MetrANOVA

A Consortium for Advancing Network Observation, Visualization and Analysis
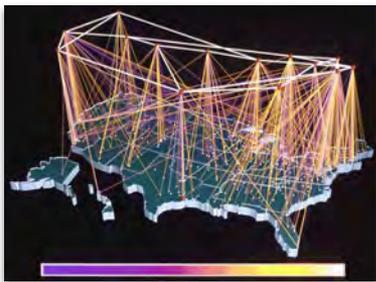
ESnet · GÉANT · GlobalNOC at Indiana University · INTERNET2 · TACC TEXAS ADVANCED COMPUTING CENTER

Life before R&E (for me)

Mind Blown	Elsewhere	Interesting	Anti-patterns

1991 ──────────────────────────────────────▶ **2000**

Open Standards
Loose Coupling
Ubiquitous Access
Vendor Neutral
Technical Optimism

IP for backhaul
Great Ops
Explosive Growth
Centralize Eyeballs

Do not be
that guy

R&E has aged, but it's as relevant as ever

The Secret Sauce of Research and Education Networking

- **Timeless design constructs**
  - Ubiquitous Access
  - Loose Coupling
  - Vendor Neutrality
  - Open Standards
  - Rough consensus and working code

- Technology != differentiator
  - Same hardware and protocols used to build a monopoly, mass surveillance, or critical infrastructure

- **Combined with community focus**
  - We are a not for profit community
  - Our values differentiate us
  - Its how we apply these technologies to address needs and facilitate scientific and educational endeavors.

- Additional Considerations
  - Collaboration and trust are key
  - Ubiquitous access tempered with appropriate access control
  - We need: Design Patterns, Service Definitions, and Policy Guidance

The power of measurement: a few short stories

- 1999 Detecting nationwide ATM network disruption with SNMP CPU stats
  - generalizable methodologies for the win

- 2002 Watch *baddies* break into hosts using Honeynets
  - Combine diverse types of measurements to create a fuller understanding

- 2005 Hurricane Katrina redefines the notion of a network *weather map*
  - higher level metadata has its benefits

Why another consortium?

- We have depth in and ongoing need for network measurement and monitoring
- It's not easy to do well, and requires sustained investment
- We have a demonstrated ability to collaborate and product reliable solutions
    - perfSONAR, InCommon, etc
- Many of us are starting to retire
    - Don't lose the sauce
    - Give opportunity to those earlier in their career
- IoT and other Industry trends present technical opportunities
    - Proven building blocks that scale

Introducing MetraNOVA

- Who is MetrANOVA today? Who will it be in the future?

- Structure, participation and governance

- Vision.

- Goals (and non-goals)

Who is MetrANOVA?

- Founding members:
  - ESNet
  - Internet2
  - GÉANT
  - GlobalNOC
  - TACC

- Future members:
  - Looking for more

- Future affiliates:
  - You ?

Vision & Guiding Principles

https://github.com/MetrANOVA/.github/blob/main/profile/vision.md

- Use the Sauce!
  - Open Source,
  - Good Design,
  - Inclusive Community

- Support everyone in the community large and small

- Create useful tools, tactics, and techniques to design and run networks

- Develop quality solutions for production environments
  - Integrate where we can, Innovate where we must

Structure, Participation, Governance

MetrANOVA provides many ways for organizations and individuals to contribute.

- **Members**
  - Requires minimum effort commitment of ~ 1 FTE *(with 0.5 or more from 1 individual)*
  - Participates in governance process

- **Affiliates**
  - Can be any organization or individual with something to contribute.
  - Much more flexible level of committed effort.
  - "Get your feet wet"/path to membership.
  - Still have a voice!
  - Provides structure for individual contributors to participate.

Consortium Lead

- Appointed by the executive committee, discretionary 2 year term.
- From a member organization.
- Provides technical leadership and guidance.
- Liaise with the executive committee.
- Works with individual contributors to make sure things get done.

★ Ed Balas (ESnet)

Executive Committee

- Provides governance and oversight.
- Decides on new membership organizations.
- Consists of one representative from each member organization.

★ Inder Monga (ESNet)
★ Ivana Golub (GÉANT)
★ James Deaton (Internet2)
★ Luke Fowler (Indiana University GlobalNOC)
★ Nathaniel Mendoza (TACC)
★ Ed Balas (as Consortium Lead)

Focus Areas

- **Defining & refining our goals based on community input**

- Data Sharing Policy
- Data sources and modeling
- Visualization and analytics
- Technical building blocks
- Federation and access control

Whats Next?

Share your thoughts and guide the consortium

- **MetrANOVA 2024 Community Survey**
  - Help influence our strategy and roadmap
  - https://forms.gle/zeYAu8Hp1bZFU8hF7

Do it right meow!

Future Work Products

- A repository of recommendations & insights
- A set of software components
- Technical Assessments
- Training and Workshops

Many Thanks!

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For more information:

- Github:
  https://github.com/MetrANOVA
- Web:
  http://www.metranova.org/

Questions?