




PORTFOLIO



Sector	: ELECTRONICS SECTOR
Qualification Title	: COMPUTER HARDWARE SERVICING NC II
Unit of Competency:	INSTALL AND CONFIGURE COMPUTER SYSTEMS
Module Title	: INSTALL AND CONFIGURE COMPUTER SYSTEMS
 <p>WEST PRIME HORIZON INSTITUTE, INC. V. Sagun Cor. M. Roxas, San Francisco District, Pagadian City</p>	

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Plan Training Session


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Name: _____

School/Institution: _____

FORM 4.1 SELF-ASSESSMENT CHECK

CORE COMPETENCIES		
CAN I...?	YES	NO
1. Install and configure computer systems		
1.1 Assemble computer hardware	✓ C	C
1.2 Prepare installer	✓	
1.3 Install operating system and drivers for peripherals/ devices	✓	
1.4 Install application software	✓	
1.5 Conduct testing and documentation		
2. Set-up Computer Networks		
2.1 Install network cables		✓
2.2 Set network configuration		✓
2.3 Set router/Wi-Fi/ wireless access point/repeater configuration		✓
2.4 Inspect and test the configured computer networks		✓
3. Set-up Computer Servers		
3.1 Set-up user access		✓
3.2 Configure network services		✓
3.3 Perform testing, documentation and pre-deployment procedures		✓
4. Maintain and Repair Computer Systems and Networks		
4.1 Plan and prepare for maintenance and repair	✓	
4.2 Maintain computer systems and networks	✓	
4.3 Diagnose faults of computer systems and	✓	


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CORE COMPETENCIES		
CAN I...?	YES	NO
networks		
4.4 Rectify/correct defects in computer systems and networks	✓	
4.5 Inspect and test the computer systems and networks	✓	

Evidences/Proof of Current Competencies

Form 4.2 Evidence of Current Competencies acquired related to Job/Occupation


Current Competencies	Proof/Evidence	Means of validating
1. Install and configure computer systems	<ul style="list-style-type: none"> ▪ Certificate of Training ▪ Actual Demonstration ▪ Certificate of Employment 	<ul style="list-style-type: none"> ▪ Confirmed by the School/Instructor ▪ Performed the correct Demonstration ▪ Oral Questioning
2. Maintain and Repair Computer Systems and Networks	<ul style="list-style-type: none"> ▪ Actual Demonstration ▪ Certificate of Employment ▪ Certificate of Training 	<ul style="list-style-type: none"> ▪ Performed the correct Demonstration ▪ Written test ▪ Confirmed by the School/Instructor

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IDENTIFYING TRAINING GAPS

Form 4.3 Summary of Current Competencies Versus Required Competencies

Required Units of Competency/Learning Outcomes based on CBC	Current Competencies	Training Gaps/Requirements
1. Install and configure computer systems		
1.1 Assemble computer hardware	<ul style="list-style-type: none"> Assemble computer hardware 	
1.2 Prepare installer	<ul style="list-style-type: none"> Prepare installer 	
1.3 Install operating system and drivers for peripherals/ devices	<ul style="list-style-type: none"> Install operating system and drivers for peripherals/ devices 	
1.4 Install application software	<ul style="list-style-type: none"> Install application software 	
1.5 Conduct testing and documentation	<ul style="list-style-type: none"> Conduct testing and documentation 	
2. Set-up Computer Networks		
2.1 Install network cables		<ul style="list-style-type: none"> Install network cables
2.2 Set network configuration		<ul style="list-style-type: none"> Set network configuration


