CA Mainframe Chorus for Storage Management

Chris Culver – Engineering Services Architect
SHARE 2012
Introduction / Agenda

1. The Mainframe Today/Tomorrow
2. Key Challenges
3. Chorus the Platform for CA Solutions
4. CA Chorus for Storage Management Overview
5. Marquee Features - Demo
6. Roadmap
CA Mainframe Modernization and Optimization

Mainframe Today

- 17 M
- 8 M 2005
- 40 new customers
- 1500 Servers
- 99.999 %
- Scalability
- Reliability

New Normal

Mainframe Tomorrow

- 85 %
- 80 %
- Mainframe
- Distributed

Mainframe Today vs. Mainframe Tomorrow: Scalability and Reliability improvements.
MSAC Identified Key Challenges

Reduce Cost  Sustain Skills  Hybrid I/T Management

- Maximize
- Rationalize
- Consolidate
- Simplify I/T Management

Mainframe Modernization and Optimization

- MSM / CA RS / Chorus
- EDUC -MF Academy
- E2E Visibility & Mgmt.
- E2E APM
- Workload Automation
- Compliance Management

CVP  MSRP  z/LINUX

Copyright © 2012 CA. All rights reserved. CA confidential. Covered by NDA. No unauthorized copying or distribution permitted. All trademarks, trade names, service marks and logos referenced herein belong to their respective companies.
CA Technologies solution to sustain skills and simplify I/T management

CA Mainframe Chorus
Our generation’s mainframe management...

Command Centric

Green Screen

Knowledge & Collaboration

Reports

Process Automation
— Predefined monitors and alerts watch storage for you
— Solution based storage analysis
— Storage topology views
— Historical storage trend analysis charts and graphs
— Full administrative capabilities through Quick Links
— Knowledge management and collaboration tools
CA Storage Solution with Automation, User Views and Storage Management Analysis
Next generation mainframe management

- Integrated Workspace
- Rich Visualization
- Robust Reporting
- Knowledge & Collaboration
- Process Automation
The next generation of mainframe management
CA Mainframe Chorus platform
Leverage the POWER of CA Technologies storage solutions

• RAID Systems
  • EMC, IBM, HDS and Sun StorageTek

• Allocation and Quota Management
  • CA Allocate™ DASD Space and Placement

• Backup and Restore
  • CA Disk™ Backup and Restore
  • IBM DFSMShsm

• Tape, Robotics and Virtual Tape Systems
  • CA Vtape™ Virtual Tape System
  • IBM VTS Virtual Tape System
  • Sun StorageTek VSM Virtual Storage Manager
  • IBM and Sun StorageTek robotic tape systems

• Tape Management
  • CA 1® Tape Management
  • CA TLMS® Tape Management
  • IBM DFSMSrmm
  • Allen Systems Group ASG-Zar

• Tape Encryption
  • CA Tape Encryption

• Database Management Systems
  • CA Datacom®/DB Database
  • CA IDMS™/DB Database
  • IBM DB2
  • Software-AG ADABAS
— Object-oriented workspace
— New role-based interaction model
— Incorporates rich features and data visualization
— Leverages CA Technologies' portfolio of products as a single bank of features and functions
Multi-host support:
- Multiple instances of the storage engine can now be defined to the Chorus Storage Role

Administrative Actions:
- Storage Resource Administrative Actions allow you to manage your storage resource environment which includes managing storage assets, facilities, and information, e.g. delete a data set

Solutions Category
- New Solutions Category which lists CA Vantage Factory-supplied Summary Objects and user-defined Summary Objects has been added to the Storage Tree

Cross-role Capabilities (Storage-Security)
- Show users and their privileges for a selected data set; show users that have tried to access a selected data set but did not have authority

Knowledge Center includes Storage Object Knowledge
- the Knowledge Center results now include a topic that details the storage object and its available backend line actions
CA Mainframe Chorus for Storage Management
prerequisites
Who needs to be involved

Systems Programmer for z/OS
Storage Administrator
Security Administrator
System requirements

Storage
- 1240 MB (CA Mainframe Chorus)
- 110 MB (CA Mainframe Chorus for Storage Management)

