

PlanetLab-Based Control Framework for GENI

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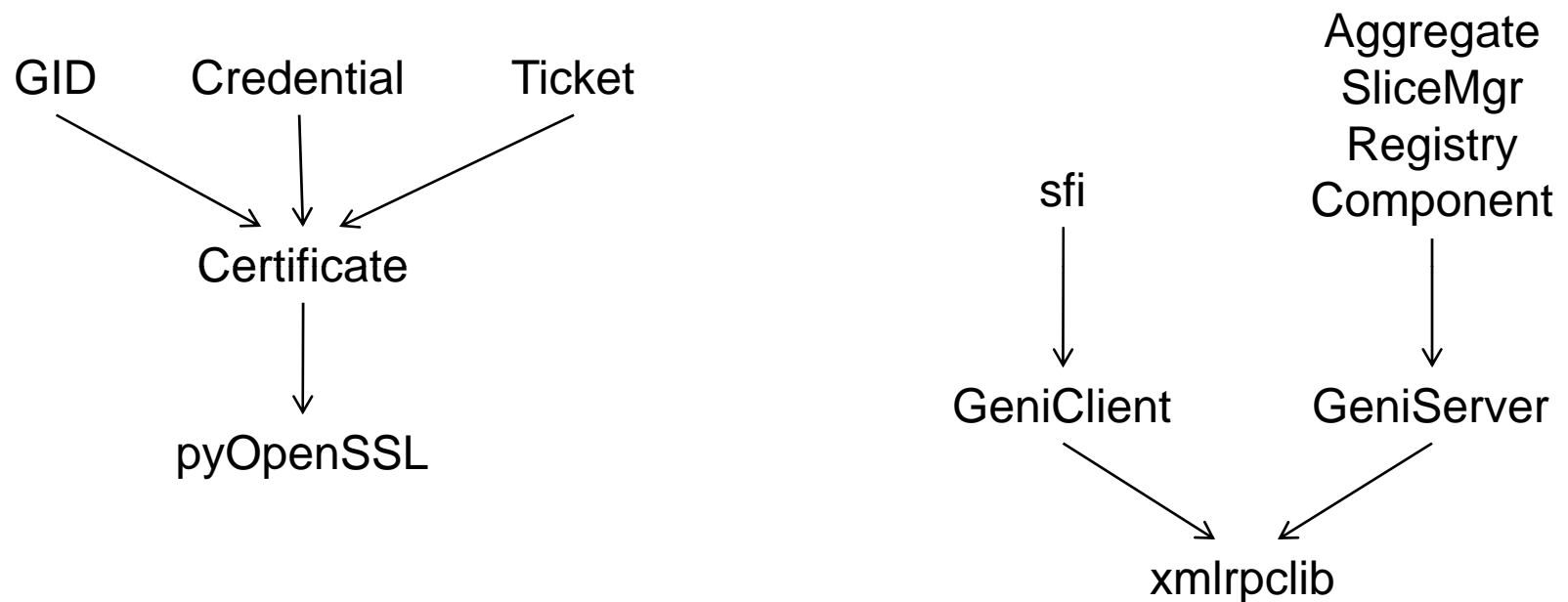
SFA Interfaces

- Registry Interface
 - Register, Update, Add, Delete, Resolve, GetCredential
- Slice Interface
 - GetTicket, RedeemTicket, Create, Delete, Update
 - Start, Stop, Reset
 - ListSlices, GetResources
- Management Interface
 - GetBootState, SetBootState, Reboot

svn.planet-lab.org

- MyPLC distribution
 - set up & extend a “private planetlab”
- Developer’s mailing list
 - Tony Mack: tmack@cs.princeton.edu
- geniwrapper module
 - source code
 - documentation

Class Hierarchy



Rights (codifies SFA Section 5.4)

RSpec (generated from EMF schema)

Record (to be generated from EMF schema)

