Site in a Box: Deploying Centrally Managed Servers

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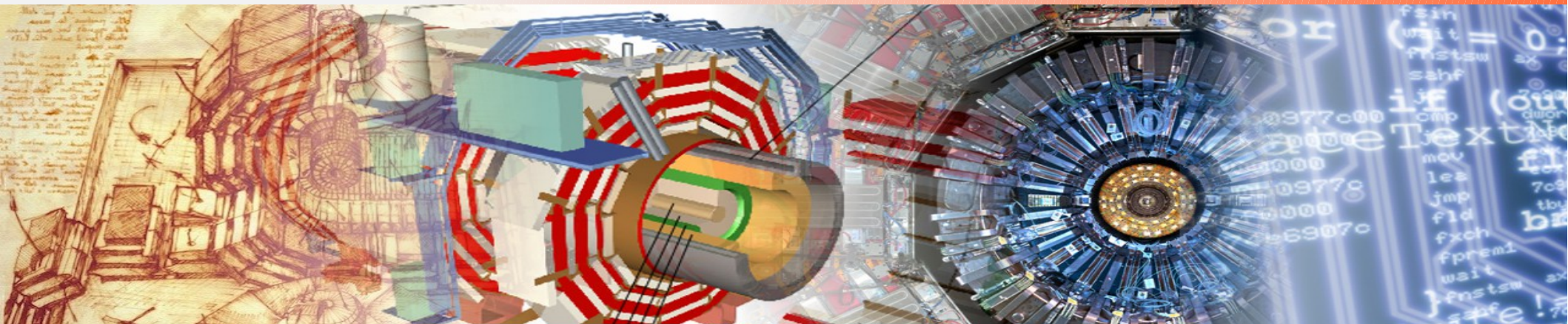


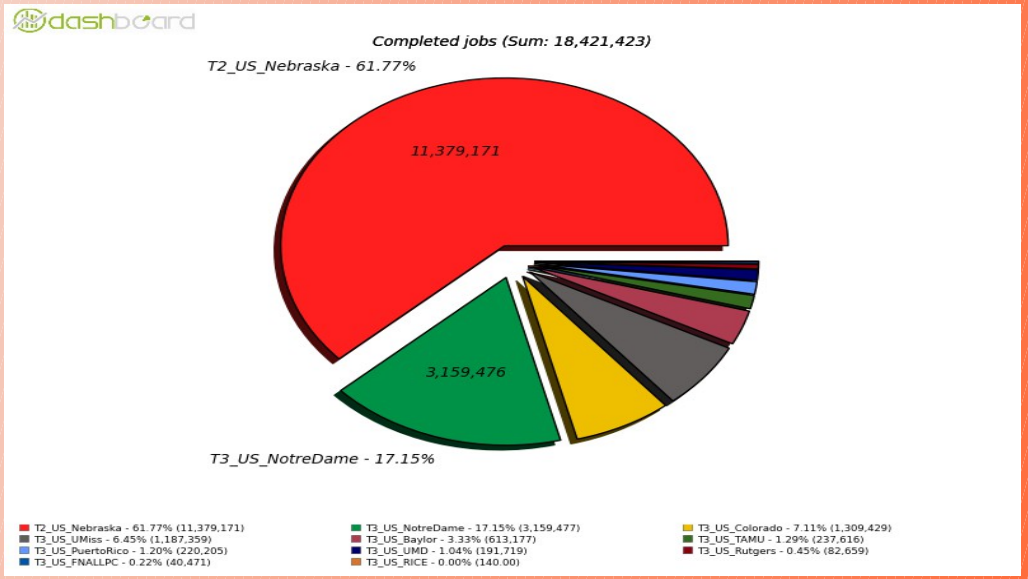
USCMS T3s

- Current usage and contributions
- Original T3 Recommendations
- The Pacific Research Platform (PRP) Model
- Transitioning the PRP to a Broader Audience
- T3 SiaB Deployed Sites

