# **ASUS NUC Pro Software Suite**

# User Guide

V4.1 **20 September 2024** 

# NUC Group, ASUSTeK COMPUTER INC.

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# **Revision History**

Version	Date	Description of Changes
4.0	June 18 2024	Initial Release
4.1	Sep 20 2024	Updated Arena Canyon and Liberty Canyon support

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# **1** Introduction

## 1.1 Overview

The ASUS NUC Pro Software Suite monitors unattended applications and provides redundant screen services for digital signage applications. Key capabilities of this tool include:

- Terminate and relaunch the application when targeted application becomes unresponsive.
- Gracefully shutdown or restart OS whenever it detects a target application failed x + times as specified by the user, since the last Windows boot.
- Log application monitoring activity to easily accessible log file.
- This utility can enable hardware watchdog timer to execute a hard system reset if a monitored application causes system to become unresponsive.
- Manage Failover NUCs when a given NUC goes down due to power or network failure.
- Hardware Diagnostic feature runs diagnostics on HDMI-CEC WMI interfaces exposed by NUC ACPI BIOS
- Application monitoring LED capability (supported on **ASUS NUC 13 Rugged only**)
- Remote server monitoring (supported on ASUS NUC 13 Rugged only)

ASUS NUC Pro Software Suite - Configuration Tool provides step by step instructions to configure the target NUCs (primary and secondary) and the display between the NUCs. For the player failover feature to successfully work, it is critical to follow the instructions provided in the Installation and Configuration Guide. However, this configuration tool is not needed for basic application monitoring.

The below image explains the overall topology of the application and configuration tool.



Software components are:

- 1. ASUS NUC Pro Software Suite and drivers installed on the target NUC
- 2. ASUS NUC Pro Software Suite Configuration Tool installed on the host PC

### **1.2** Supported NUC Products

- 1. ASUS NUC 13 Rugged NUC13BR
- 2. ASUS NUC 13 Pro Board / Kit / Mini PC NUC13AN
- 3. ASUS NUC 13 Pro Board / Kit NUC13L3, NUC13L5

### 1.3 Hardware and Network Requirements

#### 1.3.1 Configuration Tool Host PC

The Configuration Tool host PC must be on the same managed IPv4/IPv6 network subnet as the two client NPSS NUCs.

# 1.3.2 NUC Clients and Host PC

- 1. Up to four NPSS Supported NUC Platforms from section 1.2 "Supported NUC Products".
- 2. HDMI CEC-Use Consumer Electronics Control supported displays. Make sure to review specifications of televisions before buying them and make sure all HDMI ports support CEC specification. In hands-on lab tests, using two Samsung 1080P TVs, two Samsung 4K TVs, two LG 1080P, or two LG 4K televisions had the best support for HDMI CEC failover capabilities. NOTE: It is recommended to use the same resolution (1080P or 4K), same brand, and same model on both HDMI CEC compliant televisions for best NPSS results.
- 3. HDMI specification 2.0 or later compliant cables. Amazon Basics HDMI cables worked well in lab tests.
- 4. Keyboard & Mouse (Needed on all NUCs during NPSS Configuration Tool setup).
- 5. Both NPSS client NUCs and Configuration Tool host PC must be on the same managed network. This can be a wired or wireless connection to the same managed network router or switch.
- 6. A managed network environment. This means the environment needs an active router. The managed network can also include an active switch.
  - NOTE: Non-managed passive hubs and passive switches are not supported.
- 7. Wired or wireless managed active network routers and switches are required using the TCP network protocol with DHCP to dynamically assign TCP IP addresses. The NUC Pro Software Suite depends on multicast packets to be actively broadcasted through a managed network router and switch so that NUCs can communicate with each other and the NPSS Configuration Tool host PC.
  - a. NPSS supports both IPv4 and IPv6.
  - b. Manual static addressing is not currently supported.
  - c. Using a cell phone Wi-Fi hotspot is not currently supported. This is because the cell phone hotspot security can filter out NPSS network multicast packets.
- 8. Make sure both NUCs and Host PC, OS LAN and/or Wi-Fi network settings are set to "private network" mode so that ping commands can communicate between all PCs without being blocked by OS network settings.
  - Make sure OS firewall is not blocking multicast P2P traffic between NUCs and Configuration Tool host PC.
    - a. Make sure multicast P2P messages are supported in your managed network router and not filtered out or blocked by the router or switch firmware.

