

VELOCITY  
SOFTWARE

# *Long Term Performance Graphs*

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# Capacity Graphs

- Long term graphs to analyze trends
- Minute, daily, weekly, monthly and trending
  - Daily – One or 15 minute intervals
  - Trending - Daily, weekly and monthly
- Created during nightly ZMAP processing
  - Fast data retrieval and graphing
- Uses ESAEXTR
- Defined in ZMAP RUNCHART PARMS file
  - Samples provided
  - Some need customization

	Type	Days	Start	Stop	Extract	Menu Name	Parm	Peak
Chart:	MINUTE	1	00:00	24:00	CLASCPU2	UserClass	PEAK	_____
Chart:	DAILY	1	00:00	24:00	CLASCPUU	UserClass	REDHAT	_____
Chart:	DAILY	1	00:00	24:00	USERMULT	User	_____	_____
Chart:	DAILYT	1	00:00	24:00	LPDIO	LPAR	_____	_____
Chart:	DAILY	1	*	*	LPARCPUC	LPAR	_____	_____
Chart:	MONTH	1	00:00	24:00	LPDIO	LPAR	_____	_____
Chart:	WEEK	2	00:00	24:00	LPDIO	LPAR	_____	_____
Chart:	WEEKT	2	00:00	24:00	LPDIO	LPAR	_____	_____
Chart:	DAILY	1	00:00	24:00	MULTUSER	User	_____	_____
Chart:	DAILYT	20	00:00	24:00	USERMULT	User	_____	_____
Chart:	DAILY	1	00:00	24:00	CLASCPU2	UserClass	_____	_____
Chart:	DAILYT	20	00:00	24:00	CLASCPUU	UserClass	REDHAT	_____
Chart:	DAILYT	40	00:00	24:00	CLASCPUF	UserClass	_____	_____
Chart:	DAILY	1	00:00	24:00	CLASCPU	UserClass	SUSE	_____
Chart:	DAILY	1	00:00	24:00	LPARCPUS	LPAR	PEAK	_____
Chart:	DAILYT	35	00:00	24:00	LPARCPUS	LPAR	PEAK	_____
Chart:	DAILY	5	00:00	24:00	LPARCP	LPAR	_____	_____
Chart:	DAILYT	5	00:00	24:00	LPARCP	LPAR	PEAK	_____
Chart:	DAILY	1	00:00	24:00	LPARCPUS	LPAR	_____	_____
Chart:	MINUTE	1	00:00	24:00	LPARCPIS	LPAR	V*	_____
Chart:	MINUTE	1	00:00	24:00	LPARCPIS	LPAR	V*	PEAK
Chart:	DAILY	1	00:00	24:00	LPARCPUS	LPAR	VSIVM5	PEAK
Chart:	DAILY	1	00:00	24:00	LPARCPUS	LPAR	VSIVM5	_____
Chart:	DAILY	1	00:00	24:00	LSTORE	Linux	ORACLE	_____
Chart:	DAILY	1	00:00	24:00	LCPU	Linux	_____	_____
Chart:	DAILY	1	00:00	24:00	LSWAP	Linux	_____	_____
Chart:	DAILY	1	00:00	24:00	LCPU	Linux	R*	_____
Chart:	DAILY	1	*	*	CPUUTIL	CPU	_____	_____
Chart:	WEEK	1	*	*	CPUUTILS	CPU	_____	_____
Chart:	WEEK	1	*	*	CPUUTILS	CPU	PEAK	_____
Chart:	DAILYT	20	00:00	24:00	LCPU	Linux	REDHAT6X	_____
Chart:	DAILYT	2	00:00	24:00	LMCPU	Linux	REDHAT6X	PEAK

- Specify type
  - MINUTE, DAILY(T), WEEK(T), MONTH(T), NDAYS
  - T = Trending – Append to existing data
  - NDAYS = Last n days – history required
- Days
  - For trending and NDAYS specify number of days, weeks or months
- Start Stop
  - Specify time range or \*

- **EXTRACT**
  - Name of ESAEXTR file
  - Names shown are shipped as samples
    - Documented in zVIEW manual
  - First letter significant
    - C = Class
    - L = Linux
    - P or LP = LPAR
    - U = User
- **zVIEW menu name**

