

Give me back my mainframe. A plan C?

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Roadmap

- The Problem
- Plan B
- Examples
- Lessons learned
- Plan C: Octopus?



The target environment



The problem

System for environments:

- Heterogeneous
- Distributed,
- Dynamic
- Ubiquitous



Antecedents

Plan 9

- (Almost) everything is a file
- Network file system protocol (9P)
- Per-process name spaces



Our current approach

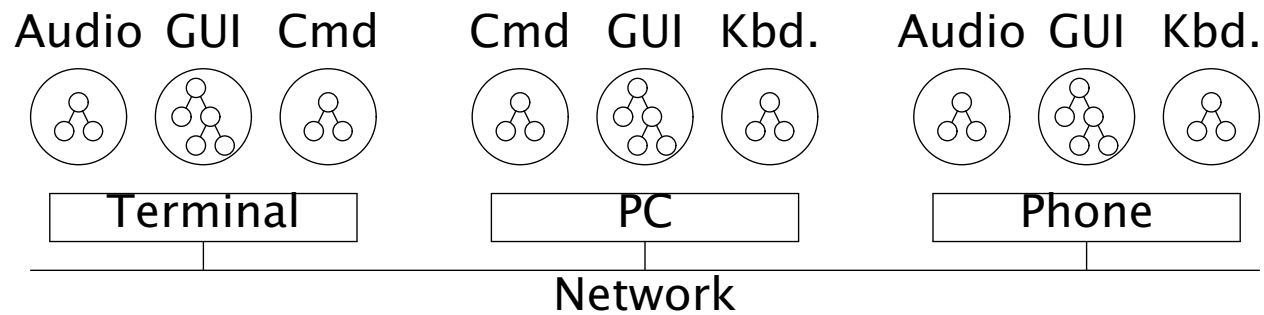
Plan B

- Abstract resource interfaces as files
- ...including location, context, etc.
- Users say what they want

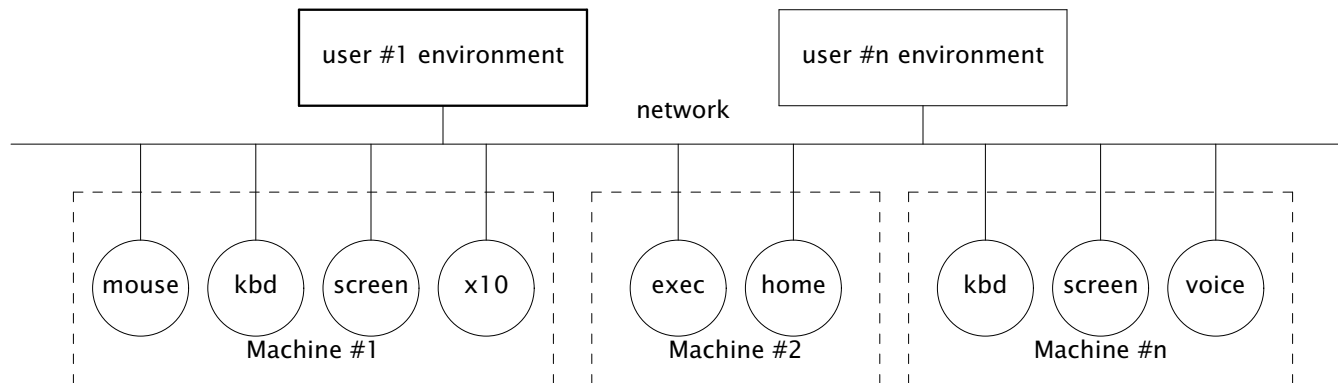


System architecture

A system built out of dynamic vols.



