

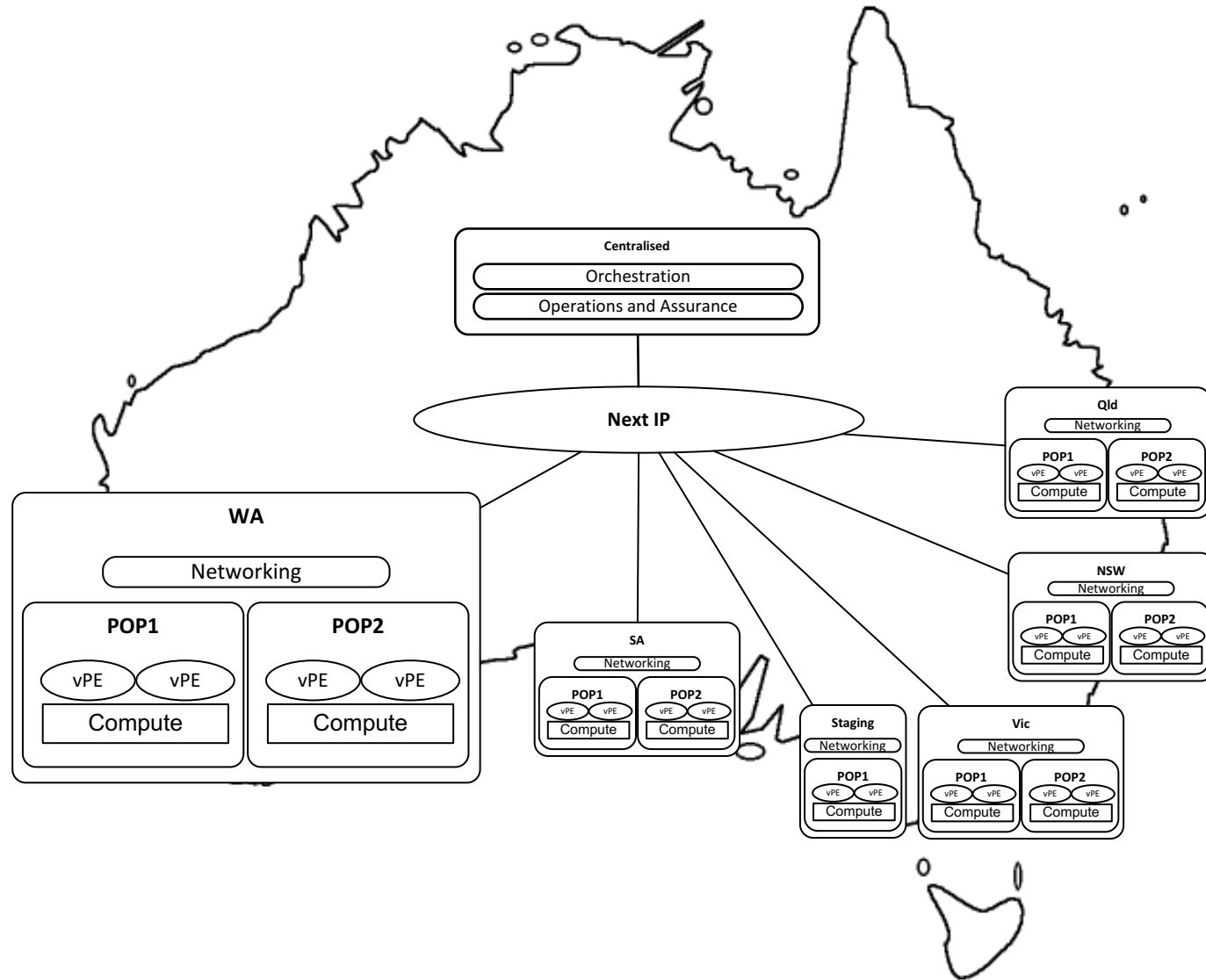


Operationalising a Virtual PE

AusNOG Sep 2019



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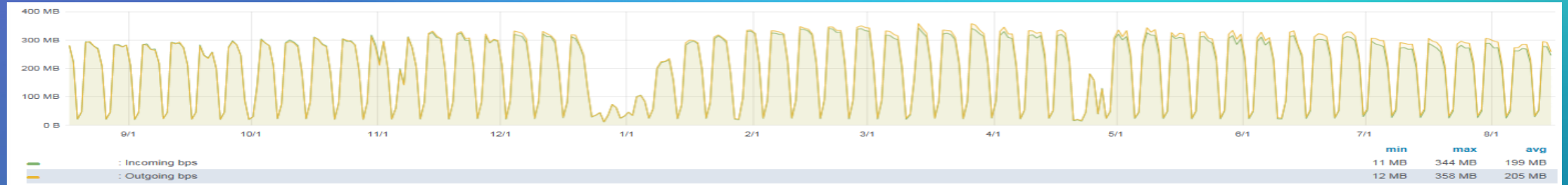
- 8000 Voice services
- 8000 Data services
- 8000 Management services

- Openstack
