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AWARENESS BRIEFING: CHINESE CYBER ACTIVITY TARGETING MANAGED SERVICE PROVIDERS

CISA
CYBER+INFRASTRUCTURE

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For more information on the Traffic Light Protocol,
see ***https://www.us-cert.gov/tlp***.

Welcome and Introductions

Laura Carlson

Stakeholder Engagement Division

Introductory Remarks

Christopher C. Krebs

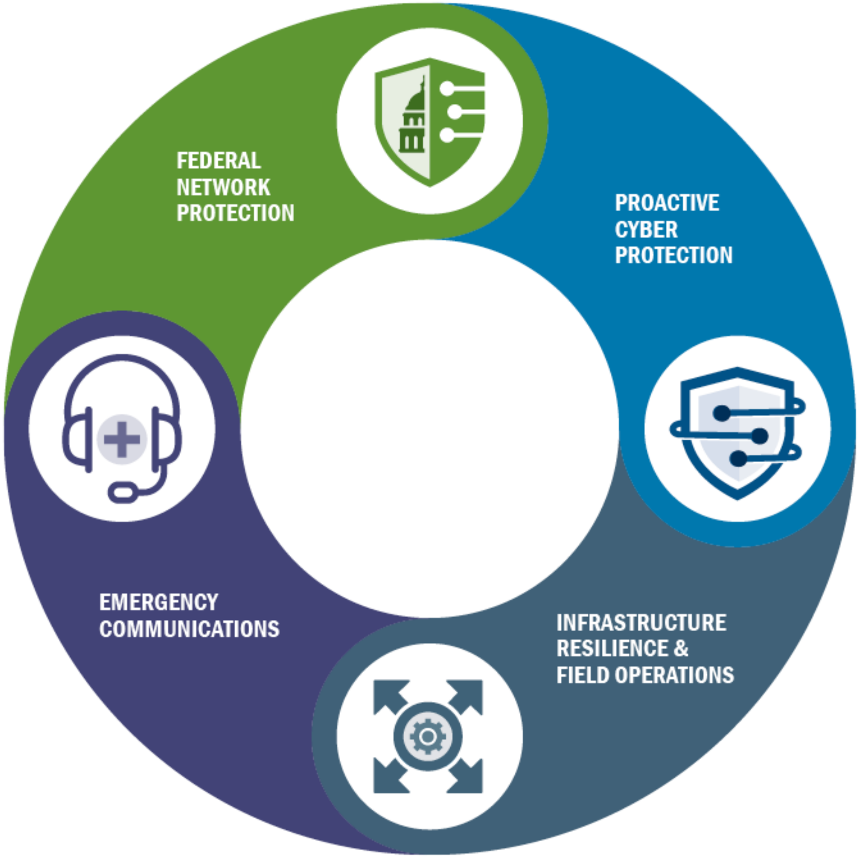
Director, Cybersecurity and
Infrastructure Security Agency

CISA OVERVIEW

CYBERSECURITY & INFRASTRUCTURE SECURITY AGENCY

The Nation's Risk Advisors

The Cybersecurity and Infrastructure Security Agency (CISA) is the pinnacle of national risk management for cyber and physical infrastructure


FEDERAL NETWORK PROTECTION
PROACTIVE CYBER PROTECTION
INFRASTRUCTURE RESILIENCE & FIELD OPERATIONS
EMERGENCY COMMUNICATIONS

CYBERSECURITY &
INFRASTRUCTURE
SECURITY AGENCY

Cybersecurity and Infrastructure Security Agency (CISA)

VISION

A Nation with secure and resilient critical infrastructure that ensures our security, economic prosperity, and way of life.

MISSION

Strengthen the Nation's cyber and physical infrastructure by managing and reducing systemic and catastrophic risk in partnership with the private sector, collaboration with the public sector, and protection of federal government networks.

Our objective with this webinar

Enable you to identify and reduce your exposure to this threat

Underlying message

You can outsource your operations, but you cannot outsource your risk

Target Audience

Managed Service Providers (MSP)

Clients

Housekeeping

- Submit questions and feedback in the **Questions** box.
- Troubleshooting: Chat with support staff in the **Technical Support** box.

