# An Approach to SLURM Configuration Verification

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# View the Slides

https://github.com/kyre6371/rmacc_2025/tree/main/slurm_verification

# Introduction – Why Configuration Matters

- Misconfigured SLURM settings often lead to user confusion, job failures, and a spike in support tickets — creating friction for both researchers and support staff.

# The Problem

- Validating SLURM configs is painful
- Manual checks are error-prone
- You only get feedback *after* something breaks

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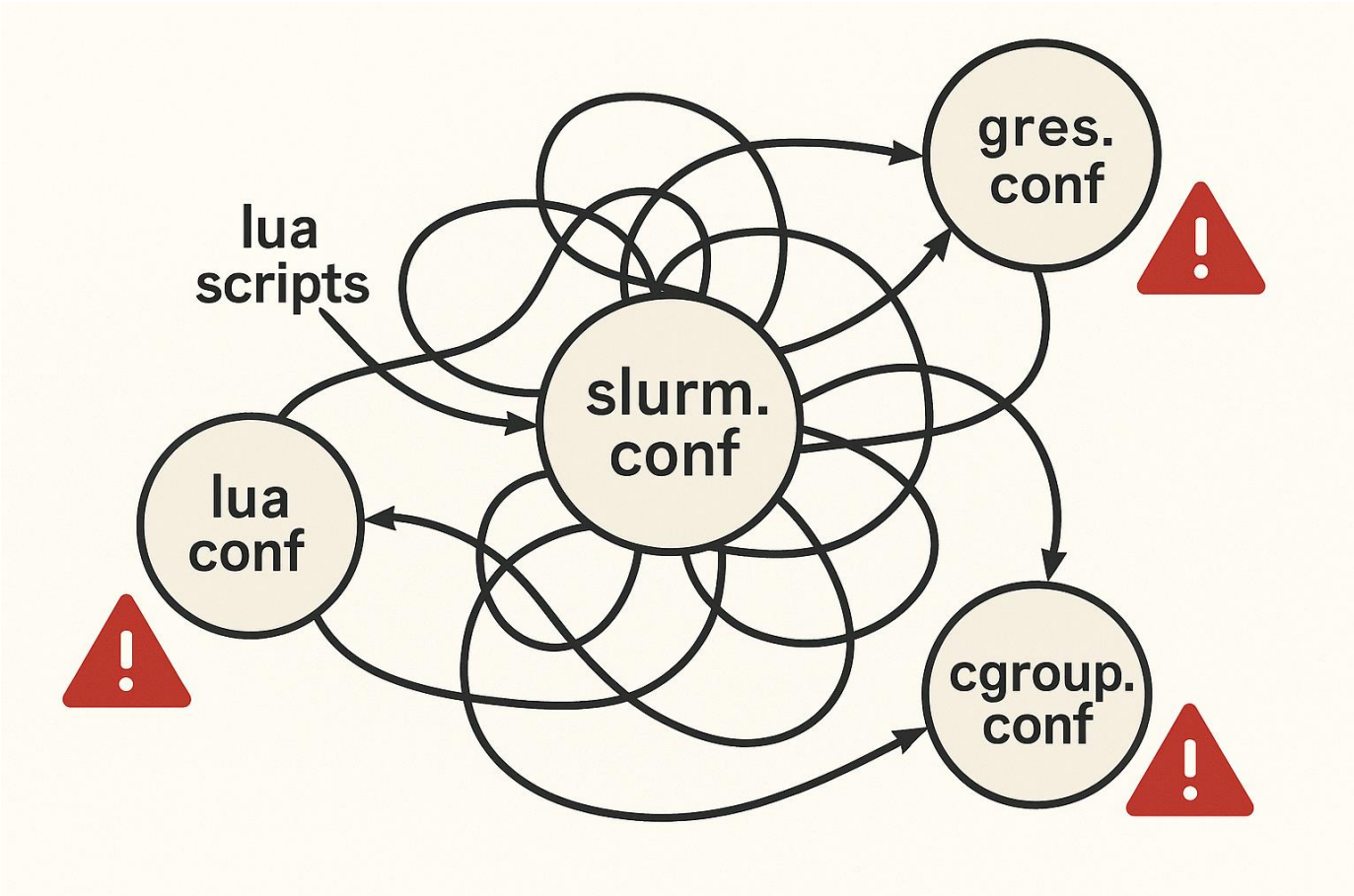


