

Appendix A: UNIX and PostgreSQL Primer

Topics:

- UNIX Primer
- VI Editor Cheat Sheet
- PSQL Meta-Commands

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Appendix A: UNIX and PostgreSQL Primer

This appendix provides an overview of commonly used Linux, vi editor, and psql meta-commands.

UNIX Primer – Directory Locations

| Path | Description |
|-------------------------|--|
| . | Current path |
| .. | Parent directory |
| ~ | Current user's home directory |
| ~userid | Home directory of the user specified |
| \$MASTER_DATA_DIRECTORY | Data directory for the master server – in this course, it is /data/master/gpseg-1 |
| \$GPHOME | Base directory for Greenplum Database installation – in this course, it is /usr/local/greenplum-db |

UNIX Primer – Directory Commands

| Command | Description |
|------------------------------|---|
| <code>cd [directory]</code> | Change to a specified directory. If no directory is specified, change to the home directory |
| <code>pwd</code> | Print working or current directory |
| <code>ls [directory]</code> | Obtain a listing of a directory |
| <code>mkdir directory</code> | Create the specified directory |
| <code>rmdir directory</code> | Delete the specified empty directory |



Example: Navigating and listing directories

```
[gpadmin@mdw ~]$ ls . # List the current directory
[gpadmin@mdw ~]$ ls # List the current directory
[gpadmin@mdw ~]$ ls /home/gpadmin # List the contents of /home/gpadmin
[gpadmin@mdw ~]$ ls ~ # List the contents of the current user's home dir
[gpadmin@mdw ~]$ ls ~root # List the contents of root's home directory
[gpadmin@mdw ~]$ cd $MASTER_DATA_DIRECTORY # Change to the directory
specified in the variable
```



Note: A comment on the UNIX command line is preceded by the # symbol.

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UNIX Primer – File Access and Manipulation

| Command | Description |
|---------------------------------------|--|
| <code>cat [filename]</code> | Display the content of one or more files on the screen |
| <code>more [filename]</code> | Display the content of one or more files a page at a time |
| <code>mv filename new_filename</code> | Rename or move the file |
| <code>rm [-r] filename</code> | Remove one or more files (recursively with the <code>-r</code> option) |



Example: Accessing and creating files

```
[gpadmin@mdw ~]$ cat hosts      # List the contents of the hosts file
mdw
smdw
[gpadmin@mdw ~]$ cat > hosts_new # Redirect standard input to the file
sdw1
sdw2
^D                               # Use CTRL-D to end input
[gpadmin@mdw ~]$ more hosts_new
sdw1
sdw2
[gpadmin@mdw ~]$ mv hosts_new hosts_seg # Rename hosts_new to hosts_seg
```

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UNIX Primer – Miscellaneous Commands

| Command | Description |
|--|--|
| <code>ssh hostname</code> | Open a secure shell to the specified hostname |
| <code>scp filename hostname:filename</code> | Secure copy a file from the current system to the specified hostname and path |
| <code>gpssh -h hostname -e 'command'</code> | Greenplum secure shell to the specified hostname |
| <code>gpscp -h hostname filename =: path/filename</code> | Greenplum secure copy (there is no space between =: and the <i>path/filename</i>) |
| <code>tail filename</code> | Print the last 10 lines of a file to standard output |
| <code>tail -n filename</code> | Print the last <i>n</i> lines of a file to standard output |



Example: Copying files using gpscp

```
[gpadmin@mdw ~]$ gpscp -h smdw $MASTER_DATA_DIRECTORY/pg_hba.conf  
=:$MASTER_DATA_DIRECTORY/pg_hba.conf # Copy pg_hba.conf to standby
```



Example: Copying files using scp

```
[gpadmin@mdw ~]$ scp $MASTER_DATA_DIRECTORY/pg_hba.conf  
smdw:$MASTER_DATA_DIRECTORY/pg_hba.conf # Copy pg_hba.conf to standby
```

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UNIX Primer – Miscellaneous Commands (Cont)



