

CA Mainframe Chorus for Storage Management

Chris Culver – Engineering Services Architect
SHARE 2013



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

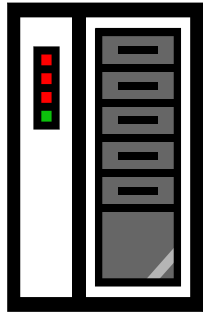
Marquee Features - Demo

6

Roadmap

CA Mainframe Modernization and Optimization

Mainframe Today



17 M

8 M 2005

40 new customers



1500 Servers



99.999 %

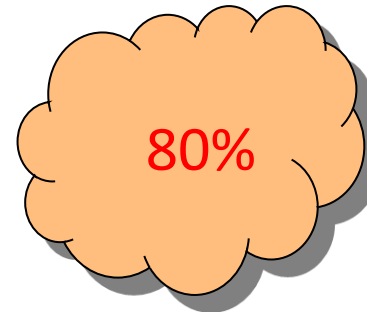
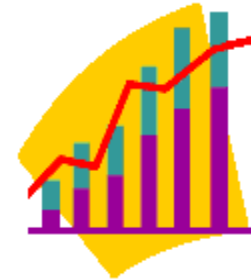
Scalability

Reliability

New Normal

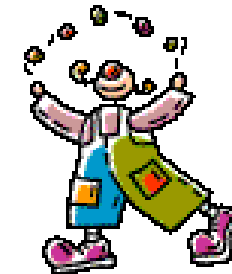
Mainframe Tomorrow

85 %

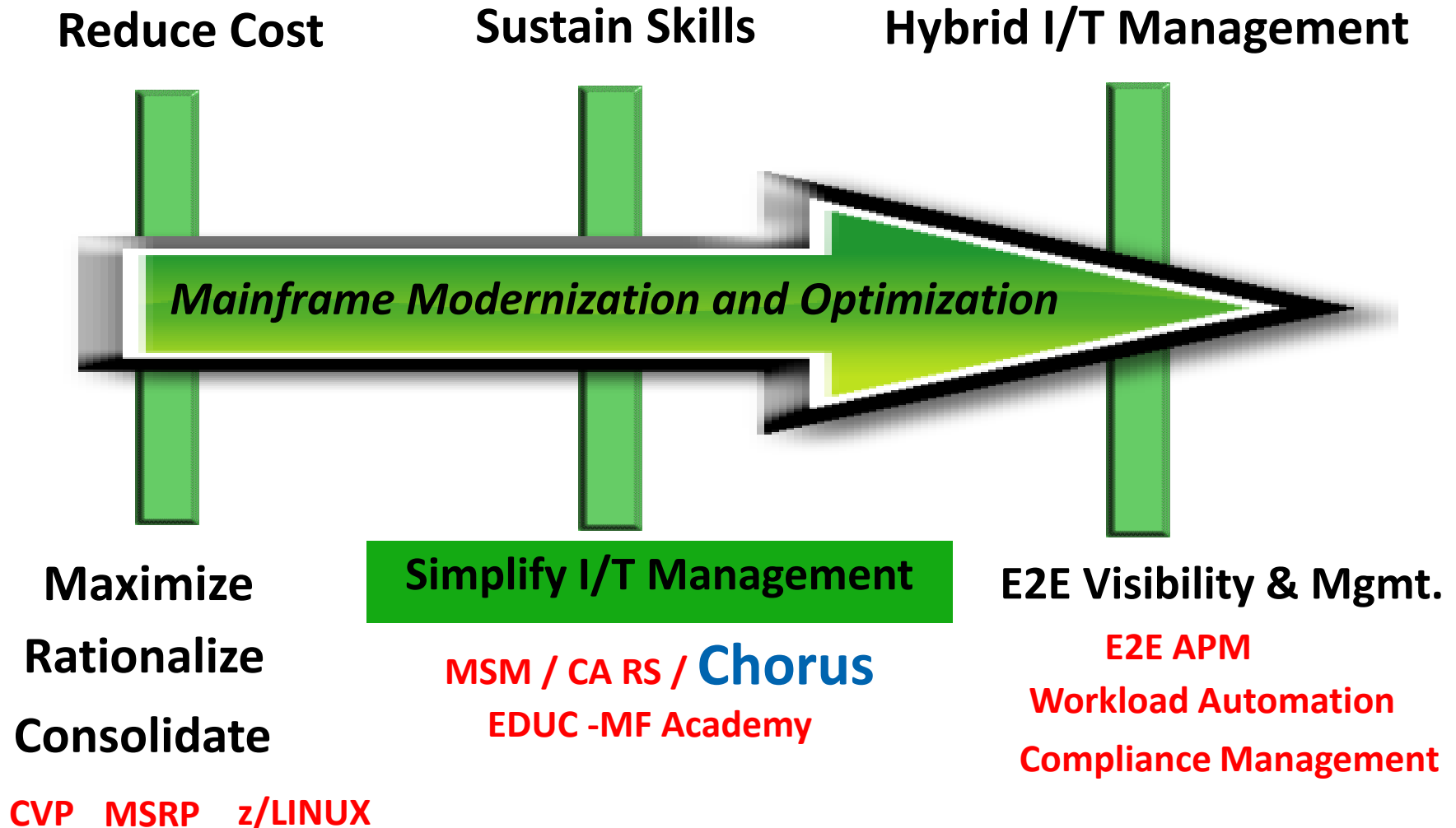


Mainframe

Distributed



MSAC Identified Key Challenges



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

CA Mainframe Chorus

Our generation's mainframe management...