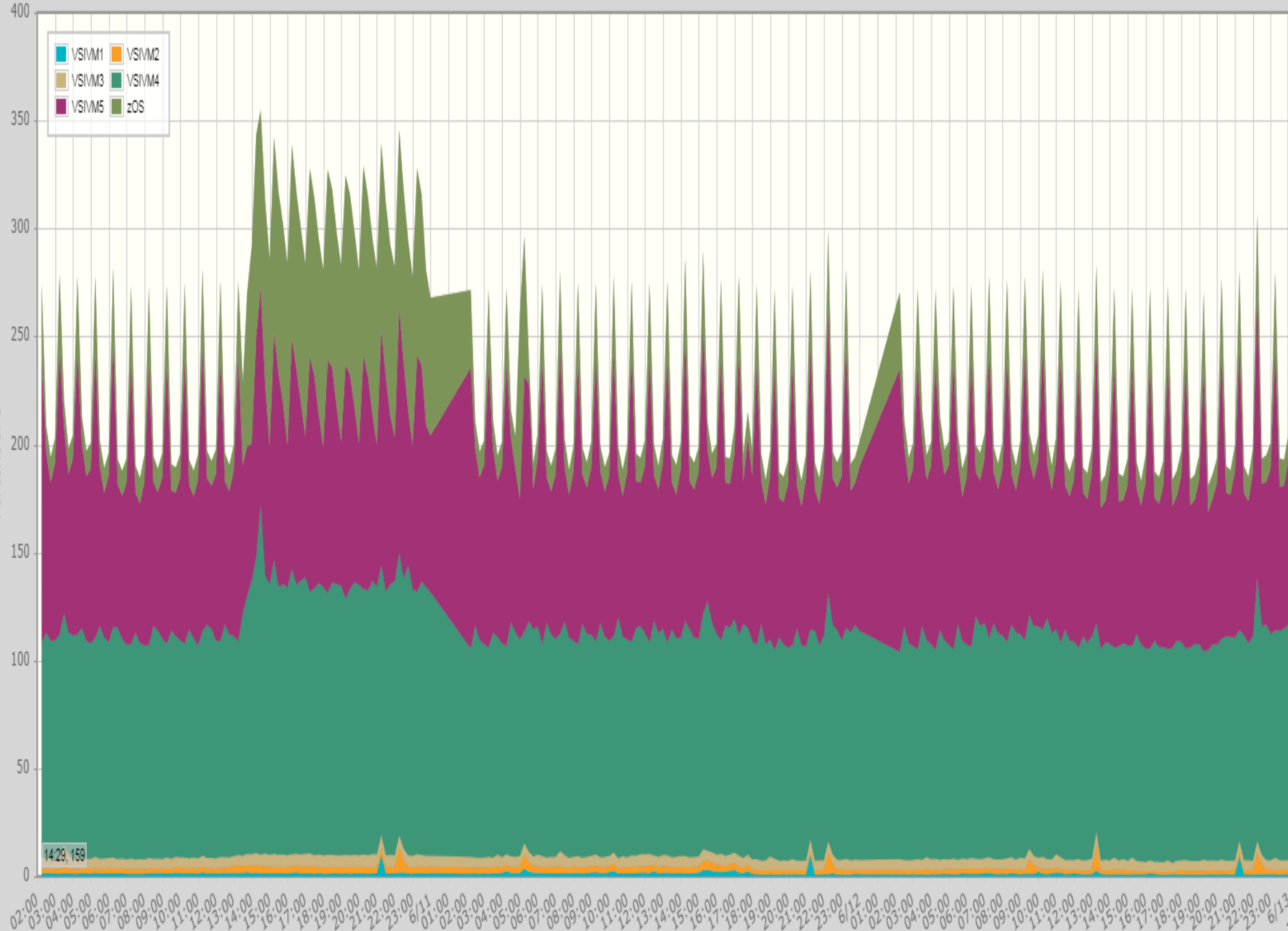
## Parm

- Restrict data to specific class, LPAR, node or user
- Lowercase values must be specified
- Graph multiple variables for one class,user,node or LPAR or one value for all classes, users, node or LPAR
- Extracts with no parm value can be further restricted
  - \* on end allowed for wildcard character
  - Graph limited to one variable

