

What's new in zVPS 4.2 z/VM and Linux Performance Reporting

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- **zVPS – Velocity Performance Suite**
 - **zVIEW enhancements**
 - **Capacity Planning charts**
 - **zOPERATOR**
 - **LGR / SSI**
 - **Supports z/VM 6.3**
 - **Network data collection**
 - **Applications: JVM, MQ, ORACLE**

25 Years of Performance Management

- **PERFORMANCE MANAGEMENT Makes cents**
 - **Reduce hardware, software costs by managing resource utilization to high utilization**
 - **20 IFLs at 30% % utilization vs 10 at 60 vs 8 at 75%**
 - **Cost of performance management is less than the alternative (unlike distributed)**
 - **How far do you drive on one gas tank if you don't have a gas gauge (that works)?**

25 Years of FORMAL Performance Management

- **Performance Analysis**
 - Real time analysis, Drill down
- **Capacity Planning**
 - Long Term resource utilizations
 - By application, node, system, server, etc
- **Operations Support**
 - Alerts for 1000's of servers
- **Charge back Support**
 - Run your IT as a business (Profit Center)
 - **Accurate metrics**
- **Management is a continuous process**

Velocity Software development guidelines

- **Low cost of data collection**
 - The monitor is **NOT** the performance problem
 - **.1% of ONE IFL per server per minute**
- **Standard interface**
- **Agentless (snmp) – no proprietary agents**
 - Supports lots of servers (x, p, solaris)
- **Capture Ratios**
- **Easy installation (2 hour target)**
- **Long term archive AND interface to MXG, MICS**
- **Accurate metrics**
- **Performance research (what problem trying to solve?)**

Velocity Software Products

- **Performance management**
 - **z/VM**
 - **z/VSE**
 - **Linux on Z**
 - **Microsoft**
 - **Solaris, P, etc**
 - **Linux on X / vmware, P, etc**
- **zTUNE**
- **Network management**
 - **Routers, vpns, printers, etc**

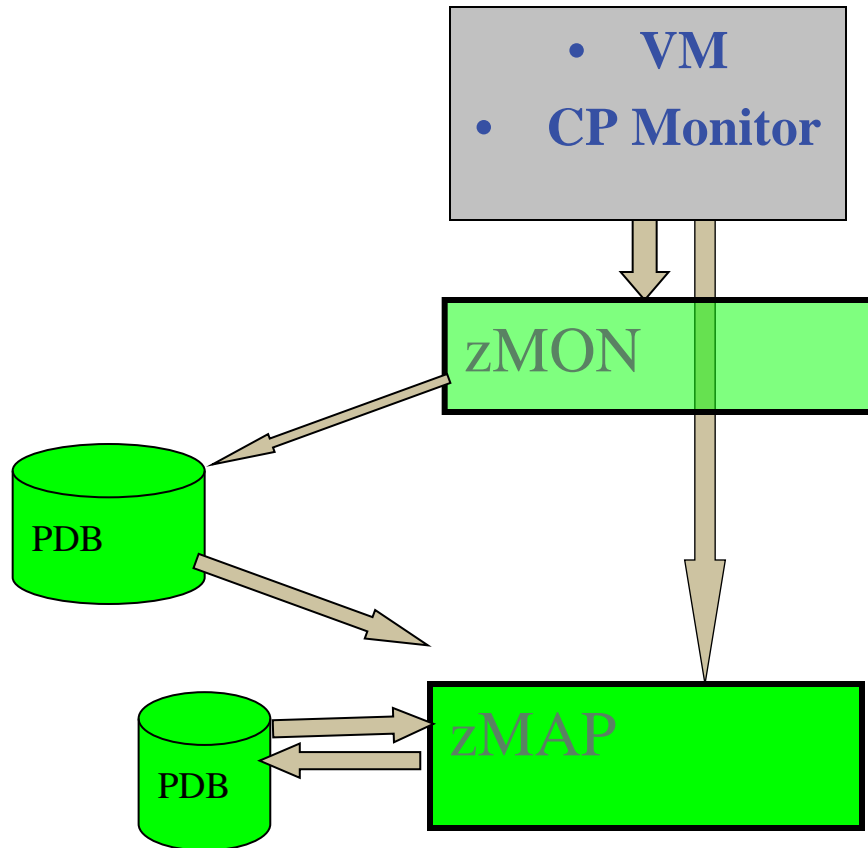
Velocity Software Products

- **z/VM Management**
 - **zOPERATOR / 3270, browser**
 - **zALERT / 3270, sms, email, etc**
 - **Console manager / access via browser**

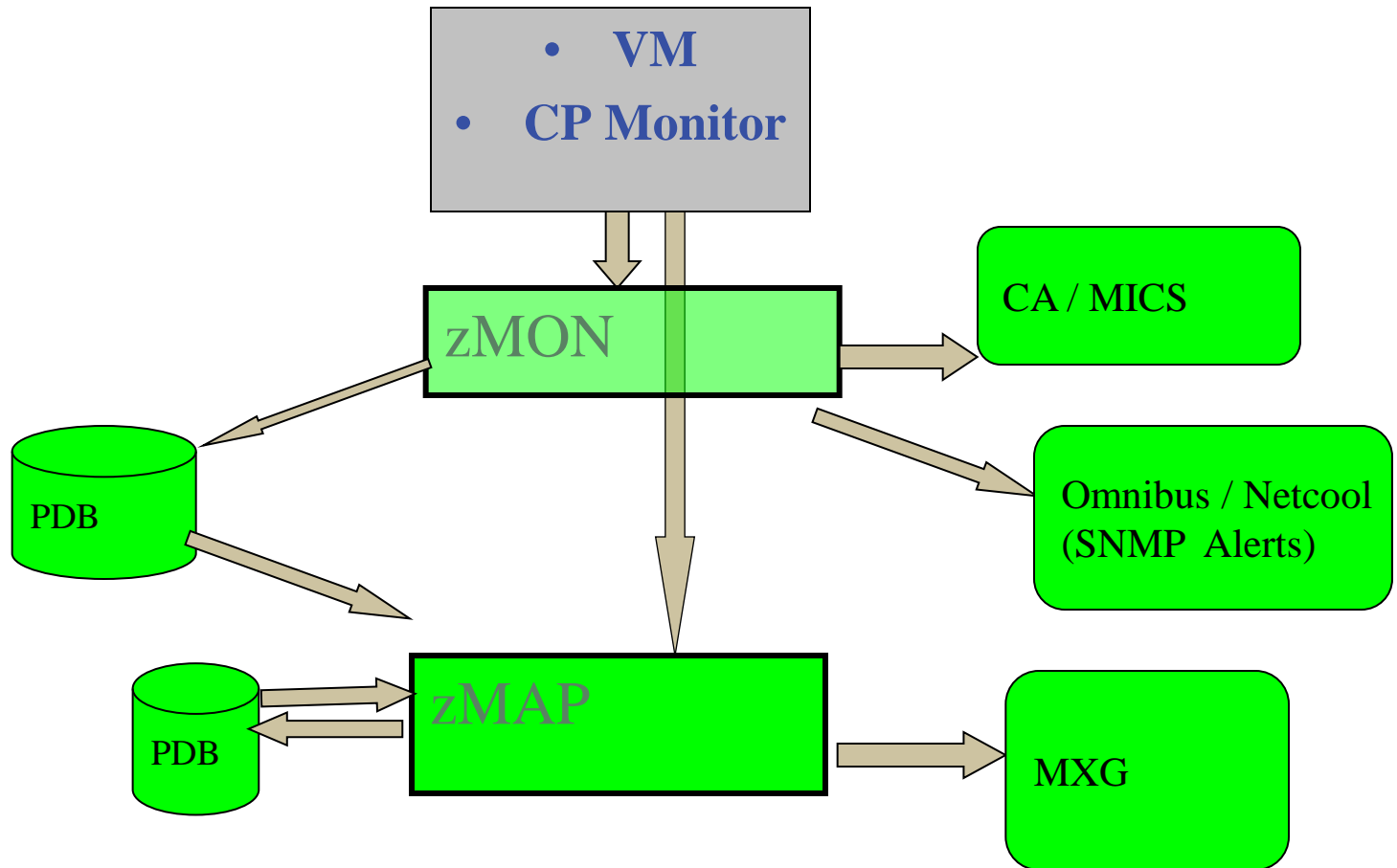
 - **Webserver – VERY VERY FAST**
 - **Web traffic logging**
 - **LDEV (3270 support via browser)**