- SRIOV
- virtual MX
- Rack Servers

- 11 Sites
- 5 computes/site
- 62 vPEs

Sample vPE Yearly Throughput

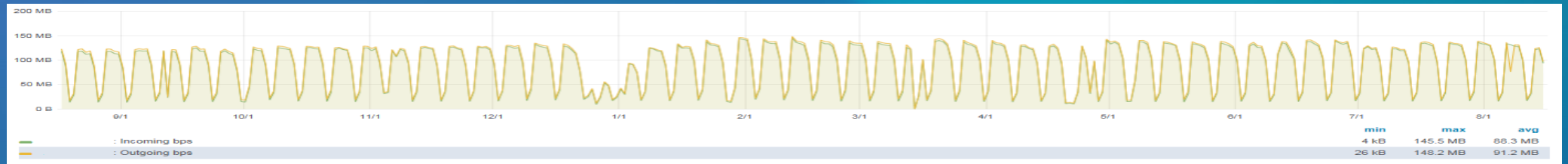
Vic (1vPE)



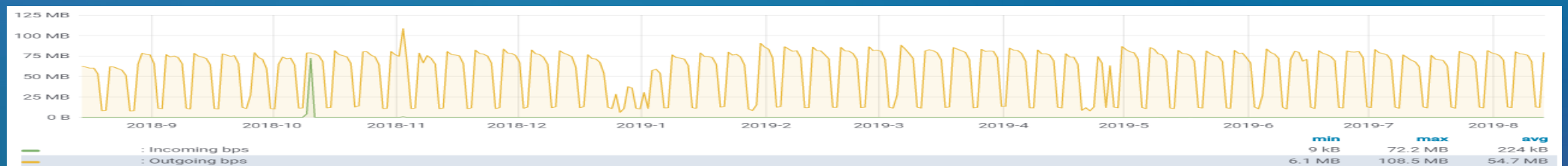
NSW (1vPE)



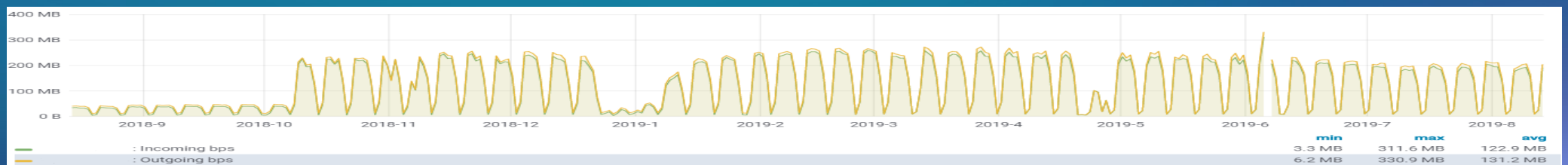
Qld (1vPE)



