State of Wisconsin Enterprise Technical Reference Model

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Contents

Technical Reference Model Overview

The State of Wisconsin Enterprise Technical Reference Model (TRM) is a component-driven, technical framework loosely based on the Federal Enterprise Architecture (FEA) TRM. It categorizes the standards and technologies to support and enable the delivery of different services by the State of Wisconsin executive branch agencies. It also provides a foundation to advance the reuse and standardization of technology and service components throughout the technology stack. Aligning State of Wisconsin capital investments to the TRM leverages a common, standardized vocabulary, allowing inter-application discovery, collaboration, and interoperability. Publication of the TRM fulfills some of the responsibilities charged to the Department of Administration (DOA) in Subchapter VII, Chapter 16 of the state statutes and allows the State of Wisconsin to benefit from economies of scale by identifying and reusing the best solutions and technologies to support the business functions, mission, and target architecture of the organization.

Organized in a hierarchy, the TRM categorizes the standards and technologies that collectively support the secure delivery, exchange, and construction of business and application service components that may be used and leveraged in a component-based or service-oriented architecture. The TRM lists the technologies that the State of Wisconsin executive branch agencies currently utilize or have utilized to provide the functionality indicated within the document. Specific details surrounding the usage or implementation of the technologies listed within the TRM should be worked through during the technical architecture review process. The TRM consists of:

Service Areas represent a technical tier supporting the secure construction, exchange, and delivery of service components in the enterprise. The service areas are defined as follows; Private Cloud Compute, Network, Storage, Platform, Security and Mainframe.   This hierarchy provides the framework to group standards and technologies that directly support the service area.

Service Categories classify lower levels of technologies and standards with respect to Service Area technology function they serve. In turn, each service category is comprised of one or more service standards.

Each Service Category is reviewed by a Technology Advisory group that makes recommendations to the Decision group. The Technology Advisory group is also responsible for developing the Service Strategy around the Category. These strategies will be referenced as available in the TRM. Additionally, where appropriate Service offering Definitions are referenced within each Category.

Service Standards / Sub-categories (table) define the standards and technologies that support a service category. Service standards identify technology versions down to the point release only. Each current technology is hyperlinked (where possible) to the vendor's page/data sheet that describes the technology in detail.

Within each service standard technologies are broken down into five technical classifications which are defined here:

Current Tactical: technologies that are currently being used / required and should be used when making design and implementation decisions.

Emerging: technologies that include near-term directions and options that need continued monitoring to find applicability within the State IT infrastructure. Included are technologies that are not yet fully production-worthy but are potential candidates for full scale production implementations at some point in the future. Continued market acceptance and adaptation will likely move these solutions toward the strategic technical classification.

Strategic: technologies that are strongly being considered for implementation into the enterprise environment. Managers should look at these when considering future technology implementations.

Transitional: technologies that are in their twilight that should be discouraged from use in new system implementations. This is not to imply that existing systems need be retired or replaced immediately, but that the use of these products and services should not be extended in any future planning and development. These technologies generally are nearing the end of their lifecycle. However, managers of systems utilizing these technologies should begin to consider when they can move away from them and to a strategic technology.

Legacy: technologies that have an identified date associated with their retirement are retired or are no longer supported. These technologies should be discouraged from use within new implementations. Existing systems should be retired or replaced by the agreed upon sunset date.

Distributed Cloud Services

Compute

Description: Hardware devices used to run operating systems and hypervisor.
Technology Advisory Group: DET Converged and Cloud Provisioning Services
Technology Decision Group: Chief Technical Officer; Director - Bureau of Infrastructure; and Director - Bureau of Architecture & Project Management
Service Offering Definition: Dedicated Virtual Hosting
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
Private Cloud - IaaS	HyperConverged; Rack Mount Intel "Kaby Lake" & "Cannonlake" Processors	Converged Pods	Rack Mount Intel "Broadwell" & "Skylake" Processors (2 sockets & 512GB-768GB RAM)	Rack Mount Intel "Haswell" & "Ivy Bridge" Processors; Blade Servers	Rack Mount Intel "Sandy Bridge" & "Westmere" Processors
Public/Hybrid Cloud – IaaS	VMware/AWS Integration	Amazon Web Services (AWS)	Microsoft Azure		

