



Australian Government

Department of Education, Employment and Workplace Relations

ICADBS409A Monitor and administer a database

Release: 1

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Modification History

Version	Comments
ICADBS409A	This version first released with <i>ICA11 Information and Communications Technology Training Package version 1.0</i>

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to manage, monitor and administer a database.

Application of the Unit

This unit applies to database support staff who are required to maintain a database, monitoring its performance and access, and administering its security.

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
<i>Elements describe the essential outcomes of a unit of competency.</i>	<i>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.</i>

Elements and Performance Criteria

1. Start up a database	1.1 Configure system for database start-up 1.2 Monitor database start-up and operation for irregularities
2. Manage database	2.1 Take action to ensure that a data dictionary has been compiled and that data structures are in place 2.2 Maintain data integrity constraints according to business requirements 2.3 Create and design indexes and multiple-field keys according to business requirements 2.4 Monitor the locking options chosen for the database 2.5 Confirm that recent backups of the database have been stored and that backups can be retrieved as a full working copy 2.6 Monitor the data storage space for ongoing viability and resize as needed 2.7 Update data according to organisational guidelines
3. Manage database access	3.1 Allocate or remove access privileges according to user status 3.2 Monitor network server log-in log file for illegal log-in attempts or for security breaches 3.3 Manage system resources in the context of database administration
4. Document database maintenance tasks	4.1 Document changes to database start-up procedures 4.2 Itemise database management structures 4.3 File authorisations for access changes 4.4 Detail procedures for monitoring log files 4.5 Record procedures to manage systems resources

Required Skills and Knowledge

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

Required skills

- analytical skills to determine database start-up and operation irregularities
- literacy skills to write technical and business reports
- problem-solving skills to resolve database irregularities
- research skills to identify, analyse and evaluate features of a particular database.

Required knowledge

- backup and recovery methodologies
- architectural design of relational databases
- database security
- selection and use of appropriate database management tools
- structured query language (SQL)
- tasks involved in database administration
- tuning methodologies.

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: • configure a database start-up • ensure data integrity • monitor data storage requirements for database • update data • update database access.
Context of and specific resources for assessment	Assessment must ensure access to: • live database, preferably on a LAN on which there is a server that offers log-in functionality • appropriate learning and assessment support when required • modified equipment for people with special needs.
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: • review of candidate's database • verbal or written questioning to assess candidate's knowledge of: • database security • database space requirements • function of indexes and data dictionaries • monitoring of database access • evaluation of candidate's database documentation detailing: • start-up and operation irregularities • network server logs of security breaches • maintenance tasks performed, by whom and when.
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.
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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.

Database may include:	- commercial off-the-shelf (COTS) database packages: - DB2 - DB4 - Informix - Ingres - Microsoft Access - Microsoft Structured Query Language (MS SQL) server - Mini SQL (mSQL) - MySQL - Oracle - Postgre Structured Query Language (Postgre SQL) - Sybase - object-relational databases - proprietary databases - relational databases.
Business requirements may include:	- customer - inventory - payroll - supplier - tax requirements.
Organisational guidelines may include:	- communication methods - content of emails - dispute resolution - document procedures and templates - downloading information and accessing particular websites - financial control mechanisms - opening mail with attachments - personal use of emails and internet access - virus risk.
Network server may include:	- Linux - Mac

	• Novell NetWare 5 or above • operating system that has multi-user ability • Windows 2000 or above.
System may include:	• components that run a computer: • hardware • software.

Unit Sector(s)

Database