

Contributing opportunistic resources to the grid with HTCondor-CE-Bosco

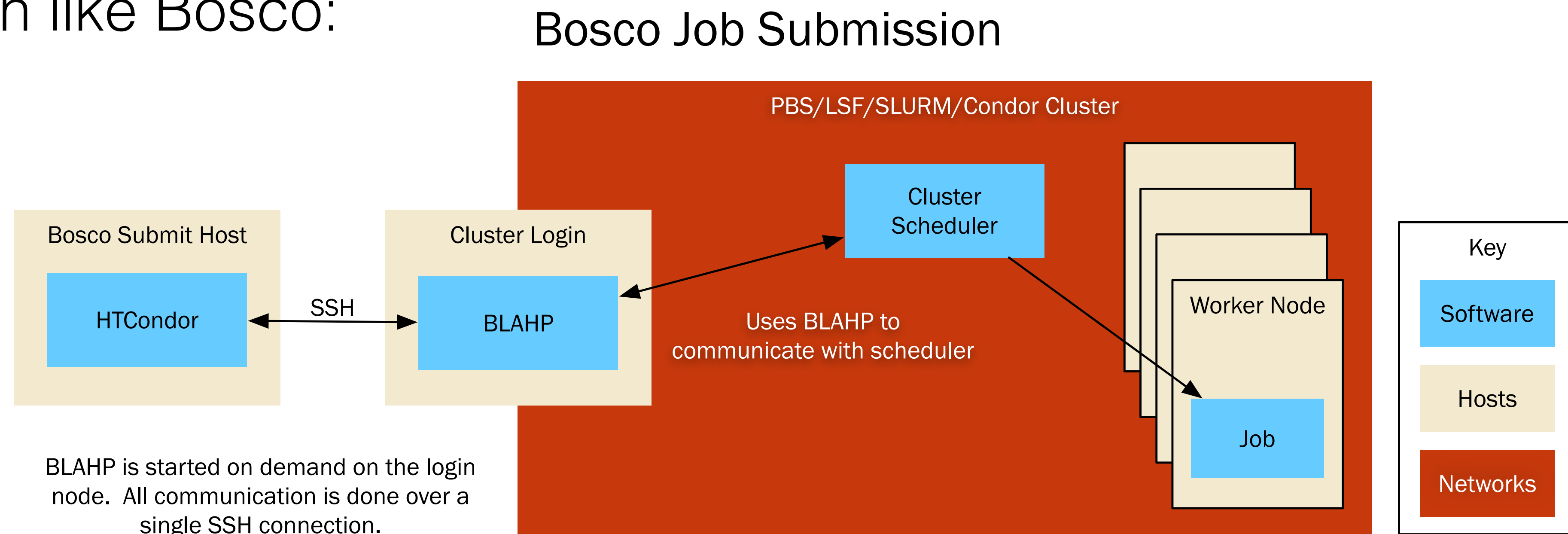
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Motivation

- Sites want an easy on-ramp to the OSG but the OSG full-stack can be daunting!
- Grid Certificates - Yuck. CE installation - Complicated (flexible?)
- However, most sites:
 - Can allow SSH pubkey-based auth.
 - Can easily add user accounts.