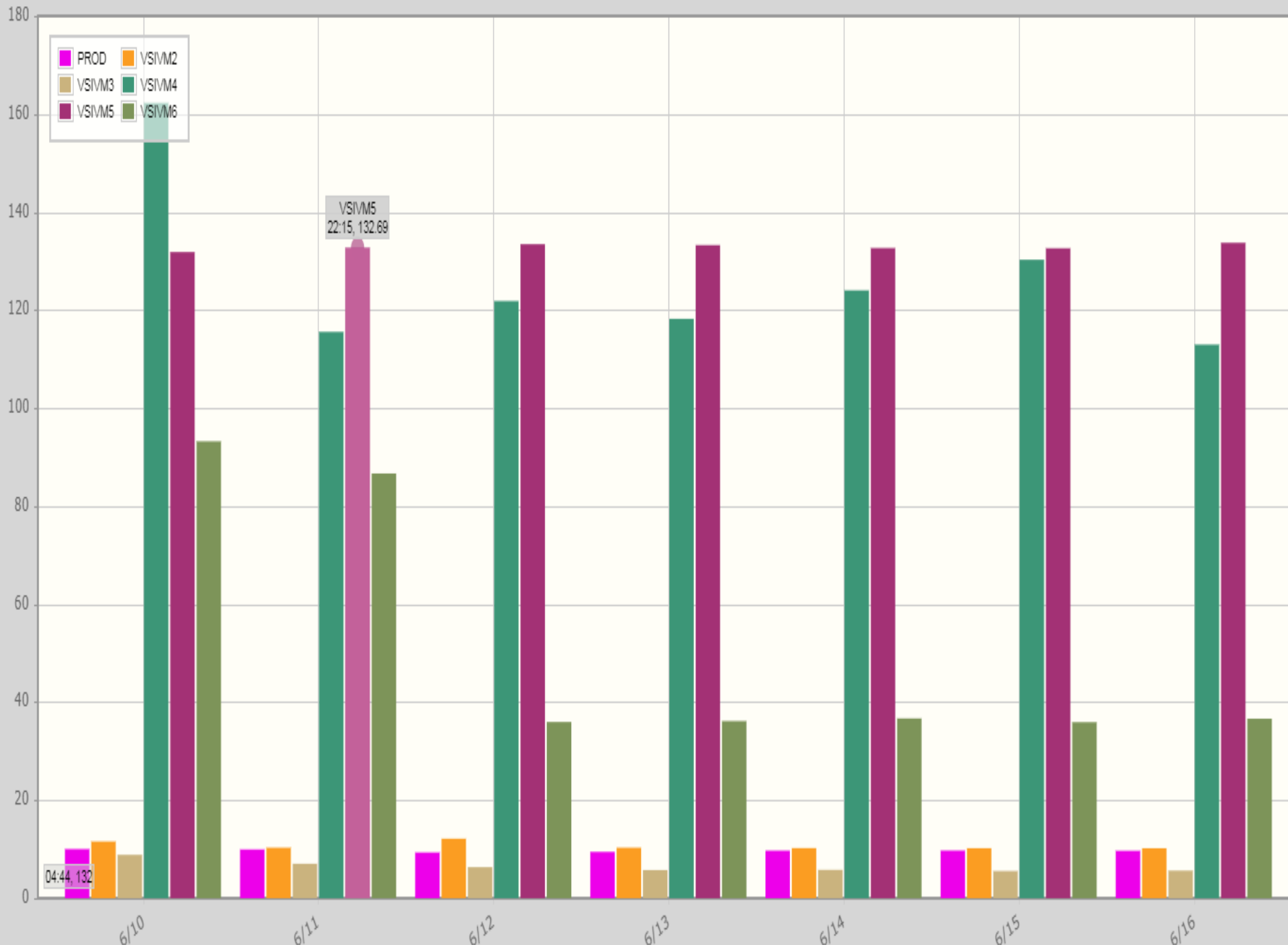
## PEAK

- Peak average for interval per day or graph interval
  - Peak value and time for each variable

