Linux Desktop: From OS Install through Running the Applications

An IdoSphere webinar

Presented by: Joe Litton & Bill Malchisky   BillMal Your Lotus Pal

About this session...
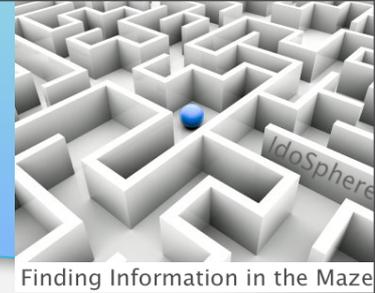
Target audience:

- Completely new to / curious about linux
- Some experience w/ linux, want to see Lotus apps on linux
- Want to feel confident installing Virtual Machine (VM)
- Need to run Windows apps (like Designer) on linux
- Ready for the crazier things like VPN and remote access

- ...not so much if you compile your own O/S builds, debate finer points of Gnome vs KDE vs other window managers, etc.

Linux Desktop:
From OS Install through Running the Applications

What we will cover in this Webinar

1	Why linux? (and why not?)

2	Ubuntu linux: download / install; what apps to use for tasks you'd want on any system

3	Installing / running Notes & Symphony in native Ubuntu

4	Install & configure a Virtual Machine to run Windows (and Designer / Administrator in Windows)

5	Connecting via Virtual Private Network (VPN)

6	Connecting to remote machines

About us...

Joe Litton
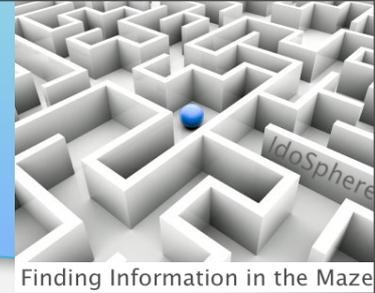
- Notes / Domino developer for 15 years
- IT guy for 25 years (VAX/VMS system manager, Voice Response developer on OS/2, various proprietary languages ...prepped me for Domino web dev :)
- Presented Java-related sessions at Lotusphere
- Wrote some for Lotus Advisor
- Linux user past 10 years
- Blog (not often enough) at http://www.joelitton.net/
- Twitter: joelitton
- Email: jrlitton@gmail.com

About us...

Bill Malchisky
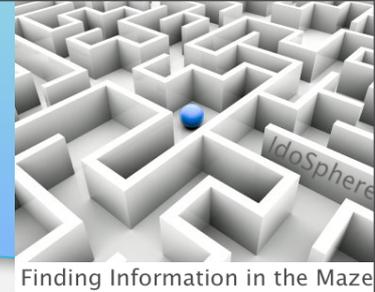
- Working with Notes since 3.0c, in 1993
- Architect, admin, auditor, trainer, process engineer, team lead, "reformed developer"
- Co-authored two IBM Redbooks on Linux; several publications
- Significant regulatory compliance and Domino specialty project experience
- Linux aficionado
- Blog at http://www.billmal.com/
- Twitter: billmalchisky
- Email: Bill@billmal.com

Finding Information in the Maze

Why use linux?

(and why perhaps not)

Pros
:) FREE (download free or buy a CD for about US$6.50)
Easy to use
Thousands of free apps
Probably works with your existing machine and peripherals (often more easily)
Needs fewer resources vs proprietary O/S
Fewer worries re viruses, etc
See: http://tek.io/linuxRocks

Cons
:(Free support at http://ubuntu.com/support , but you'll need to buy support if you want to be able to speak to support tech
Some apps (like Domino Designer) don't yet run on linux (so you still need a Windows license to run within a VM)
Some devices can be harder to configure, or you need to search for linux drivers
See: http://zd.net/linuxSucks

Ubuntu: download, configure, run
Download
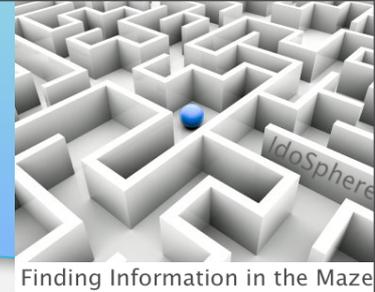
- Open a web browser and go to http://ubuntu.com
- Click the 'Download Ubuntu' button

Ubuntu: download, configure, run
Download

Finding Information in the Maze
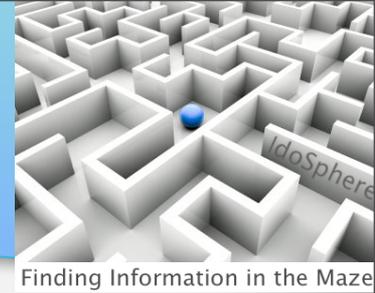
- Click 'Start download'

Ubuntu: download, configure, run
Download
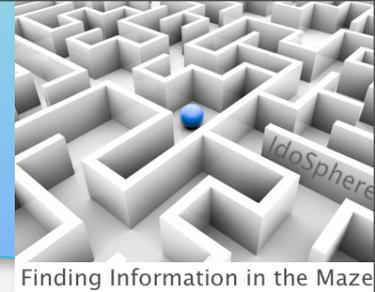
- Specify where you want to save the file (and remember where you save it!)
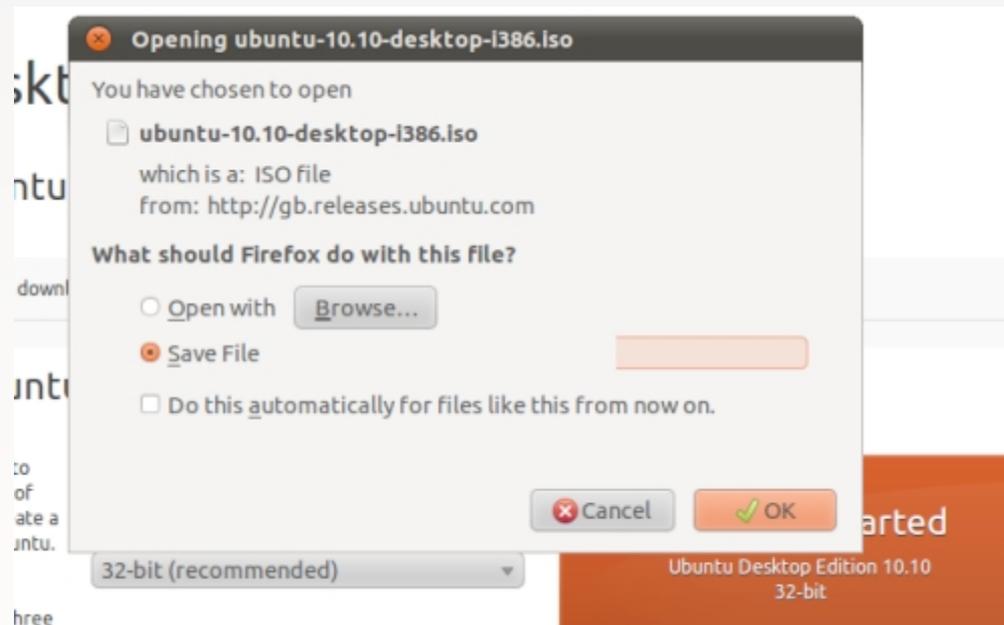
Ubuntu: download, configure, run
Create a bootable CD or USB drive
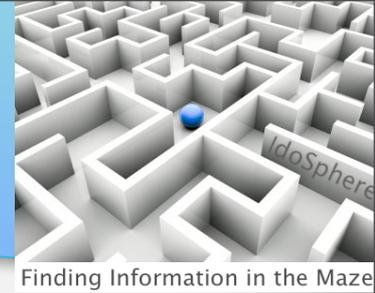
- Scroll down a little on the download page, select CD or USB
- Select your O/S and click 'Show me how'
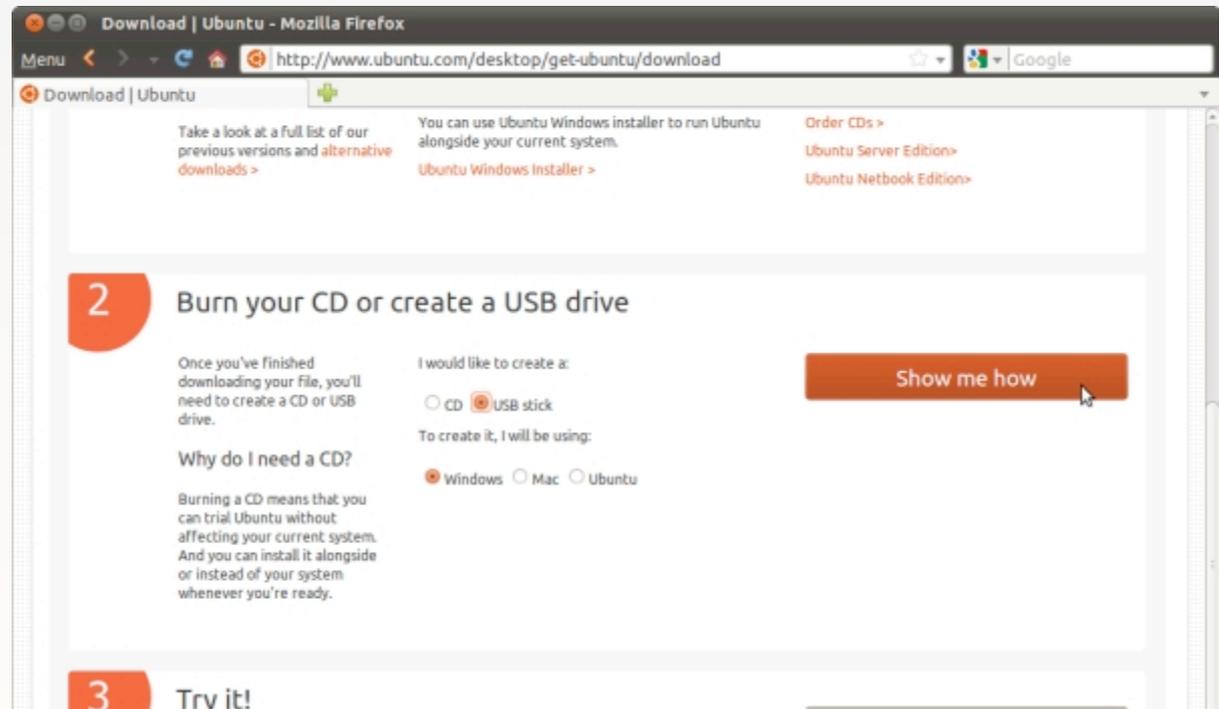
Ubuntu: download, configure, run
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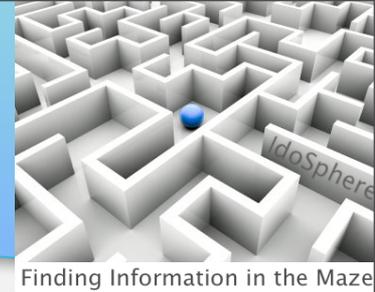
- Detailed instructions with screenshots show how to create the bootable media, using the O/S you selected
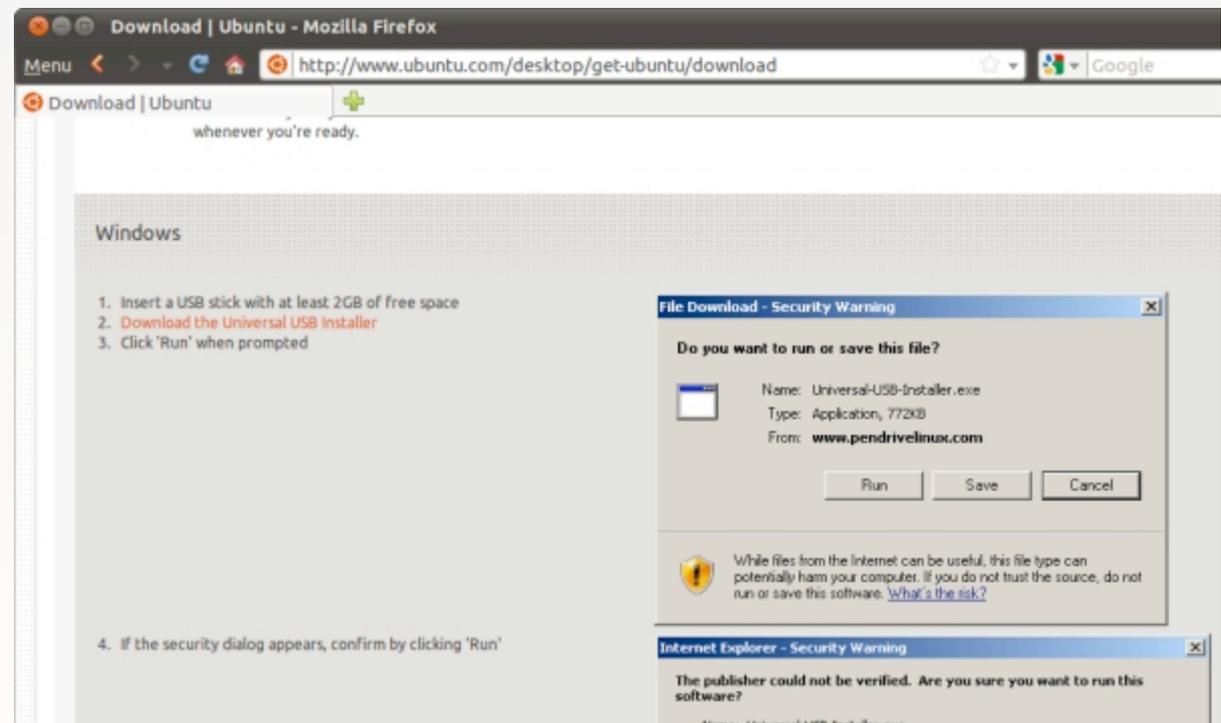
Ubuntu: download, configure, run
Boot and configure
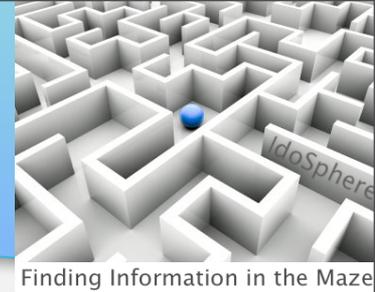
- Restart the target machine with your new bootable media in place (you may need to adjust BIOS for boot order)
- After a few moments...things start to load...

Finding Information in the Maze
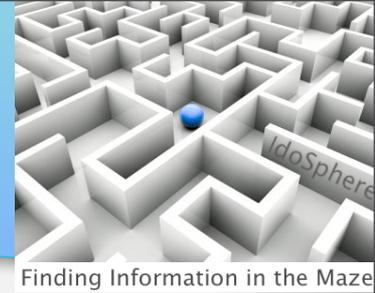
- Patience is a virtue. The ubuntu logo soon displays...
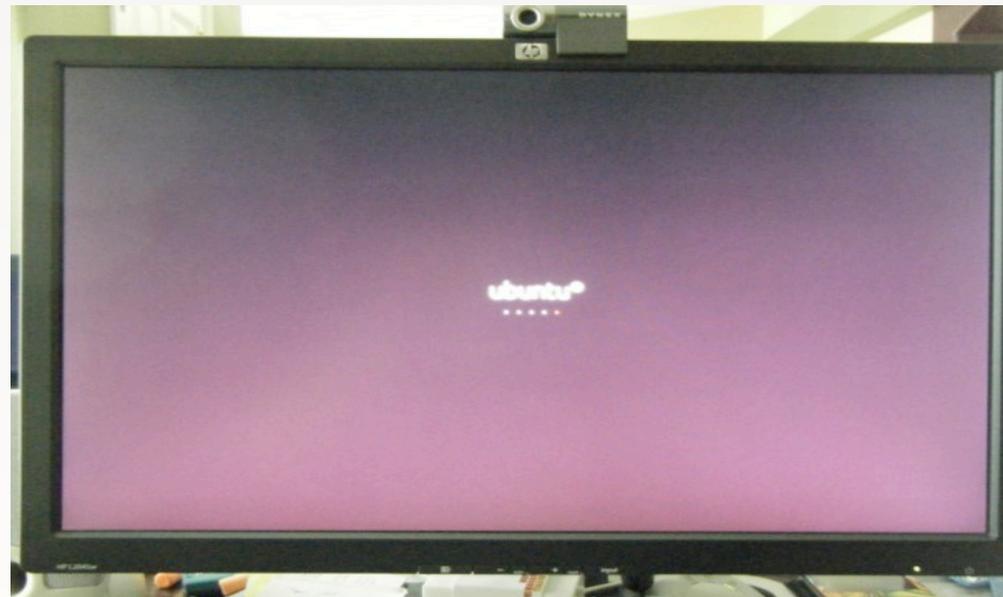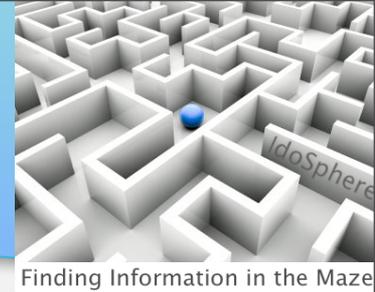
- Decide whether to TRY Ubuntu (no changes to hard drive), or install onto your hard drive (you may not get to MAKE the selection for a few moments)
- Note that wifi is automatically detected
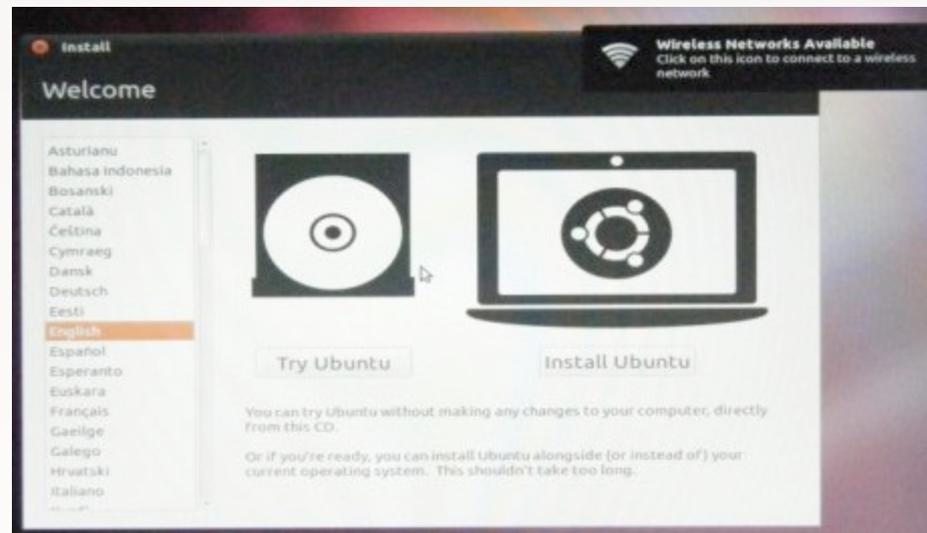
Ubuntu: download, configure, run
Boot and configure
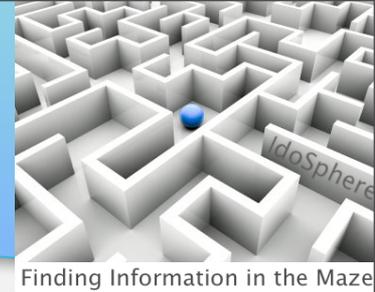
- You'll want to have an Internet connection for the install, so provide the wifi password if needed (or plug in your network cable)

Ubuntu: download, configure, run
Boot and configure
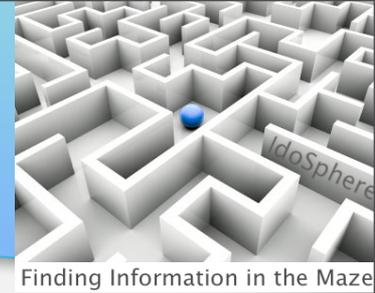
- Choose your password and enter it here...
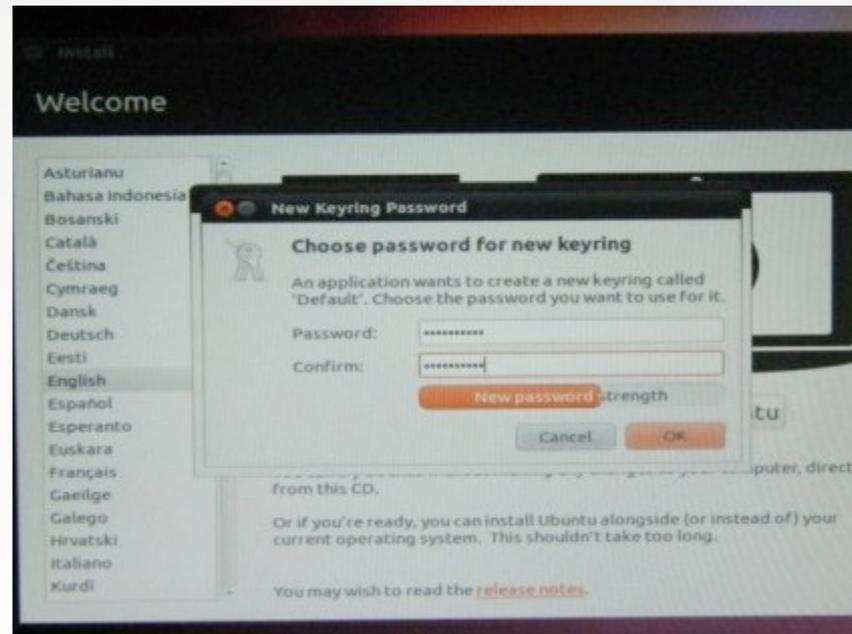
Ubuntu: download, configure, run
Boot and configure
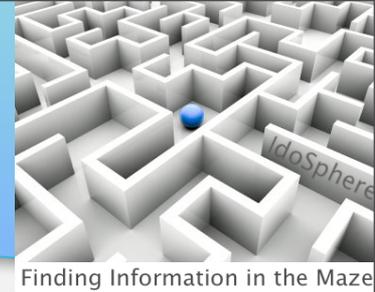
- If you didn't get to make your Try / Install selection earlier, now is the time...
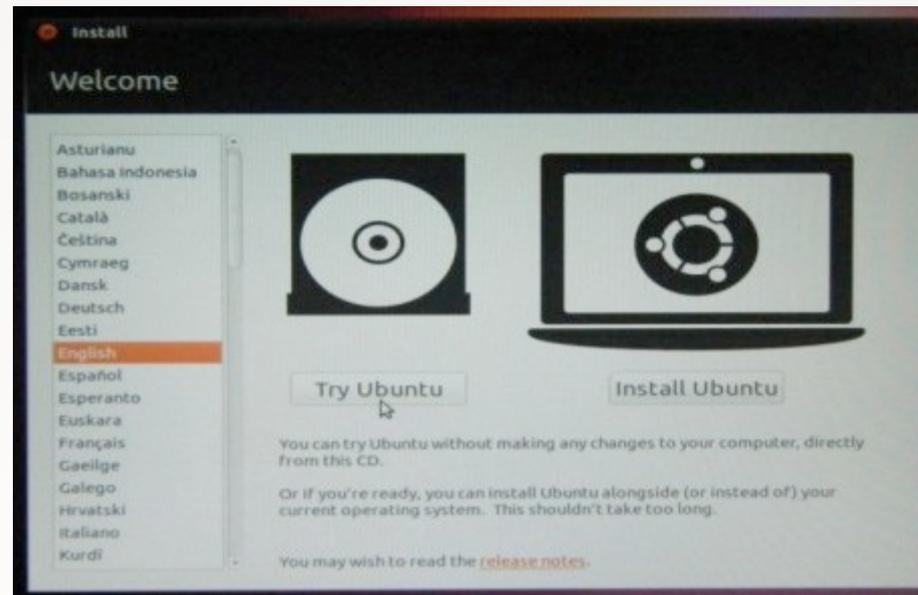
Ubuntu: download, configure, run
Boot and configure
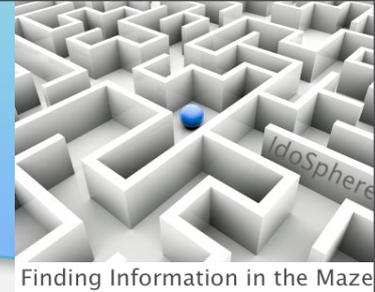
- This is why you need to remember your keyring password. If you've forgotten it, don't worry ...just restart the install

