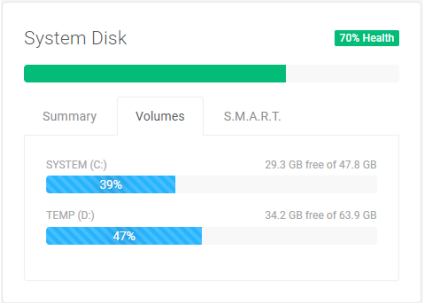
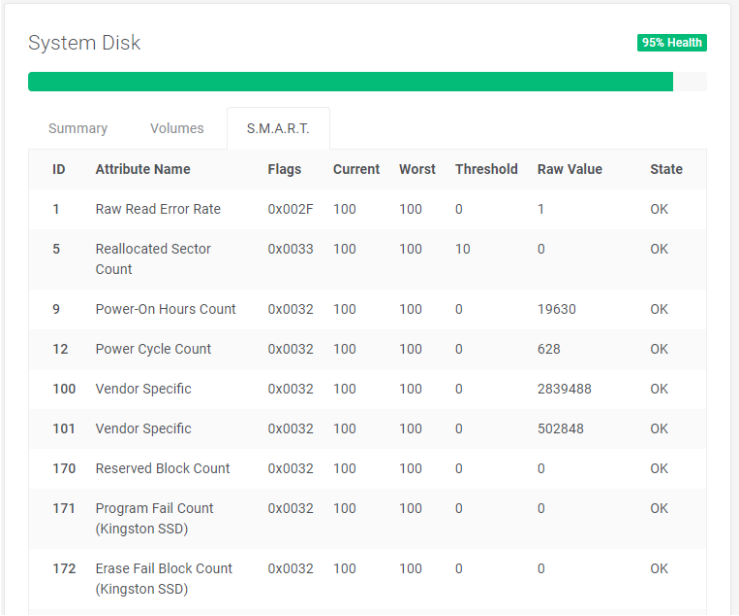


Figure 47: Disk Health (3 of 3)

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 48: 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

8.9 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.

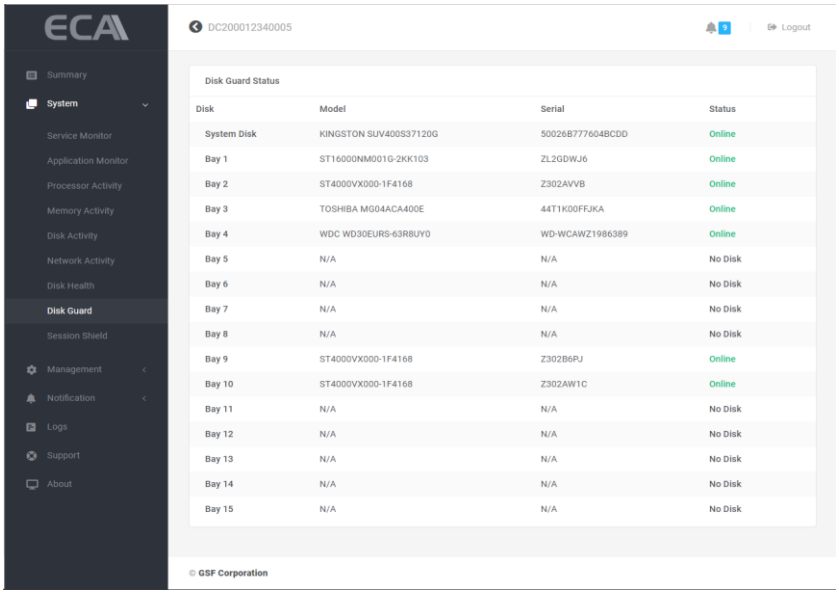


Figure 49: Disk Guard

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.

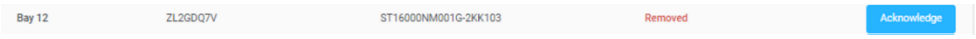
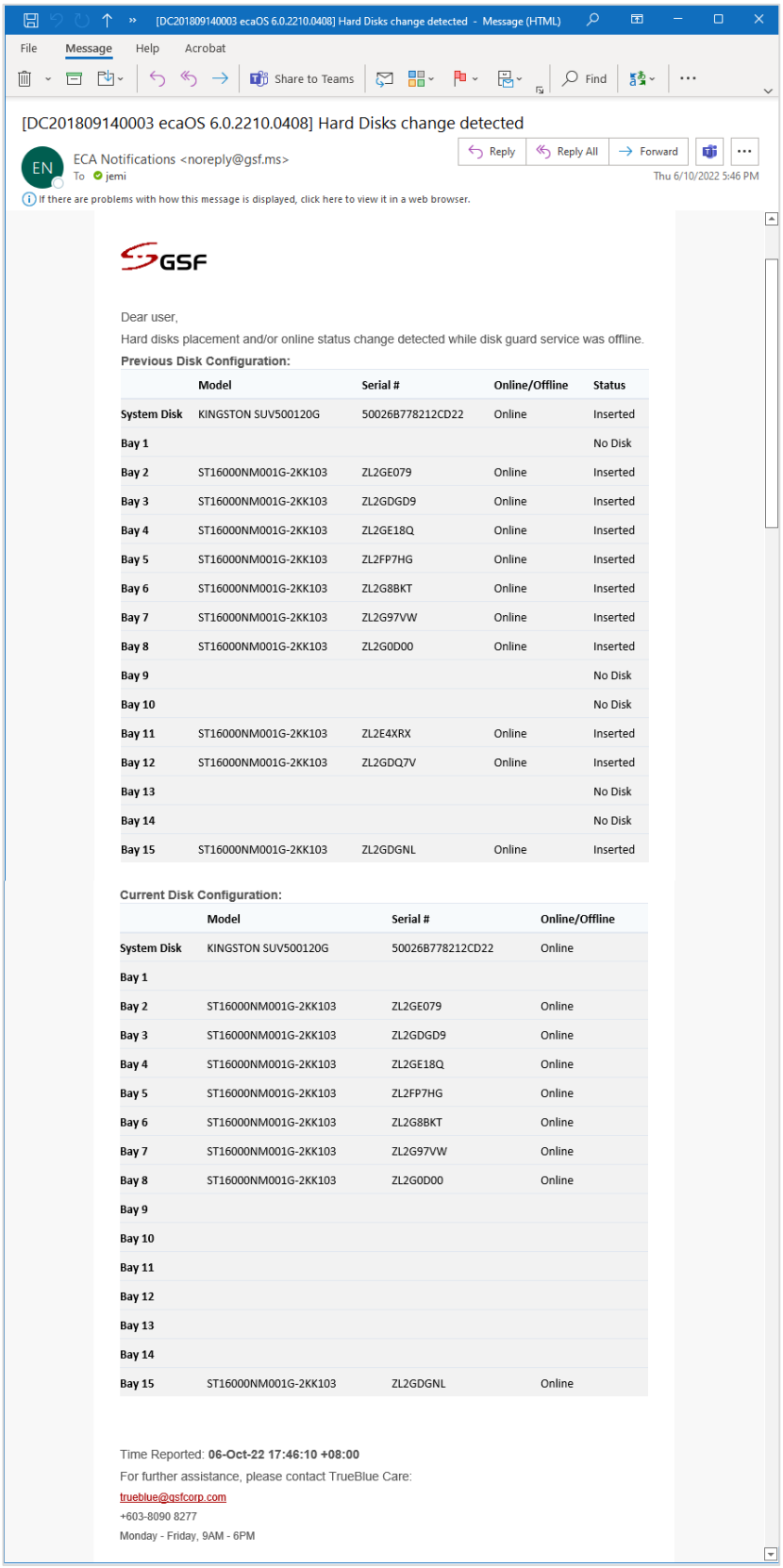


Figure 50: Disk removed

- For email and notification setting, go to Events
- Example email of the Disk Guard event in the Appendix Disk Guard

8.9.1 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 - Message (HTML)

File Message Help Acrobat

Share to Teams Find

[DC201809140003 ecaOS 6.0.2210.0408] Hard Disks change detected

EN ECA Notifications <noreply@gsf.ms>

To jemi

Reply Reply All Forward

Thu 6/10/2022 5:46 PM

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

GSF

Dear user,

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

Previous Disk Configuration:

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

Current Disk Configuration:

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

Time Reported: **06-Oct-22 17:46:10 +08:00**

For further assistance, please contact TrueBlue Care:

trueblue@gsfcorp.com

+603-8090 8277

Monday - Friday, 9AM - 6PM

Figure 51: Hard Disks change detected (1 of 1)

8.10 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.

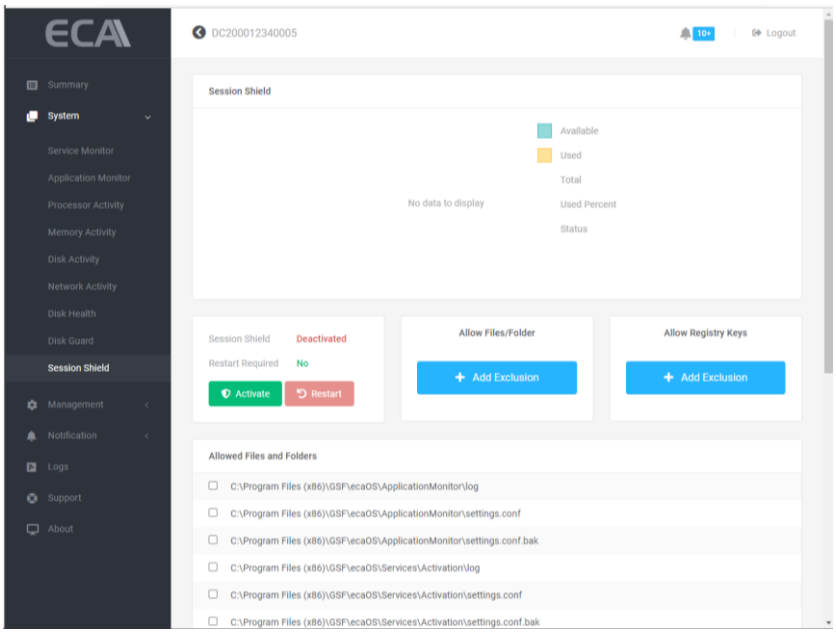


Figure 52: Session Shield

8.10.1 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'

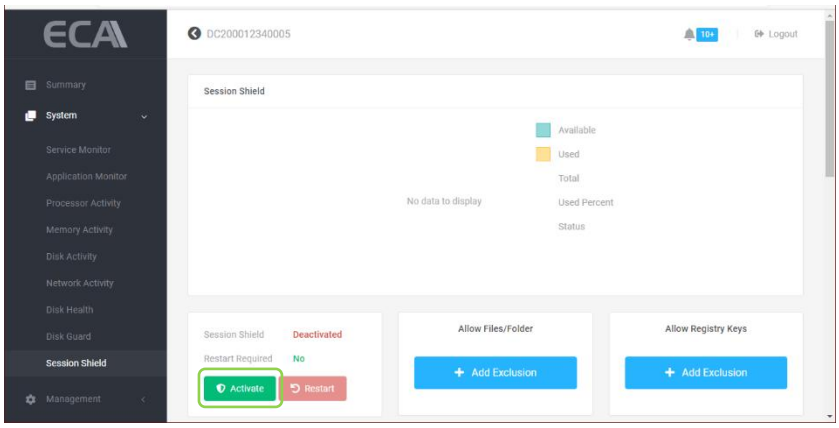


Figure 53: Activate Session Shield (1 of 5)

2. Click 'Change Settings' to save the setting

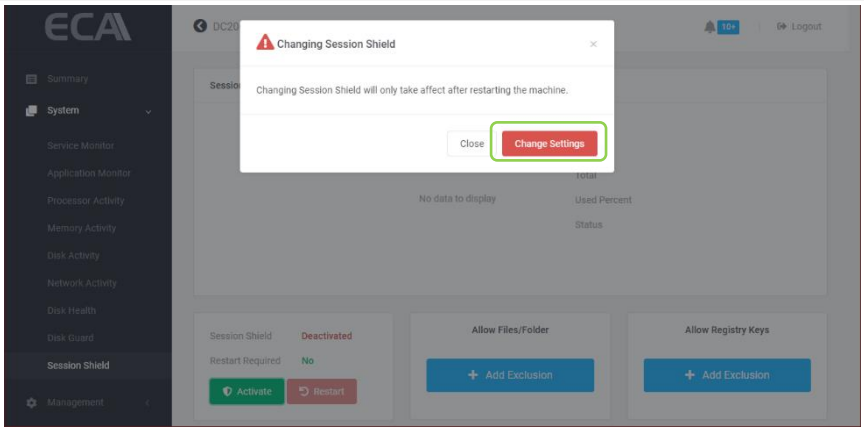


Figure 54: Activate Session Shield (2 of 5)

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

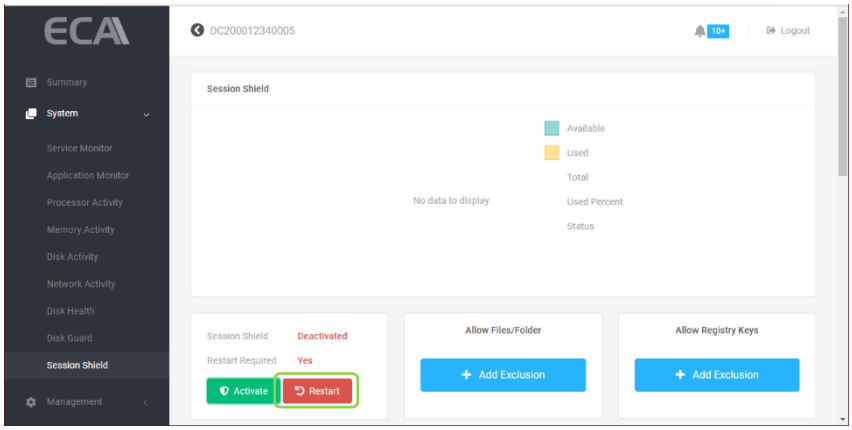


Figure 55: Activate Session Shield (4 of 6)

4. Type Restart then click 'Restart' button

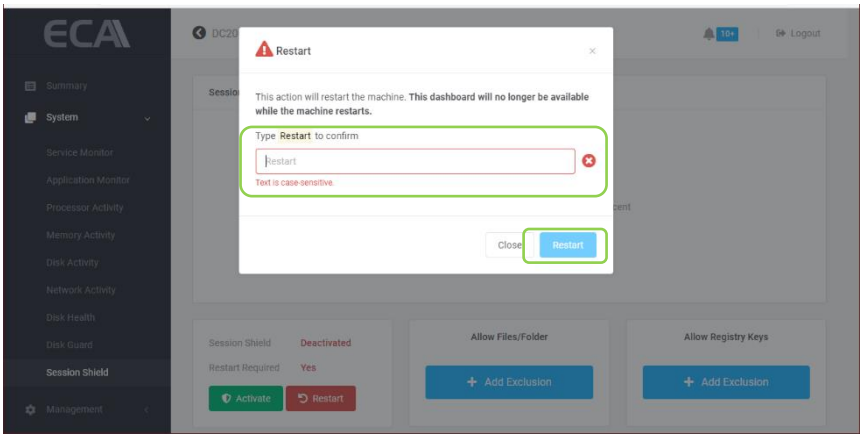


Figure 56: Activate Session Shield (5 of 6)

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

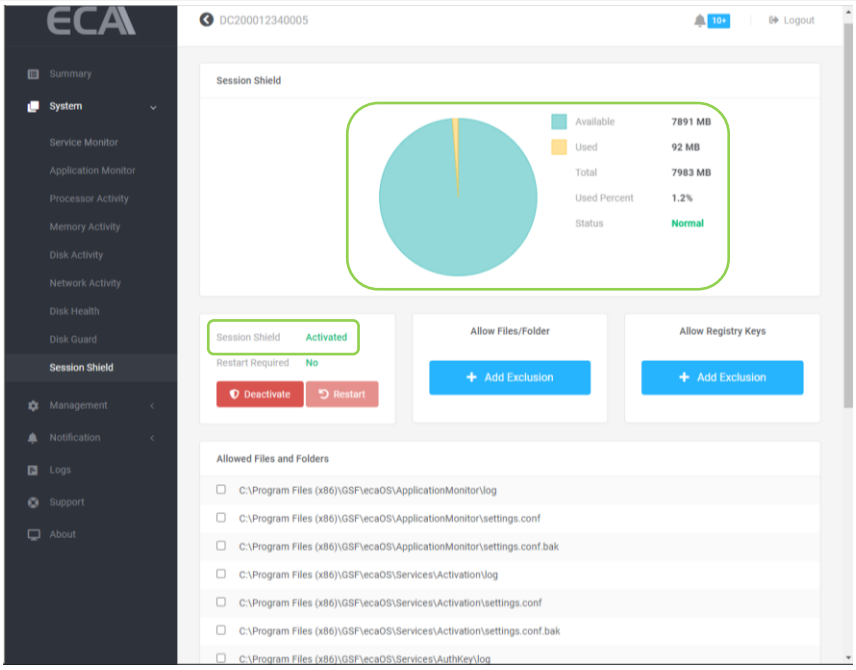


Figure 57: Activate Session Shield (6 of 6)

8.10.2 Deactivate Session Shield

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

1. Click on 'Deactivate'

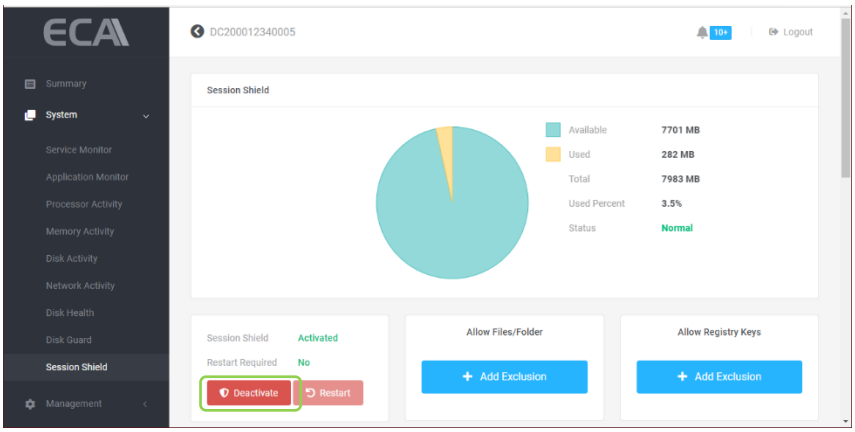


Figure 58: Deactivate Session Shield (1 of 3)

2. Click 'Change Settings' to save the setting

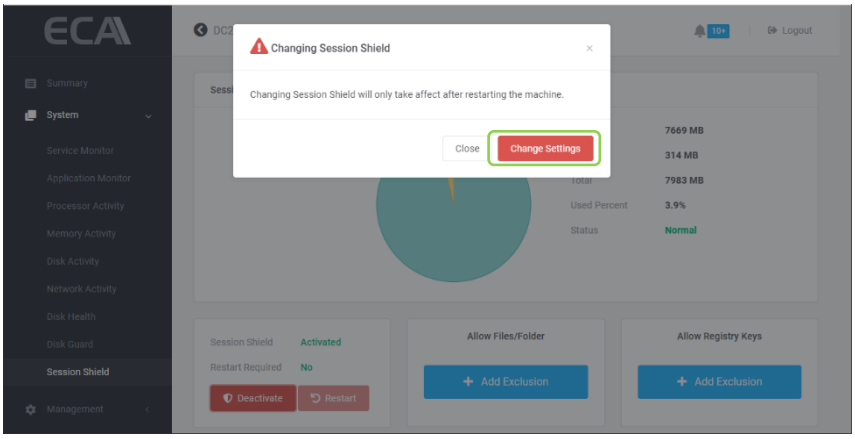


Figure 59: Deactivate Session Shield (2 of 3)

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

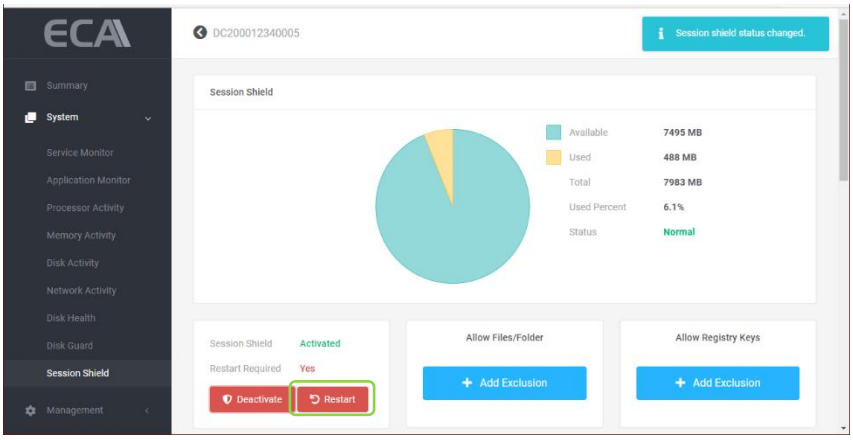


Figure 60: Deactivate Session Shield (2 of)

4. Type Restart then click 'Restart' button

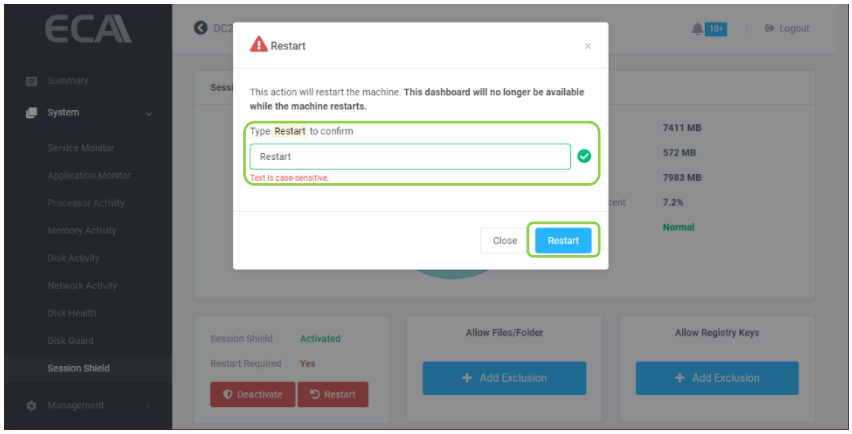


Figure 61: Deactivate Session Shield (3 of 3)

8.10.3 Exclusion List

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

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

```
C:\Program Files (x86)\GSF\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
```

8.10.4 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

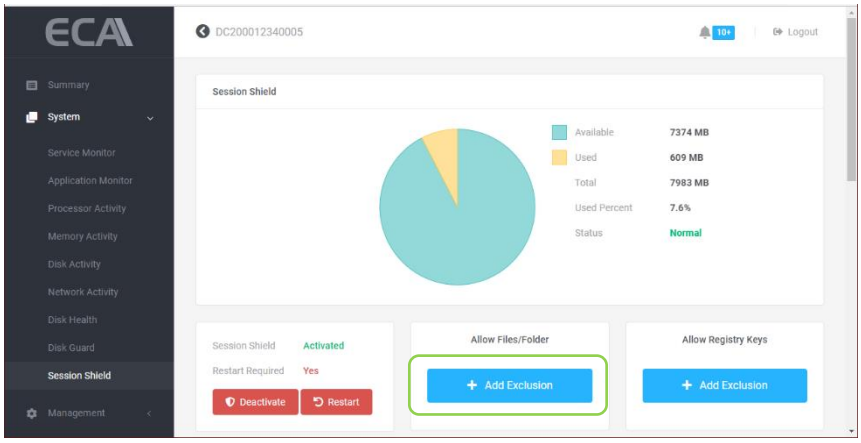


Figure 62: Allow Files/Folder (1 of 3)

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

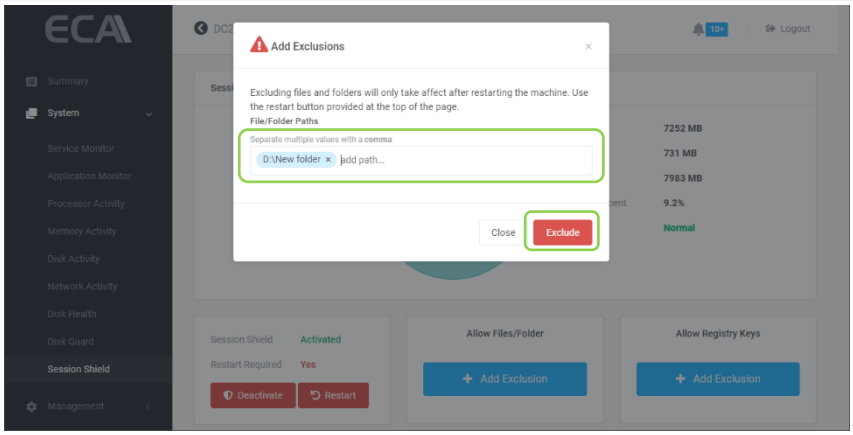


Figure 63: Allow Files/Folder (2 of 3)

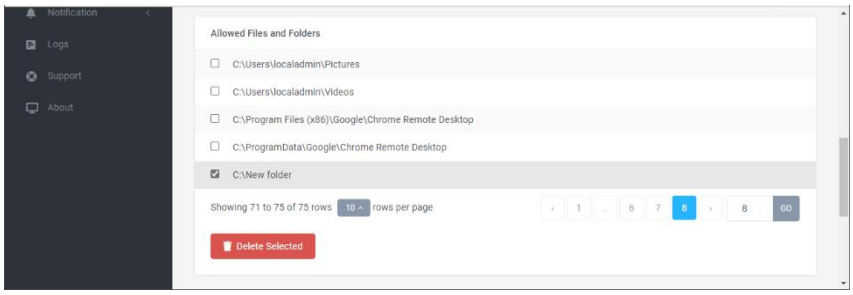


Figure 64: Allow Files/Folder (3 of 3)

8.10.5 Delete Exclusion Files or folder

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

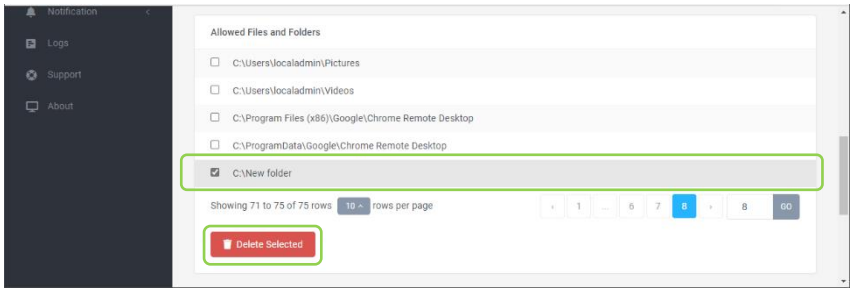


Figure 65: Delete Files/Folder (1 of 3)

2. Click 'Delete Exclusion' to confirm the operation

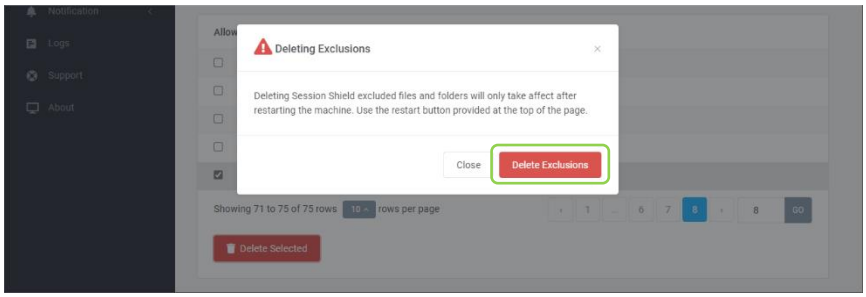


Figure 66: Delete Files/Folder (2 of 2)

8.10.6 Add Registry Keys

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

1. Click ‘Add Exclusion‘ to add registry keys

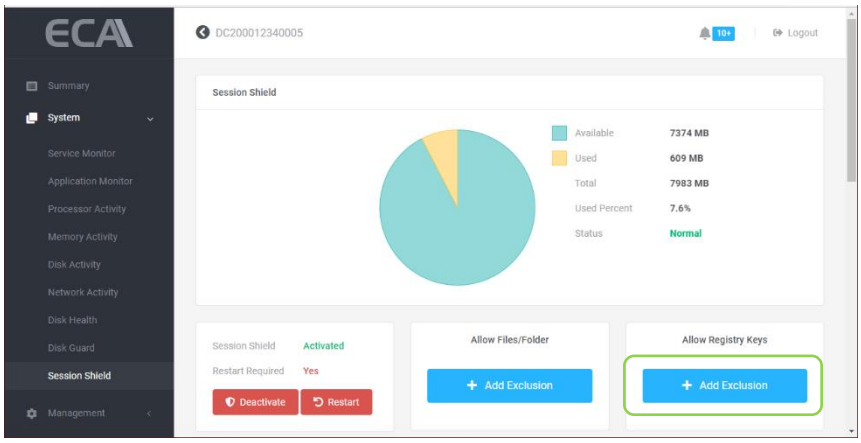


Figure 67: Allow Registry Keys (1 of 2)

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

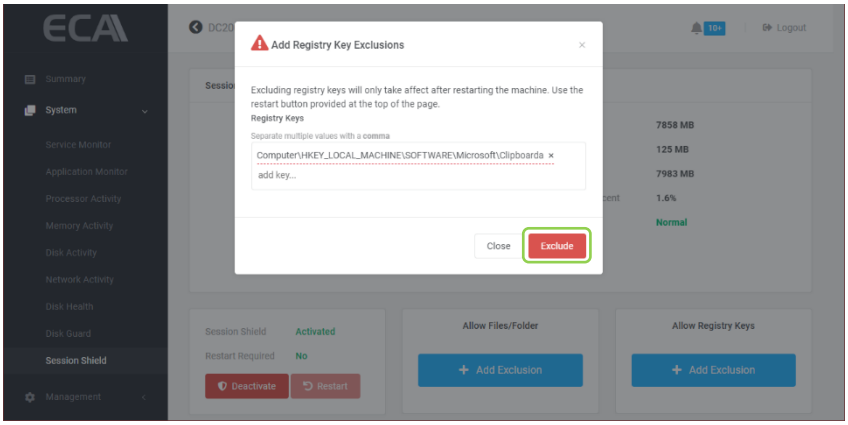


Figure 68: Allow Registry Keys (1 of 2)

8.10.7 Delete Exclusion Registry Key

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

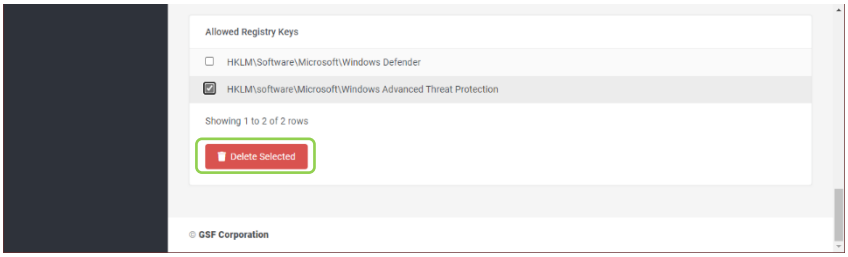


Figure 69: Delete Registry Key (1 of 2)

2. Click 'Delete Exclusion' to confirm the operation

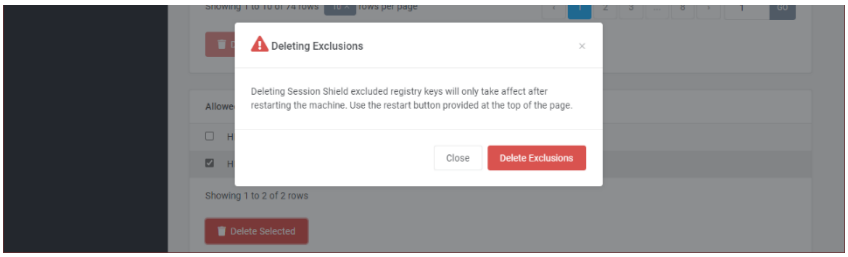


Figure 70: Delete Registry Key (2 of 2)

8.10.8 Status: Warning

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

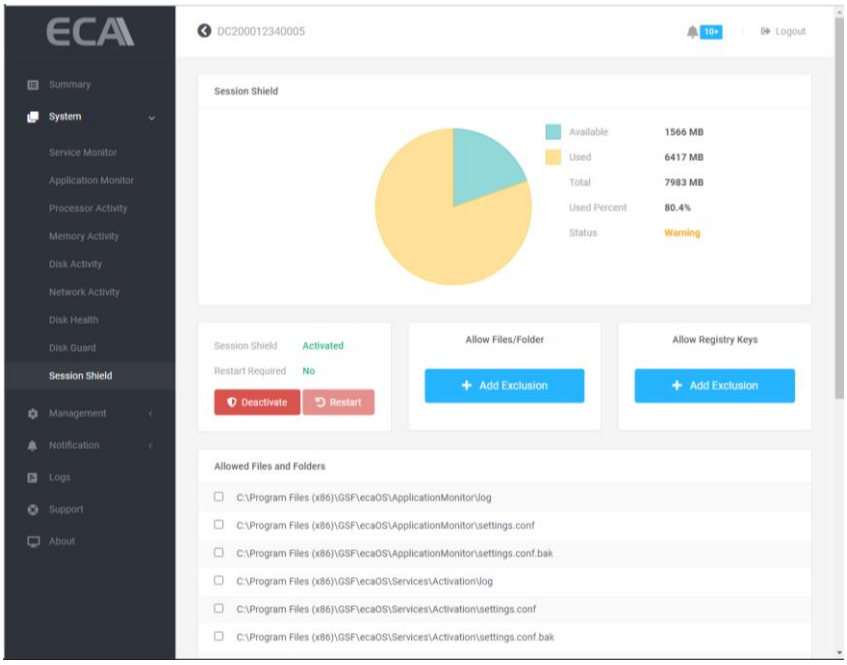


Figure 71: Warning Status

8.10.9 Status: Critical

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

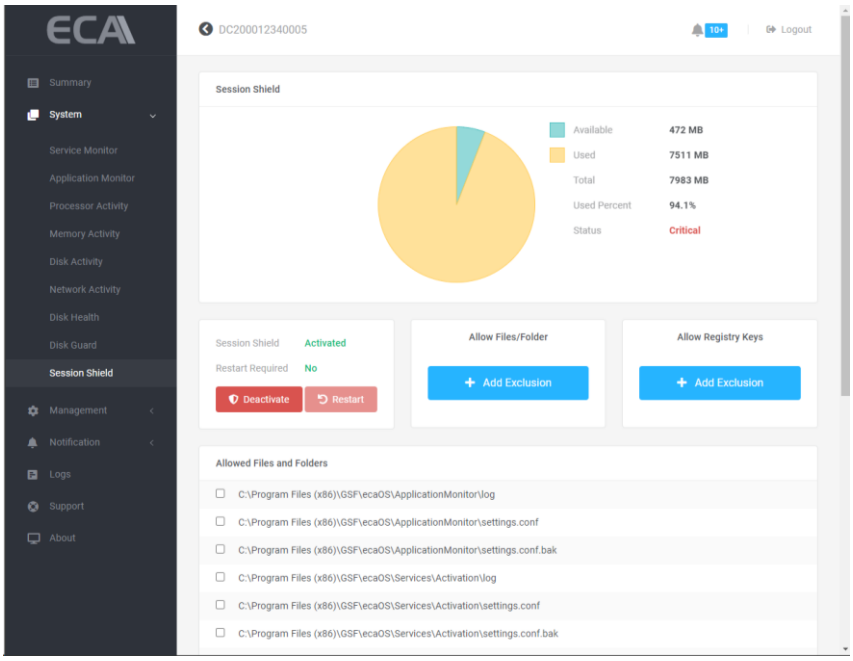


Figure 72: Critical Status

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.

