

ZOCP

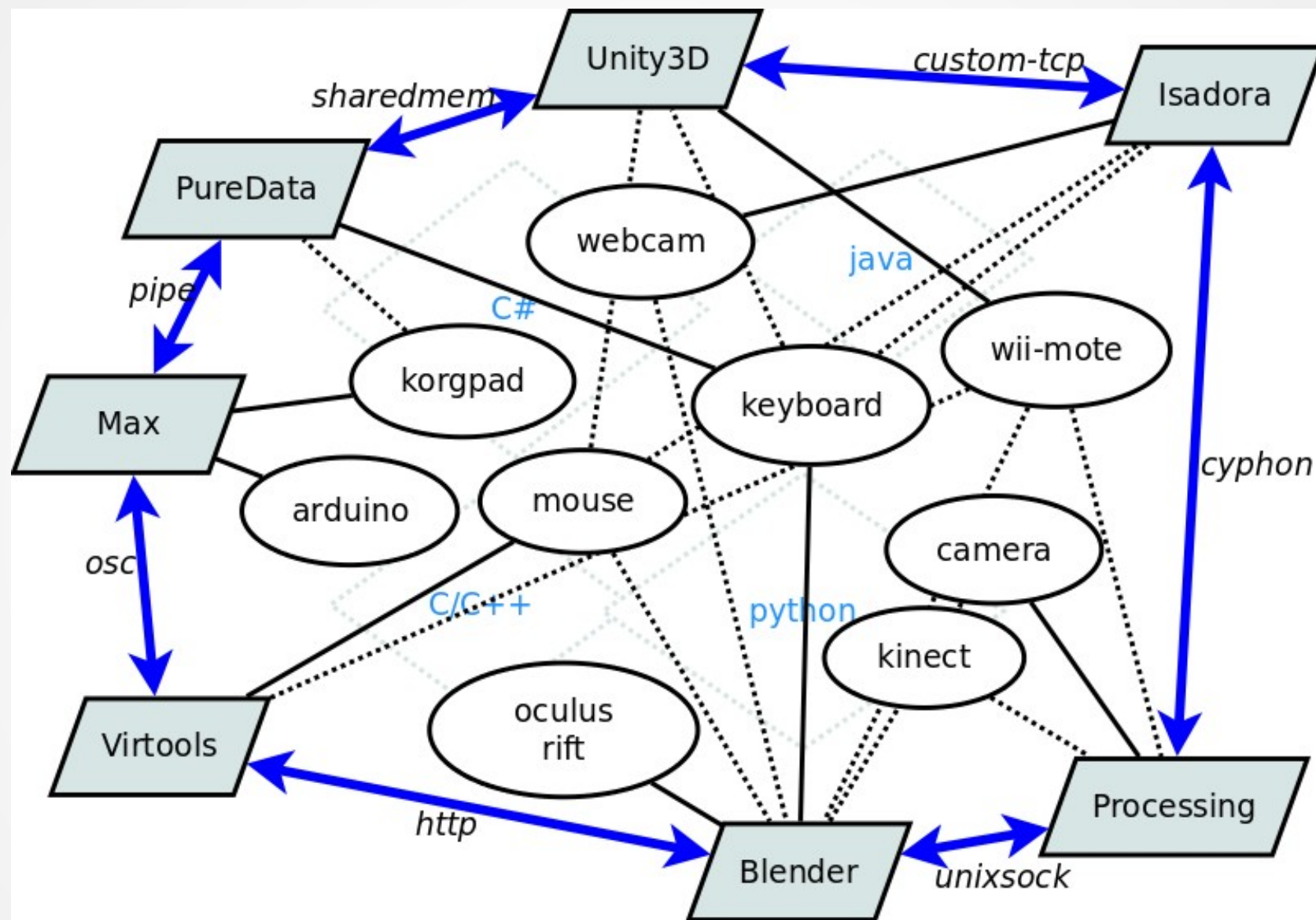
Protocol and framework for zero effort inter-application exchange



