




N.U.R AURORA EXPANSION

CYBER FACTORY ACCEPTANCE TEST PROCEDURE

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ACRONYMS	MEANING
APM	Advance Process Management
DC	Domain Controller
DCS	Distributed Control System
DDS	Detailed Design Specification
DMZ	De-Militarized Zone
DSA	Distributed System Architecture
ePO	ePolicy Orchestrator
FAT	Factory Acceptance Test
FDM	Field Device Manager
FDS	Functional Design Specification
FTE	Fault-Tolerant Ethernet
HON	Honeywell
HTML	Hyper Text Markup Language
HTTPS	Hypertext Transfer Protocol Secure
IAMS	Instrument Asset Monitoring System
ICSS	Integrated Control Safety System
IE	Internet Explorer
IFR	Issue For Review
ISA	International Society of Automation
LAN	Local Area Network
LCN	Local Control Network
OS	Operating System
PC	Personal Computer
PCN	Process Control Network
PCT	PHD Configuration Tool
PHD	Process Historian Database
PKS	Process Knowledge System
SAT	Site Acceptance Test
SC	Safety Manager

1.0 INTRODUCTION

This FAT procedure defines the test activities to be performed by End User, Purchaser and HON. The objective is a structured and well-documented HON in-house test and a consolidated well-considered Factory Acceptance Test.

1.1 OBJECTIVE

The following tests shall be performed to verify the correct implementation of designs of the Equipment. Execute the tests in accordance with the referenced method sheets and record them as specified.

All sections that pass test shall be signed off or ticked off in the appropriate boxes. Any non-compliance shall be discussed and documented in the PUNCH-LIST.

Honeywell shall take corrective actions and schedule to complete all PUNCH-LIST. Each PUNCH-LIST action that has been completed shall be witnessed by End User / Purchaser and individually signoff. Where mutually agreed, some PUNCH-LIST actions may be deferred. These deferred actions shall be clearly indicated in the PUNCH-LIST.

Upon successful completion of FAT, End User / Purchaser is expected to sign the FAT Certificate.

1.2 SCOPE

The scope of this FAT includes:

- Network Cabinet
- Server Cabinet

1.3 PROJECT OVERVIEW

The purpose of the project is to develop and implement the C300 Experion PKS and Safety Manager (SM) System Hardware. The project aims to define the functional design specifications and best practices for these systems, ensuring that they meet the design requirements and provide the necessary functions and facilities. The project also involves identifying the scope of supply from Honeywell and the owner/contractor, as well as outlining the responsibilities of each party.

2.0 GENERAL

2.1 DEFINITION

Supplier – HONEYWELL ENGINEERING SDN. BHD.
Purchaser – JURONG ENGINEERING LIMITED (JEL)
End User – N.U.R GENERATION SDN BHD

2.2 RESPONSIBILITIES

2.2.1 HONEYWELL

- To Conduct and Manage the Factory Acceptance Test as per the approved Factory Acceptance Test Procedure.
- During FAT, a set of design documents / drawings shall be made available for reference, irrespective of the approval / information category, with the latest applicable revision. All design inputs received from the End User / Purchaser will be made available for reference.
- To test the system before commencement of FAT. The Pre-FAT reports shall be provided on the first day of FAT for review / reference.
- To maintain the Deficiency Summary List containing descriptions of deviations of the system from requirements of the design documents as noted by HON or by the End User during Factory Acceptance Test. HON will correct these deficiencies, if possible, to the End User / Purchaser's satisfaction to conform to project specifications.

2.2.2 PURCHASER

- Participate in the Factory Acceptance Test and update the checklist and Deficiency Summary List, based upon the test results.
- Sign-off of the FAT Completion Certification.

2.3 PARTICIPANT SAFETY REQUIREMENT AND HAZARD

2.3.1 PARTICIPANT HEALTH

This Factory Acceptance Test will be conducted in HON Staging Area in Puchong, and at the same time this FAT was conducted during COVID-19 Pandemic issue. All participants should follow SOP as stated by Malaysian Government to reduce risk of infection of COVID-19 Virus. All participants need to:

- Wear mask at all time
- Regularly wash hand using soap or hand sanitizer
- Forfeit participant if not in best health (i.e.: fever, coughing, etc.)

2.3.2 HAZARD

The main hazards present during test staging are:

- Electric shock hazard / voltage hazards.
- Trip hazards (untidy cables or work area).
- Injury from hand tools.

2.3.3 ELECTRIC SHOCK HAZARD

The main voltages used with the staged equipment are 240V AC and 24V DC. 240V AC presents a risk of electric shock if care is not taken. The paragraphs below describe steps to manage the risk of electric shock.

- All personnel should be made clearly aware of AC voltage wiring/cabling.
- Competent, qualified, licensed electrician will perform all AC voltage wiring/cabling.
- Before working on AC Voltage Circuits: Ensure the equipment is electrically isolated e.g., unplug the power lead from the outlet; or switch the circuit breaker to the "OFF" position. Place electrical danger tags as necessary.
- Using a multi-meter, always test for zero voltage before working on AC Voltage circuits. Ensure that the multi-meter is calibrated, and the test leads are in a satisfactory condition. It is good practice to first check the multi-meter by testing for voltage at a known voltage source (e.g., general power outlet).
- 24VDC presents less of a danger than 240VAC, but personnel should be aware that the bulk 24VDC power supply can provide a high current. As with 240VAC, all test personnel should take care not to "short circuit" any wiring. Metal wristwatches or jewelry should not be worn when working in live panels.
- Before energizing circuits 240VAC or 24VDC Circuits:

- Confirm that no personnel are working on the circuit.
- Confirm danger tags are on the isolation points.
- Confirm that the circuit has been wired and tested by a licensed electrician.
- Ensure that all temporary wiring is safe.
- Ensure Perspex covers are in place over live AC terminals, conductors, and bus bars.
- Ensure the cabinet(s) are properly earthed.

2.3.4 TRIP HAZARD

- Keep the work area clean and tidy.
- Ensure that all cables are installed relatively neatly and away from walkways.
- Securely fasten cables with cable-ties or floor tape as necessary.
- All rubbish and old packaging should be kept out of the way or discarded if not required.
- Maintain good house-keeping practice throughout.
- Limit the access into working area by mean of area designation, barricade etc.

2.3.5 INJURY FROM HAND TOOLS

- To avoid injury from hand tools, only use tools that are in a satisfactory condition.
- Always use the correct tool for the job. If the task appears too difficult, or too much force is required, then almost certainly there is a more suitable tool available.
- Ensure electrical tools are within inspection period.

2.4 CARE OF EQUIPMENTS

- Ensure that all system hardware and test equipment is treated with care. Do not allow cuttings of wire or swarf from drilling to fall into any electrical equipment where it may cause short circuits.
- Check the required supply voltage on equipment labels before connecting the power. Take care not to connect the wrong voltage e.g., 240VAC instead of 24VDC.
- Drinks/fluids of any kinds are not allowed.
- Take care not to knock/bump hardware/wiring connections when moving around in the cabinet.

2.5 TRACEABILITY

All persons authorized to verify FAT line items and FAT completion are listed in the following table.

