VMWare Ubuntu Image
== Resources ==

- [[Researchtools.ccom.nh]] - Ubuntu Linux server (actually a virtual machine) for use during class projects

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Help: Editing

CCOM's wiki is running mediawiki.

Contents [hide]
1 Editing mediawiki pages - External Links
2 Local notes about editing wiki text
   2.1 Adding Tags
   2.2 Adding Categories
   2.3 Discussions
3 Policy

Editing mediawiki pages - External Links

- Wikipedia's Cheatsheet
- Wikipedia's How to edit a page
- Editing overview
- Wikitext examples

Local notes about editing wiki text

(See also: Wiki Guide)

Adding Tags
- There are a number of templates that can be used to add information to a page (e.g., that it needs verification, sets policy, is a stub that needs expansion, etc.)
- You can see all of the tags by going to the Category:Template page
- You add tags by adding {{tag-name}} to your page

Adding Categories
- Categories are a way to index our Wiki so that things are grouped logically together
- One page can belong to many categories
- You can find the list of categories from the main page (look in the 'Wiki Administration' section), or by going to Special:Categories.
- Please attempt to add as many specific categories as you can to your pages
- Please attempt to use existing categories when you can
- You add categories to your page by adding [[Category:category-name]] to the page.
# Wikipedia Cheatsheet

Welcome to Wikipedia
Help index · Ask questions · Learn wikicode · Wikipedia FAQ · Glossary
Live editing help via web chat · Help desk · Reference desk · Tutorial

## Wikipedia Cheatsheet

<table>
<thead>
<tr>
<th>Works anywhere in the text</th>
<th>Description</th>
<th>You type</th>
<th>You get</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italic text</td>
<td>''italic''</td>
<td>italic</td>
<td></td>
</tr>
<tr>
<td>Bold text</td>
<td>'''bold'''</td>
<td>bold</td>
<td></td>
</tr>
<tr>
<td>Bold and italic text</td>
<td>''''bold &amp; italic'''''</td>
<td>bold &amp; italic</td>
<td></td>
</tr>
<tr>
<td>Link to another Wikipedia page</td>
<td>[[Name of page]]</td>
<td>Name of page</td>
<td>Text to display</td>
</tr>
<tr>
<td></td>
<td>[[Name of page</td>
<td>Text to display]]</td>
<td></td>
</tr>
<tr>
<td>Link internal heading</td>
<td>[[#Heading name]]</td>
<td>#Heading name</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[[#Heading name2</td>
<td>Name2]]</td>
<td>Name2</td>
</tr>
<tr>
<td>Show an image</td>
<td>[[ File:Wiki.png</td>
<td>thumb</td>
<td>alt=text</td>
</tr>
</tbody>
</table>
Tiny URL will shorten links

http://tinyurl.com/researchtools2011

points to

Welcome to ChatZilla...
Below is a short selection of information to help you get started using ChatZilla.

Help is available from many places:
- `/commands` lists all the built-in commands in ChatZilla. Use `/help <command-name>` to get help on individual commands.

Available networks are [dalnet, efnet, freenode, hispano, ircnet, moznet, quakenet, serena, slashnet, solidirc, unternet, webnet].
**Class 4: VMWare Ubuntu Virtual Machine**

* Introduction

Before this lecture, we used putty on Windows to log into researchtools.ccom.nh using the ssh protocol. In this lecture we will download a Ubuntu Virtual Machine that can be run from the VMWare Player.

* Troubles connecting to irc.freenode.net

We hit serious trouble in this class with irc.freenode.net. CCOM uses network address translation just like you usually do at your house. All of the computers at CCOM look like they are ccom.unh.edu to the outside world and inside computers all have IP addresses like 192.168.*.* (which is a local use only address).

In future classes we will use an irc server that is inside of CCOM. This has the drawback that you must be inside of CCOM to access the IRC server.

