

Working with Linux Processes

Spoken Tutorial Project
National Mission on Education through ICT
<http://spoken-tutorial.org>

Script
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30 August 2014



Pre-requisites :

- I am using Linux OS.



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- ▶ You should know how to get started with the Linux OS.



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- ▶ You should have some basic idea about commands.



Pre-requisites :

- ▶ I am using Linux OS.
- ▶ You should know how to get started with the Linux OS.
- ▶ You should have some basic idea about commands.
- ▶ If not, please refer to spoken tutorials on <http://spoken-tutorial.org>



About the Linux commands

- ▶ **Linux is case sensitive.**



About the Linux commands

- ▶ Linux is case sensitive.
- ▶ All the commands shown are in lowercase, unless mentioned otherwise.



What is a process ?



What is a process ?

- ▶ **Anything that is running in Linux, is a process.**



Examples of process

- ▶ **Shell that is running and taking our commands.**



Examples of process

- ▶ Shell that is running and taking our commands.
- ▶ The commands that we type on terminal.



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- ▶ **Video in which you are seeing this tutorial.**



Examples of process

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- ▶ **Browser in which you have opened**
spoken-tutorial.org website.



Examples of process

- ▶ Shell that is running and taking our commands.
- ▶ The commands that we type on terminal.
- ▶ Video in which you are seeing this tutorial.
- ▶ Browser in which you have opened **spoken-tutorial.org** website.
- ▶ **Shell scripts that are running.**



What is a process ?

- ▶ **A program which is being executed i.e. running.**



What is a process ?

- ▶ A program which is being executed i.e. running.
- ▶ Processes are much like us.



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They are born, they die.



What is a process ?

- ▶ A program which is being executed i.e. running.
- ▶ Processes are much like us.

They are born, they die.

They have parent and children.



Shell process



Shell process

- ▶ Shell is a process started by the Linux Kernel as soon as we login to our system.



Shell process

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Shell process

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- ▶ The Linux Kernel is the core of the Linux operating system.
- ▶ It consists of the most essential components that make Linux run.
- ▶ The shell creates or gives birth to all the other user command processes.



Spawning

- ▶ A shell can also give birth to another shell process.



Spawning

- ▶ A shell can also give birth to another shell process.
- ▶ Giving birth to a process or creating a process is also called **spawning** a process.



Process attributes



Process attributes

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PID: Process ID.



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- ▶ **Similarly processes have attributes.**
 - PID:** Process ID.
 - PPID:** Parent Process ID.
 - Start time, etc.**



Process attributes

- ▶ **We are identified by attributes like** our name, parent's name, date of birth, PAN, etc.
- ▶ **Similarly processes have attributes.**
 - PID:** Process ID.
 - PPID:** Parent Process ID.
 - Start time**, etc.
- ▶ **Most attributes are maintained in the Process Table.**



Process attributes

- ▶ **PID**: Each process is uniquely identified by a unique integer called **PID**.



Process attributes

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- ▶ **PID** is allotted when a process is born.



Process attributes

- ▶ **PID**: Each process is uniquely identified by a unique integer called **PID**.
- ▶ **PID** is allotted when a process is born.
- ▶ **PPID**: Is the **PID** of the parent of the new process.



ps command



ps command

- ▶ **ps (process status)** is a command which displays the processes running in the system.



ps command

- ▶ **ps (process status)** is a command which displays the processes running in the system.
- ▶ Let us see what happens if we run this command without any options.



Process types



Process types

- ▶ **User processes:** Those processes that are started by the users.



Process types

- ▶ **User processes:** Those processes that are started by the users.
- ▶ **Eg:** **ps**, most commands that we run on the terminal.



Process types

- ▶ **System processes:** Those processes that are started.



Process types

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Process types

- ▶ **System processes:** Those processes that are started.
 - a by the system often during system startup or
 - b user login
 - c **Eg: bash**



All processes

- ▶ To see all the processes



All processes

- ▶ To see all the processes
System processes



All processes

- ▶ To see all the processes
 - System processes
 - User processes



All processes

- ▶ To see all the processes
 - System processes
 - User processes
- ▶ We use the **-e** or the **-A** option.



Summary

To summarize, we have learnt about:

- ▶ Process
- ▶ Shell process
- ▶ Spawning of process
- ▶ Process attributes
- ▶ Different types of processes
- ▶ **ps** command



Acknowledgement

- ▶ **Spoken Tutorial Project is a part of Talk to a Teacher Project**
- ▶ **Supported by the National Mission on Education through ICT, MHRD, Government of India**
- ▶ **More information:**
<http://spoken-tutorial.org/NMEICT-Intro>