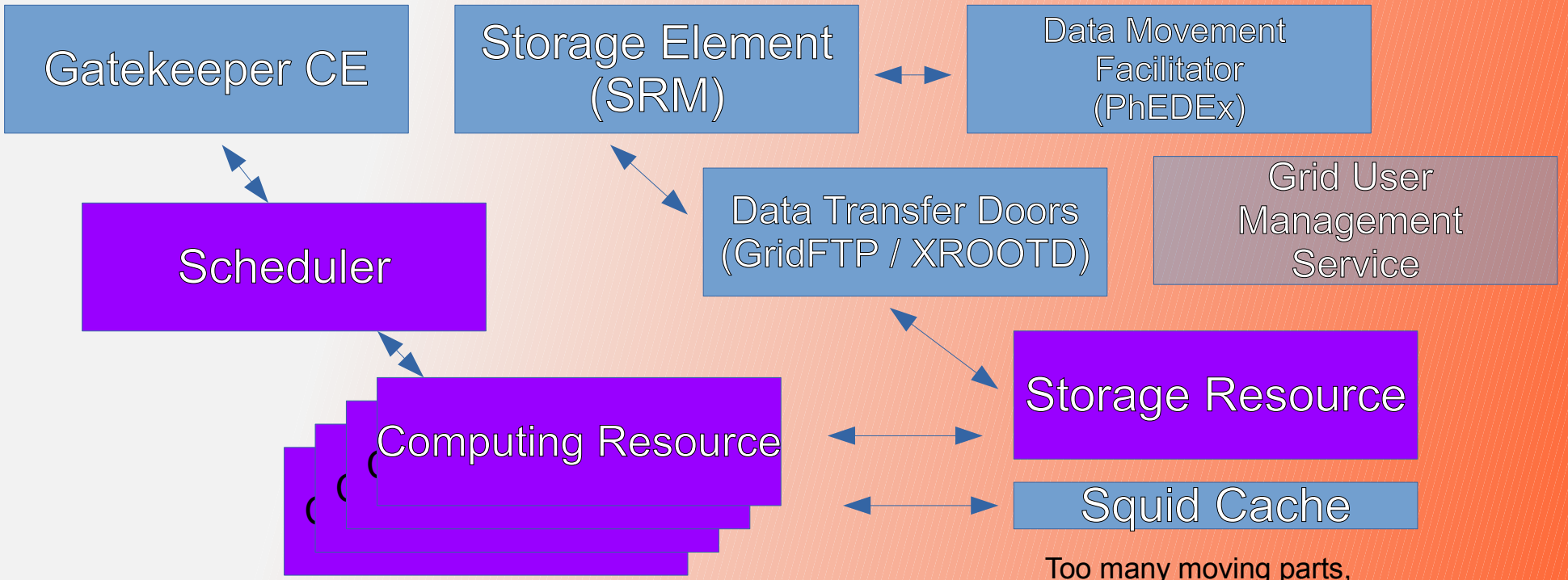
Are T3s still a thing?

- In the last calendar year T3s in the US Have contributed about as much as a single US T2.

- In this coming era of resource constraints T3s may really come into their own and the experiment should strive to ease the barrier of entry.

