pennsylvania
OFFICE OF ADMINISTRATION
INFORMATION TECHNOLOGY

Information Technology Policy

Web Server/Application Server Standards

ITP Number	***Effective Date***
ITP-APP002	October 26, 2005
Category	***Supersedes***
Recommended Policy	
Contact	***Scheduled Review***
RA-itcentral@pa.gov	April 2015

This Information Technology Policy (ITP) establishes enterprise-wide standards and guidance for Web Information and Web Application Servers.

1. Purpose

The purpose of this Information Technology Policy (ITP) is to establish enterprise-wide standards and guidance for Web Information and Web Application Servers. Establishing Web Application Server standards will provide guidance to agencies as they plan for new application development projects or make significant investments in existing applications.

2. Background

The need for this ITP has evolved out of some basic patterns that have emerged in enterprise architecture. One of these patterns is the three-tier model for enterprise computing. Associated with the three-tier model is the implementation of a Services Oriented Architecture (SOA), since a SOA utilizes elements of all three tiers. Application severs reside the middle tier in the three-tier model and as a host for Web services in a services oriented architecture.

Application Servers have three basic functions – communicating with back-end systems like business applications or databases, communicating with front-end clients usually Web clients and providing a framework to execute business logic. Application Servers are widely categorized into three main types, the Web Information Server (Web Server/HTTP Server), the Component Broker and the Web Application Server. A Web Information Server utilizes HTML templates and scripts to generate pages. These pages incorporate data from the databases

they are connected to. Additionally, Web Information Servers host Web services.

A Component Broker Server provides database access and transaction processing services to software components. This includes Dynamic Link Libraries (DLLs), Common Object Request Broker Architecture (CORBA), and Enterprise JavaBeans. Their function can be broken down to two stages. The first stage involves providing the environment for server-side components. The second stage involves providing access to the database and other services.

A Web Application Server supports and provides the rich environment for server-side logic expressed as objects, rules, and components. They are best suited for business logic, eCommerce, and decision processing. Web application servers are designed specifically to extend Web Information Servers to support dynamic content. The Web Application Server software "hooks in" to the Web Information Server software and automatically intercepts any user requests for dynamic content. The Web Information Server still sends out static Web pages and graphic files. However, the application server can create dynamic content by mixing data with templates, running programs, components and services, or by accessing databases.

All the three types of servers just mentioned are stateless servers, which unlike the stateful servers; need database or transaction monitors for completing transactions.

Enterprise Web Information and Application Servers are to incorporate the following features:

- Component Management
- Fault Tolerance
- Load balancing
- Transaction Management
- Management Console
- Security

Component Management refers to the feature of the application server, which can be said to be the manager that handles all the components and the run time services like session management, synchronous/asynchronous client notifications and executing business logic.

The Fault Tolerance is the ability of the server with no single point of failure to define policies for recovery and fail-over recovery in the case of the failure of one or more object or group of objects.

The Load Balancing aspect is the server's ability to send the request to the different servers within the set-up, depending on the load and availability of the servers.

Transaction Management is the transactional capabilities of the server, and the Management Console being the single point graphical management console for remotely monitoring clients and server clusters.

Security provides the features for the protection and security of the applications, database and other external applications and services.

3. Scope

This Information Technology Policy (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 ITP.

4. Objectives

The main objectives of this policy are to:

- Provide a uniform approach to application development
- Provide a common method of setting and achieving priorities
- Reduce costs for application development
- Decrease time to production for applications
- Enhance and promote standardization
- Enhance information sharing
- Increase coordinated IT security
- Reduce redundancy
- Improve utilization of IT resources
- Provide a developed set of core technologies
- Provide a standard approach to training and utilization of resources

5. Policy

All new application development projects will be required to use one of the current standard Web Application and Information Servers as defined in section 6.1 and 6.2 of this ITP.

Major revisions to existing applications that are not using the current standards will be reviewed as part of the Procurement Review Process (See ITP-PRO001) to determine if the investment warrants a change in standards at that time.

All IT projects related to application development are subject to review prior to inception for compliance with this standard through the Procurement Review Process (See ITP-PRO001).

6. Standards

6.1 Web Application Server Standards

CURRENT STANDARDS

(These technologies are supported by the current standards and meet the requirements of the architecture. They are recommended for use.)

Technology	Platforms	Technology Classification
Oracle WebLogic Application Server	Winows/AIX/Solaris	Current
IBM WebSphere Application Server	All	Current
JBoss Application Server	All	Current
Microsoft Internet Information Services (IIS)	Windows	Current
Apache Tomcat	All	Current
SAP NetWeaver Application Server[1]	All	Current

[1] Current Standard for Enterprise Resource Planning Implementation for Integrated Enterprise System (IES)

CONTAIN

(These technologies no longer meet the requirements of the current architecture and are not recommended for use. They are to be phased out over time. No date has been set for their discontinuance.)

Technology	Platforms	Technology Classification
Sun Microsystems Java System Application Server	All	Contain
Oracle Application Server 10g	All	Contain

Notes Regarding Contained Products:

- Technologies that are no longer the standard. They will be phased out over time.
- Extensive modifications to these systems require review to determine if newer technology is to be used.
- All products are to be patched with service packs within six months of the release date in accordance with ITP-SYM006.
- New deployments or installations of these products are not recommended.

RETIRE

(These technologies are being phased out. Plans are to be developed for their replacement, especially if there is risk involved, such as lack of vendor support. A date for retirement has been set.)

Technology	Platform	Technology Classification
Microsoft Internet Information Services 6.0	All	Retire by: 7/14/15
Microsoft Internet Information Services 5.0	All	Retire by: 7/13/10
Microsoft Internet Information Server 4.x and Prior	All	Retire by: 4/8/04

EMERGING/RESEARCH

(Emerging technologies have the potential to become current standards. At the present time, they are to be used only in pilot or test environments where they can be evaluated. Use of these technologies is restricted to a limited production mode, and requires approval of a waiver request. Research technologies are less widely accepted and time will determine if they become a standard.)

Technology	Platform	Technology Classification
N/A	--	Emerging/Research

6.2 Web Information Server Standards

CURRENT STANDARDS

(These technologies are supported by the current standards and meet the requirements of the architecture. They are recommended for use.)

Technology	Platforms	Technology Classification
IBM HTTP Server	Winows/AIX/Solaris	Current
Apache Web server	All	Current
Microsoft Internet Information Services (IIS)	Windows	Current

CONTAIN

(These technologies no longer meet the requirements of the current architecture and are not recommended for use. They are to be phased out over time. No date has been set for their discontinuance.)

Technology	Platforms	Technology Classification
Oracle Application Server 10g	All	Contain

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7. Related ITPs/Other References

- ITP-PRO001 – IT Procurement Review Process

8. Authority

- Executive Order 2011-05, Enterprise Information Technology Governance

9. Publication Version Control

It is the user's responsibility to ensure they have the latest version of this publication. Questions regarding this publication are to be directed to RA-itcentral@pa.gov.

This chart contains a history of this publication's revisions:

Version	Date	Purpose of Revision
Original	10/25/2005	Base Document
	12/18/2008	Added paragraph to policy section concerning applications not using current standards
	4/17/2009	Updated content and references only
	10/25/2010	ITB Refresh
	4/2/2014	ITP Reformat; Merged STD-APP002A, STD-APP002B to ITP