

Changing the thread stack size

The thread stack size is a parameter that determines the amount of memory reserved for the call stack associated with each thread. There should be sufficient stack size allocated to permit the application to function accurately and the stack size should not be too large as memory is wasted.

Platforms affected

All

Problem

Altering the thread stack size from 128KB to 256KB for HP Output Server.

Solution

The default thread stack size is 256KB on UNIX and on 32-bit Windows operating systems. This value is appropriate for almost all situations, and provides adequate reserve memory. In HP Output Server the default thread stack size is changed from 128KB to 256KB to meet higher memory requirement for applications running on higher load. Thus the value of the thread stack size for HP Output Server is changed to make it consistent with the operating system.

There is no procedure available to measure and set an exact value for thread stack size for any particular application and it varies for individual applications.

The value of the thread stack size is determined by the factors affecting the thread stack size, which are:

- The amount of memory usage.
- The number of CPUs.
- The number of threads in the pool.
- The load the application is required to handle.

The accurate value of the thread stack size is set based on the above parameters.

Scenarios for changing the value of the thread stack size

The following are a few scenarios when the thread stack size can be modified:

Solution

1. If large number of applications are running on a production server and the load to HP Output Server is low, you can decrease the thread stack size of the HP Output Server from the default value. The memory allocated per-thread stack is modified and the available memory can be used for other process.
2. If the load to HP Output Server is high, the server object may go to an unknown state; you must increase the stack size to meet the memory requirement.

NOTE: If the stack size is set to lower values than the adequate value, this may cause the application to crash, client requests may fail or results in unexpected output due to stack overflow.

Modifying the thread stack size

The thread stack size can be altered to higher or lower value depending on the context using the `server-executable-options` attribute.

For example

To change the thread stack size value for a dsm server, use the command:

```
config_server -u -x"--server-executable-options \"-s 300\\"" dsm
```

To change the thread stack size value for all the dsm servers, use the command:

```
config_server -u -x"--server-executable-options \"-s 300\\"" -t dsm
```

Restart the servers for the modified thread stack size values to take effect.

NOTE: To ensure that the thread stack size is adequate for the components running on the server, run the load tests on a test server.