#### 1.4 Supported Operating Systems

9.

- 1. Windows 10 IOT Enterprise LTSC 2021
- 2. Windows 11 Pro 23H2
- 3. Ubuntu 22.04 LTS
  - Kernel versions 5.15.25, 5.15.28

# **2** ASUS NUC Pro Software Suite - Features

The ASUS NUC Pro Software Suite application supports the below key features:

- 1. <u>Application Monitor</u> to monitor the state of a running application.
- 2. <u>Player Failover</u> where a backup NUC can take over a primary NUC.
- 3. Advanced features like HDMI diagnosis
- 4. <u>Remote Server Monitor</u> configure and monitor remote server address (supported on **ASUS NUC 13 Rugged only**)

## 2.1 Application Monitor

ASUS NUC Pro Software Suite						
Application Monitor	Player Failov	er	Advanced		Remote Server Monit	or
<ol> <li>To start monitoring, click on Add and choose your ap 2. To pause monitoring, uncheck the Monitor Application 3. Not Monitor Application Failure via Power Status LED 4. LED U Solid Green indicates monitored application 5. LED U Solid Anber Indicates monitored application 6. To remove application monitor, select the application 7. Entrer a time-ut value (between 60-300 seconds) the 8. Select a value to restart entire system after number 0. Select a value to restart entire system afte</li></ol>	plication n checkbox, uncheck the Monitor Failure via LED () cations within NPSS are not hanged or crashed on malfunction and click Remove. utility should wait to restart an unresponsive app of application failures.	lication.				Status Indicator Running Not Running Not Responding Not Monitored
Application Name	Monitor This Application	Monitor Failure vi	a LED Timeout	Value(seconds)	Restart Syste	m
AsusNpssService				60	Never	
Add	Remove					

The Application Monitor tab monitors the running state of desktop applications based on four major status indicators. Below are the controls for Application Monitor tab:

Feature	User Int	erface									
Add: Click 'Add' to add an											
application for monitoring.											
	NUC ASUS® N	JC Pro Softwa	are Suite								
	Ap	plication Moni	itor	Play	er Failove			Adva	nced	Remote Server	r Monitor
	1. To start monit 2. To pause mor 3. Not Monitor A 4. LED () Sol 5. LED () Sol 6. To remove ap 7. Enter a timeou 8. Select a value	oring, click on Ac itoring, uncheck oplication Failure d Green indicate d Amber indicate plication monitor, t value (betwee to restart entire	dd and choose your a the Monitor Applicati via Power Status LEI es any monitored apple es monitored applicati s select the applicatio in 60-300 seconds) the system after number	application ion checkbox. D, uncheck the Montor ilications within NPSS are ion malfunction n and click Remove. he utilty should wait to r er of application failures.	Failure via L not hangeo estart an ur	ED (U)   or crashed  responsive a	pplicatior				Status Indicator Running Not Running Not Responding Not Monitored
	Ap	Copen File	his PC + Local Disk(C) + Progra	en Fèles (x00) > Massila Firefax			~ 0	,P. Search Mealls Firster	Timeout Value(seconds)	Restar	t System
		Organize - New fold	der	Color and Mark	1			O O			
	AsusNpss	CreDrive	browser	22-12-2021 02-40 PM 22-12-2021 02-40 PM	File Tolder File Tolder				60	Never	~
		Tris PC	fipedy group clearkey	22-12-2021 02-40 PM 22-12-2021 02-40 PM	File folder File folder				60	Name	
	- wmpiayer	Desittop	updated Crashreporter	10-04-2022 11:27 PM 22-12-2021 02:40 PM	File folder Application	212 48		No preview available.	60	Never	
		Dounloads Music	<ul> <li>default-browser-agent</li> <li>feefox</li> <li>maintenancesenvice</li> </ul>	22-12-2021 02-43 PM 22-12-2021 02-43 PM 22-12-2021 02-43 PM	Application Application	627 KB 558 KB 258 KB					
		Pictures Wideos	i maintenanceservice_installe	22-12-2021 02-40 PM 22-12-2021 02-40 PM	Application Application	161 KB 741 KB					
		Local Disk (C)	Dingsender	22-12-2021 02-40 PM 22-12-2021 02-40 PM	Application Application	60.×30 236.×30					
		Fier	name (forfor					Exit New (*.0x8)			
								Open Cancel			
		Add									







#### 2.1.1 Application Monitor - Status Indicator

The Application Monitor can monitor a maximum of five applications at a time. The added applications are monitored based onfour major status indicators. The below table describes the status and corresponding color indicator.

