

# Improve the management of your growing mainframe storage environments

Apr. 26, 2012



Kevin Hosozawa - Tivoli z/OS Storage Product Manager (khosozaw@us.ibm.com)

© 2012 IBM Corporation

П**Е ) /** (

# Tivoli's zStorage solution can increase productivity, reduce costs and foster synergy

## **Customer Challenges**

- Simplifying the management of multi-vendor storage devices
- Minimizing outages & managing changes in the storage environment
- Declining staffs, skills & budgets



## **Overcoming Challenges**

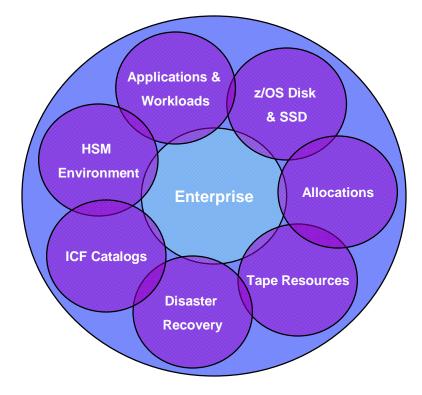
- Common set of tools across many storage systems
- Tailored alerts and automation of tasks and preplanned corrective actions
- Comprehensive, enterprisewide view of storage infrastructure to support resource management, risk mitigation, cost savings and compliance



## IBM Tivoli System z Storage Solution – Leading Edge

- Unmatched breadth and depth of z/OS storage management capability
- Powerful integrated storage monitoring
- Heterogeneous HW/SW environments
- Flexible reporting options & analytics
- Intelligent alerts & automated problem responses (manage by exception)
- Reduce resource consumption and cost
- Increases efficiency and staff productivity
- Reduce dependency on 'gurus'
- Common interface and linkage to ISM components, breaks down silos, increases staff efficiency

Tivoli System z Storage Solutions address many key disciplines



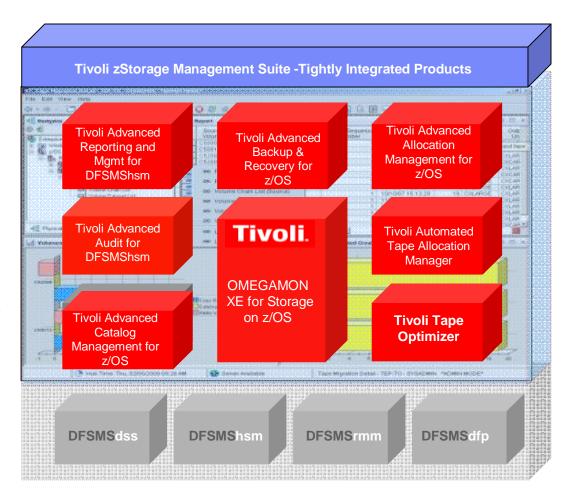
# Increase Productivity, Reduce Costs & Foster Synergy



# Tivoli zStorage Integration - Unmatched Capability

## **Differentiators**

- Seamless Integration with other IBM/Tivoli management and automation offerings
- Application view of I/O Performance
- Deep availability & performance capability
- Situations Manage by Exception
- Best in class HSM reporting, audit & error correction
- Allocation Management provides more preventive/corrective function
- IBM exclusive capability for fast replication in Backup & Recovery management





# Focus Visibility and Control to key areas – Maximize efficiency

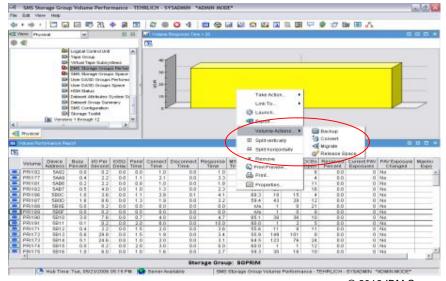
File Edit View	Help												
日日に沿	* # 3 3 8 8 8 6		) II (2)	a 🗉			in 10						
Physical						nitial Situatio	on Values	8		080*			
用-23	OMEGACENTER Bridge AG OB/39D Unix (USB) Storage Subsystem	VTOC index Status	Volume	Device Address	Device Type	Tatal Capacity Megativites		Percent Free Strace	Fragmentation Index	Largest Fr Edent Mi			
8	VCCTHiggl SYSL STORAG Application Summary Rep	Disabled Disabled	DUMP. UN0228	6223 0229	0	2707	1767	65.3 84.0	167	10			
Channel Path Report Cattle CU Portomance I Cattle CU Portomance Cattle CU Portomance Cattle	Decabled	SADMP2	8243	0	2797	1400	54.9						
	Current Situation Values												
	TOC Index Status	Volume	Device Apdress	Device Type	Total Capacity Megabytes	Free Space Negatytes	Percent Free Space	Fragmentation Index	Largest Fr Edent Mi				
	Desabled Disabled	DUMP. UN022B	0223 0228	0	2707	1767	85 J 84 0	157	£14				
KE Physical		Disabled	SADMP2	0243	0	2707	1488	54.9		14			
		0.6								080×			
Action Mame [ Command ]	Take Action	Assuments	E	A VTOC volume	index i Enable	has been disab the VTOC inc	ded This ca dex	n degrade p	erformance o	n the			
Ready	(L) Hub Time: Wed, 03/30/2005 (		Salver An	Contraction of the local distance of the loc	Advice	KSJ_VW_D	isabled_VT00	_Critical - onio	N2800 - BLAWE				
Applet started.			-	-	_				(Local mb	renet.			

