

# CICI: Creating Dynamic Superfacilities the SAFE Way

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# Superfacilities

DOE has coined the term *superfacility* to describe an integration of two or more existing facilities (e.g. instruments, compute resources, data repositories) using high-performance networks and data management software in order to increase scientific output.

Issues:

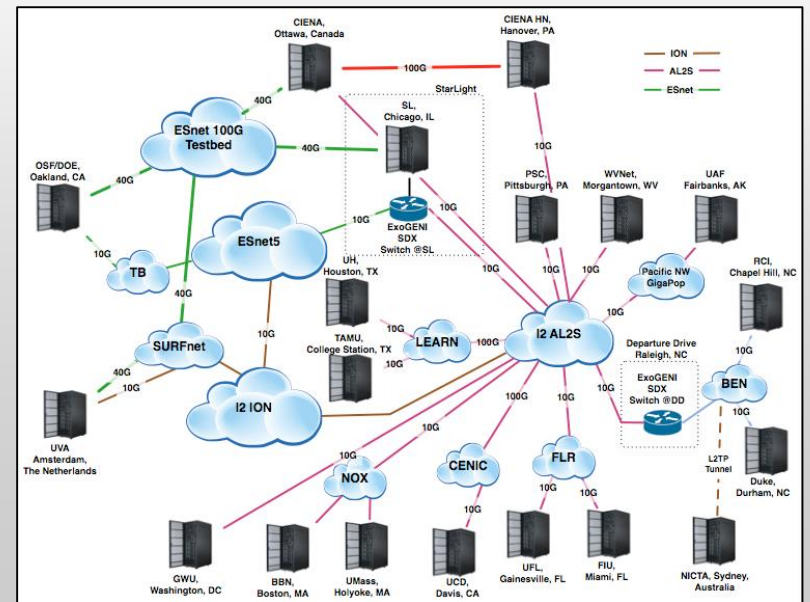
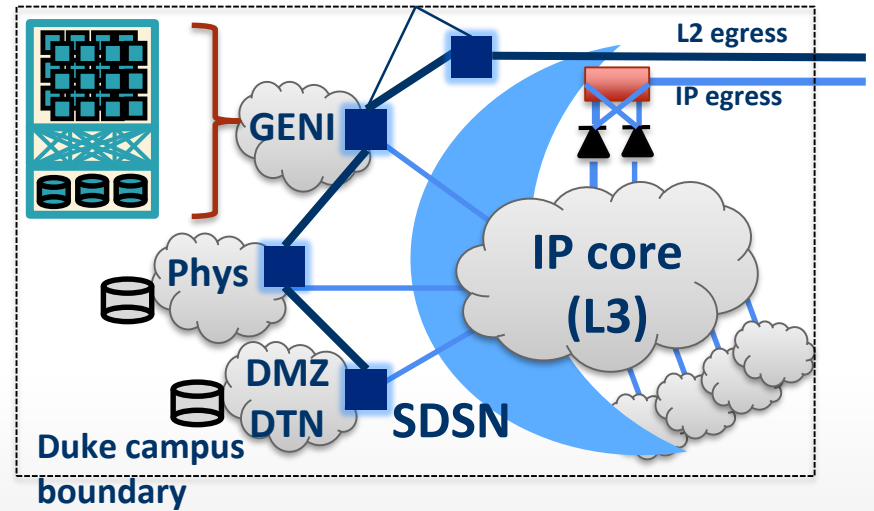
- Manual creation is time consuming
- Only worth the effort for large long running project (i.e. LHCONE)
- “Handshake” security model



# Recent Advances

- Science DMZ
  - Duke’s Software Defined Science Network (SDSN) (NSF CNS-1243315)
- Federated Infrastructure
  - ExoGENI (NSF GENI)
  - 20+ sites
  - Enables “stitching” resources (i.e. creating superfacilities)

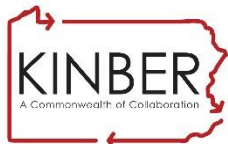
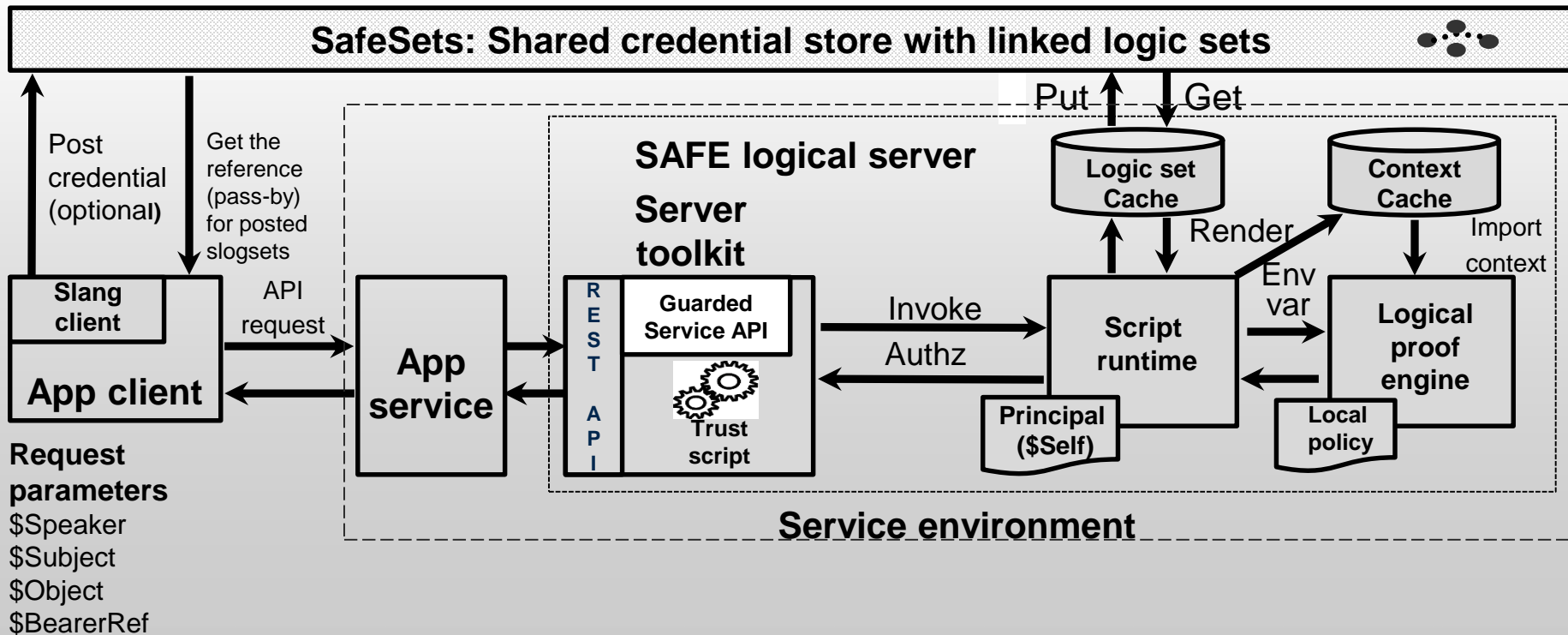
Building Blocks for Dynamic Superfacilities



# Security and Trust: SAFE Service

Secure Authorization for Federated Environments (SAFE)

Jeff Chase, Duke. Silver project (NSF CNS-1330659)



# Dynamic Superfacilites using SAFE

- Goals
  - Enable creation of superfacilities on-demand
  - Develop a framework to interpose strong and flexible authorization for each stitch operation using SAFE
  - Enable basic ExoGENI virtual SDX

