

How_to_debug_OutOfMemoryError

JVM can crash with OOM Error for multiple reasons.

- Where to check
 - ◆ Check in the application logs for OutOfMemoryError

Exception in thread ?xxx" **java.lang.OutOfMemoryError**: Java heap space

- OutOfMemoryError types
 - ◆ Java heap space
 - ◆ PermGen space
 - ◆ Out of swap space
 - ◆ unable to create new native thread
 - ◆ Requested array size exceeds VM limit
 - ◆ GC overhead limit exceeded
- How to debug different OutOfMemory errors
 - ◆ **Java heap space**
 - ◆ **GC overhead limit exceeded**
 - ◇ Happens due to a memory leak.
 - ◇ Heap dumps are automatically generated at 70/80/90/98% thresholds of the heap size.
 - file name looks like heapDump_MIVR_70%Threshold.hprof.
 - ◇ When the application goes OOM, JVM generates a heap dump during the crash.
 - file name looks like java_pid2665.hprof.
 - Due to a bug CSCte90486, this file can be collected only using remote account.
 - ◇ Collect the heap dumps (present in the service log directory. i.e. MIVR directory for engine heap dumps).
 - ◇ Collect the thread dump present in JVM.log file.
 - ◇ Refer [How to analyze heap dumps](#) for the procedure to analyze a heap dump.
 - ◆ **PermGen space**
 - ◇ Happens most probably due to ClassLoader leak.
 - ◇ When the application goes OOM, JVM generates a heap dump during the crash.
 - file name looks like java_pid2665.hprof.
 - Due to a bug CSCte90486, this file can be collected only using remote account.
 - ◇ Collect the heap dumps.
 - ◇ Collect the thread dump present in the JVM.log file.
 - ◆ **Out of swap space**
 - ◇ Happens due to a memory leak in the JNI code, or in some native applications.
 - ◇ System is low on memory.
 - ◇ Collect the Perfmon counters of all the services running in the system.
 - ◇ Plot a graph of memory usage and find which process is the culprit.
 - ◆ **unable to create new native thread**
 - ◇ Happens when OS runs out of system resources, or the application has run out of its address space due to excessive threads.
 - ◇ Collect the thread dump present in the JVM.log file.
 - ◇ Debug the perfmon logs to find the faulty application.
 - ◆ **Requested array size exceeds VM limit**

How_to_debug_OutOfMemoryError

- ◇ Happens due to an application bug or a memory leak.
- ◇ Debug application logs and heap dumps if present.