



Issues & Threats During a Pandemic

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Increased Threats to UH



- Several organizations (including UH) have noted a large increase of scans and RDP/SSH/VNC/DB bruteforcing attacks from nonattributable cloud providers such as Google, Microsoft, Amazon, DigitalOcean, and others since this summer.
- It is believed that this is due to ransomware operators forming a **cartel** to buy access to the networks of victimized organizations from other criminal groups, affiliates, and contractors who are offered a commission on the payout.
- In 2020, criminal gangs have been demanding ransom payments of over \$1 million. One of the largest demands was 136,000 BTC or \$1.5 billion for a global corporation.



Notable HE Ransomware Attacks



• University of California San Francisco paid out \$1.14 million this June following an attack by Netwalker.



https://www.bbc.com/news/technology-53214783



Ransomware Gangs who Exfiltrate/Leak Stolen Data



Avaddon Light ProLock

ClOp LockBit RagnarLocker

Conti/Ryuk Maze RansomExx

CryLock MountLocker Ranzy/Ako

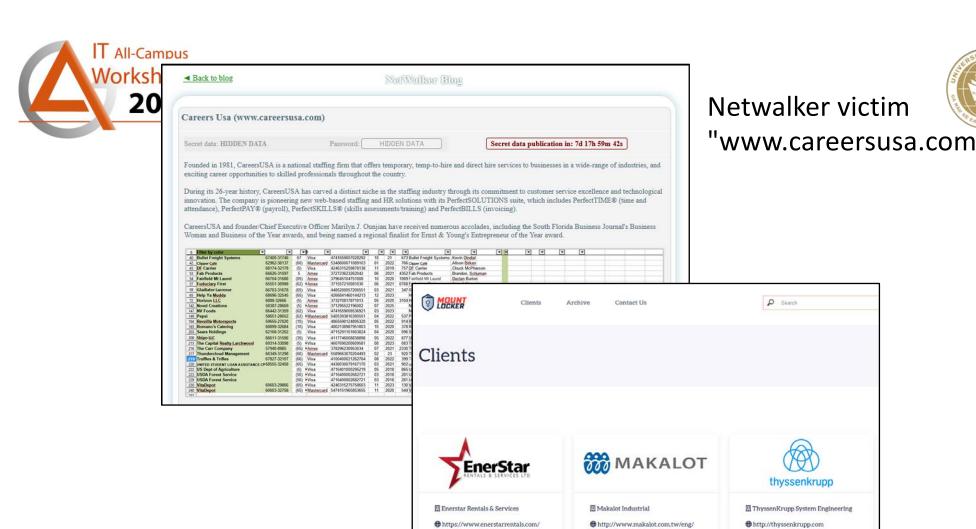
Crysis/Dharma Nemty Revil/Sodinokibi

DarkSide Nefilim/Nephilim Sekhmet

DoppelPaymer Netwalker Snake

Egregor OldGremlin Snatch

Fonix Pysa/Mespinoza SunCrypt



(t) 2020-10-07 (t) 2530

11/11/19

① 2020-09-25 @ 6018

\$35b 📤 30mb 📤 100%

@ 2020-07-30 @ 5893

MountLocker victims



October 21, 2020

Ransomware groups are going corporate

Derek B. Johnson

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Canon is among the companies targeted by a sophisticated ransomware attack this year. Ransomware groups are increasingly adopting the practices and tactics of the corporate businesses they target. (DennisM2)

As ransomware attacks have quickly morphed over the past few years into a billion-dollar business, the groups behind them are increasingly adopting the practices and tactics of the corporate businesses they target.

More and more, ransomware groups (and <u>some argue</u> the larger cybercrime ecosystem) are gravitating towards joint partnerships and profit sharing arrangements with other hacking groups, introducing tools to measure the efficiency of their work, creating playbooks and scripts during the negotiation phase, and adopting customer service and PR tactics from the corporate world.



