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vILP – CPP – Operating System

Command for searching files

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Find command

The command find is one of the powerful utility of Unix (or Linux). It can search the entire file-system to locate files and directories according to the specific search criteria. Other than searching files in can perform actions(executing commands) on searched files.

Syntax:

```
$ find <search-in directory> <search-parameter> <action>
```

Examples :

1 . File Type based Search:

>> The following command finds the file named Abc in current(.) directory and all its sub-directories

```
[390119@InGhyUnix ~]$ find . -name Abc

./Abc
./Dir1/Abc
```

>> To find a directory named bin from root (/) directory and all its sub-directories the command will be :

```
[390119@InGhyUnix ~]$find / -name bin  -type d

/bin
/usr/bin
/usr/lib/jvm/java-1.7.0-openjdk-1.7.0.9.x86_64/jre/bin
```

The -type d option searches for the file of type directory

2 . Wild-Card based Search : Wild-card characters like * and ? can be used:

>> To find all files where filename starts with Abc the command will be:

```
[390119@InGhyUnix ~]$ find . -name "Abc*"

./Abc
./Dir1/Abc
./Dir1/Abc.php
./Abc.txt
./Abc.dat
```

>> The following command finds all files with three character extension ended with t.

```
[390119@InGhyUnix ~]$ find . -name "Abc.??t"

./Abc.txt
./Abc.dat
```

3 . Source Location based Search

>>The command find can search in multiple source location :

```
[390119@InGhyUnix ~]$ find  Dir1 Dir2 -name "Abc.*"

Dir1/Abc.php
Dir2/Abc.htm
```

Searches for the file Abc with any extension only in directories Dir1 and Dir2

4 . Size Based Search : Using find files can be searched based on its size .

>> To find the files with size more than 10Mb the command will be

```
[390119@InGhyUnix ~]$ find . -size +10M

./Abc.dat
```

>> To find the files with size smaller than 2048 bytes the command will be

```
[390119@InGhyUnix ~]$ find . -size -2048c

./Abc
./Abc.txt
```

5 . Access/Modification-Time Based Search : Using find files can be searched based on the time of last access/modification :

>> To find the files which are accessed within last 3 days the command will be

```
[390119@InGhyUnix ~]$ find . -atime -3

./Abc
```

>> To find the files which are not modified within last 30 minute the command will be

```
[390119@InGhyUnix ~]$ find . -not -mmin -30

./Abc.txt
```

6 . Permission Based Search : Using find command files can be searched based on the access permission they have

>> To find the files having read write and execute permission only for the owner the command will be :

```
[390119@InGhyUnix ~]$ find . -perm 700

./Abc.txt
```

7 . Perform Action on the search result : Using exec option any action (command) can be executed on the search result.

>> To remove all the files having extension .swp from the current directory the command will be :

```
[390119@InGhyUnix ~]$ find . -name "*.swp"  -exec rm {} \;
```