

caWorld'10

with six you get HYDRA -
CA MICS® Tape Analyzer
new technology support

MR210SN

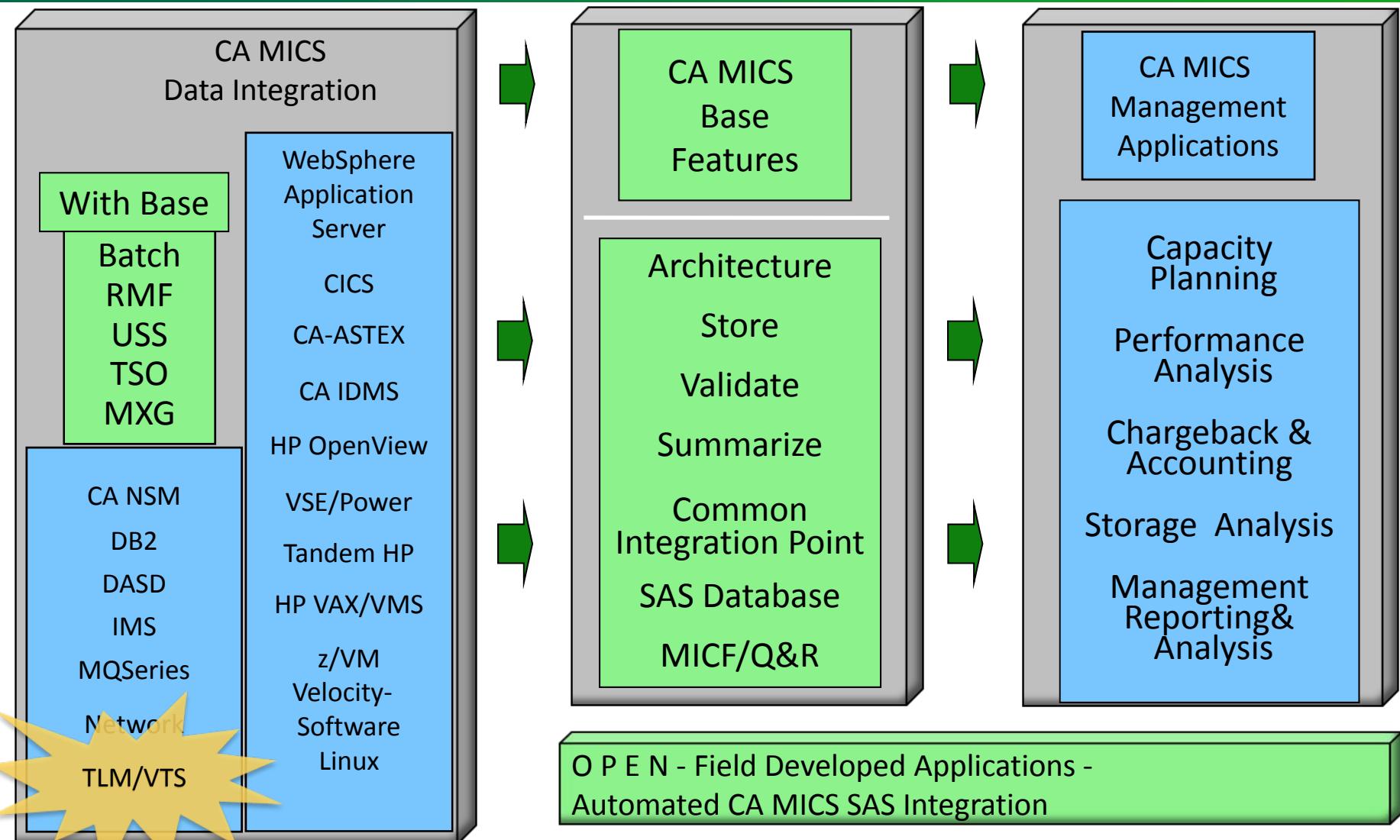
Mainframe and Application Development



agenda

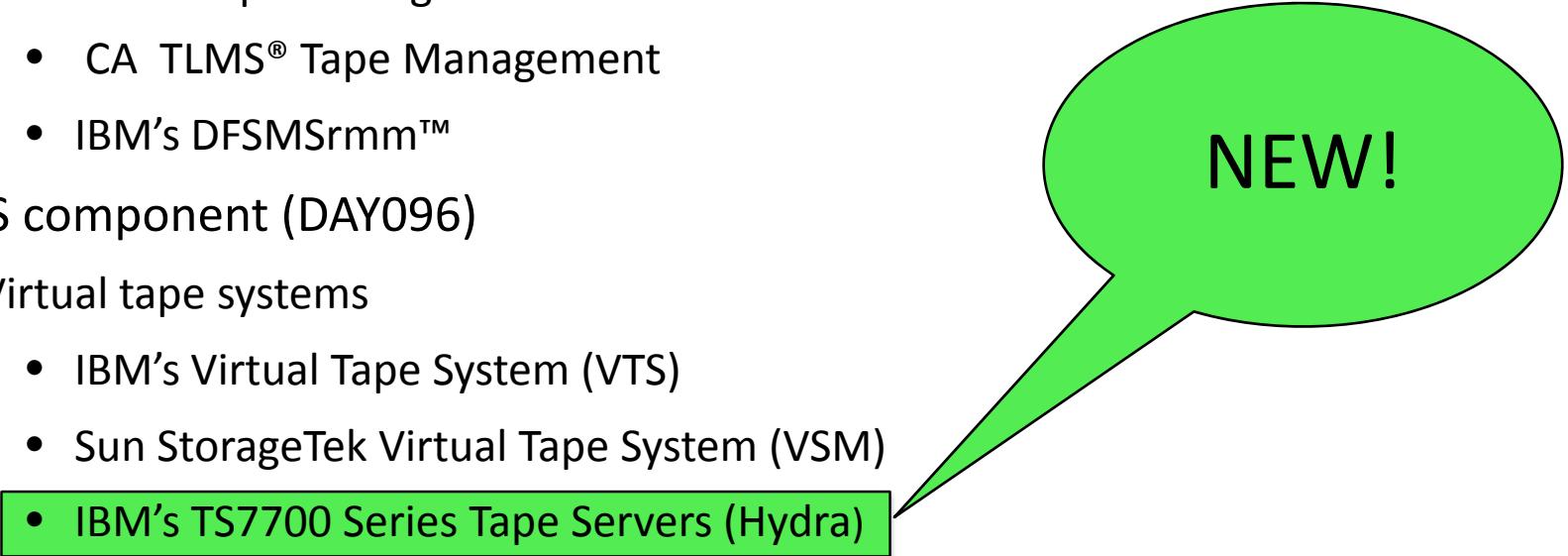
- CA MICS® Resource Management Tape Analyzer Option overview
- TLM component
- VTS component with Hydra support
- Q & A