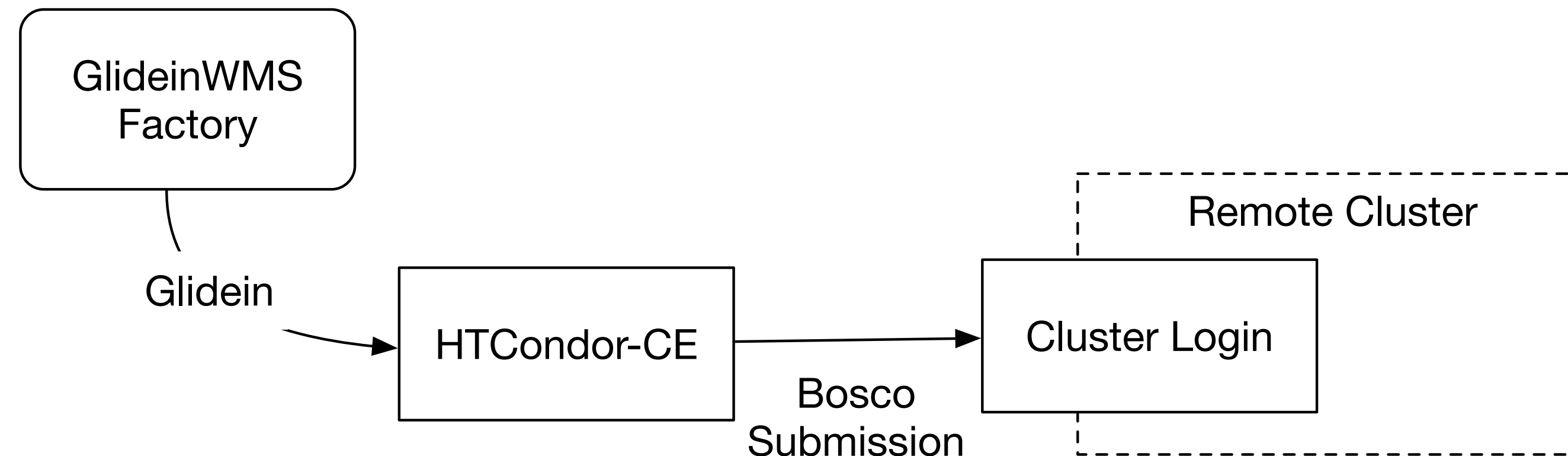
Motivation

- Lets use what the cluster admins are familiar.
- Access the cluster through the front door, the login nodes.
- Much like Bosco:



Our Proposal

- Create a new backend to the standard HTCondor-CE.
- Glideins submitted to this HTCondor-CE are routed to a remote job submission through Bosco
- Transparent to the users, glideins will come from GlideinWMS factories

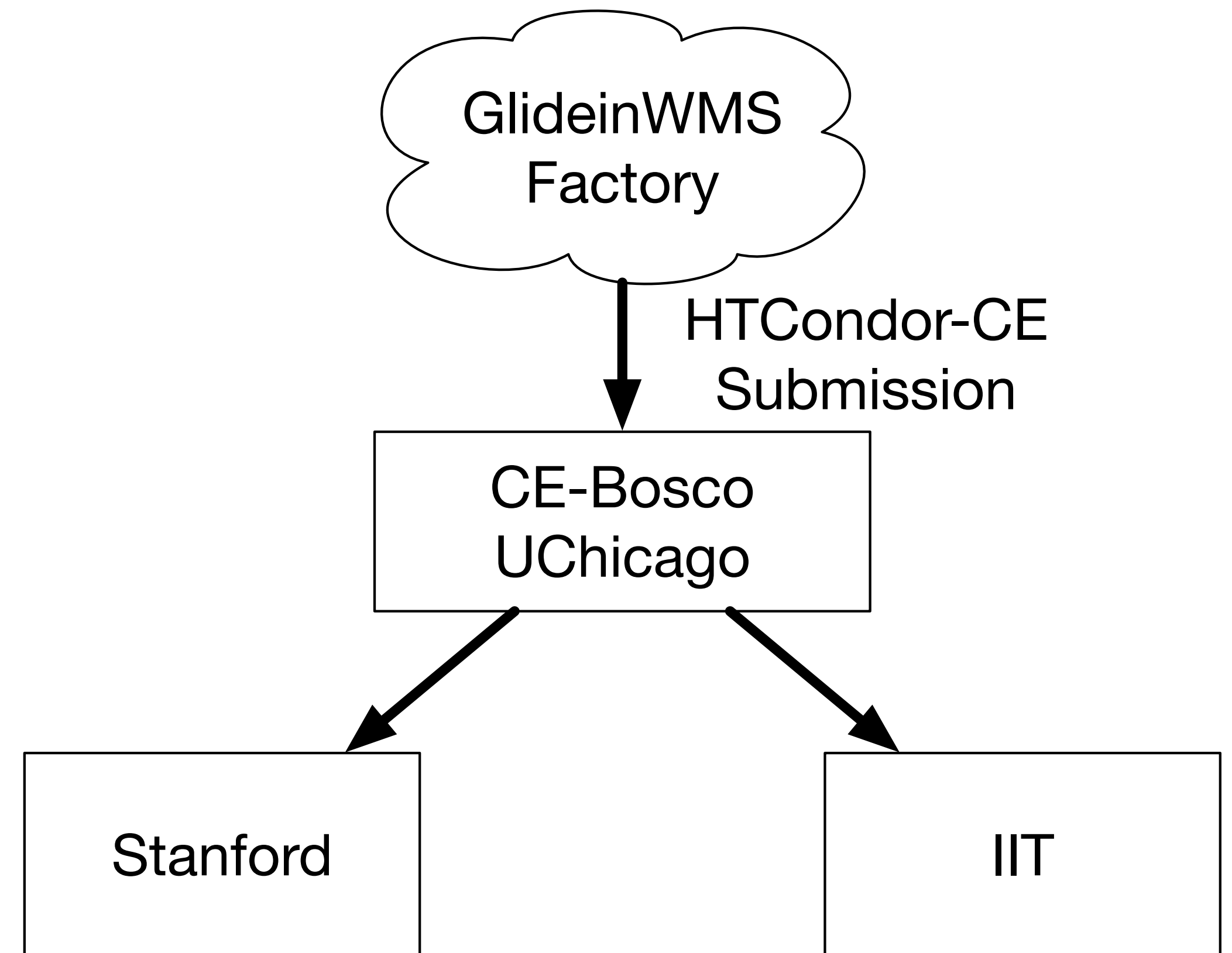


HTCondor-CE-Bosco Features

- By using an HTCondor-CE-Bosco, multiple VO's can submit to a Bosco instance
- Authorization and authentication is the same as any other CE
- Accounting is the same as any other CE
- But... The CE will submit to a remote cluster over SSH!

