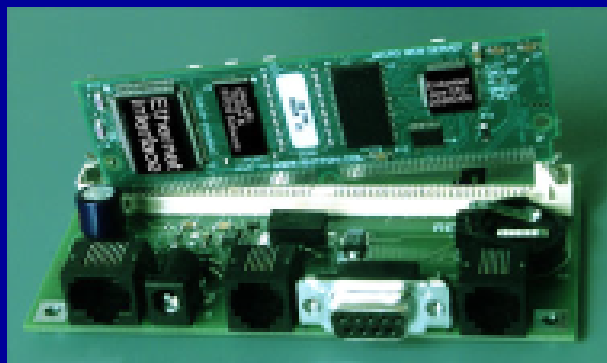
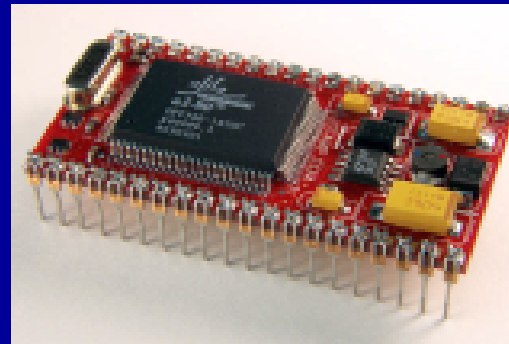


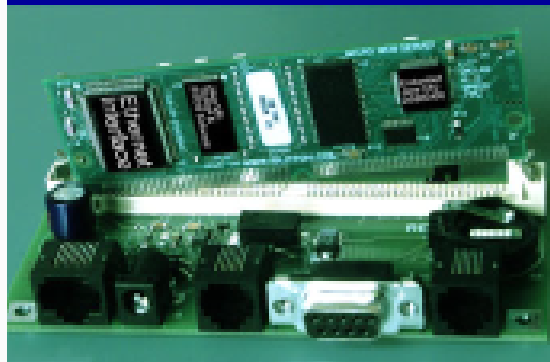
Edge Summit: Server Session



Edge Servers: 4 Types

As we started the Epsilon Project, it became clear that edge devices are more likely to be servers than clients.

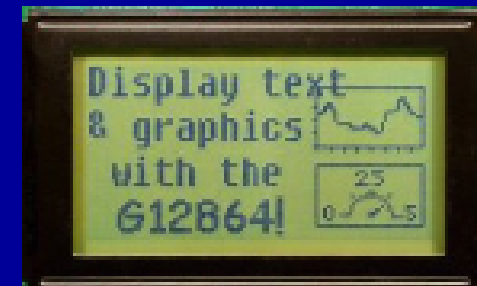
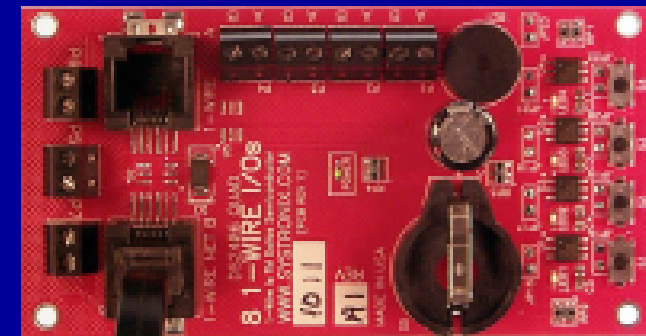
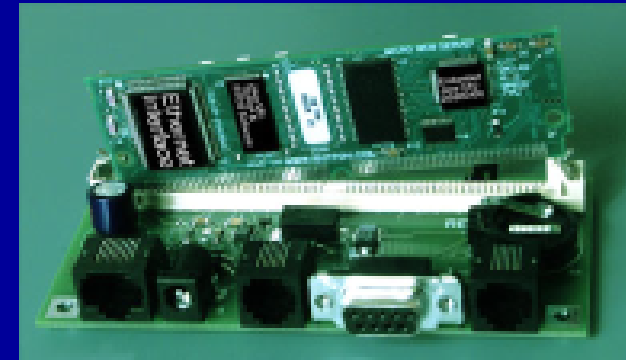
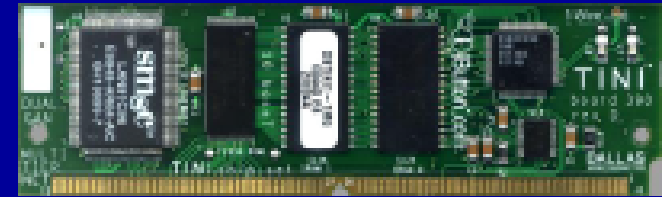
- General Purpose Appliance Servers: Cobalt
- Specialized Appliance Servers: LinkSys
- Embedded Servers: TINI
- Data Center Edge: Blades