RSpec

RSpec =
 networks+ : NetSpec

NetSpec =
 nodes+ : NodeSpec
 links* : LinkSpec

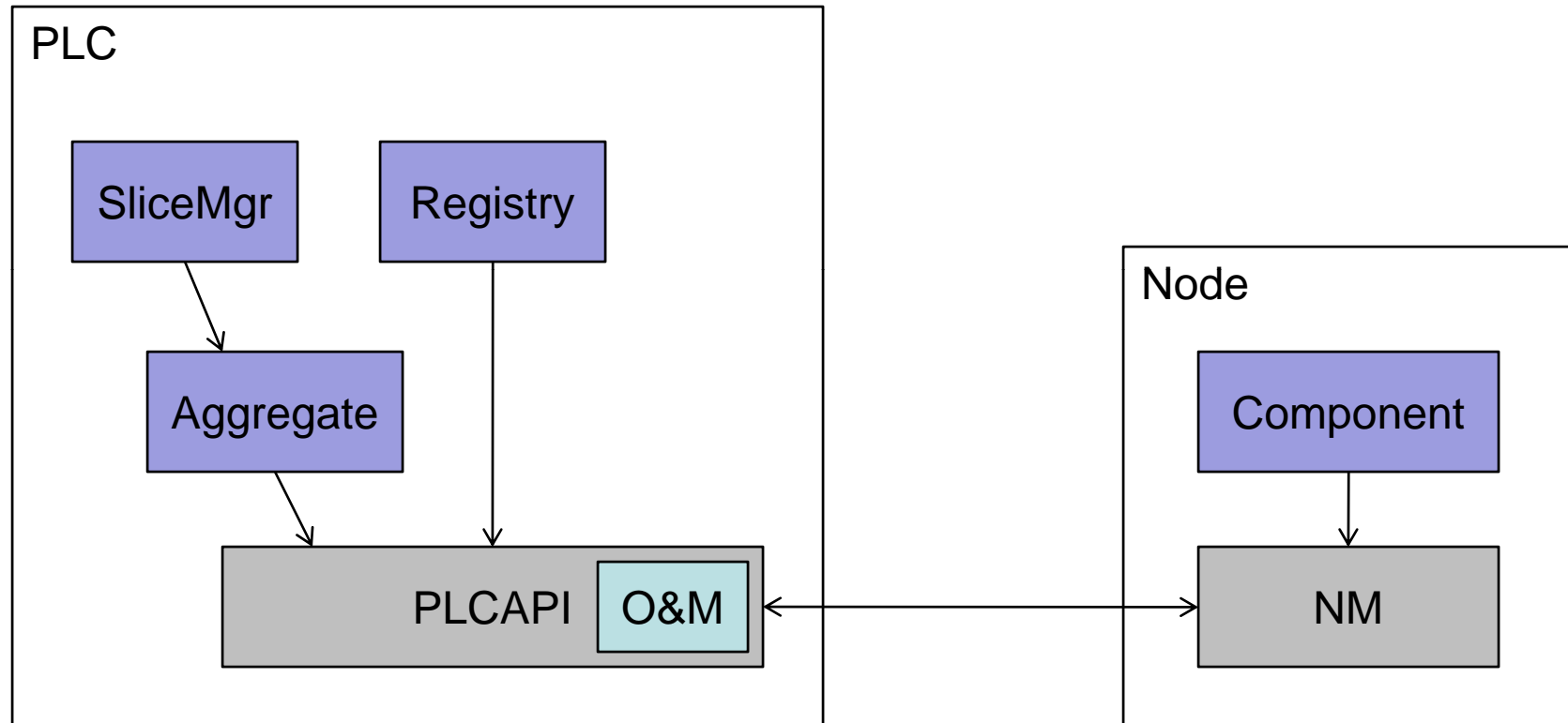
NodeSpec =
 name+ : Name
 type : String
 init_params : ByteArray
 cpu_min : Integer
 cpu_share : Integer
 cpu_pct : Integer
 disk_max : Integer
 net_if+ : IfSpec

LinkSpec =

type : String
init_params : ByteArray
bw : Integer
min_alloc : Integer
max_alloc : Integer
endpoint+ : IfSpec

IfSpec =
 name : Name
 type : String
 init_params : ByteArray
 addr : Addr
 min_rate : Integer
 max_rate : Integer
 max_kbyte : Integer
 ip_spoof : Boolean

