


Research Computing Facilitation

Principles for AI and Beyond

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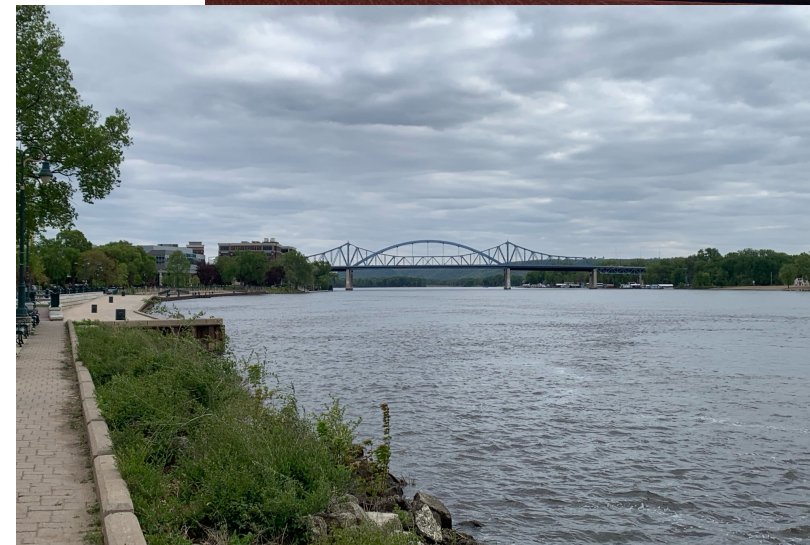
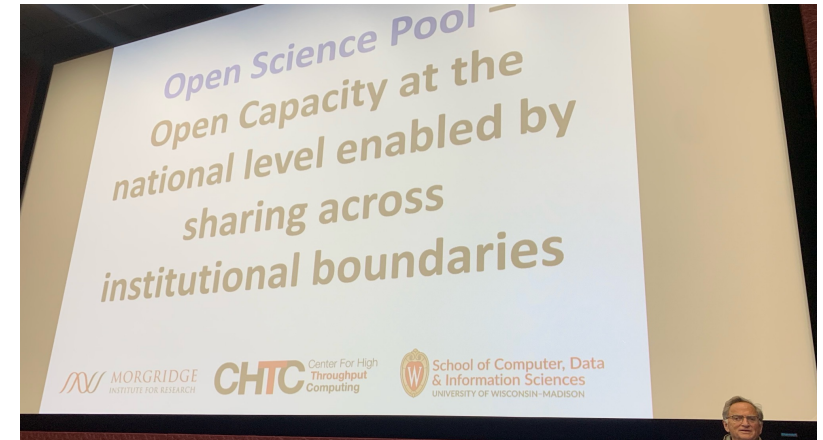
HTC26 – June 9, 2026

Where we've been...

- Research Computing Facilitation is a teenager! 
 - Originated name and principles of facilitation in 2013
 - Impetus: It's not enough to have technologies and infrastructure – facilitation is key to deliver impact for campuses.
- At UW – Madison, 700+ researcher/student interactions last year, across 80 departments and centers.
- In the OSPool, 200+ projects in the last year, completing 360 million jobs.

Where we've been...

- We want to support facilitation efforts and these kinds of teaching and research outcomes at every campus.
- In the last 9 months, presented to 7 different campuses/groups interested in HTC/facilitation.
 - Let us know if you want to learn more!



What is facilitation?

- Leveraging of **human** capabilities to advance research and teaching outcomes through computing.
- Principles:
 - Mutually beneficial **partnerships**, grounded in trust relationships
 - Clear ownership of **responsibilities** and outcomes
 - **Technology agnostic**, concept driven
 - Relies on other skillsets (infrastructure, software engineering, etc.)
- A **methodology** to be developed, tested and improved, alongside our technologies.

How has facilitation life changed
as a result of agentic AI?

*The words of Koheleth son of David, king in
Jerusalem ~ 200 A.D.*

*Only that shall happen
Which has happened,
Only that occur
Which has occurred;
There is nothing new
Beneath the sun!*

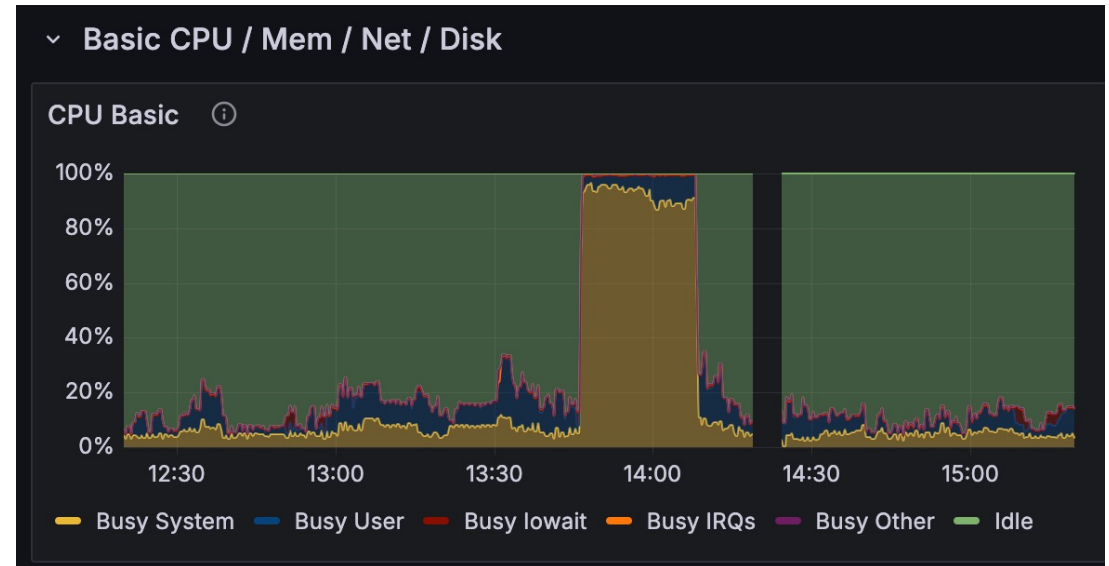


Ecclesiastes, (קֹהֵלֶת, *Kohelet*, "son of David, and king in Jerusalem" alias Solomon, Wood engraving Gustave Doré (1832–1883)

