GlobalNOC
SERVICES

Two Decades of Service

The Global Research Network Operations Center (GlobalNOC) at Indiana University has been delivering a diverse set of services to operate, manage, and evolve research and education (R&E) networks since 1998. Despite our growth in size and capability, GlobalNOC remains committed to providing outstanding service with a personal touch to each of our R&E partners.

As a member of the R&E community, we understand that R&E networking is more than bandwidth and circuits. These networks need more than just a network operations vendor providing one-size-fits-all services. GlobalNOC is a long-term partner in the success of every project we support, custom tailoring our services to fit its unique needs.

SERVICE BUILDING BLOCKS

GlobalNOC offers a range of activities falling under four main areas of service. These services build on each other to allow networks to evolve their support levels over time, easily and cost-effectively. A network project may initially require only core service desk monitoring of the network. If advanced network measurement is needed later, GlobalNOC can build on the existing integrated network information software to provide this quickly and without disruption or complicated setup.

OPERATIONS Network operations services	SOFTWARE Network management and information software	CONSULTING Future-focused consulting on network design and strategy	ADDITIONAL SERVICES

NETWORK MANAGEMENT SOFTWARE CORE

Network Planning

Advanced Network Control Software

Advanced Network Engineering

Advanced Network Measurement and Visualization Service

Network Engineering Support

Service Desk Support

Network Information Software Service

Custom Development

Network Design and Strategy Consulting

Project Management

Network Turn-Up Support

Network Deployment

Above the Net Services Support

Operating a R&E network takes a lot of coordinated effort. GlobalNOC provides reliable carrier-grade services to help networks focus on their mission for research and education instead of the details of daily operation.

Service Desk Support

The GlobalNOC Service Desk actively monitors the health and performance of all aspects of a network, in a fully redundant 24×7×365 operation. The Service Desk serves as the hub of communication for a network, coordinating all of the engineers, vendors, and users. The GlobalNOC Service Desk sees network issues before the user does, serving as a first responder to all problems.

Activities

- **Proactive monitoring** of health, availability, and performance of all devices related to a network

- **Issue and contact tracking** for all monitored or reported outages, maintenance, or support requests

- **Coordinated support** to ensure engineers and vendors are engaged, community and users are notified, and overall operational quality is assured

- **Documentation and maintainance** of proper change management processes

- **Reporting and analysis** of issues to give networks a view into the long-term availability and metrics for the network

Network Planning

GlobalNOC can provide additional higher-level network engineering help with network planning. This helps with development of technical strategy, including planning for new services and capacity planning.

Activities

- **Detailed network capacity planning**

- **Design, review, and planning** for new network services

- **Analysis** of new technology

Network Engineering Support

GlobalNOC's team of expert network engineers can provide 24×7×365 help with incident management and provisioning of networks, backed by the Service Desk Support. This group can quickly and expertly diagnose and resolve network issues on a broad variety of L1, L2, and L3 networks, from a variety of network vendors.

Activities

- **24×7×365 network incident management response, repair, and root cause analysis**

- **Timely and appropriate response** to all provisioning and network change requests following established change management policies

- **Direct network user technical assistance**
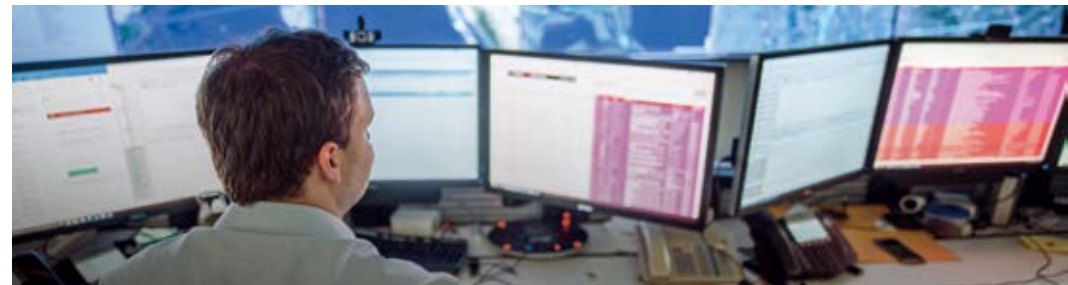
Advanced Network Engineering Support

Advanced Network Engineering Support extends the expertise of network engineering to provide deeper problem management and provisioning on networks. Advanced support can reduce the amount of time spent getting assistance from a vendor and repairing a recurring problem through deeper root cause analysis.