# *"Reduce time in manual tasks, e.g. reading reports, physically monitoring environment"*

From monitoring you can issue commands for HSM, DSS, IDCAMs, ICKDSF, RMM and JCL, use the Tools to generate automated or manual batch job responses directly from your monitoring activity Manage by exception – monitor key applications and limit visible information to what is needed

When situations "fire" quickly see what caused the alert, and compare current status of the situation to the initial condition that caused this alert

Pre-programmed actions can respond automatically to situations – or - Take Action by issuing commands



© 2012 IBM Corporation



# **Effective Problem Identification reduces cost**

## Situations: What are they?

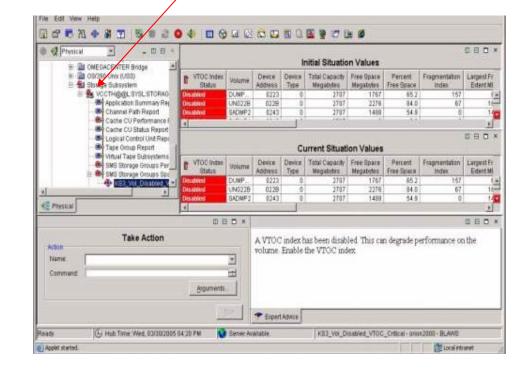
A **situation** is an intelligent alert that can utilize and/or logic to *monitor* a condition or set of conditions that you want to be notified about, which would indicate a potential problem with an identified workload and/or resource Situation "fires" and you quickly navigate to what triggered the alert

#### Situations: Why use them?

•Proactively detect and resolve problems before end users report impact.

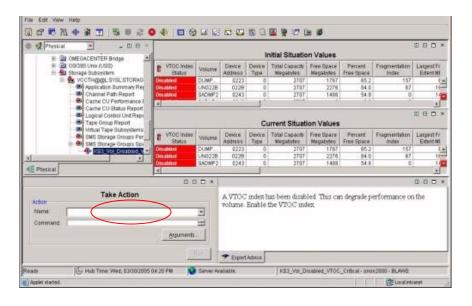
•Minimize time determining root cause (Alert if stor class=PRILRG and free space < 10% or largest free space < X MBs)

- •Create alerts based on multiple conditions ranging from simple to complex
- Customize for specific conditions and environment
- Automate problem resolution using Take Action (reflex automation)





# Fostering teamwork and efficiency – Break down the silos



Storage is a common entity with any z/OS workload, regardless spanning CICS, DB2, IMS, middleware, networking and z/OS operating system information

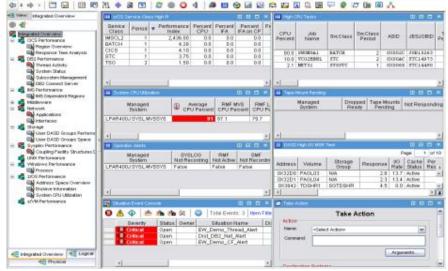
Integration at this level:

- Increases ability to identify and address problems
  Fosters greater communication
- •Prevents issues from impacting service levels
- •Reduces down time and business impact from issues

Quickly identify the problem, exploit Expert Advice, and Take action to reduce meantime-to-resolution and knowledge transfer

Separate teams using common tools and processes can collaborate easily on problem determination and resolution, breaking down the silos

Intelligent tooling and knowledge capture reduces 24x7 reliance on experienced "gurus".





