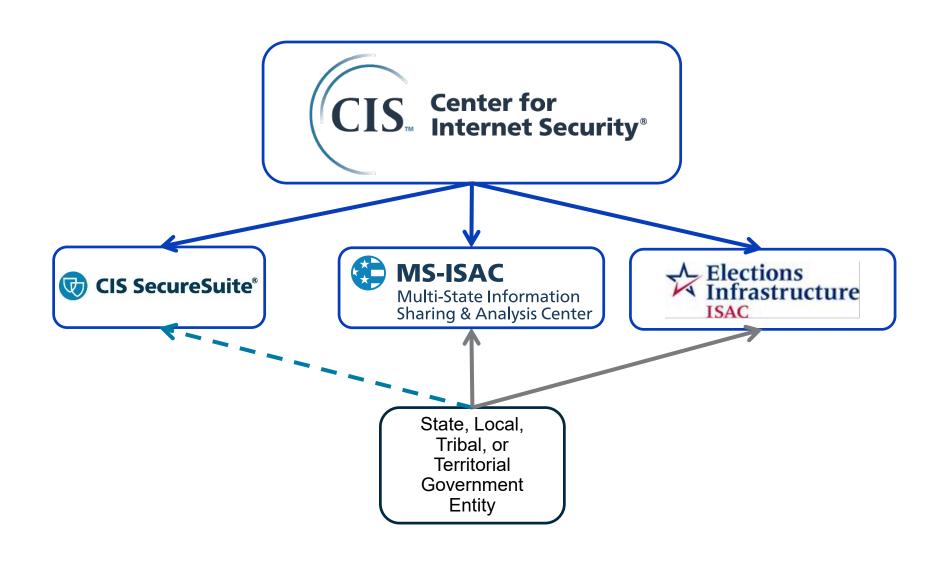




Cyber Threats and Federally-funded Cyber Resources

Eugene Kipniss







Why SLTT Governments?

Criminals look for data...

and governments have a lot of it!

































2018 NCSR Findings Preview

In 2018, both the state and local peer groups reported a decrease in overall maturity (-1% for the state peer group and -4% for the local peer group). This is a reversal of the trend that was reported in 2016 and 2017, where the state and local peer groups reported an increase in overall maturity (3% and 10% respectfully).

Local governments continue to report lower overall maturity scores (3.44) than their state counterparts (4.70).

Tribal governments continue to report lower overall maturity scores (3.33) than both their state and local counterparts.

In 2018 the tribal peer group reported a 48% increase in overall maturity.

2

·... 3

4

State, local and tribal peer groups continue to report overall scores that fall below the recommended minimum maturity level (5).



In 2018, 88% of the 33 sub-sector peer groups reported scores below the recommended minimum maturity level. The following sub-sector peer groups met the minimum maturity:

- Associations
- State Finance/Revenue
- State Information Technology
- State Museum

All peer groups continue to identify the same top five security concerns over the past four years:

- Lack of sufficient funding*
- Increasing sophistication of threats
- Lack of documented processes
- Emerging technologies
- Inadequate availability of cybersecurity professionals

* In 2018, we saw a shift in theorder the top five security concerns were ranked. Lack of sufficient funding became the number one security concern. In 2018, Supply Chain was added to the Identify function of the NIST Cybersecurity Framework and NCSR question set. The state and local peer groups scored lowest in the supply chain category within the identify function.