Private Cloud – Engineered Systems

Description: Engineered Systems are generally preconfigured solutions that are tuned for specific workloads that combine Server, Networking and Storage
Technology Advisory Group: DET Converged and Cloud Provisioning Services
Technology Decision Group: Chief Technical Officer; Director - Bureau of Infrastructure; and Director - Bureau of Architecture & Project Management
Service Offering Definition: Dedicated Virtual Hosting
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
Engineered Systems	HyperConverged	Converged Pods	Oracle Exalogic; Exadata; Exalitics	FlexPod	

Private Cloud - Server Virtualization Platform

Description: Defines the server virtualization platforms
Technology Advisory Group: DET Converged and Cloud Provisioning Services
Technology Decision Group: Chief Technical Officer; Director - Bureau of Infrastructure; and Director - Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
Data Center IaaS – Private Cloud		VMware 6.5	VMware 6.0; Oracle VM; IBM ZVM	VMware 5.5	VMware 5.0

Operating System

Description: Defines the standards for the software that controls the hardware pf a server as well as being responsible for the management of activities and sharing resources on the server.
Technology Advisory Group: DET Converged and Cloud Provisioning Services
Technology Decision Group: Chief Technical Officer; Director - Bureau of Infrastructure; and Director - Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
Windows		Windows Server 2016	Windows Server 2012 R2	Windows Server 2012; 2008 R2	Windows Server 2000; 2003, 2003 R2, 2008
Linux			Suse SLES 11SP4; Suse SLES 12; Suse SLES 12SP1; Oracle 6.7; RedHat RHEL 6.7	Ubuntu	
Unix			IBM AIX	HP HPUX	

Cloud Management

Description: Defines the standards for the services that assist in the management of a server environment.
Technology Advisory Group: DET Converged and Cloud Provisioning Services
Technology Decision Group: Chief Technical Officer; Director - Bureau of Infrastructure; and Director - Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
Patch Management		Suse Manager 3	Lumension 8.5; Suse Manager 2.1	WSUS; LANDesk; SCCM	Lumension 8.0, 7.2
AntiVirus / AntiMalware	Host Based AV	Symantec SEP 14.x	Symantec SEP 12.1.5		
Monitoring		VMWare vRealize Operations; AWS; Azure	WUG		
Automation & Orchestration – Private Cloud	Workflow Automation	Orchestration (Public/Private/Hybrid); Scripting; Configuration Management	Scripting		
Charging – Billback – Showback		VMware vRealize Business (ITBM)	EMC vIPR SRM; Cherwell; Scripting; VMware vRealize Operations		

Public/Hybrid Cloud – IaaS & PaaS

Description: Defines the external Cloud infrastructure providers
Technology Advisory Group: DET Converged and Cloud Provisioning Services, DET Architecture Team
Technology Decision Group: Chief Technical Officer; Director - Bureau of Infrastructure; and Director - Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
IaaS & PaaS	VMware/AWS Integration	Amazon Web Services (AWS)	Microsoft Azure		

Storage

Storage Array Hardware

Description: Defines the standards for server storage across the enterprise network.
Technology Advisory Group: DET Converged and Cloud Provisioning Services
Technology Decision Group: Chief Technical Officer; Director - Bureau of Infrastructure; and Director - Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
Application Storage		"VM-Aware" All Flash SSD Storage (snapshots & encryption)	Fiber Attached Block Storage; "VM-Aware" Hybrid HDD & SSD Storage (snapshots & encryption)		
File Storage		HyperConverged Infrastructure; "VM-Aware" Hybrid HDD & SSD Storage (snapshots & encryption)	NFS and CIFS network attached storage (snapshots)	Fiber attached block storage	

Storage Host Acceleration

Description: Defines the standards for infrastructure and utilities that are used for improving performance in the enterprise storage environment.
Technology Advisory Group: DET Converged and Cloud Provisioning Services
Technology Decision Group: Chief Technical Officer; Director - Bureau of Infrastructure; and Director - Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
Host LUN acceleration				EMC XtremSF accelerator cards / XtremCache software	

Storage Network Hardware

Description: Defines the network devices used for the enterprise storage network.
Technology Advisory Group: DET Converged and Cloud Provisioning Services
Technology Decision Group: Chief Technical Officer; Director - Bureau of Infrastructure; and Director - Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
Fiber Channel Switches			Cisco MDS-9710; Brocade 6510B	Cisco Nexus 5596; 5548	

