WELCOME TO IGNITE UX

# Customized Install Media Creation

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Rationale for customized install media

There are some compelling reasons for building customized install media:

- You have a large number of systems that are basically identical, and:
  - ◆ the systems lack network boot capability; or
  - ◆ networking is unreliable or slow so contact with an Ignite-UX server is problematic; or
  - ◆ the systems are geographically widespread.
- You have Series 800 systems that lack network boot, and you want to contact an Ignite-UX server.
- You want to hand a customized install media to someone and have them perform a complete non-interactive install.
- You want a single media that has all the components of the operating system (HP-UX, applications, patches, diagnostics and local customizations that are needed) loaded in a single session.
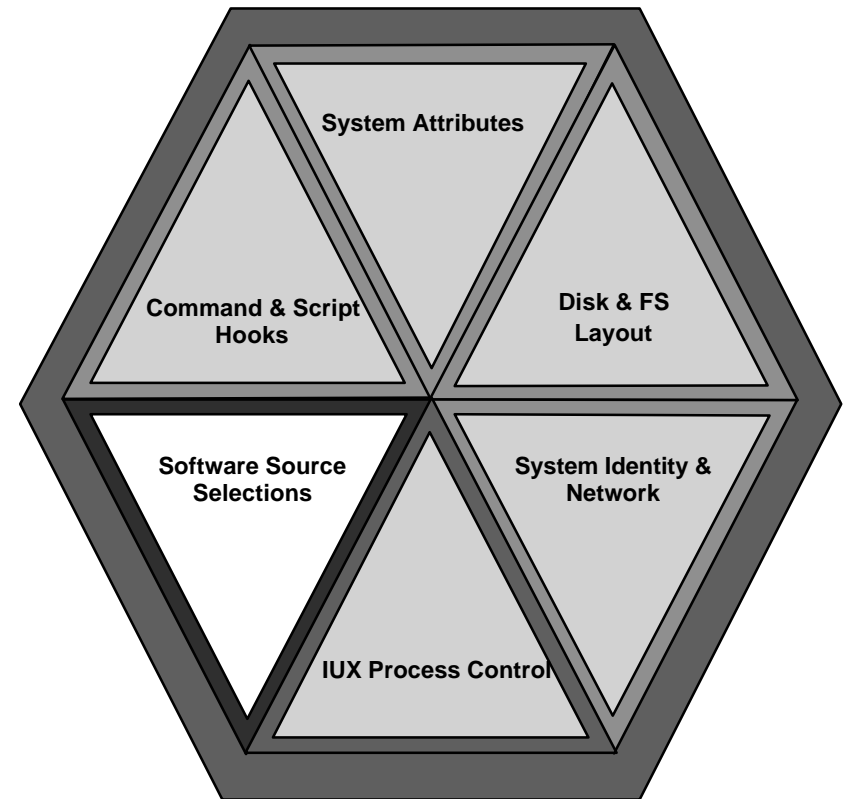
Supported Media
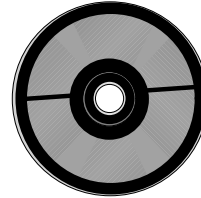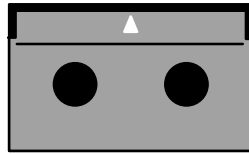
- Supported media as of now is either DDS tape or CD-ROM (HFS or CDFS file systems).

- DDS tape (90 meter) capacity is 2GB.

- CD-ROM capacity is 650 MB.

- Only one software depot on DDS tape.

- Must use DDS1 density device files for DDS tapes to assure greatest possible coverage.

- As additional media is supported (for example DLT or DVD), Ignite-UX will support them as well.

Config files

- A config file is the basic data store of Ignite-UX.

- The content of a file is one or more of the classes in the diagram.

- It is described in detail in *instl_adm*(4).

- A **sw_source** represent either a DDS tape or a CD-ROM.

- A **sw_sel** represents either an archive or a bundle in a SD depot.

System Attributes

Command & Script
Hooks

Disk & FS
Layout

Software Source
Selections

System Identity &
Network

IUX Process Control

Archives/Depots

|	Type	load_order	config file source
Archives	core	= 0	**core.cfg**
	non-core	> 0	**noncore.cfg**
Depots	core	= 0	**make_config**
	non-core	> 0	**make_config**

- For core archive access, Ignite-UX supplies a template config file in **/opt/ignite/data/examples/core.cfg**. For non-core archive access, the template file is **/opt/ignite/data/examples/noncore.cfg**. The file is typically copied elsewhere and edited.

