

CECSC & SWESC Storage Refresh

Status Update and Projected Schedule

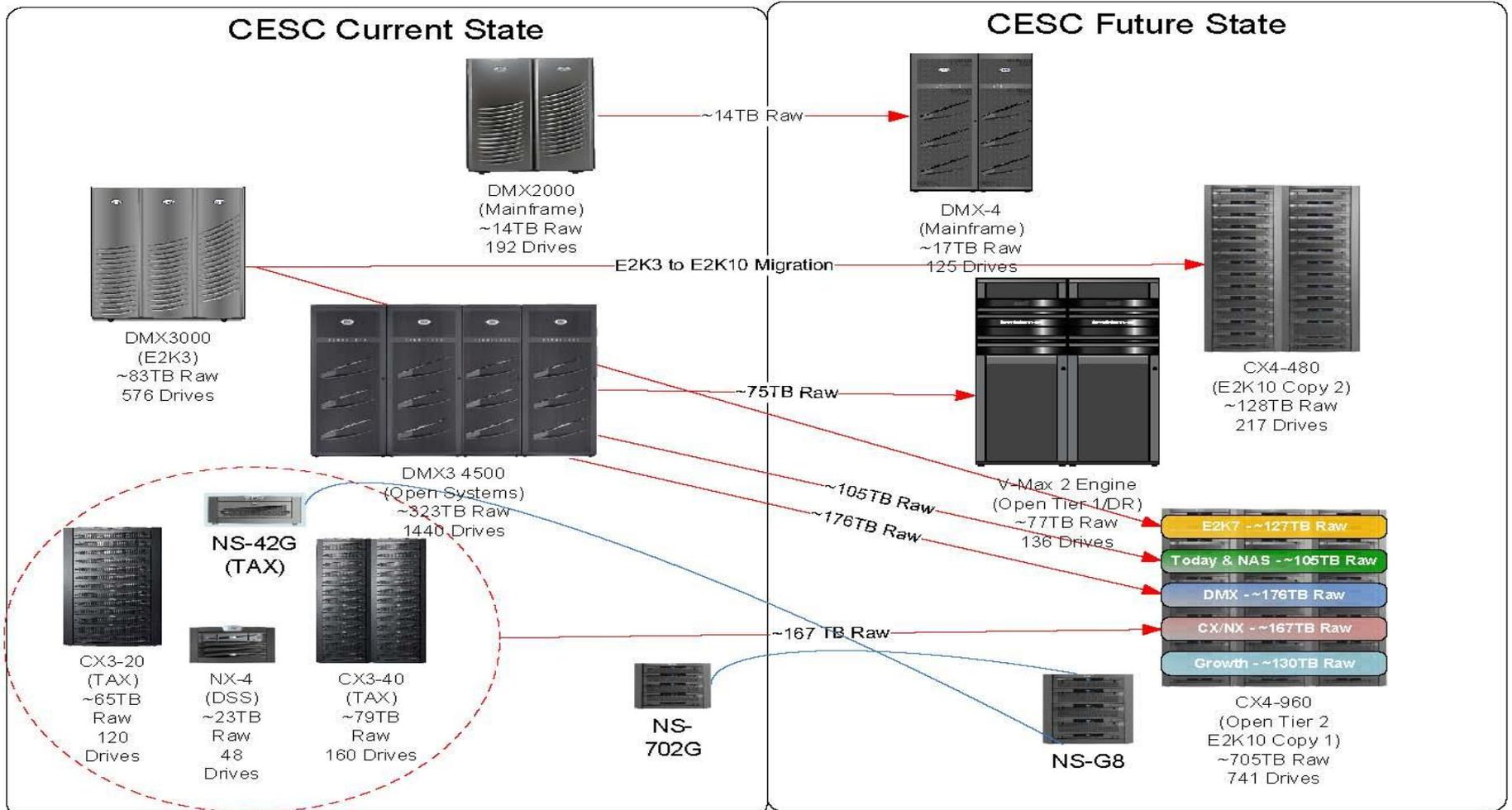
10/26/2010

Agenda

- Purpose
- Refresh Overview
- Current State
- What to Expect
- Schedule Overview
- Questions

Refresh Overview

- Tier 1 and Tier 2 Storage
- Mainframe and Server Storage at CESC & SWESC
- Server firmware and software upgrades
- SAN Fabric Firmware being upgraded
- All changes are coordinated and communicated via the Change Management process

