

IDRP Presentation

for

FAA Router Group

4/20/93

at MITRE

Reston

## Schedule for IDRP Presentation

1:00 PM - 1:15 PM      Schedule  
                         Issues

1:15 PM - 2:00 PM      IDRP, IS-IS,  
                         CLNP changes,  
                         need for ES-IS

2:00 PM - 2:45 PM      Gated Intro

2:45 PM - 3:00 PM      Break

3:00 PM - 3:15 PM      BSDI and  
                         GATED

3:15 PM - 4:30 PM      IDRP GATED  
                         Implementation

4:30 PM - 4:45 PM      DEMO

4:45 PM - 5:15 PM      Where from  
                         Here?

1:00pm - 1:10 PM     Schedule & Issues

1:00PM - 1:45 PM     IDRP Intro  
                      ES-IS,  
                      CLNP changes,  
                      IS-IS issues

2:00PM - 2:45 PM     Introduction  
                      to GATED  
                      - GATED Configurations  
                      - IDRP Configurations  
                      - GATED Internals  
                      Routing Table,  
                      Task,  
                      Timers,  
                      Re-initialization

2:45PM - 3:00PM Break

3:00PM - 3:15PM BSDI and gated  
- Routing table Support  
- Clnp support and NLPID

3:15PM - 4:30PM IDRP GATED code  
MERIT Implementation  
- Configuration format  
- Design Document  
Walk Through  
- Code Walk Through  
- Status  
- current  
- future

4:30 PM - 4:45 PM DEMO

4:45 PM - 5:15 PM Where from  
Here?

## Code Issues:

- 1) On-line Code and Design specification
- 2) Bug reports, Test lab, and Router Vendors
- 3) BSDI porting issues

## Heading to Operation Issues

4) Progression of Support  
through out Next Year

5) Fall Backs

- Static fallback  
Inter-Domain
- Static fallback for IS-IS
- ES-IS and start-up

6) ES-IS start-up issues

7) IS-IS to IDRP definitions not  
done

8) Alternative IDRP code

- Dave Katz's code to future

9) QOS and Aggregation and RDCs  
next year's code

10) We bleed - you lead  
How can we help succeed?

- 11) implications for IP land  
reuse of work
- 12) NM management by CMIP  
agent issues

## IDRP Overview:

Slides for 10 hours

NSAPs – what, when  
why on earth or  
in the sky

ES-IS Start-up Issues  
CLNP changes

IDRP protocol review

What's changed in DIS to IS  
Specification

IDRP FSM fixed  
- without fix failure to  
test even (Dave Katz  
thanks)

IDRP Flow control  
- on in Established

Loosening of Overlapping  
Routes

CleanUP!!

GDMO - my fault

IDRP Update

yes, no , and Maybe

no - bad pdu or loop

yes - install or policy

Maybe - routes from you  
you transmitted back from  
neighbor

Required for Reverse Path  
Discovery and IDRP

PDU format changes

UPDATE changes

Thanks to Linda!!

- 1.) Route Separator
- 2.) LOCALLY DEFINED QOS
- 3.) other QOS out
- 4.) protocol identifier

Allowance of QOS and multiple attributes for the NLRI.

Nice!!

gateD

Picture a gate to the Deamon  
-);

What for:

BSD systems

Glue for protocol  
conversion

between lots of protocols

What designed for:

Single Thread

Modularity

Single kernel interface to  
routing table

Rich Policy

gated Provides you

(Enough Rope and the chair)

Lots of protocols

Task Support

Tracing Support

Routing Table

Routing Table - My View

gated Provides you:

- Timer Support
- Socket Support
- Interface support
- Reconfiguration
- Policy language

See gated notes

Further Notes on Routing Table:

1) Phase 1 gives a most difficult sequence for gated

- Only active routes

2) Route table tries to protect against this

3) IP protocol BGP-4 ignores this part of specification.

## Timers Support

- 1 second intervals
- 1 host or repeating
- correctable for drift
- handled on sorted queue

timer\_create

timer\_delete

timer\_set

timer\_reset

## Socket Access:

- packet ready (task\_recv)
- data ready (stream)
- ready for write (task\_write)
- exception (task\_except)
- connection complete (stream)  
(task\_connect)
- Incoming connection (stream)  
(task\_accept)

## IOCTL and commons socket

- buffer size
- raw clnp, or IP or hopefully  
IDRP

## BSDI and Routing Table support

- BSDI 0.9

Crashed under ifconfig of SMC  
Ethernet

would install is-is iso routes

would not handle Alpha-5 gated  
without hang

- BSDI 1.0

Allows us to configure and  
ping from interface

Can build with Alpha-5 fixed  
into Beta

Anticipate that Routing Table  
support will work, but  
who knows.

- MITRE / BSD kernel
- ANTICIPATE CLNP bugs to  
send IDRP packets and  
receive them

RS6000 and AIX 3.2

- NSFNET support uses BSD Reno Abstraction for sockets and calls
- routes installed reliably
- CLNP packets sent, but garbled between sendto system call and clnp\_output routine
- clnp\_input will need fixes to watch for NLPID for IDRP in first Data byte

(Comments welcome on this from Linda and Dallas)

- Next week we will spend with IBM person in house

- Source Code to AIX 3.2 and BSD, and all the licenses you would want

## CLNP Debugging Tool

- tcpdump for Sun System fixed  
Francis Dupont of INRIA
- available for anonymous ftp  
nic.switch.ch
- CLNP, ES-IS, and TP headers
- IDRP fixed once I send him  
a working set of code.
- need all licenses above plus  
Sun

Where from Here:

- Weekly Code Releases
- Delivery 1 -  
Probably in 1 month or longer
- Delivery 2  
Mib code partially done  
parsing will be pushed to  
get done by end of  
contract
- Test Lab at MITRE
  - ATN project
- Test lab at MERIT  
ATN may come on "low  
budget" life or use  
Internet to  
access machines

- Alternative Design
  - Should we fund
  - design starts from PDUs and uses Dave Katz approach
- PDUs are 8 weeks
- Routing table code delta

Next Year's work for FAA

QOS - In Kernel and In IDRP  
by February '93

QOS Global Security  
by June '94

Aggregation - December '93

RDCs - June '94

This code goes where no network  
has gone before