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2.3 Set router/Wi-Fi/wireless access point/repeater configuration		<ul style="list-style-type: none"> Set router/Wi-Fi/wireless access point/repeater configuration
2.4 Inspect and test the configured computer networks		<ul style="list-style-type: none"> Inspect and test the configured computer networks
3. Set-up Computer Servers		
3.1 Set-up user access		<ul style="list-style-type: none"> Set-up user access
3.2 Configure network services		<ul style="list-style-type: none"> Configure network services
3.3 Perform testing, documentation and pre-deployment procedures		<ul style="list-style-type: none"> Perform testing, documentation and pre-deployment procedures
4. Maintain and Repair Computer Systems and Networks		
4.1 Plan and prepare for maintenance and repair	<ul style="list-style-type: none"> Plan and prepare for maintenance and repair 	
4.2 Maintain computer systems and networks	<ul style="list-style-type: none"> Maintain computer systems and networks 	
4.3 Diagnose faults of computer systems and networks	<ul style="list-style-type: none"> Diagnose faults of computer systems and networks 	
4.4 Rectify/correct defects in computer systems and networks	<ul style="list-style-type: none"> Rectify/correct defects in computer systems and networks 	
4.5 Inspect and test the computer systems and networks	<ul style="list-style-type: none"> Inspect and test the computer systems and networks 	

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Trainee's Characteristics

Characteristics of Learners		
Language, literacy and numeracy (LL&N)	Average grade in: English 95 and above 90 to 94 85 to 89 80 to 84 75 to 79	Average grade in: Math 95 and above 90 to 94 85 to 89 80 to 84 75 to 79
Cultural and language background	<p style="text-align: center;">Ethnicity/culture:</p> <p>Cebuano Ilocano Subano Chavacano Muslim Ilongo Others(please specify)_____</p>	
Education & general	<p style="text-align: center;">Highest Educational Attainment:</p>	

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Characteristics of Learners	
knowledge	High School Level High School Graduate College Level College Graduate with units in Master's degree Masteral Graduate With units in Doctoral Level Doctoral Graduate
Special courses	Other courses related to Electronic a. BS Information Technology b. Computer Science c. Others(please specify) _____ a) Male b) Female
Sex	
Age	Your age: 21
Physical ability	3 Disabilities (if any) _____ 4 Existing Health Conditions (Existing illness if any) a. None b. Asthma c. Heart disease d. Anemia e. Hypertension f. Diabetes g. Others(please specify) _____
Previous experience with the TM	Computer Systems Servicing a. NC II Holder
Previous Electronic Training Programs & learning attended	List down trainings program and trainings _____ _____ _____
National	Qualification NC Level



**COMPUTER SYSTEMS
SERVICING NC II**

**PLANNING TRAINING
SESSION**

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Characteristics of Learners	
Certificates	– _____ – _____ –
Learning style	<p>a. Visual - The visual learner takes mental pictures of information given, so in order for this kind of learner to retain information, oral or written, presentations of new information must contain diagrams and drawings, preferably in color. The visual learner can't concentrate with a lot of activity around him and will focus better and learn faster in a quiet study environment.</p> <p>b. Kinesthetic - described as the students in the classroom, who have problems sitting still and who often bounce their legs while tapping their fingers on the desks. They are often referred to as hyperactive students with concentration issues.</p> <p>c. Auditory- a learner who has the ability to remember speeches and lectures in detail but has a hard time with written text. Having to read long texts is pointless and will not be retained by the auditory learner unless it is read aloud.</p>
Special Current Situation	<p>a. Financially challenged</p> <p>b. Working student</p> <p>c. Solo parent</p> <p>d. Want to specialize in the field</p> <p>e. Others(please specify) _____</p>

Form No. 4.4: Training Needs

Training Needs (Learning Outcomes)	Module Title/Module of Instruction
• Set-up user access	Set - up Computer Servers

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<ul style="list-style-type: none"> • Configure network services 	Maintain and Repair Computer Systems and Networks
<ul style="list-style-type: none"> • Perform testing, documentation and pre-deployment procedures 	
<ul style="list-style-type: none"> • Plan and prepare for maintenance and repair 	
<ul style="list-style-type: none"> • Maintain computer systems and networks 	
<ul style="list-style-type: none"> • Diagnose faults of computer systems and networks 	
<ul style="list-style-type: none"> • Rectify/correct defects in computer systems and networks 	
<ul style="list-style-type: none"> • Inspect and test the computer systems and networks 	

