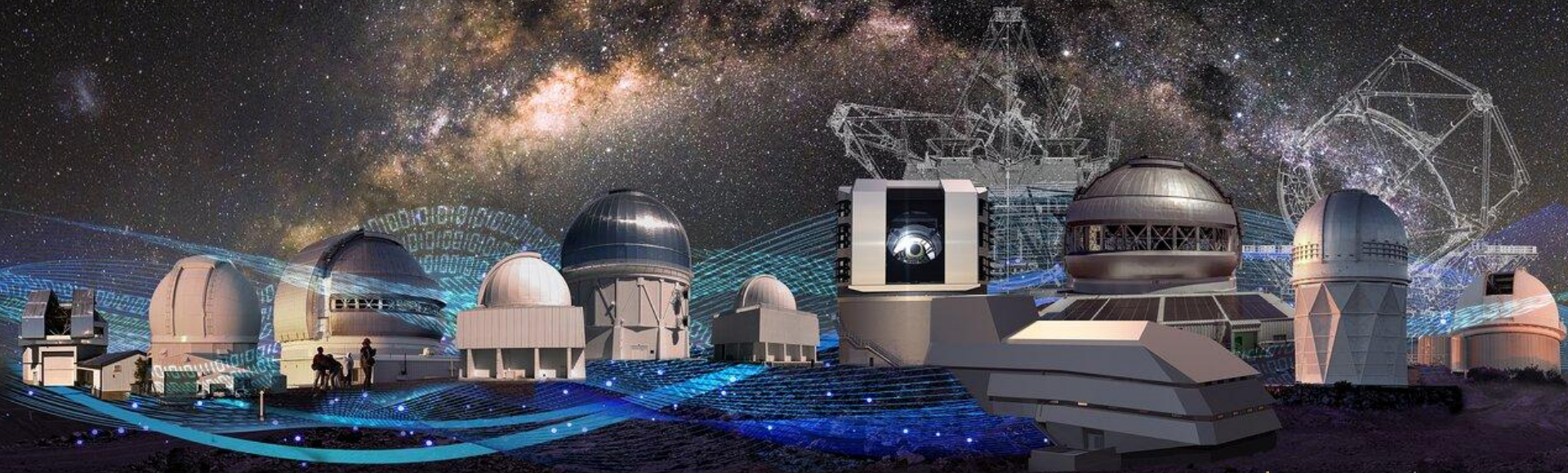


NOIRLab - IT Ops



Christopher Morrison, Mauricio Rojas, Eduardo Toro
SA3CC Meeting 2023





Agenda

- NOIRLab IT Operations (ITOps)
- Backbone Networks Activities
 - La Serena Center, Tucson Center
- NOIRLab Program Integration
 - CSDC
 - Gemini and MSO
- NOIRLab/ITOPs Network Upgrade Project
 - Current Status





NOIRLab IT Operations

Next Generation Firewalls

- Advance in Hardware/Software standardization
- Increased number of **limited** Tunnel Profiles for Remote Observing Functionalities (CTIO & SOAR)
- Implementation 2FA / MFA : Using PingOne Cloud Service to NOIRLab
- ResearchSOC Initiative (<https://researchsoc.iu.edu/>)
- SecureX Implementation

Network Tasks on Backbone devices

- OS Upgrade on all devices that provide the connectivity to NOIRLab Backbone
- Planning new Topology using HA implementation