Ubuntu: download, configure, run
Boot and configure
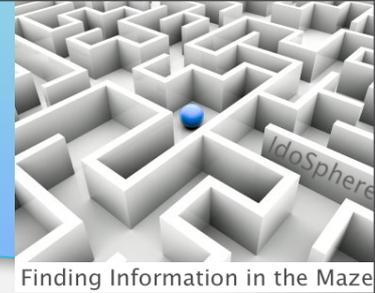
- These screenshots are for an install to the hard drive
- You want to be connected to the Internet in order to automatically update Ubuntu during the install
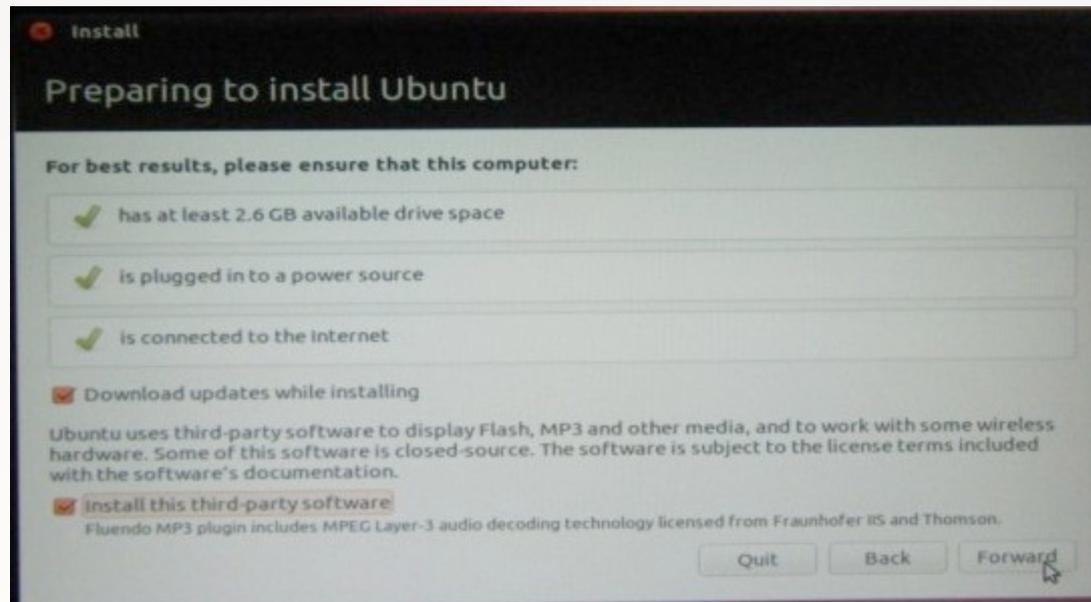
Ubuntu: download, configure, run
Boot and configure
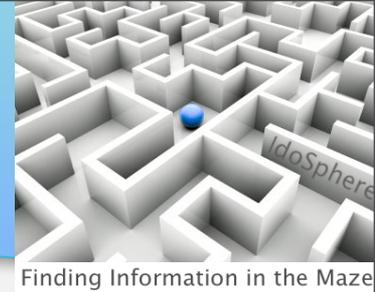
- I chose to use the entire disk, but you can install in a partition (a boot loader will automatically install for you, so you select your O/S at boot time)
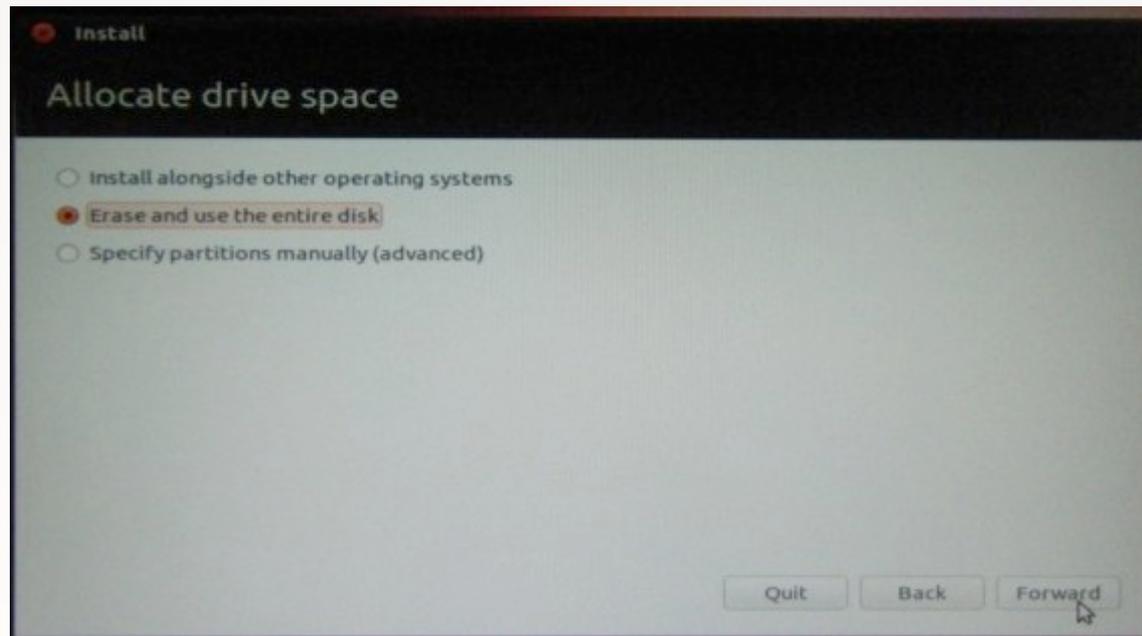
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Boot and configure
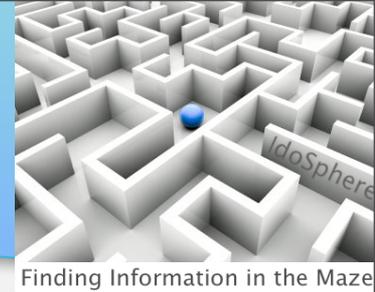
- This is your last chance to change your mind :)
- If ready to proceed, click 'Install Now'
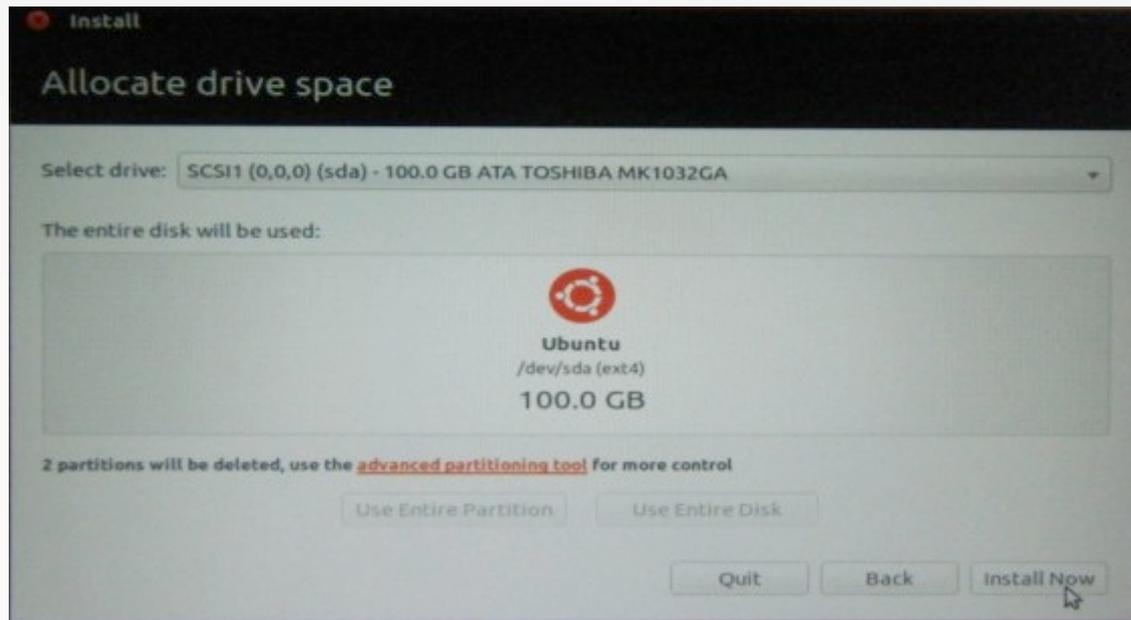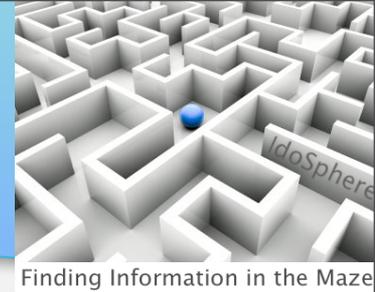
Ubuntu: download, configure, run
Boot and configure

- Select your time zone
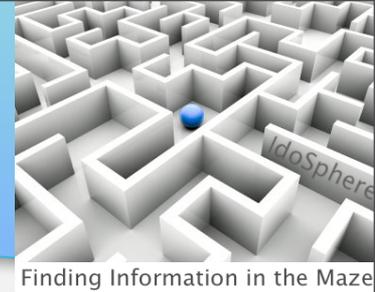
- Select your Keyboard layout
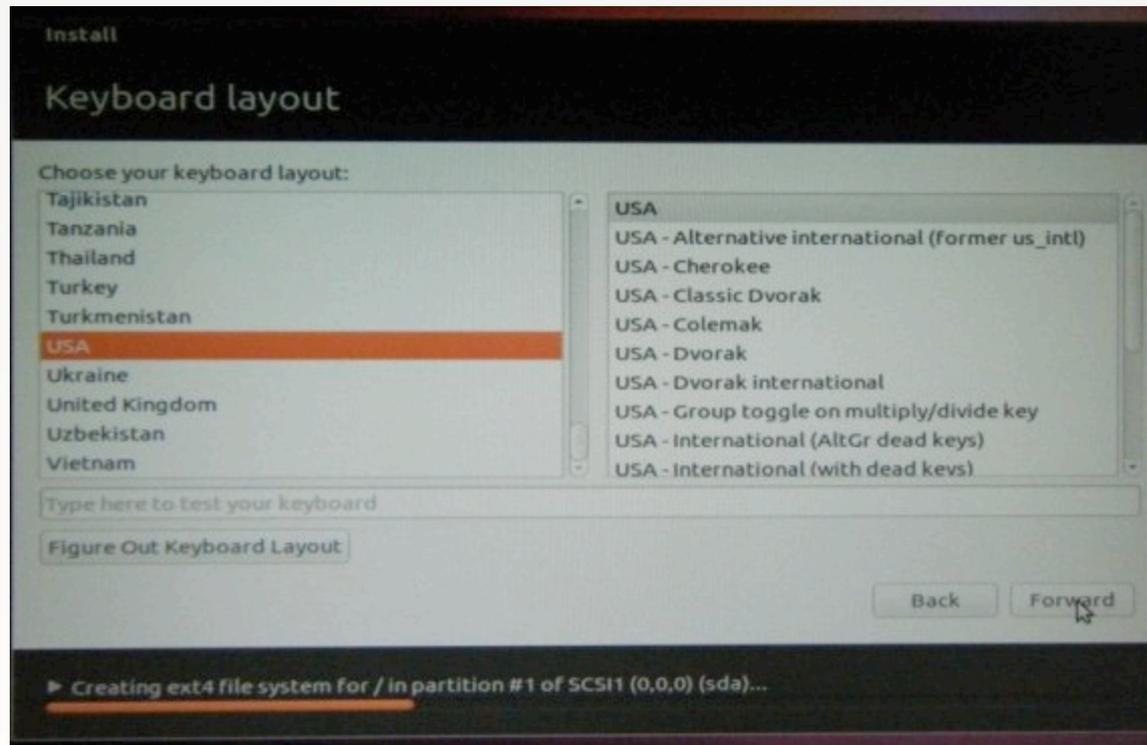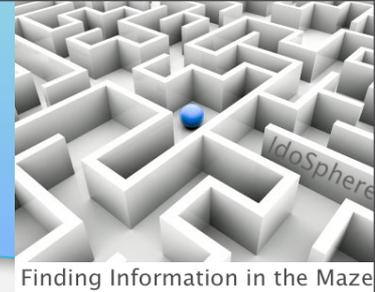
- Designate your name, how you want this computer to be listed on your network, your username, and your password.

Ubuntu: download, configure, run
Boot and configure
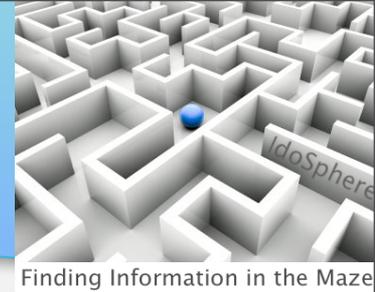
- Ubuntu now has the info it needs, so kick back, grab some coffee, or read the screens to learn about Ubuntu while it installs
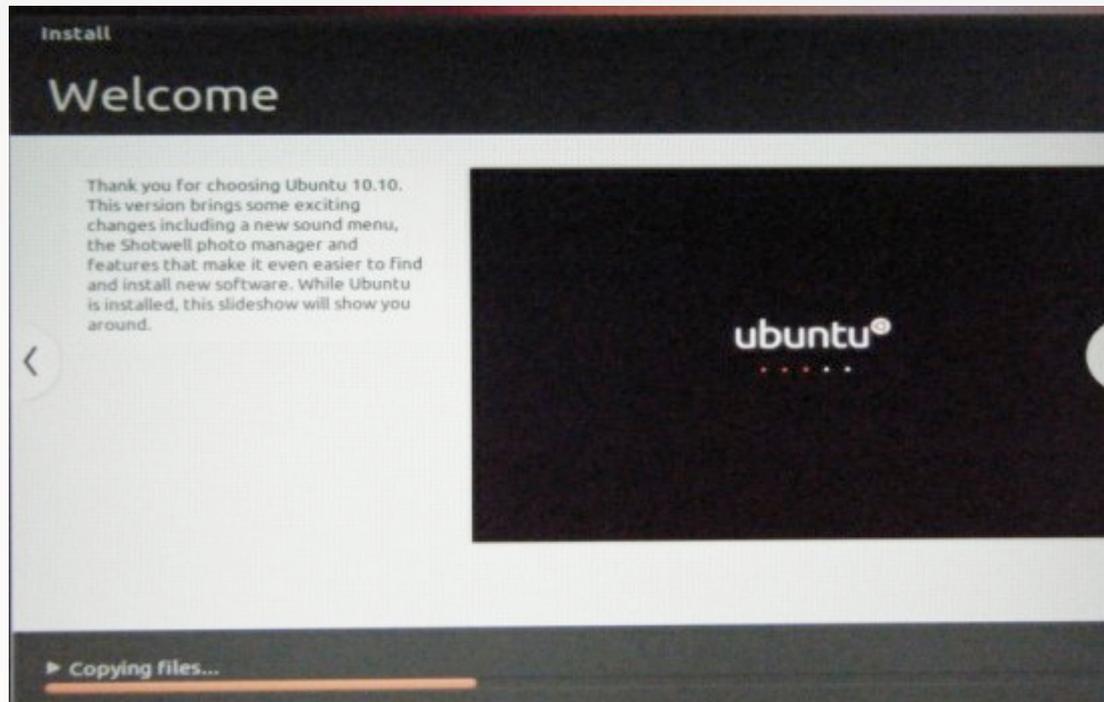
Ubuntu: download, configure, run
Boot and configure
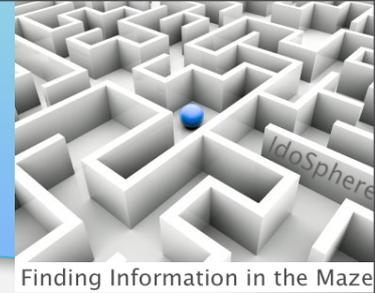
- Install is complete (well, for now), so click the 'Restart Now' button
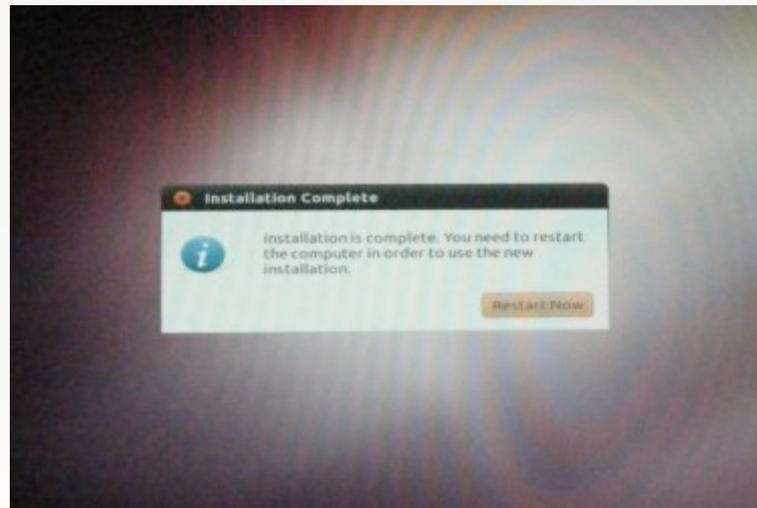
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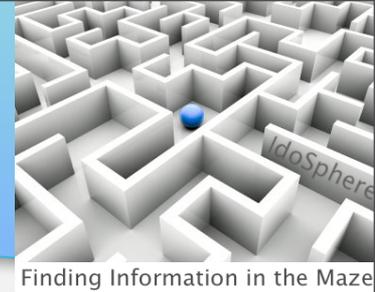
- The username you specified will be showing. If multiple users accounts are set up in the future, this is where you would select your account. Click your username and enter your password
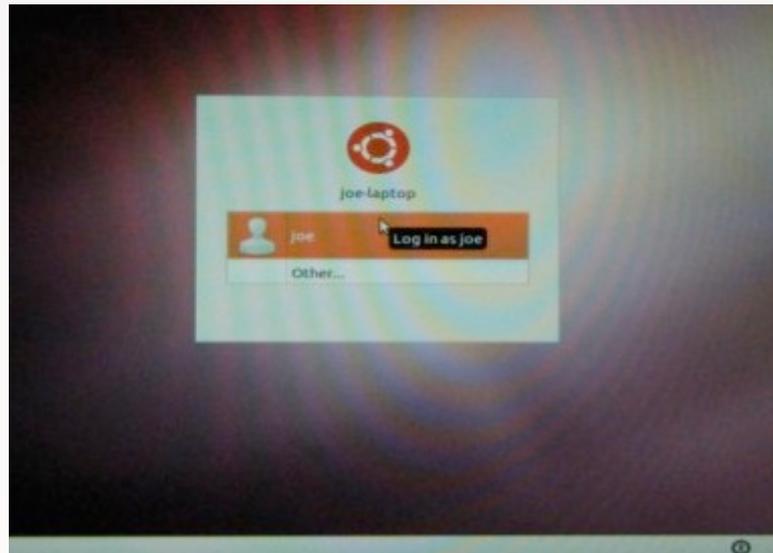
- I suggest allowing Ubuntu to check for updates daily. With this first boot up, you will have a number of updates to install, so click 'Install Updates'
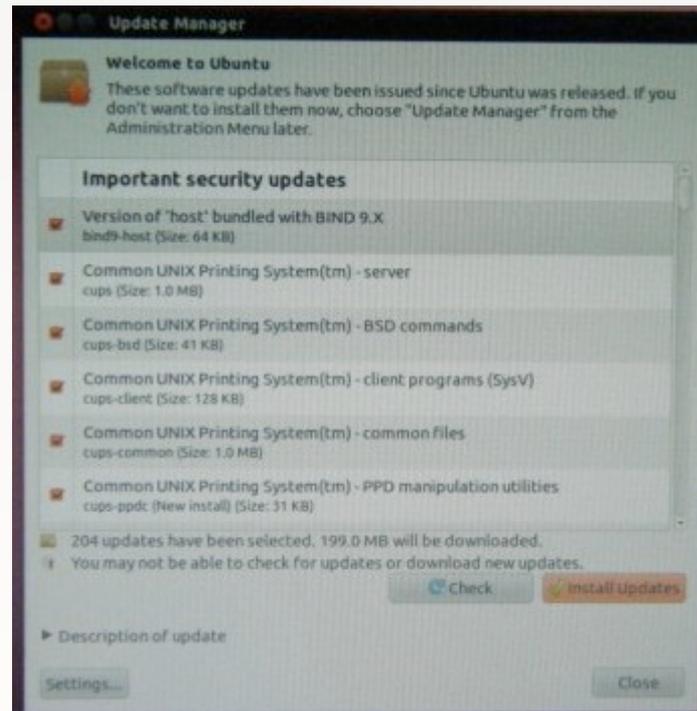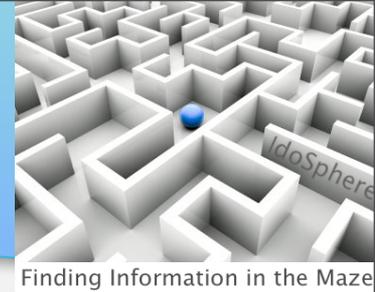
- Ubuntu will require you to enter your password whenever you are updating software. This helps ensure that you realize that you are about to update your system.
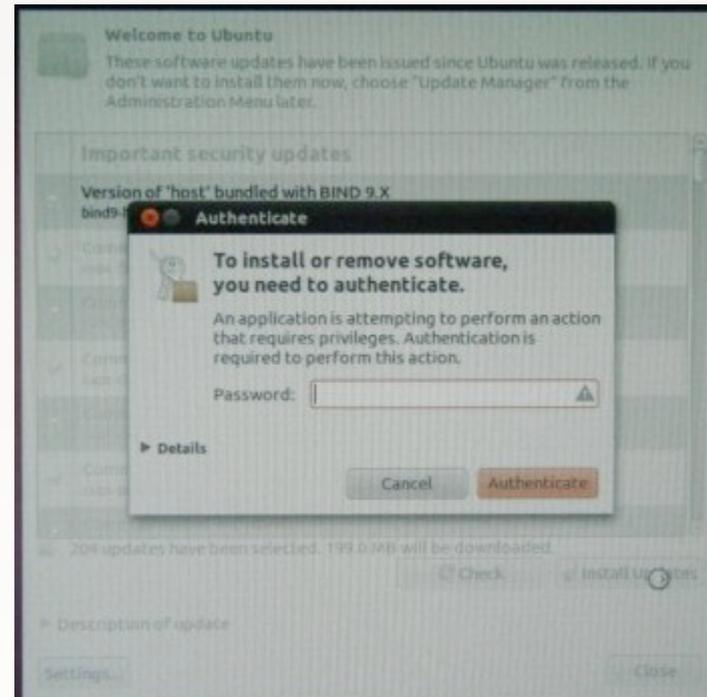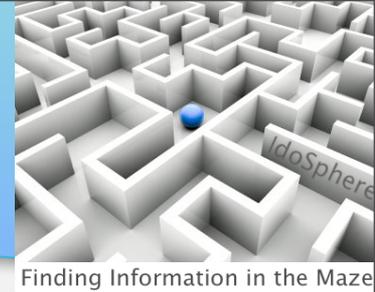
- The Update Manager will tell you when all updates have been applied. You may need to reboot one more time
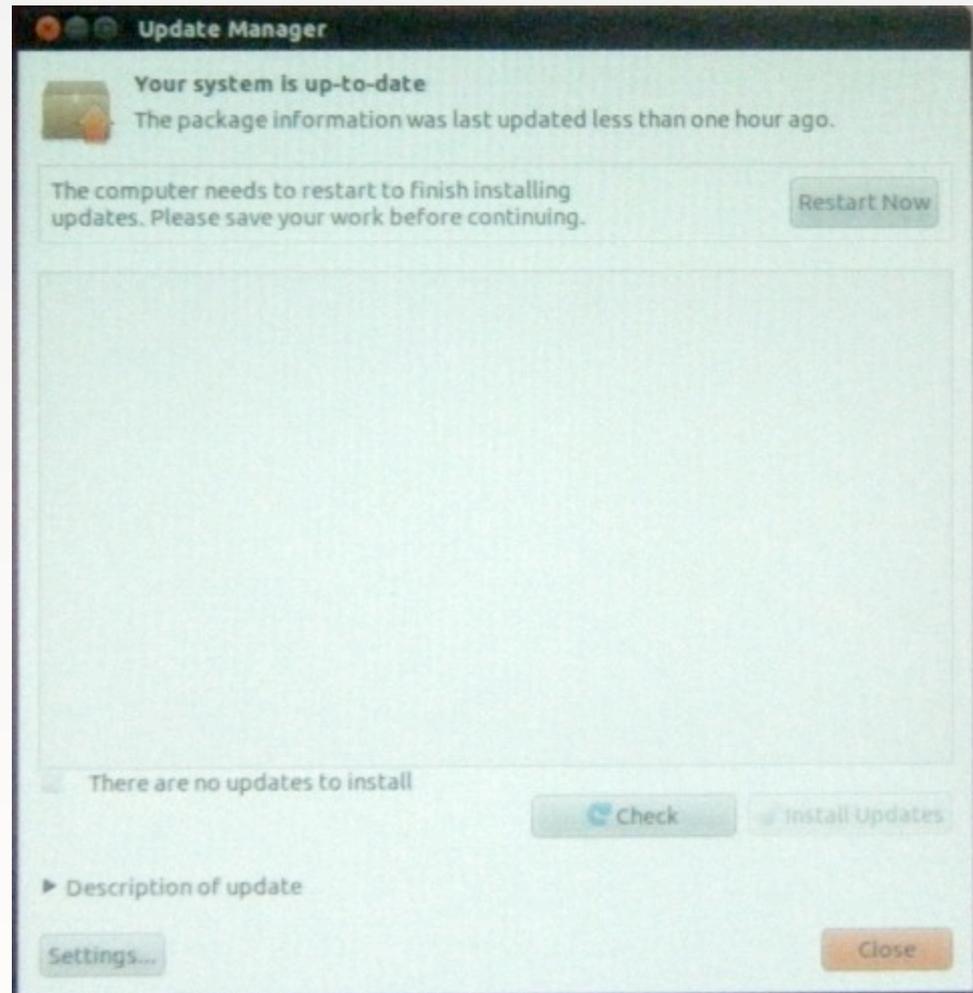
Ubuntu: download, configure, run
Boot and configure
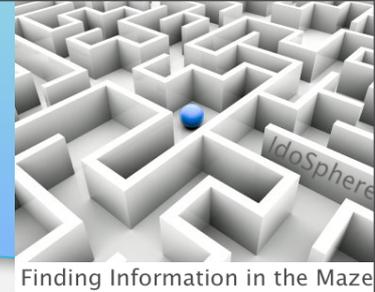
- Many devices run easily with Ubuntu. My Canon printer needed a driver to work over wifi. I had to go to http://support-my.canon-asia.com/contents/MY/EN/0100236502.html to find the driver

- Ubuntu is based on 'Debian', so look for .deb install files

- Downloaded files will typically be saved in your Downloads 'Place'...