- **zPRO – Cloud enablement**
 - **Browser based z/vm management**

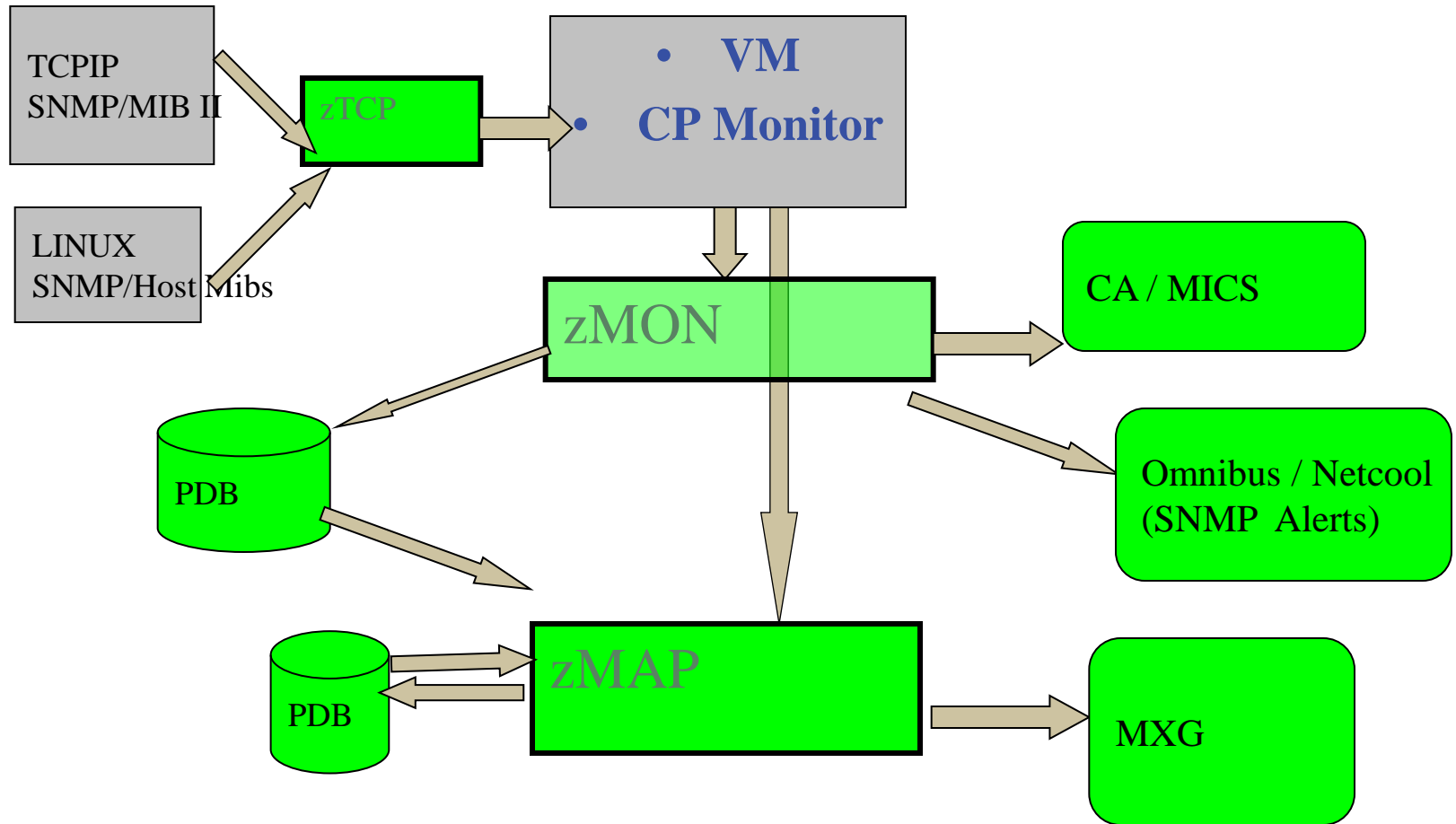
Original (1988) Architecture



Add “Enterprise” Support

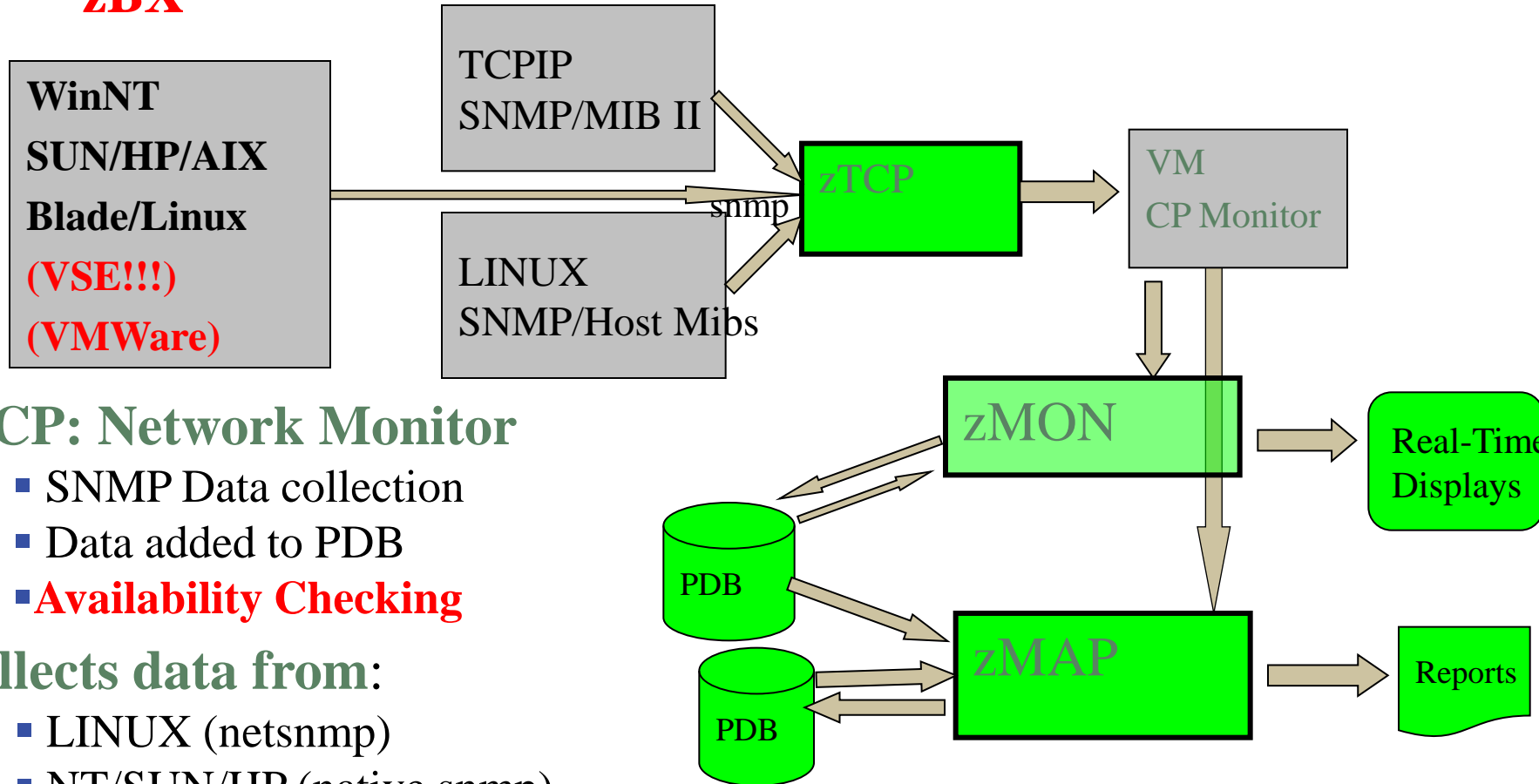


Add “Network” and Linux Support



Added Linux and Network Data Acquisition

zBX



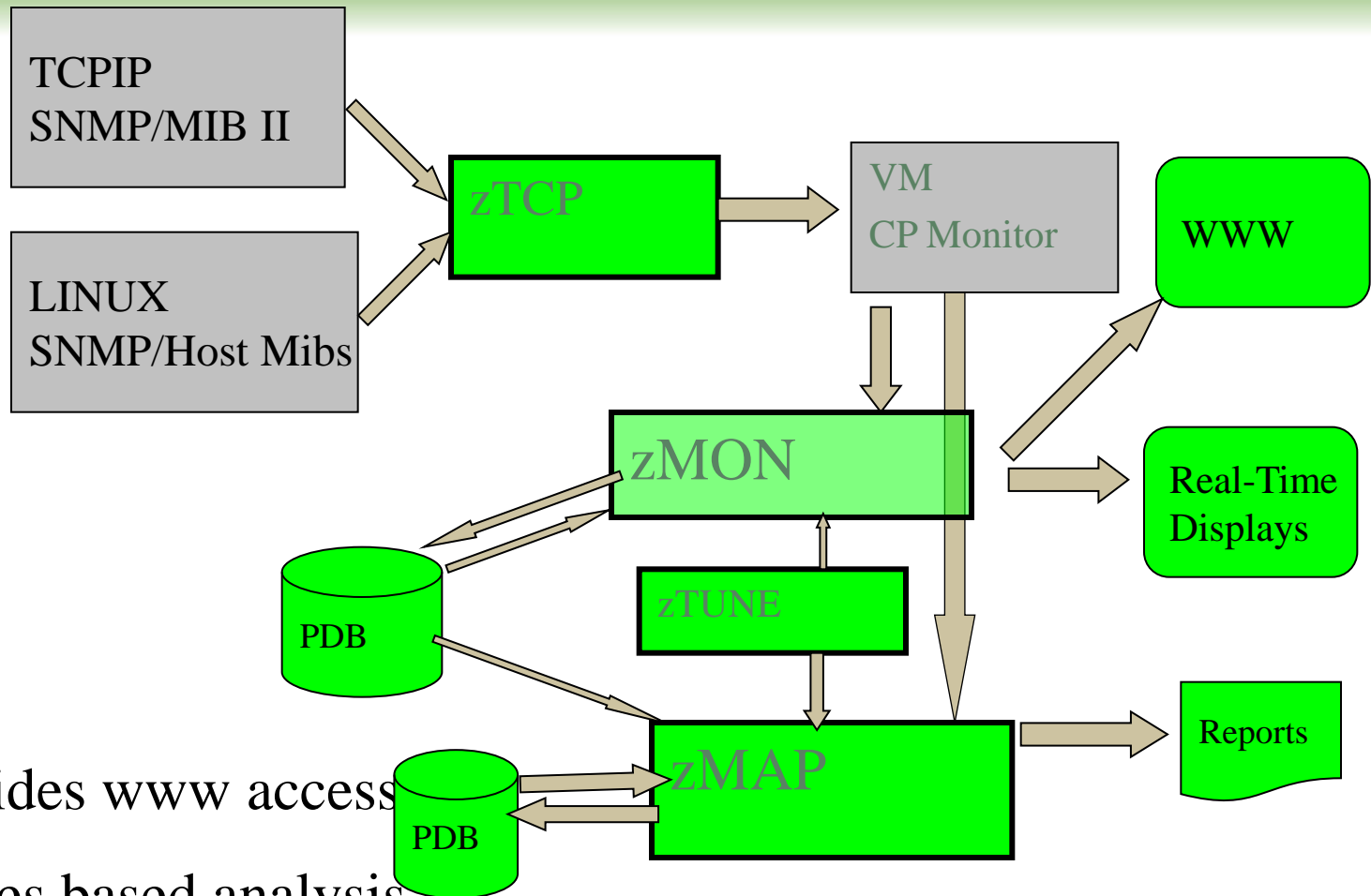
zTCP: Network Monitor

- SNMP Data collection
- Data added to PDB
- **Availability Checking**

Collects data from:

- LINUX (netsnmp)
- NT/SUN/HP (native snmp)
- Printers/Routers....
- **THOUSANDS OF SERVERS?**

Add webserving, performance skills for sale



ZVWS Provides www access

zTUNE: Rules based analysis

Benefit of using standard interface?