Command Centric



REPORT-1A 07/31/1994					
SAMPLE CONTROL TOTALS BY DIVISION					
AREA/	REGION	GROSS	EXPENSE1	EXPENSE2	COUNT
10001	10	4,532,955.90-	5,100.00-	.00	2
10001	18	-2,086,572.19	-1,940.73	1,000.00	19
10001	30	(182,278.43)	(30.00)	.00	
10001	42	8,781,387.6508	.00	1,500.00	
10001	43	209,763.01db	.00	.00	
10001	46	374,581,409.14CR	57,430.5408	1,677,786.72	5
10001	47	94,607,014.40CR	.00	189,304.38	
10001	48	88,216.54	.00	.00	
10001	56	10,270,858.01	31,631.87db	16,141.61	1
10001	57	14,607,781.16	.00	.00	
10001	58	478,384.64	.00	.00	
10001	59	7,510,761.24	.00	1,200.00	
10001	60	42,050,758.13	290,277.32CR	127,815.39	565
10001	61	56,682,016.18	11,040.64CR	85,822.08	217
10001	62	3,487,976.08	1,526,728.16	204,677.42	2
10001	64	15,058,472.40	6,281.87	3,313.60	8
10001	65	124,752,634.30	55,680.22	15,825.35	6
10001	71	70,907.68	.00	.00	
10001	73	5,866,884.77	22.00	.00	
10001	75	5,858,317.56	.00	.00	
10001	76	64,515,051.60	7,947.08	.00	1
10001	79	.00	.00	.00	
10001	80	7,988,907.67	16,931.23	3,564.73	29

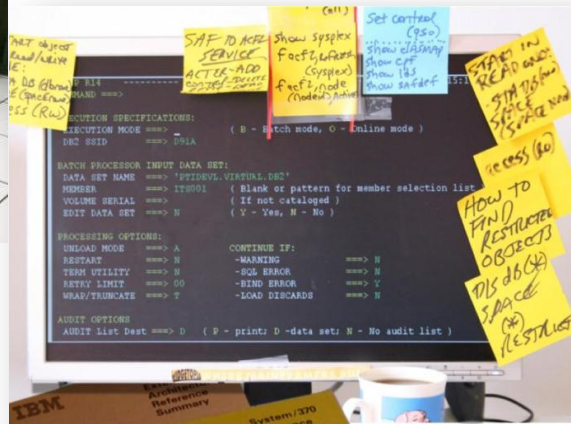
Green Screen

```
SYSDVIEW 12.13 CAS1 ----- ACTIVITY, System Activity ----- 03/31/10 10:32:49
Command ----->
-----> Lvl 3 Row 1-10/15 Col 1-19/491
(r) IP% IIP% CP% ...50...100 -Condition- ---Ready--- --Paging-- --Storage-
CPU 0% 0% 25% NoEMG SW ASIDs 4 100% 25% 100%
LCPU 2% 0% 25% NoEMG NoWTO Tasks 4 Rate 5 ESQA 70%
Spool 67% NoEMG NOTAF -----I/O----- AFQA 1.02m SQA 74%
Rate 10186 UICA 3170 SQA 74%

Formats DEFAULT ALERTS CPU IO PERF PROC STG USER WLM
Status NoEMT NoLIM NoSEL NoDST PFX NoOmn NoUPD NoPRT NoCAP

*
Cmd Jobname Stepname Procstep Type Jobnr Jc Status CPU-Time Limit Clocktime
---
PTX66MAN PTX66MAN FMINICLO STC 11596 Jc NS 7.795995 86400 01:32:51
PTX66SRV PTX66SRV WESSRV STC 11599 Jc IN 3.456497 86400 01:32:51
PTX66SRV STEP1 OTX 11756 Jc LSW 0.025760 01:31:32
PTX66SRV STEP1 OTX 11755 Jc LSW 0.023144 01:31:32
PTX66CAT PTX66CAT JAVAIVM STC 11724 Jc IN 43.58061 86400 01:31:43
PTX66NET PTX66NET FANMAHMT STC 11725 Jc NS 8.498180 86400 01:31:43
PTX66MUF STEP1 OTX 11750 Jc LSW 0.283999 01:31:32
PTX66OFA PTX66OFA OFSAGENT STC 11753 Jc NS 5.677973 86400 01:31:41
PTX66SRV STEP1 OTX 11775 Jc LSW 0.023533 01:31:31
PTX66IDC PTX66IDC INSDC STC 13509 Jc NS 2.060636 86400 00:13:26
```