CA MICS Resource Management



CA MICS Tape Analyzer Option

- One option—TWO separate components
- CA MICS Tape Analyzer Option delivers all modules to support:
 - TLM component (DAY091)
 - Tape library management systems
 - CA 1® Tape Management
 - CA TLMS® Tape Management
 - IBM's DFSMSrmm™
 - VTS component (DAY096)
 - Virtual tape systems
 - IBM's Virtual Tape System (VTS)
 - Sun StorageTek Virtual Tape System (VSM)
 - IBM's TS7700 Series Tape Servers (Hydra)



NEW!

CA MICS Tape Analyzer Option

– TLM component

- Complements the CA MICS Space Analyzer Option
 - Comprehensive physical storage media analysis
- Accounting and Chargeback – fills a void
- Detailed tape dataset and volume usage analysis

– VTS component

- Performance, throughput analysis and bottleneck detection
 - Discover opportunities for workload shifting
 - Virtual tape volume characteristics and usage

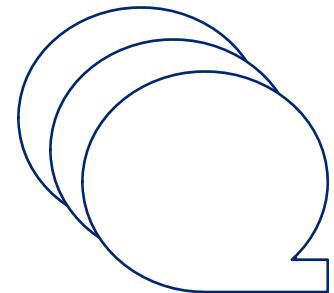
– Together and with other CA MICS analyzers

- Comprehensive dataset and media analysis and tuning

why virtual tape systems?

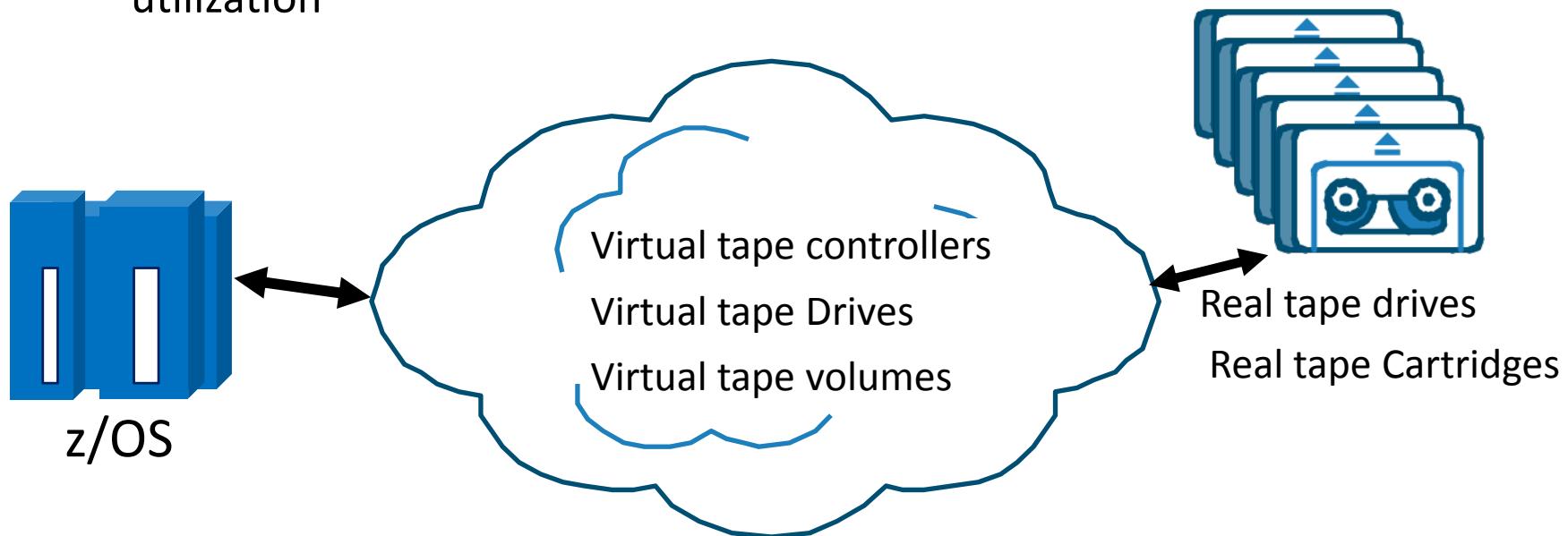
– Physical tape

- Decades of use and development
 - IBM 726 tape unit: 1952
- Consistently improved media capacity and performance
- Problems
 - Physical tape drives expensive – too few for demand
 - Long duration to mount and dismount
 - Underutilized physical media
 - File stacking techniques complicated
 - Studies showed well over 90% of tape media wasted due to small file size and large cartridge capacity