Indicator	State
Status Indicator	Running status indicator helps identify the applications in the Running mode. (Cyancircle)
Running Not Running Not Responding	Not Running status indicator helps identify the applications which are no longer running. (Yellow circle)
Not Monitored	Not Responding indicator helps identify an application in error state or when notresponding. (Red circle)
These status along with the color indicators are displayed on the Application Monitor tab and also in the system tray of the ASUS NUC Pro Software Suite application.	Not Monitored indicator helps identify applications which are no longer monitored by the system. (Gray circle)

### 2.1.2 Application Monitor - LED Indicator (on ASUS NUC 13 Rugged only)

The 'Monitor Failure via LED' feature allows users to be notified of the status of the monitored application in the LED of the hardware. ASUS NUC 13 RUGGED supports 6 rear panel RGB LEDs as indicated in the image below.

- LEDs A-C are located near Power Button.
- LEDs 1-3 are located above the LAN ports



Indicator	State								
	This LED indicates the power status of the NUC and supports tricolor(red/amber/green)								
System Status LED A									
-	Condition	LED Color							
	OS loaded successfully (normal operation)	Green							
	All monitoring applications are running	Green							
	successfully.								
	No application added into monitoring	Green							
	One of the monitored application malfunctions	Amber							
	No bootable device error Red								

System Status LED B	This LED indicates persistent display emulation status and CANNOT be configured from the NPSS User Interface. This can be only programmed from the EC firmware.						
System Status LED C	This LED indicates the Player Failover status of NPSS application and supports tricolor (red/amber/green). If NPSS is not installed, LED C will remain in Off state.						
	Condition	LED Color					
	Cable disabled or unconfigured	Off					
	Normal operation of NUCs	Solid Green					
	One of the NUCs lost heartbeat of paired NUC	Solid Amber					
	Cannot transmit heartbeat	Solid Red					
Network Status LED 1 & 2	This LED indicates the LAN status of each port and The goal of this indicator is to confirm if the remote alive.	supports tricolor(red/amber/green). e system configured via NPSS UI in the network is					
	Condition	LED Color					
	Cable disabled or unconfigured	Off					
	If the addresses listed in the NPSS UI > Monitor Remote Server are active	Solid Green					
	If the addresses listed in the NPSS UI > Monitor Remote Server are inactive or lost connection	Solid Amber					
	Cannot get valid IP address from listed addresses in the NPSS UI > Monitor Remote Server	Solid Red					
Network Status LED 3	This LED indicates Wi-Fi/WWAN status of the hard	ware and supports tricolor (red/amber/green).					
	Condition	LED Color					
	System is off or Wifi/WWAN card not detected.	Off					
	If the addresses listed in the NPSS UI > Monitor	Solid Green					
	Remote Server are active						
	If the addresses listed in the NPSS UI > Monitor	Solid Amber					
	Remote Server are inactive or lost connection						
	Cannot get valid IP address from listed addresses in the NPSS UI > Monitor Remote Server	Solid Red					

## 2.2 Player Failover

The Player Failover tab helps to manage the NUCs provided screen redundancy services to each other if a NUC encounters a system failure which may prevent it from continuing to operate.

**NOTE:** To enable player failover functionality, ensure you complete all the steps under Configuration Tool Installation section in Installation and Configuration document.

### 2.2.1 System Links

- 1. **Primary (Solid Blue)** Link between NUC and its primary display.
- 2. Standby (Dotted Grey) Link between NUC and its secondary display.



- 3. **Failover (Solid Yellow)** In case of Failover, the Standby link connecting Active NUC, and its secondary display will become Failover.
- 4. **Inactive (Dotted Red)** When a NUC goes down, system links coming out of Failover NUC should become inactive and NUC is shown as greyed out.



### 2.3 Advanced

The Advanced tab allows user to configure system settings in addition to performing HDMI hardware diagnostics. The belowscreen shows all available options in the Advanced tab.

Enable Player Failover option will be shown as selected and greyed out during configuration. After configuration it will be enabled.