* What is a virtual machine or "VM"?

http://en.wikipedia.org/wiki/Virtual_machine
Virtual machine

From Wikipedia, the free encyclopedia

A virtual machine (VM) is a "completely isolated guest operating system installation within a normal host operating system". Modern virtual machines are implemented with either software emulation or hardware virtualization. In most cases, both are implemented together.

Contents

1 VM Definitions
   1.1 System virtual machines
   1.2 Process virtual machines
2 Techniques
   2.1 Emulation of the underlying raw hardware (native execution)
   2.2 Emulation of a non-native system
   2.3 Operating system-level virtualization
3 List of hardware with virtual machine support
4 List of virtual machine software
   4.1 Extended descriptions of selected virtualization software
5 See also
6 References
7 Further reading
8 External links

VM Definitions

A virtual machine (VM) is a software implementation of a machine (i.e. a computer) that executes programs like a physical machine. Virtual machines are separated into two major categories, based on their use and degree of correspondence to any real machine. A system virtual machine provides a complete system platform which supports the execution of a complete operating system (OS). In contrast, a process virtual machine is designed to run a single program, which means that it supports a single process. An essential characteristic of a virtual machine is that the software running inside is limited to the resources and abstractions provided by the virtual machine—it cannot break out of its virtual environment.

A virtual machine was originally defined by Popek and Goldberg as "an efficient, isolated duplicate of a real machine". Current use includes virtual machines which have no direct correspondence to any real hardware.
Some of the many virtual machine systems

- MMIX, MMIXAL
- Neko virtual machine, currently Neko and haXe
- O-code machine, BCPL
- p-code machine, Pascal
- Parrot, Perl 6
- Perl virtual machine, Perl
- CPython, Python
- YARV, Ruby MRI
- Rubinius, Ruby
- ScummVM, Scumm
- SECD machine, ISWIM, Lispkit Lisp
- Sed the stream-editor can also be seen as a VM with 2 storage spaces
- Smalltalk virtual machine, Smalltalk language
  - Squeak virtual machine, Squeak language
- SQLite virtual machine, SQLite opcodes
- SWEET16
- Tamarin (JavaScript engine), ActionScript VM in Flash 9
- TrueType virtual machine, TrueType
- V8 (JavaScript engine), JavaScript VM
- Valgrind, checking of memory accesses and leaks in x86/x86-64 code under Linux
- Virtual Processor (VP) from Tao Group (UK).
- VX32 virtual machine, application-level virtualization for native code
- Waba, virtual machine for small devices, similar to Java
- Warren Abstract Machine, Prolog, CSC GraphTalk
- Z-machine, Z-Code
- Zend Engine, PHP
- libJIT Just-In-Time compilation library, libJIT bytecode

Virtual Server
- Oracle VM
- OVPsim is a freely available virtual platform simulator designed to simulate complex multiprocessor systems at very high speeds
- Palacios is an OS independent embeddable VMM, it is an open source virtual machine monitor for modern architectures
- Parallels Workstation, virtualizes x86 to run unmodified PC operating systems
- Parallels Desktop for Mac, virtualizes x86 to run virtual machines on Mac OS X
- QEMU, is a simulator based on a virtual machine
- SheepShaver
- Simics
- Sun xVM
- SVISTA
- twoOStwo
- User-mode Linux
- VirtualBox
- Virtual Iron (Virtual Iron 3.1)
- VM from IBM
- VMMLite
- VMware (ESX Server, Fusion, Virtual Server, Workstation, Player and ACE)
- Xen (Opensource)
- TransVirtual Systems & emulation of Wang Laboratories VS hardware.
- IBM POWER systems

Operating system level virtualization software
- Microsoft Hyper-V
- OpenVZ
- FreeVPS
- Linux-VServer
- FreeBSD Jails
- Solaris Containers
- AIX Workload Partitions
- LXC
I ended up sticking with this one virtual machine (vm) for the whole semester.
by authorized personnel. THERE IS NO RIGHT OF PRIVACY IN THIS SYSTEM. System personnel may give to law enforcement officials any potential evidence of crime found on UNH CCOM computer systems. USE OF THIS SYSTEM BY ANY USER, AUTHORIZED OR UNAUTHORIZED, CONSTITUTES CONSENT TO THIS MONITORING, INTERCEPTION, RECORDING, READING, COPYING, OR CAPTURING AND DISCLOSURE.