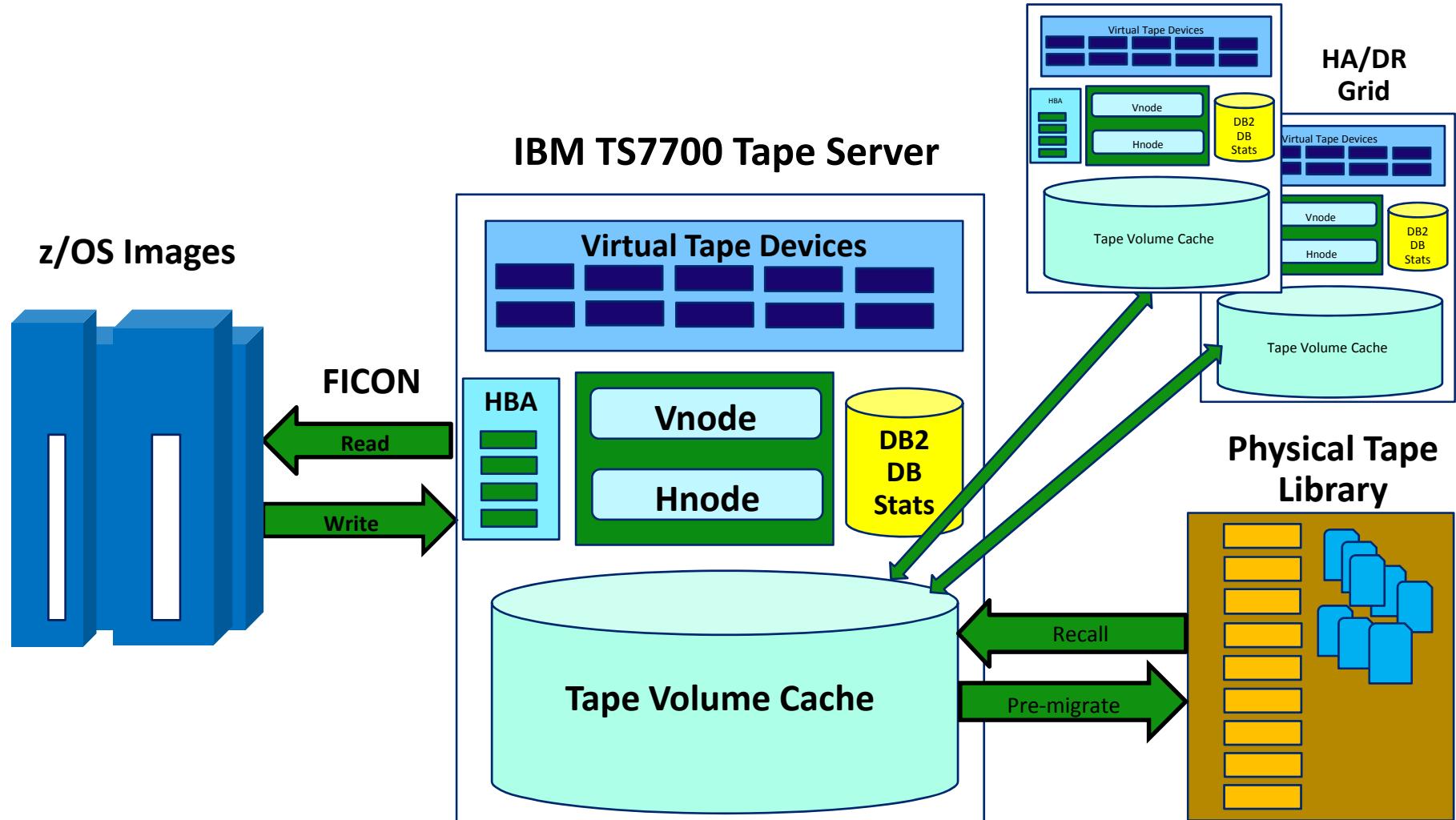


why virtual tape systems?