Example: Use gpssh to check file system size and the last 3 lines of today's logs

```
[gpadmin@mdw ~]$ cat hosts_seg
sdw1
sdw2
[gpadmin@mdw ~]$ gpssh -f hosts_seg -e 'df -k; gplogfilter -n 3
/data/primary/*/pg_log/gpdb-`date +%Y-%m-%d`*_*.csv'
[sdw1] df -k;gplogfilter -n 3 /data/primary/*/pg_log/gpdb-2012-01-31*_*.csv
[sdw1] Filesystem            1K-blocks      Used Available Use% Mounted on
[sdw1] /dev/mapper/VolGroup00-LogVol100
[sdw1]                      16220072    3577324   11805528   24% /
[sdw1] /dev/sda1              101086       12660      83207    14% /boot
[sdw1] /dev/sdb1             52909824   35143352   15078800   70% /data
[sdw1] tmpfs                  513440        0      513440    0% /dev/shm
[sdw1] requested timestamp range from beginning of data to end of data
[sdw1] ----- /data/primary/gpseg0/pg_log/gpdb-2012-01-31_000000.csv -----
-----
[sdw1] 2012-01-31 09:57:08.886117 EST||||p15824|th-1294956864||||0|||seg-
1|||||WARNING: |01000|Error when sending file rep stats to perfmon -
only -1 bytes of 392 sent|||||0||cdbfilerep.c|4109|
...
[sdw2] df -k;gplogfilter -n 3 /data/primary/*/pg_log/gpdb-2012-01-31*_*.csv
...
```

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Vi Cheat Sheet

| Mode | Description |
|---------|--|
| Insert | In insert mode, you insert text into the text editor |
| Command | Command mode allows you to enter vi commands, such as starting an insert, append, removing characters, words, and lines, or navigating through the contents of the file. Hit ESC to access Command mode. |

| Command Mode Commands | | | |
|-----------------------|----------------------------|---------|---------------------------------------|
| Command | Description | Command | Description |
| :x file | Save and quit | o | Open a new line after current line |
| :q | Quit without saving | O | Open a new line before current line |
| :w file | Save | r | Replace character at cursor |
| :wq file | Save and quit | R | Replace characters starting at cursor |
| :q! | Force quit without saving | :n | Go to line n |
| i | Insert before cursor | G | Go to last line of file |
| I | Insert at start of line | 1G | Go to first line of file |
| a | Append after cursor | 0 | Move to beginning of the line |
| A | Append after end of line | \$ | Move to the end of a line |
| x | Delete character at cursor | dd | Delete current line |

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Vi Cheat Sheet (Cont)

Command Mode Commands

| Command | Description | Command | Description |
|---------|--|-----------------|--|
| yy | Yank (or cut) the current line | w | Move to the beginning of the next word |
| p | Paste after the cursor (or current line) | W | Move to the beginning of the next space-delimited word |
| P | Paste before the cursor (or current line) | b | Move to the beginning of the previous word |
| /string | Search forward for the string | B | Move to the beginning of the previous space-delimited word |
| ?string | Search backward for the string | e | Move to end of the current word |
| n | Search for the next instance of the string | E | Move to the end of the current space-delimited word |
| N | Search for the previous instance of the string | k (up arrow) | Move up a line |
| u | Undo last change | j (down arrow) | Move down a line |
| U | Undo all changes to a line | l (right arrow) | Move to the right one character |
| . | Repeat last command | h (left arrow) | Move to the left one character |

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PSQL Meta-Commands

| Command | Description | Command | Description |
|---------|------------------------------------|--------------------|-----------------------------------|
| \dt | List tables in current search path | \h | Help for SQL commands |
| \dn | List schemas | \q | Quit psql |
| \dtS | List system tables, including | \d+ | Detailed information on an object |
| \dtS | List views, tables, and sequences | \dg | List roles |
| | | \du | |
| \dx | List external tables | \dv | List views |
| \l | List databases | \timing | Toggle timing of commands |
| \? | Help for meta-commands | \c <i>database</i> | Connect to the specified database |

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