# Enterprise wide Storage – z/OS and Distributed storage for End-To-End management

Create views of storage information spanning System z, Distributed and Cloud with integration across enterprise wide management functionality

Increasingly, storage administrators are being tasked with managing enterprise storage

- Examples:
  - Monitor cross platform backups
  - Monitor storage configuration
  - Monitor performance
  - Identify bottlenecks
  - Monitor Storage space availability

All Manageries A. M. H. M. a.	El esere	weather her	market .		1.1	4.10.10	0.8	CI ACRECIANS THE	and in the					10.2	北田市
0.4 Yee [Land 1 36	Trictor		Desertion .					Cathol	Sec. 1	Volume .	Leave	Cast atoms	mini	Catalog.	Loui Dario
and fremant	Wanter	Fed. want		- the second	C Property of	. Provent	0.Max	ET ASPA DATI ASIA	Call	017100	1 2	2594	1 1	Cont.	C 1 Continues
* <b>5</b> HER	ARCH.	HICKING			8		D Recol	KE ABPLICATION		PEP112	1	312		uter	
a second	Exchief	10/01/2-904			1		D_BMM	OF ROPLECTION		FEFTNE	1	369		Viam'	
a a the second for	Neiter	No. 1981					D Rain			HTP12A	1	313		User	
	Darg	bio rest					[ Dard	ICF REPLECTION.		0.0841	1			1/100	
	Celeter.	Inc. rafe			0	H - 25	D Dates	LT 454 pin en/		CORAL CORAL	-	- 37		010	
	100								april Child	Concerts.	-	- m		1.100	
	11				_		- 23	ALC: NO	manasar	100011		11		-	
	122 1584 5	E 100 SANAR													
	1. 1000		Jarret Hats			ububle i				light _		Address Chaines	(difede	Antel	
		18.52.38		DH4.1_1		01,041	1.8M	81/83/18 17:082			Projing.				
			8370M15	1046.7		COMP.	0.840	BNE3de 17 cd /			Frank		_	_	
			DO TOM IN	120	35-1	-There.	TAXER	00/01/08 17:08.0		Tracks.	Passing.				The opened
			55 PSM10	120		- 19411	10,257	Web 208 17 081		10-05-41	-				The party
			so fume	104.7.5		- TOP1 #	CLEM	10111-1018 P/ OR I		17.58.04	-		4		The party
		18:02:88	DO-TOM'S	ENLY I		D-TUMIN	CLEM	.8100017.081		1117.07			A		The Sphill
			SO TIMIN	DALY J		2-210418	CLEHE	810360917083		174248			4		The lighted
			53.T0#18	(164.) J		2410418	10,018	87/56/58 17 (81)					4		The opene
			53.T0MI0	INTEL		0.70918	0,842	810+0e+8-4+					4		The second
			ALTOWIN ALTOWIN	10407.0		-T3#18	OLEN!	81010817:001		17.48.21			+		The people
	-03/23					- 120418	10.645	ETQ6/08 17:08.0			the second		-		
	1.969.209	185248	R+COMTE-	DRLC.	nce s	-10918	CLAM!	81109912083	18.	02.61.1			-	_	NTV-SC-
- Part - Land	1.969.209		R+COMTE-		nce s				18.		Manual Manual				-
C Partie Street	1.969.209	185248	R+COMTE-	14.0	nce s	-19419	C.S.M.	81109912083	18.	2.61.1					
TT IT'S Basics Second Standard	1991.000 2010.000	18.52.48	EA COMPLETE EA COM	AND A		- Internet	C. Bert	at vision 17 cm at to a control of a mark		. 14		villi ser			来,田,田
El tre fanne horas faraices Data farair	100000	18.52.48	elle Commi por Commi commi	AND A	21	-19915	C.Set	810808 12 000 810808 12 000	18.			4(Q) = 41			泡.肉.肉
Direct Research Residence Data Research Services in Research Constanting Services in Research Constanting Services in Research Constanting Services	ACCESSION ACCESSION	TA 52 49 TA 52 49	no torno no torno no torno no torno	181 + 10			C. Ben b	at vision 17 cars at colore 17 cars	Second and a	10.34 Par	Sela non	410.5×1	itervi An	. fimmin	泡.肉.肉
The factor former former Logs former former to former former former former to former former former former to former	spectra spectra streng	TA 52 49 TA 52 49	no como	181 + 10		-19911	C.S.M C.S.M PC.Sex 3 Ly result result	All which it's an all which it's an all which it's and all states and all states are all states	Annual and a second sec	11.34 % 10.34 Au 50.34 Get	Maximal Select Address Select Addres	40,00	itere An	. fimmer	泡.肉.肉
The former former formanie Data former formanie to former former formation to former formation former formation formation for a formation formation formation formation for a formation		18 50 49 18 50 49 Non-original Sector Parts Sector Parts	na lara na lara na lara na lara na lara na lara	181 + 10			PC Ben 3	A Colora 12 Car a Colora 12 Car a Colora 12 Car or Later d'Acate con colora d'Acate con colora d'Acate con colora d'Acate con colora d'Acate con		11.11 % 10.14 Åge 10.14 Åge 10.14 Åge	Maximal Select Address Select Addres	410 me	itervi An	. fimmer	泡.肉.肉
The tensor larger terminal Data larger terminal destronged an enclose and terminal destronged and terminal terminal destronged and terminal destronged an	sidente antenne intern	18 50 49 18 50 49 Non-order Scholl week Child week Child	nin farm nin farm nin farm nin die samt nin nin farm	181 + 10			PC Ben 3	All which it's an all which it's an all which it's and all states and all states are all states	Annual and a second sec	11.11 % 10.14 Åge 10.14 Åge 10.14 Åge	Maximal Select Address Select Addres	410 me	itere An	. fimmer	泡.肉.肉
