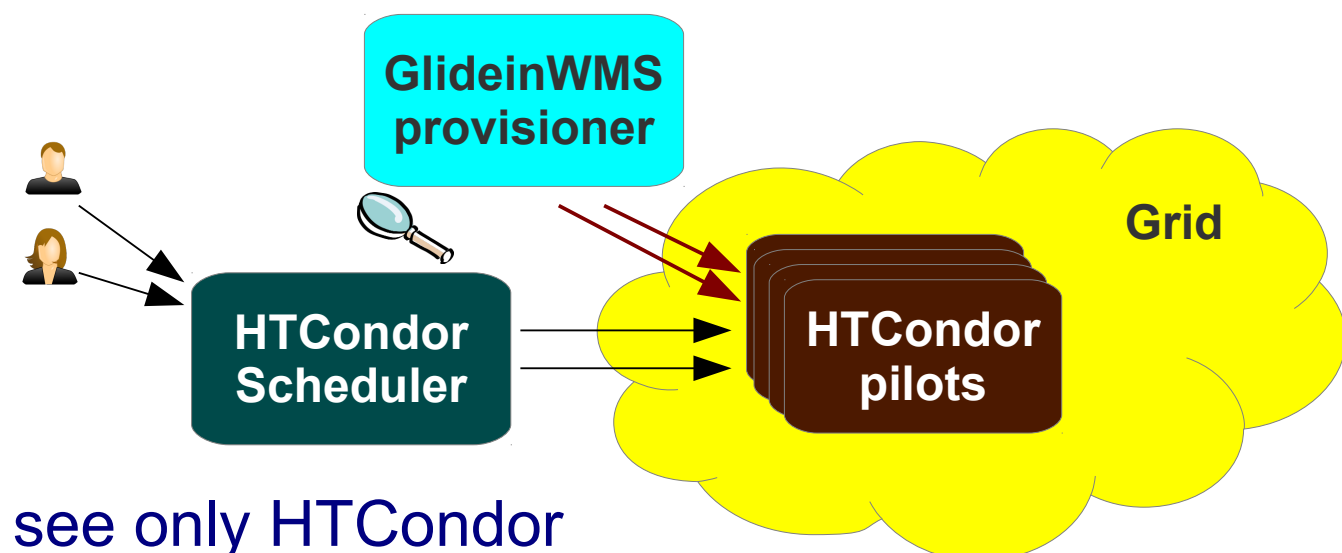# Using ssh and sshfs to virtualize Grid job submission with **rcondor**