Ubuntu: download, configure, run
Boot and configure
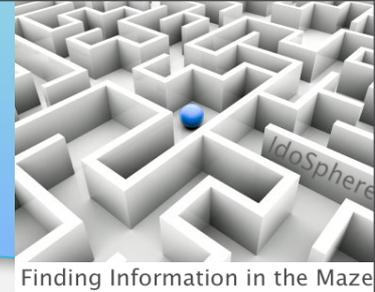
- Downloaded install files will typically be compressed archives. Double-click to open.
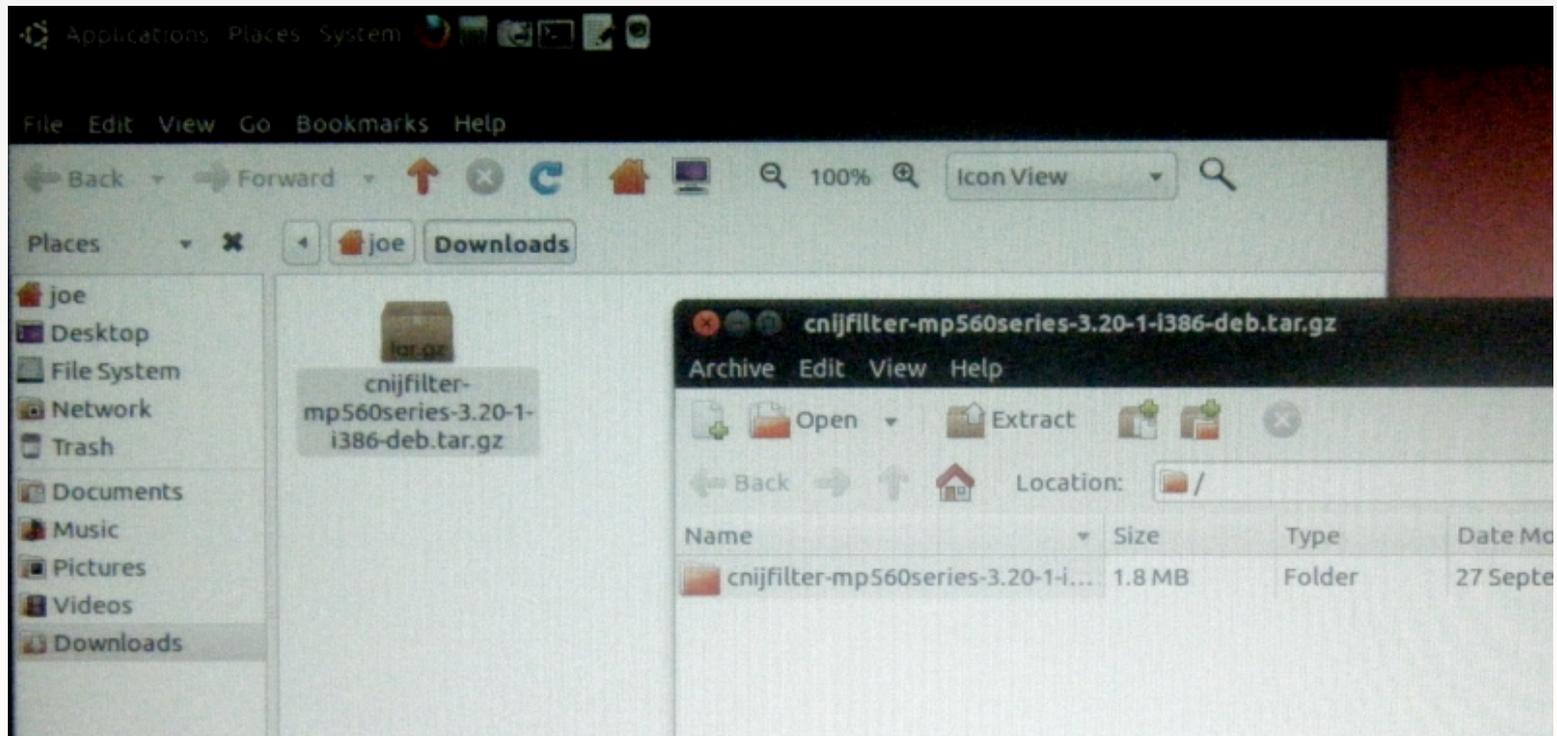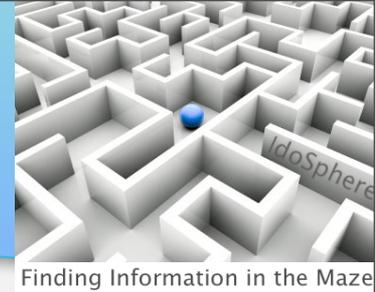
- In this case, the archive included multiple 'packages'; I double-clicked the packages folder to open it
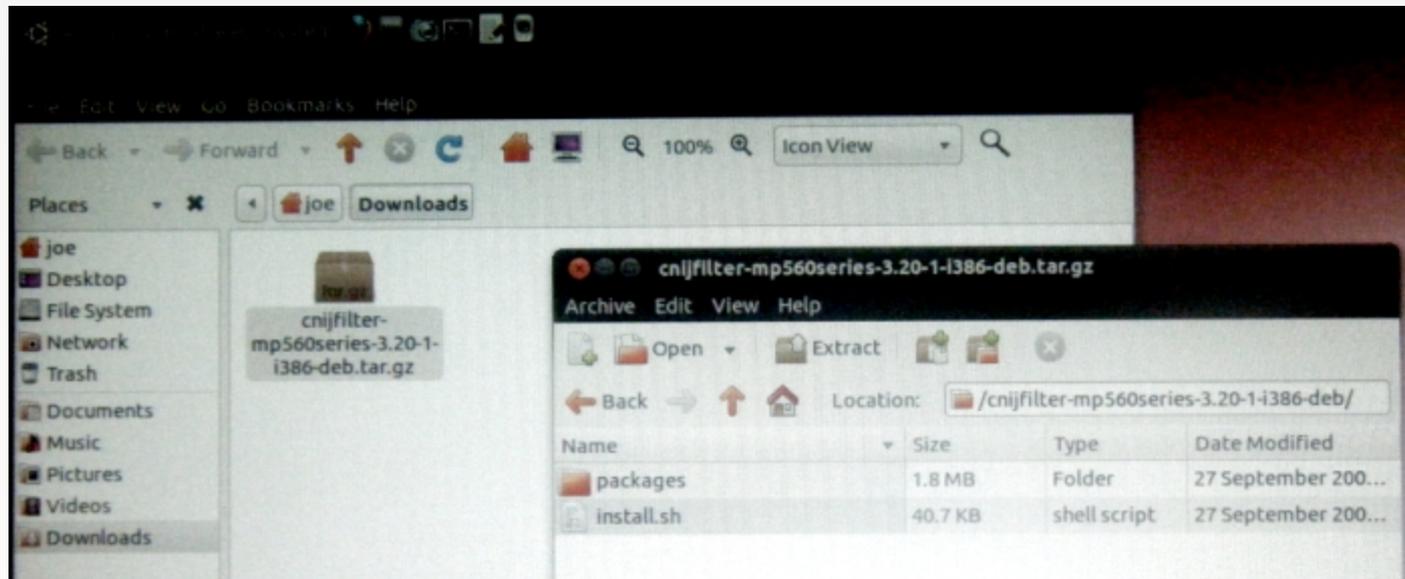
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Boot and configure
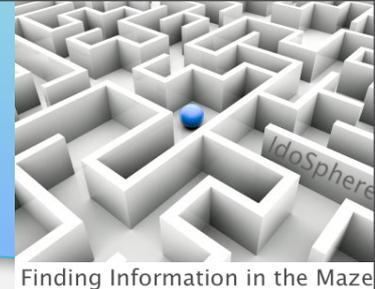
- Finally the debian packages are available. When you double-click on a .deb file, the Package Manager will attempt to install the package (I did this once for each package)
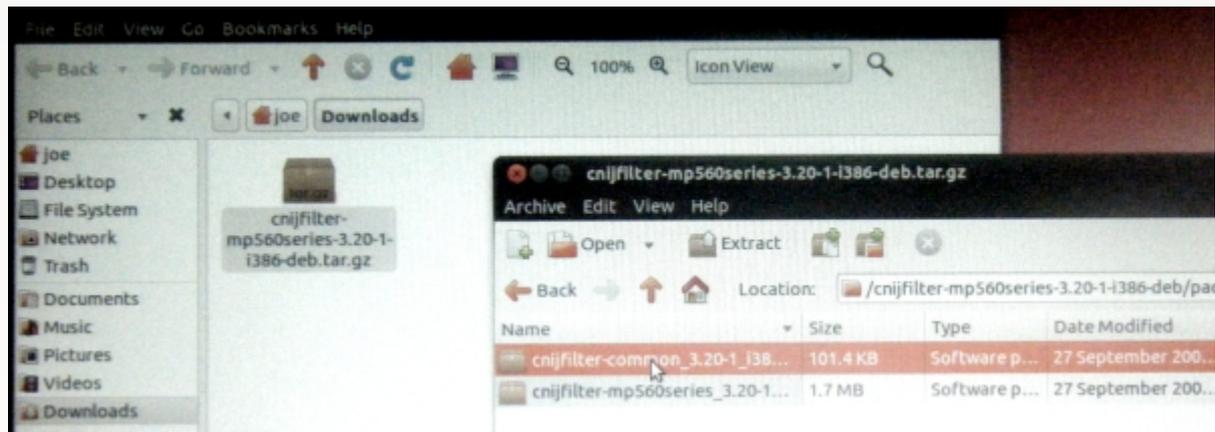
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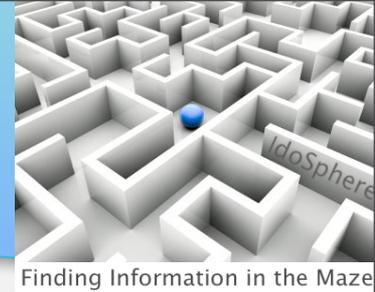
- If this package were already installed, a 'Reinstall' button would display. Since this was the initial install of my printer drivers, I clicked the displayed 'Install' button (and entered my password when prompted)
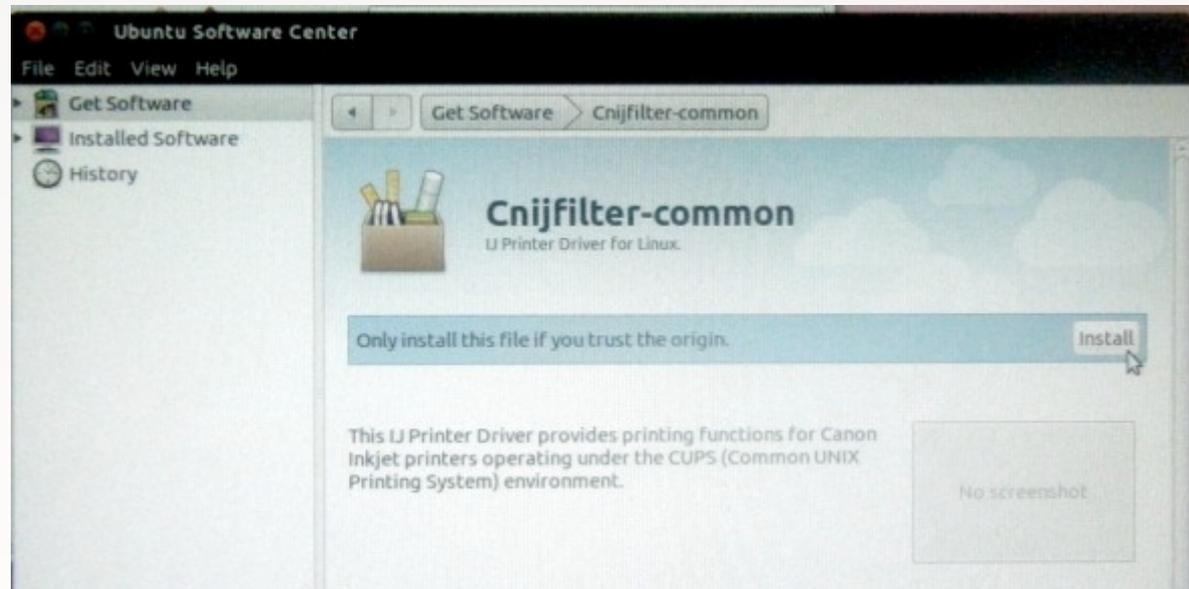
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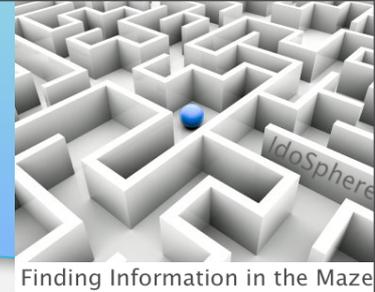
- To complete the printer config, I clicked System > Administration > Printing
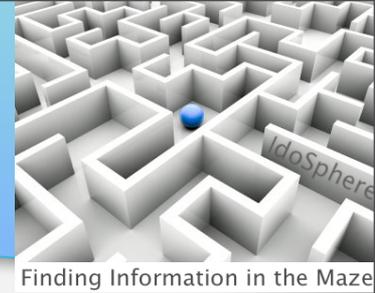
- No printers were showing yet. Click 'Add' to add / configure a printer
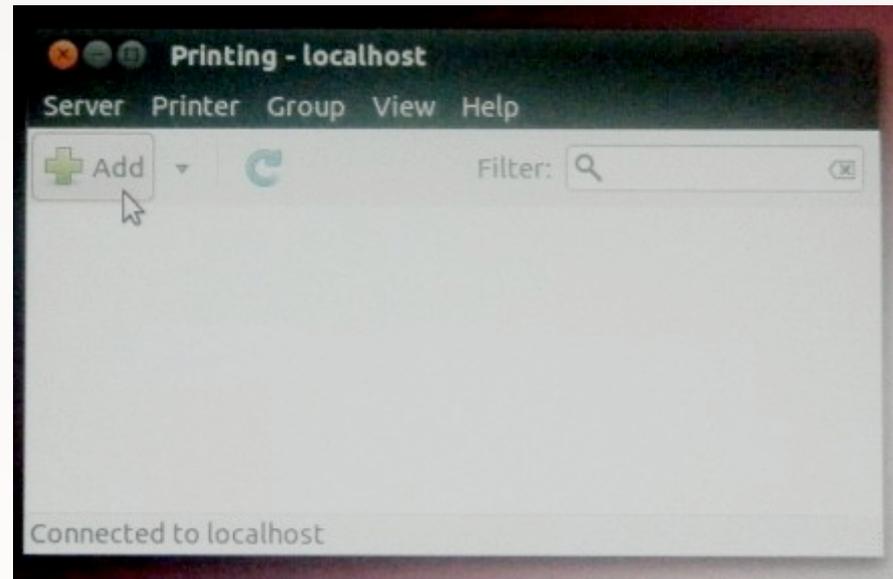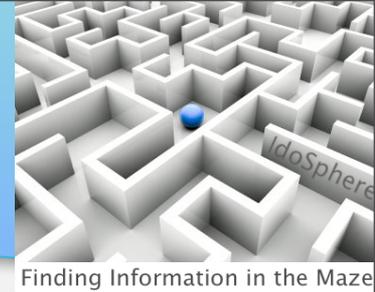
- The wireless printer was now available in the Network Printer section; when I selected it, the device URI displayed, and I clicked 'Forward'
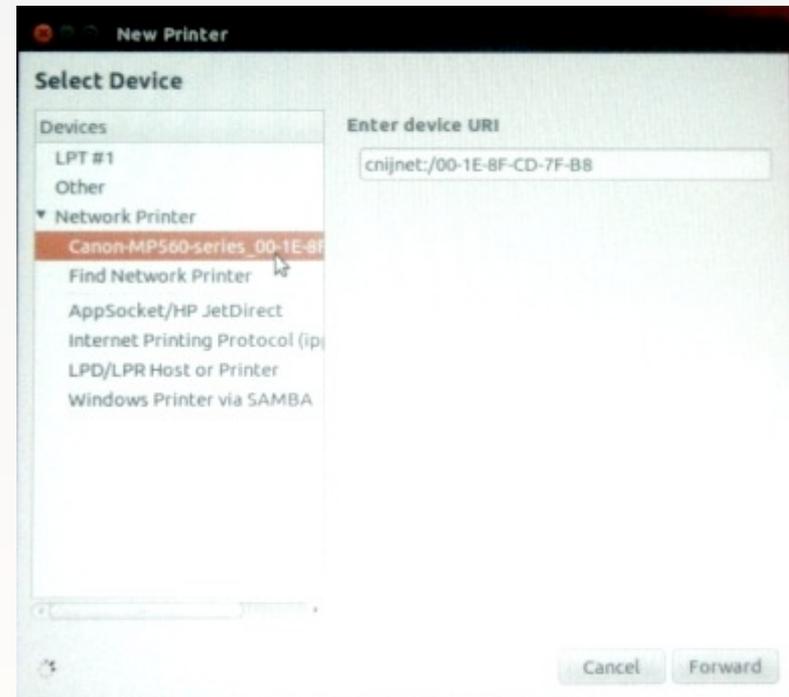
Ubuntu: download, configure, run
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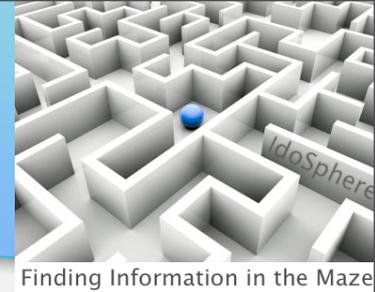
- Ubuntu searched for (and located) the drivers
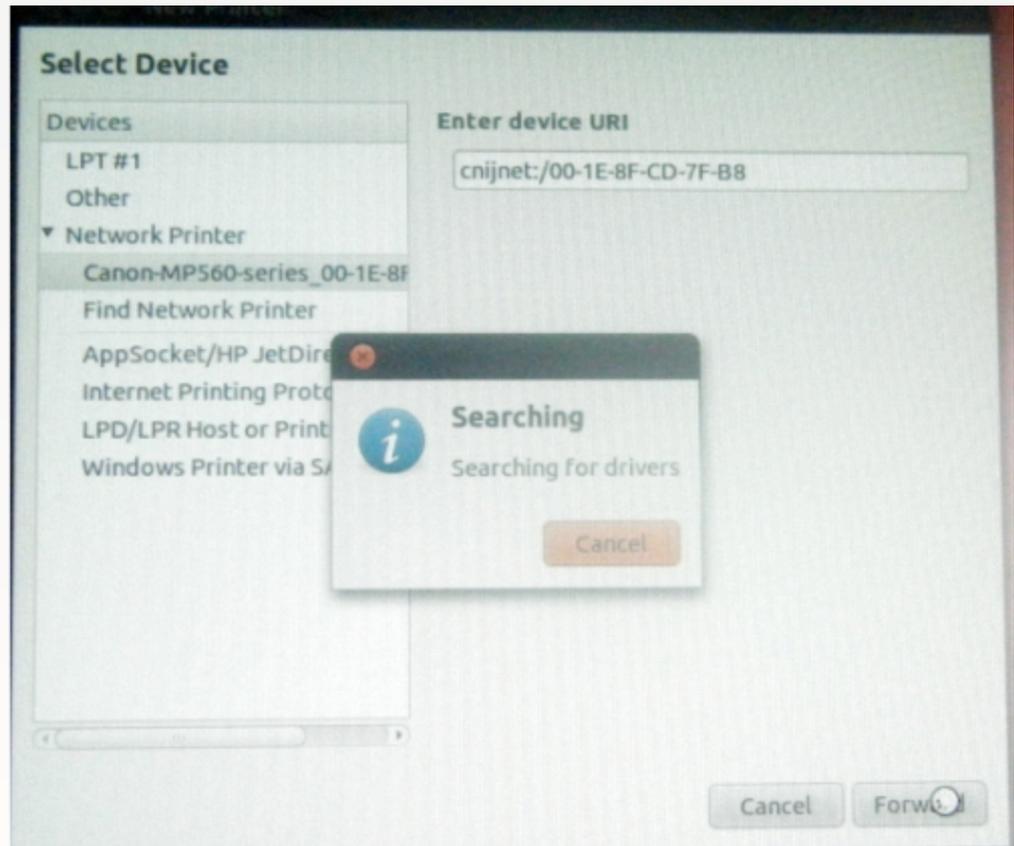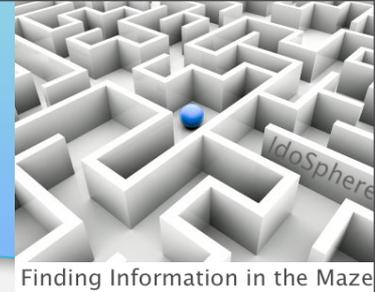
- The next dialog box required a name for the printer (it will make a suggestion), and optionally one can provide Description and Location fields. Click 'Apply' to save.
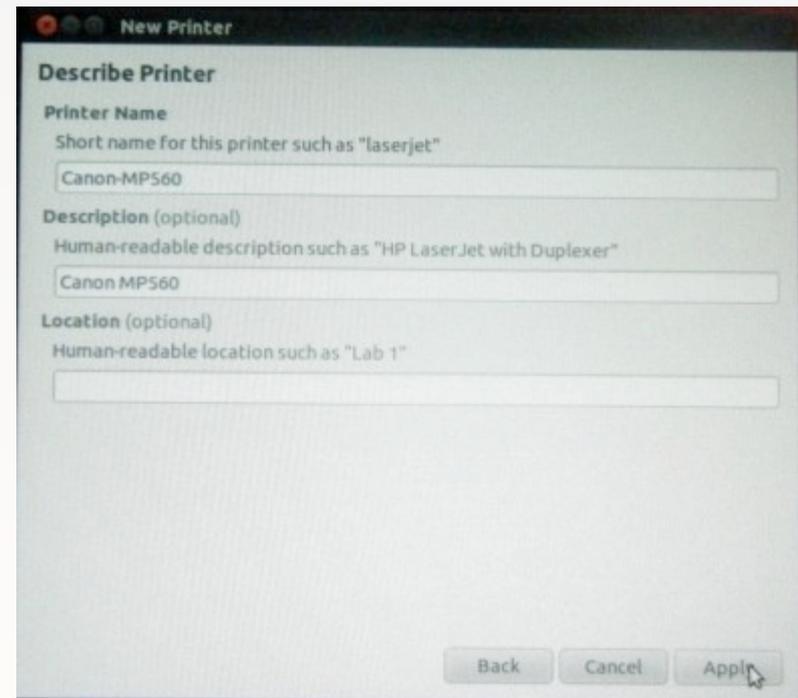
Finding Information in the Maze
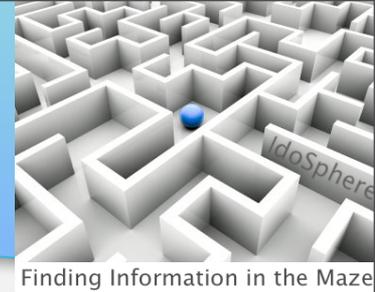
- You can see the printer now listed. The only remaining step is to verify the installation by printing a test page.

- It's important to note that I usually have not had to go to this much trouble to install a new printer; usually Ubuntu sees it right away and I simply select the driver from a list of available drivers.
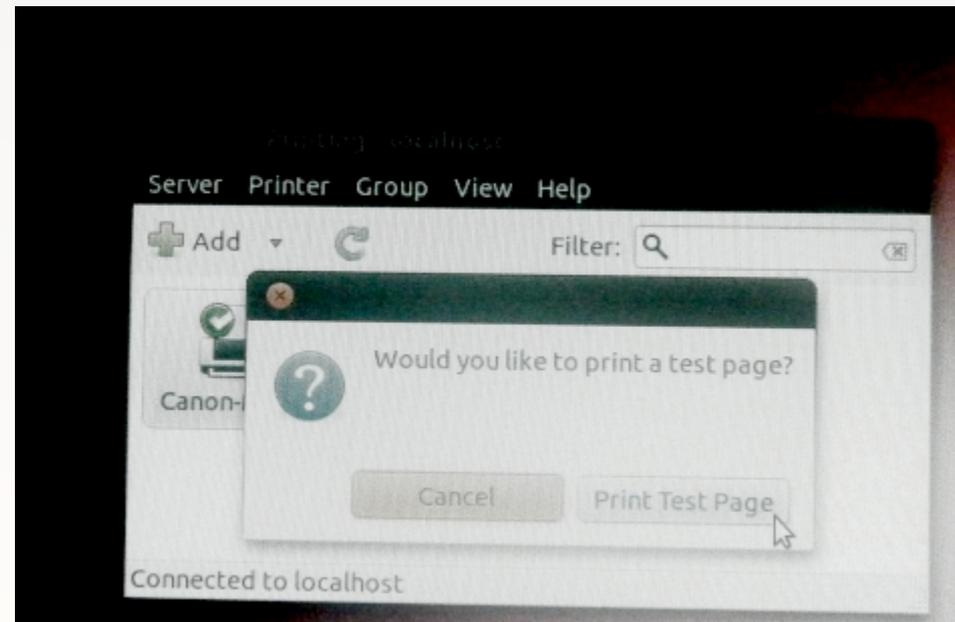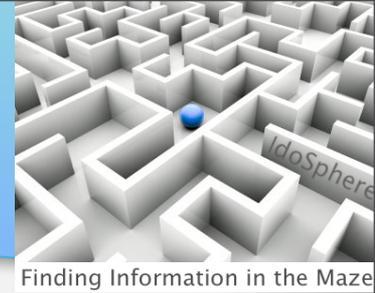
- Tens of thousands of applications are available through the Ubuntu Software Center, located on the Applications menu

Ubuntu: download, configure, run
Select and Install software
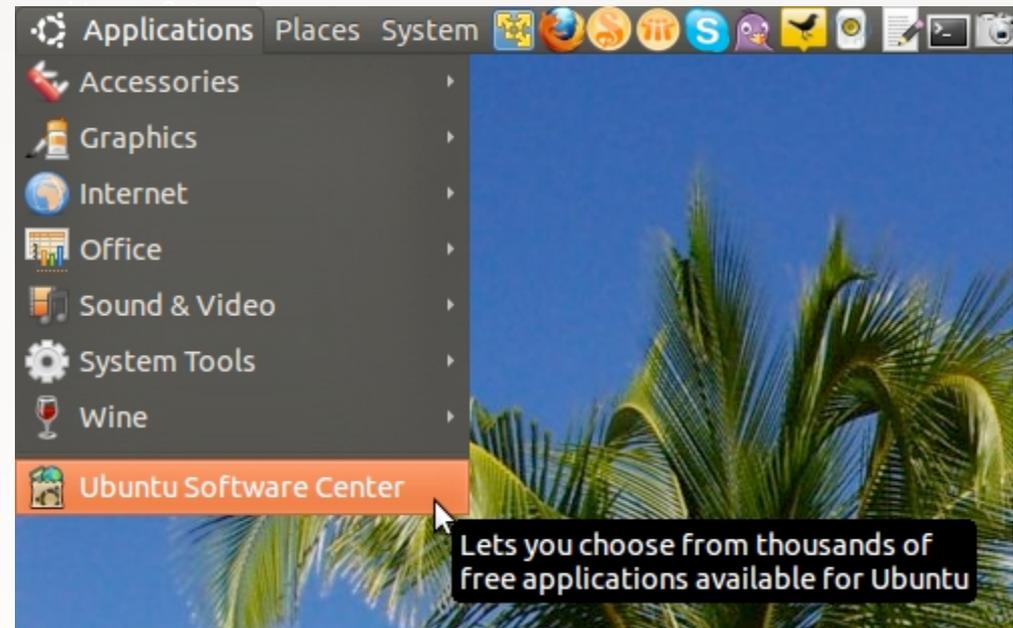
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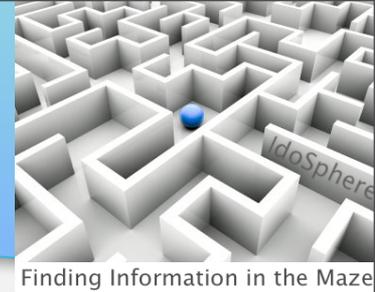
- Before you select software, configure the software sources...

Ubuntu: download, configure, run
Select and Install software
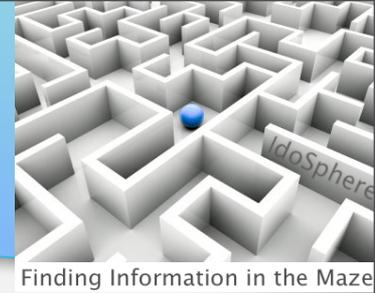
- Select Edit > Software Sources...