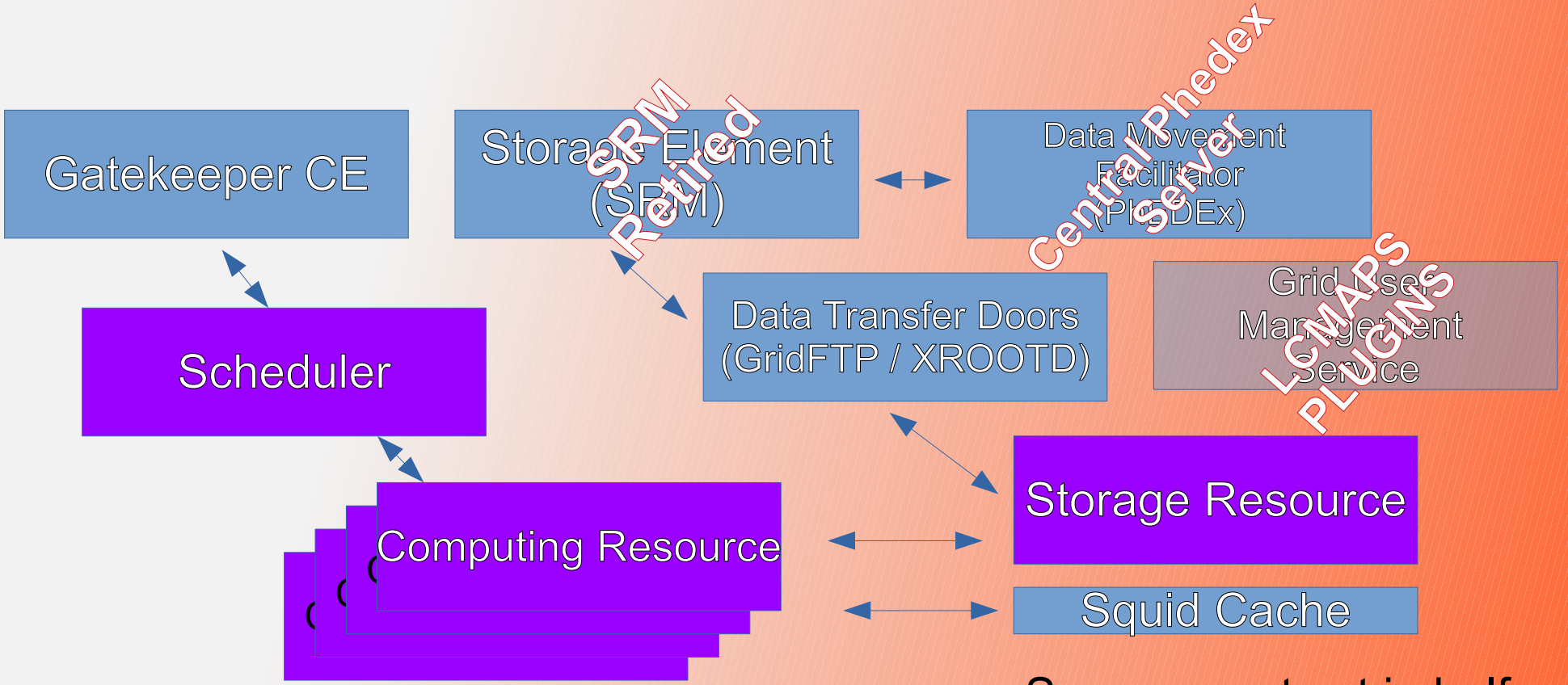


The Old Pathway to a T3



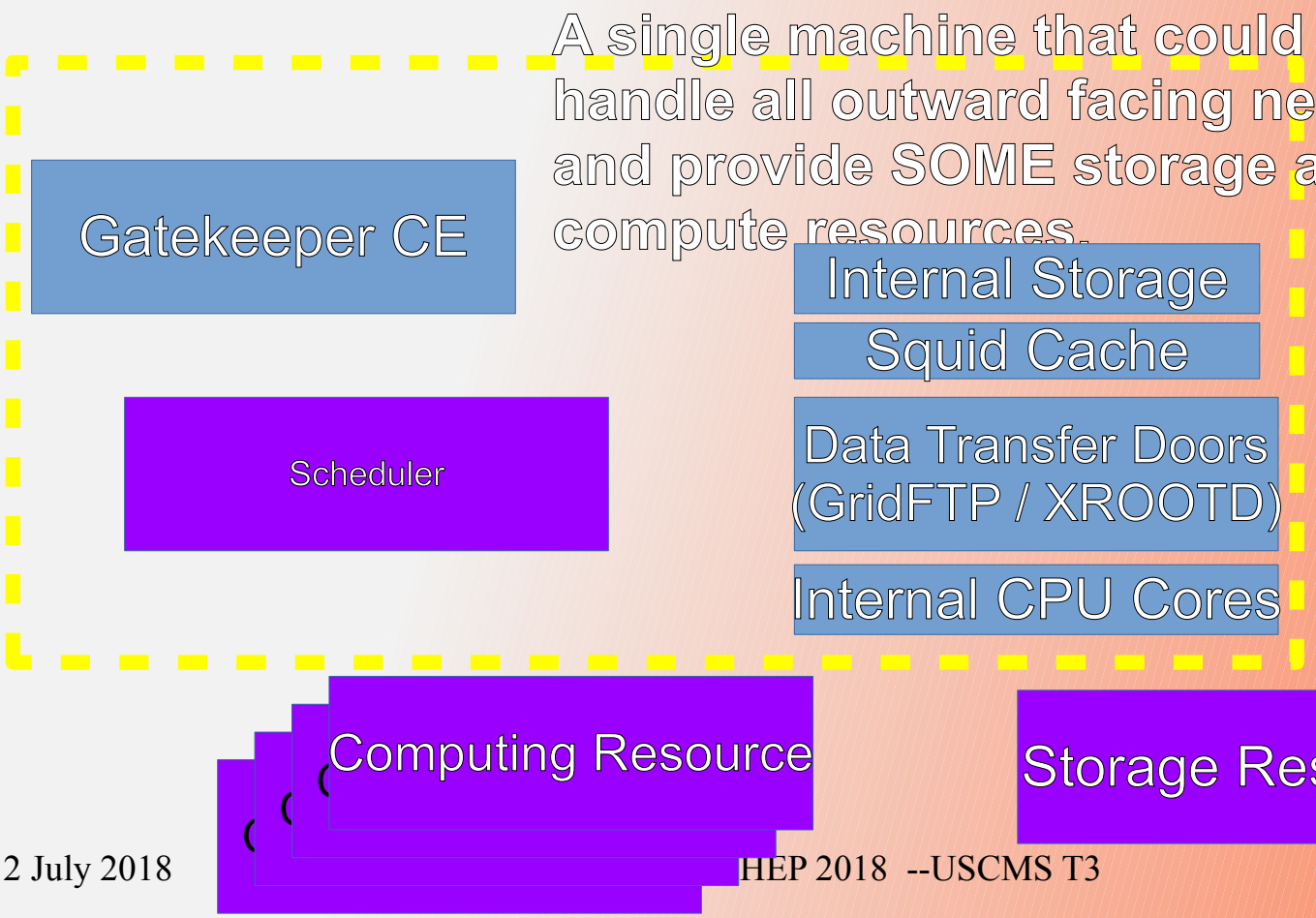
Too many moving parts, too much responsibility

How The Picture Has Changed



Server count cut in half