Network Services & Collaborative Tools

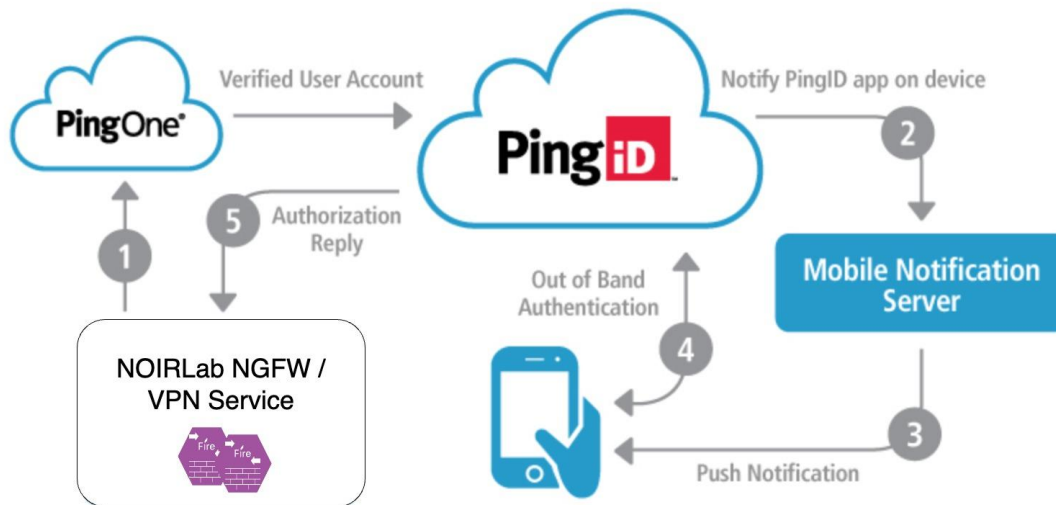
- Implementing Virtualization and Storage Clusters (CTIO, GN and Tucson)
- Unified productivity suite deployed to all NOIRLab Staff

NOIRLab IT Operations (ITOps)

Implementing
New Model to
Remote
Access
SSL/VPN

Using
PingOne

NOIRLab
Profiles

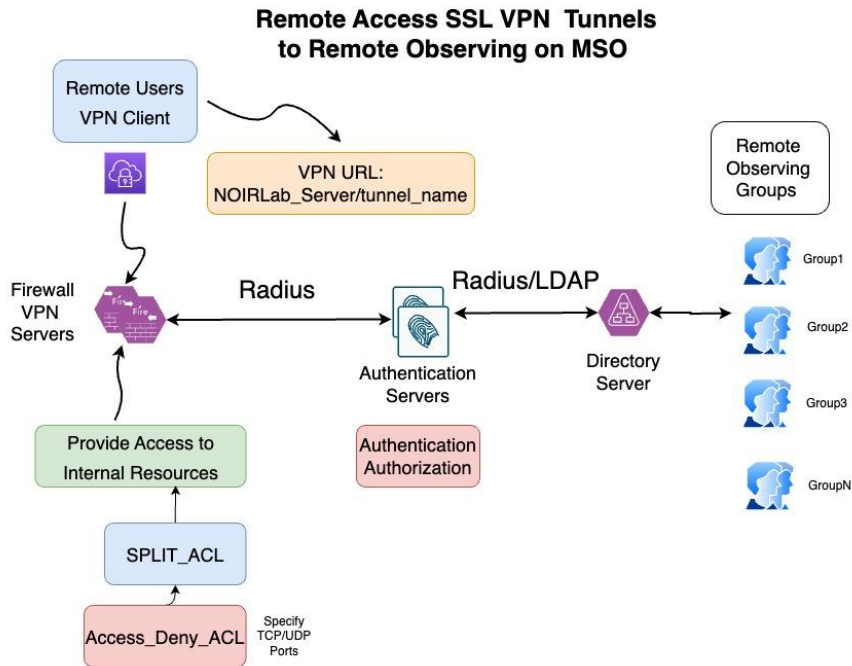


NOIRLab IT Operations (ITOps)

Planning
New Model to
Remote Access
SSL/VPN

Remote
Observing

Future : Integration
2FA/MFA





Backbone Network activities

La Serena Center (LSC)

- Chile to USA links
- La Serena <-> Santiago
- Cerro Pachon <-> La Serena
- DWDM improvements

Tucson Center (TUC)

- Internet 2 Link
- Tucson <-> Kitt Peak
- Fiber Optic recovery

Hilo Center (HBC)

