

Next Generation Virtual Network Architecture For Multi-Tenant Distributed Clouds: Challenges and Emerging Techniques

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PI IRNC: RXP: StarLight SDX

Global LambdaGrid Workshop

Sydney Australia

Sept

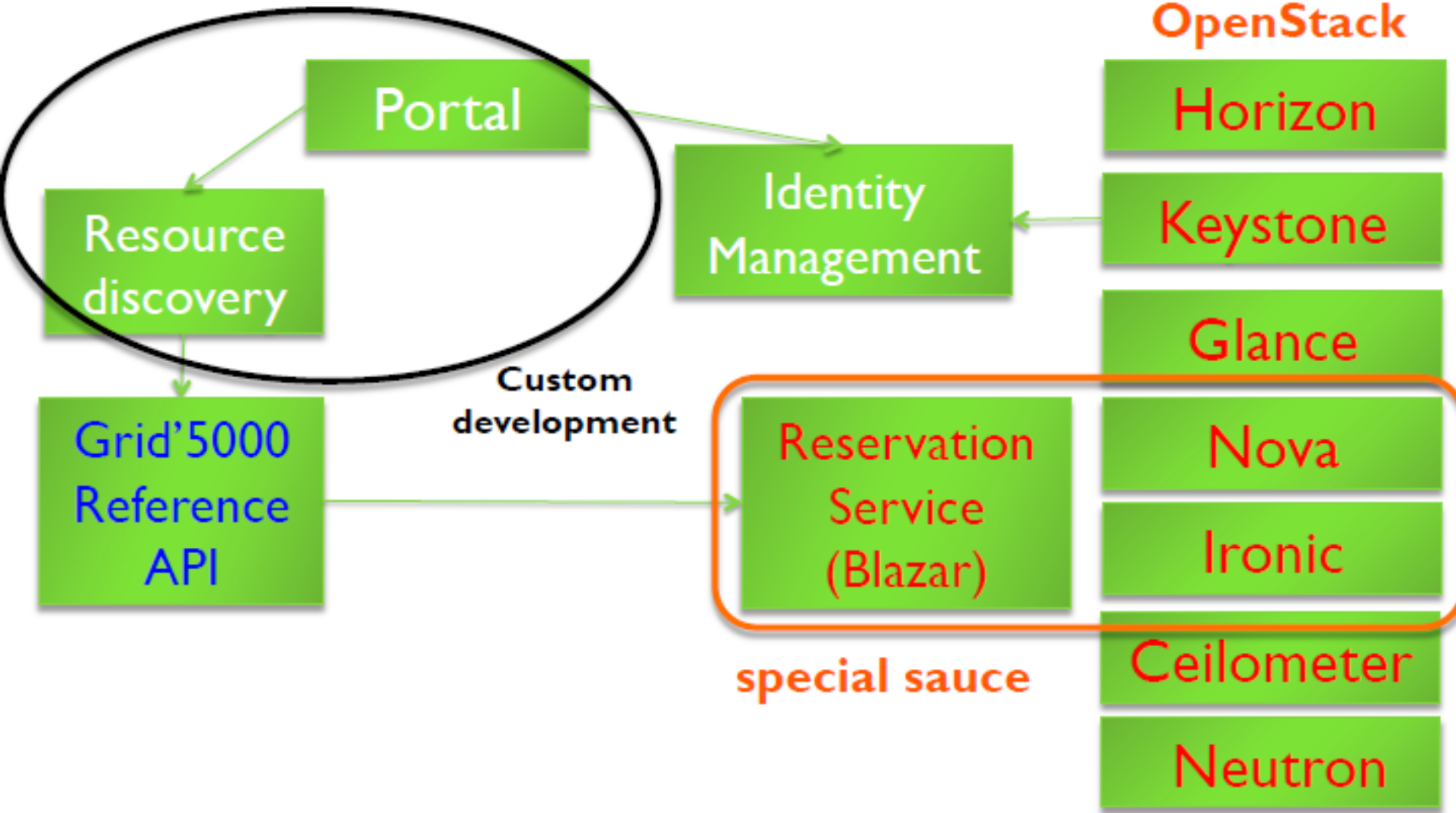


Large Scale Clouds and Tenant Networks

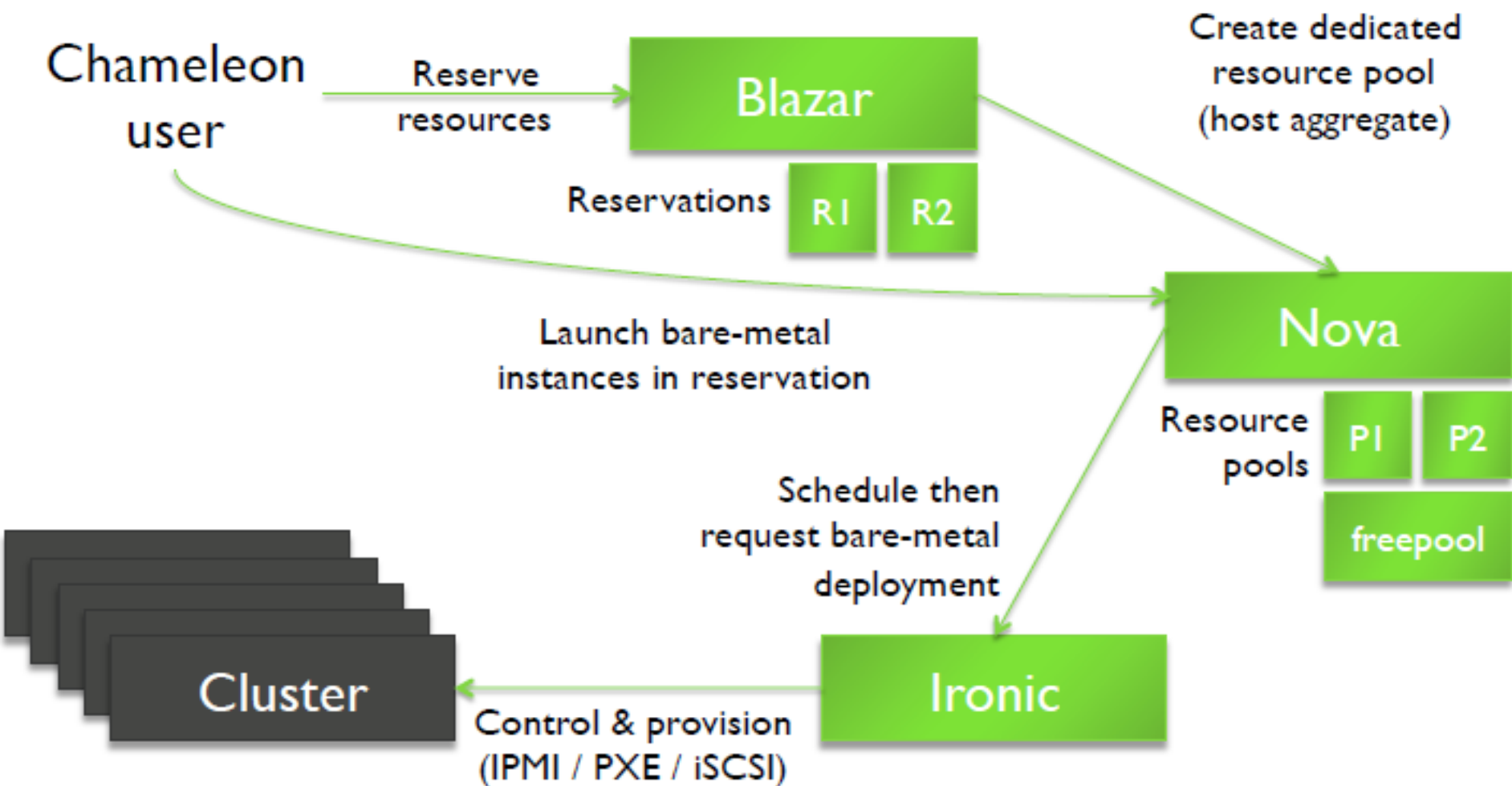
- **Large Scale Cloud Services Require Support for Multiple Tenants Within Single or Federated Distributed Cloud Environments**
- **There May Be 1,000s, 10,000s, or 100,000s of Tenants**
- **A Central NOC Cannot Manage and Control That Many Networks**
- **Tenants Require Their Own Tools For Network Design, Implementation, And Production Operations**
- **Consequently, Architecture and Techniques Are Being Developed To Enable Tenants To Use “Self-Service” Networks, With Autonomous Management, Control, and Data Planes**



