

Towards an Abstract Service Protocol for Common Lisp Applications and a Complimentary Extension into IP Networking and Two-Wire Device Protocols

Was: Trivial-Networking

Notes

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To Do: Sync project to GitHub

- Reference Materials
- Sockets - The GNU C Library
 - Beej's Guide to Network Programming
 - Linux Socket Programming by Example - Warren Gay

Conventional Networking Architecture as Defining a Networking Reference Model

Note: Interface Naming - The GNU C Library

API Sketch

- Create-Server-Peer
- Create-Client-Peer

The "Create Peer" operations can be specialized on one type of resource.

What type of resource should the operations be specialized on?

A class, NETWORK-SERVICE, may be defined, such as to serve as a base class for application layer protocols such as HTTP, SSH

The class may be abstracted as to address other contractual service protocols, such as for device connections in the hardware layer

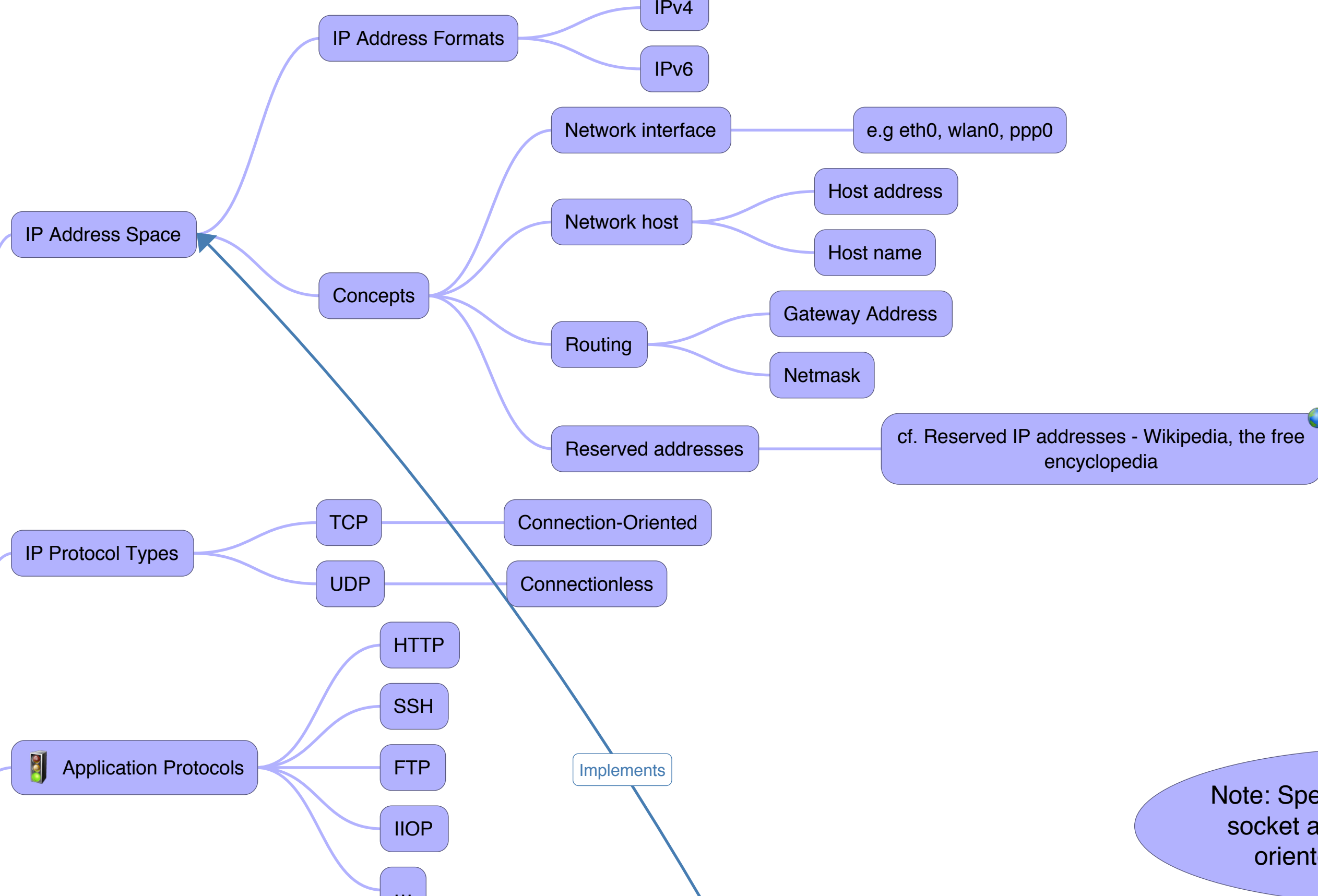
Must be suitable to connectionless (e.g DNS requests over UDP) and connection-oriented protocols (e.g HTTP, IIOP)