Initials	Full Name	Company	Position
KA	Khairil Azwan Shaari	HON	Project Manager
AG	Anandasurian Gnanasurian	HON	Engineering Manager
AM	Astrid Maria Regina	HON	Project Lead
PK	Pawan Kumar	HON	Engineer
CB	Chidambaram	HON	Engineer
KAR	Khairul Anwar	HON	Engineer

2.6 FAT GUIDELINES

- Normal FAT hours are 09.00 a.m. to 05.00 p.m. daily. If special conditions require FAT time to be outside the normal working hours, HON shall notify End User / Purchaser one (1) week in advance or with mutual agreement.
- HON does not normally test End User / Purchaser-supplied equipment unless it is part of a special service at an additional cost to the End User / Purchaser.
- End User / Purchaser is expected to "approve" each successful demonstration of System functionality by signing-off the appropriate section as defined in this Procedure.
- During FAT, End User / Purchaser shall immediately notify the HON Project Manager (or representative) upon discovery of any non-compliance for recording into the PUNCH-LIST.
- HON is responsible for adjustments, replacements, and repairs (if necessary) of HON-supplied materials in the System.
- Respect all no-smoking, no-drinking, and no-eating signs where indicated.
- Maintain cleanliness of FAT area and office where appropriate.
- HON is available to assist and support the End User / Purchaser through any initial unfamiliarity's or difficulties. However, HON shall provide all necessary staffs and manpower for demonstration of performance, test, and inspection to be witnessed by End User / Purchaser.
- All approved documents shall be prepared and made available during FAT by HON for End User / Purchaser's inspection and reference when required.

2.6.1 FAT PROCEDURE

- Before starting the FAT all the vendor drawings and non-standard documentation must be approved. A complete set of standard system documentation must be available during the test period. (This set will be referred as “FAT Copy”).
- Data records of internal acceptance testing results shall be available & reviewed before the start of the FAT.
- Drawing questions shall be reported to the Project Engineer, and where a drawing change is agreed, the Project Engineer shall mark the FAT COPY set. The change shall be given a revision reference and signed as well as dated by the Project Engineer. Test personnel shall not implement drawing changes but only list the required drawing changes in the FAT Punch List. The Project engineer will review these changes and mark up the Master copy drawings and the working FAT COPY with the appropriate revision references. The Customer will review the FAT Punch List entry for accuracy, and then initial the punch list item “complete”.

2.6.2 FAT DEFICIENCY LIST ITEMS

A FAT Deficiency (Punch) List will be used to document all non-conformances or faults found on the system during the factory acceptance test. All faults, exceptions or nonconformance shall be identified together with corrective actions.

2.7 FACTORY ACCEPTANCE CERTIFICATE

FACTORY ACCEPTANCE TEST CERTIFICATE

End User Name: N.U.R GENERATION

Purchaser: JURONG ENGINEERING LTD (JEL)

Honeywell Job Number: 20064

Honeywell Project Name: AURORA

The undersigned declare, as lawful representatives from Honeywell, NUR Generation and Jurong Engg. Ltd. (JEL) that:

The Factory Acceptance Test to be delivered by Honeywell to Jurong Engg. Ltd., as specified in the referenced order, has been performed on FAT period.

The Honeywell system is built conform to the design and valid specification, except the outstanding points listed on the Deficiency Summary List / Punch List.

Date	:		Date	:	
End-User	:	N.U.R GENERATION	Purchaser	:	JURONG ENGINEERING LTD (JEL)
Name	:		Name	:	
Function	:		Function	:	
Signature	:		Signature	:	

Date	:	
Supplier	:	HONEYWELL ENGINEERING SDN. BHD.
Name	:	
Function	:	
Signature	:	

2.8 DOMAIN CONTROLLER

2.8.1 L3.5 DC CONFIGURATION

End-User Name: NUR POWER – AURORA EXPANSION Purchaser Name: JURONG ENGINEERING LTD (JEL) Honeywell Job Number: 20064 Honeywell Project Name: AURORA		Internal Acceptance Test (IAT) Honeywell			Factory Acceptance Test (FAT) Honeywell/ Purchaser/ End-user		
		Reviewer:			Reviewer:		
		Date:			Date:		
Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
DC CONFIGURATION							
1.1	CPU: 2.50GHz, 2 processors Step: Right click on Start >> System>> Device Specifications >> Processor.						
1.2	Memory: 16GB Step: Right click on Start >> System>> Device Specifications >> RAM.						
1.3	Windows OS version: Windows Server 2019 Standard Step: Right click on Start >> System>> Windows Specifications >> Edition						
1.4	Check VM Hard disk Allocation: 200GB Step: ESXi Host (Dell PE 640XL) >> L35DC VM >> Edit Setting						
1.5	Verify IP address, Subnet mask & Gateway IP configured for DC. Step: Login to DC VM (30CKA10GK608) >> Run >> Cmd >> Type "ipconfig" (Enter)						
1.6	Verify Computer Name: 30CKA10GK608 Step: Login to DC VM and Run >> Cmd >> Type "hostname" (Enter)						
1.7	Windows license activation: Activated Step: Login to DC VM and Run >> Cmd >> Type "slmgr.vbs -xpr" (Enter)						
1.8	Windows Firewall: ON Step: Login to DC VM and Search Control Panel >> System & Security >> Windows Defender Firewall						

Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
1.9	Remote Desktop: Enabled Step: Login to DC VM and <i>Search for Remote Desktop Settings >> Remote Desktop >> OFF</i>						
1.10	Time Zone & Time: • Time Zone: (UTC+08:00 Kuala Lumpur, Singapore Singapore Standard Time) Step: Login to DC VM >> <i>Run >> Cmd >> Type "tzutil /g" (Enter)</i>						
1.11	Microsoft OS Patches applied: Note: To apply MS patches prior to site deployment Step: Login to DC VM >> <i>Right click on Windows >> Settings >> Update & Security</i>						
PHYSICAL VERIFICATION							
2.1	Dell Power Edge R640XL inspection to verify physical damages (if any)						
2.2	Dell Power Edge R640XL power supply status check						
2.3	Dell Power Edge R640XL Service Tag: 4M2C804 Step: <i>Check the Tag in the device</i>						
DOMAIN SETUP VERIFICATION							
3.1	Domain: NURAUORA-DMZ.local Step: Login to DC VM >> <i>Run >> Type "dsa.msc"</i>						
3.2	Verify that both Active Directory Domain Services and DNS Server are installed. Step: Login to DC VM >> <i>Run >> Type "dsa.msc" → To check for AD DS</i> Login to DC VM >> Server Manager >> Look Left Panel for DNS						
3.3	Verify that Domain functional level is Window Server 2016 and Forest functional level is Windows Server 2016 Step: Login to DC VM >> <i>Server Manager > Tools > Active Directory Domains and Trusts >> Right click on domain name (from Left hand side) >> Properties</i>						
3.4	Verify that 30CKA01GK608 is registered as a DC Step: Login to DC VM >> <i>Server Manager >> Tools >> Active Directory Users and Computer >> NURAUORA-DMZ.local >> Domain Controllers OU</i>						
3.5	Verify that all L3.5 Window nodes are in the domain. Step: Login to DC VM >> <i>Service Manager >> Tools >> Active Directory Users and Computers >> NURAUORA-DMZ.local</i>						

Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
3.6	Verify that admin account is a member of the Domain Admins group. Step: Login to DC VM >> Service Manager >> Tools >> <i>Active Directory Users and Computers</i> >> <i>NURAURORA-DMZ.local</i> >> Users >> Open Domain Admin Groups >> Search for Members						
3.7	Verify that GPS NTP server is configured as time source: Step: Login to DC VM >> Run >> Cmd >> Type "W32tm /query /peers"						
3.8	Verify that all L3.5 endpoint FQDNs are listed with matched IP addresses. Step: Login to DC VM >>Server Manager >> Tools >> DNS >> 30CKA01GK608 >> Reverse Lookup Zones						
Purpose: Overall acceptance of this module by the End User/ Purchase		Date:		Date:			
		Sign:		Sign:			