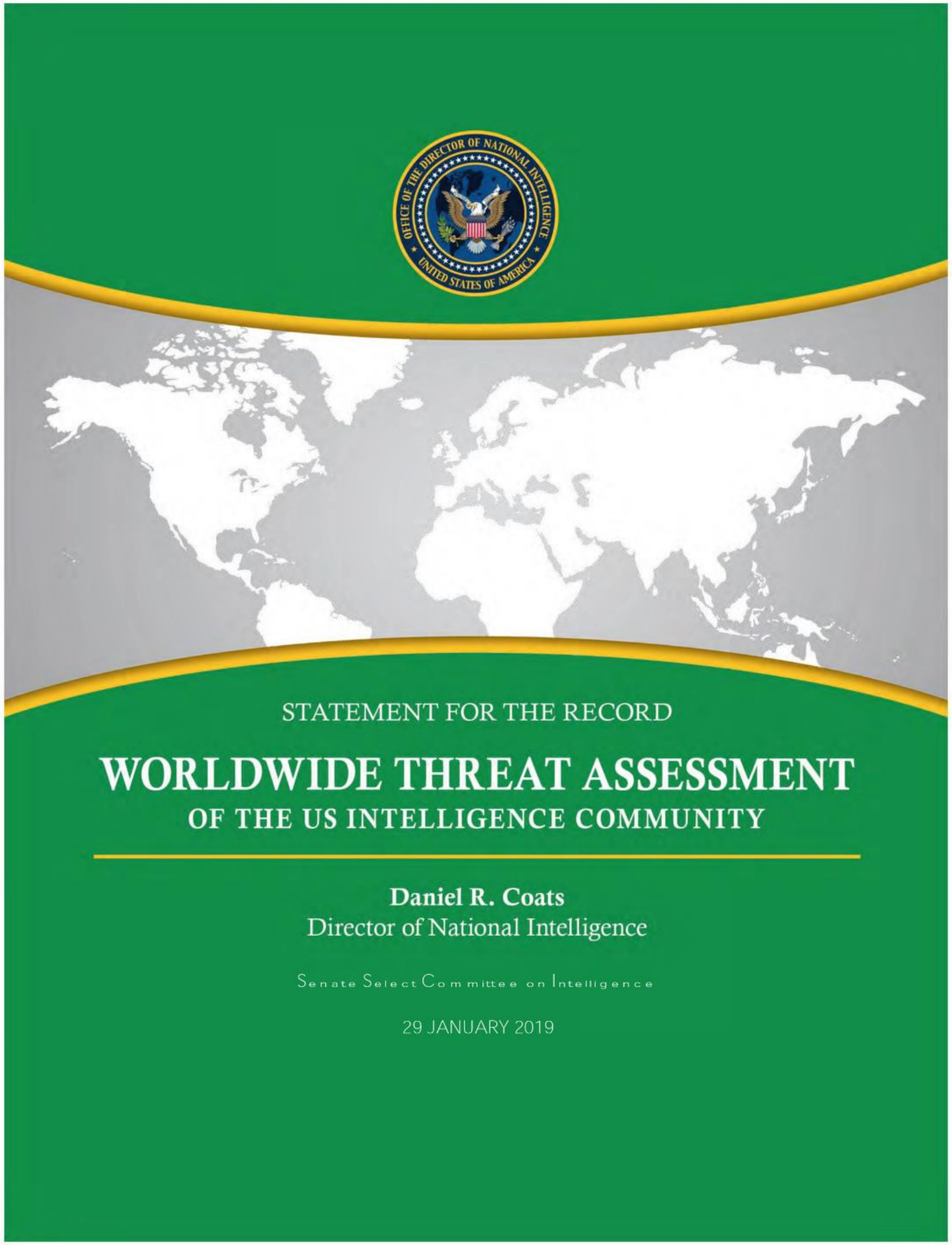
Please complete the short survey following the webinar.
We appreciate your feedback.

