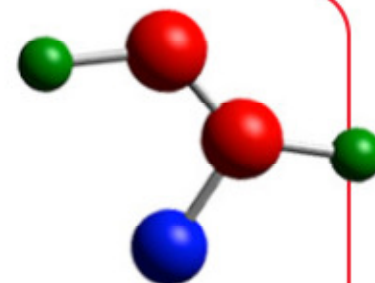




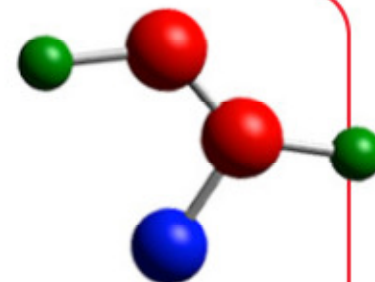
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# **Migrating to WebGUI on VMWare**

**Presented by Jarrod Igou**

**WebGUI User Conference  
September 2, 2010**

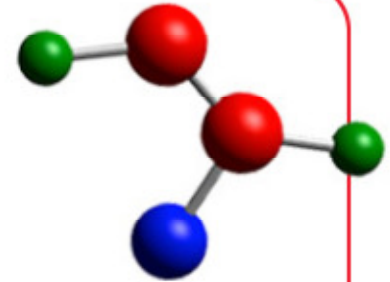


## What we'll talk about...

- WebGUI and me. (Well, OK....“Us”.)
- Why did we migrate?
- Our solution – a plan is formed
- Initial VMWare configuration
- VMWare Appliance tweaks
- Migration steps and notes



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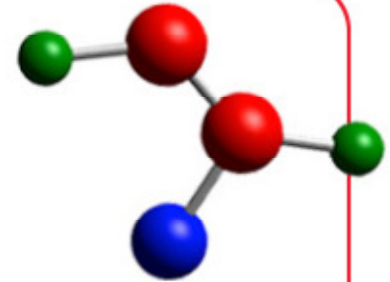


## About Kemin

- A nutritional ingredient manufacturer, Kemin is committed to improving the health and nutrition of the world with functional products that deliver maximum efficacy through superior science. The business includes 11 independent companies, serving five industries in over 60 countries.
- **We're NOT an IT shop** – rather, a company using WebGUI to support our website initiatives



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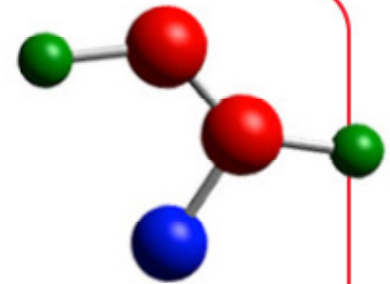


## Our WebGUI History

- Started in early 2003 with WebGUI v. 5.2.x on Windows via Zip-N-Go distribution
  - Selected primarily as our Intranet tool first, to focus on external websites second
- Switched to WRE for Windows when available (0.8.1 maybe?) – MUCH better, but still had OS envy
- Discussed Linux migration with JT for multiple years, finally completed the migration just over a year ago

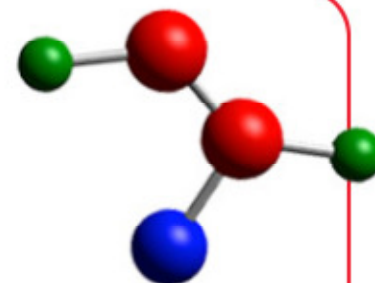


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## Things were working...why migrate?

- Stability on Windows has always been an issue – more from the supporting components (primarily ModPerl) than WebGUI-specific code
  - Hacks, batch files and frequent restarts kept things running, more or less
  - The server **STILL** knew when I was on vacation...
- We had problems upgrading past 7.4.40 on Windows
  - Installing Perl modules in Windows is Not Fun
- Final straw: JT said so.
  - Windows support was phased out. Support is important. So is being able to upgrade to the new, cool stuff.