The finance formation for a first of the fir		18 53 48 18 53 48 18 53 48 Non-order School of School School of School of School School of School School of School of School of School School of School of School of School of School School of School of School of School of School of School School of School of	els Const to	181 + 10			PC Ben 3	A Colora 12 Car a Colora 12 Car a Colora 12 Car or Later d'Acate con colora d'Acate con colora d'Acate con colora d'Acate con colora d'Acate con		11.11 % 10.14 Åge 10.14 Åge 10.14 Åge	Maximal Select Address Select Addres	410 mm	itere An	. fimmer	No. 10
Des bres transformer breaker Des brees Transformer breaker breaker and transformer breaker		18 22 48 18 22 48 18 22 48 19 19 19 19 19 19 19 19 19 19 19 19 19	no lana na lan	181 + 10			Co.B.M Co.B.M PC Res 1 Annual	All values of call and all values of the second backware of the second of the second second second second of the second second second second of the second second second second second of the second second second second second second second second second of the second s	Armanie Militarie I Militarie I Militarie I Militarie I Militarie I Militarie I		Maxima Sela fum sel sel sel sel sel sel sel sel sel sel		ALC: NO.	A TYPE T	R - C F
The former horizon to reason Data Server Server a for experimental server Server to reason of a construction of the Server to reason of the Server of the Server of the Server of the Server to reason of the Server of the Serve		18 52 48 18 52 48 28 52 48 29 20 20 20 20 20 20 20 20 20 20 20 20 20	no long no long di contra di contra contra la contra la	181 + 10			Co.B.M Co.B.M PC Res 1 Annual	All values of call and all values of the second backware of the second of the second second second second of the second second second second of the second second second second second of the second second second second second second second second second of the second s	Armanie Militarie I Militarie I Militarie I Militarie I Militarie I Militarie I		Maxima Sela fum sel sel sel sel sel sel sel sel sel sel		ALC: NO.	A TYPE T	R - C F
The final large brains		TR 52 49 TR	the Colora Port Source of Marca Source Colorador Far Source Sourc	181 + 10			Co.B.M Co.B.M PC Res 1 Annual	A Colora 12 Car a Colora 12 Car a Colora 12 Car or Later d'Acate con colora d'Acate con colora d'Acate con colora d'Acate con colora d'Acate con	Armanie Militarie I Militarie I Militarie I Militarie I Militarie I Militarie I		Maxima Sela fum sel sel sel sel sel sel sel sel sel sel		ALC: NO.	A TYPE T	R - C F
The factors benefit benefits         Interpret           1000 Benefit         Benefit		TRADITION	An Control Por Con	181 + 10		- 1997 8 - 2997 18 - 2997 18 - 2997 - 2997 18 - 2007 19 - 2007 19 - 2007 19 - 2007 19 - 2007 19 - 2007 19 - 2007	Sar	mple V	iew :	<mark>sho</mark>	ws	info	orm	atio	ent Rest In In Dn
The factors block forwards Data lands Data l		18 52 48 18 52 48 National International Participants California C	non bern non bern tra Maragarb constrate of bern philosop famous famous famous	A REAL PROVIDENT		- 1997 8 - 2997 18 - 2997 18 - 2997 - 2997 18 - 2007 19 - 2007 19 - 2007 19 - 2007 19 - 2007 19 - 2007 19 - 2007	Sar	mple V	iew :	<mark>sho</mark>	ws	info	orm	atio	ent Rest In In Dn
If The factors based for the same         Imp           Lans large         Imp           Statistics		18 52 48 18 52 48 National International Participants California C	in Contra De Con	A REAL PROVIDENT		- 1997 8 - 2997 18 - 2997 18 - 2997 - 2997 18 - 2007 19 - 2007 19 - 2007 19 - 2007 19 - 2007 19 - 2007 19 - 2007	Sar	All values of call and all values of the second backware of the second of the second second second second of the second second second second of the second second second second second of the second second second second second second second second second of the second s	iew :	<mark>sho</mark>	ws	info	orm	atio	ent Rest In In Dn
If the function below the waters         Implement         Im		18 52 49 18 55 49 19 55 49 19 55 49 19 55 49 19 55 49 19 55 49 19 55 49 195	In Control To Control Control Marca Marcine Control of a Marca Marcine Marca M	A REAL PROVIDENT		A 1997	Sai ext	mple V racted	iew s	sho 1 Ol	ws ME	info GAN	orm VIO	atio N >	on KE
Try Course Initial Terraine		18 52 49 18 52 49 18 52 49 18 52 49 18 52 49 19 19 19 19 19 19 19 19 19 19 19 19 19	Pro Control Dis Control Dis Control della magnetic constante della della magnetic della magnetic	A REAL PROVIDENT		A 1997	Sai ext	mple V racted	iew s	sho 1 Ol	ws ME	info GAN	orm VIO	atio N >	on KE
			All Control De Control	A REAL PROVIDENT		A 1997	Sai ext	mple V racted	iew s	sho 1 Ol	ws ME	info GAN	orm VIO	atio N >	on KE
The Ensure Month Terration		13.52.43 13.52.43 13.52.43 13.52.43 14.52.43 15.54.54 14.52.43 15.54.54 14.52.43 15.54.54 14.55.43 15.54.54 15.55.54 15.55.54 15.55.54 15.55.54 15.55.54 15.55.54 15.55.54 15.55.54 15.55.54 15.55.54 15.55.54 15.55.54 15.55.54 15.55.54 15.55.54 15.55.54 15.55.55.55 15.55.55.55.55 15.55.55.55.55.55.55.55.55.55.55.55.55.5	An Control De Control	A REAL PROVIDENT			Sar ext for	mple V racted Storag	iew from e, T	sho n Ol SM	ws ME , Ad	info GAN	orm VIO	atio N >	on KE
			An Control De Control	A REAL PROVIDENT			Sar ext for	mple V racted	iew from e, T	sho n Ol SM	ws ME , Ad	info GAN	orm VIO	atio N >	on KE

