

## INSTALL COMPUTER NETWORK SOFTWARE

ISCED UNIT CODE: 0612 451 05A

TVET CDACC UNIT CODE: IT/OS/NSA/CR/03/5/MA

### UNIT DESCRIPTION

This unit covers the competencies required to Install Computer Network Software. It involves the following: Conduct Network Software Simulation, Perform Computer Network software installation, Test Computer Network Software and Monitor computer network software performance.

| Elements<br><i>These describe the key outcomes which make up workplace functions</i> | Performance Criteria<br><i>These are assessable statements which specify the required level of performance for each of the elements</i><br><b><i>(Bold and italicized terms are elaborated in the range)</i></b>                                                                                    |
|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Conduct Network Software Simulation                                               | 1.1. <b><i>Computer network software</i></b> requirements are determined as per work procedure.<br>1.2 <b><i>Computer network simulation Software</i></b> is installed and configured as per software manual.<br>1.3 <b><i>Network Simulation activities</i></b> are created as per work procedure. |
| 2. Perform Computer Network software installation                                    | 2.1 <b><i>Network operating system</i></b> is installed as per work procedure.<br>2.2 <b><i>Network monitoring and management tools</i></b> are installed as per work procedure.<br>2.3 Network monitoring tools are configured as per work procedure.                                              |
| 3 Test Computer Network Software                                                     | 3.1 <b><i>Software testing</i></b> is performed as per user requirements<br>3.2 Corrective measures are performed as per user requirements<br>3.3 <b><i>Computer software</i></b> functionality test report is generated as per work procedure                                                      |
| 4. Conduct Computer Network software user training                                   | 4.1 <i>User skill gap is determined as per work procedure</i><br>4.2 <i>User training manuals are prepared as per software manual.</i><br>4.3 <i>User training is conducted as per user training manual</i><br>4.4 <i>Training report is generated as per work procedure</i>                        |

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| 5. Monitor computer network software performance | <p>5.1 <b><i>Real-time monitoring</i></b> is performed as per work procedure</p> <p>5.2 <b><i>Bandwidth and Throughput analysis is conducted as per work procedures</i></b></p> <p>5.3 <b><i>Network Alerts and notifications are monitored as per work procedures</i></b></p> |
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## RANGE

This section provides work environments and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

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| 1. Computer Network Software may include but not limited to;               | <ul style="list-style-type: none"> <li>● Operating systems</li> <li>● Network protocols and services</li> <li>● Network management software</li> <li>● Remote desktop software</li> <li>● Network backup and recovery software</li> <li>● VoIP software</li> </ul> |
| 2. Computer network simulation Software may include but not limited to;    | <ul style="list-style-type: none"> <li>● Cisco Packet Tracer</li> <li>● Graphical Network Simulator</li> <li>● Wireshark</li> </ul>                                                                                                                                |
| 3. Network Simulation activities may include but not limited to;           | <ul style="list-style-type: none"> <li>● Packet tracer tracer exercises</li> <li>● Wireshark analysis</li> <li>● Cloud based simulations</li> </ul>                                                                                                                |
| 4. Network Operating system may include but not limited to;                | <ul style="list-style-type: none"> <li>● Windows server</li> <li>● Linux-based NOS</li> <li>● Cisco IOS</li> </ul>                                                                                                                                                 |
| 5. Network monitoring and management tools may include but not limited to; | <ul style="list-style-type: none"> <li>● Wireshark</li> <li>● Nagios</li> <li>● Zabbix</li> <li>● Cisco Prime Infrastructure</li> </ul>                                                                                                                            |
| 6. Software testing may include but not limited to;                        | <ul style="list-style-type: none"> <li>● Functional testing</li> <li>● Performance testing</li> <li>● Security testing</li> <li>● Compatibility testing</li> <li>● Scalability testing</li> <li>● Usability testing</li> </ul>                                     |
| 7. Real-time monitoring may include but not limited to;                    | <ul style="list-style-type: none"> <li>● SNMP</li> <li>● Packet sniffers</li> <li>● Performance monitoring tools</li> <li>● Flow-based analytics</li> </ul>                                                                                                        |
| 8. Network Alerts and Notification may include but not limited to;         | <ul style="list-style-type: none"> <li>● Security alerts</li> <li>● Performance alerts</li> <li>● Hardware alerts</li> <li>● Configuration alerts</li> </ul>                                                                                                       |

## REQUIRED KNOWLEDGE AND SKILLS

This section describes the knowledge and skills required for this unit of competency:

### Required knowledge

- Network components and devices
- Network security measures
- Network protocols
- Understanding Operating System
- Environmental conservation
- Workplace safety and health

### Required skills

- Computer Literacy
- Critical thinking
- Problem-solving skills
- Analytical skills
- Technical proficiency
- Storage solutions
- Operating systems proficiency

## EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills range.

|                                   |                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Critical aspects of competency | Assessment requires evidence that the candidate:<br>1.1 Conducted Network Software simulation as per work procedure<br>1.2 Performed Computer Network software installation as per work procedure<br>1.3 Tested Computer Network Software as per work procedure<br>1.4 Monitored network software performance as per work procedure |
| 2. Resource implications          | The following resources should be provided:<br>2.1 Appropriately simulated environment where assessment can take place<br>2.2 Access to relevant work environment<br>2.3 Resources relevant to the proposed activities or tasks; including computers, media, routers, switches, ports etc.                                          |

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| 3. Methods of assessment               | <p>Competency in this unit may be assessed through:</p> <p>3.1 Observation</p> <p>3.2 Oral questioning</p> <p>3.3 Portfolio of evidence</p> <p>3.4 Interviews</p> <p>3.5 Third party report</p> <p>3.6 Practical assessment</p> <p>3.7 Written tests</p> |
| 4. Context of assessment               | <p>This Competency may be assessed:</p> <p>4.1 On the job</p> <p>4.2 In a simulated workplace</p>                                                                                                                                                        |
| 5. Guidance information for assessment | <p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.</p>                                                                                                                                      |