- For depot access, the output of **make_config** is used as the starting point It has to be edited somewhat for use on either a DDS tape or a CD-ROM. Unless stated otherwise, all other attributes remain the same.

- There can be only one source for core software. You can use archives or depots or both for non-core software.

DDS Media Structure

| LIF	A1/E	D/A2	A3...
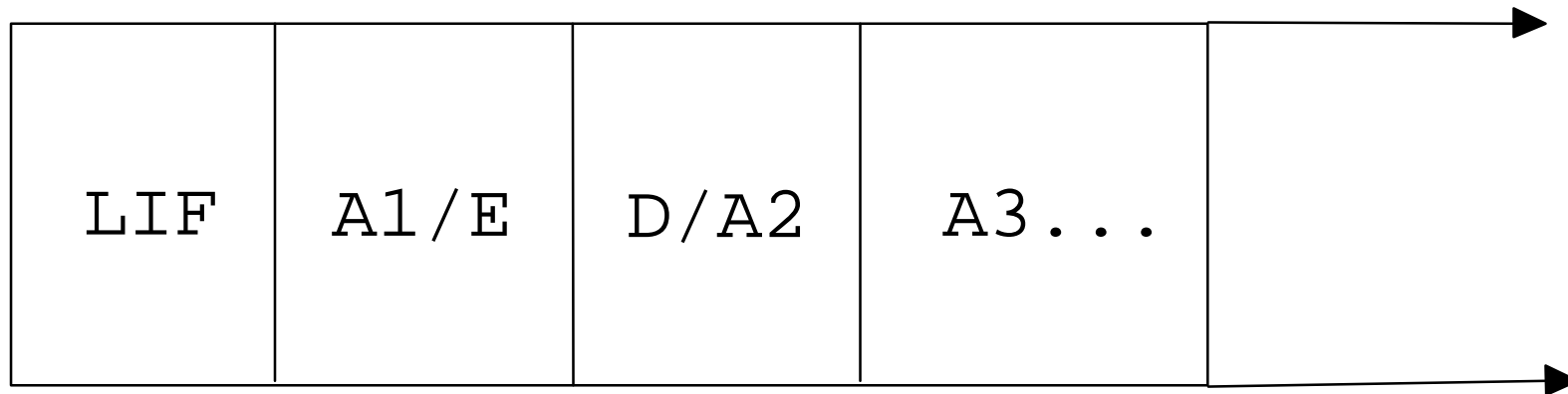
- Each of these objects has an important role to play in an install media.
- The first object is the LIF header.
- The second object is either an archive (indicated by A1) or may be empty (E) if installation is solely from the software depot.
- The third object is either a software depot (D) or may be used for an archive (A2).
- All remaining objects (A3, ...) are archives limited only by the capacity of the tape.

DDS LIF Header

LIF	A1/E	D/A2	A3...
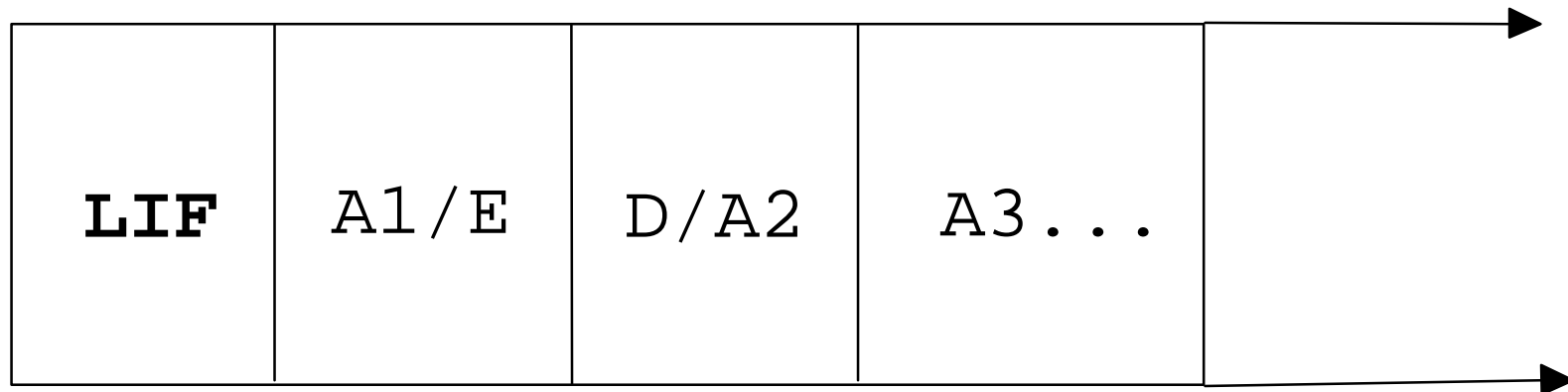
- The LIF Header contains files that provide the Ignite-UX tool, configuration information, boot utilities, install kernel and file system, and post_load and post_config scripts.

