Information Technology Policy
Commonwealth of Pennsylvania
Governor's Office of Administration/Office for Information Technology

ITP Number:	ITP-INF001
ITP Title:	Database Management Systems
Issued by:	Deputy Secretary for Information Technology
Date Issued: February 23, 2005	Date Revised: November 18, 2010
Domain:	Information
Discipline:	Data Management
Technology Area:	Database Management Systems
Revision History Date:	Description:
04/17/2009	Revised for format. Added policy requiring agencies to analyze the total cost of ownership of current database standards.
11/18/2010	ITP Refresh

Abstract:

The purpose of this Information Technology Policy (ITP) is to establish enterprise-wide standards for Database Management Systems (DBMSs) and their effective use in production environments.

A DBMS is software that manages databases. DBMSs provide a common and controlled approach maintaining data integrity and accessibility in storing data, adding new data, and in modifying and retrieving existing data within a database. Security and backups are key components.

The main objectives of this policy are to:

- Standardize on DBMSs that best meet current and future enterprise requirements.
- Increase data sharing opportunities across agencies, reduce data redundancy, and improve application interoperability.
- Increase opportunities for consolidation of like data and business processes.
- Provide for further standardization on database software tools, including data modeling, meta-data repositories, and business intelligence software.
- Leverage existing DBMSs, where appropriate.

STD-INF001A: *Database Product Standards* provides guidance to agencies on the current standards and the status of other database solutions that are being used or being considered for use. The current standards support the use of Relational Database Management Systems that are in compliance with ODBC, JDBC, and ANSI SQL92 standards.

OPD-INF001B: *Database Management Systems: Production and Operational Standards* provides specific production and operational guidance for current database solutions. These standards have applicability across all current standard products and are required for all application development efforts. If a specific standard applies only to mission-critical applications, it will be identified as such.

General:

This ITP applies to all departments, boards, commissions and councils under the Governor's jurisdiction. Agencies not under the Governor's jurisdiction are strongly encouraged to follow this policy.

Policy:

New and existing application development projects that could benefit from a DBMS are to use one of the current standards as defined in STD-INF001A.

New application development projects utilizing a database management system are to adhere to production and operational standards as defined in OPD-INF001B. Existing production applications are encouraged to adopt these standards as well.

Agencies are to analyze the total cost of ownership when selecting one or more of the current DBMS standards. Total cost of ownership includes, but is not limited to, the cost of licensing of DBMS software, hardware platforms, backup solutions, training of operations, database administration, and development staffs. Agencies are to evaluate the alignment of business and technical requirements against the features and capabilities of current DBMS standards when selecting a DBMS.

This policy is in effect for enterprise class database management systems only. Desktop databases, except those used in support of application development or application prototyping, will be defined as part of desktop standards referenced in STD-PLT001A *Desktop Software Product Standards*. To support flexible and cost- effective application test and development activities, the desktop version of the current database standards may be used.

Major revisions to existing applications using a DBMS and not using the current standards will be reviewed as part of the IT Procurement Review Process to determine if the investment warrants a change in standards at that time. For applications using a DBMS product classified as "Retire," a date for migration from this technology has been established. A definition for the classification of "Retire" can be found in Technology Life-Cycle Classifications.

Definitions of Terms:

ANSI (American National Standards Institute) - In the United States, ANSI serves as a quasi-national standards organization. It provides area charters for groups that establish standards in specific fields. ANSI is unique among the world's standards groups as a nongovernmental body granted the sole vote for the United States in the International Standards Organization (ISO).

Database Management System (DBMS) - Software to manage a database that provides a common and controlled approach maintaining data integrity and accessibility in storing data, adding new data, and in modifying and retrieving existing data within a database. Security and backups are key components.

Enterprise Class Database Management System - Integrates multiple business processes or applications into a single DBMS and hardware platform. This is in contrast to creating application-specific database management systems.

JDBC (Java Database Connectivity) – A set of programming Application Programming Interfaces (APIs) that allow easy connection to a wide range of databases through Java programs.

ODBC (Open Database Connectivity) - A vendor-neutral interface, based on the SQL Access Group (SAG) specifications, that permits maximum interoperability among diverse Database Management Systems. The ODBC interface defines: function calls that allow an application to connect to a DBMS, execute SQL statements, and retrieve results; a standard way to connect and log on to a DBMS; and a standardized representation for data types. Database drivers link the application to their choice of DBMS.

SQL (Structured Query Language) - A relational data language that provides a consistent, English keyword-oriented set of facilities for query, data definition, data manipulation and data control. It is a programmed interface to relational database management systems.

Refresh Schedule:
All standards identified in this ITP are subject to periodic review and possible revision, or upon request by the Enterprise Architecture Standards Committee (EASC).

Exemption from This Policy:
In the event an agency chooses to seek an exemption, for reasons such as the need to comply with requirements for a federally mandated system, a request for waiver may be submitted via the

Community of Practice Procurement and Architectural Review (COPPAR) process. Requests are to be entered into the COPPAR Tool located at http://coppar.oa.pa.gov/. Agency CIO approval is required. Contact your agency CoP Planner for further details or assistance.

Questions:
Questions regarding this policy are to be directed to RA-ITCentral@pa.gov.

Policy Supplements:
STD-INF001A : Database Product Standards
OPD-INF001B - Database Management Systems: Production and Operational Standards

References:
STD-PLT001: Desktop and Laptop Technology Standards