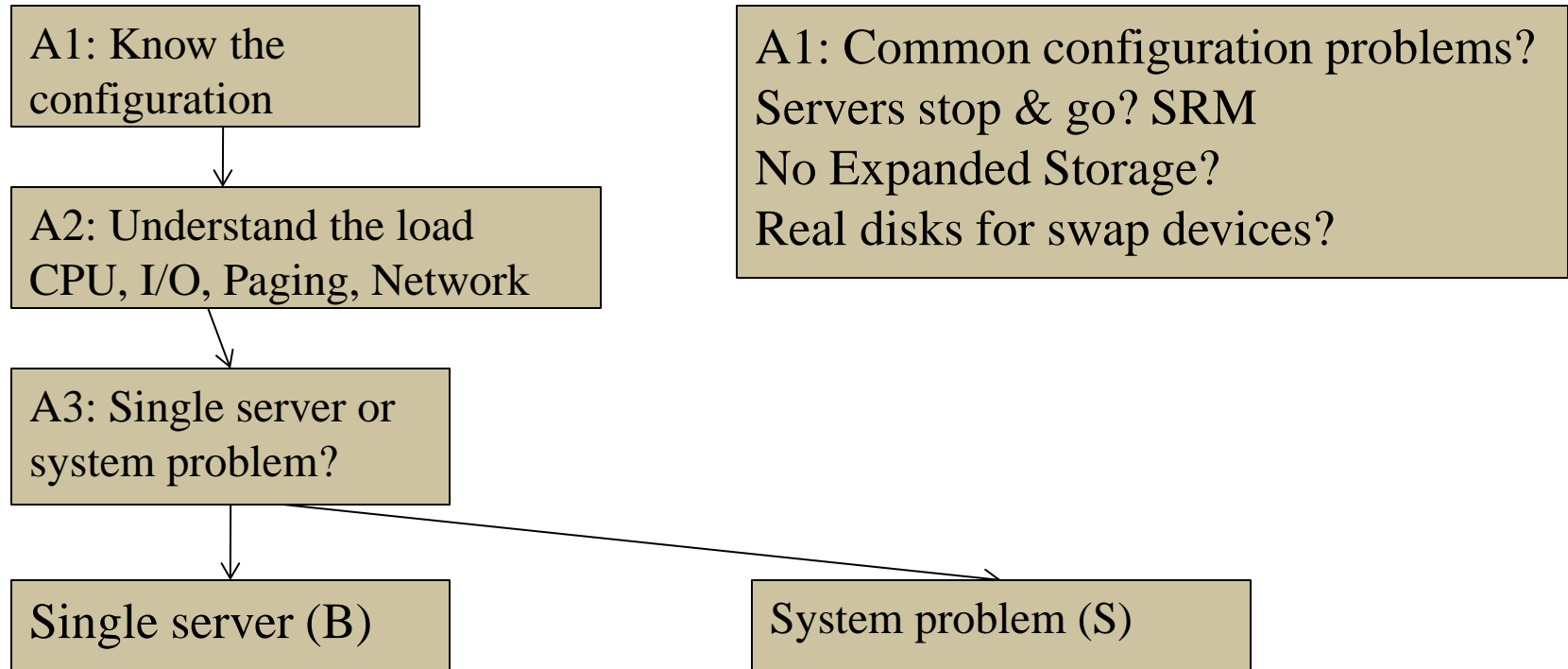
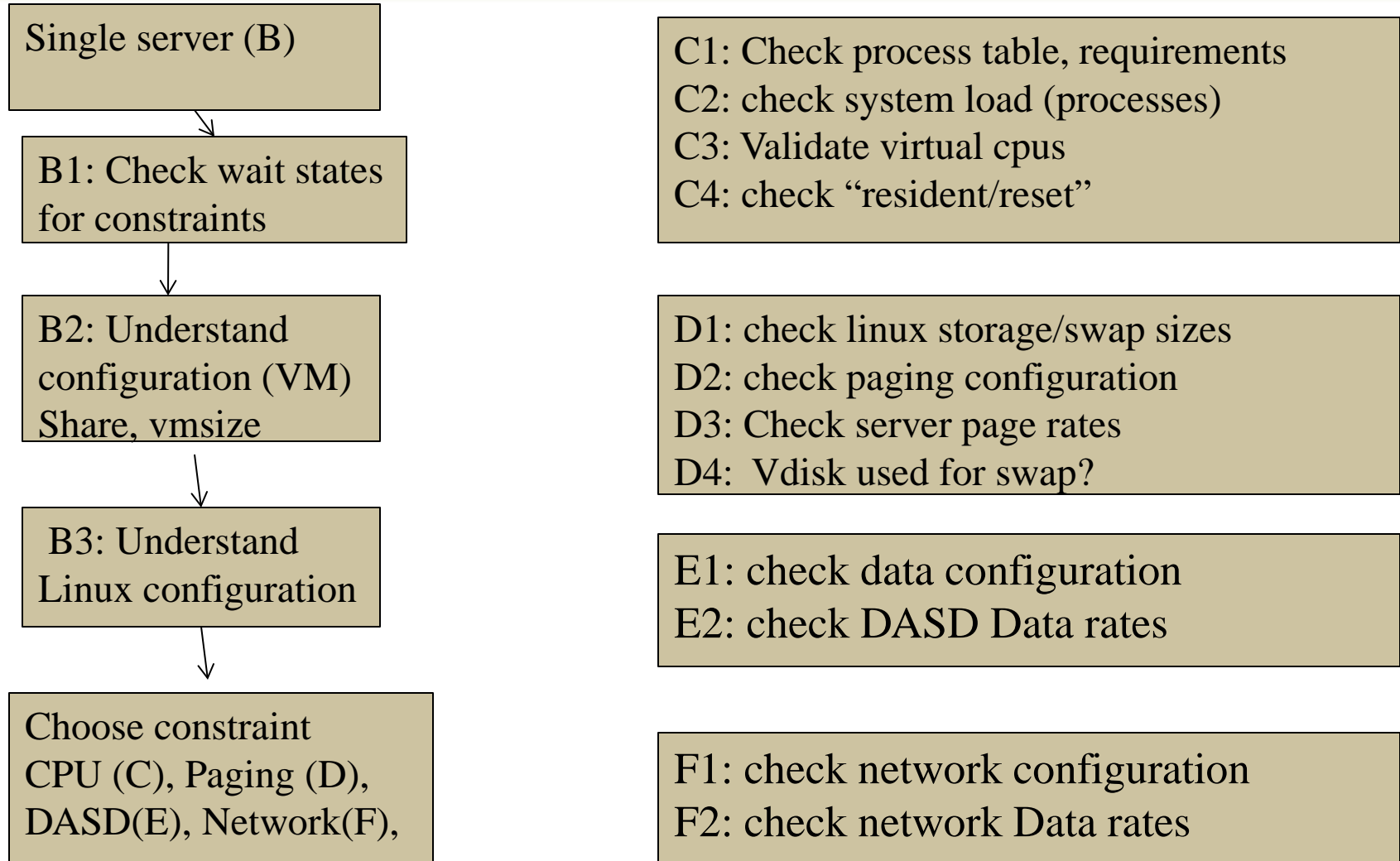