ftp://public.dhe.ibm.com/software/systemz/whitepapers/TivoliEntepriseStorageMonitoring-v2.pdf

HI HI

# Tivoli System z Storage Updates – Continuing Drum Beat in 2012

#### Delivered in 2011:

- Advanced Reporting & Mgmt V2.4 (GA Feb 11<sup>th</sup>):
  - Detailed cost of HSM workload tune system, reduce cost
  - Maintain HSM CDS while HSM is active reduce downtime
- Advanced Catalog V2.4 (GA Aug. 25<sup>th</sup>):
  - Expanded tracking of catalogs backed up by different tools
- Advanced Backup & Recovery V2.3 (GA Sept. 9<sup>th</sup>):
  - Uses storage controller fast replication, eliminating CPU overhead while making backups instantaneous. Allows more frequent backups and faster recovery
  - Additional ease-of-use features
  - Additional backup utilities supported
- Advanced Allocation Mgmt V3.2 (GA Oct 21<sup>st</sup>):
  - New ease of use and flexibility enhancements with additional filtering capability
- Advanced Audit for DFSMShsm V2.4 (GA Oct 28<sup>th</sup>):
  - Enhanced reporting on estimated of HSM errors, costs, Rebuild HSM managed tape data to recover from error or disaster, New HSM auditing reports
- OMEGAMON XE for Storage on z/OS (GA Nov. 14<sup>th</sup>)
  - New Actioning capabilities
  - Expanded hardware support

#### New in 2012

- IBM Tivoli Advanced Storage Management Suite for z/OS V1.1 (GA Feb.17<sup>th</sup>)
- Advanced Allocation Mgmt V3.2 (GA Mar. 16<sup>th</sup>)
  - Additional filtering capability

#### Continue enhancements based on customer driven input!





# IBM Storage Management Software Future Outlook

- Our focus moving forward
  - Continue focus on enterprise level storage management integration
  - Continue addressing customer enhancement requests
  - Increase integration with IBM z/OS Storage components
  - Improve Time-To-Value
  - Improve Total Cost-of-Ownership
  - Improve hardware/software resource utilization
  - Improve IT management personnel efficiency





# Save the Date

# IBM Edge2012

IBM's Premier Storage Conference June 4-8 | Orlando, FL

## 3 events under one roof:

Executive Edge
 2-Day IT and Business Leaders Track

## Technical Edge (Storage Technical University) 4.5-Day Technical Tracks 250 sessions, labs, certifications

Business Partner Forum
 Half-Day IBM Business Partner Briefing

Exclusive offer for IBM Pulse attendees: Use promotion code P5A to save 25% off enrollment



#### Hilton and Waldorf Astoria Bonnet Creek





Thank You for Joining Us today!

