



## Objectives

- Upon completion of this module, you should be able to:
  - ▶ Describe the various ulimits that are monitored by IBM Tivoli Directory Server
  - ▶ Set the ulimit values for:
    - AIX®
    - Linux®
    - HPUX
    - Solaris



## Monitored ulimit definitions

- Virtual memory size (memory)
  - ▶ Includes all types of memory including stack, heap, and memory-mapped files. Specified in kilobytes
- Maximum resident set size (rss)
  - ▶ Amount of memory that can be swapped in to physical memory on behalf of any one process. Specified in kilobytes. AIX and HP-UX define this ulimit
- Data segment (data)
  - ▶ Limits the amount of memory that a process can allocate to a heap. Specified in kilobytes
- Stack size (stack)
  - ▶ Limits the amount of memory a process can allocate to a stack. Specified in kilobytes
- File size (fsize)
  - ▶ Limits the maximum size of any one file a process can create. This is specified in 512-byte blocks
- Number of files (nofiles)
  - ▶ Limits the number of file descriptors belonging to a single process. File descriptors includes not only files but also sockets for Internet communication

The memory ulimit controls the total amount of memory that can be allocated a process.

Only available on AIX and HP-UX, the rss ulimit is the amount of memory that a process can have swapped.

The data ulimit specifies how much of the memory can be allocated to the process heap.

The stack ulimit specifies how much of the memory can be allocated to the process stack.

The fsize ulimit determines the maximum size of any file.

The nofiles ulimit determines the maximum number of files per process. For Directory Server, this number is important because every connection uses a socket. A socket is considered a file.

## Setting ulimits in AIX

- `ulimit -a` will list current ulimits
- `ulimit` command can be used to set ulimits for current session
- To set ulimits for all new sessions edit the `/etc/security/limits` file
- A value of -1 means unlimited

With all of the operating systems based on UNIX, the `ulimit -a` command will list the current settings. If you see any `ulimit` with a value of -1, it means that `ulimit` is set to unlimited. In AIX you can set the default ulimits for all users as well as those for a specific user by editing the `/etc/security/limits` file.

## Setting ulimits in Linux®

- `ulimit -a` will list current ulimits
- `ulimit` command can be used to set ulimits for current session
- To set ulimits for all new sessions edit the `/etc/security/limits.conf` file
- A value of `-1` means unlimited

In the Linux operating system, the file to edit for ulimits is the `/etc/security/limits.conf` file.

## Setting ulimits in HPUX

- `ulimit -a` will list current ulimits
- `ulimit` command can be used to set ulimits for current session
- A value of -1 means unlimited
- Use the DB2® `db2osconf` utility to determine the required kernel parameters for the system
- Use the documentation provided with the operating system to modify the kernel parameters as suggested by `db2osconf`

HPUX is similar to the previous operating systems for listing and setting temporary ulimits. For HPUX you can use the DB2 command `db2osconf` utility to have DB2 determine the optimum kernel parameters (ulimits). Refer to the documentation for specific methods of modifying the kernel parameters.

## Setting ulimits in Solaris

- `ulimit -a` will list current ulimits
- `ulimit` command can be used to set ulimits for current session
- A value of -1 means unlimited
- Use the DB2 `db2osconf` utility to determine the required kernel parameters for the system
- Use the documentation provided with the operating system to modify the kernel parameters as suggested by `db2osconf`

Solaris is also similar to the previous operating systems for listing and setting temporary ulimits. You can also use the DB2 command `db2osconf` utility to have DB2 determine the optimum kernel parameters (ulimits). Refer to the documentation for specific methods of modifying the kernel parameters.

## Training roadmap for IBM Tivoli Directory Server

[http://www.ibm.com/software/tivoli/education/edu\\_prd.html](http://www.ibm.com/software/tivoli/education/edu_prd.html)



## Summary

- You should now be able to:
  - ▶ Describe the various ulimits that are monitored by IBM Tivoli Directory Server
  - ▶ Set the ulimit values for:
    - AIX
    - Linux
    - HP/UX
    - Solaris

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