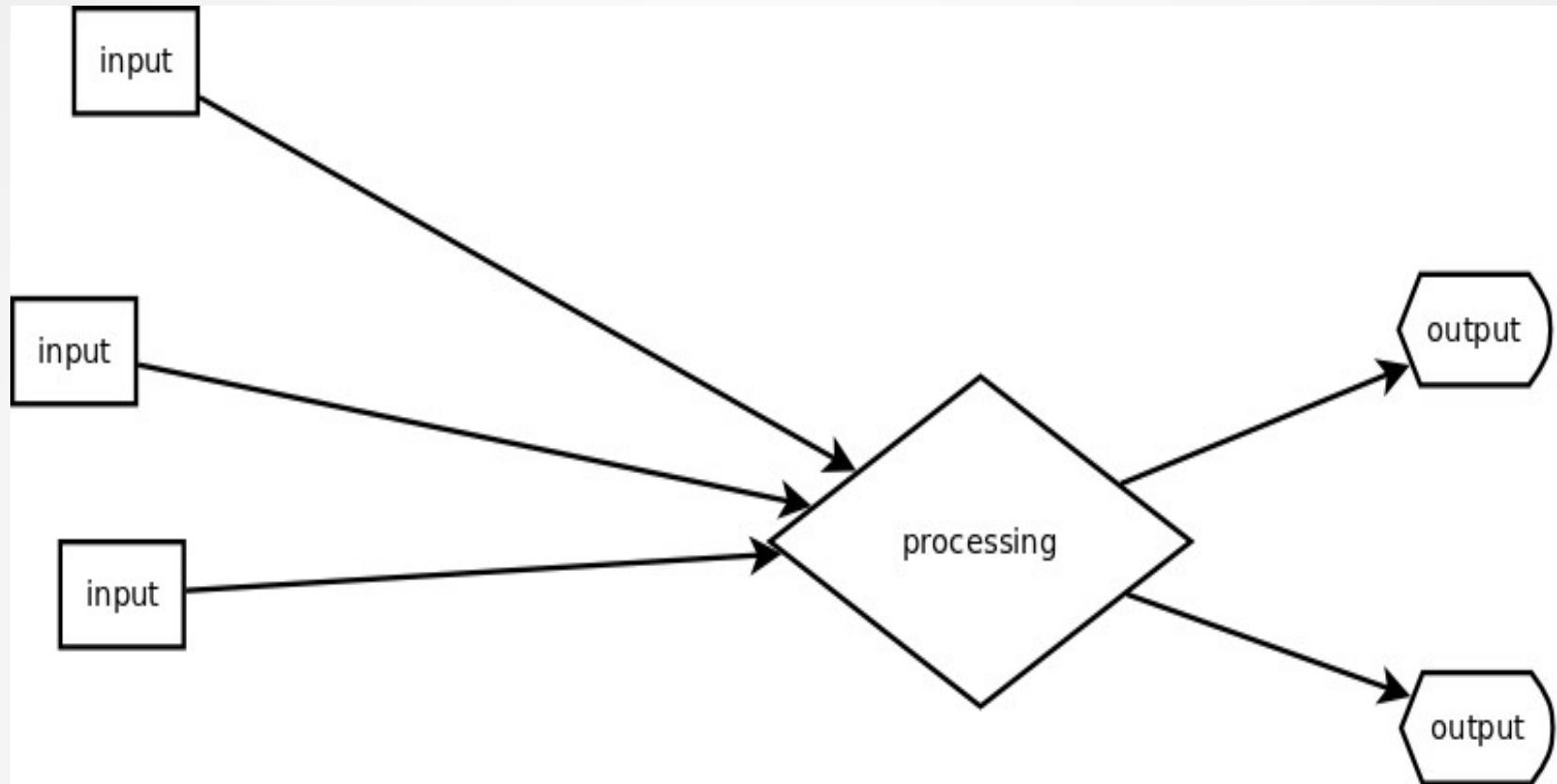
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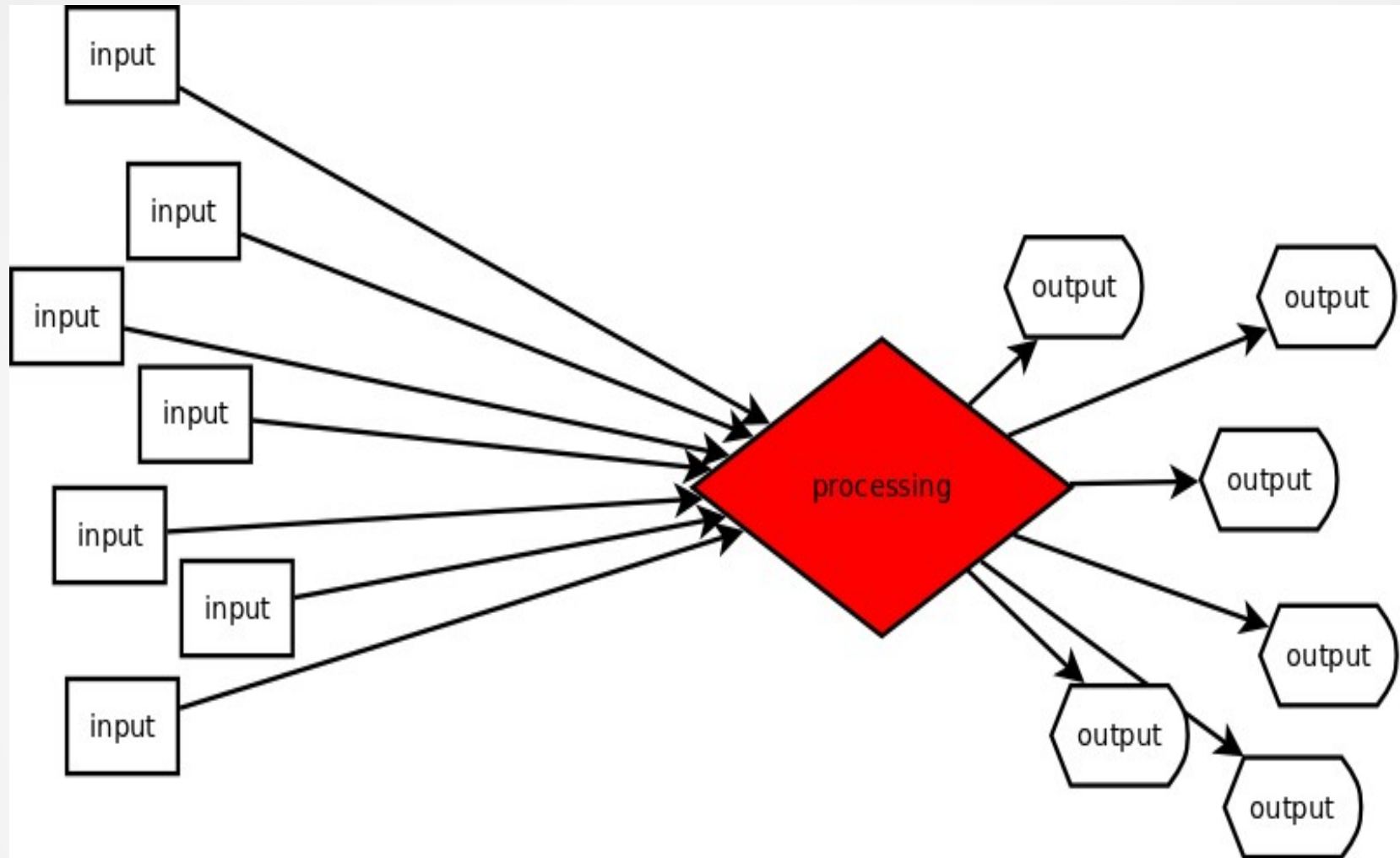
Application exchange?