Go to <u>www.ibm.com/software/systemz/events/calendar</u> to:

- Replay this teleconference
- Replay previously broadcast teleconferences
- Register for upcoming events



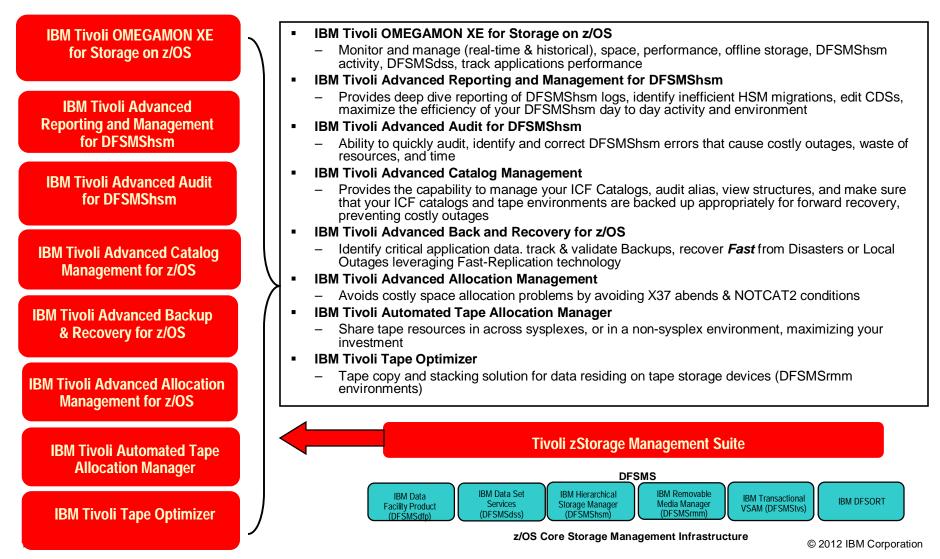
# Backup



# System z Storage Management Solutions (box)

## Tivoli zStorage Management Suite -Tightly Integrated Products

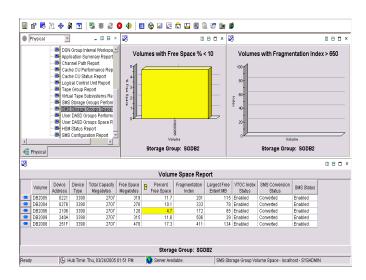
Set of tools needed by a storage administrators to monitor, automate, and tune for the day-to-day management of a complex environment





## OMEGAMON XE for Storage on z/OS v420

- A mainframe STORAGE monitor, real-time and historical
- Powerful alerting and "Take Action" capability
- Daily Storage management capability and functions
- A wide breadth of mainframe storage information:
  - Space and Performance management (storage groups all the way down to data set groups, define your own for reporting)
  - Tape / VTS
  - Channels (FICON), Control Units, CACHE
  - DFSMShsm (View and administer your active HSM queues, control Datasets, etc.)
  - DFSMShsm / DFSMSdss / ICKDSF / IDCAMS online toolkit
  - Batch JCL creation from toolkit any JCL
  - SMS constructs
  - DS8000 support
  - Ability to see all logical volumes on a physical disk
  - Powerful applications view
  - Powerful dataset view and action capability
  - Integration capabilities from TEP interface to



## – Dynamic Workspace Linking to:

- •IBM Tivoli Advanced DFSMShsm Reporter (ITAARD)
- •IBM Tivoli Advanced DFSMShsm Audit (ITAAD)
- •IBM Tivoli Advanced Catalog Management (ITACM)
- •IBM Tivoli Advanced Backup and Recovery (ITABR)
- •IBM Tivoli Advanced Allocation Manager (ITAAM)
- •IBM Tivoli Tape Optmizer (ITTO)
- •IBM Tivoli Automated Tape Allocation Manager (ATAM)
- DFSMSrmm reporting and toolkit functions

Cornerstone for every zStorage management Tool box!



# Advanced Allocation Management for z/OS

## Formerly Tivoli Allocation Optimizer:

- Enables users to avoid and recover from X37 type abends such as B37, D37, and E37 abends and NOTCAT2 situations
- Provides ability to simulate changes before implementing
- Handles all DASD data sets, both SMS and non SMS-managed (VSAM and non-VSAM). Used with SMS, <u>all</u> unsuccessful DASD allocations are eligible for recovery
- Maximizes use of the current volume before attempting to allocate additional volumes dynamically adjusting catalog and control blocks only when an extent is needed
- Limits fragmentation of a data set on a single volume and across multiple volumes, preserving valuable catalog space and memory-based control block storage
- TEP integration and take-action makes it easy to see issues and intervene



## **New in V3.1 - Overall Control of Allocation**

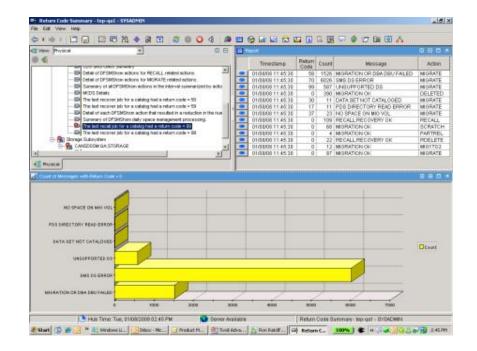
- •Greater control with SMS and non-SMS
- •Non-SMS volume group definition
- •Re-direction of unit type
- •Allocation based on variety of variables
- •Non-SMS placement based on resource metrics
- •Set or override over 50 allocation attributes
- •Make DATACLAS, override JCL