MOST POPULAR

Popular Emailed Recent

<u>B&N cyberattack calls into question</u> <u>the retailer's network segmentation</u> practices

SC Media aces phishing test (whew!), but average score was only 52%

<u>URL address spoofing flaw keeps</u> mobile victims from determining fake, real sites

<u>Cyber Solarium Commission lays out</u> plan to secure supply chain

Phishing scams use redirects to steal Office 365, Facebook credentials



October 21, 2020

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THE BELL WAR TO THE SERVER

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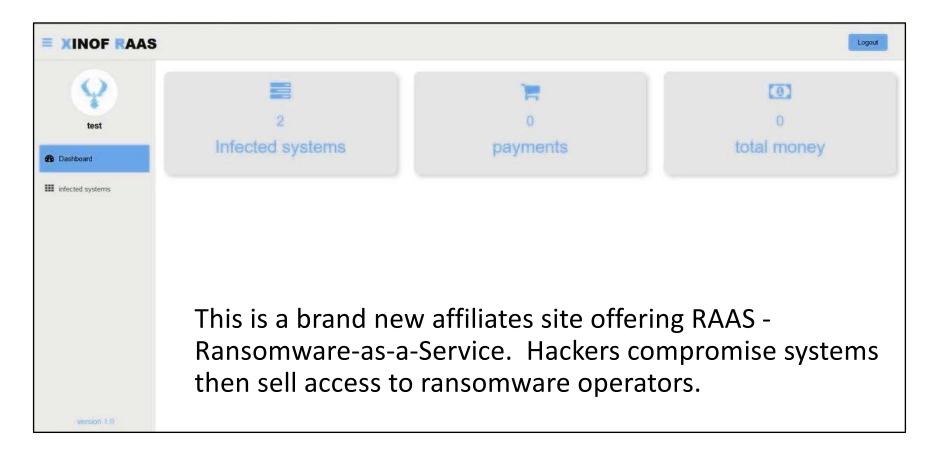
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RAAS - Ransomware-as-a-Service







Two Threats to Watch Out For...



- Credential Stuffing
 - Attacker uses credentials stolen from other websites in order to gain access into the target organization
- Malware (SpearPhishing)
 - Attacker infects victim machines with malware in order to gain access into the target organization

Credential Stuffing

Collection of Public Data Dumps

12,755 files totaling 708GB

4.6 billion credentials

Matches on "@hawaii.edu"

146,774 credentials

4,402 credentials (complexity match)

