Quick and Easy - Accessing z/OS PDSEs and Sequential Data Sets Simply and Easily Using 'MVSDS', an IBM-supplied Component of z/OS Web Browser

Patricia Wingfield

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Bank of America

Purpose of This Presentation

- It's been my experience that many z/OS users are still not aware of how easily z/OS PDSE's and flat files can be viewed via the z/OS web browser.

- This paper will cover the basics of how easily this is done and some of the uses that can be made of this facility.

Introduction

- z/OS PDSE's and flat files can be viewed via the z/OS web browser
- IBM distributes a GWAPI program called 'MVSDS' that makes this possible
- z/OS default 'out of the box' installations comes with this facility installed.
- You just need your z/OS system DNS name and possibly appropriate port number in order to view your z/OS text files via your company intranet
- Easier than accessing HFS files since no web browser directives etc. needed

Typical URL

- https://yourdnsname/MVSDS/'yourflatorpdsedsname'
- Example: https://lpar01.bankofamerica.com:8283/MVSDS/'USERID1.SHR.SAS'
- DNS name must be for a system that has an instance of the HTTP server started task running on it with 'MVSDS' installed.
- **Default** installation of IBM HTTP Server includes 'MVSDS'
- *z/OS Systems are BY DEFAULT large web servers, with all of their text data sets accessible via browsers dependent only on RACF security constraints.*
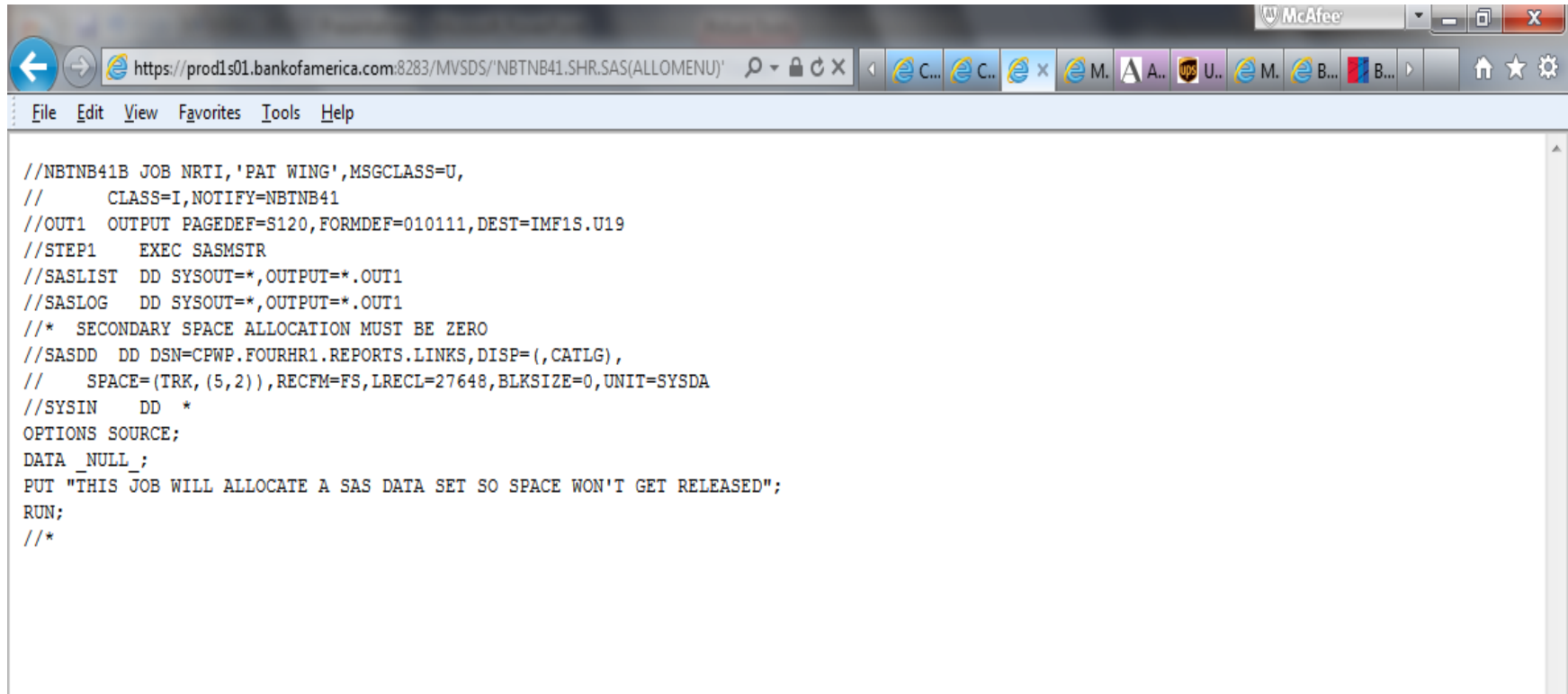
Typical URL - continued

https://prod1s01.bankofamerica.com:8283/MVSDS/'NBTNB41.SHR.SAS'

Directory Listing of 'USERID1.SHR.SAS':

- $JOBAVG
- $JOBCFI
- $JOBHIST
- $PGMAVG
- $SHIFT
- ABENDS
- ABSMIPS
- ABSMIPST
- ACCUMCIA
- ACCUMCIB
- ACCUMCIT
- ACCUMCIZ
- ACCUMDMY
- ACCUMDM2
- ACTINITS
- ACTLGR01
- ACTLGR02
- ACTLINES
- ALLOAS40
- ALLOCOPY
- ALLOEXCP

Typical URL - continued

Click on a member and you get:


•Can print via file/print etc.

Security – Two Ways to Set up:

- <u>Option #1</u> – do **NOT** use Web Server Directive "UserID %%CLIENT%%":
  - Set up to use security settings of z/OS HTTP Server started task. If server started task has 'READ' access, then you can browse data set
  - In practice this usually allows access only to data sets with a default RACF access of 'READ'
  - Very good for report access, since users DO NOT NEED ID defined to access z/OS reports via web
  - Anyone, even managers without mainframe ids, can access reports.

Security – Two Ways to Set up:

- Option #2 – **Do** Use Web Server Directive "UserID %%CLIENT%%":
  - Causes browser user to be prompted for their RACF userid/password
  - Security then allowed or denied by RACF according to user's security settings.
  - Drawback is that everyone needs an id defined on z/OS system in order to access reports

