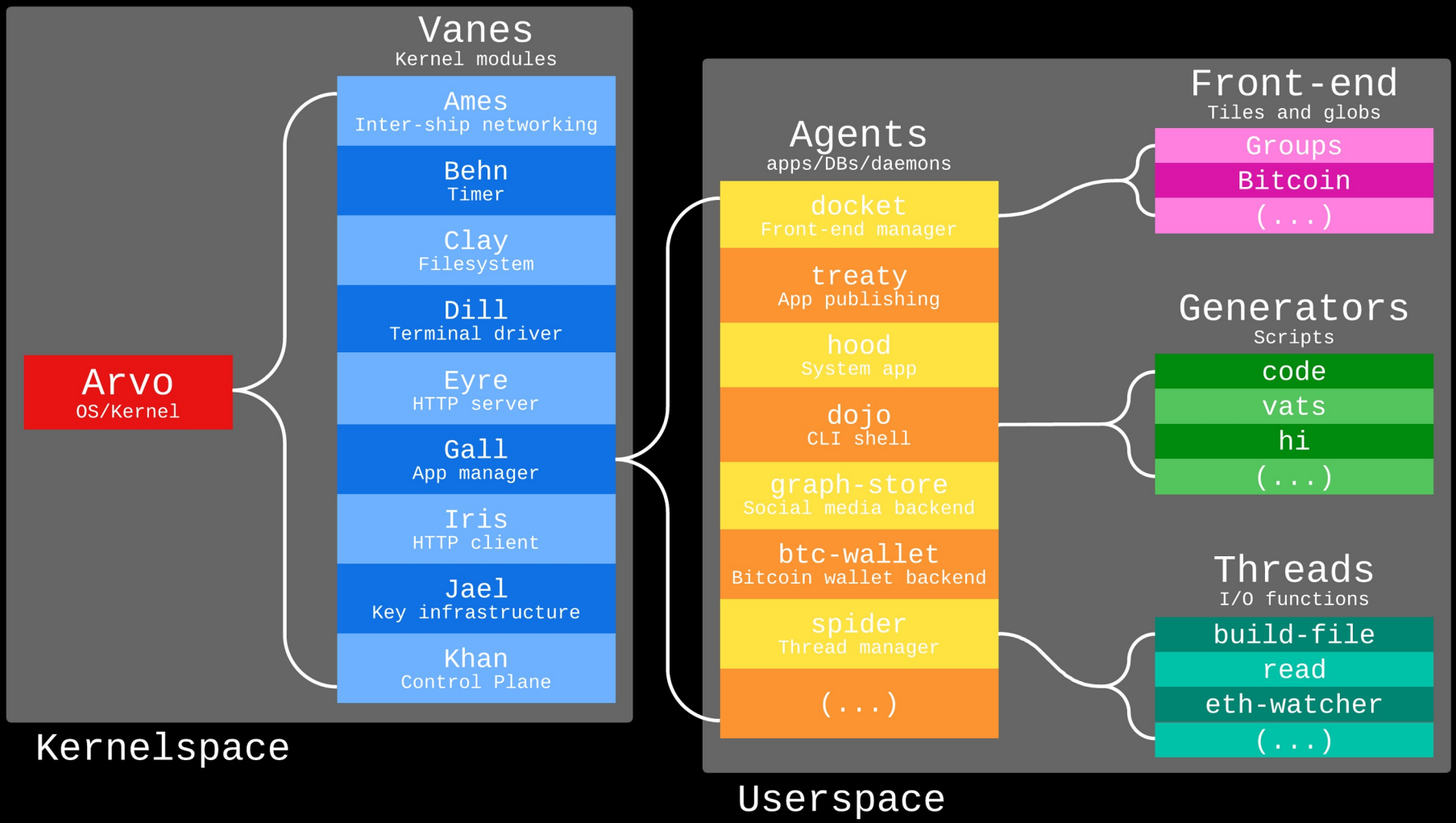
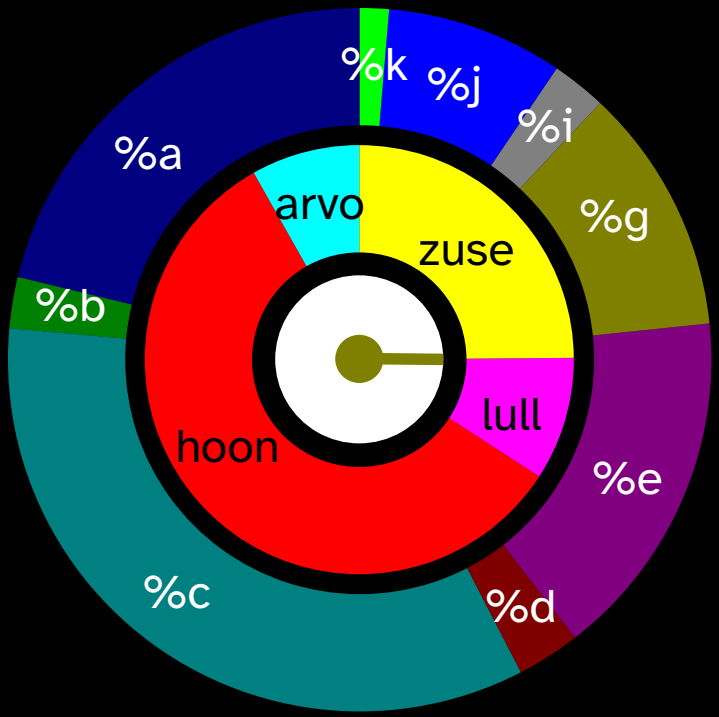