- z/VM new releases supported day 1 (Note stg size)

Report: ESAUCD2

LINUX UCD Memory Analysis Report

Veloc

```
-----
Node/      <-----Storage Sizes (in MegaBytes)-----
Time/      <--Real Storage--> <-----SWAP Storage-----> Total <----Storage i
Date       Total  Avail Used  Total Avail Used  MIN  Avail CMM  Buffer
-----
```

15:29:00

*** Nodes *****

Node	Total	Avail	Used	Total	Avail	Used	MIN	Avail	CMM	Buffer
ZLNXT030	994.8	407.7	587.1	256.1	256.1	0	15.6	663.8	0	21.8
ZLNXT006	494.7	388.8	105.9	511.5	511.5	0	15.6	900.3	0	19.3
ZLNXT001	494.2	24.9	469.3	256.0	256.0	0	15.6	280.9	0	19.7
ZLNXT018	994.8	472.1	522.8	1279	1279	0	15.6	1751	0	41.9
ZLNXT017	3008.7	2612	396.9	1279	1279	0	15.6	3891	0	29.5
ZLNXT002	2001.3	902.4	1099	512.0	512.0	0	15.6	1414	0	53.9
ZLNXT007	201192	96151	103K	1023	1023	0	15.6	97174	0	18.1
ZLNXT009	201192	165K	32356	640.1	640.1	0	15.6	166K	0	19.9
ZLNXT013	201192	171K	26563	7.9	7.9	0	15.6	171K	0	22.2
ZLNXT010	201192	181K	15917	1535	1535	0	15.6	182K	0	24.3
ZLNXT011	201192	194K	2280	128.9	128.9	0	15.6	194K	0	28.4

Benefits of Architecture – day one support

- z/VM new releases supported day 1 (Note stg size)

Report: ESASTR1

Velocity Software Corporate

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-----
      Users <-----Pages-----Over
      Loggd System <Available> System  User  <-AddSpace> VDISK Commit  Capt-
Time      On Storage<2gb  >2gb  ExSpC Resdnt  System User  Rsdnt Ratio  Ratio
-----
15:29:00   69 138412K   84 1258K 10296   134M 1641K    0    0 1.915   1.000
15:30:02   69 138412K  109 1649K 10194   134M 1699K    0    0 1.915   1.000
15:31:00   69 138412K  178 1540K 10059   134M 1732K    0    7 1.915   1.000
15:32:00   67 138412K  838 2974K  9869 89040K 1764K    0   21 1.915   0.686
15:33:03   66 138412K 200K   46M  9717 58977K 1064K    0   26 1.915   0.776
15:34:08   66 138412K 390K   77M  9277 23615K  707K    0   22 1.915   0.743
15:36:01   65 138412K 486K  136M  8669 204895 81839    0   10 1.915   0.995
15:37:00   65 138412K 486K  136M  8426 205722 78891    0   10 1.915   0.996
15:38:00   62 138412K 486K  137M  8333 206309 14582    0    0 1.915   1.000
*****Summary*****
Average:    66 138412K 250K   65M  9392 57454K  912K    0   16 1.915   0.903
    