# Weekly LPAR CEC Summary 6/10 - DEMO

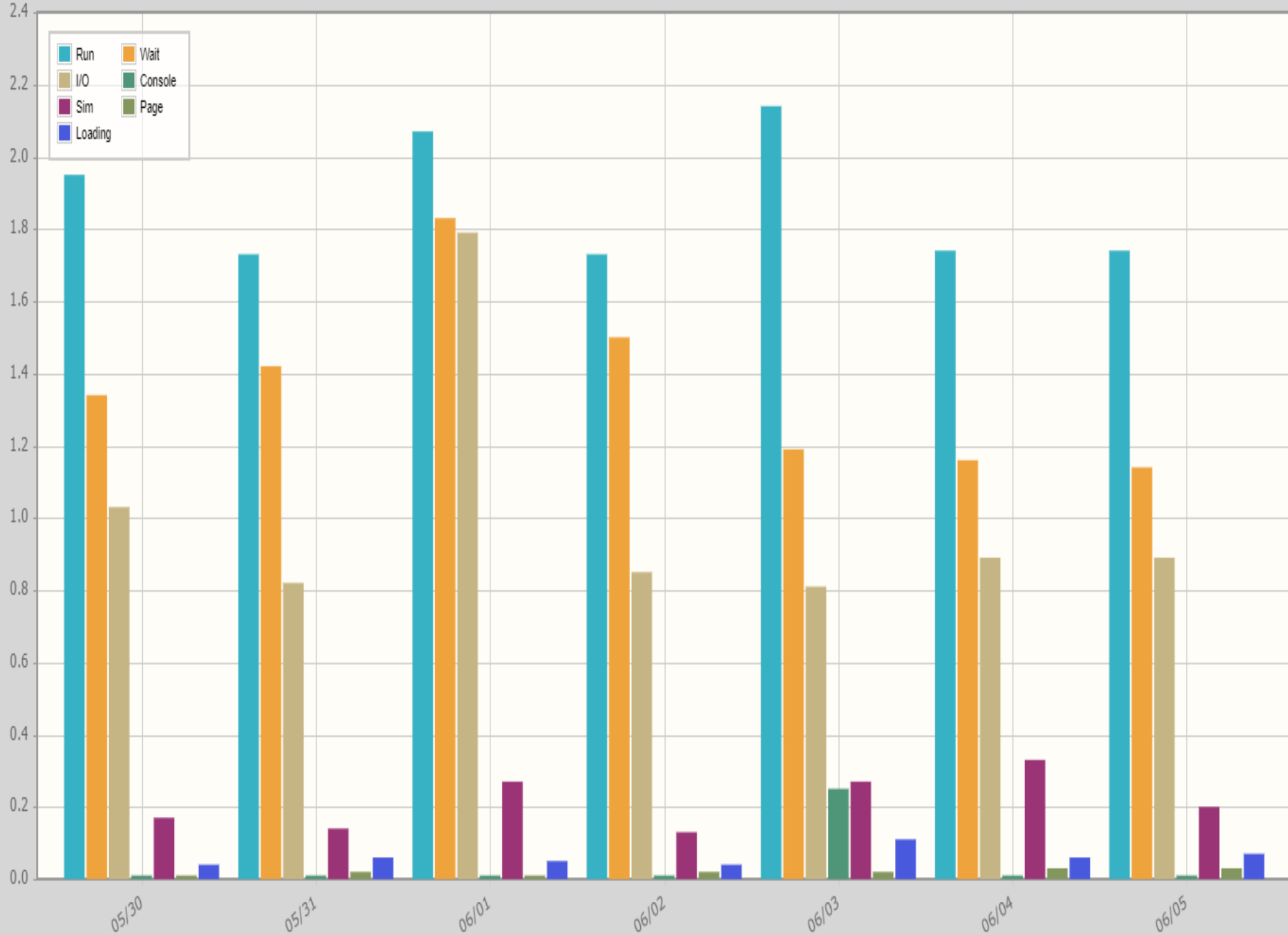


# Weekly Peak LPAR CEC Summary 6/10-6/16 - TIM2





# Weekly Peak User Wait Analysis System: - TIM



## Graph customization – ESAEXTR TITLE stmts

### Variables specified in title

- Start date and time, end date and time, and userid
- *TITLE = 'LPAR CEC Summary &USERID &SDATE'*
- For ranges use *&sdate-&edate* and *&stime-&etime*