- It is created using **make_medialif**.

- The configuration information in the INSTALLFS can be modified using **instl_adm**. The defaults are whatever is stored in the INSTALLFS on your Ignite-UX server when **make_medialif** is run.

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DDS Archives

LIF	**A1**/E	D/**A2**	**A3...**
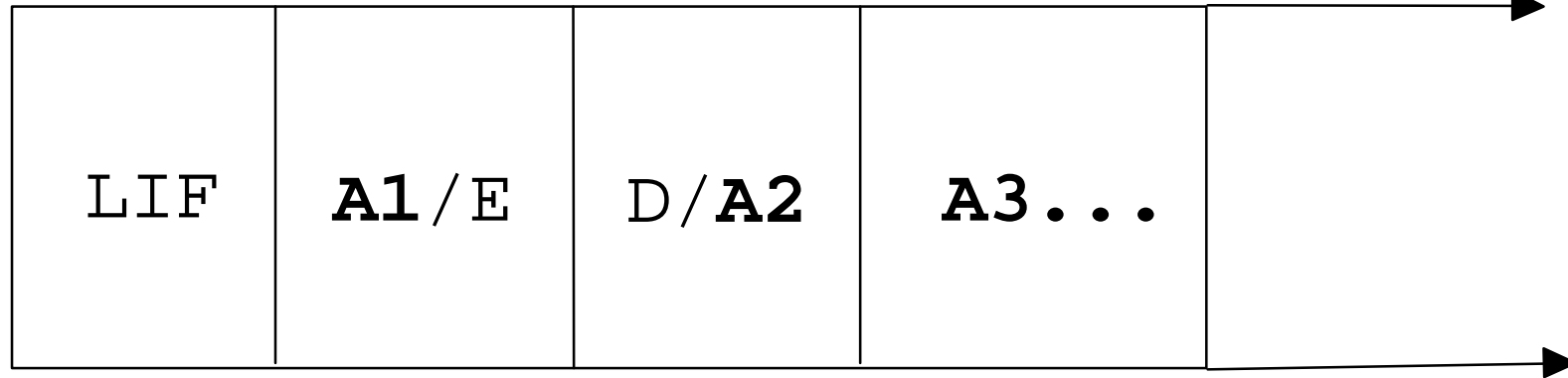
- A core archive is usually created using **make_sys_image**.
- To access an archive on a tape, these config file attributes must be set:
  - ▸ sw_source
    source_type = "MT"
    change_media = FALSE
  - ▸ sw_sel
    archive_path = "1"
    impacts = "/" 32Kb
- The impacts lines must be those reported by **archive_impacts**.

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DDS Archives config file

LIF	A1/E	D/A2	A3...

```
sw_source "core archive" {
    load_order = 0
    source_format = archive
    source_type = "MT"
    change_media = FALSE
}
```

```
init sw_sel "1st Series 700 archive" {
    sw_source = "core archive"
    sw_category = "HPUXEnvironments"
    archive_type = gzip tar
    archive_path = "1"
    impacts = "/" 32Kb
} = TRUE
sw_sel "2nd Series 700 archive" {
    archive_path = "3"
    impacts = "/" 34Kb
}
```