Ubuntu: download, configure, run
Select and Install software
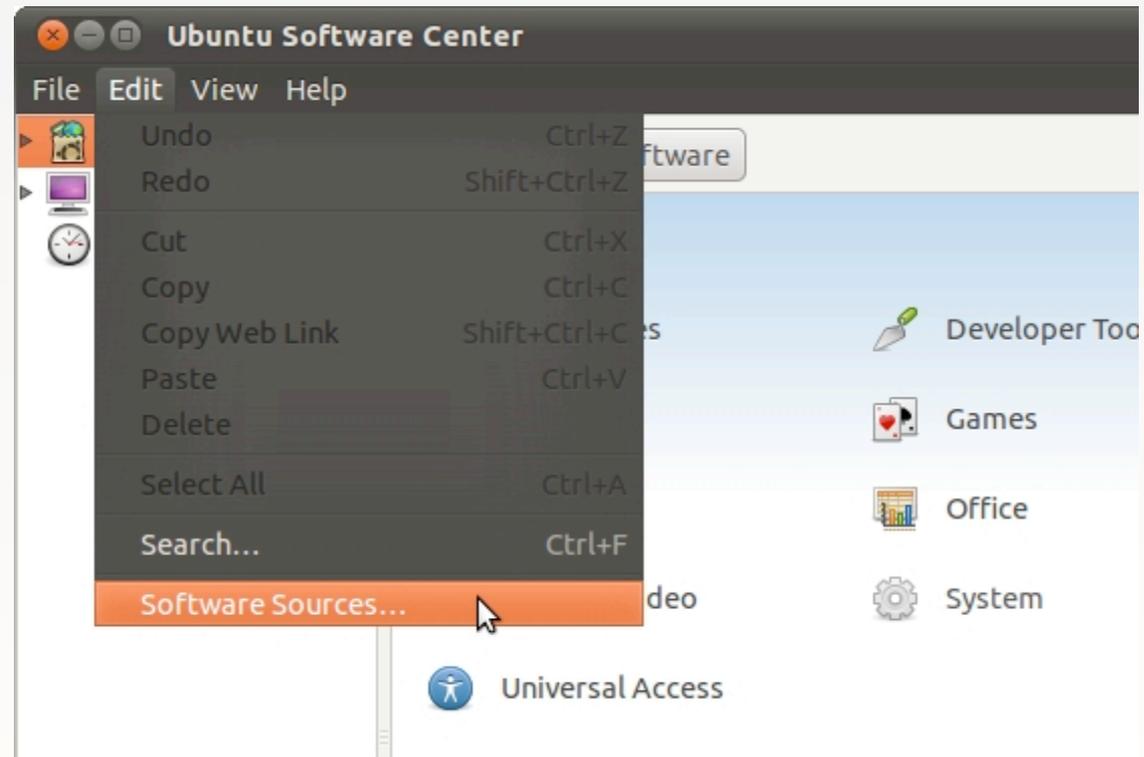
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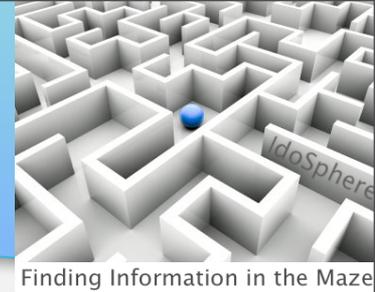
- I typically select all options (except Source code). If there are copyright or other licensing issues, you can read about that in each app's listing.

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Select and Install software
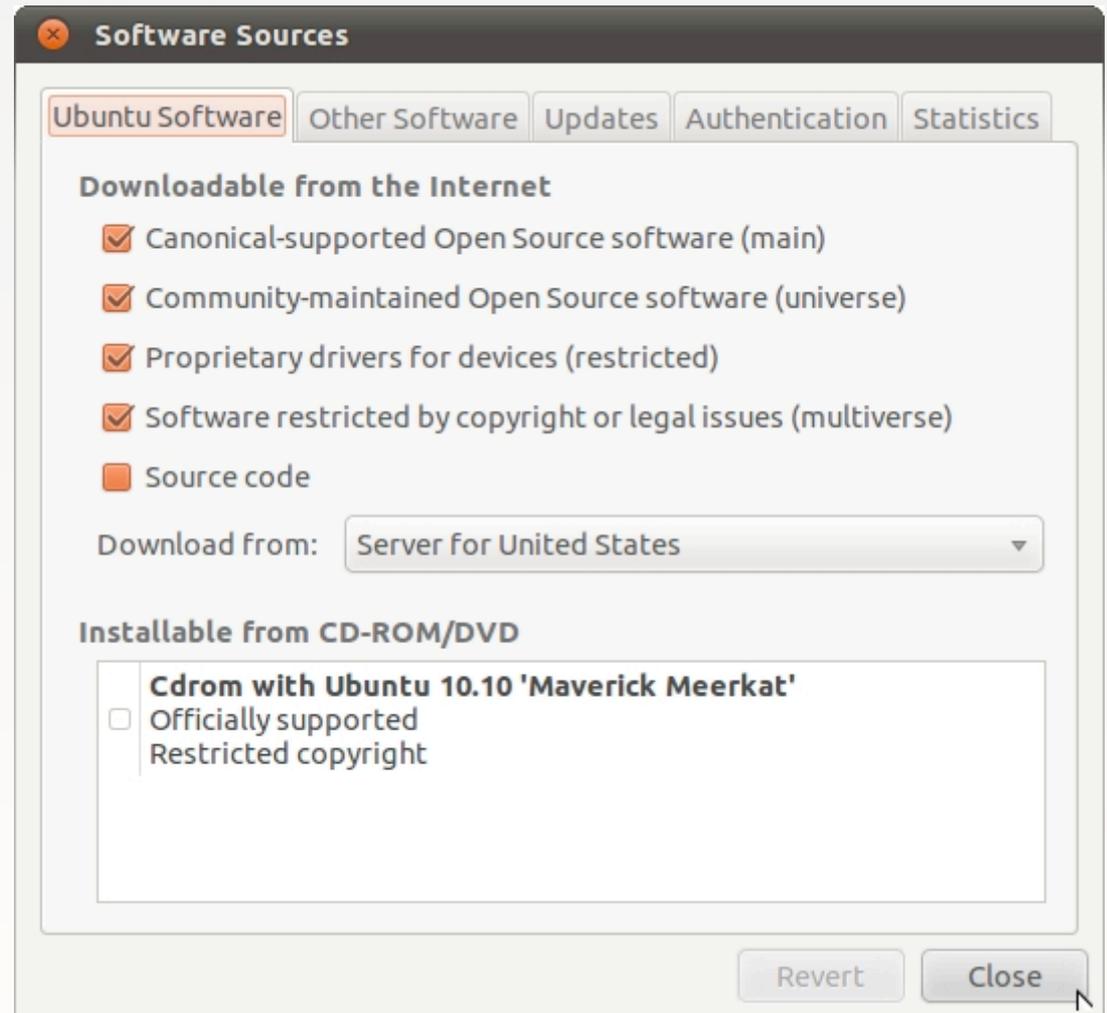
Finding Information in the Maze
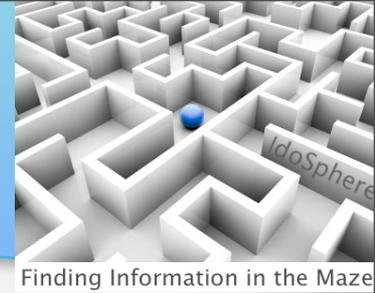
- Similarly, on the 'Other Software' tab, I typically select all options. Click 'Close' to save your selections.
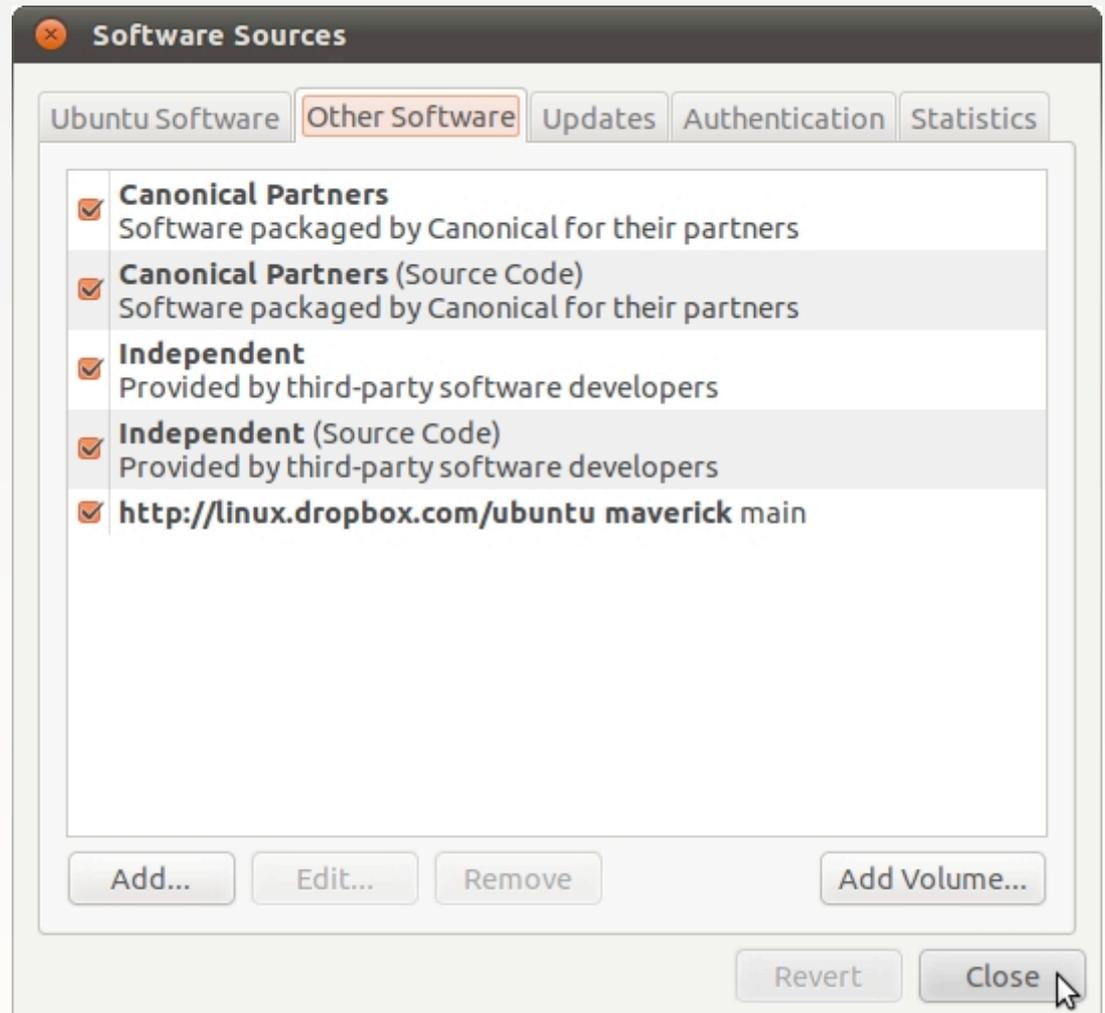
Ubuntu: download, configure, run
Select and Install software
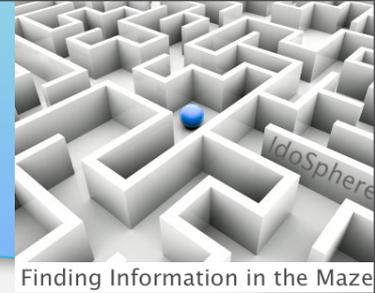
- To add applications, you can browse the categories, or if you know the name of an app, just type it in the search bar. The example here is Skype
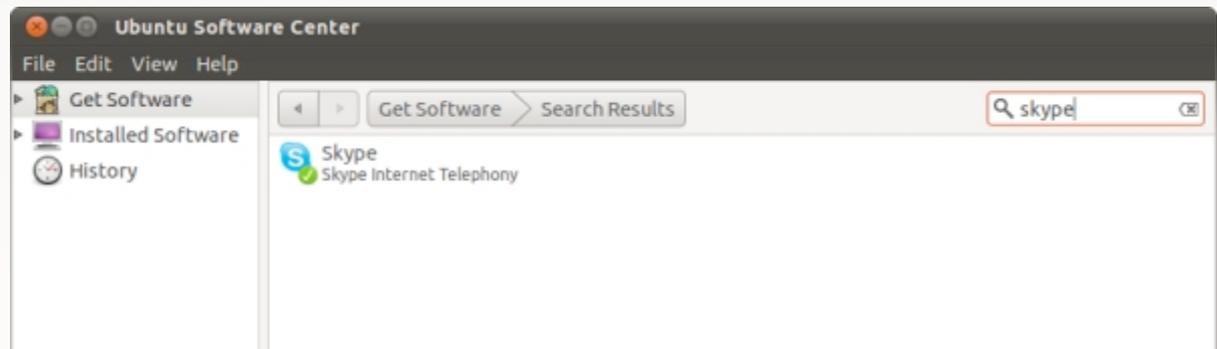
Ubuntu: download, configure, run
Select and Install software
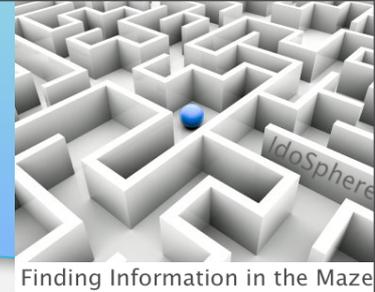
- Since I already had installed Skype, it the 'Remove' button is displayed instead of the 'Install' button.

Ubuntu: download, configure, run
Select and Install software
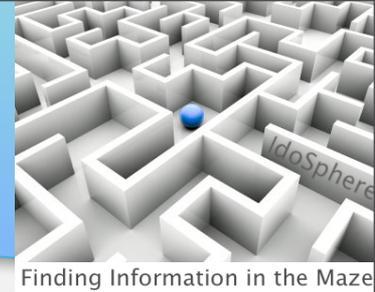
- As the install window told us, Skype can be found under Applications > Internet > Skype

Ubuntu: download, configure, run
Select and Install software
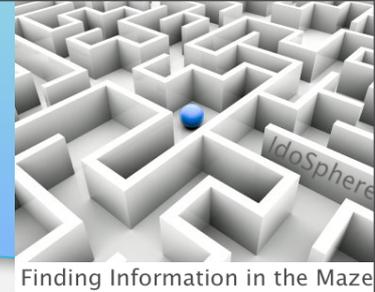
- Since I have a webcam, I followed the same procedure to install the 'Cheese' webcam app as I followed to install Skype.
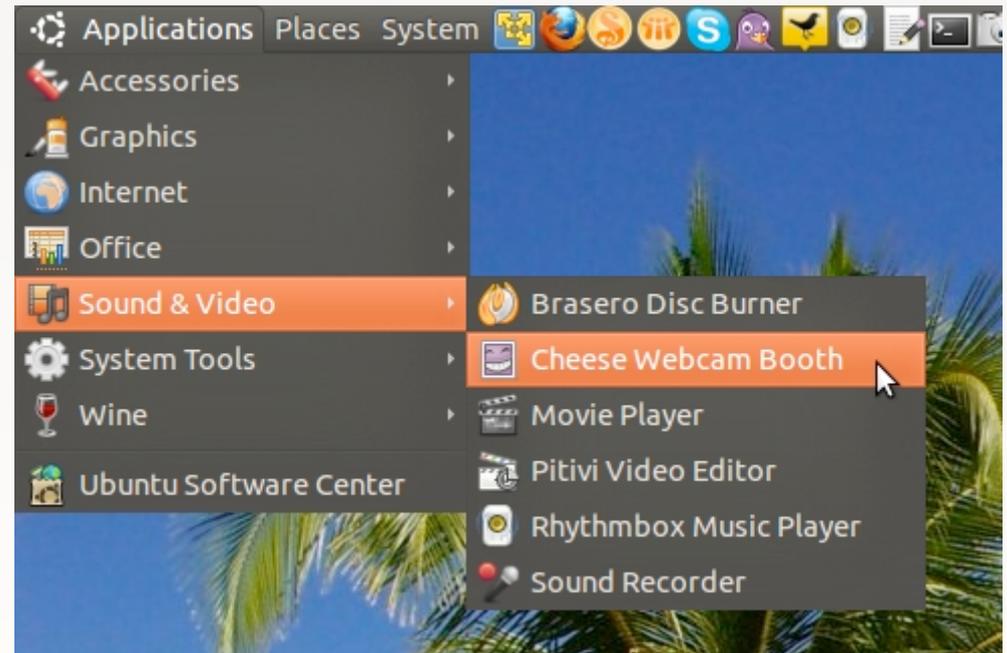
Select and Install software
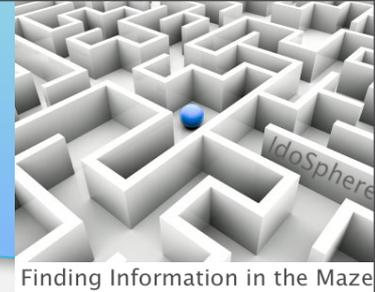
- Running 'Cheese' provides an easy way to test your webcam.
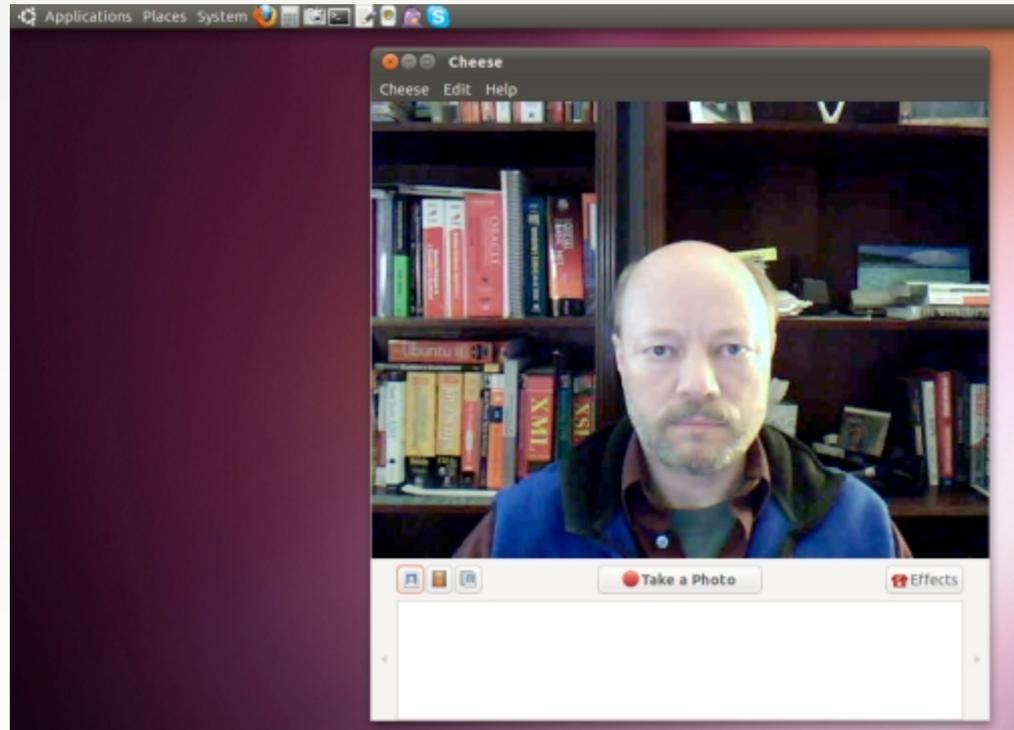
Ubuntu: download, configure, run

Some apps to consider...
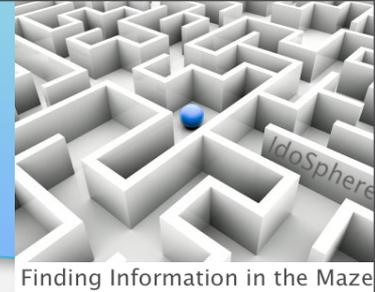
file explorer	Computer app, or Places
graphics, images manipulation	GIMP, Shotwell, Shutter
photo management	Picasa, Shotwell
web browser	Firefox, Chrome
chat	Pidgin, Skype, Gwibber
MP3 music & device management	Rhythmbox, gtkpod (iPod mgr)
screen grabs	Take Screenshot
Twitter, Facebook, LinkedIn	TweetDeck (install Adobe Air first)
text edit	gedit
backup	SpiderOak
file transfers	DropBox
calculator	Calculator
webcam	Cheese, Skype
music purchase	Ubuntu One
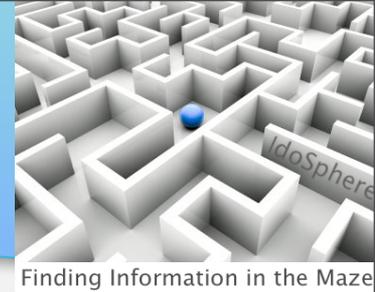
- The initial desktop background is kinda boring. To change the wallpaper, right-click on the desktop and select 'Change Desktop Background'

Finding Information in the Maze
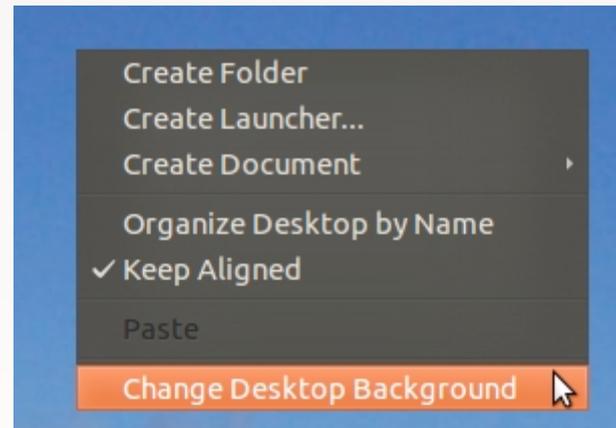
Customize the interface
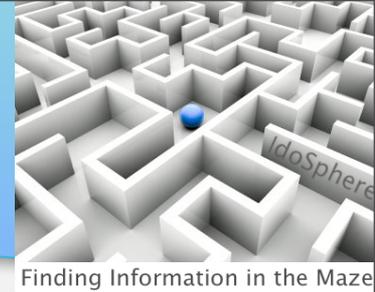
- The Appearance Preferences dialog lets you select from pre-loaded images, add an image of your own, or browse the web for wallpaper.
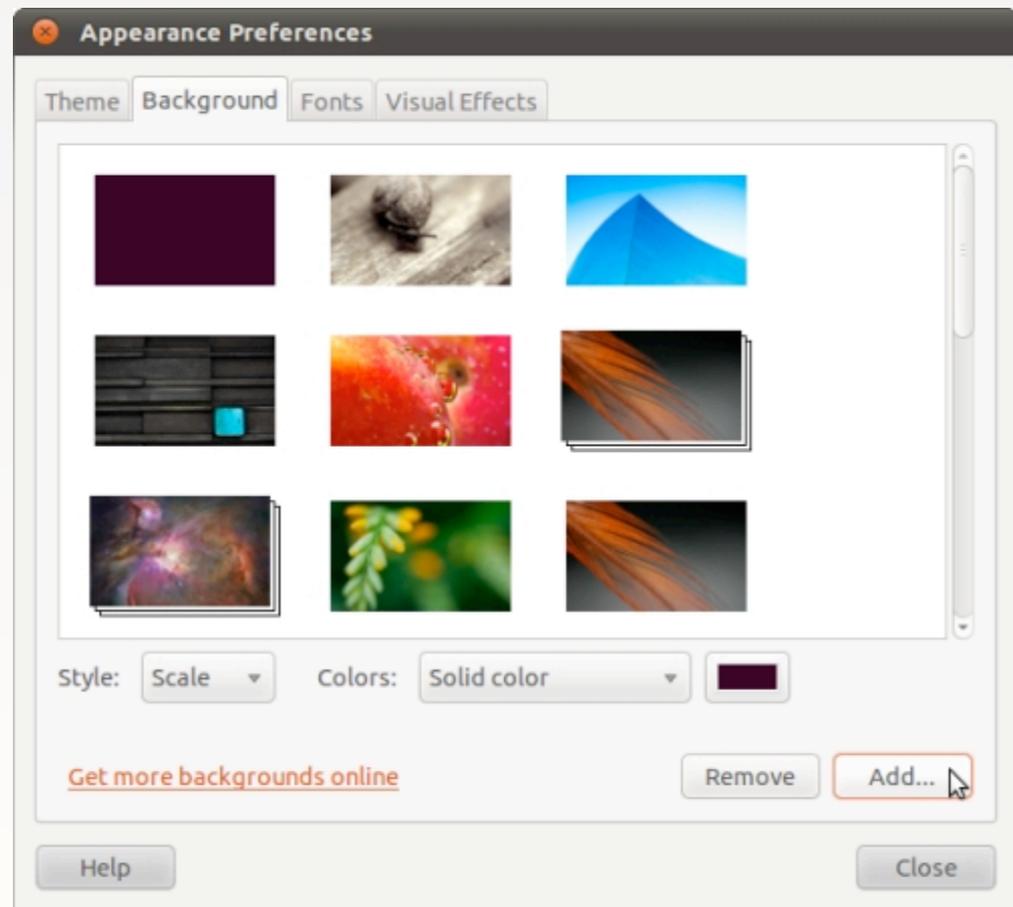
Ubuntu: download, configure, run
Customize the interface
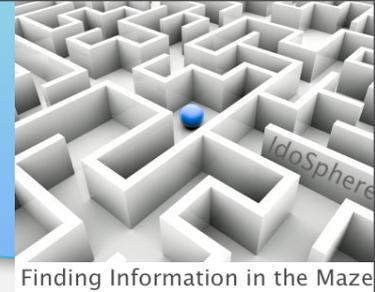
- I clicked 'Add' and then selected an image that I'd downloaded in the past, and clicked 'Open' to save my selection.
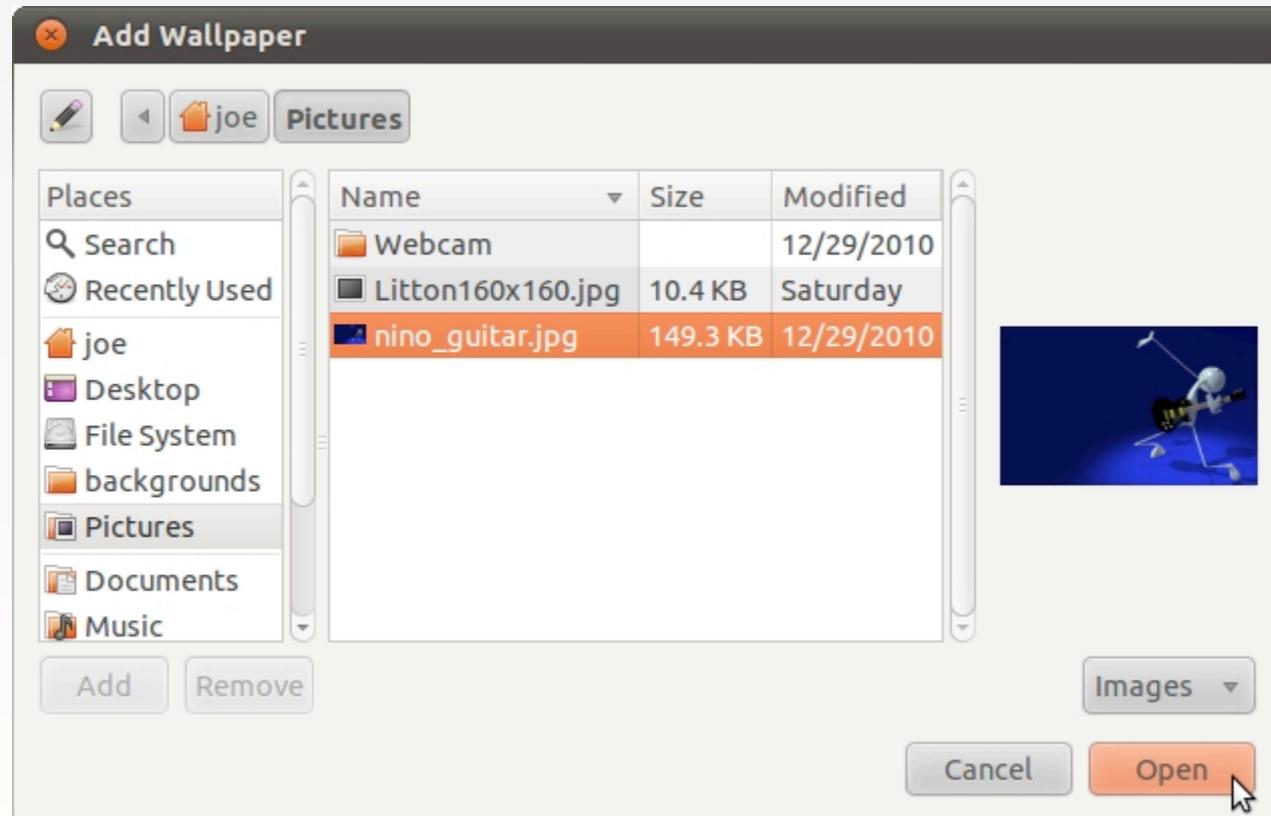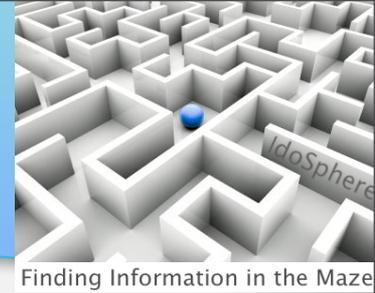
- Ahh...That's more like it :)