Processor
- Recommend at least 2 GP processors
- Highly recommend specialty engine zAAP

DISK
- Approximately 8500 cylinders for MSM to install and deploy
- Approximately 4500 cylinders for target and dlib datasets
- Approximately 400 cylinders of zFS space for user documentation and configuration

USS BPXPRMXX
- MAXFILEPROC(64000) – sets maximum file descriptions per USS process
Software requirements - IBM

- IBM z/OS 1.11 or above

- IBM z/OS UNIX System Services (USS) support for zFS file systems

- IBM z/OS system logger

- IBM 64-bit SDK for z/OS, Java Technology Edition, Version 7 Release 0 Modification 0 (5655-W44), including optional JZOS batch launcher

- IBM 31-bit SDK for z/OS, Java Technology Edition, Version 7 Release 0 Modification 0 (5655-W43), is required to generate batch reports in CA Mainframe Chorus. This feature uses the CA Easytrieve service component of CA Common Services for z/OS.

- TCPIP Ports - Recommend reserving a range of at least 35
Software requirements – CA Technologies

CA Common Services for z/OS

- Release 12 with maintenance
- Release 14.0 with maintenance
- Release 14.1

CA Common Services required components

- CAIRIM
- CA LMP
- CAMASTER
- CA Easytrieve CA Common Services (FMID CDX8E00)

Important! The CAMASTER address space must be running.
CA Mainframe Software Manager (MSM)
- Release 4.0
- Release 4.1
- Release 5.0

CA Mainframe Chorus requires an MSM installation!

CA Mainframe Chorus for Storage Management
- Release 2.5

CA Vantage SRM
- Release 12.6 base
- Vantage SRM Automation Option
- CA GMI
Security requirements for Chorus

- Target library CETJJCL(ETJI0095) contains sample definitions for RACF, ACF2 and Top Secret
  - Chorus user ID’S
  - Started Task Definitions
  - Resource definitions

- Passtickets used to avoid repetitive log in
  - 10 minute expiration
  - LPAR time zones
Security requirements for the installer

- Update access to target libraries and zFS high-level qualifier
- OMVS segment with valid home directory
- BPX.SUPERUSER
- BPX.FILEATTR.APF
- BPX.FILEATTR.PROGCTL
- BPX.FILEATTR.SHARELIB
- BPX.SERVER
Installation process

• Must use MSM

• Install all pax files into the same SMPE CSI (Chorus 3rd Party Products, the Chorus Platform and roles)

• CA Mainframe Chorus Installation Quick Reference Guide
  • Step by step instructions for the Chorus Platform and available roles
  • Check list format
  • Worksheets for gathering and recording configurable items

• CA Mainframe Chorus Installation guides
  • Lots of detail and background
  • Use as a reference
CA Mainframe Chorus for Storage Management overview
Storage role architecture

LPAR A

Storage Engine
(CA Vantage SRM A)

Storage Metadata

User-interface Browser Communication:
- CA Mainframe Chorus client
- Storage Engine Interface (CA Vantage Web Client)

User-interface Desktop Communication:
- CA Vantage SRM Windows Client
- CA Vantage SRM Config Client

User-interface CA Vantage 3270 Client Communication

Storage Management Support
- Archive
- Tape Management
- Backup
- Virtual Tape
- Reports
- Database
- HW Displays

CA Vantage SRM Services
- Alert API
- TSF API

JBoss (on USS)

JAVA EWS

CA Mainframe Chorus Application

Teiid
(Virtual SQL DB)

Storage Role Translator

Quick Links Module:
- Storage Engine Interface (CA Vantage SRM Web Client)
- Other Role Translators (DB2, Security, and so on)

CA Mainframe Chorus Alert Listeners

CA Mainframe Chorus Time Series Facility (TSF)

CA Mainframe Chorus Database Multi-User Facility (MUF)

Shared Storage

Private (local) Storage

CA Datacom/AD
CA Mainframe Chorus for Storage Management

an overview...

