

Fractal to FACL Mapping

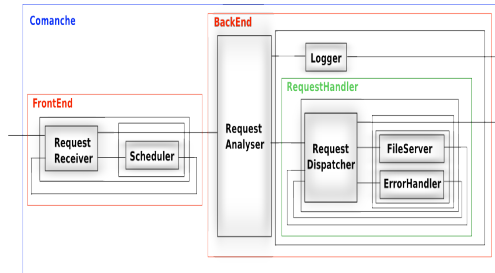
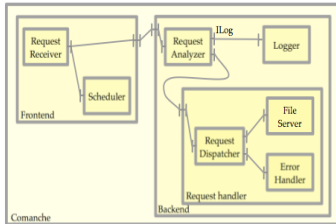
Abdel Hakim Hannousse

20th Meeting

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 - Simple component connection : one-to-one

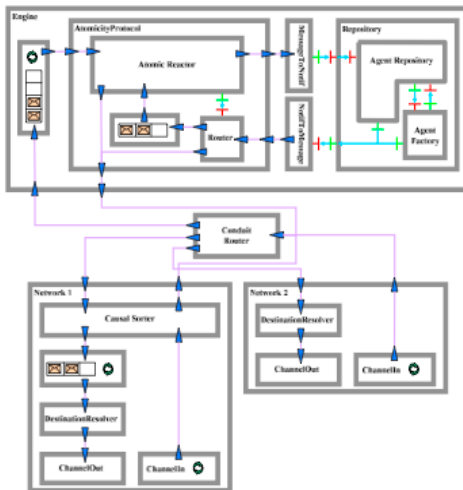
Comanche HTTP Server



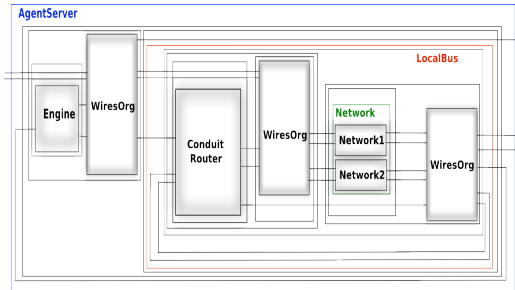
```

comanche      = frontEnd >>> backEnd
frontEnd     = loop(requestReceiver >>> second (scheduler))
backEnd      = requestAnalyser >>> (logger *** requestHandler)
requestHandler = loop (requestDispatcher >>> second (fileServer *** errorHandler))
    
```

Agent Server Architecture in Fractal

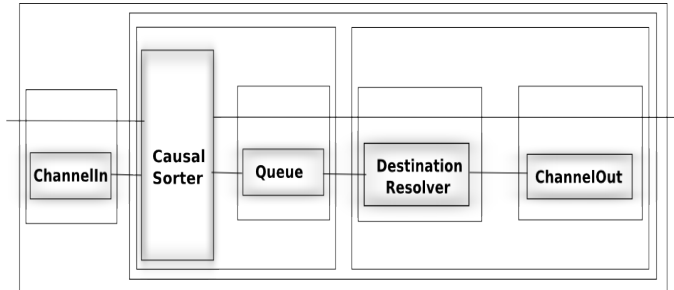


Agent Server Architecture in FACL



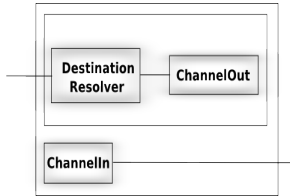
```
agentServer = loop ((second (engine) >>> wiresOrg) >>> (second (localBus)))
localBus    = loop ((first (Network) >>> first (wiresOrg)) >>>
                  (first (network) >>> wiresOrg))
network     = network1 *** network2
```

Network (1) Architecture in FACL



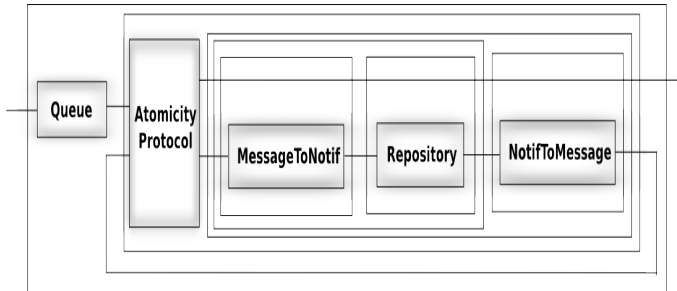
```
network1 = second (channelIn) >>> ((causalSorter >>> second (queue)) >>> (second (destinationResolver) >>> second (channelOut)))
```

Network (2) Architecture in FACL



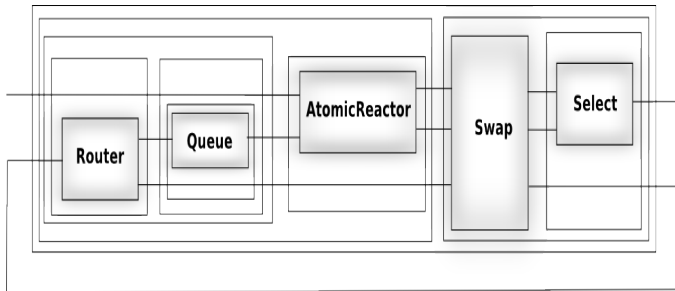
```
network2 = (destinationResolver >>> channelOut) *** channelIn
```

Using Arrows to Compose Parallel Process : Example



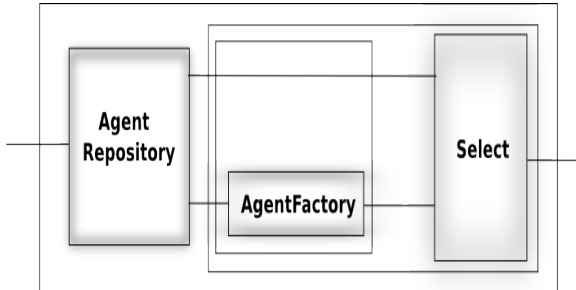
```
engine = queue >>> loop (atomicityProtocol >>> ((second (messageToNotif) >>>  
second (repository)) >>> second (notifToMessage)))
```


Atomicity Protocol Component Architecture in FACL



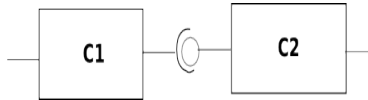
```
atomicityProtocol = loop ((second (router) >>> second (first (queue))) >>>  
first (atomicReactor)) >>> (swap >>> first (select)))
```

Repository Component Architecture in FACL

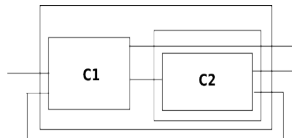


```
repository = agentRepository >>> (second (agentFactory) >>> select)
```

Simple component connection : one-to-one



CBSE connection



Arrows Representation

Open problems

- 1 Send-Wait-Receive communication protocol
- 2 Active-Reactive Components
- 3 inputs and outputs should be activated at the same time
- 4 n-ary composition operators