Data Protection

Description: Defines the enterprise standards used for data protection and recovery in the storage environment.
Technology Advisory Group: DET Converged and Cloud Provisioning Services
Technology Decision Group: Chief Technical Officer; Director - Bureau of Infrastructure; and Director - Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
Data Backup	Appliance based backups (with data indexing/search); Cloud integration	Cloud integration	Agent-based backup; Hypervisor snapshots; Storage snapshots	Agent-based backup	
Data Replication	"Pool" based replication; Cloud replication	HyperConverged replication	Block level array based replication; File level array based replication Application based replication		

Cloud Storage

Description: Defines the supported external partners for use in the enterprise environment.
Technology Advisory Group: DET Converged and Cloud Provisioning Services; DET Architecture Team
Technology Decision Group: Chief Technical Officer; Director - Bureau of Infrastructure; and Director - Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
	Amazon Web Services (AWS); Microsoft Azure		Private Cloud		

Network

Enterprise Network

Description: Defines the infrastructure, standards and utilities for the enterprise network environment.
Technology Advisory Group: DET WAN/LAN Services; DET Network Access Management; DET Data Center Planning and Operations; DET Security Team
Technology Decision Group: Chief Technical Officer; Director - Bureau of Infrastructure; and Director - Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
Protocol	TCP/IP v6	TCP/IP v6	TCP/IP v4		
Switches			Cisco		NetGear
Routers			Cisco		
VPN			Cisco		
Wireless LAN			Cisco	Aruba	
Load Balancers			F5		Cisco
Network Monitoring			Statseeker; WUG; ELSA; Cisco		Solarwinds
IP Address Mgmt (IPAM)			Bluecat	XLS spreadsheet	Solarwinds

DNS

Description: Defines the utilities that assist in the management of the enterprise network environment.
Technology Advisory Group: DET Network Access Management
Technology Decision Group: Chief Technical Officer; Director - Bureau of Infrastructure; and Director - Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
		Bluecat Adonis	Bind		

DHCP

Description: Defines the utilities that assist in the management of the enterprise network environment.
Technology Advisory Group: DET WAN/LAN Services; DET Network Access Management; DET Data Center Planning and Operation
Technology Decision Group: Chief Technical Officer; Director - Bureau of Infrastructure; and Director - Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
			Microsoft		

Platform

Database

Description: Defines the supported databases within the enterprise environment.
Technology Advisory Group: DET Database Team; DET Mainframe
Technology Decision Group: Chief Technical Officer; Director - Bureau of Infrastructure; and Director - Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
SQL Server Database Version			SQL Server 2014, 2016	SQL Server 2008, 2008 R2, 2012	SQL Server 2005
SQL Server Reporting Services (SSRS); SQL Server Integration Services (SSIS); SQL Server Analysis Services (SSAS)			SQL Server 2014, 2016	SQL Server 2008, 2008 R2, 2012	SQL Server 2005
Oracle Database Version	Oracle 12.2.0.1		Oracle 12.1.0.2	Oracle 11gr2, 12.1.0.1	Oracle 10g, 11gr1
DB2 Database Version			DB2 11		

E mail Service

Description: Defines the standards for e mail services and utilities in the enterprise environment.
Technology Advisory Group: DET Application Hosting Team
Technology Decision Group: Chief Technical Officer; Director - Bureau of Infrastructure; and Director - Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
E mail Server		Office 365	Exchange 2013		Exchange 2007
E mail Anti-virus/Anti-spam	Office 365		IronPort 8.5.6		
E mail encryption	Office 365		Cisco Registered Envelope Service		
E mail Retention		Office 365 Preservation Policies	Exchange 2013 Archiving and eDiscovery	Symantec Enterprise Vault; Quest Archive Manager	