ASUS NUC Pro Software Suite					
Application Monitor	Player Failover		Advanced	Remote Server Monitor	
HDMI Hardware Diagnostic			Settings		
System HDMI Status					
Get HDMI display connect	ivity properties from all ports	$\checkmark$	Always show Asus NUC Pro Soft	tware Suite Application on system restart	
Number of the HDMI ports on the system:     2       HDMI ports connected to displays:     HDMI_p1       HDMI Ports in the NUC supporting HDMI CEC:     HDMI_p1,HDMI_p2			Enable Hardware Watchdog Tin	ner	
HDMI CEC Command					
Get physical and logical addresses from the display	/ connected through		Enable Player Failover		
	HDMI port: 1				
	ecute				
	THEA Data				
Error Code : No Error					

#### 2.3.1 HDMI Hardware Diagnostic

- 1. System HDMI Status Click "*Get HDMI display connectivity properties from all ports*" to get the current state information of HDMI ports
  - i. Number of the HDMI ports on the system
  - ii. HDMI ports connected to displays.
  - iii. HDMI ports in the NUC supporting HDMI CEC

ASUS NUC Pro Software Suite					
Application Monitor	Player Failover		Advanced	Remote Server Monitor	
HDMI Hardware Diagnostic		Application	Settings		
System HDMI Status					
Get HDMI display connectiv	vity properties from all ports	Always show Asus NUC Pro Software Suite Application on system rest			
Number of the HDMI ports on the system: HDMI ports connected to displays: HDMI Ports in the NUC supporting HDMI CEC:	2 HDMI_p1 HDMI_p1,HDMI_p2	$\checkmark$	Enable Hardware Watchdog Tim	er	
HDMI CEC Command					
Get physical and logical addresses from the display	connected through	$\checkmark$	Enable Player Failover		
	HDMI port: 1				
Exe	cute				
U Human Readable	Hex Data				
0X 00 01 02 03 04 05 06 07 08 09 0A 0B 0C	0D 0E 0F				
00   00 02 01 03 00 00 00 00 00 00 00 00 00 00 00	00 00 00				
01   00 00 00 00 00 00 00 00 00 00 00 00 0	00 00 00				
02   00 00 00 00 00 00 00 00 00 00 00 00 0					
03 00 00 00 00 00 00 00 00 00 00 00 00 0					
Error Code : No Error					

The HDMI Diagnostic makes WMI calls and shows the response in Human Readable or Hex Data format on UI.

#### 2. HDMI CEC Command

When a user clicks the HDMI CEC Command dropdown, the below mentioned commands are available. Select anycommand and click 'Execute' to view the results.

- Get physical and logical addresses from the display connected through...
   On Execute of this command, the user can get physical and logical address of the NUCs connected through HDMI.
- Get EDID information from the display connected through...
   On Execute this command, the user can get Product Name, Serial Number, Manufacturer ID of the connectedthrough HDMI port.
- iii. Query display power state from...On Execute this command, the user can get the power status of the display.
- iv. Set the display's HDMI input to where this system is connected to via... This command helps the user to switch display screen from to secondary port.

US NUC Pro Software Suite				
Application Monitor	Player Failover		Advanced	Remote Server Monitor
lardware Diagnostic		Application	Settings	
m HDMI Status				
Get HDMI display connecti	vity properties from all ports	$\checkmark$	Always show Asus NUC Pro Soft	ware Suite Application on system restart
Number of the HDMI ports on the system:         2           HDMI ports connected to displays:         HDMI_p1           HDMI ports in the NUC supporting HDMI CEC:         HDMI_p1			Enable Hardware Watchdog Tim	ner
MI CEC Command				
Get physical and logical addresses from the display connected through Get physical and logical addresses from the display connected through Get EDID information from the display connected through			Enable Player Failover	
ry display power state from the display's HDMI input to where this system is	s connected to via			
or Code : No Error				

#### 3. Error Codes



The user can get any of the error codes below in response to a HDMI CEC Command.

Error Code	Description
00h	No error
E1h	Function not supported
E2h	Undefined device
E3h	EC no respond
E4h	Invalid Parameter
E5h	Node busy. Command could not be executed because
	command processing resources are temporarily unavailable
E6h	Command execution failure. Parameter is illegal because
	destination device has been disabled or is unavailable
E7h	Invalid CEC Opcode
E8h	Data Buffer size is not enough
<u>EFh</u>	Unexpected error
Others	Reserved

#### 2.3.2 Application Settings

- 2.3.2.1 Always show ASUS NUC Pro Software Suite on system restart Check this box to open the application on the desktop after every system restart. When this is not checked, the application will be displayed only in the system tray.
- 2.3.2.2 **Disable/Enable Hardware Watchdog Timer** Default Hardware Watchdog Timer is enabled on launching the application. Whena user manually checks this box and if "AsusNPSSService" service stops, then after default time (300 sec), the system will restart.

