U.S. DEPARTMENT of ENERGY

BERKELEY LAB

ESnet
ENERGY SCIENCES NETWORK

Perimeter Security Update

Eli Dart

Network Engineer, Science Engagement

dart@es.net

LHCONE 57

Naples, IT

1 October, 2026

Reminder: Motivation

- HL-LHC is coming
  - 100% performance for DC29, Run 4 in 2030
  - 10x Run 3 traffic rates
- The community must be prepared
  - Capacity upgrades
  - Ability to use that capacity productively
- Perimeter security is a key barrier
  - Need community-wide best practice, both technical and policy
  - Must avoid performance problems caused by naive implementation of security controls
- Best practice community document helps WLCG sites
  - Brings full clout of LHC collaborations to conversations with security officers
  - Helps security officers by separating risk domains and giving them performance scalability in a resource-constrained environment
    - We want security officers as collaborators, not opponents
  - Brings together expertise from across the community to benefit all WLGC sites

We Appear Stalled

- Several people have indicated that this is a valuable effort
- For a variety of reasons there has been very little progress
- Questions going forward:
  - Is this something that we want to continue?
  - If so, what is the right path forward?
- Some thoughts:
  - Hardware prices have scrambled computing plans
  - We don’t yet know how much performance gain we can get from config
    - That means: more performance from existing hardware
  - This seems like a good idea - if so, how do we move forward?

Discussion

- Very interested in everyone's perspective
- Some thoughts:
  - Perimeter security is part of the larger host tuning effort
    - Tuning involves hosts, networks, etc.
    - Performant perimeter security design is an enabler of performance
  - Broad vs. deep: do we focus first on a few sites, or on the community as a whole?
  - The effort thus far has been focused on a large, comprehensive document. Is it better to produce something shorter in the interest of moving forward more quickly?
- Other thoughts?

U.S. DEPARTMENT of ENERGY

BERKELEY LAB

ESnet
ENERGY SCIENCES NETWORK

Thanks!

Eli Dart

dart@es.net

https://my.es.net/

https://www.es.net/

https://fasterdata.es.net/