```

zVPS Enhancements and Evolution

If you can't measure it, I'm just not interested

- **Live Guest Relocation**
- **500 GB of real storage**
- **Fcx / HPF (high performance ficon)**
 - **You paid for it, are you using it?**

zVPS Enhancements and Evolution

- **Performance Analysis**
 - **New Linux metrics, zview enhancements**
 - **z/VM 6.3 (storage)**
- **Capacity Planning**
 - **Capacity charts**
 - **Node grouping (to support ESX, etc)**
- **Operations Support (No charge features!)**
 - **zAlert**
 - **zOPERATOR (full operations support)**
 - **Console Management (for zVPS and ??)**

zVPS “is” zVIEW

- **zVIEW is the “face” of zVPS**
 - **Customers don’t have zVPS, they have “zview”**
- **zVIEW:**
 - **Web application**
 - **Integrated with zVPS**
 - **No charge feature of zVPS**
- **CEC List / Enterprise View**
 - **Feature of zVIEW**
 - **Renamed to match function**
 - **High level view of any LPAR in enterprise**
 - **MULTI-System “enterprise” access**

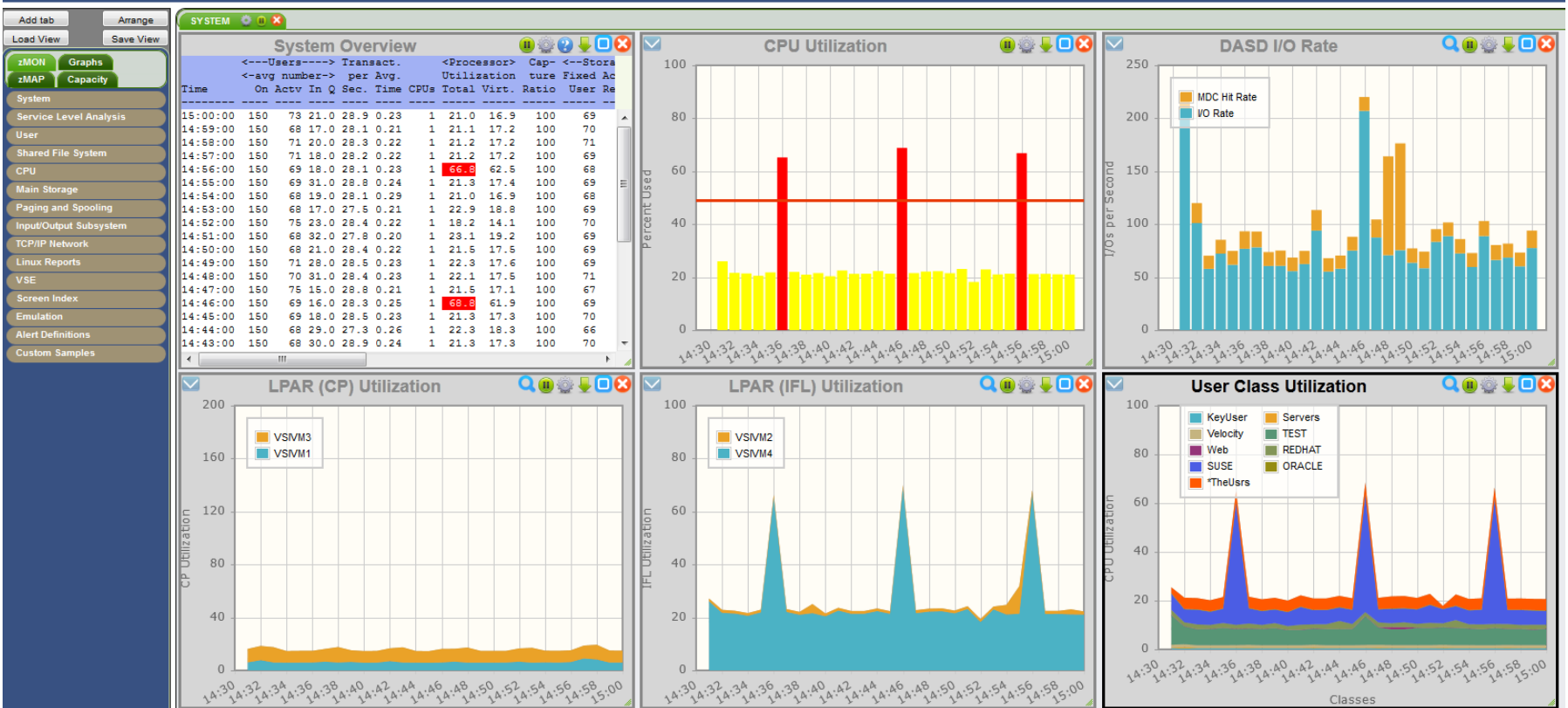
zVPS “is” zVIEW

- **zVIEW enhancements**
 - **Colors user customizable**
 - **Enterprise view**
 - **LPAR Grouping**
 - **Configurable number of guests displayed**
 - **“expand button”**
 - **zOPERATOR display included**
 - **New I/O Response and I/O Intensity charts**

DEMO.VelocitySoftware.COM

zVIEW Version 4120

zVIEW - Velocity Software - VSIVM4
Performance Displays for zVM and Linux on System z



Real Time Displays via browser

 **zVIEW - Velocity Software - VSIVM4**
Performance Displays for zVM and Linux on System z

zVIEW Version 4120

Add tab Arrange
Load View Save View

zMON Graphs
zMAP Capacity

- System
 - ESAMGMT
 - ESAHDR
 - ESAMAIN
 - ESASUM
 - ESAOPER
 - ESATUNE
- Service Level Analysis
- User
- Shared File System
- CPU
- Main Storage
- Paging and Spooling
- Input/Output Subsystem
- TCP/IP Network
- Linux Reports
- VSE
- Screen Index
- Emulation
- Alert Definitions
- Custom Samples

System Overview																									
Time	<---Users--->				Transact.		<Processor>			Cap		<--Storage (MB)-->			<--Paging-->		<---I/O--->			<MiniDisk>		Spool		Communications	
	On	Actv	In	Q	Sec.	Time	CPUs	Total	Virr.	Ratio	User	Resid.	Load	XScore	DASD	Rate	Resp	Rate	Hit	Rate	Page	<per second-->	IUCV	VNCF	
14:58:00	150	71	20.0	28.3	0.22	1	21.2	17.2	100	71	2367	0.5	35	25	68	1	0	13	93.4	1	510	1			
14:57:00	150	71	18.0	28.2	0.22	1	21.2	17.2	100	69	2365	0.5	27	8	66	1	0	14	95.1	1	506	1			
14:56:00	150	69	18.0	28.1	0.23	1	66.8	62.5	100	68	2365	0.5	25	26	89	1	0	14	94.0	2	514	1			
14:55:00	150	69	31.0	28.8	0.24	1	21.3	17.4	100	69	2366	0.5	1	12	60	1	0	13	94.0	1	508	1			
14:54:00	150	68	19.0	28.1	0.29	1	21.0	16.9	100	68	2363	0.5	12	36	72	1	0	14	94.2	1	510	1			
14:53:00	150	68	17.0	27.5	0.21	1	22.9	18.8	100	69	2361	0.5	25	44	89	1	0	13	94.5	1	507	1			
14:52:00	150	75	23.0	28.4	0.22	1	18.2	14.1	100	70	2367	0.5	23	35	83	1	0	12	93.0	1	488	1			
14:51:00	150	68	32.0	27.8	0.20	1	23.1	19.2	100	69	2360	0.5	3	5	58	1	0	16	95.6	1	529	1			
14:50:00	150	68	21.0	28.4	0.22	1	21.5	17.5	100	69	2359	0.5	2	7	64	1	1	13	92.1	1	508	1			
14:49:00	150	71	28.0	28.5	0.23	1	22.3	17.6	100	69	2357	0.5	18	18	75	1	0	101	89.1	2	993	1			
14:48:00	150	70	31.0	28.4	0.23	1	22.1	17.5	100	71	2362	0.5	15	34	71	1	0	93	89.4	2	961	1			
14:47:00	150	75	15.0	28.8	0.21	1	21.5	17.1	100	67	2362	0.5	42	41	87	1	0	17	94.6	2	534	1			
14:46:00	150	69	16.0	28.3	0.25	1	68.8	61.9	100	69	2362	0.5	4	17	207	1	0	13	94.4	1	519	1			
14:45:00	150	69	18.0	28.5	0.23	1	21.3	17.3	100	70	2355	0.5	4	5	75	1	0	13	94.3	2	514	1			
14:44:00	150	68	29.0	27.3	0.26	1	22.3	18.3	100	66	2353	0.5	19	18	58	1	0	12	95.2	1	510	1			
14:43:00	150	68	30.0	28.9	0.24	1	21.3	17.3	100	70	2356	0.5	19	8	55	1	0	13	94.7	1	507	1			
14:42:00	150	77	17.0	28.3	0.26	1	21.3	17.2	100	70	2359	0.5	29	31	94	1	1	19	93.1	8	537	1			
14:41:00	150	69	20.0	28.2	0.19	1	22.5	18.7	100	68	2360	0.5	11	28	62	1	1	12	95.3	1	506	1			
14:40:00	150	68	17.0	27.7	0.24	1	20.3	16.6	100	70	2357	0.5	1	5	56	1	0	13	94.9	1	504	1			
14:39:00	150	69	13.0	27.2	0.24	1	21.5	17.4	100	70	2356	0.5	18	13	61	1	0	14	95.8	1	505	1			
14:38:00	150	75	23.0	27.9	0.25	1	20.9	17.0	100	70	2361	0.5	26	7	61	1	1	13	94.8	1	507	1			
14:37:00	150	74	36.0	27.7	0.23	1	22.0	17.9	100	69	2362	0.5	29	25	78	1	0	15	95.8	1	508	1			
14:36:00	150	71	20.0	28.4	0.21	1	65.2	61.2	100	69	2364	0.5	19	33	77	1	0	17	92.7	7	533	1			
14:35:00	150	70	19.0	29.2	0.20	1	21.8	17.8	100	69	2361	0.5	19	22	62	1	0	13	95.2	2	508	1			
14:34:00	150	73	30.0	29.2	0.21	1	20.5	16.4	100	68	2367	0.5	19	39	72	1	0	13	94.4	2	511	1			
14:33:00	150	67	16.0	30.1	0.20	1	21.4	17.5	100	69	2362	0.5	30	12	58	1	0	12	94.9	1	507	1			
14:32:00	150	73	12.0	28.9	0.21	1	21.6	17.1	100	70	2368	0.5	82	53	101	1	0	19	96.6	1	507	1			
14:31:00	150	70	21.0	28.8	0.22	1	26.0	19.2	100	69	2369	0.5	65	173	208	2	0	15	94.3	1	501	1			
14:30:00	150	69	18.0	29.4	0.22	1	21.0	17.2	100	69	2361	0.5	10	7	59	1	0	13	95.4	1	507	1			
14:29:00	150	69	17.0	29.2	0.23	1	21.2	17.0	100	67	2357	0.5	22	18	67	1	0	13	95.4	1	507	1			
14:28:00	150	68	17.0	29.1	0.23	1	21.0	17.1	100	68	2356	0.5	17	8	67	1	0	13	94.8	1	511	1			
14:27:00	150	72	29.0	28.8	0.22	1	22.0	17.8	100	69	2361	0.5	9	8	87	1	0	15	95.8	1	513	1			
14:26:00	151	71	32.0	28.6	0.22	1	64.9	60.9	100	68	2358	0.5	25	12	76	1	0	16	92.9	1	511	1			
14:25:00	151	70	20.0	28.7	0.21	1	22.4	18.6	100	69	2356	0.5	16	25	60	1	0	13	94.8	1	507	1			
