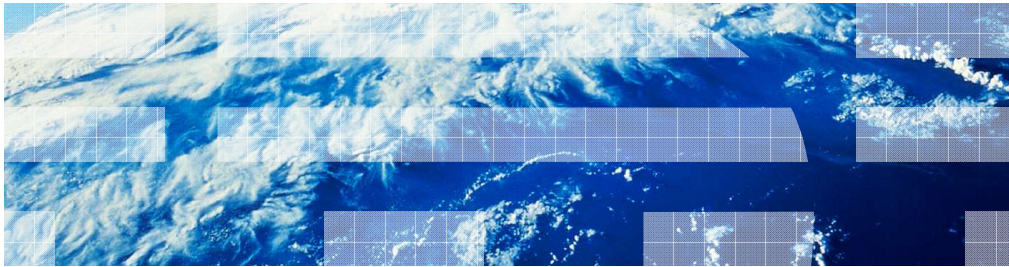


# z/OS Communications Server

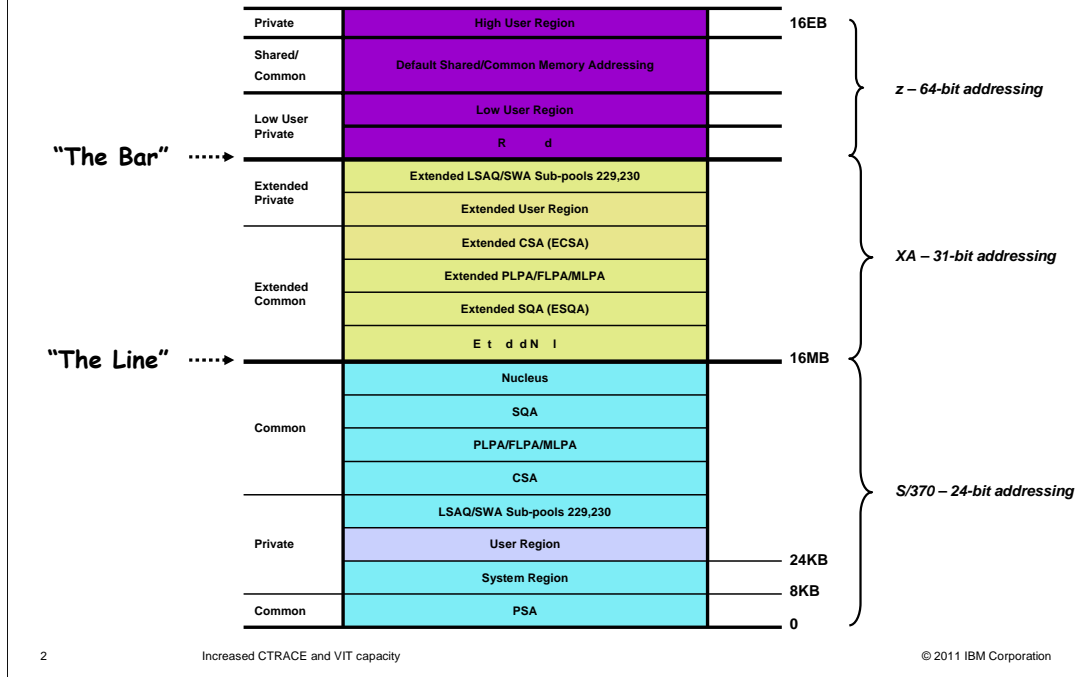
## Increased CTRACE and VIT capacity



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This presentation describes the changes in z/OS® V1R13 Communications Server to increase trace capacity for both TCP/IP and VTAM®.

## Increased CTRACE and VIT capacity: Background



This shows a layout of z/OS virtual storage including 64 bit storage.

64-bit common storage is placed between the 1TB-2TB location.

Storage above the bar is managed by way of the IARV64 system macro.

16 exabytes ( $2^{64}$ ) is the maximum virtual storage address in z architecture.

A 31-bit XA address space is 128 times larger than a 24-bit S/370 address space.

A 64-bit z/Architecture® address space is eight billion times larger than a 31-bit XA address space and 1024 billion times larger than a S/370 address space.

## CTRACE

- TCP/IP CTRACE moves from TCPIPDS1 to HVCOMMON
- TN3270 CTRACE moves from 31-bit private to 64-bit private
- SYSTCPIP maximum size raised to 1GB



In V1R13, TCP/IP CTRACE components are moved from the TCPIPDS1 data space to 64-bit common storage (HVCOMMON). These components are SYSTCPIP, SYSTCPDA, SYSTCPOT, SYSTCPIS, and the real-time trace data for SYSTCPCN and SYSTCPSM.

The TN3270E server CTRACE is also moved from 31-bit private storage to 64-bit private storage.

At the same time, the maximum size allowed for CTRACE component SYSTCPIP is increased from 256MB to one gigabyte (1GB). This applies to both TCP/IP and the TN3270E server.