- Internet 2 Link
- Hilo <-> Mauna Kea



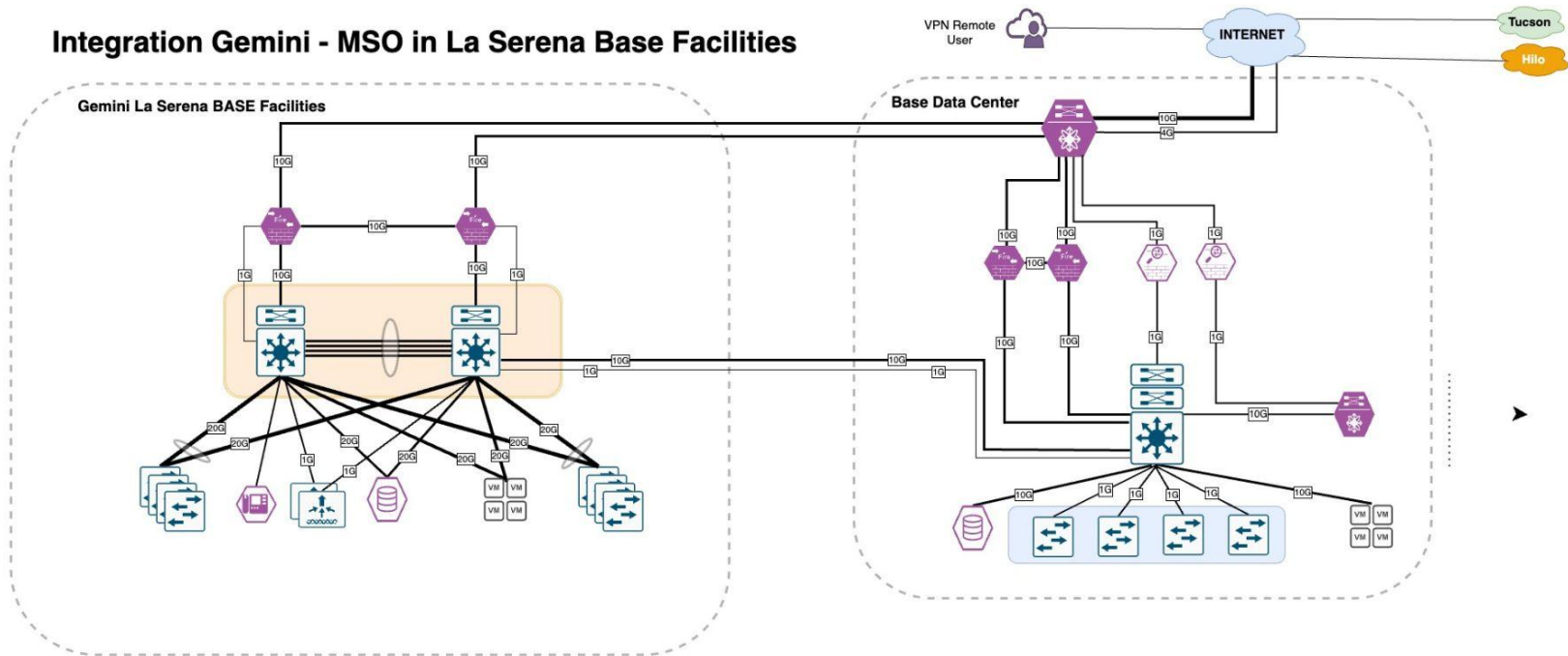
NOIRLab Program Integration

- CSDC (Community Science & Data Center)
 - Working together to implement improvements to:
 - Benefit service delivery
 - Establish high-availability, reliable, resilient and secure services
 - Offload system administration to service teams
- Gemini & MSO Integration
 - Continued implementation of secure interconnections between Programs
 - Leveraging new NOIRLab IT infrastructure to improve inward and outward-facing services.