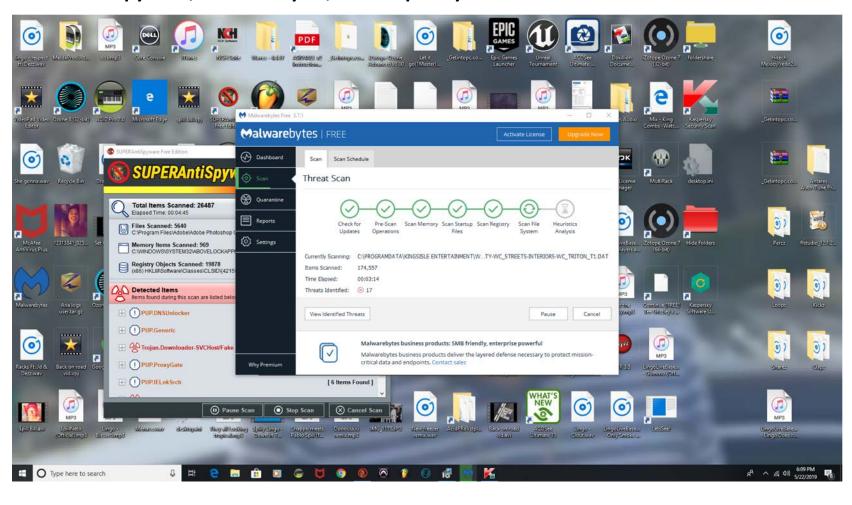
1,649 passwords reset since 2019

Chegg breach accounted for 82% of password resets at UH

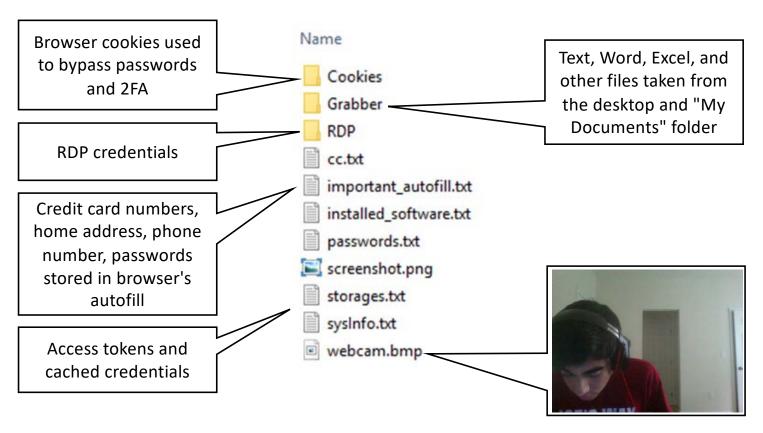
https://haveibeenpwned.com/

| Cafepress.com_1.2kk.txt | 38,049 KB |
|---|---|
| Cafepress.com_11kk.txt | 345,562 KB |
| Canva.com_98k.txt | 3,230 KB |
| Canva.com_904k.txt | 29,893 KB |
| Canva.com-orig_137kk.txt | 23,762,811 KB |
| CashCrate.com_6kk.txt | 195,829 KB |
| Cex.io_95k.txt | 3,117 KB |
| CFire.mail.ru_8.7kk.txt | 267,713 KB |
| CFire.mail.ru_924k.txt | 27,951 KB |
| ChatBooks.sql-orig_15.8kk.txt | 6,487,924 KB |
| □ cr .p. r. 201 | 68,313 KB |
| ChatBooks_2kk.txt | 00,515 KB |
| ChatBooks_2kk.txt | 10,660 KB |
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| CheatGamer.com_337k.txt | 10,660 KB |
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| CheatGamer.com_337k.txt Chegg.com_29kk.txt Chegg.com-orig_39.8kk.txt ChristianPassions_997k.txt | 10,660 KB 978,945 KB 8,755,782 KB 113,621 KB |
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| CheatGamer.com_337k.txt Chegg.com_29kk.txt Chegg.com-orig_39.8kk.txt ChristianPassions_997k.txt ClixSense.com_2.2kk.txt CoinBulb.com_587k.txt Corevin.com_732k.txt DaFont.com_661k.txt | 10,660 KB 978,945 KB 8,755,782 KB 113,621 KB 69,928 KB 20,420 KB 22,543 KB 349,674 KB 21,492 KB |

This screenshot was taken when malware executed on a victim's PC. This user has **McAfee**, **SUPERAntiSpyware**, **MalwareBytes**, and **Kaspersky**.



This malware will **steal data** from the computer and **send** it off to its Command and Control, then **delete itself** so the user will find no evidence of an infection and take no action (e.g. don't change passwords)



This malware will steal passwords from all browsers, email, FTP, chat, and other programs. **12 UH users** were affected by this malware.

```
Google Chrome
               https://www.car2go.com/en/a
Google Chrome
               http://www.audiobooks.com/a
Google Chrome
               https://www.roblox.com/
Google Chrome
               https://postmates.com/apply
Google Chrome
               https://us.battle.net/accou
               https://login.live.com/ppse
Google Chrome
Google Chrome
               https://accounts.google.com
Google Chrome
               https://auth.zappos.com/ap/
Google Chrome
               https://www.facebook.com/
Google Chrome
               https://cas.uni.edu/cas/log
               https://passport.twitch.tv/
Google Chrome
Google Chrome
               https://www.paypal.com/webs
               https://idp.thrivent.com/ni
Google Chrome
Google Chrome
               https://sm-prd11.ucollabora
Mozilla Firefox | https://accounts.google.d
                 https://bandcamp.com | cr
Mozilla Firefox
Mozilla Firefox
                 https://www.facebook.com
Mozilla Firefox
                 https://www.paypal.com
Mozilla Firefox
                 https://www.lynda.com
Mozilla Firefox
                 https://austin.bibliocomn
Mozilla Firefox
                 https://www.reddit.com
Mozilla Firefox
                 https://accounts.google.d
                 https://app.roll20.net
Mozilla Firefox
Mozilla Firefox
                 https://memberidentity.uf
Mozilla Firefox
                 https://www.dominos.com
                 https://us.battle.net
Mozilla Firefox
Mozilla Firefox | https://twitter.com
```



