

Workstations

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7:31 PM

- A **workstation** is a computer hardware dedicated to a single customer's work.
- Usually deployed in large quantities and have long life cycles.

- Workstation states:
 - o New = completely new
 - o Clean = just installed OS
 - o Configured = correctly configured, all programs work
 - o Unknown = misconfigured or out of date
 - o Off = retired
- State transitions
 - o Build = new --> clean
 - o Initialize = clean --> configured
 - o Update = configured --> configured
 - o Entropy = configured --> unknown
 - o Debug = unknown --> configured
 - o Rebuild = unknown --> clean
 - o Retire = all --> off
- Workstation only usable when it's configured.
- To ensure that the system work, make sure that the OS degrade as slow as possible.
 - o OS vendor decision have impact here.
 - o How easy it is for a user to configure the system himself? How easy it is to mess up?

- Three tasks
 - o Loading system software and applications initially
 - o Update system software and applications
 - o Configuring network parameters

- Loading software initially
 - o Automate!
 - o Why?
 - Prevent mistakes --> save time, save money
 - Prevent nonuniformity
 - o Make sure the installation is completely automated.
 - o Automated installation can be done by hard disk cloning.
 - Have to have a **golden host** for each type of system in use.
 - Not a very flexible method.
 - o Don't trust vendor's installation.
 - If you install yourself, you know what state the workstation is in.
 - Vendors will set up for their own purposes.
 - You have to reload the OS anyway.
 - o Make checklist for things you can't automate.

- Updating software
 - o How is it different from installation?
 - The host must be usable.
 - Must do so in a way that does not flood the network.
 - Shouldn't require physical visit.
 - The host is already in use. Must be usable once it is done.
 - The host might be in unknown state.
 - The host might be dual boot.
 - The host might connect and reconnect to the network time and again.
 - o One, Some, Many
 - One: Start with your machine.
 - Some: Then try on your group's PCs.

- Many: Slowly move to larger groups.
- Network Configuration
 - Find an automatic way to update network parameters of workstations.
 - Difficulty: Information is specific to particular hosts.
 - Most common way: DHCP.
 - Tips
 - Use template.
 - Know when to use dynamic leases.
 - Don't use dynamic DNS. (Prevent user from naming their machine the same as your server!)
- More general tips
 - Involve customers in specification and design of workstations.
 - Keep only a small number of standard configurations. Otherwise, use Software Configuration Management (SCM)