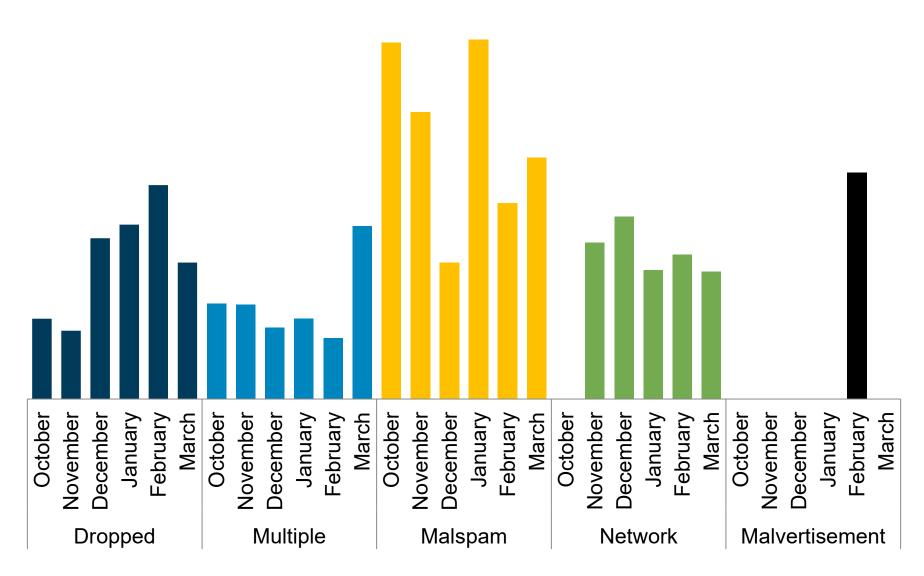
Top 10 Malware 2018

January 2018	February 2018	March 2018	April 2018	May 2018	June 2018
Kovter	Kovter	Kovter	Kovter	Kovter	WannaCry
WannaCry	WannaCry	Emotet	ZeuS	ZeuS	Emotet
Emotet	Emotet	ZeuS	Emotet	NanoCore	Kovter
ZeuS	ZeuS	Redyms	CoinMiner	Redyms	ZeuS
CoinMiner	NanoCore	TinyLoader	NanoCore	Mirai	Mirai
Gh0st	CoinMiner	CoinMiner	Xtrat	CoinMiner	Cerber
NanoCore	Gh0st	NanoCore	Redyms	WannaCry	NanoCore
Ursnif	Qarallex	Gh0st	WannaCry	Emotet	CoinMiner
Mirai	Latentbot	WannaCry	Mirai	Gh0st	Gh0st
Redyms	Mirai	Cerber	Gh0st	Latentbot	Xtrat

July 2018	February 2018	September 2018	October 2018	November 2018	December 2018
Emotet	Kovter	Emotet	Emotet	WannaCry	WannaCry
Kovter	Emotet	WannaCry	Kovter	Emotet	ZeuS
ZeuS	ZeuS	Kovter	ZeuS	ZeuS	Emotet
NanoCore	CoinMiner	ZeuS	WannaCry	Kovter	Kovter
Cerber	WannaCry	CoinMiner	NanoCore	CoinMiner	Qakbot
Gh0st	NanoCore	NanoCore	Gh0st	Mirai	Samsam
CoinMiner	Mirai	Gh0st	CoinMiner	NanoCore	Gh0st
Trickbot	Gh0st	Mirai	Mirai	Gh0st	Mirai
WannaCry	Cerber	Trickbot	Ursnif	Smoke Loader	Brambul
Xtrat	Ursnif	AZORult	Smoke Loader	Ursnif	CoinMiner