Knowledge & Collaboration

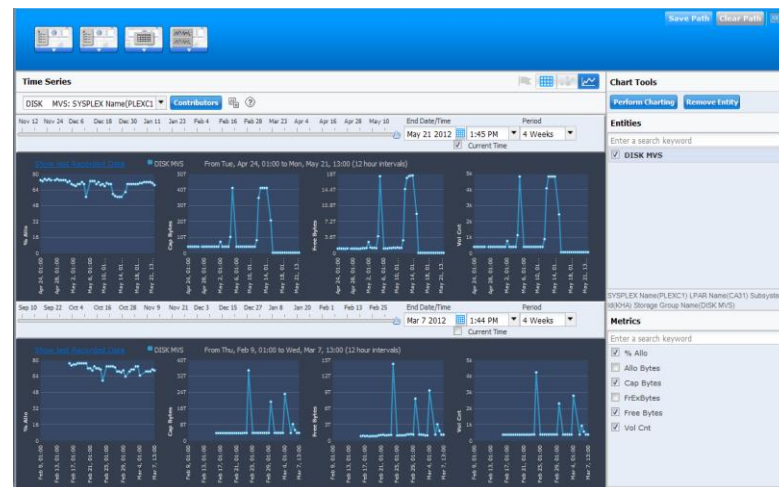
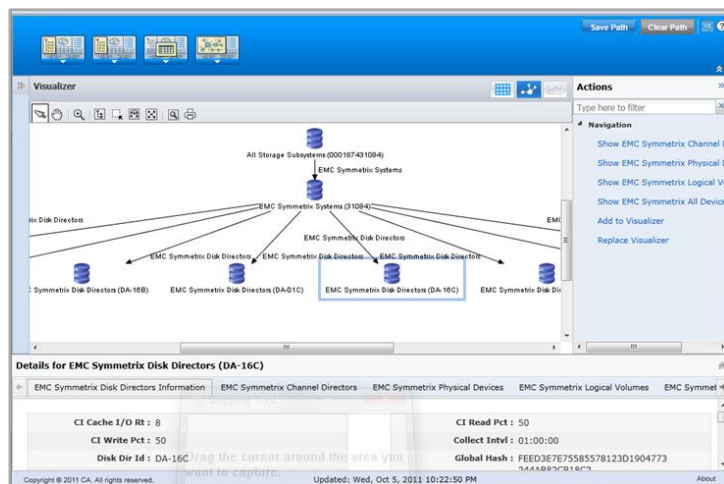
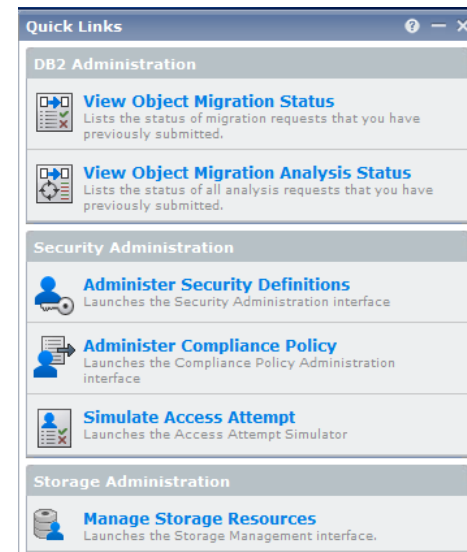


Reports

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



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

Chorus Storage Management Interface
 Logged in as: wilja25 (Log Out)

Find on Tree

- Object Tree
 - Allocation Control
 - Automation and Logging
 - Backup and Archive Management
 - CA Vantage Internal Management
 - Catalog Management
 - Data Set Groups (Application)
 - Data Set Management
 - Database Management
 - DFSMS Constructs
 - Distributed Sys Views
 - Encryption Key Management
 - Hardware Errors - Disk
 - Performance Management

Volume Space Usage

Select and: Actions Zooms

Page 1 of 4 Displaying 1 - 20 of 78

Volume	CUA1	DevType	Model	% Allo	Frndx
DEMD01	4D1A	3390	1	0	
SMD001	4C46	3390	27	30	
SMD002	4C47	3390	27	63	
SMD003	4C48	3390	27	56	
SMD004	4C49	3390	27	30	
SMD005	4C4A	3390	27	31	
SMD006	4C4B	3390	27	24	
SMD007	4C4C	3390	27	97	

Mainframe Chorus
 Logged in as: wilja25 (Log Out)

Getting Started DB2 Performance DB2 Admin Security Storage

Quick Links

- Administer Security Definitions
- Administer Compliance Policy
- Simulate Access Attempt
- View Object Migration Status
- View Object Migration Analysis Status
- Manage Storage Resources

Module Library

- DBA Command Manager for DB2 Administration
- Tutorials Administration
- Investigator Administration
- Quick Links Administration
- Notes Administration
- Security Command Manager Administration
- Alerts Administration

Investigator

Public Paths Private Paths

Start New Investigation

Public Notes Private Note

Object Instance Text Author Created

SYSDATABASE (DBNLST) is the datab: colr05 Sun, Sep 4, 2011

Storage Groups

File View Edit Commands Actions Help

Show Line: []