Customize the interface
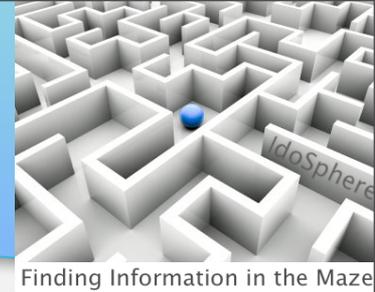
- To organize the icons on your Ubuntu desktop, right-click on the desktop and select 'Organize Desktop by Name'
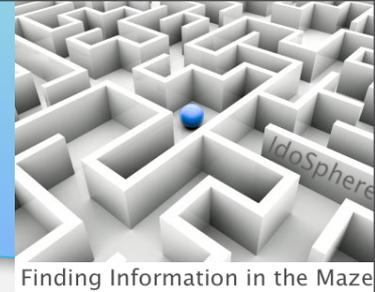
Customize the interface

- The icons will now be displayed in an orderly manner.
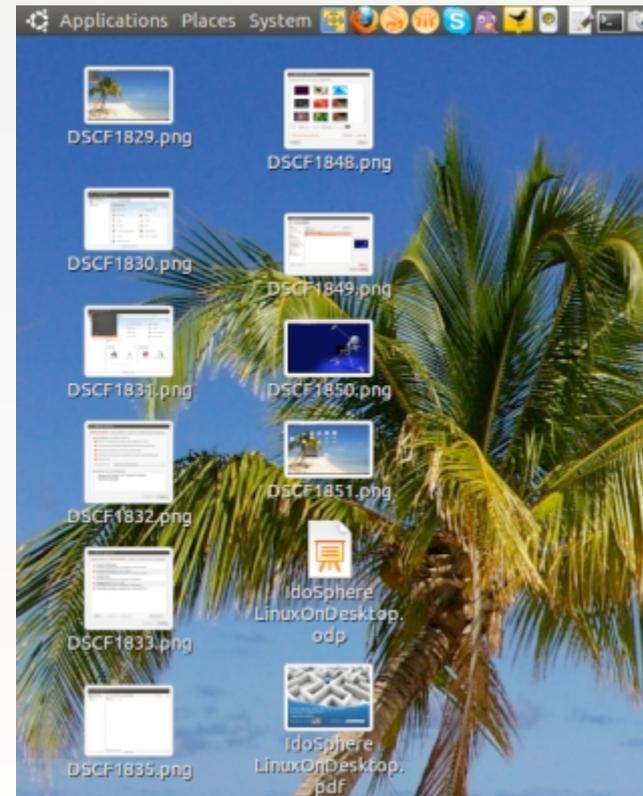
Ubuntu: download, configure, run
Customize the interface
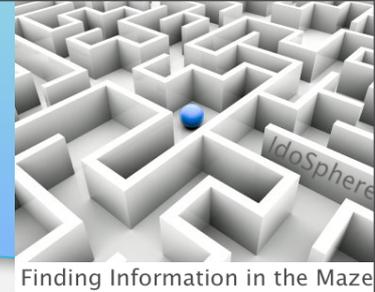
- To customize the menu, select System > Preferences > Main Menu
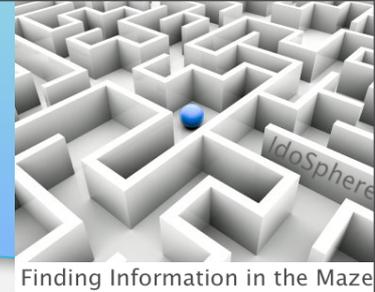
- To hide the Games menu, for example, uncheck Games and click 'Close'...
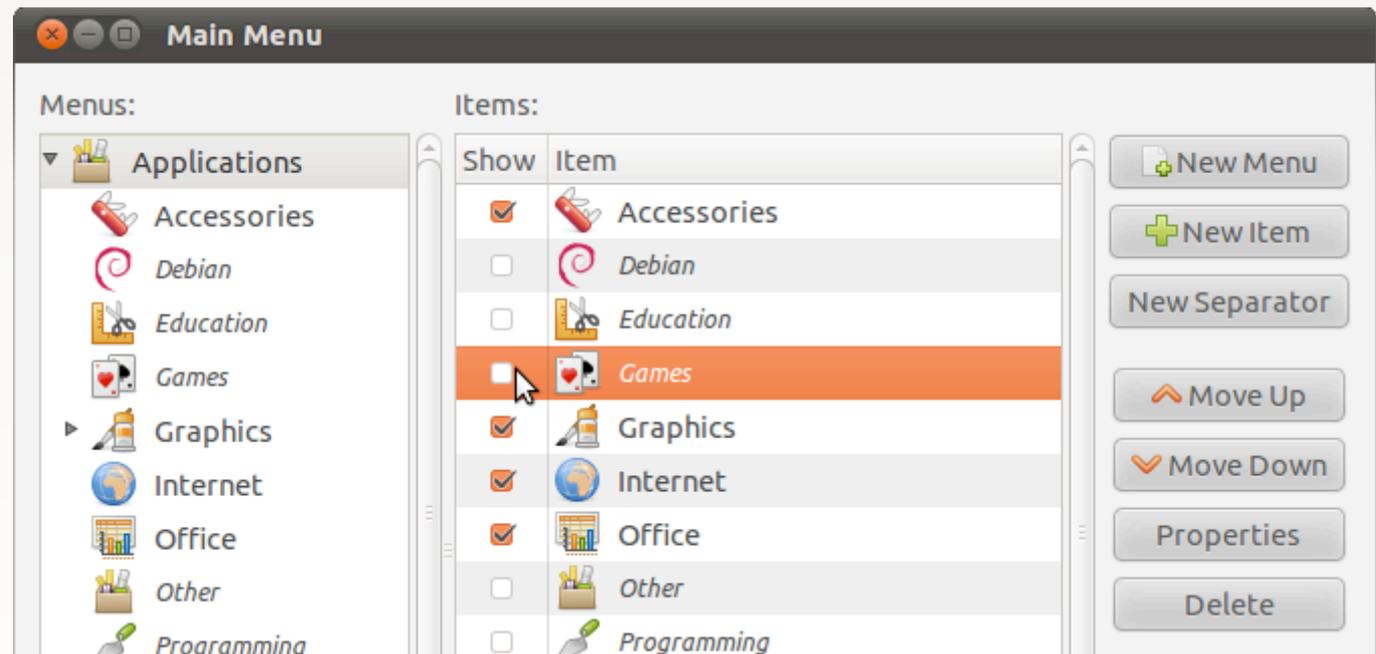
Ubuntu: download, configure, run
Customize the interface
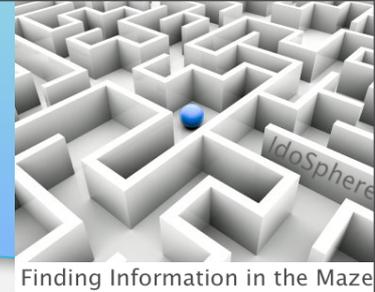
- The Games menu is now hidden. You can likewise rearrange the position of menus, and add / remove / hide menu options as you like.
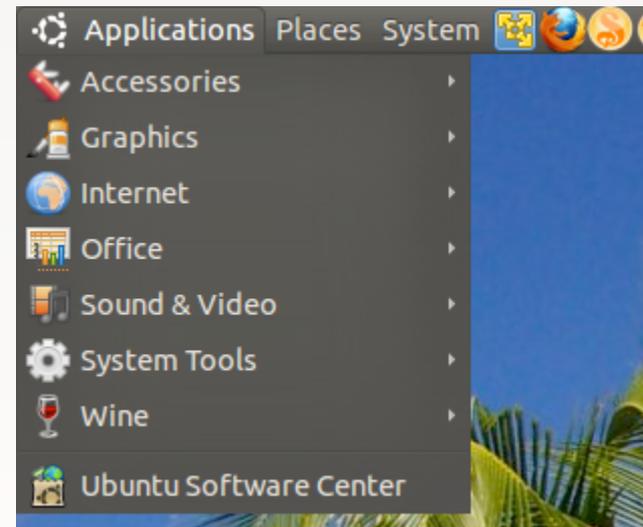
Install & run Notes, Symphony in native Ubuntu
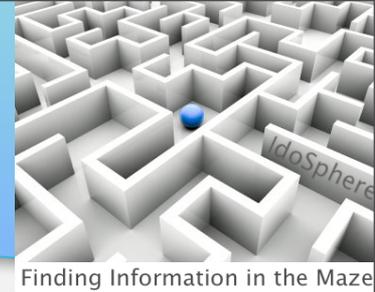
- Download the IBM Lotus Symphony beta for Ubuntu at
  http://www14.software.ibm.com/webapp/download/preconfig.jsp?id=2010-02-02+09%3A58%3A12.499225R&S_TACT=104CBW71&S_CMP=

- ...or search for "ibm lotus symphony beta for ubuntu" :)

- Be sure to select the version for Ubuntu

Search results

Name	Version	Type	Release date	Size	Operating system
1. Lotus Symphony 3 Beta Lotus Symphony 3 Beta is an early view of our next release of applications for creating, editing, and sharing word processing documents, spreadsheets, and presentations.	Beta 4	Beta	25 Aug 2010	249 MB	Linux, Red Hat Linux, SUSE Linux
2. Lotus Symphony 3 Beta Lotus Symphony 3 Beta is an early view of our next release of applications for creating, editing, and sharing word processing documents, spreadsheets, and presentations.	Beta 4	Beta	25 Aug 2010	241 MB	Ubuntu
3. Lotus Symphony 3 Beta Lotus Symphony 3 Beta is an early view of	Beta 4	Beta	25 Aug 2010	213 MB	Mac OS X

Install & run Notes, Symphony in native Ubuntu

Finding Information in the Maze
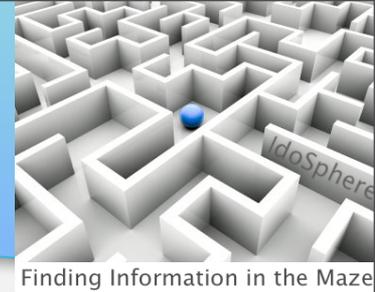
- Symphony is free. You can log in or create a new account, or enter as a Guest after selecting the desired download

- Download Director will typically result in faster downloads. Click 'Download now' to start the download.

If you use Symphony to save your files in PPT format and do not save in the ODF format, your files will not be affected and the ODF plug-in is not required.

Downloads

Lotus Symphony 3 Beta for Ubuntu
English
2010-08-25

To download using Download Director, select the files you want below and click on 'Download now'. Learn more.

You can also download the files using http.

Download using Download Director	Download using http

☑ **Lotus Symphony 3 Beta - Ubuntu, English**
    symphony_3.0-1hardy1_i386.deb (266 MB)

⬇ Download now

Install & run Notes, Symphony in native Ubuntu
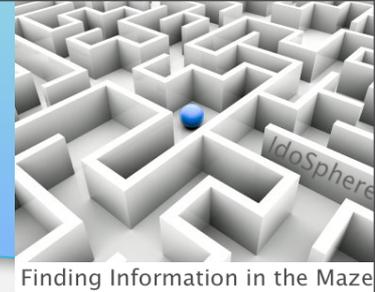
- By default, Download Director will create a folder under your home folder. Open the Computer app (or use the Places menu) to open your home folder, open the DownloadDirector folder, and look for the .deb file

- Double-click on the symphony install file (the .deb) to begin the install
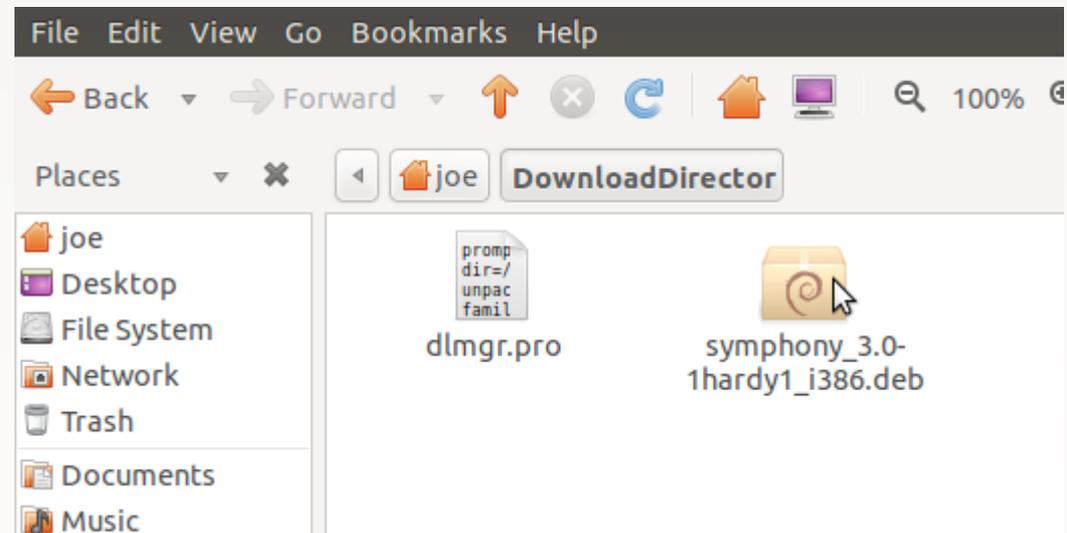
Install & run Notes, Symphony in native Ubuntu
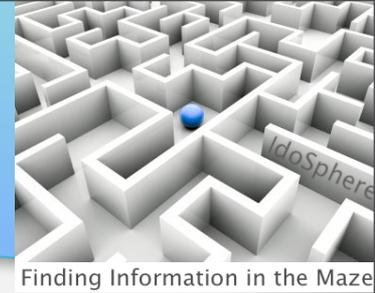
- Click 'Install' and the Package Manager will install Symphony (follow prompts to accept license agreement, etc)

Install & run Notes, Symphony in native Ubuntu
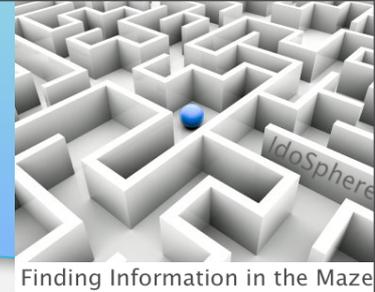
- When the instal completes, IBM Lotus Symphony will be listed under Applications > Office

  (it really is just that easy)
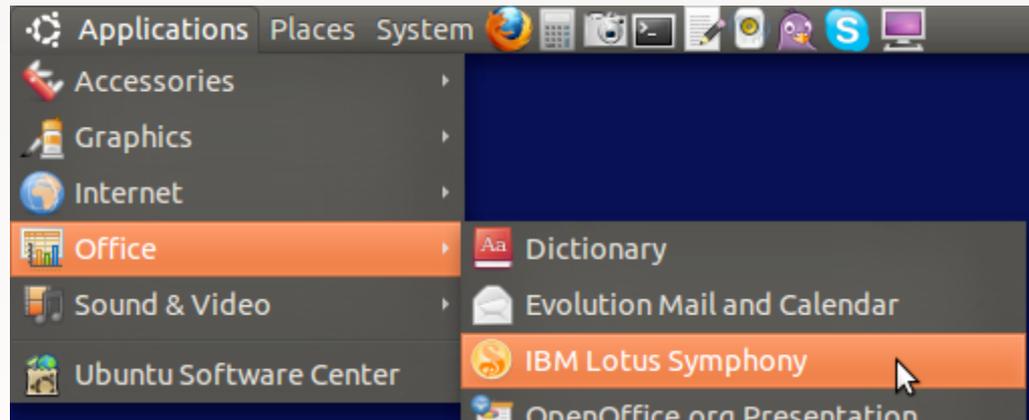
Install & run Notes, Symphony in native Ubuntu
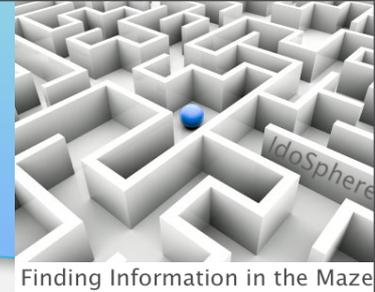
- Only the Notes client is available to run in native Ubuntu. You need access to Passport Advantage or other legitimate media source. The file I downloaded was called notes852_notes_linux_deb_cd4_prod.tar

- Navigate to the downloaded file. A '.tar' file is an archive, so double-click to open the archive

- Then double-click to allow the Package Manager to install ibm-lotus-notes-8.5.2.i586.deb

- Complete the install just as you would in Windows (provide server name, id file, etc)

Install & run Notes, Symphony in native Ubuntu
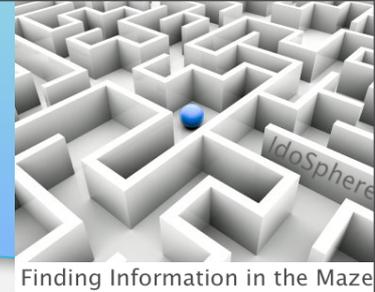
- Once you've configured Notes as you like, it looks pretty much the same as in Windows:
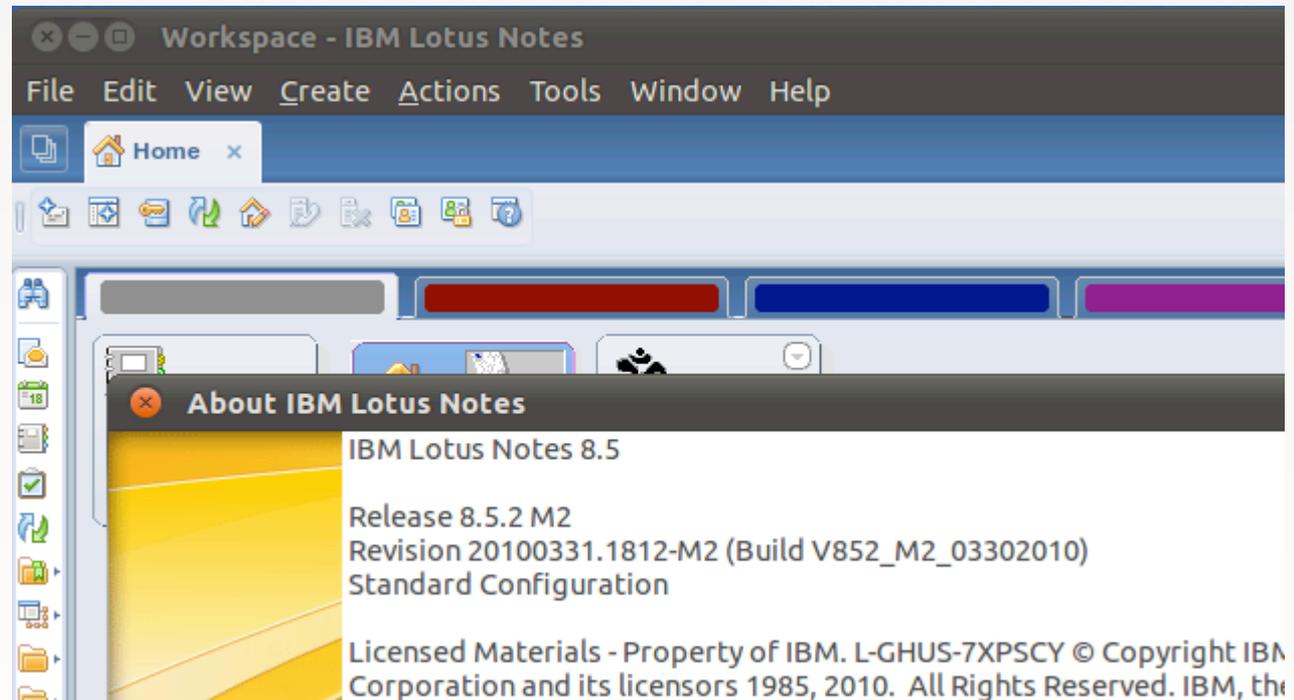
Configure a Virtual Machine to run Windows apps
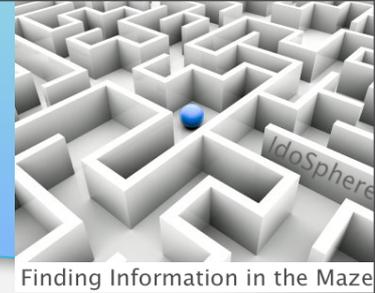
- Domino Designer and some other applications only run in Windows. To do this with Ubuntu, install a Virtual Machine (VM), and run Windows within the VM

- The VM is just an app to Ubuntu

- You allocate disk and memory to the VM

- You can configure multiple VMs

- Various options exist; we will use VMWare Player

Configure a Virtual Machine to run Windows apps
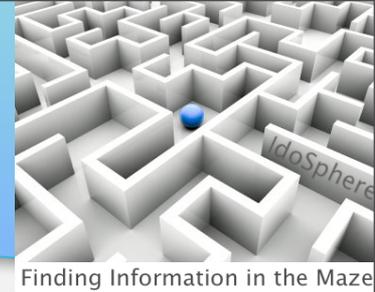
- Go to http://www.vmware.com/go/downloadplayer/ to get the VMWare Player

- Register for a free account & log in once registered

- Once logged in, the download page displays. Select the 32-bit or 64-bit Linux .bundle file

SHA1SUM(¹) 8ab358eic97a64639cce83766c35d43b0d662132

VMware Player 3.1.3 for 32-bit Linux
11/18/10 | 3.1.3 | 103 MB | Binary
(.bundle)

Download

VMware Player for Linux 32-bit .bundle Installation file for 32-bit Linux

MD5SUM(¹) e5d0bf19a1908262f63a8f88df77f73e
SHA1SUM(¹) 4abb87d37706c47a86337ada1d23d390455e4931

Configure a Virtual Machine to run Windows apps
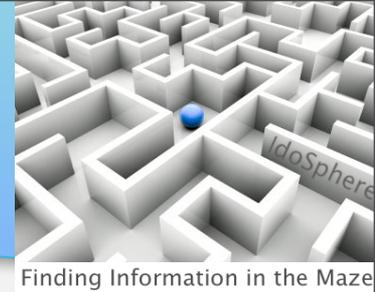
- Follow instructions at https://help.ubuntu.com/community/VMware/Player
to install the VMware Player on Ubuntu

- The first step is to select Applications > Accessories > Terminal to open a command prompt, and then issue this command (documented on the help page linked above):
sudo apt-get install build-essential linux-headers-`uname -r`

Configure a Virtual Machine to run Windows apps

Finding Information in the Maze
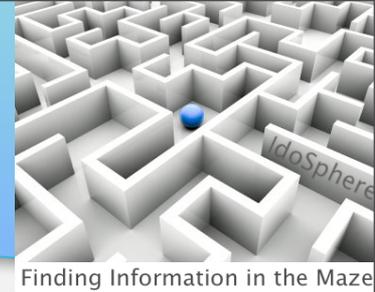
- (The sudo command - substitute user do … or super user do - allows you to run privileged commands; hence, you are prompted for your password)

- **Ensure that the downloaded .bundle file is executable** (right-click on the file to open Properties)
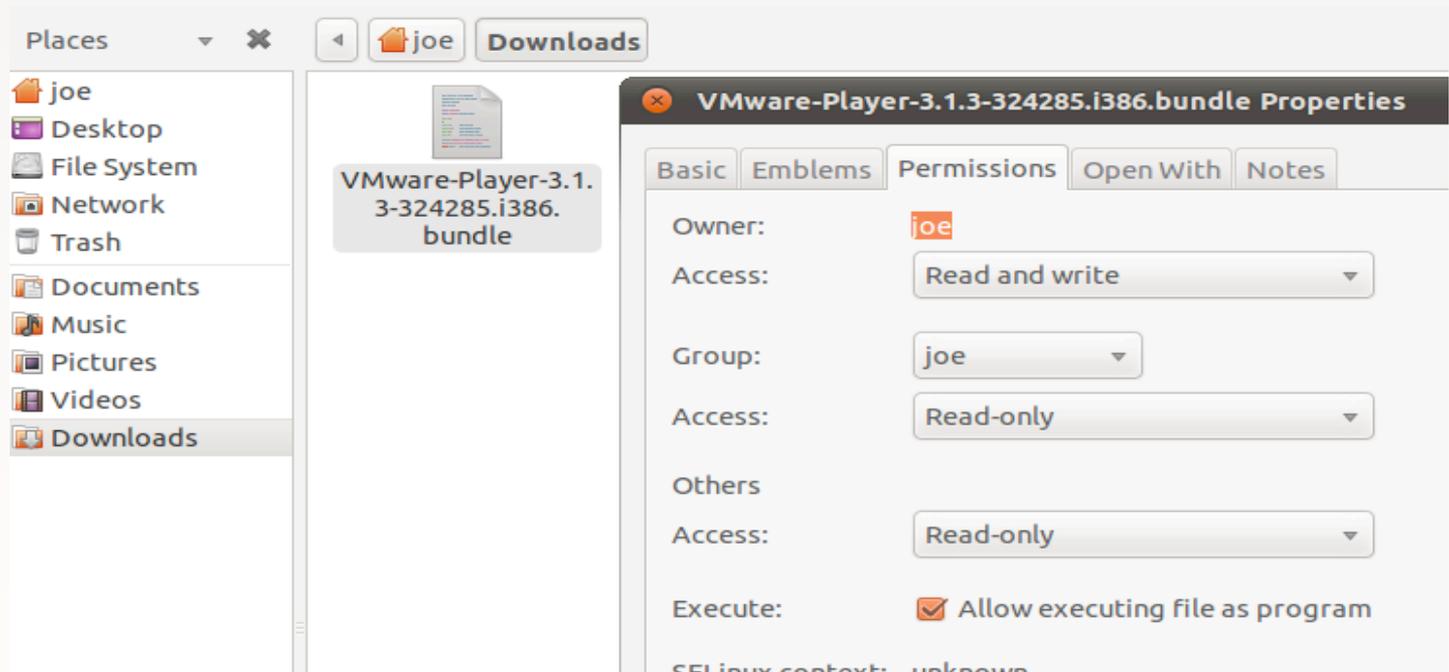
Configure a Virtual Machine to run Windows apps
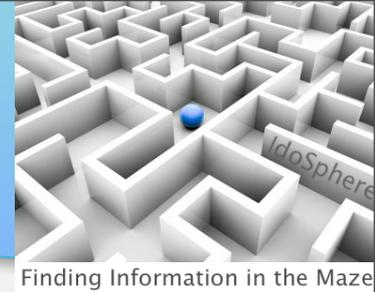
- Back at the Terminal prompt, navigate to the Downloads folder (the cd command takes you to your home folder; cd Downloads will then take you to Downloads)