Things we do to ourselves



"self phished" ourselves

DoNotReply@hawaii.edu

UH LMS Notice - Certification Signup

To: jodi@hawaii.edu,

Reply-To: DoNotReply@hawaii.edu

☐ Inbox - UH August 20, 2020 at 7:42 AM



Certification Signup

You have signed up for COVID-19 Safety Training Certification.

Certification Details

Target Date:

Get more information at the COVID-19 Safety Training Certification certification page.

You are receiving this email because you have signed up for COVID-19 Safety Training Certification.

University of Hawai'i - Knowledge Sharing powered by Saba Cloud! | © Saba



WFH issues



- Transitioning to digital/electronic workflows could introduce more risk
 - Use of email for information exchange/sharing
 - Sharing/exchange of "protected" information
 - Acquisition of & routing for signatures for internal processes
- Flood in the use of (and request to use) "microservices"
 - Zoom integration tools
 - Academic tools
 - Need to review privacy policies, data security, terms & conditions
- Using @hawaii.edu as a "user account" (gmail account) to sign up on other services





Keeping up with "Regs"







a.k.a. NDAA 889 / HHS 889

https://www.federalregister.gov/documents/2020/07/14/2020-15293/federal-acquisition-regulation-prohibition-on-contracting-with-entities-using-certain

Federal Acquisition Regulation: Prohibition on Contracting With Entities Using Certain Telecommunications and Video Surveillance Services or Equipment

A Rule by the Defense Department, the General Services Administration, and the National Aeronautics and Space Administration on 07/14/2020



| _ | □ Start Printed Page 42665 | DOCUMENT DETAILS |
|----------|---|--|
| = | | Printed version: |
| | AGENCY: | PDF |
| h . | AGENOTI | Publication Date: |
| | Department of Defense (DoD), General Services Administration (GSA), and | 07/14/2020 |
| 20 | National Aeronautics and Space Administration (NASA). | Agencies: |
| R | | Department of Defense |
| 3 | ACTION: | General Services Administration |
| | Interim rule. | National Aeronautics and Space Administration |
| | intermitue. | Dates: |
| 28 | SUMMARY: | Effective: August 13, 2020. |
| 3 | OOMM/ATTI | Effective Date: |
| _ | DoD, GSA, and NASA are amending the Federal Acquisition Regulation (FAR) to | 08/13/2020 |
| 3 | implement section 889(a)(1)(B) of the John S. McCain National Defense | Document Type: |
| 3 | Authorization Act (NDAA) for Fiscal Year (FY) 2019 (Pub. L. 115-232). | Rule |
| 3 | | Document Citation: |



Section 889's Two Prohibitions



https://acquisition.gov/FAR-Case-2019-009/889_Part_B

- Part A: Effective August 13, 2019, the Government may not obtain (through a contract or other instrument) certain telecommunications equipment or services produced by five named Chinese companies or their subsidiaries and affiliates
- Part B: Effective August 13, 2020, the Government may not contract with an entity that <u>uses</u> certain telecommunications equipment or services, as a substantial or essential component of any system, or as critical technology as part of any system, produced by any of the same five named Chinese companies or their subsidiaries and affiliates
 - Use is "regardless of whether that use is in performance of a Federal contract"



What does this mean?



- As of August 13, 2020, government agencies are prohibited from contracting with an entity that uses any equipment, system, or service that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system
- Prohibition applies regardless of <u>whether or not</u> that usage is in performance of work under a Federal contract
- UH cannot purchase/use any telecom or video surveillance equipment or services from:
 - Huawei Technologies Company
 - ZTE Corporation
 - Hytera Communications Corporation
 - Hangzhou Hikvision Digital Technology Company
 - Dahua Technology Company
 - or any subsidiary or affiliate of these entities

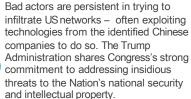
https://www.govinfo.gov/content/pkg/FR-2020-08-27/pdf/2020-18772.pdf

Why are these changes important?



