Operating Systems

Software that manages a computer’s resources
Allocates resources among other programs
Resources include the central processing unit (CPU), computer memory, file storage, input/output (I/O) devices, and network connections
Runs indefinitely and terminates only when the computer is turned off
Operating Systems

Examples

DOS (Generic term)
Microsoft OS
Mac OS
Linux
iOS
Android
Symbian OS
Operating Systems

History

First digital computers had no operating systems

Ran one program at a time, which had command of all system resources

A human operator would provide any special resources needed

First operating systems were developed in the mid-1950s
Command Line Interface / Graphical User Interface
Unix

Operating system by AT&T Bell Labs
Originally developed in 1969
Command line interface
Portable, multi-tasking, multi-user
Free distribution, open system
Servers, workstations, mobile devices
Basis of Linux and MacOS
Unix

Commands

See Reading section of course site for basic Unix commands.
Chmod

chmod sets permissions

Every file and directory has nine permissions associated with it.

Files and directories have three types of permissions (or none):

- **r** (read)
- **w** (write)
- **x** (execute)
- **-** (no permission)

The above permissions occur for each of the following classes or users:

- **u** (user/owner)
- **g** (group)
- **o** (other/world)
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<th>U</th>
<th>G</th>
<th>W</th>
<th>Command</th>
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</thead>
<tbody>
<tr>
<td>rwx</td>
<td>rwx</td>
<td>rwx</td>
<td>chmod 777 filename</td>
</tr>
<tr>
<td>rwx</td>
<td>rwx</td>
<td>r-x</td>
<td>chmod 775 filename</td>
</tr>
<tr>
<td>rwx</td>
<td>r-x</td>
<td>r-x</td>
<td>chmod 755 filename</td>
</tr>
<tr>
<td>rwx</td>
<td>r-x</td>
<td>r-x</td>
<td>chmod 664 filename</td>
</tr>
<tr>
<td>r-w</td>
<td>r-w</td>
<td>r--</td>
<td>chmod 644 filename</td>
</tr>
</tbody>
</table>
Chmod

Files and folders

Standard file permission: 644
Owner can read and write file; group can read file; others can read file

Standard directory permission: 755
Owner can read, write and execute file; group can read and execute file; others can read and execute file
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