by
I Sfiligoi[1] and J M Dost[1]
isfiligoi@ucsd.edu   jdost@ucsd.edu

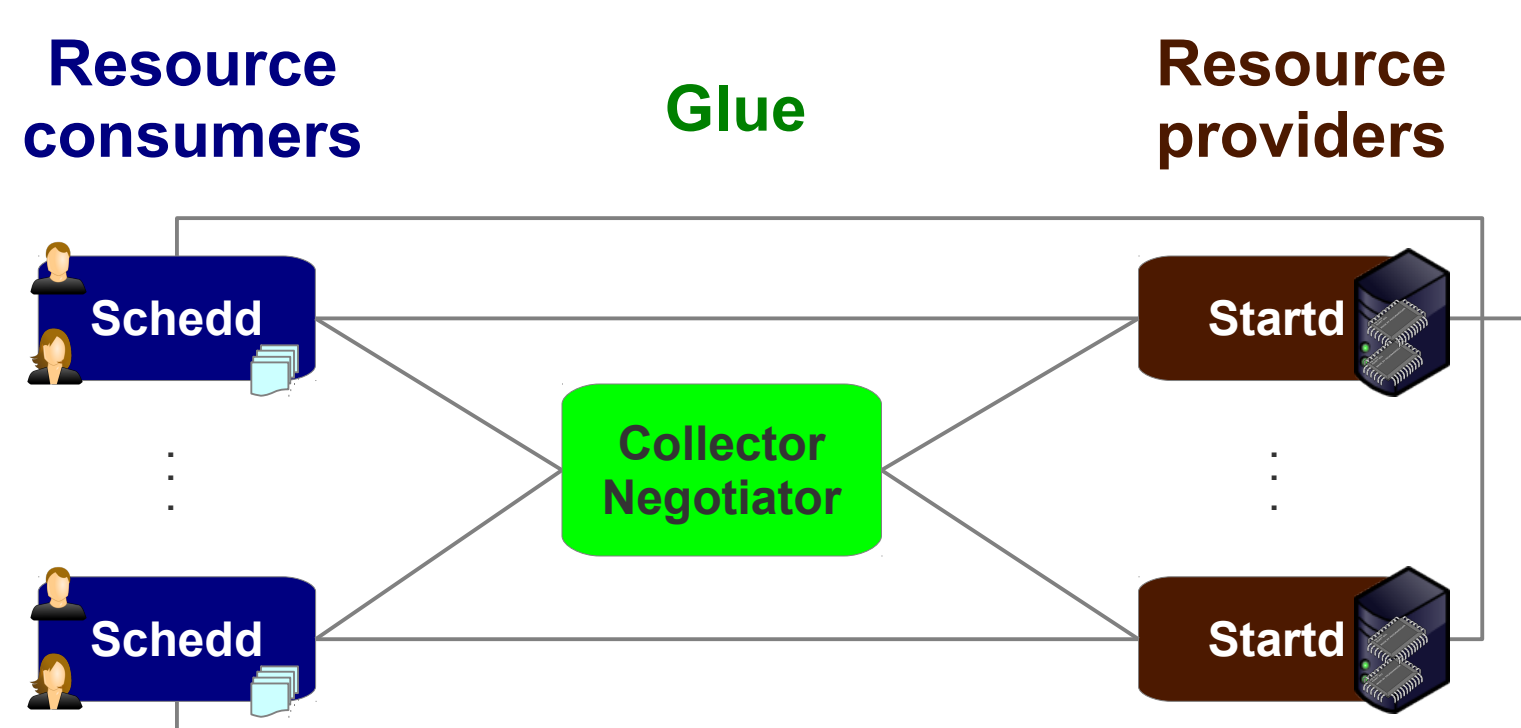[1]University of California San Diego, La Jolla, CA 92093, USA