# Performance Case Studies

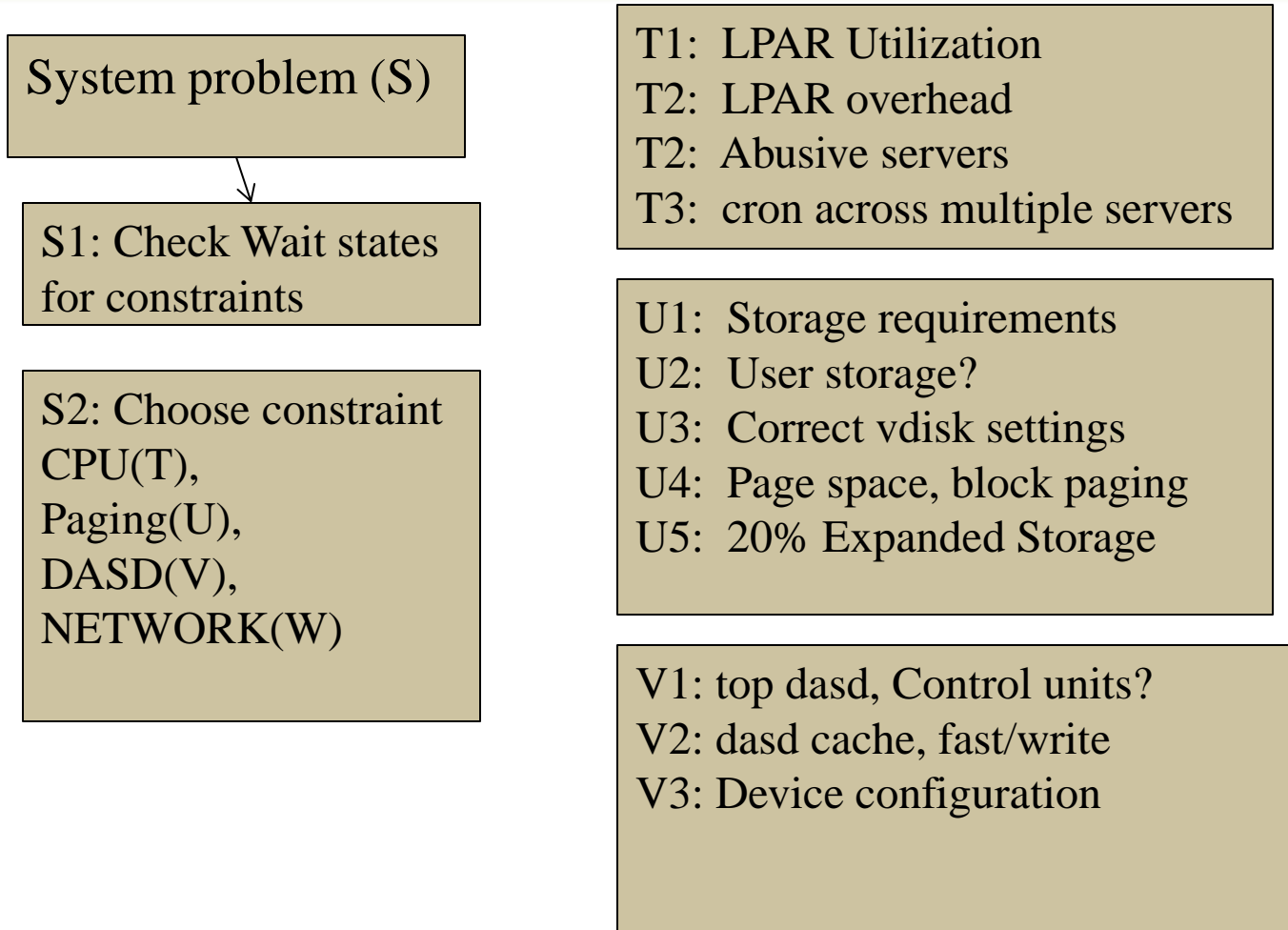
# The Analysis Flow Chart



# The Analysis Flow Chart



# The Analysis Flow Chart



# The Analysis Flow Chart

A1: Configuration: ESAHDR  
A2: System Load: ESASSUM / ESAMAIN  
B1: Check wait states: ESAXACT  
B2: Virtual machine config: ESAUSRC / ESAUSR1  
B3: Linux configuration: ESALNXS

C1: Process table: ESALNXC  
C2: Process Load: ESALNXP  
C3: Validate Virtual CPUs: ESAUSP2

D1: Linux Storage: ESAUCD2  
D2: Paging configuration: ESAPSDV  
D3: Server Paging Rate: ESAUSPG  
D4: VDISK for swap: ESAASPC

E1: Data configuration: ESAUSEK  
ESAQDIO

E2: DASD Rates: ESADSD2

F1: Network configuraiton: ESATCPI  
F2: Network data rates: ESATCP1/2/4  
F3: Vswitch users: ESANIC  
F4: Vswitch traffic: ESAVSW  
F5: OSA traffice: **ESAOSA**

# The Analysis Flow Chart

S1: Wait states: ESAXACT

T1: Lpar utilization (ESALPARS)

T2: LPAR overhead (ESALPAR)

T3: Abusive Server ESAUSP2 / ESAUSR2

T4: Cron across servers: ESALNXP

U1: Storage requirements: ESASTR1

U2 User Storage: ESAUSPG

U3 VDISK Storage : ESAVDSK / ESAASPC

U4: page configuration: ESAPSDV

U5: Page space: ESAPSDV/ESABLKP

U6: Expanded storage: ESAXSTO

V1: top dasd? Control units: ESADSD2

V2: dasd cache, fast/write: ESADSD5

V3: Device configuration: ESADSD1

# Know the configuration: ESAHDR

```
Report: ESAHDR          z/VM Monitor Analysis
Monitor initialized: 06/16/16 at 08:00:00 on 2098 serial
Monitor period:       3600 seconds ( 1:00:00)
```

```
-----
ZMAP Release          4.3.0.0
History Source        4.2.4.7
Monitor file created: 06/16/16 08:00:00
```

```
z/VM Version: 5          Release 4.0 SLU 1001
TOD clock at last IPL: 10/10/14 13:47:37
System Operator:      OPERATOR
Time zone adjustment from GMT: -4 hours
```

```
System Identifier      VM03V5R4
Checkpoint/Warmstart Volumes V3R540/V3R540
Machine Model/Type     z10B:2098/A00
System Sequence Code   00000000000FD045
Processor 0 model/serial 2098-A00 /00D045 Master
Processor 1 model/serial 2098-A00 /00D045
Processor 2 model/serial 2098-A00 /00D045
Processor 3 model/serial 2098-A00 /00D045
```

```
ESAME (Memory Extension) Nucleus in use
ESA/370 hardware installed
Operating on IFL Processor(s)
Channel Path Measurement Facility(CPMF) Extended is installed
```

```
Main Storage Generated (MB): 26624
Expanded Storage installed (MB): 6144
Expanded Storage for CP (MB): 6144
Number of users in monitor file: 42
Number of DASD in monitor file: 491
Number of non-DASD in monitor file: 1
```

## Common configuration problems

- IFLs?
- Real Storage / Expanded
- Release significant
- Master processor significant

# Know the overall loads: ESASSUM / ESAMAIN

Report: ESASSUM                      Subsystem Activity                      Velocity  
 Monitor initialized: 06/16/16 at 08:00:00 on 2098 serial 0D045                      First

```

-----
      <---Users----> Transactions <Processor> Storage (MB) <-Paging-->
      <-avg number->      Per   Avg. Utilization Fixed Active <pages/sec>
Time      On Actv In Q Minute   Resp Total Virt.  User Resid. XStore DASD
-----
08:01:00  42   30 32.0   37.0 1.041   291   264  78.5  25503  2356  868
08:02:00  42   33 28.0   64.0 1.084   256   211  78.6  25486   441  313
08:03:00  42   30 29.0   74.0 0.552   250   203  78.5  25489   281   87
08:04:00  42   31 29.0   56.0 0.926   249   200  78.5  25494   216   74
08:05:00  42   31 28.0   69.0 0.593   244   196  78.5  25496   616  201
08:06:00  42   30 29.0   68.0 0.668   254   205  78.5  25498   930  548
08:07:00  42   32 28.0   61.0 0.847   258   208  78.5  25493  1190  741
08:08:00  42   30 29.0   56.0 0.916   259   210  78.5  25498   511  445
08:09:00  42   31 29.0   63.0 0.856   241   191  78.5  25494   331  221
08:10:00  42   31 29.0   68.0 0.701   239   194  78.7  25495   463  154
  
```

Look for Spikes, dramatic changes, what time?