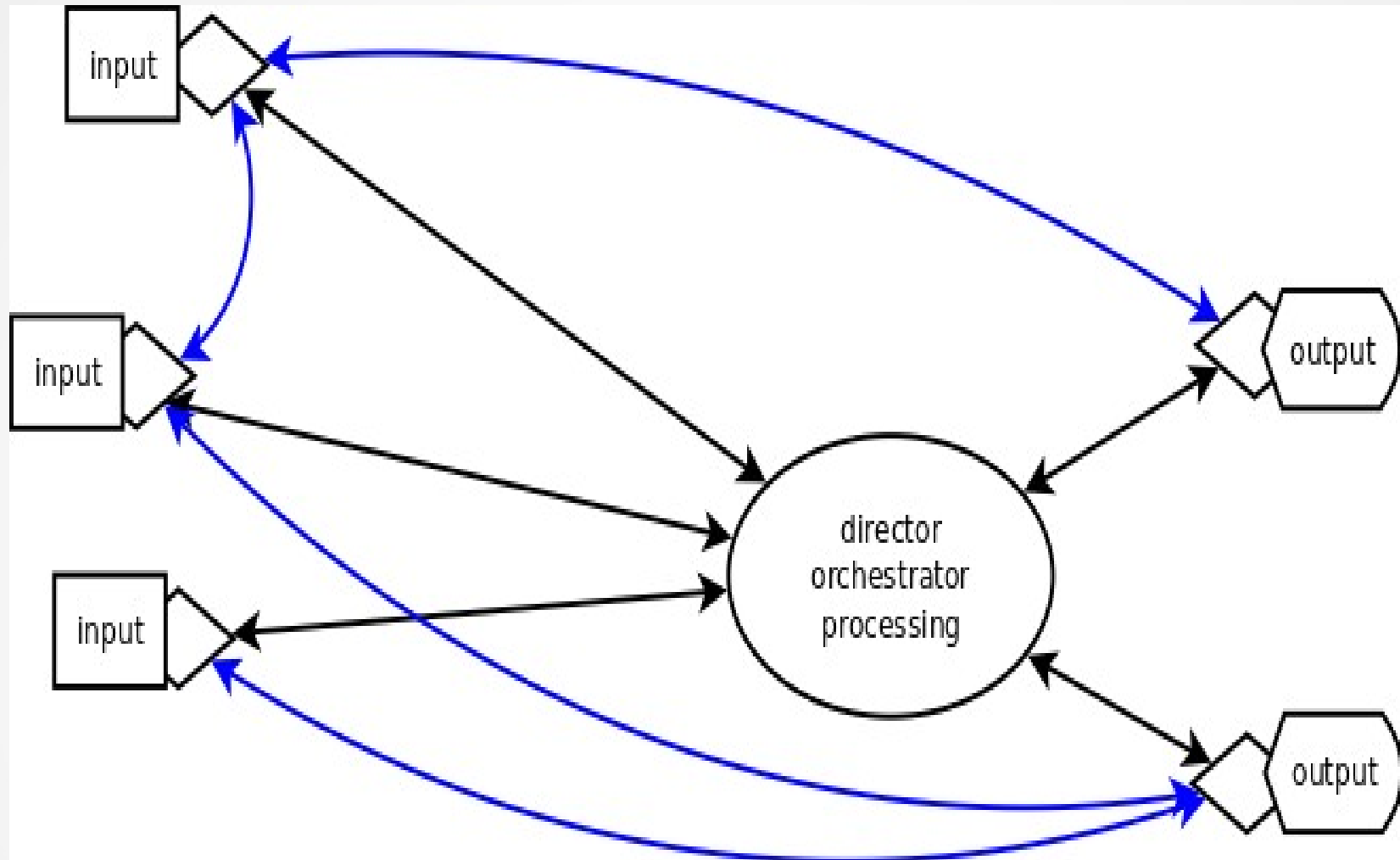
Data flow



Data flow



Data flow NG

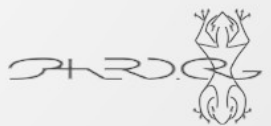


ZOCP requirements

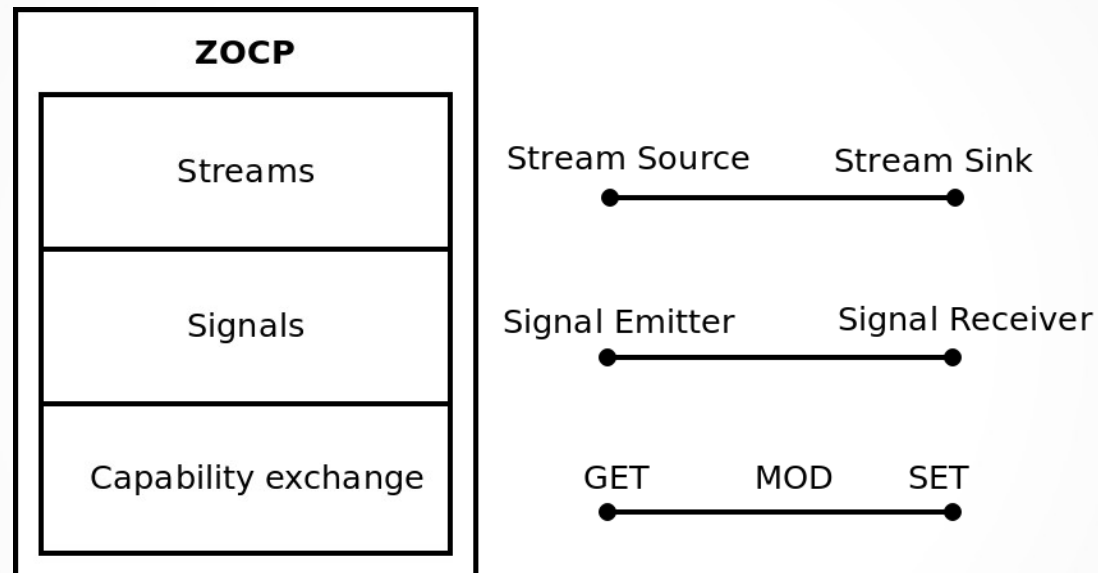
- KISS (*Keep it Simple Stupid*)
- Zero configuration
- TCP/IP
- Open standards
- Low latency (*when needed*)
- Reliability (*when needed*)
- Unintrusive debugging and monitoring

Minimal example

```
from zocp import Z0CP  
node = Z0CP()  
node.register_int("myInt", 10, "rw")  
node.start()  
node.run()
```