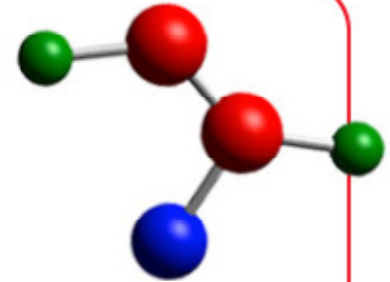


## The Solution

- Software: VMWare Virtual Machine by Plain Black
  - It was the “Easy Button” that still let us host on our own
  - Created and supported by Plain Black
  - We were virtualizing anyway
  - I Am Not A Sysadmin – I didn’t want to build from scratch.
- Hardware: HP Proliant DL380 G5
  - 2 x 2.833 GHz Dual-Core Intel Xeon processors
  - 18GB RAM (8 for WebGUI)
  - 405 GB HD space (RAID 5) (200 GB for WebGUI)
  - Two other VMWare appliances on this server are low-use test environments



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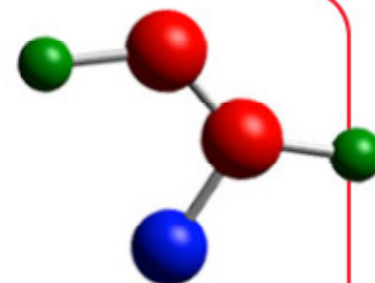


## The Plan

- Get the new VMWare server configured and running
- Get the WRE up and running
- “Downgrade” WebGUI to the live sever version
- Create “shells” for each of our sites via the WRE
- Import the sites
- Upgrade the sites
- GO LIVE!



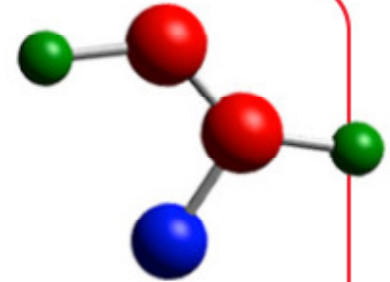
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## Prep the server and appliance

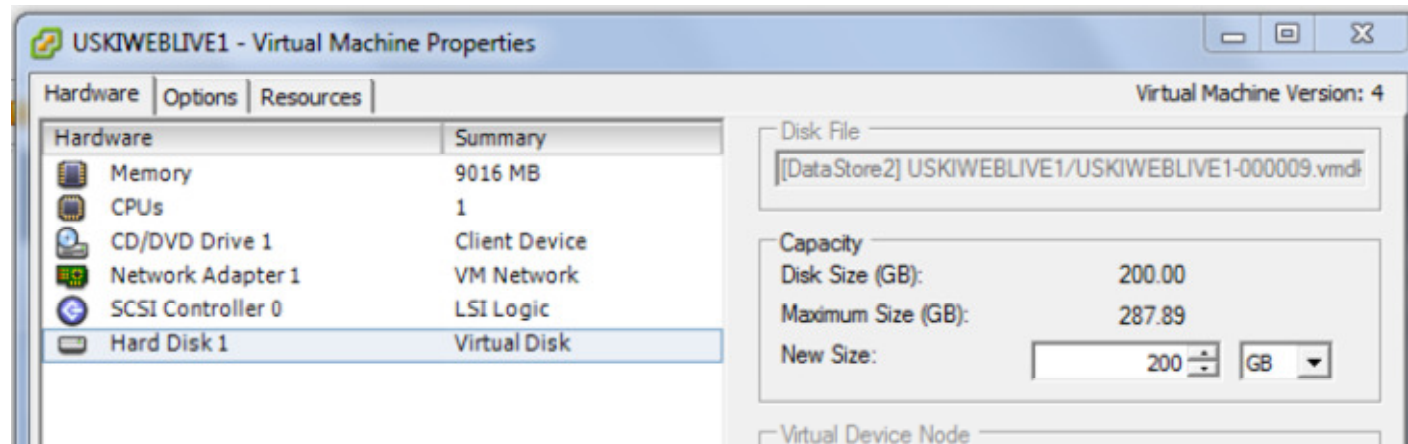
- We're running VMWare ESXi, which doesn't handle the format as delivered by Plain Black
  - Solution: Convert to a Virtual Appliance
    - VMWare Workstation on local machine (what I did)
    - Converter at <http://www.vmware.com/products/converter/>
- After conversion, load Virtual Appliance to machine





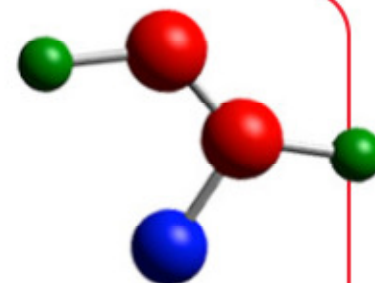
## Host Machine setup

- Install VMWare base software (your choice) – we used ESXi, now known as vSphere Hypervisor)
- After loading appliance onto server, adjust system allocations through VMWare Infrastructure Client