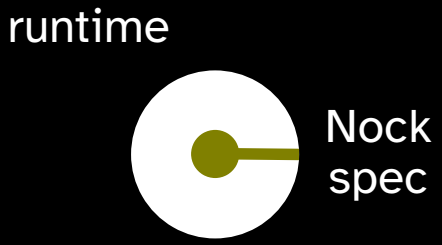
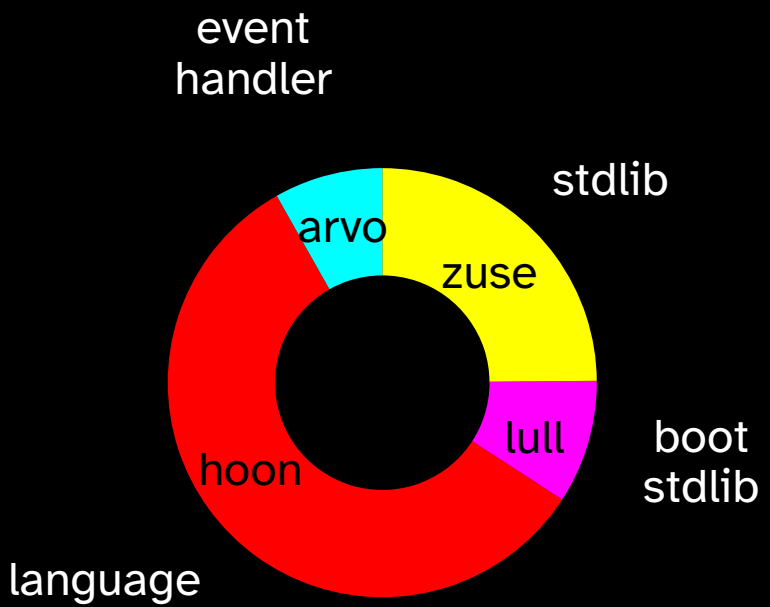
APP SCHOOL LIVE ♥ LESSON 1

