Sandia provides technical and thought leadership in cyber security solutions to secure the nation’s most critical systems.

Sandia’s over 40-year history of assessing U.S. Nuclear Command and Control Systems has given us an unusually rich understanding that can be employed to compromise even the most carefully protected systems. This has been integrated into Sandia’s rigorous cradle-to-grave lifecycle approach for developing information security approaches, technologies and systems.

Sandia’s cyber security R&D program draws heavily upon our core S&T capabilities developed over several decades in support of our national security missions. These S&T investments afford the nation the ability to leverage world-leading capabilities in advanced informatics, microelectronics, and modeling and simulation. Sandia’s differentiating value, among other R&D institutions, comes from our unique systems approach integrating scientific understanding, technology development, and complex requirements-driven engineering to develop solutions that work effectively within the broader context of their intended deployment environment and operational mission.

Sandia works effectively as an innovation hub to build and lead collaborations with academia, industry, and government partners, leveraging its deep science and technology base and rich security system engineering, design, and integration tradition. We foster innovation through the unique ability for the recursive and non-linear integration of science and understanding, missions and users, and tools and technology. We invest in the entire innovation space and assume risks that others cannot or will not accept.

COLLABORATION/PARTNERSHIPS
Sandia works closely with a diverse array of organizations and participates in a vast number of committees, panels, advisory boards and strategic studies to secure our nation’s cyber space. Our customers are responsible for a broad spectrum of infrastructure critical to maintaining national security, ranging from vital military capabilities to the private industries that support our societal needs. Our sponsors and partners include:

- Department of Energy (DOE)
- Department of Defense (DoD)
- Department of Homeland Security (DHS)
- Missile Defense Agency (MDA)
- Members of the banking industry
- Power companies
- Software development companies
- Other research laboratories

For more information please visit: www.sandia.gov/bus-ops/partnerships

The invention of the laminar airflow clean room in 1960 by Sandia scientist Willis Whitfield is credited with making the modern microelectronics industry possible.
Sandia National Laboratories is playing a fundamental, enabling role in assisting the nation both as a provider of robust security solutions and as a technical advisor on national cyber strategies.

**Key Capabilities**

Our extensive capabilities and expertise include:

- Cyber science and technology development
- Trusted hardware and software to assure the integrity of our cyber infrastructure
- Simulating and prototyping integrated protective systems
- Conducting information operations red teaming and assessments
- Leveraging world-class scalable computational algorithms & analysis and high-performance computing capabilities.

**Vulnerability Assessment**

A sophisticated approach to red teaming and vulnerability assessment is a customer-valued asset. This comprehensive VA expertise (stemming from the NW Mission and decades of experience evaluating mission critical systems) enables us to deliver solutions that leverage our science and technology base to identify and mitigate cyber risks in vital national security systems.

**High-Performance Computing**

Sandia has a long and distinguished history in massively parallel computing. Sandia’s work in high-performance computing (HPC) has been paramount to the success of Advanced Simulation & Computing (ASC) at all three NNSA laboratories. Distinguishing impacts include:

- Extremely broad set of applications ranging from materials science to mechanical response and high-energy density physics to electrical system response.
- Lightweight kernel technology that formed the basis for the operating systems on the Intel Paragon, the Intel Teraflops supercomputer (ASC Red), and Cray’s XT3.
- Key mathematical libraries that are used by the tri-lab HPC community (Trilinos) for solving systems of equations; Zoltan for load balancing; and Dakota for optimization.
- SRL hosts the DoD National Security Computing Center (NSCC).

"The NSCC provides a first of its kind ability for the nation. It is also one of the first visible steps in NNSA’s commitment to interagency partnerships and a glimpse of our future science, technology, and engineering enterprise. This is an important example of how our investment in nuclear security is providing the nation the tools to tackle broader national challenges." - NNSA Administrator Thomas D’Agostino