Security – RACF HTTP Server Userid/Password Prompt:
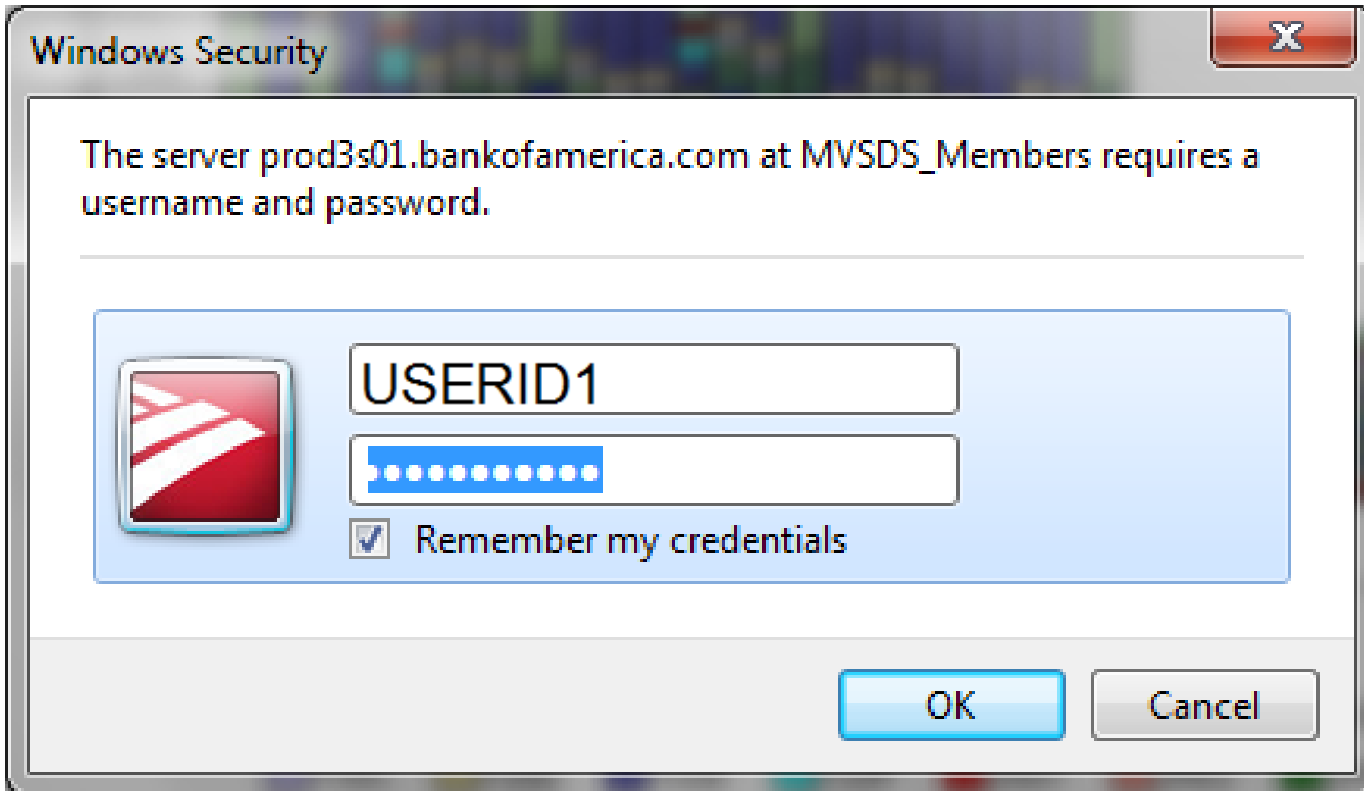
Security – RACF HTTP Server userid/password prompt:

- If don't have RACF READ or if URL misspelled, get same message –
  - (IMW0254E) Error 404 on browser
- Know it's security if get in SYSLOG:
  ICH408I USER(WEBSRV) GROUP(IMWEB   ) NAME(WEBSRV VALIDATOR   ) 022
    SYS1.PARMLIB CL(DATASET) VOL(1SXFR1)
    INSUFFICIENT ACCESS AUTHORITY
    FROM SYS1.PARMLIB.** (G)
    ACCESS INTENT(READ   ) ACCESS ALLOWED(NONE

Making z/OS links:

- Watch out for email etc. bug
- Some email and other Windows products will truncate the ending ")' " of your URL
- Can't tell by looking at the link
- Get the same Error 404 message
- Surrounding your URL with double quotes when **making link** will prevent this from happening
- Link looks the same as link made without double quotes, but works – nothing chopped off when click on it

Making z/OS links:

- HTML, PDF, GIF data sets etc. should have 'HTML', 'PDF', 'GIF' etc. as a complete qualifier in data set name.
- Otherwise text - great way to print PDS members if have RACF read to them!
- If don't put member, get directory list displayed in browser and can select desired member
- PDSE's and flat files good
- GDG's also supported – but if want to use gdg# it must be a flat file unless type out the "GxxxVnn'
-

Advantages of Using MVSDS
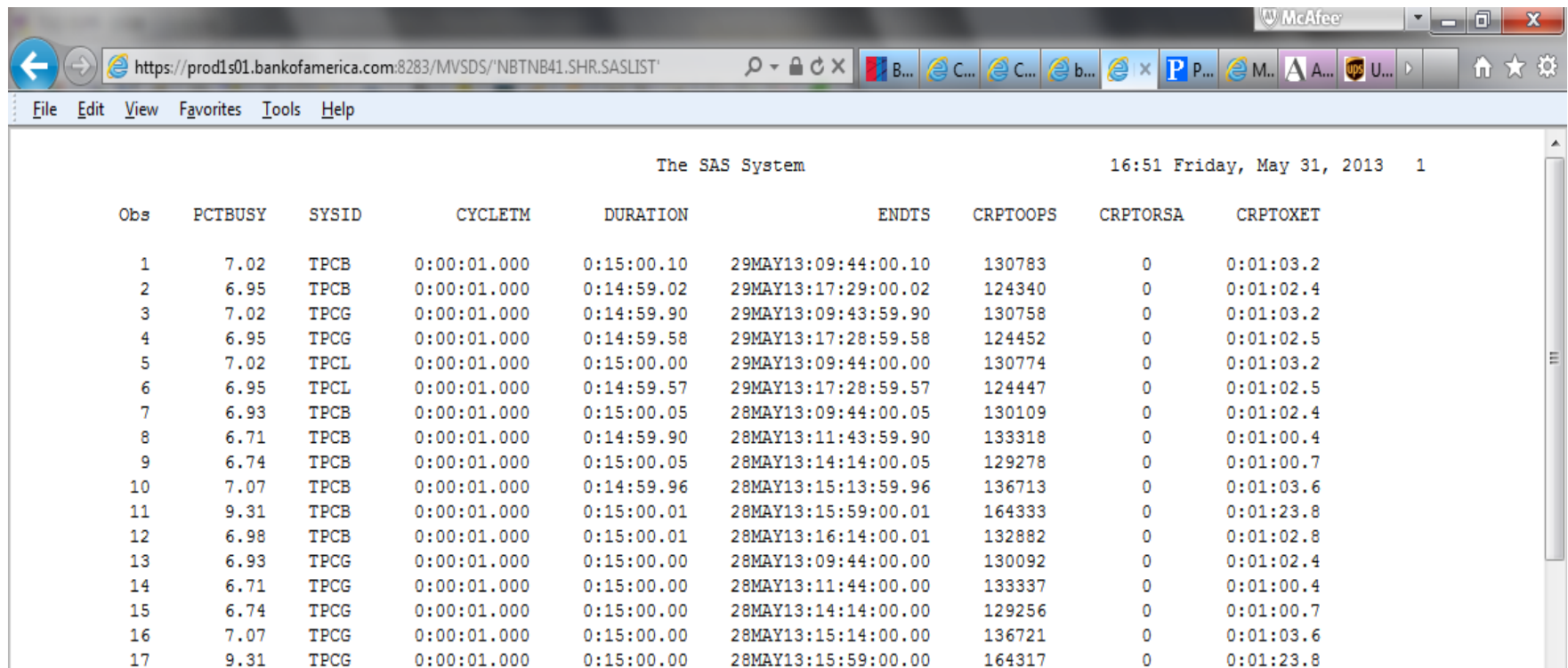
- Don't have to move your data to other platforms to do z/OS reporting
- Can use extensive z/OS automation tools available
- Report data set management etc. available via DF/HSM etc.
- Code in common, centrally managed and supported repositories

Examples for Using MVSDS

- Text reports
- Links via emails
- HTML menus into text reports
- Simple spreadsheets
- Downloading from mainframe
- Single member HTML report or flat file HTML reports (Base SAS)
- HTML multiple PDSE member reports (Base SAS)
- More complicated spreadsheets (Base SAS)
- Graphical reports (SAS Graph)

Examples – Text Reports

- Just use SDSF 'XDC' command to write JES output to data set
- Or write report directly to data set
- Just point URL to it