DDS Software Depot

LIF	A1/E	**D**/A2	A3...
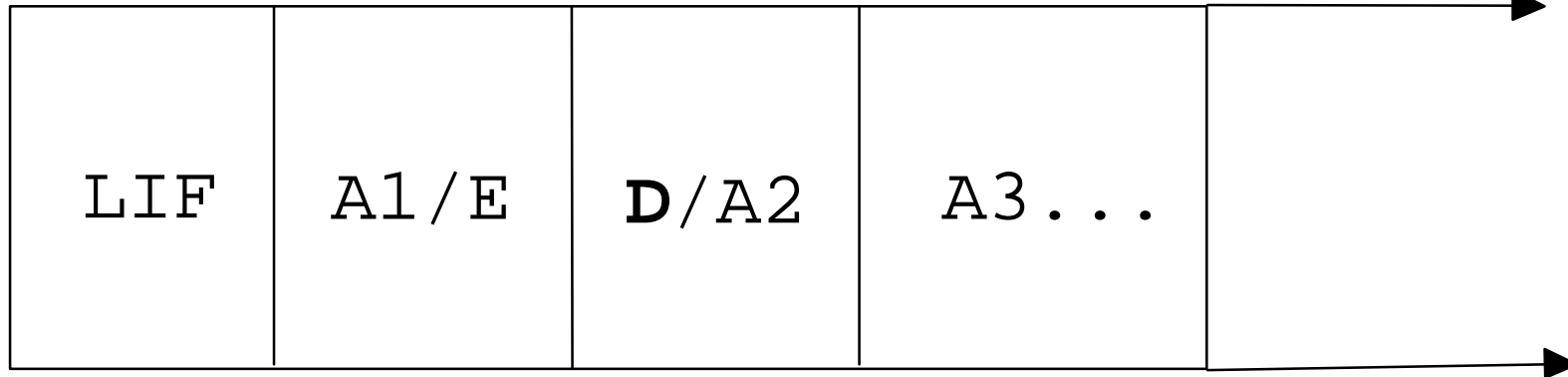
- If the DDS tape has a LIF header, the depot on a DDS tape must be the third object on the tape. If it does not, it must be the first object (if change_media was true for example). This is an SD restriction.
- The depot is referred to as a serial depot. It is created using **swpackage -x target_type=tape**.
- To access the depot on a tape, these config file attributes must be set:
  - ► sw_source

    source_type = "MT"
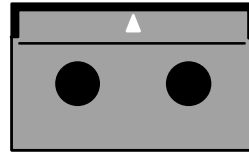
DDS Depot Config File

LIF	A1/E	**D**/A2	A3...
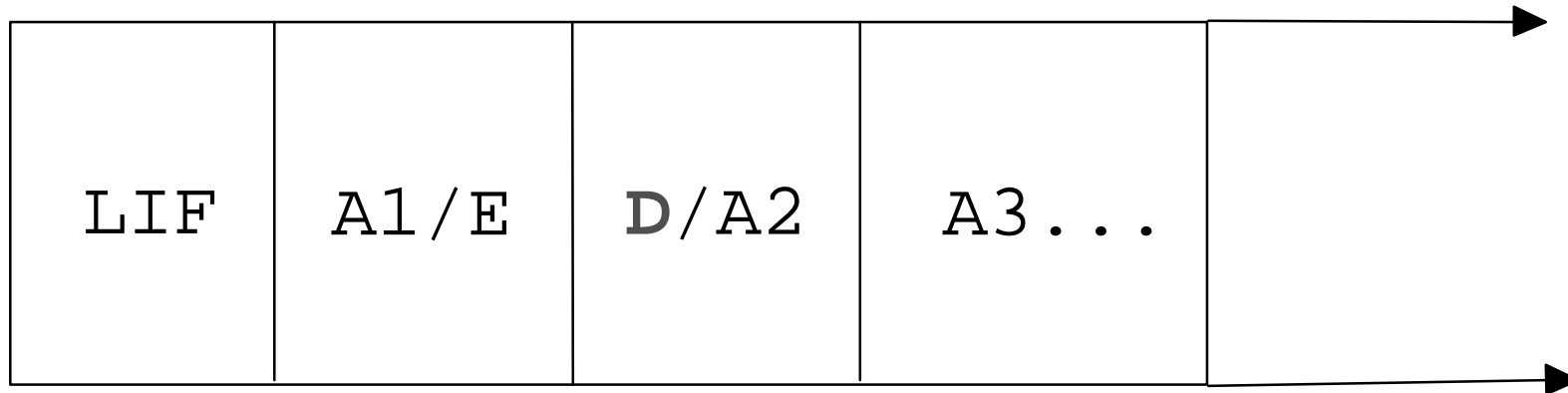
```
sw_source "tape depot" {
    source_type = "MT"
    source_format = "SD"
}
```

```
sw_sel "myApplication" {
    sw_source = "tape depot"
}
init sw_sel "myKeyApp" {
    sw_source = "tape depot"
} = TRUE
```

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Assembling the DDS tape

- When all config files are complete and checked using **instl_adm -T**, use **make_medialif** to create the LIF header. It is advisable that the first config file passed in with a **-f** argument be the default config file (**/opt/ignite/data/Rel_B.*/config**) for the release being installed.

