

# CS 503 Lab 0

Getting to know XINU

Rajas H Karandikar  
([rkarandi@purdue.edu](mailto:rkarandi@purdue.edu))

# What is XINU ?

- Small and elegant operating system
- Supports:
  - Dynamic process creation
  - Dynamic memory allocation
  - Network communication
  - Remote and local file system support
- Ported on many architectures and platforms
  - Intel x86 – Intel Galileo Gen 1 development board
  - ARM – Beagleboard-Xm, Beaglebone Black, Raspberry Pi
  - MIPS – Linksys routers

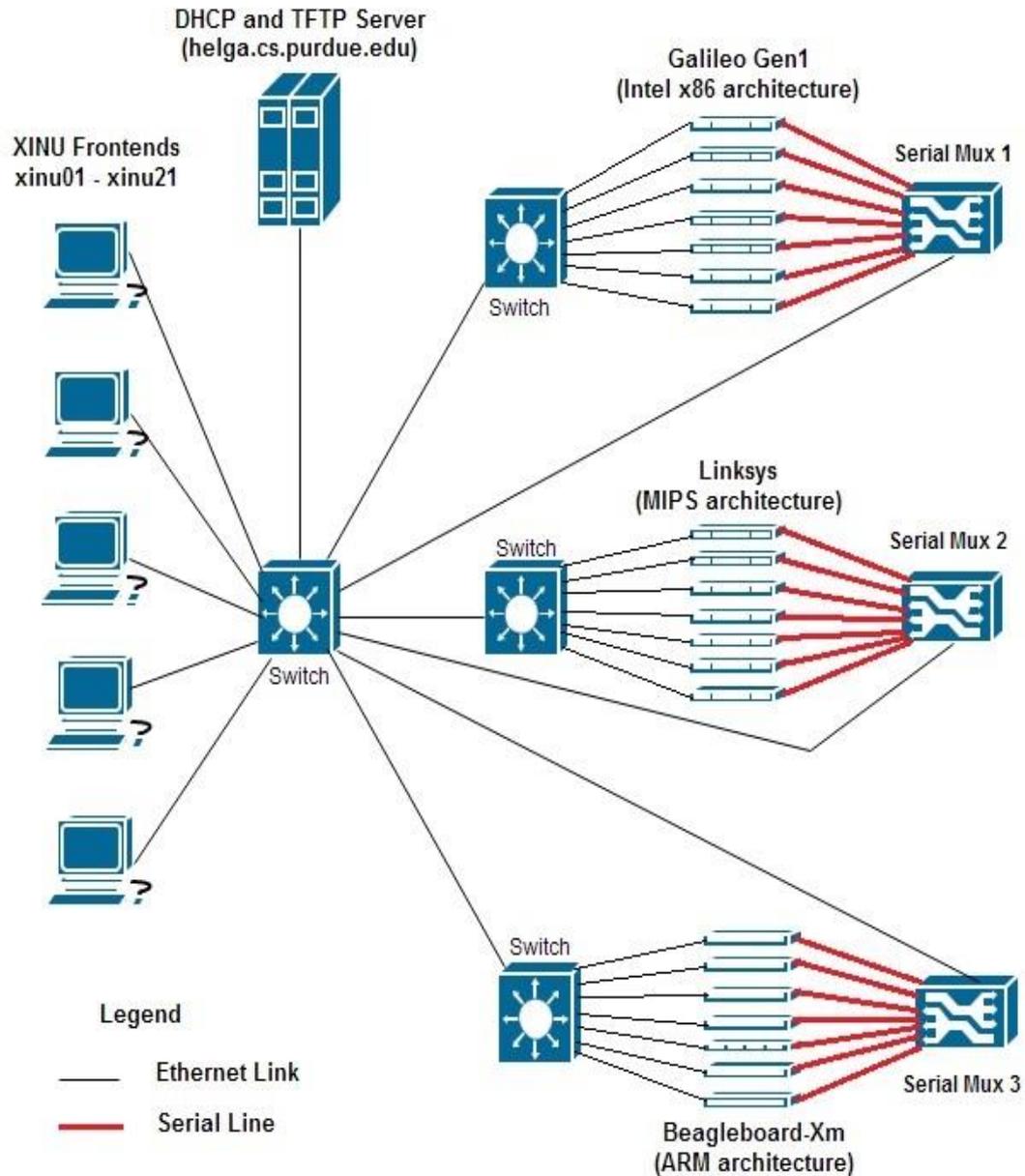
# Why XINU ?