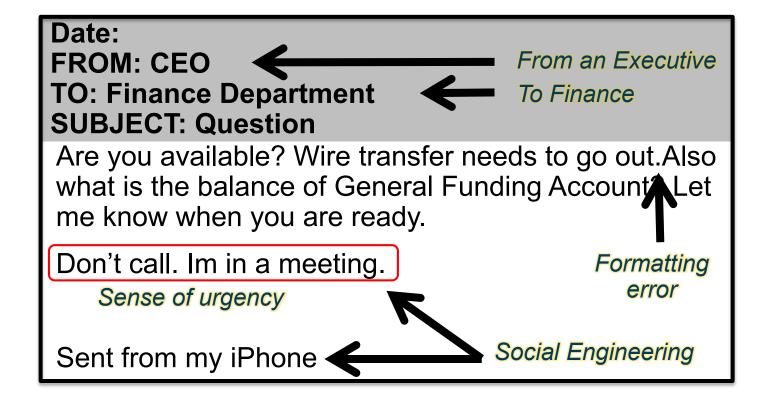


Top 10 Malware - Initiation Vectors





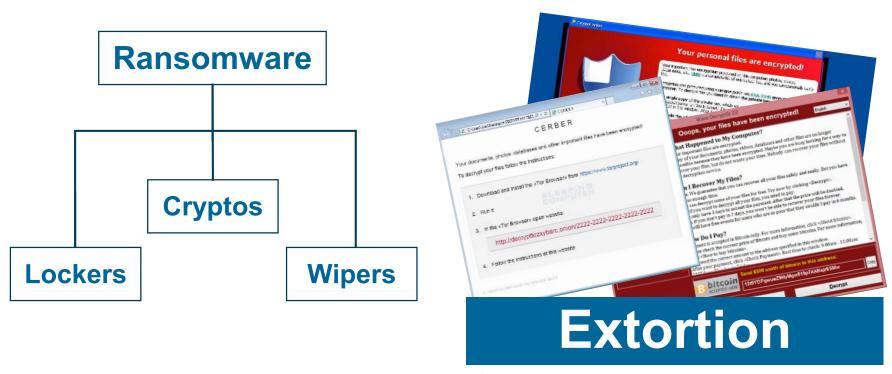
BEC: CEO Compromise Example





Ransomware

malware that blocks access to a system, device, or file until a ransom is paid; commonly demand that the victim pays \$200 - \$1,000 in bitcoins, gift cards, etc.



- 1. Lockers blocks access to files or the system
- 2. Cryptos encrypts files
- 3. Wipers erases files; no recovery



Emotet

- Emotet is the single most destructive piece of malware currently affecting state, local, tribal, and territorial (SLTT) governments in the U.S.
- Highly infectious due to worm-like capabilities
- Infostealer
- Modular
- Business continuity disaster
- Potential data breach

C



TrickBot

- Modular banking trojan that targets user financial information and acts as a dropper for other malware.
 - Man-in-the-browser attacks
 - Continuously releasing new modules/versions
 - Malspam campaigns or dropped
 - Some modules abuse SMB Protocol for lateral movement

https://www.cisecurity.org/white-papers/security-primer-trickbot/

LP: WHITE



Cryptocurrency Miners

Malware:

- CoinMiner TOP 10
- Coinhive
- WannaMine
- Dark Test
- BrowseAloud

Infection Vectors:

- Malspam
- EternalBlue
- Exploit Kits
- Worms
- Tech Support Scam
- Plugins



- Masquerading as Windows/system files, Fake AV, apps
- Fileless malware
- Infecting: Windows, Mac, smartphones, smartTVs, SCADA systems



Insider Crypto-mining

New York City Government Punishes Employee For Mining Bitcoin at Work



ALTCOIN MINING FEBRUARY 24, 2014 09:42 Harvard Student Uses 14,000-Core Supercomputer to Mine Dogecoin Welcome to Florida State Employee Arrested for Allegedly Mining Crypto at Work

PSA: Don't mine cryptocurrency on government computers

TLP: WHITE

Jan 31, 2017 | Jamie Redman | © 22034
Federal Reserve Employee Mines Bitcoin
Using the Fed's Server



Theft of Currency and Wallets



SIM Swapping/Jacking

Joel Ortiz and the \$5 Million SIM heist

- Attacker does recon of social media etc.
- Next they contact the mobile carrier
- Socially engineer a SIM re-issue or change
- Reset email accounts using phone verification
- Intercept all communication including 2FA!





Hoax Extortion Schemes

From: MrSmith [mailto:maillist@mailserver.com] Sent: Tuesday, September 19, 2017 10:52 AM

Subject: DDoS Warning

Hello.

FORWARD THIS MAIL TO WHOEVER IS IMPORTANT IN YOUR COMPANY AND CAN MAKE

We are Phantom Squad

Your network will be DDoS-ed starting Sept 30st 2017 if you don't pay protection fee - 0.2 Bit @ 1CR84W1ZAkqs8rWgGpaBoxdmSMnVtsqBNv.

If you don't pay by Sept 30st 2017, attack will start, yours service going down permanents. stop will increase to 20 BTC and will go up 10 BTC for every day of attack

SAMPLE EMAIL TEXT

Subject: <username> - <password>

I'm aware, <password>, is your pass word ou do t kr v me and you are most

In fact, I actually placed a malware of ut vide (porno) web site and guess mitiated operating as a RDP (R While you were watching vide your display and web cam. Imn er that, my software gathered all of your

What exactly did I do?

I made a double-screen video. 1st part displays the video you were viewing (you've

What should you do?

Well, I believe, <extortion amount> is a reasonable price tag for our little secret. You'll make the payment by Bitcoin (if you do not know this, search "how to buy bitcoin" in Google).