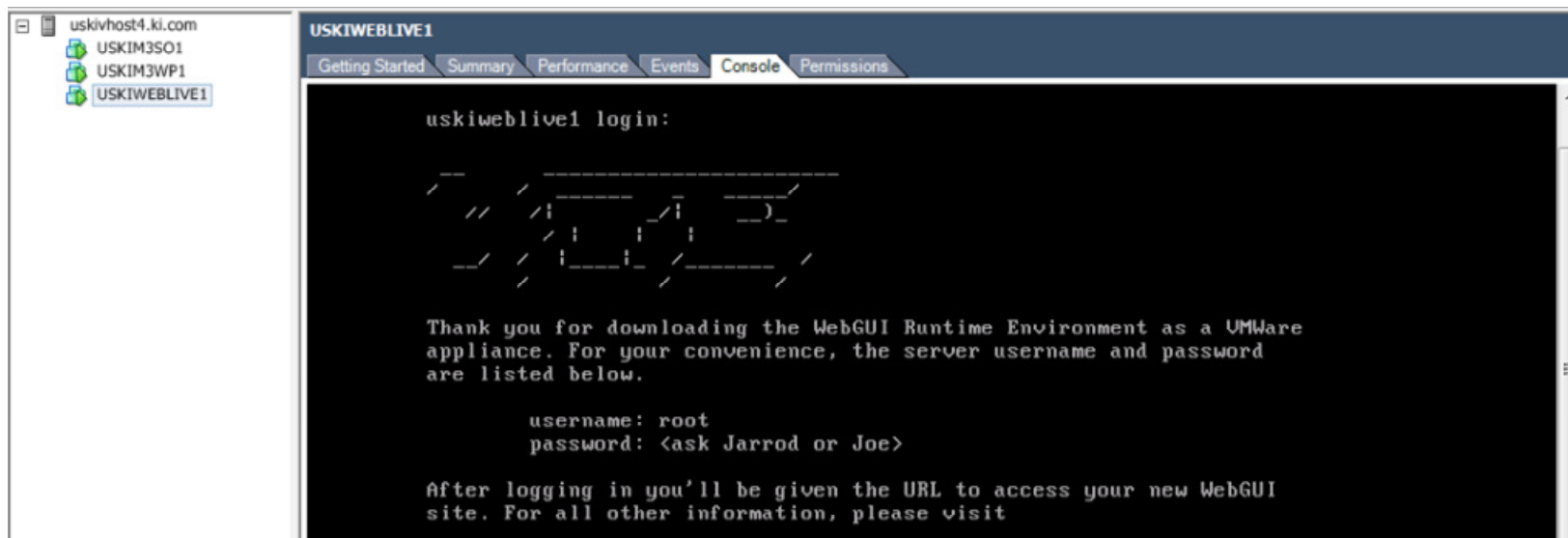




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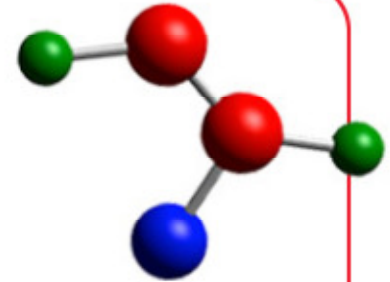
## Fire up the VMWare App



- Start the appliance from within the Infrastructure Client



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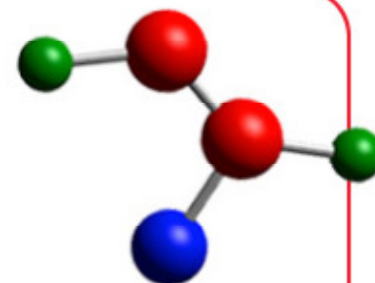


## Tweaks to the VMWare App

- Console in the Infrastructure Client works but is stripped down. Use PuTTY or another SSH client
  - <http://www.chiark.greenend.org.uk/~sgtatham/putty/>
- Now that you're in, before anything else:  
**CHANGE THE ROOT PASSWORD**
- Next, create your user account (Don't log in as ROOT)
  - Why? <http://control-escape.com/linux/lx-postinstall.html>
- Configure IP address to static IP vs DHCP
  - <http://www.cyberciti.biz/faq/rhel-centos-fedoracore-linux-network-card-configuration/>