14:24:00	152	70	18.0	28.6	0.22	1	20.7	16.6	100	69	2360	0.5	17	27	79	1	0	13	95.3	1	509	1			
14:23:00	152	68	21.0	28.9	0.22	1	21.2	17.2	100	68	2357	0.5	25	15	76	1	0	13	95.5	1	506	1			
14:22:00	152	71	28.0	29.1	0.20	1	21.3	16.8	100	69	2361	0.5	24	19	96	1	0	14	95.9	1	507	1			
14:21:00	152	70	22.0	29.9	0.18	1	21.5	17.3	100	67	2363	0.5	17	15	117	1	0	15	97.1	19	532	1			
14:20:00	152	67	19.0	29.5	0.21	1	23.0	18.9	100	68	2363	0.5	10	20	86	1	0	13	95.5	1	508	1			
14:19:00	152	67	19.0	28.8	0.21	1	21.6	17.4	100	67	2360	0.5	11	9	84	1	0	13	95.5	1	508	1			
14:18:00	152	68	14.0	28.2	0.23	1	21.5	17.2	100	69	2365	0.5	5	10	90	1	0	13	95.9	1	509	1			
14:17:00	152	77	13.0	28.6	0.21	1	23.0	18.0	100	68	2363	0.5	80	39	136	1	9	16	88.5	1	534	1			
14:16:00	152	75	16.0	28.7	0.21	1	67.1	60.1	100	68	2368	0.5	19	17	217	1	0	13	95.5	1	514	1			
14:15:00	152	73	14.0	30.4	0.18	1	22.5	18.7	100	68	2365	0.5	32	7	69	1	0	13	96.0	1	508	1			
14:14:00	152	71	17.0	30.4	0.18	1	20.9	17.0	100	69	2365	0.5	22	3	62	1	0	13	95.5	2	508	1			
14:13:00	152	72	16.0	29.9	0.23	1	21.2	17.6	100	69	2361	0.5	6	0	50	1	0	26	93.5	15	536	1			

Drill down Options

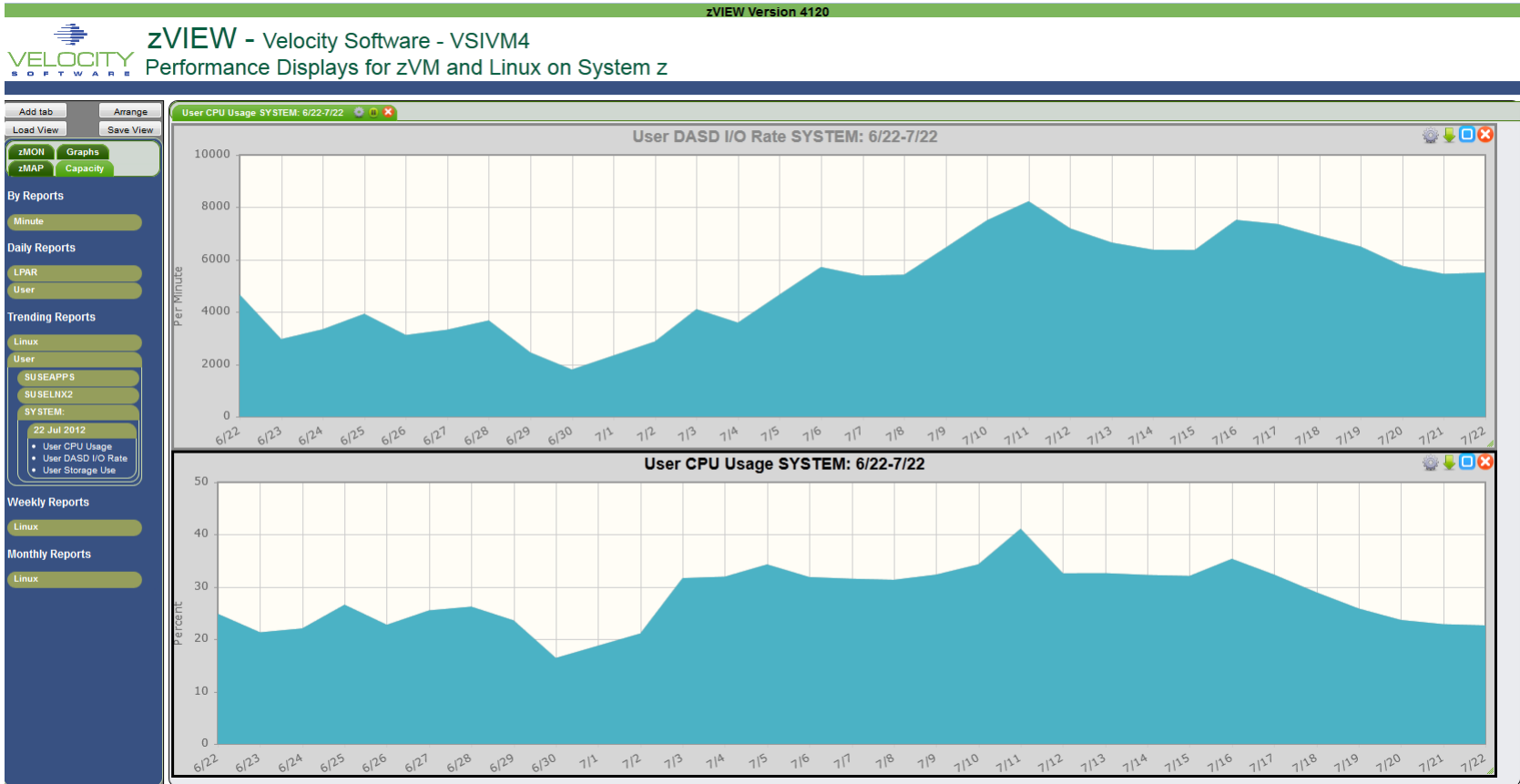
The screenshot displays the Velocity Software interface. On the left is a sidebar menu with options: zMON, Graphs, zMAP, System, Service Level Analysis, and User. The 'User' option is selected and highlighted in purple. Below it is a list of users including ESAUSR1, ESASRV1, ESAUSRC, ESASRVC, ESAACCT, ESAXACT, ESAUSR2, ESAUSR3, ESAWKLD, ESAUSRQ, ESASYSQ, ESAUSER, ESATUSR8, ESATOPU, ESAIDLE, ESAUSRS, and ESAUSPG. An arrow points from the 'User' menu item to the main window. The main window, titled 'ESAUSPG', shows a 'User Storage Analysis' table. The table has columns for Time, UserID /Class, Total, >2GB, <2GB, Xstor, DASD, <--Page Writes to:-- Xstor, Disk, and Migration. The table contains data for various users and classes, with the 'REDHAT' row highlighted in green. An arrow points from the 'REDHAT' row in the table to the 'User' menu item in the sidebar.

Time	UserID /Class	Total	>2GB	<2GB	Xstor	DASD	<--Page Writes to:-- Xstor	Disk	Migration
17:10:00	System:	664879	197480	467399	747999	2609K	28	0	
17:10:00	*TheUsrs	41674	12525	29149	22170	199418	0	0	
17:10:00	KeyUser	3430	1901	1529	349	8276	0	0	
17:10:00	ORACLE	34842	11904	22938	6711	188759	0	0	
17:10:00	REDHAT	258455	78708	179747	536580	592529	0	0	
17:10:00	REDHAT5X	87333	33358	53975	485474	31158	0	0	
17:10:00	REDHAT5	46665	12525	34140	5737	108832	0	0	
17:10:00	REDHAT6	19821	5939	13882	23266	105537	0	0	
17:10:00	Servers	1210	810	400	1978	30403	0	0	
17:10:00	SUSE	176464	48152	128312	51280	864768	0	0	
17:10:00	TEST	142604	39842	102762	125496	693779	0	0	
17:10:00	Velocity	4105	2268	1837	1591	23659	0	0	
17:10:00	Web	2095	1370	725	1844	7372	28	0	

Click on “user” to see user screens

Click on “redhat” class to see “redhat users”

zMAP Capacity/Trend Graphs



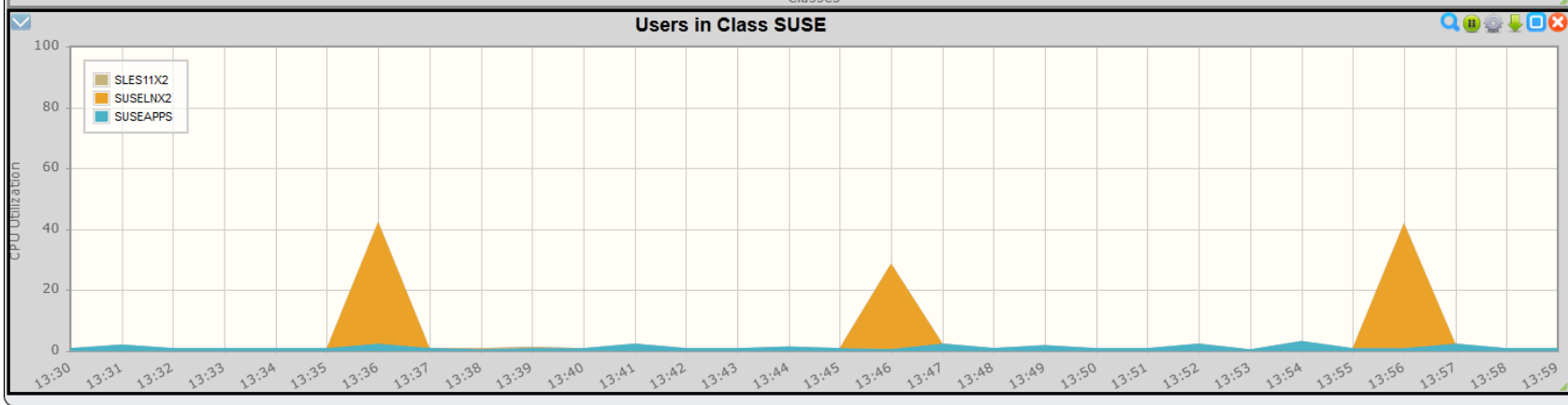
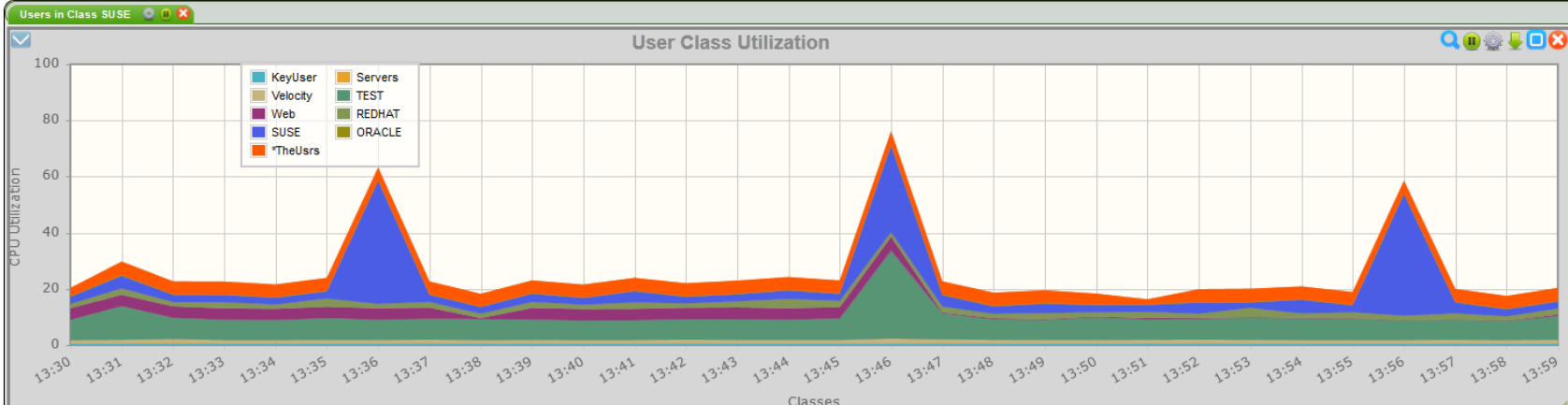
Graph Drilldown

zVIEW Version 4120

VELOCITY SOFTWARE zVIEW - Velocity Software - VSIVM4
Performance Displays for zVM and Linux on System z

Add tab Arrange
Load View Save View

- zMON Graphs
- zMAP Capacity
- System
- User
 - Active User Summary
 - DASD Block I/O Rate
 - DASD I/O Rate
 - Logged-On Users
 - Top Servers
 - Top Users
 - User Class Utilization
 - Users in Queue
 - VDISK I/O Rate
- Linux
- Storage
- I/O
- Paging
- Network
- Custom Graphs



Multiple (SSI+++) System View



RSM and Velocity Software Performance Management Demonstration

RSM z/VM

RSMDemo	13/06/15	10:29	03AB37-0	0.76%	<div style="width: 10px; height: 10px; background-color: green;"></div>
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Velocity cloud

VSIIDemo	13/06/15	02:30	044B42-0	23.71%	<div style="width: 100px; height: 10px; background-color: green;"></div>
Linux Nodes (z/VM-Guests)					
slls2ora	4.85%	<div style="width: 10px; height: 10px; background-color: green;"></div>			
roblx1	1.28%	<div style="width: 10px; height: 10px; background-color: green;"></div>			
BROBLX1	1.27%	<div style="width: 10px; height: 10px; background-color: green;"></div>			
roblx2	0.71%	<div style="width: 10px; height: 10px; background-color: green;"></div>			
BROBLX2	0.69%	<div style="width: 10px; height: 10px; background-color: green;"></div>			
redhat01	0.48%	<div style="width: 10px; height: 10px; background-color: green;"></div>			

Velocity Production

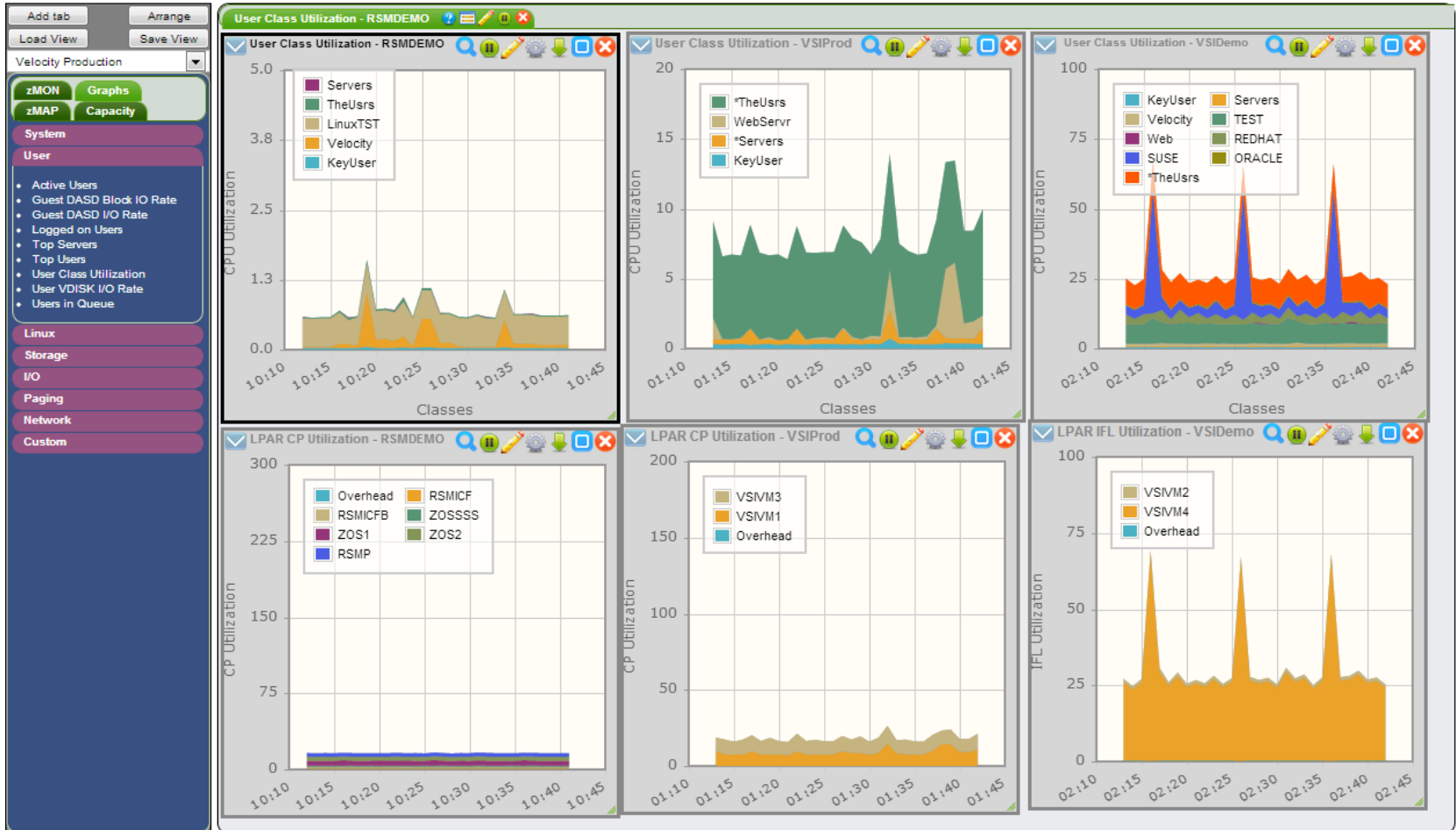
VSIProd	13/06/15	01:30	014B42-0	4.02%	<div style="width: 100px; height: 10px; background-color: green;"></div>
			014B42-1	3.47%	<div style="width: 100px; height: 10px; background-color: green;"></div>
			Total	7.49%	<div style="width: 100px; height: 10px; background-color: green;"></div>
Linux Nodes (Distributed Servers)					
LINUX9	3.98%	<div style="width: 10px; height: 10px; background-color: green;"></div>			
suselnx3	2.61%	<div style="width: 10px; height: 10px; background-color: green;"></div>			

Multiple System View (3 LPARs)

zVIEW Version 4143



zVIEW - Velocity Software/RSMZVM6 (RSMDEMO)
Performance Displays for zVM and Linux on System z



Measuring Application or other servers

Node Groups – Virtualized systems and applications -Group by ESX

Report: **ESAUCD2** LINUX UCD Memory Analysis Report Velocity Software Corporate