The danger our Nation faces from foreign intelligence actors looking to infiltrate our systems has never been greater.

NDAA prohibitions against nefarious networks like Huawei will ensure our Nation remains secure. This Administration is committed to working with Congress to keep America strong through implementing the NDAA prohibitions.



The Federal Government alone experiences hundreds of thousands of digital assaults every day. Malicious actors are persistent, usually well-funded and constantly changing their tactics. They often exploit technologies from the identified Chinese companies to do so. The Administration shares Congress' strong commitment to addressing insidious threats to the Nation's national security and intellectual property.

The Trump Administration is keeping our government systems strong against nefarious networks like Huawei by leaning into Congress's Huawei ban with an aggressive posture.

Part A - The Government Cannot Obtain **Prohibited Telecom**

Part A became effective on August 13, 2019.

Part A prohibits the government from obtaining (through a contract or other instrument) certain telecommunications equipment (including video surveillance equipment) or services produced by the following covered entities and their subsidiaries and affiliates:

- Huawei Technologies Company
- ZTE Corporation
- Hytera Communications Corporation
- Hangzhou Hikvision Digital **Technology Company**
- Dahua Technology Company

The Department of Defense has the authority to add additional companies to this list.

Part A has been added to the Federal Acquisition Regulation (FAR) at FAR subpart 4.21.

Note that the Part A ban also applies to commercial items (FAR 12.301(d)(6)) and micro-purchases (FAR 13.201(j)).

Have questions about GSA's implementation of Section 889? See GSA's 889 Part A Q&As

Part B - Government Contractors Cannot **Use Prohibited Telecom**

Part B is effective August 13, 2020.

Part B prohibits the government from contracting with any entity that uses certain telecommunications equipment or services produced by the entities listed in the statute.

- The Government cannot contract with an entity that uses covered telecommunications equipment or services as a substantial or essential component of any system or as critical technology as part of any system.
- Prohibition applies regardless of whether or not that usage is in performance of work under a Federal contract.
- The prohibition applies to every sector and every dollar amount. Your ability to enter into contracts with the Government will be impacted by Part B.
- After conducting a <u>reasonable inquiry</u>, entities will represent whether they do or do not use prohibited telecommunications equipment or services.

Part B has been added to the Federal Acquisition Regulation (FAR) at FAR subpart 4.21.











New Interim DFARS Rules



- DFARS Clause 252.204-7020: NIST SP 800-171 DoD Assessment Methodology
 - Effective November 1, 2020
 - Must submit a self assessment of 800-171 compliance on SPRS website before award
 - https://www.sprs.csd.disa.mil/reference.htm
- DFARS Clause 252.204-7021: Cybersecurity Maturity Model Certification (CMMC)
 - By Oct. 2025, CMMC certification will be required for ALL DoD contracts
 - Phased rollout
 - FY 21: 15 contractors will be selected (including subcontractors)

UNCLASSIFIED





Projected CMMC Roll-Out

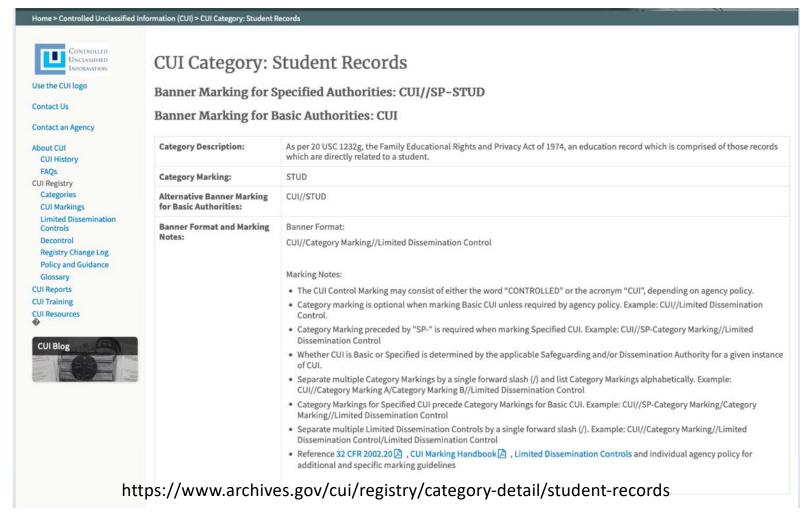
 OUSD(A&S) is working with Services and Agencies to identify candidate programs that will have the CMMC requirement during FY21-FY25 phased roll-out

