

# **Assessment Evidence Guide**

## **For**

# **“Cloud Configuration Assistant”**

**Level-4**

**(Summative Assessment)**



**National Vocational & Technical  
Training Commission**

## Instruction Sheet for the Candidate

<b>Title of Qualification:</b> National Vocational Certificate Level 4 in Computer Networking and Cloud Computing (Cloud Configuration Assistant)	<b>CS Code:</b>	<b>Level:4</b>	<b>Version:01</b>
<b>Competency Standard Title:</b> Install Server Operating System Configure Inter-VLAN Routing by Using Multi-Layer Switch (MLS) Configure Basic Wireless Network Perform Window Based Network Administration Perform LINUX Based Network Administration Manage Video Conference and Meeting Install and Configure CCTV and NVR Perform NAS Configuration Develop Program Using Object Oriented Concepts Perform Deployment of Cloud Application Develop Application on Any High-Level Programming Language Perform Debugging of Cloud Application Develop API Functions Build Application by Using Command Line Interface (CLI) and Software Development Kits (SDK) Create Virtual Machines/Hypervisor in a Datacenter Manage Virtual Machines/Hypervisor Perform Basic Green Skills	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time: 05 Hrs</b>		

<b>Candidate Details</b>	<b>Name:</b> .....  <b>Registration/Roll Number:</b> .....
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Guidance for Candidate	<p><b>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration &amp; assessment):</b></p> <p><b>Assessment Task 1:</b></p> <p>Candidate is required to install server OS, configure DHCP server, DNS server and create roaming profile as per instructions given by assessor.</p> <p><b>Assessment Task 2:</b></p> <p>Candidate is required to configure server in a virtual machine hosted in cloud and deploy static page application and test online as per instructions given by assessor.</p> <p><b>And complete:</b></p> <ol style="list-style-type: none"> <li><b>1. Knowledge assessment test (Written or Oral)</b></li> <li><b>2. Portfolios at the time of assessment (if any)</b></li> </ol>
Minimum Evidence Required	<p><b>Assessment Task 1:</b></p> <p>Performance Criteria 1: Configure YAML file.</p> <p>Performance Criteria 2: Create web server gateway interface (WSGI) application.</p> <p>Performance Criteria 3: Write Scripts according to application requirements.</p> <p>Performance Criteria 4: Install the operating system on workstation as required</p> <p>Performance Criteria 5: Perform console connection to the switch</p> <p>Performance Criteria 6: Connect PC's or devices to Switch with internet cables</p> <p>Performance Criteria 7: Assign IP addresses to PC's</p> <p>Performance Criteria 8: Login using default username / password</p> <p>Performance Criteria 9: Configure wireless security</p> <p>Performance Criteria 10: Clean the threat /malware using antivirus tool</p> <p>Performance Criteria 11: Configure DHCP settings.</p> <p>Performance Criteria 12: Change the default administrative password</p> <p>Performance Criteria 13: Install the required software DHCP Server</p> <p>Performance Criteria 14: Configure the DHCP Server</p> <p>Performance Criteria 15: Test the DHCP server with client</p> <p>Performance Criteria 16: Install the required software DNS Server</p> <p>Performance Criteria 17: Configure the DNS Server</p> <p>Performance Criteria 18: Test the DNS server with client</p> <p><b>Assessment Task 2:</b></p>