BTC Address: <address>

(It is cAsE sensitive, so copy and paste it)

I did not hack Your gmail it was open on the network so im alerting you guys of thus Hey Steve & users this is Greg I do Seucrity Work! I have Found severe vulnerabilities n Your Network I'm asking 1 bitcoin to show you guys the 0 day exploit I used to get here I assure You i didnt even touch Your email account i didnt even poke around didnt exfiltrate any data I know this is illegal but you are ripe for the plucking and i dont like that idea seeing its a us gov computer system I have access to the entire network and will not be coming back I am not going to leak this I did not take any data out I did not really poke around I just want You safe and some cash for my troubles have me 1 btc ready by tuesday and have a very nice day stay safe contact me skyline123@tutanota.com

Emails can include user's:

- Names
- **Passwords**
- **Emails**
- Telephone numbers

Spoofing the victim's email



Employee Mistakes



TLP: GREEN



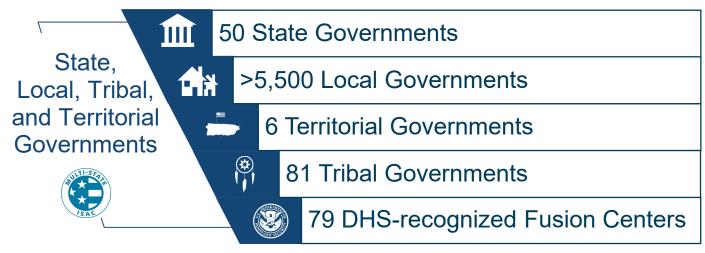
Why care? - Employee Mistakes



TLP: GREEN



Who We Serve







How to access MS-ISAC resources

- Register for the MS-ISAC's services here:
 https://learn.cisecurity.org/ms-isac-registration
- The MS-ISAC Stakeholder Engagement team will provide you with next steps:
 - Register your HSIN account
 - Submit public IPs, domains, and subdomains
 - Register for an MCAP account
 - Add additional staff to your account



24 x 7 Security Operations Center

Central location to report any cybersecurity incident

Support:

- Network Monitoring Services
- Research and Analysis

Analysis and Monitoring:

- Threats
- Vulnerabilities
- Attacks

Reporting:

- Cyber Alerts & Advisories
- Web Defacements
- Account Compromises
- Hacktivist Notifications



To report an incident or request assistance:

Phone: 1-866-787-4722

Email: soc@cisecurity.org

19



Computer Emergency Response Team

- Incident Response (includes on-site assistance)
- Network & Web Application Vulnerability Assessments
- Malware Analysis
- Computer & Network Forensics
- Log Analysis
- Statistical Data Analysis

To report an incident or request assistance:

Phone: 1-866-787-4722 Email: soc@cisecurity.org



Monitoring of IP Range & Domain Space

IP Monitoring

- IPs connecting to malicious C&Cs
- Compromised IPs
- Indicators of compromise from the MS-ISAC network monitoring (Albert)
- Notifications from Spamhaus

Domain Monitoring

- Notifications on compromised user credentials, open source and third party information
- Vulnerability
 Management
 Program (VMP)
 - Web Profiler
 - Port Profiler

Send domains, IP ranges, and contact info to: soc@cisecurity.org



Vulnerability Management Program

Web Profiler

- ✓ Server type and version (IIS, Apache, etc.)
- ✓ Web programming language and version (PHP, ASP, etc.)
- ✓ Content Management System and version (WordPress, Joomla, Drupal, etc.)

Email notifications are sent with 2 attachments containing information on out-of-date and up-to-date systems:

- Out-of-Date systems should be patched/updated and could potentially have a vulnerability associated with it
- Up-to-Date systems have the most current patches

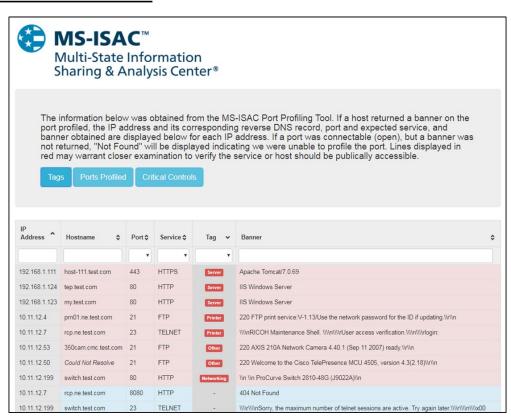




Vulnerability Management Program

Port Profiler

- Quarterly notifications
- Contact vmp.dl@cisecurity.org to:
 - Opt out of this service
 - Provide feedback on the Port Profiler
- Contact soc@cisecurity.org if:
 - You wish to add IP addresses
 - To verify "VMP Notification" contacts
- Source IP address: 52.14.79.150