## CTRACE externals

```

16.21.57 D TCPIP,,STOR
16.21.57 EZZ8453I TCPIP STORAGE
EZZ8454I TCPCS1 STORAGE CURRENT MAXIMUM LIMIT
EZD2018I 31-BIT
EZZ8455I ECSA 2696K 2823K NOLIMIT
EZZ8455I PRIVATE 8851K 8857K NOLIMIT
EZZ8455I ECSA MODULES 8411K 8411K NOLIMIT
EZD2018I 64-BIT
EZZ8455I HVCOMMON 1M 1M NOLIMIT
EZZ8455I HVPRIVATE 0M 0M NOLIMIT
EZZ8455I TRACE HVCOMMON 2578M 2578M 2578M
EZZ8459I DISPLAY TCPIP STOR COMPLETED SUCCESSFULLY

```

```

16.21.57 D TCPIP,tn3270,STOR
16.21.57 EZZ8453I TELNET STORAGE
EZZ8454I TN3270 STORAGE CURRENT MAXIMUM LIMIT
EZD2018I 31-BIT
EZZ8455I ECSA 522K 522K NOLIMIT
EZZ8455I PRIVATE 8851K 8857K NOLIMIT
EZD2018I 64-BIT
EZZ8455I TRACE HVPRIVATE 1025M 1025M 1025M
EZZ8459I DISPLAY TELNET STOR COMPLETED SUCCESSFULLY

```

The D TCPIP,STOR command output has been enhanced for both TCP/IP and TN3270.

Sections are added to clearly delineate 31-bit and 64-bit storage.

POOL storage is renamed to PRIVATE.

64-bit common is renamed HVCOMMON.

CTRACE storage is displayed separately as either TRACE HVCOMMON or TRACE HVPRIVATE.

## VTAM internal trace (VIT)

- VIT moves from ECSA and data space to HVCOMMON
- VIT maximum size raised to 2GB



In V1R13, the VTAM internal trace (VIT) is moved from ECSA and an optional data space is moved to 64-bit common storage (HVCOMMON). This reduces the usage of ECSA storage by up to 4MB.

At the same time, the maximum size allowed for the VIT is increased from 50MB to 2GB. While the VIT can now be very large, only 4MB is fixed at any point in time.

## VIT start options

- SIZE operand now specified in megabytes
- DSPSIZE operand no longer supported

```
SSCPID=01,           Host ID
SSCPNAME=SSCP1A,    Host name
CONFIG=1A,           Start config
TRACE,
  TYPE=VTAM,SIZE=16M,OPT=(HPR),
NETID=NETA,          In NETA
NODETYPE=NN          ICN node
```

```
s vtamcs.net,,,(list=1a)
$HASP100 VTAMCS  ON STCINRDR
$HASP373 VTAMCS  STARTED
IEF403I VTAMCS - STARTED - TIME=13.42.33
.
.
.
IST315I VTAM INTERNAL TRACE ACTIVE - MODE = INT, SIZE = 0016 MB
IST199I OPTIONS = HPR PSS SMS
IST314I END
```

You need to convert your VTAM start options as follows:

The SIZE operand for the VTAM internal trace table was formerly specified in pages. It is now specified in megabytes. Values from 4M to 2048M are allowed and all other values are rejected. A default value of 4M is used when not specified or if an non-valid value is specified.

The DSPSIZE operand is no longer supported and is ignored.

The examples on this slide show the specification of a 16MB VIT table and how this is reflected at VTAM initialization. Note that the size of the VIT table is now displayed in megabytes.

## VIT MODIFY TRACE command

- SIZE operand now specified in megabytes
- DSPSIZE operand no longer supported

```
f net,trace,type=vtam,mode=int,size=200M
IST097I MODIFY ACCEPTED
IST315I VTAM INTERNAL TRACE ACTIVE - MODE = INT, SIZE = 0200 MB
IST199I OPTIONS = PSS SMS
IST314I END
```

As with VTAM start options, the MODIFY TRACE command changes as follows:

The size operand was formerly specified in pages. It is now specified in megabytes. Values from 4M to 2048M are allowed and all other values will cause the command operation to fail.

The DSPSIZE operand is no longer supported. If specified then the command operation will fail.

The example on this slide shows the specification of a 200MB VIT table and the result. Note that the size of the VIT table is now displayed in megabytes.

## Increased CTRACE and VIT capacity: Considerations

- IPCS formatting of the CTRACE and VIT remains unchanged
- TCPIPDS1 and ISTITDS1 data spaces no longer used
- Reserve sufficient storage in HVCOMMON



There isn't much different with the CTRACE and VIT buffers moving to 64-bit common storage.

IPCS formatting of the CTRACE and VIT is unaffected by this change.

You no longer need to dump the TCPIPDS1 and ISTITDS1 data spaces to include CTRACE or VIT in your dumps. The 64-bit common buffers are included in TCP/IP or VTAM dumps.

Since the TCP/IP CTRACE and the VTAM VIT are now located in HVCOMMON, you should ensure you have sufficient storage reserved for HVCOMMON to accommodate them. This is configured in the IEASYSxx PARMLIB member. A range of 2GB to 1TB is allowed for HVCOMMON, with a default size of 64GB.





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