ZOCP internals

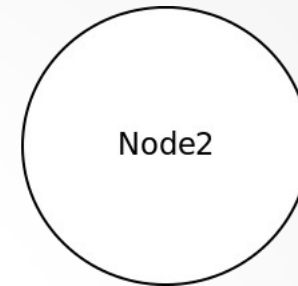
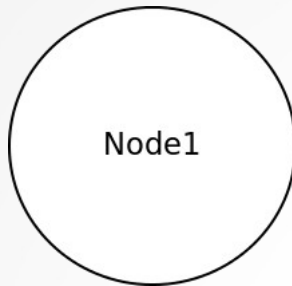


ZOCP Technologies



- Capabilities, signals and streams
- Mesh network of interconnected nodes
- Transport

ZRE (zyre/pyre)



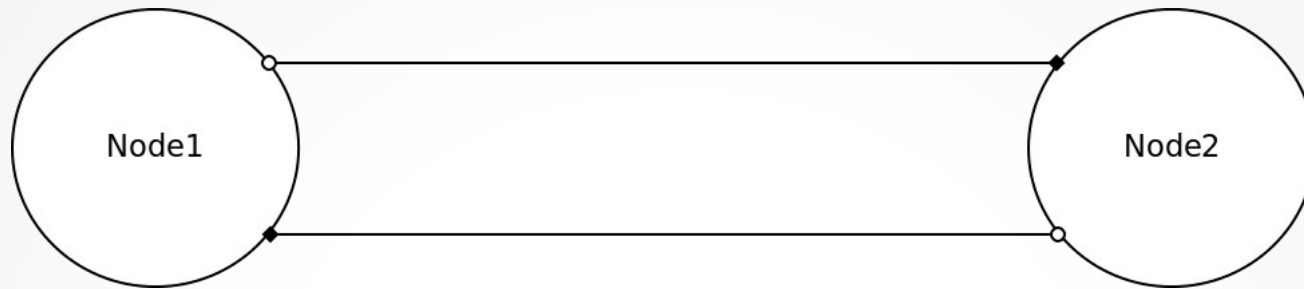
ZRE (zyre/pyre)



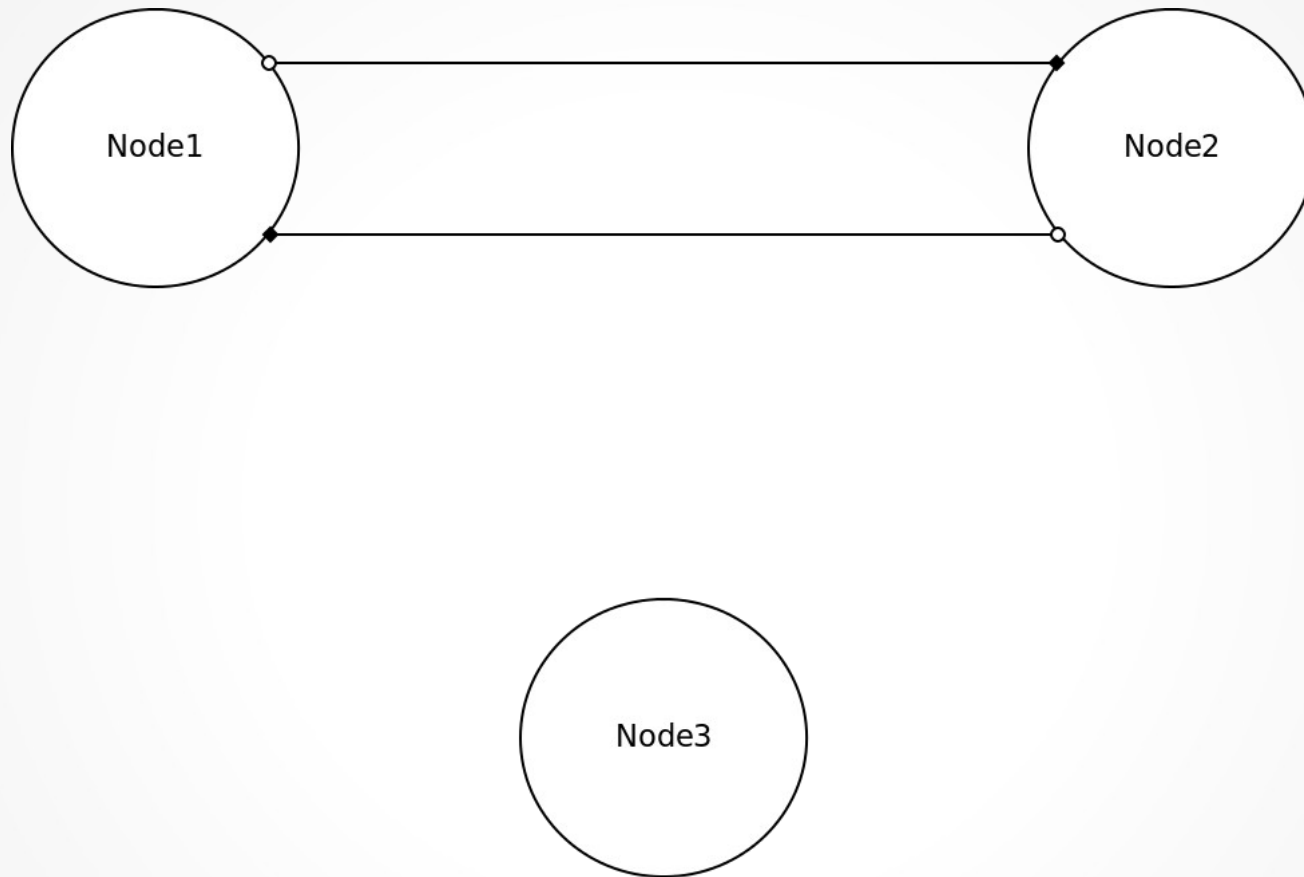
ZRE (zyre/pyre)



