



Standards

STANDARDS

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Fairfax County Information Technology Standards

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FAIRFAX COUNTY INFORMATION TECHNOLOGY STANDARDS

OVERVIEW

The Department of Information Technology establishes, updates, and retires technical standards throughout the year to ensure alignment, consistency, and modernization in the selection and design of business solutions across the County.

A product or platform is established as a standard through a governance process. This approach enables DIT to define and develop a portfolio of technology solutions that can be effectively managed and supported given available resources. Typically, projects in the concept stage come before DIT's **Architectural Review Board (ARB)** to discuss the technical approach and business objectives. Where the concept relies on new products or non-standard configurations, the details are assessed to establish general conformity to enterprise objectives. The ARB may steer the solution back to conformance, or it may authorize the use of a new product or configuration by granting a waiver. The ARB may alternatively recommend that the new product replace an existing standard, or that it be added to the list of supported standards. When DIT's executive management approves a recommendation, the standards are updated accordingly. Once adopted, the new product and its former standard, if any, are further classified as emerging (new), current (established), twilight (becoming obsolete), or sunset (retiring from support as of a known date).

When a standard is established, it indicates that the designated technology will be supported by DIT as applicable, and that the selection is in alignment with broader IT goals, objectives, and strategic direction. In some cases, a standard may be adopted in advance of procurement or deployment, to provide strategic direction for emerging business needs. Adoption of a standard is not intended to convey endorsement for, or recommendation against, any specific product.

Declaration of a standard indicates DIT's strongest recommendation for selection of the listed product(s) over any alternatives that may be similar or comparable.

Generally, any solutions that will rely on the systems enterprise infrastructure, connect to the network, or depend upon DIT support must be fully conforming. Agencies using or selecting non-standard solutions may apply to the Architectural Review Board for a waiver on the basis of business needs and justification.

Standards are essential to sound cost controls in software licensing and maintenance, hardware, services, training, and integration. Having fewer platforms in use enables allocated resources to better support the information systems under management. Agencies are encouraged to invite DIT members to participate in selection and technical advisory committees for the Request for Proposal (RFP) process. In some cases, DIT and its ARB should be consulted in advance of an RFP, to help explain technical alternatives and develop the proposal language to support conformance with existing and emerging standards.

The standards shown here do not represent a comprehensive view of all the products in use across the County. The list is intended to convey the primary standards for the major solutions to be supported by DIT and/or delivered with DIT resources.

Revised May 2010

**PLATFORM ARCHITECTURE STANDARDS:
END USER SOFTWARE**

Component	Current Standards
Operating System	Windows Vista/Windows7
Word Processor	Microsoft Word 2007/2010
Spreadsheets	Microsoft Excel 2007/2010
Presentations	Microsoft PowerPoint 2007/2010
Database	Microsoft Access 2007/2010
E-Mail Client	Microsoft Outlook 2007/2010 Outlook Web Access (latest release)
Project Management	Microsoft Project Professional 2007/2010
Graphics	Microsoft Visio Professional 2007/2010
Web Browser	Microsoft Internet Explorer -IE7/IE8
Antivirus	Symantec AntiVirus (latest release) for Workstations and Servers
Patch Management	Microsoft System Center Configuration Manager (SCCM) 2007 Windows Server Update Services (WSUS)
Mainframe Terminal Emulation	Blue Zone
Thin Client Access	Citrix Xenapp 6.0
Other	Must be approved for Business Unit standard image/requirements

**PLATFORM ARCHITECTURE STANDARDS:
END USER HARDWARE**

Component	Desktops	Laptops
Power	Single	Single
CPU	Intel Core 2 Duo Processor 800GHz FSB	Intel Core 2 Duo T7500 (2.20GHz, 4MB L2 Cache)
Disk Configuration	160 GB , SATA drive	80 GB, 7200 RPM Hard Drive
Media Drive	16X DVD R/W combo drive	8X DVD CD-R/W combo drive
Memory	4 GB, Non-ECC SDRAM, 4 DIMMS	4 GB RAM (2 DIMMS)
Monitor	19" SVGA, Ultra Sharp, Flat Panel, DVI/ VGA	Wide Screen WXGA+ LCD Panel
Video Card	Dedicated 256MB ATI Radeon, dual monitor capable DVI	dedicated 128 MB NVidia
Interface Card(S)	Ethernet 10/100/ 1000 Base- T	Built-in Ethernet card
Operating System	Windows Vista/Windows 7	Windows Vista/Windows 7
File System	NTFS	NTFS
Maintenance	5 Year on-site, next business day	5 Year on-site, next business day
Additional Hardware Requirements	Sound bar	Port replicator, external mouse, keyboard and monitor if used as desktop. Security Lock
Platform	Dell	Dell