Computing Environment



Computing Environment

How?

```
mount -V /devs/voice!L136!Unemo /voice
```

```
mount -a -V /devs/voice!L136 /voice
```



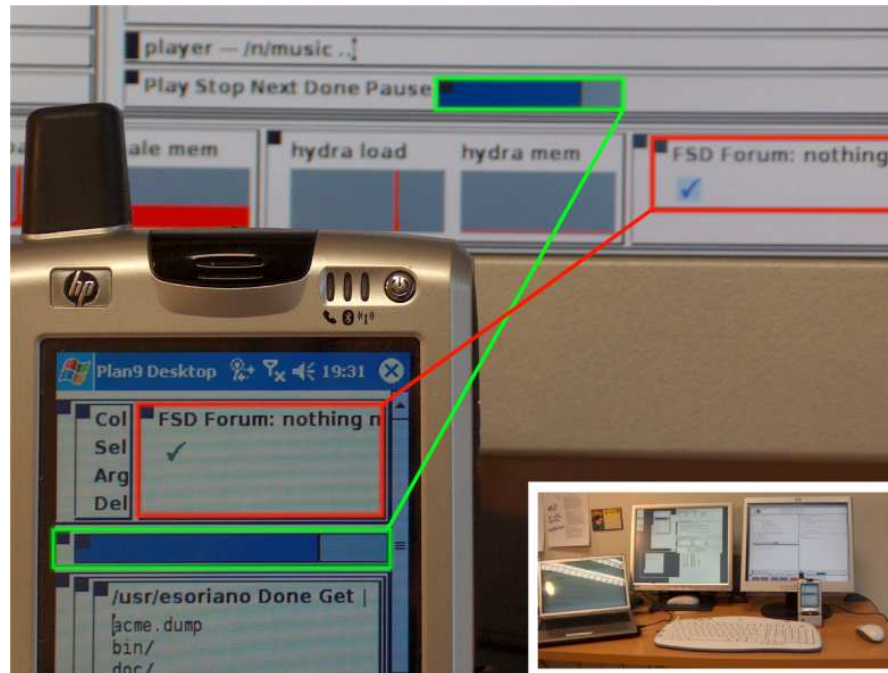
Example: The Plan B player

The screenshot displays a desktop environment with several widgets and applications:

- Top Row:** A vertical menu with options 'Col', 'Sel', 'Arg', and 'Del'. A cartoon fish icon. Three 'Weather' widgets for 'madrid', 'alicante', and 'jaen'. A clock widget.
- Second Row:** 'whale load' and 'whale mem' (empty bars). 'aquamar load' and 'aquamar mem' (red bars). 'nautilus load' (red bars). 'hydra load' (empty bar).
- Third Row:** 'atlantis' (nautilus, sargazos, victim). 'pwr:136lamp' (pwr:136light, who:136). 'Mail' (javierb, andresl) with a logo. 'who' (paurea, sareval) with photos.
- Bottom Row:**
 - player** window: Title '/n/music/mecano/2.Donde-esta-el-Pai'. Controls: Play, Stop, Next, Done, Pause. Playlist:
 01. Donde-esta-el-pais-de-las-hadas.mp3
 02. Este-chico-es-una-joya.mp3
 03. La-bola-de-cristal.mp3
 04. El-amante-de-fuego.mp3
 05. Madrid.mp3
 06. Barco-a-Venus.mp3
 07. La-fiesta-nacional.mp3
 08. Un-poco-loco.mp3
 09. No-aguanto-mas.mp3
 10. Focas.mp3
 11. El-balon.mp3
 12. El-ladron-de-discos.mp3
 - /usr/nemo** window: Title '/usr/nemo Done Get | oban'. Content: '[usr/nemo fortune 1609] Done |'. Text: 'Nobody goes to the theatre unless suffering from acute bronchitis. assert(np);'. Controls: Play, Stop, Next, Done, Pause.
 - oban** window: Title 'oban -'. Content: 'B: 0 W: 6.5 T: 0 Playing: W Mode: Edit'. Controls: Play, Bigger, Smaller, Print, Put, Get, Chcol, Undo. A yellow grid with three blue dots.



Example: The Plan B player



Example: The Plan B player

- Audio device:
`/devs/audio/audio`
`/devs/audio/output`
- User interface:
`/devs/xxxui/.../col:player/`
`etc.`
- Music files:
`/n/music/`
- Displaying poster for CD:
`/mnt/plumb/poster`



Example: tell

The Plan B intercom

```
location=`{cat /who/nemo/where}
```

```
mount -V /devs/voice!L$location
```

```
echo hi there! >/devs/voice/out
```



Example: Zip'ing a room

- Store room UIs, lights, volume

```
mount -V /devs/ui!L$location  
mount -V /devs/x10!L$location  
mount -V /devs/voice!L$location  
cd /devs  
tar c *ui x10 voice >/tmp/room.tar
```

- Unzip'ing a room

```
tar xf /tmp/room.tar
```



So, what did work?