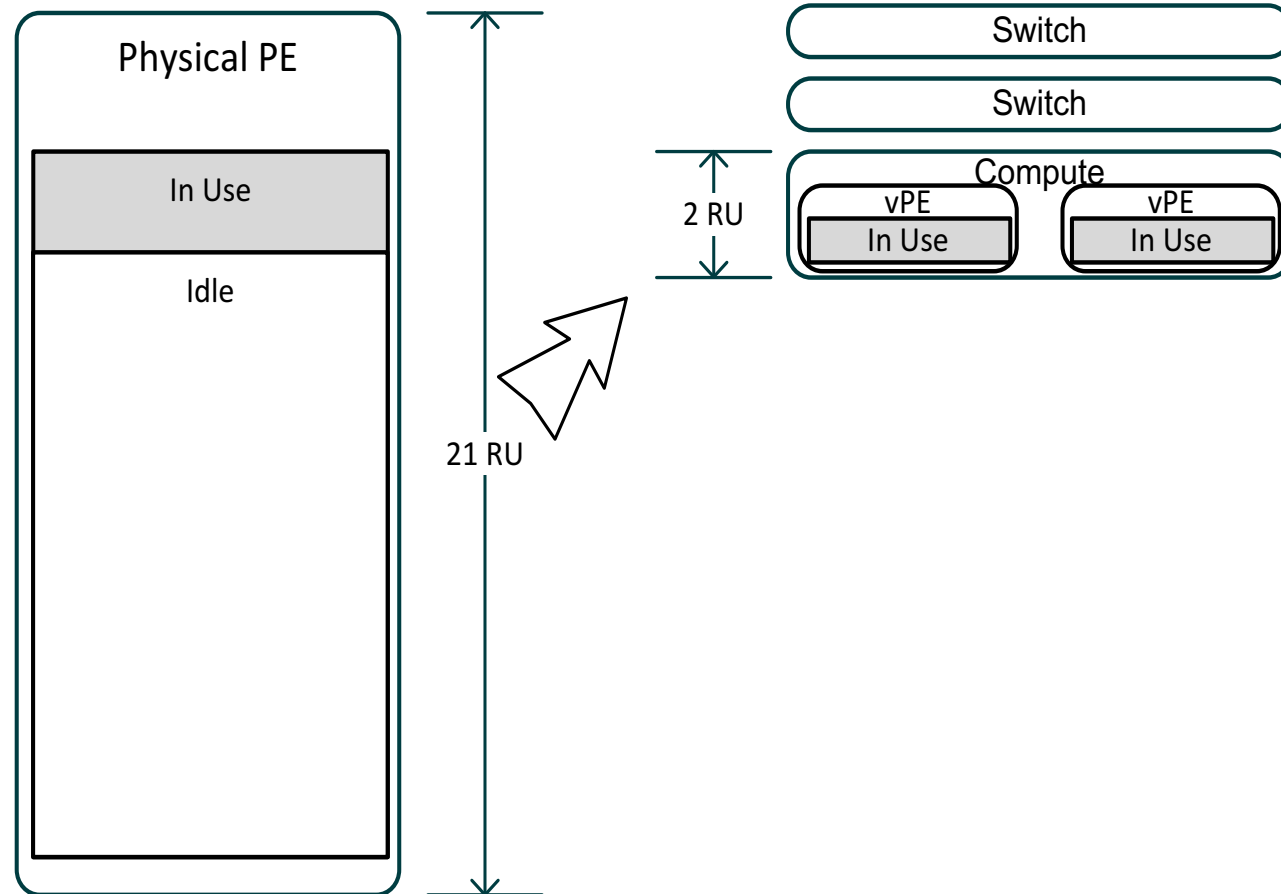
WA (1vPE)



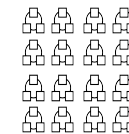
SA (1vPE)