2.8.2 L3 DC CONFIGURATION

End-User Name: NUR POWER – AURORA EXPANSION Purchaser Name: JURONG ENGINEERING LTD (JEL) Honeywell Job Number: 20064 Honeywell Project Name: AURORA		Internal Acceptance Test (IAT) Honeywell			Factory Acceptance Test (FAT) Honeywell/ Purchaser/ End-user		
		Reviewer:			Reviewer:		
		Date:			Date:		
Test #	Detail Test Items	PASS	FAIL	Re-Test PASS	PASS	FAIL	Re-Test PASS
DC CONFIGURATION							
1.1	CPU: 2.50GHz, 2 processors Step: Right click on Start >> System>> Device Specifications >> Processor.						
1.2	Memory: 16GB Step: Right click on Start >> System>> Device Specifications >> RAM.						
1.3	Windows OS version: Windows Server 2019 Standard Step: Right click on Start >> System>> Windows Specifications >> Edition						
1.4	Check VM Hard disk Allocation: 200GB Step: ESXi Host (Dell PE 740XL) >> L3DC VM >> Edit Setting						
1.5	Verify IP address, Subnet mask & Gateway IP configured for DC. Step: Login to DC VM (30CKA10GK618) >> Run >> Cmd >> Type "ipconfig" (Enter)						
1.6	Verify Computer Name: 30CKA10GK618 Step: Login to DC VM and Run >> Cmd >> Type "hostname" (Enter)						
1.7	Windows license activation: Activated Step: Login to DC VM and Run >> Cmd >> Type "slmgr.vbs -xpr" (Enter)						
1.8	Windows Firewall: ON Step: Login to DC VM and Search Control Panel >> System & Security >> Windows Defender Firewall						

Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
1.9	Remote Desktop: Enabled Step: Login to DC VM and <i>Search for Remote Desktop Settings >> Remote Desktop >> OFF</i>						
1.10	Time Zone & Time: • Time Zone: (UTC+08:00 Kuala Lumpur, Singapore Singapore Standard Time) Step: Login to DC VM >> <i>Run >> Cmd >> Type "tzutil /g" (Enter)</i>						
1.11	Microsoft OS Patches applied: Note: To apply MS patches prior to site deployment Step: Login to DC VM >> <i>Right click on Windows >> Settings >> Update & Security</i>						
PHYSICAL VERIFICATION							
2.1	Dell Power Edge R740XL inspection to verify physical damages (if any)						
2.2	Dell Power Edge R740XL power supply status check						
DOMAIN SETUP							
3.1	Joined domain: NURAUROA-PIN.LOCAL Step: <i>Run >> Type "dsa.msc"</i>						
3.2	Verify that both Active Directory Domain Services and DNS Server are installed. Step: <i>Run >> Type "dsa.msc" → To check for AD DS</i> <i>Run >> Cmd >> Type "ipconfig /all" → To check for DNS</i>						
3.3	Verify that Domain functional level is Window Server 2019 and Forest functional level is Windows Server 2019 Step: <i>Server Manager > Tools > Active Directory Domains and Trusts >> Right click on domain name (from Left hand side) >> Properties</i>						
3.4	Verify that the following Honeywell GPOs have been installed: Step: Group Policy Management > Forest: NURAUROA-PIN.local > Domains > NURAUROA-PIN.local <ul style="list-style-type: none"> ○ Honeywell Engineering Role ○ Honeywell Operational Roles ○ Honeywell Product ○ Administrator Role 						
3.5	Verify that 30CKA10GK618 is registered as a DC Step: Active Directory Users and Computer >> NURAUROA-PIN.local>> Domain Controllers						
3.6	Verify that all L3 Window nodes are in the domain. Step: Active Directory Users and Computers >> NURAUROA-PIN.local>>Computers.						
3.7	Verify that admin account is a member of the Domain Admins group. Step: Active Directory Users and Computers >> NURAUROA-PIN.local>> Users						

Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
3.8	Verify that GPS NTP server is configured as time source: Step: Run >> Cmd >> Type "W32tm /query /peers"						
3.9	Verify that all L3 endpoint FQDNs are listed with matched IP addresses. Step: Server Manager >> Tools >> DNS >> 30CKA01GK618 >> Reverse Lookup Zones						
Purpose: Overall acceptance of this module by the End User/ Purchase		Date:		Date:			
		Sign:		Sign:			

2.8.3 L2 DC CONFIGURATION

End-User Name: NUR POWER – AURORA EXPANSION Purchaser Name: JURONG ENGINEERING LTD (JEL) Honeywell Job Number: 20064 Honeywell Project Name: AURORA		Internal Acceptance Test (IAT) Honeywell			Factory Acceptance Test (FAT) Honeywell/ Purchaser/ End-user		
		Reviewer:			Reviewer:		
		Date:			Date:		
Test #	Detail Test Items	P A S S	F A I L	Re-Test PASS	P A S S	F A I L	Re-Test PASS
DC CONFIGURATION							
1.1	CPU: Intel® Xeon® E-2378 CPU @ 2.60GHz 2.59 GHz Step: Right click on Start >> System>> Device Specifications >> Processor.						
1.2	Memory: 32 GB Step: Right click on Start >> System>> Device Specifications >> RAM.						
1.3	Windows OS version: Windows Server 2019 Standard Step: Right click on Start >> System>> Windows Specifications >> Edition						
1.4	Hard disk Allocation: 200 GB for C drive and 640 GB for D drive Step: This PC >> Devices and drives >> Local disk (C:) & Local disk (D:)						
1.5	Dell Power Edge R740XL Service Tag: 2F2SRY3 Step: Check the Tag in the device OR Run >> Cmd >> Type "wmic bios get serialnumber" (Enter)						
1.6	Verify IP address, Subnet mask & Gateway IP configured. Step: Run >> Cmd >> Type "ipconfig" (Enter)						
1.7	Verify Computer Name: 30CKA01GK623 Step: Run >> Cmd >> Type "hostname" (Enter)						
1.8	Windows license activation: Activated Step: Run >> Cmd >> Type "slmgr.vbs -xpr" (Enter) OR Run >> Control >> System and Security >> System >> Windows Activation						

Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
1.9	Windows Firewall: Enabled Step: Search Control Panel >> System & Security >> Windows Defender Firewall						
1.10	Remote Desktop: Enabled Step: Search for Remote Desktop Settings >> Remote Desktop >> ON						
1.11	Time Zone & Time: • Time Zone: (UTC+08:00 Kuala Lumpur, Singapore) Step: Run >> Cmd >> Type "tzutil /g" (Enter)						
1.12	Microsoft OS Patches applied: Note: To apply MS patches prior to site deployment Step: Right click on Windows >> Settings >> Update & Security						
PHYSICAL VERIFICATION							
2.1	Dell Power Edge R740XL inspection to verify physical damages (if any)						
2.2	Dell Power Edge R740XL power supply status check						
DOMAIN SETUP							
3.1	Joined domain: NURAUROA-PIN.LOCAL Step: Run >> Type "dsa.msc"						
3.2	Verify that both Active Directory Domain Services and DNS Server are installed. Step: Run >> Type "dsa.msc" → To check for AD DS Run >> Cmd >> Type "ipconfig /all" → To check for DNS						
3.3	Verify that Domain functional level is Window Server 2019 and Forest functional level is Windows Server 2019 Step: Server Manager > Tools > Active Directory Domains and Trusts >> Right click on domain name (from Left hand side) >> Properties						
3.4	Verify that the following Honeywell GPOs have been installed: Step: Group Policy Management > Forest: NURAUROA-PIN.LOCAL > Domains > NURAUROA-PIN.LOCAL <ul style="list-style-type: none"> ○ Honeywell Engineering Role ○ Honeywell Operational Roles ○ Honeywell Product ○ Administrator Role 						
3.5	Verify that 30CKA10GK623 is registered as a DC Step: Active Directory Users and Computer >> NURAUROA-PIN.local >> Domain Controllers						
3.6	Verify that Window nodes are in the domain. Step: Active Directory Users and Computers >> NURAUROA-PIN.LOCAL >> Computers.						

Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
3.7	Verify that admin account is a member of the Domain Admins group. Step: Active Directory Users and Computers >> NURAUROA-PIN.LOCAL >> Users						
3.8	Verify that GPS NTP server is configured as time source: Step: Run >> Cmd >> Type "W32tm /query /peers"						
3.9	Verify that all L2 and L3 endpoint FQDNs are listed with matched IP address. Step: Server Manager >> Tools >> DNS >> 30CKA10GK623 >> Reverse Lookup Zones						
Purpose: Overall acceptance of this module by the End User/ Purchase		Date:		Date:			
		Sign:		Sign:			

2.9 EBR CONFIGURATION

End-User Name: NUR POWER – AURORA EXPANSION Purchaser Name: JURONG ENGINEERING LTD (JEL) Honeywell Job Number: 20064 Honeywell Project Name: AURORA		Internal Acceptance Test (IAT) <i>Honeywell</i>			Factory Acceptance Test (FAT) <i>Honeywell/ Purchaser/ End-user</i>		
		Date:			Date:		
Test#	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
EBR SERVER CONFIGURATION VERIFICATION							
1.1	Verify Computer / HostName: 30CKA10GK612 Step: Run >> Cmd >> Type "hostname" (Enter)						
1.2	CPU: Intel ® Xeon ® E-2378 CPU @ 2.60GHz 2.59 GHz Step: Right click on Start >> System>> Device Specifications >> Processor.						
1.3	Memory: 32 GB Step: Right click on Start >> System>> Device Specifications >> RAM.						
1.4	Windows OS version: Windows Server 2019 Standard Step: Right click on Start >> System>> Windows Specifications >> Edition						
1.5	Hard disk Allocation: 893 GB Step: This PC >> Devices and drives >> Local disk (C:)						
1.6	Verify IP address, Subnet mask & Gateway IP configured. Step: Run >> Cmd >> Type "ipconfig" (Enter)						
1.7	Windows license activation: Activated Step: Run >> Cmd >> Type "slmgr.vbs -xpr" (Enter)						

Test#	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PAS S
1.8	Windows Firewall: Enabled Step: Search Control Panel >> System & Security >> Windows Defender Firewall						
1.9	Remote Desktop: Disable Step: Search for Remote Desktop Settings >> Remote Desktop >> OFF						
1.10	Time Zone & Time: • Time Zone: (UTC+08:00 Kuala Lumpur, Singapore) Step: Run >> Cmd >> Type "tzutil /g" (Enter)						
1.11	Microsoft OS Patches applied: Note: To apply MS patches prior to site deployment Step: Right click on Windows >> Settings >> Update & Security						
PHYSICAL VERIFICATION							
2.1	Dell EMC PE R350, inspection to verify physical damages (if any)						
2.2	Dell EMC PowerEdge R350, power supply status check						
STORAGE AND BACKUP RESTORATION							
3.1	Ensure that all L3 servers are included as managed computers.						
3.2	Verify the storage node is configured to the designated storage device/location in 30CKA10GK612						
3.3	Upon time lapse, check on the activities on the computers. The backup job should start. At the end of the backups, check backup status and ensure the backup files are stored in the EBR Image Storage location (NAS shared folder).						
3.4	Create or delete a file in C Drive and take a backup of the node using EBR manager.						
3.5	Perform restoration on the node with the backup archive done to verify the restoration. After restoration, verify that the deleted file is present						
3.6	Perform a backup procedure via the NAS						
Purpose: Overall acceptance of this module by the End User/ Purchase		Date:		Date:			
		Sign:		Sign:			

2.10 NAS CONFIGURATION

2.10.1 NAS SERVER CONFIGURATION

End-User Name: NUR POWER – AURORA EXPANSION Purchaser Name: JURONG ENGINEERING LTD (JEL) Honeywell Job Number: 20064 Honeywell Project Name: AURORA		Internal Acceptance Test (IAT) <i>Honeywell</i>			Factory Acceptance Test (FAT) <i>Honeywell/ Purchaser/ End-user</i>		
		Date:			Date:		
Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
SERVER CONFIGURATION							
1.1	CPU: Intel® Xeon® E-2324G CPU @ 3.10GHz 3.10 GHz Step: Right click on Start >> System>> Device Specifications >> Processor.						
1.2	Memory: 8 GB Step: Right click on Start >> System>> Device Specifications >> RAM.						
1.3	Windows OS version: Windows Server 2019 Standard Step: Right click on Start >> System>> Windows Specifications >> Edition						
1.4	Hard disk Allocation: 200 GB for C and 3.44TB for D Step: This PC >> Devices and drives >> Local disk (C:) & Backup (D:)						
1.5	Dell Power Vault NX440 Service Tag: G592JZ3 Step: Check the Tag in the device OR Run >> Cmd >> Type "wmic bios get serialnumber" (Enter)						
1.6	Verify IP address, Subnet mask & Gateway IP configured. Step: Run >> Cmd >> Type "ipconfig" (Enter)						
1.7	Verify Computer Name: 30CKA10GK611 Step: Run >> Cmd >> Type "hostname" (Enter)						
1.8	Windows license activation: Activated Step: Run >> Cmd >> Type "slmgr.vbs -xpr" (Enter) OR Run >> Control >> System and Security >> System >> Windows Activation						

Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
1.9	Windows Firewall: Enabled Step: Search Control Panel >> System & Security >> Windows Defender Firewall						
1.10	Remote Desktop: Enabled Step: Search for Remote Desktop Settings >> Remote Desktop >> ON						
1.11	Time Zone & Time: • Time Zone: (UTC+08:00 Kuala Lumpur, Singapore) Step: Run >> Cmd >> Type "tzutil /g" (Enter)						
1.12	Microsoft OS Patches applied: Note: To apply MS patches prior to site deployment Step: Right click on Windows >> Settings >> Update & Security						
PHYSICAL VERIFICATION							
2.1	Dell Power Vault NX440 inspection to verify physical damages (if any)						
2.2	Dell Power Vault NX440 power supply status check						
CONFIGURATION VERIFICATION							
3.1	Joined domain: NURAURORA-PIN.local Step: Run >> Type "dsa.msc"						
3.2	Verify backup location in NAS (30CKA10GK611) Step: D:\NASShare\Backup\						
3.3	Verify 30CKA10GK611 is registered as a Storage Node in EBR						
Purpose: Overall acceptance of this module by the End User/ Purchase		Date:		Date:			
		Sign:		Sign:			

2.11 NETWORK INFRA CONFIGURATION

2.11.1 L2.5 – SWITCH (Primary)

End-User Name: NUR POWER – AURORA EXPANSION Purchaser Name: JURONG ENGINEERING LTD (JEL) Honeywell Job Number: 20064 Honeywell Project Name: AURORA				Internal Acceptance Test (IAT) <i>Honeywell</i>			Factory Acceptance Test (FAT) <i>Honeywell/ Purchaser/ End-user</i>		
				Reviewer:			Reviewer:		
				Date:			Date:		
Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS		
HARDWARE AND SOFTWARE TEST									
1.1	<ul style="list-style-type: none"> Host Name: 30CYD10GK653 Model: C9200-24T-4G-A Serial No: FOC26469T99 Step: <i>show inventory</i>								
1.2	Verify if power cable is connected								
1.3	Verify if all network cables are connected as detailed in Network Configuration								
1.4	Verify if all cables are correctly labelled								
1.5	Verify IOS is loaded in the switch <ul style="list-style-type: none"> IOS Version: IOS XE 17.06.05 								
CONFIGURATION TEST									
2.1	Verify IP address of switch is correct as detailed in Network Configuration Step: <i>show ip interface brief</i>								
2.2	Verify that all ports connected to Physical Hosts are configured for Duplex auto and speed auto operation. Step: <i>show interfaces switchport</i>								
2.3	Verify the password on the switch Step: <i>show run inc secret</i>								

Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
2.4	Verify no CRC errors on all connected ports Step: <i>show interface counters errors non-zero inc CRC</i>						
2.5	Verify uptime of the switch Step: <i>show version</i>						
2.6	Verify switch Management IP address, Subnet mask & Gateway IP of switch is configured. Step: <i>show run</i>						
2.7	Verify the NTP settings in the switch configuration. Note: Time zone is set to UTC. Step: <i>show clock</i>						
2.8	Verify description of VLAN(s). Step: <i>show vlan brief</i>						
2.9	Verify if the port descriptions in the switch is included. Step: <i>show interface desc</i>						
2.10	Verify if unused ports are shutdown. Step: <i>show int status</i>						
2.11	Check interface status Step: <i>show interface status</i>						
FUNCTIONALITY TEST							
3.1	Review Logs Step: <i>show logs</i>						
3.2	Verify fan status is running normally. Step: <i>show environment all</i>						
3.3	Verify no hardware error Step: <i>show log</i>						
3.4	Check switch performance – last 72 hrs max & avg for CPU. – last 72 hrs max & avg for Memory. Recommended average CPU utilization: < 75% Recommended average free Memory: < 30% Step: • <i>show processes cpu history</i> • <i>show processes cpu sorted</i> • <i>show mem sta history</i>						
3.5	Verify ssh and console access Step: <i>show ip ssh</i>						
Purpose: Overall acceptance of this module by the End User/ Purchase		Date:		Date:			
		Sign:		Sign:			

2.11.2 L2.5 – SWITCH (Secondary)

End-User Name: NUR POWER – AURORA EXPANSION Purchaser Name: JURONG ENGINEERING LTD (JEL) Honeywell Job Number: 20064 Honeywell Project Name: AURORA		Internal Acceptance Test (IAT) <i>Honeywell</i>			Factory Acceptance Test (FAT) <i>Honeywell/ Purchaser/ End-user</i>		
				Reviewer:			Reviewer:
		Date:			Date:		
Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
HARDWARE AND SOFTWARE TEST							
1.1	<ul style="list-style-type: none"> Host Name: 30CYD10GK654 Model: C9200-24T-4G-A Serial No: FOC26469TEK Step: <i>show inventory</i>						
1.2	Verify if power cable is connected						
1.3	Verify if all network cables are connected as detailed in Network Configuration						
1.4	Verify if all cables are correctly labelled						
1.5	Verify IOS is loaded in the switch <ul style="list-style-type: none"> IOS Version: IOS XE 17.06.05 						
CONFIGURATION TEST							
2.1	Verify IP address of switch is correct as detailed in Network Configuration Step: <i>show ip interface brief</i>						
2.2	Verify that all ports connected to Physical Hosts are configured for Duplex auto and speed auto operation. Step: <i>show interfaces switchport</i>						
2.3	Verify the password on the switch Step: <i>show run inc secret</i>						

Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
2.4	Verify no CRC errors on all connected ports Step: <i>show interface counters errors non-zero inc CRC</i>						
2.5	Verify uptime of the switch Step: <i>show version</i>						
2.6	Verify switch Management IP address, Subnet mask & Gateway IP of switch is configured. Step: <i>show run</i>						
2.7	Verify the NTP settings in the switch configuration. Note: Time zone is set to UTC. Step: <i>show clock</i>						
2.8	Verify description of VLAN(s). Step: <i>show vlan brief</i>						
2.9	Verify if the port descriptions in the switch is included. Step: <i>show interface desc</i>						
2.10	Verify if unused ports are shutdown. Step: <i>show int status</i>						
2.11	Check interface status Step: <i>show interface status</i>						
FUNCTIONALITY TEST							
3.1	Review Logs Step: <i>show logs</i>						
3.2	Verify fan status is running normally. Step: <i>show environment all</i>						
3.3	Verify no hardware error Step: <i>show log</i>						
3.4	Check switch performance – last 72 hrs max & avg for CPU. – last 72 hrs max & avg for Memory. Recommended average CPU utilization: < 75% Recommended average free Memory: < 30% Step: • <i>show processes cpu history</i> • <i>show processes cpu sorted</i> • <i>show mem sta history</i>						
3.5	Verify ssh and console access Step: <i>show ip ssh</i>						
Purpose: Overall acceptance of this module by the End User/ Purchase		Date:		Date:			
		Sign:		Sign:			

2.11.3 L3 – ROUTER (Primary)

End-User Name: NUR POWER – AURORA EXPANSION Purchaser Name: JURONG ENGINEERING LTD (JEL) Honeywell Job Number: 20064 Honeywell Project Name: AURORA		Internal Acceptance Test (IAT) <i>Honeywell</i>			Factory Acceptance Test (FAT) <i>Honeywell/Purchaser/End-user</i>		
		Date:			Date:		
Test #	Detail Test Items	P A S S	F A I L	Re-Test PASS	P A S S	F A I L	Re-Test PASS
HARDWARE AND SOFTWARE TEST							
1.1	<ul style="list-style-type: none"> Host Name: 30CYD10GK655 Model: C9200-24T-4G-A Serial No: FJC272423GV Step: <i>show inventory</i>						
1.2	Verify if power cable is connected						
1.3	Verify if all network cables are connected as detailed in Network Configuration						
1.4	Verify if all cables are correctly labelled						
1.5	Verify IOS is loaded in the switch <ul style="list-style-type: none"> IOS Version: IOS XE 17.06.05 						
CONFIGURATION TEST							
2.1	Verify IP address of switch is correct as detailed in Network Configuration Step: <i>show ip interface brief</i>						
2.2	Verify that all ports connected to Physical Hosts are configured for Duplex auto and speed auto operation. Step: <i>show interfaces switchport</i>						
2.3	Verify the password on the switch Step: <i>show run inc secret</i>						

Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
2.4	Verify no CRC errors on all connected ports Step: <i>show interface counters errors non-zero inc CRC</i>						
2.5	Verify uptime of the switch Step: <i>show version</i>						
2.6	Verify switch Management IP address, Subnet mask & Gateway IP of switch is configured. Step: <i>show run</i>						
2.7	Verify the NTP settings in the switch configuration. Note: Time zone is set to UTC. Step: <i>show clock</i>						
2.8	Verify description of VLAN(s). Step: <i>show vlan brief</i>						
2.9	Verify if the port descriptions in the switch is included. Step: <i>show interface desc</i>						
2.10	Verify if unused ports are shutdown. Step: <i>show int status</i>						
2.11	Check interface status Step: <i>show interface status</i>						
FUNCTIONALITY TEST							
3.1	Review Logs Step: <i>show logs</i>						
3.2	Verify fan status is running normally. Step: <i>show environment all</i>						
3.3	Verify no hardware error Step: <i>show log</i>						
3.4	Check switch performance – last 72 hrs max & avg for CPU. – last 72 hrs max & avg for Memory. Recommended average CPU utilization: < 75% Recommended average free Memory: < 30% Step: • <i>show processes cpu history</i> • <i>show processes cpu sorted</i> • <i>show mem sta history</i>						
3.5	Verify ssh and console access Step: <i>show ip ssh</i>						
Purpose: Overall acceptance of this module by the End User/ Purchase		Date:		Date:			
		Sign:		Sign:			