Learning Experiences


Learning Outcome 2


Check operational of network services

Learning Activities	Special Instructions
<ul style="list-style-type: none"> • Read Information Sheet 3.2-4 Check operational of network services 	<p>If you have some problem on the content of the information sheet don't hesitate to approach your facilitator.</p> <p>If you feel that you are now Knowledgeable on the content of the information sheet you can now answer self-check provided in the module.</p>
<ul style="list-style-type: none"> • Answer Self check 3.2-4 Check operational of network services 	<p>Compare your answer to the answer key 3.2-4. If you got 100% correct answer in this self-check, you can now move to the next information sheet. If not review the information sheet and go over the self- check again.</p>
<ul style="list-style-type: none"> • Read Information Sheet 3.2-5 Respond to unplanned events or conditions 	<p>If you have some problem on the content of the information sheet don't hesitate to approach your</p>

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	facilitator. if you feel that you are now Knowledgeable on the content of the information sheet you can now answer self-check provided in the module.
<ul style="list-style-type: none"> • Answer Self check 3.2-5 Respond to unplanned events or conditions 	Compare your answer to the answer key 3.2-5. If you got 100% correct answer in this self check, you can now move to the next information sheet. If not review the information sheet and go over the self- check again.

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Information Sheet 3-2.4

Check operational of network services

Learning Objectives:

After reading this information sheet:

- You will know how to Check operational of network services
- Checking an operational of network services

A capability that facilitates a network operation. It typically is provided by a server (which can be running one or more services), based on network protocols running at the application layer in the Open Systems Interconnection (OSI) model of the network. Some examples are domain name system, (DNS) [dynamic](#) host configuration protocol (DHCP), voice over internet protocol (VoIP), etc.

Network Services:

- **Web Server**
 - Respond to browser request
 - Using standard web browsing protocols
 - HTML,HTML5

```

aaronkilik@tecmint ~ $ apache2ctl status
      Apache Server Status for localhost (via 127.0.0.1)


Server Version: Apache/2.4.27 (Ubuntu) OpenSSL/1.1.0f
Server MPM: prefork
Server Built: 2017-07-12T05:42:18

-----
Current Time: Monday, 04-Sep-2017 14:15:07 EAT
Restart Time: Monday, 04-Sep-2017 10:06:01 EAT
Parent Server Config. Generation: 2
Parent Server MPM Generation: 1
Server uptime: 4 hours 9 minutes 6 seconds
Server load: 1.04 0.99 1.01
Total accesses: 58 - Total Traffic: 120 kB
CPU Usage: u.03 s.03 cu0 cs0 - .000401% CPU load
.00388 requests/sec - 8 B/second - 2118 B/request
1 requests currently being processed, 5 idle workers

W_____
.....
.....

Scoreboard Key:
" " Waiting for Connection, "S" Starting up, "R" Reading Request,
"W" Sending Reply, "K" Keepalive (read), "D" DNS Lookup,
"C" Closing connection, "L" Logging, "G" Gracefully finishing,
"I" Idle cleanup of worker, "." Open slot with no current process
aaronkilik@tecmint ~ $

```

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- Web pages are stored on the server
- Downloaded to the browser
- Static pages or built dynamically in real time

- **File Server**

- Centralized storage of documents, spread sheets, videos, pictures, and another files
- Standard system of file management
- SMB (SERVER MESSAGE BLOCK), Apple filing protocol (AFP), etc.
- The front-end hides the protocol
- Copy, Delete, Rename, etc.