Malicious Code Analysis Platform

A web based service that enables members to submit and analyze suspicious files in a controlled and non-public fashion

- Executables
- DLLs
- Documents
- Quarantine files
- Archives

To gain an account contact: mcap@cisecurity.org



SecureSuite

Workbench

- Platform for creating and maintaining resources
- https://workbench.cisecurity.org

Controls

 Prioritized set of actions to protect your organization and data from known cyber attack vectors

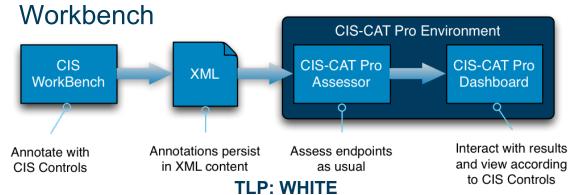
Benchmarks

Well-defined, un-biased, consensus-based industry best practices

CIS-CAT Pro

Configuration and Vulnerability Assessment Tool

Assessor and Dashboard can be downloaded from





HSIN Community of Interest

Access to:

- MS-ISAC Cyber Alert Map
- Archived webcasts & products
- Cyber table top exercises
- Guides and templates
- Message boards

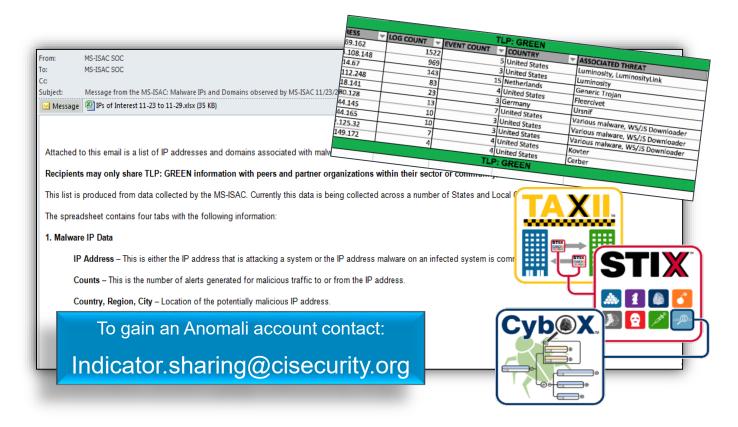






Weekly Malware IPs and Domains

Automated Threat Indicator Sharing via Anomali





MS-ISAC Cyber Alerts

MS-ISAC Advisory

Sent: Thursday, June 16, 2016 at 2:57 PM

To: Thomas Duffy

TLP: WHITE MS-ISAC CYBER ALERT

TO: All MS-ISAC Members, Fusion Centers, and IIC partners

DATE ISSUED: June 16, 2016

SUBJECT: Malicious Email Campaign Targeting Attorneys Spoofs Emails From Statewide Legal Organizations - TLP: WHITE

In June 2016 MS-ISAC became aware of a malicious email campaign targeting attorneys, which spoofs emails from statewide legal organizations, such as the Bar Association and the Board of Bar Examiners. The subject and body of the emails include claims that "a complaint was filed against your law practice" or that "records indicate your membership dues are past due." Recipients are asked to respond to the claims by clicking a link which leads to a malicious download, potentially ransomware.

The emails are well written and appear to originate from the appropriate authority, such as an Association official, likely increasing their effectiveness. Reporting from various states indicates a likelihood that this campaign is personalized to individuals practicing in a particular state and may be progressing on a state-by-state basis. The following states have been referenced in public reporting on this campaign: Alabama, California, Florida, Georgia, and Nevada. This targeting may include attorneys working for state, local, tribal, and territorial (SLTT) governments.