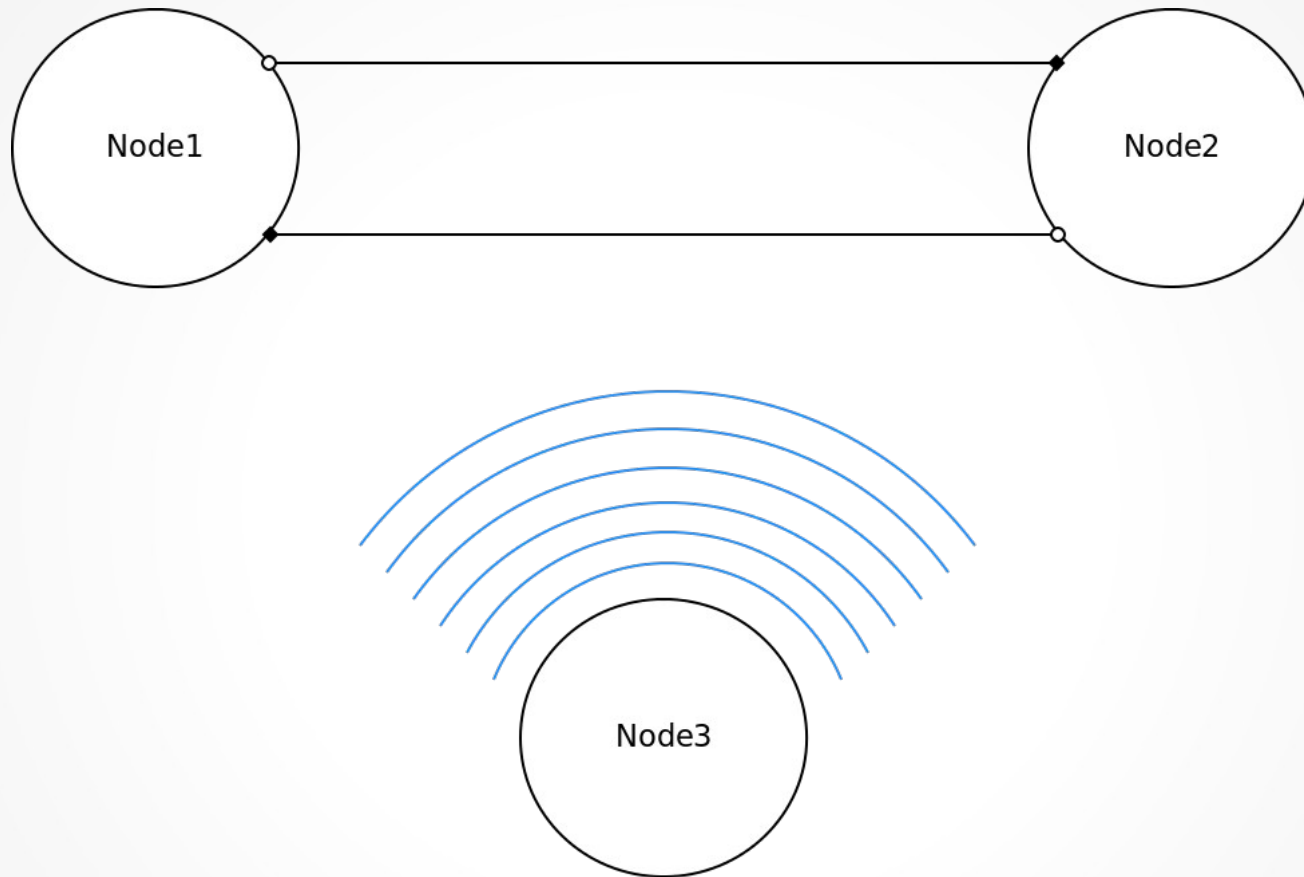
ZRE (zyre/pyre)



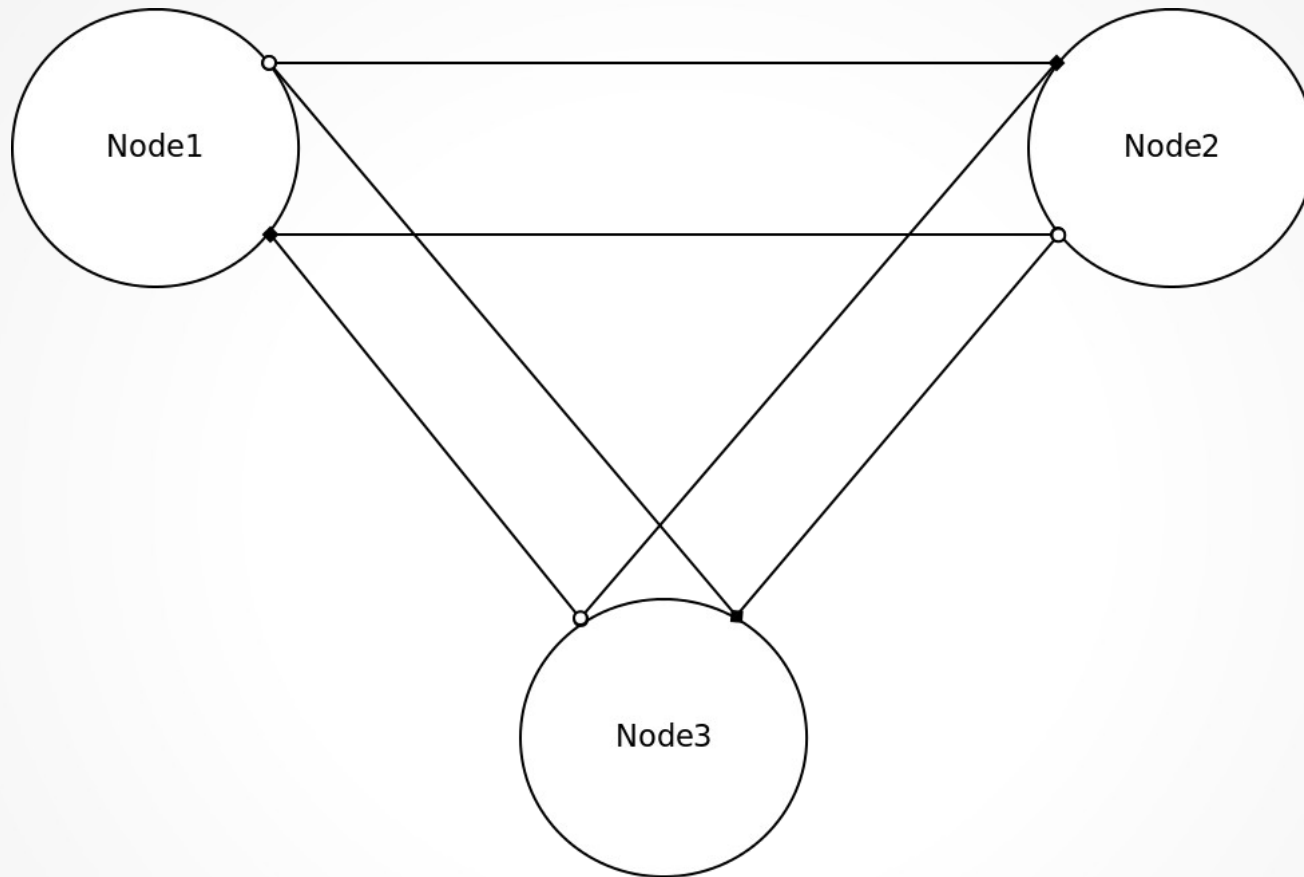
ZRE (zyre/pyre)



