CA Mainframe Chorus for Storage Management

Chris Culver – Engineering Services Architect SHARE 2012



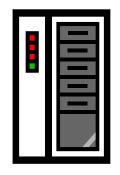
Introduction / Agenda

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



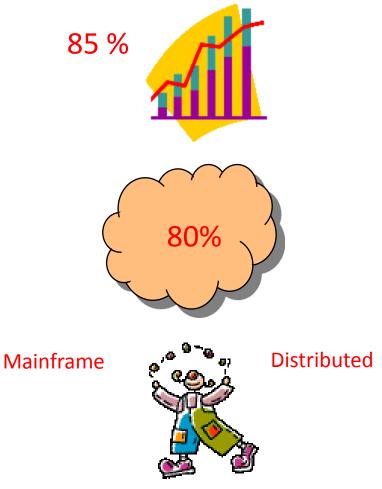
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Scalability

Reliability

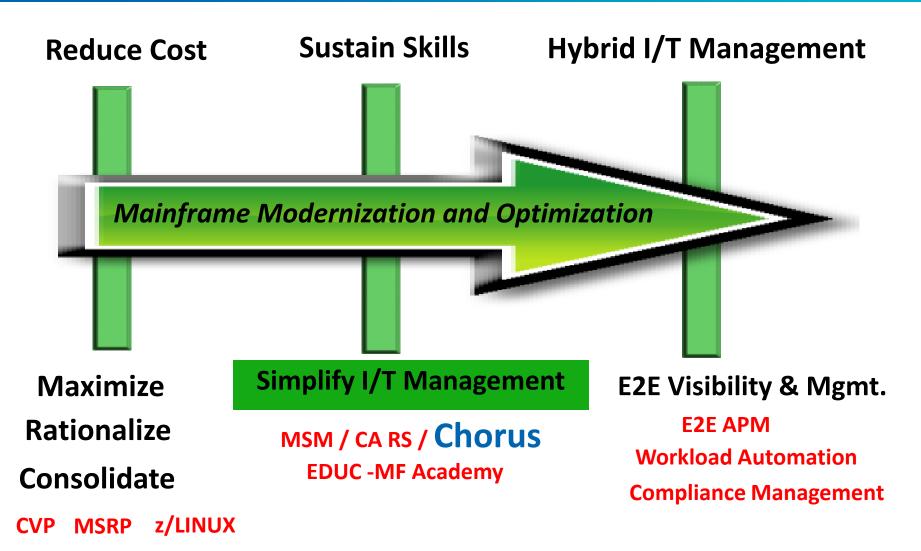
New Normal

Mainframe Tomorrow





MSAC Identified Key Challenges



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CA Technologies solution to sustain skills and simplify I/T management

CA Mainframe Chorus

Our generation's mainframe management...

Command Centric



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Knowledge & Collaboration

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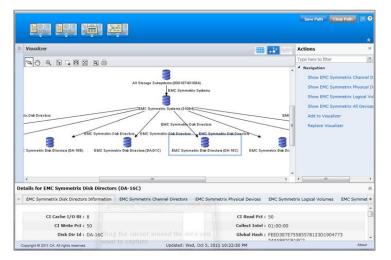
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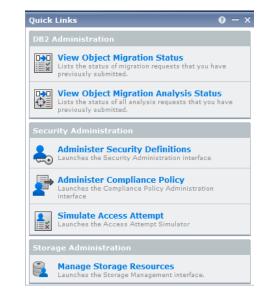
Process Automation



Simplify IT Management and Sustain Skills

- 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



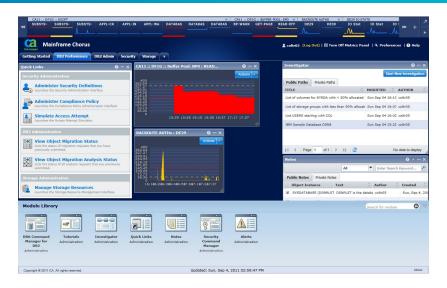


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CA Storage Solution with Automation, User Views and Storage Management Analysis

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Next generation mainframe management