	SG Name	Type	% Allo	Vol Cnt	Capacity Bytes (GB)	Allocated Bytes (GB)	Free Bytes (GB)
1	TOTAL	ONL	55	520	3,872.64	2,165.50	1,707.14
2	APCDASD	MVS	78	1	7.93	6.26	1.67
3	DEMD	USR	51	6	12.33	6.31	6.02
4	DEMI	USR	44	3	7.93	3.49	4.44
5	DEMM	USR	43	13	66.08	28.69	37.38
6	DEMOED	SMS	83	23	150.23	126.18	24.05
7	DEMS	USR	85	25	184.09	157.64	26.45
8	DISK	MVS	55	480	3,674.65	2,041.66	1,632.99

XE21 / SP06 - (POOLS) Storage Groups LI Records: 47

Next generation mainframe management

Integrated Workspace

Rich Visualization




Robust Reporting

Knowledge & Collaboration

Process Automation

The next generation of mainframe management


**Mainframe Chorus**


coltr05 (Log Out) | Turn Off Metrics Panel | Preferences | Help


Getting StartedDB2 PerformanceDB2 AdminSecurityStorage+

Quick Links


Security Administration


**Administer Security Definitions**
Launches the Security Administration interface

**Administer Compliance Policy**
Launches the Compliance Policy Administration interface


**Simulate Access Attempt**
Launches the Access Attempt Simulator

DB2 Administration

**View Object Migration Status**
Lists the status of migration requests that you have previously submitted.

**View Object Migration Analysis Status**
Lists the status of all analysis requests that you previously submitted.

Storage Administration

**Manage Storage Resources**
Launches the Storage Resource Management interface.

CA11 :: DF1G :: EXCPT

SUBSYS- SUBSYS- SUBSYS- APPL-CR APPL-IN APPL-WA DATABAS DATABAS DATABAS

CA11 :: DF1G :: BUFFER POOL: BP0

BP-WARN GET-PAGE READ-EFF

RACROUTE AUTHS

DE29 DE30

IO Stat IO Stat IO Stat

CA11 :: DF1G :: Buffer Pool: BP0 : READ...

400 363.64 327.27 290.91 254.55 218.18 181.82 145.45 109.09 72.73 36.36 0

15:39 15:58 16:18 16:38 16:57 17:17 17:37

RACROUTE AUTHS : DE29

400 363.64 327.27 290.91 254.55 218.18 181.82 145.45 109.09 72.73 36.36 0

16:1#6:2#6:3#6:4#6:5#7:0#7:1#7:2#7:37

Investigator

Start New Investigation

Public Paths Private Paths

TITLE	MODIFIED	AUTHOR
List of volumes for SYSDA with < 50% allocated	Sun Sep 04 16:10	coltr05
List of storage groups with less than 50% allocati	Sun Sep 04 16:07	coltr05
List USERS starting with COL	Sun Sep 04 16:02	coltr05
IBM Sample Database DSN8	Sun Sep 04 15:25	coltr05

Page 1 of 1

No data to display


Notes


Public Notes Private Notes


Object Instance	Text	Author	Created
SYSDATABASE (DSNRLST)	DSNRLST is the datab	coltr05	Sun, Sep 4, 201


Search for module


Module Library


**DBA Command Manager for DB2**
Administration


**Tutorials Administration**

**Investigator Administration**

**Quick Links Administration**

**Notes Administration**

**Security Command Manager Administration**

**Alerts Administration**

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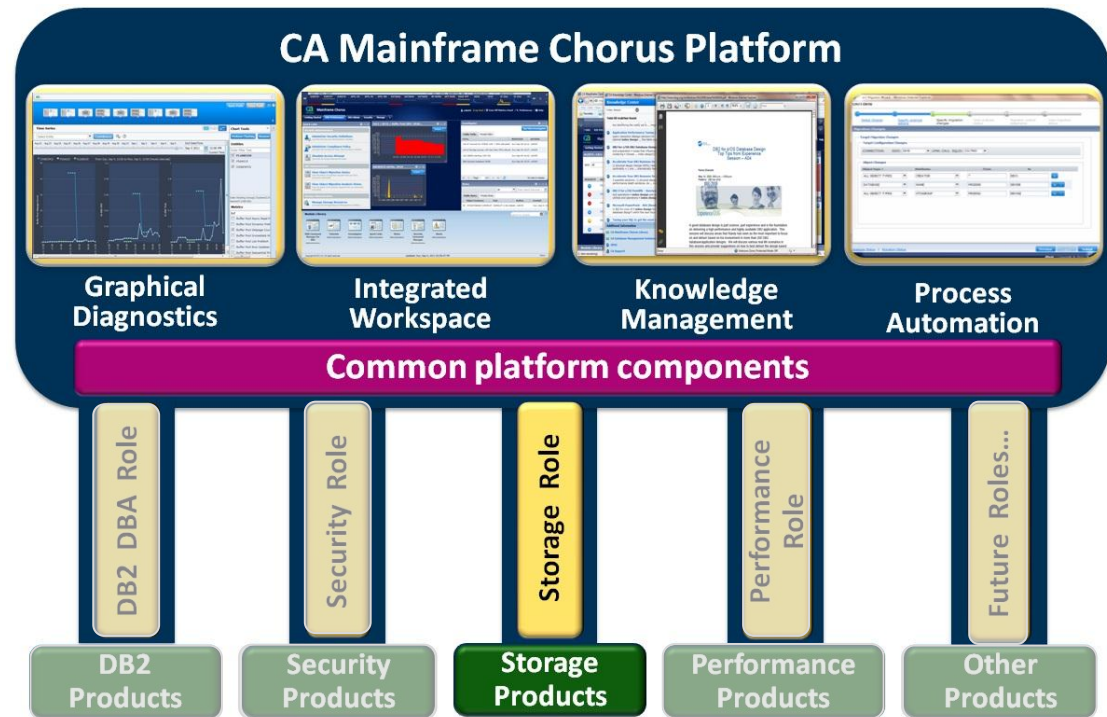
CA Mainframe Chorus platform