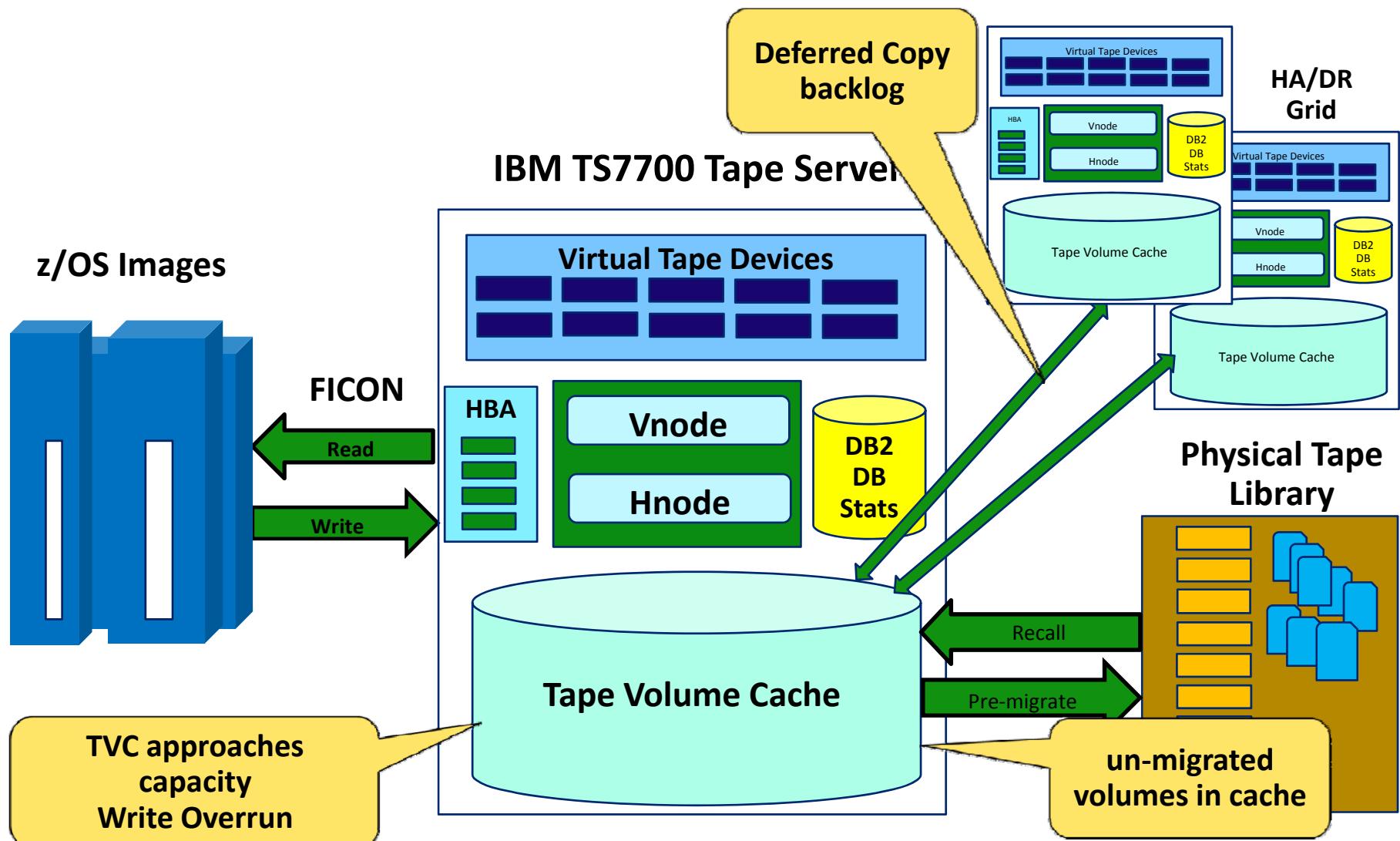
- Virtual tape
 - Hundreds of virtual tape drives
 - Almost instant mount/dismount of tapes (in cache)
 - Virtual volumes stacked on physical cartridges approaches 100% media utilization