CE-Bosco in use

- UChicago hosts a CE which can send jobs to multiple resources
- Current, sends jobs to Stanford and IIT
- Next potential sites to connect are Ohio



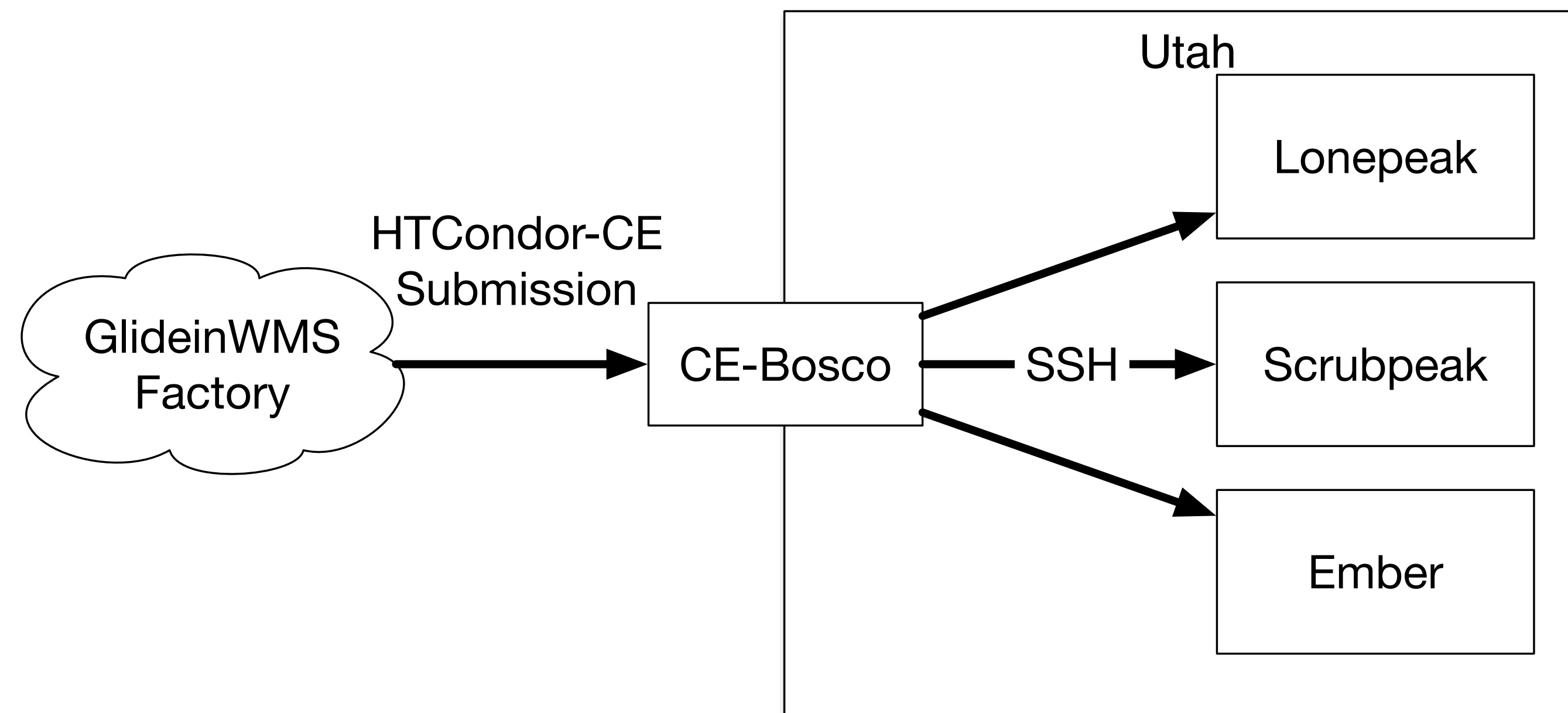
HTCondor-CE-Bosco Features

- Load balance through multiple routes
- Incoming jobs will be distributed between multiple routes