***WARNING***WARNING***WARNING***
Welcome to Ubuntu 11.04 (GNU/Linux 2.6.38-8-generic-pae i686)

* Documentation:  https://help.ubuntu.com/

System information as of Tue Jun 26 21:57:54 EDT 2012
System load: 0.0 Processes: 93
Usage of /home: 1.5% of 21.54GB Users logged in: 0
Memory usage: 53% IP address for eth0: 192.168.2.28
Swap usage: 0%

Graph this data and manage this system at https://landscape.canonical.com/
New release 'oneiric' available.
Run 'do-release-upgrade' to upgrade to it.

Last login: Sun Jun 24 16:47:27 2012 from webmail.com.unh.edu
schwehr@researchtools:~$
VMware Player
THE EASIEST WAY TO RUN A VIRTUAL MACHINE

VMware Player is the easiest way to run multiple operating systems at the same time on your PC. With its user-friendly interface, VMware Player makes it effortless for anyone to try out Windows 8 developer release, Windows 7, Chrome OS or the latest Linux releases, or create isolated virtual machines to safely test new software and surf the Web. VMware Player can also be used to run a virtual copy of an old PC so that you can recycle the old machines you have under your desk or stored in the closet.

Better than Windows XP Mode
Run legacy Windows XP applications with better graphics, faster performance, and tighter integration than Windows XP mode offers. With Unity, shared folders and drag and drop convenience, VMware Player is the better way to run Windows XP on Windows 7. Use VMware vCenter Converter to transform your existing Windows PC into a virtual machine and eliminate the need to re-install and re-configure your existing applications which is necessary with Windows.
Edit the hardware settings for this virtual machine.
Processors
This virtual machine is configured to use:
1 processor core

Memory
Increasing the memory allocation of the virtual machine can improve performance but may also reduce the performance of other running applications.

1024 MB
Recommended value: 1024 MB
Would you like to upgrade this virtual machine?

An upgraded virtual machine offers support for new features, but cannot be used by earlier versions of VMware Fusion until you downgrade it.

- Never show this dialog again

  Don't Upgrade  Upgrade
Install the VMware Tools package inside this virtual machine.

After the guest operating system starts, select Virtual Machine > Install VMware Tools and follow the instructions.

☐ Never show this dialog again

OK
The password is !rt2011vm
It seems that you do not have the hardware required to run Unity. Please choose Ubuntu Classic at the login screen and you will be using the traditional environment.
Welcome to Ubuntu 11.10 'Oneiric Ocelot'

The Ubuntu team is proud to announce Ubuntu 11.10 'Oneiric Ocelot'.

To see what's new in this release, visit:

http://www.ubuntu.com/desktop/features

Ubuntu is a Linux distribution for your desktop or server, with a fast and easy install, regular releases, a tight selection of excellent applications installed by default, and almost any other software you can imagine available through the network.

We hope you enjoy Ubuntu.

Feedback and Helping

Release Notes  Don't Upgrade  Ask Me Later  Yes, Upgrade Now
Welcome to GNU Emacs, one component of the GNU/Linux operating system.

Emacs Tutorial
Emacs Guided Tour
View Emacs Manual
Absence of Warranty
Copying Conditions
Ordering Manuals

Learn basic keystroke commands
Overview of Emacs features at gnu.org
View the Emacs manual using Info
GNU Emacs comes with ABSOLUTELY NO WARRANTY
Conditions for redistributing and changing Emacs
Purchasing printed copies of manuals

To start... Open a File  Open Home Directory  Customize Startup
To quit a partially entered command, type Control-g.

This is GNU Emacs 23.2.1 (i686-pc-linux-gnu, GTK+ Version 2.24.4)
of 2011-04-04 on rothera, modified by Debian
Copyright (C) 2010 Free Software Foundation, Inc.