- Use **instl_adm** to set **run_ui** and **control_from_server** attributes in the LIF header to appropriate values.

- Using a DDS-1 density, no compression, no rewind device file, use **mt** to rewind the tape and to write empty files to the tape. Use **dd** to write out the LIF header, all archives, and the serial depot. Note that the LIF header must be written out with an output block size of 2KB; everything else is written out with a 10KB output block size.

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CD-ROM File System

- A CD-ROM is either an HFS or CDFS file system.
- Ignite-UX will mount the CD-ROM when it is accessing it. All paths for archives and depots are relative to this mount point.
- The easiest method to create a file system image is to create a logical volume large enough to store everything on the CD-ROM. Then using commands like **tar**, **swcopy** and **cp**, move the objects into place in that logical volume.
  - ▶ For CDFS, use something like **mkisofs** to create the CDFS as a regular file from the mounted file system.
  - ▶ For HFS, unmount the volume and copy the raw logical volume to a regular file using **dd**.
- The capability to make it an install media is provided by **instl_combine** that wraps the LIF header around the file system image.
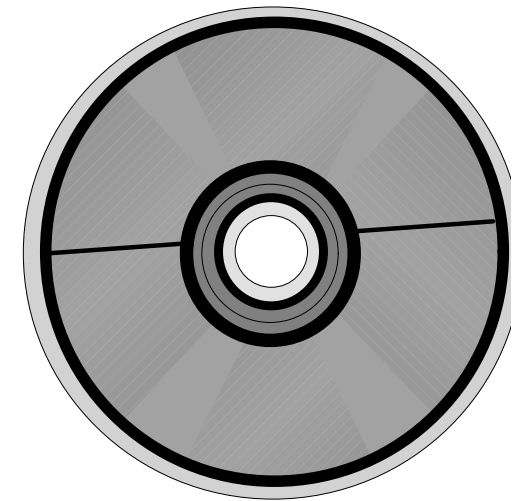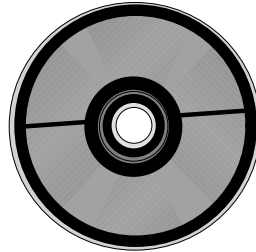
CD-ROM Archives

- There is no limit on the number of archives on a CD-ROM. The only limitation is the capacity of the CD-ROM.
- To access the archive on a CD-ROM, these config file attributes must be set:
  - ➤ sw_source

    source_type = "DSK"

    change_media = FALSE
  - ➤ sw_sel

    archive_path="archives/myarchive.gz"

    impacts = "/" 32Kb
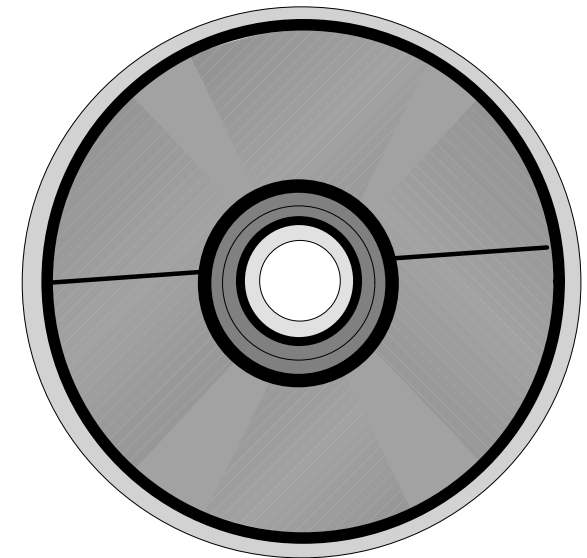
CD Archives config file

```
                                init sw_sel "1st Series 700 archive" {
                                    sw_source = "core archive"
                                    sw_category ="HPUXEnvironments"
sw_source "core archive" {          archive_type = gzip tar
    load_order=0                    archive_path = "archives/my1st.gz"
    source_format=archive           exrequisite = "2nd Series 700 archive"
    source_type="DSK"               impacts = "/" 22Kb
    change_media=FALSE          } = TRUE
}                               sw_sel "2nd Series 700 archive" {
                                    archive_path ="archives/my2nd.gz"
                                    impacts = "/" 25Kb

                                }
```
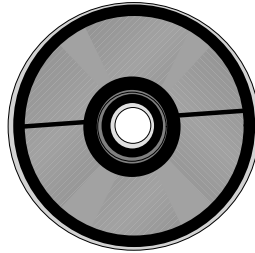
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CD-ROM Software Depots