The SAS System   16:51 Friday, May 31, 2013   1

Obs	PCTBUSY	SYSID	CYCLETM	DURATION	ENDTS	CRPTOOPS	CRPTORSA	CRPTOXET
1	7.02	TPCB	0:00:01.000	0:15:00.10	29MAY13:09:44:00.10	130783	0	0:01:03.2
2	6.95	TPCB	0:00:01.000	0:14:59.02	29MAY13:17:29:00.02	124340	0	0:01:02.4
3	7.02	TPCG	0:00:01.000	0:14:59.90	29MAY13:09:43:59.90	130758	0	0:01:03.2
4	6.95	TPCG	0:00:01.000	0:14:59.58	29MAY13:17:28:59.58	124452	0	0:01:02.5
5	7.02	TPCL	0:00:01.000	0:15:00.00	29MAY13:09:44:00.00	130774	0	0:01:03.2
6	6.95	TPCL	0:00:01.000	0:14:59.57	29MAY13:17:28:59.57	124447	0	0:01:02.5
7	6.93	TPCB	0:00:01.000	0:15:00.05	28MAY13:09:44:00.05	130109	0	0:01:02.4
8	6.71	TPCB	0:00:01.000	0:14:59.90	28MAY13:11:43:59.90	133318	0	0:01:00.4
9	6.74	TPCB	0:00:01.000	0:15:00.05	28MAY13:14:14:00.05	129278	0	0:01:00.7
10	7.07	TPCB	0:00:01.000	0:14:59.96	28MAY13:15:13:59.96	136713	0	0:01:03.6
11	9.31	TPCB	0:00:01.000	0:15:00.01	28MAY13:15:59:00.01	164333	0	0:01:23.8
12	6.98	TPCB	0:00:01.000	0:15:00.01	28MAY13:16:14:00.01	132882	0	0:01:02.8
13	6.93	TPCG	0:00:01.000	0:15:00.00	28MAY13:09:44:00.00	130092	0	0:01:02.4
14	6.71	TPCG	0:00:01.000	0:15:00.00	28MAY13:11:44:00.00	133337	0	0:01:00.4
15	6.74	TPCG	0:00:01.000	0:15:00.00	28MAY13:14:14:00.00	129256	0	0:01:00.7
16	7.07	TPCG	0:00:01.000	0:15:00.00	28MAY13:15:14:00.00	136721	0	0:01:03.6
17	9.31	TPCG	0:00:01.000	0:15:00.00	28MAY13:15:59:00.00	164317	0	0:01:23.8

Examples – Links via email etc.

- Then you can send link to report in an email
- Remember to put double quotes around link as you make it!
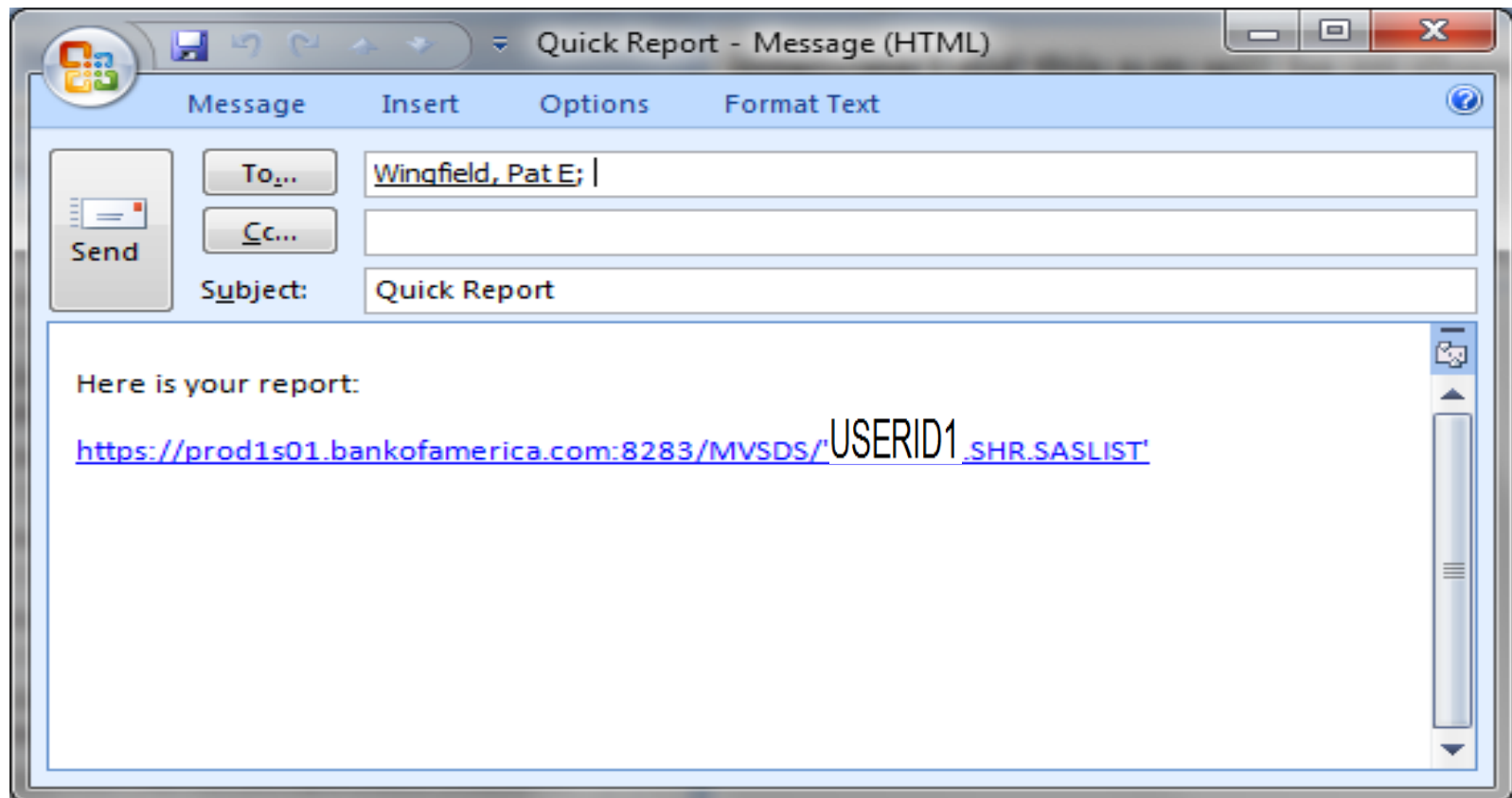
Examples – Text Reports:

- You can also just write to fixed PDSE gdg and then point url to directory of member reports:
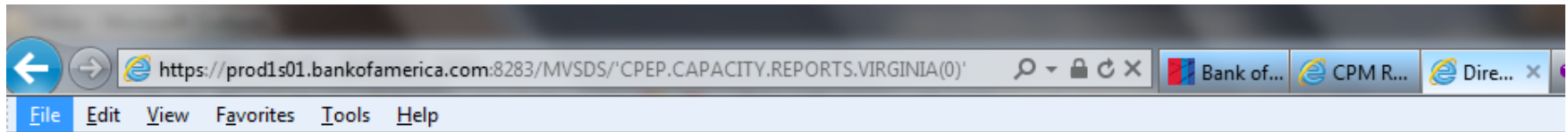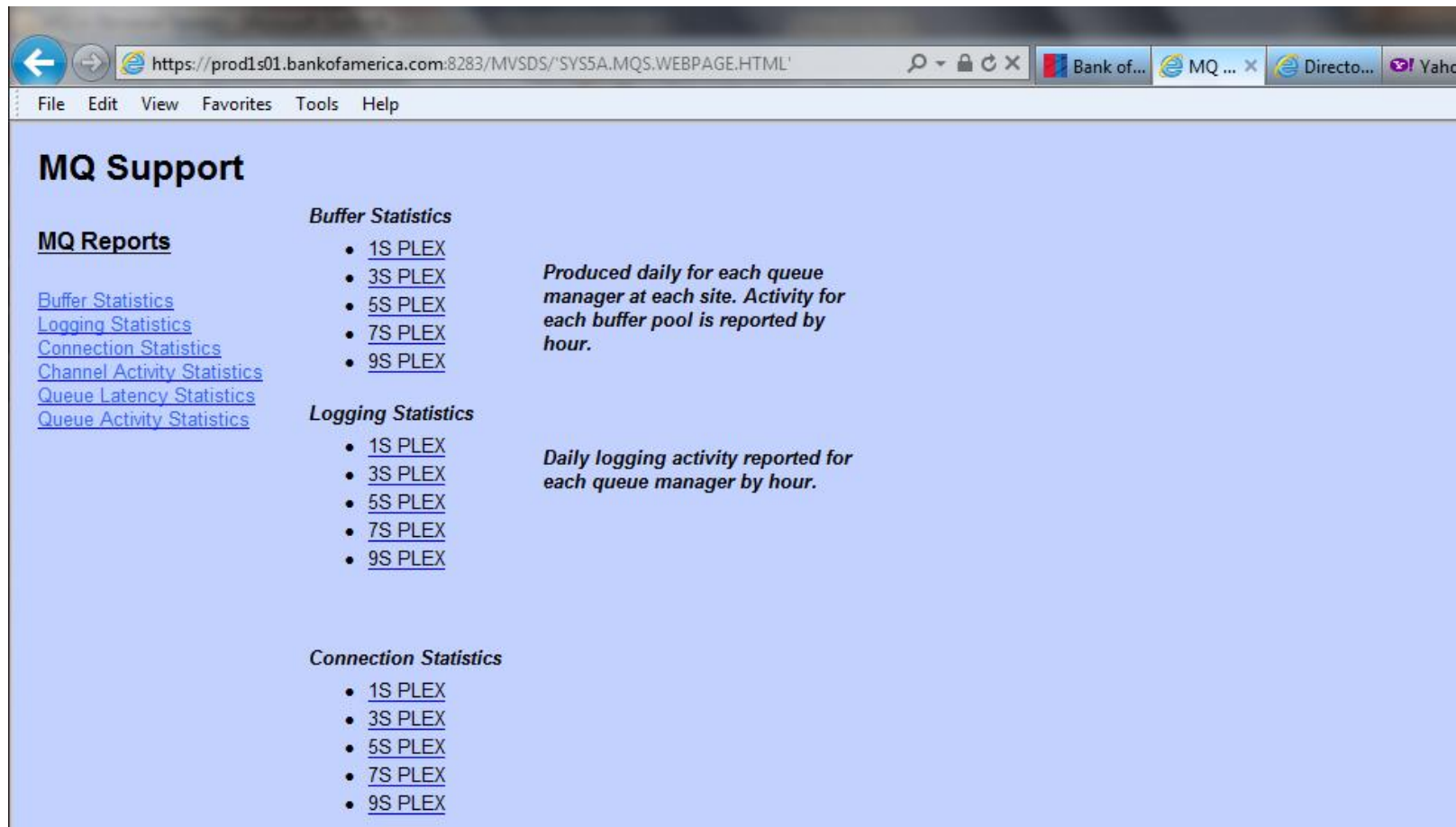
Directory Listing of 'CPEP.CAPACITY.REPORTS.VIRGINIA(0)':

- (DAILYCIC)
- (DAILYIMS)
- (DAILYOVR)
- (DAILYREG)
- (EXCPCICS)
- (EXCPIMS)
- (HOURCICS)
- (HOURIMS)
- (PCD80BAP)
- (PCD80BAT)
- (PCD80CIC)
- (PCD80DEV)
- (PCD80IMS)

Examples – HTML Menus into Text Reports:

- Static HTML Menu Created via Windows product and uploaded to mainframe pointing to text gdgs:

Examples – Simple Spreadsheets

• You can make text report into a quick and easy spread using Select All/Copy; paste into spread and then 'Text to Columns' under 'Data' Excel tab – No more CSV's!

Examples – Downloading from z/OS

- Sometimes a file is too large to copy/paste into a spreadsheet – then you need to download

- HTTP Server directive:
  AddType .DOWNLOAD text/download ebcdic 1.0 # MVSDS

- Whenever a URL is selected that ends in '.DOWNLOAD', the Windows downloading dialog window will pop up.

Examples – Downloading from z/OS

Examples – HTML reports

- Base SAS easily creates HTML reports
- Base SAS using ODS HTML or ODS tagsets.mvshtml creates HTML documents.
- SAS 'PROC REPORT' extremely useful – can assign URLs as cell attributes etc.

Examples – HTML reports

- Won't go into SAS coding techniques here – this has been covered in previous papers – this is overview of what you CAN do – not HOW to do it.
- Please see Section 'Downloads' of Barry Merrill's web site: http://www.mxg.com/downloads/ , **Pat Wingfields's z/OS SAS ODS & Graph Paper**
- Also presented at CMG 2009 – 'No More Downloading' paper
- Presented at NESUG/SESUG several times
- Many papers/presentations available on SAS

Examples – HTML reports

Our Report Index – SAS PROC REPORT used to assign links to cells:

Examples – HTML reports

Network Exception Reporting System – each link is to a report showing an exception threshold exceeded:

Examples – HTML reports

Updated Version of MQ Operational Reports Shown Earlier:

Examples – HTML

SAS Proc Report:
- Eye tracking shading etc.
- PREV/NEXT/Home/Menu buttons for report navigation
- Notice Data Center Links at upper left – can navigate to cloned reports residing on different z/OS Sysplexes
- All hangs together like one physical report

DCONNCPU

PREV   NEX

Richmond, VA
Merrill Lynch at Richmond, VA
Richardson, TX
Kansas City, MO
Wyndham, TX
Malaysia and Camberley, UK
Text GDG(0)

Home   Menu

Bank of America - Mainframe Capacity Planning and Performance - Job CPWDMQS2
Connection Statistics by Queue Manager, Type,and Date for Richmond

Queue Manager Name=QPC1 System Identifier=1C01 Date=01JUN2013

1. Connection Statistics by Queue Manager, Connection, Date
Queue Manager Name=QPC1 System Identifier=1C01 Date=01JUN2013

Queue Manager Name=QPC1 System Identifier=1C01 Date=02JUN2013

Queue Manager Name=QPR1 System Identifier=2R01 Date=01JUN2013

Queue Manager Name=QPR1 System Identifier=2R01 Date=02JUN2013

Queue Manager Name	System Identifier	Date	Type Of Connection	CONNECTION NAME	Total CPU Time	Total Elapsed Time	Total PUT Calls	Total GET Calls	Total API Calls
QPC1	1C01	01JUN2013	BATCH/TSO	DB2PAC11	0:00:00.253	0:00:00.3	60	0	240
QPC1	1C01	01JUN2013	BATCH/TSO	DB2PAC12	0:00:23.757	0:00:24.7	238,274	0	953,096
QPC1	1C01	01JUN2013	BATCH/TSO	DC1PMQL1	0:00:18.657	0:03:31.2	0	1,095,240	1,095,240
QPC1	1C01	01JUN2013	BATCH/TSO	IMIBV001	0:00:00.000	0:00:00.0	1	0	3
QPC1	1C01	01JUN2013	BATCH/TSO	IMIG001G	0:00:00.001	0:00:00.0	3	0	9
QPC1	1C01	01JUN2013	BATCH/TSO	IMIG002G	0:00:00.001	0:00:00.0	3	0	9
QPC1	1C01	01JUN2013	BATCH/TSO	IMIG003G	0:00:00.001	0:00:00.0	3	0	9
QPC1	1C01	01JUN2013	BATCH/TSO	IMIJ002J	0:00:00.001	0:00:00.0	3	0	9
QPC1	1C01	01JUN2013	BATCH/TSO	IMIL001L	0:00:00.001	0:00:00.0	3	0	9

Examples - HTML

SAS Proc Report – freeze headers, highlight exception cells etc.