Integrated Workspace





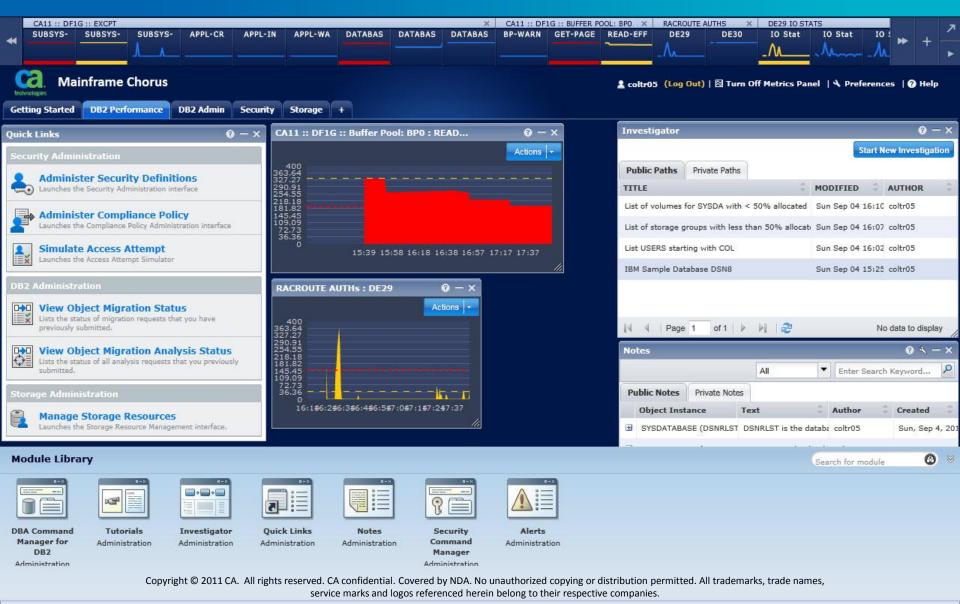


Knowledge & Collaboration



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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

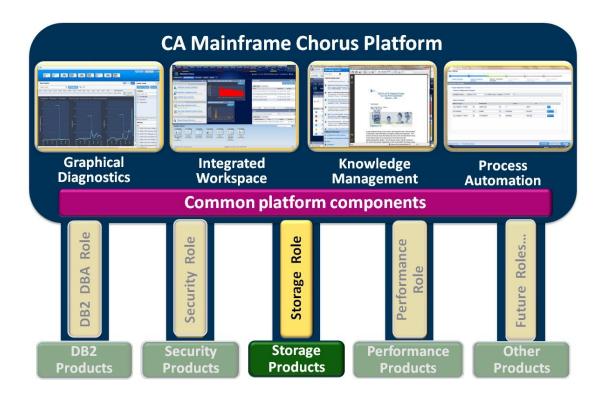
- •Tape Encryption •CA Tape Encryption
- Database Management Systems

•CA Datacom[®]/DB Database
•CA IDMS[™]/DB Database
•IBM DB2
•Software-AG ADABAS



CA Mainframe Chorus Platform

- 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





CA Mainframe Chorus for Storage Management r2.5 features

- 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

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.



Software requirements – CA Technologies

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

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



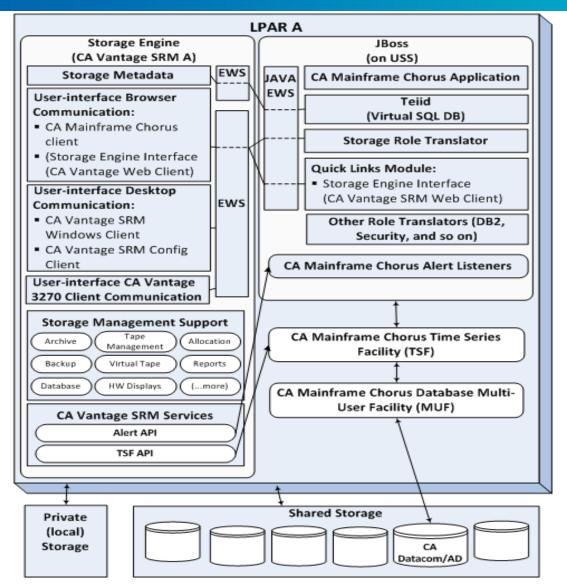
Installation process

- 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





CA Mainframe Chorus for Storage Management *an overview...*

Integrated Workspace	Role-Based Navigation	Graphical Diagnostics	Knowledge Management	Process Automation
 Singular interaction model Fast Learning Curve 	 Matches Job Functions Leverage people across platforms and disciplines 	 Historical performance graphing and comparison Solve problems faster 	 Local knowledge and expertise at users fingertips including IDUG and QuickRef Increases the whole team's efficiency 	 Wizard-like process for Object actions Reduces possibility of errors



