



Australian Government

Department of Education, Employment and Workplace Relations

ICAI3101B Install and manage network protocols

Release: 1

ICAI3101B Install and manage network protocols

Modification History

Not Applicable

Unit Descriptor

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| Unit descriptor | <p>This unit defines the competency required to install and manage network protocols in a networking environment.</p> <p>The following units are linked and form an appropriate cluster:</p> <ul style="list-style-type: none"> • ICAS3121B Administer network peripherals • ICAS3031B Provide advice to clients • ICAS3024B Provide basic system administration • ICAS3032B Provide network systems administration • ICAS3120C Configure and administer a network operating system • ICAT3025B Run standard diagnostic tests |
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Application of the Unit

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| Application of the unit | |
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Licensing/Regulatory Information

Not Applicable

Pre-Requisites

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| Prerequisite units | | |
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Employability Skills Information

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| Employability skills | This unit contains employability skills. |
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Elements and Performance Criteria Pre-Content

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| Elements describe the essential outcomes of a unit of competency. | Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide. |
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Elements and Performance Criteria

| ELEMENT | PERFORMANCE CRITERIA |
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| 1. Install and manage network protocols | 1.1. Select, test and validate appropriate <i>network protocol services</i> 1.2. Design a network addressing system, with subnet and host IDs, including appropriate <i>devices</i> 1.3. Configure hosts and workstations to use IP addresses either manually or through automatic allocation of addresses, such as found with dynamic host configuration protocol (DHCP) |
| 2. Identify network protocol applications | 2.1. Identify a range of well-known network protocol <i>applications</i> 2.2. Evaluate client user requirement and recommend <i>network protocol services</i> 2.3. Apply IP addressing scheme according to approved policies and procedures |

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

- Plain English literacy and communication skills in relation to dealing with clients and team members
- Problem solving skills for a defined range of network functions, problems involving participation in developing strategic initiatives (e.g. when designing a network addressing system with subnet and host IDs, and when using appropriate devices, such as gateways, routers or emulations)
- Report writing skills for business, requiring depth in some areas, analysis and evaluation of information in a defined range of areas
- Project planning skills in relation to set benchmarks and identified scope (e.g. when designing network addressing system with subnet and host IDs, using appropriate devices, such as gateways, routers or emulations)

Required knowledge

- Current industry-accepted hardware and software products, with broad knowledge of general features and capabilities
- Broad general knowledge of the client business domain, business function and organisation (e.g. when installing network protocol applications)

REQUIRED SKILLS AND KNOWLEDGE

- Communications technologies, with broad knowledge of general features and capabilities incorporating substantial depth in some areas
- Substantial knowledge of network protocols (e.g. when installing and configuring network protocol environment)
- Broad knowledge of vendor product range and development directions

Evidence Guide

| EVIDENCE GUIDE | |
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| <p>The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.</p> | |
| Overview of assessment | |
| Critical aspects for assessment and evidence required to demonstrate competency in this unit | <p>Evidence of the following is essential:</p> <ul style="list-style-type: none"> • Assessment must confirm knowledge of network protocols and how this knowledge can be used internally and to facilitate interconnectivity. • Assessment must confirm the ability to install and manage network protocols in a network, including troubleshooting procedures. <p>To demonstrate competency in this unit the person will require access to:</p> <ul style="list-style-type: none"> • Live network • Networked computers |
| Context of and specific resources for assessment | <p>The breadth, depth and complexity of knowledge and skills in this competency would cover selecting, adapting and transferring skills and knowledge to new environments and providing technical advice and some leadership in resolution of specified problems. This would be applied across a range of roles in a variety of contexts with some complexity in the extent and choice of options available.</p> <p>Assessment must ensure:</p> <ul style="list-style-type: none"> • Performance of a defined range of skilled operations, usually within a range of broader related activities involving known routines, methods and procedures, where some discretion and judgement is required in the selection of equipment, services or contingency measures and within known time constraints would be characteristic. • Applications may involve some responsibility for others. Participation in teams including group or team coordination may be involved. |

| EVIDENCE GUIDE | |
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| Method of assessment | <p>The purpose of this unit is to define the standard of performance to be achieved in the workplace. In undertaking training and assessment activities related to this unit, consideration should be given to the implementation of appropriate diversity and accessibility practices in order to accommodate people who may have special needs. Additional guidance on these and related matters is provided in ICA05 Section 1.</p> <ul style="list-style-type: none"> • Competency in this unit should be assessed using summative assessment to ensure consistency of performance in a range of contexts. This unit can be assessed either in the workplace or in a simulated environment. However, simulated activities must closely reflect the workplace to enable full demonstration of competency. • Assessment will usually include observation of real or simulated work processes and procedures and/or performance in a project context as well as questioning on underpinning knowledge and skills. The questioning of team members, supervisors, subordinates, peers and clients where appropriate may provide valuable input to the assessment process. The interdependence of units for assessment purposes may vary with the particular project or scenario. |
| Guidance information for assessment | <p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example:</p> <ul style="list-style-type: none"> • ICAS3121B Administer network peripherals • ICAS3031B Provide advice to clients • ICAS3024B Provide basic system administration • ICAS3032B Provide network systems administration • ICAS3120C Configure and administer a network operating system • ICAT3025B Run standard diagnostic tests <p>An individual demonstrating this competency would be able to:</p> <ul style="list-style-type: none"> • Demonstrate some relevant theoretical knowledge |

EVIDENCE GUIDE

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| | <ul style="list-style-type: none"> • Apply a range of well-developed skills • Apply known solutions to a variety of predictable problems • Perform processes that require a range of well-developed skills where some discretion and judgement is required • Interpret available information, using discretion and judgement • Take responsibility for own outputs in work and learning • Take limited responsibility for the output of others • Maintain knowledge of industry products and services |
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Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

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| <i>Devices</i> may include but is not limited to: | <ul style="list-style-type: none"> • gateways • routers • emulators |
| <i>Network</i> may include but is not limited to: | <ul style="list-style-type: none"> • large and small local area networks (LANs) • wide area networks (WANs) • Virtual Private Networks (VPNs) • wireless local area networks (WLANs) |
| <i>Applications</i> may include but are not limited to: | <ul style="list-style-type: none"> • secure shell • Telnet (not secure) • file transfer protocol (FTP) • simple mail transfer protocol (SMTP) • hypertext transfer protocol (HTTP) • hypertext transfer protocol secure (HTTPS) • secure socket layer (SSL) |

RANGE STATEMENT***Network protocol services***

Some organisations may use a wide range of protocols while others a few or none at all, though more and more companies are using a large number of protocols:

- TCP/IP
- Hypertext transfer protocol (HTTP)
- Simple network management protocol (SNMP)
- H.323 protocol
- Internet protocol (IP)
- Electronic mail protocols
- Address resolution protocol (ARP)
- Wireless application protocol (WAP)
- Dynamic host configuration protocol (DHCP)
- Simple object access protocol (SOAP)
- Internet protocol version 6 (IPv6)
- File transfer protocol (FTP)

Unit Sector(s)

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| Unit sector | Implement |
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Co-requisite units

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| Co-requisite units | |
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Competency field

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