- **Wizard-like process for Object actions**
- Reduces possibility of errors

---

**Integrated Workspace**
- Singular interaction model
- Fast Learning Curve

**Role-Based Navigation**
- Matches Job Functions
- Leverage people across platforms and disciplines

**Graphical Diagnostics**
- Historical performance graphing and comparison
- Solve problems faster

**Knowledge Management**
- Local knowledge and expertise at users fingertips including IDUG and QuickRef
- Increases the whole team’s efficiency

**Process Automation**
- Wizard-like process for Object actions
- Reduces possibility of errors
Integrated Workspace
CA Mainframe Chorus for Storage Management
an overview...

Integrated Workspace
- Singular interaction model
- Fast Learning Curve

Role-Based Navigation
- Matches Job Functions
- Leverage people across platforms and roles

Graphical Diagnostics
- Historical performance graphing and comparison
- Solve problems faster

Knowledge Management
- Community knowledge and expertise at users fingertips including IDUG and QuickRef
- Increases the whole team’s efficiency

Process Automation
- Wizard-like process for Object migration
- Reduces possibility of errors

Copyright © 2012 CA. All rights reserved.
Role -based Navigation
CA Mainframe Chorus for Storage Management

an overview...

- Wizard-like process for Object migration
- Reduces possibility of errors

- Reduces possibility of errors

- Community knowledge and expertise at users fingertips including IDUG and QuickRef
- Increases the whole team’s efficiency

- Historical performance graphing and comparison
- Solve problems faster

- Matches Job Functions
- Leverage people across platforms

- Integrated Workspace
- Role-Based Navigation
- Graphical Diagnostics
- Knowledge Management
- Process Automation

- Singular interaction model
- Fast Learning Curve
CA Chorus for Storage – Graphical Diagnostics
CA Mainframe Chorus for Storage Management
an overview...

Integrated Workspace
- Singular interaction model
- Fast Learning Curve

Role-Based Navigation
- Matches Job Functions
- Leverage people across platforms

Graphical Diagnostics
- Historical performance graphing and comparison
- Solve problems faster

Knowledge Management
- Community knowledge and expertise at users fingertips including IDUG and QuickRef
- Increases the whole team’s efficiency

Process Automation
- Wizard-like process for Object migration
- Reduces possibility of errors
CA Mainframe Chorus for Storage Management
an overview...

- **Integrated Workspace**
  - Singular interaction model
  - Fast Learning Curve

- **Role-Based Navigation**
  - Matches Job Functions
  - Leverage people across platforms

- **Graphical Diagnostics**
  - Historical performance graphing and comparison
  - Solve problems faster

- **Knowledge Management**
  - Community knowledge and expertise at users fingertips including IDUG and QuickRef
  - Increases the whole team’s efficiency

- **Process Automation**
  - Wizard-like process for Object migration
  - Reduces possibility of errors
Process Automation
CA Mainframe Chorus for Storage Management with the underline technology of CA Vantage

- Integrated Workspace
  - Singular interaction model
  - Fast Learning Curve

- Role-Based Navigation
  - Matches Job Functions
  - Leverage people across platforms

- Graphical Diagnostics
  - Historical performance graphing and comparison
  - Solve problems faster

- Knowledge Management
  - Community knowledge and expertise at users fingertips including IDUG and QuickRef
  - Increases the whole team’s efficiency

- Process Automation
  - Wizard-like process for Object migration
  - Reduces possibility of errors

Copyright © 2012 CA. All rights reserved.
Next generation mainframe management

- Integrated Workspace
- Rich Visualization
- Robust Reporting
- Knowledge & Collaboration
- Process Automation
Storage Role roadmap as of January 12, 2012

**Chorus V4.0**
- Tier 2 Graphical Based Analysis/Solutions with Projected ROI Cost Savings (Executive Dashboard)
- Storage Categorization/Hash Tags
- Service Interruption Solutions (detailed analysis and recommend solutions to prevent problems, e.g. threshold limits approaching)
- Inherited features from Platform *(for Storage integration)*