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

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 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

Security requirements for the installer

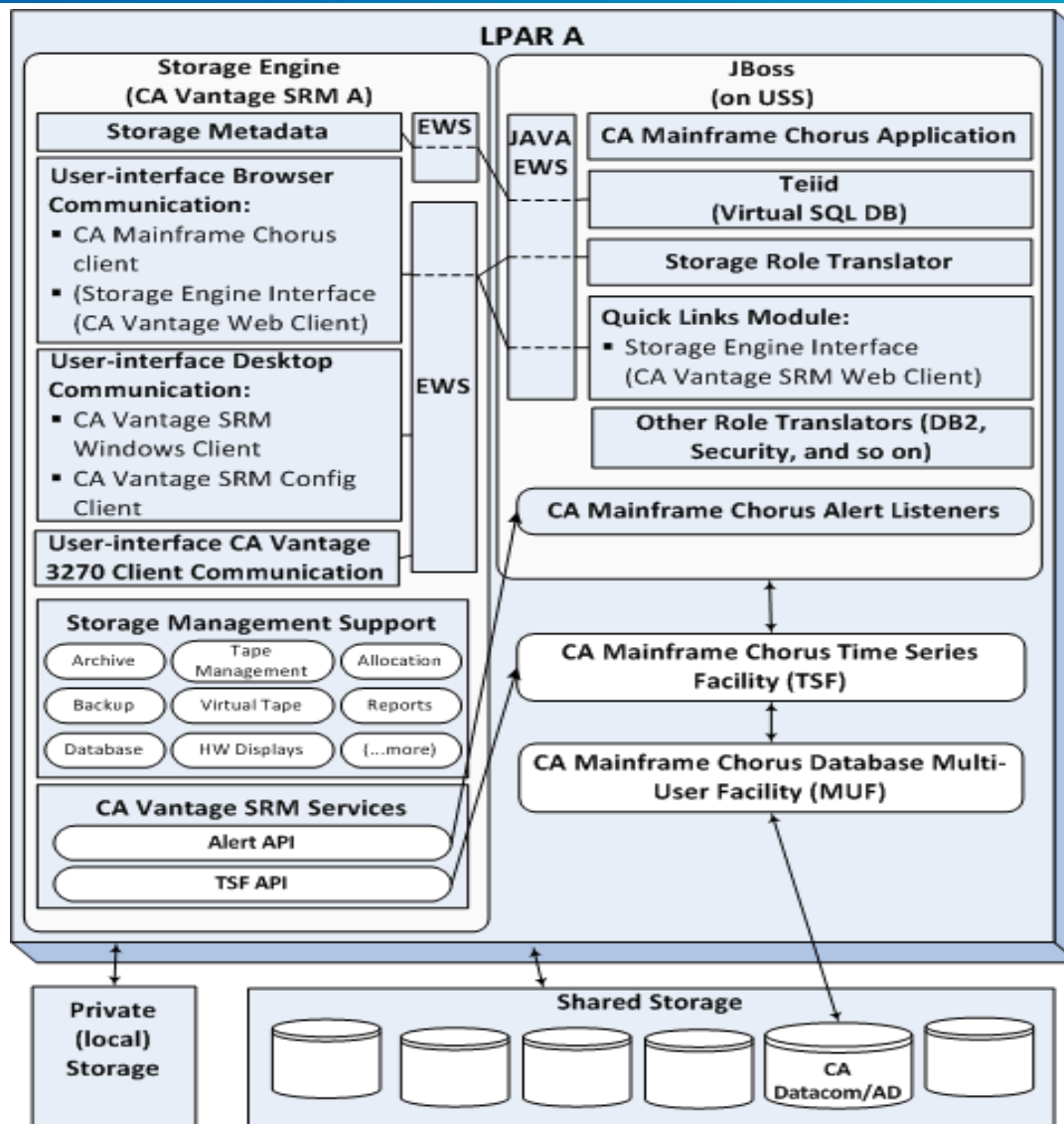
- Update access to target libraries and zFS high-level qualifier
- OMVS segment with valid home directory
- BPX.SUPERUSER
- BPX.FILEATTR.APF
- BPX.FILEATTR.PROGCTL
- BPX.FILEATTR.SHARELIB
- BPX.SERVER

