# Managing Systems With Ignite-UX

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# When to Ignite

- Similarity is a good thing
  - cookie cutter clones
  - performing same functions
  - matching architectures
- Advantages in numbers
  - minutes saved add up quickly
  - less desire to customize
  - infrastructure cost less of an issue

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# When to Ignite?
## Critical Time Limits

- limited maintenance windows
  - predictable install times
  - automation friendly
  - PCH full ignite in 12 minutes
- rapid fallback required
  - IUX server can host old images
  - known ignite time for previous image
  - full installation allows alternate disks to be used

# When to Ignite?
## Wiping the slate clean

- restoring test systems
  - eliminate cross-contamination
  - better test reproducibility
- systems of many hats
  - ignite to new function
  - full environment switch
- share hardware, not information
  - share a useful system, without data
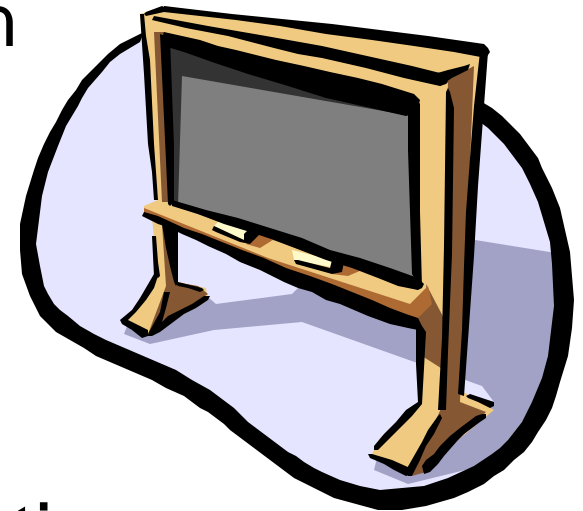
# Configuring for Success
## Keep your roots clean

- no volatile data on root volume
  - avoid loss or backdate
  - takes extra time to restore
- user directories automounted
  - biggest source of root data
- NIS for configurable data
  - avoid need for customizations

# Configuring for Success
## Don't skimp on the server

- fast disks; multiple io cards
  - image files are gigabytes in size
  - disk spindle is #1 bottleneck
- fast networking interfaces for all subnets
  - server should be faster than any client
  - gateways add to impact and complexity
- double duty as net_recovery host
  - justify as a disaster recovery expense

# Configuring for Success
## Made for each other

- Build your systems for images
  - HW arrays are faster than SW mirrors
  - allow for two sets of root volumes
  - remote console access
- Build your images for systems
  - include needed drivers and HWE patches
  - beware cross-volume symbolic links
  - block bootsys automatically
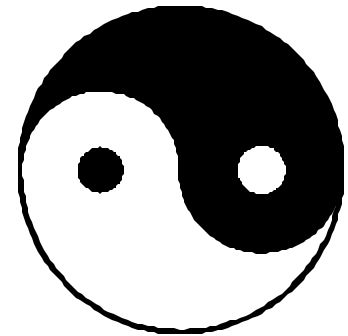
# Then the Real World Hits…

We all know that:
- almost cookie cutter doesn't count
- getting one user to decide is hard enough…
- tinkering happens

*You will be customizing*

# Golden Image Configuration

- ## IUX configuration files

    For defining the root volume, setting up networking, and importing data volumes

- ## User-defined scripts

    Probably already exist, written in common language (sh, perl…), modified outside IUX

- ## User-defined depots

    SD depots with software to load on image

# Release-specific config file

- located in /opt/ignite/data/Rel_*release*
- set the defaults for HP-UX release
- great examples for beginners

The language used by IUX config files is defined in the instl_adm(4) page

# Server-specific config file

- located at /var/opt/ignite/config.local
- provides info for use from specific-IUX server

```
dns_domain="fc.hp.com"
dns_nameserver[0] = "15.1.9.11"
dns_nameserver[1] = "15.1.12.7"
nis_domain="corp"
wait_for_nis_server=FALSE
ntpdate_server="15.1.48.11"
```

# System-specific config file

- /var/opt/ignite/clients/*0xLLAddr*/config
- can be used to set primary & secondary swap, path to boot disk, keyboard type

```
init _hp_disk_layout="HP-UX save_config layout"
init _hp_root_disk="8/4.5.0"
init _hp_min_swap=2097152K
init _hp_locale="SET_NULL_LOCALE"
init _hp_keyboard="PS2_DIN_US_English"
```

- not only method for system-specific changes!

```
( system_name == "chc36001" ) { }
```

# post-installation scripts

- set using `post_config_script` variable in config file, or defined in INDEX file using the `scripts` clause

- selected scripts will be run on target system during final configuration

- scripts can be run prior to the initial reboot using the `post_load_script` variable, but limited commands are available for use

# Using IUX from scripts

- `bootsys` utility allows remote systems to be prepared and rebooted to IUX control
- script is outside of IUX, and can be built with knowledge of multiple servers
- remote console access is strongly recommended to allow quick recovery from minor problems