- **Print Server**

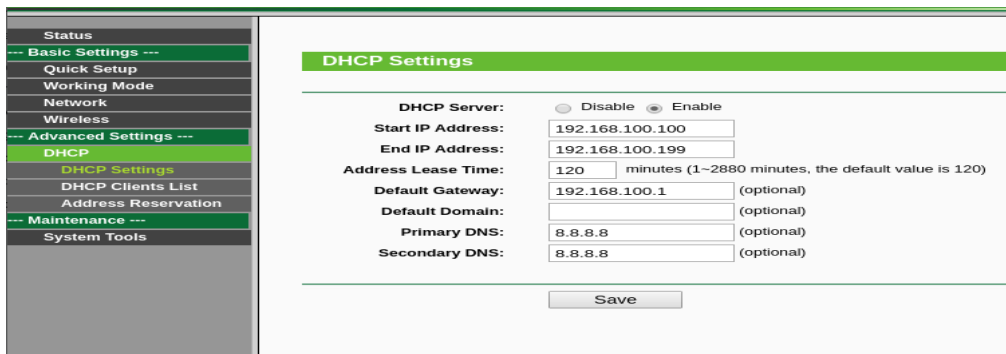
- Connect a printer to the network
- Provide printing services for all network devices
- May be software in a computer
- Computer is connected to the printer
- May be built-in to the printer
- Network adapter and software
- Uses standard printing protocols
- SMB (SERVER MESSAGE BLOCK), IPP (INTERNET PRINTING DAEMON) PROTOCOL), LPD (LINE PRINTER DAEMON)



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- **DHCP Server (Dynamic Host Configuration Protocol)**

- Automatic IP address configuration
- Very common service
- Available on most home routers
- Enterprise DHCP will be redundant
- Usually running on central servers



- **DNS SERVER (Domain Name System)**

- Convert name to IP address
- And vice versa
- Distributed Naming System
- The load is balance across many different servers
- Usually manage by the ISP or enterprises IT department
- A critical resource



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- **Proxy Server**

An intermediate server


- Client makes the request to the proxy
- The proxy performs the actual request
- The proxy provides result back to the client
- Useful features
 - Access control, caching, URL filtering, content scanning



- **Mail Server**

Store your incoming mail


- Send your outgoing mail
- Usually managed by the ISP or the enterprises IT department
 - A complex set of requirements
- Usually one of the most important services

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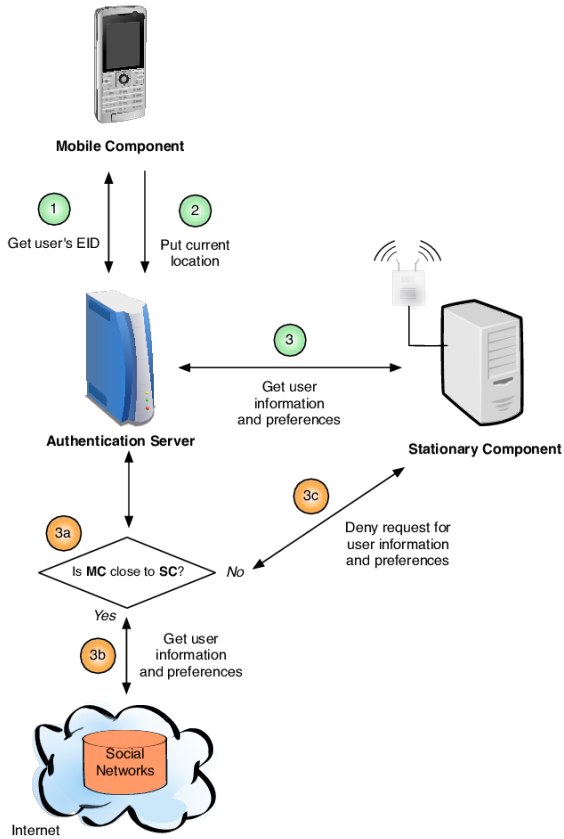
- 24 x 7 support




-

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- **Authentication Server**
 - Centralized management
 - Almost always an enterprise service
 - Not required on a home network
 - Usually a set of redundant servers
 - Always available
 - Extremely important service