IBM TS7700 tape server

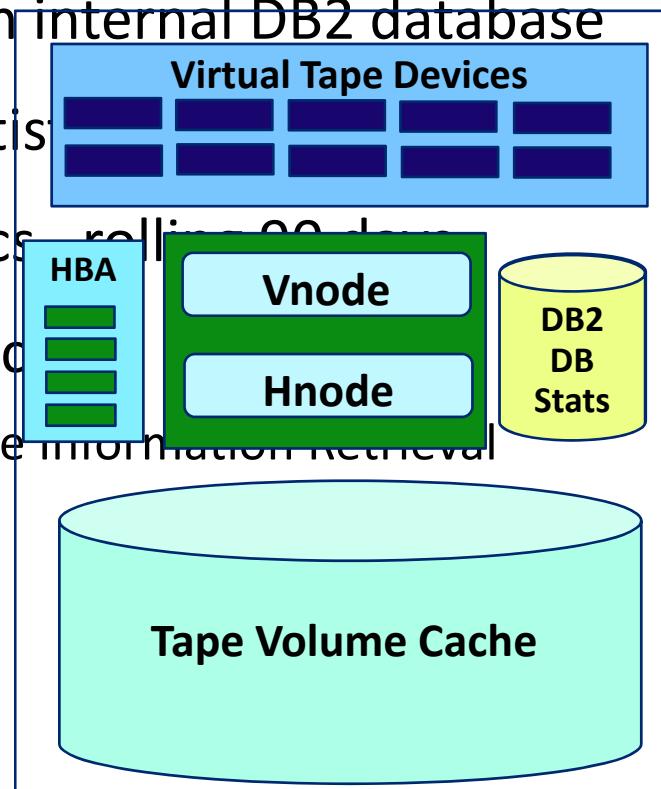


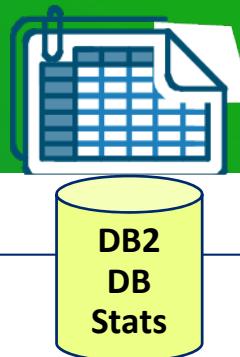
IBM TS7700 tape server





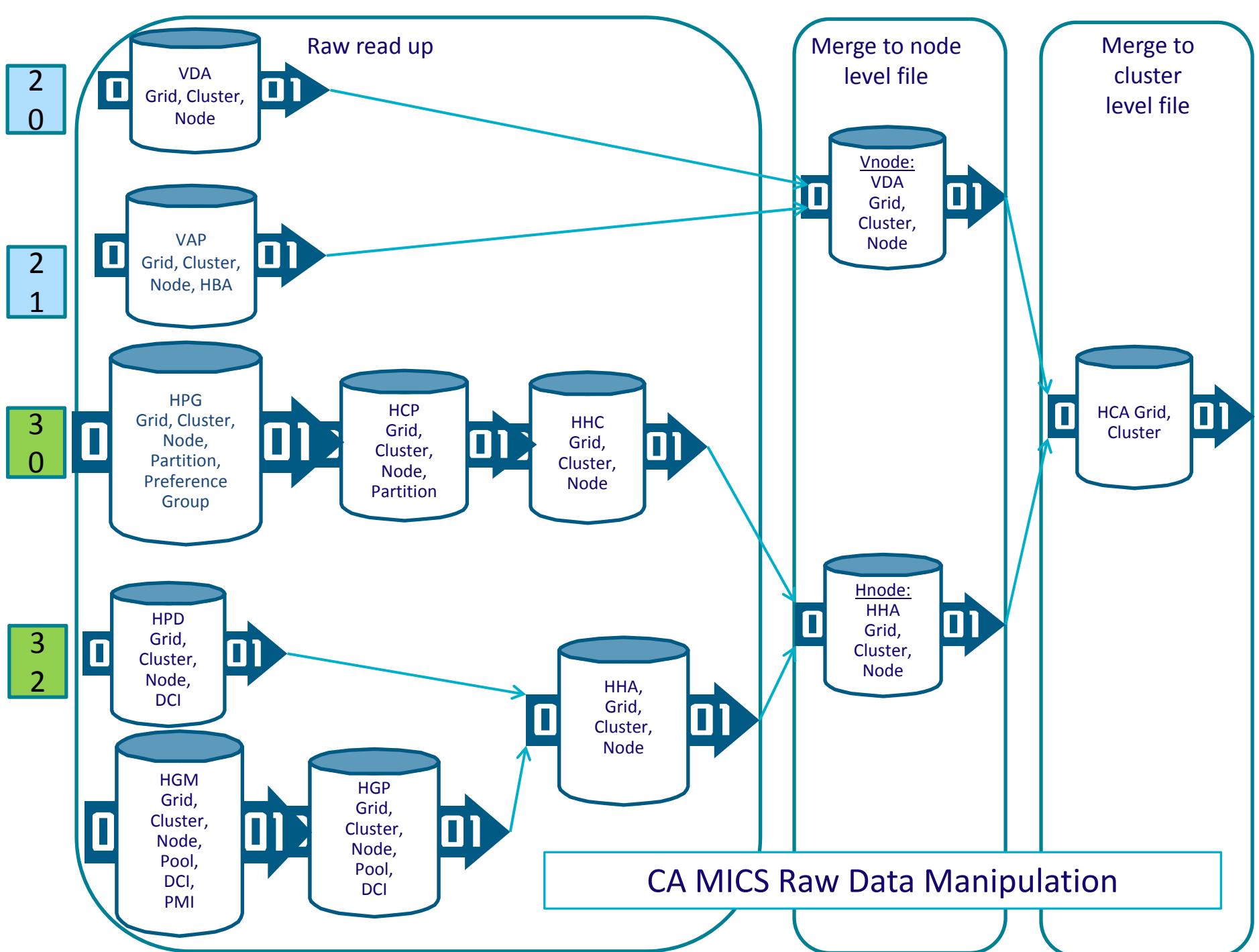
- No longer writes interval statistics to SMF
- Stores statistics in internal DB2 database
- Point-in-time statistics
- Historical statistics (rolling 20 days)
- Extracting statistics
 - BVIR – Bulk Volume Information Retrieval





- 5 record types processed

20	Vnode Virtual Device Historical Record
21	Vnode Adapter Historical Record
30	Hnode HSM Historical Record
32	Hnode Library Historical Record
33	Hnode Grid Historical Record



VTS component – configure for Hydra

– Component activation – DAY096

- Update VTSGENIN OPTION statement

- StorageTek: OPTION NOIBMVTS STK NOHYDRA
- IBM VTS: OPTION IBMVTS NOSTK NOHYDRA
- IBM Hydra: OPTION NOIBMVTS NOSTK HYDRA

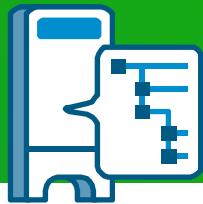
STK ----- activates the fourteen SVT information area files
IBMVTS --- activates the eight IVT information area files
HYDRA - - - **activates the twelve HVT information area files**

VTS component – configure for Hydra

– Component activation – DAY096

- Update prefix.MICS.PARMS(VTSOPS)
 - Usual suspects: WORK, INCR, RESTART
 - VTSSYSID xxxx (default SYS1)
 - VTS component assigns IVT/HVT info area files SYSID value
 - User can select SYSID to assign with VTSSYSID
 - Section 7.2.3.1.3
- Update prefix.MICS.PARMS(INPUTVTS)
 - Define input data set on INPUTBVR DD statement
 - Section 7.2.3.2.2

VTS component – Hydra files



– HVT IBM Virtual Tape Subsystem Information Area files

HVTVDA	Hydra Vnode Device Activity File
HVTVAP	Hydra Vnode Adapter Port Activity File
HVTHHC	Hydra Hnode Cache Activity File
HVTHCP	Hydra Hnode Cache Preference Group Activity File
HVTHPD	Hydra Hnode Physical Drive Activity
HVTHGP	Hydra Hnode G-Use Pool Activity File
HVTHGM	Hydra Hnode G-Use Pool Media Activity File
HVTHHA	Hydra Hnode Activity File
HVTHCA	Hydra Cluster Summary File
HVTGRC	Hydra Grid Activity File
HVTGCC	Hydra Grid Cluster Activity File