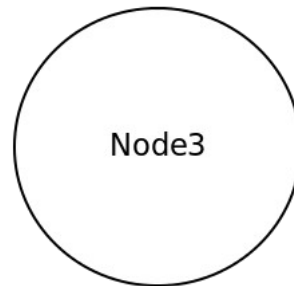
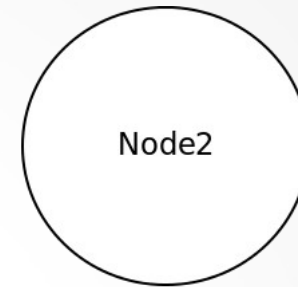
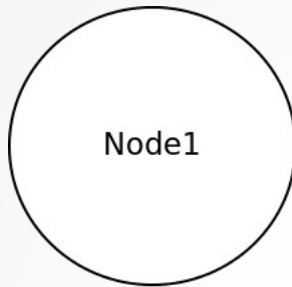
ZRE (zyre/pyre)



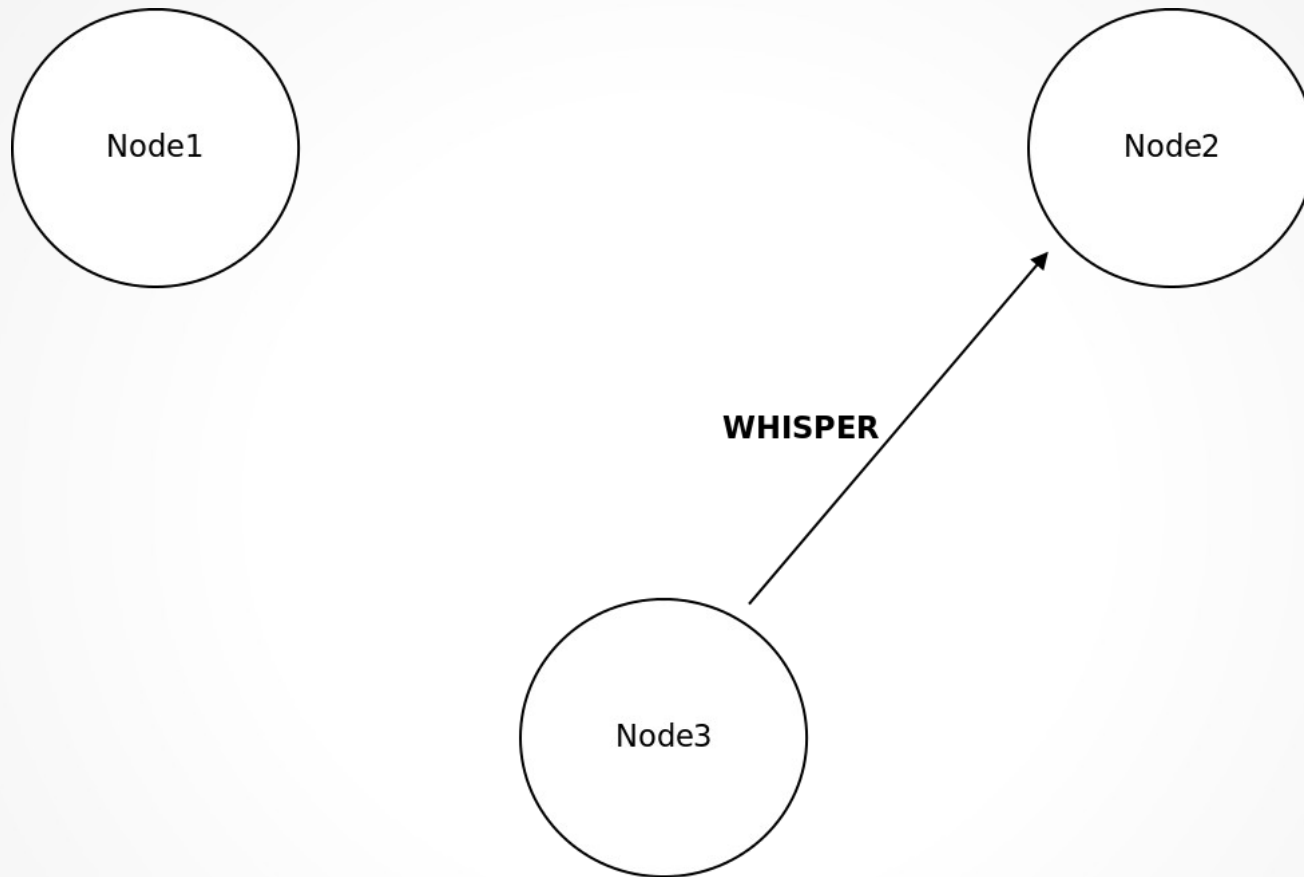
ZRE (zyre/pyre)



