



Australian Government

ICADBS601B Build a data warehouse

Release 1

ICADBS601B Build a data warehouse

Modification History

Release	Comments
Release 2	This version first released with ICA11 Information and Communications Technology Version 2. Added performance criteria under element 1. Added to range statement. A range of minor editorial changes. Outcomes deemed equivalent.
Release 1	This version first released with ICA11 Information and Communications Technology Version 1.

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to undertake activities, from proposal to implementation stage, for a data warehouse model that reflects current and future business requirements and the business knowledge management strategy.

Application of the Unit

This unit applies to those managing a knowledge management team, or working in a senior role in such a team. Those with line management responsibility should undertake this role.

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. Confirm database design	1.1. Review database design document, including data structures, queries, reports and user interface 1.2. Identify possible big data applications 1.3. Compare database access and security feature design with business security plan
2. Identify required data and sources	2.1. Identify required data with reference to enterprise knowledge management strategy 2.2. Identify subject areas with reference to business processes and required data 2.3. Explore operational data, define warehouse sources, and record outcomes 2.4. Develop warehouse source specifications with reference to existing data tables and files
3. Determine data warehouse operational steps and processes	3.1. Develop warehouse targets with reference to business processes and required data 3.2. Identify warehouse agents according to system configuration 3.3. Identify and develop warehouse steps and processes
4. Design and develop data warehouse features	4.1. Design and develop warehouse user interface with reference to principles of user-interface design 4.2. Develop and implement warehouse security strategy according to enterprise security plan 4.3. Identify dimension tables and fact tables with reference to required data 4.4. Cost technology requirements for implementation of warehouse security strategy and include them in e-business budgeting 4.5. Develop warehouse information catalogue with reference to enterprise knowledge management strategy
5. Test and implement data warehouse	5.1. Test data warehouse against business requirements to ensure that iterations meet business objectives 5.2. Recommend changes to business processes to ensure compatibility with data warehouse and knowledge management strategy 5.3. Implement the data warehouse 5.4. Establish ongoing maintenance schedule to keep system

	efficient 5.5. Benchmark and document the performance level of the data warehouse
6. Finalise work processes	6.1. Arrange for users to have ongoing training in the data warehouse 6.2. Validate test results 6.3. Obtain sign-off of the data warehouse

Required Skills and Knowledge

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

Required skills

analytical skills to:

- analyse business requirements
- gather and analyse user requirements
- communication skills to liaise with business and technical staff
- literacy skills to prepare reports and technical documentation
- numeracy skills to complete cost-benefit analyses
- planning and organisational skills to manage data warehouse implementation
- technical skills to:
 - convert and validate data
 - perform data modelling
 - work with databases, including programming languages

Required knowledge

- business operating systems relating to data sources
- database management system (DBMS) fundamentals to facilitate extraction of data
- decision support systems relating to knowledge management strategies
- encryption and authentication as they apply to database security features
- functions and features of dimension tables and fact tables
- installation and use of proprietary software
- logical database model knowledge to facilitate data extraction

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: - undertake activities from proposal to implementation stage for a data warehouse model that reflects current and future business requirements and the business knowledge management strategy and demonstrates: - cost-benefit analysis of a data warehouse implementation for a defined enterprise - user guide for use by an implemented data warehouse - technical documentation for an implementation of a data warehouse.
Context of and specific resources for assessment	Assessment must ensure: - data in a DBMS - data-warehousing tools - 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 written report - questioning to determine knowledge of relationship between databases and data warehouses - project to implement a data warehouse.
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.

Database may include:	• DB2 • Informix • Ingres • Microsoft SQL (MS SQL) server • Mini SQL (mSQL) • MySQL • Oracle • Postgre Structured Query Language (Postgre SQL) • Sybase.
Document may relate to:	• audit trails • client training • International Organization for Standardization (ISO) standards • maintaining equipment inventory • naming standards • project management templates and report writing • satisfaction reports • version control.
Big data may include:	• data access that incorporates high volume, high velocity and a high variety of information with fast in-depth processing • data managed by large information management specialist companies using big data technologies, such as Software AG, Oracle, IBM, Microsoft, SAP, EMC, and HP • data that is distributed within the cloud across a wide number of database servers.
System may include:	• application service provider (ASP) • applications • databases • gateways • internet service provider (ISP) • operating systems • servers.

<i>Users</i> may include:	• department within an enterprise • person within a department • third party.
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Unit Sector(s)

Database