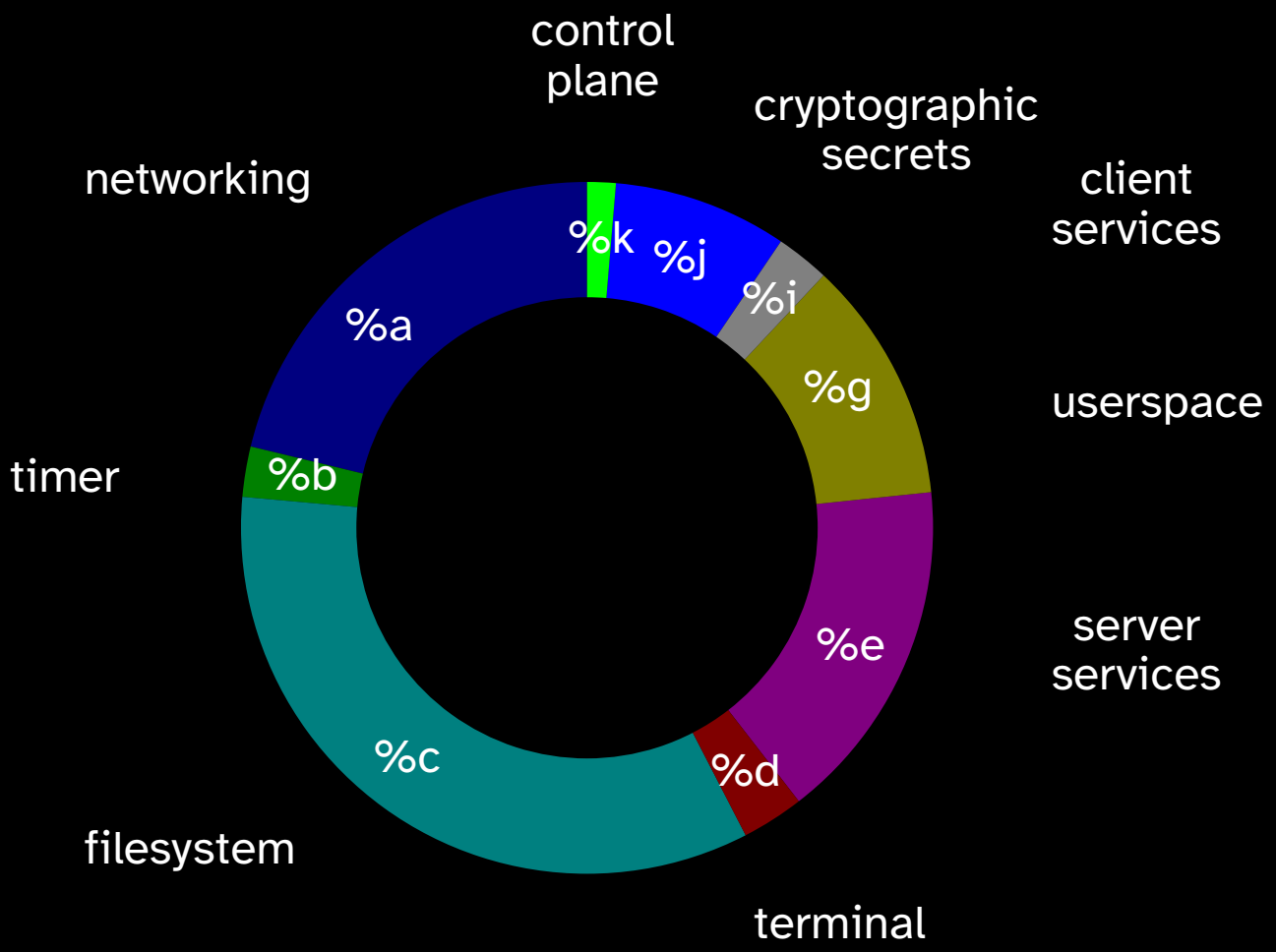
ARVO SERVICES


Vanes
Kernel modules
Ames
Inter-ship networking
Behn
Timer
Clay
Filesystem
Dill
Terminal driver
Eyre
HTTP server
Gall
App manager
Iris
HTTP client
Jael
Key infrastructure
Khan
Control Plane
Arvo
OS/Kernel
Kernelspace
Agents
apps/DBs/daemons
docket
Front-end manager
treaty
App publishing
hood
System app
dojo
CLI shell
graph-store
Social media backend
btc-wallet
Bitcoin wallet backend
spider
Thread manager
(...)
Front-end
Tiles and globs
Groups
Bitcoin
(...)
Generators
Scripts
code
vats
hi
(...)
Threads
I/O functions
build-file
read
eth-watcher
(...)
Userspace