Application Hosting

Description: Defines the enterprise standards for applications hosting and other hosting services (i.e. video, fax, list, etc.).
Technology Advisory Group: DET Application Hosting Team
Technology Decision Group: Chief Technical Officer; Director - Bureau of Infrastructure; and Director - Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
Middleware		WebSphere 9.0	WebSphere 7.0, 8.5.5; Oracle Fusion Middleware 12c		WebSphere 5.0, 6.1; Oracle WebLogic 11g
Web Search					Ultraseek 5.7.8
Web Analytics			Splunk Enterprise; Tableau 10.1		Urchin 6.5.00
Enterprise eFax	RightFax Cloud SaaS	RightFax 11.0	RightFax 10.6		
Media Presentation			Adobe Connect 9.3.1; Adobe Connect 9.5		
Video Broadcasting					MediaSite 6.1, 7.0
List Services	GovDelivery	Lyris 12.0	Lyris 11.0		
Application Publishing Services		VMware Horizon (Workspace Aggregator)			Citrix Presentation Server 4.5
Enterprise FTP Services			GlobalScape EFT		
SharePoint		SharePoint 2016; SharePoint Online (O365)	SharePoint 2013		
Team Foundation Services		TFS 2015, 2017	TFS 2012		
Enterprise Distributed Batch			MS 2012		
Image Capture & Processing		Kofax Total Agility	Kofax Capture 9		
Enterprise Service Bus			IBM Integration Bus (IIB)	Websphere Enterprise Service Bus	

HTTP Server

Description: Defines the standards for the services that assist in the management of a server environment.
Technology Advisory Group: DET Application Hosting Team
Technology Decision Group: Chief Technical Officer; Director - Bureau of Infrastructure; and Director - Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
Web Server		IBM HTTP Server (IHS) 9; MS IIS 10.0	Oracle HTTP Server (OHS) 12c; IBM HTTP Server (IHS) 7, 8.5.5; MS IIS 8.5	MS IIS 7.5	Oracle HTTP Server (OHS) 11; IBM HTTP Server (IHS) 5, 6; MS IIS 6.0

Mobile Device Management

Description: Defines the standards for the services that assist in the management of a server environment.
Technology Advisory Group: DET Application Hosting Team
Technology Decision Group: Chief Technical Officer; Director - Bureau of Infrastructure; and Director - Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
		Microsoft InTune	AirWatch Cloud Services 9.0		

Business Intelligence

Description: Defines the standards for the services that assist in the management of a server environment.
Technology Advisory Group: DET Database Team; DET Application Hosting Team
Technology Decision Group: Chief Technical Officer; Director - Bureau of Infrastructure; and Director - Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
Advanced Analytics			Tableau 10.1		

Enterprise Content Management Systems

Description: Defines the standards for Content and Document management.
Technology Advisory Group: DET Application Hosting Team
Technology Decision Group: Chief Technical Officer; Director - Bureau of Infrastructure; and Director - Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
Distributed Content Management Systems			IBM DCMS; OnBase		

Geographical Information System (GIS)

Description: Defines the standards for the services and technologies that assist in the management of the shared GIS environment.
Technology Advisory Group: DET Application Hosting Team; State GIS Group
Technology Decision Group: Chief Technical Officer; Director - Bureau of Infrastructure; and Director - Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
Server				ArcGIS Server 10.2	
				ArcGIS Web Adaptor	
				ArcSDE	
Desktop				ArcInfo Advanced	
				ArcView	
				ArcGIS Publisher	
				Spatial Analyst	

Desktop Virtualization Platform

Description: Defines the desktop virtualization platforms and technologies
Technology Advisory Group: DET Converged and Cloud Provisioning Services
Technology Decision Group: Chief Technical Officer; Director - Bureau of Infrastructure; and Director - Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
Private Cloud		VMware Horizon	VMware Horizon	Unidesk; Citrix XenDesktop	
Public/Hybrid Cloud		VMware Horizon Air			

High-Productivity Application Platform as a Service (hpaPaaS)

Description: Defines development and deployment environments for application services focusing on declarative, model-driven design, and one-step deployment.
Technology Advisory Group: DET Innovation Center
Technology Decision Group: Chief Technical Officer; Director – Bureau of Innovation; Director - Bureau of Infrastructure; and Director - Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
hpaPaaS			Salesforce		

Communication Technology

Description: Defines the enterprise standards for Communication Technology services.