Examples – Creating spreadsheet from HTML:

- Select All/Copy/Paste to Empty Spread
- Gives you a nice formatted spreadsheet – need to be careful of any subtotal lines however
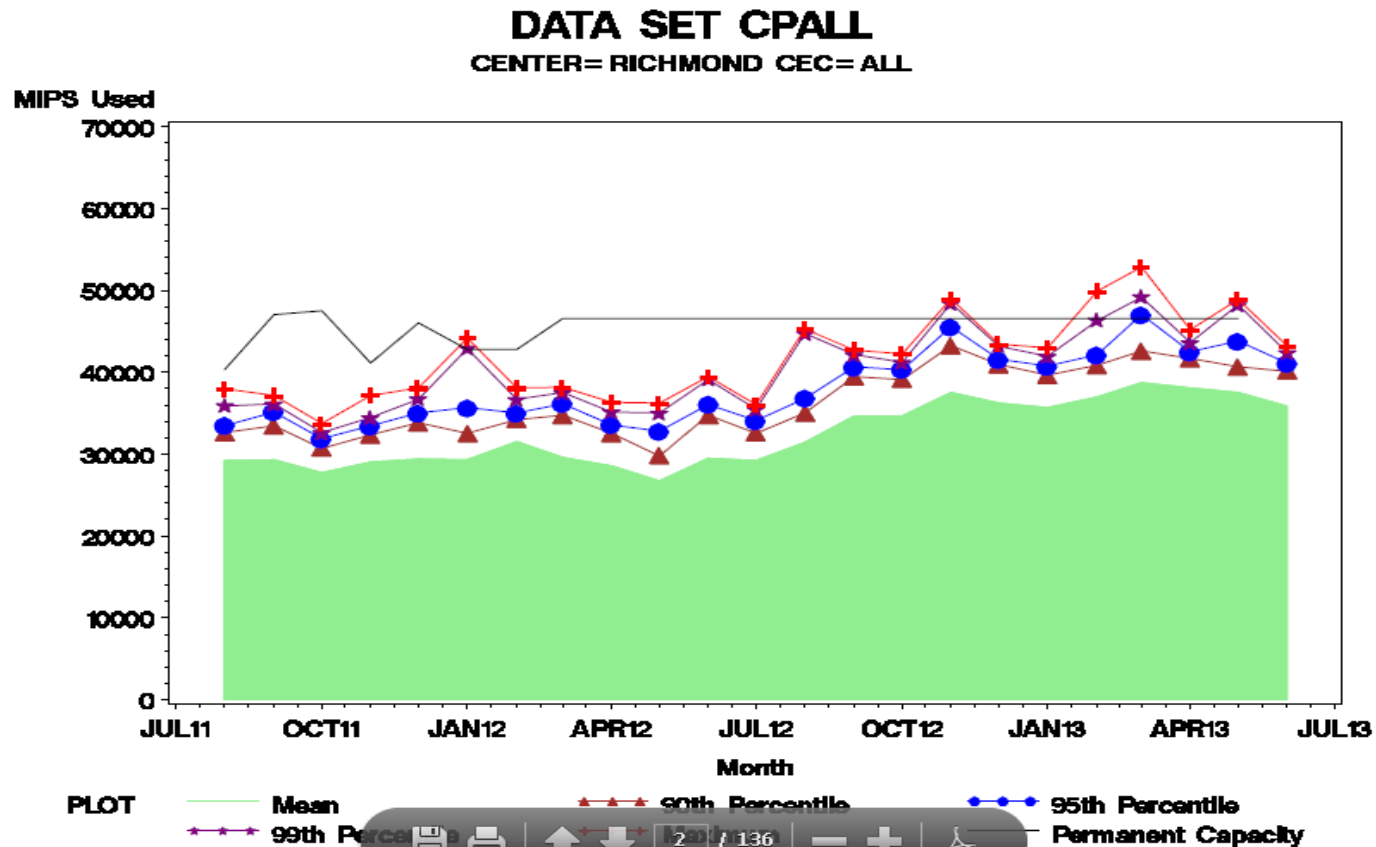
Examples – Creating PDF/RTF formats

- SAS ODS PDF (Adobe Acrobat)
- SAS ODS RTF (Microsoft Word)
- Once again, available with Base SAS

Examples – SAS ODS PDF

- Creates flat file – all one document
- Better for printing etc. than HTML

Examples – SAS ODS tagsets.excelxp

- Text based Excel files
- SAS ODS tagsets.excelxp
- Create z/OS excel file – multiple tabs, summaries etc.
- Gets around some formatting issues when that can be found when copying/pasting from HTML
- Once again, available with Base SAS

Examples – SAS ODS tagsets.excelxp

- Batch job sends out automated email from z/os system:

NEW MAINFRAME CONFIGURATION REPORT AVAILABLE.

PCPW@varchvp02vipa-1s07.bankofamerica.com on behalf of CAPACITY.REPORTING@BANKOFAMERICA.COM

Sent: Wed 6/26/2013 7:42 AM
To: 9.02.02M3P041310

Job CPWDHAR1 has created new daily configuration reports

Please see the following URL for recent changes:

"HTTP://PROD1S05.BANKOFAMERICA.COM//MVSDS/'CPWP.UPGRADES.DAILY.REPORTS.HTML(LINKS)'"

The following URL for a new configuration report:

"HTTP://PROD1S05.BANKOFAMERICA.COM//MVSDS/'CPWP.CONFIG.REPORTS.HTML(LINKS)'"

The following URL for a new CEC configuration XML file:

"HTTP://PROD1S05.BANKOFAMERICA.COM//MVSDS/'CPWP.CONFIG.XML(CEC)'"

The following URL for a new SYSID configuration XML file:

"HTTP://PROD1S05.BANKOFAMERICA.COM//MVSDS/'CPWP.CONFIG.XML(SYSID)'"

THANK YOU,
CAPACITY DATA MANAGEMENT AND ANALYTICS

IMPORTANT: THIS IS AN AUTOMATED MESSAGE, DO NOT REPLY TO THIS EMAIL
            PLEASE SEND RESPONSES TO PATRICIA WINGFIELD
            MAIL TO PAT.WINGFIELD@BANKOFAMERICA.COM