%k
%j
%i
%a
%g
arvo
zuse
%b
lull
hoon
%e
%c
%d


runtime
Nock
spec


event
handler
stdlib
arvo
zuse
lull
boot
stdlib
hoon
language


control
plane
cryptographic
secrets
client
services
userspace
server
services
terminal
filesystem
timer
networking
%k
%j
%i
%g
%e
%d
%c
%b
%a

Scrying

`.^(type %gx /ship/desk/case/path/mark)`

The return type.

The data returned by the scry will be cast to this type. The scry will fail if the data does not nest in this type.

Ship

Always our ship because remote scries are not yet supported.

Case

- For Clay scries this allows you to specify a desk revision to target. The case may be an absolute time, a revision number or a label. The leading `%da`, `%ud` or `%tas` is omitted.
- For all other vanes and agents, this is always the current time.

Path

This is the actual scry path. It will be different for each endpoint.

`/foo/bar/baz`

Vane

a - Ames
b - Behn
c - Clay
d - Dill
e - Eyre
g - Gall
i - Iris
j - Jael

Care

The kind of request.
One of:

a b c d e f p s r t u v w x y z

- Usually **x**, meaning "read".
- Sometimes **y**, meaning "directory listing" or the equivalent.
- Occassionally **u**, meaning "existence check".
- The rest are mostly particular to Clay.
- Jael never takes a care.
- Eyre sometimes doesn't take a care.
- The rest of the vanes take a care.

Desk, agent or tag.

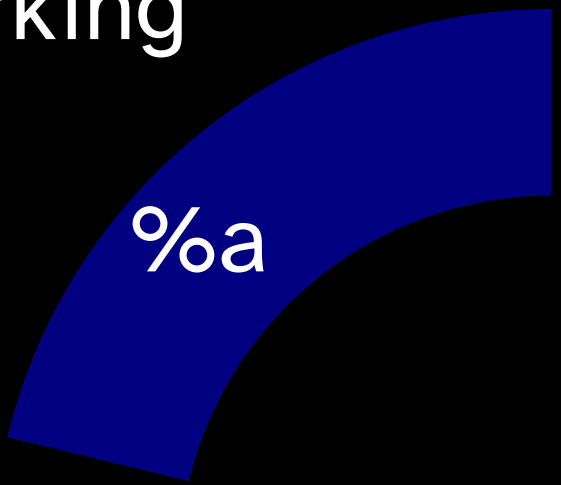
- For Clay this is the target desk, e.g. `%home`.
- For Gall this is the target agent, e.g. `%graph-store`.
- For Jael, this is a tag which specifies the scry endpoint, e.g `%code`.
- Sometimes this is a tag for Eyre too, other times it is empty.
- This is always empty for Ames, Behn, and Dill.

Mark

- This is only used for Gall agent scries with a care of **x**. It is omitted entirely in all other cases.
- For a Gall agent **x** scry, Gall will attempt to convert the mark returned by the endpoint to the mark you specify here. The scry will fail if the mark conversion fails.
- Most often just `%noun`.