- Processor
- Storage for users
- Page rates
- DASD I/O rates
- (Transactions are for traditional workloads)



# Wait States: ESAXACT

Report: ESAXACT Transaction Delay Analysis Veloc  
 Monitor initialized: 06/16/16 at 08:00:00 on 2098 serial 0D045 First

```

-----
<-----Percent non-dormant (Wait states)-----
UserID  <-Samples->
/Class  Total  In Q  Run Sim  CPU  SIO  Pag  SVM  SVM  SVM  CF  Tst <Asynch>
-----  -----  -----  -----  -----  -----  -----  -----  -----  -----  -----  -----  -----  -----  -----
06/16/16
08:01:00      42    32  6.3   0   13   0  3.1   0   0   0   0   78   0   .   .
Hi-Freq:  3360  1832  12  0.2   39  0.1  1.5   0  9.2  0.6   0   44  1.0  0.1  1.0
  ***Key User Analysis ***
RSCS          60     1   0   0   0   0   0   0   0   0   0   100   0   0   0
TCPIP         60    18   0   0  5.6   0   0   0   0   0   0   94   0   0   0
  ***User Class Analysis***
Servers       420     1   0   0   0   0   0   0   0   0   0   100   0   0   0
Velocity     600    76  1.3   0  2.6  1.3   0   0   50  12   0   83   0   0   0
*PSFIN       480   480  22   0  51   0   0   0   0   0   0   28   0   0   0
*PSHCM       360   360  6.9  0.3  40   0  0.3   0   0   0   0   52  0.3   0   0
*RMANDB      120   120  15  0.8  45   0  0.8   0   0   0   0   36  0.8   0  1.7
*SBCRM       120   120  8.3   0  48   0   0   0   0   0   0   42  0.8   0  0.8
*ORACLE      360   360  7.2  0.3  41   0   0   0   0   0   0   47  4.2  0.3   0
*SBHYP       120   118  8.5   0  23   0   0   0   0   0   0   69   0   0   0
TheUsrs      600   178  15   0  24   0  14   0  2.2  1.1   0   36   0  0.6  8.4
  ***Top User Analysis***
SBFIN3       120   120  26   0  59   0   0   0   0   0   0   15   0   0   0
SBFIN1       120   120  31   0  55   0   0   0   0   0   0   14   0   0   0
SBFIN2       120   120  28   0  57   0   0   0   0   0   0   15   0   0   0
E9SMTP3      120   117  14   0  21   0  17   0   0   0   0   33   0  0.9  13
ORADBT1      120   120  13   0  57   0   0   0   0   0   0   18  13   0   0
RMANDB       120   120  15  0.8  45   0  0.8   0   0   0   0   36  0.8   0  1.7
  
```

# Eligible list? ESAUSRQ

Report: Esausrq Velocity Software Corporate ZMAP 4.3.0 0  
 Monitor i8 serial 0D045 First record analyzed: 06/16/16 08:00:00

```

-----
<-----Average Number of Users in Queue-----
UserID <-----Dispatch List-----> Limit <-----Eligible List--
/Class      Q0      Q1      Q2      Q3  Ldng List      E0      E1      E2      E3
-----
06/16/16
08:01:00    2.0    1.0     0    29.0    1.0     0      .     0     0     0
Hi-Freq:    1.5    0.1    0.4    28.5    0.3     0     0     0     0     0
  ***Key U
RSCS        0    0.0     0     0     0     0     0     0     0     0
TCPIP       0.3     0     0     0     0     0     0     0     0     0
  ***User
Servers     0    0.0     0     0     0     0     0     0     0     0
Velocity    1.1    0.1    0.1     0     0     0     0     0     0     0
*PSFIN      0     0     0     8.0     0     0     0     0     0     0
*PSHCM      0     0     0     6.0     0     0     0     0     0     0
*RMANDB     0     0     0     2.0    0.0     0     0     0     0     0
*SBCRM      0     0     0     2.0    0.0     0     0     0     0     0
*ORACLE     0     0     0     6.0     0     0     0     0     0     0
*SBHYP      0     0     0     2.0     0     0     0     0     0     0
TheUsrs     0.0    0.0    0.3    2.6    0.3     0     0     0     0     0
  ***Top U
SBFIN3      0     0     0     2.0     0     0     0     0     0     0
SBFIN1      0     0     0     2.0     0     0     0     0     0     0
SBFIN2      0     0     0     2.0     0     0     0     0     0     0
E9SMTP3     0     0     0     0     0     0     0     0     0     0
ORADBT1     0     0     0     0     0     0     0     0     0     0
RMANDB      0     0     0     0     0     0     0     0     0     0
SANDBX2     0     0     0     0     0     0     0     0     0     0
  
```

Look for "Non zero eligible"

- SRM Settings?
- Check STORBUF
- Loading is percent of paging devices busy

# Special Condition, server “stops”: ESAUSR4

Report: ESAUSR4 User Resource Utilization  
Monitor initialized: 06/16/16 at 08:00:00 on

-----  
UserID Resid Frame Address Expanded Storage  
/Class At List Spaces <-----pages----->  
/Reset Reord Avg Max Read Write Migr  
-----

08:01:00 746K 3 0 0 56788 79380 25K

\*\*\*Top User Analysis\*\*\*

|          |      |   |   |   |       |       |     |
|----------|------|---|---|---|-------|-------|-----|
| SBFIN3   | 0    | 0 | 0 | 0 | 0     | 9991  | 162 |
| SBFIN1   | 0    | 0 | 0 | 0 | 164   | 2609  | 0   |
| SBFIN2   | 0    | 0 | 0 | 0 | 86    | 262   | 0   |
| E9SMTP3  | 0    | 0 | 0 | 0 | 12064 | 0     | 0   |
| ORADBT1  | 0    | 0 | 0 | 0 | 348   | 2391  | 0   |
| RMANDB   | 0    | 0 | 0 | 0 | 7412  | 9822  | 0   |
| SANDBX2  | 247K | 1 | 0 | 0 | 6756  | 2776  | 0   |
| OCINPROD | 0    | 0 | 0 | 0 | 4344  | 0     | 0   |
| SBHCM1   | 0    | 0 | 0 | 0 | 143   | 8254  | 14K |
| SBCRM    | 221K | 1 | 0 | 0 | 13536 | 12607 | 0   |

08:06:00 561K 2 0 0 11036 42335 31K

\*\*\*Top User Analysis\*\*\*

|         |      |   |   |   |     |      |      |
|---------|------|---|---|---|-----|------|------|
| SBFIN3  | 324K | 1 | 0 | 0 | 0   | 2295 | 0    |
| ORADBT1 | 0    | 0 | 0 | 0 | 34  | 42   | 0    |
| SBFIN1  | 237K | 1 | 0 | 0 | 0   | 1645 | 0    |
| SBFIN2  | 0    | 0 | 0 | 0 | 5   | 2521 | 23K  |
| GRID1   | 0    | 0 | 0 | 0 | 0   | 8    | 0    |
| SBCRM   | 0    | 0 | 0 | 0 | 604 | 4172 | 0    |
| SANDBX2 | 0    | 0 | 0 | 0 | 80  | 5968 | 4000 |

## Prior to 6.3....

Look for “resident at reset”

- CP Sorts pages, server stops for duration
- Option to disable reorder (sort) function
- Server stops during reorder!

