



Discipline

DEFINITION

<i>Name</i>	Database Management
<i>Description</i>	Database Management relates to the organization of data and information into physical structures, which are then accessed and updated through the services of a database management system. It defines the roles, standards, and technologies for physical database definition and design, the various database management options, and administration principles to enable the development of the enterprise-wide resource. The Database Management discipline builds on Data Management to provide structure in a manner that enables Knowledge Management and Application Engineering while adhering to all designated Interoperability, Security and Privacy requirements.
<i>Rationale</i>	Few consistent statewide standards or state best practices were in place when the current database systems and corresponding databases were developed. Data is stored in multiple database systems on multiple platforms using multiple methods / designs across the state which are used to perform day-to-day operations. If these distributed systems were organized in known, predictable, and meaningful designs, Missouri state government could more easily provide this valuable information to support the state's business services, decision-makers and general public. A goal is a database management protocol or process that is designed using standards and best practices whereby it can be consistently implemented across the state. The protocols and processes should be designed to be re-useable, shareable, accurate, up-to-date, secure, and able to be managed from an enterprise perspective. The desire is to move from a business construct where a majority of the data was designed for access by single application systems within a single agency, to one where there is access by multiple application systems in multiple agencies simultaneously. Distributing data to appropriate platforms will place more importance on administration and database management. This becomes the key to maintaining the overall information architecture.
<i>Benefits</i>	<ul style="list-style-type: none"> • Increase and maintain data's integrity and relevance. (enforcement) • Maintain a stable environment (database structure, access) • Ensure data reliability (backup/recovery, retention) • Ensure data availability (making sure users can get to the data when it's needed) • Ability to protect sensitive data (security) • Ability to ensure proper access to data (authorization) • Ensures efficient access to data and storage of data (performance) • Allows for maximizing the investment in hardware and software (cost)
BOUNDARY	
<i>Boundary Limit Statement</i>	Database Management encompasses all the components, designs, management systems, processes, and practices for implementing and managing an integrated, cohesive database management policy. The components examined within this discipline include the various database

	management system types such as relational, hierarchical, and object-oriented. The physical design and modeling of the database systems including servers, distributed systems, replication, performance, and business continuity objectives are also included in this discipline.	
ASSOCIATED ARCHITECTURE LEVEL		
<i>List the Domain Name</i>	Information	
CRITICAL REFERENCES		
Related Domains/Disciplines		
<input type="checkbox"/> <i>Interface – Branding</i>	<input type="checkbox"/> <i>Integration – Functional Integration</i>	<input checked="" type="checkbox"/> <i>Systems Mgt – Business Continuity</i>
<input type="checkbox"/> <i>Interface – Access</i>	<input checked="" type="checkbox"/> <i>Integration – Middleware</i>	<input type="checkbox"/> <i>Security – Managerial Controls</i>
<input type="checkbox"/> <i>Interface – Accessibility</i>	<input checked="" type="checkbox"/> <i>Application – Application Engineering</i>	<input checked="" type="checkbox"/> <i>Security – Technical Controls</i>
<input checked="" type="checkbox"/> <i>Information – Knowledge Mgt</i>	<input type="checkbox"/> <i>Application – Electronic Collaboration</i>	<input type="checkbox"/> <i>Security – Operational Controls</i>
<input checked="" type="checkbox"/> <i>Information – Data Mgt</i>	<input type="checkbox"/> <i>Systems Mgt – Asset Mgt</i>	<input type="checkbox"/> <i>Privacy – Profiling</i>
<input checked="" type="checkbox"/> <i>Information- GIT</i>	<input checked="" type="checkbox"/> <i>Systems Mgt – Change Mgt</i>	<input type="checkbox"/> <i>Privacy – Personification</i>
<input type="checkbox"/> <i>Infrastructure - Network</i>	<input type="checkbox"/> <i>Systems Mgt – Console/Event Mgt</i>	<input checked="" type="checkbox"/> <i>Privacy – Privacy</i>
<input checked="" type="checkbox"/> <i>Infrastructure - Platform</i>	<input type="checkbox"/> <i>Systems Mgt – Help Desk/Problem Mgt</i>	
Standards Organizations/Government Bodies		
<i>List Standards Organizations</i>	<p>Standards exist for programming languages, operating systems, data formats, communications protocols, and user interfaces. Most official computing standards are set by one of the following organizations:</p> <ul style="list-style-type: none"> • <u>ANSI</u> (American National Standards Institute) www.ansi.org • <u>IEEE</u> (Institute of Electrical and Electronic Engineers) www.ieee.org • <u>ISO</u> (International Standards Organization) www.iso.ch • <u>W3C</u> (World Wide Web Consortium) www.w3.org • <u>OGC</u> (Open GIS Consortium) www.opengis.org • <u>NIST</u> (National Institute of Standards & Technology) SQL2 & SQL3 (in process) www.nist.gov • <u>ODMG-2.0</u> (Object Data Management Group) www.odmg.org • <u>J2EE</u> (Java 2 Platform, Enterprise Edition) java.sun.com • <u>.NET</u> (Microsoft) www.microsoft.com • <u>Web Services</u> IBM-Oracle-Microsoft 	
<i>List Government Bodies</i>		
Stakeholders/Roles		
<i>List Stakeholders</i>		
<i>List Roles</i>		
Discipline-specific Technology Trends		
<i>List Discipline-specific Technology Trends</i>	<p>Grid Computing Storing of large object types within databases (Blob, Clob, etc.) Component based XML storage and retrieval Spatially enabled database development e-Gov web application support</p>	