Examples – SAS ODS tagsets.excelxp – to make XML into spread:
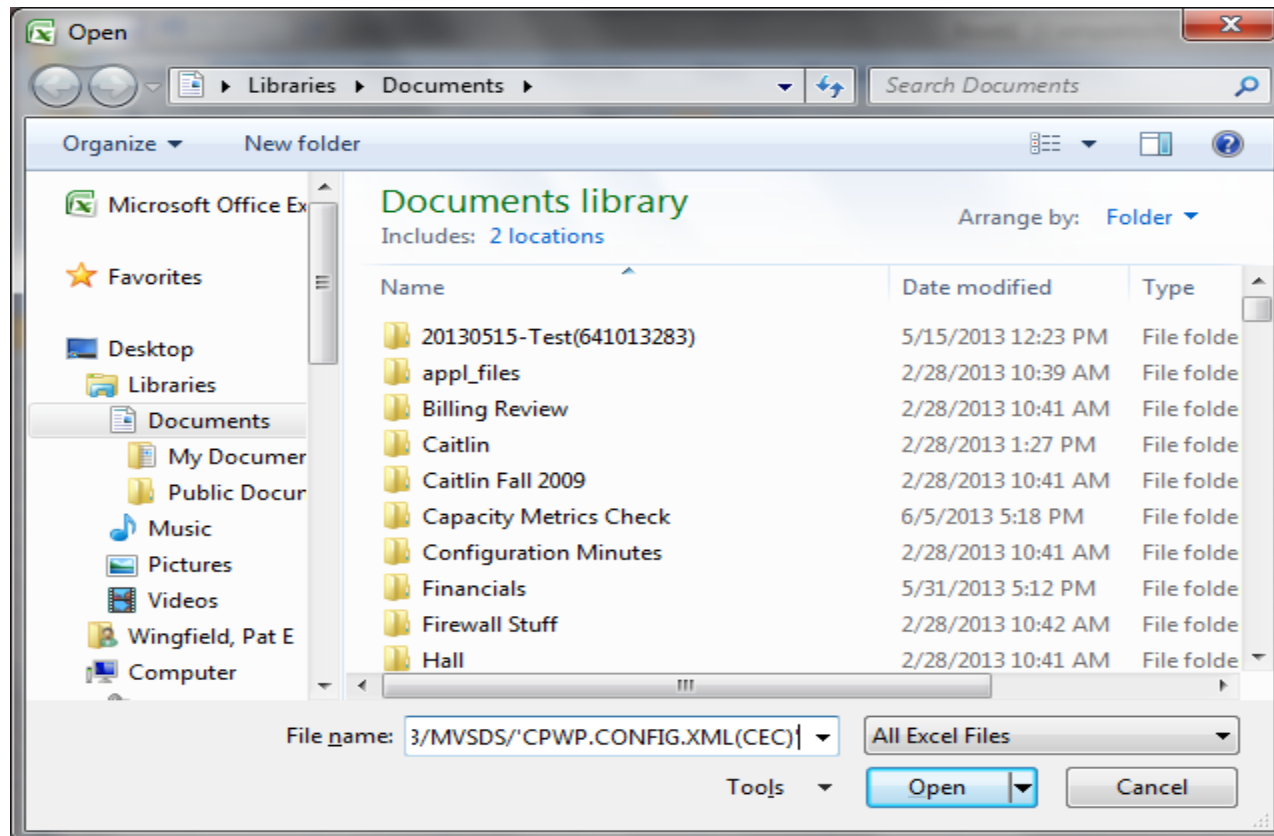
- Click on XML link:

Examples – SAS ODS tagsets.excelxp – to make XML into spread:

Method 1:
- Open an empty spread – click file/open
- Copy and paste the entire desired '.XML' link below into the 'File Name' box and click on 'Open'.
- You may be prompted for your id/password and after a few seconds, the spreadsheet will be populated.

Examples – SAS ODS tagsets.excelxp – to make XML into spread:

Spreadsheet opens;
- titles centered
- separate tabs for each 'by' variable etc.

Method 2:
- Click on link
- XML text data set displayed (as in previous slide)
- Save as '.XML' file in desired location
- When click on saved file, opens as a spreadsheet.