glideinWMS Grid job submission
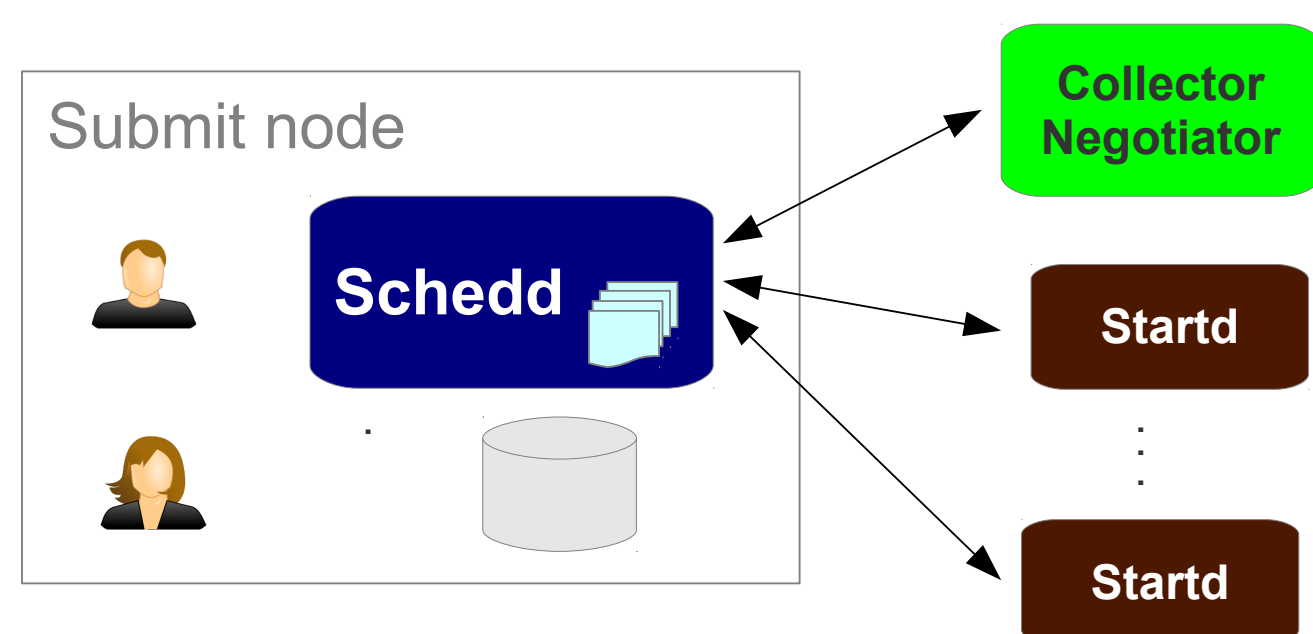

Users see only HTCondor

HTCondor architecture

Resource consumers   **Glue**   **Resource providers**

No HTCondor "client"

Submit node is a server
• Actively manages the user jobs
• Responds to requests

Users must be local to the HTCondor process
• Uses OS authentication
• Needs access to user files
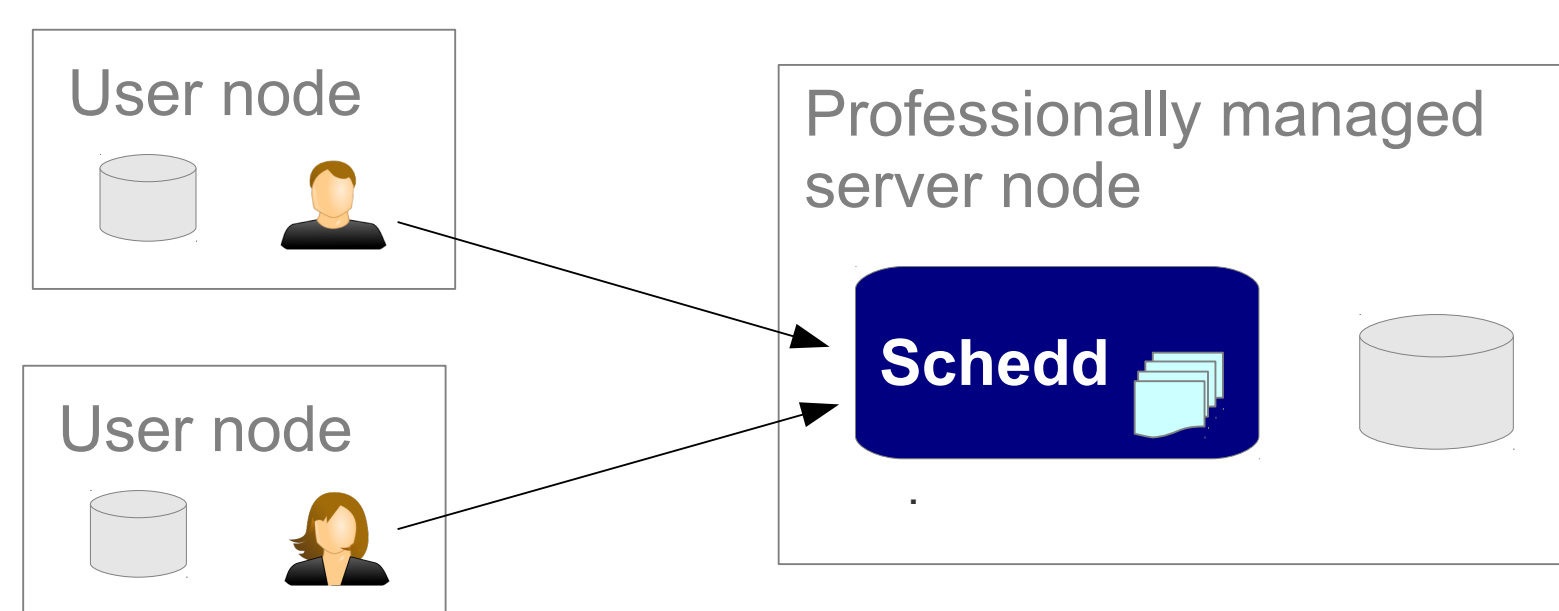