```

-----Storage Sizes (in MegaBytes)-----
Node/      <---Real Storage---> <---SWAP Storage---> Total <---Storage in Use--->
Time/      Total  Avail Used  Total Avail Used  MIN  Avail  CMM  Buffer Cache Ovrhd
Date
-----
00:15:00
***Node Groups***
REDHAT      3477.6 104.4  3373 14609 13490  1119  93.7 13595      0  644.8  1272  1456
SUSE        11098 873.8 10224 25733 24337  1395 193.7 25211      0 1867.6  4367  3989
SOLARIS    2535.1 215.6  2320  1792 888.4 903.6 31.2  720.3      0     0     0  2320
VMWARE    1985.9 135.8  1850  5636 5454  182.7 46.9  5589      0  448.7  779.2  622.1
*** Nodes *****
redhat01    496.9  12.5  484.3  1024  1024    0.1  15.6  1036      0   56.4  338.1  89.8
redhat5     499.2  17.5  481.7  4095  3561  533.2  15.6  3579      0   63.8   24.9  393.0
redhat5x    497.1  18.2  478.9  4095  3874  220.5  15.6  3892      0   96.9   55.7  326.3
linux93     1011.4 21.5  989.9  1914  1336  578.2  15.6  1357      0   61.2   91.4  837.3
redhat56    497.0  17.4  479.7  1176  820.1  355.9  15.6  837.5      0   71.3   40.7  367.6
linux64     2013.1 15.8  1997     0     0     0  15.6  15.8      0   71.4  1819  107.0
rhel55v     498.5  22.5  476.1  2047  2047    0.1  15.6  2070      0  133.0  139.3  203.8
rhel64v     996.4  82.8  913.7  2047  2047     0  15.6  2130      0  194.7  536.2  182.7
redhat6x    994.8  31.0  963.8  125.0 125.0     0  15.6  156.0      0  187.3  625.3  151.2
sles11x     494.2 189.5  304.7  4219  4219     0  15.6  4408      0  139.7  109.7   55.3
sles11      494.7  75.0  419.7  4211  4211     0  15.6  4286      0  141.2  213.5   64.9
sles10      493.0  24.6  468.4  4219  4219     0  15.6  4243      0  141.5  276.7   50.1
SUSEAPPS    997.4  41.6  955.8   62.5  23.8  38.7  15.6   65.4      0  140.4  106.2  709.2
solarisa    1535.6 166.1  1369  768.0 768.0     0  15.6  700.2      0     0     0  1369
solarisb    999.6  49.5  950.1  1024  120.4 903.6 15.6  20.2      0     0     0  950.1
    
```

Process Storage metrics (zVPS version 4.2)

New metrics

- RSS, Size - Same
- Locked: Locked memory size (mlock)
- Peak: peak RSS (high water mark)
- Data: size of data, stack
- Stack: size of stack
- EXEC: size of executable (text)
- Lib: shared library code size
- PTBL: page table entries (linux 2.6.10) - Use to evaluate LARGE PAGES
- Swap: Swapped out

Report: ESALNXP LINUX HOST Process Statistics Report Velocity Software Corporate ESAMAP 4.2.0
Monitor initialized: 03/07/13 at 13:04:28 on 2096 serial 34B42 First record analyzed: 03/07/13 13:05:00

node/ Name	<-Process Ident->			<-----CPU Percents----->							<-----Storage Metrics (MB)----->											
	ID	PPID	GRP	Nice	PRTY	Valu	Valu	Tot	sys	user	syst	usr	Size	RSS	Peak	Swap	Data	Stk	EXEC	Lib	Lck	PTbl
13:06:00																						
sles11x2	0	0	0	0	0	0.58	0.37	0.22	0	0	0	508	109	589	1.73	170	6.2	10.3	159	0	0.70	
ksoftirq	3	2	0	0	20	0.02	0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
snmpd	15544	1	15544	-10	10	0.28	0.18	0.10	0	0	0	31	15	40.4	0	18.4	0.1	0.0	11	0	0.06	
kworker/	30397	2	0	0	20	0.02	0.02	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
top	35656	1	0	0	20	0.27	0.15	0.12	0	0	0	3	1	2.9	0	0.40	0.1	0.1	1.9	0	0.09	

Process Storage metrics (zVPS version 4.2)

New metrics, New report ESALNXR (RAM)

- SwapCached Both in swap and ram
- Active Recently referenced
- Inactive Not recently referenced
- ActiveAnon Anonymous storage NOT file backed
- InactiveAnon
- ActiveFile page cache active
- VmallocTotal total allocated virtual address space
- VmallocUsed total used virtual address space
- VmallocChunk largest available chunk (virtual?)
- Slab - In-kernel data structure cache
- SReclaimable
- SUNreclaim
- KernelStack
- PageTables

Report: ESALNXR LINUX RAM/Storage Analysis Report Velocity Software Corporate ESAMAP 4.2.0
 Monitor initialized: 03/07/13 at 13:04:28 on 2096 serial 34B42 First record analyzed: 03/07/13 13:05:00

Node/	<---Memory in megabytes--<----->				<-Kernel(MB)->			<-Buffers(MB)-->			Wrt <---VMAlloc-->			<-----Huge page----->									
Time	Total	Free	Size	Actv	Swap	Actv	Inact	Size	Size	SRec	Size	Dirty	Back	Write	<---VMAlloc-->	TOT	Used	Chunk	Totl	Fre	Rsv	Surp	Size
13:06:00	996.5	43.1	519	399	0.2	51.1	12.2	39.1	1.6	117	106	242	0.0	0	.1M	13.1	131K	928.0	0	0	0		

Installation Process