# Advanced Reporting and Management for DFSMShsm

## Provides Detailed HSM Reporting Capability

- Daily Health Reports
  - Provides reports for:
    - ► DFSMS Mounted Volumes
    - DFSMShsm Managed Volumes
    - DFSMShsm Space Management
    - DFSMShsm Automatic Backup
    - DFSMShsm Autodump Activities
  - Automatic Spreadsheet Charting
- Ad-hoc reports
  - Fast and highly interactive
  - Easily find areas of concern
    - Drive the view to the area of concern
    - Look around, Act on what you see
- Perform "what-if" analysis
  - Migration thresholds
  - Recycle percent valid
- "Plans" Feature makes new reports simple to create and save
  - Provides filtering logic so you can drill down
- Automated command generation
  - Allows wrapping action commands around listed data sets
  - Go from "Now I know what to do" to "I've already done it"
  - Add your own customized commands to the command library



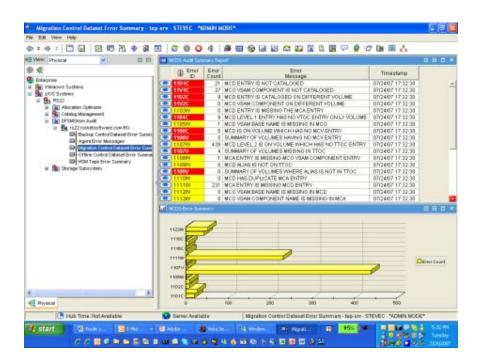
- TEP Interface makes it much easier to detect and diagnose problems – even linking to other products, and supports key take-action commands issued from the TEP
- Easy-to-Use ISPF User Interface



## IBM Tivoli Advanced Audit for DFSMShsm

- Audits, repairs, and ensures integrity of the DFSMShsm environment, including tape.
- Automates data collection and corrective actions
- Proactive notification and alerts to critical problems which can be expertly resolved before a system outage occurs
- Finds and can correct 100% of DFSMShsm errors
- Prove integrity of DFSMShsm environment
- Operates many times faster than native DFSMShsm commands, without performance impact on DFSMShsm
- Ease-of-Use and performance permits regular rather than periodic audits
- TEP Interface makes it much easier to detect, drill down, and diagnose problems

   even linking to other products, and allowing key actions to be intitiated from the TEP in response to situations

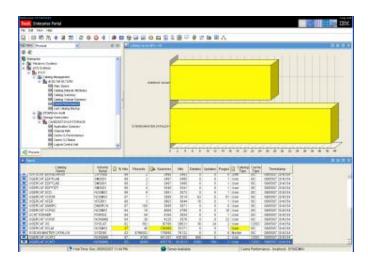


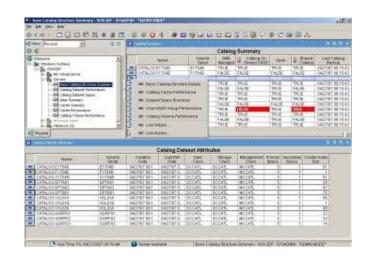
Regular HSM audits help Maintain the complex data structure of the DFSMShsm Control Datasets (CDS) to prevent outages and improve efficiency



## Advanced Catalog Management for z/OS

- Provides powerful, safe, reliable, and easy ICF catalog and VSAM backup and <u>fast</u> forward recovery
- Protects a catalog's complex structural integrity, alerts for potential errors, and reduces recovery time
- Helps meet Service Levels: reduces application down-time by permitting catalog maintenance while open
- New Merge-while-open capability is key for Customers who are undergoing merger activity or datacenter consolidation
- Allows "what-if" simulation to preview effects of actions
- Easy-to-use interface improves staff productivity
- TEP Integration and Take-Action capability makes it easier to detect, drill down, diagnose, and correct problems involving catalogs – even linking seamlessly to other products like OMEGAMON XE for Storage.



