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| **ORA-00445: Background Process "xxxx" Did Not Start After 120 Seconds (Doc ID 1345364.1)** | [To Bottom](https://support.oracle.com/epmos/faces/DocumentDisplay?_afrLoop=175677244600228&id=1345364.1&_adf.ctrl-state=c5mznriih_384%20\o%20To%20Bottom) |  |





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| **In this Document**   |  |  | | --- | --- | |  | [Symptoms](https://support.oracle.com/epmos/faces/DocumentDisplay?_afrLoop=175677244600228&id=1345364.1&_adf.ctrl-state=c5mznriih_384%20\l%20SYMPTOM) | |  | [Changes](https://support.oracle.com/epmos/faces/DocumentDisplay?_afrLoop=175677244600228&id=1345364.1&_adf.ctrl-state=c5mznriih_384%20\l%20CHANGE) |  |  |  | | --- | --- | |  | [Cause](https://support.oracle.com/epmos/faces/DocumentDisplay?_afrLoop=175677244600228&id=1345364.1&_adf.ctrl-state=c5mznriih_384%20\l%20CAUSE) | |  | [Solution](https://support.oracle.com/epmos/faces/DocumentDisplay?_afrLoop=175677244600228&id=1345364.1&_adf.ctrl-state=c5mznriih_384%20\l%20FIX) |     **APPLIES TO:**  SaaS Operations - Version N/A to N/A  Oracle Database - Enterprise Edition - Version 11.2.0.1 to 12.1.0.2 [Release 11.2 to 12.1]  Oracle Database - Standard Edition - Version 11.2.0.4 to 11.2.0.4 [Release 11.2]  IBM: Linux on System z  Linux x86-64  Linux x86  **SYMPTOMS**  Errors are seen in the alert log relating to spawning of processes such as:  @ Checked for relevance on 17th Jan 2012  ORA-00445: background process "m001" did not start after 120 seconds  Incident details in: /opt/u01/app/oracle/diag/rdbms/incident/incdir\_3721/db1\_mmon\_7417\_i3721.trc  ERROR: Unable to normalize symbol name for the following short stack (at offset 2):  Tue Jun 21 03:03:06 2011  ORA-00445: background process "J003" did not start after 120 seconds  or  Waited for process W002 to initialize for 60 seconds    The system appears to be running very slowly and defunct processes can appear.  **CHANGES**  REDHAT 5 kernel 2.6.18-194.el5 #1 SMP Tue Mar 16  Oracle 11.2.0.2 Single Instance  IBM: Linux on System z  **CAUSE**  Recent linux kernels have a feature called Address Space Layout Randomization (ASLR).  ASLR  is a feature that is activated by default on some of the newer linux distributions.  It is designed to load shared memory objects in random addresses.  In Oracle, multiple processes map a shared memory object at the same address across the processes.  With ASLR turned on Oracle cannot guarantee the availability of this shared memory address.  This conflict in the address space means that a process trying to attach a shared memory object to a specific address may not be able to do so, resulting in a failure in shmat subroutine.  However, on subsequent retry (using a new process) the shared memory attachment may work.  The result is a "random" set of failures in the alert log.    **SOLUTION**  It should be noted that this problem has only been positively diagnosed in Redhat 5 and Oracle 11.2.0.2.  It is also likely, as per unpublished BUG:8527473,  that this issue will reproduce running on Generic Linux platforms running  any Oracle 11.2.0.x. or 12.1.0.x  on Redhat/OEL kernels which have ASLR.  This issue has been seen in both Single Instance and RAC environments.  ASLR also exists in SLES10 and SLES 11 kernels and by default ASLR is turned on.  To date no problem has been seen on SuSE servers running Oracle  but Novell confirm ASLR may cause problems.  Please refer to  <http://www.novell.com/support/kb/doc.php?id=7004855> mmap occasionally infringes on stack  You can verify whether ASLR is being used as follows:   # /sbin/sysctl -a | grep randomize  kernel.randomize\_va\_space = 1  If the parameter is set to any value other than 0 then ASLR is in use.  On Redhat 5 to permanently disable ASLR.  add/modify this parameter in /etc/sysctl.conf  kernel.randomize\_va\_space=0  kernel.exec-shield=0  You need to reboot for kernel.exec-shield parameter to take effect.  Note that both kernel parameters are required for ASLR to be switched off.    There may be other reasons for a process failing to start, however, by switching ASLR off, you can quickly discount ASLR being the problem. More and more issues are being identified when ASLR is in operation.    Note:  "In RHEL/OEL 7 exec-shield is not modifiable anymore, so changing the exec-shield parameter produces an error." |