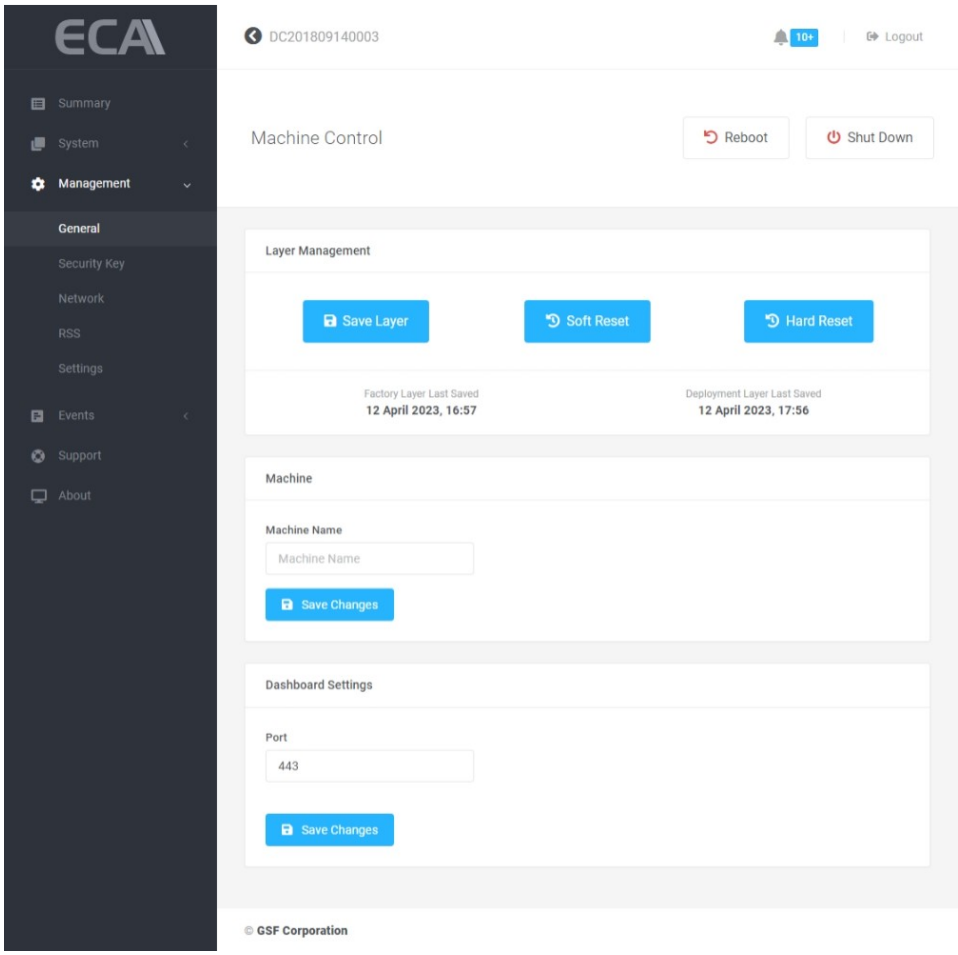


Figure 73: General

9.1.1 Authorize Restart

Only restart through the Dashboard will consider as authorize restart.

1. Click on ‘Restart’

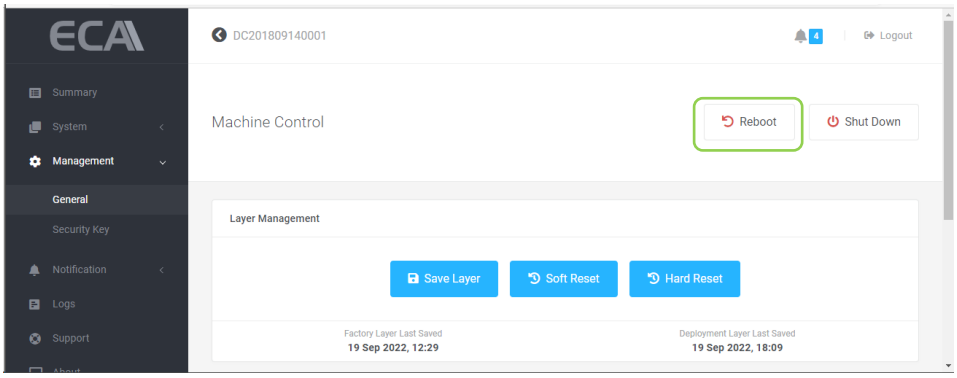


Figure 74: Authorize Restart (1 of 2)

2. Type **Restart** then click ‘Restart’ button

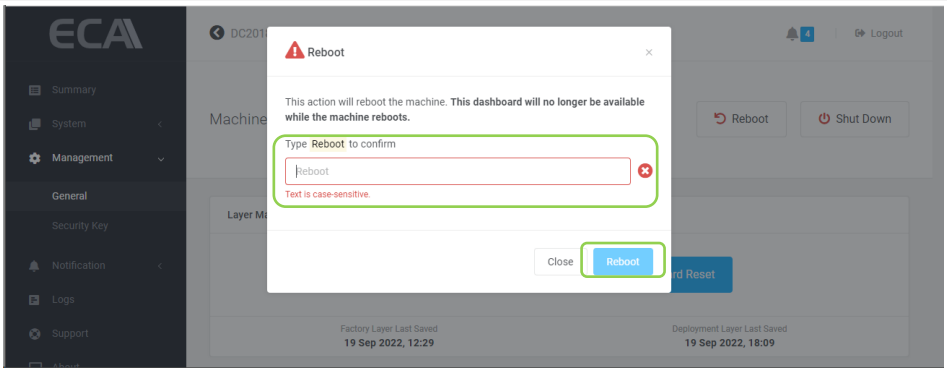


Figure 75: Authorize Restart (2 of 2)

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'

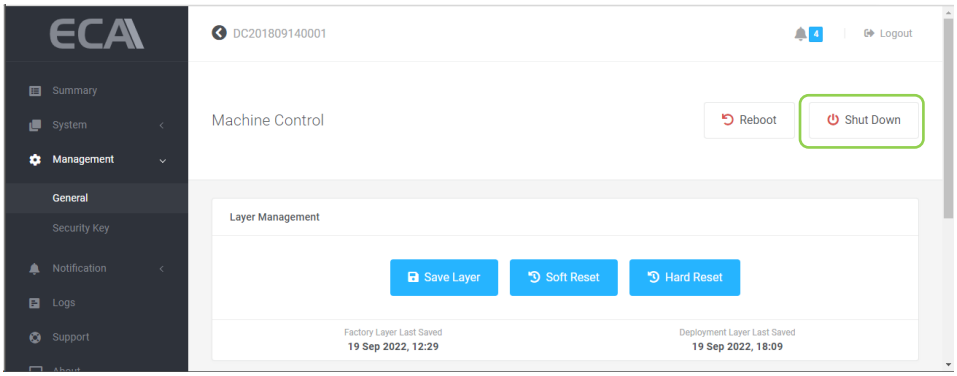


Figure 76: Authorize Shut Down (1 of 2)

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

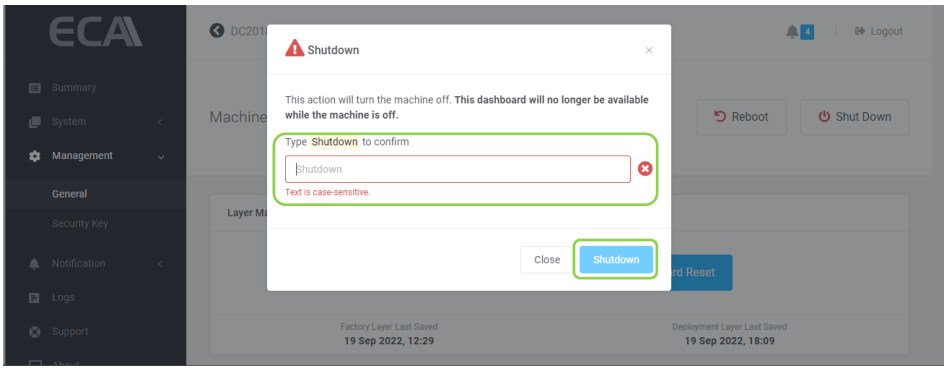


Figure 77: Authorize Shut Down (2 of 2)

9.1.3 Saving & Deploy Layer

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

9.1.3.1 Save Layer

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

NOTE:

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

1. Click on 'Save Layer'

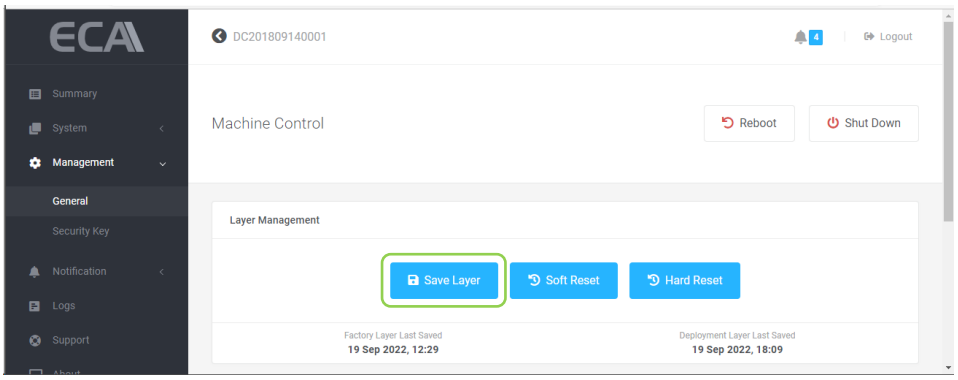


Figure 78: Save Layer (1 of 5)

1. ECA will reboot and go to Layer Manager.

Figure 79: Save Layer (2 of 5)

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

Figure 80: Save Layer (3 of 5)

3. Saving layer in progress show with percentage

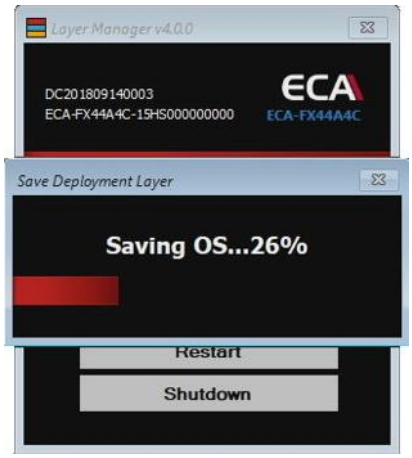


Figure 81: Save Layer (4 of 5)

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

Figure 82: Save Layer (5 of 5)

9.1.3.2 Soft Reset

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

1. Click on ‘Soft Reset’

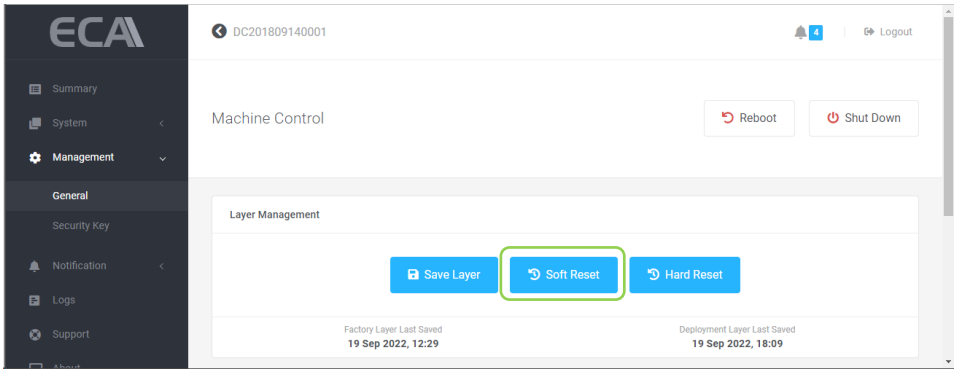


Figure 83: Soft Reset (1 of 5)

3. ECA will reboot and go to Layer Manager.

Figure 84: Save Layer (2 of 5)

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

Figure 85: Save Layer (3 of 5)

5. Restoring layer in progress show with percentage

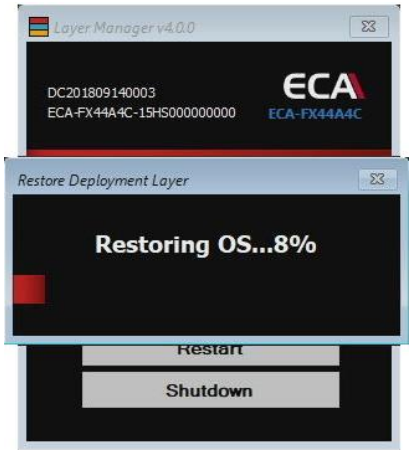


Figure 86: Save Layer (4 of 5)

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

Figure 87: Save Layer (5 of 5)

9.1.3.3 Hard Reset

Deploy default layer saved from factory.

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

1. Click on 'Hard Reset'

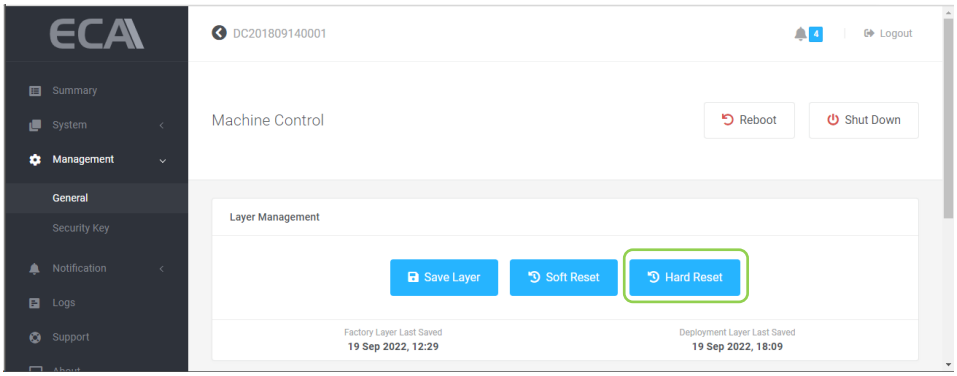


Figure 88: Soft Reset (1 of 2)

5. ECA will reboot and go to Layer Manager.

Figure 89: Save Layer (2 of 5)

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

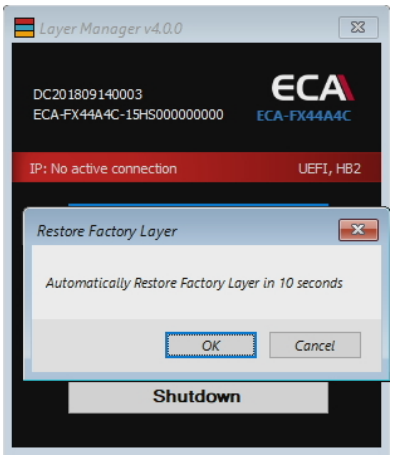


Figure 90: Save Layer (3 of 5)

7. Restoring layer in progress show with percentage

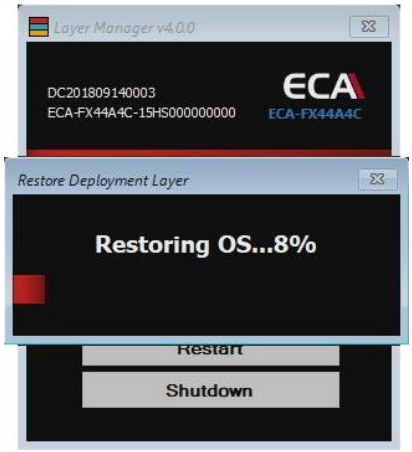


Figure 91: Save Layer (4 of 5)

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

Figure 92: Save Layer (5 of 5)

9.1.3.4 Last Saved Layer Information

Display the last date and time of the layer last saved

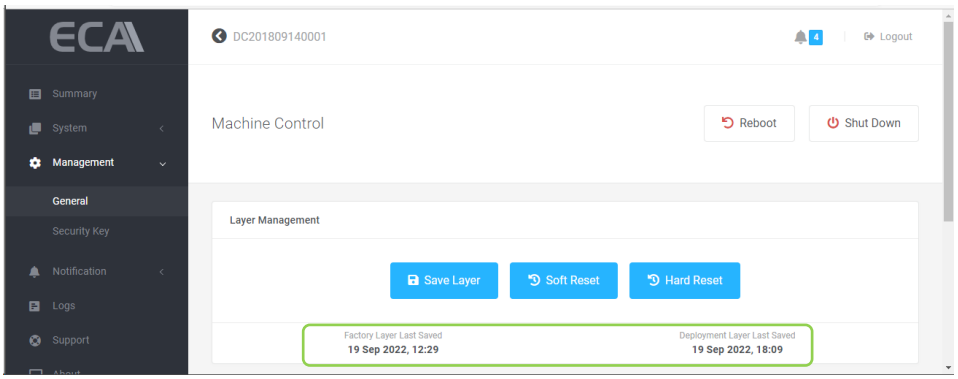


Figure 93: Information about the last saved layer

9.1.4 Machine Name

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

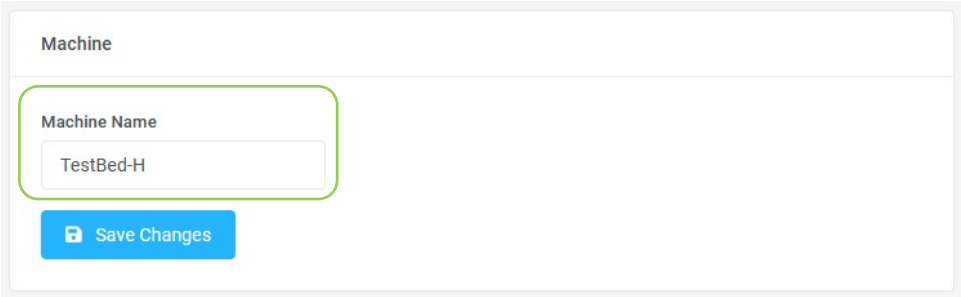


Figure 94: Machine name for ECA

9.1.5 Change Dashboard Port

By default, port 443 is use ECA for remotely access Dashboard from another machine via local LAN. Modify this port if the default ports already in use.

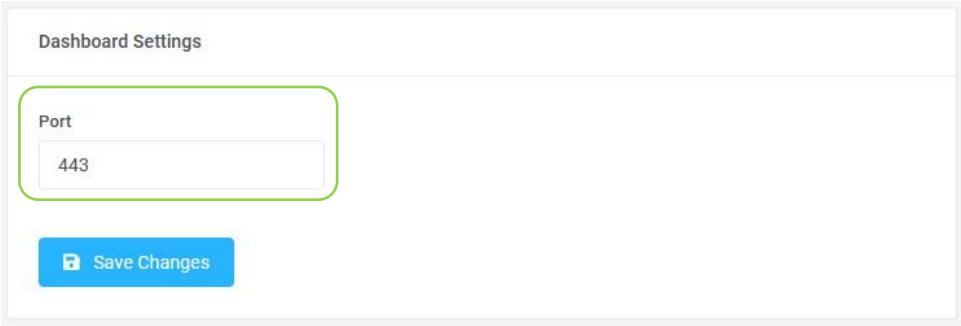


Figure 95: Port settings for Dashboard

9.2 Security Key

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

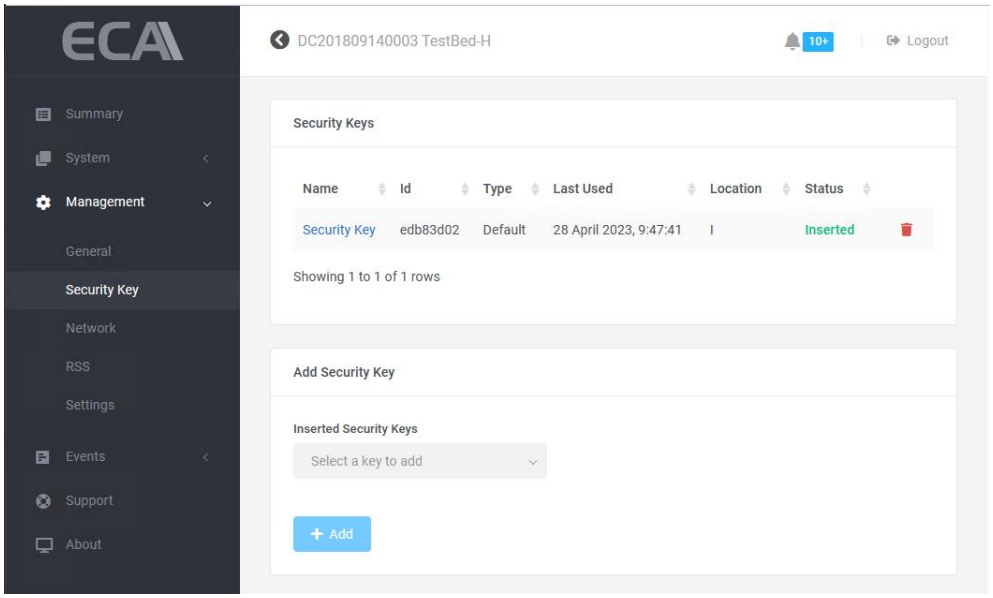


Figure 96: Security Key

9.2.1 Register Security Key

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

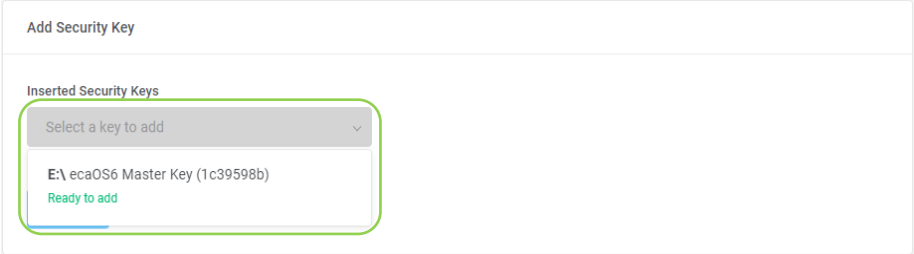


Figure 97: Register security key (1 of 3)

3. Click Add to register

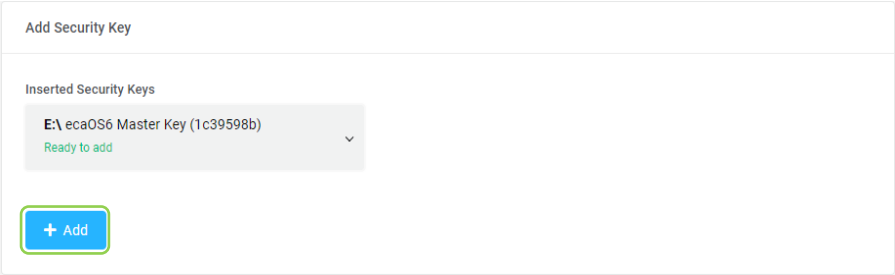


Figure 98: Register security key (2 of 3)

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

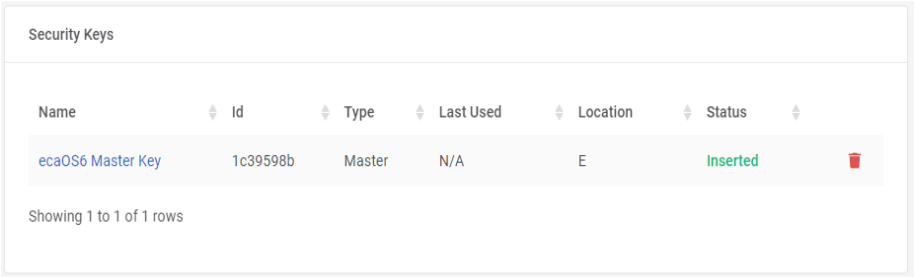


Figure 99: Register security key (3 of 3)

9.2.2 Delete Security Key

1. Click on the dustbin icon of the Security key to be delete

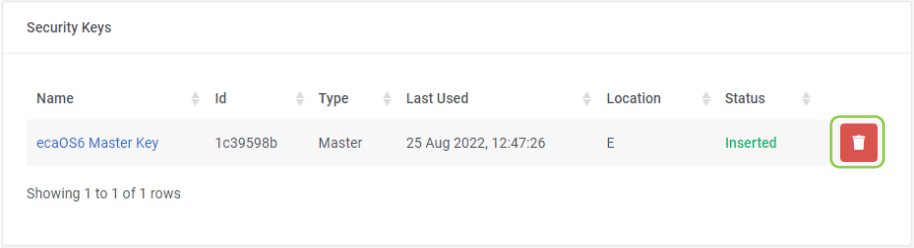


Figure 100: Delete security key (1 of 2)

2. Type in the field Security Key name and click 'Delete Security Key'

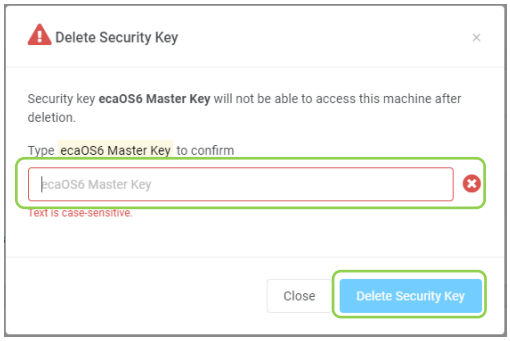


Figure 101: Delete security key (1 of 2)

9.2.3 Add Virtual Security Key

1. Click on the ‘Add’ button under Virtual Security key

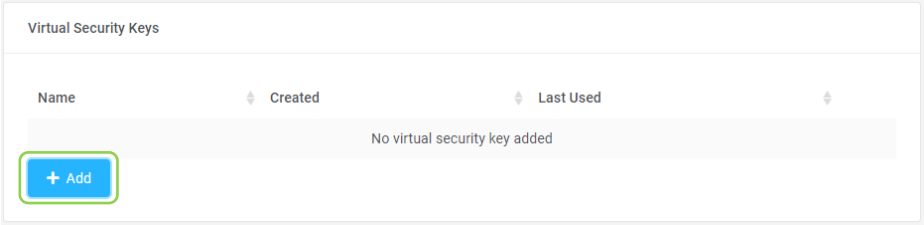


Figure 102: Add virtual security key (1 of 5)

2. Click ‘Next’ button

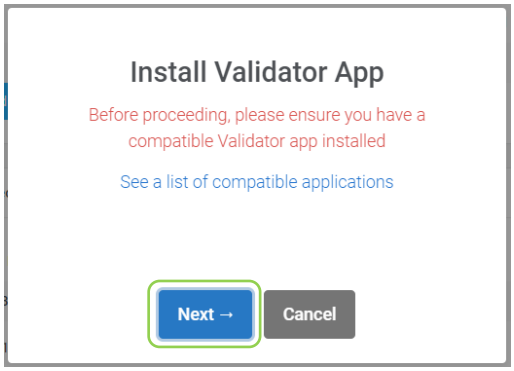


Figure 103: Add virtual security key (2 of 5)

3. Give the new virtual security key a name

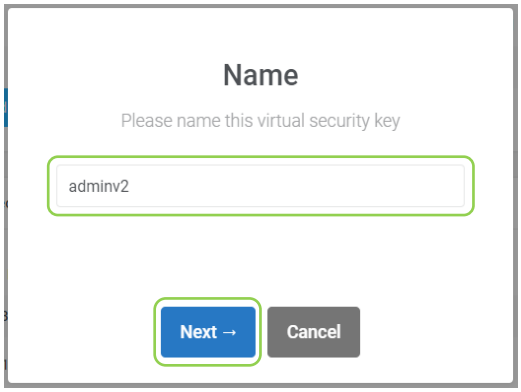


Figure 104: Add virtual security key (3 of 5)

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

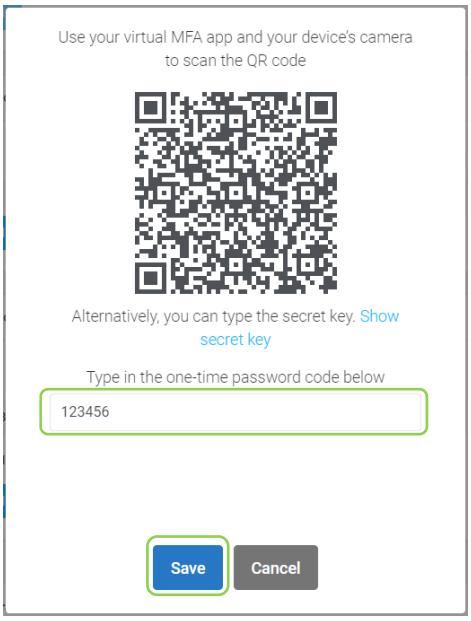


Figure 105: Add virtual security key (4 of 5)

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

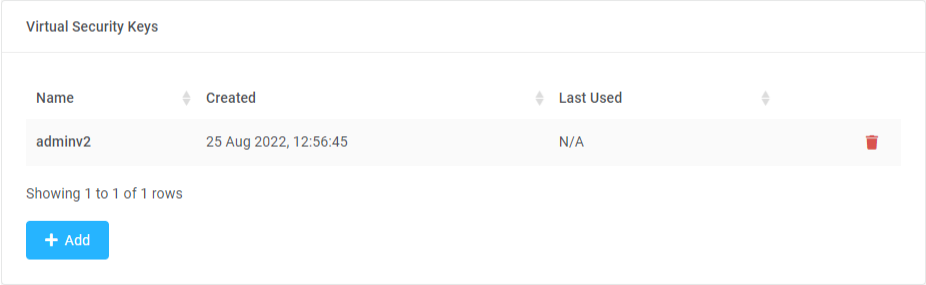


Figure 106: Add virtual security key (5 of 5)

9.2.4 Delete Virtual Security Key

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

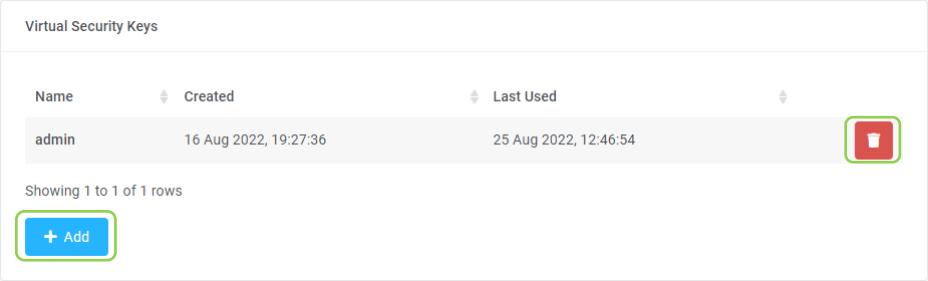


Figure 107: Delete Virtual Security Key (1 of 2)

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

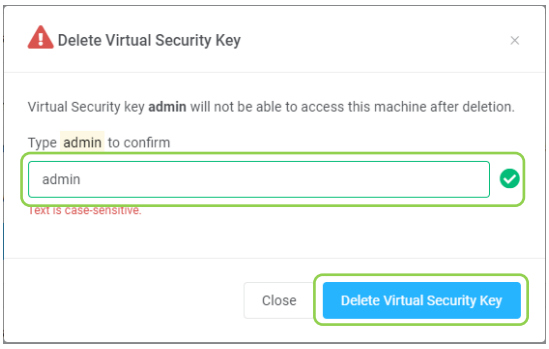


Figure 108: Delete Virtual Security Key (2 of 2)