- There is no limit on the number of depots on a CD-ROM. The only limitation is the capacity of the CD-ROM.
- To access a depot on a CD-ROM, the following config file attributes must be set as follows:
  - ➤ sw_source

    source_type="DSK"

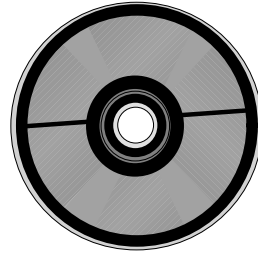   sd_depot_dir="depots/apps700"

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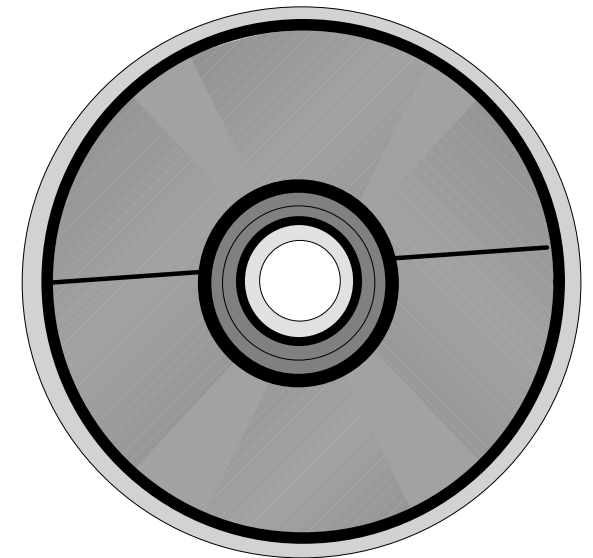
CD-ROM Depots config file

```
sw_source "1st depot" {
    source_type="DSK"
    sd_depot_dir="depots/my1stdepot"
    source_format=SD
}
sw_source "2nd depot" {
    sd_depot_dir="depots/my2nddepot"
}
```

```
sw_sel "my1stapp" {
    sw_source="1st depot"
}
init sw_sel "my2ndapp" {
    sw_source="2nd depot"
} = TRUE
sw_sel "my3rdapp" {
    sw_source="2nd depot"
}
```

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Assembling the CD-ROM

- When all config files are complete and checked using **instl_adm -T**, use **make_medialif** to create the LIF header. It is advisable that the first config file passed in with a **-f** argument be the default config file (**/opt/ignite/data/Rel_B.*/config**) for the release being installed.

- Use **instl_adm** to set **run_ui** and **control_from_server** attributes in the LIF header to appropriate values.

- The raw file system image must be copied to a regular file using **dd** for an HFS CD-ROM. For a CDFS, it must be created from the mounted file system.

- Use **instl_combine** to combine the LIF header and file system image .

- The image can be written to a raw disk and tested before burning a CD. Using your CD writing software write the file system image to the CD in raw mode.

Two most important INSTALLFS variables

- `run_ui`

  If true, will execute Ignite-UX command **itool** for an interactive install on either the target or server depending on how control_from_server is set.

  If false, will attempt a non-interactive install. Ignite-UX, by default, gives a 10 second delay to permit the process to be interrupted.

- `control_from_server`

  If true, will attempt to contact an Ignite-UX server at the IP address stored in the INSTALLFS variable **server**.

  If false, control is maintained locally at the target.

You've got the power!

- Ignite-UX is a powerful toolset. You can decide if, when and how to use:
    - ☒ OS archives
    - ☒ SD depots
    - ☒ Interactive installs
    - ☒ Conditional installs
    - ☒ Automated installs
    - ☒ Interact with server
    - ☒ File system layout
    - ☒ Series 700 versus 800
    - ☒ 32-bit versus 64-bit for 11.0
    - ☒ Final networking information versus **set_parms**
- What is not supported:
    - ☒ Multiple OS versions on same media like both 10.10 and 10.20

A CD-ROM for you

- There is a customized install CD-ROM which is available. It will be available here and in the Tech Lab at the Ignite-UX display. It is also being used in another presentation. Limit yourself to one copy please.

- It will install 10.20 on either Series 700 or Series 800. There are a number of applications that can be interactively selected for loading. ACE and Hardware Extensions systems are not supported. Of course Ignite-UX in general supports these systems, but the CD does not.

- The latest version of Ignite-UX is found in a depot called **Ignite-UX** on the CD-ROM. So if the CD-ROM is mounted at **/cdrom**, the depot location would be **/cdrom/Ignite-UX**.

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