Australian Government

Department of Education, Employment and Workplace Relations

ICASAS209A Connect and use a home-based local wireless network

Release: 1

INDUSTRY SKILLS COUNCILS
Creating Australia's Future

ICASAS209A Connect and use a home-based local wireless network

Modification History

Release	Comments
Release 1	This Unit first released with *ICA11 Information and Communications Technology Training Package version 1.0*

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to install, configure and secure devices to a small home-based local network.

Application of the Unit

This unit applies to workers who determine the requirements for a small home-based wireless network and then install, configure and secure the network.

Licensing/Regulatory Information

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement but users should confirm requirements with the relevant federal, state or territory authority.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Element	Performance Criteria
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.*

Elements and Performance Criteria

1. Confirm requirements for home-office wireless network	1.1 Document *client* requirements and confirm with *appropriate person* 1.2 Identify available documentation and technical support options 1.3 Identify the *digital devices* to be connected to the network and confirm *wireless network component* requirements 1.4 Take action to ensure client support expectations are covered by vendor warranty and support services 1.5 Ensure required *OHS standards* are incorporated as part of the installation process
2. Prepare for installation	2.1 Obtain digital devices and wireless network components 2.2 Validate that contents of delivered components and physical contents match the packing list and resolve discrepancies if necessary 2.3 Determine internet service provider *(ISP) connection properties*
3. Install and configure the wireless router and adapters	3.1 Install the *wireless router* 3.2 Configure the wireless router using the *router configuration properties* 3.3 Install the *wireless adapters* 3.4 Configure the *wireless system (wi-fi)*
4. Secure the wireless system	4.1 Set the *security components* of the system 4.2 Test the security components 4.3 Review any updated documentation regarding security issues and the components used

Required Skills and Knowledge

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

Required skills

- customer interaction and conflict-resolution skills to ensure proposed actions are consistent with client's expectations
- literacy skills to:
  - document installation configuration and security codes
  - follow component documentation guidelines
  - present information
- negotiation skills to interact with other team members and clients
- problem-solving skills to resolve routine installation and configuration issues
- technical and decision-making skills to ensure components meet job requirements.

Required knowledge

- computer-component installation procedures
- current industry-accepted wireless network products
- detailed knowledge of wi-fi installation requirements
- general understanding of wi-fi systems and wi-fi security considerations
- ISP connection protocols
- OHS procedures for electrical equipment
- wireless network components.

Evidence Guide

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 ability to: • determine suitable wi-fi requirements for small home office style settings • safely connect and integrate wi-fi components into a small office system • install and configure wireless routers and adapters as part of a wi-fi system • secure components of a wi-fi system.
Context of and specific resources for assessment	Assessment must ensure access to: • appropriate learning and assessment support when required • modified equipment for people with special needs • wi-fi equipment currently used in industry • technical documentation and technical support to support the wi-fi installation • internet to enable configuration procedures.
Method of assessment	A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit: • direct observation of candidate installing, connecting and configuring wi-fi network • review of reports that document client requirements compared to the work completed by the candidate for a variety of different scenarios and situations • verbal or written questioning to assess candidate's ability to install, configure and secure a wireless home network • direct observation of candidate installing, configuring and securing a device to a wireless network.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, where appropriate. Assessment processes and techniques must be culturally appropriate, and suitable to the communication skill level, language, literacy and numeracy capacity of the candidate and the work being performed. Indigenous people and other people from a non-English speaking

	background may need additional support.
	In cases where practical assessment is used it should be combined with targeted questioning to assess required knowledge.

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.

Client may include:	- external organisations - individual home owners - internal departments - small businesses.
Appropriate person may include:	- authorised business representative - contract authoriser - project manager - supervisor - system administrator.
Digital devices may include:	- iPad or similar device - laptop - notebook - personal computer - personal digital assistant (PDA).
Wireless network component may include:	- PC, notebook or similar - wireless adapters - wireless router or gateway.
OHS standards may include:	- electrical safety - ergonomics in the workplace: - correct posture - style and adjustments of chair - type of desk - type of monitor - working position - length of time in front of computer - lighting level - placement of light fittings - repetitive strain injury (RSI) prevention - safe lifting methods - ventilation.
ISP connection properties may include:	- default gateway - digital subscriber line (DSL) - transmission control protocol or internet protocol (TCP/IP)

	• IP address • MAC address • password • subnet mask • username.
Wireless router may include:	• G Plus Mimo Wireless Networking - greater range and faster speeds • G Plus Wireless Networking - improved speed and coverage • G Wireless Networking - shares internet connection wirelessly • N Wireless Networking - enhanced speed and coverage • N1 Wireless Networking - maximum wireless performance.
Router configuration properties may include:	• ISP • password • point-to-point protocol over ethernet (PPPoE) • router-configuration IP address • utility ID.
Wireless adapters may include:	• peripheral component interconnect (PCI) and mini PCI • Personal Computer Memory Card International Association (PCMCIA) • universal serial bus (USB) card • wireless compact flash • wireless wide area network (WWAN) PC card.
Wireless system (wi-fi) may include:	• DSL modem • internet connections • wi-fi network cards • wireless network components • wireless router.
Security components may include:	• 802.11b clients • 802.11g clients • 802.11g routers • enable encryption • MAC-address filtering • passphrase passwords • pre-shared keys • router's configuration utility • service set identifier (SSID) • wi-fi protected access (WPA) encryption • wired equivalent privacy (WEP) encryption.

Unit Sector(s)

Systems administration and support

Innovation and Business Skills Australia