9.3 Network

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

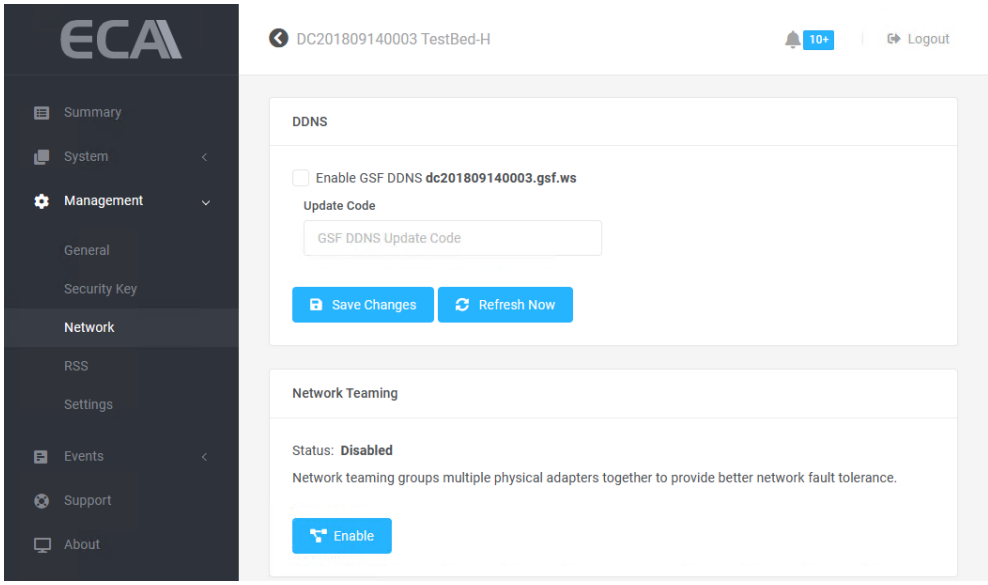


Figure 109: DDNS and Network Teaming

9.3.1 Enable DDNS

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

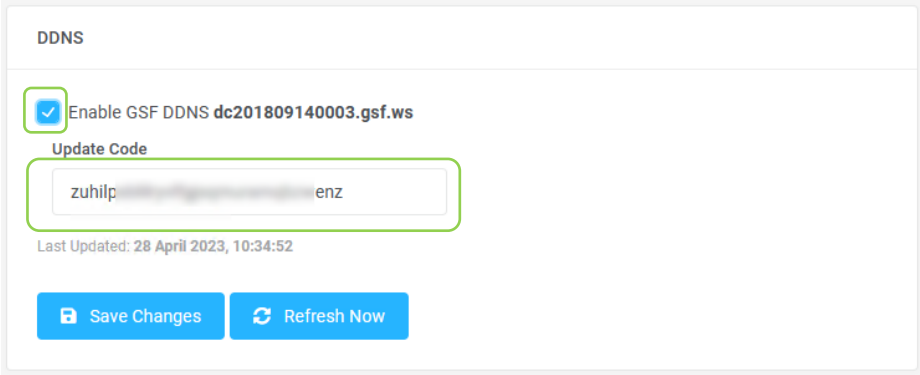


Figure 110: Enable DDNS

9.3.2 Enable Network Teaming

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

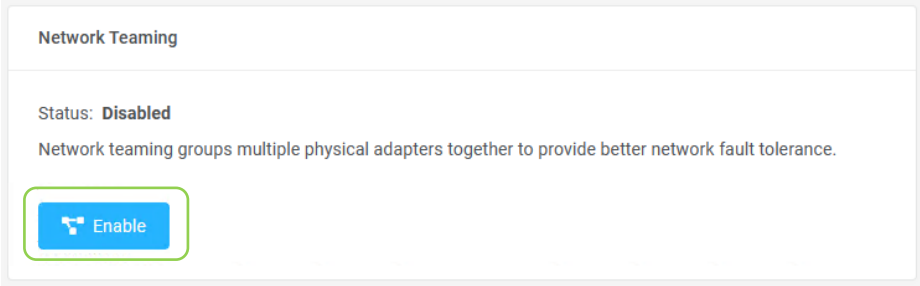


Figure 111: Enable Network Teaming

2. Type ‘Confirm and click on ‘Confirm’ button

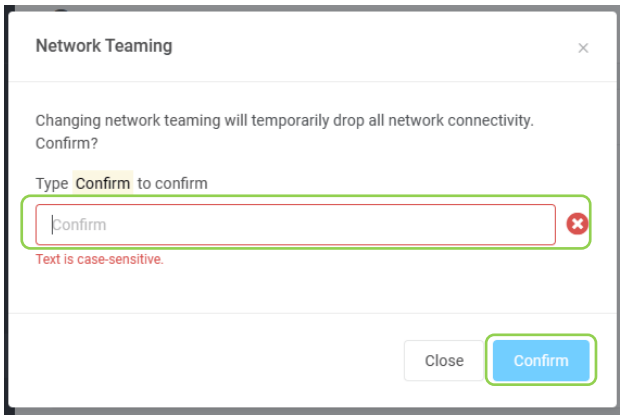


Figure 112: Confirm to enable network teaming

9.3.3 Disable Network Teaming

1. Click on the ‘Disable’ button to disable Network Teaming.

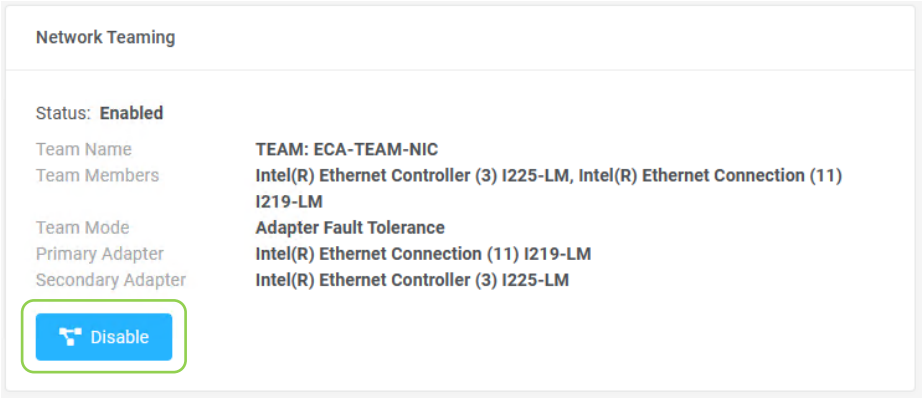


Figure 113: Disable Network Teaming

2. Type ‘Confirm and click on ‘Confirm’ button

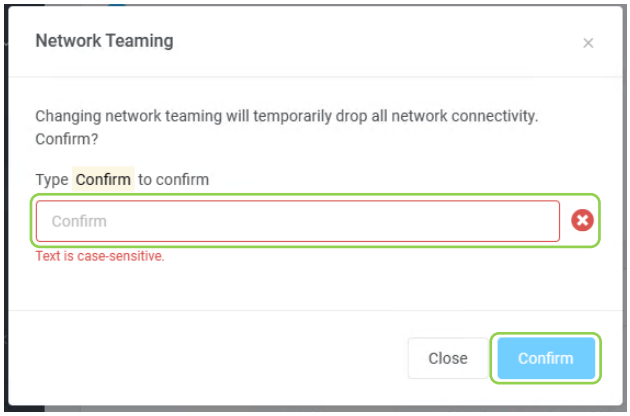


Figure 114: Confirm to disable network teaming

9.4 RSS (Redundant Storage System)

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

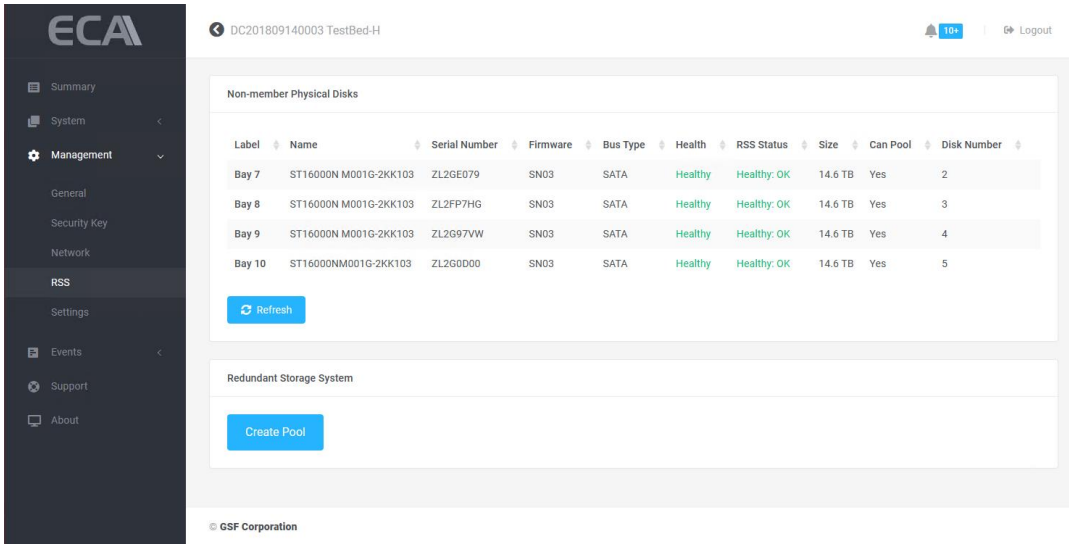


Figure 115: RSS – Redundant Storage System

9.4.1 Create Storage Pool

1. Click on the ‘Create Pool’ button to create pool.

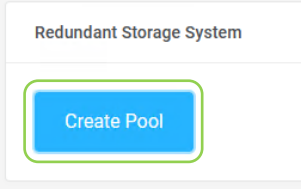


Figure 116: Create Pool

2. Name the storage pool and click on the ‘Next’ button.

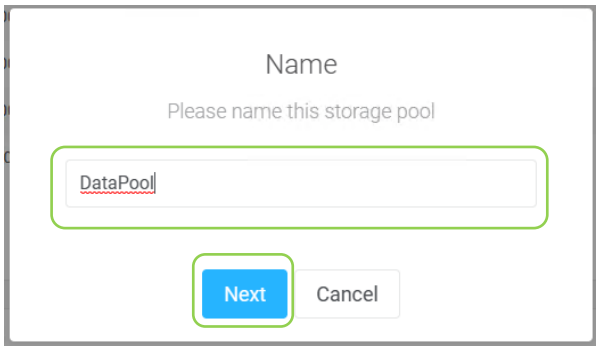


Figure 117: Name storage pool

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

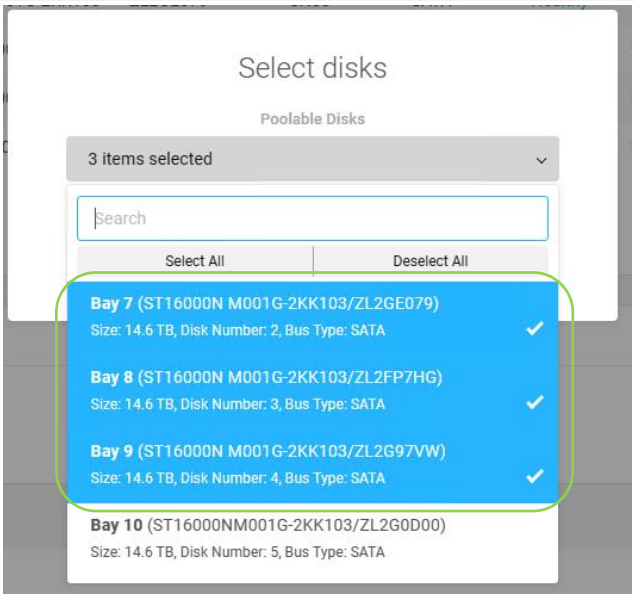


Figure 118: Select disks

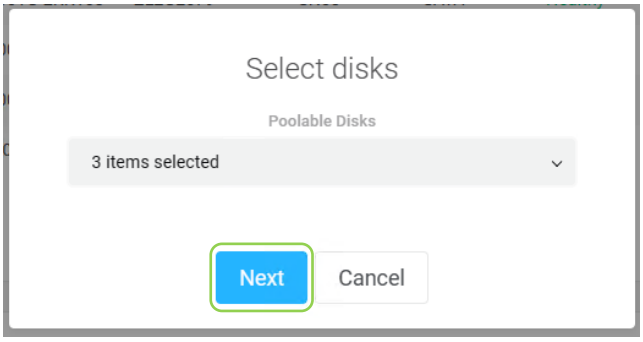


Figure 119: Select disks

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

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

Figure 120: Resiliency type table

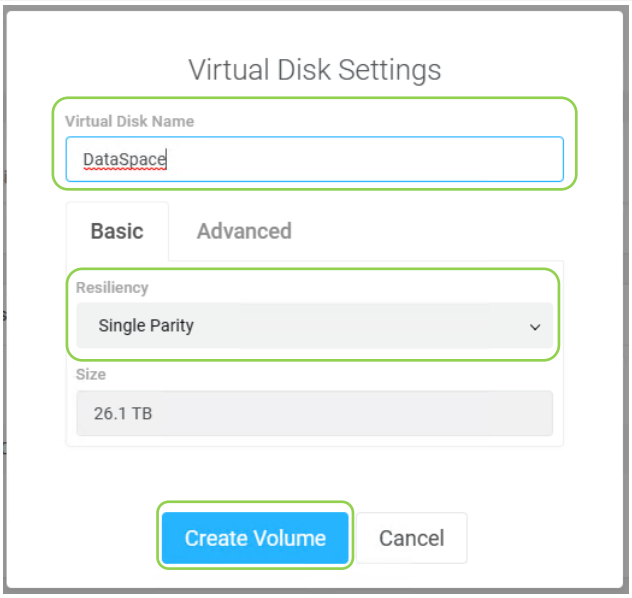


Figure 121: Create volume

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

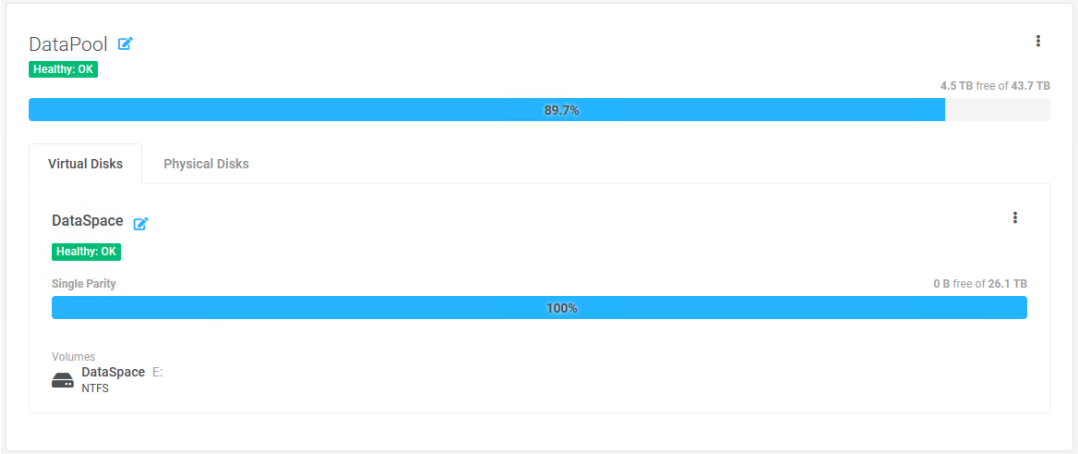


Figure 122: View storage pool, virtual disk health status

9.4.2 Delete Storage Pool

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

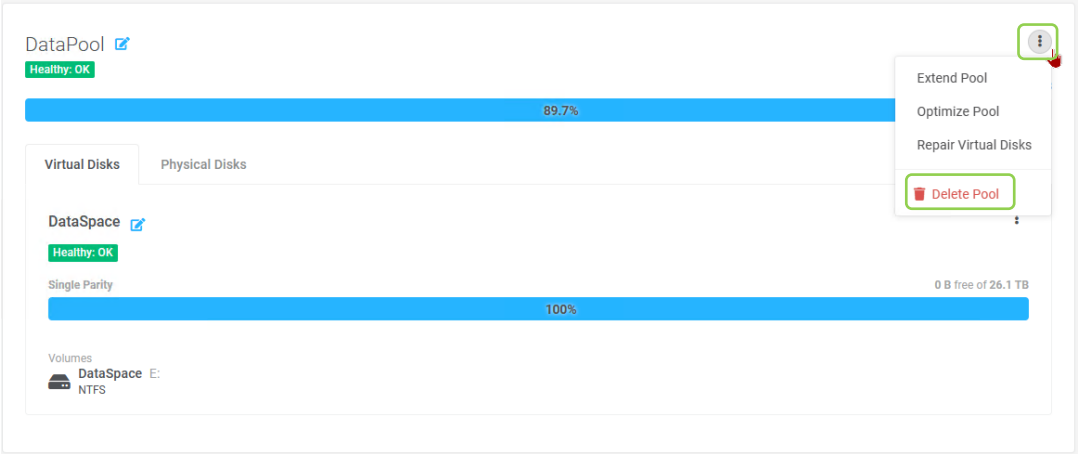


Figure 123: Delete pool

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

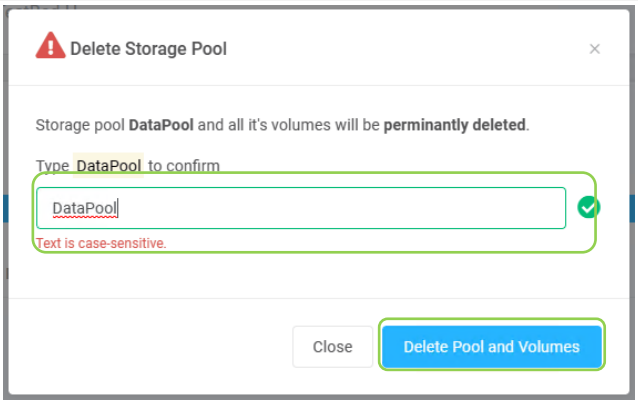


Figure 124: Confirm delete pool

9.4.3 Extend Storage Pool

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

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

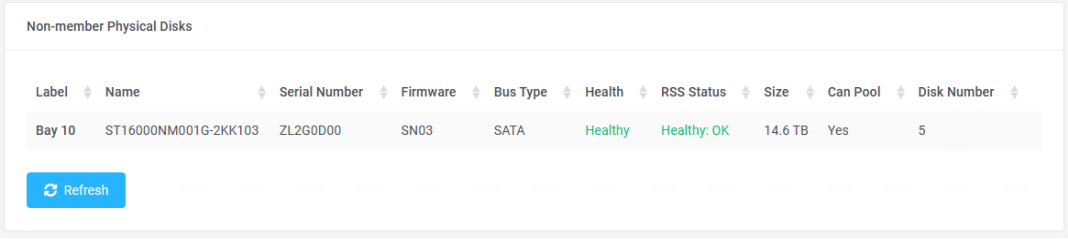


Figure 125: RSS non-member physical disks

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

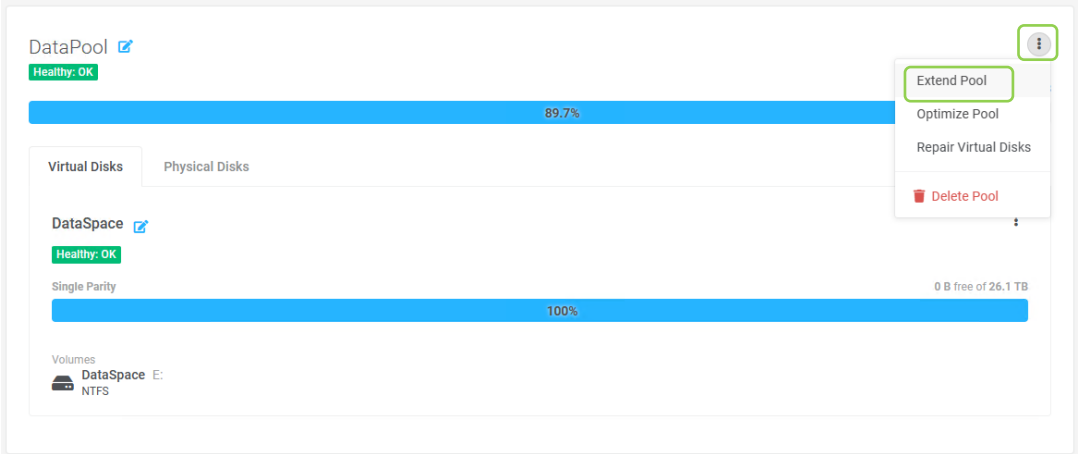


Figure 126: Extend storage pool

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

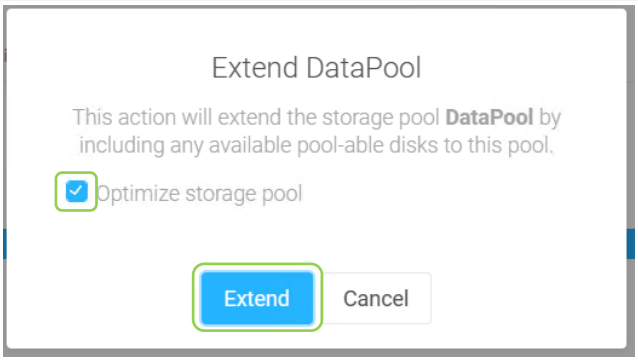


Figure 127: Optimize and extend storage pool

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

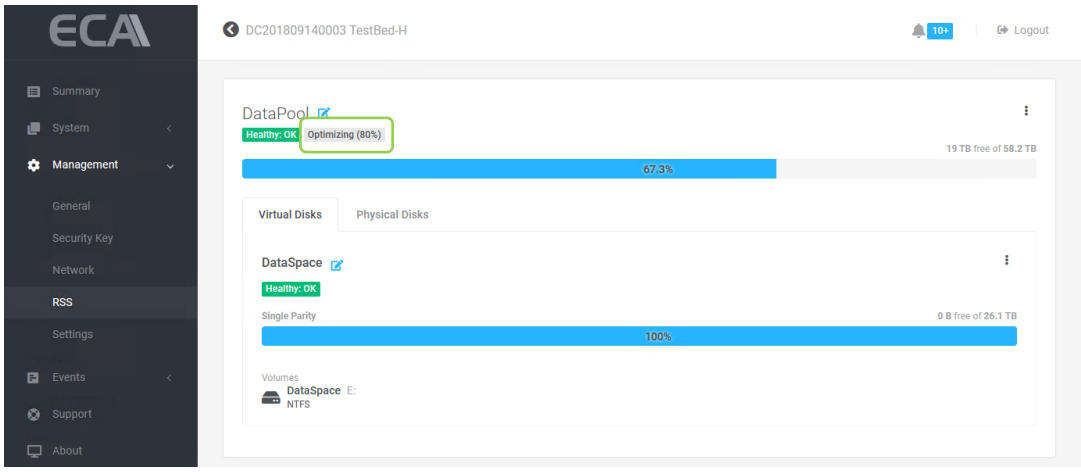


Figure 128: Optimizing storage pool

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

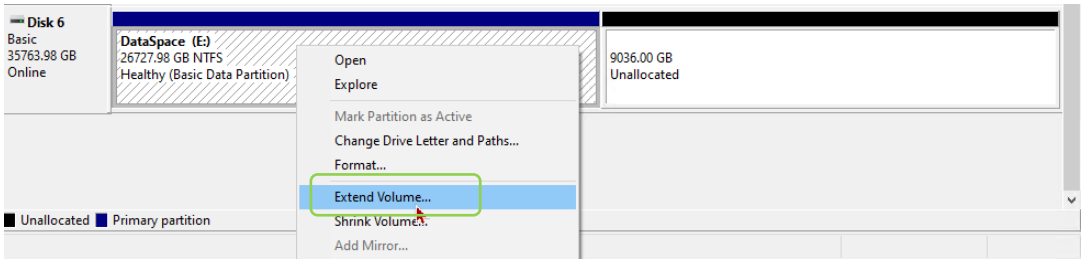


Figure 129: Extend volume in Disk Management (1 of 2)

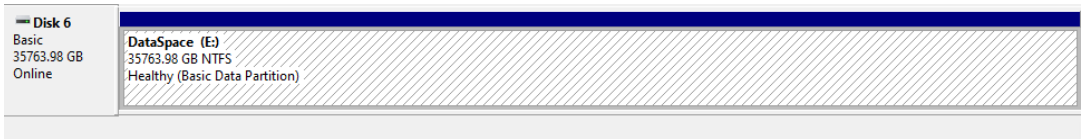


Figure 130: Extend volume in Disk Management (2 of 2)

9.4.4 Repair Storage Pool

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

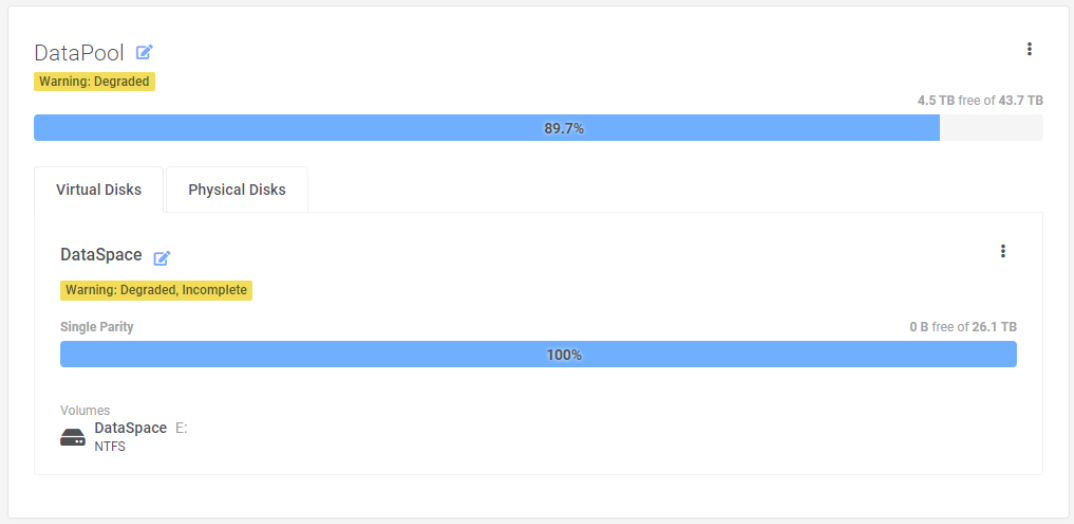


Figure 131: RSS Degraded

Figure 132: RSS Degraded Desktop notifications

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

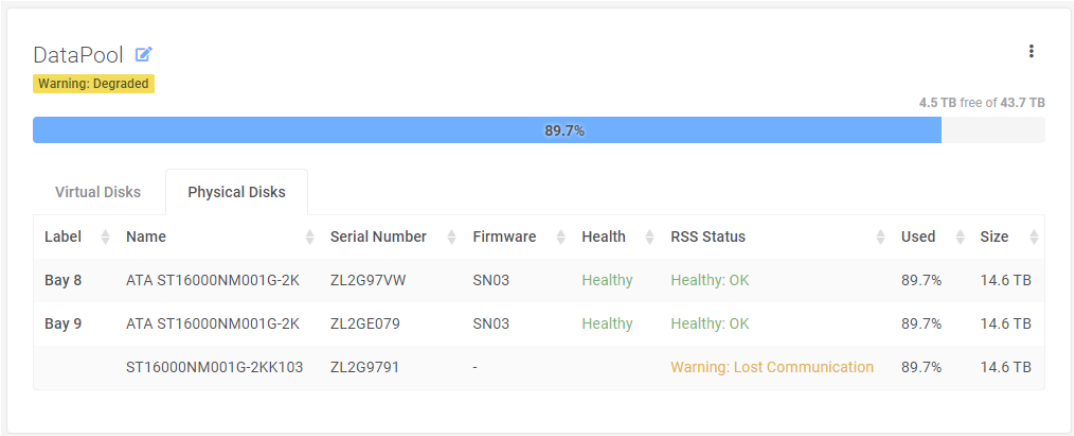


Figure 133: RSS member disk lost communication

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

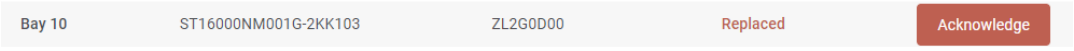


Figure 134: Acknowledge the replacement disk

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

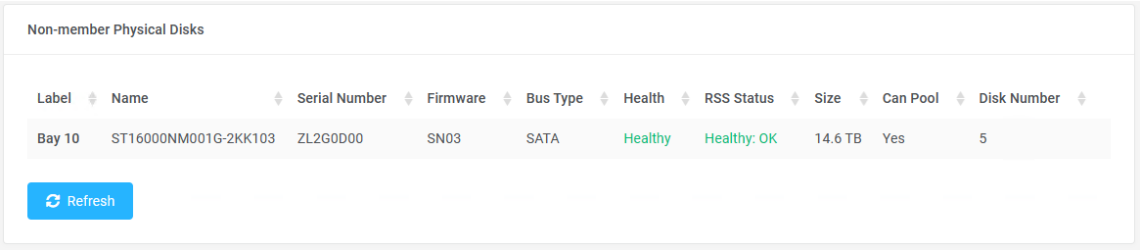


Figure 135: RSS non-member physical disks

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

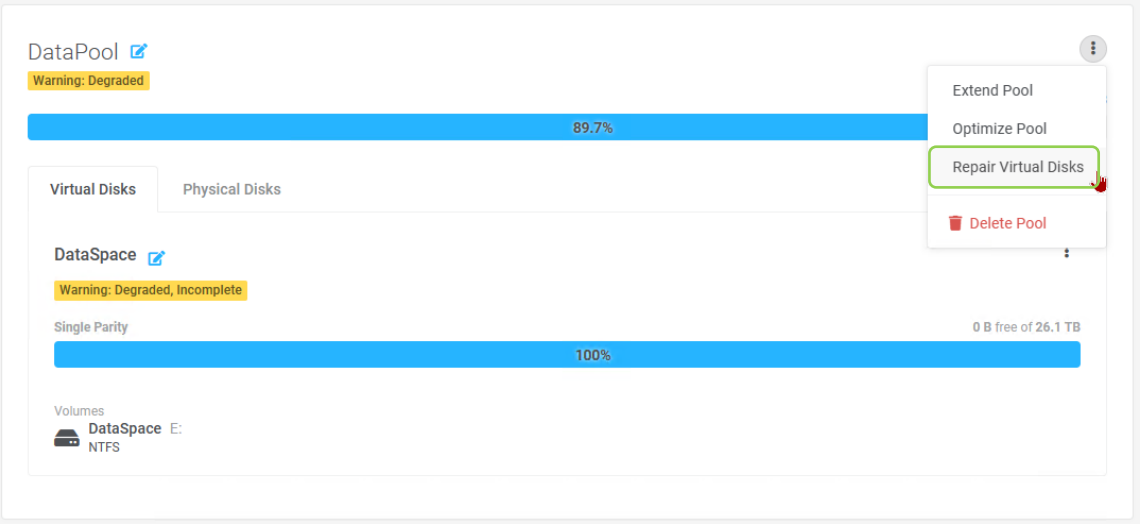


Figure 136: RSS non-member physical disks

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

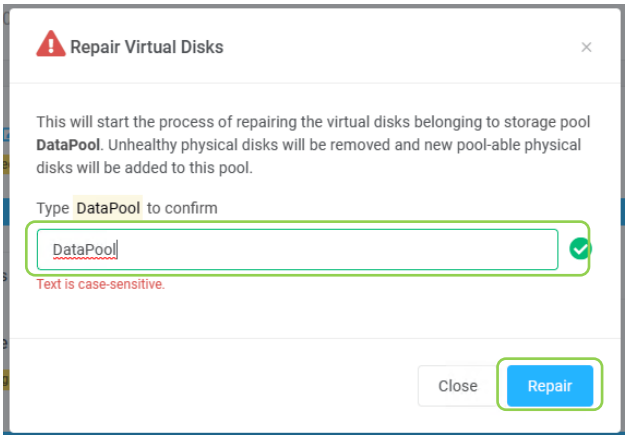


Figure 137: Confirm delete pool

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

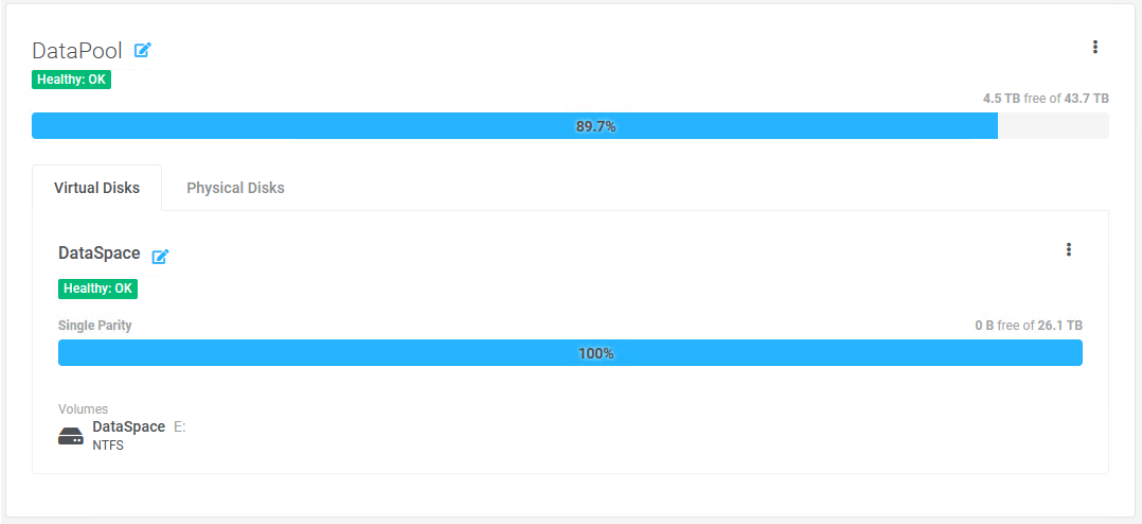


Figure 138: RSS healthy storage pool and virtual disk

9.5 Settings

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

9.5.1 Email Recipient Settings

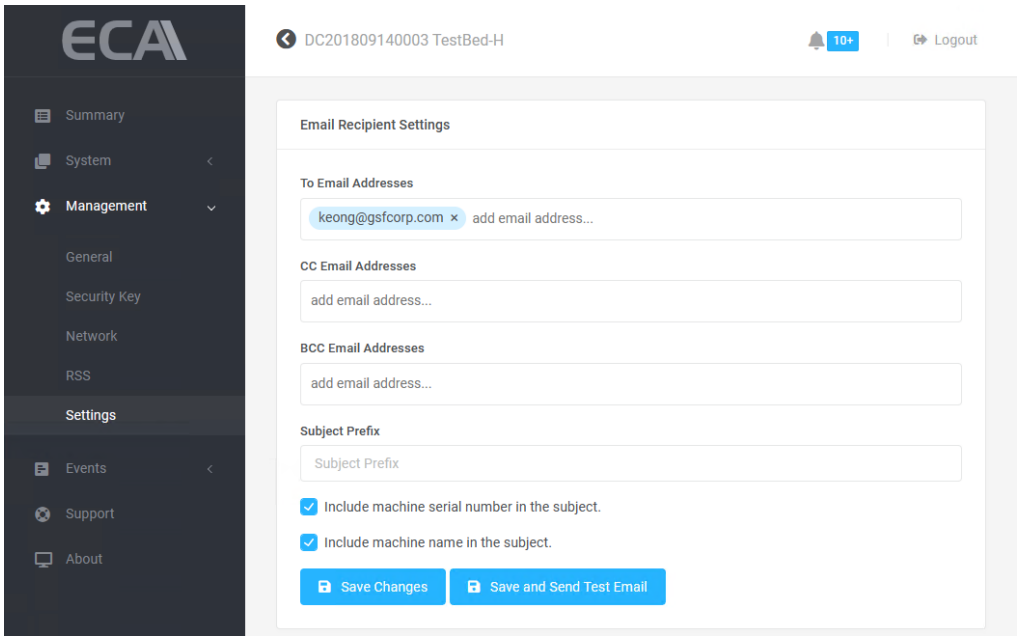


Figure 139: Email Setting (1 of 2)

9.5.2 Mail Servers

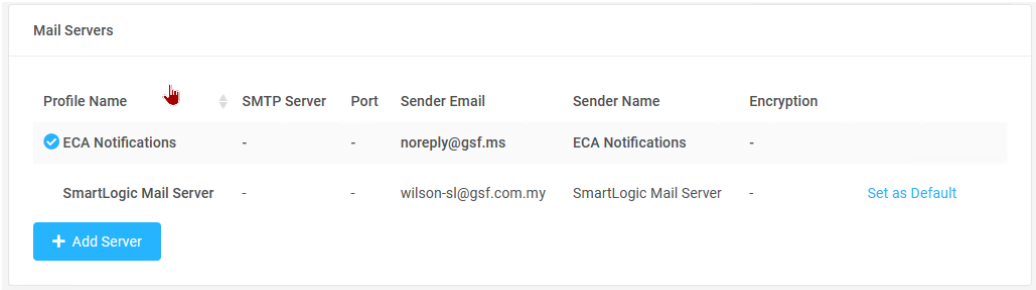


Figure 140: Email Setting (2 of 2)