Configure a Virtual Machine to run Windows apps

Finding Information in the Maze
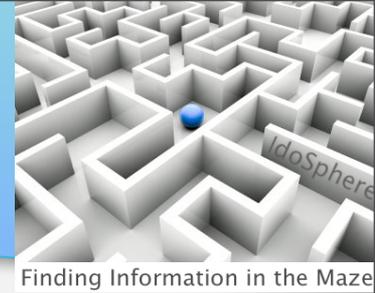
- Copy the name of the .bundle file from Downloads (may be easiest from the Computer app or Places)
- Then in the Terminal window, type
gksudo bash ./
and use <Ctrl-Shift-V> ...or the menu ...to paste the name of the .bundle file after the typed text. Hit <Enter>

Configure a Virtual Machine to run Windows apps
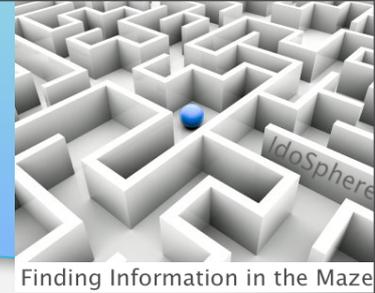
- The VMware Player installer runs and will prompt you to allow checking for product updates. Follow the prompts

Configure a Virtual Machine to run Windows apps

Finding Information in the Maze
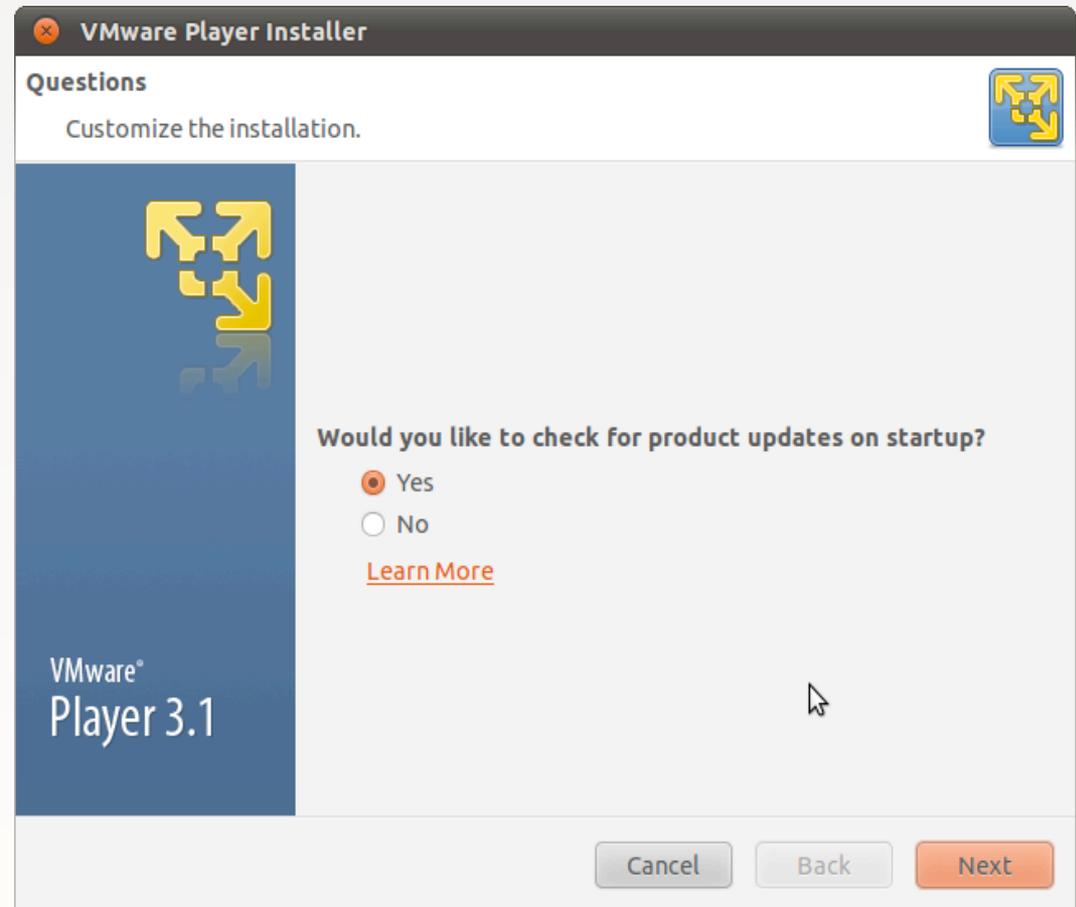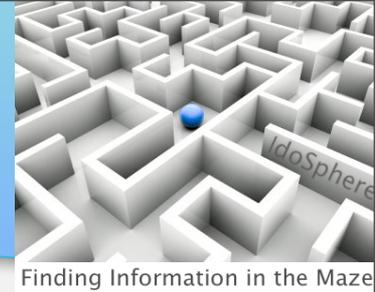
- When done installing, the VMware Player will be available under Applications > System Tools > VMware Player
  (you can add this or any app to the top panel by right-clicking from the menu and selecting 'Add this launcher to panel')
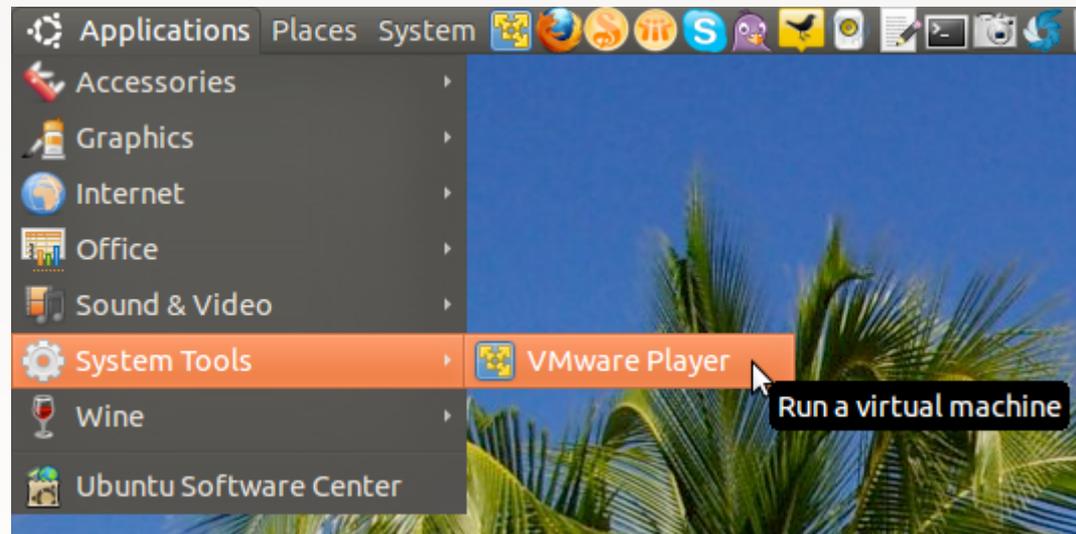
Configure a Virtual Machine to run Windows apps
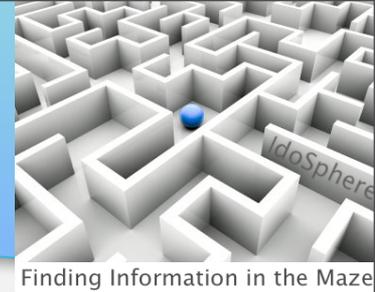
- Start VMware Player, insert your Windows install media in the CD/DVD drive, and click to create a new Virtual Machine
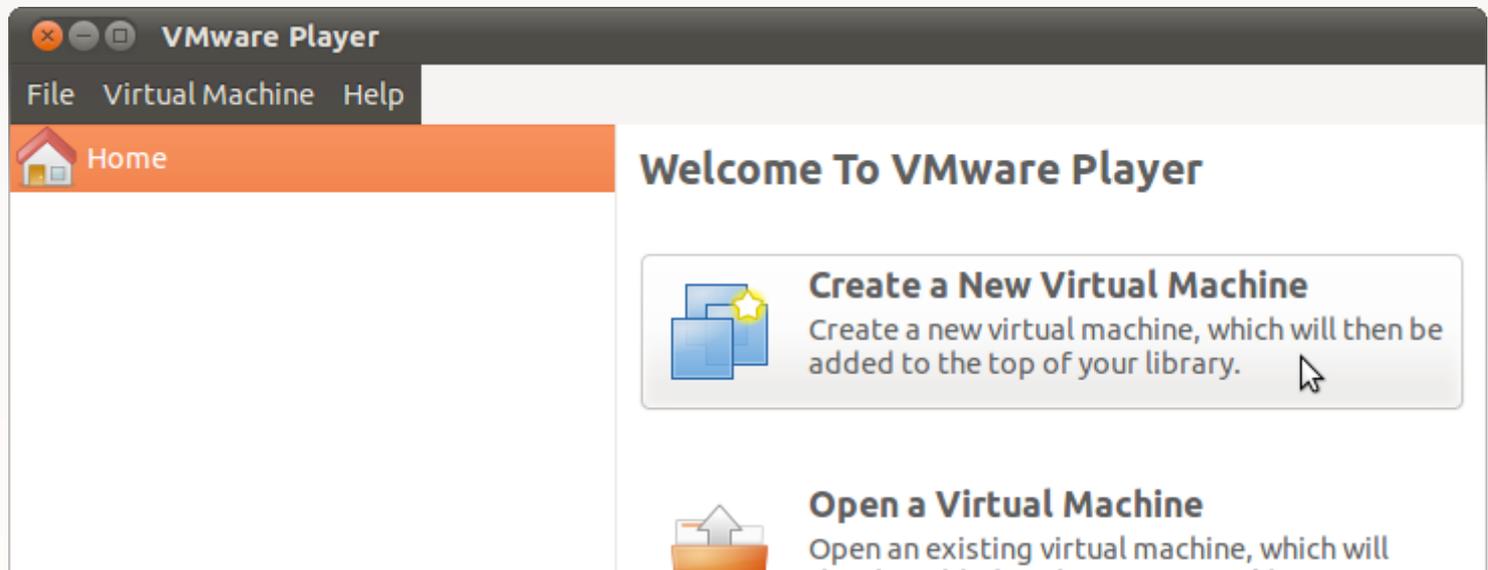
Configure a Virtual Machine to run Windows apps
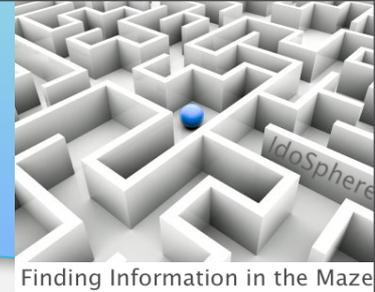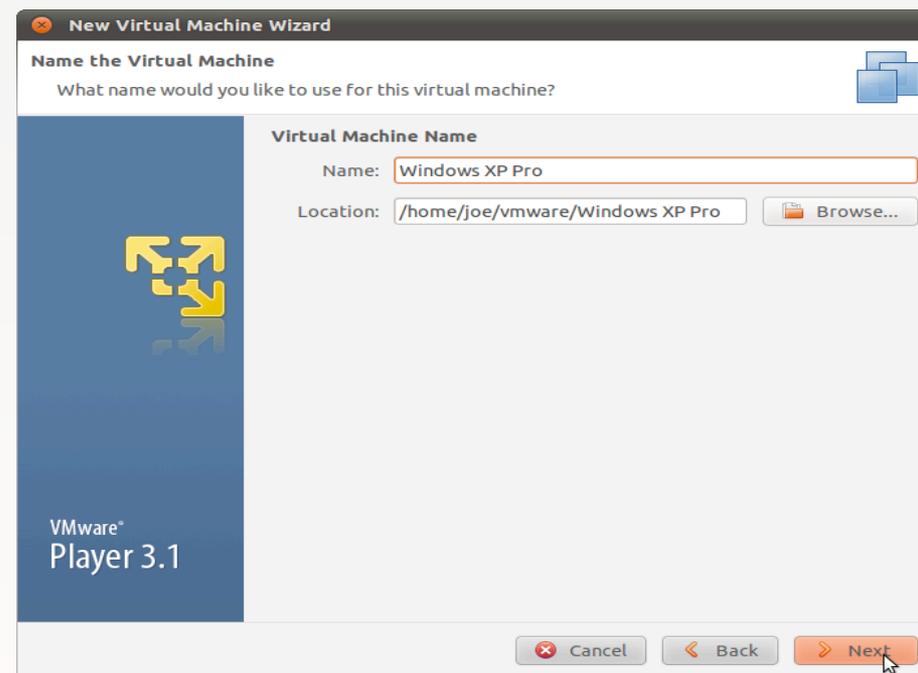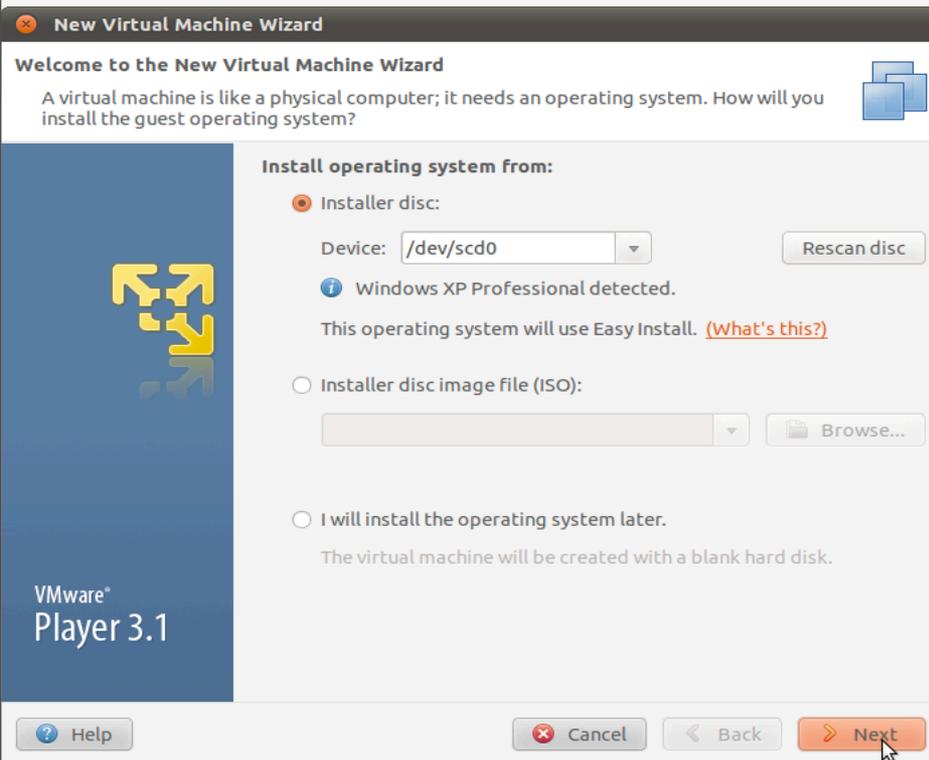
Finding Information in the Maze

- Follow the prompts...

Configure a Virtual Machine to run Windows apps

Finding Information in the Maze
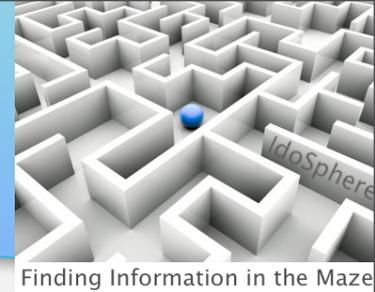
- Follow the prompts...
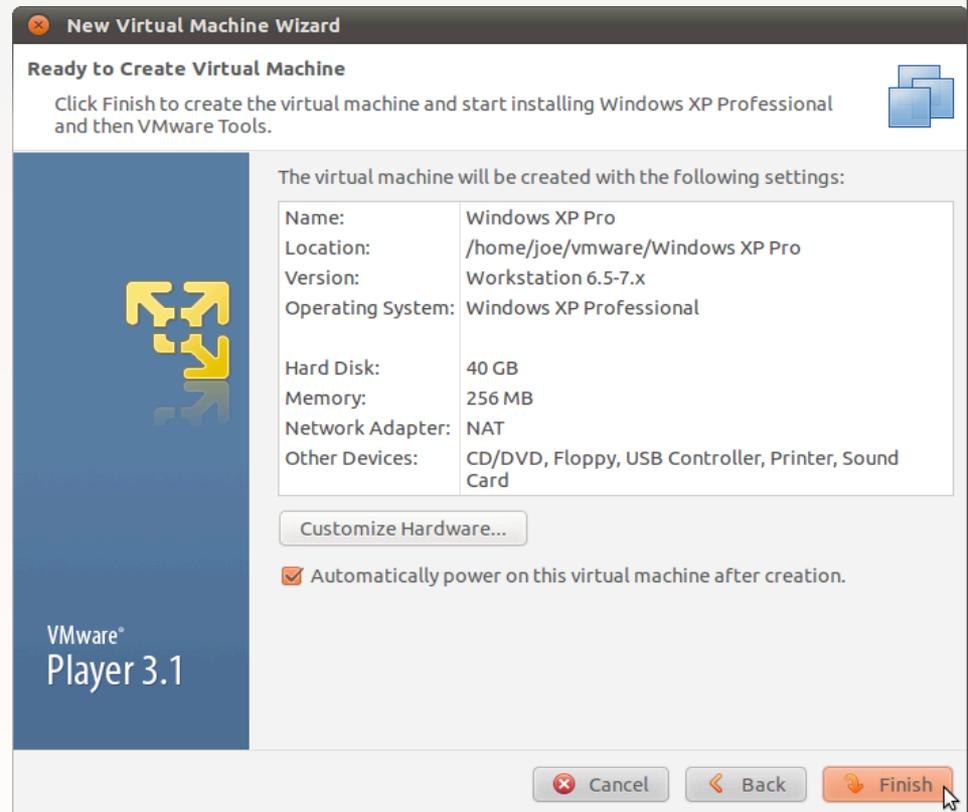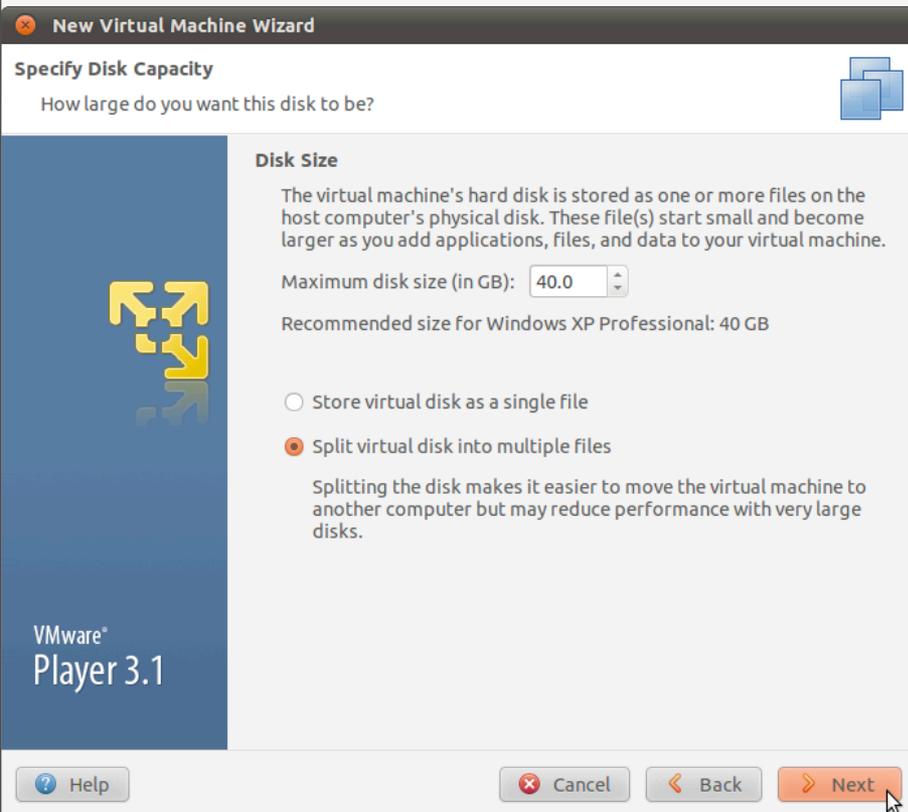
Configure a Virtual Machine to run Windows apps
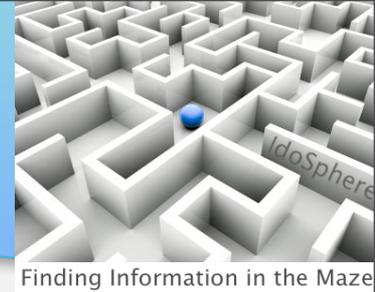
- VMware Player will begin installing Windows in a new VM. When prompted, enter the Windows product key

Configure a Virtual Machine
to run Windows apps
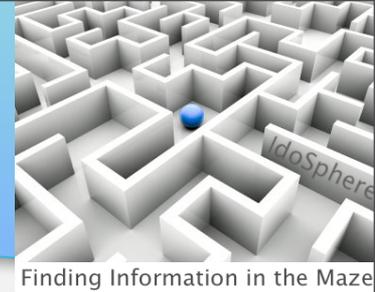
- Windows will automatically start up in the new VM

Configure a Virtual Machine to run Windows apps

Finding Information in the Maze
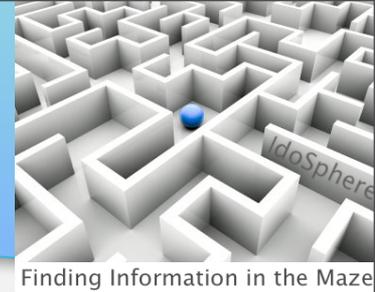
- Now comes the nasty part: regular install of Windows, with the many updates and restarts

- Good news is restarts are all in the VM, so very fast

- I suggest disabling automatic updates once Windows is fully updated

- Each VM you configure is stored as a folder in the vmware folder under your home folder
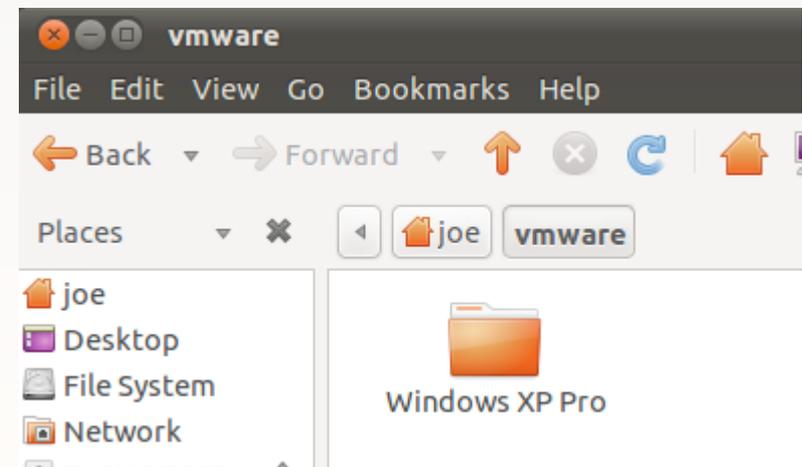
Configure a Virtual Machine to run Windows apps
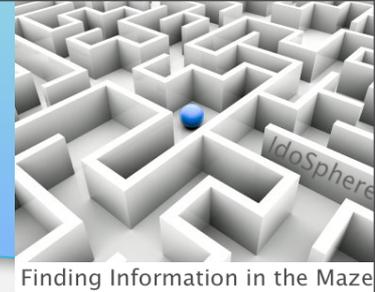
- Once you have your VM configured the way you like, use File > Suspend and Quit to exit the VM. This will make restarting the VM much faster.

Configure a Virtual Machine to run Windows apps
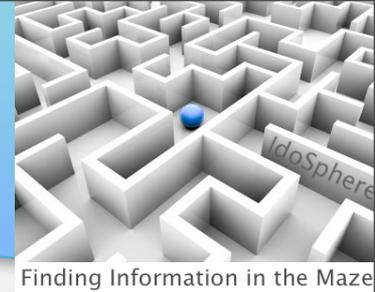
- From this point onward, installing, configuring, and running applications in your VM is the same as on any Windows machine.