Single PLC

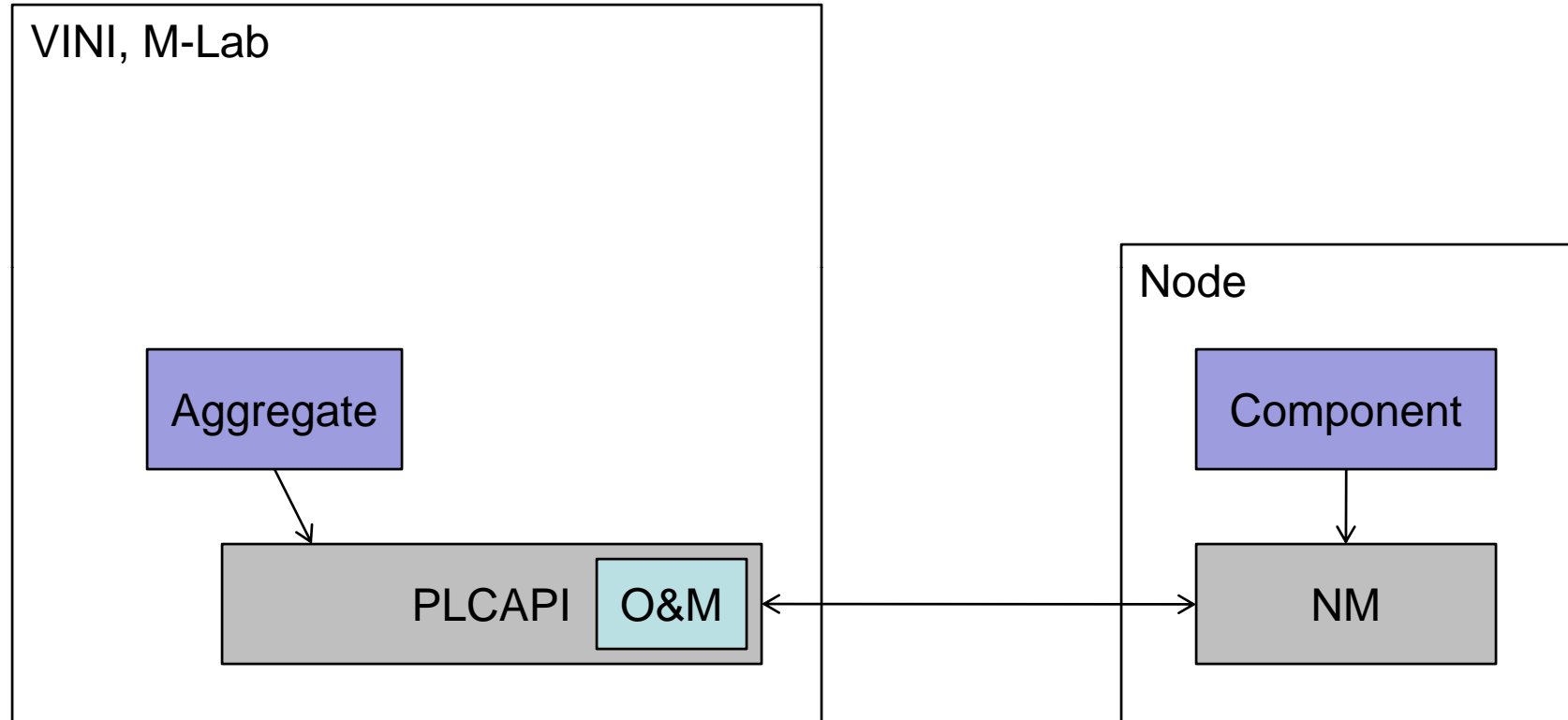


Notes

GetTicket at Aggregate only

RedeemTicket at Component only

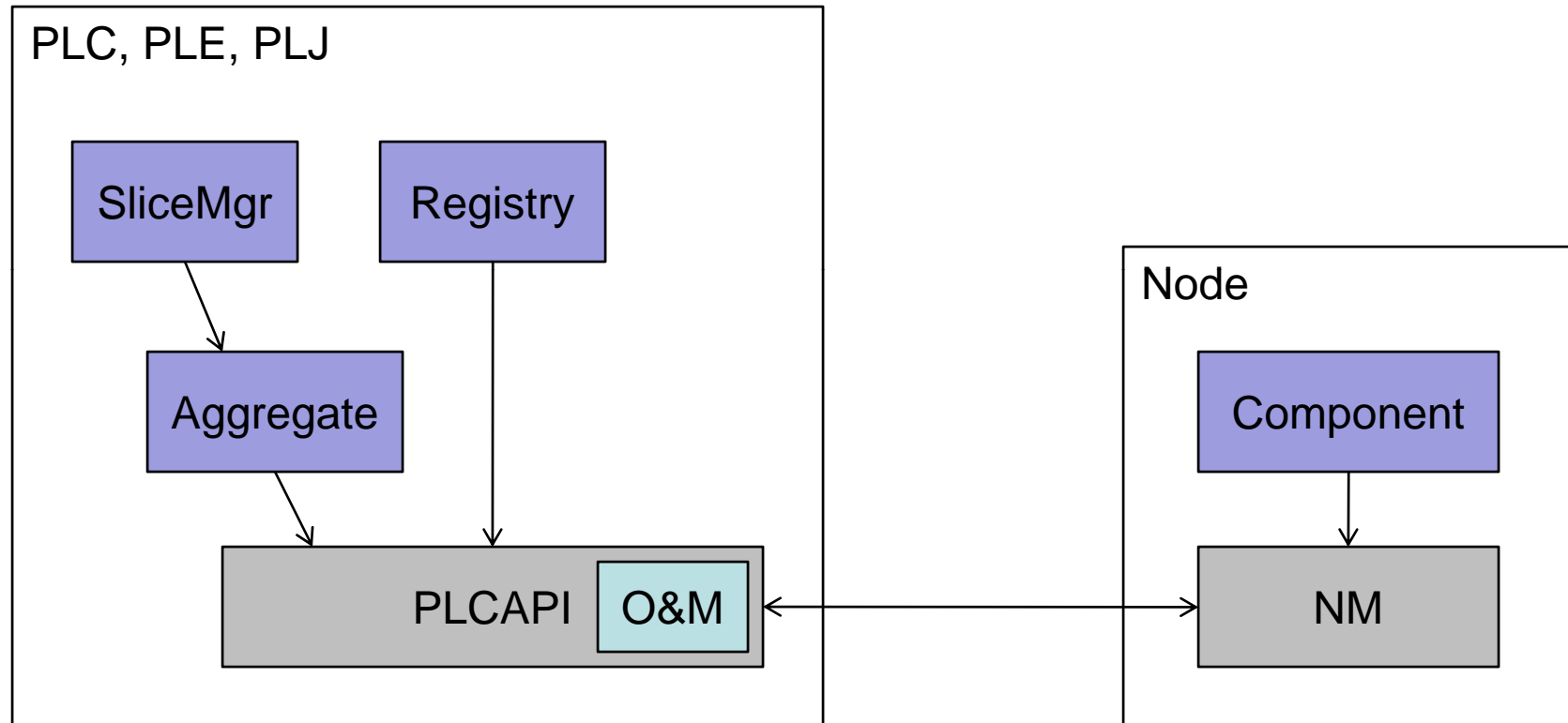
Multiple Aggregates



Notes

PLC's SliceMgr will peer with a set of Aggregates

Full Fledged Peers



Notes

- Each SliceMgr will peer with all Aggregates (for now)
- PLC's Registry will "point to" PLE & PLJ's Registry

SFI

- Runs on researcher's laptop (client of Registry & SliceMgr)
- Automatically acquires and manages credentials
- Use “helper” functions to edit RSpecs and registry records
- Examples...

```
sfi list -t user plc.us.princeton
```

```
sfi show -o llp.reg plc.us.princeton.llp
```

```
sfi update plc.us.princeton.llp llp.reg
```

```
sfi nodes -f dns -o default.rspec
```

```
sfi create plc.us.princeton.test request.rspec
```

```
sfi resources -o my.rspec plc.us.princeton.test
```

```
sfi stop plc.us.princeton.test
```

```
sfi start plc.us.princeton.test
```