	<p>Performance Criteria 1: Login to cloud server</p> <p>Performance Criteria 2: Create a new application on cloud server</p> <p>Performance Criteria 3: Configure application</p> <p>Performance Criteria 4: Create web server environment as per requirement (single instance, load balancing or auto scaling environment)</p> <p>Performance Criteria 5: Create worker environment</p> <p>Performance Criteria 6: Deploy application on cloud</p> <p>Performance Criteria 7: Create environment inside a VPC</p> <p>Performance Criteria 8: Configure Web servers with hosting plan</p> <p>Performance Criteria 9: Get request response for a webpage.</p> <p>Performance Criteria 10: Upgrade web application to use WSGI.</p> <p>Performance Criteria 11: Enable logging using diagnostics</p> <p>Performance Criteria 12: Isolate project on using virtualenvs</p> <p>Performance Criteria 13: Use pip to install virtualenv or use Pycharm as you're IDE (as guided by instructor)</p> <p>Performance Criteria 14: Gather information from other applications.</p> <p>Performance Criteria 15: Integrate data using JSON or XML format.</p> <p>Performance Criteria 16: Open hypervisor</p> <p>Performance Criteria 17: Open guest OS</p> <p>Performance Criteria 18: Assign IP address to the VM</p> <p>Performance Criteria 19: Perform operations on VM</p> <p>Performance Criteria 20: Run the hypervisor</p> <p>Performance Criteria 21: Verify the resources</p> <p>Performance Criteria 22: Run the hypervisor</p> <p>Performance Criteria 23: Monitor assigned resources utilization</p>
	<p><b>Portfolios required at the time of assessment (if any) for</b></p> <ol style="list-style-type: none"> <li>1. Folder containing printed document on video conference and meeting applications.</li> <li>2. Folder containing CCTV/IP camera and NVR installation as evidence.</li> <li>3. Folder containing a printed document with all important API functions</li> </ol> <p>Performance Criteria 1: Authorize user for video meeting/conference</p> <p>Performance Criteria 2: Configure all setting and security before starting the meeting</p> <p>Performance Criteria 3: Schedule meeting through Date and time on video application</p> <p>Performance Criteria 4: Install the components for CCTV camera system</p> <p>Performance Criteria 5: Install duct and mount servers in rack</p>

	<p>Performance Criteria 6: Connect the cameras with NVR</p> <p>Performance Criteria 7: Build new services using REST (Representational State Transfer) or SOAP (Simple Object Access Protocol)</p> <p>Performance Criteria 8: Configure API security</p>
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## Assessors Judgment Guide

<b>Candidate Details</b>	Name: ..... Registration/Roll Number: ..... Candidate Signature:.....
<b>Assessment Outcome</b>	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: ..... Assessor's code: ..... Signature of the Assessor: .....

Assessment Summary (to be filled by the assessor)							
Activity	Method					Result	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓				
Knowledge Assessment	✓	✓					
Other Requirement				✓			

## Observation Checklist

Assessment Task 1		Description of Assessment Task 1		
		Install server OS, configure DHCP server, DNS server and create roaming profile.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Configure YAML file.			
2.	Create web server gateway interface (WSGI) application.			
3.	Write Scripts according to application requirements.			
4.	Install the operating system on workstation as required			
5.	Perform console connection to the switch			
6.	Connect PC's or devices to Switch with internet cables			
7.	Assign IP addresses to PC's			
8.	Login using default username / password			
9.	Configure wireless security			
10.	Clean the threat /malware using antivirus tool			
11.	Configure DHCP settings.			
12.	Change the default administrative password			
13.	Install the required software DHCP Server			
14.	Configure the DHCP Server			
15.	Test the DHCP server with client			
16.	Install the required software DNS Server			
17.	Configure the DNS Server			
18.	Test the DNS server with client			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		
Each Assessment Task (with performance criteria)				

<b>Assessment Task 2</b>		<b>Description of Assessment Task 2</b>		
		Configure server in a virtual machine hosted in cloud and deploy static page application and test online.		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Login to cloud server			
2.	Create a new application on cloud server			
3.	Configure application			
4.	Create web server environment as per requirement (single instance, load balancing or auto scaling environment)			
5.	Create worker environment			
6.	Deploy application on cloud			
7.	Create environment inside a VPC			
8.	Configure Web servers with hosting plan			
9.	Get request response for a webpage.			
10.	Upgrade web application to use WSGI.			
11.	Enable logging using diagnostics			
12.	Isolate project on using virtualenvs			
13.	Use pip to install virtualenv or use Pycharm as you're IDE (as guided by instructor)			
14.	Gather information from other applications.			
15.	Integrate data using JSON or XML format.			
16.	Open hypervisor			
17.	Open guest OS			
18.	Assign IP address to the VM			
19.	Perform operations on VM			
20.	Run the hypervisor			
21.	Verify the resources			
22.	Run the hypervisor			
23.	Monitor assigned resources utilization			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		
Each Assessment Task (with performance criteria)				