Agenda

- Threat Overview
- Mitigation & Detection
- Q&A
- CISA Offerings

THREAT OVERVIEW

Cyber is the top threat to national security



OFFICE OF THE DIRECTOR OF NATIONAL INTELLIGENCE
UNITED STATES OF AMERICA

STATEMENT FOR THE RECORD

WORLDWIDE THREAT ASSESSMENT
OF THE US INTELLIGENCE COMMUNITY

Daniel R. Coats
Director of National Intelligence

Senate Select Committee on Intelligence

29 JANUARY 2019

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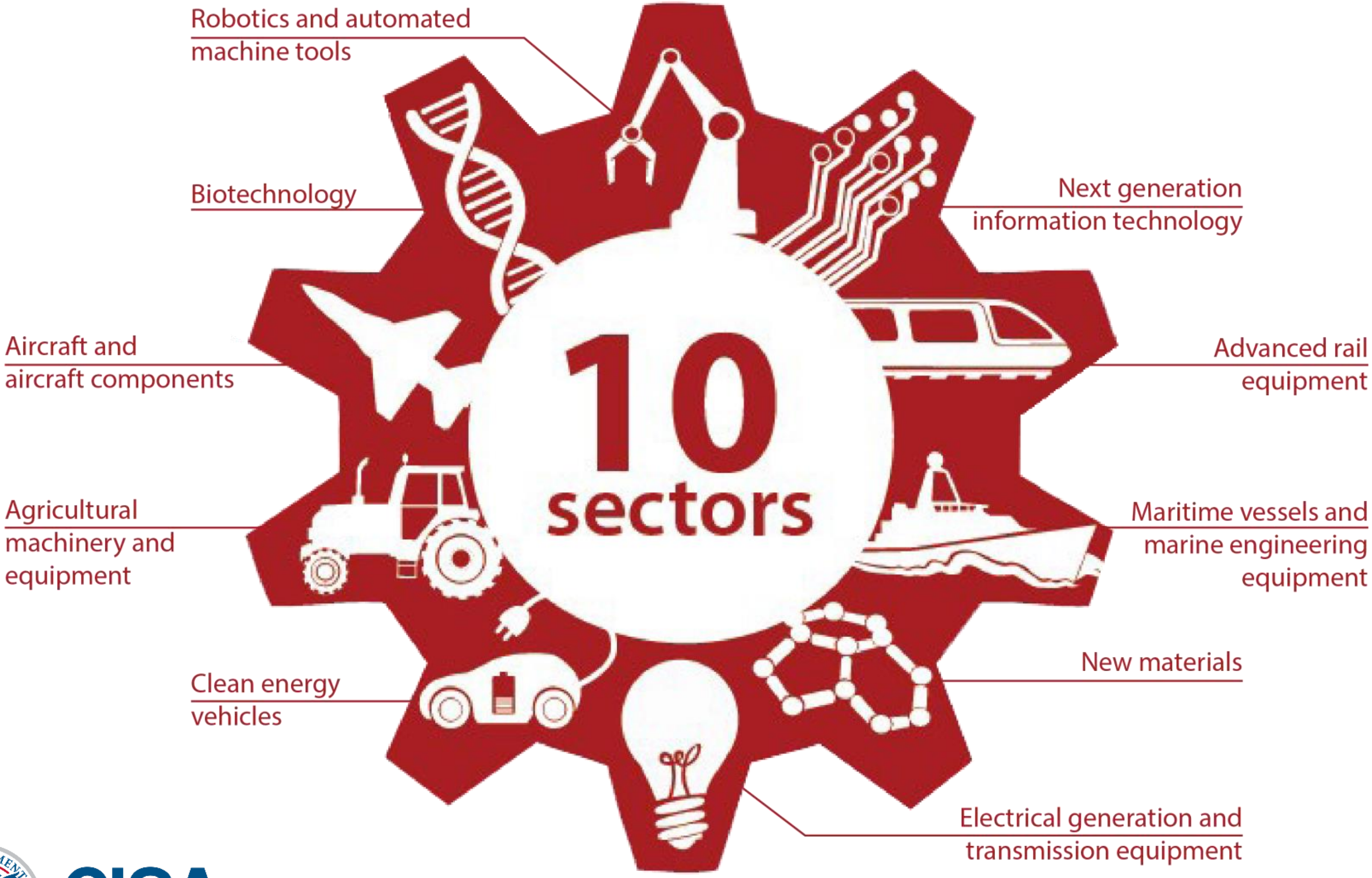
China wants what we have


Robotics and automated machine tools
Biotechnology
Aircraft and aircraft components
Agricultural machinery and equipment
Clean energy vehicles
10 sectors
Next generation information technology
Advanced rail equipment
Maritime vessels and marine engineering equipment
New materials
Electrical generation and transmission equipment

CREDIT: DOJ, Statement of John C. Demers, Assistant Attorney General, National Security Division, U.S. Department of Justice before the Committee on the Judiciary, United States Senate for a hearing on China's Non-Traditional Espionage Against the United States: The Threat and Potential Policy Responses presented on December 12, 2018