Not suitable for the end users

Security risks
• Incoming connectivity
• All security configuration on the submit node
• Submit node controls user authentication and authorization

Unfriendly to non-dedicated hardware e.g. laptops
• Requires always-on operation
• Must be on a public network with static IP address

Requires a "cloudy" deployment
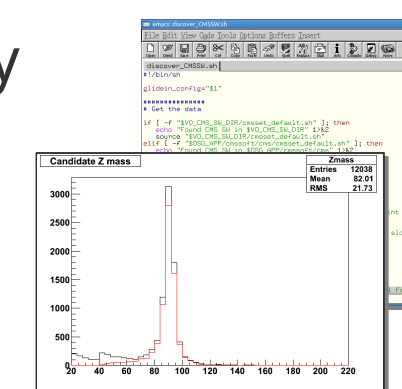

Traditional approach - SSH

"Let the user ssh into the submit node and work there"

Easy for the admins

A pain for the user

A need for local look-and-feel

Users like to use locally installed software
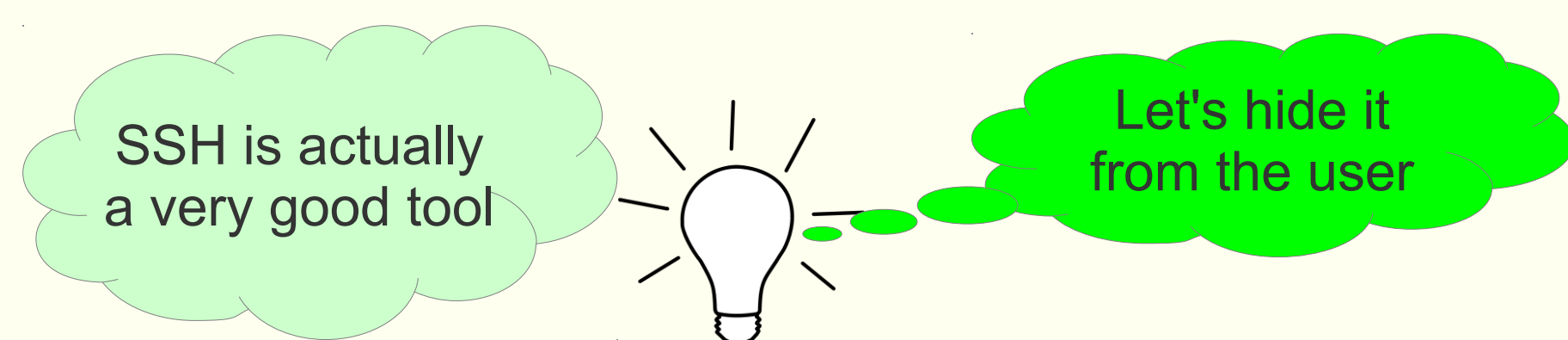• Special purpose
• GUI
• Automation