# User Configuration: ESAUSRC

Report: ESAUSRC  
ware Corporate

User Configuration  
ZMAP 4.3.0 0

Velocity Soft

| UserID  | ClassID  | Account Code | ACI Grp Name | <CP POOL> PoolName | CPU Type | <-----SHARE-----> |               |     |      | <---CPU---> |             |    | <Status> |     |     | <-MDC> |    | <Storage> |      |
|---------|----------|--------------|--------------|--------------------|----------|-------------------|---------------|-----|------|-------------|-------------|----|----------|-----|-----|--------|----|-----------|------|
|         |          |              |              |                    |          | <Normal> Rel      | <--MAX--> Abs | Typ | Shre | Lim -it     | <Count> Def | On | Mode     | SVM | Dsp | Qck    | NO | NO        | FS   |
| GRID1   | *ORACLE  | GRID1        | .            | .                  | IFL      | 200               | .             | .   | .    | .           | 2           | 2  | ESA      | N   | N   | N      | N  | 3.8G      | 3.8G |
| ORADBT1 | *ORACLE  | ORADBT1      | .            | .                  | IFL      | 200               | .             | .   | .    | .           | 2           | 2  | ESA      | N   | N   | N      | N  | 4.0G      | 4.0G |
| RACFVM  | KeyUser  | SYSTEMS      | .            | .                  | IFL      | 100               | .             | .   | .    | .           | 1           | 1  | ESA      | N   | Y   | N      | N  | 20M       | 20M  |
| RMANDB  | *RMANDB  | RMANDB       | .            | .                  | IFL      | 200               | .             | .   | .    | .           | 2           | 2  | ESA      | N   | N   | N      | N  | 3.0G      | 3.0G |
| RSCS    | KeyUser  | 1            | .            | .                  | IFL      | 100               | .             | .   | .    | .           | 1           | 1  | ESA      | N   | N   | N      | N  | 32M       | 32M  |
| SANDBX2 | *ORACLE  | SANDBX2      | .            | .                  | IFL      | 200               | .             | .   | .    | .           | 2           | 2  | ESA      | N   | N   | N      | N  | 4.0G      | 4.0G |
| SBCRM   | *SBCRM   | SBCRM        | .            | .                  | IFL      | 200               | .             | .   | .    | .           | 2           | 2  | ESA      | N   | N   | N      | N  | 4.0G      | 4.0G |
| SBFIN1  | *PSFIN   | SBFIN1       | .            | .                  | IFL      | 200               | .             | .   | .    | .           | 2           | 2  | ESA      | N   | N   | N      | N  | 5.0G      | 5.0G |
| SBFIN2  | *PSFIN   | SBFIN2       | .            | .                  | IFL      | 200               | .             | .   | .    | .           | 2           | 2  | ESA      | N   | N   | N      | N  | 6.0G      | 6.0G |
| SBFIN3  | *PSFIN   | SBFIN3       | .            | .                  | IFL      | 200               | .             | .   | .    | .           | 2           | 2  | ESA      | N   | N   | N      | N  | 6.0G      | 6.0G |
| SBFIN4  | *PSFIN   | SBFIN4       | .            | .                  | IFL      | 200               | .             | .   | .    | .           | 2           | 2  | ESA      | N   | N   | N      | N  | 6.0G      | 6.0G |
| SBHCM1  | *PSHCM   | SBHCM1       | .            | .                  | IFL      | 200               | .             | .   | .    | .           | 2           | 2  | ESA      | N   | N   | N      | N  | 4.0G      | 4.0G |
| SBHCM2  | *PSHCM   | SBHCM2       | .            | .                  | IFL      | 200               | .             | .   | .    | .           | 2           | 2  | ESA      | N   | N   | N      | N  | 4.5G      | 4.5G |
| ZADMIN  | Velocity | ZADMIN       | .            | .                  | IFL      | 100               | .             | .   | .    | .           | 1           | 1  | ESA      | N   | Y   | N      | N  | 32M       | 32M  |
| ZSERVE  | Velocity | ZSERVE       | .            | .                  | IFL      | 300               | .             | .   | .    | .           | 1           | 1  | ESA      | N   | Y   | N      | N  | 32M       | 32M  |
| ZTCP    | Velocity | ZTCP         | .            | .                  | IFL      | .                 | 3.0           | .   | .    | .           | 1           | 1  | ESA      | N   | N   | N      | N  | 32M       | 32M  |
| ZWRITE  | Velocity | ZWRITE       | .            | .                  | IFL      | .                 | 3.0           | .   | .    | .           | 1           | 1  | ESA      | N   | Y   | N      | N  | 32M       | 32M  |

## Look for “Interesting configurations”

- Large relative shares / absolute shares
- CPU Counts, matching shares (100 Rel / vcpu)
- CPU Type (IFL, CP)
- Virtual machine storage sizes (too large?, largest?)

# LPAR Configuration: ESALPARS

Report: ESALPARS      Logical Partition Summary      Velocity Softw  
Monitor initialized: 06/16/16 at 08:00:00 on 2098 serial 0D045      First record a

```
-----  
      <--Complex--> <-----Logical Partition-----> <-Assigned Shares---  
      Phys Dispatch      Virt CPU <%Assigned> <---LPAR--> <VCPU Pct  
Time      CPUs      Slice Name      Nbr CPUs Type Total Ovhd Weight Pct /SYS /CPU  
-----  
08:01:00      7  Dynamic Totals:      00  14 IFL 652.8  5.9 2455 100  
                VM03      00   4 IFL 293.0  1.4 500 20.4 5.09 35.6  
                VMDB      03   3 IFL  2.6  0.4 600 24.4 8.15 57.0  
                VM04      01   4 IFL 171.6  2.6 755 30.8 7.69 53.8  
                VM05      02   3 IFL 185.6  1.5 600 24.4 8.15 57.0
```

Totals by Processor type:

```
<-----CPU-----> <-Shared Processor busy->  
Type Count Ded shared Total Logical Ovhd Mgmt  
-----  
IFL      7  0      7 659.8 647.0 5.9 7.0
```

## Look for “Shared processors”

- IFLs shared between LPARs (none)
- Check weights
- Assigned pct/CPU > 100 ??? -> excess share?
- First LPAR is “us”, z/vm where data collected

# Consumers within LPAR: ESAUSP2

Report: ESAUSP2                      User Resource Rate Report                      Velocity Software C

---

| UserID<br>/Class          | <---CPU time-->      |              |     | <----Main Storage (pages)-----> |               |                           |                        |                      | <-----Paging (pages)-----> |                                   |       |                     |       |       |
|---------------------------|----------------------|--------------|-----|---------------------------------|---------------|---------------------------|------------------------|----------------------|----------------------------|-----------------------------------|-------|---------------------|-------|-------|
|                           | <(Percent)><br>Total | T:V<br>Virt  | Rat | <Resident><br>Totl              | Lock<br>Activ | -----WSS-----<br>-ed Totl | -----WSS-----<br>Activ | -----WSS-----<br>Avg | <---Allocated---><br>Total | -----Paging (pages)-----<br>ExStg | Disk  | <Pgs/Secnd><br>Read | Write |       |
| 08:01:00                  | 276.8                | 264.0        | 1.0 | 6.5M                            | 6529K         | 324                       | 7.4M                   | 7413K                | 177K                       | 9803K                             | 3263K | 6540K               | 446.1 | 420.2 |
| ***User Class Analysis*** |                      |              |     |                                 |               |                           |                        |                      |                            |                                   |       |                     |       |       |
| Servers                   | 0.00                 | 0            | 0.0 | 4.0                             | 0             | 0                         | 215                    | 0                    | 0                          | 8304                              | 144   | 8160                | 0     | 0     |
| Velocity                  | 1.62                 | 1.46         | 1.1 | 1150                            | 1150          | 0                         | 2648                   | 2621                 | 262                        | 10977                             | 2652  | 8325                | 0.3   | 0     |
| *PSFIN                    | 125.9                | 123.8        | 1.0 | 3.2M                            | 3210K         | 59                        | 3.9M                   | 3941K                | 985K                       | 2739K                             | 541K  | 2198K               | 21.9  | 2.7   |
| *PSHCM                    | 31.46                | 29.80        | 1.1 | 1.1M                            | 1055K         | 34                        | 1.1M                   | 1073K                | 358K                       | 2281K                             | 525K  | 1756K               | 39.6  | 232.6 |
| *RMANDB                   | 19.54                | 19.00        | 1.0 | 377K                            | 377K          | 12                        | 390K                   | 390K                 | 390K                       | 127K                              | 34265 | 93086               | 45.5  | 0     |
| *SBCRM                    | 12.03                | 11.06        | 1.1 | 252K                            | 252K          | 0                         | 263K                   | 263K                 | 263K                       | 1007K                             | 346K  | 662K                | 7.9   | 0     |
| *ORACLE                   | 39.69                | 33.26        | 1.2 | 1.4M                            | 1398K         | 0                         | 1.5M                   | 1544K                | 515K                       | 2105K                             | 634K  | 1471K               | 23.2  | 0     |
| ***Top User Analysis***   |                      |              |     |                                 |               |                           |                        |                      |                            |                                   |       |                     |       |       |
| <b>SBFIN3</b>             | <b>45.61</b>         | <b>45.00</b> | 1.0 | 977K                            | 977K          | 3                         | 1.2M                   | 1226K                | 1M                         | 748K                              | 77618 | 671K                | 0.1   | 2.7   |
| SBFIN1                    | 40.80                | 40.22        | 1.0 | 959K                            | 959K          | 26                        | 1.2M                   | 1162K                | 1M                         | 361K                              | 54183 | 307K                | 11.8  | 0     |
| SBFIN2                    | 32.57                | 32.00        | 1.0 | 1.0M                            | 1021K         | 20                        | 1.3M                   | 1256K                | 1M                         | 664K                              | 251K  | 412K                | 9.7   | 0     |
| E9SMTP3                   | 25.33                | 25.00        | 1.0 | 31K                             | 31013         | 1                         | 9869                   | 9869                 | 9869                       | 611K                              | 561K  | 49978               | 225.1 | 0     |
| ORADBT1                   | 20.92                | 15.52        | 1.3 | 660K                            | 660K          | 0                         | 798K                   | 798K                 | 798K                       | 488K                              | 187K  | 301K                | 1.3   | 0     |