What would the “Ideal” SiaB be?



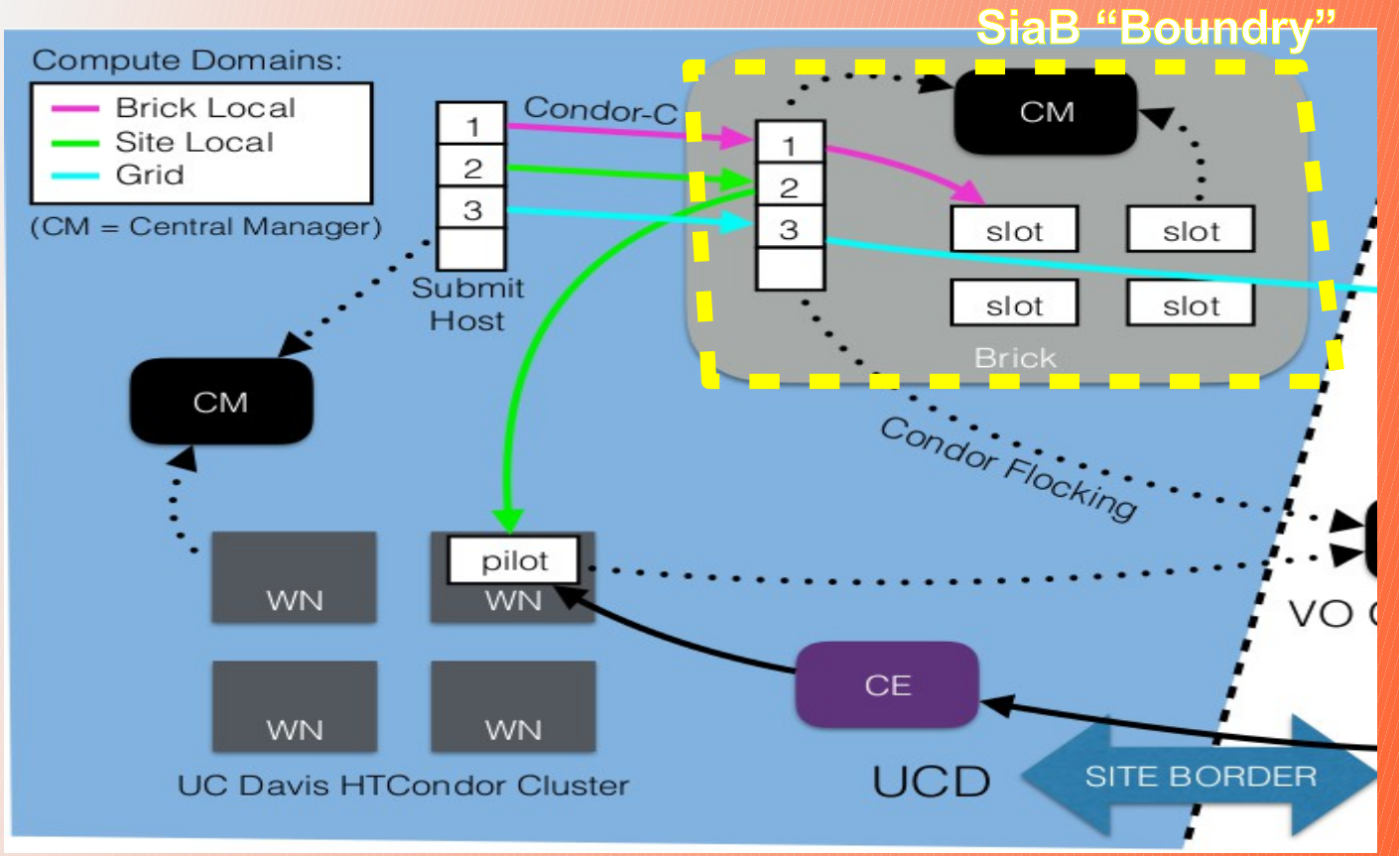
Factors such as site policy, internal site privilege restrictions and scalability make the ideal SiaB unreasonable if not impossible.