- Easy to understand (simple + very well written)
- Helps strengthen fundamental concepts of OS
  - Process synchronization
  - Inter-process communication
  - Device-independent I/O system calls
  - Device drivers and interrupt handling

...Learn all of the above and much more not just in theory, but by experimenting with it yourself!
- Also, is a cute recursive acronym – Xinu Is Not Unix :)

How do I use XINU ?

# XINU Lab topology



helga.cs.purdue.edu  
(DHCP and TFTP server)

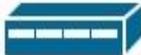
Select a backend  
using cs-console



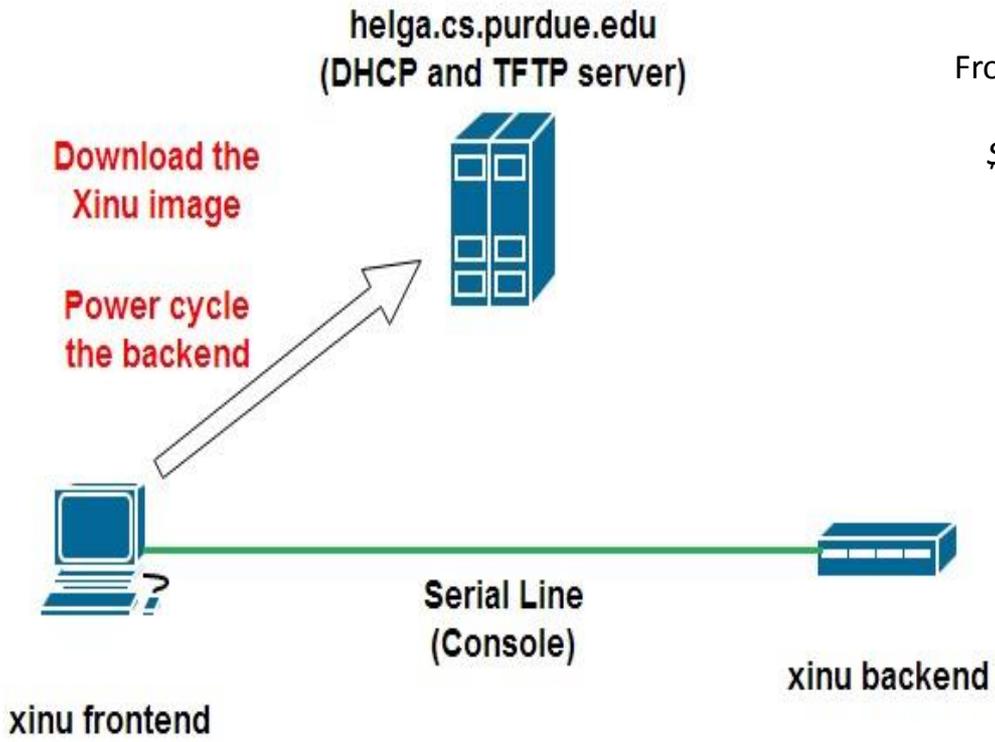
xinu frontend

From xinu frontend:

```
$ cs-console xinu101
```



xinu backend



From xinu frontend:

```
$ cs-console xinu101  
(command-mode) d  
file: xinu.xbin  
  
(command-mode) p
```

---

helga.cs.purdue.edu  
(DHCP and TFTP server)



DHCP Request



Serial Line  
(Console)



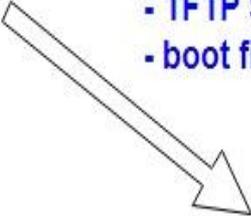
xinu frontend

xinu backend

helga.cs.purdue.edu  
(DHCP and TFTP server)



- IP Address
- TFTP Server address
- boot file name



xinu frontend

Serial Line  
(Console)

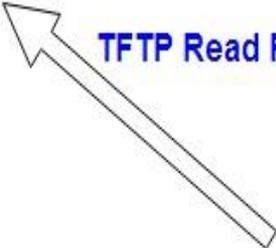


xinu backend

helga.cs.purdue.edu  
(DHCP and TFTP server)



TFTP Read Request



Serial Line  
(Console)



xinu frontend

xinu backend

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(DHCP and TFTP server)



Download Xinu image  
from TFTP server



Serial Line  
(Console)



xinu frontend

xinu backend

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(DHCP and TFTP server)



XINU boots on  
the backend



xinu frontend

Serial Line  
(Console)



xinu backend