- Abstract interfaces (eg. widgets vs draw)
- Files for application data (editor as Mail)
- Location is powerful
- Indirection between ns and devices
- central registry of volumes



What did not work?

- peer-to-peer
- Main FS crash recovery
- Switching / and/or /usr
- Plan B at home



What's the problem again?

System for environments:

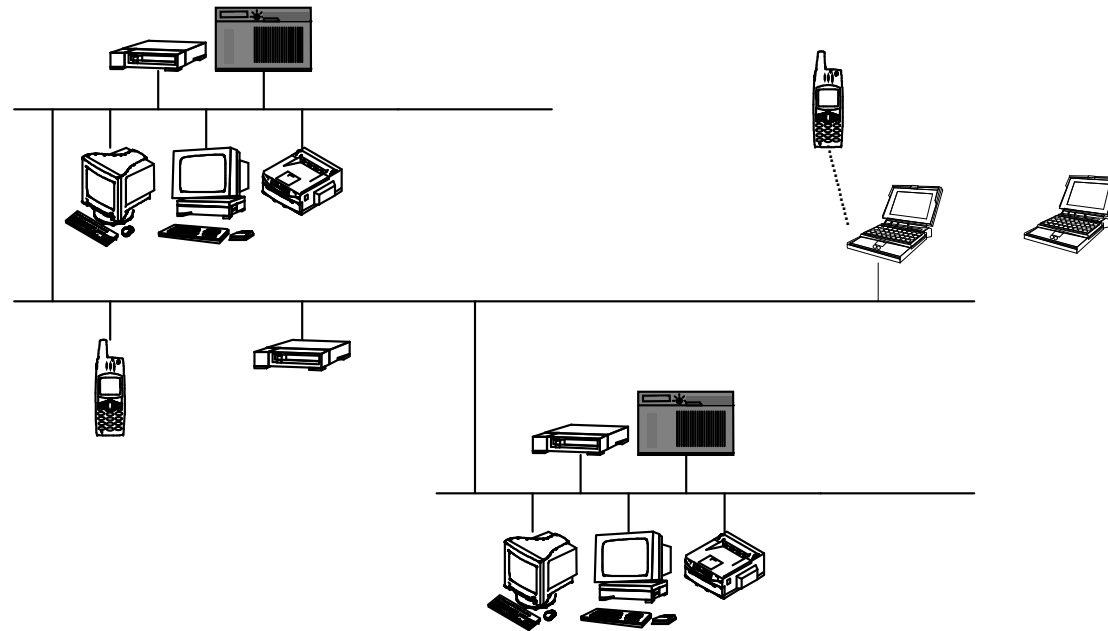
- Heterogeneous
- Distributed,
- Dynamic
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But note: a single system is

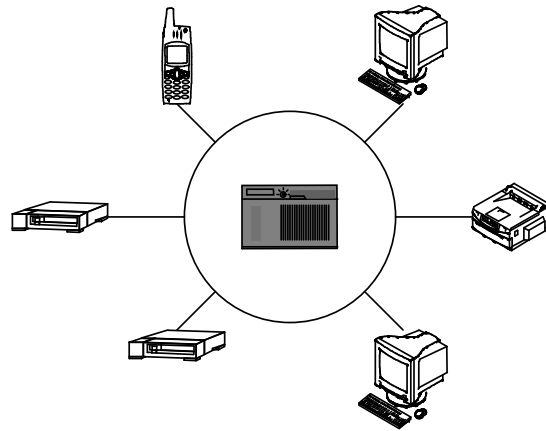
- Homogenous
- Centralized
- Not so dynamic
- with ubiquitous access to it.



The octopus environment



The octopus



issues: latency + copy



Questions?

More information via our httpd

`http://lsub.org`

`http://lsub.org/lis/octopus.html`