- I suggest DropBox as an easy way to move files among physical and virtual machines
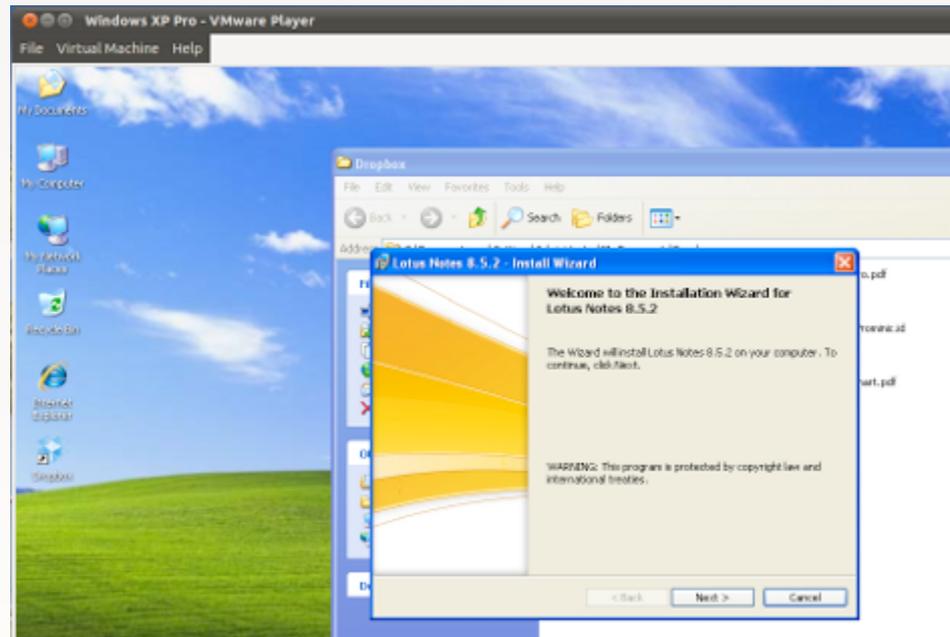
Configure a Virtual Machine to run Windows apps
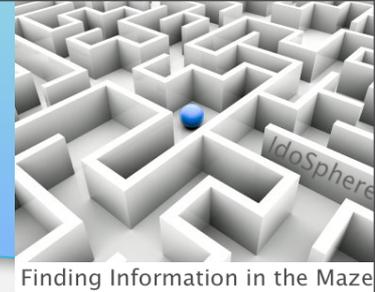
- If your VM is primarily for running Domino Designer and Administrator, you may wish to load parts of Notes whenever the VM loads

Configure a Virtual Machine to run Windows apps

Finding Information in the Maze
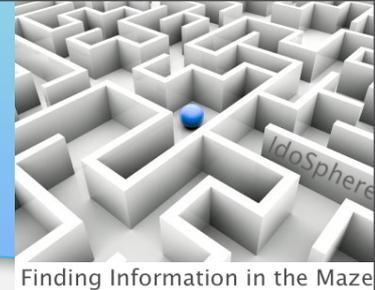
- Screen shot of Domino Designer running in VM
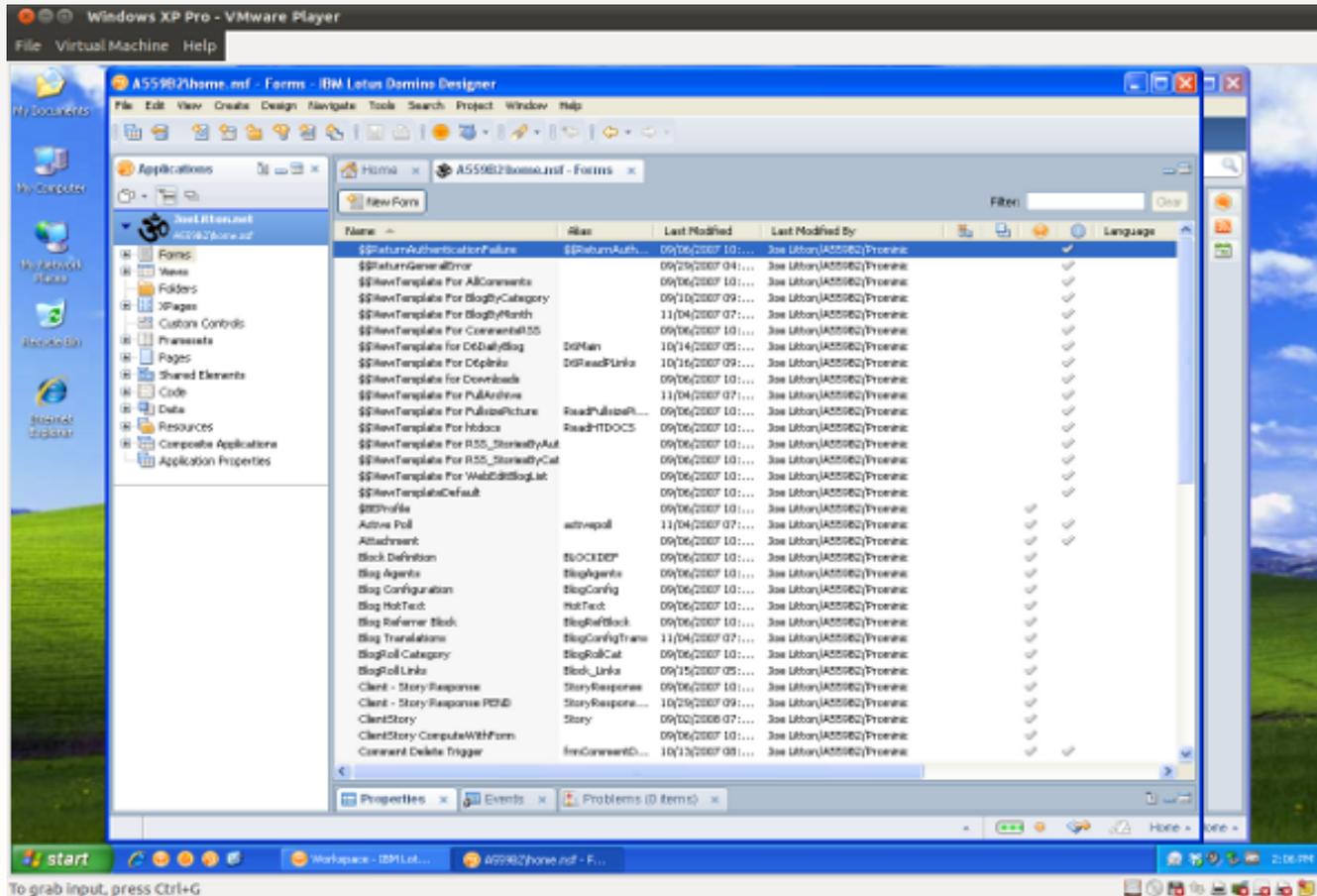
Configure a Virtual Machine to run Windows apps
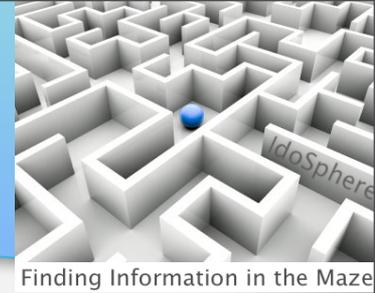
- Screen shot of Domino Administrator running in VM
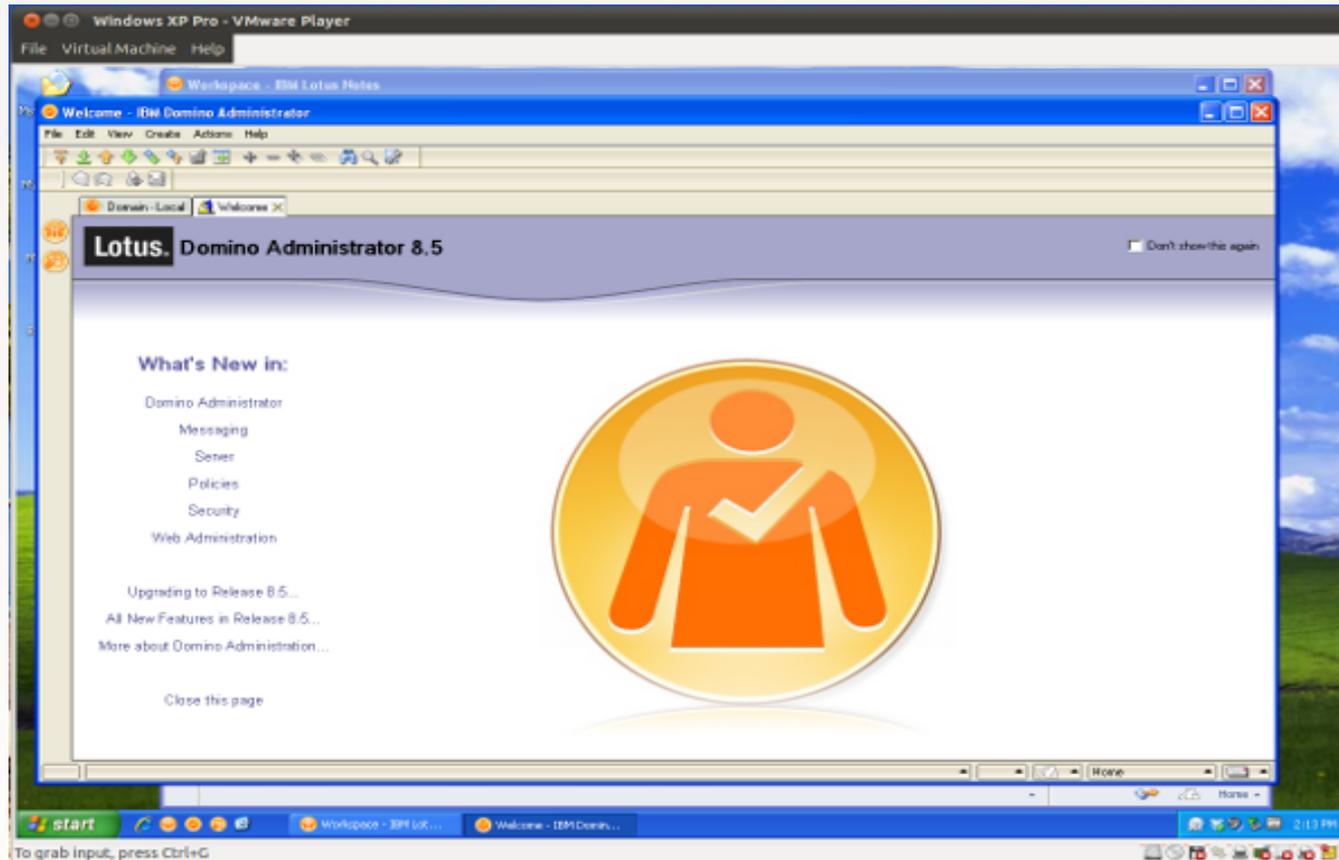
Deep Dive

with Bill Malchisky

Finding Information in the Maze
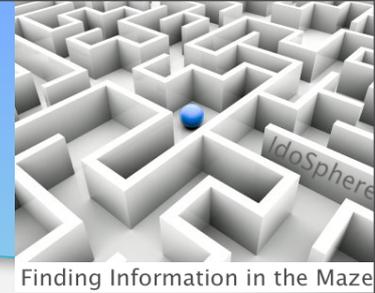
The powerful utility called md5sum

> Computes and checks MD5 values (128-bit checksums) on files

> Syntax: md5sum [option] ... [File] ...

So, `$md5sum LotusTraveler_852_FP1.tar`

Return value: `1d3538726b0d6077951ddfd995fb64f2`
`LotusTraveler_852_FP1.tar`

Verify this value against the value provided on the download site from your vendor

Linux Desktop:
From OS Install through Running the Applications

What we will cover in this Webinar

1	Why linux? (and why not?)
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4	Install & configure a Virtual Machine to run Windows (and Designer / Administrator in Windows)
5	Connecting via virtual Private Network (VPN)
6	Connecting to remote machines
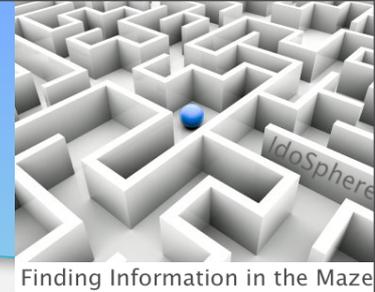
A great conceptual connection portal

- Stores Ethernet, WiFi, DSL, VPN, Mobile Broadband profiles
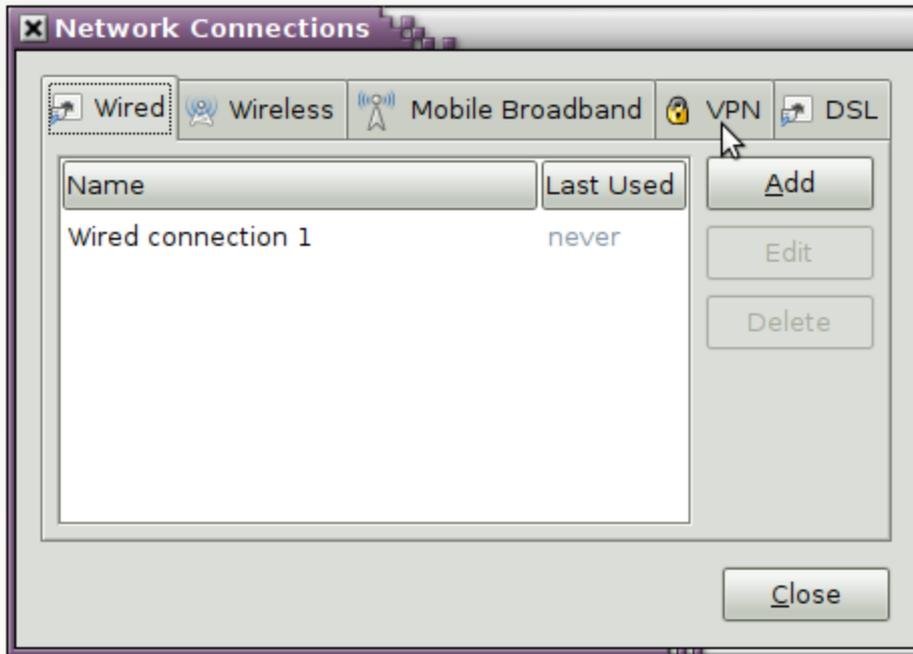
Recovery In The Face Of Adversary
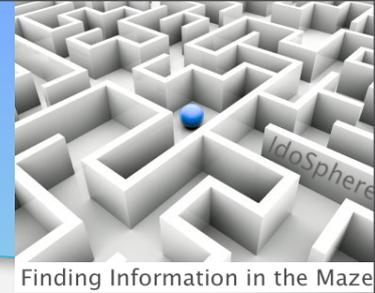
What is the NetworkManager icon disappears?

```
$sudo service network-manager restart
```

Menu options to the rescue...

Main Menu

Wired Network

Wireless Networks

**VPN Connections > {Available options} Configure VPN \\ Disconnect VPN **

Righ-click Menu

Enable Networking / Wireless

Connection Info / Edit Connections...

Finding Information in the Maze
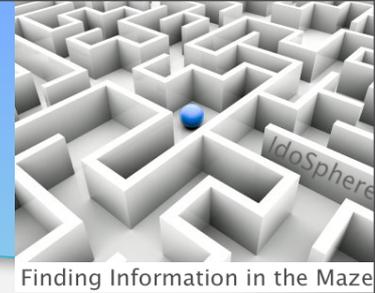
Several VPN connection options

Much easier to configure in Linux

   Splitting traffic in two easy clicks

   Easy management too -- via NetworkManager's VPN-aware menu branch

Increasing your changes for success

   Library version gap -- what you have installed and what the vendor provides

   What your admin allows -- they all allow Windows

   May need your key file for proper access

VPN Connections – Getting Setup
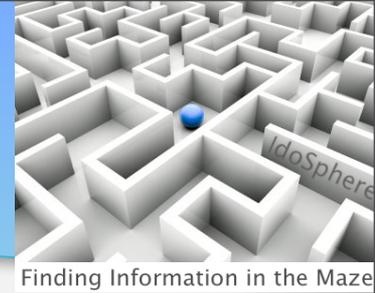
The most common modules are for

> **PPTP – Microsoft,primarily**
>
> **OpenVPN – Open VPN Server**
>
> **VPNC – Cisco VPN**

Finding Information in the Maze
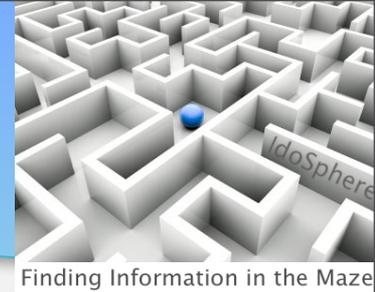
Install the missing software

- Need: pptp-linux, network-manager-pptp
  - Note: the "-gnome" is optional, but easy to add
- Open the Ubuntu Software Center
- Type in the package name, if you see green check mark, move on, else, install
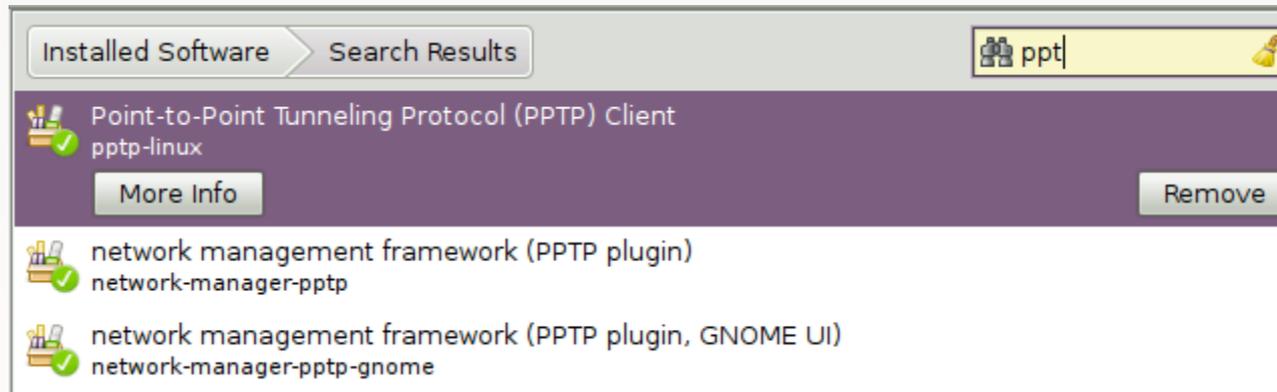
VPN Connections –
Getting Setup
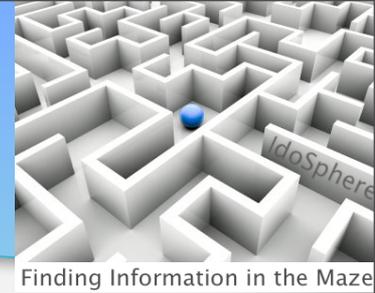
You can also just type it on the command-line, if you prefer

```
$sudo apt-get install network-manager-gnome
network-manager-openvpn network-manager-pptp
network-manager-vpnc
```

Here, network-manager-pptp will pull pptp-linux as a dependency, but you can add it to ensure success, if you wish

VPN Connections –
Adding Your Connection
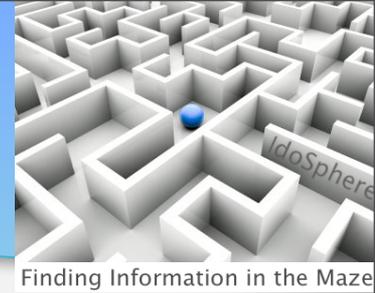
NetworkManager **offers plugin support for VPN modules, so by installing things, you can get what you need sans additional files or patches later.**
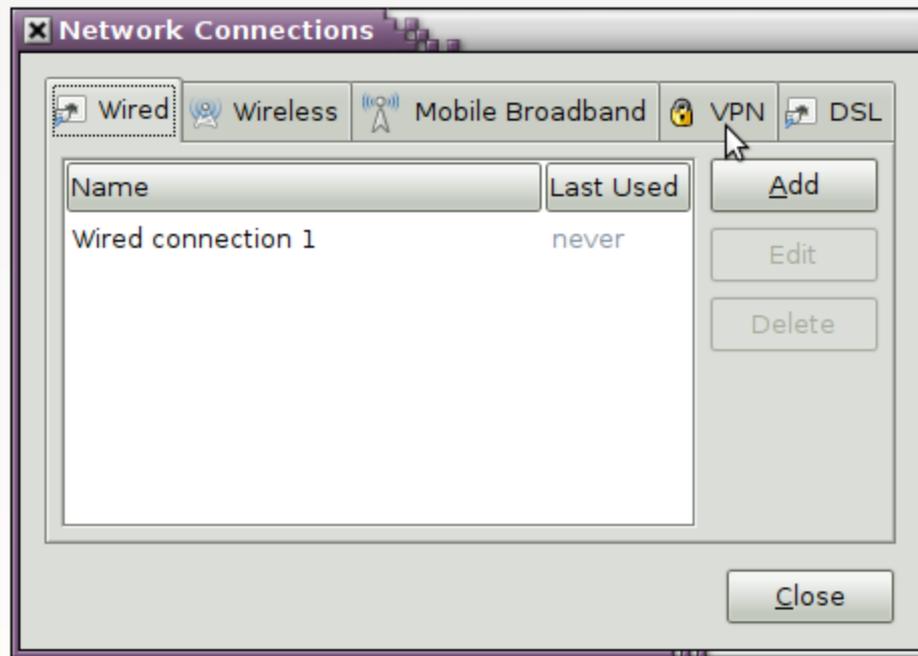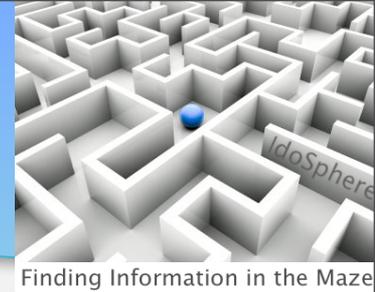
From VPN Tab, click Add

- Set type to PPTP

Network Connections

| Wired | Wireless | Mobile Broadband | VPN | DSL |

| Name | Last Used | Add |

Choose a VPN Connection Type

Select the type of VPN you wish to use for the new connection. If the type of VPN connection you wish to create does not appear in the list, you may not have the correct VPN plugin installed.

Point-to-Point Tunneling Protocol (PPTP)

Compatible with Microsoft and other PPTP VPN servers.

Cancel   Create...

VPN Connections – Adding Your Connection
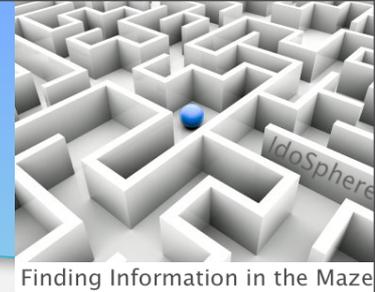
Commence the data entry

- Will need the NT Domain, and IP for Gateway
- Note: depending upon how your admin configured the NT server, may need to append ".local" – try both ways

Editing Test Connection 1

Connection name: Test Connection 1

☐ Connect automatically

VPN | IPv4 Settings

General

Gateway: [   ]

Optional

User name: [   ]

Password: [   ]

☐ Show password

NT Domain: [   ]

Advanced...

☐ Available to all users   Cancel   Apply

VPN Connections – Advanced page
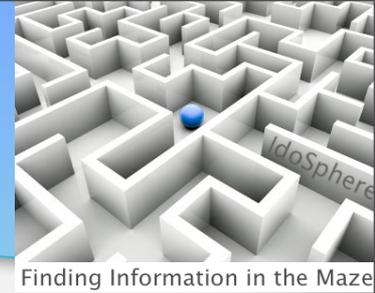
Lists all the CHAPs – MSCHAP, MSCHAPV2, and EAP inclusive
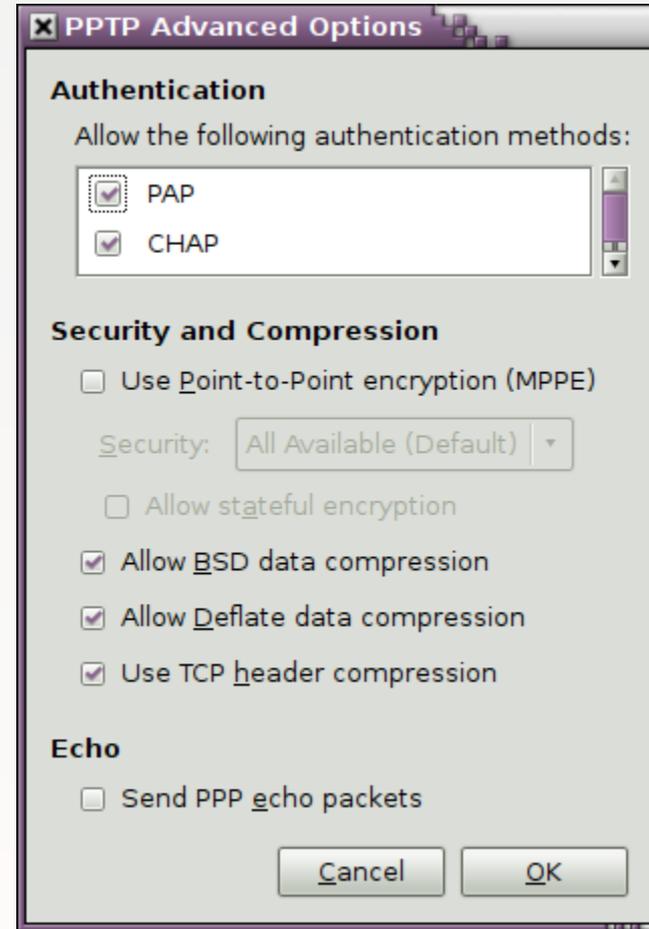
VPN Connections – Adding Routes
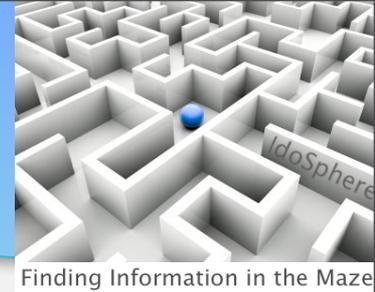
Windows does add routes, Linux does not

You may need to add them yourself

Click on the IP V4 tab
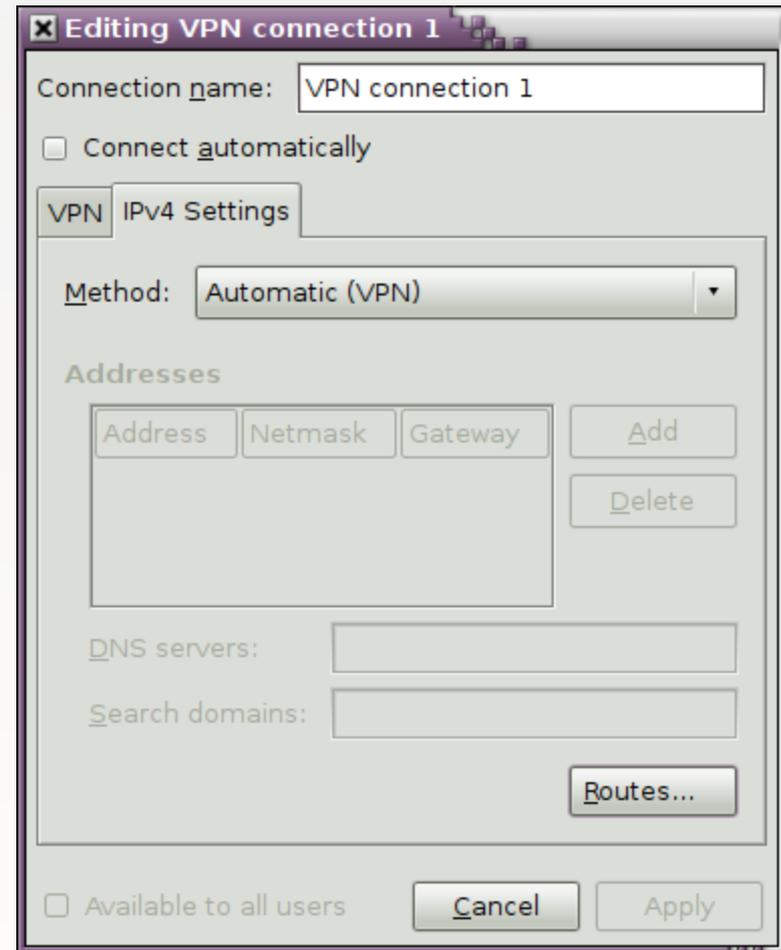
VPN Connections – Adding Routes
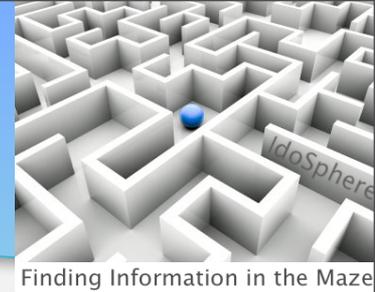
Leave Method as "Automatic (VPN)"

Click Routes...
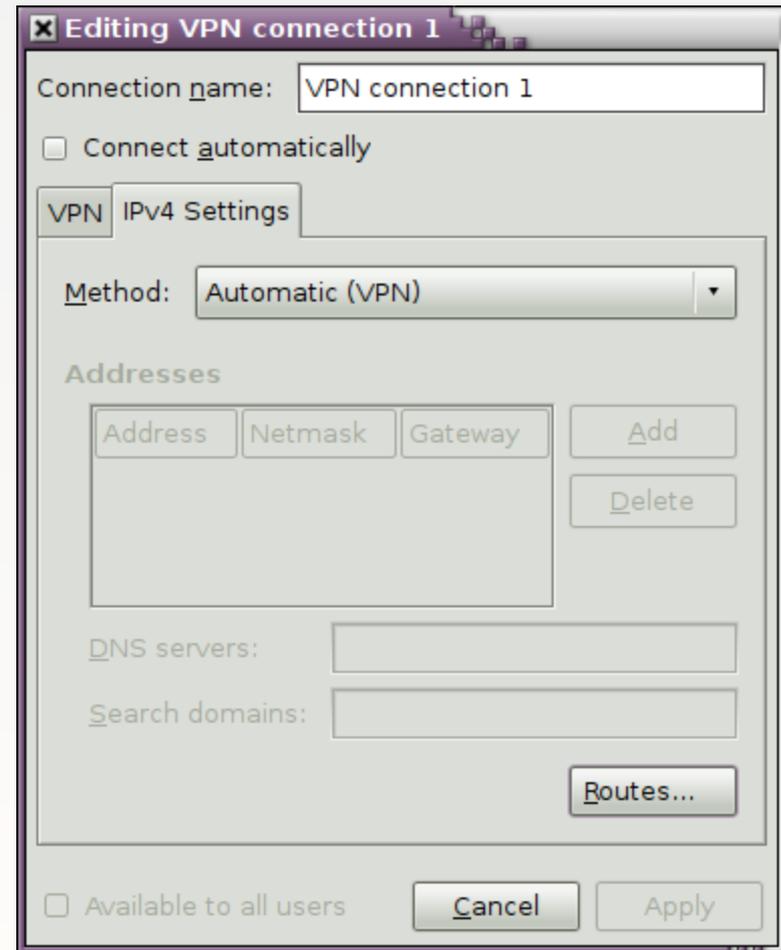
VPN Connections – Adding Routes
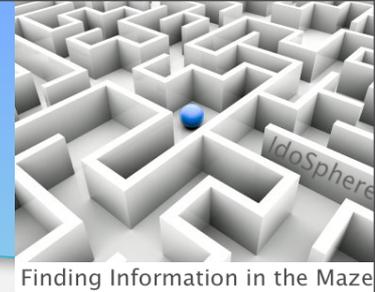
Click Add

Fill-in within each column, the appropriate values

Click OK when done

Keep metric to 1

Reboot!

