

# Internal Penetration Testing of the NSF and U.S. Antarctic Program Networks

REPORT PREPARED BY MAX CYBERSECURITY, LLC





## At a Glance

Internal Penetration Testing of the NSF and U.S Antarctic Program Networks Conducted by Max Cybersecurity, LLC  
OIG 24-6-004 | September 27, 2024

### OBJECTIVE

As part of our ongoing efforts to assess the U.S. National Science Foundation's (NSF) information security program, we engaged Max Cybersecurity, LLC (Max Cyber) to perform internal penetration testing of the NSF and the United States Antarctic Program (USAP) networks and applications in support of the OIG's *Federal Information Security Modernization Act* (FISMA, Pub. L. No. 113-283) evaluation. The objective of the testing was to identify and attempt to exploit network vulnerabilities from within the networks. The internal penetration testing sought to provide a practical demonstration of the security controls' effectiveness and to provide an estimate of each network's susceptibility to internal exploitation and data breaches.

### RESULTS

The NSF and USAP networks present a medium-risk attack surface. Multiple vulnerabilities were identified during the penetration testing, including security flaws that hackers typically exploit to move within systems and exfiltrate data; instances of data leakage; and other vulnerabilities which may contribute to unauthorized access, network disruption, and pose a significant risk to NSF's and USAP's information systems. Max Cyber is responsible for the testing and the conclusions expressed in the report. NSF OIG does not express any opinion on the conclusions presented in Max Cyber's report.

### RECOMMENDATION

Max Cyber recommended that NSF remediate the vulnerabilities identified through the penetration testing using NSF's vulnerability management procedure.

### AGENCY RESPONSE

NSF agreed with the recommendation in the report.

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