IBM Software Group

Selected Excerpts from the 2009 AOTC Session A02: Recently Delivered AO-OG Capabilities

e business on demand.

UA42881: AF TEP SPE

- The TEP enablement SPE includes features that enable a user to build a resource status application and display the results on the Tivoli Enterprise Portal (TEP) Desktop
  - An in-depth look at the features and usage of the SPE is scheduled later in this conference
- Highlights of the SPE include
  - Updates to AFSHOW function
  - New function COMUASDR
  - New functions KOGTEP01 and KOGTEP02
  - Updates to OmegaView ST functions
- A link to the PTF and User's Guide documentation is included at the end of this presentation

UA42881: AF TEP SPE - AFSHOW function enhancement

- SHOW command output put directly into REXX variables
- The LINK DISPLAY command added for AFSHOW
  - Any LINK DISPLAY command is allowed
- Example

```
Rc = AFSHOW('LINK DISPLAY TYPE(TCPIP) DETAIL(BRIEF)')

Do i = 1 to afshow.0
    parse var afshow.i '!AOP3776 ' . ' SESSION ' LINKID STATUS
    say 'TCP/IP link' LINKID 'is' STATUS
end
```

UA42881: AF TEP SPE: New COMUASDR function

- Sends data to the IBM Tivoli Universal Adapter (UA)
- Optionally, receives a response from the UA
- A TCP/IP link is required between the host system and the UA
- Call structure

```
Rc = COMUASDR('linkid','metafile','delimiter','ack_value',
              'attrib1', . . . ,'attrib16')
```

- Example

```
Rc = COMUASDR('SP23UALK','AFOPER','DD','Ok','Test','40')
```

UA42881: AF TEP SPE: New KOGTEP functions

- KOGTEP02
  - Starts or stops TCP/IP links from a host AF to a UA
  - Manages the pool of links between AF and UA
- KOGTEP01
  - Sends all items in the AF STATUSITEMS database to the UA
  - Can be used to re-populate the UA as a result of a loss of the UA connection or a recycle of the UA
- Call structure

```
Rc = KOGTEP01('RESYNC',linkid)

Rc = KOGTEP02('STARTL',linkid,parm1,parm2)

Rc = KOGTEP02('STOPL',linkid,options)
```

UA42881: AF TEP SPE: Updates to ST functions

- OmegaView ST functions
  - Functions STCLOSE, STCREATE, STDSTRY, STGET, STOPEN, STSIGNAL and STUPDATE updated
  - Dual communication
    - Communication with OmegaView via SDM bridge remains intact
    - Communication with UA added
  - Communication methodology is automatically detected

UA44313: MAXMAT condition

- A new WTO for an out of matches condition
  - Currently
    - When MAXMAT is exhausted, !AOP2001 is issued as a WTL
    - !AOP2001 is deliberately not a WTO to avoid adding further stress to the system
    - Being a WTL, !AOP2001 is not trappable
  - New
    - Message !AOP2000 has been added and is a WTO
    - It is issued with !AOP2001 but only for the first instance
    - It should be trapped by another AF task as it's highly likely it cannot be trapped by the system issuing it…. since It's out of matches
- New WTO message text

```
!AOP2000 NO FREE MATCHES AVAILABLE - SUBSYS(ssss),JOB(jjjjjjjj)
```

UA33959: Binding a local PORT for a TCP/IP LINK

- Some firewalls use the local port number of an outbound TCP/IP link
- During a LINK START, a port number is assigned to the local socket
- Issuing a D TCPIP command will show the locally assigned port

```
LINK DEFINE LINK(EX1) HOST(192.168.1.2) PORT(1040)
LINK START(EX1)
```

```
D TCPIP ,,NETSTAT,ALLCON,CLIENT=AFTASKNM

EZD0101I NETSTAT CS V1R9 TCPIP 877
USER ID  CONN     STATE
AFTASKNM 000143E2 ESTBLSH
LOCAL SOCKET:   192.168.1.1..1160  ←port number assigned by TCP/IP
FOREIGN SOCKET: 192.168.1.2..1040
```

UA33959 (cont)

- A new BIND(PORT(nnnnn)) keyword has been added to LINK DEFINE
- The remote system is listening on port 1040
- The local client is using 12345
- D TCPIP confirms the port numbers
- A new error condition is created when the specified local port is not available

```
LINK DEFINE LINK(EX2) HOST(192.168.1.2) PORT(1040) BIND(PORT(12345))
LINK START(EX2)
```

```
D TCPIP ,,NETSTAT,ALLCON,CLIENT=AFTASKNM
EZD0101I NETSTAT CS V1R9 TCPIP 877
USER ID  CONN     STATE
AFTASKNM 000143E2 ESTBLSH
LOCAL SOCKET:   192.168.1.1..12345 ← port we assigned
FOREIGN SOCKET: 192.168.1.2..1040
```

UA33307: WTO trapping based on MPF state

- A WTO can now be trapped based upon whether or not it's been suppressed by MPF
- New options added to TRAP ADD and TRAP CHANGE commands
  - WTO traps only
  - Options
    - MPF
      - Default
      - Matches regardless of the MPF suppression state of a WTO
    - MPF(ONLY)
      - Matches an MPF suppressed WTO only
    - NOMPF
      - Do not match an MPF suppressed WTO