For information about GNU Emacs and the GNU system, type C-h C-a.
To run a command as administrator (user "root"), use "sudo <command>". See "man sudo_root" for details.

researchtools@ubuntu:$
To run a command as administrator (user "root"), use "sudo <command>". See "man sudo_root" for details.

researchtools@ubuntu:~$ pwd
/home/researchtools
researchtools@ubuntu:~$ mkdir test
researchtools@ubuntu:~$ cd test
researchtools@ubuntu:~/test$ pwd
/home/researchtools/test
researchtools@ubuntu:~/test$ ls -l
total 0
researchtools@ubuntu:~/test$ ls -la
total 8
drwxr-xr-x 2 researchtools researchtools 4096 2012-06-26 19:38 ..
drwxr-xr-x 22 researchtools researchtools 4096 2012-06-26 19:38 .
researchtools@ubuntu:~/test$ cd ~
researchtools@ubuntu:~$
researchtools@ubuntu:~ $ ls -la

-rw-r--r-- 1 researchtools researchtools 220 2011-09-01 16:33 .bash_logout
-rw-r--r-- 1 researchtools researchtools 3353 2011-09-01 16:33 .bashrc
drwxr-xr-x 7 researchtools researchtools 4096 2012-06-26 19:10 .config
drwxr-xr-x 3 researchtools researchtools 4096 2012-06-26 19:08 .dbus
drwxr-xr-x 3 researchtools researchtools 4096 2012-06-26 19:08 Desktop
-rw-r--r-- 1 researchtools researchtools 63 2012-06-26 19:26 .dmrc
drwxr-xr-x 2 researchtools researchtools 4096 2012-06-26 19:08 Documents
-rw-r--r-- 2 researchtools researchtools 4096 2012-06-26 19:08 Downloads
-rw-r--r-- 3 researchtools researchtools 4096 2012-06-26 19:33 emacs.d
-rw-r--r-- 1 researchtools researchtools 16 2012-06-26 19:08 .esd_auth
-rw-r--r-- 1 researchtools researchtools 179 2011-09-01 16:33 examples.desktop
-rw-r--r-- 4 researchtools researchtools 4096 2012-06-26 19:26 .gconf
-rw-r--r-- 2 researchtools researchtools 4096 2012-06-26 19:35 .gconfd
-rw-r--r-- 5 researchtools researchtools 4096 2012-06-26 19:09 .gnome2
-rw-r--r-- 1 researchtools researchtools 177 2012-06-26 19:26 .gtk-bookmarks
-rw-r--r-- 2 researchtools researchtools 0 2012-06-26 19:26 .gvfs
-rw-r--r-- 1 researchtools researchtools 636 2012-06-26 19:26 .ICEauthority
-rw-r--r-- 3 researchtools researchtools 4096 2012-06-26 19:09 .local
-rw-r--r-- 2 researchtools researchtools 4096 2012-06-26 19:08 .Music
-rw-r--r-- 2 researchtools researchtools 4096 2012-06-26 19:08 .nautilus
-rw-r--r-- 2 researchtools researchtools 4096 2012-06-26 19:08 .Pictures
-rw-r--r-- 1 researchtools researchtools 675 2011-09-01 16:33 .profile
-rw-r--r-- 2 researchtools researchtools 4096 2012-06-26 19:08 .Public
-rw-r--r-- 1 researchtools researchtools 256 2012-06-26 19:08 .pulse
-rw-r--r-- 1 researchtools researchtools 4096 2012-06-26 19:38 .pulse-cookie
-rw-r--r-- 2 researchtools researchtools 4096 2012-06-26 19:08 .Templates
-rw-r--r-- 2 researchtools researchtools 4096 2012-06-26 19:38 .test
-rw-r--r-- 2 researchtools researchtools 4096 2012-06-26 19:08 .Videos
-rw-r--r-- 1 researchtools researchtools 3174 2012-06-26 19:40 .xsession-errors
-rw-r--r-- 1 researchtools researchtools 7129 2012-06-26 19:14 .xsession-errors.old
The GNOME Project needs your help!
Help us make 2012 the year of accessibility!