**PLATFORM ARCHITECTURE STANDARDS:
HAND HELD MOBILE DEVICES**

Component	Current Standards
Platform	RIMM/Blackberry Syclo <i>Blackberry Enterprise Server</i>
Software Compatibility	Outlook Exchange (Downloadable), Active Sync, Date Book, Address Book, To do List, Memo Pad, Calculator
Connectivity	TCP/IP Internet or USB enabled

**PLATFORM ARCHITECTURE STANDARDS:
GENERAL SERVER STANDARDS**

Component	Current Standards
Procurement	<p>Servers are procured by DIT as warranted by many factors, including current utilization of existing infrastructure, the requirements of planned projects, and the availability of specific funding for new equipment. Some platforms will share components and others will not, depending upon the unique circumstances for each project and product. Sharing and re-use are promoted when feasible.</p> <p>Agency Project Managers work with DIT to develop a technical task plan and budget estimate for the project's hardware, software, middleware, peripherals, storage, maintenance, and connectivity. DIT will assess the requirements in light of the current environment (and other factors) to confirm which components must be purchased, and which will be paid for through DIT funding.</p>
Operating System	<p>Microsoft Windows Server 2008 R2 Standard Edition Microsoft Windows Server 2008 Enterprise Server (clustering or servers with 4 processors or more); Solaris (latest release) z/OS 1.4</p>
Thin Client Access	<p><i>Citrix Xenapp 6.0</i></p>
Hardware	<p>Intel (Windows) SPARC(UNIX) IBM Z-Series (Mainframe)</p>
Backup	<p>Symantec Net Back Up Storage Thin Provisioning z/OS DFSMS</p>
Storage	<p>SAN/NAS</p>
E-Mail	<p>Microsoft Exchange Server 2003 Enterprise Edition/Microsoft Exchange Server 2010 <i>L-Soft LISTSERV</i></p>
Web/Application Servers	<p>Preferred: Microsoft Internet Information Server – IIS7 Apache Web server (if required by COTS package) Tomcat (if required by COTS package) JBOSS BEA Systems WebLogic Microsoft BizTalk Web Methods <i>Oracle Application Server 10g</i></p>
Configuration/Change management	<p>Infra Enterprise – ITIL Service Management</p>

**PLATFORM ARCHITECTURE STANDARDS:
FILE / PRINT / WEB SERVERS**

Component	File/Print Services	Web Server (INTEL)	Web Server (UNIX)
Type	INTEL	INTEL	UNIX
Power	Redundant, UPS required if not EOC-resident	Redundant, UPS required if not EOC-resident	Redundant, UPS required if not EOC-resident
Fault Tolerance / Disk Configuration	Operating System Drives – Raid 1 (Mirrored) Database / Application Drives – Raid 5 utilizing SAN if EOC resident	Operating System Drives – Raid 1 (Mirrored) Database / Application Drives – Raid 5 utilizing SAN if EOC resident	Operating System Drives – Raid 1 (Mirrored) Database / Application Drives – Raid 5 utilizing SAN if EOC resident
CPU	Dual 3.0 MHz	Dual 3.0 MHz	Dual 1.5 GHz
Network Interface Cards	Dual Ethernet 1000 Base-T	Dual Ethernet 1000 Base-T	Dual Ethernet 1000 Base-T
Operating System	Windows 2003/2008 Server	Windows 2003 Server; Windows Server 2008	Solaris (latest release)
Monitor	17" SVGA Color, if non-EOC site Not required if EOC resident	17" SVGA Color, if non-EOC site Not required if EOC resident	Rack mountable Flat LCD monitor Required if EOC resident
RAM	4 GB Minimum Cache 256MB	4 GB Minimum Cache – Database/Application specific	4 GB Minimum Cache – Database/Application specific
File System	NTFS	NTFS	Solaris
Third Party Software Requirements	Symantec Antivirus, Enterprise Edition MS SCCM Client	Symantec Antivirus, Enterprise Edition eTrust SiteMinder Agent MS SCCM Client	Symantec Antivirus, Enterprise Edition eTrust SiteMinder Agent
Web Server Software	N/A	Internet Information Server IIS7 Tomcat (if required by COTS package) BEA Systems WebLogic	Apache (if required by COTS package) Tomcat (if required by COTS package)
Platform	Dell	Dell	Sun
Maintenance	5 Year, 24/7, 4 hour on-site, parts & labor included	5 Year, 24/7, 4 hour on-site, parts & labor included	5 Year, 24/7, 4 hour on-site, parts & labor included
Additional Hardware Requirements	Raid Controller Rack mountable rails if EOC resident Minimum 3 Open Slots to facilitate system expansion HBAs (if connected to SAN)	Raid Controller Rack mountable rails if EOC resident Minimum 3 Open Slots to facilitate system expansion HBAs (if connected to SAN)	Raid Controller Rack mountable rails if EOC resident Minimum 2 Open Slots to facilitate system expansion Dual HBAs (if connected to SAN); DVD-ROM & Tape Drive (DDS-4)
Pre-Install Options	None	None	None
Storage And Backup	Symantec NetBackup & Storage thin provisioning (i.e. snapshot)	Symantec NetBackup & Storage thin provisioning (i.e. snapshot)	Symantec NetBackup & Storage thin provisioning (i.e. snapshot)