– All files available in all timespans



- Reporting – IBM Hydra Performance MICF Reports
 - TAPLHA: IBM Hydra Performance Overview
 - TAPLHB: IBM Hydra Preference Group Analysis
 - TAPLHC: IBM Hydra Physical Tape Drive Analysis
 - TAPLHD: IBM Hydra Virtual Tape Mount Analysis
- Reports support all timespans
- Headings auto-adjust content based on summarization level

VTS component



Configuration
Information

– Reporting: Hydra System Overview Analysis Report

**Virtual mount
Stats**

Inquiry : TANDEM
Run Date: 29MAYyy

Cluster Identification #: 0
Node Identification #: N/A
Node Serial Number: 78-42FG3

Channel Throughput

Data Presented by Hour within Day

Grid Composite Identification: 10000
Distributed Library Sequence #: 10001
Virtual Engine Code Level: 8.5.0.154

Throttling Values

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Report Start: 28MAYyy:00:00
Report End: 29MAYyy:00:00
Timespan: 1 DAYS

Virtual Mounts										Data Transferred				Channel MB/Sec			Compress	Throttle Values					
HOUR	Numb	Intv	Total	Scratch	Spcfic	Cache	Cache	Pct	Cache	Cache	Written	(Est)	Read	Write	Min	Avg	Max	Ratio	Wrt to	Wrt	Copy	Copy	Defr
										Ch Blks	BSize	GB	GB	Cache	Cache	Cache	Cache	Cache	Cache	Cache	Cache	Cache	Cache
0	4	137	73	64	64	0	0%	6940.87	28000	0.0	81.1	28.6	51.2	61.6	2.22	3%	0%	0%					
1	4	443	303	140	139	1	1%	23869.7	26000	2.0	225.8	142.8	211.6	271.3	3.26	0%	0%	0%					
2	4	311	203	108	107	1	1%	26503.6	40000	1.5	251.2	229.8	288.2	329.2	4.02	0%	0%	0%					
3	4	218	119	99	99	0	0%	14052.6	39000	5.6	164.8	137.4	153.8	171.5	3.10	0%	0%	0%					
4	4	198	127	71	71	0	0%	9551.71	35000	15.0	131.2	30.9	112.3	203.7	2.60	0%	0%	0%					
5	4	144	109	35	35	0	0%	9387.68	33000	0.0	177.3	50.3	89.0	112.3	1.76	0%	0%	0%					
16	4	153	88	65	58	7	11%	6594.72	29000	10.1	92.0	25.2	65.8	117.3	2.15	0%	0%	0%					
17	4	143	114	29	28	1	3%	10415.0	25000	0.1	83.5	6.1	73.0	172.9	3.07	0%	0%	0%					
18	4	174	89	85	84	1	1%	5593.18	24000	1.1	71.3	15.6	40.3	68.0	1.95	0%	0%	0%					
19	4	125	83	42	41	1	2%	5646.15	25000	0.1	76.4	20.7	45.4	88.0	2.08	0%	0%	0%					
20	4	160	105	55	49	6	11%	5325.32	25000	6.4	64.7	18.0	45.9	71.6	2.30	0%	0%	0%					
21	4	120	83	37	33	4	11%	4850.14	27000	0.2	66.7	23.6	42.2	64.0	2.22	0%	0%	0%					
22	4	293	214	79	60	19	24%	22502.5	24000	14.0	226.1	107.4	144.3	201.1	2.06	0%	0%	0%					
23	4	149	116	33	33	0	0%	19926.2	27000	15.8	251.5	105.6	148.0	195.6	1.90	22%	0%	0%					
Tots	96	4373	2591	1782	1697	85	5%	217241	29000	124.7	2712	4.8	113.0	329.2	2.35	1%	0%	0%					

VTS component



Configuration
Information

Hydra Virtual Tape Drive Analysis Report

Tape Volume Cache Statistics

Inquiry : TAPLD
Run Date: 29MAYyy

Cluster Identification #: 0
Node Identification #: 0
Node Serial Number: 78-42FG3

Virtual Mount Statistics

CA MICS Hydra VTS Virtual Tape Mount Analysis Report
Data Presented by Hour within Day

Grid Composite Identification: 10000
Distributed Library Sequence #: 00001
Virtual Engine Code Level: 8.5.0.154