# Using Delta Depots

- image maintenance
  - minor corrections without rolling image
  - security patches, patch warnings, critical or locally required newer patches
- shared image for similar environments
  - optional core components & applications
  - patch level management
- paid for in installation time, use wisely

# /var/opt/ignite/INDEX

A `cfg` clause in the INDEX file will appear as one selection in the IUX GUI.  This defines the 32-bit image used for 11.11 workstation ignites in the PCH:
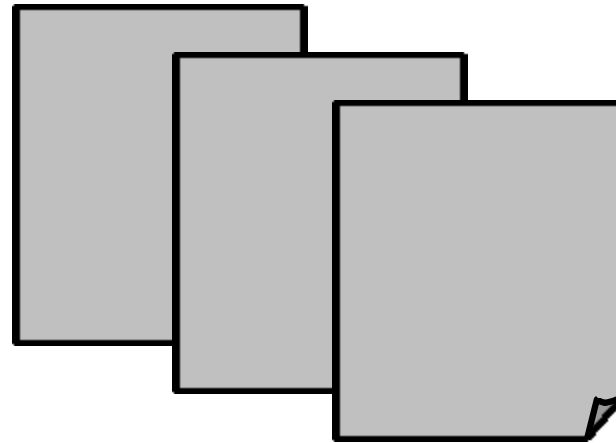
```
cfg "CH_11.11_32_700_HF" {
   description "PCH 11.11_32_700 archive"
   "/opt/ignite/data/Rel_B.11.11/config"
   "/var/opt/ignite/config.disks_700"
   "/var/opt/ignite/images/1111_32_700.cfg"
   "/var/opt/ignite/depots/latest_patch.cfg"
   "/var/opt/ignite/config.local"
}
```
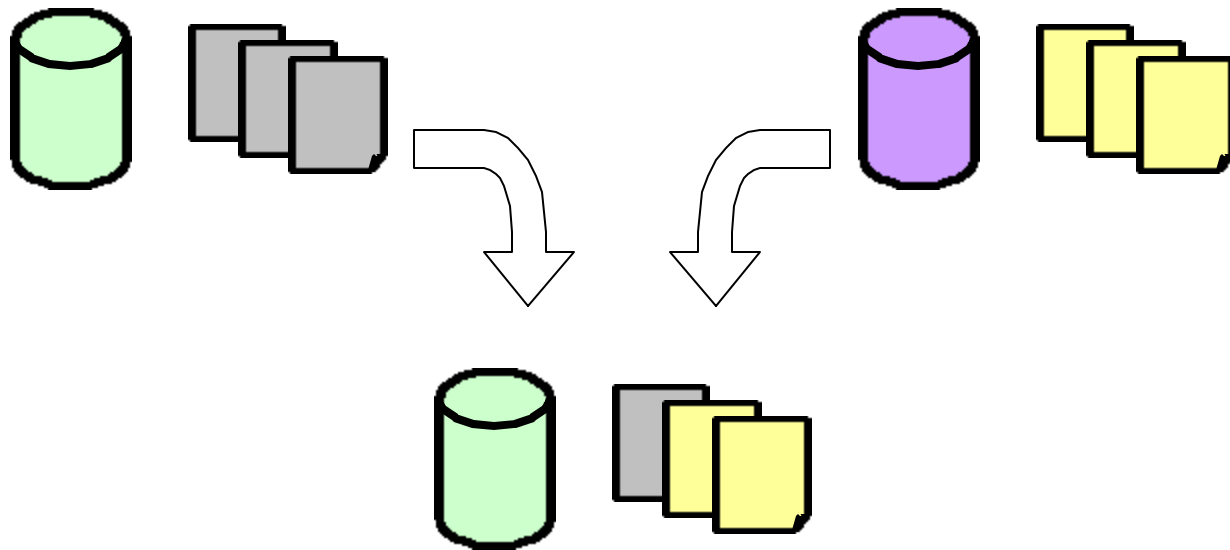
# IUX recovery images
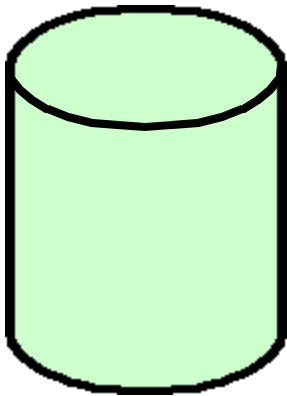
archive

archive, control, and system config files

A recovery image consists of the archive of all files, and three configuration files that define it and the system that created the image

# IUX recovery images



The archive can be prepared for installation on
another system by creating new config files based on the
new target (a copy of the archive is not needed)

