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SCION based ScienceDMZ and fast file transfer for HPCCs

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Today's research often relies on a high volume of data. While universities cannot always provide the computing resources to process a given amount of data, a high-performance computing cluster (HPCC) offers a cost-effective alternative for re - searchers.
With a SCION-based Science DMZ, the HPCC and each university operate as independent autonomous system (AS), managing their own cryptographic keys and enforcing their own network rules. Each AS also has its own LightningFilter deployed. High-volume data transfers between a university and the HPCC are performed using dedicated, SCION-based systems, such as Hercules, which route their traffic through Lightning-Filter instead of the network's general-purpose firewall.
With LightningFilter, the ASes can control the amount of traffic received from the other ASes or from specific hosts.
For instance, the HPCC can enforce different rate limits for each university while guaranteeing a certain throughput for specific hosts. Such limits are important to protect the services offered from misbehaving hosts that consume more bandwidth than agreed and thus partially or completely block other hosts from reaching the service.

We will present the latest developments on SCION based ScienceDMZ and showcase some early deployments and PoCs.

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