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- **IDS and IPS**

Network-based Intrusion Detection System/ Intrusion Prevention System

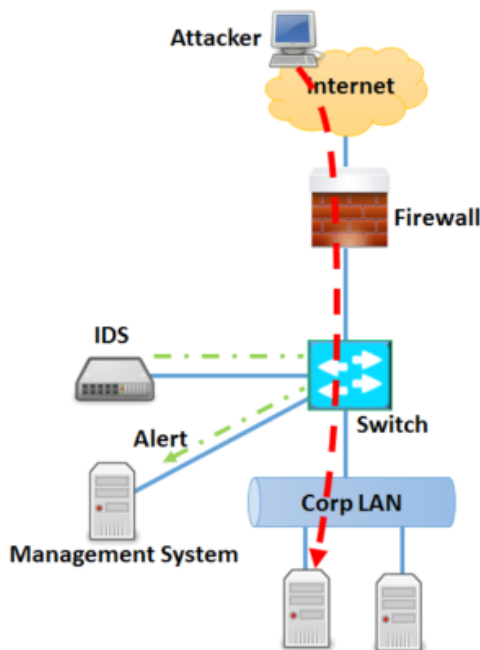
- **Intrusions**

- Exploits against operating systems, applications, etc.
- Buffer overflows, cross-site scripting other vulnerabilities

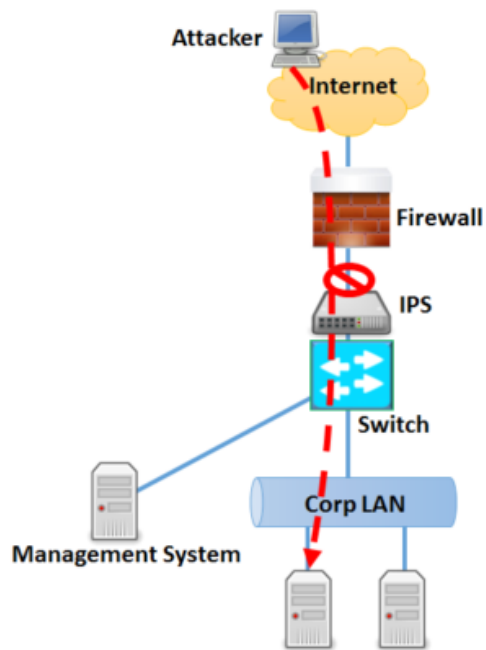
- **Detection vs. Prevention**

- Detection- Alarm or alert
- Prevention- stop it before it's gets into the network

Intrusion Detection System



Intrusion Prevention System



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- **ALL IN ONE SECURITY APPLIANCE**


Next generation firewall, Unified Threat Management (UTM) /Web security gateway

- URL filter /content inspection
- Malware inspection
- Spam filter
- CSU/DSU
- Router, switch
- Firewall
- IDS/IPS
-



All-in-One
Appliance

Anti-Spam | Anti-Virus | Data Leakage Protection | Email Archiving | eDiscovery


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- **LEGACY AND EMBEDDED SYSTEMS**


- Legacy Systems
- Another expression for “really old”
- May also be “really important”
- Learning old things can be just as important as learning the new things

- **EMBEDDED SYSTEMS**

- Purpose built device
- Not usual to have direct access to the operating system
- Alarm system, door security, timecard system

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Self-Check 3.1-1

TRUE OR FALSE Write the word **true** if the statement is correct. And write **false** if the statement is wrong.


_____ 1. Proxy Server is an intermediate server.

_____ 2. Authentication Server Centralized management.

_____ 3. DNS SERVER (Domain Name System) Convert name to IP address and vice versa.

_____ 4. DHCP Server (Dynamic Host Configuration Protocol) Exploits against operating systems, applications, etc.


_____ 5. Mail Server is an intermediate server.

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Answer Key to 3.1-1

TRUE OR FALSE

1. True
2. True
3. True
4. False
5. False

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