```
MAIN                               Velocity Software Inc.
                                Product Installation and Configuration

The following product packages are available for installation
Place "X" to mark the directory entries to create or update and press PF4
Place the cursor on a product package and press PF2 to install
```

Product Name	Initialize Complete	Installed Version	Available Packages
INSTALL	Complete	4.1.3.0	4123 4130
PORTAL	Complete	4.1.5.1	4150 4151
PTRACK	Complete	2.1.0.5	2100 2105
SFPURGER	Incomplete	<none>	4110
VSESNMP	Incomplete	<none>	4100
ZALERT	Complete	4.1.4.1	4140 4141
ZDOC	Complete	4.1.0.2	4100 4102
ZLDEV	Incomplete	<none>	4130
ZMAP	Complete	4.1.3.4	4130 4134
ZMON	Complete	4.1.1.1	4110 4111
ZOPER	Complete	4.1.1.2	4110 4111 4112
ZPRO	Complete	1.3.4.3	1340 1341 1342 1343
ZSSL	Incomplete	<none>	4140
ZTCP	Complete	4.1.3.4	4130 4133 4134 4200
ZTUNE	Complete	4.1.1.0	4100 4110
ZVIEW	Complete	4.1.4.3	4140 4141 4142 4143
ZVWS	Complete	4.1.5.1	4140 4144 4150 4151
ZWRITE	Complete	4.1.3.8	4130 4137 4138

```
License Key, overtype to update: 768D64E38ADFD4F0CD70FECFBF08045805CD71EB
License Key expires:              Aug 2, 2013
```

```
PF1: Help  PF2: Select  PF3: Exit  PF4: Create Dir  PF5: KEY Update  PF6: Delete
PF9: Check for Updates  PF10: Configure
```

New Installation Easy Update Process

White is update to installed product, yellow is update to something not installed

```
GETUPDAT Velocity Software Inc.
          Download Installation Packages

          Select following new or updated file(s) to download and press PF2

_ FBADIR  README    13-06-17 13:11
_ INSTALL PROD4130 13-06-16 19:12
_ POOLDEF README    13-06-17 07:29
_ PTRACK  PROD2100 12-07-04 17:19
_ VSESNMP PROD4100  13-05-16 10:27
_ ZALERT  PROD4140 13-05-02 08:25
_ ZLDEV   README    13-04-24 07:18
_ ZLDEV   PROD4150  13-04-24 09:06
_ ZMAP    PROD4135  13-05-14 16:19
_ ZOPER   PROD4112 13-06-10 08:49
_ ZPRO    PROD1343  13-05-21 06:30
_ ZSSL    README    13-05-21 06:09
_ ZSSL    PROD4152 13-05-21 06:29
_ ZSSL    PROD4150 13-04-13 12:10
_ ZVIEW   PROD4144  13-06-13 13:27
_ ZVWS   README    13-05-20 07:14
_ ZVWS    README    13-05-20 07:14
_ ZVWS    PROD4152  13-05-28 09:43

PF1: Help      PF2: Download  PF3: Exit      PF5: Upload
PF6: All Files PF9: Update Key PF12: Cancel
```

Performance “new stuff”

New CP Monitor metrics

- 6.2 / SSI / LGR
- 6.3.....

New snmp metrics (4.2)

- New storage (ram) metrics
- “steal percent” (4.1)
- MQ
- WAS
- Oracle

Performance “new stuff”

zTCP – Network Data Collector – 4.2

- **Topology recognition**
 - From snmp, know if node moves (LGR)
 - move nodes to correct LPAR (4.2)
- **DNS Support**
- **Apple PID support (pid > 64K)**
- **Long process names (16 characters)**

zOPERATOR

Several requests to extend ESAOPER screen

zOPERATOR:

- Optional **no-charge** application component of zMON
- Uses standard zMON 3270 screen driver, existing function
- Scrollable 3270 console
- Messages can be searched by text, date or time
- All messages logged in daily files
- Actions can be set based on messages received
- Can be viewed from DIALed terminal or **zVIEW (WEB!)**

Console Management View

Performance | zVWS administration | zTCP administration | zVPS administration

Available zVPS Console Logs

zPRO Available Log Files

Select one or more logfiles that you wish to view or download

Download View Upload Reset

DXTZMAP			
<input type="checkbox"/> 14 Jun 2013 (4)	<input type="checkbox"/> 03 Jun 2013 (4)	<input type="checkbox"/> 23 May 2013 (4)	<input type="checkbox"/> 12 May 2013 (4)
<input type="checkbox"/> 13 Jun 2013 (4)	<input type="checkbox"/> 02 Jun 2013 (4)	<input type="checkbox"/> 22 May 2013 (4)	<input type="checkbox"/> 11 May 2013 (4)
<input type="checkbox"/> 12 Jun 2013 (4)	<input type="checkbox"/> 01 Jun 2013 (4)	<input type="checkbox"/> 21 May 2013 (648)	<input type="checkbox"/> 10 May 2013 (4)
<input type="checkbox"/> 11 Jun 2013 (4)	<input type="checkbox"/> 31 May 2013 (4)	<input type="checkbox"/> 20 May 2013 (6)	<input type="checkbox"/> 09 May 2013 (39)
<input type="checkbox"/> 10 Jun 2013 (4)	<input type="checkbox"/> 30 May 2013 (4)	<input type="checkbox"/> 19 May 2013 (6)	<input type="checkbox"/> 08 May 2013 (4)
<input type="checkbox"/> 09 Jun 2013 (4)	<input type="checkbox"/> 29 May 2013 (4)	<input type="checkbox"/> 18 May 2013 (6)	<input type="checkbox"/> 07 May 2013 (4)
<input type="checkbox"/> 08 Jun 2013 (4)	<input type="checkbox"/> 28 May 2013 (4)	<input type="checkbox"/> 17 May 2013 (6)	<input type="checkbox"/> 06 May 2013 (4)
<input type="checkbox"/> 07 Jun 2013 (4)	<input type="checkbox"/> 27 May 2013 (4)	<input type="checkbox"/> 16 May 2013 (6)	<input type="checkbox"/> 05 May 2013 (4)
<input type="checkbox"/> 06 Jun 2013 (4)	<input type="checkbox"/> 26 May 2013 (4)	<input type="checkbox"/> 15 May 2013 (4)	
<input type="checkbox"/> 05 Jun 2013 (4)	<input type="checkbox"/> 25 May 2013 (4)	<input type="checkbox"/> 14 May 2013 (4)	
<input type="checkbox"/> 04 Jun 2013 (4)	<input type="checkbox"/> 24 May 2013 (4)	<input type="checkbox"/> 13 May 2013 (4)	
INSTALL			
<input type="checkbox"/> 14 Jun 2013 (263)	<input type="checkbox"/> 02 Jun 2013 (553)	<input type="checkbox"/> 20 May 2013 (78)	<input type="checkbox"/> 09 May 2013 (6)
<input type="checkbox"/> 13 Jun 2013 (16)	<input type="checkbox"/> 31 May 2013 (12)	<input type="checkbox"/> 17 May 2013 (153)	<input type="checkbox"/> 08 May 2013 (257)
<input type="checkbox"/> 12 Jun 2013 (38)	<input type="checkbox"/> 30 May 2013 (6)	<input type="checkbox"/> 16 May 2013 (887)	<input type="checkbox"/> 06 May 2013 (5)
<input type="checkbox"/> 10 Jun 2013 (8)	<input type="checkbox"/> 29 May 2013 (317)	<input type="checkbox"/> 15 May 2013 (494)	<input type="checkbox"/> 05 May 2013 (155)
<input type="checkbox"/> 05 Jun 2013 (6)	<input type="checkbox"/> 28 May 2013 (6)	<input type="checkbox"/> 14 May 2013 (48)	
<input type="checkbox"/> 04 Jun 2013 (6)	<input type="checkbox"/> 23 May 2013 (63)	<input type="checkbox"/> 13 May 2013 (434)	
<input type="checkbox"/> 03 Jun 2013 (1050)	<input type="checkbox"/> 22 May 2013 (20)	<input type="checkbox"/> 10 May 2013 (14)	
SFPURGER			
<input type="checkbox"/> 14 May 2013 (8)	<input type="checkbox"/> 11 May 2013 (8)	<input type="checkbox"/> 08 May 2013 (8)	<input type="checkbox"/> 05 May 2013 (8)
<input type="checkbox"/> 13 May 2013 (8)	<input type="checkbox"/> 10 May 2013 (8)	<input type="checkbox"/> 07 May 2013 (8)	
<input type="checkbox"/> 12 May 2013 (8)	<input type="checkbox"/> 09 May 2013 (8)	<input type="checkbox"/> 06 May 2013 (8)	
ZALERT			
<input type="checkbox"/> 13 Jun 2013 (40)	<input type="checkbox"/> 03 Jun 2013 (48)	<input type="checkbox"/> 24 May 2013 (50)	<input type="checkbox"/> 14 May 2013 (52)
<input type="checkbox"/> 12 Jun 2013 (48)	<input type="checkbox"/> 02 Jun 2013 (38)	<input type="checkbox"/> 23 May 2013 (42)	<input type="checkbox"/> 13 May 2013 (70)
<input type="checkbox"/> 11 Jun 2013 (42)	<input type="checkbox"/> 01 Jun 2013 (52)	<input type="checkbox"/> 22 May 2013 (63)	<input type="checkbox"/> 12 May 2013 (42)

zVPS Application Feature

- Requirement to go beyond z/VM and Linux metrics
- z/VPS provides over 4,000 unique metrics
 - z/VM System metrics
 - z/VM Virtual machine metrics
 - Network metrics
 - Linux System metrics
 - Linux Process metrics
- **Development to target the users:**
 - **Oracle**
 - **Websphere**
 - **MQ**

Application Feature - Java/WebSphere Metrics

Report: ESAJVM Java Subsystem Analysis Report Velocity Sof