### Graph type

- Vertical and horizontal bar, stacked bar, area and stacked area, line
- *TITLE = '\*Type VBAR'*

### Names for variables in legend

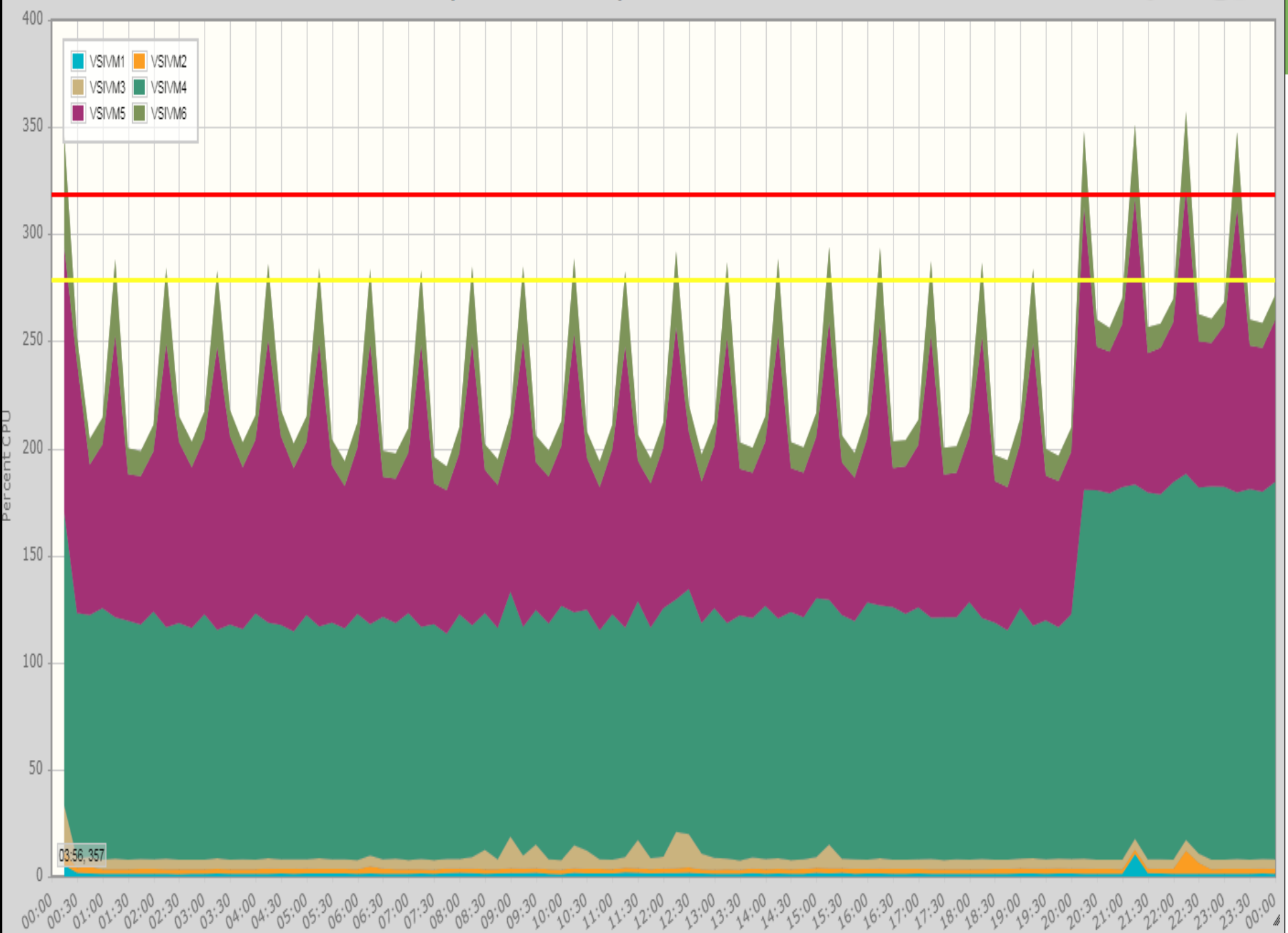
- Multiple variables for one server
- *TITLE = '\*LABELS Run CPU\_Wait Page\_Wait I/O\_Wait'*

