

z/VSE VTAM 31bit I/O Buffer Support

Background

VTAM manages VSE system storage for I/O operations. This storage area is referred to as the VTAM IO buffers (or IOBUF pool). Buffers from this storage area are directly used to perform I/O operations. The current support in VSE/VTAM requires the IO buffers remain below the 24 bit line (16 Meg). In some workloads this restriction can create storage constraints.

VSE/VTAM 31bit IO Buffer Support

VSE/VTAM is providing new 31 bit IO buffer support via a new function PTF applicable to z/VSE 3.1+PTFs. This new VTAM function will now support 31 bit IO buffers, thereby removing the 24 bit IO buffer restriction. With this enhancement, VTAM will now move the IO buffer pool and all IO CTC packing buffers above the 24 bit line. VTAM will now support IO operations in 31 bit mode (using format 1 CCWs). This enhancement will allow z/VSE customers to grow their communications workloads associated with their business critical applications.

31Bit Support Details

Software Requirements

The new 31 bit IO buffer support is provided by both VTAM and VSE PTFs. The support is applicable to z/VSE 3.1+PTFs and above only. The PTFs are:

1. VTAM support - APAR DY46471 PTF UD52964 and UD53054
2. z/VSE support - APAR DY46396 PTF UD52873 (AF Base) and if applicable UD52874 (Generation Feature)
3. In addition PTF [UD53035](#) (AF Base) and if applicable [UD53060](#) (Generation Feature) must be applied.

Migration and Compatibility

The VTAM support (PTF) requires the VSE support (PTF). However, both the VTAM and VSE PTFs can be installed independently of each other. In order to exploit the new 31 bit function, both the VTAM and the VSE PTFs must be installed. Availability of the VTAM 31 bit support is planned for 4Q 2005 (plans are subject to change).

While the 31 bit IO buffer support will only be enabled on z/VSE 3.1 +PTFs, the VTAM PTF can be applied to a VTAM which runs on earlier releases of VSE that precede z/VSE 3.1 (e.g. VSE/ESA 2.7). When the VTAM PTF is installed on older releases of VSE, the 31 bit function can not be enabled, and there will no impact or effect to existing VTAM functions on those releases. This facilitates maintenance on those systems and may aid in migration to z/VSE 3.1. Refer to the *Operational Notes* section below for additional details.

System Configuration

Once the VSE and VTAM PTFs have both been installed, the new 31 bit function can be enabled. There are no VSE supervisor system configuration changes required. The only configuration change required to enable the support is a new VTAM start option.

A new VTAM start option **IOBUF31** has been provided to control the new support. The default will continue to operate with IO buffers in 24 bit mode. The following text provides an overview of the new start option.

IOBUF31

```
>> | _____ | _____ ><
    | _IOBUF31=NO_ |
    | _____ |
    | _IOBUF31=YES_ |
    | _____ |
    | _NO_ |
```

IOBUF31 is a **VSE** only start option, and requires z/VSE release 3.1+PTFs. or above. This option allows the VSE system administrator to control the VTAM allocation for system storage associated with IO operations. The two primary storage areas that are controlled by the IOBUF31 setting are:

1. VTAM IO buffers (IOBUF pool)
2. VTAM packing buffers (used for CTC based DLCs)

This option allows VTAM to exploit 31 bit storage for IO operations. The default for IOBUF31 is No, meaning the IO buffers will be restricted to 24 bit storage. When Yes is specified, VTAM will use 31 bit storage for the IO buffer pool and packing buffers (related to CTC based devices). This option is only evaluated during VTAM

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initialization, and therefore must be set prior to VTAM startup. If this setting is changed it will not take affect until VTAM is restarted.

IOBUF31 = No

When IOBUF31 defaults to No or is specified as No, VTAM will allocate all IO buffers below the 16 megabyte line (24 bit storage).

IOBUF31 = Yes

When IOBUF31 is specified as Yes, VTAM will allocate all IO buffers (and CTC packing buffers) above the 16 megabyte line (31 bit storage). When Yes is specified VTAM will not support any ICA (Integrated Communications Adapter) attached devices (SDLC, BSC, X.25 and LAN). When Yes is specified, ICA resources can not be activated.

Displaying the IOBUF31 Setting

Once the VTAM PTF has been installed, the new 31 bit start option setting can be displayed.

The following example is provided.

```
d net,vtamopts,opt=iobuf31
AR 0015 1C39I COMMAND PASSED TO ACF/VTAM
F3 0003 IST097I DISPLAY ACCEPTED
F3 0003 IST1188I ACF/VTAM V4R2 STARTED AT 17:11:29 ON 11/11/05
F3 0003 IST1349I COMPONENT ID IS 5686-06501-FE6
F3 0003 IST1348I VTAM STARTED AS INTERCHANGE NODE
F3 0003 IST1497I VTAM FUNCTIONAL SUPPORT LEVEL IS INTERENTERPRISE
F3 0003 IST1189I IOBUF31 = YES
F3 0003 IST314I END
```

Operational Notes

1. If the VTAM PTF has been installed but the system is missing the z/VSE support (your VSE release is less than VSE 3.1 or missing the 3.1 VSE PTFs), then VTAM will not allow the 'Yes' setting for the IOBUF31 start option. During VTAM initialization, if VTAM detects the missing supervisor support and 'Yes' was specified, then the following message will appear:

IST448I IOBUF31 OPTION IGNORED - VSE 31-BIT SUPPORT NOT AVAILABLE

2. When the VSE supervisor support is missing the VTAM IOBUF31 start option setting will display as "not applicable":

F3 0003 IST1189I IOBUF31 = *NA*****

3. When the VSE support is present and IOBUF31 = Yes is configured and an attempt is made to define an ICA major node, the following message will appear:

IST1350I DEFINITION ERROR: ICA DEVICE NOT VALID WITH IOBUF31=YES

4. For local non-SNA terminals, like terminals used under VM, moving I/O buffers in 31-bit storage requires about 4 copy blocks for each terminal. Depending on the number of local non-SNA terminals the default number of copy blocks, which is 1500, might not be sufficient. It can be changed by using the IPL SYS BUFSIZE command.

Before changing to IOBUF31=YES, make sure you have enough copy blocks defined, otherwise VTAM startup might fail. The SIR command shows the actual usage of the copy blocks.