

GLIF end-to-end architecture v2.0

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GLIF:
Healthy
for
you



Use Cases

Cloud Applications

*real-time, collab., on-demand
new applications and workflows*

Big Data (science+)

*massive, predictable data movement,
Simulation, Viz., Analysis*

Large sensors

*reliable, consistent, workflows
LHC, SKA, Video, Telescopes*

Infrastructure capabilities

ScienceDMZ

sustained data-transfer capability

nx100G

dark-fiber assets, extreme scale

**Packet-
Optical
open
exchange**

multi-layer flexible integration

Software & Services

Identity

Federation, Trust, multi-domain

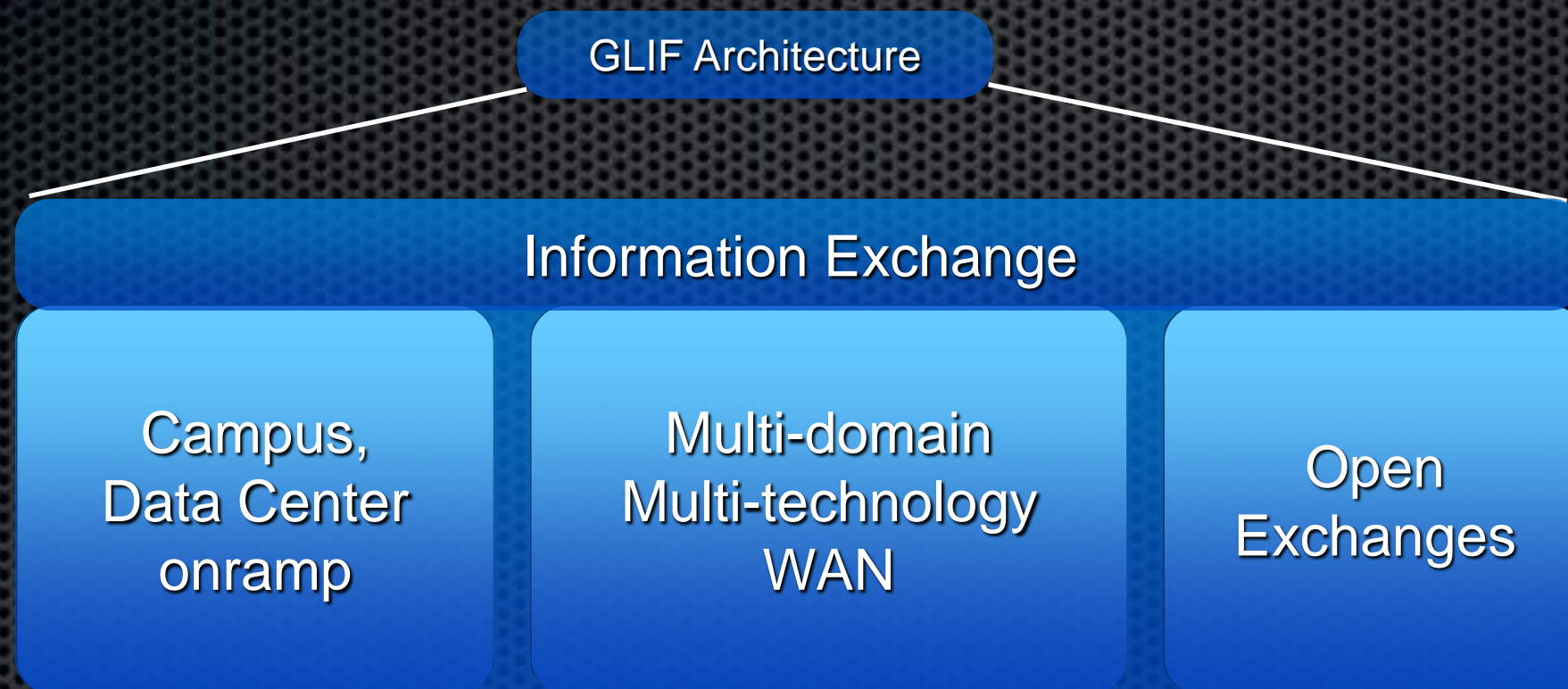
Programmable

SDN, NSI, Policies, Service composition

Middleware

Globus Online, Co-manage, others

End-to-End scope

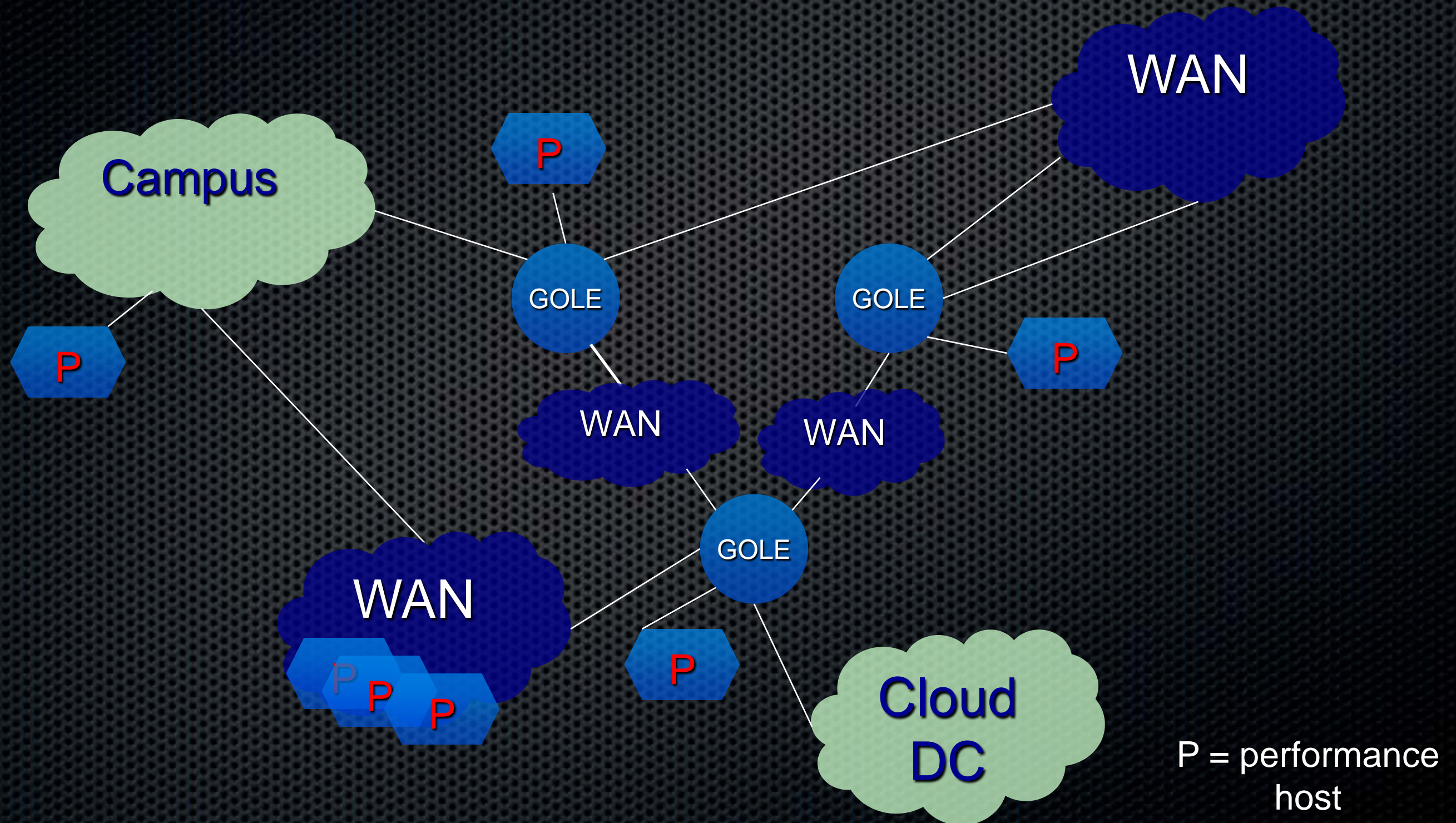


Some Challenges to solve:

Increase goodput for all applications

Deliver resilient, interoperable network services

Complexity View



Challenges

- Break complexity into simple, composable elements
- Common terminology
- Multi-layer, interoperable infrastructure
- Automation and programmability
 - DTOX, NSI Ops, AutoGOLE
- Policy and behavior
- Measurement and Verification

Topics of Discussion

Strawman proposals - brainstorming in GLIF

Choose technology directions with an eye towards implementation

Area	Technology WG	Implementation WG?
Campus/DC onramp	SDN/OpenFlow ScDMZ in the WAN IP address assignment (dynamic) misconfig detection tool?	FW Bypass Optical Switching integration with GO, other tools
Multi-Domain WAN	Virtualization Support for VO like collaborations Service composition Policy	L2/L1 SPB, MPLS, MPLS-TP...
Open Exchanges	Flow switching	Managing Link Policies perfSONAR instrumented GOLEs
Information Exchange	Multi-domain debugging privacy issues authorization/security challenges	

Next Steps

- Terminology/Terms of Reference
- Green Paper Skeleton
 - Strengths, weaknesses, opportunities
- Use Cases/Prioritize projects to be spawned in GLIF
 - Short-list of topics to discuss and debate as immediate next steps
- Present the short-list of topic identified
- Create a landing site for GLIF Architecture
- Ask the applications group to focus on the campus upgrade/architecture