Superclass: SERVICE, instances of which would represent the implementation of a service protocol, in a protocol-specific regard

Try to follow on this with generic function definitions suitable to the definition of an abstract service protocol, and its extension into IP networking, HTTP and IIOP specifically, and a device-oriented protocol suitable to application integration (I2C?)

Note that IP networking is, itself, comprised of a stack or semantic network of related protocols, from ARP (Ethernet MAC addressing) on to IP addressing, DNS name query services (recently augmented with Bonjour and Zeroconf service protocols) and the application layer protocols such as HTTP, IIOP, SSH, Mosh, DNS queries, etc

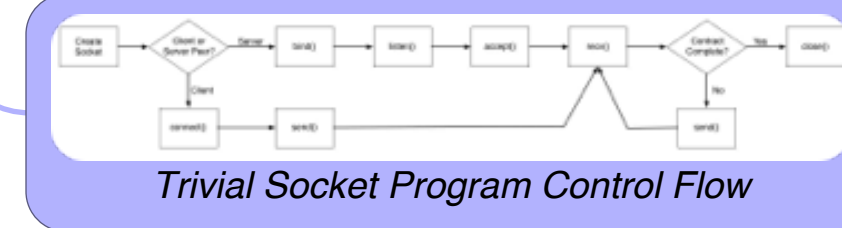
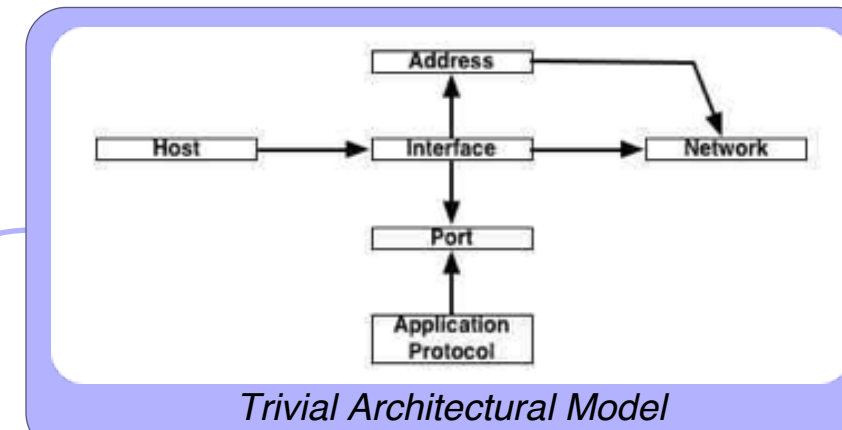
IP Networking