**PLATFORM ARCHITECTURE STANDARDS:
DATABASE/ APPLICATION SERVERS**

Component	Database Servers (INTEL)	Database Servers (UNIX)	Application Servers (INTEL)	Application Servers (UNIX)
Power	Redundant, UPS required if not ETOC-resident	Redundant, UPS required if not ETOC-resident	Redundant, UPS required if not ETOC-resident	Redundant, UPS required if not ETOC-resident
Fault Tolerance / Disk Configuration	Operating System Drives – Raid 1 (Mirrored) Database / Application Drives - Raid 5 (utilizing SAN if EOC resident)	Operating System Drives – Raid 1 (Mirrored) Database / Application Drives - Raid 5 (utilizing SAN if EOC resident)	Operating System Drives – Raid 1 (Mirrored) Database / Application Drives - Raid 5 (utilizing SAN if EOC resident)	Operating System Drives – Raid 1 (Mirrored) Database / Application Drives - Raid 5 (utilizing SAN if EOC resident)
CPU	Quad 3.0 Mhz	Quad 1.5 Mhz	Quad 3.0 Mhz	Quad 1.5 Mhz
Network Interface Cards	Dual Ethernet 1000 Base-T	Dual Ethernet 1000 Base-T	Dual Ethernet 1000 Base-T	Dual Ethernet 1000 Base-T
Operating System(s)	Windows 2003 /2008 Server Windows 2003 /2008 Advanced Server (Clustering)	Solaris (latest release)	Windows 2003 Server Windows 2003 Advanced Server (Clustering); Windows Server 2008	Solaris (latest release)
Monitor	17" SVGA Color, if non-EOC site Not required if EOC resident	Rack Mountable LCD Flat monitor Required if EOC resident	17" SVGA Color, if non-EOC site Not required if EOC resident	Rack Mountable LCD Flat monitor Required if EOC resident
RAM	8.0 GB Minimum Cache - Database/Application specific	8.0 GB Minimum Cache - Database/Application specific	4.0 GB Minimum Cache - Database/Application specific	4.0 GB Minimum Cache - Database/Application specific
File Systems	NTFS	Solaris	NTFS	Solaris
Third Party Software Requirements	Symantec Antivirus, Enterprise Edition MS SMS Client	Symantec Antivirus, Enterprise Edition	Symantec Antivirus, Enterprise Edition MS SMS Client, SCCM Client	Symantec Antivirus, Enterprise Edition
Platform	DELL	SUN	DELL	SUN
Maintenance	5 Year, 24/7, 4 hour on-site, parts & labor included	5 Year, 24/7, 4 hour on-site, parts & labor included	5 Year, 24/7, 4 hour on-site, parts & labor included	5 Year, 24/7, 4 hour on-site, parts & labor included
Additional Hardware Requirements	Raid Controller Rack mountable rails if EOC resident Minimum 3 Open Slots to facilitate system expansion HBAs (if connected to SAN)	Raid Controller Internal Tape Drive for Root Volume Backup Minimum 2 Open Slots to facilitate system expansion Dual HBAs (if connected to SAN); DVD-ROM, Tape Drive (DDS-4)	Raid Controller Rack mountable rails if EOC resident Minimum 3 Open Slots to facilitate system expansion HBAs (if connected to SAN)	Raid Controller Internal Tape Drive for Root Volume Backup Minimum 2 Open Slots to facilitate system expansion Dual HBAs (if connected to SAN); DVD-ROM, Tape Drive (DDS-4)
Storage And Backup	Symantec NetBackup & Storage thin provisioning (i.e. snapshot)	Symantec NetBackup & Storage thin provisioning (i.e. snapshot)	Symantec NetBackup & Storage thin provisioning (i.e. snapshot)	Symantec NetBackup & Storage thin provisioning (i.e. snapshot)