Examples – Graphical Reports

- Both static and dynamic graphs available If have SAS licensed on mainframe,
- Or can use Windows etc. based product and upload to mainframe
- If fortunate enough to have SAS/Graph on mainframe, can easily do automated extensive graphical reporting
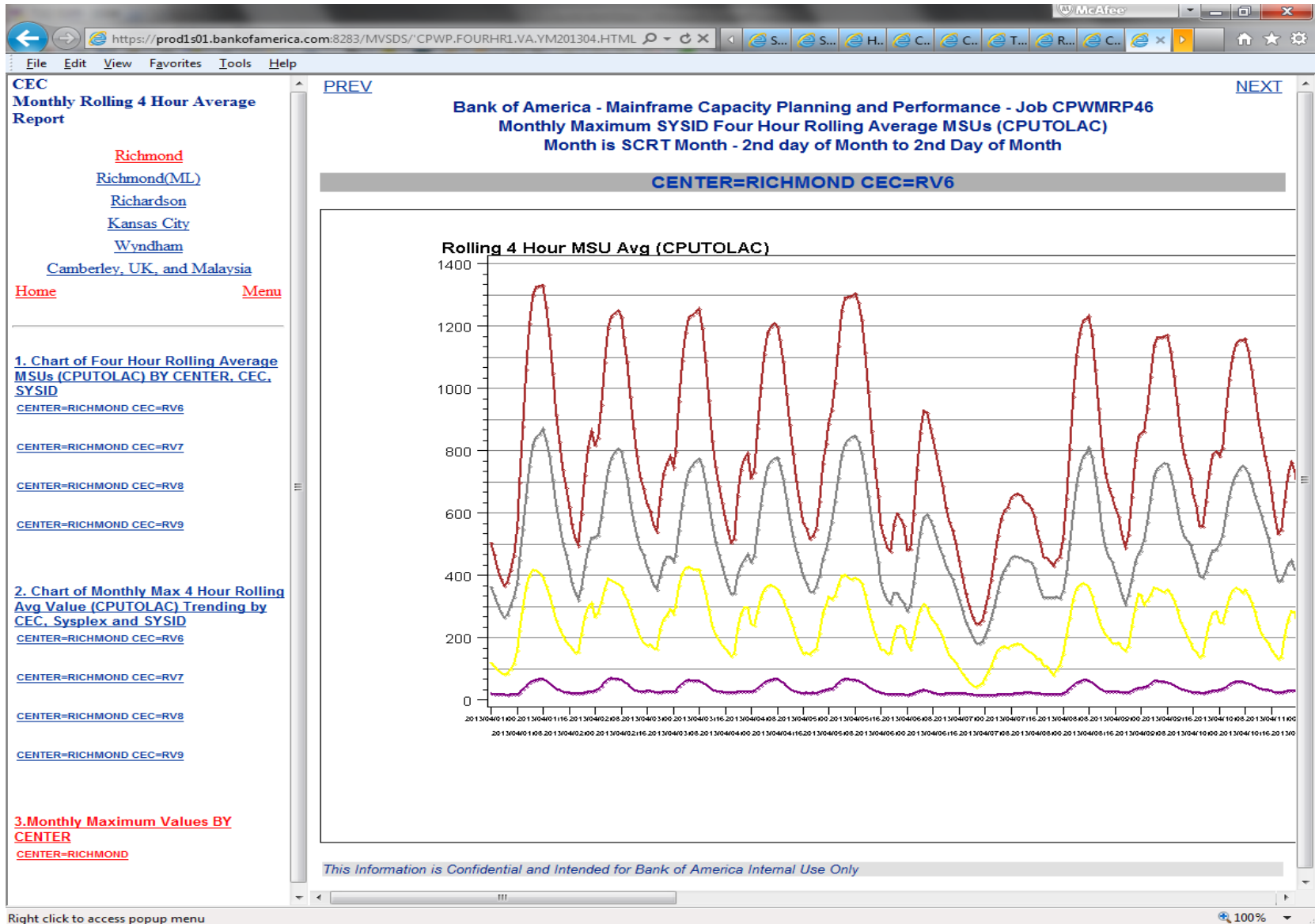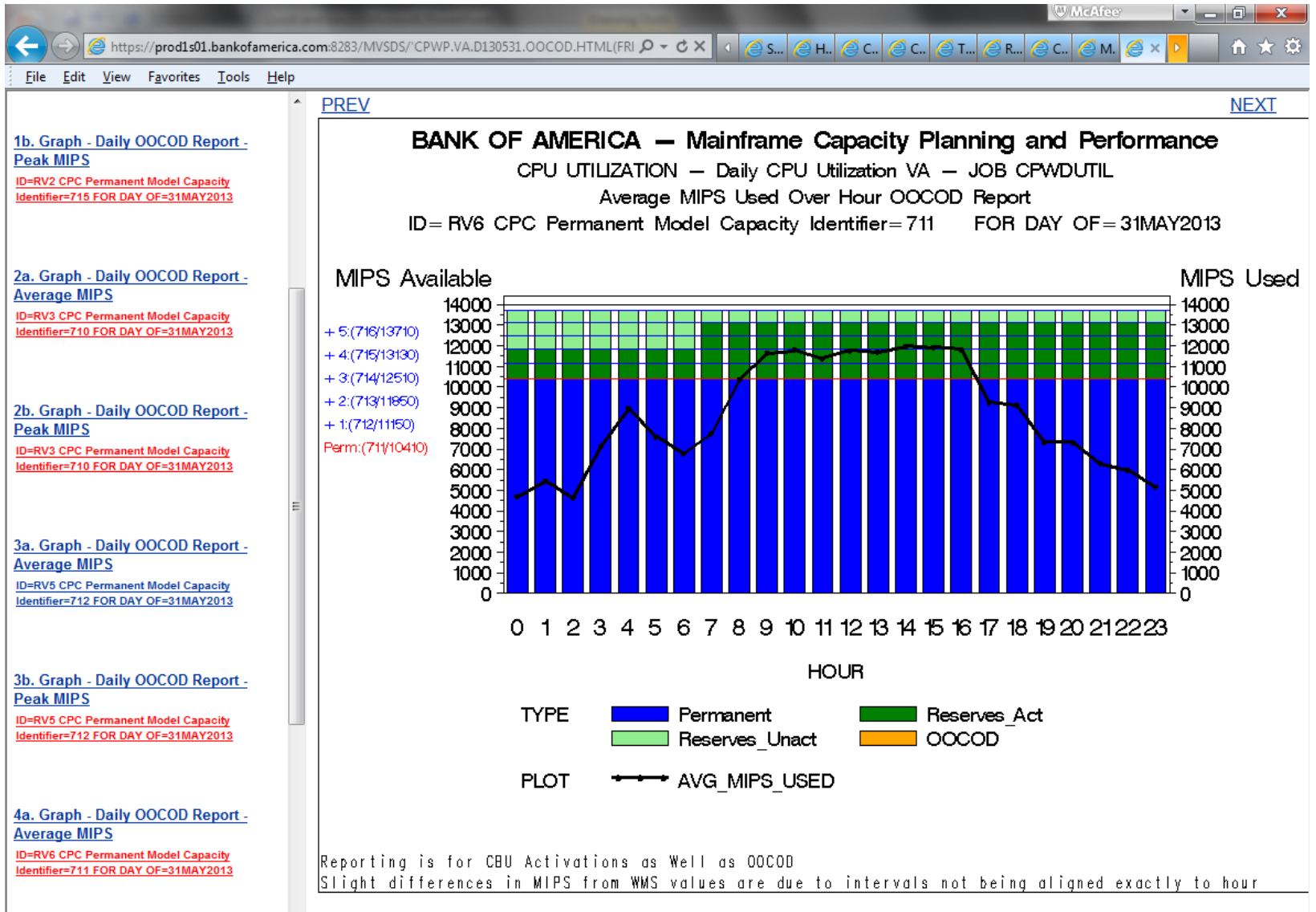
Examples – Graphical Reports – SAS java graph
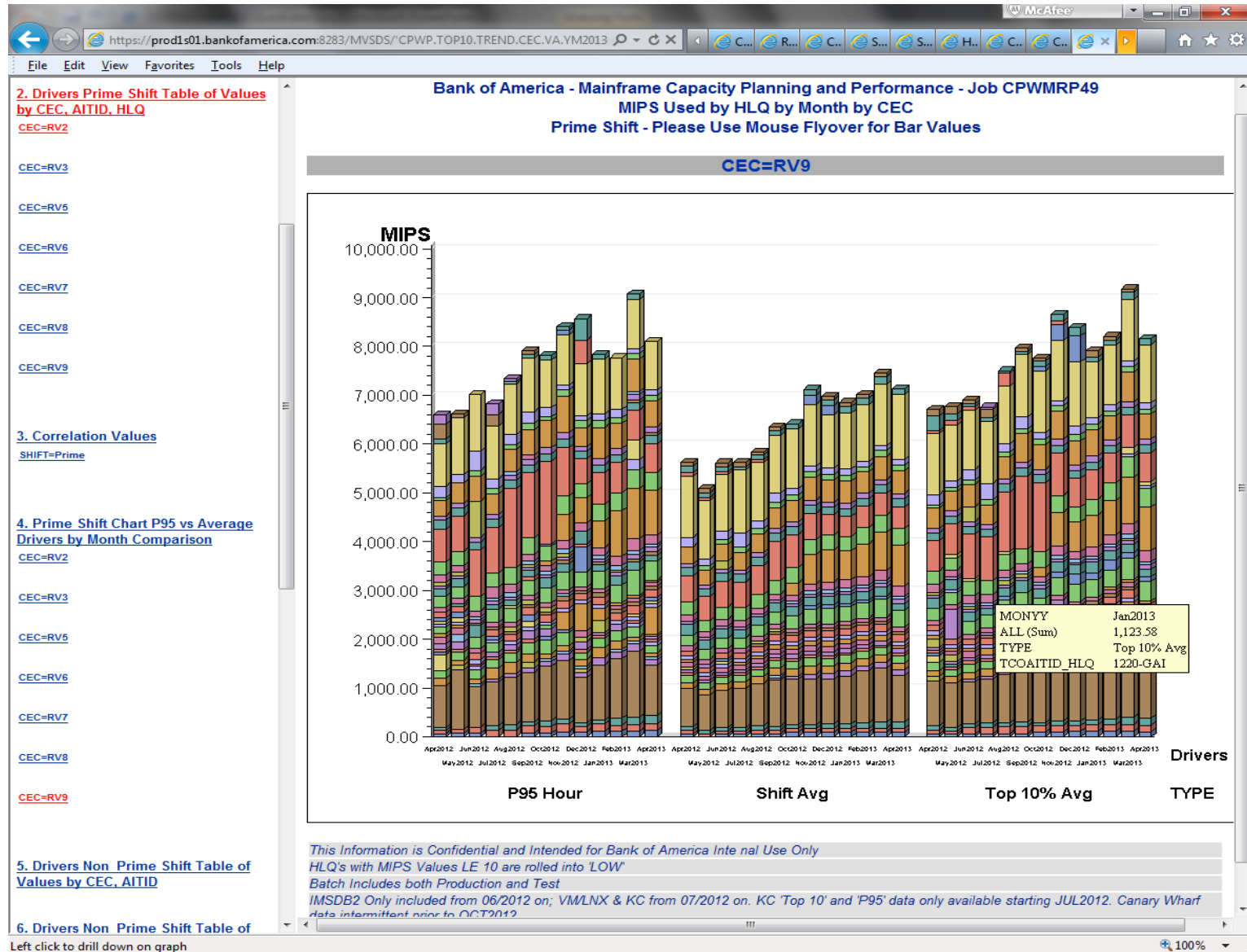
Examples – Graphical Reports – SAS PROC REG Relative Nest Intensity vs CPI analysis graph
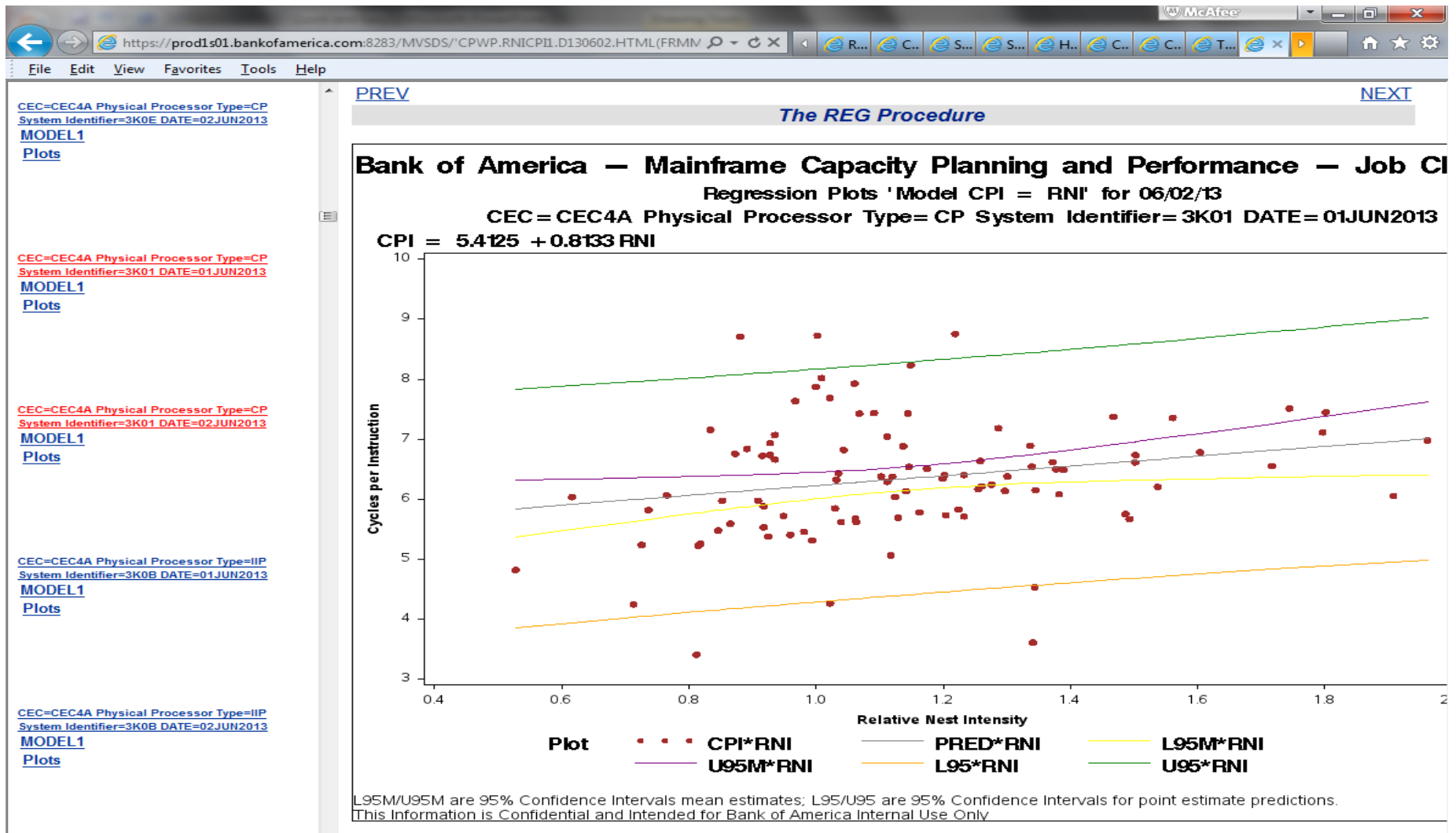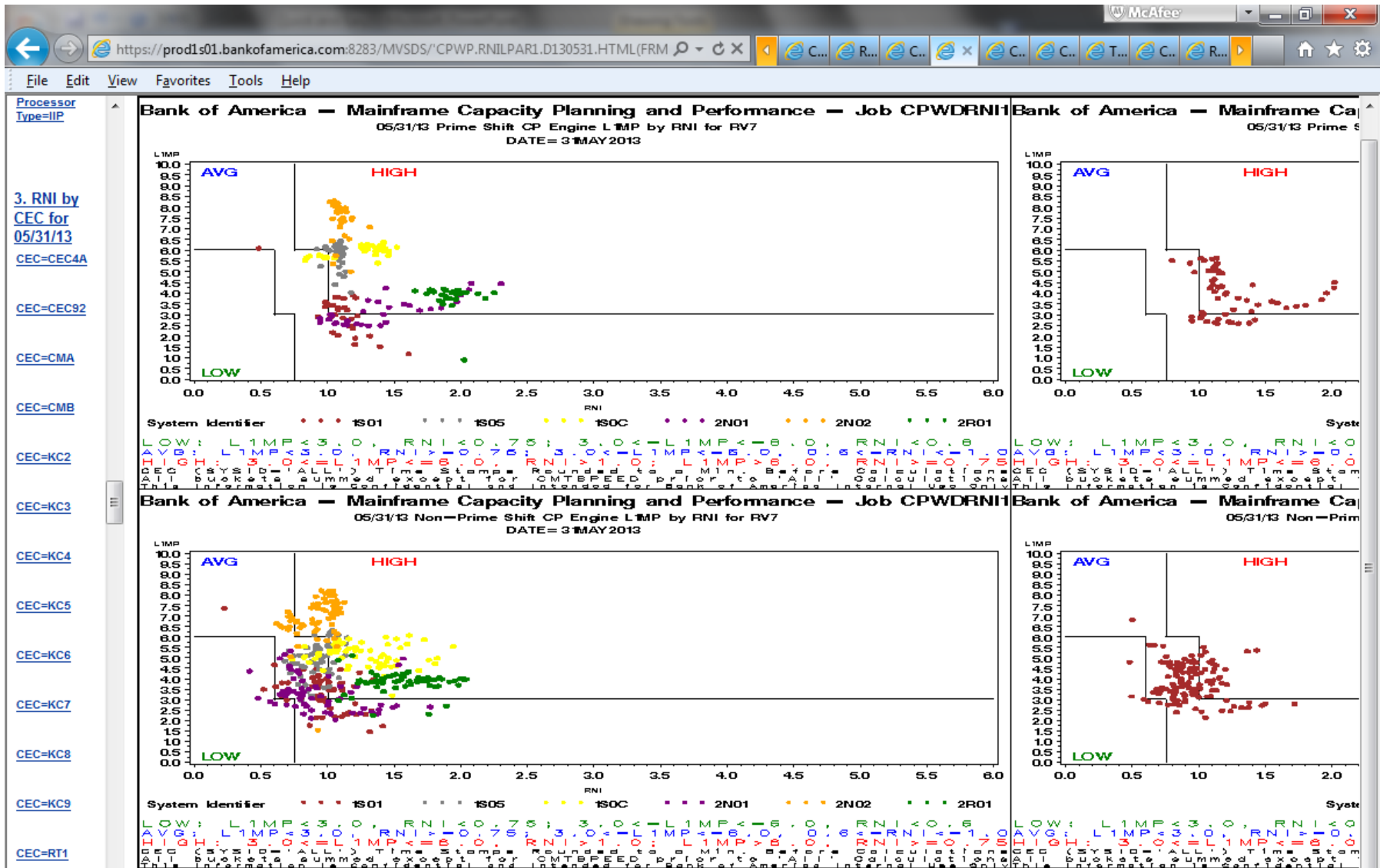
Examples – Graphical Reports – SAS Gplot Rolling Four Hour Average

Examples – Graphical Reports – SAS PROC Gchart CEC OOCOD Usage

Examples – Graphical Reports – SAS PROC Gchart Greplay tiled RNI/L1MP Reports

Apache Web Server

- z/OS Web Server changing to 'Apache' web server
- 'MVSDS' still supplied
- I have not been able to test, as we don't have 'Apache'

References

- Vincent DelGobbo and Cynthia L. Zender from SAS Institute have done very helpful papers on SAS tagsets.excelxp
- Also from SAS: http://support.sas.com/rnd/base/ods/templateFAQ/MVSODS3.pdf
- Also on www.MXG.com under 'Downloads' section 'No More Downloading' paper by Patricia.

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Questions?