Technology Advisory Group: DET Telecom Group; DET Application Hosting Team; DET Data Center Planning & Operations; DET Architecture Team

Technology Decision Group: Chief Technical Officer; DOA Telecom Chief; Director – Bureau of Infrastructure Services; and Director - Bureau of Architecture & Project Management

Service Offering Definition:

Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
Voice over IP (VoIP)	Microsoft Skype4B Online (O365)	AT&T Hosted Skype4B service	AT&T UC Voice (Cisco UCM); On Premise Cisco UCM for DCF		Centrex
Automated Call Distribution (ACD)		Genesys	Call Center Anywhere (CCA)		
Unified Communications		AT&T Hosted Skype4B service	Enterprise IMC service (Skype4B On-premise); Microsoft Skype4B Online (O365)		
Web Conferencing		AT&T Hosted Skype4B service	Enterprise IMC service (Skype4B On-premise); Microsoft Skype4B Online (O365)		
Dial-In Audio Conferencing	Dial-in Conferencing for Microsoft Skype4B Online (O365)	Dial-in access number to AT&T Hosted Skype4B service	Dial-in access number to On-premise Skype4B;		AT&T Conferencing
Video Conferencing		AT&T Hosted Skype4B service; BlueJeans	Cisco Telepresence	Polycom	
Video Broadcasting		Skype Meeting Broadcast			MediaSite
Unified Messaging (Voicemail)		Microsoft Exchange Online UM (O365)	Unity B Voicemail		Unity A Voicemail

Security

Identity

Description: Defines the enterprise standards for Identity services.
Technology Advisory Group: DET Security Team; DET Network Access Management
Technology Decision Group: Chief Technical Officer; Chief Information Security Officer; Director - Bureau of Infrastructure; and Director - Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
Internal Identity			MS Active Directory; MS Azure AD		
External Identity	MS Azure B2C; MicroFocus Identity Governor; SailPoint		MS Active Directory; MicroFocus eDirectory		
Internal Identity Management Tools			Tools4Ever; BeyondTrust; Microsoft	RMAD	
External Identity Management Tools			MicroFocus; Microsoft		
Advanced Authentication (Multi-Factor)	Office 365 MFA; Smartcards	Next Generation MFA (Duo)	FOB based (RSA)		

Network Security

Description: Defines the enterprise standards for Network Security services.
Technology Advisory Group: DET Security Team; DET Network Access Management
Technology Decision Group: Chief Technical Officer; Chief Information Security Officer; Director - Bureau of Infrastructure; and Director - Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
Firewalls		Cisco Next Gen	Cisco, Palo Alto		
Web Application Firewall			F5 ASM	Trustwave	
Network Access Control (NAC)			Cisco	Aruba	
URL Web Content Filtering			Zscaler	Websense; Bluecoat; Palo Alto	

Security Tools

Description: Defines the enterprise standards for management of security services.
Technology Advisory Group: DET Security Team
Technology Decision Group: Chief Technical Officer; Chief Information Security Officer
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
DDOS	Appliance based solution		Upstream Provider		
Computer Forensic Analysis			Host Based Toolsets (Encase); Network Based Toolsets		
Intrusion Detection/Prevention			Intrusion Detection Systems (IDS); Intrusion Prevention Systems (IPS)		
Security Log Collection	VM & cloud aware log collection tools		Log Collection Tools		
Security Log/Event Monitoring			Log Monitoring Tools		
Vulnerability Assessment		Security Center Continuous View	Nessus; MSS Tools		
DLP	Office 365 Rights Management		Symantec Data Loss Prevention		
Web Application Security Testing			Various Tools		
Penetration Testing			Various Tools		
Security Awareness Training			Star LMS		
Security Audit / Compliance			Various Tools		