(Yes, you read that correctly.)

Editing IPv4 routes for VPN connection 1

Address	Netmask	Gateway	Metric
192.168.1.110	255.255.255.0	192.168.1.1	1

Add
Delete

☐ Ignore automatically obtained routes
☐ Use this connection only for resources on its network

Cancel   OK

Finding Information in the Maze
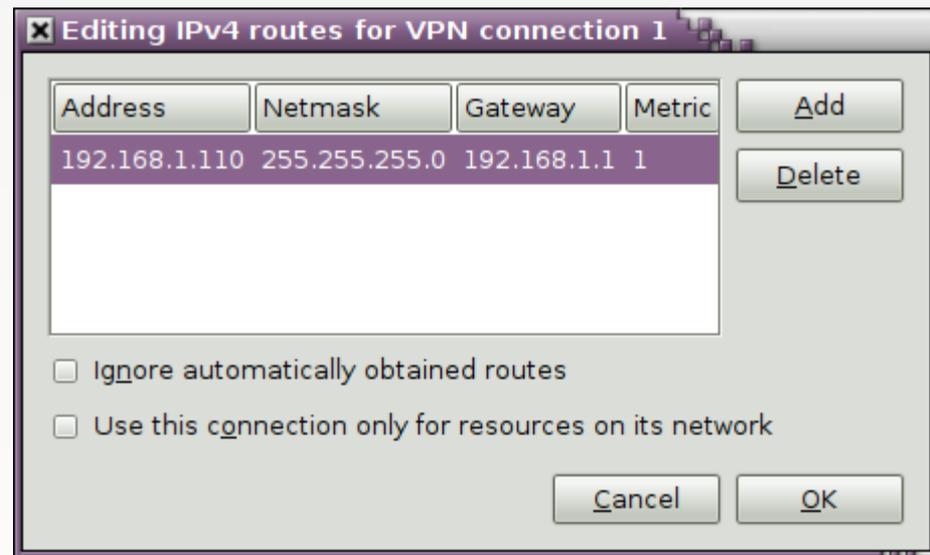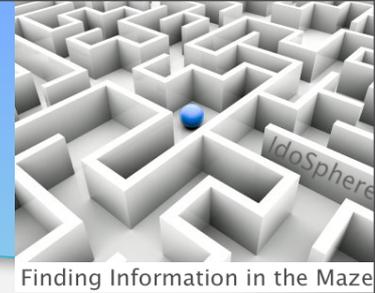
If you need additional troubleshooting assistance...

- The main PPTP site is really good
  - http://pptpclient.sourceforge.net/howto-diagnosis.phtml

Linux Desktop:
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Alternate Access Mediums

Finding Information in the Maze
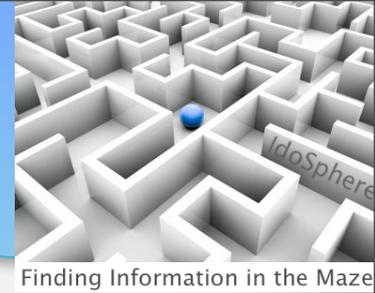
RDP

• **Many wonderful applications...**

Look Inside TS Client for Ubuntu – Main Screen

Finding Information in the Maze
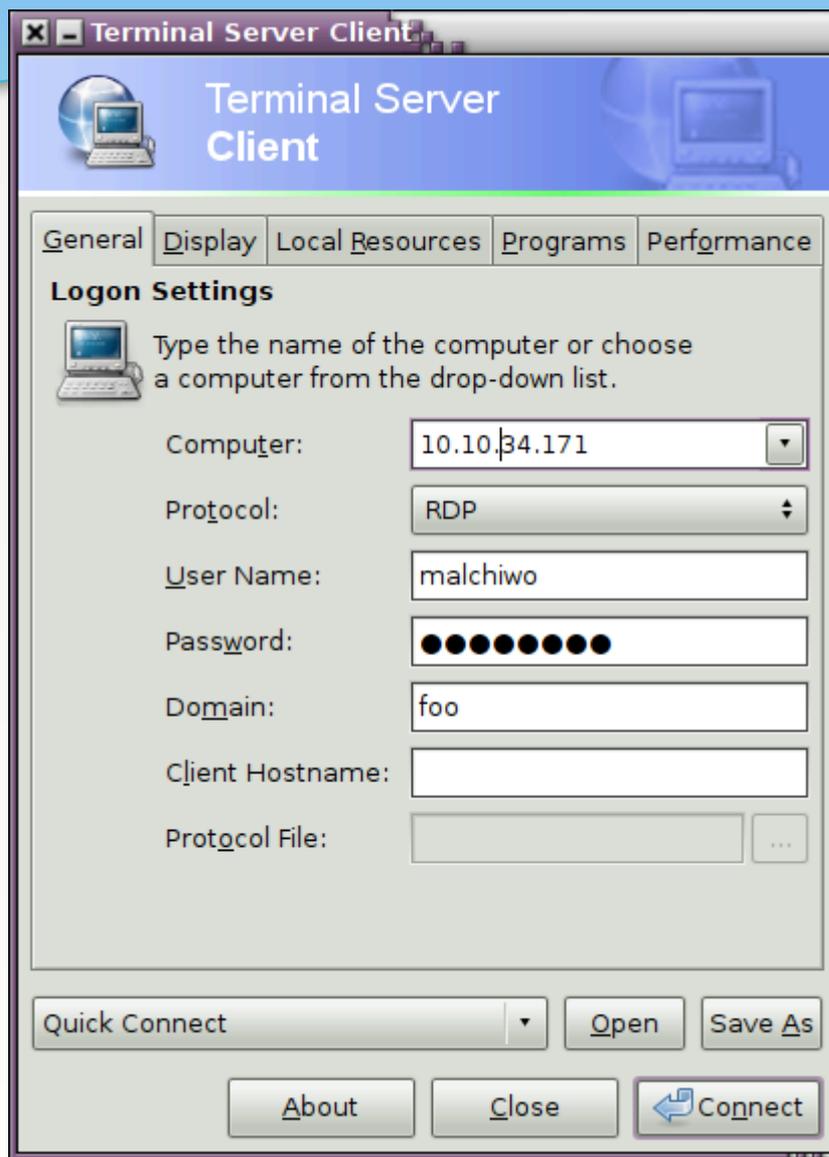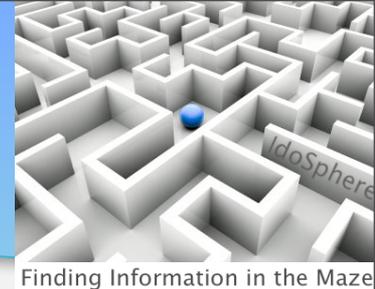
Look Inside TS Client for Ubuntu – Display Tab

Finding Information in the Maze
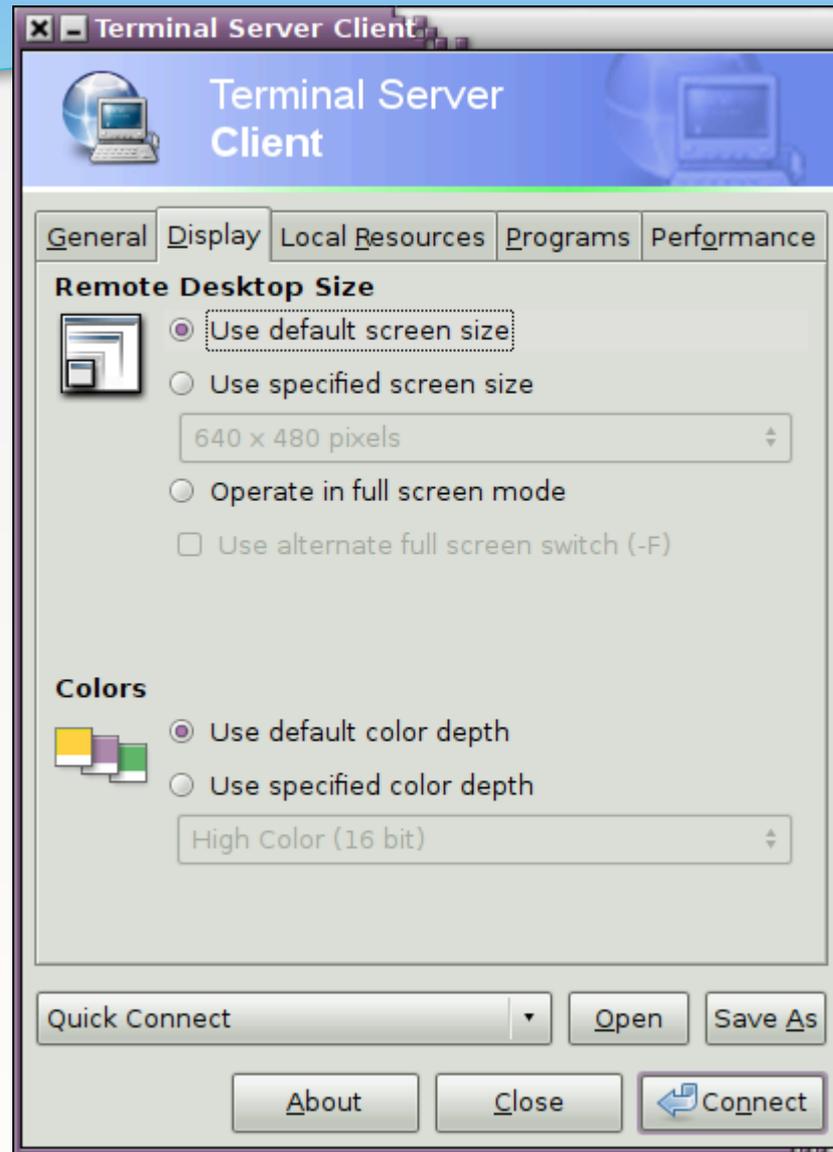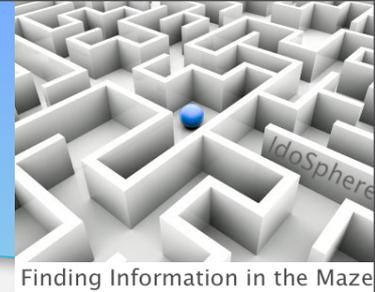
Look Inside TS Client for Ubuntu – Local Resources

Finding Information in the Maze
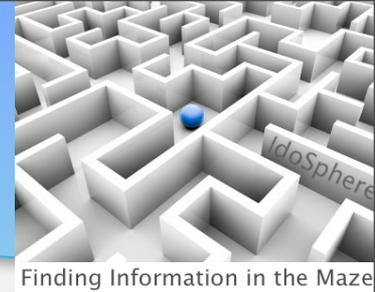
Look Inside TS Client for Ubuntu – Programs

Finding Information in the Maze
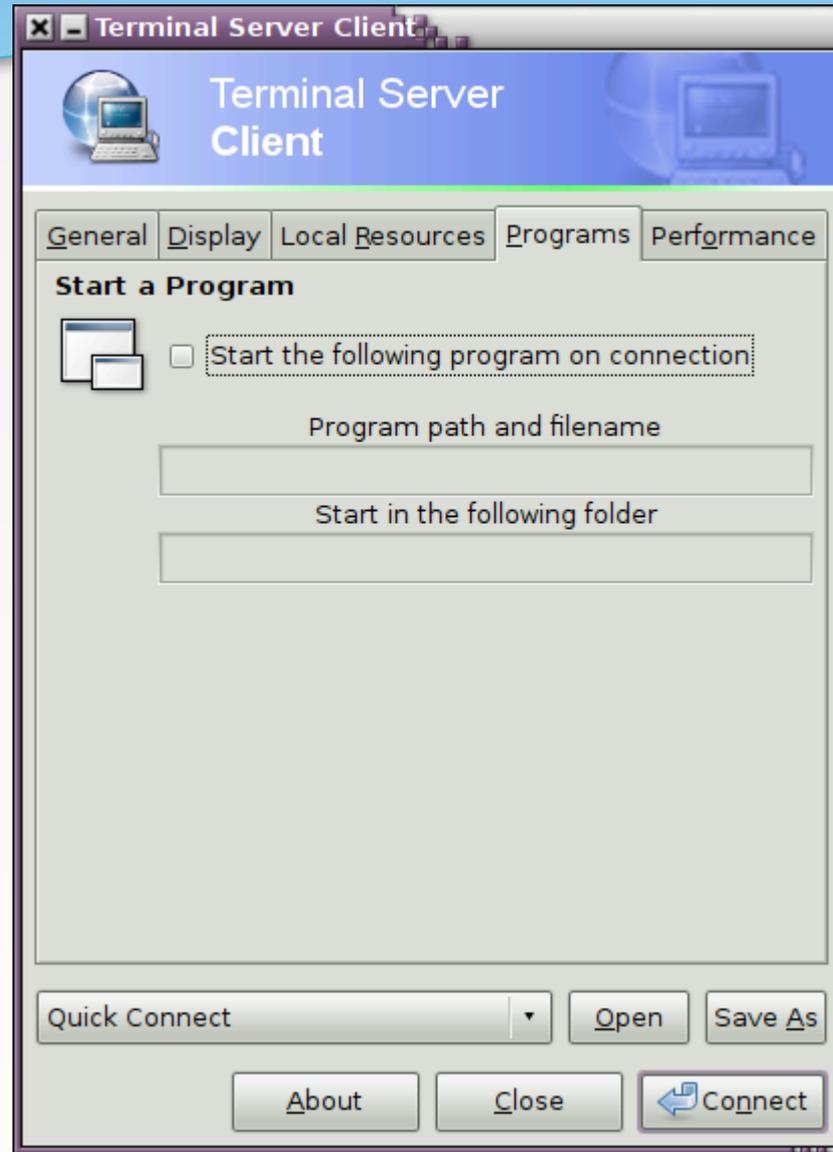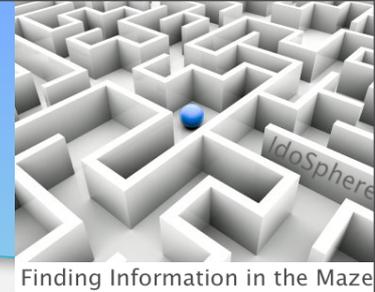
Look Inside TS Client for Ubuntu – Performance

Finding Information in the Maze

Terminal Server Client

Terminal Server Client

General | Display | Local Resources | Programs | Performance

Optimize Performance

Options available for optimizing performance

- ☐ Enable bitmap caching
- ☐ Do not send motion events
- ☐ Enable window manager's key bindings
- ☑ Hide window manager's decorations
- ☐ Attach to console

Quick Connect ▾   Open   Save As

About   Close   Connect

Finding Information in the Maze

Stubborn Network Recovery

For Ethernet DHCP connections...

Syntax: if[up down] <connection>

example: `$sudo ifdown eth0`

Will stop a network device

Ifdown eth0 Screen Output
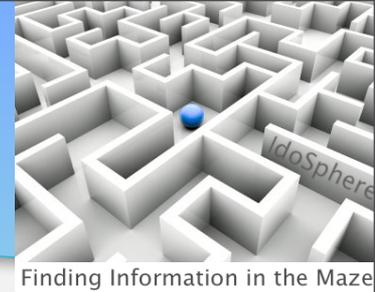
RTNETLINK answers: No such process

There is already a pid file /var/run/dhclient.eth0.pid with pid 2470

killed old client process, removed PID file

Internet Systems Consortium DHCP Client V3.1.3

Copyright 2004-2009 Internet Systems Consortium.

All rights reserved.

For info, please visit https://www.isc.org/software/dhcp/

Listening on LPF/eth0/00:15:58:86:d2:55

Sending on   LPF/eth0/00:15:58:86:d2:55

Sending on   Socket/fallback

DHCPRELEASE on eth0 to 192.168.1.1 port 67

Ifup eth0 Screen Output
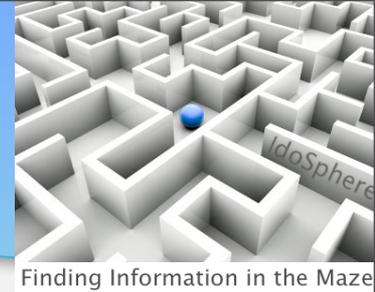
```
Internet Systems Consortium DHCP Client V3.1.3

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All rights reserved.

For info, please visit https://www.isc.org/software/dhcp/


Listening on LPF/eth0/00:15:58:86:d2:55

Sending on    LPF/eth0/00:15:58:86:d2:55

Sending on    Socket/fallback

DHCPDISCOVER on eth0 to 255.255.255.255 port 67 interval 6

DHCPDISCOVER on eth0 to 255.255.255.255 port 67 interval 13

DHCPOFFER of 192.168.1.188 from 192.168.1.1

DHCPREQUEST of 192.168.1.188 on eth0 to 255.255.255.255 port 67

DHCPACK of 192.168.1.188 from 192.168.1.1

bound to 192.168.1.188 -- renewal in 16939 seconds.
```
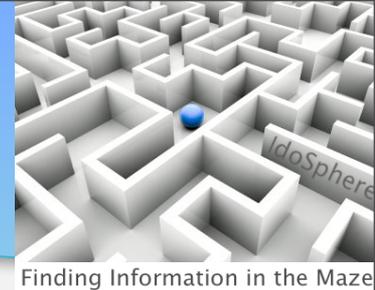
Finding Information in the Maze

Ifconfig eth0 Output

```
eth0      Link encap:Ethernet  HWaddr 00:XX:XX:XX:XX:XX
          inet addr:192.168.1.188  Bcast:192.168.1.255  Mask:255.255.255.0
          inet6 addr: fe80::215:58ff:fe86:d255/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:108041 errors:0 dropped:0 overruns:0 frame:0
          TX packets:134470 errors:0 dropped:0 overruns:0 carrier:0
     collisions:0 txqueuelen:1000
          RX bytes:73456524 (73.4 MB)  TX bytes:20617289 (20.6 MB)
          Memory:ee000000-ee020000
```

Ifconfig Output -- Part I
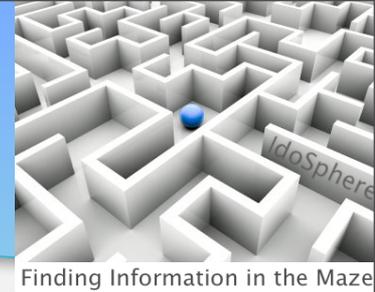
```
eth0      Link encap:Ethernet   HWaddr 00:XX:XX:XX:XX:XX
          inet addr:192.168.1.188   Bcast:192.168.1.255   Mask:255.255.255.0
          inet6 addr: fe80::215:58ff:fe86:d255/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST   MTU:1500   Metric:1
          RX packets:108041 errors:0 dropped:0 overruns:0 frame:0
          TX packets:134470 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:73456524 (73.4 MB)   TX bytes:20617289 (20.6 MB)
          Memory:ee000000-ee020000

lo        Link encap:Local Loopback
          inet addr:127.0.0.1   Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP LOOPBACK RUNNING   MTU:16436   Metric:1
          RX packets:1065001 errors:0 dropped:0 overruns:0 frame:0
          TX packets:1065001 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:168517072 (168.5 MB)   TX bytes:168517072 (168.5 MB)
```

Finding Information in the Maze
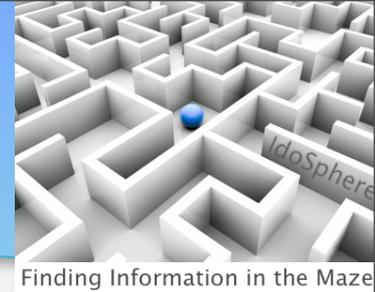
```
vmnet1    Link encap:Ethernet   HWaddr 00:50:56:c0:00:01
          inet addr:192.168.115.1  Bcast:192.168.115.255  Mask:255.255.255.0
          inet6 addr: fe80::250:56ff:fec0:1/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:605 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)


vmnet8    Link encap:Ethernet   HWaddr 00:50:56:c0:00:08
          inet addr:192.168.236.1  Bcast:192.168.236.255  Mask:255.255.255.0
          inet6 addr: fe80::250:56ff:fec0:8/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:2649 errors:0 dropped:0 overruns:0 frame:0
          TX packets:605 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)
```

Finding Information in the Maze
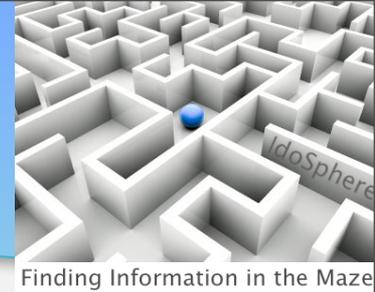
Reverse IP Lookup (getting the hostname for the IP)

dig +short -x <ip_address>

```
imac:~ tux$ dig +short -x 70.84.139.138
lincoln.websitewelcome.com.
```

Package Management Contrasting
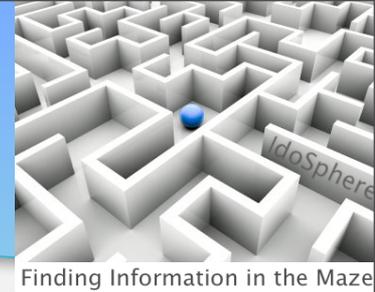
New to Ubuntu? Here's a table to ease the translation from other Linux distros

Red Hat	Ubuntu	Comments
yum	apt-get	`sudo apt-get install <package_name>`
rpm	dpkg	`sudo dpkg -i <package_file>.deb` `sudo dpkg -r <package_name>`
sysvinit	upstart	No `/etc/inittab` Not ready for primetime
rpm –qi	dpkg-deb	`dkpg-deb -I <package_file; archive>`
rpm –q	dpkg-query	`dpkg-query -l <pattern> -L <pkgname>` `-S <pattern>`

Linux Provides Some Command-Line Assistance

Finding Information in the Maze
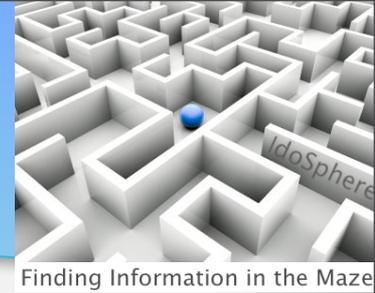
Typing along, then you utilize an uninstalled command – Ubuntu tells you and makes a suggestion:

```
tux@sardi:~$ jnettop
The program 'jnettop' is currently not installed.
   You can install it by typing:

   sudo apt-get install jnettop
```

Dynamic Application Installation

```
tux@sardi:~$ sudo apt-get install jnettop

[sudo] password for tux:

Reading package lists... Done

Building dependency tree

Reading state information... Done

The following NEW packages will be installed:

  jnettop

0 upgraded, 1 newly installed, 0 to remove and 5 not upgraded.

Need to get 39.3kB of archives.

After this operation, 152kB of additional disk space will be used.

Get:1 http://us.archive.ubuntu.com/ubuntu/ lucid/universe jnettop 0.12.0-4 [39.3kB]

Fetched 39.3kB in 0s (49.2kB/s)

Selecting previously deselected package jnettop.

(Reading database ... 222940 files and directories currently installed.)

Unpacking jnettop (from .../jnettop_0.12.0-4_amd64.deb) ...

Processing triggers for man-db ...

Processing triggers for menu ...

Setting up jnettop (0.12.0-4) ...
```

THANK YOU!

Any Questions?

Your Logo

SkiLUG
Is Almost Here!

25-27 Feb
Sunday River Resort
Join us!
http://SkiLUG.org

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Joe Litton

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- Blog: http://www.joelitton.net

Bill Malchisky

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The Consultant in your Pocket webcast series: find us at http://consultantinyourpocket.com