Percent Cache Miss Chart

Page 001

Report Start: 28MAYyy:00:00
Report End: 29MAYyy:00:00
Timespan: DAYS

Day: 28MAYyy

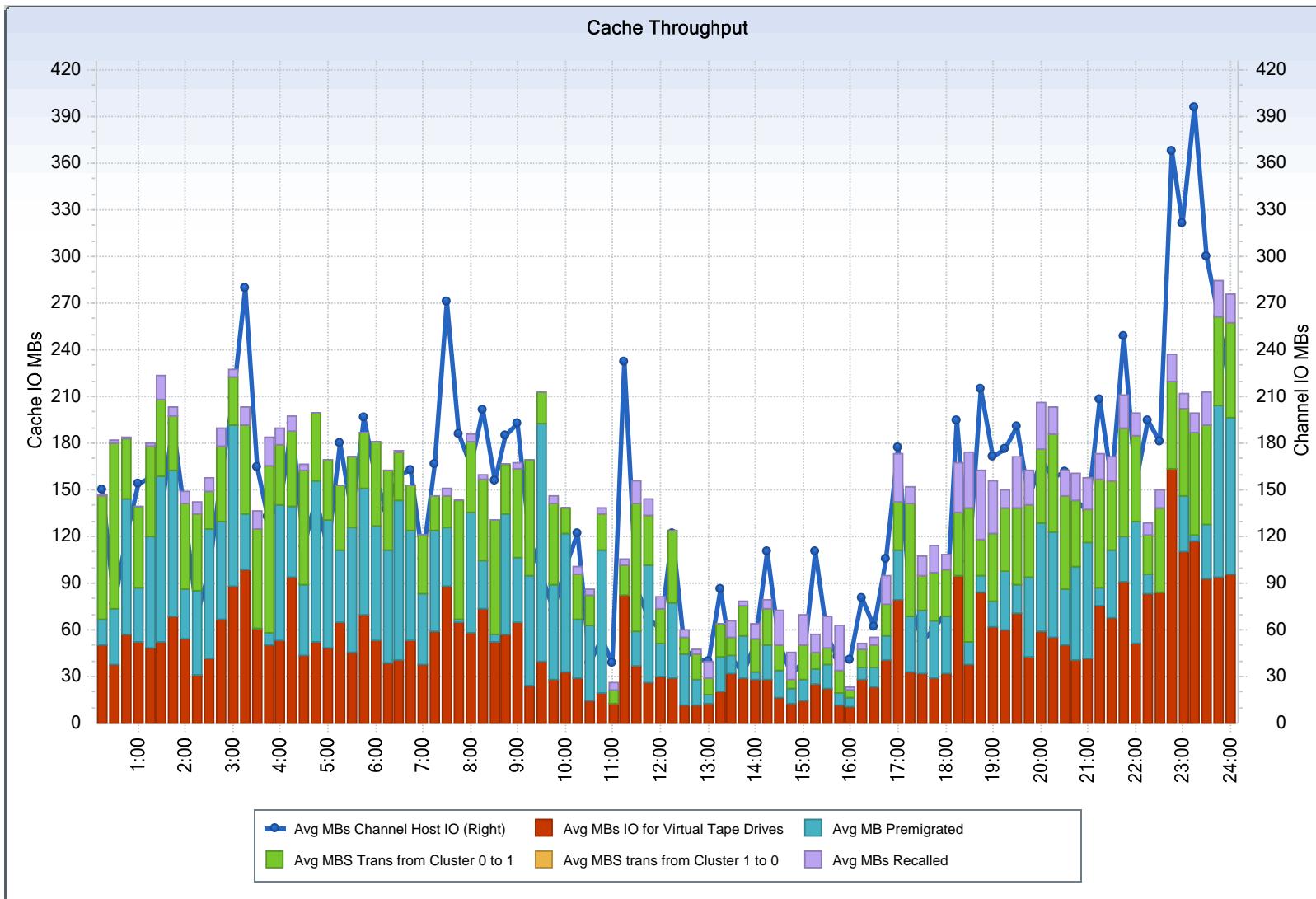
HOUR	Numb	Intv	Cache Size (GB)	Data in Cache (GB)	Pct Util	Avg Vols in Cache	Avg Vol Size (MB)	--Scratch-- (Fast Ready)		-Cache Hit--		-Cache Miss- (Recalls)		-----Percent Cache Misses-----						
								Total Mounts	Scr Total	Avg MM:SS	Hit Total	Avg MM:SS	Miss Total	Avg MM:SS	Pct Miss	2	4	6	8	0
0	4	6000	5181	86%	4795	1081	137	73	0:01	64	0:01	0	0:00	0%						
1	4	6000	5248	87%	4910	1069	443	303	0:01	139	0:01	1	1:06	1%	*					
2	4	6000	5437	91%	5055	1076	311	203	0:01	107	0:01	1	1:22	1%	*					
13	4	6000	5211	87%	4643	1122	163	49	0:01	105	0:00	9	1:18	8%	**					
14	4	6000	5258	88%	4693	1121	178	122	0:01	56	0:00	0	0:00	0%						
15	4	6000	5262	88%	4694	1121	122	89	0:01	33	0:00	0	0:00	0%						
16	4	6000	5284	88%	4727	1118	153	88	0:01	58	0:01	7	0:36	11%	***					
17	4	6000	5294	88%	4746	1116	143	114	0:01	28	0:00	1	0:54	3%	*					
18	4	6000	5303	88%	4748	1117	174	89	0:01	84	0:01	1	1:24	1%	*					
19	4	6000	5332	89%	4758	1121	125	83	0:01	41	0:00	1	0:38	2%	*					
20	4	6000	5352	89%	4767	1123	160	105	0:01	49	0:01	6	0:39	11%	***					
21	4	6000	5359	89%	4765	1125	120	83	0:00	33	0:00	4	1:06	11%	***					
22	4	6000	5439	91%	4846	1123	293	214	0:01	60	0:01	19	0:48	24%	*****					
23	4	6000	5457	91%	4722	1156	149	116	0:01	33	0:01	0	0:00	0%						
Tots	96	6000	5245	87%	4726	1110	4373	2591	0:01	1697	0:01	85	1:06	5%	*					