9.5.3 Events

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

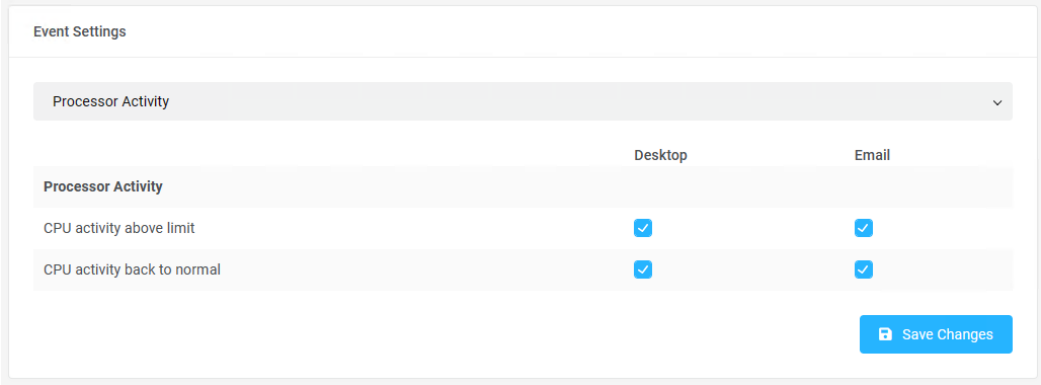


Figure 141: Events

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

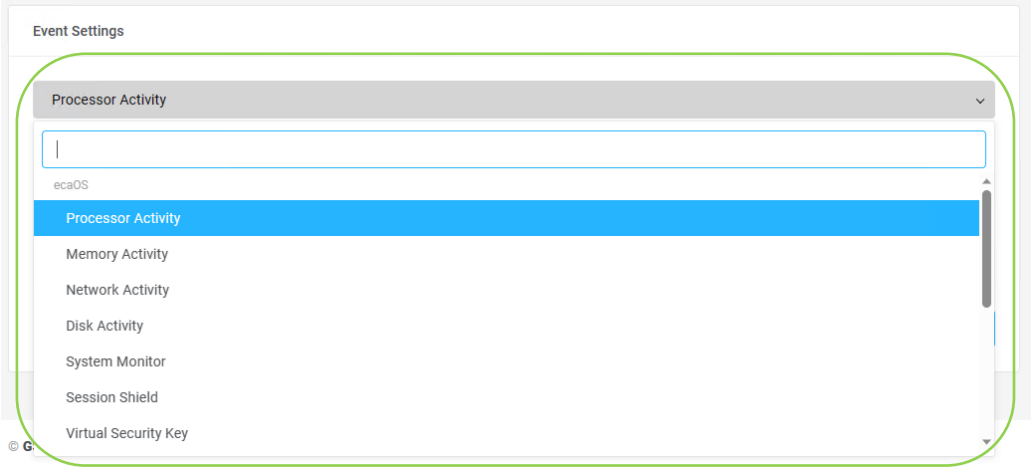


Figure 142: Select event (1 of 2)

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

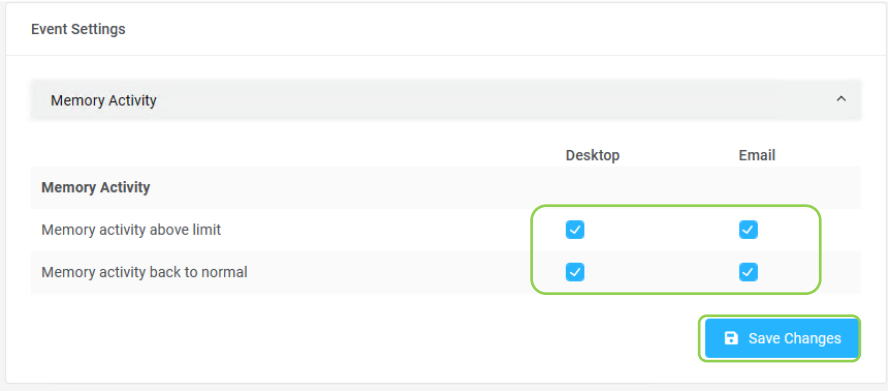


Figure 143: Select event (2 of 2)

9.5.3.1 Events List

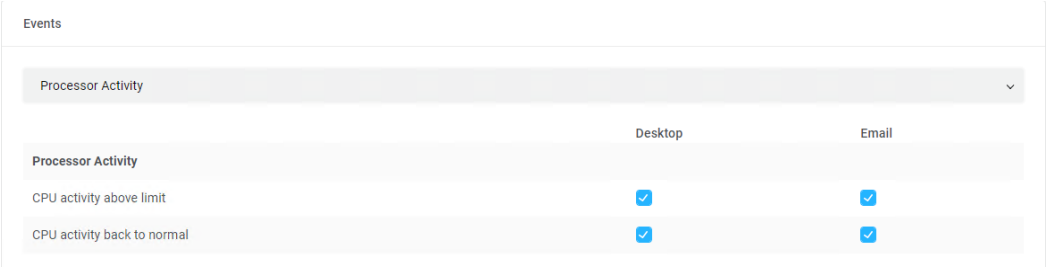


Figure 144: Processor Activity events notify setting

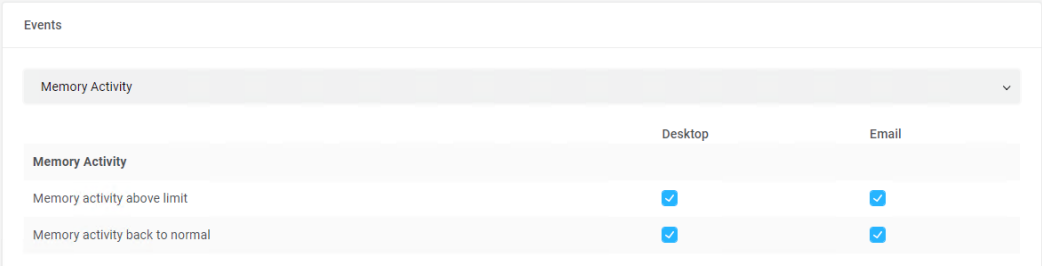


Figure 145: Memory Activity events notify setting

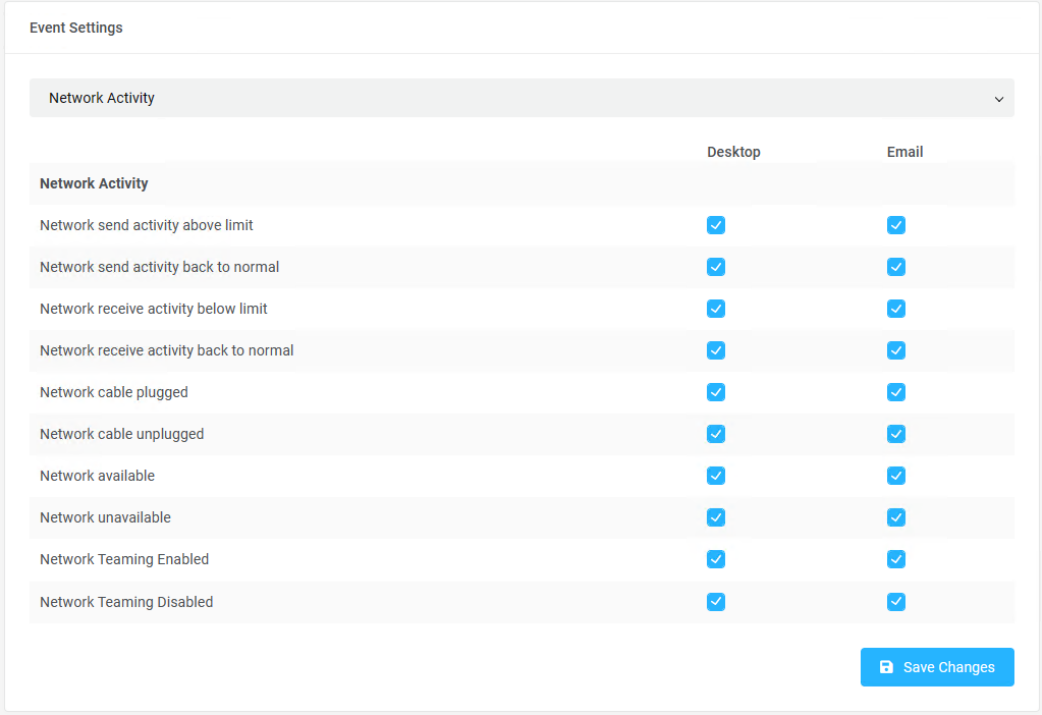


Figure 146: Network Activity events notify setting

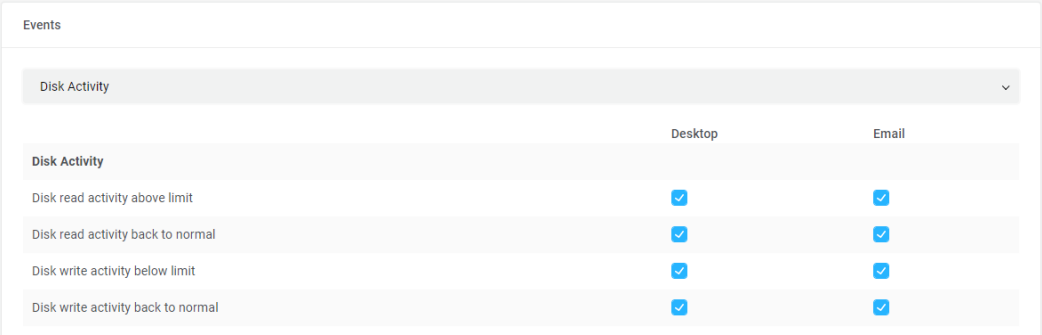


Figure 147: Disk Activity events notify setting

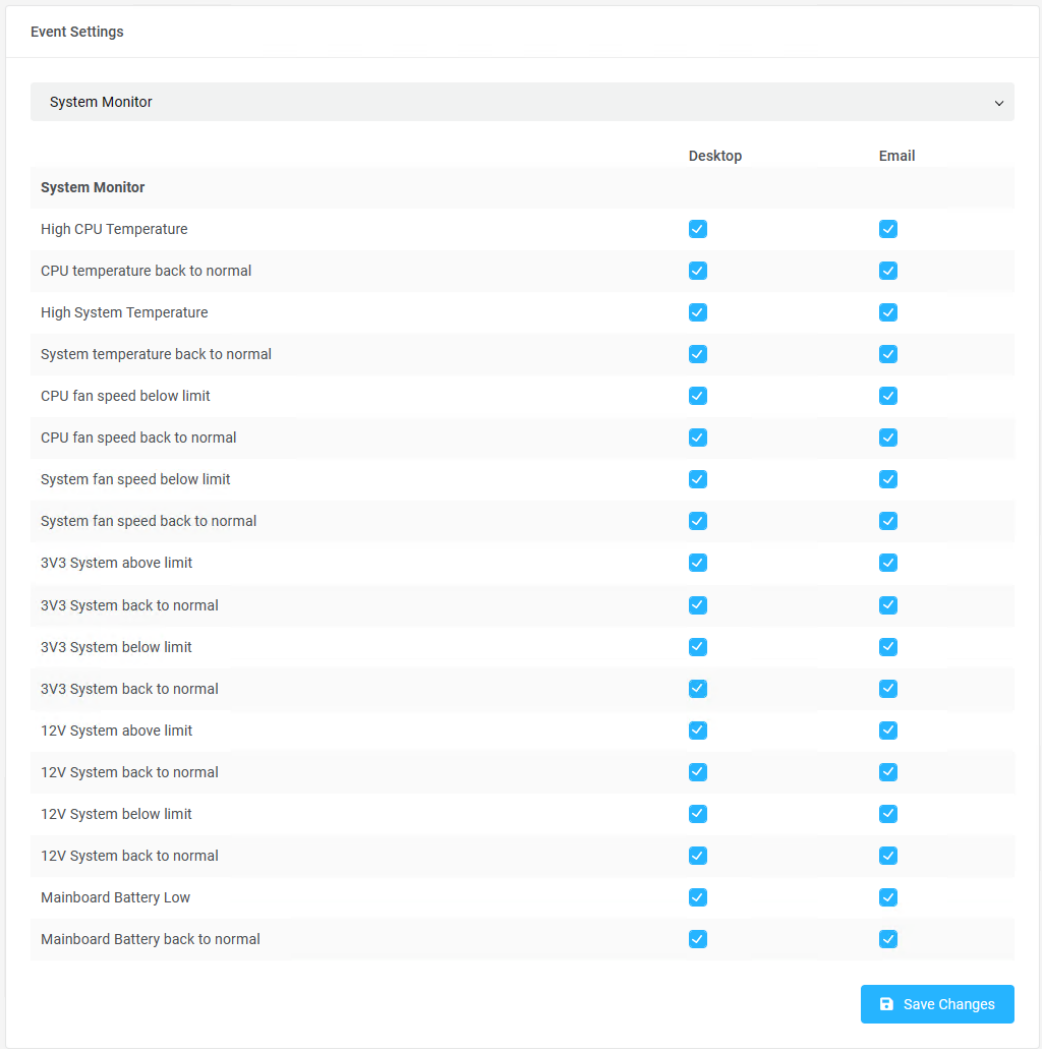


Figure 148: System Monitor events notify setting

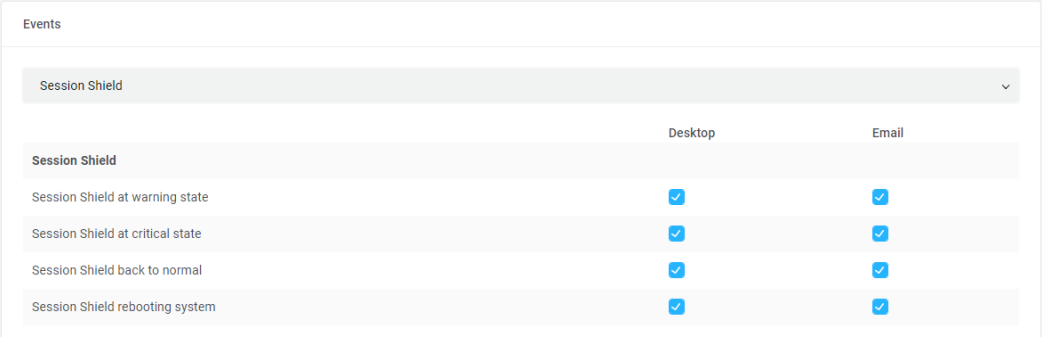


Figure 149: Session Shield events notify setting

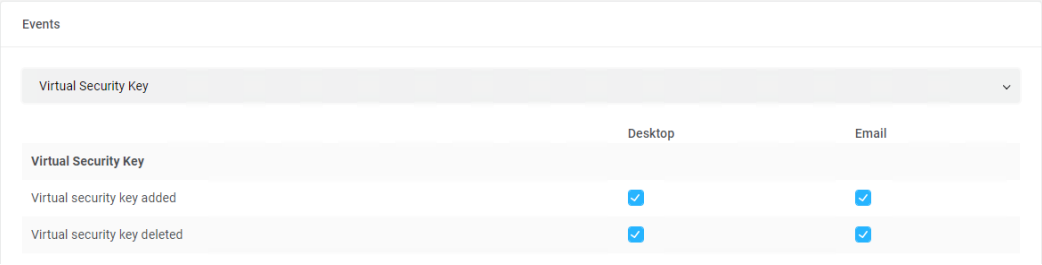


Figure 150: Virtual Security Key events notify setting

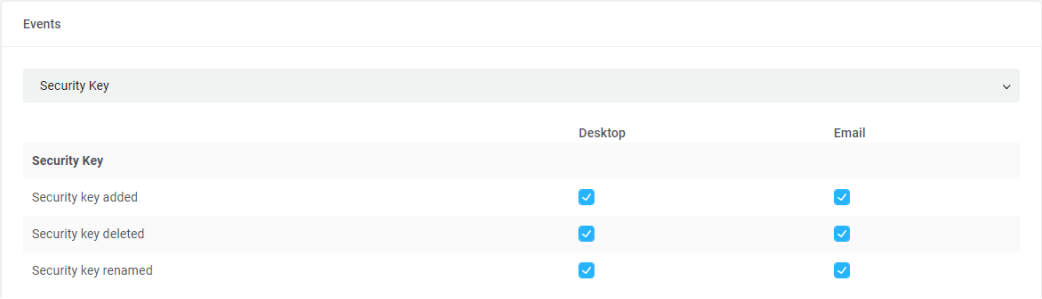


Figure 151: Security Key events notify setting

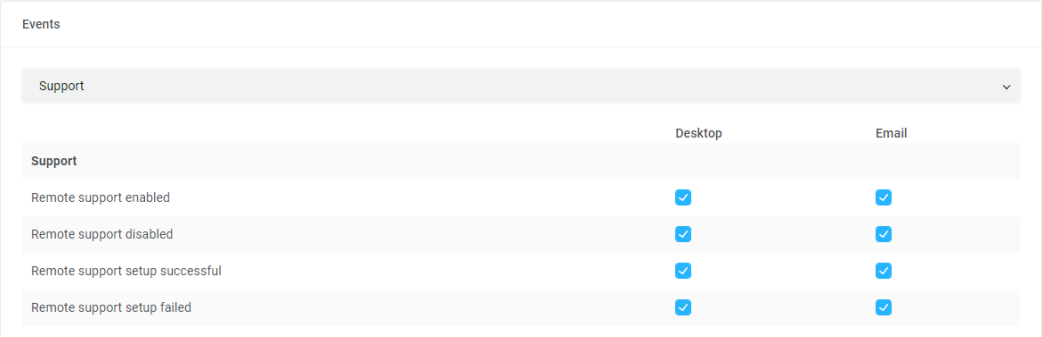


Figure 152: Support events notify setting

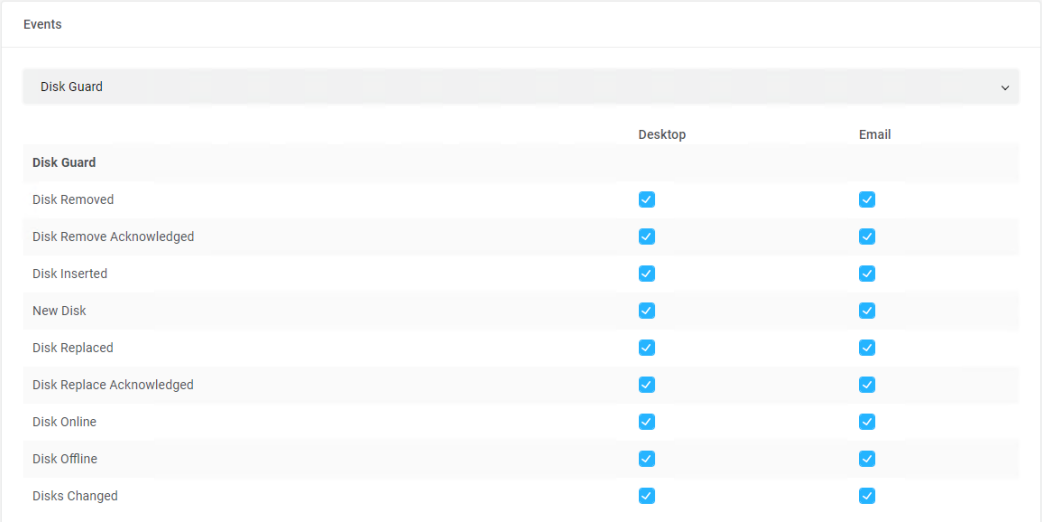


Figure 153: Disk Guard events notify setting

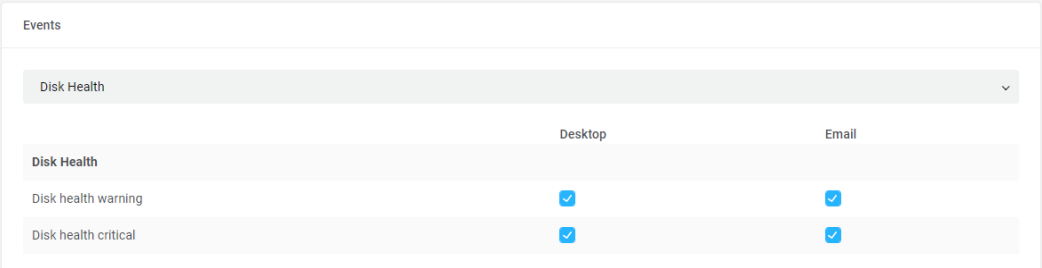


Figure 154: Disk Health events notify setting

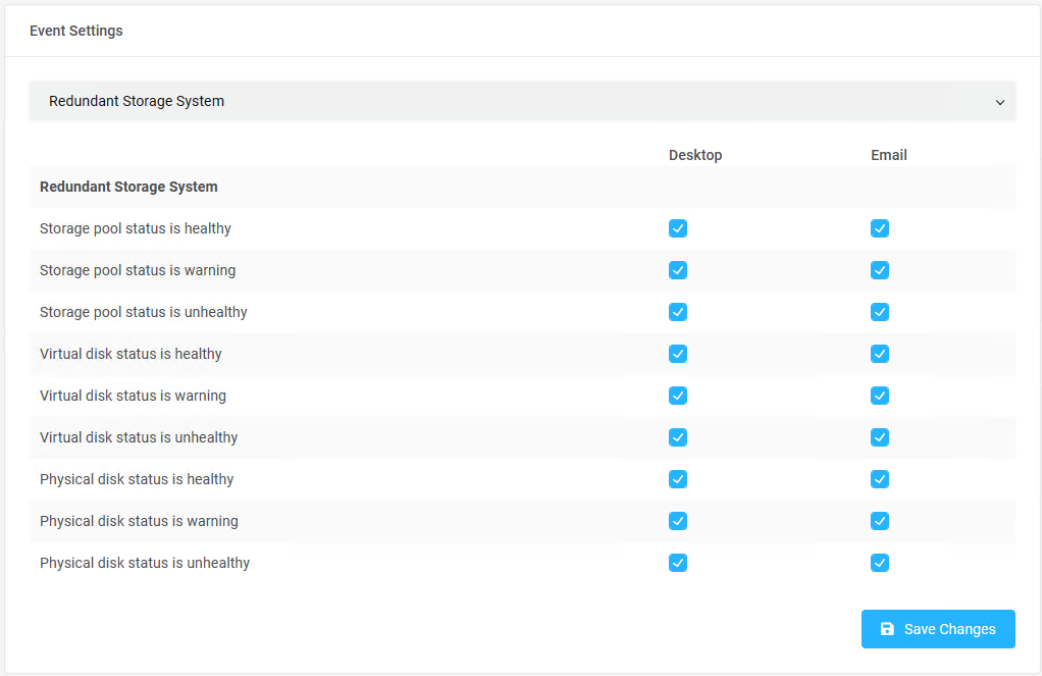


Figure 155: Redundant Storage System notify setting

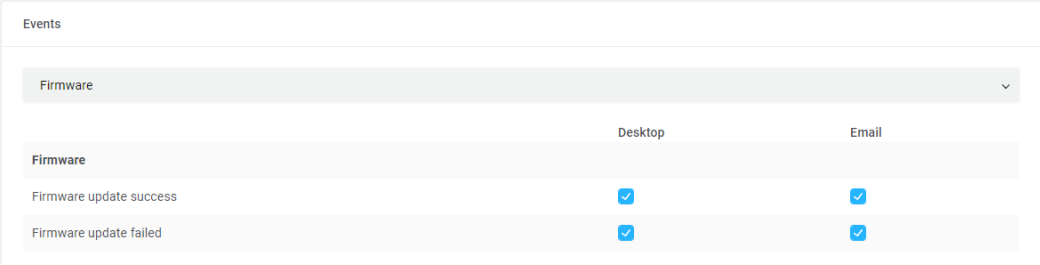


Figure 156: Heartbeat firmware events notify setting

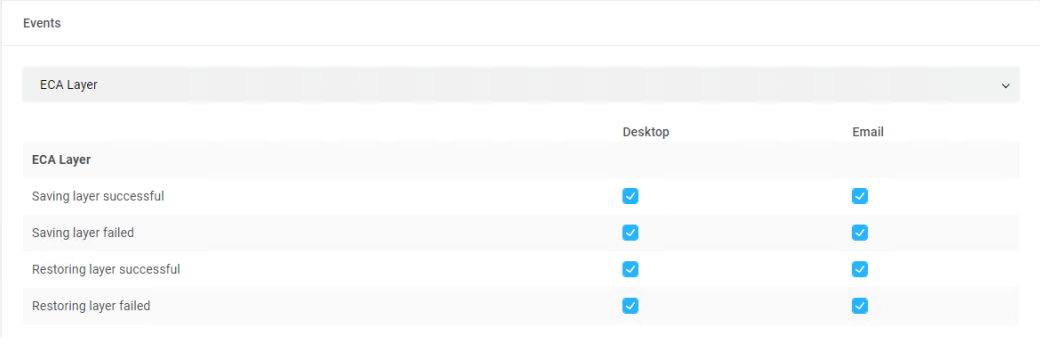


Figure 157: ECA Layer events notify setting

10 Events

10.1 Notification

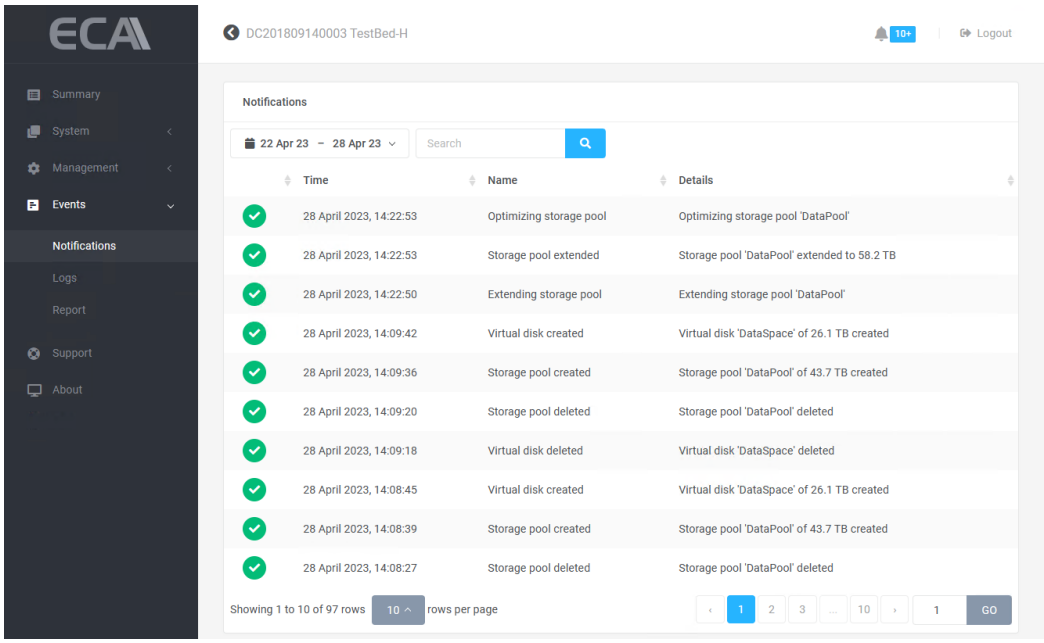


Figure 158: Notification

10.2 Logs

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

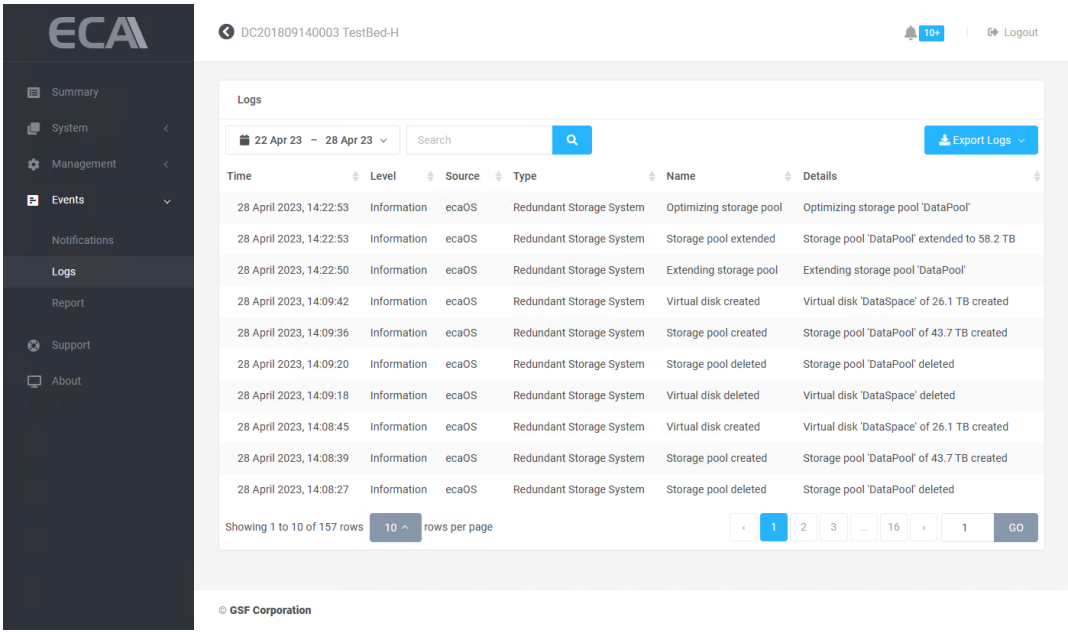


Figure 159: Log

10.2.1 Filtering Log

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

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

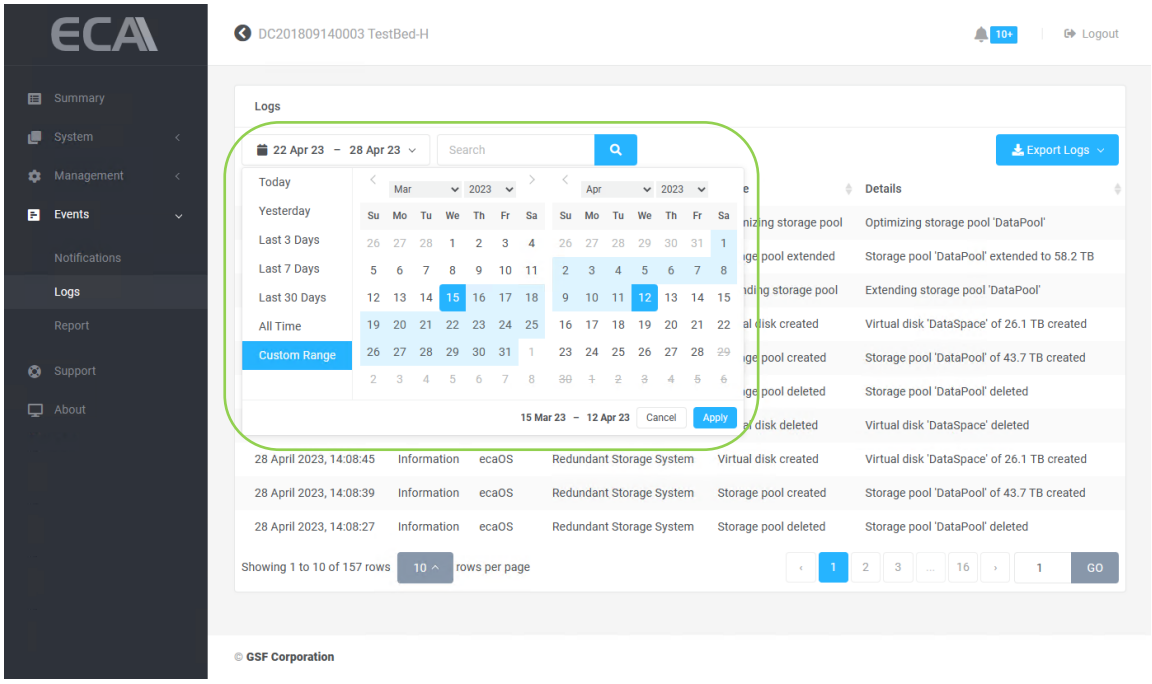


Figure 160: Filter log

10.2.2 Exporting Log

1. Click on the 'Export Logs' button

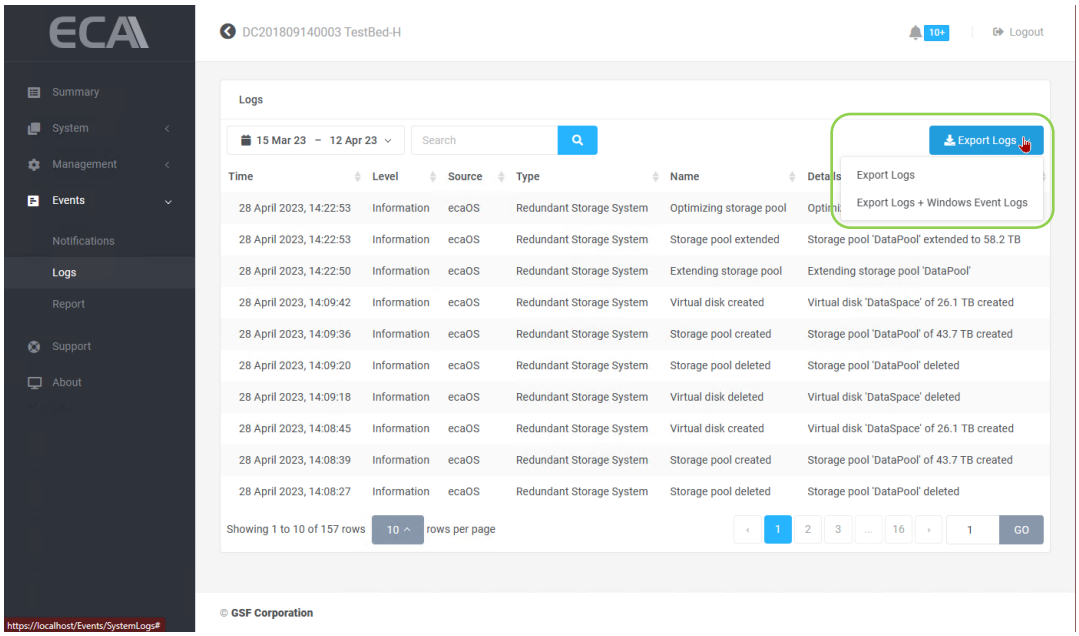


Figure 161: Export Log (1 of 8)

2. Click OK to start export the current log

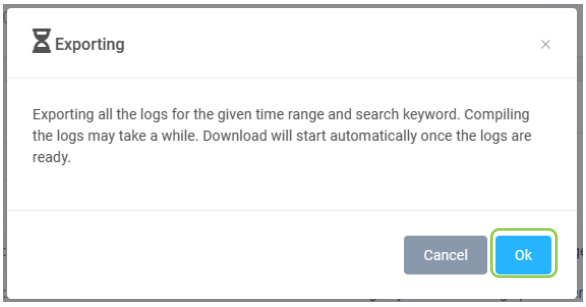


Figure 162: Export Log (2 of 8)

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

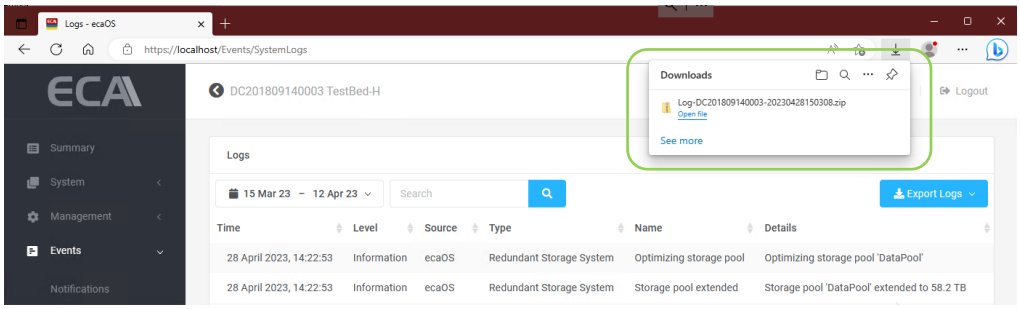


Figure 163: Export Log (3 of 8)