Look for consumers, in percent of cpu

- By class (SOA)
- Abusive servers (LNXUWA\*)?
- Correct per expected? Not a performance question

# Linux Process Load: ESALNXP

Report: ESALNXP      LINUX HOST Process Statistics Report      Velocity Softwar3.0 06/16/16    Pg    2802  
 Monitor initialized: 06/16/16 at 08:00:00 on 2098 serial 0D045      First record ana:00

| node/<br>Name | <-Process Ident-><br>ID | PPID     | GRP         | Nice     | PRTY      | <-----CPU Percents-----> |             |          |             |             | <-----Stor-----> |      |      |      |   | <-Faults/Second-> |     |     |      |     |  |
|---------------|-------------------------|----------|-------------|----------|-----------|--------------------------|-------------|----------|-------------|-------------|------------------|------|------|------|---|-------------------|-----|-----|------|-----|--|
|               |                         |          |             | Valu     | Valu      | Tot                      | sys         | user     | sys         | usrt        | Size             | RSS  | Peak | Swap | k | PTbl              | min | maj | mint | maj |  |
| 08:01:00      |                         |          |             |          |           |                          |             |          |             |             |                  |      |      |      |   |                   |     |     |      |     |  |
| ocinprod      | 0                       | 0        | 0           | 0        | 0         | 12.7                     | 0.30        | 0.17     | 0.64        | 11.6        | 1796             | 238  | 0    | 0    | 0 | 0                 | 64  | 0   | 443  | 0   |  |
| <b>cron</b>   | <b>2450</b>             | <b>1</b> | <b>2450</b> | <b>0</b> | <b>20</b> | <b>12.2</b>              | <b>0.02</b> | <b>0</b> | <b>0.59</b> | <b>11.6</b> | 3                | 1    | 0    | 0    | 0 | 0                 | 0   | 0   | 370  | 0   |  |
| sbfin1        | 0                       | 0        | 0           | 0        | 0         | 37.2                     | 7.08        | 15.0     | 2.60        | 12.5        | 170K             | 4577 | 170K | 100  | 1 | 50.4              | 453 | 0   | 1503 | 0   |  |
| init          | 1                       | 1        | 1           | 0        | 20        | 15.1                     | 0           | 0        | 2.58        | 12.5        | 2                | 1    | 2.5  | 0.11 | 0 | 0.01              | 0   | 0   | 1496 | 0   |  |
| ksoftirq      | 3                       | 2        | 0           | 0        | 20        | 0.56                     | 0.56        | 0        | 0           | 0           | 0                | 0    | 0    | 0    | 0 | 0                 | 0   | 0   | 0    | 0   |  |
| oracle        | 3065                    | 1        | 3065        | 0        | 20        | 3.31                     | 0.40        | 2.90     | 0           | 0           | 1008             | 86   | 1000 | 0    | 0 | 0.79              | 408 | 0   | 0    | 0   |  |
| oracle        | 6413                    | 1        | 6413        | 0        | 20        | 4.15                     | 2.35        | 1.81     | 0           | 0           | 1061             | 272  | 1109 | 4.71 | 0 | 0.93              | 0   | 0   | 0    | 0   |  |
| oracle        | 22774                   | 1        | 22774       | 0        | -2        | 0.65                     | 0.29        | 0.37     | 0           | 0           | 1733             | 15   | 1733 | 0    | 0 | 0.30              | 0   | 0   | 0    | 0   |  |
| oracle        | 46541                   | 1        | 0           | 0        | 20        | 6.00                     | 0.40        | 5.60     | 0           | 0           | 1736             | 33   | 1738 | 0    | 0 | 0.33              | 0   | 0   | 0    | 0   |  |
| snmpd         | 47408                   | 1        | 0           | -15      | 5         | 0.52                     | 0.33        | 0.19     | 0           | 0           | 68               | 16   | 67.5 | 0.37 | 0 | 0.11              | 38  | 0   | 0    | 0   |  |
| oracle        | 49397                   | 1        | 0           | 0        | -2        | 0.67                     | 0.29        | 0.38     | 0           | 0           | 1221             | 14   | 1221 | 1.53 | 0 | 0.30              | 0   | 0   | 0    | 0   |  |
| oracle        | 50956                   | 1        | 0           | 0        | -2        | 0.67                     | 0.29        | 0.38     | 0           | 0           | 998              | 12   | 998  | 0    | 0 | 0.35              | 0   | 0   | 0    | 0   |  |
| sbfin2        | 0                       | 0        | 0           | 0        | 0         | 29.5                     | 5.33        | 5.35     | 2.93        | 15.8        | 155K             | 2833 | 155K | 146  | 0 | 34.8              | 280 | 0   | 1569 | 0   |  |
| init          | 1                       | 1        | 1           | 0        | 20        | 17.5                     | 0.02        | 0        | 2.13        | 15.4        | 2                | 0    | 2.5  | 0.11 | 0 | 0.01              | 0   | 0   | 991  | 0   |  |
| ksoftirq      | 9                       | 2        | 0           | 0        | 20        | 0.59                     | 0.59        | 0        | 0           | 0           | 0                | 0    | 0    | 0    | 0 | 0                 | 0   | 0   | 0    | 0   |  |
| java          | 2209                    | 2165     | 2165        | 0        | 20        | 2.29                     | 0.29        | 0.74     | 0.79        | 0.47        | 689              | 274  | 704  | 57.5 | 0 | 0.82              | 129 | 0   | 571  | 0   |  |
| oracle        | 38411                   | 1        | 0           | 0        | 20        | 3.66                     | 2.10        | 1.56     | 0           | 0           | 1316             | 121  | 1364 | 5.29 | 0 | 0.52              | 0   | 0   | 0    | 0   |  |
| oracle        | 49522                   | 1        | 0           | 0        | -2        | 0.59                     | 0.23        | 0.36     | 0           | 0           | 1221             | 11   | 1221 | 0    | 0 | 0.30              | 0   | 0   | 0    | 0   |  |
| oracle        | 52017                   | 1        | 0           | 0        | -2        | 0.58                     | 0.21        | 0.36     | 0           | 0           | 2245             | 14   | 2245 | 0    | 0 | 0.30              | 0   | 0   | 0    | 0   |  |
| sbfin3        | 0                       | 0        | 0           | 0        | 0         | 41.5                     | 8.41        | 15.1     | 3.37        | 14.6        | 173K             | 2925 | 174K | 233  | 0 | 34.3              | 441 | 0   | 923  | 0   |  |
| init          | 1                       | 1        | 1           | 0        | 20        | 16.4                     | 0           | 0        | 2.53        | 13.9        | 2                | 1    | 2.5  | 0    | 0 | 0.01              | 0   | 0   | 580  | 0   |  |
| oracle        | 16228                   | 1        | 16228       | 0        | 0         | 0.71                     | 0.21        | 0.40     | 0           | 0           | 1733             | 12   | 1733 | 1.54 | 0 | 0.20              | 0   | 0   | 0    | 0   |  |
| oracle        | 26676                   | 1        | 26676       | 0        | 0         | 0.71                     | 0.21        | 0.40     | 0           | 0           | 1733             | 12   | 1733 | 1.54 | 0 | 0.20              | 0   | 0   | 0    | 0   |  |
| oracle        | 31856                   | 1        | 31856       | 0        | 0         | 0.71                     | 0.21        | 0.40     | 0           | 0           | 1733             | 12   | 1733 | 1.54 | 0 | 0.20              | 0   | 0   | 0    | 0   |  |
| oracle        | 31860                   | 1        | 31860       | 0        | 0         | 0.71                     | 0.21        | 0.40     | 0           | 0           | 1733             | 12   | 1733 | 1.54 | 0 | 0.20              | 0   | 0   | 0    | 0   |  |