Installation process

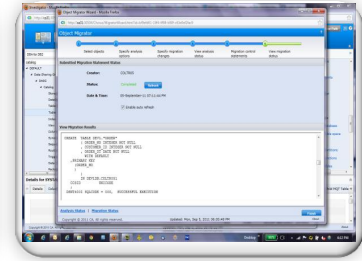
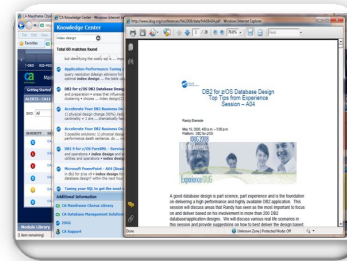
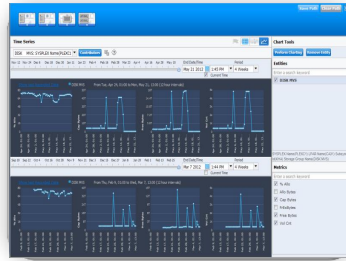
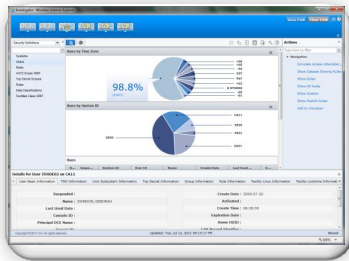
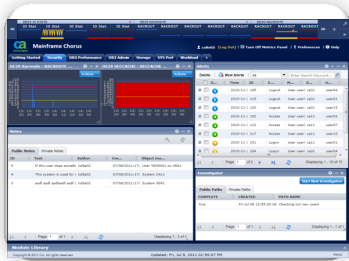
- Must use MSM
- Install all pax files into the same SMPE CSI (Chorus 3rd Party Products, the Chorus Platform and roles)
- CA Mainframe Chorus Installation Quick Reference Guide
 - Step by step instructions for the Chorus Platform and available roles
 - Check list format
 - Worksheets for gathering and 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

- 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

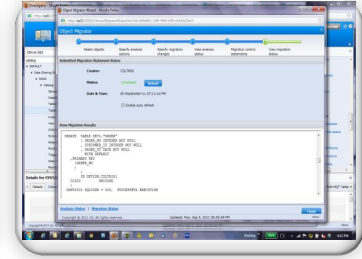
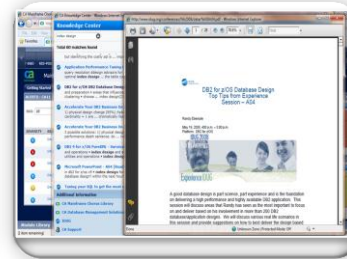
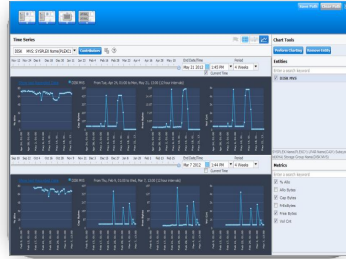
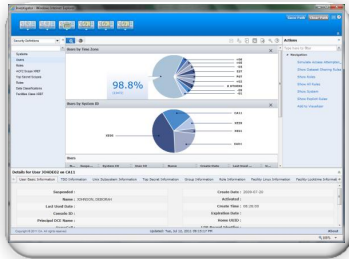
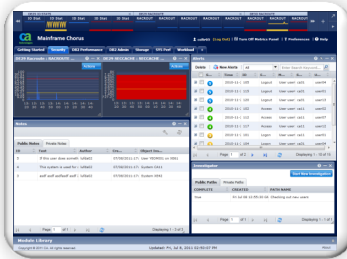
- Local knowledge and expertise at users fingertips including IDUG and QuickRef
- Increases the whole team's efficiency

Process Automation

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

Integrated Workspace

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



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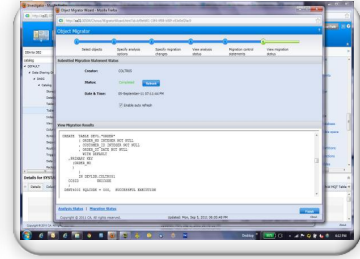
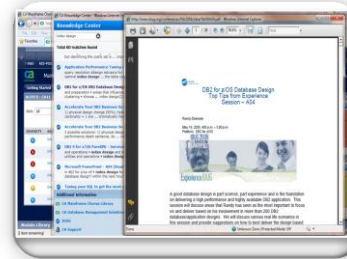
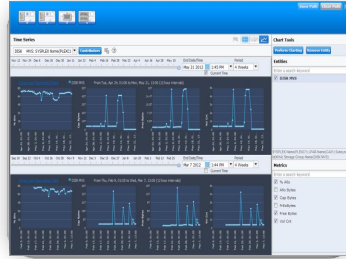
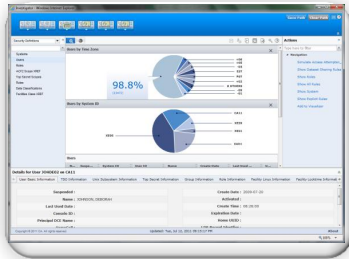
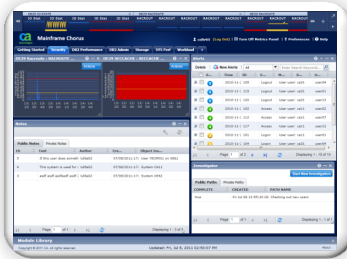
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Role -based Navigation