### Y axis label

- *TITLE = '\*Yaxis Percent'*

- Graph customization – TITLE \*ZVIEW
  - *TITLE = '\*ZVIEW directive'*
  - *YAXIS – Y axis scale range*
    - *\*ZVIEW YAXIS:0 200*
    - *\*ZVIEW YAXIS:0 NCPUS\*100*
  - *Thresholds*
    - *Warning and critical values (yellow and red)*
    - *\*ZVIEW THRESHOLD:70 90*
  - *Others*
    - *Legend on/off*

# Daily LPAR CEC Summary 6/24 - VM5



## ESAEXTR Variables

- Usually  $X = 'STOPTIME'$
- Single or multiple  $Y = 'variable\ name'$ 
  - Use ZMAP PDR or HISTORY KEYWORDS for variable names

## CRITERIA

- Optional and can have multiple
  - Treated as AND condition
- $CRITERIA = 'SYTCUP.LCUPNAME \neq Totals:'$
- $CRITERIA = 'USRCON.CLASSID = \&parm'$

## INTERVAL

- *INTERVAL* = 'xx'
- IN for interval data (default)
  - Data points every 15 minutes
- SU for summary data
  - Summarized intervals as follows:
    - DAILY Hour
    - DAILYT Day
    - WEEK Day
    - WEEKT Week
    - MONTH Day
    - MONTHT Month
  - Override in *extractname* ESAMAP file (base NDAYESAMAP)
    - *History interval* parameter (seconds)
- IN support for trending graphs

## Multiple EXTRACT:

- Provides for OR conditions
- All Y variables must be the same

EXTRACT:

TITLE = 'Users in Class &userid CPU - &SDATE'

X = 'STOPTIME'

Y = 'USERID'

Y = 'useact.vmdttime/seconds\*100' ; total cpu%

Criteria = 'USRCON.CLASSID = &parm'

CRITERIA = 'USERTYPE = USER'

INTERVAL = 'IN

EXTRACT:

X = 'STOPTIME'

Y = 'USERID'

Y = 'useact.vmdttime/seconds\*100' ; total cpu%

Criteria = 'USERID = SUSELN2'

CRITERIA = 'USERTYPE = USER'

INTERVAL = 'IN'

## Manually run on ZMAP

- Test new capacity graphs
- Catch up on old data
- RUNCHART *charttype input extractname* **debug**
  - *charttype* – MINUTE, DAILY(T), WEEK(T), MONTH(T), NDAY
  - *input* – (yyyy)mmdd, (yyyy)ww, (yyyy)mm, \*
    - Default or \* previous interval except MONTH(T) current month
    - DAILY(T) can use \* to create initial trending days
  - *extractname* – File name of ESAEXTR file

**Make sure to LOG OFF ZMAP when finished!**



## RUNAUTO PARMS – CHARTCNT

- CHARTCNT 6 8 7 3 1
- Number of monthly, weekly, daily, minute and ndays graphs to keep