Look for processes within Linux, in percent of cpu

- By relevant server (LNXUWA01)
- Correct? Relevant? Cron?
- Total Page tables seem low for oracle?



# Linux Storage: ESALNXR

Report: ESALNXR      LINUX RAM/Storage Analysis Report      MAP 4.3.0 06/16/16      Pg  
Monitor initialized: 06/16/16 at 08:00:00 on 2098 serial 0D045      08:00:00

```
-----  
Node/      <-----Memory in megabytes-----> <-Kernel(MB)->  
           <---Cache---><---Anonymous---> Stack<-Slab--> Page <---Huge pages--->  
Time      Total Free Size Actv Swap Total Actv Inact Size Size Srec Tbls Totl Free Rsvd Size  
-----  
06/16/16  
08:01:00  
gridctl  12041  754 3508 3263  2.8  6503 5897 608.4  4.1  627  581  20K    0    0    0 2048  
hyptepm  24020 4590 9196 8107  1.3  7686 7549 137.7 10.1 1123 1036 28K    0    0    0 2048  
hyptess  24020  12K 8615 6672   0  1491 1472  20.2  4.0  733  667 11K    0    0    0 2048  
jenkins   3961  349  644 1055  1.2  1778 1548 231.5  2.4  362  317 6200   0    0    0 2048  
psdbtest 24149  21K 1230  987   0 358.8  357  1.4  3.4  221  154 5400   0    0    0 2048  
psfin853 16083 1277 5908 5306  151 7331 6491 983.0  6.2  608  537 49K    0    0    0 2048  
pshcm853 16083  177 2897 1444  167 11300 10K  1418 11.2  699  574 113K    0    0    0 2048  
rmandb   3006 46.9  461  204 12.1 313.2  228  91.1  3.5 34.1 19.9 21K 2056 1450 1444 1024  
sbfin1   5016  141  995  331 24.6 853.8  912 448.6  4.5  114 72.6 57K 2568 261 260 1024  
sbfin2   6024  177  888  474 45.7 960.5  692 280.1  5.1 80.9 45.2 43K 3684 625 548 1024  
sbfin3   6024  235 1367  734 32.0 925.3  666 274.8  5.3  166  124 43K 3080 1100 1099 1024  
sbfin4   6024  36.4  399  214 11.3 682.3  465 221.5  4.2 74.1 43.1 30K 4623 3142 56.0 1024
```

Look for inactive storage, large page tables  
Large page support???



# Storage Utilization: ESASTR1

Report: ESASTR1      Main Storage Analysis      Velocity Software Corporate      ZMAP 4.3.0 06/16/16  
 Monitor initialized: 06/16/16 at 08:00:00 on 2098 serial 0D045      First record analyzed: 06/16/16 08:00:00

| Time     | Users <-----MegaBytes-----> Over |                |             |           |           |             |                       |              |             |                   |                         |             |             |         |              |    |       |
|----------|----------------------------------|----------------|-------------|-----------|-----------|-------------|-----------------------|--------------|-------------|-------------------|-------------------------|-------------|-------------|---------|--------------|----|-------|
|          | Loggd On                         | System Storage | Fixed Store | Non-Pgble | Free Stor | Frame Table | <Available> <2gb >2gb | System ExSpc | User Resdnt | NSS/DCSS Resident | <-AddSpace> System User | VDISK Rsdnt | <MDC> Rsdnt | Diag 98 | Commit Ratio |    |       |
| 06/16/16 |                                  |                |             |           |           |             |                       |              |             |                   |                         |             |             |         |              |    |       |
| 08:01:00 | 42                               | 26624          | 9           | 79        | 3         | 208         | 0                     | 0            | 12          | 25503             | 68                      | 370         | 0           | 289     | 0            | 67 | 1.823 |
| 08:02:00 | 42                               | 26624          | 9           | 79        | 3         | 208         | 1                     | 9            | 12          | 25486             | 67                      | 370         | 0           | 295     | 0            | 67 | 1.823 |
| 08:03:00 | 42                               | 26624          | 9           | 79        | 3         | 208         | 1                     | 7            | 12          | 25489             | 67                      | 370         | 0           | 295     | 0            | 67 | 1.823 |
| 08:04:00 | 42                               | 26624          | 9           | 79        | 3         | 208         | 1                     | 2            | 12          | 25494             | 68                      | 370         | 0           | 295     | 0            | 67 | 1.823 |
| 08:05:00 | 42                               | 26624          | 9           | 79        | 3         | 208         | 1                     | 1            | 12          | 25496             | 68                      | 370         | 0           | 294     | 0            | 67 | 1.823 |
| 08:06:00 | 42                               | 26624          | 9           | 79        | 3         | 208         | 1                     | 1            | 12          | 25498             | 68                      | 370         | 0           | 292     | 0            | 67 | 1.823 |
| 08:07:00 | 42                               | 26624          | 9           | 79        | 3         | 208         | 1                     | 9            | 12          | 25493             | 67                      | 370         | 0           | 289     | 0            | 67 | 1.823 |
| 08:08:00 | 42                               | 26624          | 9           | 79        | 3         | 208         | 1                     | 4            | 12          | 25498             | 67                      | 370         | 0           | 289     | 0            | 67 | 1.823 |
| 08:09:00 | 42                               | 26624          | 9           | 79        | 3         | 208         | 1                     | 2            | 12          | 25494             | 68                      | 370         | 0           | 294     | 0            | 67 | 1.823 |
| 08:10:00 | 42                               | 26624          | 9           | 79        | 3         | 208         | 0                     | 1            | 12          | 25495             | 68                      | 370         | 0           | 295     | 0            | 67 | 1.823 |
| 08:11:00 | 42                               | 26624          | 9           | 79        | 3         | 208         | 1                     | 3            | 12          | 25495             | 67                      | 370         | 0           | 293     | 0            | 67 | 1.823 |
| 08:12:00 | 42                               | 26624          | 9           | 79        | 3         | 208         | 1                     | 9            | 12          | 25490             | 68                      | 370         | 0           | 292     | 0            | 67 | 1.823 |

Total storage analysis (in **MEGABYTES**)