Ames

networking



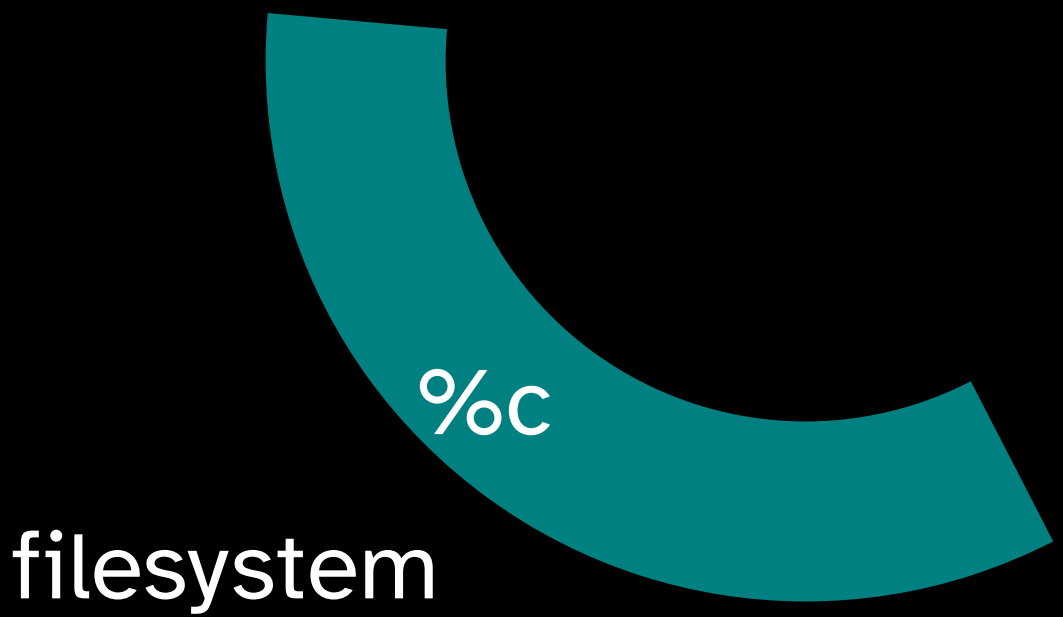
- UDP packets
- end-to-end encryption
- routing, congestion control

Behn

- timer priority queue
- guaranteed notification *after* wakeup time

timer %b

Clay



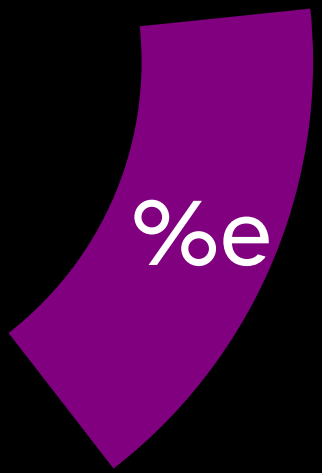
- typed filesystem
- all files have *marks*
- referentially transparent
- version-controlled
- global namespace
- 2 GB limit currently

Dill

- session and keyboard handler
- see Drum and Hood

terminal

Eyre



server
services

- HTTP API endpoints
- data subscription model preferred (JSON-based *channels*)
- cookie-based authentication
- MIME types are Arvo-level primitives

Gall

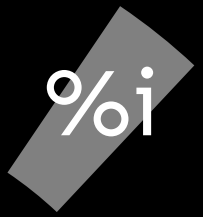
userspace

- persistent daemons
- standard form
- Gall brokers access to Arvo services
- communicates via Eyre