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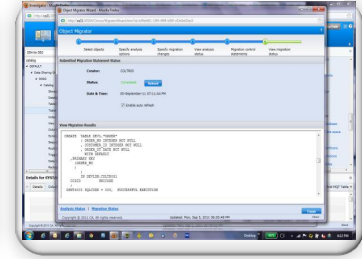
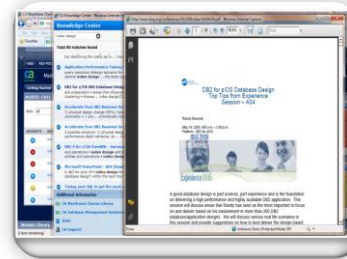
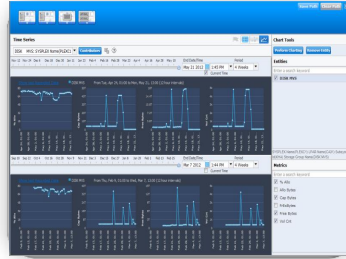
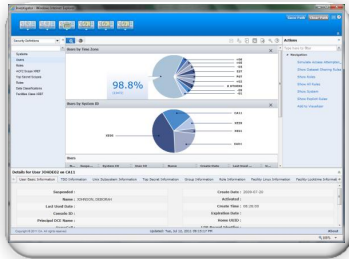
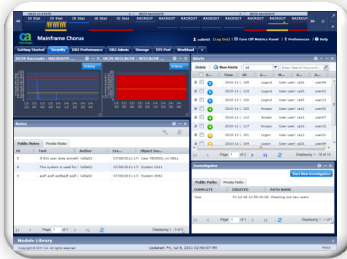
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CA Chorus for Storage – Graphical Diagnostics

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



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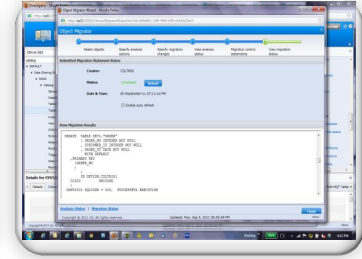
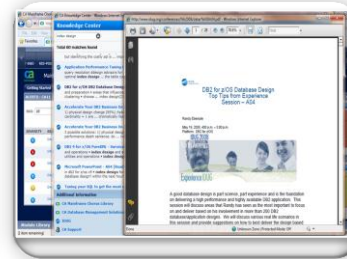
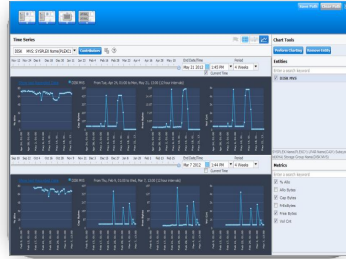
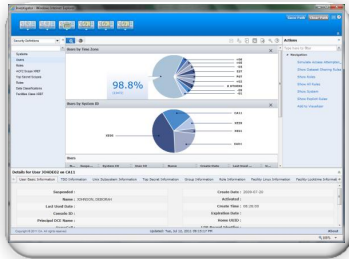
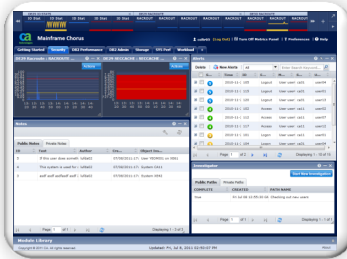
Process Automation

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CA Chorus for Storage – Product Documentation, Notes and WEB UI

CA Chorus for Storage – Local documentation, URLs

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



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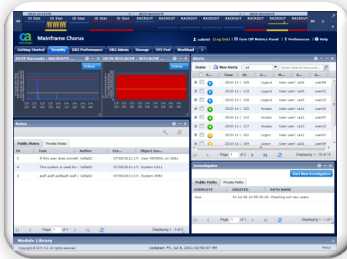
- Community knowledge and expertise at users fingertips including IDUG and QuickRef
- Increases the whole team's efficiency