Integrated Workspace



CA Mainframe Chorus for Storage Management *an overview...*

Integrated Workspace	Role-Based Navigation	Graphical Diagnostics	Knowledge Management	Process Automation
 Singular interaction model Fast Learning Curve 	 Matches Job Functions Leverage people across platforms and roles 	 Historical performance graphing and comparison Solve problems faster 	 Community knowledge and expertise at users fingertips including IDUG and QuickRef Increases the whole team's efficiency 	 Wizard-like process for Object migration Reduces possibility of errors



Role -based Navigation



CA Mainframe Chorus for Storage Management *an overview...*

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CA Chorus for Storage – Graphical Diagnostics



CA Mainframe Chorus for Storage Management *an overview...*

Integrated Workspace	Role-Based Navigation	Graphical Diagnostics	Knowledge Management	Process Automation
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<u>CA Chorus for Storage – Product Documentation, Notes</u> and WEB UI



CA Chorus for Storage – Local documentation, URLs



CA Mainframe Chorus for Storage Management *an overview...*

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



CA Mainframe Chorus for Storage Management with the underline technology of CA Vantage

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Integrated Workspace	Role-Based Navigation	Graphical Diagnostics	Knowledge Management	Process Automation
 Singular interaction model Fast Learning Curve 	 Matches Job Functions Leverage people across platforms 	 Historical performance graphing and comparison Solve problems faster 	 Community knowledge and expertise at users fingertips including IDUG and QuickRef Increases the whole team's efficiency 	 Wizard-like process for Object migration Reduces possibility of errors



Next generation mainframe management

Integrated Workspace





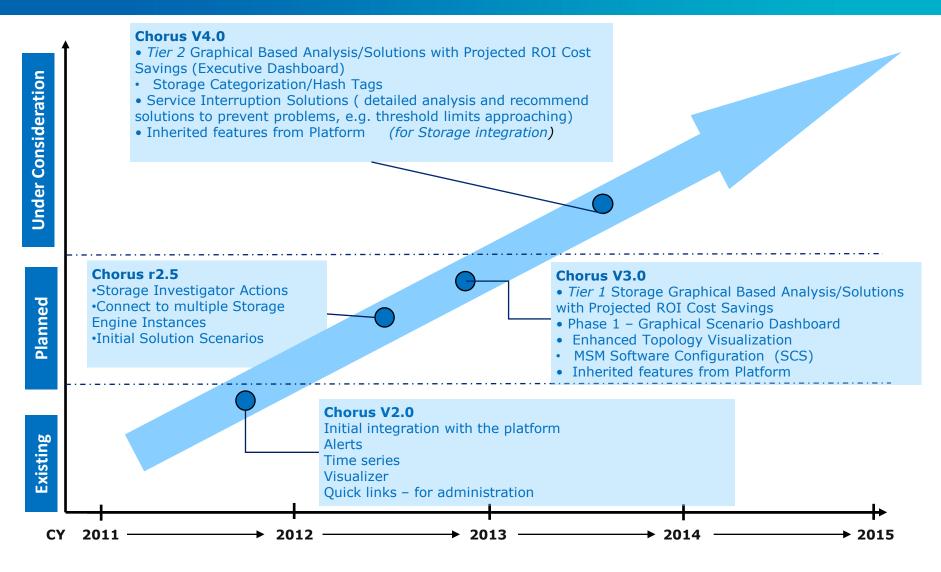


Knowledge & Collaboration



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Storage Role roadmap as of January 12, 2012