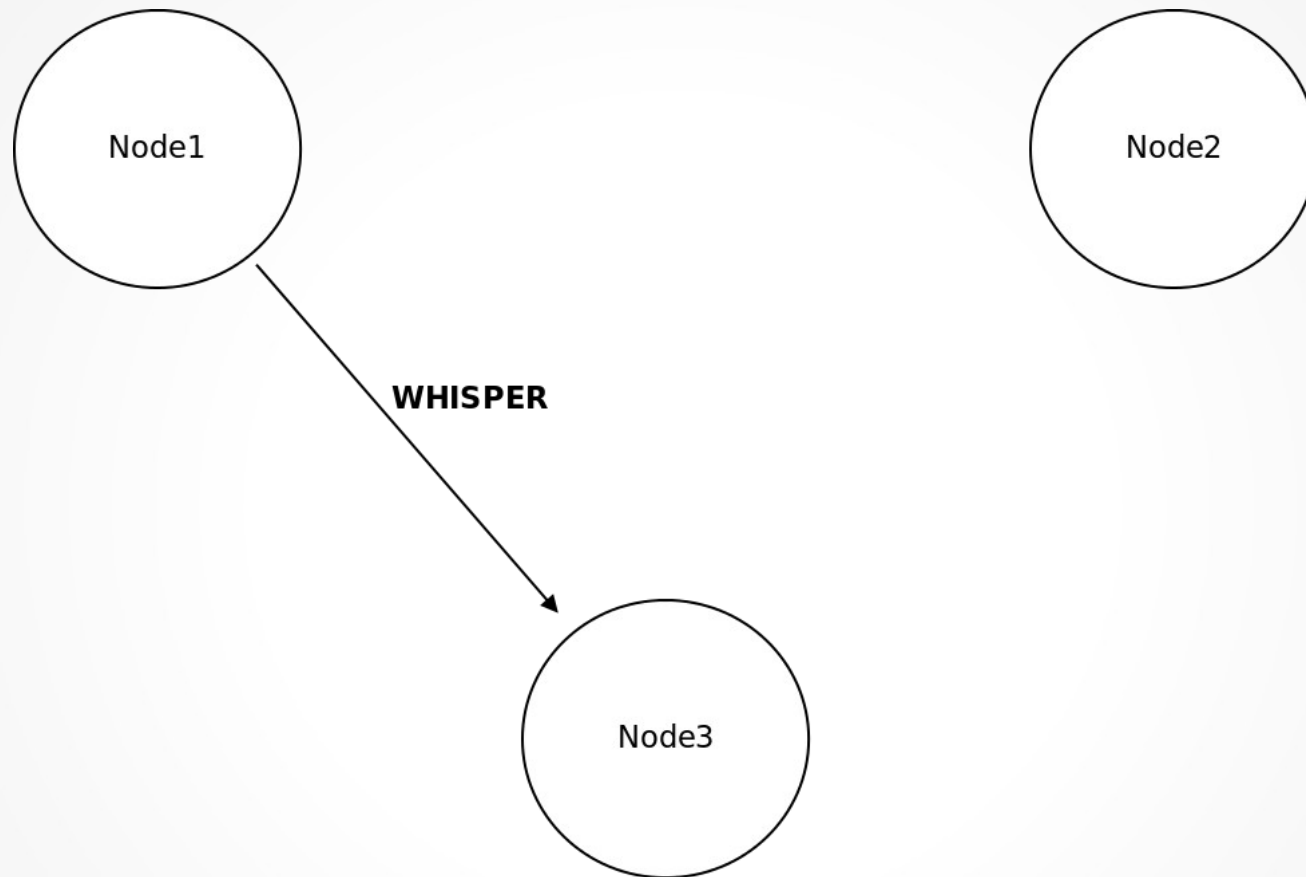
ZRE (zyre/pyre)



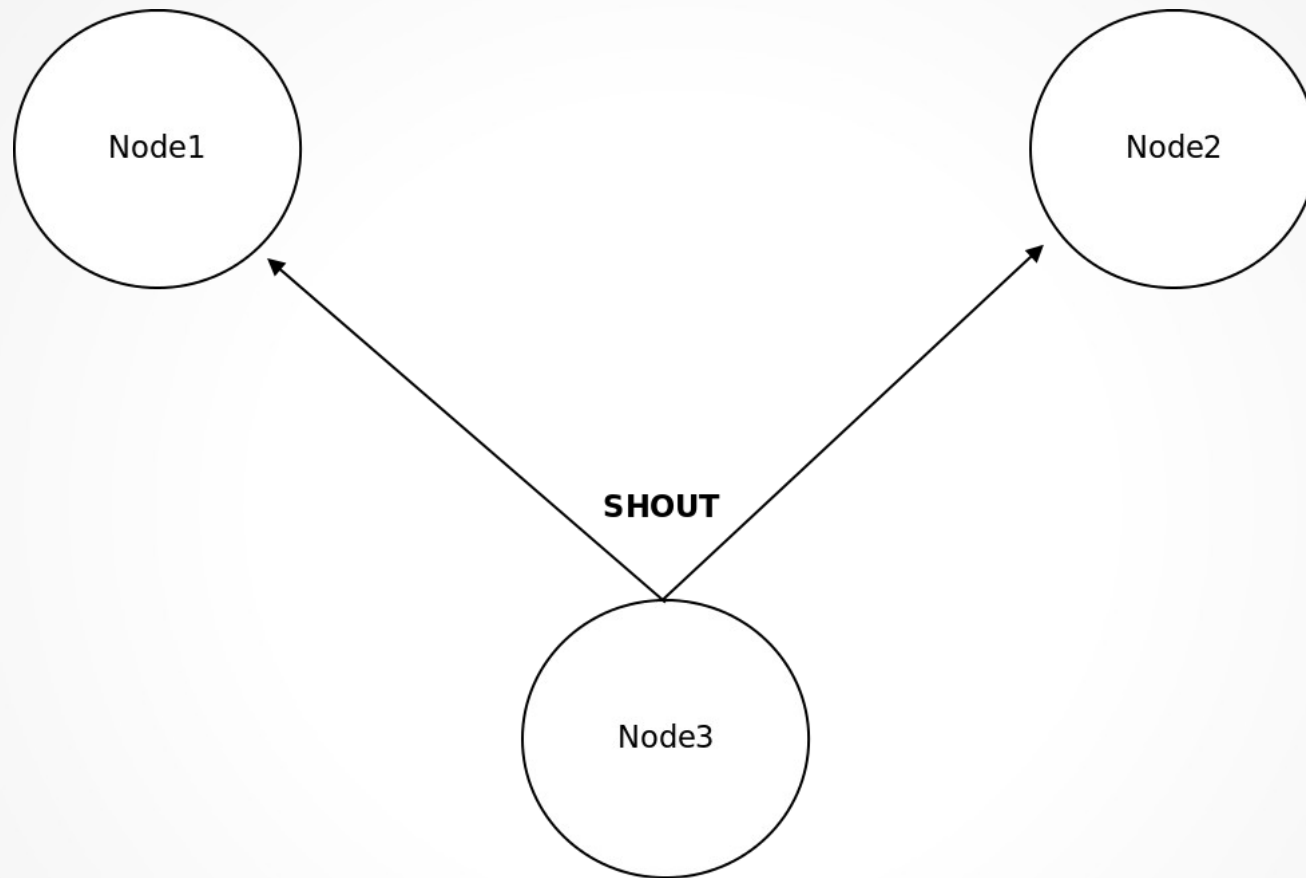
ZRE (zyre/pyre)