	<p>Increased preponderance of relational DBMS Increased growth in data warehouse/mart Increased availability of self-monitoring aspects of DBMS Federated DBMS integration Increased focus on security and privacy issues</p>
<i>Technology Trend Source</i>	<p>eWeek – The Enterprise Newsweekly (www.eweek.com) Database Trends and Applications (www.dbta.com) ZJournal (www.zjournal.com) DB2 Magazine (www.db2mag.com) IDUG Solutions Journal (www.idug.org) www.Techtarget.com AS400 (www.Search400.com) AS400 (www.news400.com) IDMS User Association (www.iua.com) Government Enterprise Government Technology InformationWeek Oracle Magazine (www.oracle.com/oraclemagazine) SQL Server Home (www.microsoft.com/sql) Computer World (www.computerworld.com) Computer Magazine www.networkcomputing.com</p>
ASSOCIATED COMPLIANCE COMPONENTS	
<i>List Discipline-level Compliance Components</i>	
METHODOLOGIES	
<i>List methodologies followed.</i>	
DISCIPLINE DOCUMENTATION REQUIREMENTS	
<i>Provide documentation requirements for this Discipline.</i>	<p>Infrastructure – Platform Changes and upgrades of hardware and operating systems has implications on the database management systems compatibility / operability.</p> <p>Integration – Middleware To maintain interoperability between database systems there are issues related to compatibility / connectivity and how that is to be achieved.</p> <p>Application – Application Engineering Databases exist to support these applications and are thus tied explicitly to their implementation.</p> <p>Systems Management – Change Management Versions of data definitions (schemas) must be synchronized with the application development process.</p> <p>Systems Management – Business Continuity As business continuity requirements change the DBMS must support those requirements, policies and processes.</p> <p>Security – Technical Controls As security requirements evolve the DBMS must support those requirements, policies and processes.</p>

	Privacy – Privacy As privacy requirements change the DBMS must support those requirements, policies and processes.			
ASSOCIATED TECHNOLOGY AREAS				
<i>List the Technology Areas associated with this Discipline.</i>	<ul style="list-style-type: none"> • Database Management Systems • Distributed Database Systems • Physical Design & Modeling • Performance • Physical Data Dictionary • Data Replication 			
CURRENT STATUS				
<i>Provide the Current Status</i>	<input type="checkbox"/> <i>In Development</i>	<input type="checkbox"/> <i>Under Review</i>	<input checked="" type="checkbox"/> <i>Approved</i>	<input type="checkbox"/> <i>Rejected</i>
AUDIT TRAIL				
<i>Creation Date</i>	4-12-2004	<i>Date Approved/Rejected</i>	5-11-04	
<i>Reason for Rejection</i>				
<i>Last Date Reviewed</i>		<i>Last Date Updated</i>		
<i>Reason for Update</i>				