## RUNAUTO PARMS – ADISKBLKS

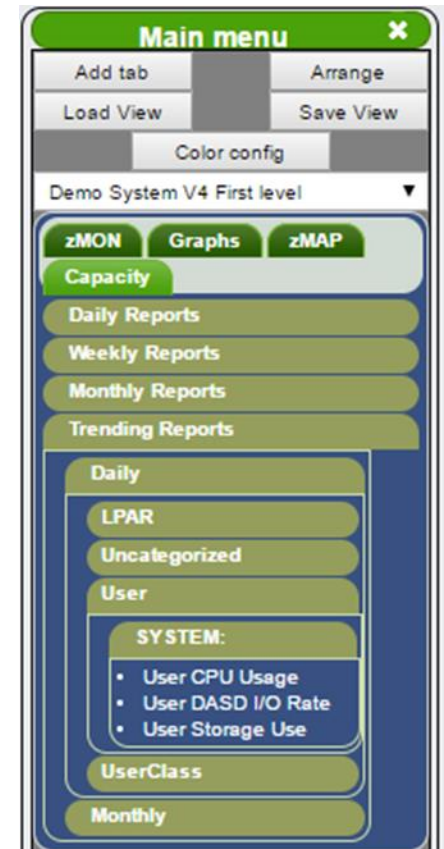
- Number of disk blocks to free before starting ZMAP run
- Minimum 20,000
- 25,000 if creating lots of capacity graphs

If trending graphs important, backup ZMAP 191

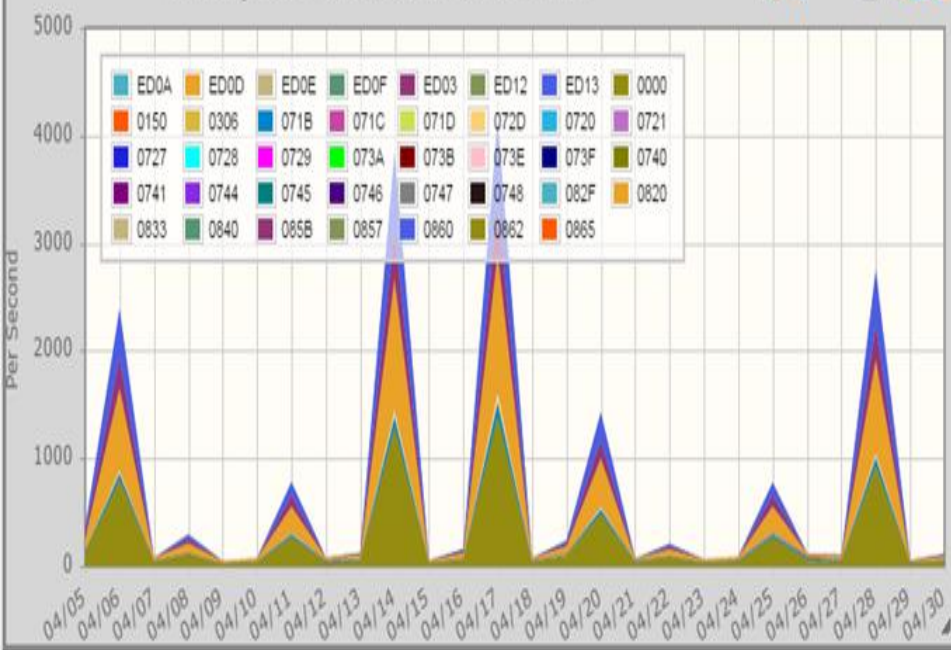
Complete documentation in zVIEW manual

## Steps for capacity graphs

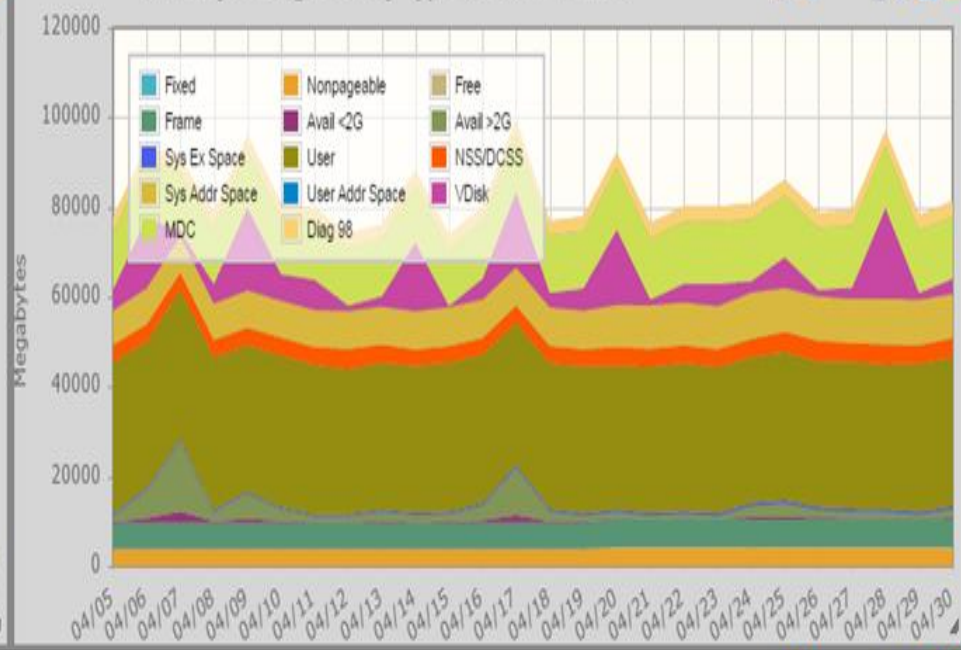
- Identify resources you want to regularly monitor
- Create ESAEXTR file
- Update RUNCHART PARMS
- Run RUNCHART or wait until next day
  - Refresh (F5) zVIEW for new graphs
- Select graphs in Capacity tab
- Save as view
  - Relative dates in tab parms
    - Yesterday, Last business, Last week, Last month
  - Use URL to access view
- Download (png, jpg, pdf, csv) graphs



