How to manage the Java heap space

The JobScheduler runs a Java Virtual Machine for each task that is executed.

Heap Space usage with Java 1.8

• Java 1.8 changes the memory management in way that the JVM allocates heap space depending on the available physical memory (1/64).
• This results in the fact that JobScheduler tasks are allocated a lot more memory than required. Typically such jobs, e.g. the JITL jobs, can be operated with 32 MB to 64 MB. However, for a server equipped with 64 GB physical memory each task will be allocated 1 GB by default.
• It is therefore recommended to reduce the memory consumption by JobScheduler settings, see chapter Modify heap size settings.

Heap Space usage with Java 1.7 and before

• By default the JVM would use 64 MB virtual memory.
• Adjustments for memory consumption of jobs
  • have to made if jobs require more than 64 MB.
  • can be made if jobs can be operated with 32 MB, e.g. the JITL jobs for SSH connections.

Modify heap space settings

• The minimum memory allocation by Java can be checked with the command:
  java -XX:+PrintFlagsFinal -version
  The output of the command should provide a line that contains the string InitialHeapSize with the minimum heap space setting.

• Java heap space usage can be modified by JobScheduler settings at job level and at a global level:
  • The -Xmxsize parameter sets the maximum Java heap size
  • The -Xmssize parameter sets the initial Java heap size
    • each job can be assigned an attribute to e.g. specify 64 MB memory consumption like this
    </job java_options="-Xmx64m -Xms64m">
    • The file ./config/sos.ini can be used to specify the memory consumption for all jobs like this
    [java]
    options = -Xmx64m -Xms64m

• For more detailed information see How to increase or decrease the Java heap space