Network latency may be a killer on the go
• Even if bandwidth OK
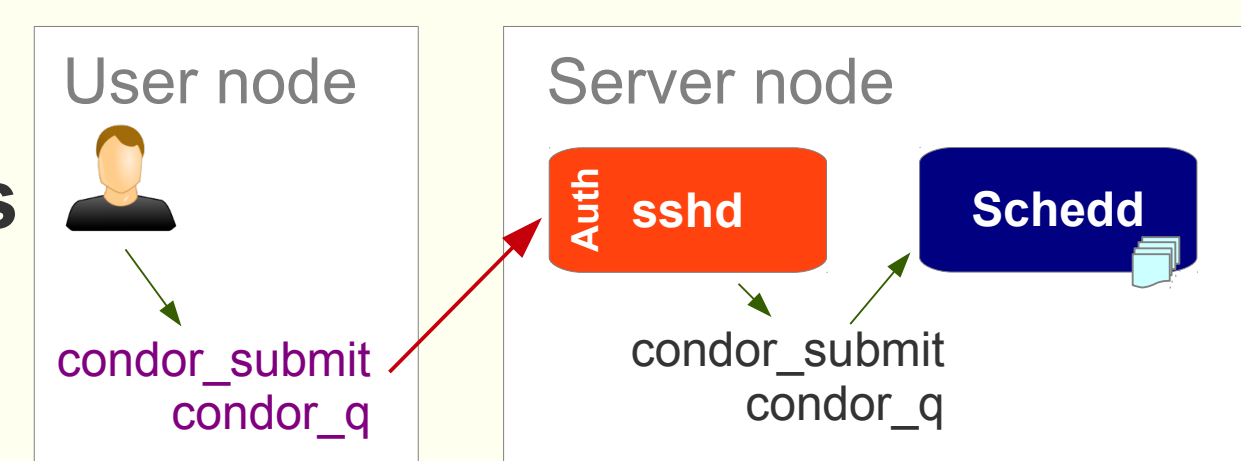• Even if user likes cmdline tools

Introducing the **rcondor** package

https://htcondor-wiki.cs.wisc.edu/index.cgi/wiki?p=RemoteCondor
http://www.slideshare.net/igor_sfiligoi/remote-condor-convenience-control

SSH is actually a very good tool
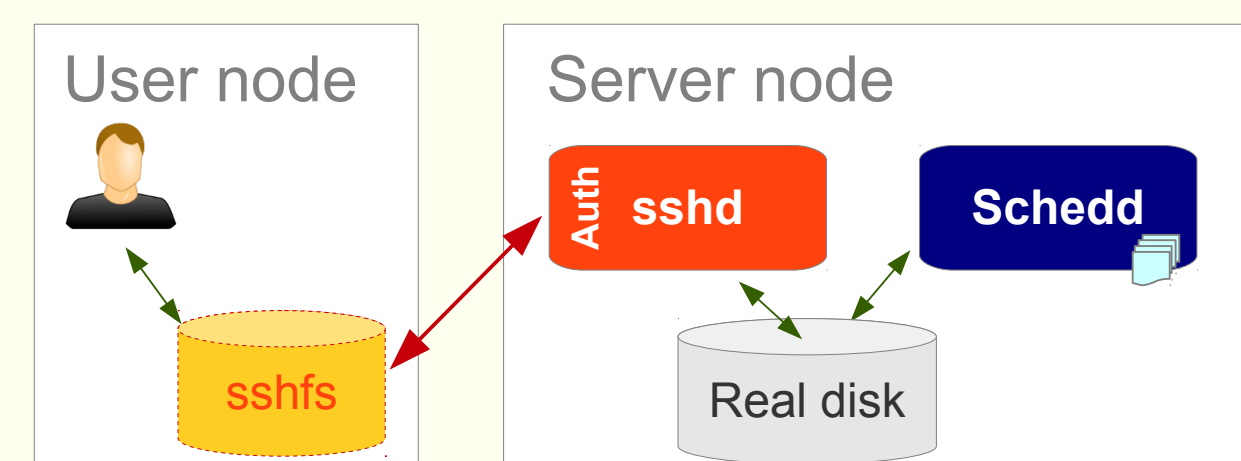
Let's hide it from the user

Provide wrappers for HTCondor cmds
• There are only O(30)
• Exe same command over ssh

Use sshfs for data access
• Data stays on the server
• Accessible to HTCondor
• But feels like it was local (just slower)

Wrappers sshfs aware → automatic path remaps

Current packaging primitive, mostly due to lack of user push.
Contact us if you think it is a problem for you.

Alternatives

HTCondor remote access	HTCondor-C	BOSCO
• True client solution	• Works in offline mode	• Works in offline mode
• Tricky security setup	• Still a server	• Uses SSH
• Only partial functionality e.g. no DAGMan	• But can be firewalled	• Still a server
• Explicit data staging	• Tricky security setup	• But can be firewalled
	• Explicit data staging	• Explicit data staging