z/VM Service Critical Issues

Operating System Software Red Alerts

APAR VM64862 is in error

Attention: Any customers running Linux on z/VM

APAR VM64862 has been found to be in error. Installing this
APAR may result in ABENDHRM003.   APAR VM64965 has been opened
to correct the problem and will be available by the end of April.

VM64862 HCPHRMDP MAY GET WRONG PTIL LOCK TO INVALIDATE STE

ERROR DESCRIPTION:
Under certain circumstances, HCPHRM obtains the wrong PTIL lock
when attempting to invalidate segment table entries. Various
outcomes are possible, depending on the specific entries
involved.

PROBLEM SUMMARY:
****
* USERS AFFECTED: ALL USERS OF z/VM   *
****
* PROBLEM DESCRIPTION: *
****
* RECOMMENDATION: APPLY PTF   *
****
Virtual storage release processing was incorrectly handling the
Virtual Machine Definition Blocks (VMDBKs) and the Page Table
Invalidation Locks (PTILs) therein. Under certain
circumstances, the code was getting PTIL (VMDPTIL) on one VMDBK
when it needed it on another VMDBK instead. It would then act
on the unserialized virtual machine as though it held the lock,
when in fact it did not. This opened a window for any other
PTIL-holding process to collide on Dynamic Address Translation
(DAT) structures for the guest. A wide variety of symptoms are
possible depending on the function that happened to collide with
release processing. Theoretically these symptoms could include
system abends, guest data loss, or guest data corruption.
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PROBLEM CONCLUSION:
HCPHRM was updated to handle the VMDBKs and PTIL locks
correctly. The logic was changed to correctly distinguish
between the dispatched VMDBK, the owning VMDBK, and the SYSTEM
and/or SYSTEMMP VMDBKs. Logic was added to introduce a loss of
control in the case where PTIL-x was needed and the code was
already running dispatched on the SYSTEM VMDBK, so that a
dispatch switch would not be fruitful. This loss of control
also required code to restart the release process when the
required PTIL-x was finally acquired.

R540   UM33298
R610   UM33299

VM64965 PEVM64862 ABENDHRM003 CORRUPTED PAGE TABLE ENTRY

ERROR DESCRIPTION:
ABENDHRM003 was encountered during RESET processing for a user,

when processing a particular page table entry. The contents
were not valid for the current state of the page.