**Chorus V3.0**
- Tier 1 Storage Graphical Based Analysis/Solutions with Projected ROI Cost Savings
- Phase 1 – Graphical Scenario Dashboard
- Enhanced Topology Visualization
- MSM Software Configuration (SCS)
- Inherited features from Platform

**Chorus V2.0**
- Initial integration with the platform
- Alerts
- Time series
- Visualizer
- Quick links – for administration

**Chorus v2.5**
- Storage Investigator Actions
- Connect to multiple Storage Engine Instances
- Initial Solution Scenarios

---

**Existing**

**Planned**

**Under Consideration**
Also see:

— Mainframe Solutions Workbench – Chorus
  - Articles
  - Demos
  - Analysis
  - Product Briefs
  - Webcasts
  - Solution Briefs
  - Success Stories
  - Videos

— CA Technologies Education Portal - Chorus
  - 72 Courses spanning installation, role and usage
Q & A
Thank you for your time!
CA Chorus for Storage Management

CA Vantage Release 11.6
CA Vantage SRM capabilities

- **RAID Systems**
  - EMC, IBM, HDS and Sun StorageTek

- **Allocation and Quota Management**
  - CA Allocate™ DASD Space and Placement

- **Backup and Restore**
  - CA Disk™ Backup and Restore
  - IBM DFSMShsm

- **Tape, Robotics and Virtual Tape Systems**
  - CA Vtape™ Virtual Tape System
  - IBM VTS Virtual Tape System
  - Sun StorageTek VSM Virtual Storage Manager
  - IBM and Sun StorageTek robotic tape systems

- **Tape Management**
  - CA 1® Tape Management
  - CA TLMS® Tape Management
  - IBM DFSMSrmm
  - Allen Systems Group ASG-Zar

- **Tape Encryption**
  - CA Tape Encryption

- **Database Management Systems**
  - CA Datacom®/DB Database
  - CA IDMS™/DB Database
  - IBM DB2
  - Software-AG ADABAS
CA Vantage SRM capabilities

- **Tape Encryption**
  - CA Tape Encryption

- **Database Management Systems**
  - CA Datacom®/DB Database
  - CA IDMS™/DB Database
  - IBM DB2
  - Software-AG ADABAS
Multi-Host Support

- Multiple instances of the storage engine can now be defined to the Chorus Storage Role
- Storage Objects will show data from each active backend
- A “Storage Engine Information” object has been added to the Storage Tree, listing name, LPAR, port number, Status (Available or Not Available), and response statistics for each backend configured
Marquee Features: Easily Accessible Storage Solutions

- New Solutions Category which lists CA Vantage Factory-supplied Summary Objects and user-defined Summary Objects has been added to the Storage Tree.
- Summary Objects summarize the data present in any source object, e.g. number of items that match certain filter criteria or the average value of certain fields.
- Provides easy access to a rich set of Summary Solutions.
Chorus V2.5 introduces two Storage to Security cross role data set investigations:

- Show users and their privileges for a selected data set
- Show users that have tried to access a selected data set but did not have authority
My name is Joe Mazur
(Storage Admin for Morgan Stanley)
Here's my story...

- I maintain the storage environments of Morgan Stanley Production and Development LPARs.

Use Case #1 - John Smith submitted a Morgan Stanley change request to add volumes to a SMS storage group.

Multi-Host, Storage Resource Administrative Actions

Use Case #2 - We are scheduled for our semi-annual Disaster Recovery testing during the weekend of June 22nd-24th. Mark Behrje asked me for tape encryption analysis from 2011 on CA31. It takes me literally weeks of research to locate, analyze and produce the report.

Solution Category for all Summary Objects

Use Case #3 - Automated storage process can be executed by an exceeding a threshold in the Metrics and followed by an automated script and notification from the Alerts module. Let's develop and test the automation scripts.

Multi-Host (Chorus Storage Engine) Support

Storage Resource Administrative Actions

Solutions Category for all Summary Objects

Ability to Execute CA Vantage SRM Automation Scripts
CA Storage Solution with Automation, User Views and Storage Management Analysis

Chorus Storage Management Interface

Mainframe Chorus

Storage Groups

XE21/SP05 - (POOLS) Storage Groups