**APPLICATION ARCHITECTURE STANDARDS:
APPLICATION DEVELOPMENT**

Component	Mainframe	UNIX	INTEL	Internet/Intranet	GIS
Database Software	N/A	Oracle 10g	SQL Server (latest release) Oracle 10g	N/A	Oracle 10g Oracle Spatial DB
Application Development Frameworks	N/A	Java	.NET Framework (latest release) Java	.NET Framework (latest release) Java	.NET Framework (latest release) ESRI
Virtualization	LPARS	Zones/ Containers	VMWare	VMWare	Zones/ Containers
Software And Development Tools (Report Writing Products Are Listed On Page 8.)	COBOL CICS TSO JCL	N/A	Microsoft Visual Studio – Latest Release Eclipse	Microsoft Visual Studio – Latest Release Eclipse	ArcGIS 9.3 & Extensions ERDAS 9.3 Arc Internet Map Server 9.3 / ArcGIS Server 9.3 ArcSDE 9.3 ArcPad 8 OnPoint 6.2 Microsoft Visual Studio – Latest Release
Version And Release Control	SCLM	Serena Version Manager	Serena Version Manager	Serena Version Manager	Serena Version Manager
LDAP / Directory / Authentication	RACF	Native operating system (Solaris, Linux, AIX)	Active Directory e-Trust SiteMinder	Active Directory e-Trust SiteMinder	Native Operating system
Data And Process Modeling	MS Visio Professional – Latest Release	MS Visio Professional – Latest Release	MS Visio Professional – Latest Release	MS Visio Professional – Latest Release	MS Visio Professional – Latest Release
Middleware (EAI)	webMethods Jacada	webMethods	webMethods MS BizTalk	webMethods Jacada MS BizTalk	N/A
Workstation Requirements	TN3270 Emulation TCP/IP Connectivity	Oracle Client Suite ODBC Drivers	Oracle Client Suite ODBC Drivers SQL Management Studio	MS Internet Explorer – IE7	Terminal Server Client Citrix Metaframe Client Active X Plug-in Active Directory Tools

**PLATFORM ARCHITECTURE STANDARDS:
ENTERPRISE SOLUTION PLATFORMS**

Platform	Current Standards
Report Writing: Departmental Reporting Needs	Business Objects Crystal Reports Microsoft SQL Reporting <i>Easytrieve Plus</i>
Statistical Analysis	SAS
Enterprise Reporting Business Intelligence	N/A
Document Scanning/Imaging	Documentum Enterprise Content Management / Captiva
Web Content Management	Documentum Web Content Management
Web Search Engine	Google Appliance
Survey Instrument Software	SNAP 8.0 ProNet Edition (w/Scanning module)
Correspondence Tracking	Intranet Quorum
CRM	Siebel
IT Services Management	Infra Enterprise – ITIL Service Delivery
GIS	ArcGIS 9.3 & Extensions ERDAS 9.3 Arc Internet Map Server 9.3 / ArcGIS Server 9.3 ArcSDE 9.3 ArcPad 8 OnPoint 6.2 Electronic Field Study 2.7
Voice Communications	Avaya S8700s and G700s Servers

FAIRFAX COUNTY DATA COMMUNICATIONS STANDARDS**NETWORK PROTOCOLS**

TCP/IP – Network is pure IP environment.
BGP/OSPF – Routing protocols employed on County WAN/MAN.
MPLS/VRF – Architecture employed on County WAN/MAN.

STRUCTURED CABLING STANDARDS**ACCESS LAYER CABLING:**

CAT-5E – used in existing facilities
CAT-6 – used in all new construction
CAT-6A – used in new construction with special high speed requirements
All voice and data cabling are terminated in same faceplate with color code inserts to identify function.

BACKBONE CABLING:

Multi-mode optical fiber 62.5/125
Single mode fiber – use dependent on distance

DATA NETWORK STANDARD EQUIPMENT

The Fairfax County Enterprise Network is standardized on Cisco networking platform. Below are the specific models of equipment deployed in the network. Platform families may be added or modified.

ROUTING:

Cisco 2600/2800 – Access layer sites (Non I-Net)
Cisco 3800 – I-Net Access layer sites
Cisco 6500 MSFC – Campus Routing
Cisco Nexus 7010's, Nexus 5020's and 1000V – I-Net Core/Campus Routing

SWITCHING:

Cisco 2950 – Wire Closet (small IDF) be phased out
Cisco 3560 – Wire Closet (small to medium IDF)
Cisco 4500 – Wire Closet (medium to large IDF)
Cisco Nexus 7010's, Nexus 5020's and 1000V – Core switching (MDF)

DWDM SWITCHING:

Cisco ONS 11454 – I-Net Core

WEB CONTENT /CACHING:

Ironport S660
DNS:
F5 Big IP 1500 GTM – Global Load Balancer/DNS

CONTENT SWITCHING/LOAD BALANCING:

Netscaler 12000

FIREWALL:

Cisco Firewall Services Module version 3.2(4) and 3.2(13)