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JOB_ROUTER_ENTRIES = \  
[ \  
    GridResource = "batch slurm  
osguser1@lonepeak1.chpc.utah.edu"; \  
    TargetUniverse = 9; \  
    name = "Local_BOSCO_lonepeak1"; \  
] \  
[ \  
    GridResource = "batch slurm  
osgusere@ember1.chpc.utah.edu"; \  
    TargetUniverse = 9; \  
    name = "Local_BOSCO_ember1"; \  
] \  
[ \  
    GridResource = "batch slurm  
osguserk@kingspeak1.chpc.utah.edu"; \  
    TargetUniverse = 9; \  
    name = "Local_BOSCO_kingspeak1"; \  
]
```

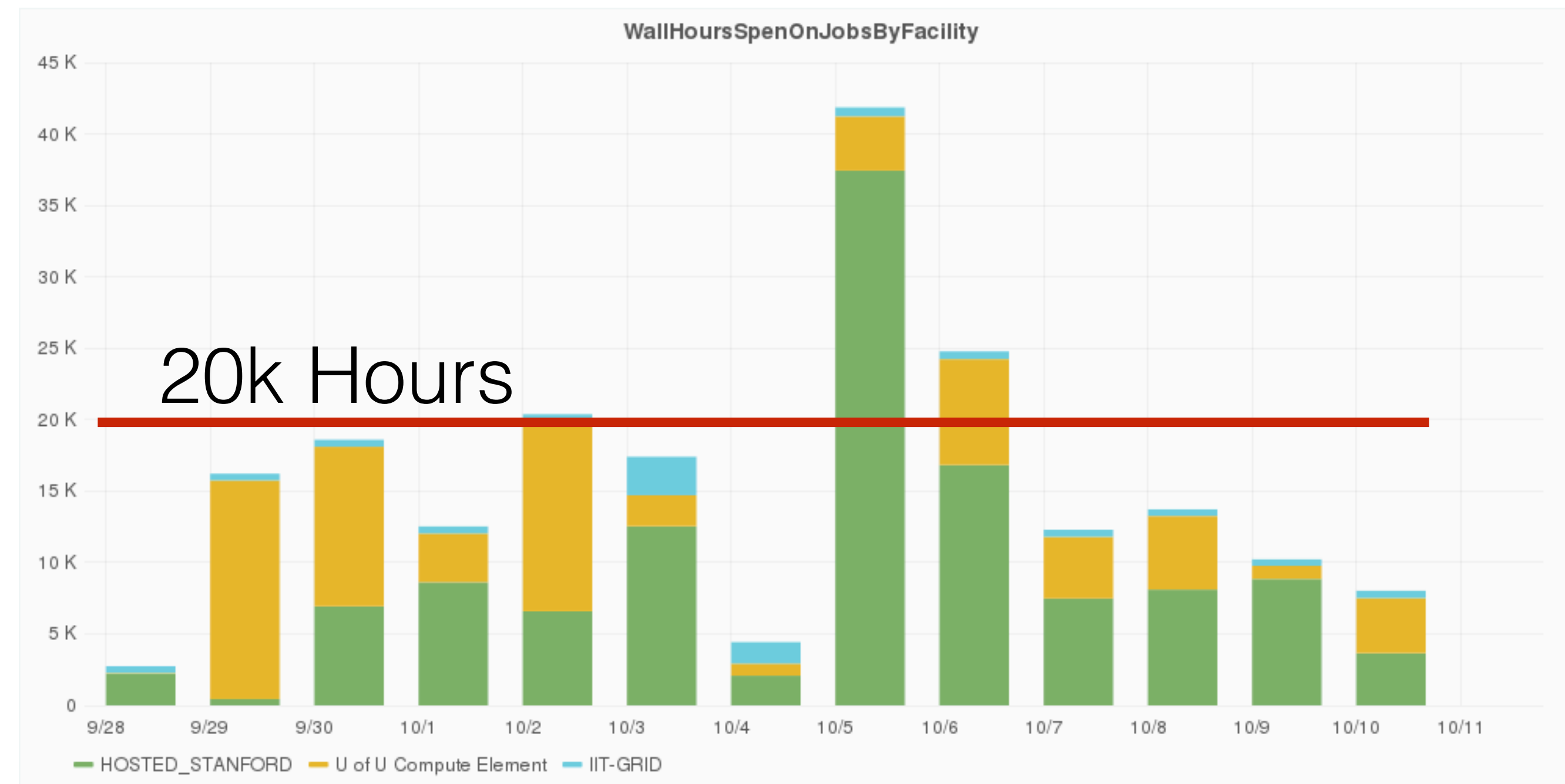
CE-Bosco in Use

- Sites also want to load balance across clusters.
- Utah load-balances multiple clusters to run OSG grid jobs



Usage

- Opportunistic sites now contribute around 20k Hours per day.
- Usage grows and shrinks depending on available resources at the site.



HTCondor-CE-Bosco

- The HTCondor-CE-Bosco will enable a faster on-ramp for new clusters.
- It will provide a great first step to entering the OSG.
 - And allow the centralized hosting of CE's to offload operational costs to GlideinWMS.
- User support can easily create the CE and send jobs to remote HPC clusters

Questions?