Process Automation

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

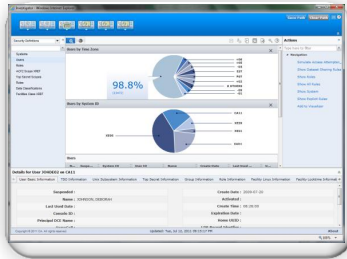
Process Automation

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



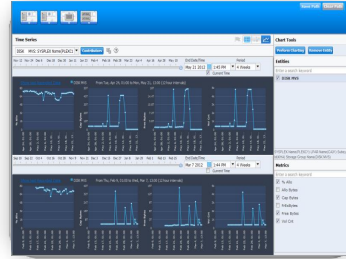
Integrated Workspace

- Singular interaction model
- Fast Learning Curve



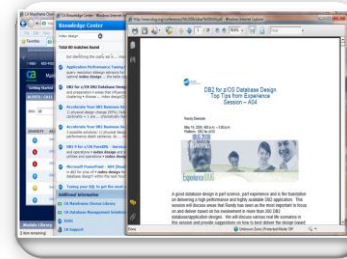
Role-Based Navigation

- Matches Job Functions
- Leverage people across platforms



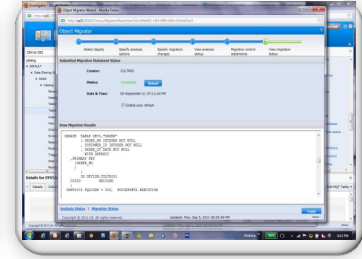
Graphical Diagnostics

- 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

Next generation mainframe management

Integrated Workspace

Rich Visualization

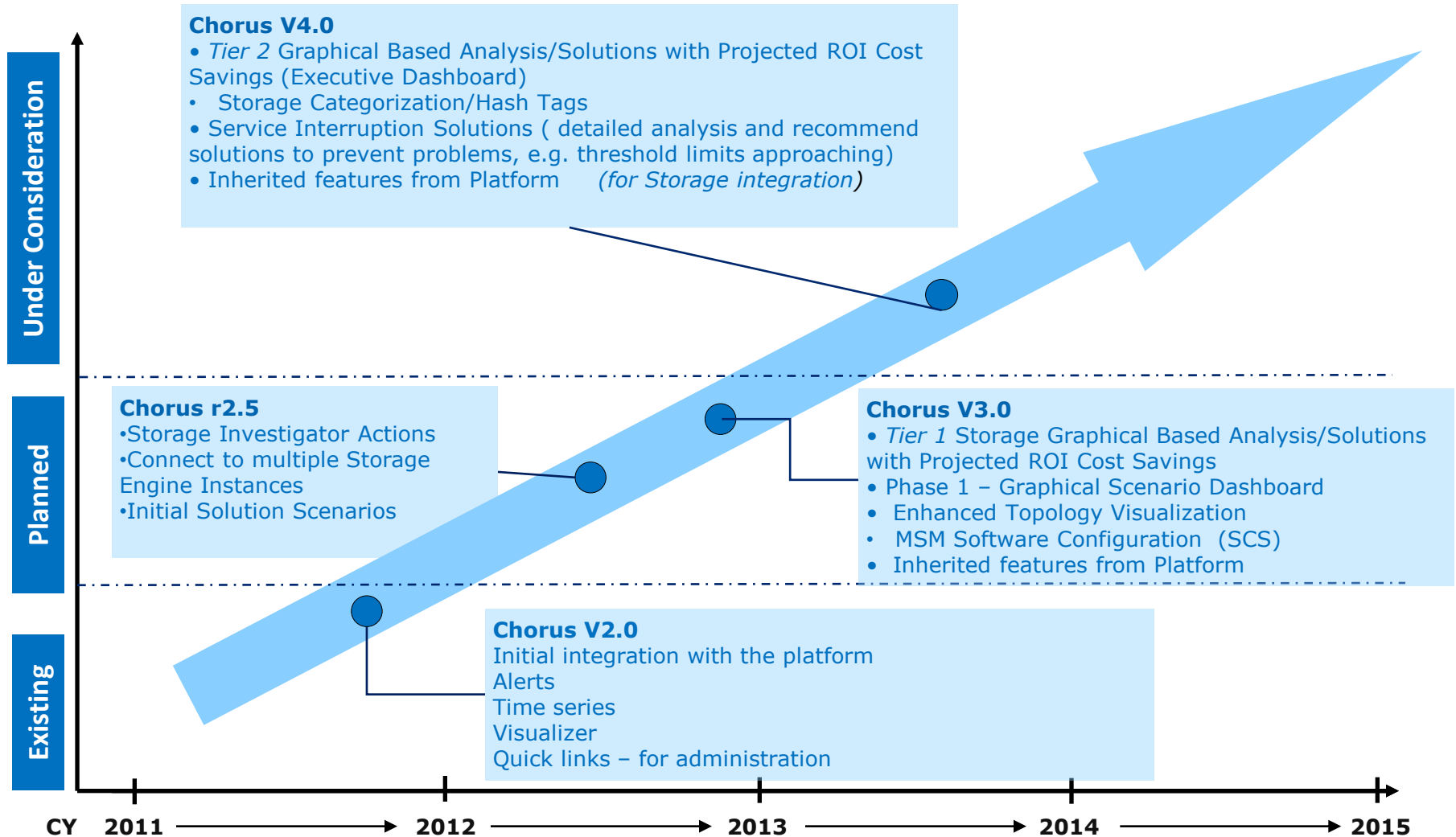


Robust Reporting

Knowledge & Collaboration

Process Automation

Storage Role roadmap as of January 12, 2013



Also see:

For more information on CA Mainframe Chorus please visit:

<http://www.ca.com/us/products/detail/CA-Mainframe-Chorus.aspx>

Q & A

Thank you for your time!