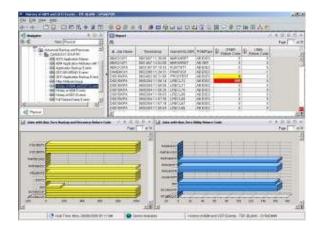


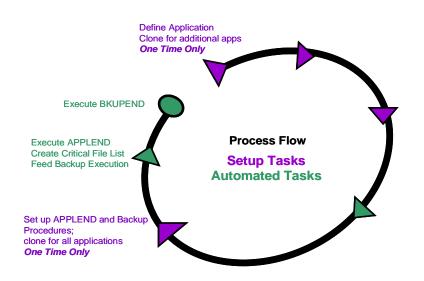


# Advanced Backup & Recovery for z/OS

## Single Toolset to automatically:

- Identify critical application data
- Track & Validate Backups
  - Where they are
  - Currency
  - Support removable or non-removable media types
- Recover *Fast* from Disasters or Local Outages
  - Either at Local or DR site
  - From one central location
  - With one simple process
- Eliminates guesswork and manual processes
- Eliminate duplicate backups
- Comply with governance requirements always be audit-ready!
- Easy to use TEP interface makes it easy to stay on top of backup status and spot problems before they cause outages!





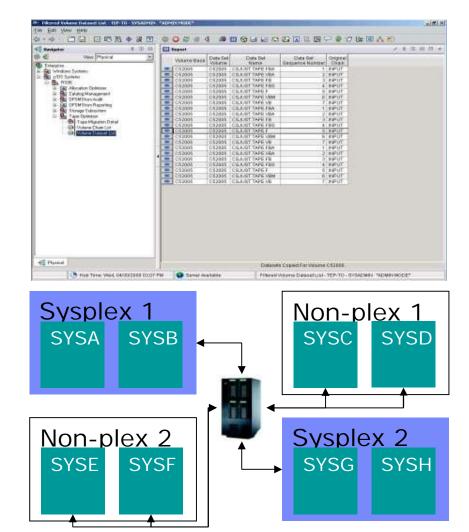
# Automated Tape Allocation Manager for z/OS

## Automated Tape Allocation Manager (ATAM):

 Share tape devices between multiple images: sysplex, nonplex, multiple standalone in any combination - even legacy devices such as 3420

## Improves Operational Efficiency:

- Maximize the use of existing tape devices
- Reduce operational overhead
- Minimize backlogs of job requests
- Improve ROI on tape hardware investments
- Support hardware acquisition decisions
- Single Point of Control without the Single Point of Failure – no shared control file to fail
- Responds automatically and directly to user/job resource requests at "machine speed" instead of "operator speed"
- Real-time and historical reporting built-in
- TEP Integration and Take-Action capability makes it easier to detect, drill down, diagnose, and correct problems – even linking seamlessly to other products as needed

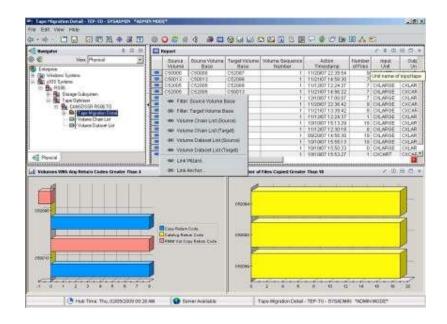


© 2012 IBM Corporation



# **Tivoli Tape Optimizer**

- Copy individual tape data sets by name, expiration date, catalog status, and many other filter criteria
- Optionally rename tape data sets during copy operations
- Support for 3592 tape drives and high-capacity tape media
- Optionally continue copy processing after certain types of failures or errors, such as tape I/O errors
- Uses relative generation data group (GDG) catalog entries to help identify generation data sets for a copy request
- Edit copy options for requests pending restart
- Run multiple, concurrent copy tasks for a copy request
- Reporting for stacked tapes
- TEP Integration and Take-Action capability makes it easier to detect, drill down, diagnose, and correct problems – even linking seamlessly to other products as needed



- •Use Full Tape Media Capacity reduce waste
- Automatically updates DFSMSrmm
- •Ensures system catalog accuracy

New Offering: "IBM Tivoli Advanced Storage Management Suite for z/OS"

- A new <u>consolidated offering</u> containing 4 Tivoli z/OS Storage Management products:
  - Advanced Reporting and Management for DFSMShsm
  - Advanced Audit for DFSMShsm
  - Advanced Catalog Management
  - Advanced Allocation Management

## Addresses <u>reducing costs</u> and <u>maximizing administration and personnel efficiency</u>:

- HSM administration and management capability
- ICF Catalog management and integrity
- z/OS Storage allocations and availability

## Benefits:

- Maximize efficiency of managing HSM, both environment and personnel
- Lower cost of maintaining HSM
- Increase availability of DASD storage, Catalogs, and HSM
- Maximize efficiency of catalog integrity and management
- Can integrate tools for better management capability synergy and leveraging technology/products
- Links to "OMEGAMON XE for Storage on z/OS" for wide breadth and depth of storage functions
- Single vendor that can provide all your needs for z/OS Storage Management
- Easier to order / pricing benefit
- Expand and integrate at the enterprise and business levels with other IBM Tivoli solutions
- Best capabilities, currency and overall service