Ecclesiastes Chapter 1 verse 9

Struggles on the login node


- Preventing users from running CPU/memory intensive processes on the login node.
- Agents
 - Don't know the rules.
 - Obscure what is being run.
 - Also use CPUs!
- We are working on system limits and user education.



💡 Come to Ian's talk on Friday to learn more!

Agents as coding helpers

- Users consistently use agents to generate code and commands to run on our systems.
- Results are...mixed.
 - Some models hallucinate inputs.
 - Other models use obscure or deprecated options from the manual.
 - Can use site-specific options in the wrong place.
 - Some good results!
 - Some disasters!
- Still need good documentation and examples.

 Come to Brian's talk on Wednesday to learn more!

Communication challenges

- Researchers will reach for an agent, rather than emailing RCFs
 - User can get immediate answers
 - Can mean that we don't hear about issues promptly
- When we do get an email, it's not the original issue.
 - One user's agent did provide a good answer!
 - But sometimes it obscures what's really happening.
- It's helpful if someone TELLS us that they used an agent.

My NetID cannot submit new jobs since ~14:30 CDT on May 13.
Symptoms:
< long list here >

Looks like an OAuth/SciTokens credd issue on ap2001. Could you check the condor_credd daemon health or my account's OAuth ALLOW_WRITE entry?

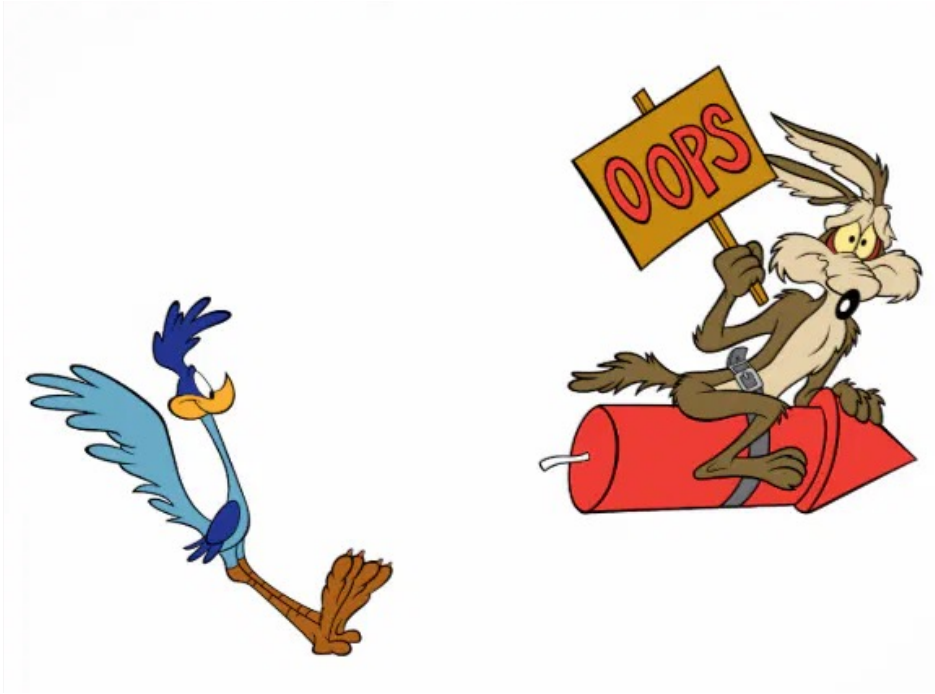
No user is going to come up with that suggestion on their own!

Nothing new under the sun

We had all of these problems before

- **Struggles on the login node:** This problem has existed forever. Communicating how to share is universal.
- **Agents as coding helpers:** Researchers have been running commands they don't understand since the dawn of time – using either copy-paste code from Stack Overflow or the lab's 'how to use the cluster' protocol.
- **Communication challenges:** Users have always wanted immediate feedback and sent cryptic emails.

Well, sort of



- In general, agents have **accelerated** the problems we had before or made them **bigger**.
 - More processes on the login node, weird code that doesn't work.
- **Edge cases** are now much more common and **accessible**.
 - Much easier to break things in weird ways.

Lessons learned

- These are all things we should be doing anyway:
 - Educating researchers about the **responsibilities** of using a shared computing system.
 - Continuing to build **relationships** with researchers and provide good **guidance** (via documentation, one-on-one help, etc.) on how to use our systems.
 - **Improve** our technologies and their usability
- The acceleration of the “old problems” via AI agents have forced us to grow and improve.

Looking to the future

- Facilitation is needed now, more than ever.
 - Instrumental in enabling computing powered outcomes at any campus.
 - A reference point for how we support research and teaching in the face of a changing computing and cultural world.
- We have years of experience...and are still at the beginning of what's possible.
 - There are new and fascinating opportunities ahead!
- What would you need to get facilitation to your campus? How can we partner to make it happen?

What about “AI” workloads?

Next talk!!

Acknowledgements

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