#### 2.3.2.3 Enable/Disable Player Failover -

2.3.2.3.1 During first launch of ASUS NUC Pro Software Suite, until the NUCs and corresponding displays are successfully connected, the default player failover is disabled as indicated in the screen below. No NUC is visible in the 'Player Failover' section.

ASUS NUC Pro Softw	are Suite			
Application Moni	tor	Player Failover	Advanced	Remote Server Monitor
		Player Failove	er Feature is Disabled.	
To Enable • Make network connu- • Ensure NPSS - Confi on HOST PC • Player Failover is en successful configura	ections guration Tool is installed abled automatically after tion	Ne	Wired Or Wireless Co Wired Or Wireless Co Host PC ASUS NPSS Configuration Tool	Router Target NUCS ASUS NUC Pro Software Suite

2.3.2.3.2 After Discovering the NUCs, User can see NUCs on Player Failover section and during the entire process of configuration "Enable Player Failover" is disabled and grayed out.

ASUS NUC Pro Software Suite						
Application Monitor	Player Failover		Advanced	Remote Server Monitor		
HDMI Hardware Diagnostic	DMI Hardware Diagnostic		Application Settings			
System HDMI Status						
Get HDMI display connect		$\sim$	Always show Asus NUC Pro Software Suite Applic	ation on system restart		
Number of the HDMI ports on the system:						
HDMI ports connected to displays: HDMI Ports in the NUC supporting HDMI CEC:	HDMI_p1 HDMI_p1,HDMI_p2	$\sim$	Enable Hardware Watchdog Timer			
HDMI CEC Command						
Get physical and logical addresses from the display connected through						
	HDMI port: 1 💌					
Human Readable	Hex Data					
Ĩ						
Error Code : No Error						

2.3.2.3.3 After the configuration is complete, user can uncheck the "Enable Player Failover" which will prompt for user confirmation.

ASUS NUC Pro Software Suite					
Application Monitor	Player Failover		Advanced		Remote Server Monitor
HDMI Hardware Diagnostic		Application	Settings		
System HDMI Status					
Get HDMI display connectivity properties from all ports		$\sim$	Always show Asus	NUC Pro Sot	ftware Suite Application on system restart
Number of the HDMI ports on the system: HDMI ports connected to displays: HDMI Ports in the NUC supporting HDMI CEC:	2 HDMI_p1 HDMI_p1,HDMI_p2		Enable Hardware \	Watchdog Tir	ner
HDMI CEC Command					
Get physical and logical addresses from the display	connected through	$\sim$	Enable Player Failover		
	HDMI port: 1 🗾				
Ex					
Error Code : No Error					

ASUS NUC Pro Software Suite					
Application Monitor	Player Failover	Advanced	Remote Server Monitor		
HDMI Hardware Diagnostic		Application Settings			
System HDMI Status					
Get HDMI display connectivity properties from all ports		Always show Asus NUC Pro Software Suite Application on system restart			
Number of the HDMI ports on the system:	2				
HDMI ports connected to displays: HDMI Ports in the NUC supporting HDMI CEC:	HDI	× gT	imer		
HDMI CEC Command					
Get physical and logical addresses from the display conr Disabling Player Failover will allow the failover NUC to take over the display of this NUC and stream the primary content of this NUC. Are you sure you would want this behaviour ?					
Ex	ecute				
Human Readable	Yes	No			
Enor Code : No Litor					

2.3.2.3.4 On click of **Yes**, Player failover is disabled and No NUC is visible in the 'Player Failover' section.

# 2.4 Remote Server Monitor

Remote server monitor tab provides the user capability to configure remote server list and monitor each server's address and its connectivity.



# **3** ASUS NUC Pro Software Suite - Configuration Tool

The ASUS NUC Pro Software Suite - Configuration Tool provides step by step instructions to configure the target NUCs and setup the primary and secondary connection between the target system and displays.

Do not install the configuration tool on the target NUCs. Instead, install the configuration tool on a host PC which is on the samenetwork as the target NUCs.