Friends of GNOME
$17,422 – only $2,578 to go!

Donate now!

The web at your fingertips

Discover GNOME 3

We make great software available to all.
Make a donation and become a Friend of GNOME!
Welcome to IPython. I will try to create a personal configuration directory where you can customize many aspects of IPython's functionality in:

/home/researchtools/.ipython
Initializing from configuration: /usr/lib/python2.7/dist-packages/IPython/UserConfig

Successful installation!

Please read the sections 'Initial Configuration' and 'Quick Tips' in the IPython manual (there are both HTML and PDF versions supplied with the distribution) to make sure that your system environment is properly configured to take advantage of IPython's features.

Important note: the configuration system has changed! The old system is still in place, but its setting may be partly overridden by the settings in "~/.ipython/ipy_user_conf.py" config file. Please take a look at the file if some of the new settings bother you.

Please press <RETURN> to start IPython.
Please read the sections 'Initial Configuration' and 'Quick Tips' in the IPython manual (there are both HTML and PDF versions supplied with the distribution) to make sure that your system environment is properly configured to take advantage of IPython's features.

Important note: the configuration system has changed! The old system is still in place, but its setting may be partly overridden by the settings in ~/.ipython/ipy_user_conf.py config file. Please take a look at the file if some of the new settings bother you.

Please press <RETURN> to start IPython.

Python 2.7.1+ (r271:86832, Apr 11 2011, 18:05:24)
Type "copyright", "credits" or "license" for more information.

IPython 0.10.1 -- An enhanced Interactive Python.
? -> Introduction and overview of IPython's features.
%quickref -> Quick reference.
help -> Python's own help system.
object? -> Details about 'object'. ?object also works, ?? prints more.

Welcome to pylab, a matplotlib-based Python environment.
For more information, type 'help(pylab)'.

In [1]: pwd
Out[1]: '/home/researchtools'

In [2]: ls
Desktop/ Downloads/ Music/ Public/ test/
Documents/ examples.desktop Pictures/ Templates/ Videos/

In [3]: cd test/
/home/researchtools/test

In [4]:
See "man sudo_root" for details.

researchtools@ubuntu:~$ pwd
/home/researchtools
researchtools@ubuntu:~$ socat
The program 'socat' is currently not installed. You can install it by typing:
sudo apt-get install socat
researchtools@ubuntu:~$ sudo apt-get install socat
[sudo] password for researchtools:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following extra packages will be installed:
  libreadline5
The following NEW packages will be installed:
  libreadline5 socat
0 upgraded, 2 newly installed, 0 to remove and 9 not upgraded.
Need to get 478 kB of archives.
After this operation, 1,282 kB of additional disk space will be used.
Do you want to continue [Y/n]? y
Get:1 http://us.archive.ubuntu.com/ubuntu/ natty/main libreadline5 i386 5.2-7build1 [132 kB]
Get:2 http://us.archive.ubuntu.com/ubuntu/ natty/universe socat i386 1.7.1.3-1 [346 kB]
Fetched 478 kB in 2s (174 kB/s)
Selecting previously deselected package libreadline5.
(Reading database ... 193944 files and directories currently installed.)
Unpacking libreadline5 (from .../libreadline5_5.2-7build1_i386.deb) ...
Selecting previously deselected package socat.
Unpacking socat (from .../socat_1.7.1.3-1_i386.deb) ...
Processing triggers for man-db ...
Processing triggers for doc-base ...
Processing 1 added doc-base file(s)...
Registering documents with scrollkeeper...
Setting up libreadline5 (5.2-7build1) ...
Setting up socat (1.7.1.3-1) ...
Processing triggers for libc-bin ...
lconfig deferred processing now taking place
researchtools@ubuntu:~$
researchtools@ubuntu:~$ socat
2012/06/26 19:59:33 socat[2455] E exactly 2 addresses required (there are 0); use option "-h" for help
researchtools@ubuntu:~$ socat datalogger1.ccom.nh:36000 - | head
2012/06/26 19:59:41 socat[2457] E unknown device/address "datalogger1.ccom.nh"
researchtools@ubuntu:~$ socat TCP4:datalogger1.ccom.nh:36000 - | head
# 1340765965.71
# 1340765965.99
# HCHDT,26.2,T*1F
# 1340765966.04
$WMMW,140.4,R,1.6,N,A*25
# 1340765966.09
$GPVTG,??????,N*30
# 1340765966.19
$WMDA,29.6511,I,1.0041,B,14.0,C,??????,*,39
2012/06/26 19:59:46 socat[2459] E write(1, 0x8fbc7c0, 16): Broken pipe
researchtools@ubuntu:~$
NAME
socat - Multipurpose relay (SOcket CAT)