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

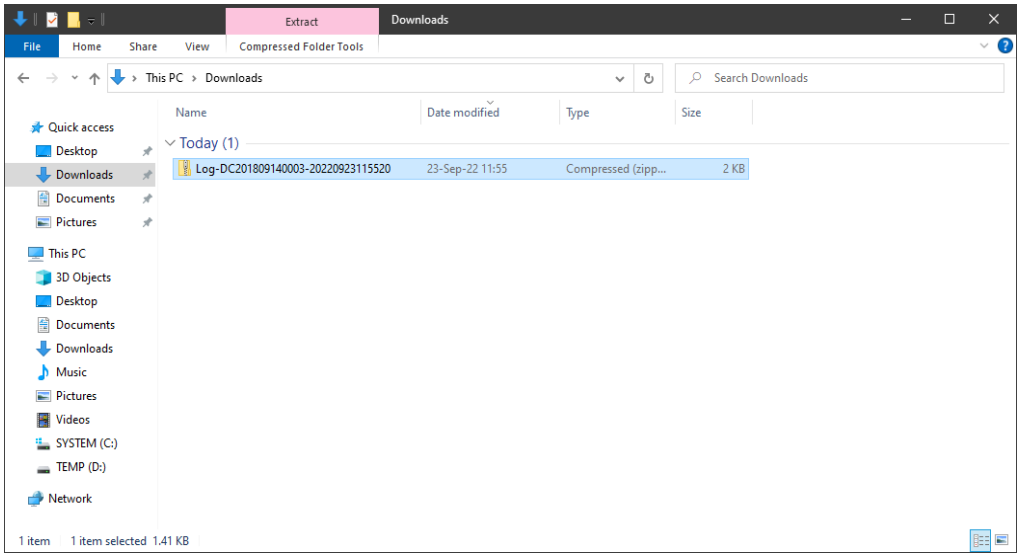


Figure 164: Exporting log (4 of 8)

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

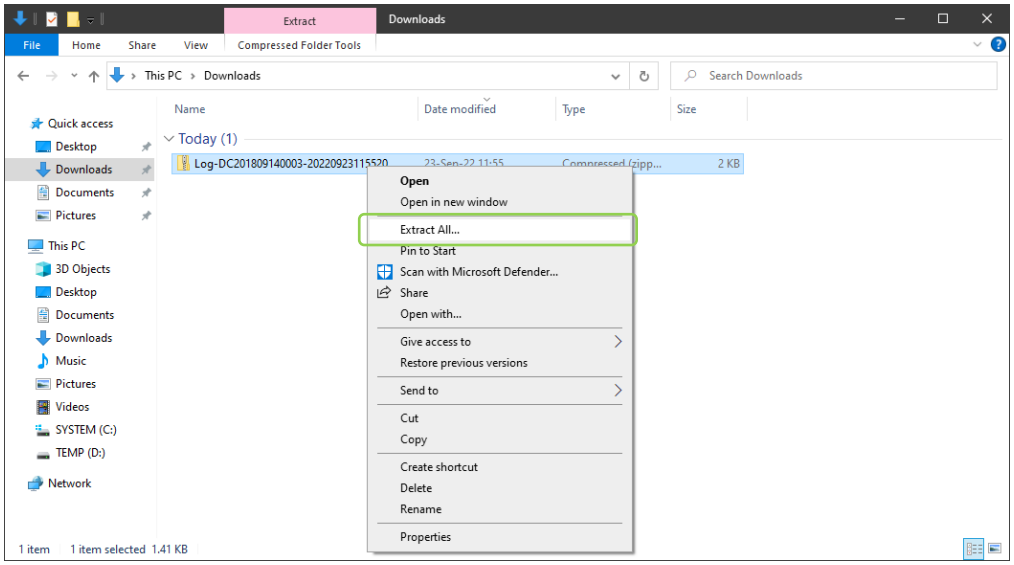


Figure 165: Exporting log (5 of 8)

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

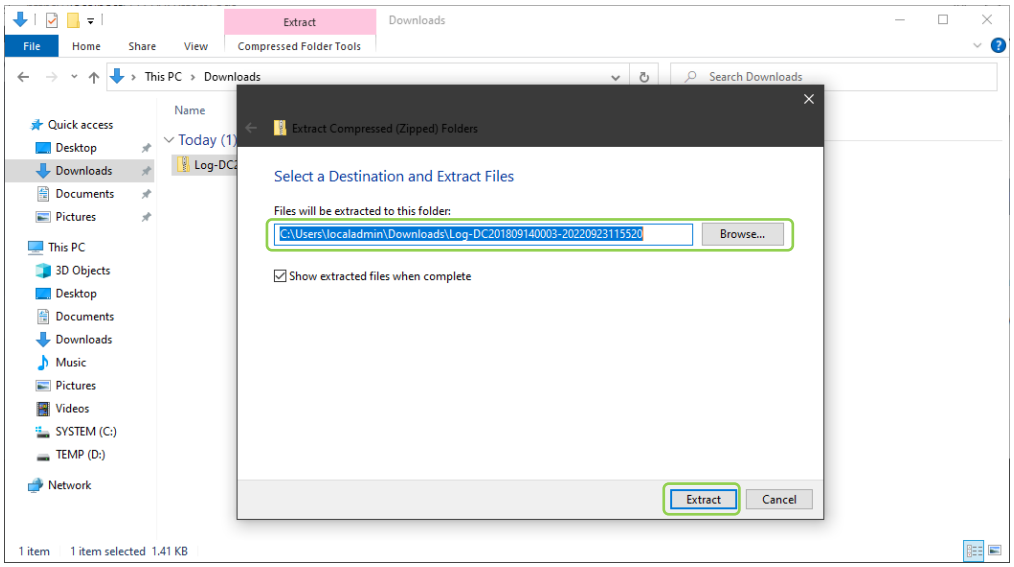


Figure 166: Exporting log (6 of 8)

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

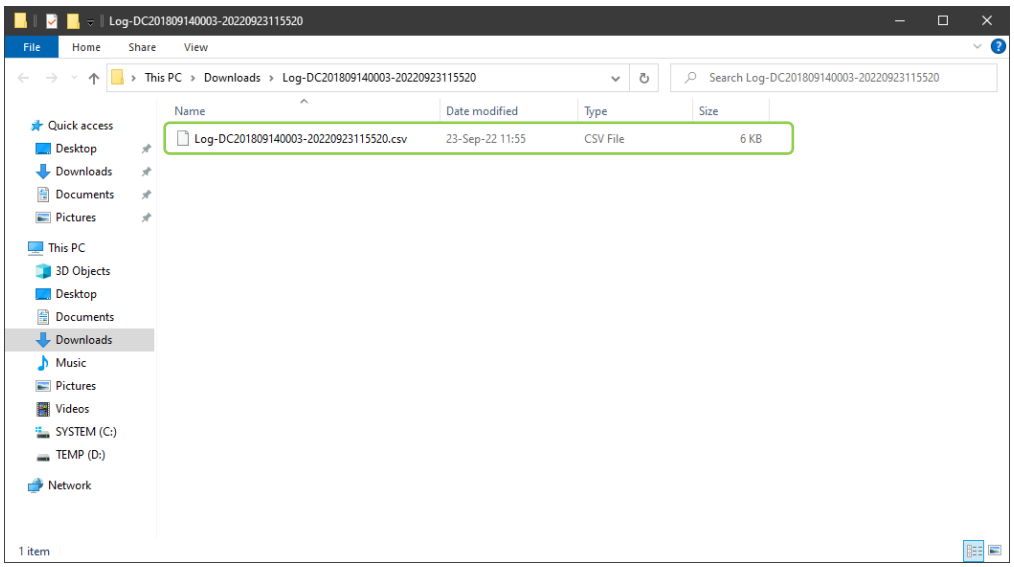


Figure 167: Exporting log (7 of 8)

8. Use Spreadsheet program to open the log file.

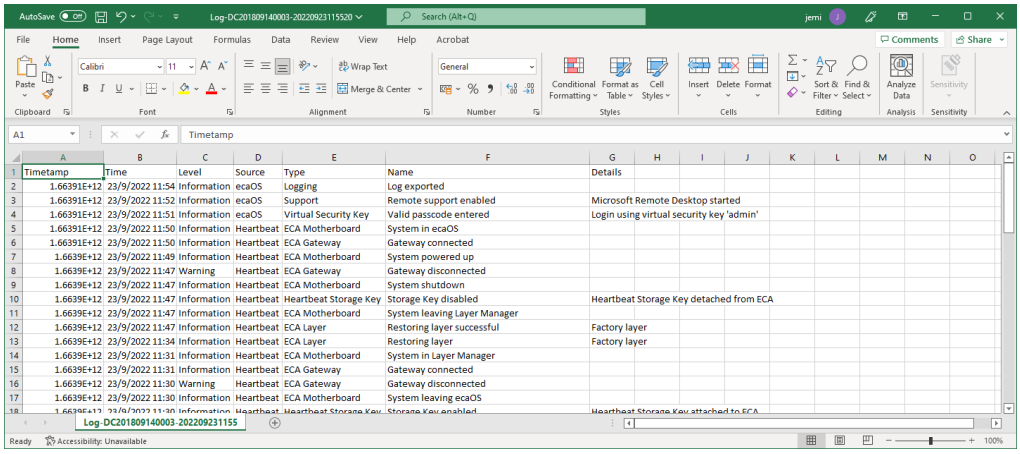


Figure 168: Exporting log (8 of 8)

10.3 Report

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

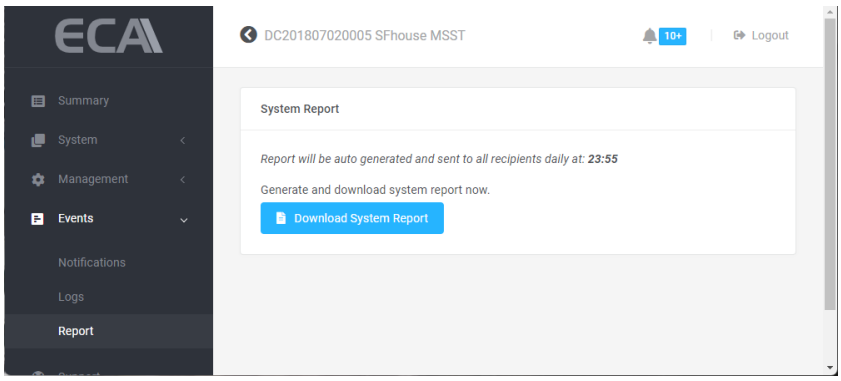


Figure 169: Manual Report Download at Events > Report section

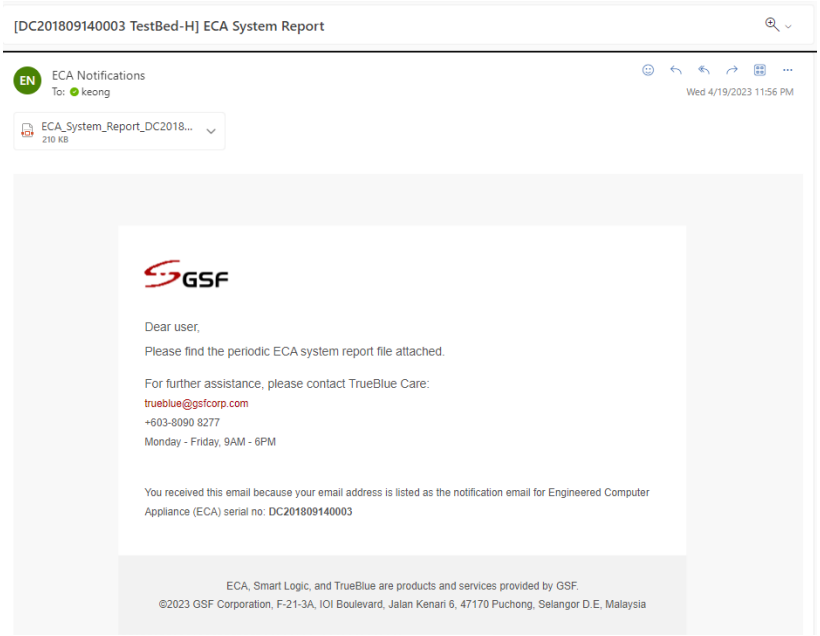


Figure160A: ECA email an ECA report

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

Disks

	Model	Serial #	Health Status	Temperature	Disk Guard
System Disk	KINGSTON SUV400S37120G	50026B777C01AC30	94% HEALTHY	32 °C	ONLINE
Bay 1	ST4000VX000-1F4168	Z302B6PJ	100% HEALTHY	30 °C	ONLINE
Bay 2	ST16000NM001G-2KK103	ZL2G64K3	100% HEALTHY	32 °C	ONLINE
Bay 3	ST16000NM001G-2KK103	ZL2E4XRX	100% HEALTHY	31 °C	ONLINE
Bay 4	ST16000NM001G-2KK103	ZL2E4XGM	100% HEALTHY	30 °C	ONLINE
Bay 5	ST16000NM001G-2KK103	ZL2GDQ7V	100% HEALTHY	31 °C	ONLINE
Bay 6	ST4000VX000-1F4168	Z302AVWB	100% HEALTHY	30 °C	ONLINE
Bay 7			-	-	NO DISK
Bay 8			-	-	NO DISK
Bay 9			-	-	NO DISK
Bay 10			-	-	NO DISK
Bay 11			-	-	NO DISK
Bay 12			-	-	NO DISK
Bay 13			-	-	NO DISK
Bay 14	ST31000528ASQ	5VP4QVNK	30% CRITICAL	31 °C	ONLINE
Bay 15			-	-	NO DISK

Figure 170B: Example ECA report in PDF format

11 Support

11.1 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

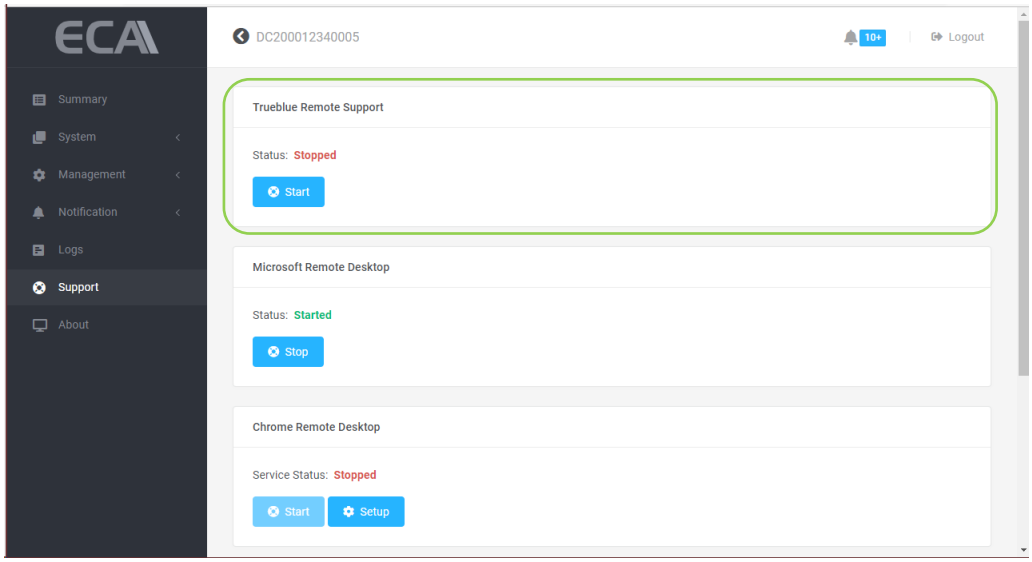


Figure 171: Trueblue Remote Support (1 of 2)

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

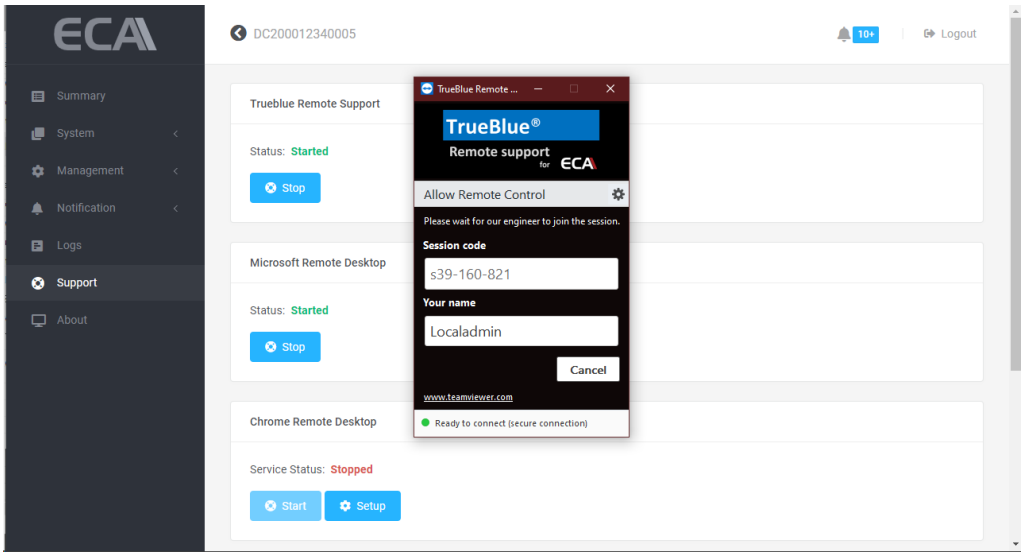


Figure 172: Trueblue Remote Support (2 of 2)

11.2 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

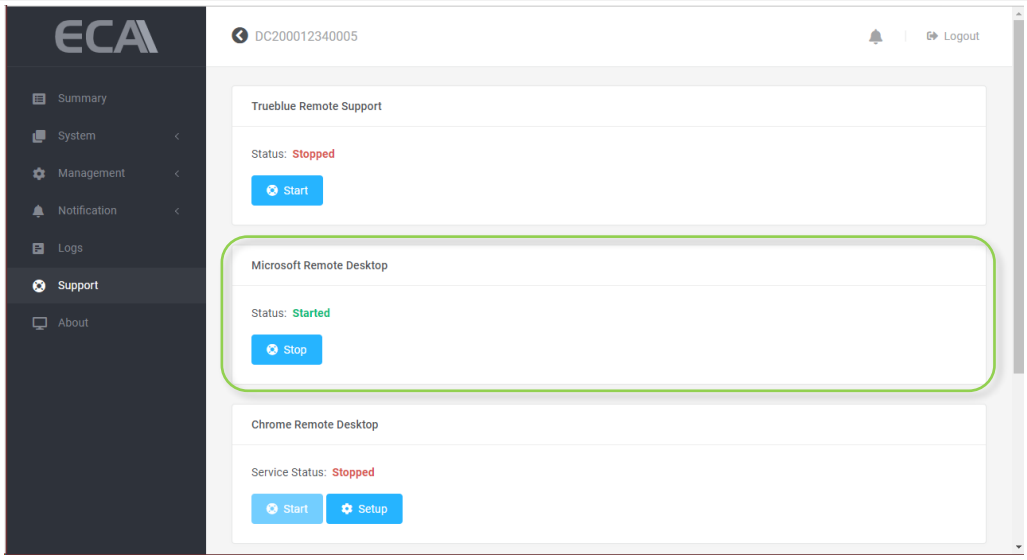


Figure 173: Microsoft Remote Support

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

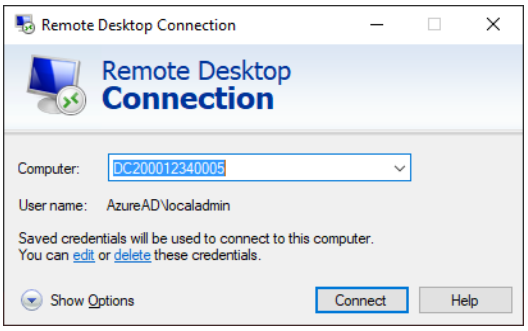


Figure 174: Trueblue Remote Support (1 of 2)

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

11.3 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.

11.3.1 Setup ECA into your Chrome Remote Desktop

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

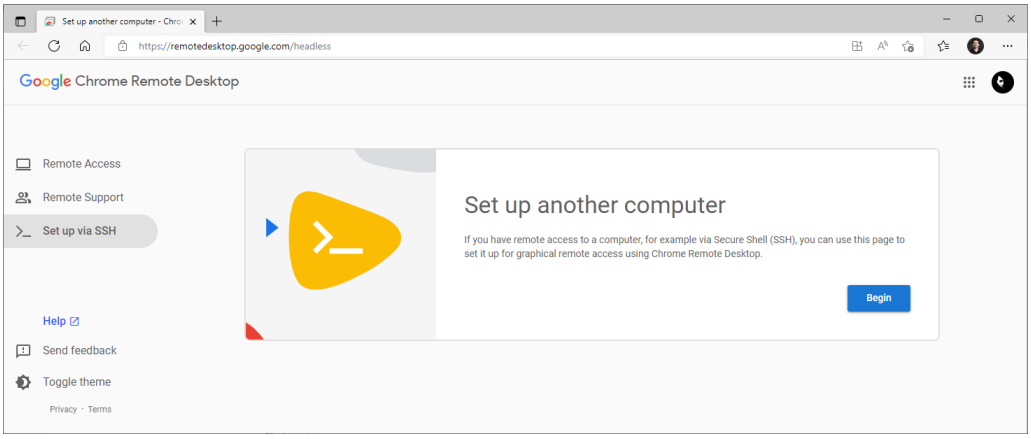


Figure 175: Chrome Remote Desktop (1 of 6)

1. Click 'Begin'

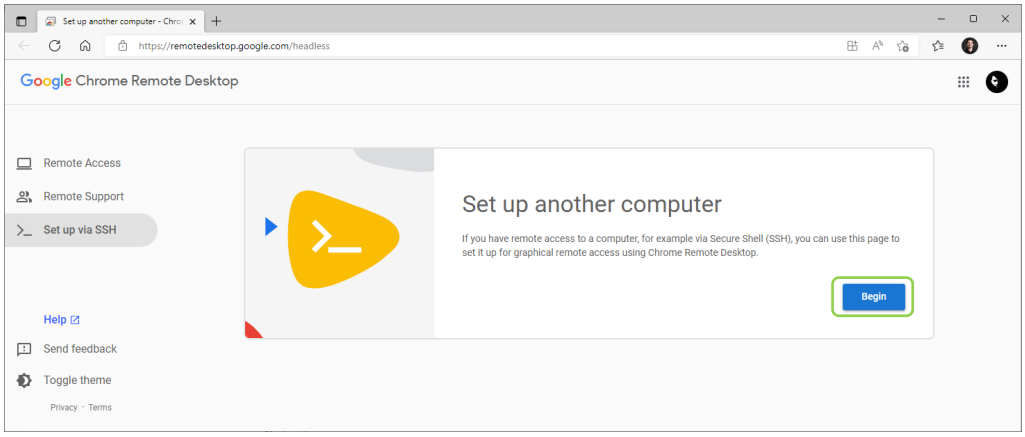


Figure 176: Chrome Remote Desktop (2 of 6)

2. Click 'Next'

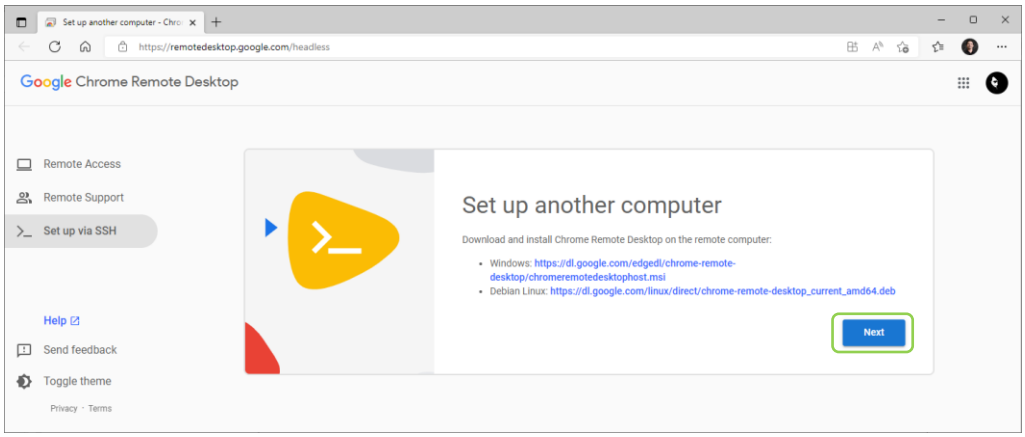


Figure 177: Chrome Remote Desktop (3 of 6)

3. Click 'Authorize'

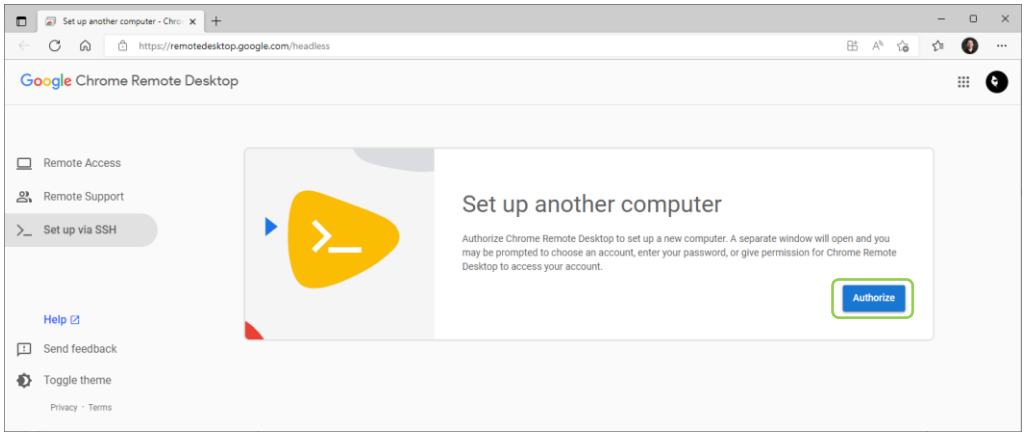


Figure 178: Chrome Remote Desktop (3 of 6)

4. Copy command for Windows (Cmd)

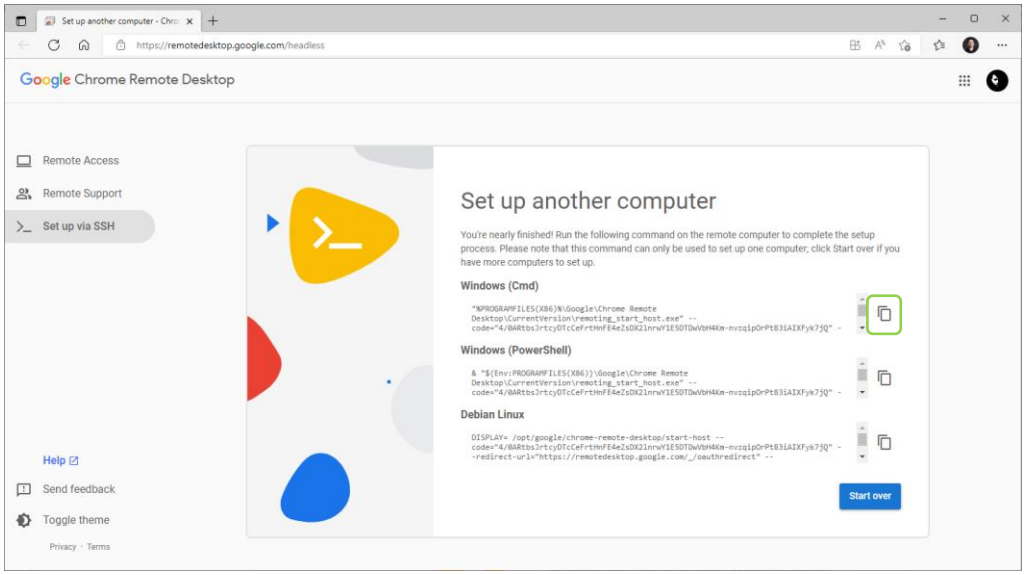


Figure 179: Chrome Remote Desktop (4 of 6)

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

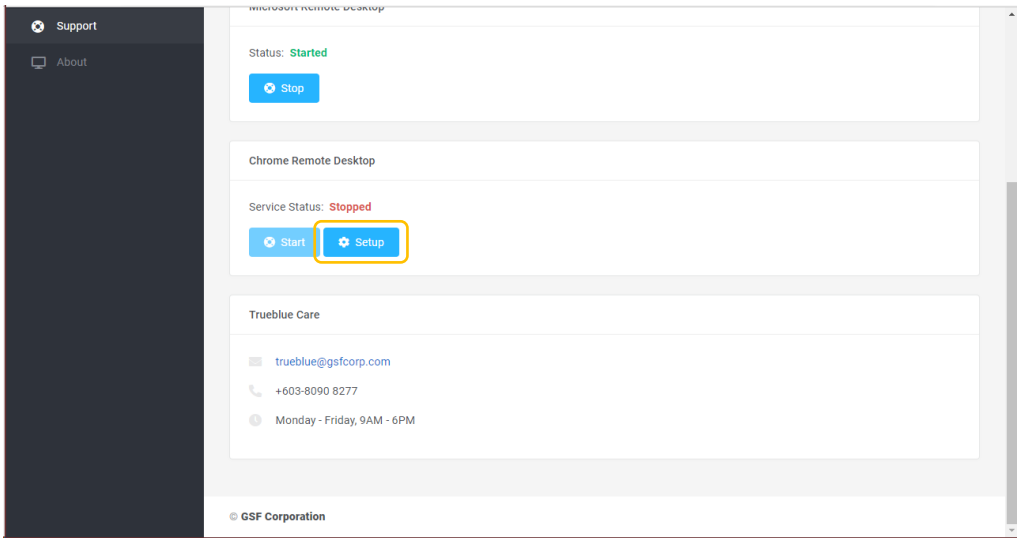


Figure 180: Chrome Remote Desktop (5 of 6)

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

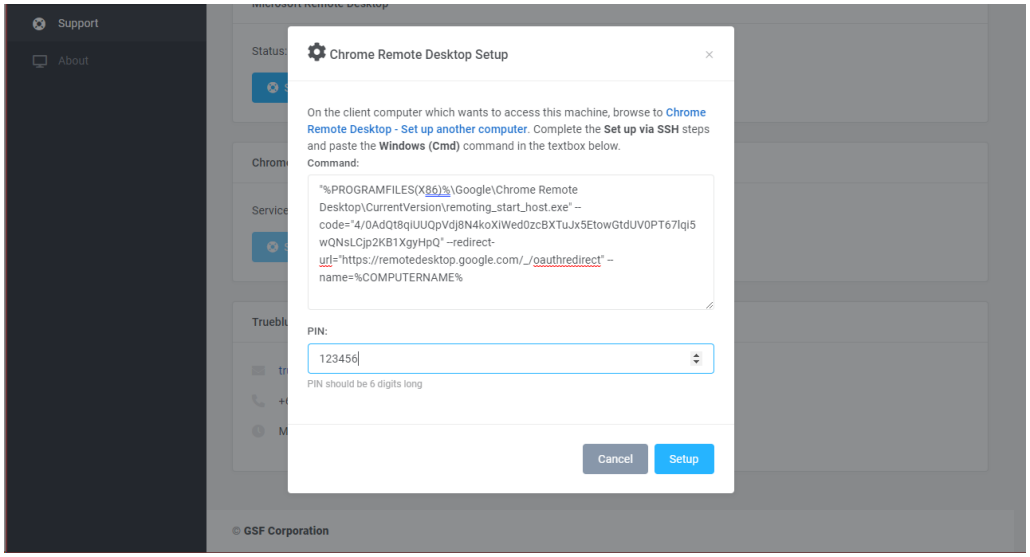


Figure 181: Chrome Remote Desktop (6 of 6)

11.3.2 Accessing ECA via Chrome Remote Desktop?

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

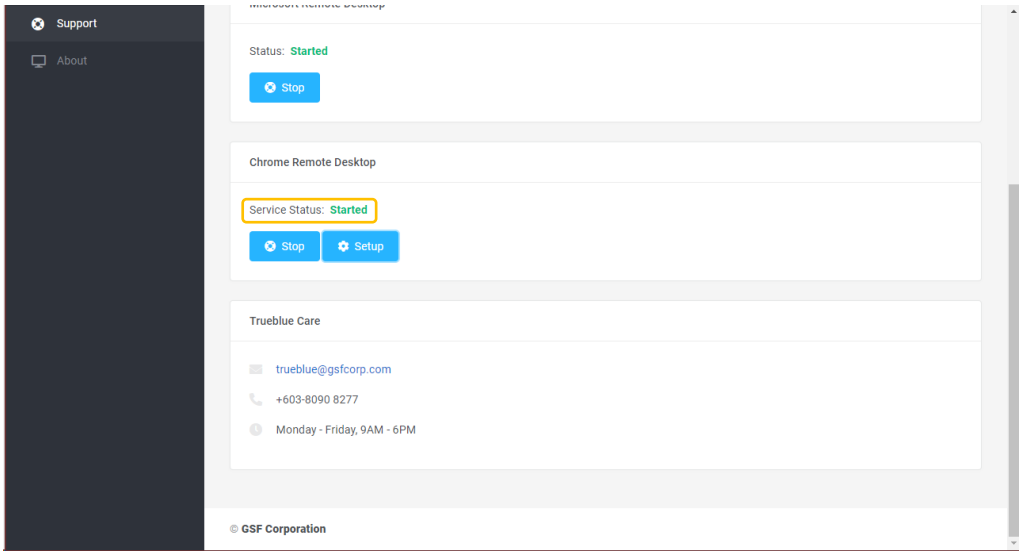


Figure 182: Accessing ECA via Chrome Remote Desktop (1 of 4)

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

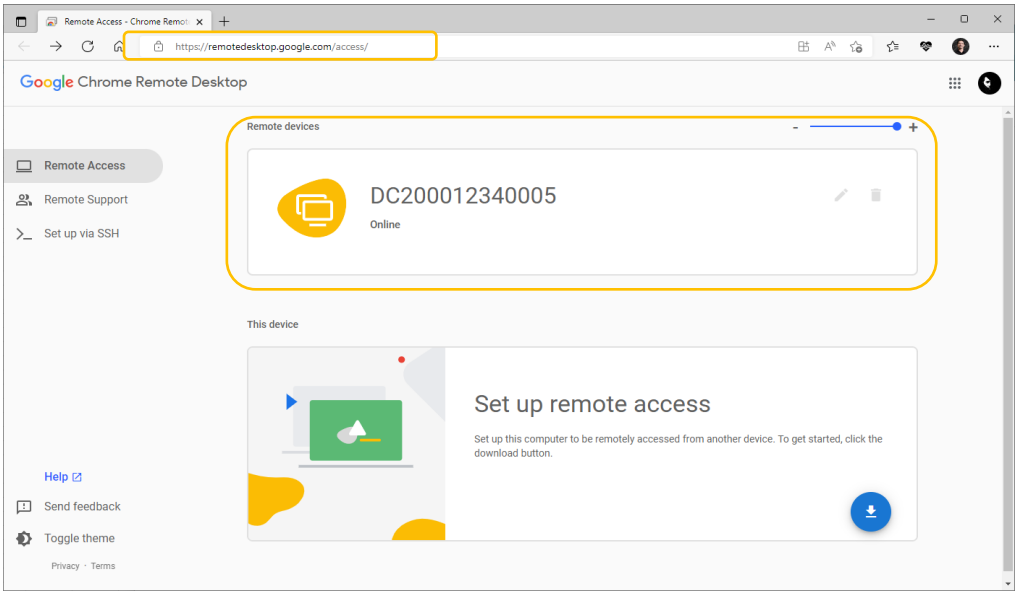


Figure 183: Accessing ECA via Chrome Remote Desktop (2 of 4)

