Recommendations for improving Science Gateway Security

By Mark Krenz, Trusted CI

SGCI Webinar
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Trusted CI’s mission is to provide the NSF community a coherent understanding of cybersecurity’s role in producing trustworthy science and the information and know-how required to achieve and maintain effective cybersecurity programs.

https://trustedci.org/
Who am I?

Mark Krenz

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Deputy CISO for Trusted CI
CISO for ResearchSOC
20+ years in system administration
9+ years in Cybersecurity
Programmer 0 and 1 over the years
Creator of https://twitter.com/climagic
Overview

• Goals
• Challenges
• Security requirements
• Recommendations
• Conclusion
• Questions
Goals of most science gateways

• Create new interface to scientific resource
• Utilize latest technologies
• Work within limited budget
• Be very useful
Challenges

• Limited funding
• Limited time
• Distributed team
• Limited security training
Security requirements

• Where to start?
• What to do?
• What to prioritize?
• Start with low hanging fruit
Security help

- Developed for Science Gateways
- Prioritized recommendations
- References to Trusted CI Framework
- Curated list of resources

https://trustedci.org/science-gateways
Know your limits

[C] Implement a maintainable system architecture

[D] Determine acceptable cybersecurity risks
Know thyself

[E] Create and maintain architecture diagrams
[F] Create and maintain a data flow diagram
[M] Use a security assessment tool
[N] Prepare an asset inventory
Keep watch

[B] Monitor System health
Be ready for action

[G] Adopt an Incident Response Plan
Use best practices

[A] Harden Secure Shell (SSH) configuration

[I] Harden docker/container configurations

[J] Train staff in secure coding

[L] Perform cloud security best practices
Know your friends

[O] Use institutional resources

[K] Use HPC and Science Gateway resources
Conclusion
Upcoming Event: NSF Cybersecurity Summit

• Plenary: October 12–13
• Trainings: October 15
• Workshops: October 18–19

• REGISTRATION CLOSES October 4th
• Register at: https://www.trustedci.org/
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Questions