The PRP – Pacific Research Platform

Site in a box provides a UC Tier 3 site with some slots, an XROOTD and Squid resource.

This box is centrally managed by Tier 2 admins and factory experts from a centralized Puppet instance at UCSD.

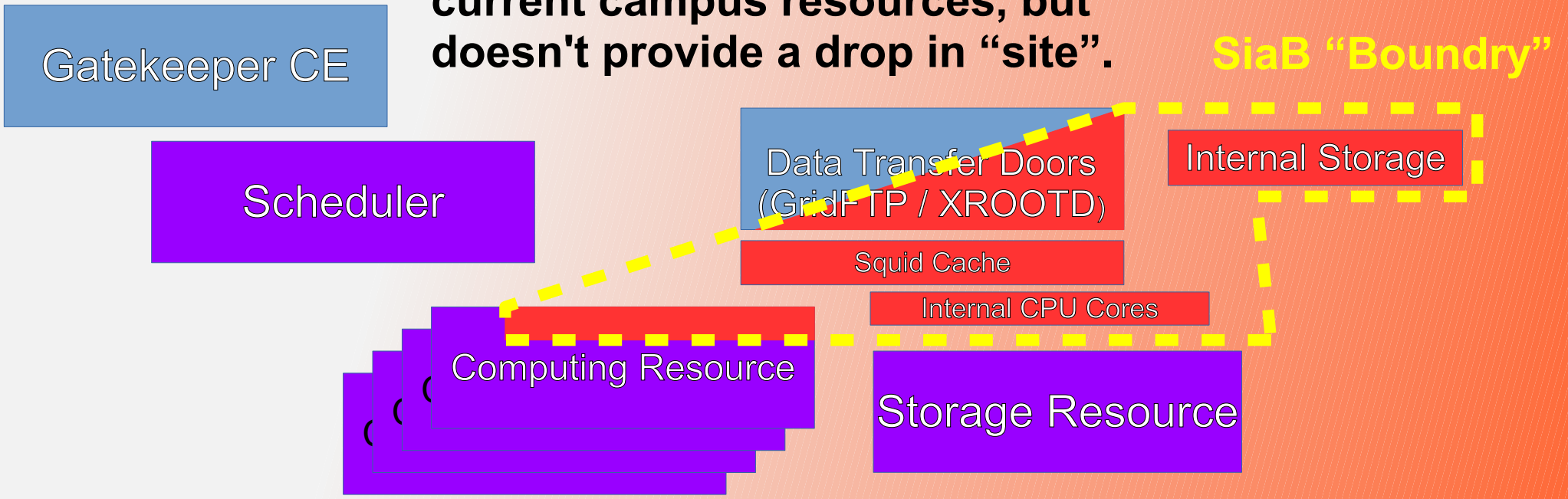
The suggestion was made to adopt this project to USCMS at large in the US and reuse much of their work and infrastructure