Recommendations:

MS-ISAC recommends the following actions:

- Share this information with potentially impacted organizations your area of responsibility, including Departments of Law/Justice, related law enforcement agencies, and agency-specific offices of counsel.
- Train government legal professionals in identifying spear phishing emails which may include spoofed email addresses, unusual requests, and questionable and/or masked links. This particular series of emails includes what appears to be a link to the state bar association, but when the user hovers over the link it shows that the link is really to a different website. Copying and pasting the link, instead of clicking on it, would defeat this social engineering attempt.
- · Perform regular backups of all systems to limit the impact of data loss from ransomware infections. Backups should be stored offline.

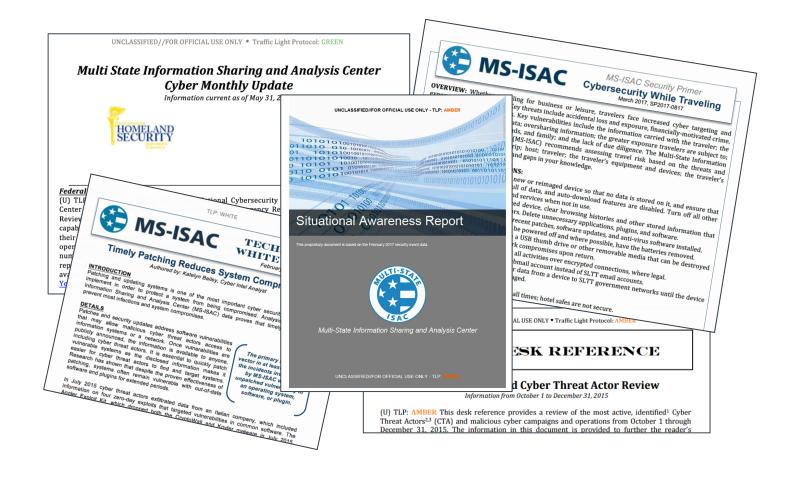


MS-ISAC Advisories





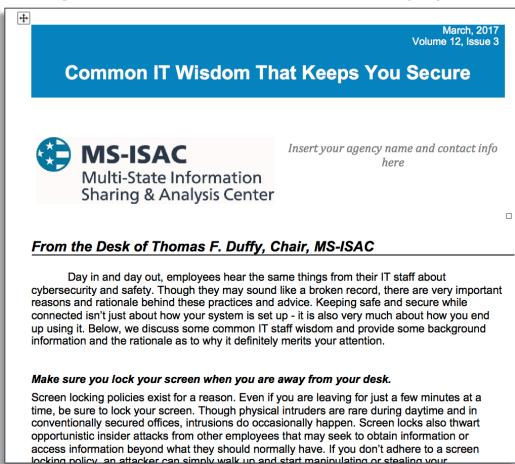
MS-ISAC Intel Papers





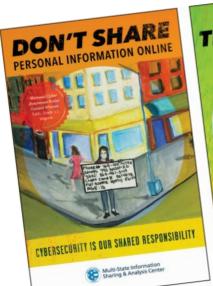
Monthly Newsletter

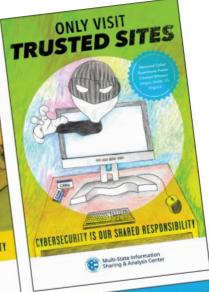
Distributed in template form to allow for re-branding and redistribution by <u>your</u> agency



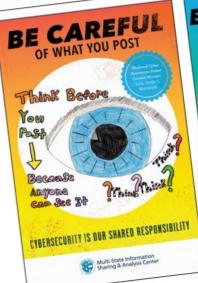


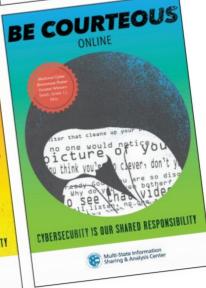
Cybersecurity Awareness Toolkit













Have you logged off your terminal?



Free Online Training Environment

- CompTIA A+, Network+, Security+
- CISSP Certification Prep
- Operating System Security





Who do I call?

Security Operations Center (SOC)

SOC@cisecurity.org - 1-866-787-4722
31 Tech Valley Dr., East Greenbush, NY 12061-4134
www.cisecurity.org

to join or get more information:

https://learn.cisecurity.org/ms-isacregistration





MS-ISAC 24x7 Security Operations Center 1-866-787-4722 SOC@cisecurity.org

info@msisac.org

Eugene Kipniss
Program Manager
MS-ISAC
518.880.0716
Eugene.Kipniss@cisecurity.org