- MDC? SET MDC MAX/MIN
- VDISK ok
- System Execution space ok

# VDISK for Swap: ESA VDSK

Report: ESAVDSK      VDISK Analysis Report      Velocity Softwa      Pg      3948  
 Monitor initialized: 06/16/16 at 08:00:00 on 2098 serial 0D045      First record an  
 Monitor period:      3600 seconds (      1:00:00)      Last record:

-----  
 Maximum VDISK:      Blocks      (MB)  
 System storage:      --No Limit--  
 Storage per user:      --No Limit--

| Owner  | Space Name                    | <--Size--> |       | <AddSpce> |      | Priv | VIO  | User  | <--pages--> |      | DASD  | X-   |
|--------|-------------------------------|------------|-------|-----------|------|------|------|-------|-------------|------|-------|------|
|        |                               | AddSpc     | VDSK  | Cre-      | Del- |      |      |       | or          | rate |       |      |
|        |                               | Pages      | Blks  | ates      | etes | Shrd | /sec | Links | dent        | e    | Slots | Blks |
| SBFIN1 | VDISK\$SBFIN1\$\$\$0300\$0055 | 262K       | 2097K | 0         | 0    | Priv | 0.01 | 1     | 17K         | 0    | 254K  | 106  |
| SBFIN1 | VDISK\$SBFIN1\$\$\$0301\$0056 | 262K       | 2097K | 0         | 0    | Priv | 0    | 1     | 0           | 0    | 2258  | 0    |
| SBFIN2 | VDISK\$SBFIN2\$\$\$0300\$000B | 262K       | 2097K | 0         | 0    | Priv | 0.00 | 1     | 1256        | 0    | 262K  | 20   |
| SBFIN2 | VDISK\$SBFIN2\$\$\$0301\$000C | 262K       | 2097K | 0         | 0    | Priv | 0    | 1     | 0           | 0    | 2258  | 0    |
| SBFIN3 | VDISK\$SBFIN3\$\$\$0300\$003B | 262K       | 2097K | 0         | 0    | Priv | 0    | 1     | 20.1        | 0    | 214K  | 5    |
| SBFIN3 | VDISK\$SBFIN3\$\$\$0301\$003C | 262K       | 2097K | 0         | 0    | Priv | 0    | 1     | 0           | 0    | 2258  | 0    |
| SBFIN4 | VDISK\$SBFIN4\$\$\$0300\$0061 | 262K       | 2097K | 0         | 0    | Priv | 0    | 1     | 0           | 0    | 197K  | 7    |
| SBFIN4 | VDISK\$SBFIN4\$\$\$0301\$0062 | 262K       | 2097K | 0         | 0    | Priv | 0    | 1     | 0           | 0    | 2258  | 0    |
| SBHCM1 | VDISK\$SBHCM1\$\$\$0300\$001D | 262K       | 2097K | 0         | 0    | Priv | 0.03 | 1     | 20K         | 0    | 250K  | 0    |
| SBHCM1 | VDISK\$SBHCM1\$\$\$0301\$001E | 262K       | 2097K | 0         | 0    | Priv | 0    | 1     | 0           | 0    | 2258  | 0    |
| SBHCM2 | VDISK\$SBHCM2\$\$\$0300\$005F | 262K       | 2097K | 0         | 0    | Priv | 5.88 | 1     | 27K         | 0    | 257K  | 7688 |

## Virtual Disk Analysis

- Vdisks for swap, small and large?
- Are there multiple vdisks, and PRIORITIZED!!!

# Linux Storage - 2: ESAUCD2

Report: ESAUCD2      LINUX UCD Memory Analysisrpt      Velocity Software

```

-----
Node/      <-----Storage Sizm MegaBytes)-----
Time/      <--Real Storage--> <-----SWAP Storage Total <-----Storage in Use----
Date       Total  Avail Used  Total Avail Used  Avail CMM  Buffer Cache Ovrhd
-----
08:01:00
*** Nodes *****
psdbtest   24149 20720 3429 2055 2055 0 22775 0 1329.4 1230 869.2
psfin853   16083 1277 14805 7164 6134 1029 7412 0 550.6 5908 8347
pshcm853   16083 176.8 15906 5116 2608 2508 2784 0 526.3 2897 12483
rmandb     3006.4 46.8 2960 2031 1944 86.7 1991 0 20.1 461.5 2478
sandbx2    4014.4 52.3 3962 3072 2629 442.6 2682 0 24.4 895.1 3043
sbcrm      4014.4 41.4 3973 4079 3569 509.9 3610 0 68.6 173.0 3731
sbfin1     5016.3 141.5 4875 4079 3936 143.1 4077 0 198.8 995.1 3681
sbfin2     6024.3 176.5 5848 2031 1856 175.4 2032 0 96.0 887.5 4864
sbfin3     6024.4 235.0 5789 2031 1784 247.1 2019 0 120.1 1367 4302
sbfin4     6024.3 36.4 5988 2031 1976 54.7 2013 0 96.0 399.5 5492
sbhcm1     4014.5 54.6 3960 8175 7609 565.8 7664 0 19.6 224.1 3716
sbhcm2     4512.3 38.7 4474 8175 7568 607.3 7606 0 27.6 193.8 4252
sbhcm3     4014.4 196.2 3818 8175 8129 46.1 8325 0 151.0 235.3 3432
sbhyp      2001.6 80.3 1921 2031 2030 0.7 2111 0 141.5 833.9 945.8
    
```

## Linux Storage Map

- Opportunities?
  - High available (greater than 5%)
  - High buffer (greater than 20mb)
- Issues? Swap
- If swap used, but also large buffer, CMM?

# Paging Subsystem: ESAPSDV

Report: ESAPSDV Page And Spool Device Activi  
Monitor initialized: 06/16/16 at 08:00:00 on 2098

```
-----<-----Paging----->
Dev      <-----Slots-----> <-per sec->
No. Serial Avail Used %Use Max Read Write
-----
08:01:00
103A V3PG0A 601020 368323 61 368323 14.3 14.3
103B V3PG0B 601020 363202 60 363202 14.0 14.4
103C V3PG0C 601020 367162 61 367162 14.7 14.8
103D V3PG0D 601020 357378 59 357378 15.5 15.2
103E V3PG0E 601020 359623 60 359623 16.5 13.4
103F V3PG0F 601020 354060 59 354060 14.2 16.0
1031 V3PG01 601020 355090 59 355090 15.8 12.8

1042 V3PG12 601020 356263 59 356263 16.1 17.0
1043 V3PG13 601020 358292 60 358292 18.4 15.8
1044 V3PG14 601020 363900 61 363900 14.7 17.0
1045 V3PG15 601020 361872 60 361872 17.8 16.3
111F V3PG16 601020 399707 67 399707 16.1 12.6
1120 V3PG17 601020 404986 67 404986 14.8 16.1
1122 V3PG18 601020 401146 67 401146 17.0 17.4
110D V3PG19 601020 335029 56 335029 19.1 16.7
1918 V3S540 . . . . 0 0

-----
Total:      16228K  9806K  60  9806K  447.4  420.2
```

## Paging Configuration:

- How many devices (11)
- Equal sizes?
- How full? (50%)
- Fragmentation....
- z/VM 5.4
- Rates reasonable?  
Device type dependent

Report: ESADSD2      DASD Performance Analysis  
Monitor initialized: 06/16/16 at 08:00:00 on 2098 serial 0D

```
-----<-----
Dev          Device <--SSCH--> <%DevBusy> <SSCH/sec->
No. Serial  Type  Total  ERP  Avg  Peak  avg  peak  Resp
-----
08:01:00
***Top DASD by Device busy***
9005 XV9005 9336   30655  0  64.9 64.9 510.9 510.9  1.3
9000 XV9000 9336    893  0   7.1  7.1  14.9  14.9  4.7
9002 XV9002 9336   1419  0   6.1  6.1  23.6  23.6  2.6
9004 XV9004 9336    844  0   3.6  3.6  14.1  14.1  2.6
9001 XV9001 9336    627  0   3.2  3.2  10.4  10.4  3.0
1045 V3PG15 3390-3   704  0   2.4  2.4  11.7  11.7  2.1
103D V3PG0D 3390-3   689  0   2.3  2.3  11.5  11.5  2.0
1035 V3PG05 3390-3   731  0   2.3  2.3  12.2  12.2  1.9
1031 V3PG01 3390-3   591  0   2.3  2.3   9.8   9.8  2.3
1041 V3PG11 3390-3   719  0   2.3  2.3  12.0  12.0  1.9
```