Credit: J.Dost CHEP 2016 (Slides)

How does the PRP Model alter a current T3?

XROOTD, Squid, some storage and a few cores. All of this is hopefully easy to integrate with current campus resources, but doesn't provide a drop in "site".



XOOTD Services – Data Access is Key

There are actually three separate XROOTD uses for this box.

1) Server
   Serve local data out to other sites to allow analyzing local data on remote resource

2) Redirector
   Register local data into the XROOTD namespace to allow remote sites to find local data shares*

*CHEP 2016 proceeding for server + redirector role in a federated storage system

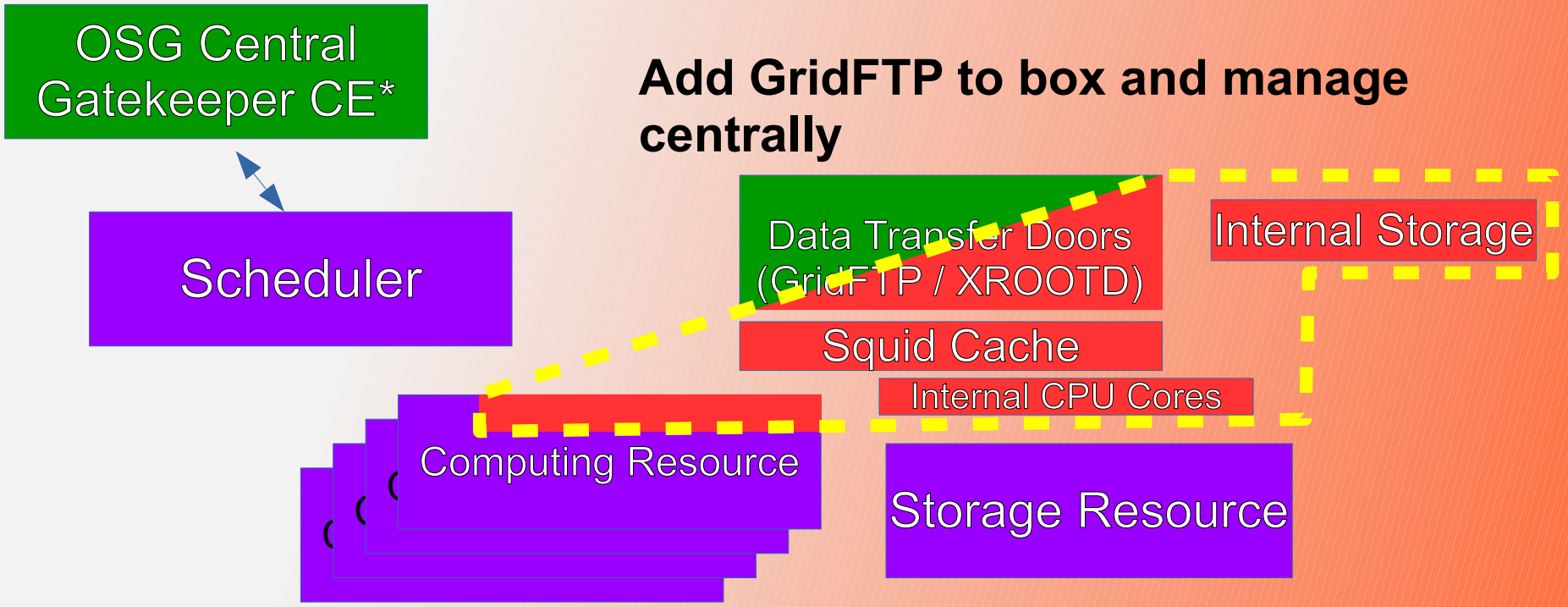
3) Proxy Cache
   The significant disk storage shipped on the box can be used to limit WAN traffic to the site*

*CHEP 2016 proceeding for proxy cache

What further can be done?

