

HIP & SIP over IP6 Status

Six Months of Slow Progress
With Rapid Problem Discovery

HIP for SIP over IPv6

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Test Bed

- Computers and OS
 - 3 OQO m2 running Centos 5.2
 - 1 OQO m2 running FC10
 - 1 Asus Eee701 running FC10
 - For OQO management console
- Infrastructure
 - HP Procurve switches for VLANs
 - Centos 5.2 server for RADVD and IPv6 routing

Test Bed Server

- OQO3 – Centos 5.2
 - Bind, ntpv6, yum repos (hipl,sip, etc), HIP RVS
 - 2 DNS entries for all systems:
 - Principal IPv6 address in AAAA with HIP HI
 - e.g. oqo1.htt
 - OQO3's IPv6 address in AAAA with system's HIP HI
 - e.g. oqo1.mobile.htt

Clients

- OQO1,2,4 and ASUS701
- HIPD and HIPFW run as services
- HIPDNSPROXY run on demand
 - Default resolv.conf has IPv6 of oqo3
 - Starting dnstproxy replaces this with 127.0.0.53
 - A system crash leaves resolv.conf wrong
- SIP Communicator 3 Alpha Nightly build
 - Non-proxy SIP configuration
- TightVNC for remote console
 - Custom build for F10 from RedHat

Mobility Testing

- RVS currently unreliable in HIPL
 - Recent bugs, Works sometimes
 - RVS registration at boot fails, process order?
- When RVS works, mobility is GREAT!
 - Ping6 to test mobility
 - Initiator mobility: ping6 -n oqo2.htt
 - Responder: mobility ping6 -n oqo2.mobile.htt
 - Switch client between VLANs
 - Old IPv6 address needs to time out before routing on new address works, based on RADVD timers

IPv4 over HIP over IPv6

- For 'legacy' applications
 - TightVNC
 - Redhat reports that TightVNC client for F11 supports IPv6, but server does not. 'A major rewrite needed'.
 - FC10 code is based on FC11 source. RPMs built specially for me by FC11 developer.
 - DNSPROXY modified to generate LSI from DNS supplied HI
 - No LSI configuration needed!
 - Always have LSI even when not wanted
 - Works great for p2p IPv4 applications

SIP Testing

- A bust to date
- No adequate testing over Ipv6 by developers
 - IPv6 support only added 9/08
 - Recent patches fixed need to open firewall ports for RTP protocol
 - Since peers both start RTP, they are suppose to open firewall by using these ports
- Preferred IPv4 over IPv6
 - With LSI, was always running as IPv4
 - Recent patch allows specifying IPv6 preferred

SIP Testing

- USB mike seems to be resulting in kernel crash
 - Need additional headsets for testing
- SRV record requests were not supported in DNSPROXY
 - Recent changes all for additional types
- Would really be interested in alternative SIP clients that support IPv6 on Centos and FC10

Misc Testing

- Yum over HIP/IPv6 just works
- Ping6 main 'debugging' tool
- Ntpv6 does not seem to use HIP
- DNS queries not using HIP
- SSH -6 works
 - Why run SSH over HIP? For mobility
- Much more testing needed
 - SMTP, POP3, vpn (which?)

Problems

- FC10 bug in glibc for resolv.conf with IPv6.
 - MUST have at least ONE IPv4 address
 - 127.0.0.1
- RVS registration at boot time
- With DNSPROXY run on demand, resolv.conf can be left in proxy state then starting DNSPROXY
- Quicker release of old IPv6 address on mobility
- No Teredo testing

To Do

- Portable Test Bed
 - Portable switch supporting VLANs and wireless
- Teredo testing
- Working SIP
- More apps
 - Firefox, sendmail, Thunderbird, SMB, etc.
- Create business proposition
- Get wider usage