TINI: Embedded Java Server

What is TINI? Tiny InterNet Interface

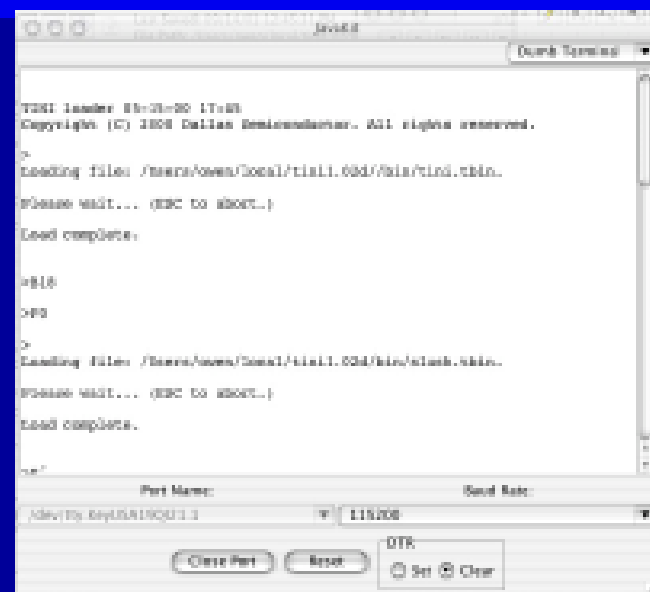
- Chips & Software
 - DS-80C390, DS-2480
 - Java 1.1
- Board: 72 pin SIMM
- Motherboards
 - Ether, RS232, CAN, 1-Wire
- Peripherals
 - Display, Sensors, ...



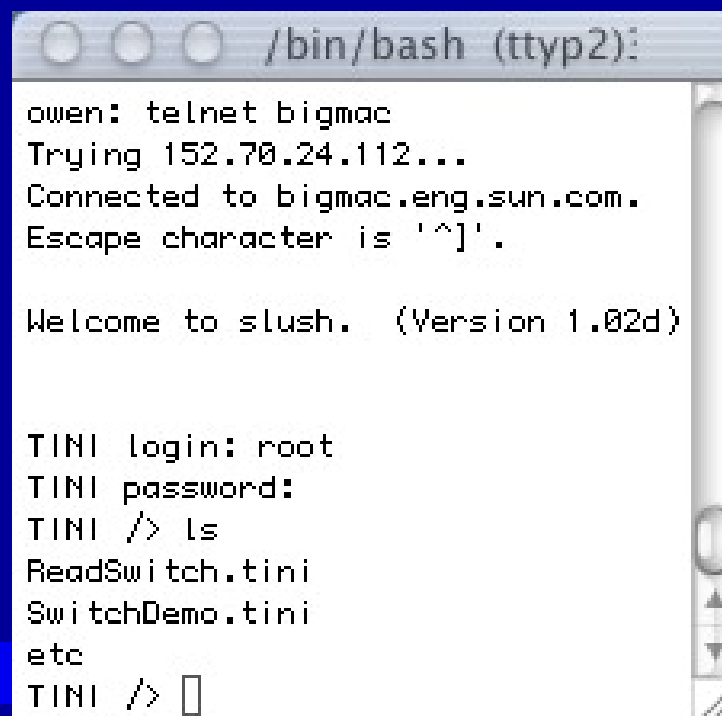
TINI: Development Environment

Java All The Way Down!