<b>Portfolio</b>		<b>Description of Portfolio</b>		
		1. Folder containing printed document on video conference and meeting applications. 2. Folder containing CCTV/IP camera and NVR installation as evidence. 3. Folder containing a printed document with all important API functions		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
1.	Authorize user for video meeting/conference			
2.	Configure all setting and security before starting the meeting			
3.	Schedule meeting through Date and time on video application			
4.	Install the components for CCTV camera system			
5.	Install duct and mount servers in rack			
6.	Connect the cameras with NVR			
7.	Build new services using REST (Representational State Transfer) or SOAP (Simple Object Access Protocol)			
8.	Configure API security			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		
Each Assessment Task (with performance criteria)				

## Knowledge Assessment

<b>Title of Qualification:</b> National Vocational Certificate Level 4 in Computer Networking and Cloud Computing (Cloud Configuration Assistant)	<b>CS Code:</b>	<b>Level:</b> 4	<b>Version:</b> 01
<b>Competency Standard Title:</b> Install Server Operating System Configure Inter-VLAN Routing by Using Multi-Layer Switch (MLS) Configure Basic Wireless Network Perform Window Based Network Administration Perform LINUX Based Network Administration Manage Video Conference and Meeting Install and Configure CCTV and NVR Perform NAS Configuration Develop Program Using Object Oriented Concepts Perform Deployment of Cloud Application Develop Application on Any High-Level Programming Language Perform Debugging of Cloud Application Develop API Functions Build Application by Using Command Line Interface (CLI) and Software Development Kits (SDK) Create Virtual Machines/Hypervisor in a Datacenter Manage Virtual Machines/Hypervisor Perform Basic Green Skills	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b> 30 min		

Guidance for Candidate	<b>To complete your assessment for this Competency Standard, you need to answer the questions on the following pages successfully.</b>
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Candidate Details	Name:..... Registration/Roll Number: Candidate Signature:.....
Written Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: ..... Assessor's code: Signature of the Assessor: .....

<b>Questions</b> (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)	
1. What is kernel?	
2. What is VLAN?	
3. What is Access and Trunk Link?	
4. Why WPA encryption is preferred over WEP?	
5. Which are the important configuration files for DHCP server?	
6. List down the names of Video conferencing applications?	
7. What is the difference between DVR /NVR?	

<b>Questions</b> (Candidate confidently answered questions correctly and demonstrated understanding of the topics and their application)	
8. What is Fragment?	
9. What is debugging a code?	
10. What is SLA?	
11. What is SQS dead-letter queue (DLQ)?	

### **ANSWER KEY**

<b>Sr.</b>	<b>Answers</b>
1.	Linux kernel is a free, open-source, monolithic, modular, Unix-like operating system kernel. It is the main component of the Linux operating system (OS) and is the core interface between the computer's hardware and its processes.
2.	A VLAN (virtual LAN) is a subnetwork which can group together collections of devices on separate physical local area networks (LANs).
3.	The access links are part of only one VLAN and carry traffic to only the end devices connected to that particular VLAN. But a trunk link is used to connect switches to other switches or to routers and can carry traffic from multiple VLANs.
4.	WPA brings several security improvements to the airwaves. WPA uses Temporal Key Integrity Protocol (TKIP), which replaces WEP's 40-bit static key with a 128-bit dynamically assigned key. That improvement prevents eavesdroppers from intercepting keys and associating with the WLAN.
5.	The main DHCP configuration file is /etc/dhcp/dhcpd.conf. The file is used to store the network configuration information required by DHCP clients. There is also a sample configuration file at /usr/share/doc/dhcp-[version]/dhcpd.
6.	<ul style="list-style-type: none"><li>• Zoom.</li><li>• Microsoft Teams.</li><li>• Skype.</li><li>• Webex Meetings.</li><li>• Blue Jeans Meetings.</li><li>• GoToMeeting.</li></ul>
7.	A DVR converts analog footage into a digital format, while an NVR typically only works with digital footage. DVR systems process data at the recorder, while NVR systems encode and process data at the camera before transmitting it to the recorder for storage and remote viewing.
8.	Fragments are incomplete sentences. Usually, fragments are pieces of sentences that have become disconnected from the main clause. One of the easiest ways to correct them is to remove the period between the fragment and the main clause
9.	The process of identifying and removing errors from computer hardware or software.
10.	Service Level Agreement - A contract between the provider and the user that specifies the level of service expected during its term.
11.	A Dead Letter Queue is an SQS queue useful for debugging your application or your messaging system, that can isolate messages that can't be processed successfully for later analysis