Gemini & MSO Integration

Integration Gemini - MSO in La Serena Base Facilities





NOIRLab Network Upgrade Project

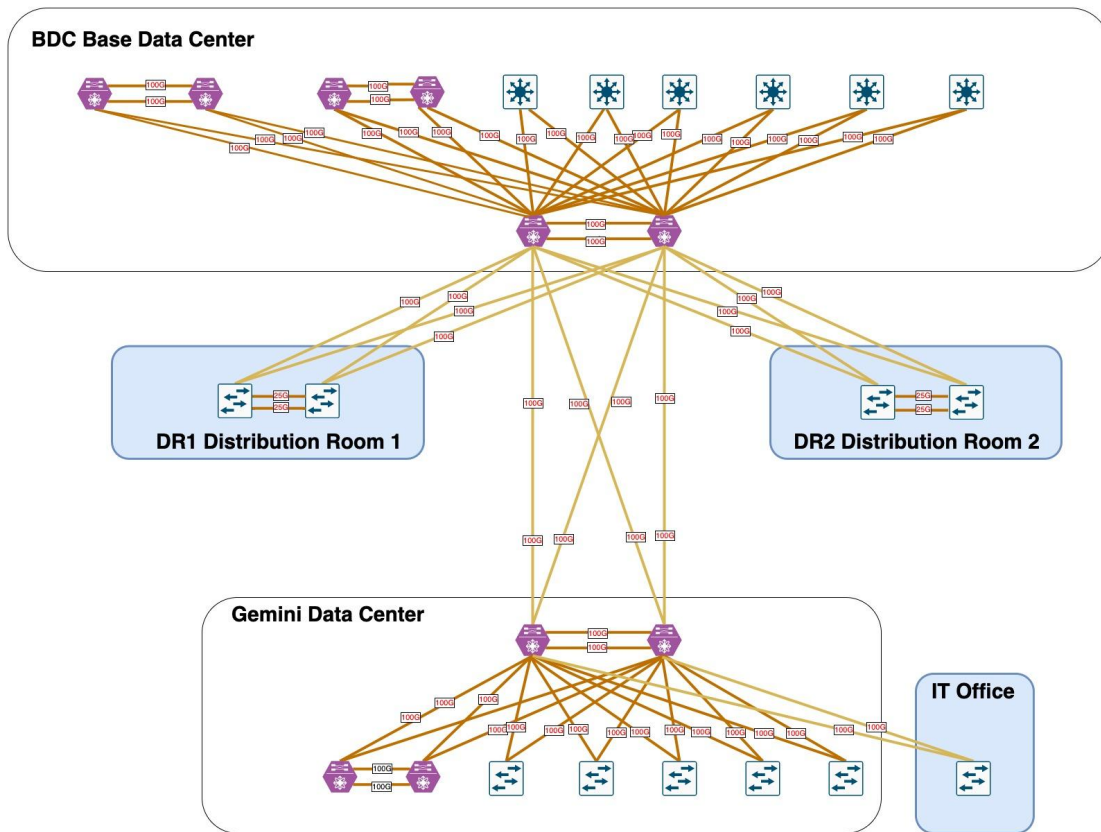
NOIRLab Networking Upgrade Project

- LAN Design in all Locations : Still in progress
 - Priority : Tucson Base facilities (Design and Purchase equipment)
- WiFi Upgrade : Implementation In Progress at La Serena Center
- WAN Design (VPN S2S Matrix updated, NGFW and Border routers standardization in HA)

Planning Implementation based on standard technologies (LSC) :