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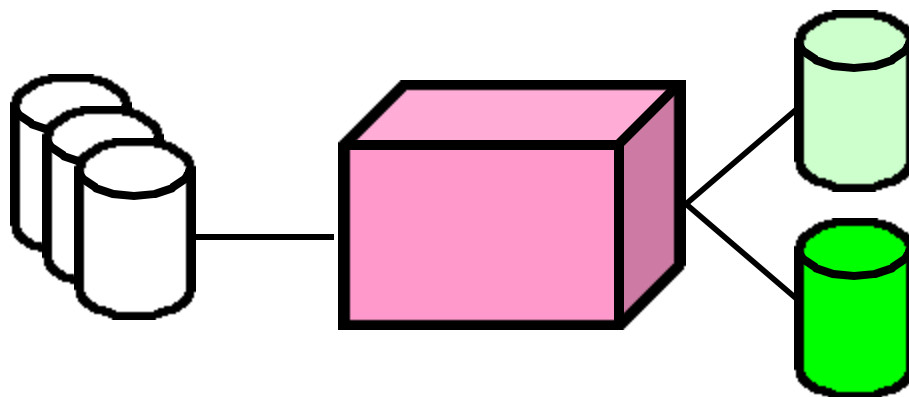
# The maintenance system
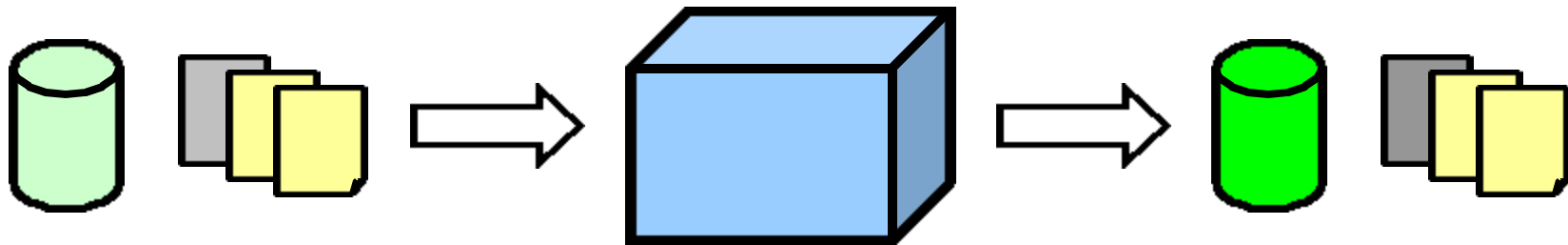
After loading image on the maintenance server, any updates desired are installed and tested before a new image is created for the updated environment

# Once more, with feeling!
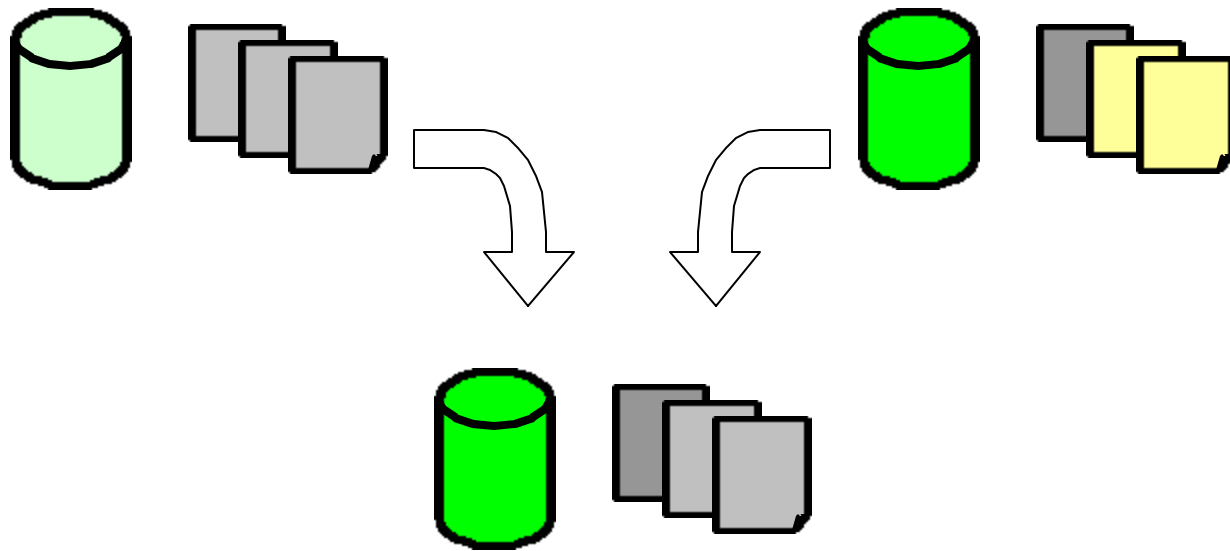
The new archive uses the same process to restore the configuration files for installation on the original production box

# The ideal ending



By loading the updated image without destroying the original boot volume, recovery is a reboot away. The data disks are rehosted in either environment thanks to the config files.

# IUX Recovery for IPF Systems

- No Tape Boot Support in IPF Firmware
  - No EFI tape device drivers
  - No sequential tape boot control firmware
- Future Media Recovery may be Disk
  - Increasing capacity of DVD media and widespread use may lead to use as the future recovery media

# IUX Recovery for IPF Systems

- IPF System Two-Step Media Recovery
  - Step 1: Boot from CD
  - Step 2: Recover from tape
- Use Cold Install CD for selected OS
  - Step 1 CD is any HP-UX install CD for the OS version of the recovery image
- Support Starting in HP-UX 11.23