Implements

Implements

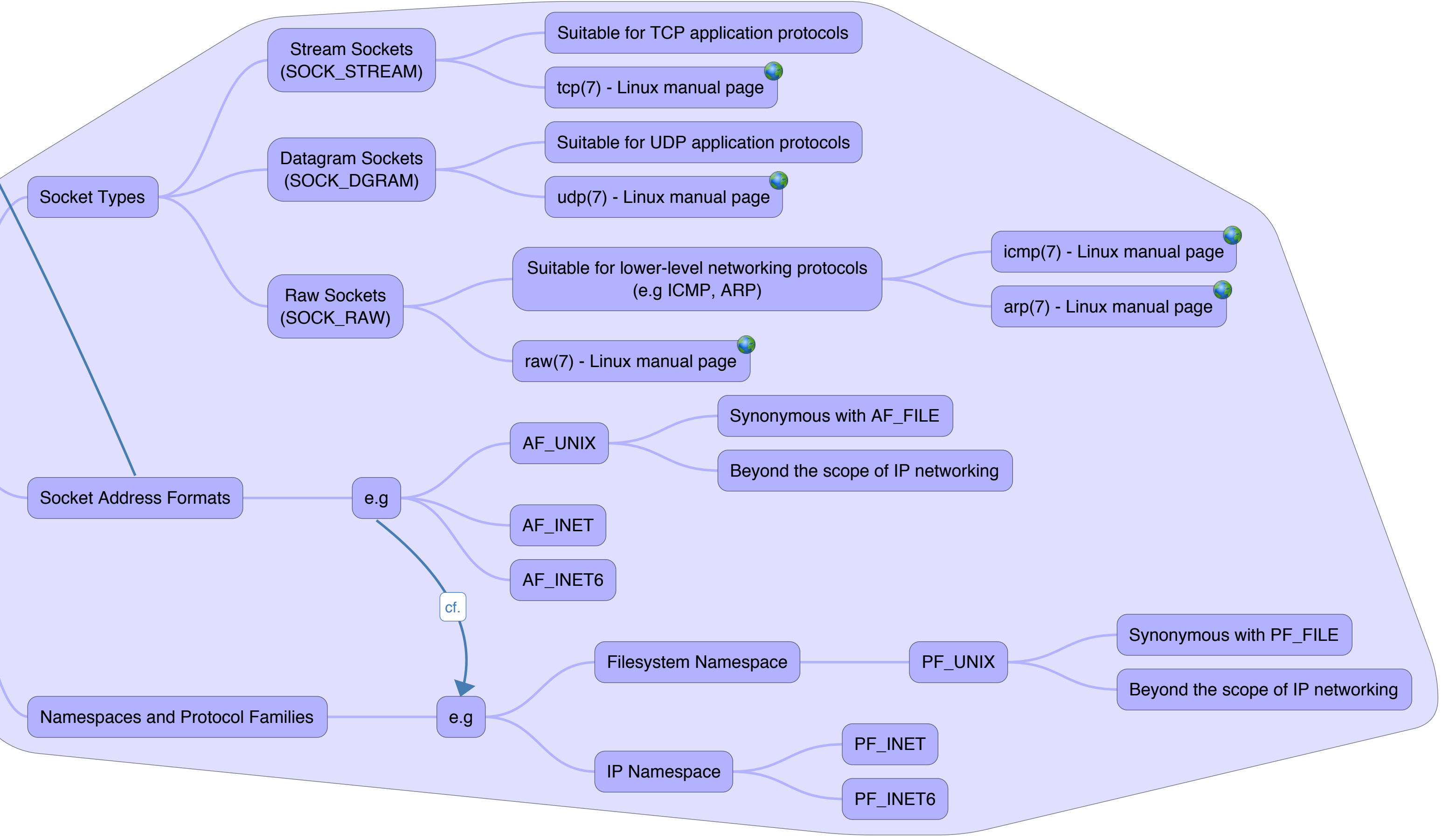
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May be implemented via raw sockets

cf. article at link

Illustrations



Note: Special role of AF_UNSPEC socket addressing in datagram-oriented networking (UDP)

- Networking/NameResolution - FedoraProject
- Safari I Linux Socket Programming by Example -> The AF_UNSPEC Address Family
- Safari I Linux Socket Programming by Example

I2C and SMBus

Overview

- I2C - Wikipedia, the free encyclopedia
- System Management Bus - Wikipedia, the free encyclopedia

Applications

- I2C Tutorial
- avr-libc: Example using the two-wire interface (TWI)

Devices

Simple Devices

- LEDs
 - thingm :: an electronic product studio: BlinkM
- I2C to USB Adapters
 - Aardvark I2C/SPI Host Adapter - USB to I2C and SPI interface
 - I2c-tiny-USB