Iris

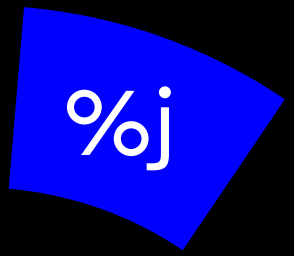
- client vane for HTTP requests

client
services



Jael

cryptographic secrets



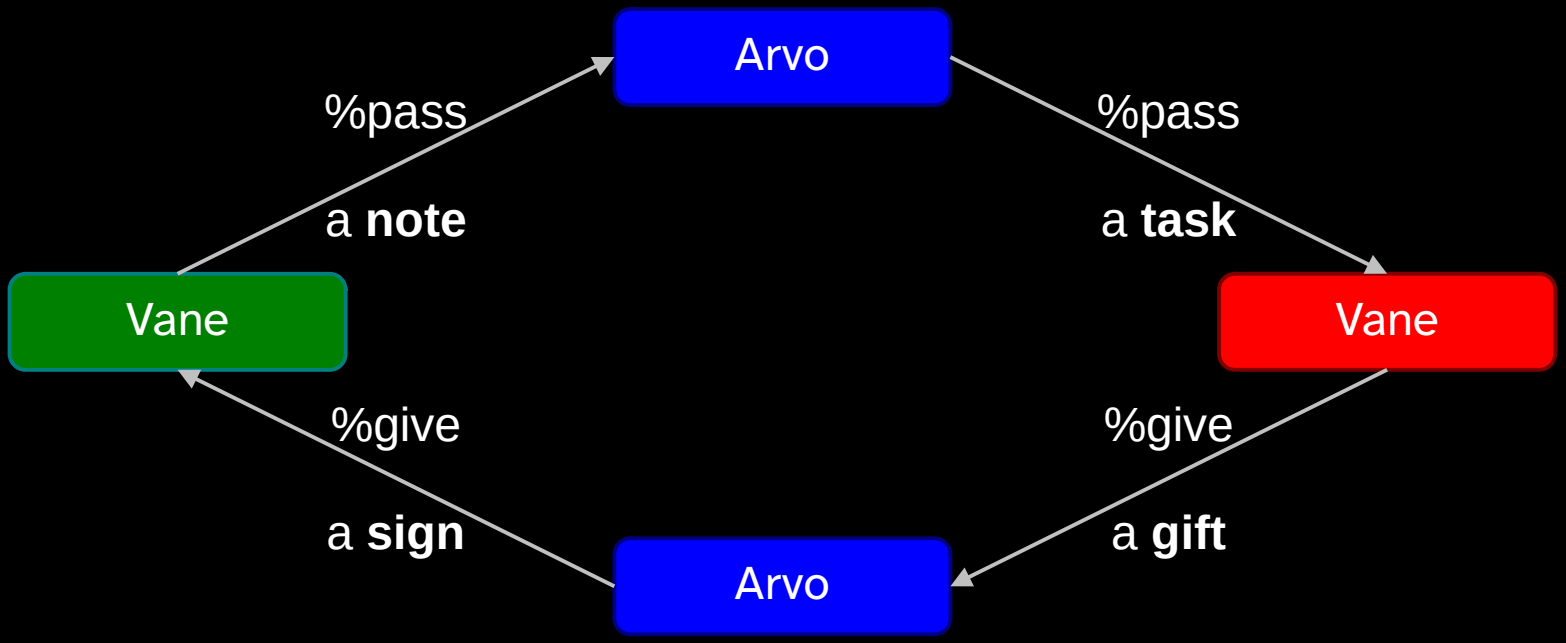
- verify identity
- track public keys (Azimuth state)
- communicate with sponsor