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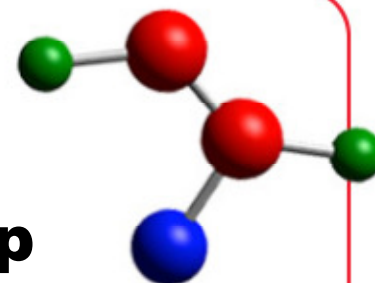


## More tweaks to the VMWare App

- The kernel as delivered only handles 4GB of RAM
  - <http://www.cyberciti.biz/tips/redhat-enterprise-linux-4gb-plus-ram-support.html>
- The disk space delivered is only 8GB
  - <http://flavins.net/blog/linux/expanding-lvm-drives-in-vmware/>
- VMWare has a little issue of time creeping with Linux appliances
  - [http://www.djax.co.uk/kb/linux/vmware\\_clock\\_drift.html](http://www.djax.co.uk/kb/linux/vmware_clock_drift.html)
  - <http://www.cyberciti.biz/faq/howto-install-ntp-to-synchronize-server-clock/>
  - Nightly CRON job corrects – typically .02 seconds a night



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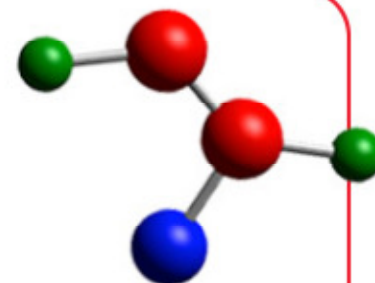


## Even MORE tweaks to the VMWare App

- Install Samba to enable filesharing within our Windows environment
  - [http://www.centos.org/docs/5/html/Deployment\\_Guide-en-US/ch-samba.html](http://www.centos.org/docs/5/html/Deployment_Guide-en-US/ch-samba.html)
  - Used “Yet Another Even Better Method” here as a guideline: <http://wiki.centos.org/TipsAndTricks/WindowsShares>
- Adjust software firewall settings within Centos
  - system-config-securitylevel-tui



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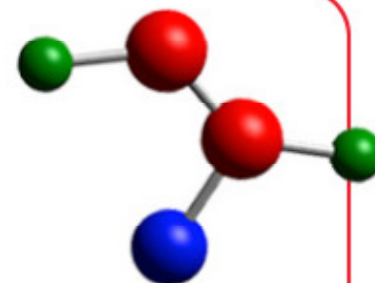


## And more tweaks to the VMWare App

- Install PHP (Yes, I said it.)
  - [http://www.webgui.org/community-wiki/compile-mod\\_php-into-wre](http://www.webgui.org/community-wiki/compile-mod_php_into-wre)
- Optional: Configure system to send alerts for Root to an alternate email address (I used my work address)



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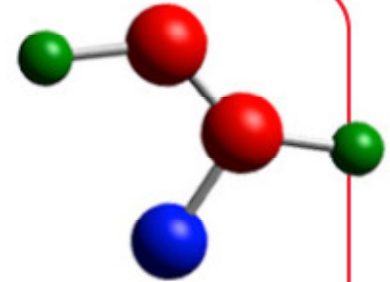


## Lets start the migration!

- Note: Old WebGUI versions run just fine on newer WREs (probably), so install the newest WRE you can and “downgrade” the wG version to match what you’re migrating from
- Use the WRE to set up the website(s)
  - This creates the proper directory structure / config files / permissions, etc.



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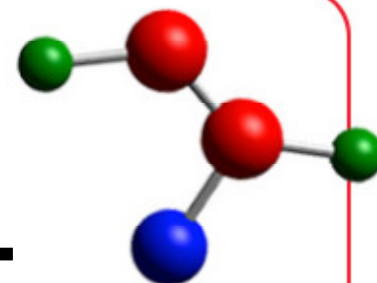
## Move some files

- Transfer the files from your old server to the new server
  - /data/domains/[YourDomainHere]/public
  - /data/domains/[YourDomainHere]/logs (optional)
  - /data/domains/[YourDomainHere]/awstats (optional)
- Transfer any custom code (Macros? Assets?)
- Transfer any custom config settings
  - Possibly a manual merge – httpd.conf
- Coming from Windows? Your work isn't done...



