![Australian Government - Department of Education, Employment and Workplace Relations]

# ICAB5160C Build and configure a server

**Release: 1**

![ISC Industry Skills Councils - Creating Australia's Future]

## ICAB5160C Build and configure a server

## Modification History

Not Applicable

## Unit Descriptor

| Unit descriptor | This unit defines the competency required to build, configure and test a server.<br><br>No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication. |
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## Application of the Unit

| Application of the unit | |
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## Licensing/Regulatory Information

Refer to Unit Descriptor

## Pre-Requisites

| Prerequisite units | | |
|---|---|---|
| | ICAA5140C | Design a server |
| | | |

## Employability Skills Information

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

| 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 |
|---|---|
| 1.  Confirm server specification | 1.1. Confirm *network operating system*, *server applications* and server design with client<br><br>1.2. Identify product and vendor architecture and *equipment* specifications<br><br>1.3. Identify technology and resource within *business requirements* and budget |
| 2.  Build server | 2.1. Create a detailed *task* list identifying breakdown of the logical stages and sequence of work required<br><br>2.2. Review *hardware* and *software* to ensure compatibility<br><br>2.3. Obtain all *hardware* required for *server* installation<br><br>2.4. Install the required *operating system*<br><br>2.5. Install additional tools or third-party *software* as required by the created design<br><br>2.6. Patch the *operating system* and *applications* to ensure maximum security and reliability |
| 3.  Configure and test server | 3.1. Configure the *server* as required by *technical requirements*<br><br>3.2. Define the scope and applicability of the testing against *technical requirements*<br><br>3.3. Develop the test plan with reference to resources and *network* impact<br><br>3.4. Run the *system* testing according to test plan and record outcomes<br><br>3.5. Analyse the error report and make changes as required<br><br>3.6. Test required changes or additions<br><br>3.7. Validate changes or additions against specifications |

## Required Skills and Knowledge

| REQUIRED SKILLS AND KNOWLEDGE |
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| This section describes the skills and knowledge required for this unit. |
| **Required skills** |
| • Ability to assemble computer components |

**REQUIRED SKILLS AND KNOWLEDGE**

- Install and configure complex software packages
- Basic logic process skills
- Ability to deploy testing solutions at the system and component level
- Liaising with vendors and service providers

**Required knowledge**

- Single and multiple processors; memory (SD and RD RAM DDR, Registered RAM, memory leads, bandwidth); chassis (size, thermals, EMI specifications, security, drive bays, cable management, ease of maintenance, LED/LCD panels, aesthetics)
- Disk drives and internal/external storage devices (RAID solutions and functionality, drive formats, back-up systems - DAT/DLT/AIT, storage area networks (SANs); load balancers
- Power (supply requirements and management, protection - back-up/line conditioning/surge suppression, power budgeting); hot plug peripherals (PCI expansion cards, power supplies, hard drives, fans)
- Ancillaries (racks, keyboard, monitor, cabinets, air flow)
- Server design and network architecture

# Evidence Guide

| EVIDENCE GUIDE | |
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| 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. | |
| **Overview of assessment** | |
| **Critical aspects for assessment and evidence required to demonstrate competency in this unit** | Evidence of the following is essential: <ul><li>Assessment must confirm the ability to build, configure and test a server according to business needs and technical requirements.</li></ul> To demonstrate competency in this unit the person will require access to: <ul><li>Server components</li><li>Tools and equipment</li><li>Vendor specification and propriety software</li><li>Open source software</li></ul> |
| **Context of and specific resources for assessment** | Servers form the backbone of the internet and are integral to contemporary business. Careful selection and use of appropriate servers should be considered a priority for all organisations. A thorough knowledge of servers will assist in assuring competency and would cover a broad range of varied activities or application in a wider variety of contexts, most of which are complex and non-routine. The breadth, depth and complexity covering planning and initiation of alternative approaches to skills or knowledge applications across a broad range of technical and/or management requirements, evaluation and coordination would be characteristic. Assessment must ensure: <ul><li>The demonstration of competency may also require self-directed application of knowledge and skills, with substantial depth in some areas where judgement is required in planning and selecting</li></ul> |