SYNOPSIS
socat [options] <address> <address>
socat -V
socat -h[h[h]] | -?[?][?]
filan
procan

DESCRIPTION
Socat is a command line based utility that establishes two bidirectional byte streams and transfers data between them. Because the streams can be constructed from a large set of different types of data sinks and sources (see address types), and because lots of address options may be applied to the streams, socat can be used for many different purposes.

Filan is a utility that prints information about its active file descriptors to stdout. It has been written for debugging socat, but might be useful for other purposes too. Use the -h option to find more infos.

Procan is a utility that prints information about process parameters to stdout. It has been written to better understand some UNIX process properties and for debugging socat, but might be useful for other purposes too.

The life cycle of a socat instance typically consists of four phases.

In the init phase, the command line options are parsed and logging is initialized.

During the open phase, socat opens the first address and afterwards the second address. These steps are usually blocking; thus, especially for complex address types like socks, connection requests or authentication dialogs must be completed before the next step is started.

In the transfer phase, socat watches both streams' read and write file descriptors via select(), and, when data is available on one side and can be written to the other side, socat
Welcome to Emacs, one component of the GNU/Linux operating system.

Emacs Tutorial
Emacs Guided Tour
View Emacs Manual
Absence of Warranty
Copying Conditions
Ordering Manuals

Learn basic keystroke commands
Overview of Emacs features at gnu.org
View the Emacs manual using Info
GNU Emacs comes with ABSOLUTELY NO WARRANTY
Conditions for redistributing and changing Emacs
Purchasing printed copies of manuals

To start... Open a File  Open Home Directory  Customize Startup
To quit a partially entered command, type Control-g.

This is GNU Emacs 23.2.1 (i686-pc-linux-gnu, GTK+ Version 2.24.4)
of 2011-04-04 on rothera, modified by Debian
Copyright (C) 2010 Free Software Foundation, Inc.

For information about GNU Emacs and the GNU system, type C-h C-a.
Shut Down

Are you sure you want to close all programs and shut down the computer?

Cancel  Shut Down
Pyro name server daemon: disabled, see /etc/default/pyro-nsd

Broadcast message from root@ubuntu
(unknown) at 20:03 ...

The system is going down for halt NOW!
speech-dispatcher disabled: edit /etc/default/speech-dispatcher

init: tty4 main process (901) killed by TERM signal
init: tty5 main process (907) killed by TERM signal
init: tty2 main process (917) killed by TERM signal
init: tty3 main process (919) killed by TERM signal
init: tty6 main process (922) killed by TERM signal
init: cron main process (935) killed by TERM signal
init: tty1 main process (1166) killed by TERM signal
init: Plymouth-upstart-bridge main process (2504) terminated with status 1

* Stopping open-vm guest daemon vmtoolsd          [ OK ]
FATAL: Module vmhgs not found.
FATAL: Module umsync not found.
FATAL: Module ublock not found.
* Removing open-vm-tools modules                 [ OK ]
* Stopping bluetooth                            [ OK ]
Checking for running unattended-upgrades: modem-manager[501]: <info> Caught signal 15, shutting down...

init: Disconnected from system bus
init: dbus main process (447) killed by TERM signal
* Asking all remaining processes to terminate... [ OK ]