2.11.4 L3 – ROUTER (Secondary)

End-User Name: NUR POWER – AURORA EXPANSION Purchaser Name: JURONG ENGINEERING LTD (JEL) Honeywell Job Number: 20064 Honeywell Project Name: AURORA		Internal Acceptance Test (IAT) <i>Honeywell</i>			Factory Acceptance Test (FAT) <i>Honeywell/ Purchaser/ End-user</i>		
		Date:			Date:		
Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
HARDWARE AND SOFTWARE TEST							
1.1	<ul style="list-style-type: none"> Host Name: 30CYD10GK656 Model: C9200-24T-4G-A Serial No: FJC272422LV Step: <i>show inventory</i>						
1.2	Verify if power cable is connected						
1.3	Verify if all network cables are connected as detailed in Network Configuration						
1.4	Verify if all cables are correctly labelled						
1.5	Verify IOS is loaded in the switch <ul style="list-style-type: none"> IOS Version: IOS XE 17.06.05 						
CONFIGURATION TEST							
2.1	Verify IP address of switch is correct as detailed in Network Configuration Step: <i>show ip interface brief</i>						
2.2	Verify that all ports connected to Physical Hosts are configured for Duplex auto and speed auto operation. Step: <i>show interfaces switchport</i>						
2.3	Verify the password on the switch Step: <i>show run inc secret</i>						

Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
2.4	Verify no CRC errors on all connected ports Step: <i>show interface counters errors non-zero inc CRC</i>						
2.5	Verify uptime of the switch Step: <i>show version</i>						
2.6	Verify switch Management IP address, Subnet mask & Gateway IP of switch is configured. Step: <i>show run</i>						
2.7	Verify the NTP settings in the switch configuration. Note: Time zone is set to UTC. Step: <i>show clock</i>						
2.8	Verify description of VLAN(s). Step: <i>show vlan brief</i>						
2.9	Verify if the port descriptions in the switch is included. Step: <i>show interface desc</i>						
2.10	Verify if unused ports are shutdown. Step: <i>show int status</i>						
2.11	Check interface status Step: <i>show interface status</i>						
FUNCTIONALITY TEST							
3.1	Review Logs Step: <i>show logs</i>						
3.2	Verify fan status is running normally. Step: <i>show environment all</i>						
3.3	Verify no hardware error Step: <i>show log</i>						
3.4	Check switch performance – last 72 hrs max & avg for CPU. – last 72 hrs max & avg for Memory. Recommended average CPU utilization: < 75% Recommended average free Memory: < 30% Step: • <i>show processes cpu history</i> • <i>show processes cpu sorted</i> • <i>show mem sta history</i>						
3.5	Verify ssh and console access Step: <i>show ip ssh</i>						
Purpose: Overall acceptance of this module by the End User/ Purchase		Date:		Date:			
		Sign:		Sign:			

2.11.5 L3.5-SWITCH (Primary)

End-User Name: NUR POWER – AURORA EXPANSION Purchaser Name: JURONG ENGINEERING LTD (JEL) Honeywell Job Number: 20064 Honeywell Project Name: AURORA		Internal Acceptance Test (IAT) <i>Honeywell</i>			Factory Acceptance Test (FAT) <i>Honeywell/ Purchaser/ End-user</i>		
				Reviewer:			Reviewer:
		Date:			Date:		
Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
HARDWARE AND SOFTWARE TEST							
1.1	<ul style="list-style-type: none"> Host Name: 30CYD10GK657 Model: C9200-24T-4G-A Serial No: JAE26341MVT Step: <i>show inventory</i>						
1.2	Verify if power cable is connected						
1.3	Verify if all network cables are connected as detailed in Network Configuration						
1.4	Verify if all cables are correctly labelled						
1.5	Verify IOS is loaded in the switch <ul style="list-style-type: none"> IOS Version: IOS XE 17.06.05 						
CONFIGURATION TEST							
2.1	Verify IP address of switch is correct as detailed in Network Configuration Step: <i>show ip interface brief</i>						
2.2	Verify that all ports connected to Physical Hosts are configured for Duplex auto and speed auto operation. Step: <i>show interfaces switchport</i>						
2.3	Verify the password on the switch Step: <i>show run inc secret</i>						

Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
2.4	Verify no CRC errors on all connected ports Step: <i>show interface counters errors non-zero inc CRC</i>						
2.5	Verify uptime of the switch Step: <i>show version</i>						
2.6	Verify switch Management IP address, Subnet mask & Gateway IP of switch is configured. Step: <i>show run</i>						
2.7	Verify the NTP settings in the switch configuration. Note: Time zone is set to UTC. Step: <i>show clock</i>						
2.8	Verify description of VLAN(s). Step: <i>show vlan brief</i>						
2.9	Verify if the port descriptions in the switch is included. Step: <i>show interface desc</i>						
2.10	Verify if unused ports are shutdown. Step: <i>show int status</i>						
2.11	Check interface status Step: <i>show interface status</i>						
FUNCTIONALITY TEST							
3.1	Review Logs Step: <i>show logs</i>						
3.2	Verify fan status is running normally. Step: <i>show environment all</i>						
3.3	Verify no hardware error Step: <i>show log</i>						
3.4	Check switch performance – last 72 hrs max & avg for CPU. – last 72 hrs max & avg for Memory. Recommended average CPU utilization: < 75% Recommended average free Memory: < 30% Step: • <i>show processes cpu history</i> • <i>show processes cpu sorted</i> • <i>show mem sta history</i>						
3.5	Verify ssh and console access Step: <i>show ip ssh</i>						
Purpose: Overall acceptance of this module by the End User/ Purchase		Date:		Date:			
		Sign:		Sign:			

2.11.6 L3.5-SWITCH (Secondary)

End-User Name: NUR POWER – AURORA EXPANSION Purchaser Name: JURONG ENGINEERING LTD (JEL) Honeywell Job Number: 20064 Honeywell Project Name: AURORA		Internal Acceptance Test (IAT) <i>Honeywell</i>			Factory Acceptance Test (FAT) <i>Honeywell/Purchaser/End-user</i>		
		Date:			Date:		
Test #	Detail Test Items	P A S S	F A I L	Re-Test PASS	P A S S	F A I L	Re-Test PASS
HARDWARE AND SOFTWARE TEST							
1.1	<ul style="list-style-type: none"> Host Name: 30CYD10GK658 Model: C9200-24T-4G-A Serial No: FOC26272ZRV Step: <i>show inventory</i>						
1.2	Verify if power cable is connected						
1.3	Verify if all network cables are connected as detailed in Network Configuration						
1.4	Verify if all cables are correctly labelled						
1.5	Verify IOS is loaded in the switch <ul style="list-style-type: none"> IOS Version: IOS XE 17.06.05 						
CONFIGURATION TEST							
2.1	Verify IP address of switch is correct as detailed in Network Configuration Step: <i>show ip interface brief</i>						
2.2	Verify that all ports connected to Physical Hosts are configured for Duplex auto and speed auto operation. Step: <i>show interfaces switchport</i>						
2.3	Verify the password on the switch Step: <i>show run inc secret</i>						

Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
2.4	Verify no CRC errors on all connected ports Step: <i>show interface counters errors non-zero inc CRC</i>						
2.5	Verify uptime of the switch Step: <i>show version</i>						
2.6	Verify switch Management IP address, Subnet mask & Gateway IP of switch is configured. Step: <i>show run</i>						
2.7	Verify the NTP settings in the switch configuration. Note: Time zone is set to UTC. Step: <i>show clock</i>						
2.8	Verify description of VLAN(s). Step: <i>show vlan brief</i>						
2.9	Verify if the port descriptions in the switch is included. Step: <i>show interface desc</i>						
2.10	Verify if unused ports are shutdown. Step: <i>show int status</i>						
2.11	Check interface status Step: <i>show interface status</i>						
FUNCTIONALITY TEST							
3.1	Review Logs Step: <i>show logs</i>						
3.2	Verify fan status is running normally. Step: <i>show environment all</i>						
3.3	Verify no hardware error Step: <i>show log</i>						
3.4	Check switch performance – last 72 hrs max & avg for CPU. – last 72 hrs max & avg for Memory. Recommended average CPU utilization: < 75% Recommended average free Memory: < 30% Step: • <i>show processes cpu history</i> • <i>show processes cpu sorted</i> • <i>show mem sta history</i>						
3.5	Verify ssh and console access Step: <i>show ip ssh</i>						
Purpose: Overall acceptance of this module by the End User/ Purchase		Date:		Date:			
		Sign:		Sign:			

3.0 FIREWALL CONFIGURATION

3.1 L3.5 FIREWALL (Primary)

End-User Name: NUR POWER – AURORA EXPANSION Purchaser Name: JURONG ENGINEERING LTD (JEL) Honeywell Job Number: 20064 Honeywell Project Name: AURORA		Internal Acceptance Test (IAT) <i>Honeywell</i>			Factory Acceptance Test (FAT) <i>Honeywell/ Purchaser/ End-user</i>		
		Reviewer:			Reviewer:		
Date:			Date:				
Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
HARDWARE AND SOFTWARE TEST							
1.1	<ul style="list-style-type: none"> • Hostname: 30CYD02GK659 • Name: Fortinet 101F • Serial No: FG101FTK23019568 						
1.2	Verify if power cable is connected						
1.3	Verify if all network cables are connected as detailed in Network Configuration						
1.4	Verify if all cables are correctly labelled						
1.5	Check the Firmware is loaded in the firewall. <ul style="list-style-type: none"> • Firmware: FortiOS 7.4.3 Step: Login to Firewall >> Dashboard						
1.6	Verify FG-101F license. Step: Login to Firewall >> System >> FortiGuard						
CONFIGURATION TEST							
2.1	Check the Local User Account and Permission settings. Step: Login to Firewall >> System >> Administrator						
2.2	Verify Management IP address settings. Step: Login to Firewall >> Network >> Interface >> [mgmt]						
2.3	Verify Hostname settings. Step: Login to Firewall >> Dashboard						
2.4	Check the NTP settings. Step: Login to Firewall >> System >> Settings						

Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
2.5	Verify Time Zone and Local Time. Step: Login to Firewall >> System Settings >> System Time						
2.6	Verify network interface settings. Step: Login to Firewall >> Network >> Interface						
2.7	Verify DNS settings. Step: Login to Firewall >> Network >> DNS						
2.8	Check static routes settings. Step: Login to Firewall >> Network >> Static Route						
2.9	Check high availability (HA) settings and synchronization status. Step: Login to Firewall >> System >> HA						
2.10	Check IP Address object settings. Step: Login to Firewall >> Policy & Objects >> Address						
2.11	Check Services Object settings. Step: Login to Firewall >> Policy & Objects >> Services						
2.12	Check the Firewall policy configured correctly. Step: Login to Firewall >> Policy & Objects >> Firewall Policy						
FUNCTIONALITY TEST							
3.1	Check if firewall policy is functioning. Step: Login to Firewall >> Policy & Objects >> Firewall Policy						
3.2	Check configuration backup / restore settings. Step: Login to Firewall >> Dashboard						
3.3	Verify forward traffic logs. Step: Login to Firewall >> Log & Report >> Forward Traffic						
3.4	Verify system event logs. Step: Login to Firewall >> Log & Report >> System Events						
Purpose: Overall acceptance of this module by the End User/ Purchase		Date:		Date:			
		Sign:		Sign:			

3.2 L3.5 FIREWALL (Secondary)

End-User Name: NUR POWER – AURORA EXPANSION Purchaser Name: JURONG ENGINEERING LTD (JEL) Honeywell Job Number: 20064 Honeywell Project Name: AURORA		Internal Acceptance Test (IAT) <i>Honeywell</i>			Factory Acceptance Test (FAT) <i>Honeywell/ Purchaser/ End-user</i>		
		Reviewer:			Reviewer:		
Date:			Date:				
Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
HARDWARE AND SOFTWARE TEST							
1.1	<ul style="list-style-type: none"> • Hostname: 30CYD02GK660 • Name: Fortinet 101F • Serial No: FG101FTK23019213 						
1.2	Verify if power cable is connected						
1.3	Verify if all network cables are connected as detailed in Network Configuration						
1.4	Verify if all cables are correctly labelled						
1.5	Check the Firmware is loaded in the firewall. <ul style="list-style-type: none"> • Firmware: FortiOS 7.4.3 Step: Login to Firewall >> Dashboard						
1.6	Verify FG-101F license. Step: Login to Firewall >> System >> FortiGuard						
CONFIGURATION TEST							
2.1	Check the Local User Account and Permission settings. Step: Login to Firewall >> System >> Administrator						
2.2	Verify Management IP address settings. Step: Login to Firewall >> Network >> Interface >> [mgmt]						
2.3	Verify Hostname settings. Step: Login to Firewall >> Dashboard						
2.4	Check the NTP settings. Step: Login to Firewall >> System >> Settings						

Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
2.5	Verify Time Zone and Local Time. Step: Login to Firewall >> System Settings >> System Time						
2.6	Verify network interface settings. Step: Login to Firewall >> Network >> Interface						
2.7	Verify DNS settings. Step: Login to Firewall >> Network >> DNS						
2.8	Check static routes settings. Step: Login to Firewall >> Network >> Static Route						
2.9	Check high availability (HA) settings and synchronization status. Step: Login to Firewall >> System >> HA						
2.10	Check IP Address object settings. Step: Login to Firewall >> Policy & Objects >> Address						
2.11	Check Services Object settings. Step: Login to Firewall >> Policy & Objects >> Services						
2.12	Check the Firewall policy configured correctly. Step: Login to Firewall >> Policy & Objects >> Firewall Policy						
FUNCTIONALITY TEST							
3.1	Check if firewall policy is functioning. Step: Login to Firewall >> Policy & Objects >> Firewall Policy						
3.2	Check configuration backup / restore settings. Step: Login to Firewall >> Dashboard						
3.3	Verify forward traffic logs. Step: Login to Firewall >> Log & Report >> Forward Traffic						
3.4	Verify system event logs. Step: Login to Firewall >> Log & Report >> System Events						
Purpose: Overall acceptance of this module by the End User/ Purchase		Date:		Date:			
		Sign:		Sign:			

4.0 ANTI-VIRUS CONFIGURATION (AV)

End-User Name: NUR POWER – AURORA EXPANSION Purchaser Name: JURONG ENGINEERING LTD (JEL) Honeywell Job Number: 20064 Honeywell Project Name: AURORA				Internal Acceptance Test (IAT) <i>Honeywell</i>			Factory Acceptance Test (FAT) <i>Honeywell/ Purchaser/ End-user</i>		
				Reviewer:			Reviewer:		
				Date:			Date:		
Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS		
ePO SERVER CONFIGURATION VERIFICATION									
1.1	Verify Operating System i.e. Microsoft Windows Server 2019								
1.2	Verify application name : Trellix ePolicy Orchestrator								
1.3	Trellix ePO Server: 5.10 Trellix Endpoint Security Platform: 10.7.0 Minor Version 6149 Trellix Windows Agent: 5.8.0								
1.6	Verify TCP/IP setting IP: 10.2.30.11 Subnet Mask: 255.255.255.0 Gateway: 10.2.30.1								
1.7	Verify Hostname: 30CKA01GK621								
2.0 ePO VERIFICATION									
2.1	Verify ePO Server can access following path http: \\30CKA10GK621.NURAURORA-PIN.local:8425)								
2.2	Verify latest AV DAT and AV engines are downloaded to the ePO Server. Step: Click Master Repository >> Pull Now								
2.3	Verify ENS installation status on all nodes. Step: System Tree >> My Organization >> _NUR_GENERATION_KULIM >> NURAURORA SYSTEMS >> Check Managed status								

Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
2.4	Verify McAfee ePO System tree is populated with all nodes. Step: System Tree >> My Organization >> _NUR_GENERATION_KULIM >> NURAURORA SYSTEMS						
2.5	Verify that the Auto Update task schedule is enabled for All Nodes Step: System Tree >> Select any Node >> Assigned Policies						
2.6	Verify Antivirus signature is updated on target nodes, Antivirus DAT version installed at ePO Server and Target node should be same. Step: System Tree >> Select any Node >> Assigned Policies						
2.7	Verify file/ folder exclusions are configured on Trellix ePO server Step: System Tree >> Select any Node >> Assigned Policies						
2.8	Verify Script Scan and Buffer Overflow Protection are disabled for EPKS nodes. Step: System Tree >> Select any Node >> Assigned Policies						
2.9	Verify the Agent Communication Status to ePO Step: System Tree >> Click on the Node >> System Information						
2.10	Verify file/ folder exclusions are applied on the EPKS nodes Step: System Tree >> Select any Node >> Assigned Policies						
2.11	Verify the Local Authentication						
2.12	Verify the AD Authentication						
2.17	Verify ePO Logs. Audit log						
2.19	Verify one-time Full Scan have been performed for sample Nodes						
Purpose: Overall acceptance of this module by the End User/ Purchase		Date:		Date:			
		Sign:		Sign:			

5.0 WINDOWS SERVER UPDATE SERVICES (WSUS)

End-User Name: NUR POWER – AURORA EXPANSION Purchaser Name: JURONG ENGINEERING LTD (JEL) Honeywell Job Number: 20064 Honeywell Project Name: AURORA	Internal Acceptance Test (IAT) Honeywell	Factory Acceptance Test (FAT) Honeywell/Purchaser/End-user
	Reviewer:	Reviewer:
	Date:	Date:

Test #	Detail Test Items	PASS	FAIL	Re-Test PASS	PASS	FAIL	Re-Test PASS
SERVICE NODE CONFIGURATION VERIFICATION							
1.1	Windows OS version: Windows Server 2019 Standard CPU: 6vCPUs						
1.2	Memory: 16GB						
1.3	Hard disk allocation: C: 100GB ; D: 200GB						
1.5	Verify IP address: 10.2.30.12 Subnet IP: 255.255.255.0 Gateway IP configured: 10.2.30.1						
1.6	Verify Computer Name: 30CKA01GK620						
1.7	Window license activation: Activated Step: Run >>cmd >> slmgr /xpr						
1.9	Verify that VMware Tools Time synchronization is disabled. Step: VM Host >> Manage >> NTP						
1.10	Windows Update Verification: Verify that update check is successful with WSUS service.						
1.11	Joined domain: NURAUORA-PIN.LOCAL						
1.12	Windows Firewall: Enabled						
1.13	Remote Desktop: Disabled						

Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
SERVICE NODE FUNCTIONALITY TEST							
2.1	Check Windows update settings on client computers						
2.2	Check on appointed test system for available patch notification						
2.3	Check computer assignments on the WSUS server						
2.4	Ensure that all computers are connected to the WSUS server and clients run recent agent.						
Purpose: Overall acceptance of this module by the End User/ Purchase		Date:		Date:			
		Sign:		Sign:			

6.0 SECURE MEDIA EXCHANGE (SMX)

End-User Name: NUR POWER – AURORA EXPANSION Purchaser Name: JURONG ENGINEERING LTD (JEL) Honeywell Job Number: 20064 Honeywell Project Name: AURORA	Internal Acceptance Test (IAT) <i>Honeywell</i>	Factory Acceptance Test (FAT) <i>Honeywell/Purchaser/End-user</i>
	Reviewer:	Reviewer:
	Date:	Date:

Test #	Detail Test Items	PASS	FAIL	Re-Test PASS	PASS	FAIL	Re-Test PASS
HARDWARE AND SOFTWARE TEST							
1.1	Perform a hardware visual inspection of the SMX appliance. <ul style="list-style-type: none"> SMX appliance/tablet USB Adaptor Power adaptor USB Thumbdrive 						
1.2	Powered ON and login screen display <i>ON button at the top-right of the device</i>						
1.3	Verify Device Hostname: SMX_H9G0BT3 Step: Run>>Cmd >> Hostname						
1.5	Verify IP address settings: <Refer to IP Address table> Step: Login as SMXAdmin > Windows > CMD > Enter 'ipconfig /all'						
1.6	Check on the account for login. There are two accounts by default for login <ol style="list-style-type: none"> SMXAdmin SMXUser The passcode in SMXUser is required to perform certain configurations on SMX and also used to logout from SMXUser. Step: Login > Sign-out to Windows > Login as SMXAdmin > Windows > Computer Management > Local Users and Groups						

Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
1.7	Check on the settings in SMXUser <ul style="list-style-type: none"> • Check In/Out • Account & Identity • Create Installer • Import Keys & Certs • Create Backup Keys • Review Logs • About (Version Info) <ul style="list-style-type: none"> - SMX Gateway Version: 202.15.1.3 - SMX Client Version: 202.13.1.3 - BIOS Version: 1.28.0 						
1.9	Check on the Wi-Fi Connection after logging in SMXAdmin <ul style="list-style-type: none"> • Attempt to connect to Wi-Fi Step: Login > Sign-out to Windows > Login as SMXAdmin > Windows > Wi-fi						
FUNCTIONALITY TEST							
SMX Check in Tests							
2.1	Connect any USB device on SMX gateway						
2.2	Perform check-in upon successful scanning						
2.3	Connect the USB to a PC with SMX Client Software						
2.4	Access granted on Checked-in USB device						
SMX Check Out Tests							
2.5	Connect the USB used previously to SMX gateway						
2.6	Select check-out option						
2.7	Upon successful check-out, use the USB device at any non-SMX client PC						

Test #	Detail Test Items	P A S S	F A I L	Re- Test PASS	P A S S	F A I L	Re- Test PASS
Testing on unchecked-in devices at PC with SMX Client Software							
2.8	Plug any unchecked-in USB into PC with SMX Client						
2.9	PC will inform the device is unauthorized and cannot be accessed unless checked-in at SMX gateway						
2.10	Rechecked-in at SMX gateway and repeat the test						
Testing incremental check in functionality (Enabled)							
2.11	Plug in checked-in USB device into PC-1 with SMX Client						
2.12	Copy 5 files into the USB device						
2.13	Plug out and plug in the same USB device to PC-2						
2.14	Ensure the 5 new files are accessible in PC-2						
Testing incremental check in functionality (Disabled)							
2.15	Plug in checked-in USB device into PC-1 with SMX Client						
2.16	Copy 5 files into the USB device						
2.17	Plug out and plug in the same USB device to PC-2						
2.18	Ensure the 5 new files are NOT accessible in PC-2						
Purpose: Overall acceptance of this module by the End User/ Purchase				Date:		Date:	
				Sign:		Sign:	