UA31940: Enhanced Simulated Event Trapping

- Trap CMD or WTO events based on if they came from AOSIM
- New options added to TRAP ADD & TRAP CHANGE commands
  - SIM
    - Default; match real and SIM events
  - SIM(ONLY)
    - Match SIM events only
  - NOSIM
    - Do not match SIM events, trap only real events
- Useful when a new source of AOSIM events is enabled
  - AOSIM overrides can create some confusion as to the value of filters used on a trap
  - Using **TRAP ADD(SIM1) WTO(*)** with the **SIM(ONLY)** keyword means JOBNAME and SYSID etc. can be checked without matching large numbers of unnecessary unrelated events

UA35127: Simulated event ABENDLIM

- Pre-PTF
  - Repeated SSI abends while handling WTO or CMD events triggers ABENDLIM & disables the associated event type
  - AOSIM events are not included in this process
- Post-PTF: New SIM(nn) option added to ABENDLIM startup parameter
  - ABENDLIM(WTO(nn),CMD(nn),SIM(nn),WARN)
    - Where nn can be a value from 1 to 99
    - Setting SIM(5)will cause trapping of SIM events to be disabled if 5 abends occur on the SSI while processing them
- Two new system variables
  - AOABLSIM – Limit
  - AOABCSIM – Counter
- Two new commands
  - AF SIM – Enable SIM processing
  - AF NOSIM – Disable SIM processing

UA35127 (Cont)

- New message if SIM ABENDLIM is reached
  - `!AOP0987 ssss SIM EVENT PROCESSING SUSPENDED. ABEND LIMIT EXCEEDED`
- New message for warn mode when 50% of the limit is reached
  - `!AOP0988 ssss SIM EVENT ABEND THRESHOLD WARNING`
- ABENDLIM current count and limit displayed with AF command

```
AF
!AOP0151 OPTIONS IN EFFECT: HOSTNAME(HOSTNAME) LINKDEFS(LINKS,TIMEOUT(20))
!AOP0151 OPTIONS IN EFFECT: AOVTPOOL(AOVTPOOL) AOVTPLU0(AOVTPLU0)
!AOP0715 SSI ABEND LIMITS : WTO(3) CMD(3) SIM(5) WARNING
!AOP0716 SSI ABEND COUNTS : WTO(0) CMD(0) SIM(0)
```

UA34980: Update REXX CONSOLE function

- z/OS 1.8 removed the master console
- With that, the REXX CONSOLE and CFILE $CONSOLE functions returned a null value
- Leading to, new NONULLCONSOLE startup parameter
- With the parameter included in the RKANPAR startup member
  - Functions return a 0 instead of a null value
  - Eliminates need to change execs that depend on a numerical value being returned from the functions

UA36492: CART keyword for OPER command

- A CART (Command And Response Token) keyword can now be coded on the OPER command
  - This keyword associates a command & response with each other
- The addition of the CART keyword allows another monitoring product to issue a command to AF & retrieve the results
  - “Product Z” issues a command to AF
  - AF issues the command to MVS via OPER
  - A response is produced which contains the value of the CART keyword
  - “Product Z” captures the response based on the CART keyword
- How it works
  - AF issues an OPER command with the CART keyword
  - Command output contains the CART value allowing another product to retrieve the response by matching the CART value
  - New global variable AOCART contains the keyword value
- The CART keyword is not permitted on OPER RESP commands

UA38863: Update OPER RESP with SYSID

- Pre-PTF
  - Over PEERLINK, OPER RESP commands are performed in parallel
  - Over COMM links (APPC, TCP/IP or XCF), OPER RESP commands are performed serially
    - This can create performance issues with response collection and processing of the next command
      - Response collection requires several seconds
      - Large numbers of commands could create backlogs in response collection & delays in processing subsequent commands
      - Most noticeable, are responses without end markers (see D T)
        - Matches wait the full timeout interval before completing causing longer delays in processing subsequent commands
- New startup parameter COMMS introduced by the PTF
  - COMMS(CMDRSP(PARALLEL)
    - OPER RESP commands processed in parallel for COMM links
  - Non-inclusion of the startup parameter indicates OPER RESP commands will continue to be serially processed for COMM links

UA40650: SMF STATS collection enhancement

- Pre-PTF: COLLECT(EXEC) parameter
  - SMF stats recorded when an exec started and stopped as the result of an EXEC command
    - As the ACTION in a TRAP command
    - As imbedded EXEC commands within another exec
- Post-PTF: COLLECT(NOW) parameter
  - Records SMF stats for execs started via CALL, function call and EXEC commands

```
/* Rexx */
"EXEC TESTEX1"
```

Pre-PTF

```
/* Rexx */
"EXEC TESTEX1"
Call TESTEX2
Rc = TESTEX3()
```

Post-PTF

UA41982: Altering MSCOPE of AF EMCS Consoles

- Pre-PTF
  - MSCOPE of EMCS consoles is *ALL
  - Thought to be contributing to high CPU use in the CONSOLE address space due to allowing messages from other LPARs in a Sysplex to be received by the EMCS consoles
- Post-PTF: Allow EMCS consoles to be allocated with MSCOPE=*
  - Consoles receive messages only from the local LPAR
  - Improves OPER RESP processing
  - Coded in RKANPAR as
    - CONSOLE(TYPE(EMCS),MSCOPE(*))

AF TEP SPE

- PTF
  - IBM - OA26094: TEP ENABLEMENT SPE FOR AF/OPERATOR.
- User's Guide Documentation
  - IBM - UA42881 - TEP Enablement SPE Documentation