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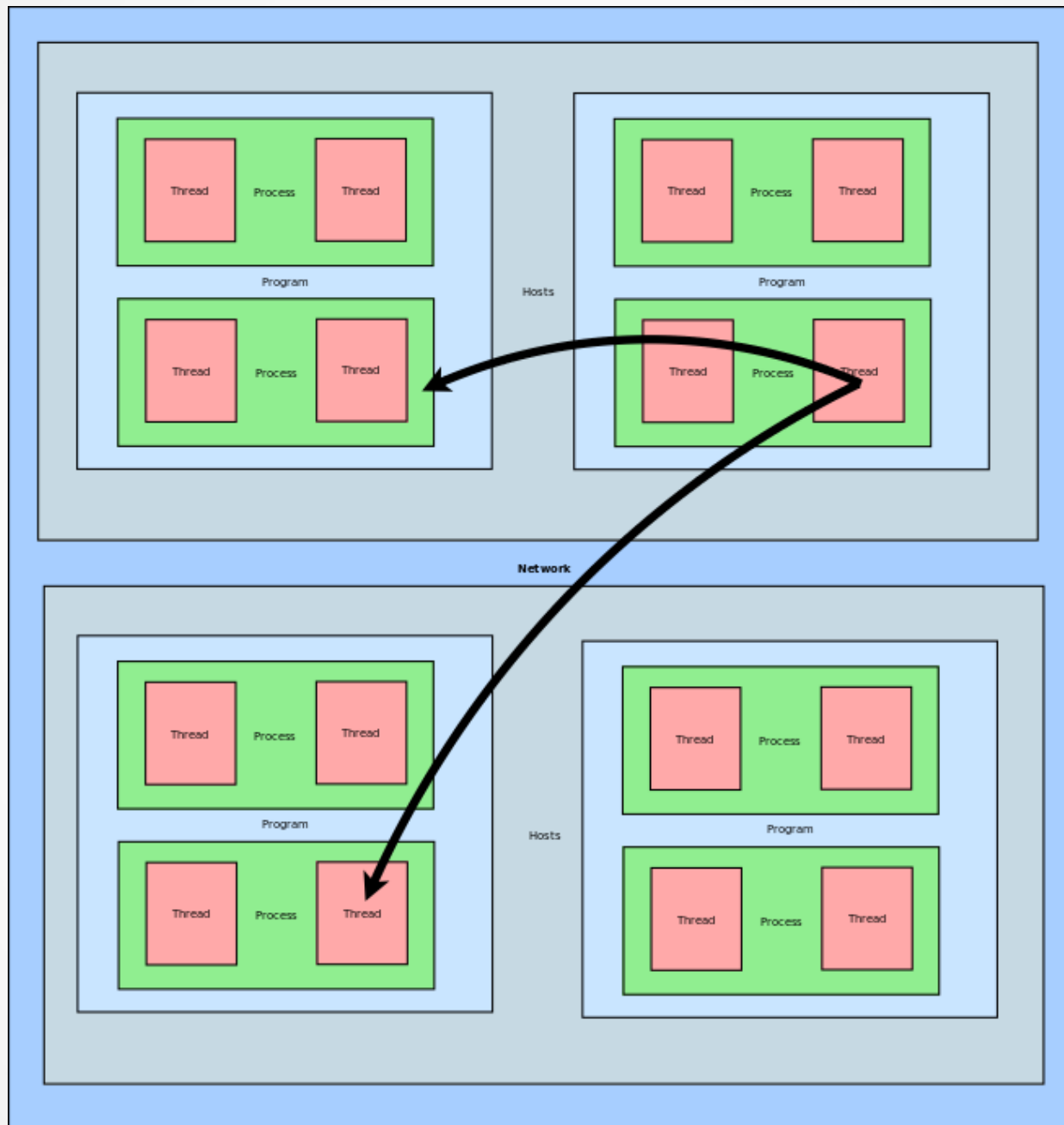
Road ahead

- Glue
 - Smart autonomous zero configuration protocol
- Agreement
 - Defined set how to communicate and exchange data
- Simple and fast
 - Low latency
 - Efficient (limit congestion and burden)

Road ahead

- Utilizing multicast for groups
- Discovery mechanisms on WAN networks
- Signal logic

Communication Scope



Road ahead

- Utilizing multicast for groups
- Discovery mechanisms on WAN networks
- Signal logic
- Optimal path selection

References

- ZOCP: <https://github.com/z25/pyZOCP>
<https://github.com/z25/pyZNodeEditor>
- ZYRE/ZRE: <https://github.com/zeromq/zyre>
<https://github.com/zeromq/pyre>
- ZeroMQ: <http://www.zeromq.org>
- Referenced research paper:
http://www.z25.org/static/_rd_/zocp_init_plab/index.html



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Context: MIDI → OSC → ...