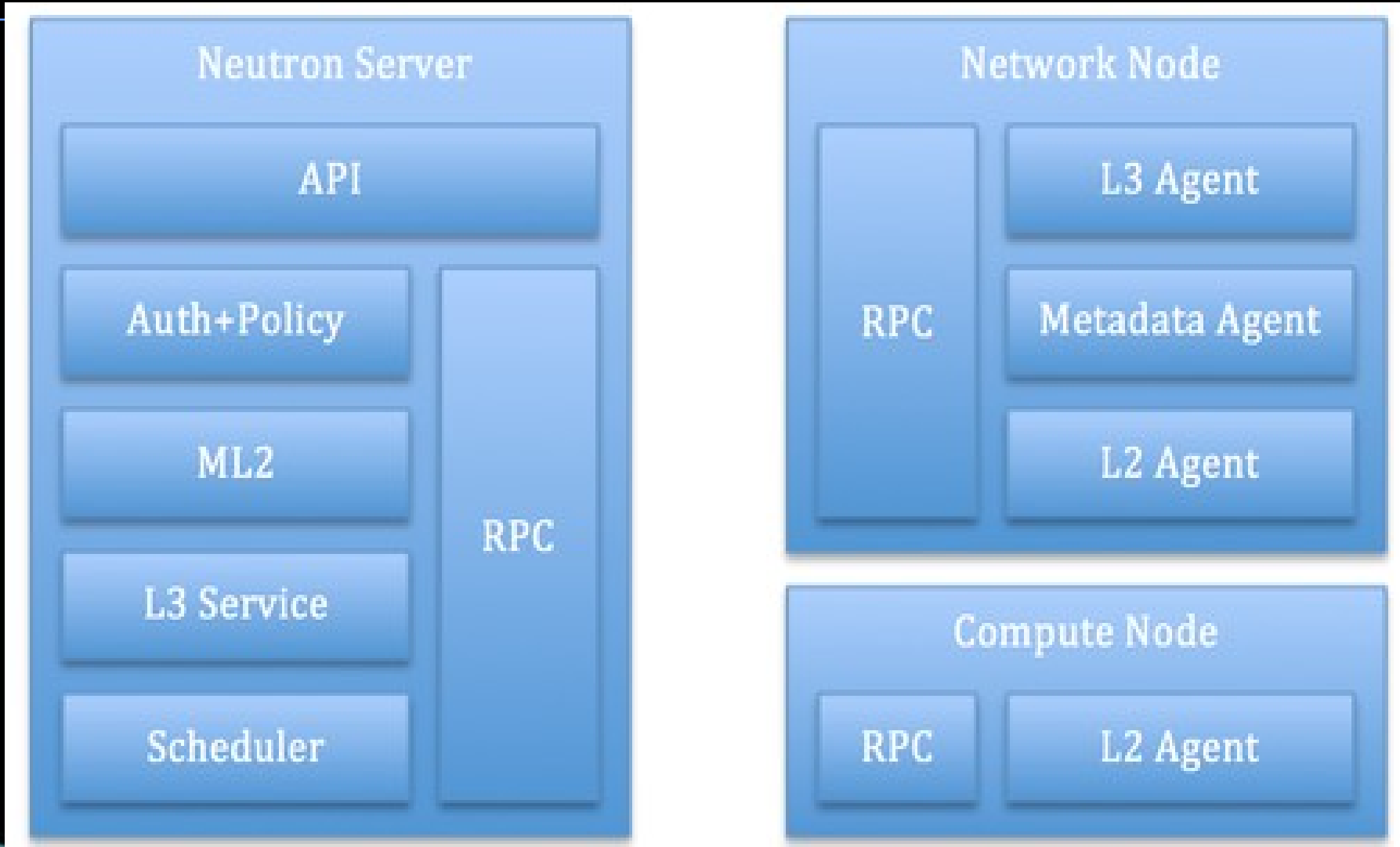
CHI: OVERALL ARCHITECTURE



HOW DOES IT WORK INTERNALLY?