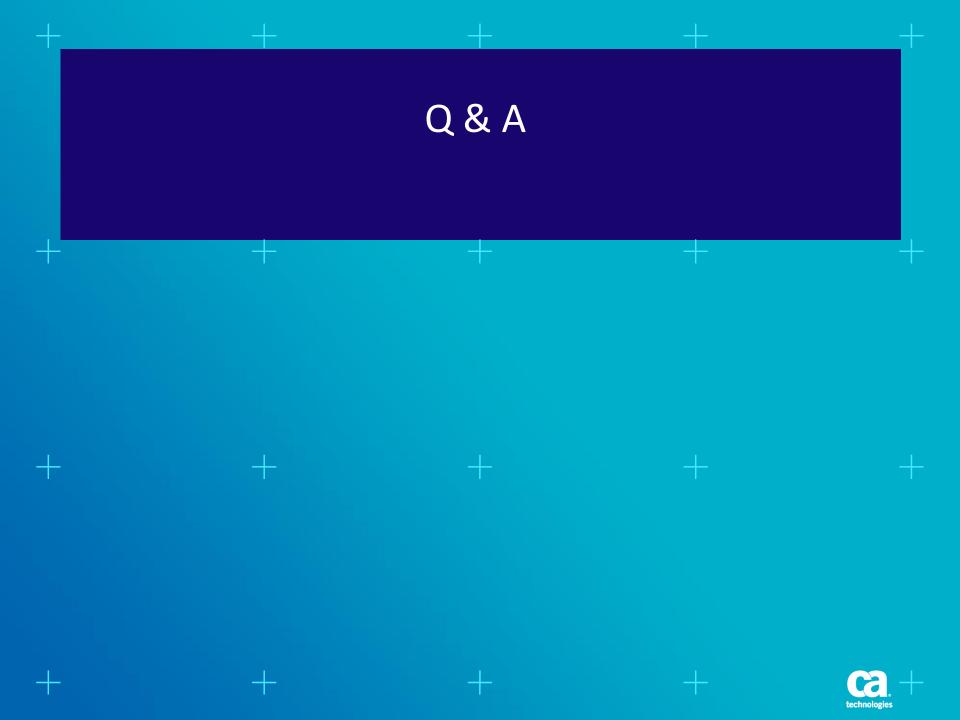


Also see:

Mainframe Solutions <u>Workbench</u> – Chorus

- Articles
- Demos
- Analysis
- Product Briefs
- Webcasts
- Solution Briefs
- Success Stories
- Videos
- CA Technologies Education Portal Chorus
 - 72 Courses spanning installation, role and usage





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



Version 2.5 Marquee Features: Multi-Host Support

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

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VantageKha01 CA31 908 Available KHA 12.06.00 RESERVE 02MAR2012 Logging VantageQvt/c6 CA11 1366 Available QCV6 12.06.00 RESERVE 02MAR2012 VantageQvt/c6 CA11 1366 Available QCV6 12.06.00 RESERVE 02MAR2012 VantageMdr01 CA11 807 Not Available C P <td< th=""></td<>
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Marquee Features: Easily Accessible Storage Solutions

Solutions Category of all Summary Objects

- New Solutions Category which lists CA Vantage Factorysupplied 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

Storage	• «	Storage >	All Storage Soluti	ions > Factory Def	ined >					ς.) 🎹 🎝 🛛
inter a search keyword	×	Give a Su	mmary per 1st No	de in Dataset					Q 🌒 🗘 🗄)• 🗟 指 🗉	2 • %
All Storage Solutions All Summary Objects Factory Defined Applications Give a Summary per 1st Node in Dataset	Â	Notes	Nodes 🍦	Count 🗘	Pct ‡	FSTData Set 💲	TOTAllocated	AVGAllocated 🗘	MAXAllocated 🗘	MINAllocated	TOTIdle B
			AAAC	2	0	AAAC.MOTM.STOCH	4419792	2209896	4249800	169992	56664
			ABAVI01	7	0	ABAVI01.ISPF.ISPPR	45331200	6475885	19549080	56664	2209896
			ABBAL03	1	0	ABBAL03.RECEIVE.M	56664	56664	56664	56664	56664
Give a Summary Line per Dsorg Type Summary by BESKey, Name Summary by SMS Dataclass Summary by Algorithm used Summary by Jobname Summary of Total Files Encrypted per Sub system Give a Summary Name per Type Defined Summary by BESKey Name	-		ABBWI01	5	0	ABBWI01.ISPF.ISPP	8102952	1620590	3399840	226656	906624
			ABDIB01	1	0	ABDIB01.ISPF.ISPPF	113328	113328	113328	113328	0
			ABEBR01	3	0	ABEBR01.JCL	283320	94440	113328	56664	56664
			ABEJUA1	1	0	ABEJUA1.ISPF.ISPPR	339984	339984	339984	339984	0
			ABEJU01	6	0	ABEJU01.ISPF.ISPPR	3683160	613860	1699920	56664	1303272
			ABEWI01	12	0	ABEWI01.XAD1.SPFL	19379088	1614924	11049480	56664	6686352
Summary by SMS Dataclass			ABRGE01	5	0	ABRGE01.ISPF.PLIB		294652	566640	56664	113328
Summary by Algorithm used											
Summary by Jobhame Summary of Total Files Encrypted per Sub system Volume Properties Juser Defined Summarize nbr of archives versus backups in each FILES test IL in summary with sort test modes rt		_	ACF2	1	0	ACF2.RACROUTE.GI		169992000	169992000	169992000	16914204
	-		ACP	1	0	ACP.FDF.AC001V	849960	849960	849960	849960	849960
			ADAMIA3	4	0	ADAMIA3.SRCHFOR.	3569832	892458	2889864	56664	3003192
	s		ADAMI03	13	0	ADAMI03.ISPF.ISPP	32921784	2532444	28898640	56664	28501992
			ADASH01	3	0	ADASH01.ISPF.ISPP	1303272	434424	849960	56664	0
			ADDMA03	1	0	ADDMA03.CA31.SPF	509976	509976	509976	509976	453312
test modes DC		1									