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

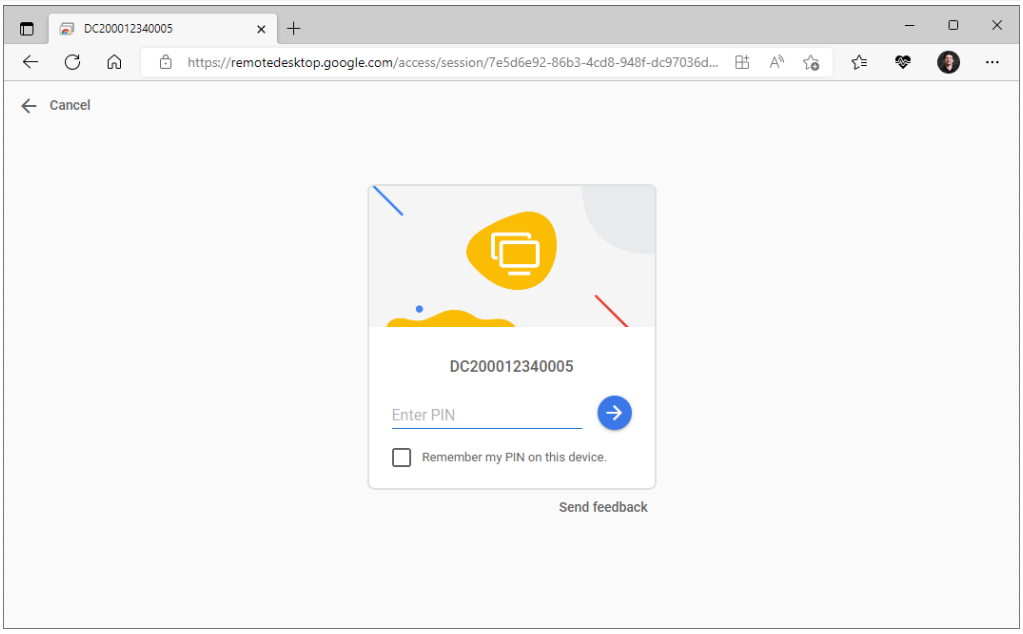


Figure 184: Accessing ECA via Chrome Remote Desktop (3 of 4)

4. Access the ECA

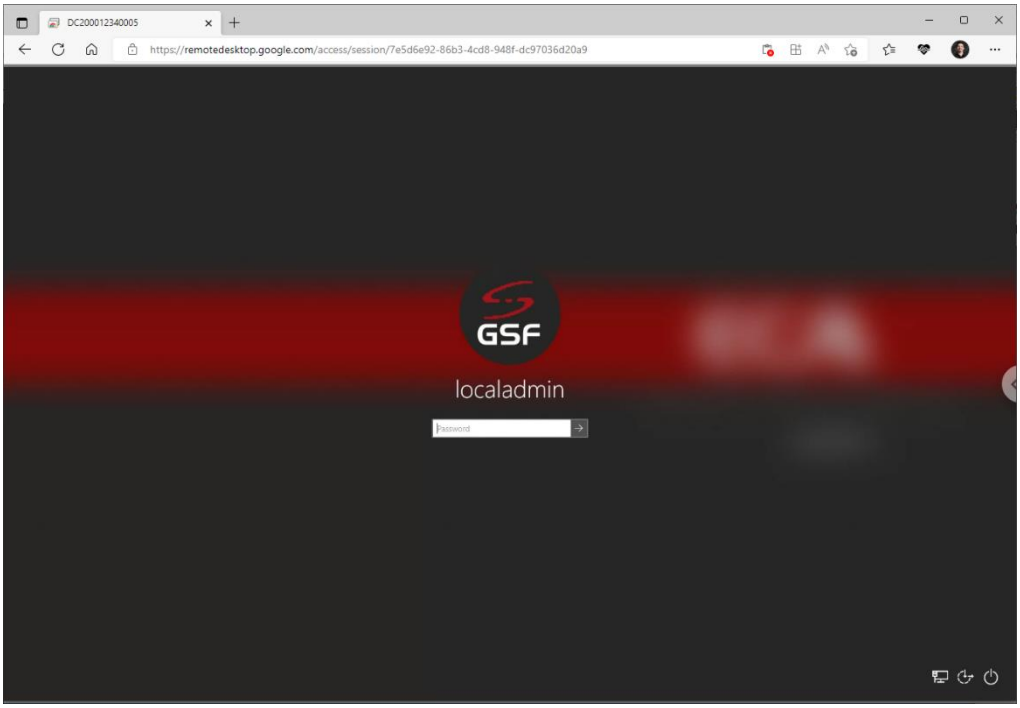


Figure 185: Accessing ECA via Chrome Remote Desktop (4 of 4)

12 About

12.1 Machine Information

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

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

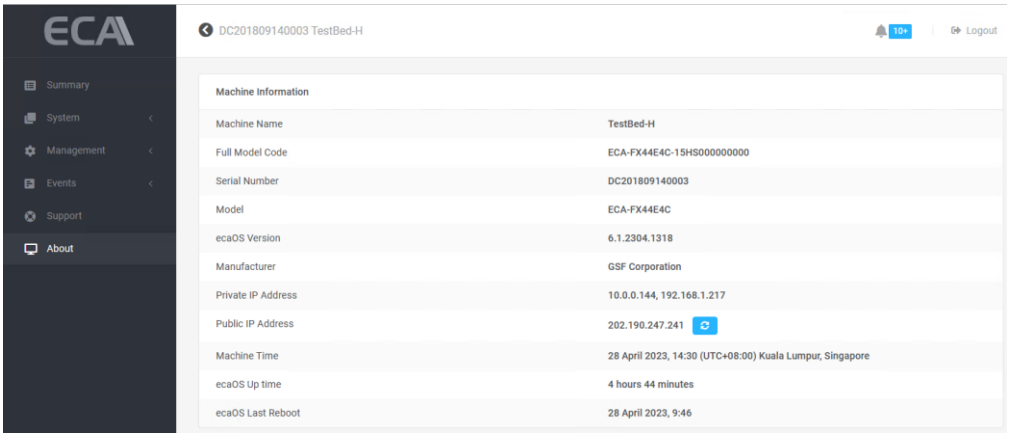
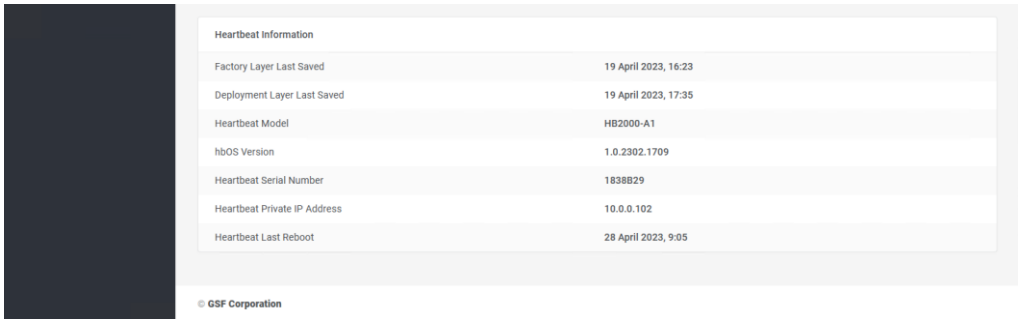


Figure 186: Machine Information

12.2 Heartbeat Information

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

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



Heartbeat Information

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

© GSF Corporation

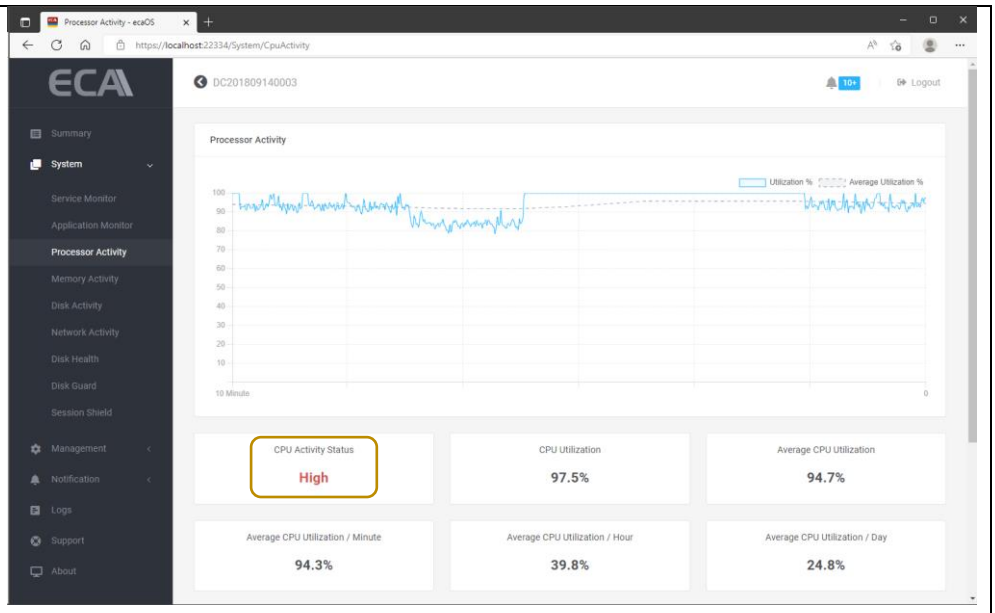
Figure 187: Heartbeat Information

13 APPENDIX

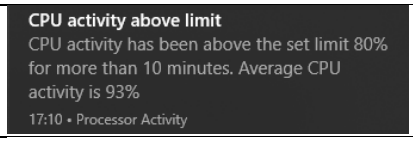
13.1 Processor Activity

13.1.1 CPU activity above limit

Dashboard



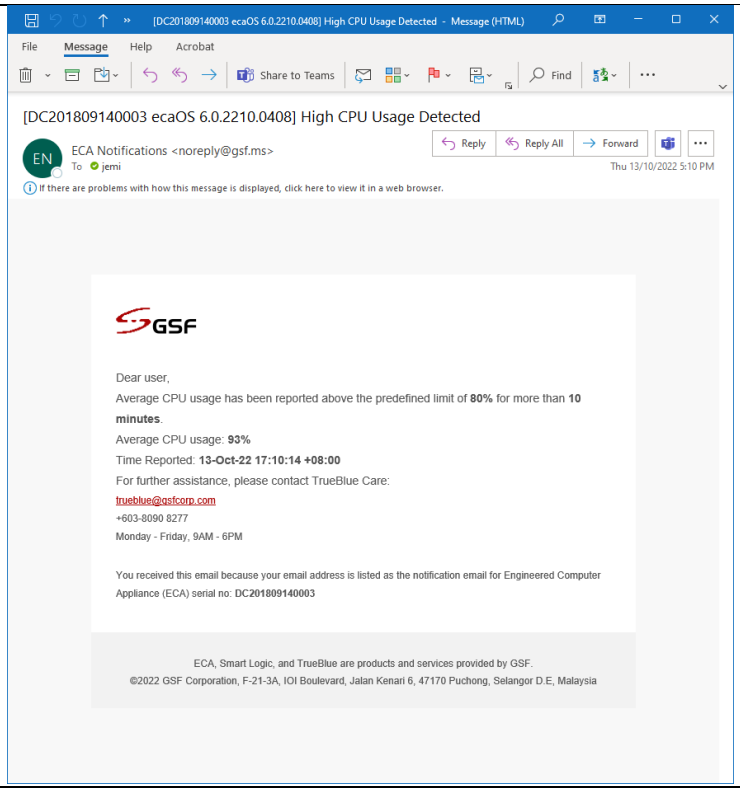
Notification



Log

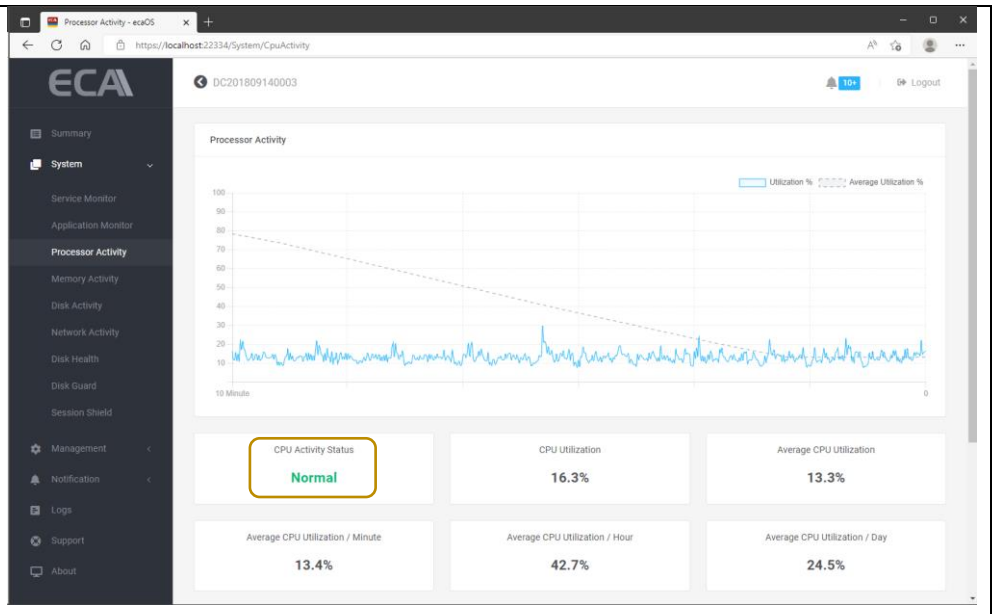
Time	Level	Source	Type	Name	Details
13 Oct 2022, 17:10:14	Warning	ecaOS	Processor Activity	CPU activity above limit	CPU activity has been above the set limit 80% for more than 10 minutes. Average CPU activity is 93%

Email

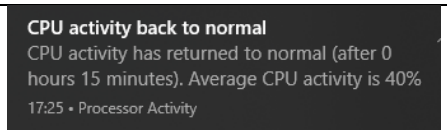


13.1.2 CPU activity back to normal

Dashboard



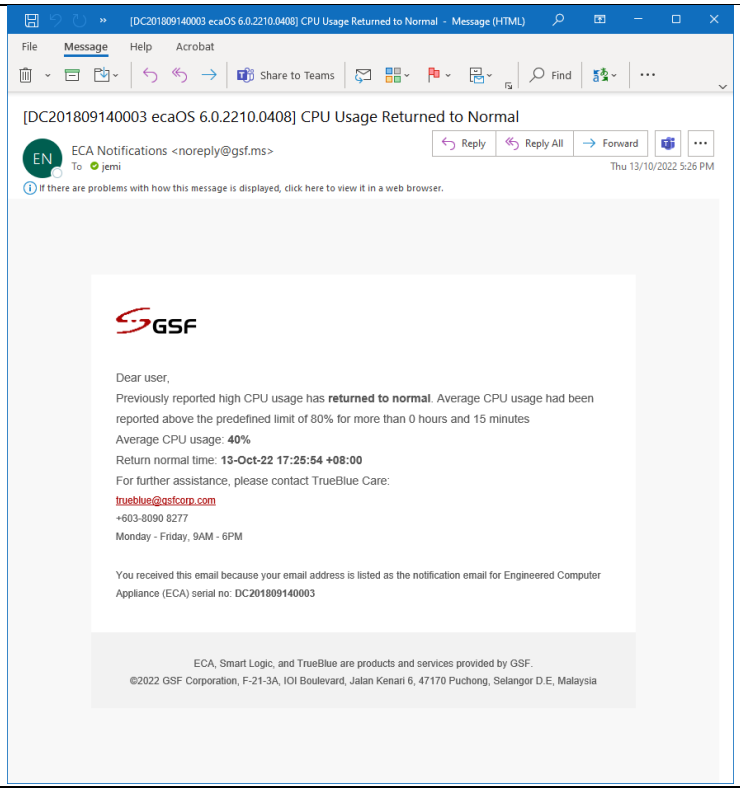
Notification



Log

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%

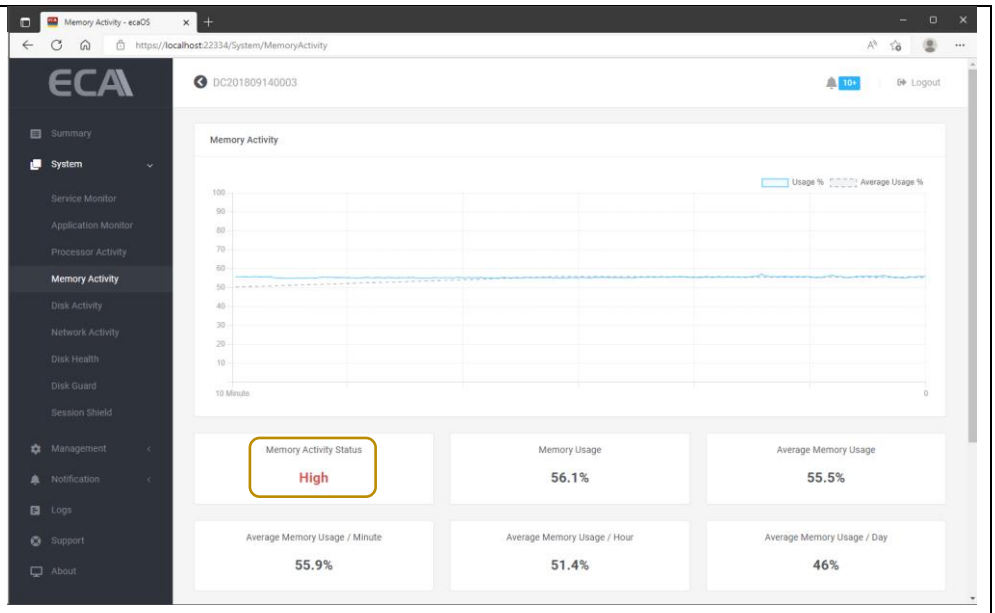
Email



13.2 Memory Activity

13.2.1 Memory usage above limit

Dashboard

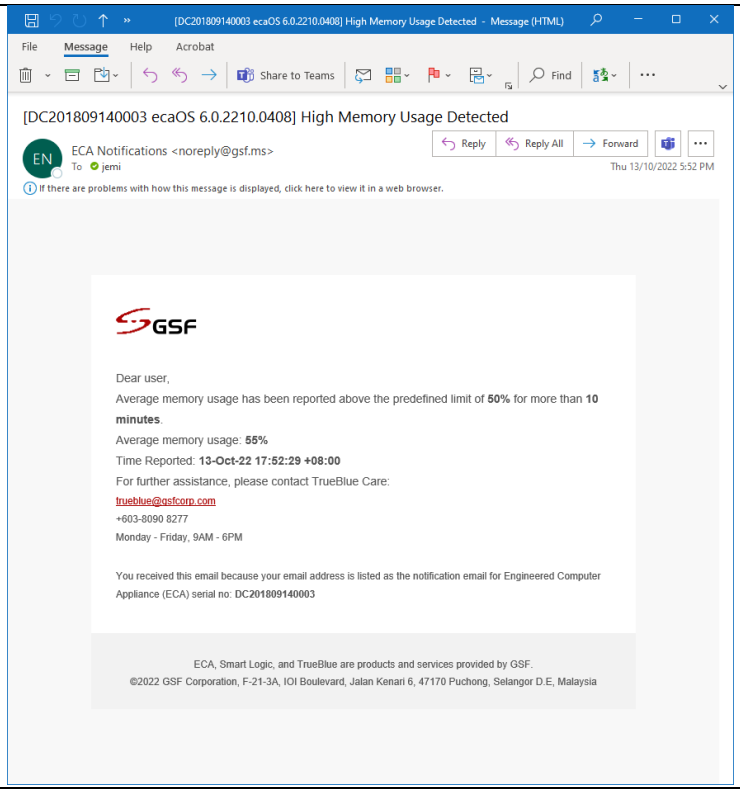


Notification

Log

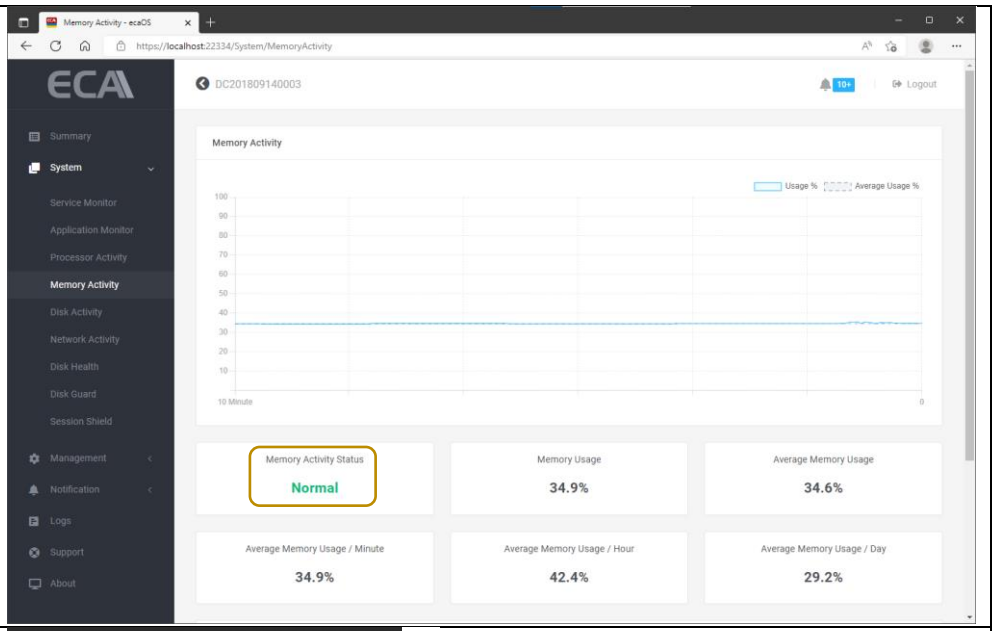
Time	Level	Source	Type	Name	Details
13 Oct 2022, 17:52:29	Warning	ecaOS	Memory Activity	Memory activity above limit	Memory activity has been above the set limit 50% for more than 10 minutes. Average Memory activity is 55%

Email

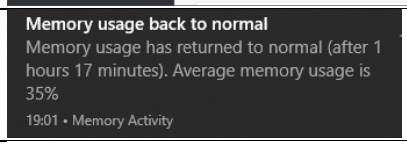


13.2.2 Memory activity back to normal

Dashboard



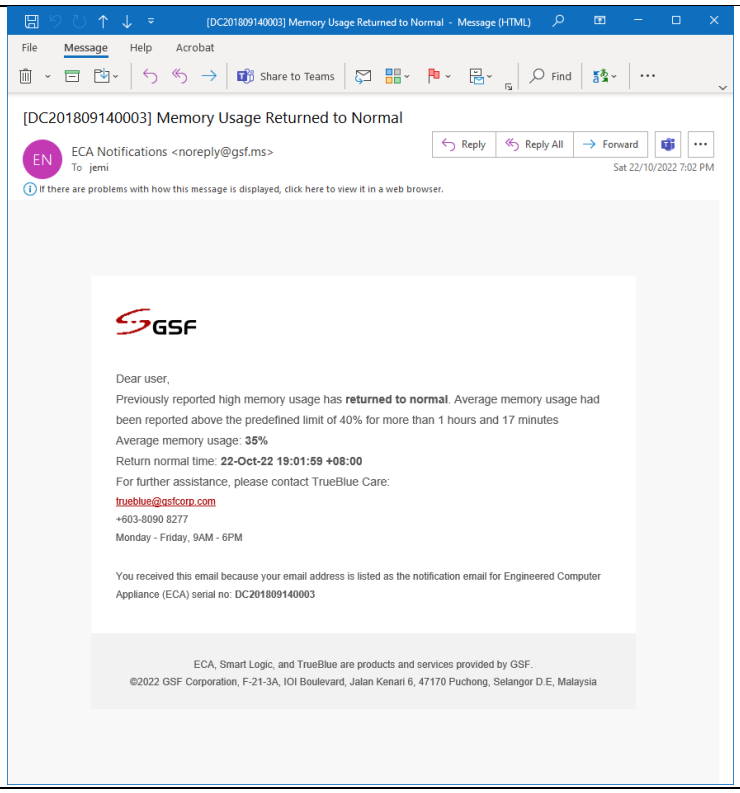
Notification



Log

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%

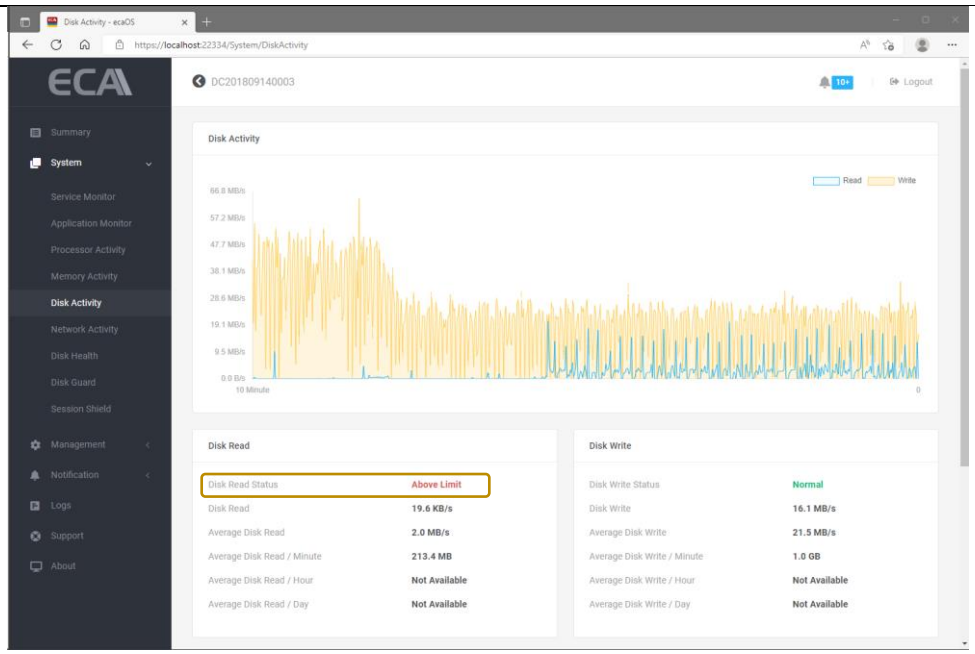
Email



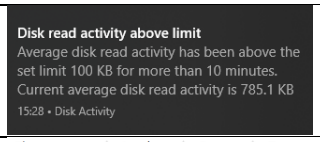
13.3 Disk Activity

13.3.1 Disk read activity above limit

Dashboard



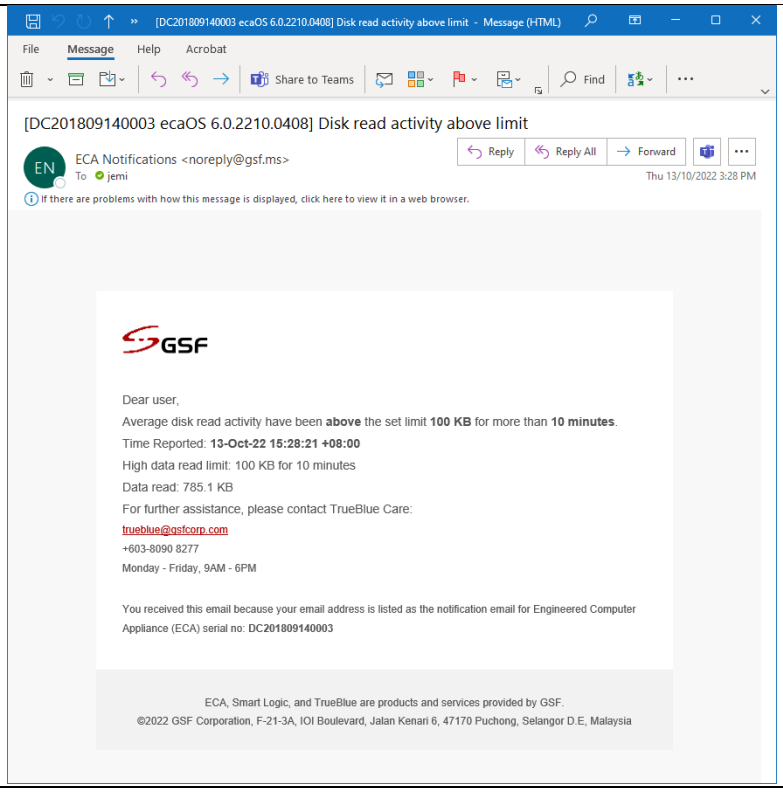
Notification



Log

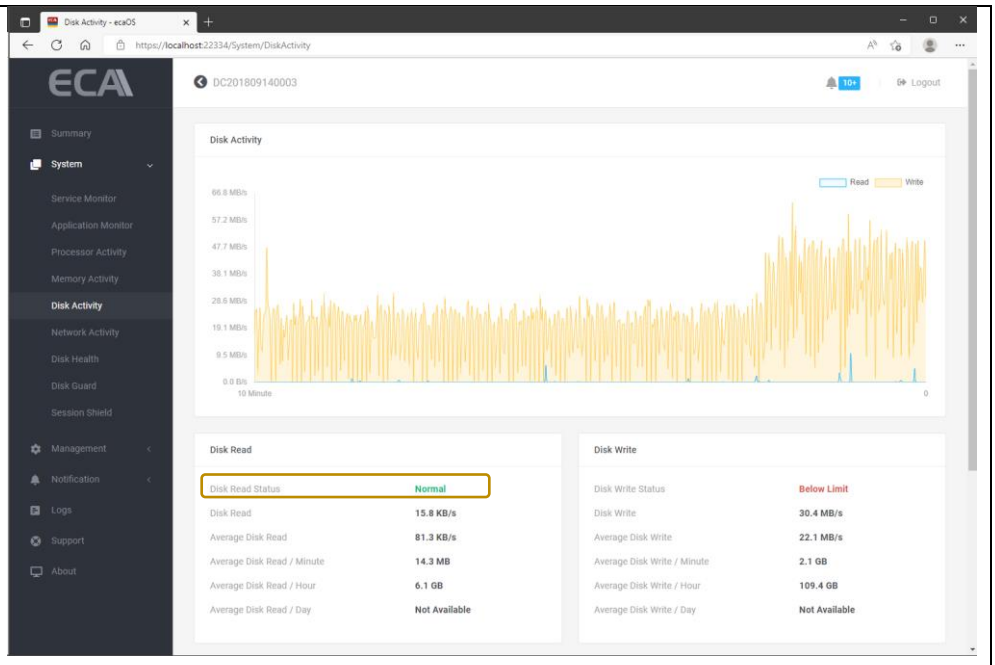
Time	Level	Source	Type	Name	Details
13 Oct 2022, 15:28:21	Warning	ecaOS	Disk Activity	Disk read activity above limit	Average disk read activity has been above the set limit 100 KB for more than 10 minutes. Current average disk read activity is 785.1 KB

Email

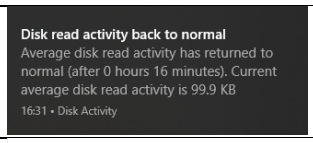


13.3.2 Disk read activity back to normal

Dashboard



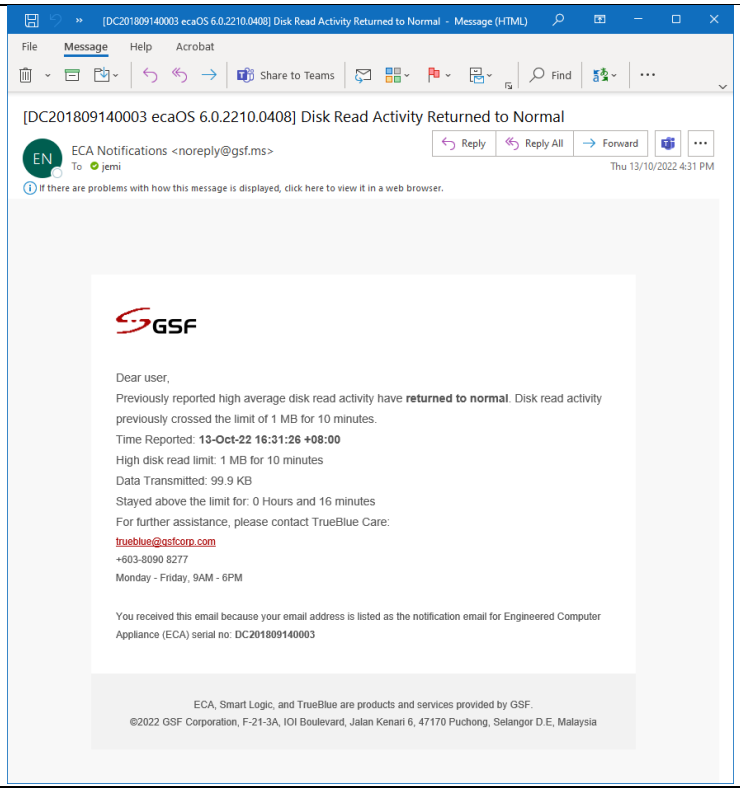
Notification



Log

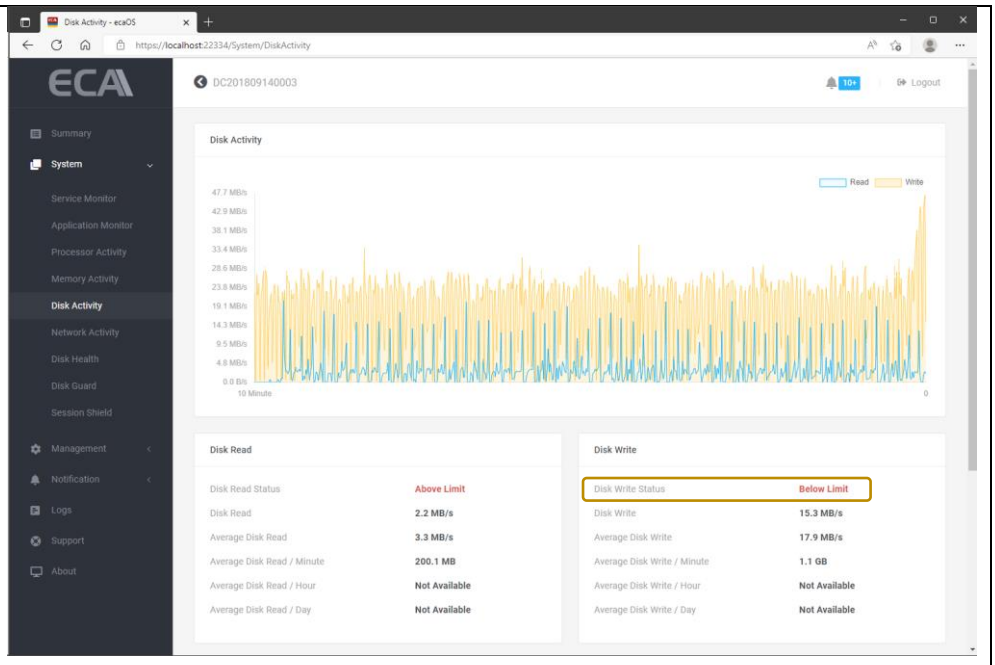
Time	Level	Source	Type	Name	Details
13 Oct 2022, 16:31:26	Information	ecaOS	Disk Activity	Disk read activity back to normal	Average disk read activity has returned to normal (after 0 hours 16 minutes). Current average disk read activity is 99.9 KB