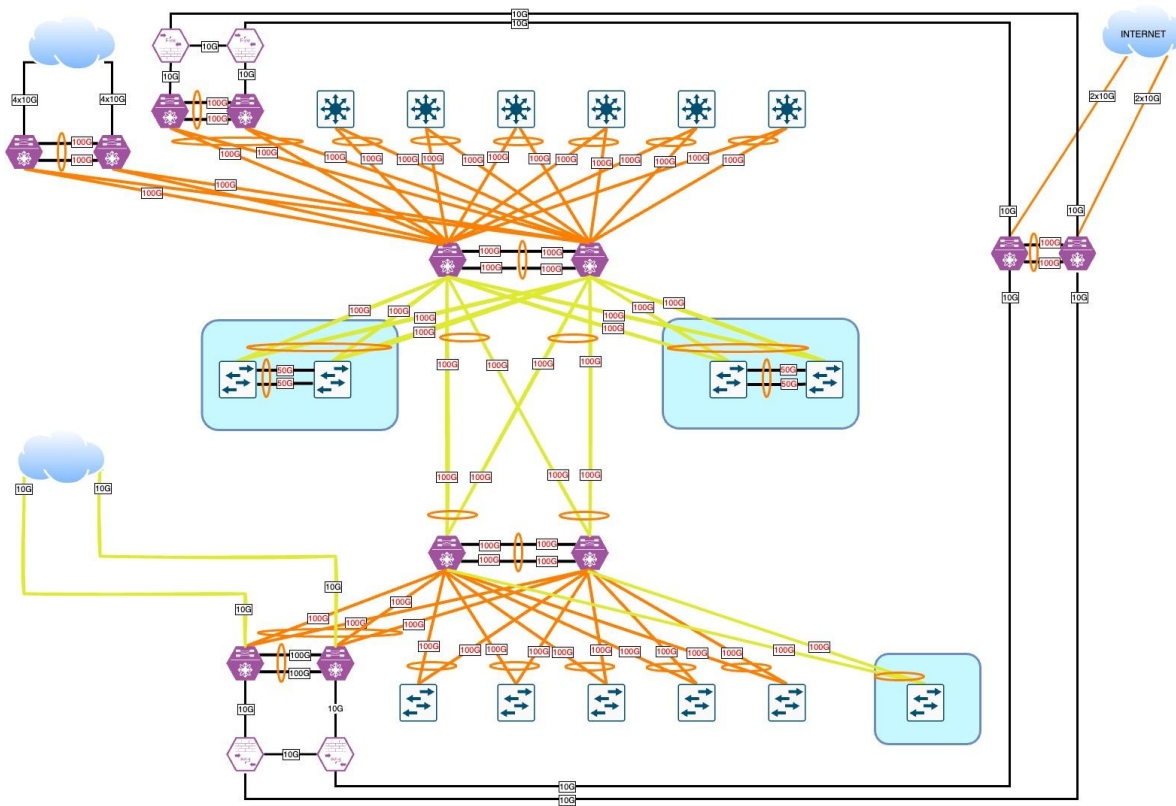
- Traditional Multi-Tier design / Fabric L2 Leaf-Spine (Using Multi-Link Aggregation - MLAG)
 - Core - Distribution - Access Topologies
- Preparing Setup in BDC La Serena (Optics Hardware / Unified Management Tools)

Requires studying vendor capabilities

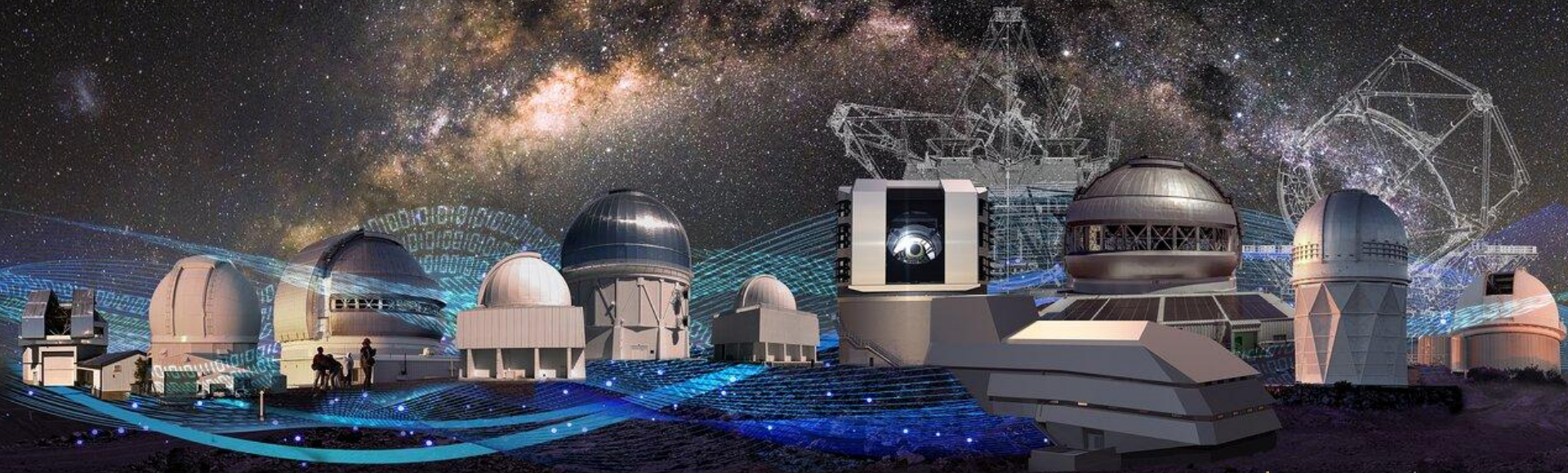




NOIRLab LAN Design : Integrated with AURA Backbone



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