– Reporting: Hydra Preference Group Analysis Report

Preference Group 0												Preference Group 1													
Remove from Cache ASAP												Keep Volumes in Cache as long as possible													
Inquiry : TA			Run Date: 29			Preference C			our within			Report Start: 28MAYyy:00:00			Report End : 29MAYyy:00:00			Timespan : DAYS							
Cluster Identification #:	0	Node Identification #:	0	Node Serial Number:	78-42FG3	Grid Composite Identification:	10000	Distributed Library Sequence #:	10001	Virtual Engine Code Level:	8.5.0.154	Report Start:	28MAYyy:00:00	Report End :	29MAYyy:00:00	Timespan	DAYS	Cache Partition #	1	Day:	28MAYyy				
HOUR	Numb	Avg	Vols in	Avg	Vol	Avg	Cache	--	Rolling	--	Volume	Age	Migrated	Avg	Vols in	Avg	Vol	Cache	--	Rolling	--	Volume	Age	Migrated	
													Last												Last
													4-HR	4-HR	4-HR	4-HR	4-HR	4-HR	4-HR	4-HR	4-HR	4-HR	4-HR	4-HR	35-DY
													4-HR	4-HR	4-HR	4-HR	4-HR	4-HR	4-HR	4-HR	4-HR	4-HR	4-HR	4-HR	35-DY
0	4	253	764	194	52:22	13:47	11:38				593	8927	134176	4542	1098	4988	341	344	318	219	1073	14319			
1	4	359	618	221	1:46	13:47	11:38				682	8890	134176	4551	1104	5026	338	343	318	219	1073	14319			
2	4	559	812	454	1:58	13:46	11:38				823	8933	134176	4496	1108	4983	334	343	318	312	1084	14319			
3	4	591	906	535	2:22	13:46	11:38				1152	9043	134176	4386	1110	4870	330	343	318	171	1091	14319			
4	4	547	744	407	2:47	13:45	11:38				1101	9034	134176	4411	1109	4893	327	342	318	171	1048	14319			
5	4	213	806	172	4:00	13:52	11:38				1298	8702	134176	4435	1108	4912	324	342	318	171	1048	14319			
6	4	108	980	106	3:36	13:52	11:38				1337	8892	134176	4456	1105	4925	322	341	318	78	1048	14319			
7	4	15	1071	16	2:42	13:52	11:38				1175	8981	134176	4474	1106	4947	325	341	318	0	1048	14319			
8	4	35	767	27	1:45	13:52	11:38				1133	8986	134176	4511	1117	5038	327	340	318	0	1048	14319			
9	4	20	661	13	36:05	16:51	11:38				766	8995	134176	4529	1123	5088	329	340	318	0	1048	14319			
10	4	26	573	15	36:46	16:55	11:38				529	8995	134176	4561	1125	5132	329	340	318	0	1048	14319			
22	4	78	1114	87	9:58	18:54	11:38				706	8958	134176	4767	1123	5352	346	334	318	63	1024	14319			
23	4	183	1834	335	7:23	18:53	11:55				643	9020	134325	4540	1128	5123	341	334	320	294	684	14241			
Tots		96	138	845	118	13:10	16:19	11:39			757	8935	134182	4589	1117	5127	334	339	318	71	1037	14316			

VTS component



summary



- Process the Historical Statistics Records from the IBM TS7700 Tape Server
- Ideal for
 - Day to day performance analysis
 - Long term trending
 - Capacity Planning
- Support for IBM TS7700 Hydra Tape Servers
 - Available NOW!



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Q&A

mainframe networking

Mainframe MIPS Lounge —
Mainframers can relax and talk
informally

Islander D
Monday: 12 PM – 4:45 PM
Tuesday & Wednesday: 8 AM – 6PM
Thursday: 8 AM – 12 PM

Mainframe Networking Lunches

Where: Islander Ballroom, Salon B

When: Tuesday and Wednesday

Time: 12:00pm - 1:15pm



Seating is limited and
will be on a first
come, first served
basis



Mainframe-only party, Wed
night, 7-10pm, House of Blues
(Mandalay Bay)
Need entry pin, get them in the
Mainframe lounge

related sessions

SESSION #	TITLE	Day / Time Room: <u>Topics A</u>
MR030SN	CA MICS Technology Support – You Asked, We Delivered!	Monday / 1:15
MR050SN	Have You Checked Your CA MICS Implementation Lately?	Monday / 3:45
MR230SN	CA MICS Observations: Practical Best Practices	Tuesday / 9:00
MR090SN	Digging for Gold – How to Mine and Share CA MICS Data, Quickly and Easily	Tuesday / 2:30
MR210SN	CA MICS Tape Analyzer Option – With Six You Get HYDRA	Tuesday / 3:45
MR110SN	Are You Drowning in SMF Data?	Wednesday / 9:00
MR130SN	Get Your Data Faster (and More Easily) – A User Success Story	Wednesday / 1:15
MR170SN	CA MICS Customer Panel – CA MICS <u>NOTE different room: Islander G</u>	Wednesday / 2:30
MR150SN	CA MICS Resource Management in the CA Data Center – A Success Story	Wednesday / 3:45
MR250SN	CA MICS Global User Community Meeting	Wednesday / 5:00

exhibition center related CA technology

- CA Mainframe area
 - Booth 182 Stop by to see MICS reporting with Q&R
- Exhibition Center Tours
 - Sign up at the Info Desk in the Exhibition Center

please complete a session evaluation form

- The number for this session is **MR210SN**
- After completing your session evaluation form, place it in the basket at the back of the room

thank you