Email

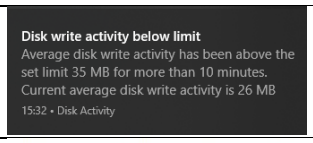


13.3.3 Disk write activity below limit

Dashboard



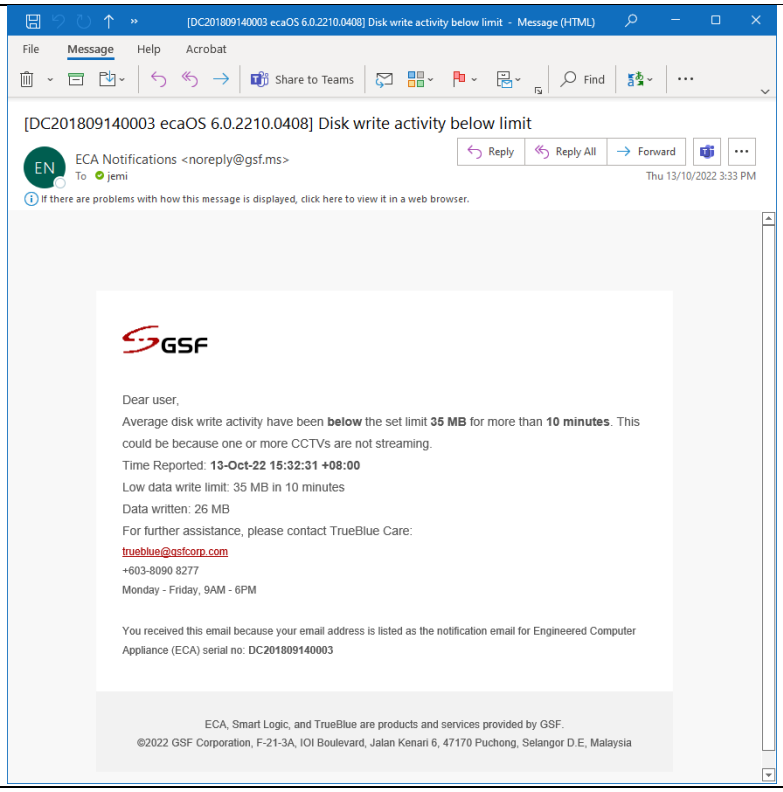
Notification



Log

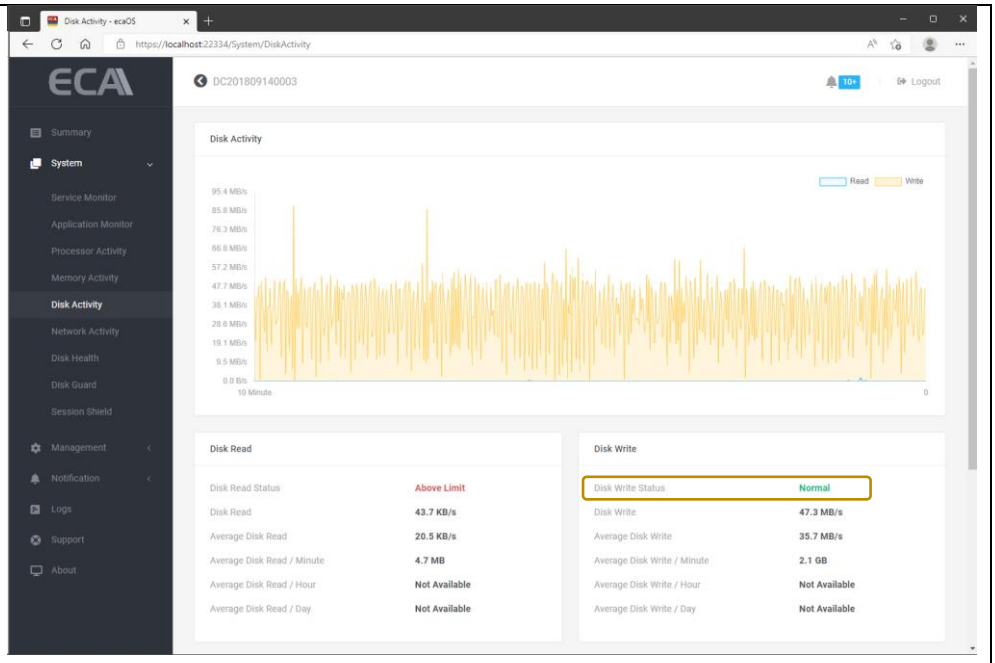
Time	Level	Source	Type	Name	Details
13 Oct 2022, 15:32:31	Warning	ecaOS	Disk Activity	Disk write activity below limit	Average disk write activity has been below the set limit 35 MB for more than 10 minutes. Current average disk write activity is 26 MB

Email

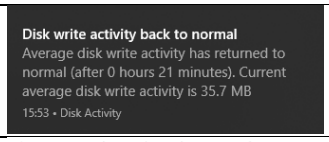


13.3.4 Disk write activity back to normal

Dashboard



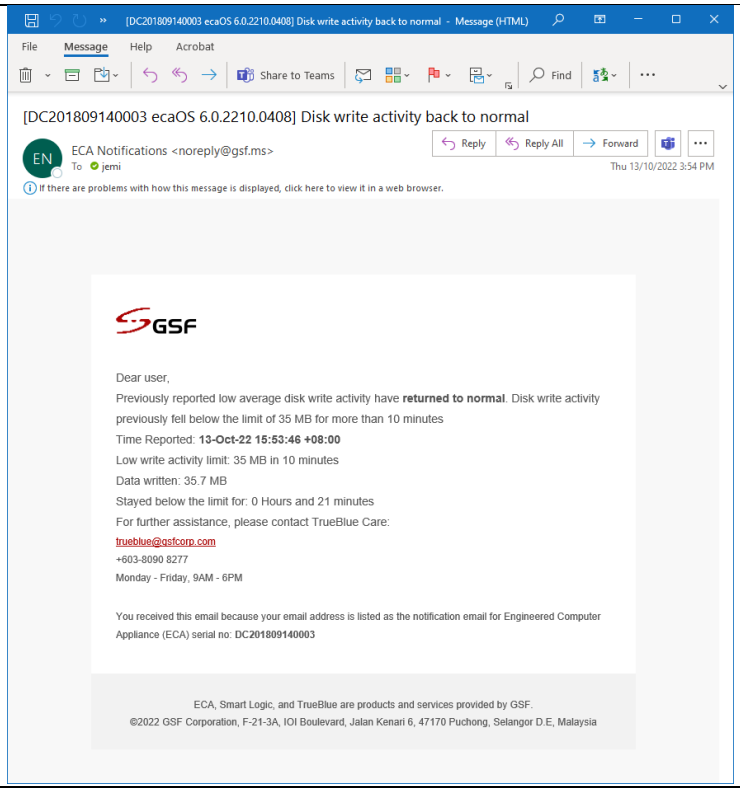
Notification



Log

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

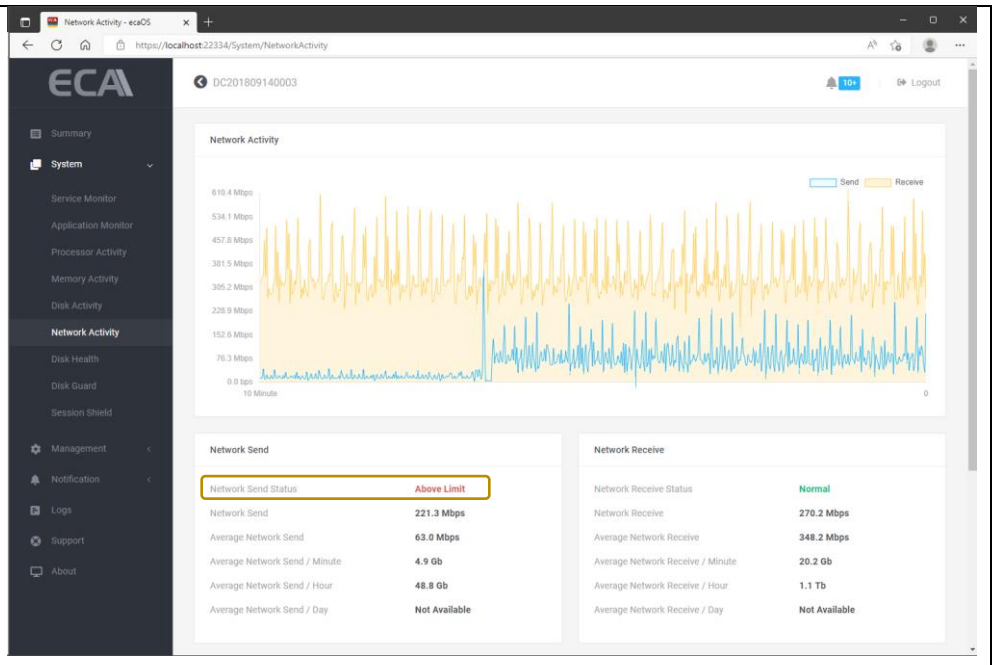
Email



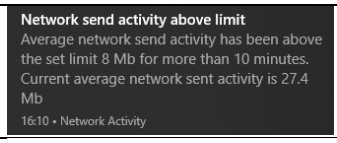
13.4 Network Activity

13.4.1 Network send activity above limit

Dashboard



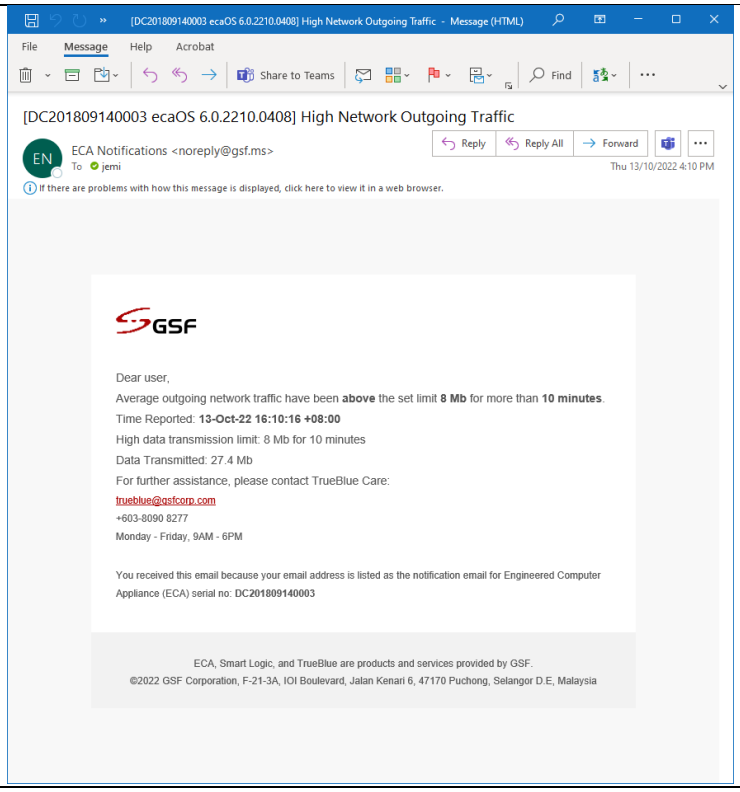
Notification



Log

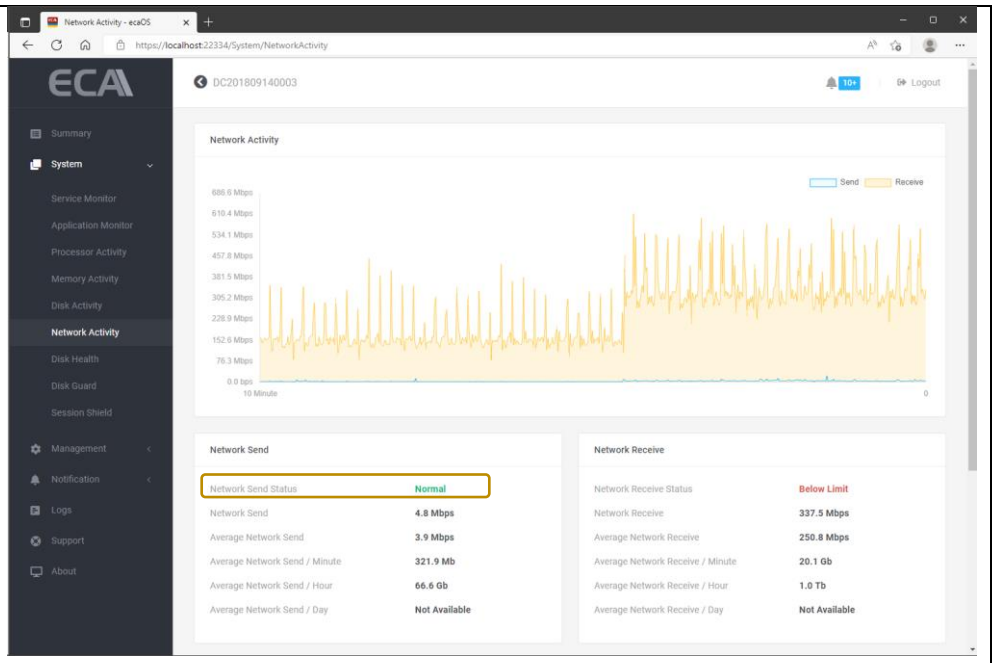
Time	Level	Source	Type	Name	Details
13 Oct 2022, 16:10:16	Warning	ecaOS	Network Activity	Network send activity above limit	Average network send activity has been above the set limit 8 Mb for more than 10 minutes. Current average network send activity is 27.4 Mb

Email

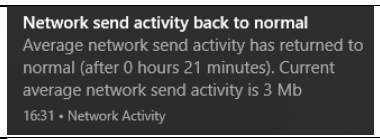


13.4.2 Network send activity back to normal

Dashboard



Notification



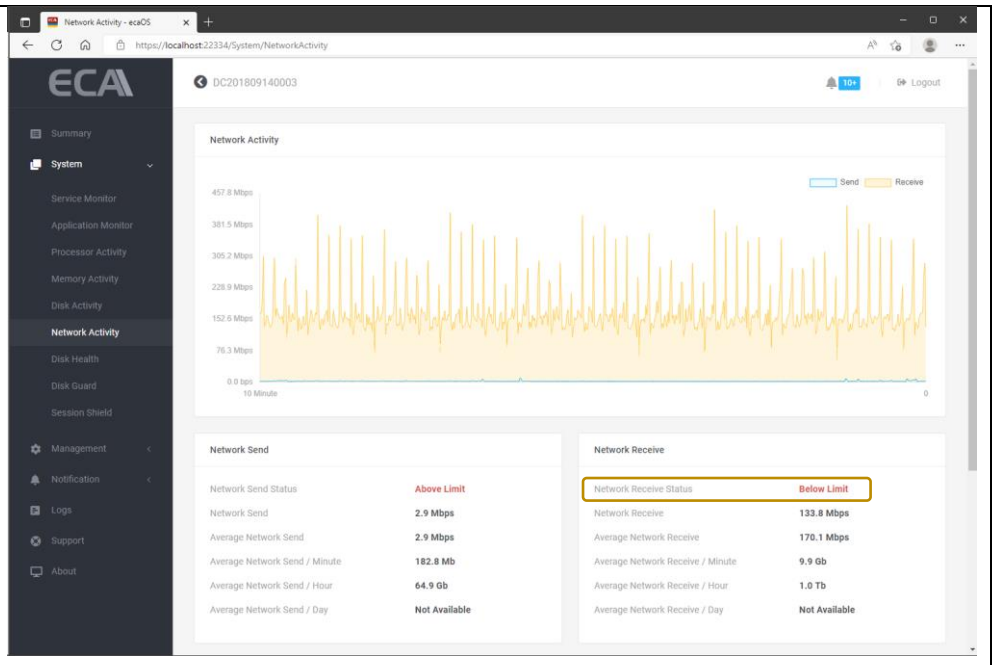
Log

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

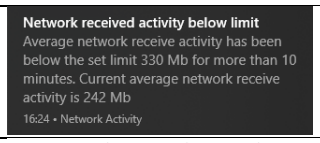
Email

13.4.3 Network receive activity below limit

Dashboard



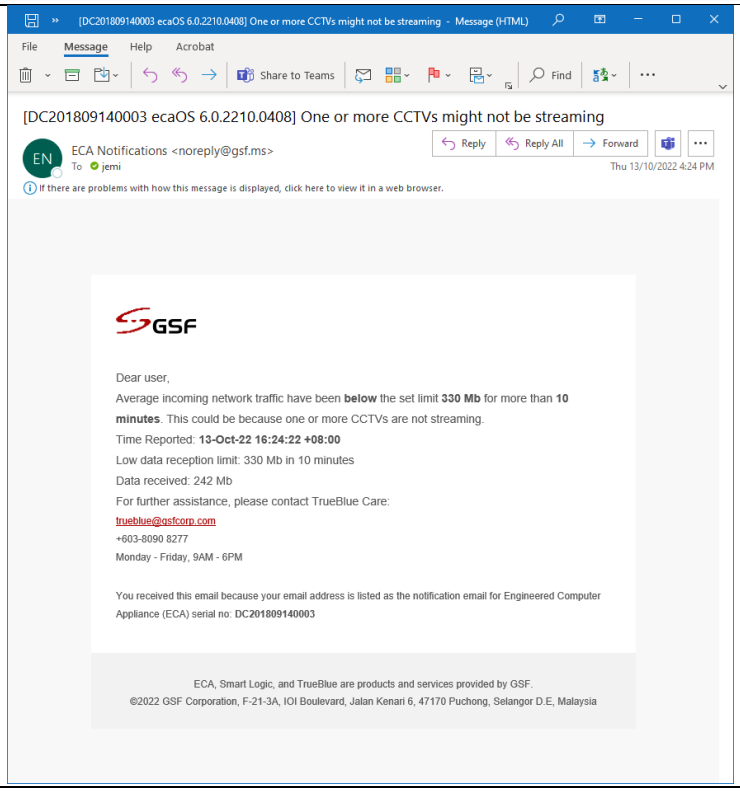
Notification



Log

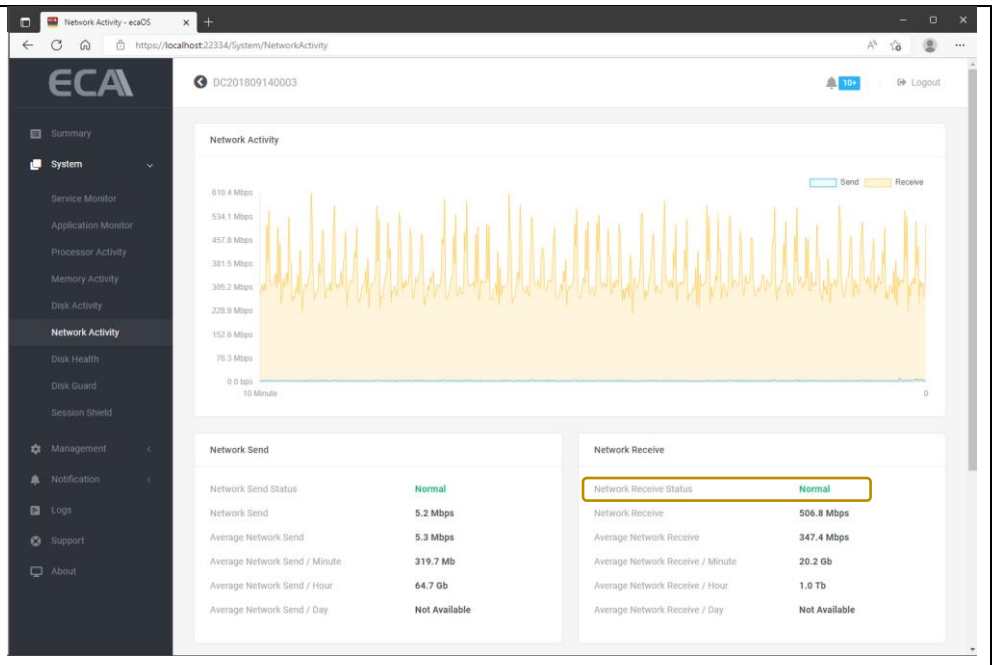
Time	Level	Source	Type	Name	Details
13 Oct 2022, 16:24:22	Warning	ecaOS	Network Activity	Network receive activity below limit	Average network receive activity has been below the set limit 330 Mb for more than 10 minutes. Current average network receive activity is 242 Mb

Email

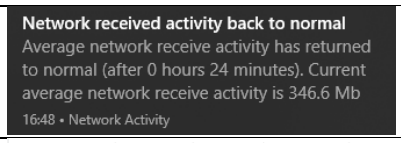


13.4.4 Network receive activity back to normal

Dashboard



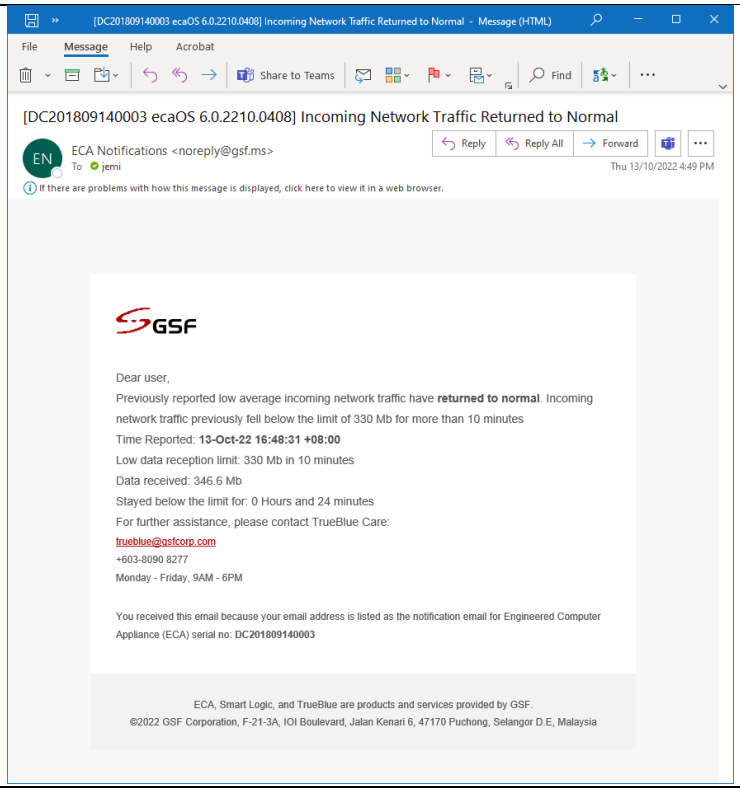
Notification



Log

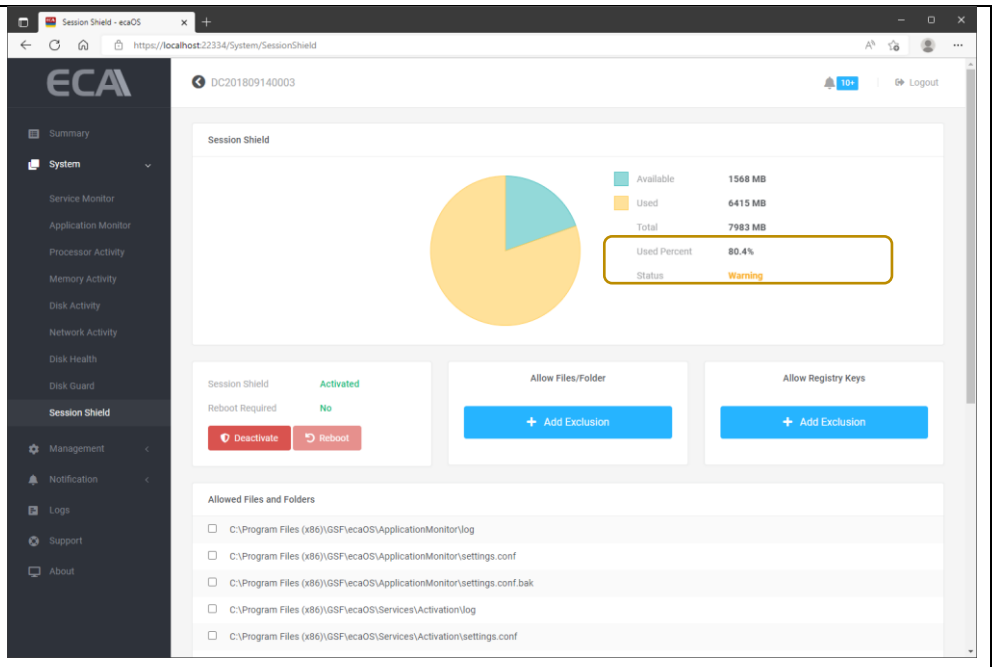
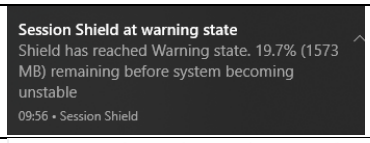
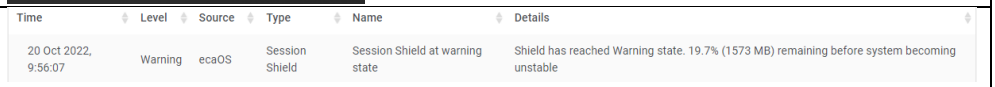
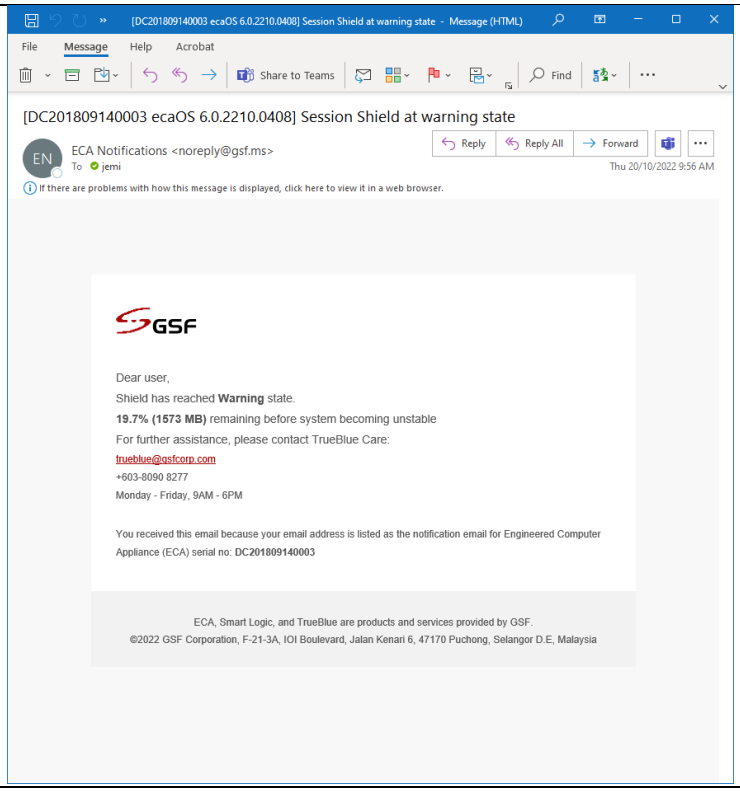
Time	Level	Source	Type	Name	Details
13 Oct 2022, 16:48:31	Information	ecaOS	Network Activity	Network receive activity back to normal	Average network receive activity has returned to normal (after 0 hours 24 minutes). Current average network receive activity is 346.6 Mb

Email

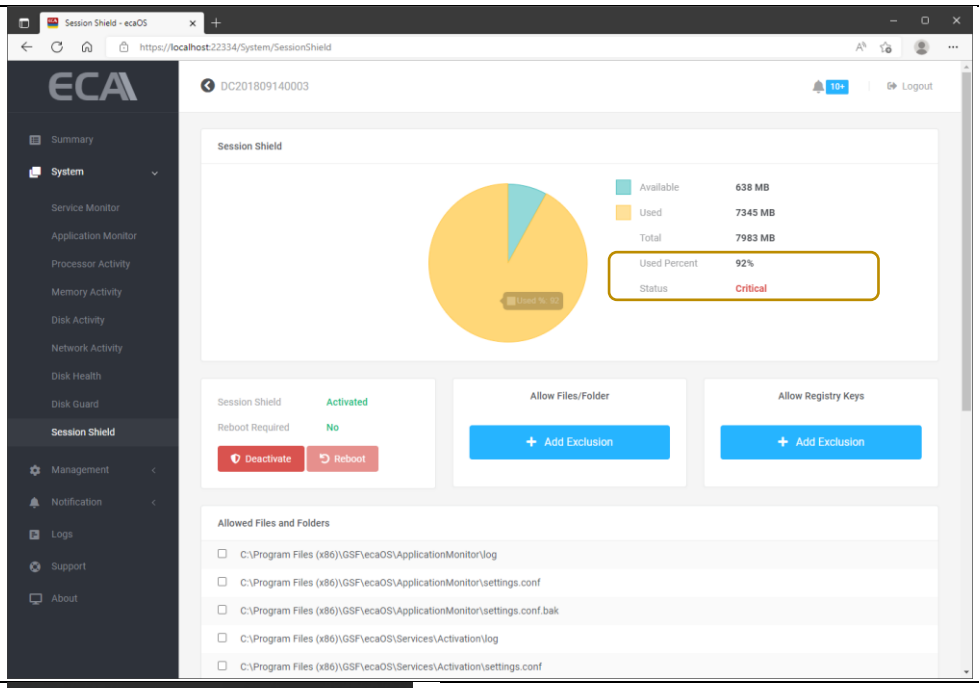
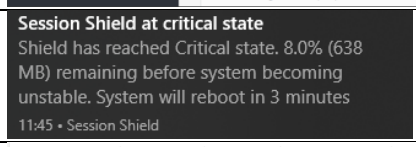
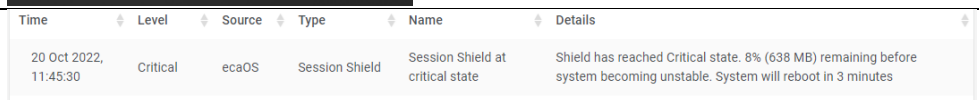
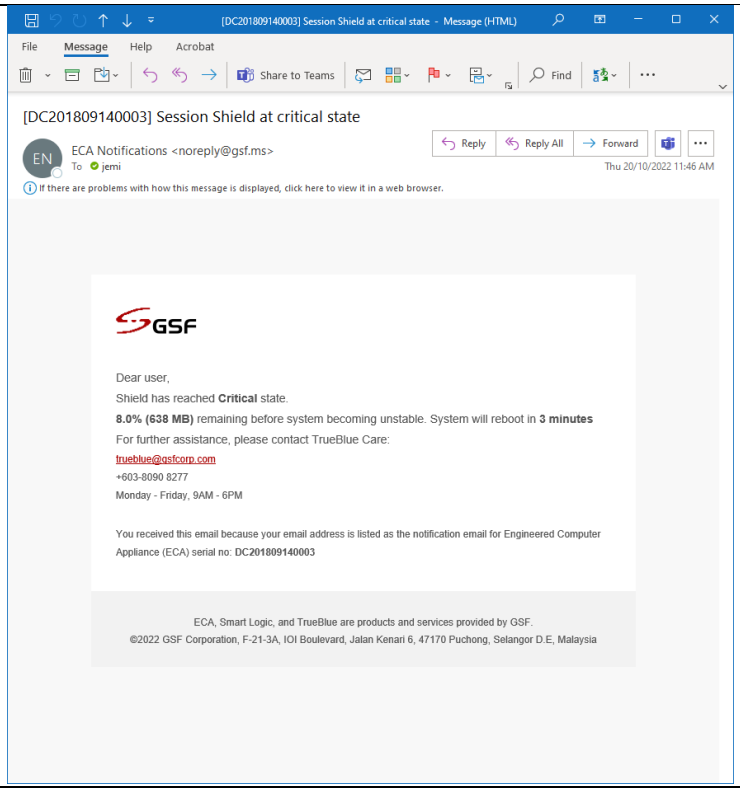


13.5 Session Shield

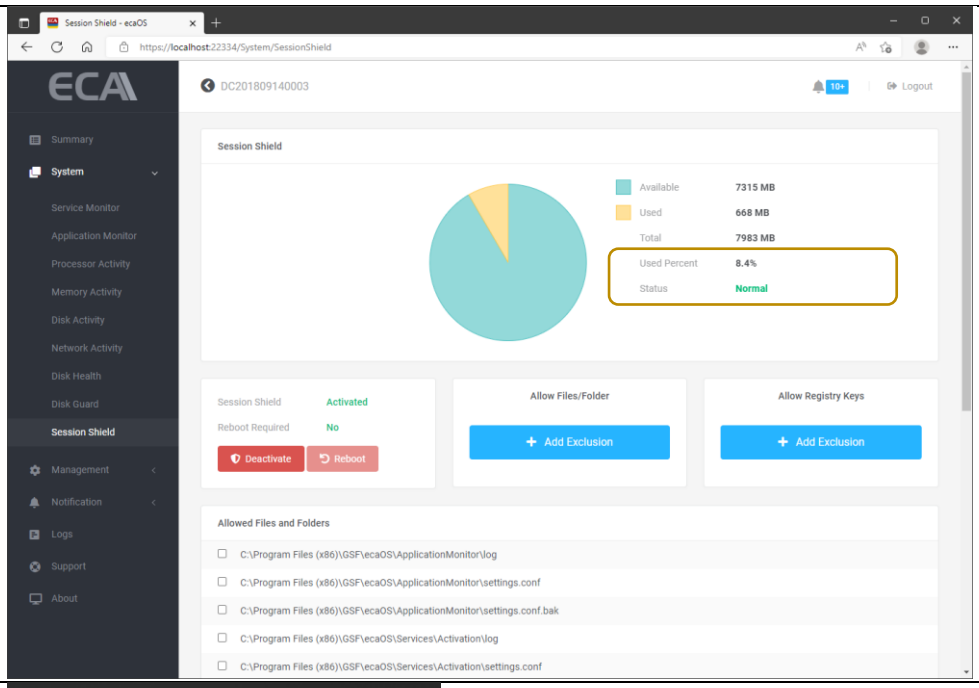
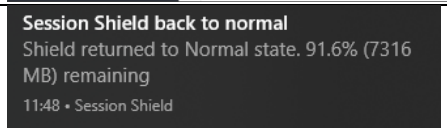
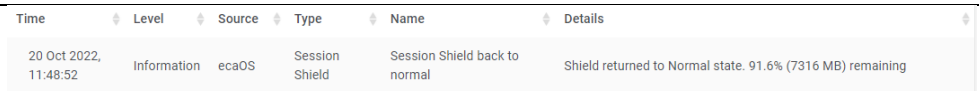
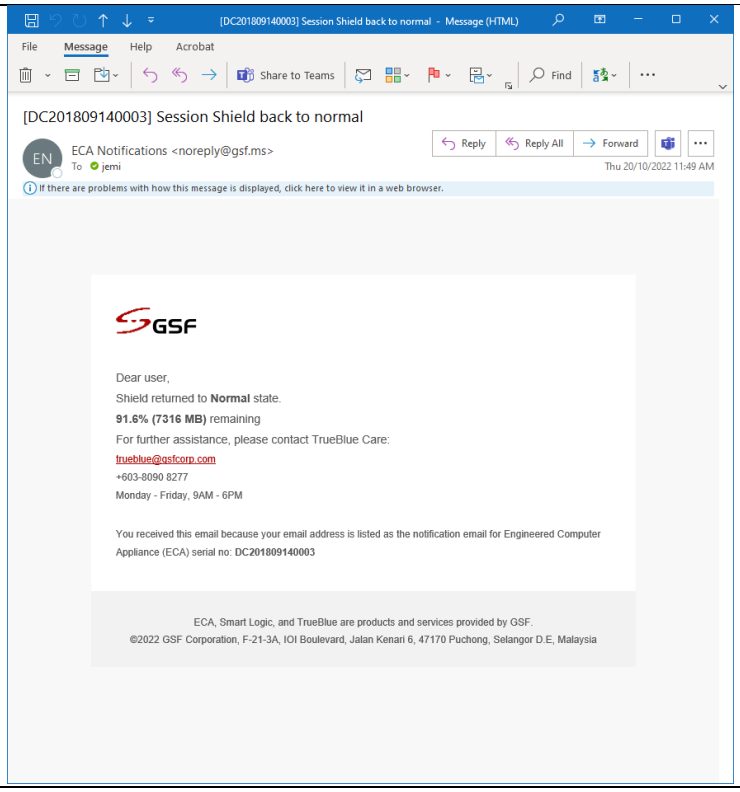
13.5.1 Warning Status