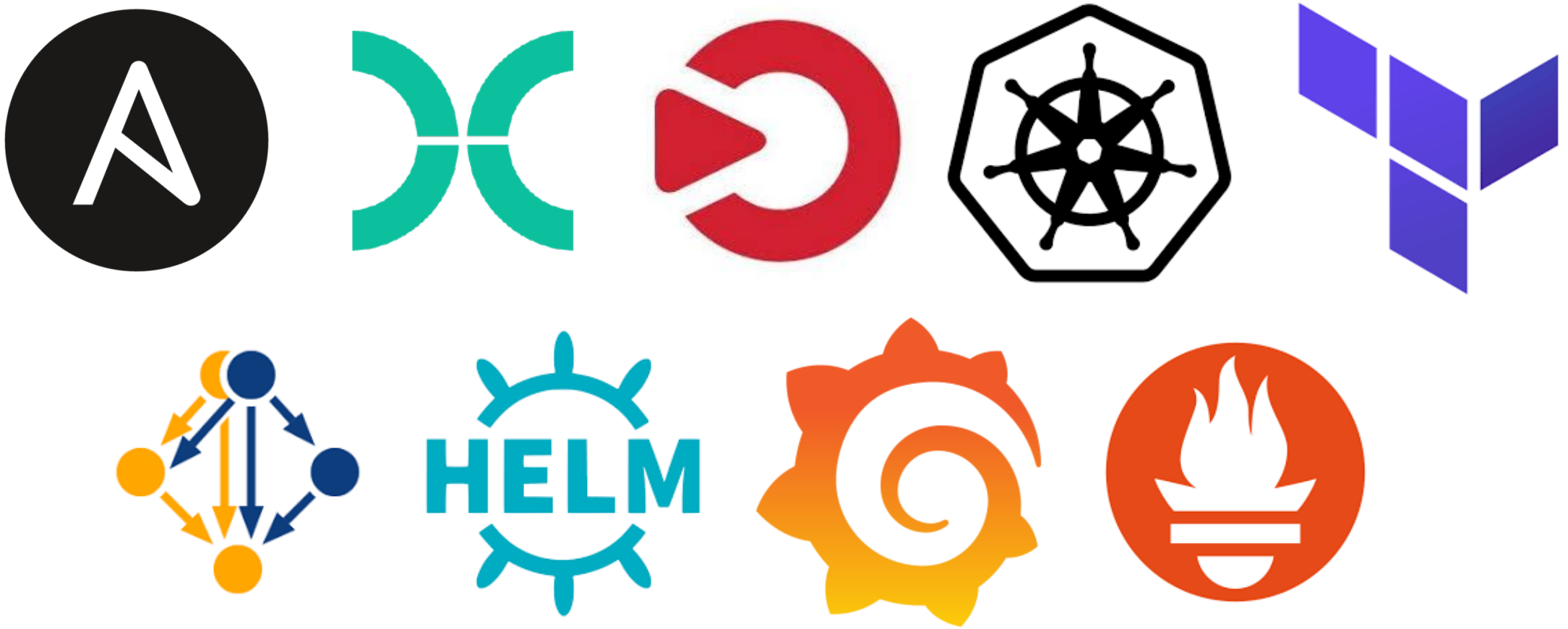
# Current Approaches

- **Manual Reviews** — Time-consuming and error-prone
- **Cluster-Specific Scripts** — Custom, hard to reuse or share
- **Limited Tooling** — scontrol, slurmlint, UBCCR simulator offer partial checks

# An Approach to SLURM Configuration Verification

- Declarative validation schemas (e.g. JSON schema for YAML-like configs)
- Automated testing pipelines
- Community-driven validation rules

# Products Utilizing Schema Validation



# Conclusion

- Config correctness is essential → current tools fall short → better tooling is possible

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# Prior Art in SLURM Configuration Checking

- https://github.com/appeltel/slurmlint – amazing work, does not use a schema, last updated 2019
- https://ubccr-slurm-simulator.github.io/ - incredible project for simulating configurations, supports Slurm 17.11 – is currently being updated
- Spin up slurm controller in a container and see if fails
- “If it crashes, it's not right” – Joe Malingowski

# Limitations with Current Approaches

- Don’t scale well
- Hard to generalize
- Not integrated into CI/CD