Mainframe

Operating Systems/ Hardware Support

Description: Defines the O/S and utilities necessary for the administration of the mainframe environment.
Technology Advisory Group: DET Mainframe Team
Technology Decision Group: Chief Technical Officer; Director Bureau of Infrastructure; and Director Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
			Change Action v8.03		
	z/OS v2.3	DFSMSdfp v2.5	DFSMSdfp v2.1		
	z/OS v2.3	DFSMSdss v2.5	DFSMSdss v2.1		
	z/OS v2.3	DFSMSsort v2.5	DFSMSsort v2.1		
	z/OS v2.3	DFSMStvs v2.5	DFSMStvs v2.1		
	z/OS v2.3	DFSMShsm v2.5	DFSMShsm v2.1		
	z/OS v2.3	DFSMSrmm v2.5	DFSMSrmm v2.1		
	z/OS v2.3		EREP V3R5		
	z/OS v2.3		FTP (z/OS v2.1)		
	z/OS v2.3		FTPS Security (z/OS v2.1)		
		GDDM v2.5	GDDM v2.1		
	z/OS v2.3	HCD v2.5	HCD v2.1		
	z/OS v2.3	HLASM v2.5	HLASM v2.1		
	z/OS v2.3	z/OS v2.5	IBM Ported Tools v2.1		
	z/OS v2.3	ICKDSF v2.5	ICKDSF v2.1		
	z/OS v2.3	IPCS v2.5	IPCS v2.1		
	z/OS v2.3	ISPF v2.5	ISPF v2.1		
	z/OS v2.3	JES2 v2.5	JES2 v2.1		
	z/OS v2.3	LE/370 v2.5	Language Environment v2.1		
	MXG V34.34		MXG V31.31		
			OAM v2.1		
	BMC MAINVIEW v16.07		BMC MAINVIEW v15.02B		
			Perl for z/OS V5.22		
	z/OS v2.3		RMF v2.1		
	SAS V9.4		SAS V9.1.3		
	z/OS v2.3		SDSF v2.1		

z/OS v2.3		SFTP Unix Part (z/OS v2.1)		
z/OS v2.3		SMP/E V3.R6		
		STK HSC		
SYNCsort v2.2		SYNCsort v2.1		
Syncsort: SAS Proc SYNCsort v2.3		Syncsort: SAS Proc SYNCsort v2.3		
z/OS v2.3	TCP/IP v2.5	TCPIP v2.1		
		ThruPut Manager v7.1		
		TPX v5.3		
		T-REX v7.2		
z/OS v2.3	TSO/E v2.5	TSO/E v2.1		
z/OS v2.3	VTAM v2.5	VTAM v2.1		
	XL C/C++ Compiler v2.5	XL C/C++ Compiler v2.1		
z/OS v2.3	z/OS v2.5	z/OS v2.1		
		z/OS UNIX /USS (z/OS V2.1)		

Operations Support

Description: Defines the tools and utilities for the administration and operation for the mainframe environment. This would include license management, operational reporting, and automation, etc.
Technology Advisory Group: DET Mainframe Team
Technology Decision Group: Chief Technical Officer; Director Bureau of Infrastructure; and Director Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
	CO:Z v4.1		CO:Z v3.6.1		
			AbendAid-DB2		
			AbendAid-IMS		
	Abend-Aid-MVS v12.1		Abend-Aid-MVS v12.03		
			ASG/ESW Center v8.1		
			ASG/ESW DB2 Stored Procs v8.1		
			ASG-Insight v8.1		
			ASG-SmartEdit v8.1		
			ASG-SmartTest v8.1		
	ChangeMan v8.1.2		ChangeMan v8.1.1A		
	Control-M v9.0.02		Control-M v7.0.02		
	Control-O v9.0.02		Control-O v7.0.02		
	Control-R v9.0.02		Control-R v7.0.02		
	Control-D v9.0.02		Control-D v7.0.02		
			ECC: Compuware Shared Svcs v04.00		
			ECC: License Mgmt System v04.00		
	EDGE Portfolio Analyzer v1.07.04		EDGE Portfolio Analyzer v1.07.03		
	FASTPACK: FASTGENR v5.4F		FASTPACK: FASTGENR v5.4E		
	FASTPACK: FASTVSAM v5.4F		FASTPACK: FASTVSAM v5.4E		
	FASTPACK: Member Organizer v5.4F		FASTPACK: Member Organizer v5.4E		
	FASTPACK: PDSFAST v5.4F		FASTPACK: PDSFAST v5.4E		
	FASTPACK: Volume Driver v5.4F		FASTPACK: Volume Driver v5.4E		
	FILE-AID MVS v17.02		FILE-AID MVS v16.03		
			Finalist v8.3.0		

			Infoprint Server z/OS 1.13		
	InfoprtXT E z/OS v1.13		Infoprint XT Extender v1.1		
	Replace by Prt TranF		Infoprint Transforms v2.2	To be retired	
			Listcat Plus MVS v7.3		
			Print Transforms - AFP v1.1		
			Infoprnt Font Collection v1.1		
			MailStream Plus v8.2.0		
	MSP: Control Manager v2.7		MSP: Control Manager v1.9		
	MSP: Datamanager v2.7		MSP: Datamanager v1.9		
	MSP: Design Manager v2.7		MSP: Design Manager v1.9		
	MSP: Dictionary Manager v2.7		MSP: Dictionary Manager v1.9		
			PKZIP MVS v15.0		
	Quick Ref v8.1		Quick Ref v8.0		