Khan

- external thread control plane
- brand new, likely to evolve

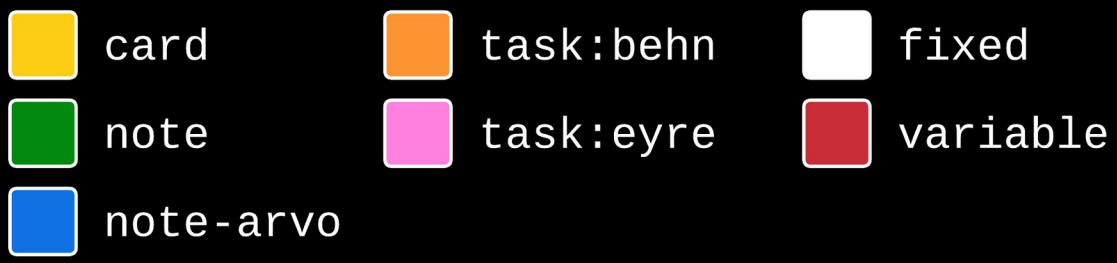
control plane

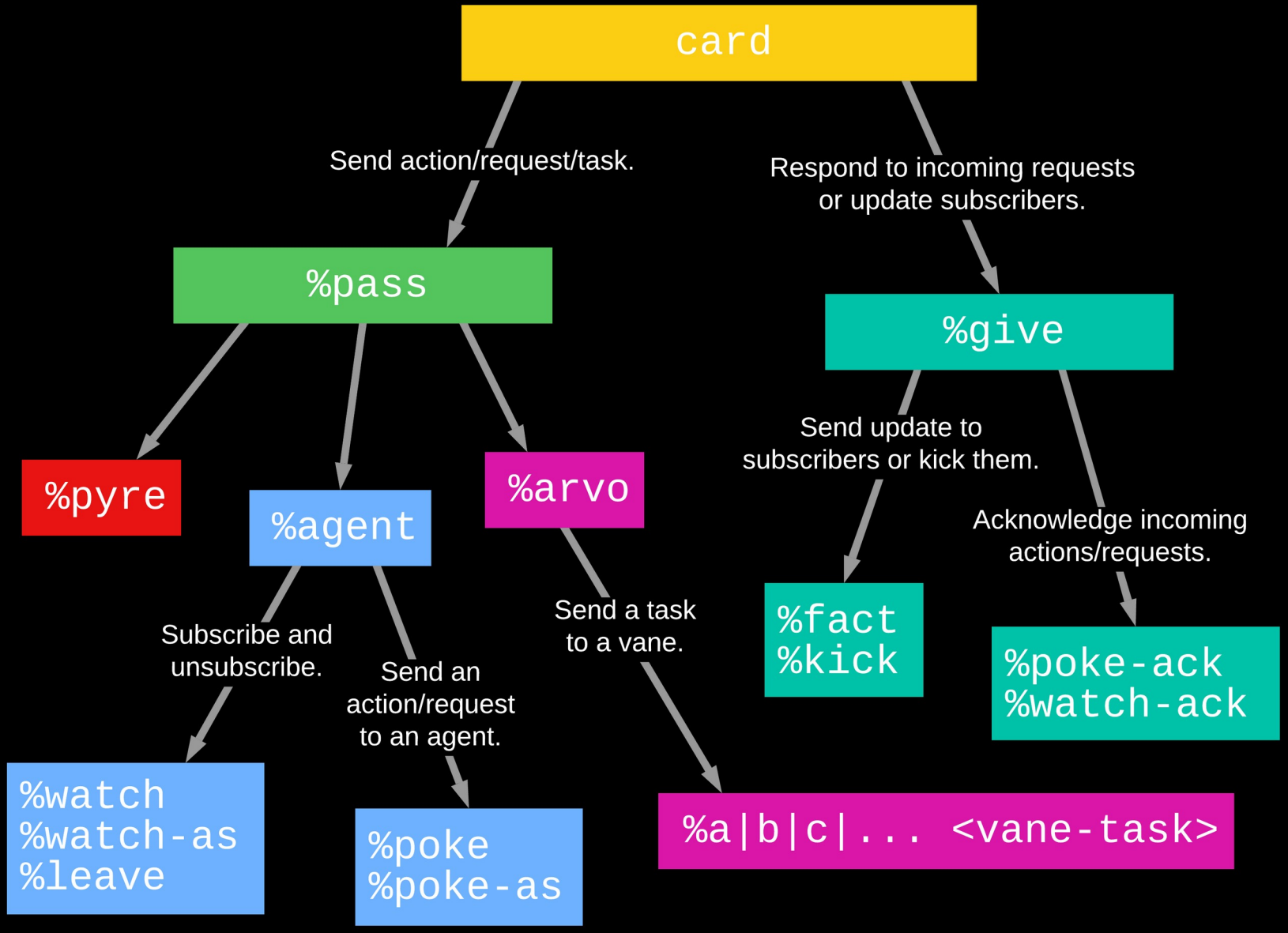
Arvo
Event Handler



Cards

```
[%pass /some/wire %arvo %b %wait (add ~m1 now.bowl)]
[%pass /some/wire %arvo %e %connect /some/url/path %some-agent]
```




card
Send action/request/task.
Respond to incoming requests
or update subscribers.
%pass
%give
%pyre
%agent
%arvo
Send update to
subscribers or kick them.
Acknowledge incoming
actions/requests.
Subscribe and
unsubscribe.
Send an
action/request
to an agent.
Send a task
to a vane.
%fact
%kick
%poke-ack
%watch-ack
%watch
%watch-as
%leave
%poke
%poke-as
%a|b|c|... <vane-task>