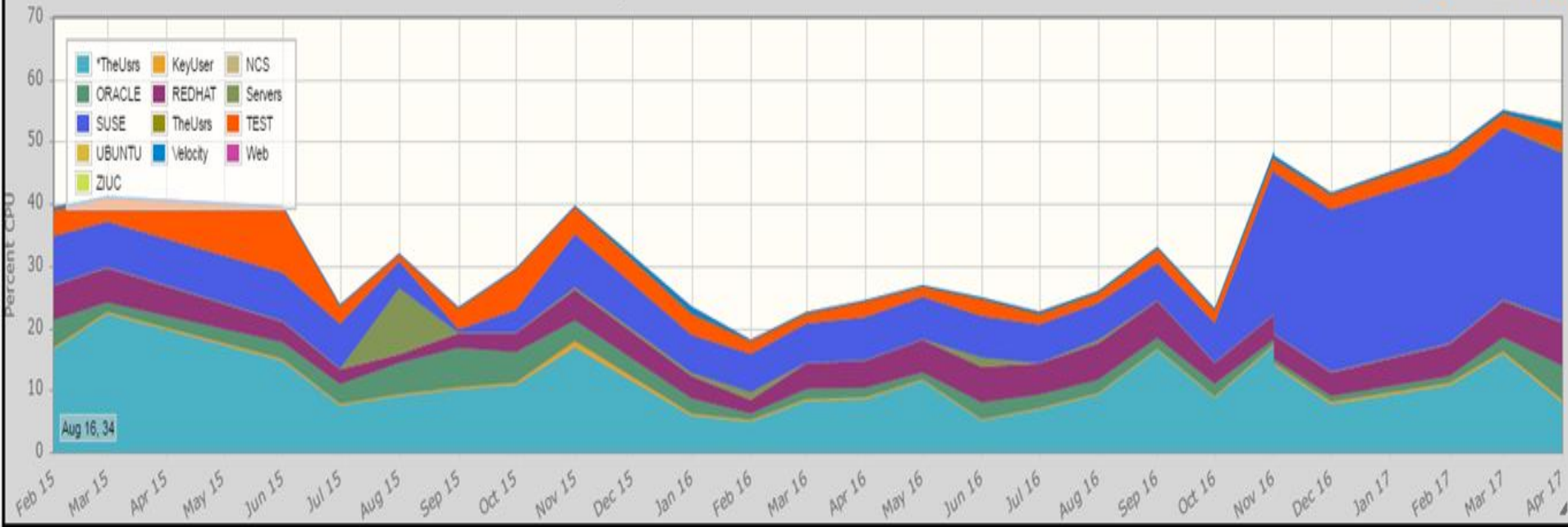
### Monthly DASD I/O Rate 4/5-4/30 - DEMO



### Monthly Storage Use by Type 4/5-4/30 - DEMO



### Monthly User Class CPU - DEMO



Questions ?