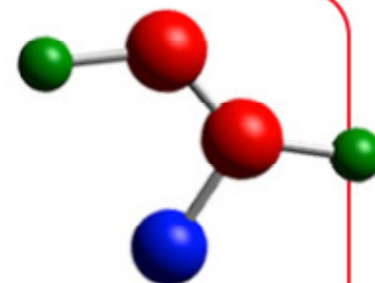


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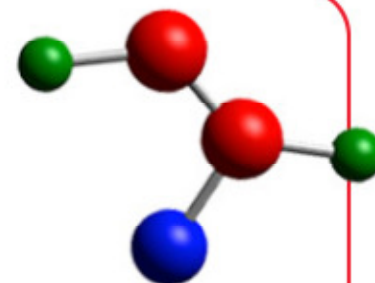
## Your filesystem may cause problems...

- Windows and Mac OSX filesystems are NOT case-sensitive, Linux filesystems are
- Problems primarily occur in “public”, which is where uploads from the CMS go
  - <http://www.webgui.org/bazaar/uploads-capitalization-repair>
- There’s also a flag in the WebGUI Config File
  - “caseInsensitiveOS” : “1”,
- Problems MAY occur in MySQL tables
  - Manual work required
  - <http://www.webgui.org/dev/db-schema> for reference



## Move the databases

- If you haven't yet, create backups of your databases and copy to the new server
  - <http://dev.mysql.com/doc/refman/5.1/en/mysqldump.html>
- With sites created on new server and data copied over, import database backups from “old” server
  - I create shell scripts for steps like this because I usually end up doing it more than once (script included at the end of this presentation)

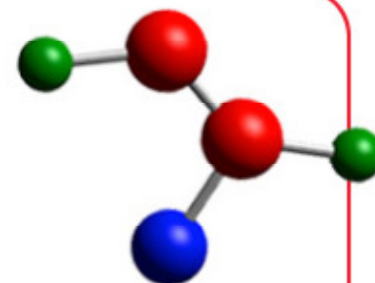


## You should be migrated!

- Restart WebGUI services (just because) and test, test TEST!
- From this point, you can upgrade to whatever current version you'd like (if you aren't there already, of course)

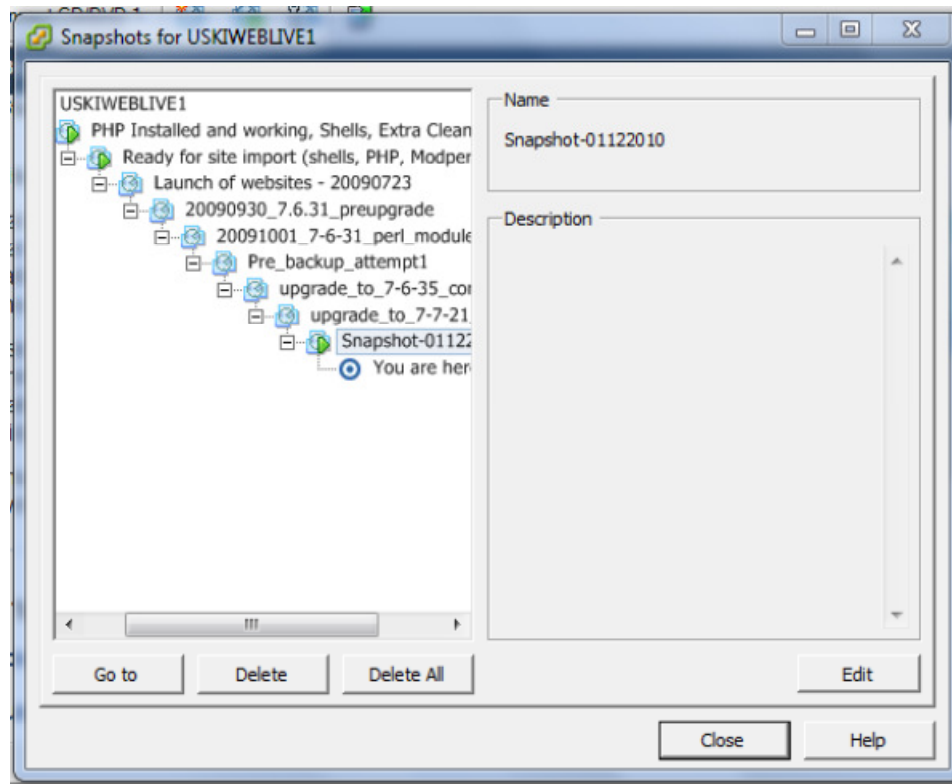


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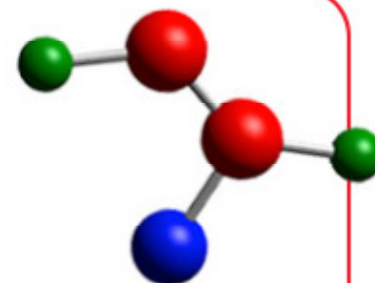
## Cool VMWare help