Replace gatekeeper with OSG's Central Service

Add GridFTP to box and manage centrally



*OSG Hosted CE Documentation

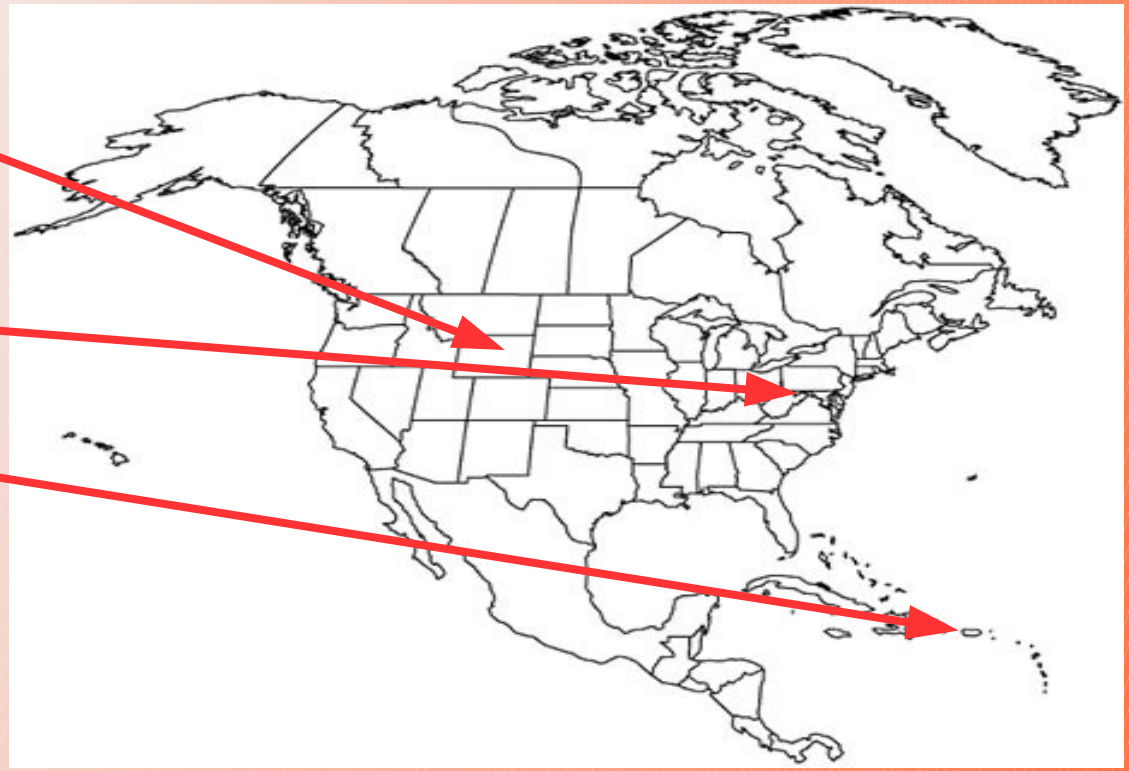
Where have we deployed test boxes?

T3 @ U. of Colorado Boulder

T3 @ U. of Maryland

T3 @ Puerto Rico

Three sites this year, more to come.



What Challenges Remain?

- This approach still requires initial effort and communication from the sites for needed configuration parameters to be propagated up to the centralized configuration server.

  This may not sound like a huge problem but the T3 support team in encountering very strange network topologies and difficulty engaging knowledgeable personal to help integrate this new box into their environment.

- Network commissioning still causes issues at sites.

- Certificate procurement has become more of an issue as the OSG CA has been retired. Certificate management cannot be handled remotely in a proven secure way.

- Even with three servers deployed it's difficult to define success for the boxes.

Tier 3 Not-So-Site-in-a-box

Work continues to improve the Tier 3 experience.
The PRP project is currently being expanded to include a broader audience and the functionality continues to evolve.