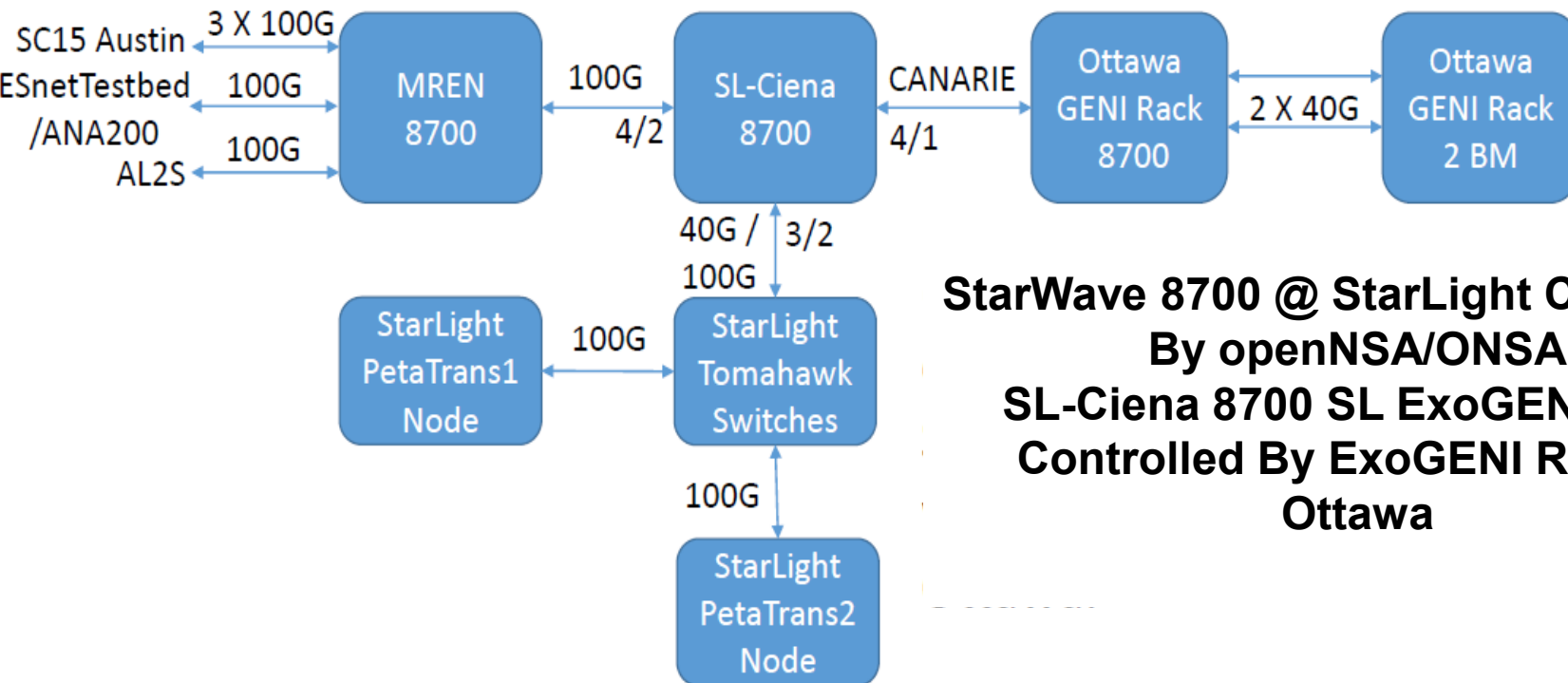


Open Stack SW Architecture For Neutron Reference Platform



Multi-Tenant 100 GE SDX

Multi-Tenant 100GE Science Network Exchange SC15 NRE Testing Phase



**StarWave 8700 @ StarLight Controlled
By openNSA/ONSA
SL-Ciena 8700 SL ExoGENI Rack
Controlled By ExoGENI Rack in
Ottawa**