```

-----
Node/           <JavaClass> Memory <-----Heap data----->
Date   <-----Application-----> <---Loaded-> pending <-----sizes----->
Time   Name                Type Curr  /Sec  Final  Init  Used  Commit Max
-----
13:06:00
S11R20RA WAS Server1          JVM   15287    0      0 52.4M  100M 107.5M  268M
        WAS Server2longerna JVM   15312    0      0 52.4M  85.4M 103.3M  268M
    
```

Report: ESAJVM Java Velocity Software Corporate ESAMAP 4.2.0 06/19/13 Page 171

```

-----
Node/           <---Non Heap Data----> <---Thread Count data->
Date   <-----Application- <-----sizes-----> Curr Daemon Peak start
Time   Name                Init Used  Commit Max  Live Count  thrds /sec
-----
13:06:00
S11R20RA WAS Server1          0  101M 184.7M    0 58.0   55.0  55.0    0
        WAS Server2longerna 0  101M 171.9M    0 58.0   55.0  55.0    0
    
```



Application Feature – Oracle Metrics

Oracle Reports: (10, 11G , 12C supported , “x” AND “z”!)

- 40 metrics
- Configuration, subsystem I/O, SGA, PGA

ESAORAC: Oracle Configuration

Report: ESAORAC Oracle Database Configuration Report Velocity Software Corporate ZMAP 4.2.0
 Monitor initialized: 08/06/13 at 18:28:15 on 2096 serial 34B42 First record analyzed: 08/06/13 18:29:00

```
-----
```

Node/ Date Time	<-----Database Description-->			<-----Database----->			<-----Storage Overview (MB)----->					
				<----Start----->			<-----SGA----->			<-----PGA----->		
	DatabaseName	Instance	Version	Date	Time	Status	Size	Free	Max	Size	Max	MaxMan
18:30:00	oracle	orcl	10.2.0.4.0	2013/05/07	09:15	OPEN	133K	0	940K	1778K	532K	0
	S11R20RA	db01	11.2.0.2.0	2013/06/28	12:46	OPEN	143K	0	1557K	1007K	0	0
18:31:00	oracle	orcl	10.2.0.4.0	2013/05/07	09:15	OPEN	133K	0	940K	1778K	532K	0
	S11R20RA	db01	11.2.0.2.0	2013/06/28	12:46	OPEN	143K	0	1557K	1007K	0	0

```
-----
```

Application Feature – Oracle Metrics (I/O)

Oracle Reports: (10.2, 11.2 supported)

ESAORAS: Oracle Subsystem

Report: ESAORAS Oracle Subsystem Analysis Report Velocity Software Corporate ZMAP 4.2.0
 Monitor initialized: 08/06/13 at 18:28:15 on 2096 serial First record analyzed: 08/06/13 18:29:00

```

-----
Node/      <---Database----> <-User Activity->  ----Physical Reads Activty---> <-Phphysical Write Activity-->
Date                               <Rate per second>  -----Rate per second-----> <-----Rate per second----->
Time      Name      Instance  Calls Comm Rollbk  Rds  Hits  Direct  I/O Bytes Writss CHits Direct  I/O  Bytes
-----
18:30:00
oracle  orcl      orcl      3175  114K  11139  026611  14593  2813  2801    12  23777  6377K  35646  35634    12
S11R20RA db01      db01      3201  342K  9767  035503  26838  57495  55324  2171  253111  4335K  29590  27893  1697
-----
18:31:00
oracle  orcl      orcl      3175  114K  11139  026611  14593  2813  2801    12  23777  6377K  35646  35634    12
S11R20RA db01      db01      3201  342K  9767  035503  26838  57495  55324  2171  253111  4335K  29590  27893  1697
  
```

Application Feature – Oracle Metrics (SGA/PGA)

Oracle Reports: (10.2, 11.2, 12(X-only?) supported)

ESAORAG: General Storage Areas (SGA, PGA)

Report: ESAORAG Oracle SGA/PGA Analysis Report Velocity S
Monitor initialized: 08/06/13 at 18:28:15 on 2096 serial 34B42 First reco

Node/ <-----Shared Global Area (SGA)----->

Date <--DataBase ----> Fixed Redo Buffer <-----Pool sizes----->
Time Name Instance Size Buffr Cache Free Shrd Large Java Stream ShrIO

18:30:00

oracle	orcl	orcl	133K	135K	0	0	1543K	268K	268K	0	0
S11R20RA	db01	db01	143K	274K	1711K	0	1812K	268K	268K	268416	0

<-----PGA Data----->

<-Target-> InUse Alloc Free
Parm Auto -able

1778K 90752 1239K 0 881K
1007K 1832K 0 4544 1074K

APM – MQ metrics (4.2)

MQ Manager

ID, Description, version, path, queue information,
channel information, handles, statuses

Queues (Per queue)

Id, name, description, DEPTH, MAXQDEPTH, Open in/out, other....

MQ Channels (Per channel)

ID, name, description, type, message length , keep alive
Buffers receive/sent , bytes receive/sent, batch size

z/VM 6.3 System Storage

Storage has changed - Ready to reclaim: free list?

Report: ESASTR3 Storage IBR / DPA Analysis Velo
 Monitor initialized: 07/16/13 at 15:27:11 on 2817 serial FE0A6 Firs

Time	<---Users---->			<-----Age List in Pages----->					<- Page-->		
	On	Actv	In Q	Target	size	Ready	Chnged	Refd	Ready	Chgd	Refd
15:29:00	69	38	13.0	2745K	1M	196K	0	0	703155	0	0
15:30:02	69	40	29.0	2745K	947K	140K	0	0	645887	0	0
15:31:00	69	43	17.0	2745K	951K	126K	0	0	641654	0	0
15:32:00	67	38	14.0	2745K	704K	90858	0	0	485985	0	0
15:33:03	66	40	13.0	2745K	628K	90042	0	0	426325	0	0

Report: ESASTR1 Main Storage Analysis Vel

Time	Users		Pages							System ExSpC	User Resdnt
	Loggd On	System Storage	Fixed Store	Non-Pgble	Free Stor	Frame Table	<Available> <2gb >2gb				
15:29:00	69	138412K	2775	38741	414	1081K	84	1258K	10296	134M	
15:30:02	69	138412K	2775	38724	414	1081K	109	1649K	10194	134M	
15:31:00	69	138412K	2775	38672	415	1081K	178	1540K	10059	134M	
15:32:00	67	138412K	2775	38607	390	1081K	838	2974K	9869	89040K	
15:33:03	66	138412K	2775	38537	388	1081K	200K	46M	9717	58977K	



z/VM 6.3 User Storage

Storage has changed

IBR – Invalid but resident – Exstore replacement

Report: ESAUSTR User Storage Analysis V

```

-----
                <-----Virtual Server Storage (Pages)-----> <Resident> Page
UserID      Size  Alloc  Resi-  UFO    <--IBR--> <AgeList> <Unreferd> slot
/Class      Size  Size  dent  Activ  TOT  >2gb  <2gb  >2gb  <2gb  >2gb  used
-----  -----  -----  -----  -----  -----  -----  -----  -----  -----  -----
15:29:00   265M   169M   134M   133M   1756   1029    217   1.2M   142   331K    41M
***User Class Analysis***
Servers     117K   18119   2060   454.0   287    256     0   1319     0    120   17421
ZVPS       49152   5409   2305     6.0   18.0   18.0     0   2281     0   13.0    4988
Linux      14336   1980     96     3.0    6.0    6.0     0   87.0     0     0    1929
TheUsers   265M   169M   134M   133M   1240    618    217   1.2M   142   331K    41M
***Top User Analysis***
LNXT007    52.4M   39.2M    23M   22.1M   16.0   16.0   57.0   499K     0   241K    18M
LNXT009    52.4M   43.4M    36M   35.6M   166   20.0     0    27K     0   2220  8979K
LNXT010    52.4M   27.2M    24M   23.6M   188   50.0   90.0   160K   89.0    55K   4761K
LNXT013    52.4M   36.5M    30M   30.2M   212   92.0    1.0   175K     0   8116  7331K
LNXT011    52.4M   22.1M    22M   21.6M   14.0   14.0   53.0   167K   53.0    15K   1583K
LNXT017     786K   116K  19796   260.0   128   45.0    1.0    19K     0   2978   113K
LNXT002     524K   304K  53250   1471   10.0   10.0    8.0    52K     0   2765   302K

```

ZVPS Overview

Fully integrated “Performance Management”

- Systems, Network, Applications

Platforms:

- z/VM
- z/VSE
- Linux on z, x, p
- Solaris, Microsoft, Apple
- VMWare, KVM

Application subsystems

- Oracle, WAS/Java, MQ