Activities

- **Final level escalation** for network incidents leveraging high-level expertise to accelerate service restoration and problem management

- **Evaluation of incident trends** to ensure overall network performance

- **A designated primary technical service owner and contact**

Just as network operations need advanced engineering support and a highly functional service desk, network management systems are equally essential. GlobalNOC's systems teams have proven to be true leaders in development and support of advanced network tools tailored for the research and education community. Their toolset provides a highly integrated network management software solution operating across OSI layers 0–4 and above.

Network Management Software Service

GlobalNOC can provide these network management systems as a managed software service. Network management servers can be placed directly in a network or remotely in IU's secure data centers or a combination of the two. These servers and the software that runs on them are managed 24×7×365 by professional systems and software engineers at the GlobalNOC.

Activities

- **24×7×365 service monitoring, troubleshooting, and incident management response**
- **Routine server maintenance** and regular software upgrades
- **Custom feature development** and implementation
- **Integration** with external systems through rich APIs

Custom Development

GlobalNOC knows that each network is different. While there are similarities aross the R&E networking landscape and we have learned how to leverage the tools we develop across our customer base when it is most efficient or effective that we do so, we recognize that each network has its own unique needs. At GlobalNOC, we take the time to listen and learn about an individual network and provide the support and tools best suited for its mission and needs. If that customized approach means developing specialized tools or unique features added to our existing tools, GlobalNOC will both guide
the process and deliver such software services.

The set of software deployed is customized for each client, and typically includes applications such as:

- **Comprehensive network monitoring systems** supporting network event notification and reporting
- **Network visualization systems**, including GlobalNOC Worldview and Atlas
- **An advanced operational network information database**, documenting all aspects of a network, including hardware, IP addresses, vendor and customer relationships, details about physical deployment, photographs, topology/circuits, etc.
- **High-resolution network measurement systems** utilized to collect and visualize network performance data
- **Automated database configuration agents and network configuration backups** to keep archival configurations for configuration management and disaster purposes
- **Advanced automated network control and dynamic circuit provisioning software**
- **Looking glass type interface acting** that allows specified access to aid in troubleshooting and problem verification
- **Access control, authorization, and accounting systems**

CONSULTING

In addition to ongoing services, GlobalNOC can provide advice and consulting on specific projects as needed. This can include advice or review of network plans, NOC enablement, or auditing security, operations, disaster recovery, or optimization purposes.

Activities

- RFP review and advice
- Network design review
- Network streamlining
- Security review
- New service enablement

THE GLOBALNOC COMMUNITY

We understand that R&E projects are optimized when conducted with the support of an extended community. In addition to the expertise we provide, projects supported by GlobalNOC gain the added benefit of being part of a community of collaborators comprised of users from each of the projects.

Activities

- **A forum** for sharing industry knowledge and expertise among GlobalNOC projects
- **Provision of input** on GlobalNOC initiatives and roadmaps
- **Participation** in the GlobalNOC User Group

ADDITIONAL SERVICES

GlobalNOC can provide assistance with the following services which build upon and augment the support identified in our base services.

Project Management

Provide dedicated Project Management support for new and existing services and endeavors. By using agreed upon project management methods and standards, the Project Management Team will be able to provide planning and control of the project, lead and engage resources to complete the project request and support implementation team through project duration.

Network Turn-Up Support

Provide support in the initial turn-up of a network, from network planning to the initial deployment and on through implementation of the network services and support. We utilize years of experience in building and supporting networks to ensure the turn-up of the network meets the needs of its community.

Network Deployment

Provide, independent of other services, assistance with proper deployment and tracking of new networks into telecommunications facilities, including not just physical installation, but also anything that would be needed from testing to turn-up.

Above the Net Services Support

Provide support for services offered to a network's customer, such as DDoS mitigation, DNS, firewall, media management, and visual communication. We work with the network to define a process to assist their customers with activities such as initial triage, task creation and escalation, and support through to task resolution. In many cases, this support is vendor-agnostic, although our ability to support the service may depend upon the vendor utilized.

GlobalNOC

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Our technicians are ready to help any time of day, every day of the year. Please contact us at any time to learn how GlobalNOC can help your organization.

200 YEARS