Business Case



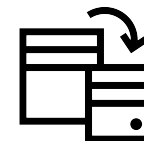
Reduce Unit Cost



High Control-plane

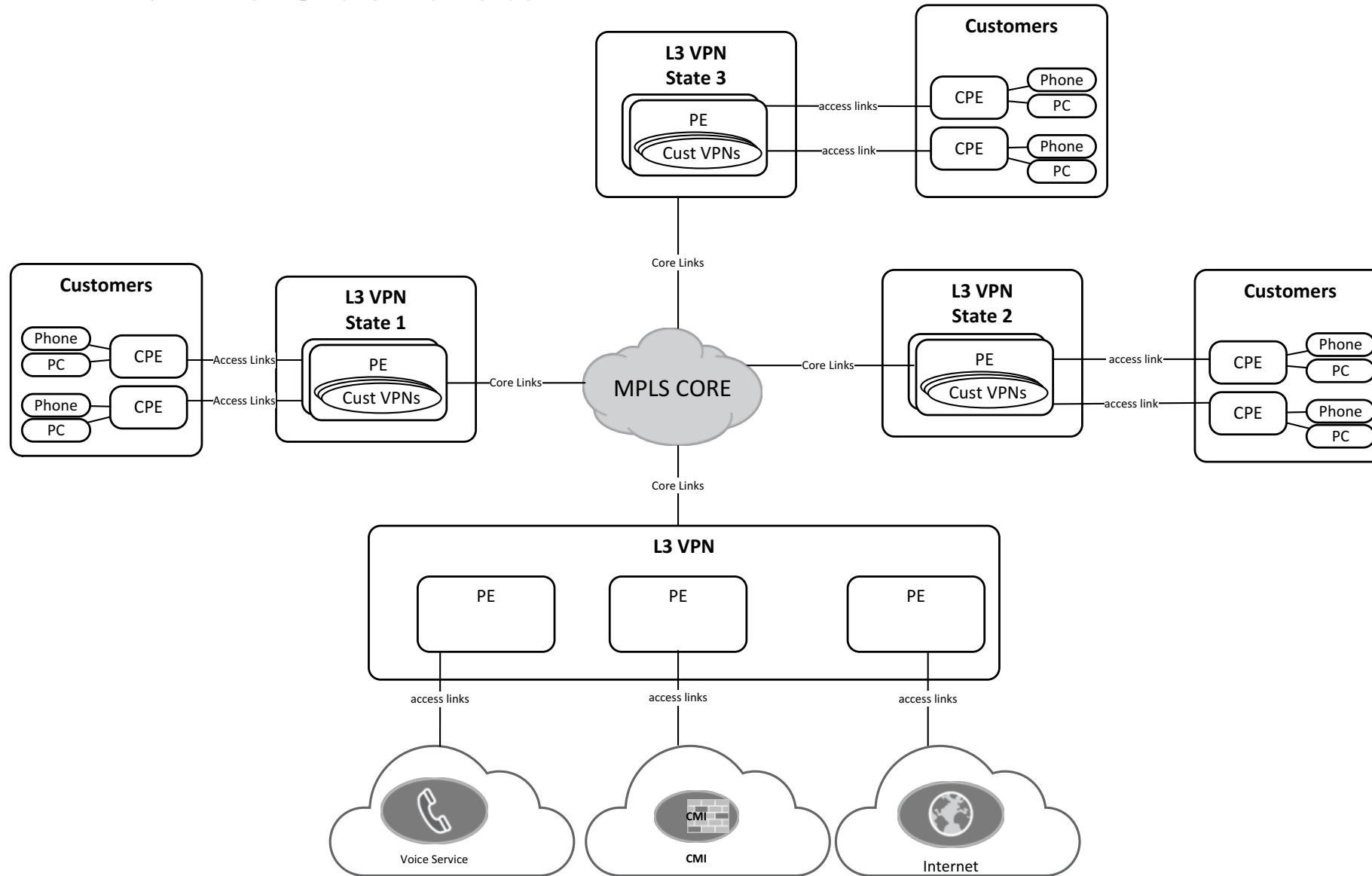


Reliable Bandwidth

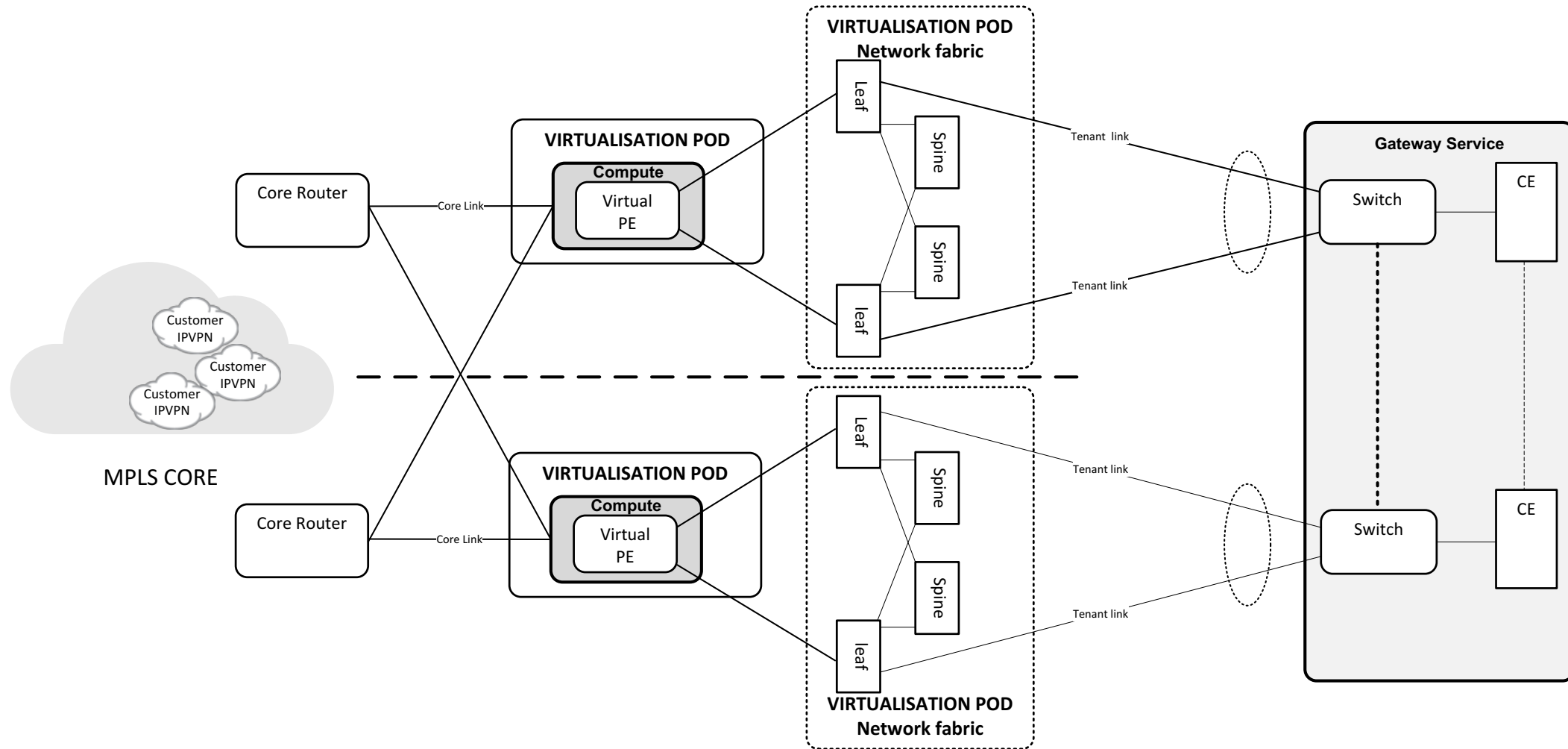


Flexible Infrastructure

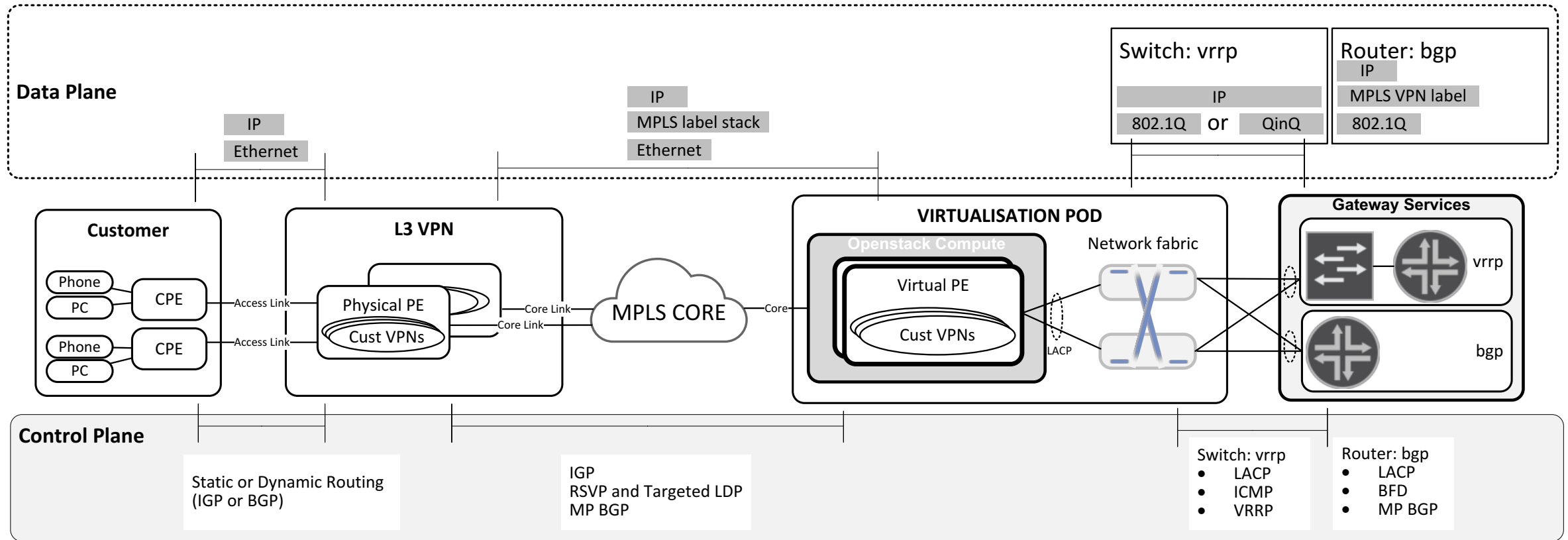