Mainframe Security

Description: Defines the standards for the security management in the mainframe environment.
Technology Advisory Group: DET Mainframe Team
Technology Decision Group: Chief Technical Officer; Director Bureau of Infrastructure; and Director Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
	RACF v2.1		RACF v1.13		
			z/Lock v2.1		
			z/Secure v2.1		

Application Hosting Tools

Description: Defines the standards for applications running in the mainframe environment.
Technology Advisory Group: DET Mainframe Team
Technology Decision Group: Chief Technical Officer; Director Bureau of Infrastructure; and Director Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
			3270 PC File Transfer		
			AD/CYCLE C/370 v1.2		
			Barcode/OCR		
			Enterprise COBOL v3.4		
	HTTP Server APACHE		HTTP Server v5R3M0		
			Java SDK v1.4.10	Not known if	used
			Java SDK v1.5.7	Used by HOD	HOD v10
			Java SDK v6.0.1	Used by HOD	HOD v11
	JOBSCAN v8.0		JOBSCAN v7.9		
			MFAMVS		
			OGL Overlay Gen Lang. v1.0		
			OS PL/I v2.3		
			OS/VS COBOL v1.2.4		
			PL/I for MVS v1.1.1		

			PPFA (Page Printer Formatting Aid) v1.0		
	PSF v4.5		PSF v4.4		
			VS Fortran v2.6		
			Websphere v5.02		
			Websphere v6		

Database/Data Communications

Description: This defines the database environments on the mainframe and those utilities that are used to manage those databases.
Technology Advisory Group: DET Mainframe Team
Technology Decision Group: Chief Technical Officer; Director Bureau of Infrastructure; and Director Bureau of Architecture & Project Management
Service Offering Definition:
Service Strategy:

Sub-category	Emerging	Strategic	Current Tactical	Transitional	Legacy
		AbendAid/ v12.3	AbendAid/FX-CICS v12.02	v1203 on ITS1	
	Problems Name Changed		GT ASSIST-TS v7.3.0	GT Software Co	
			DADS Plus v4.0		
		Platinum v17.9	Platinum v17.0		
		CDB Utilities v9.3	CDB Utilities v9.3		
	CICS v5.2		CICS v4.1		
			CICS/QSORT v2.6	BMC Product	
	CICS/ HOTPRINT v2.2		CICS/HOTPRINT v2.0	McKinney	Product
			CICS/MESSAGE v5.4	McKinney	Product
			EasyHelp v2.9		
			Assist/TS v7.3.0		
			HFRM (no release info)	Homegrown	PGMs/ Assembler
			z/Services for CICS v6.1		
			ERI/CICS v2.1.0		
			ERI/CICS Lock v2.2		
			DISOSS v3.4	Used by DCF-	KIDS for doc repos.
			Office Vision R3		
			Displaywrite/370 v2.2		
	BMC MAINVIEW v16.07		BMC MAINVIEW v15.02B		

	MQ Series v8.0.5		MQ Series v8.0		
			DB2 v11		
			DB2 Contnt Mgr z/OS v8.5		
			BMC ETA for IMS v3.6	Extended Term	nal Assist/ Plus
			EZTracer v9.1		
			FILE-AID IMS v16.03		
	IMS v15		IMS v13		
			H/P. Pointer Chk v3.1	High Perform.	Pointer Checker
			IMS H/P Unload v1.R2		
	IMS Lib Integr v2.02.0		IMS Lib Itegr v2.01.0		
	Optim v7.2		MOVE for DB2 v7.2	Changed name	
	BMC MAINVIEW/CICS v16.07		BMC MAINVIEW/CICS v15.02B		
	BMC MAINVIEW/IMS v16.07		BMC MAINVIEW/IMS v15.02B		
			QMF v11		
	Connect:Direct for MVS v5.2		Connect:Direct for MVS v5.1.1		
	Connect:Direct Secure Plus v5.2		Connect:Direct Secure Plus v5.1.1		