
API extension to get IP addresses

(SIOCGIFaaa ioctl and IPv6 interfaces)

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Background

- Network apps sometimes need a list of IP addrs on a node
 - DHCPv6 daemon, routing protocol daemons, IKE daemon, DNS servers, RA daemon...
 - to meet a particular protocol requirement
 - "use this address"
 - for access control purposes

Problems in the current API

- Less portability
 - sysctl, ioctl, via a special file, ...
- Many pitfalls to use them
 - buffer size estimation, alignment, sa_len portability, lack of IPv6 support...
- See BIND[89] to understand this:
 - (BIND 8.4.4)/src/bin/named/ns_main.c
 - (BIND 9.3s)/lib/isc/unix/ifiter_xxx.c

BSD's getifaddrs (3)

- A higher level API
 - to provide a list of addresses and related info
 - IPv6/v4 addresses
 - net masks
 - interface names
 - without the pitfalls
- Description

```
getifaddrs(struct ifaddrs **ifap);
struct ifaddrs {
    struct ifaddrs *ifa_next;
    char            *ifa_name;
    u_int           ifa_flags;
    struct sockaddr *ifa_addr;
    struct sockaddr *ifa_netmask;
    ...
}
```

Discussions and Questions

- We want to have a portable lib like getifaddrs
 - to help developing network apps
- Does it make sense to discuss this here?
 - note: this is not specific to IPv6, but we have a similar library like if_nametoindex in the basic API
- If yes...
 - is it useful to write an I-D?
 - we need to make it portable enough
 - remove system dependent members, etc.
 - some other info may be necessary
 - ask the apps area guys?