Other Features: Storage to Security Cross Role Data Investigations

Storage to Security Cross Role Data

Investigations

- 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

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All Storage Solutions Allocation Control Automation and Logging Automation Event Types Automation Event Types Automation Event Types Automation Event Types Automation Event Types Automation Event Types Audit Script Activity Log Soript to Object Dependency Script to Object Dependency General Object Automation (f Message Automation (MA) Backup and Archive Management DFSMS Constructs Data Set Groups (Applications) Data Set Management Database Management	Max Executes	Execute Cnt Image: Cnt ima	Ist Uri Hiler HLOTXT INCL ARC/ N/A N/A	Script PDS Name PSS.4300.TESTVANT.VANQCVC6.AUTOSCR PSS.4300.QCV6200C.SYSTSCR PSS.4300.QCV6200C.SYSTSCR PSS.4300.QCV6200C.LOSGCR PSS.4300.TESTVANT.VANQCVC6.AUTOSCR PSS.4300.QCV6200C.SYSTSCR PSS.4300.QCV6200C.SYSTSCR PSS.4300.QCV6200C.SYSTSCR PSS.4300.QCV6200C.SYSTSCR PSS.4300.QCV6200C.SYSTSCR PSS.4300.QCV6200C.SYSTSCR PSS.4300.TESTVANT.VANQCVC6.AUTOSCR	Exclude days? N N N N N N N N N N N Y N Y N	Enable If Fire Fire/Keep Fire/Zero Refresh Refresh/Keep Send Chorus Alert Zero Zero/Defer Navigation Show users of selected dataset in column: Script PDS Name Show violation on selected dataset in column: Script PDS Name Show success violation on selected dataset in column: Script PDS Name Show Script to Object Dependency
Encryption Key Management Hardware Errors - Disk/Tape Performance Management (DAS - III		of1	N/A	PSS.A300.QCV6200C.LOGSCR	N Displaying 1 - 62 of 62	4 [



Marquee Features - Use Case Demo

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 testi 22nd-24th Mark Behrje analysis from 2011 on (weeks of research to lo report.

Solution Category for a

Use Case #3 - Automat executed by an exceedi and followed by an auto from the Alerts module automation scripts.

Ability to Execute CA V

Let's see how CA Mainframe Chorus for Storage v2.5

can assist Joe Mazur:

- Multi-Host (Chorus Storage Engine)Support \geq
- Storage Resource Administrative Actions
- Solutions Category for all Summary Objects \geq
- Ability to Execute CA Vantage SRM Automation Scripts \succ

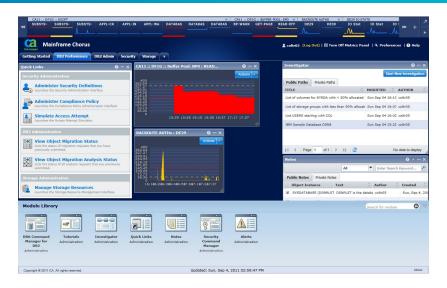


Marquee Features - Use Case Demo



CA Storage Solution with Automation, User Views and Storage Management Analysis

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📄 Database Management	SMD004	4C49	3390	27	30	1
DFSMS Constructs	SMD005	4C4A	3390	27	31	
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5	DEMM	USR	43	13	66.08	28.69	37.38				
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