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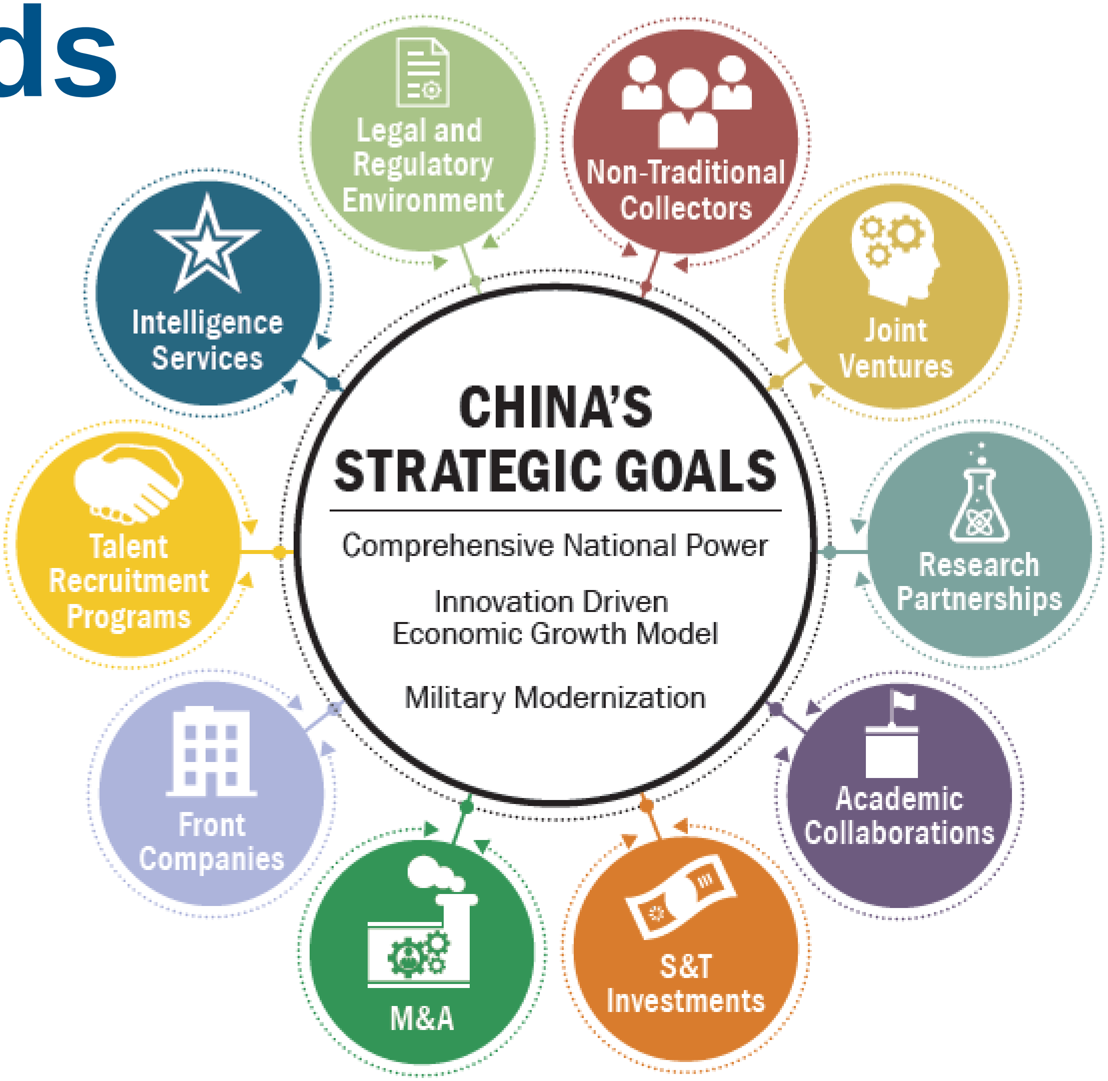
China needs cyber espionage



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CREDIT: Statement for the Record, Worldwide Threat Assessment of the US Intelligence Community; Daniel R. Coats, Director of National Intelligence, Senate Select Committee on Intelligence; 29 January 2019

Threat Actor: APT 10

Background

- Affiliated with the Ministry of State Security (December 2018 indictment)
- Active since at least 2006
- Becoming increasingly sophisticated and capable