## Page Device Analysis – DASD Subsystem

- Page Devices are usually in “top ten DASD”
- Device busy > 20% cause for concern
- Device busy > 50% serious
- Minute by minute analysis would show 30% “Peak”

# Device Busy – who? ESAUSP3

Report: ESAUSP3 User Resour  
Monitor initialized: 06/16/16 at

```
-----  
                    <-----I/O Rates  
UserID      DASD Block  MDC  VDsk  
/Class      I/O    I/O  Hits  I/O  
-----  
06/16/16  
08:01:00 655.2    0.0  50.3  1.6  
  ***Key User Analysis ***  
RSCS          0      0      0      0  
TCPIP         0      0      0      0  
  ***User Class Analysis***  
Servers       0      0      0      0  
Velocity     13.0     0      3.3     0  
*PSFIN       12.5     0      0.1     0  
*PSHCM       14.7     0      0.0     0.0  
*RMANDB      10.9     0      1.1     1.5  
*SBCRM       27.7     0     10.9     0  
*ORACLE      567.3     0     33.8     0  
*SBHYP        0.5     0      0      0  
TheUsrs       8.4     0.0     1.0     0  
  ***Top User Analysis***  
SBFIN3        7.6     0      0.1     0  
SBFIN1         0.9     0      0      0  
SBFIN2         3.4     0      0      0  
E9SMTP3        4.4     0      0      0  
ORADBT1      559.9     0     33.8     0  
RMANDB        10.9     0      1.1     1.5  
SANDBX2        2.2     0      0      0
```

Quick check on dasd device, who is using?  
ESAUSP3, DASD I/O rates.

# Paging Analysis: ESABLKP

Report: ESABLKP      Block Paging Analysis  
Monitor initialized: 06/16/16 at 08:00:00 on 2098 serial 0D045

```
-----  
      <----Load---->  Serv  <-Block->  <-Blocks Formed By->  
      <-Users-> Tran  Time  <-Reads->  <-Steal->  <Migrate>  
Time   Actv In Q /sec  (ms)  /sec Size  /sec Size  /sec Size  
-----  
08:01:00   30 32.0  0.6  63.8  62.1  4.5      0    0 102.8  4.9  
08:02:00   33 28.0  1.1  63.8  27.2  4.6      0    0  21.7  7.8  
08:03:00   30 29.0  1.2  63.8   3.0  4.1      0    0   8.2  9.6  
08:04:00   31 29.0  0.9  63.8   2.3  3.1      0    0   4.9 13.7  
08:05:00   31 28.0  1.1  63.8   6.4  4.0      0    0  20.6  8.9  
08:06:00   30 29.0  1.1  63.8   6.0  4.2     0.3 39.3  53.5 10.1  
08:07:00   32 28.0  1.0  63.8  35.9  3.4      0    0  40.8 12.9  
08:08:00   30 29.0  0.9  63.8  36.2  4.0      0    0  46.1  5.8  
08:09:00   31 29.0  1.0  49.0  16.0  3.7      0    0  47.9  3.6  
-----
```

## Block Paging Analysis

- Block page read – optimal 10 pages
- Steal should be zero prior to 6.3
- Migrate should be zero with 6.3 and beyond
- Pages stolen, unreferenced – Storage stress
- Single page read – goes up with 6.3

# DASD Configuration: ESADSD1

Report: ESADSD1                    DASD Configuration

| Dev No.     | Sys ID      | Serial        | Device Type | SHR       | <CHPIDS OnLn> |          |          |          | <-Cntrl Unit-> |             |
|-------------|-------------|---------------|-------------|-----------|---------------|----------|----------|----------|----------------|-------------|
|             |             |               |             |           | 01            | 02       | 03       | 04       | OBR/           | CU Model    |
| 1031        | 0035        | V3PG01        | 3390-3      | NO        | 24            | 10       | .        | .        | 3C/00          | 2107        |
| 1032        | 0036        | V3PG02        | 3390-3      | NO        | 24            | 10       | .        | .        | 3C/00          | 2107        |
| 1033        | 0037        | V3PG03        | 3390-3      | NO        | 24            | 10       | .        | .        | 3C/00          | 2107        |
| 1034        | 0038        | V3PG04        | 3390-3      | NO        | 24            | 10       | .        | .        | 3C/00          | 2107        |
| 1035        | 0039        | V3PG05        | 3390-3      | NO        | 24            | 10       | .        | .        | 3C/00          | 2107        |
| 1036        | 003A        | V3PG06        | 3390-3      | NO        | 24            | 10       | .        | .        | 3C/00          | 2107        |
| 1037        | 003B        | V3PG07        | 3390-3      | NO        | 24            | 10       | .        | .        | 3C/00          | 2107        |
| 1038        | 003C        | V3PG08        | 3390-3      | NO        | 24            | 10       | .        | .        | 3C/00          | 2107        |
| 1039        | 003D        | V3PG09        | 3390-3      | NO        | 24            | 10       | .        | .        | 3C/00          | 2107        |
| 9000        | 0666        | XV9000        | 9336        | NO        | 20            | .        | .        | .        | 00/00          | 6310        |
| 9001        | 0666        | XV9001        | 9336        | NO        | 20            | .        | .        | .        | 00/00          | 6310        |
| 9002        | 0666        | XV9002        | 9336        | NO        | 20            | .        | .        | .        | 00/00          | 6310        |
| 9003        | 0666        | XV9003        | 9336        | NO        | 20            | .        | .        | .        | 00/00          | 6310        |
| 9004        | 0666        | XV9004        | 9336        | NO        | 20            | .        | .        | .        | 00/00          | 6310        |
| <b>9005</b> | <b>0666</b> | <b>XV9005</b> | <b>9336</b> | <b>NO</b> | <b>20</b>     | <b>.</b> | <b>.</b> | <b>.</b> | <b>00/00</b>   | <b>6310</b> |
| 9006        | 0666        | XV9006        | 9336        | NO        | 20            | .        | .        | .        | 00/00          | 6310        |
| 9007        | 0666        | XV9007        | 9336        | NO        | 20            | .        | .        | .        | 00/00          | 6310        |
| 9008        | 0666        | XV9008        | 9336        | NO        | 20            | .        | .        | .        | 00/00          | 6310        |
| 9009        | 0666        | XV9009        | 9336        | NO        | 20            | .        | .        | .        | 00/00          | 6310        |
| 900A        | 0666        | XV900A        | 9336        | NO        | 20            | .        | .        | .        | 00/00          | 6310        |
| 900B        | 0666        | XV900B        | 9336        | NO        | 20            | .        | .        | .        | 00/00          | 6310        |

## DASD Configuration

- Multi channels to devices?
- 6310 is fast....



# Dispatch rates – workload suitable for SMT?

Report: ESAPLDV

```
-----  
Time          CPU    <ispatcher  
              CPU    Song Paths  
-----  
08:01:00      0      7487.4  
              1      7500.2  
              2      6724.9  
              3      7558.6  
              --  
System:      29271.2  
-----  
08:02:00      0      15805.0  
              1      15609.4  
              2      15659.2  
              3      15342.2  
              --  
System:      62415.8  
-----  
08:03:00      0      18826.3  
              1      18812.7  
              2      18835.9  
              3      18465.7  
              --  
System:      74940.4
```

Very high dispatch rate

- Not suitable to SMT