If you have not installed the configuration tool yet, download and install the tool from ASUS Support site.

#### ASUS NUC Pro Software Suite – Configuration Tool:

## 4 System Tray Application



Open the system tray from desktop and right-click the application icon, the below options/status will be shown:

	mousebuttons
•	NUC : 192.168.8.160
	ASUS NUC Pro Software Suit
	View Logs
	About
	Exit

- 1. Applications added from Application Monitor along with their status.
- 2. Paired NUCs along with their status.
- 3. Application name to open the User Interface.
- 4. View Logs are used to open captured logs.
- 5. **About** shows the version of Application and service.
- 6. Exit closes the Application.

# **5** Known Errata

- 1. If user is not able to get discovered NUC on config tool's NUC discovery list, then user need to recheck network connection and then close config tool and launch it again. This will resolve this discovery NUC issue and User can go forward for player failover configuration.
- 2. Player Failover feature can behave unexpectedly if HDMI cables are unplugged and plugged-in during runtime.
- 3. To unselect a row on Application Monitor, the user needs to press the CTRL key and click the desired row at the same time.
- 4. During NPSS Configuration, there may be a chance when NUCs are not visible to each other and state message (like disconnect HDMI-2, persistent enable/disable etc.) are not updated on configuration tool.
  - **Work around 1**: The user needs to click start over to restart configuration tool.
  - **Work around 2**: If user still gets the issue, then verify successful network connectivity with all NUCs and the Configuration tool host. Reboot all systems.
- 5. In some scenarios few NUCs are in a pre-configured state and one NUC needs to be replaced, after replacement the user may get a wrong connection on the topology screen.
  - Work around: User can click start over and restart configuration for all the target NUCs.
- 6. During configuration if HDMI cable is plugged out from either NUC then NPSS application hides from both HDMI screens
  - Work around: User need to right click and select exit NPSS through system tray app and relaunch the NPSS app.
- 7. If ASUS NUC Pro Software Suite application is in use, user recommended not to uninstall the Watch Dog timer (WDT) Driver. If WDT driver gets uninstalled accidentally, then ASUS NUC Pro Software Suite application will stop working.
  - Work around: User must re-install Watchdog Driver again then restart system, ASUS NUC Pro Software Suite application will again start to work.

Note: This point is only for Linux build

- 8. During the NPSS Configuration Tool host application's "Enable Persistent Display Emulation" step, it can sometimes take 3-5 minutes for the NPSS Configuration Tool host application to refresh and update the NPSS Configuration Tool host's status as successful.
  - Here is a work around if this step in the NPSS Configuration Tool is going beyond 3-5 minutes. In the operating system, select to software shutdown the NPSS client NUC which has enabled persistent display emulation, then power the NUC back on. This can force the client NPSS NUCs to resend multicast packets to update the NPSS Configuration Tool host PC that enabling persistent display emulation was successful.
  - This known issue is being addressed as a high priority improvement for the next release of NPSS on supported NUCs generation 12 and later.
- 9. NUC Persistent Display Emulation Firmware notifications and settings:
  - In BIOS Persistent Display Emulation settings, the user can set the "Inconsistent Display Warning" settings to "Countdown" instead of the NUC pausing on the persistent display emulation notification waiting for user input. Enabling the persistent display emulation "Countdown" setting in BIOS allows the NUC to automatically continue booting if the user does not need to update the persistent display emulation firmware.
  - When a completed NPSS configuration setup environment loses power (For example 1. a power outage, or 2. the AC power is unplugged) on the NPSS configured NUCs and televisions, the user may observe a persistent display emulation firmware notification when the AC power is restored and the NUC is powered back on. The user can select option "B" to update persistent display emulation firmware so that the persistent display firmware settings can be saved if necessary. If nothing has changed in the NPSS environment, then persistent display firmware option "B" selection may not be needed. The reason this persistent display emulation firmware notification occurs is because when power is lost the persistent display emulation firmware can be saved again.
- 10. Player Failover configuration completed between NUCs then if new NUC will appear in same network then user can get "incorrect Connection" popup may appear on either paired NUC.
  - User can restart system effected NUC and "incorrect Connection" popup will vanish.
- 11. During Player Failover Configuration if we observe that after system reboot Persistent not disabled or enabled during primary or secondary configuration and user observe Persistent message on NPSS UI then as a workaround user can do a **Startover** and restart the configuration.