- JavaComm: RxTx
- JavaKit: Install Firmware
- Slush: TCP/IP Shell
 - ftp
 - telnet
 - java
- Java: javac, TiniConvert
- TiniHttpServer
 - servlets



```
java
-----
TINI loader 01-01-00 17:00
Copyright (C) 2000 Dallas Semiconductor. All rights reserved.
>
Loading file: /Users/owen/Desktop/tini1.00d/bin/tinl.cbin.
Please wait... (ESC to abort.)
Load complete.
>
>
>
Loading file: /Users/owen/Desktop/tini1.00d/bin/starb.cbin.
Please wait... (ESC to abort.)
Load complete.
>
>
Port Name:
Send Rate:
Activity: 0x00000000 115200
DTR
Clear Port Reset Set Clear
```



```
/bin/bash (tty2):
owen: telnet bigmac
Trying 152.70.24.112...
Connected to bigmac.eng.sun.com.
Escape character is '^]'.

Welcome to slush. (Version 1.02d)

TINI login: root
TINI password:
TINI /> ls
ReadSwitch.tini
SwitchDemo.tini
etc
TINI /> █
```

Programming: A Day in the Life

Java provides smooth transition from desktop to TINI

- **javac: foo.java -> foo.class**
 - Try on desktop: RxTx, OWAPI
- **TiniConverter: foo.class -> foo.tini**
 - ftp foo.tini to TINI (slush ftp server)
- **Slush: telnet**
 - java foo.tini
- **TiniHttpServer**
 - servlet access: foo.html

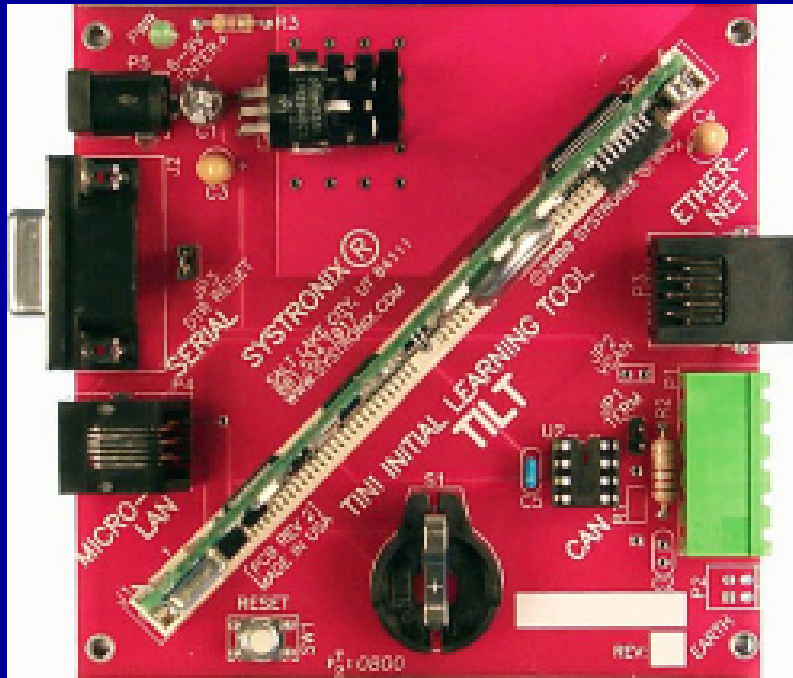
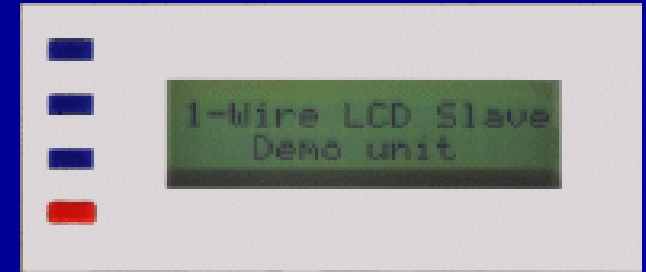


TINI System

Serial Text/Graphics Display

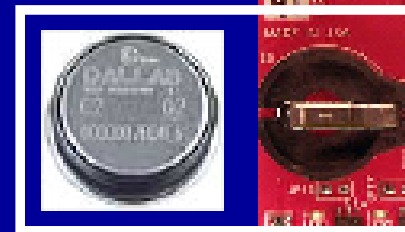


1-Wire Display



TINI + Motherboard

Thermochron



1-Wire Buzzer

1-Wire Switches

8x1 1-Wire Protoboard