Dashboard	
Notification	
Log	
Email	

13.5.2 Critical Status

Dashboard	
Notification	
Log	
Email	

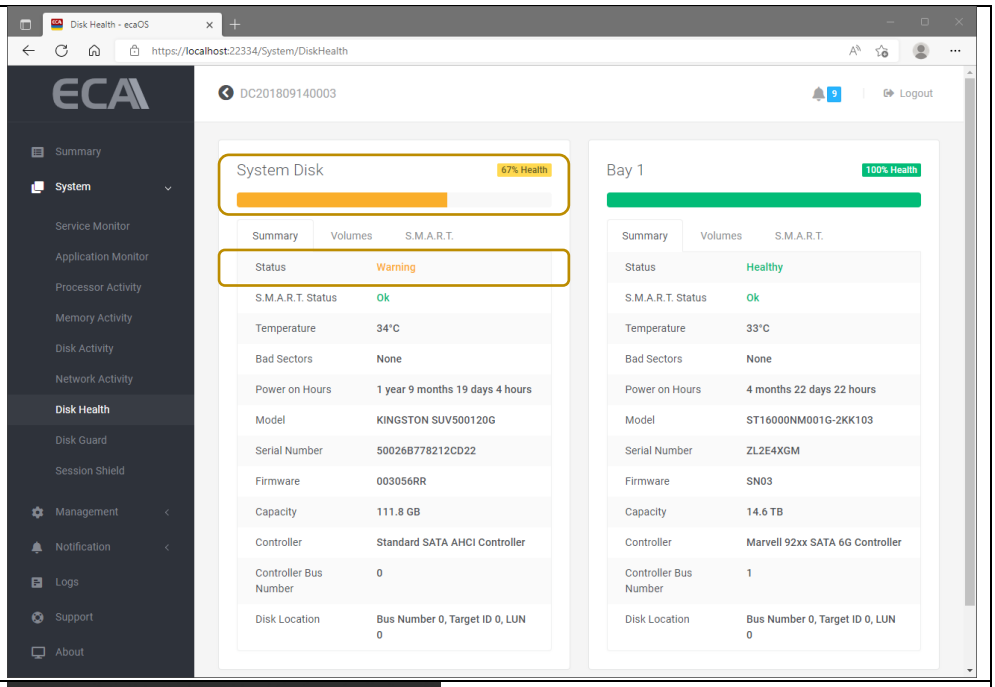
13.5.3 Status back to normal

Dashboard	
Notification	
Log	
Email	

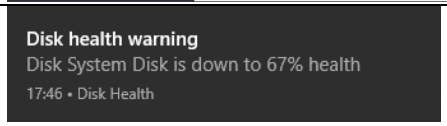
13.6 Disk Health

13.6.1 Warning Status Disk

Dashboard



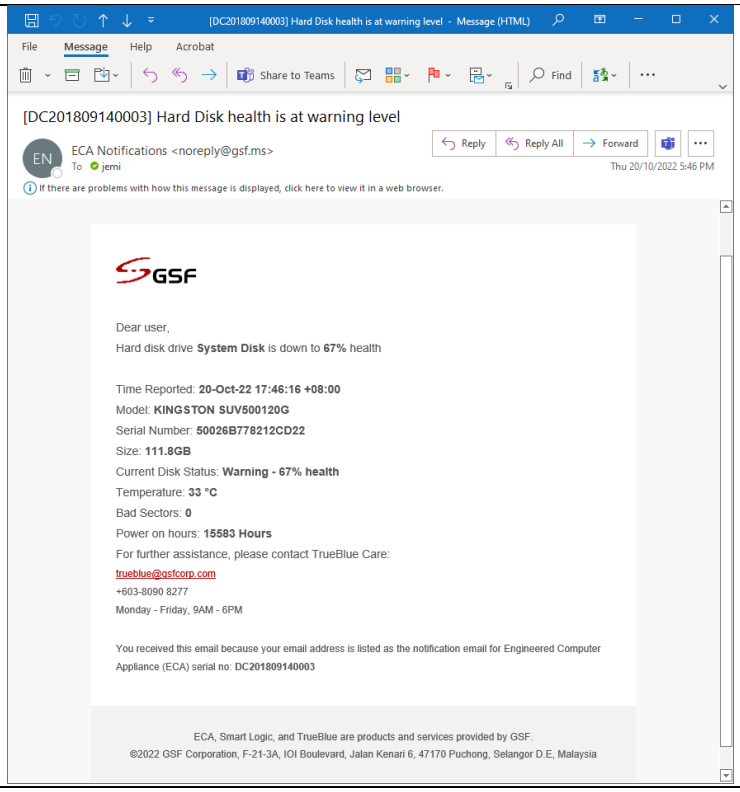
Notification



Log

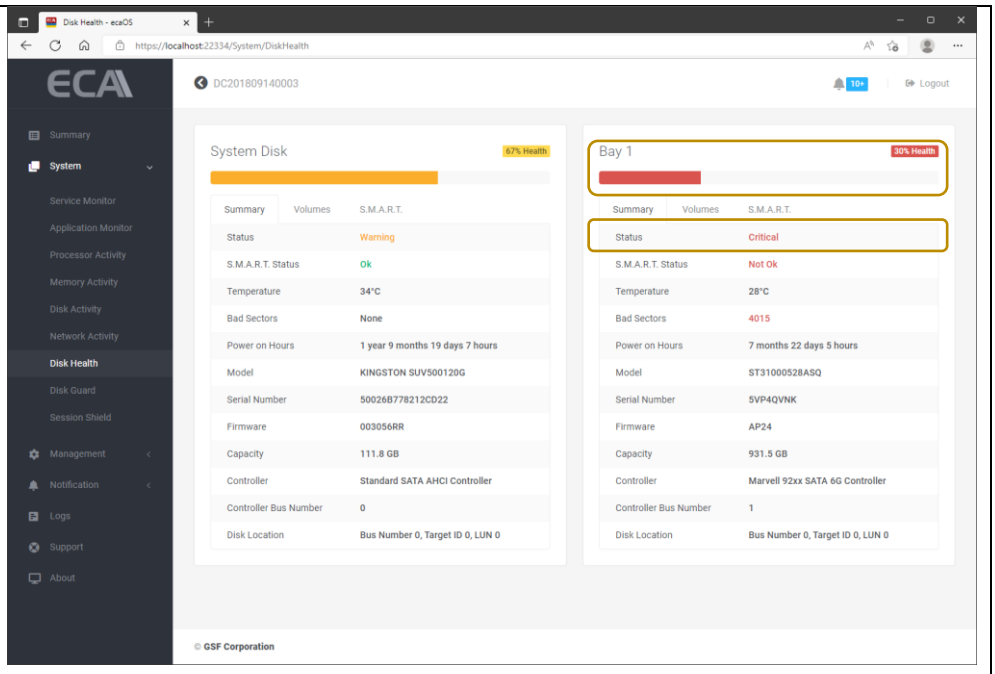
Time	Level	Source	Type	Name	Details
20 Oct 2022, 17:46:16	Warning	ecaOS	Disk Health	Disk health warning	Disk System Disk is down to 67% health

Email

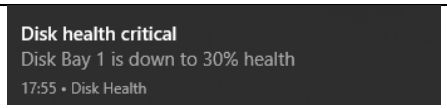


13.6.2 Critical Status Disk

Dashboard



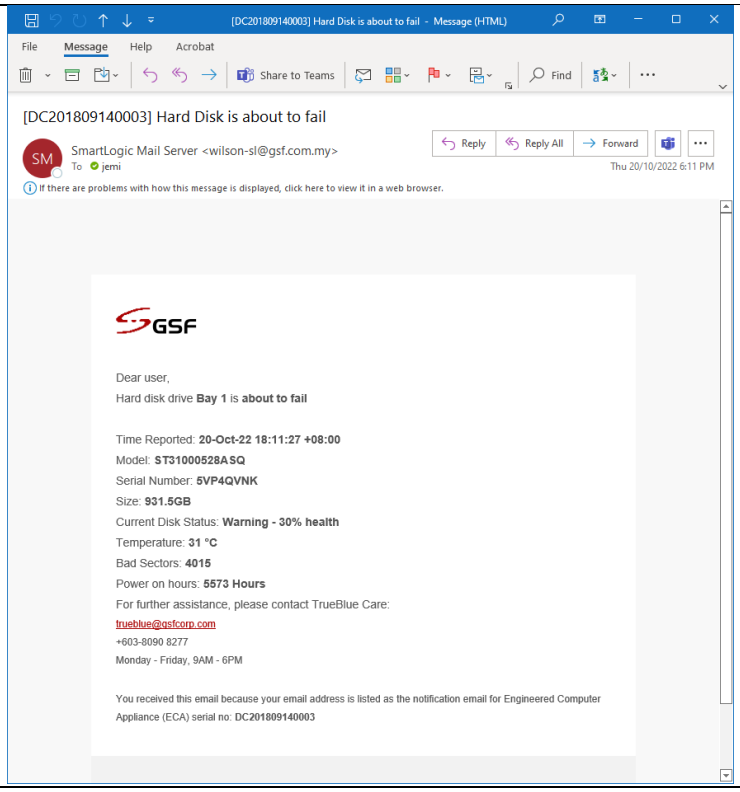
Notification



Log

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

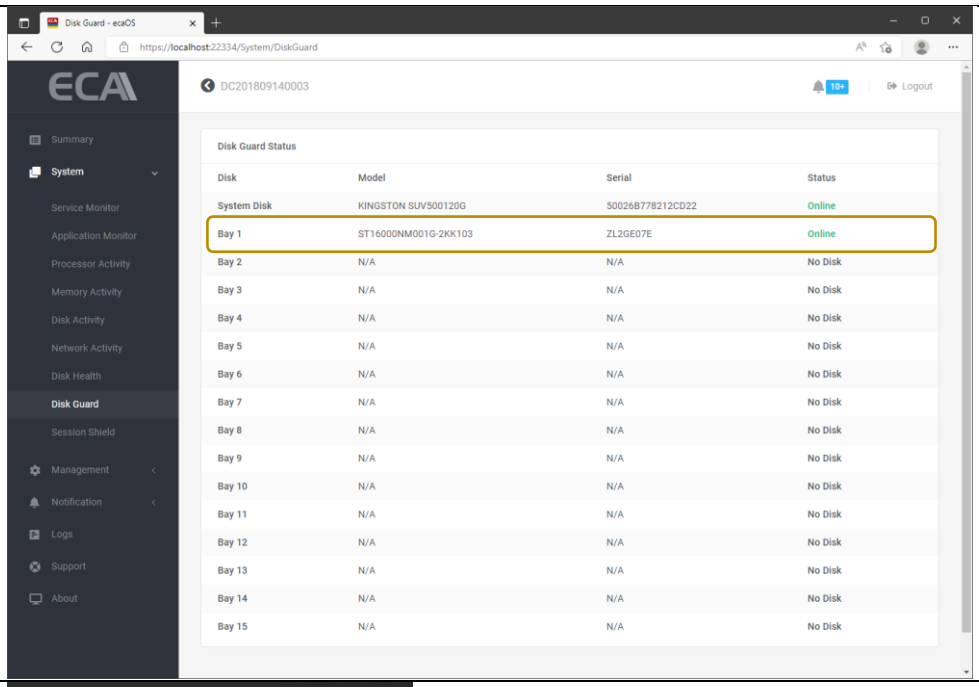
Email



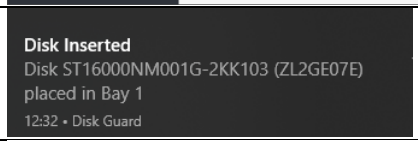
13.7 Disk Guard

13.7.1 New disk / Disk Inserted

Dashboard



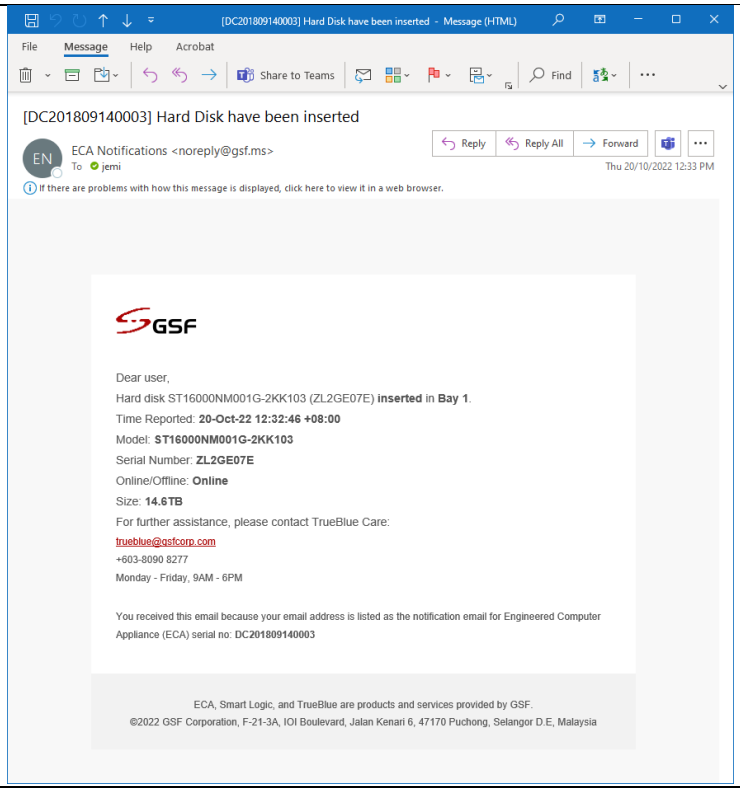
Notification



Log

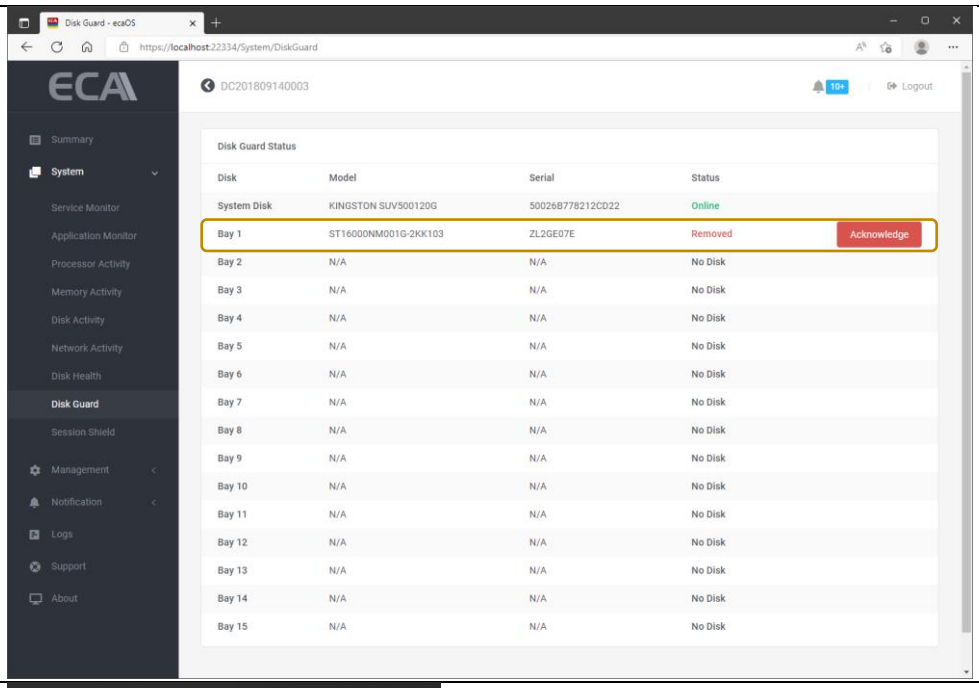
Time	Level	Source	Type	Name	Details
20 Oct 2022, 12:32:46	Information	ecaOS	Disk Guard	Disk Inserted	Disk ST16000NM001G-2KK103 (ZL2GE07E) placed in Bay 1

Email

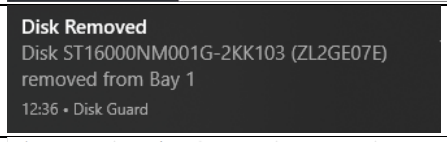


13.7.2 Disk Removed

Dashboard



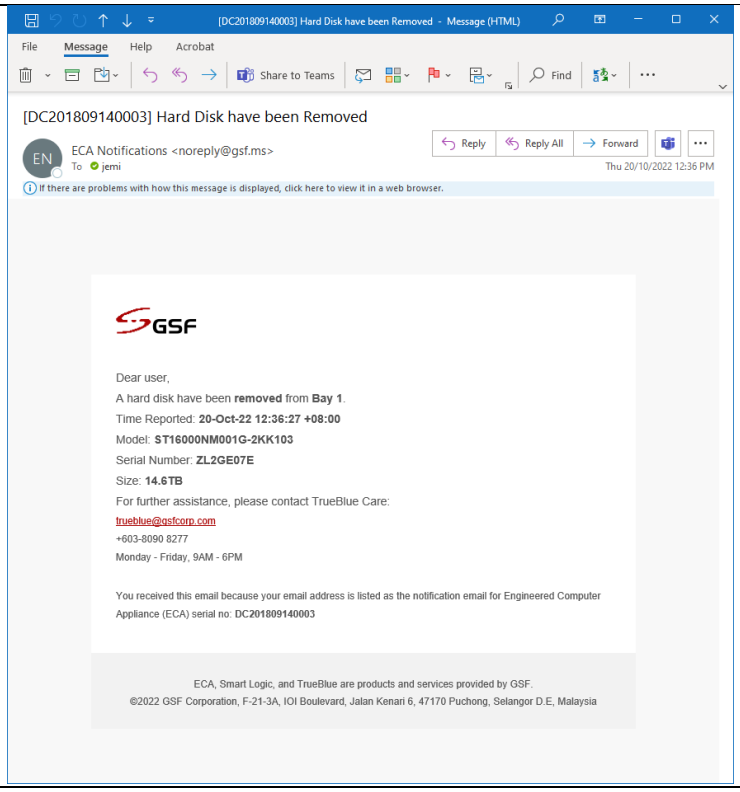
Notification



Log

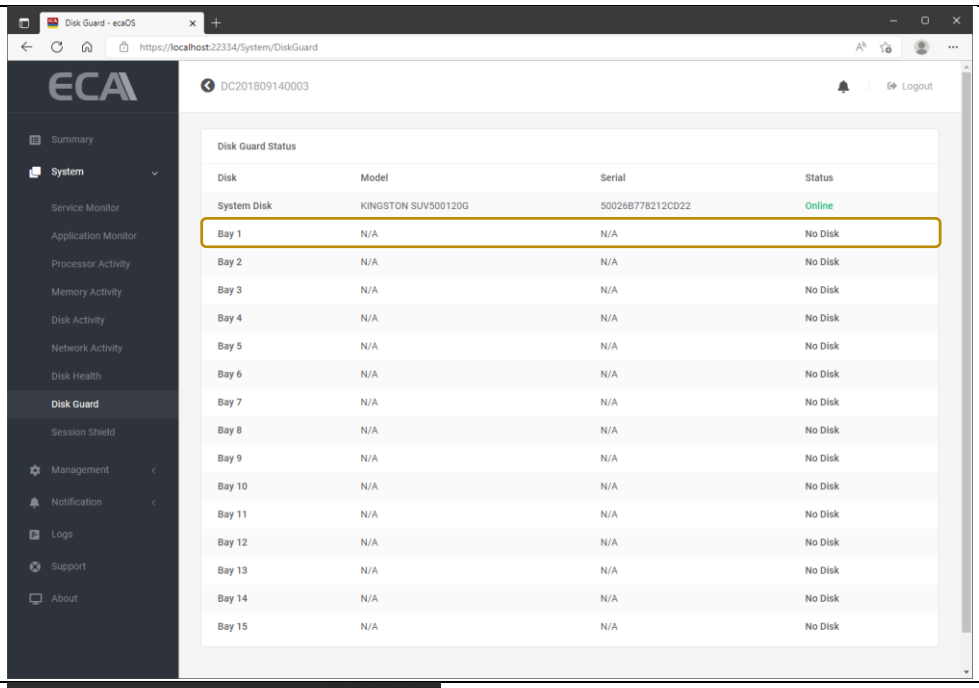
Time	Level	Source	Type	Name	Details
20 Oct 2022, 12:36:27	Warning	ecaOS	Disk Guard	Disk Removed	Disk ST16000NM001G-2KK103 (ZL2GE07E) removed from Bay 1

Email

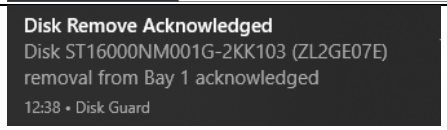


13.7.3 Disk Removed Acknowledge

Dashboard



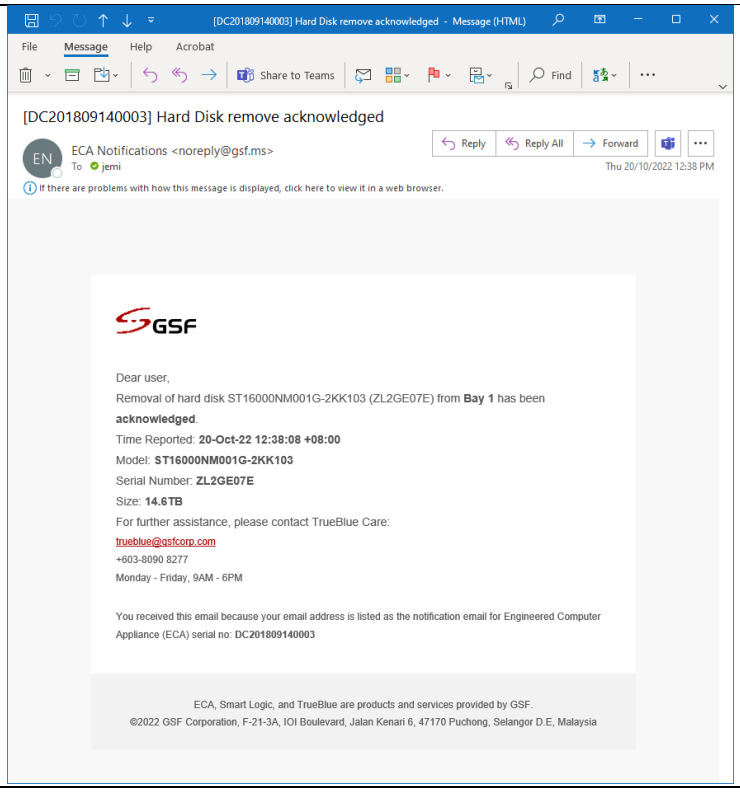
Notification



Log

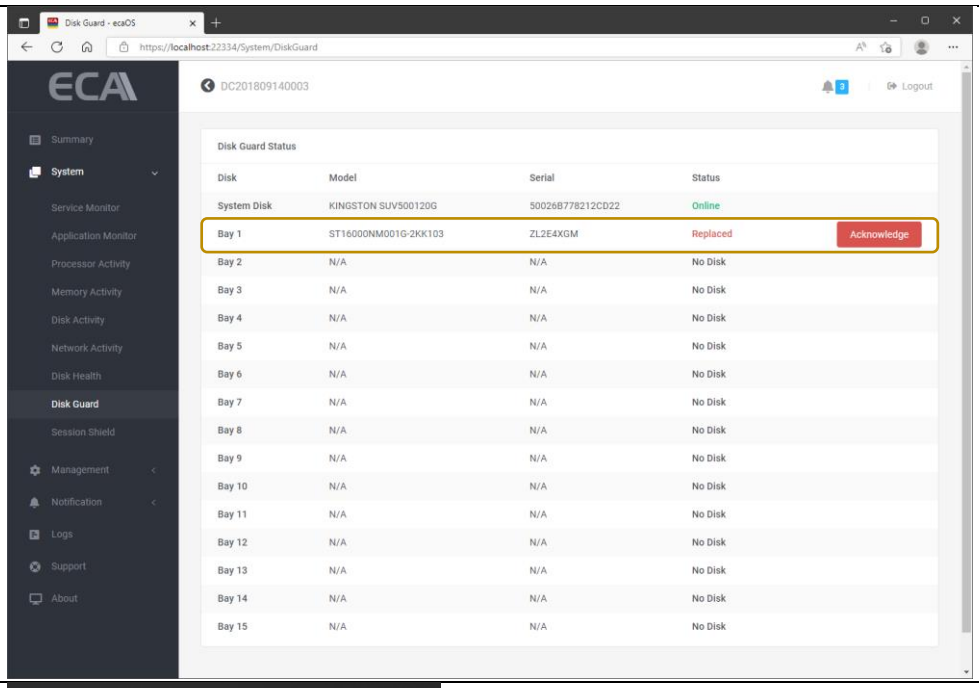
Time	Level	Source	Type	Name	Details
20 Oct 2022, 12:38:08	Information	ecaOS	Disk Guard	Disk Remove Acknowledged	Disk ST16000NM001G-2KK103 (ZL2GE07E) removal from Bay 1 acknowledged

Email

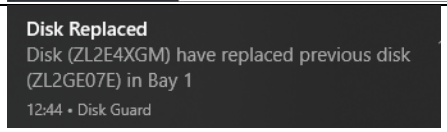


13.7.4 Disk Replaced

Dashboard



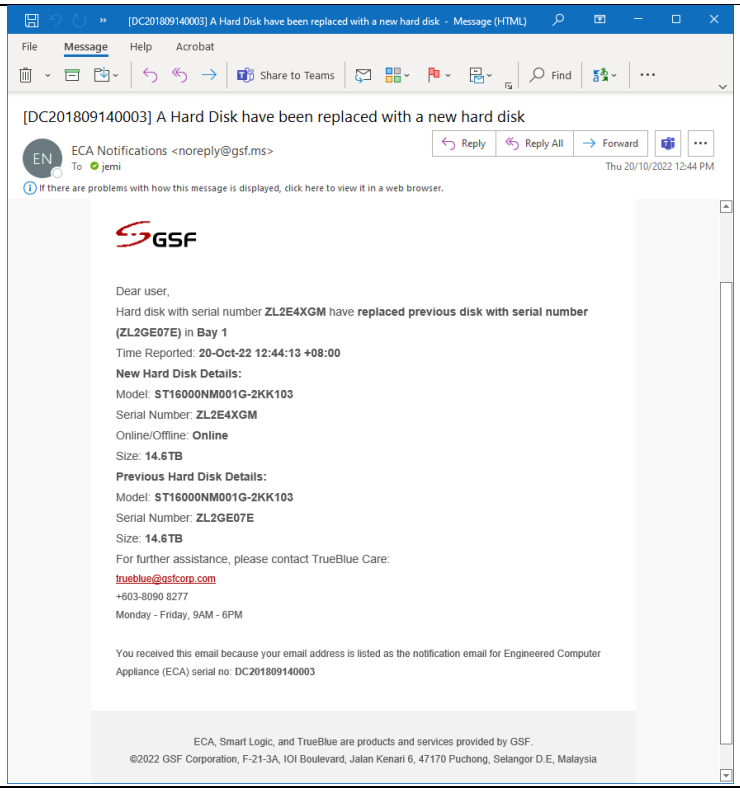
Notification



Log

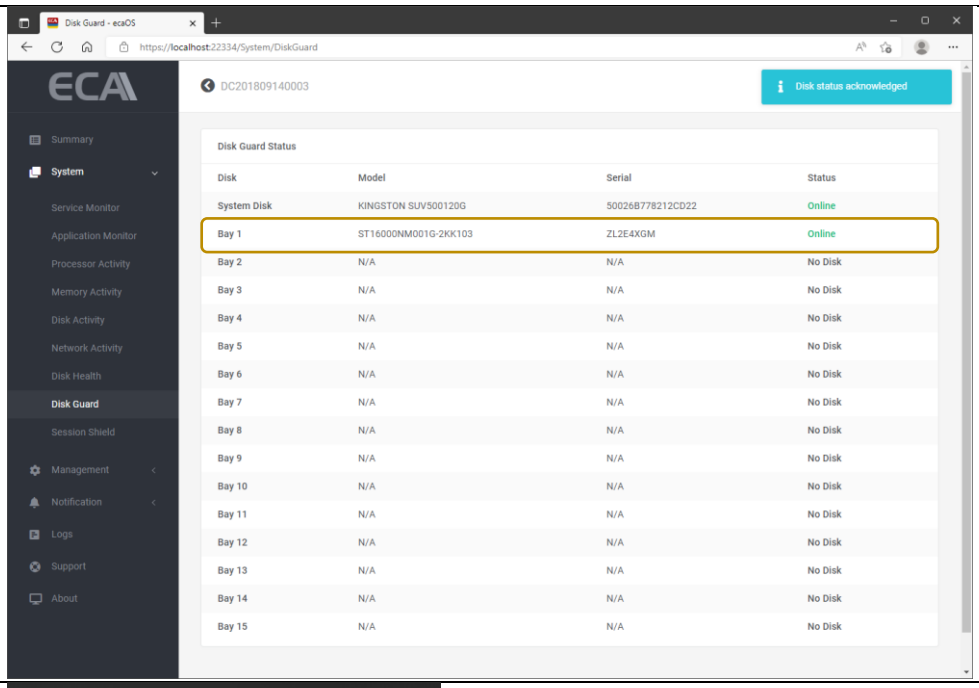
Time	Level	Source	Type	Name	Details
20 Oct 2022, 12:44:13	Warning	ecaOS	Disk Guard	Disk Replaced	Disk (ZL2E4XGM) have replaced previous disk (ZL2GE07E) in Bay 1

Email

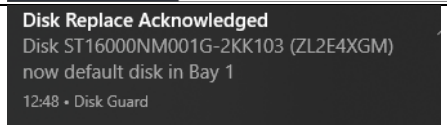


13.7.5 Disk Replaced Acknowledge

Dashboard



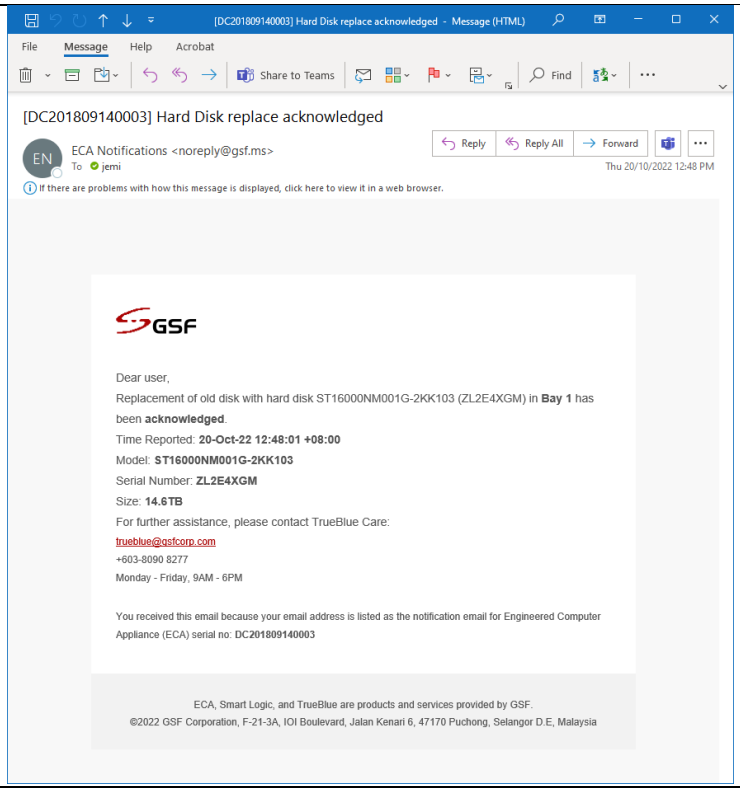
Notification



Log

Time	Level	Source	Type	Name	Details
20 Oct 2022, 12:48:01	Information	ecaOS	Disk Guard	Disk Replace Acknowledged	Disk ST16000NM001G-2KK103 (ZL2E4XGM) now default disk in Bay 1

Email



13.8 Log

13.8.1 ECA reboot more than 3 times

Figure 188 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 188

13.8.2 AC Power loss

Figure 189 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 189

13.8.3 Unauthorize ECA Reboot

Figure 190 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 190

13.8.4 Unauthorize ECA Shutdown

Figure 191 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 191

13.8.5 Authorize ECA Shutdown

Figure 192 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 192

13.8.6 Authorize ECA Reboot

Figure 193 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 193

13.8.7 Power up ECA by pressing power button

Figure 194 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 194

13.8.8 Force shutdown by pressing power (heartbeat) button

Figure 195 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 195

13.8.9 Accessing Dashboard using Security Key

Figure 196 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 196

13.8.10 Accessing Dashboard using Virtual Security Key

Figure 197 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 197

13.8.11 Add new Security Key

Figure 198 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 198

13.8.12 Delete paired Security Key

Figure 199 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 199

13.8.13 Delete Virtual Security Key

Figure 199 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 200

13.8.14 Add Virtual Security Key

Figure 199 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 201

13.8.15 Open ECA cover chassis

Figure 198 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 202

13.8.16 Close ECA cover chassis

Figure 198 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 203

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