Telstra IPVPN Overview



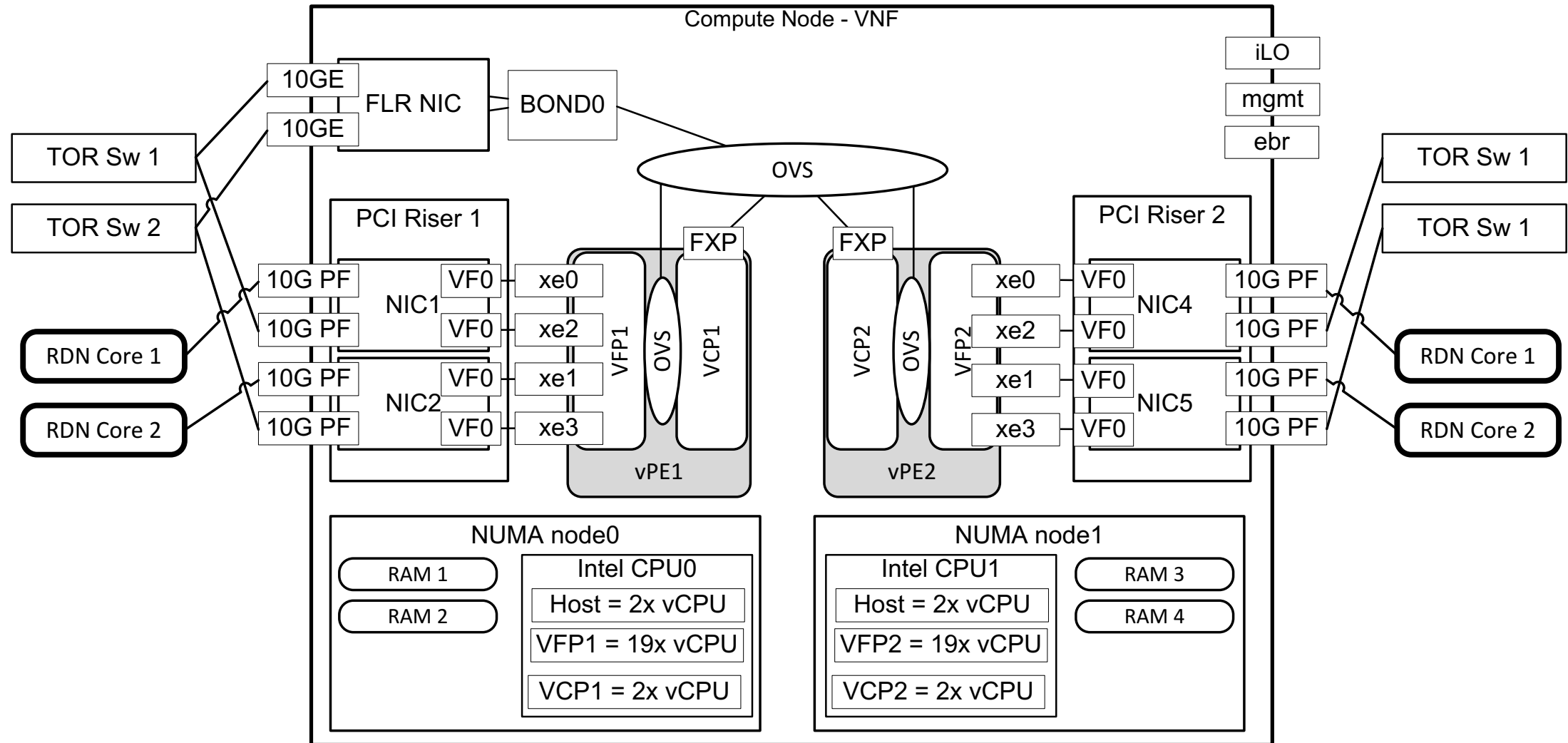
Virtual PE Topology



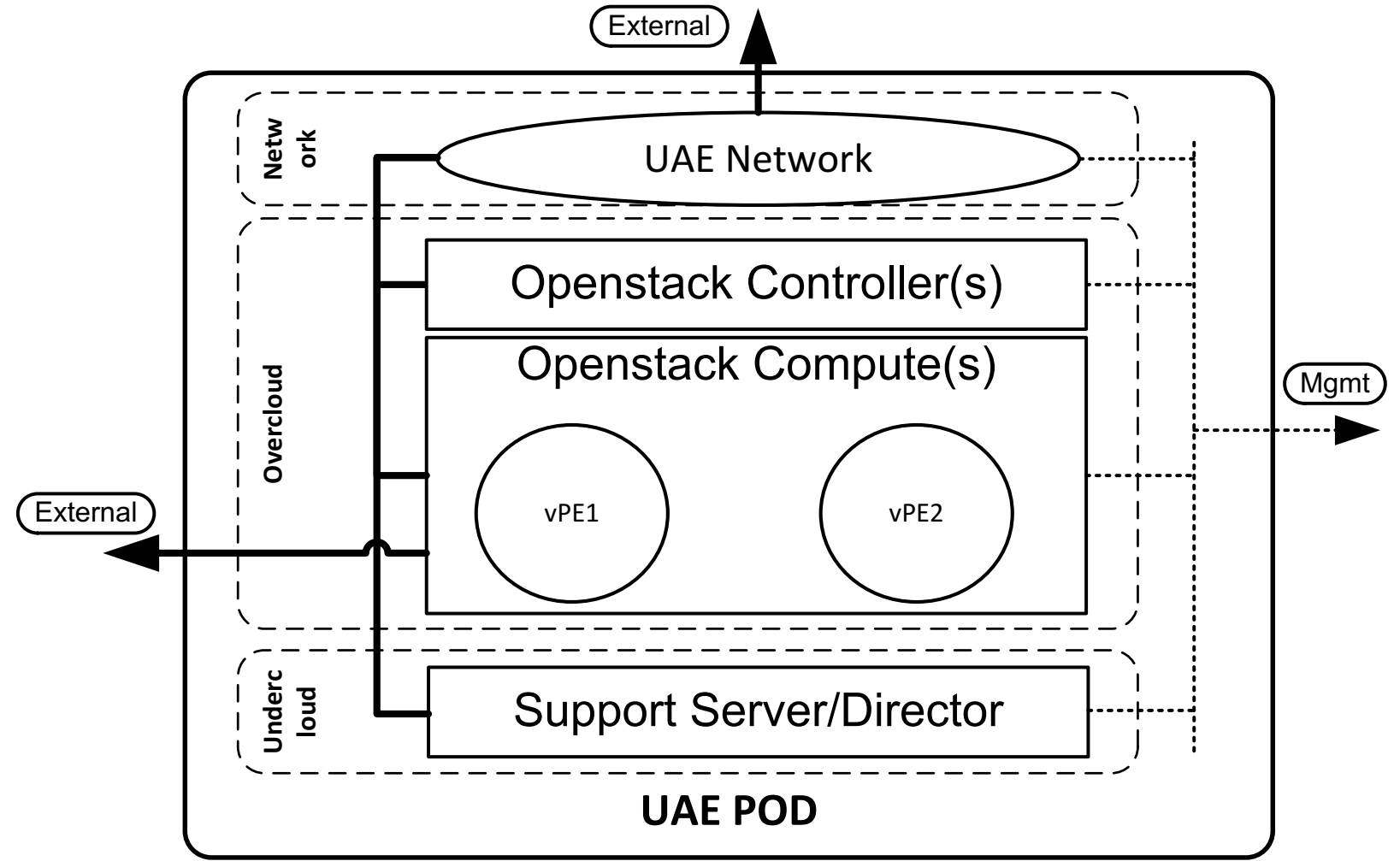
Virtual PE Protocols



Compute optimisation



Openstack Overview



Virtualisation Summary



Pros

- **More efficient use of power and floor space**
- **Can create/remove quickly**
- **Can reuse hardware for other use cases**
- **Reduce per SIO costs**

Cons

- **Complexity adds time and cost**
- **Specialised support skills**
- **Increased failure domains**
- **Support relies upon multiple groups**
- **High infrastructure costs if use case not selected carefully**
- **Cross vendor certification and support**

Key Learning

Skills – Give time for all affected staff to be trained and comfortable

Keep it Simple – just because the technology is available doesn't mean it should be used

Automation – automate as much as possible within the project scope

Network Virtualisation – multi-tenant VNFs can satisfy economical service provider use cases



Questions