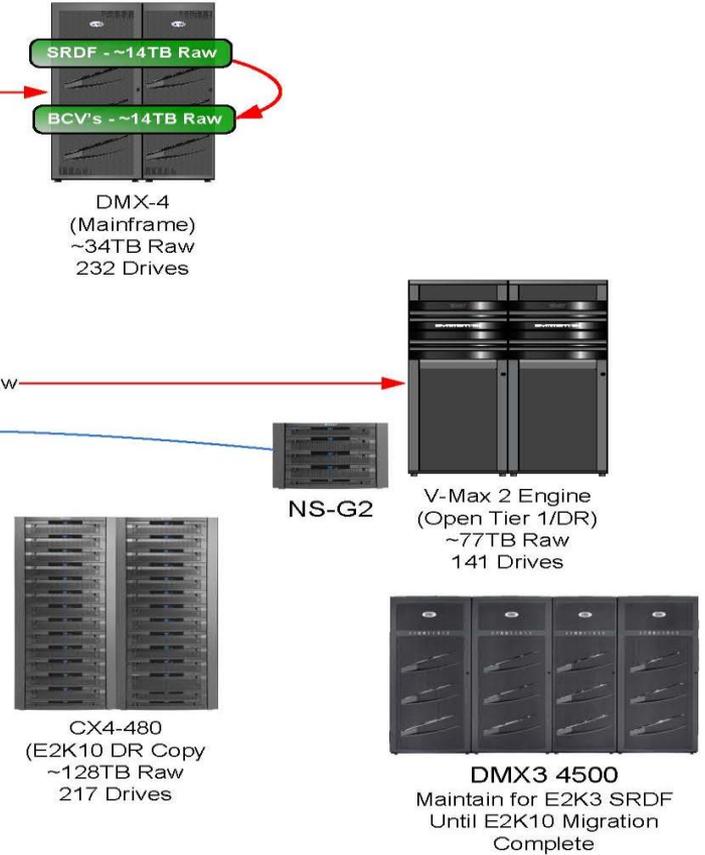


SWESC Current State



~14TB Raw

SWESC Future State



~49TB Raw

Mainframe Storage Refresh Process

- Connect existing storage to new storage
 - CESC & SWESC storage currently at CESC
- Sync data from old to new storage
- Relocate new SWESC storage to SWESC
- Halt mainframes
- Final sync from old to new storage and from CESC to SWESC
- Restart mainframes on new storage
- Will be done same weekend as Tier 1 server or following Tier 1 server cutover
 - Discussions with key customers will determine final date

Tier 1 Server Storage Plan

- Update Server Firmware and Software as needed to currently supported versions (on going)
- Update SAN Fabric Infrastructure
- Update Existing Tier1 SAN code levels
- Connect existing and new Tier1 Storage
- Cutover to new Tier 1 Storage
 - All Agencies on Same Weekend
 - Relocate new SWESC storage to SWESC
 - Down affected servers
 - Final sync from old to new storage at CESC
 - Final sync from new storage at CESC to new storage at SWESC
 - Up affected servers on new storage
 - VMWare server live move via SVMotion

Tier 2 Server Storage Plan

- Update Server Firmware and Software as needed to currently supported versions (ongoing)
- Update SAN Fabric Infrastructure
- Update Existing Tier2 NAS code levels
- Configure new Tier 2 Storage
 - Additional Capacity
 - Additional Features for Performance
 - Solid State “fast cache” disk staging for I/O
 - Tiered disk pools with automated relocation of “hot” I/O to faster devices.
 - Move existing Tier 2 data to new configuration
- Move non-DR server storage from existing Tier 1 SAN to new Tier 2 infrastructure
 - Moved in groups by server and agency
 - Dates and server list will be communicated to agencies prior to moves

SAN Fabric Update Schedule

Sunday, October 17th:
SAN Fabric Core
Upgrade 1

Sunday October 31st :
SAN Fabric Core
Upgrade 2

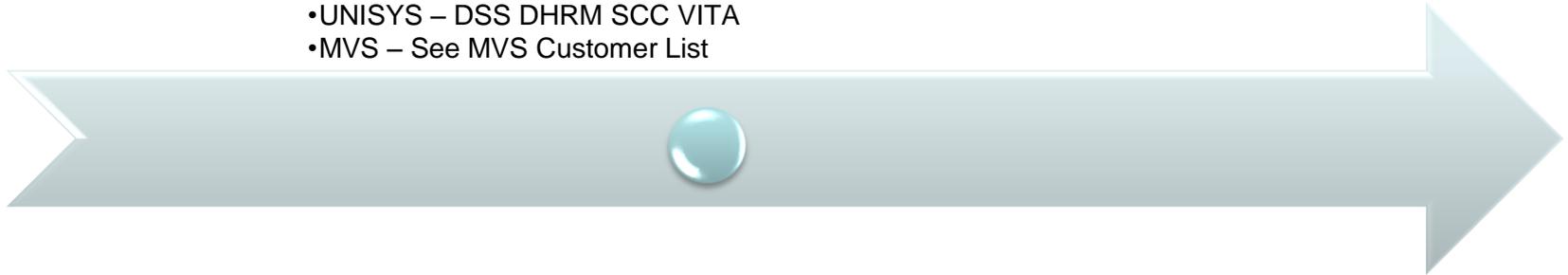
- Early Sunday AM, In place upgrade, should be no impact on customers
- **All Tier1 & Tier2 Agencies**

Saturday & Sunday
October 23rd-24th:
SAN Fabric ISL
Switch Upgrade

Key Dates Mainframe Storage Refresh

Sunday November 28 or Sunday December 5

- All data moves to new DMX4
- Normal Mainframe PM Window in AM
- Mainframes down 2-4 hours during transition
- Actual date to be finalized after discussion with customers
- Affected Agencies
 - UNISYS – DSS DHRM SCC VITA
 - MVS – See MVS Customer List



Tier 1 Server Storage Refresh Schedule

Server updates and San Fabric updates completed by 10/31/10

- Any additional tasks will be completed on 11/7

November 15 – November 27 : Data sync to new Tier 1



Sunday November 14: Code upgrades on existing Tier 1 SAN to support migration.