Intent

- Most likely to support commercial and economic espionage
  - ○ Made in China 2025, Five Year Plan
- Could also target PII
- Targets of opportunity

Campaign: CLOUD HOPPER

MSPs as Targets

- Provide unique opportunities for access and collection against large numbers of targets
- Fits a pattern of threat actors increasingly targeting supply chains and trusted relationships

CLOUD HOPPER

- Begins in 2014, picks up in 2016, on-going through 2018 despite public disclosure in 2017
- Targets MSPs and MSP customers on every continent targeted (finance and banking, telecommunications, biotechnology, consulting, automotive…)

Campaign: CLOUD HOPPER

TTPs:

- Initial compromise may be phishing or spearphishing
- Use of common and custom malware (PlugX, RedLeaves, QuasarRAT)
- Living-off-the-Land, stolen credentials, lateral movement
- Encryption of exfiltrated data from target through MSP networks
- Appears to adjust to public disclosure

Key Takeaways

1. This is a serious actor with resources and they require a firm resolve by the defenders.

2. This actor sweeps up collateral targets of opportunity, in addition to their primary targets of interest.

3. This actor lives off the land, and they may use commonplace tools found in your network environments and turn them against you.

MITIGATION & DETECTION

General Mitigation Guidance

Mitigation Strategies for Managed Service Provider (MSP) Customers

Manage Supply Chain Risks

- Understand the supply chain risks associated with their MSP to include determining network security expectations
- Manage risk equally across their security, legal, and procurement groups.

Manage Architecture Risks

- Review and verify all connections between customer systems, service provider systems, and other client enclaves
- Restrict Virtual Private Network (VPN) traffic to and from MSP using a dedicated VPN connection

General Mitigation Guidance

Mitigation Strategies for Managed Service Provider (MSP) Customers

Implement Strong Operational Controls

- Create baseline for system and network behavior; continuously monitor network devices SIEM appliance alerts
- Regularly update software and operating systems

Manage Authentication, Authorization, and Accounting Procedures

- Adhere to best practices for password and permission management
- Ensure MSP accounts are not assigned to administrator groups and restrict those accounts to only systems they manage

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General Mitigation Guidance

Mitigation Strategies for Managed Service Providers (MSP)

Apply the principle of least privilege to their environment

Ensure that log information is aggregated and correlated to enable maximum detection capabilities

Ensure they have fully implemented all mitigation actions available to protect against this threat

Implement robust network and host-based monitoring solutions

Work with their customers to ensure hosted infrastructure is monitored and maintained

Specific Mitigation Guidance

Mitigation Strategies for known TTPs

DLL Search Order Hijacking

- Disallow loading of remote DLLs

Enable Safe DLL Search Mode

- Forces the use of restricted directories

Implement tools for detecting search order hijacking opportunities

Utilize application whitelisting to block unknown DLLs

Monitoring for DLL Search Order Hijacking

- Monitor file system for created, moved, renamed DLL's
- Changes in system DLL's not associated with updates/patches are suspicious
- Monitor DLL's loaded by processes (legitimate names, abnormal path)

Logging

Enable and audit advanced PowerShell logging

User account activity (focus on administrator level accounts)

Network Activity

Monitor processes for outbound network activity (against baseline)

Monitor connections to MSP infrastructure

Key Takeaways

1 Good credentials management goes a long way.

2 Foreclosing the doors this actor uses to move, hide, and attack can be done through good cyber hygiene.

3 Recognizing normal versus abnormal system and network behavior is still the longest yard to make.

Q&A

How do we learn about these types of malicious activities?

Q&A

What are the benefits of reporting this information?

CISA Offerings

CISA offers a collection of resources and tools to support identification of and defense against Chinese malicious activity

- A comprehensive list of mitigation strategies for IT service providers can be found at **https://www.us-cert.gov/china**

Organizations that determine their risk to be elevated should conduct a dedicated investigation to identify any Chinese related activity

- Contact CISA NCCIC
  ncciccustomerservice@hq.dhs.gov
  888-282-0870

- Report unauthorized network access to your local FBI Cyber Division
  cywatch@fbi.gov
  855-292-3937

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We Need You

Engage with us, share with us.

One entity's detection is another's prevention.

We're all in this together.

DEFEND TODAY. SECURE TOMORROW.

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For more information:
cisa.gov

For media inquiries, contact
nppdmedia@hq.dhs.gov

Report incidents
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Phone: 1-888-282-0870

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