| EVIDENCE GUIDE | |
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| | appropriate equipment, services and techniques for self and others.<br><br>• Applications involve participation in development of strategic initiatives as well as personal responsibility and autonomy in performing complex technical operations or organising others. It may include participation in teams including teams concerned with planning and evaluation functions. Group or team coordination may also be involved. |
| **Method of assessment** | 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.<br><br>• 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.<br><br>• 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** | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended. |

| EVIDENCE GUIDE | |
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| | An individual demonstrating this competency would be able to: <br><br> • Demonstrate understanding of a broad knowledge base incorporating theoretical concepts, with substantial depth in some areas <br> • Analyse and plan approaches to technical problems or management requirements <br> • Transfer and apply theoretical concepts and/or technical or creative skills to a range of situations <br> • Evaluate information, using it to forecast for planning or research purposes <br> • Take responsibility for own outputs in relation to broad quantity and quality parameters <br> • Take some responsibility for the achievement of group outcomes <br> • Maintain knowledge of industry products and services |

# Range Statement

| RANGE STATEMENT | |
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| 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. | |
| *Network operating system* may include but is not limited to: | • Novell NetWare 5 or above or operating system that has multi-user ability:   Linux 8.0, Mac OS X, Windows 2000 or above |
| *Client* may include but is not limited to: | • internal departments <br> • external organisations <br> • clubs <br> • individual people <br> • internal employees |
| *Equipment* may include but is not limited to: | • workstations <br> • personal computers <br> • modems and other connectivity devices |

| RANGE STATEMENT | |
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| | • printers<br>• DSL modems<br>• hard drives<br>• monitors<br>• switches<br>• hubs<br>• personal digital assistant (PDA)<br>• other peripheral devices |
| **Business requirements** may be in reference to: | • business<br>• system<br>• application<br>• network<br>• people in the organisation |
| **Server applications** may include: | • file sharing<br>• printer sharing<br>• messaging<br>• web services<br>• network and remote access<br>• database and data warehousing<br>• directory services<br>• management<br>• line of business applications<br>• terminal services |
| **Task** may include but is not limited to: | • work<br>• activities<br>• function<br>• job |
| **Software** may include but is not limited to: | • commercial software applications; organisation-specific software, packaged software, in-house or customised software |
| **Server** may include: | • Application/web servers<br>• BEA Weblogic servers<br>• IBM VisualAge and WebSphere<br>• Novell NDS servers<br>• Email servers<br>• File and print servers<br>• FTP servers<br>• Firewall servers<br>• Proxy/cache servers |

| RANGE STATEMENT | |
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| ***Operating system*** may include but is not limited to: | • Linux 8.0 or above<br>• Windows 2000/Server 2003 or above<br>• Apple OS X or above |
| ***Hardware*** may include but is not limited to: | • workstations<br>• personal computers<br>• modems and other connectivity devices<br>• networks<br>• remote sites<br>• servers |
| ***Application*** may include | • database programs<br>• word processors<br>• email programs<br>• internet browsers<br>• system browsers<br>• spreadsheets |
| ***Technical requirements*** may be in reference to: | • business<br>• system<br>• platform<br>• application<br>• database<br>• network<br>• people in the organisation |
| ***Network*** may include but is not limited to: | • large and small LANs<br>• national WANs<br>• the internet<br>• the use of the PSTN for dial-up modems only<br>• private lines<br>• data<br>• voice |
| ***System*** may include but is not limited to: | • databases<br>• applications<br>• servers<br>• operating systems<br>• gateways<br>• application service provider<br>• ISP |

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## Unit Sector(s)

| Unit sector | Build |
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## Co-requisite units

| Co-requisite units | | |
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## Competency field

| Competency field | |
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