- Early Sunday AM window
- VITA NAS shares will be unavailable during the upgrade

Saturday & Sunday November 27 & 28 – Tier 1 Cutover

- Affected servers down at Midnight Saturday Night
- Cutover Completed and Servers online by 8 AM Sunday
- Affected Agencies
 - **SBE VDOT TAX VDH DSS + VITA & NG**

Tier 2 Server Storage Refresh Schedule

Server updates and San Fabric updates completed by 10/31/10

- Any additional tasks will be completed on 11/7

Sunday November 21st: Code upgrades on existing Tier 2 NAS, migration support.

- VITA NAS Only



Sunday November 14:
Code upgrades on existing Tier 1 SAN to support migration.

- Early Sunday AM window
- In Place Upgrade with minimal impact expected
- Requesting customers to not run production work on servers during this time to keep I/O minimal and reduce impact if any issues arise
- VITA NAS shares will be unavailable during the upgrade
- **All Tier1 & Tier2 Agencies**

November 22 until Done

- Migrate existing TIER 2 data to new TIER 2 Storage
- SAN & NAS
- Migrate non-DR (non-replicated) data from existing TIER 1 storage to TIER 2 SAN
- Migrated non-DR (non-replicated) data from legacy TIER 2 storage at CESC to new TIER 2 storage at CESC

Key Dates Summary

10/27/2010 – Informational Discussion for all impacted agencies:

- Time: 10:00; Location CESC room – 1223;
- Contact Mike.Shaffer@vita.virginia.gov for webinar/Bridge information

11/14/2010 – Maintenance window to complete the upgrade of existing TIER 1 SAN code to support the migration

- Suggest not scheduling production updates during Sunday PM Window

11/21/2010 – Tier2 NAS upgrades. VITA NAS Only

11/27 – 28/2010 – Tier1 Mainframe and Server cutover

12/5/2010 – Alternate proposed date for Tier 1 Mainframe and Server cutover.

November 22nd until done

-Migrate non-DR Server storage from existing Tier 2 SANS to new Tier 2 SAN

- Will be done in groups by server and by customer (NG, VITA pilots)
- Server reboots required.

Agencies Currently Scheduled for Tier 1 SAN

Agency	Tier 2	Tier 1
121 Office of the Governor	Yes	
122 Department of Planning and Budget	Yes	
132 State Board of Elections	Yes	Yes
136 Virginia Information Technologies Agency	Yes	Yes
136 VITA NAS	Yes	
140 Department of Criminal Justice Services	Yes	
154 Department of Motor Vehicles	Yes	
161 Department of Taxation	Yes	Yes
199 Department of Conservation and Recreation	Yes	
223 Department of Health Professions	Yes	
301 Department of Agriculture and Consumer Services	Yes	
411 Department of Forestry	Yes	
440 Department of Environmental Quality	Yes	
501 Department of Transportation	Yes	Yes
601 Virginia Department of Health	Yes	Yes
720 Behavioral Health and Developmental Services	Yes	
720 Department of Behavioral Health and Developmental Services	Yes	
720 Department of Mental Health, Mental Retardation, and Substance Abuse Services - Central Office	Yes	
765 Department of Social Services	Yes	Yes
777 Juvenile Justice, Department of	Yes	
8213 Northrop Grumman Corporation	Yes	Yes
8213 Shared Solaris Zones	Yes	

MVS Mainframe Customer Agencies

ABC	DJJ	LWC	SMV
ACT	DMA	MAS	SRE
AER	DMV	MHR	SSA
AGI	DOC	MLR	TAX
AGR	DOE	MME	TCC
APA	DPB	MNH	TRS
ARL	DRS	MRC	TSF
ATG	FBG	MSD	UVA
CAL	FFX	MWC	UVH
CHE	FOR	NSU	VAM
CHR	FSC	NVC	VAS
CHT	FSD	OCT	VBT
CNC	FTO	ODU	VCC
COR	GIF	OPA	VEC
CTO	GMU	PDC	VET
CVB	HCD	PER	VMI
CVH	HEA	PHC	VPA
CWM	HEN	PUR	VPE
DBA	HRB	RAU	VPI
DBS	HWY	RBC	VSL
DCE	IRS	RIC	VSP
DCS	JCP	ROC	VSR
DEQ	JMU	SBE	VSU
DES	JSR	SCB	VWC
DGS	JYF	SCC	WEL
DHR	LEG	SCV	WWR
DIT	LIN	SLD	

Questions?

- Approval of November 28th Migration Date?
- Known Issues?