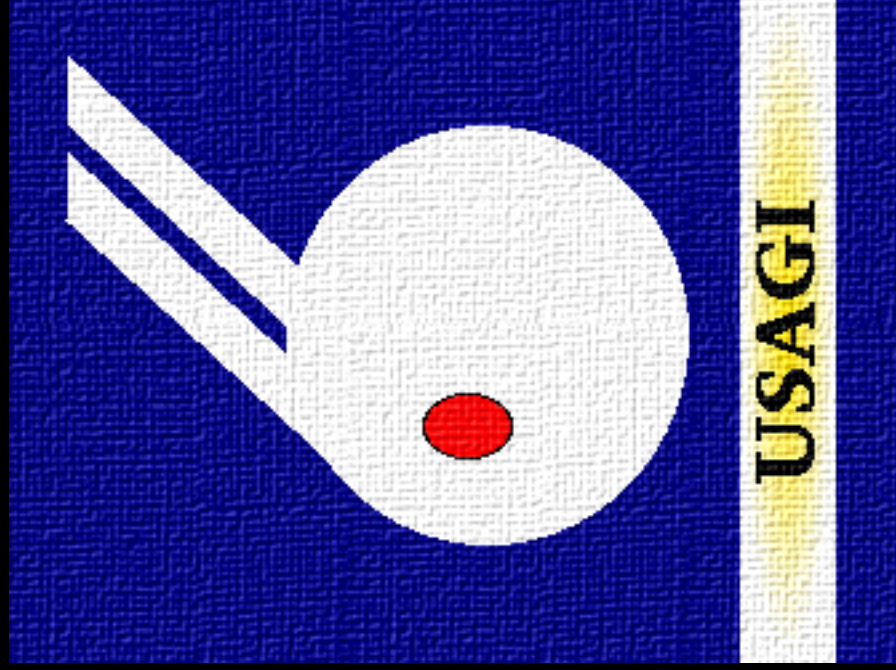


Status of USAGI / Linux IPv6



www.linux-ipv6.org

USAGI/WIDE Project / The University of Tokyo
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What is USAGI?

UniverSAI playGround for Ipv6

- Founded in Sep. 2000
- Goals
 - Advanced / stable IPv6 environment based on Linux system
 - ▶ IPv6 protocol stack / API in the kernel and the standard library
 - ▶ Basic IPv6 applications
 - Free of use
 - ▶ GPL2
 - ▶ "Distribution" independent
- Core Members / Collaborations
 - Core: 8
 - ▶ Communication Research Lab., Gluon Partners Co.,Ltd, Hitachi Corp., NTT Software Corp., Toshiba Corp., Yokogawa Electric Corp., Keio Univ. and The Univ. of Tokyo
 - WIDE Project, KAME Project and TAHI Project

New features in our releases

- IPsec
 - Transport mode AH, ESP with manual keying
- IPV6_V6ONLY socket option
 - reworked bind(2) behaviour / packet handling
 - By default, PF_INET6 sockets eat PF_INET traffic (original Linux behaviour)
 - With IPV6_V6ONLY, PF_INET6 sockets won't eat PF_INET traffic, and PF_INET6 and PF_INET may co-exist.
- Privacy Extensions
- Source address selection by longest prefix match
- Per-interface Statistics for MIBs
- ICMPv6 Node Information Queries
- Traffic class API
- IPv6 over ARCnet
 - tester needed
- Mobile IP
 - based on HUT's implementation (MIPL)

New features in our releases (cont.)

- Rwho daemon
 - ▶ ff02::103 (RFC2375)
- Talk / talk daemon
 - ▶ new socket-structure-like structure and talk address family
 - ▶ guess by length of packet
 - A draft should be written

Fixes in our releases

- Improved ND/SAA sanity checks
- Fixed number of / interval between DADs
- Improved the precision of address expiration timer
- Hacked NDP state transition mechanisms
- Other random fixes:
 - router alert option format
 - checksum for raw sockets
 - ▶ it is mandatory for icmp socket
 - ▶ incorrect checksum with uninitialized buffer
 - sanity checks against `{set,get}sockopt()` parameters

Fixes (being) merged into the main kernel tree

TAHI IPv6 Conformance Test Result

- IPv6
 - linux-2.2.15: 95%
 - linux-2.4.7: 100%
 - usagi24(*): 100%
- ICMPv6
 - linux-2.2.15: 100%
 - linux-2.4.7: 100%
 - usagi24(*): 100%
- ND
 - linux-2.2.15: 35%
 - linux-2.4.7: 48%
 - usagi24(*): 57%
- SAA
 - linux-2.2.15: 4%
 - linux-2.4.7: 77%
 - usagi24(*): 100%

Current Hacking Items / Coming Soon

- IPv{6,4} over IPv{6,4} tunneling device (GIT)
- IPsec
 - Tunnel mode (using GIT device)
 - IKE daemon
- Advanced Source Address Selection
 - <draft-ietf-ipngwg-default-addr-select-05.txt>
- IPv6 over ATM
 - RFC 2492
- Anycast

- Much more improvements needed...
 - Neighbour Discovery Protocol

For Further Detail

- WWW
 - <http://www.linux-ipv6.org>
- FTP
 - <ftp://ftp.linux-ipv6.org>
- CVS
 - [:pserver:anoncvs@anoncvs.linux-ipv6.org:/cvsroot/usagi](pserver:anoncvs@anoncvs.linux-ipv6.org:/cvsroot/usagi)
 - <http://www.linux-ipv6.org/cvsweb/>
- Mailing list
 - <http://www.linux-ipv6.org/ml/>
 - ▶ usagi-users@linux-ipv6.org
- Contact address
 - usagi-core@linux-ipv6.org