- A cool VMWare feature: Snapshots



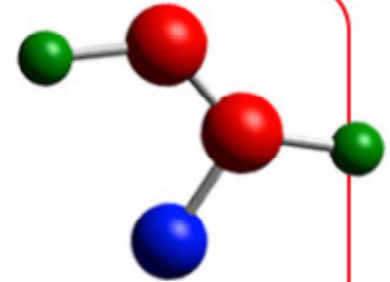


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## When to snapshot?

- My usual snapshot points
  - After the VMWare Appliance is configured
  - After the databases are created via the WRE
  - After I've copied over all files (public folder)
  - After I've run the capitalization fix script
  - After I've imported the databases
  - Before each upgrade
- Option to snapshot memory as well – no need
  - Dramatically slows snapshot, messes stuff up (clock)



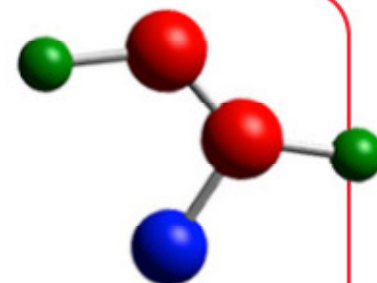
## Since the migration?

- Aside from a few service restarts when adding or removing websites and other maintenance-related tasks, it's been STABLE:

```
15:24:59 up 316 days, 12:37, 1 user, load average: 0.23, 0.14, 0.04
```



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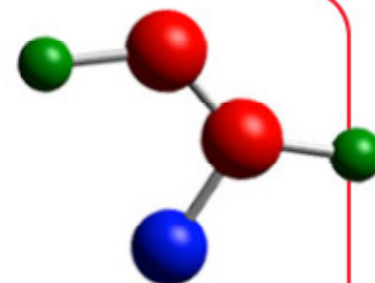


**Questions?**

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## Database import shell script

```
#!/bin/sh

# This script imports MySQL databases from /WebGUI_Install/transfer
# The site list lives in /data/scripts/sites
# In colon-delimited site list, field 1 is sitename and field2 is dbname

echo ""
echo "This script will import MySQL databases into the WebGUI installation."
echo "NOTE: It WILL overwrite the databases that currently reside there."
echo "This WILL erase ALL CURRENT SITES!!"
echo ""
echo -n "To continue, type GO at the prompt; type anything else to quit: "
read user_input

if [ "$user_input" = "GO" ]; then
  echo "Beginning site import...."
  while read inputline
  do
    sitename="$(echo $inputline | cut -d: -f1)"
    dbname="$(echo $inputline | cut -d: -f2)"
    echo ". . . . . $sitename"
    mysql -uroot -p123qwe $dbname < /WebGUI_Install/transfer/$dbname.sql
  done < /data/scripts/sites
  echo "Sites imported!"
else
  echo "Import Cancelled."
fi

exit 0
```

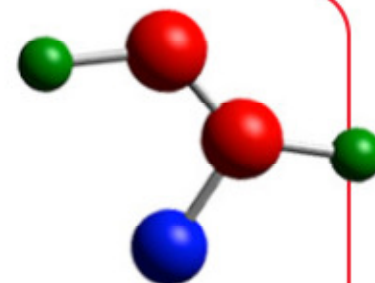
Below is a sample "sites" datafile:

```
www.kemin.com:www_kemin_com
www.luteininfo.com:www_luteininfo_com
```





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## Capitalization fix shell script

```
#!/bin/sh

# This script calls the Perl fixup script for the "fix capitalization from a case-insensitive filesystem"
# issue described here: http://www.webgui.org/bazaar/uploads-capitalization-repair
# This script uses the same datafile as the database import script

echo "Beginning capitalization fix...."
while read inputline
do
  sitename="$(echo $inputline | cut -d: -f1)"
  echo ". . . . . $sitename"
  perl /data/wre/sbin/fixUploadsCase.pl /data/domains/$sitename/public/uploads /data/domains/$sitename/public/uploads2

done < /data/scripts/sites
echo "Capitalization Fixed!"

exit 0
```