| Total Number of New Prime Contracts Awarded Each Year with CMMC Requirement | | | | | | | |
|---|------|------|------|------|--|--|--|
| FY21 | FY22 | FY23 | FY24 | FY25 | | | |
| 15 | 75 | 250 | 479 | 479 | | | |

| | Total Number of Prime Contractors and Sub-Contractors with CMMC Requirement | | | | | |
|---------|---|-------|--------|--------|--------|--|
| | FY21 | FY22 | FY23 | FY24 | FY25 | |
| Level 1 | 899 | 4,490 | 14,981 | 28,714 | 28,709 | |
| Level 2 | 149 | 749 | 2,497 | 4,786 | 4,785 | |
| Level 3 | 452 | 2,245 | 7,490 | 14,357 | 14,355 | |
| Level 4 | 0 | 8 | 16 | 24 | 28 | |
| Level 5 | 0 | 8 | 16 | 24 | 28 | |
| Total | 1,500 | 7,500 | 25,000 | 47,905 | 47,905 | |

- All new DoD contracts will contain the CMMC requirement starting in FY26
- Assumes for every unique prime contractor, there are ~ 100 unique subcontractors

Eventually Student Info will be CUI





Draft Federal Student Aid Strategic Plan FY2020-24



- https://studentaid.gov/sites/default/files/fy2024-strategicplan-draft.pdf
- Strategic Goal 4: Strengthen Data Protection and Cybersecurity Safeguards
 - 4.2: Improve student privacy data and cybersecurity controls of IHEs through outreach and communication, to mitigate future cyber incidents and breaches
 - 4.3: Build an effective cybersecurity culture through employee awareness, training and accountability focused on protecting systems and data
 - "Performance metrics" mentions <u>assessment findings</u> & <u>OMB</u> <u>compliance audits</u>





ITS Security Initiatives



Free Certificates!

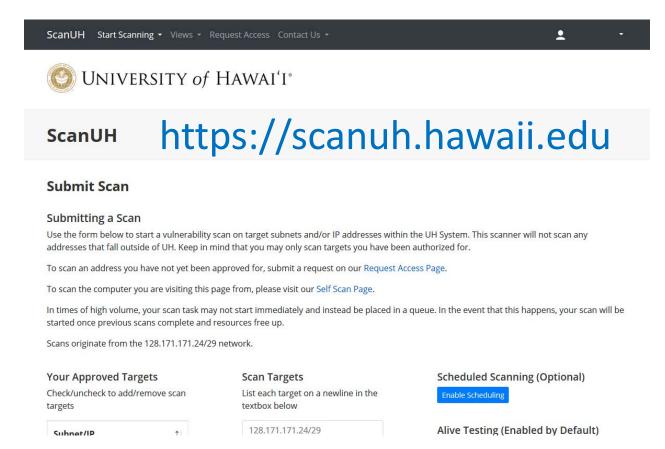


- InCommon Certificates are now available at no charge:
 - http://www.hawaii.edu/sitelic/incommon/
- All UH websites should be using a certificate (SHA-2)
- All CAS URL registrations will require a certificate (https) in 2021
 - Be on the lookout for retirement of TLS v1.1
 - TLS v1.1 deprecated earlier this year



OpenVAS is now ScanUH







Internal Scanning Solutions



- Nessus Scanner w/ Tenable.sc
 - Self hosted scanner behind your firewall
- Nessus Agents w/ Nessus Manager (and ScanUH Soontm)
 - Lightweight; install agent on each machine

https://www.hawaii.edu/infosec/assets/vuln-scan/
[UH Login Required]





Cyber Hygiene Best Practices

Home > Minimum Security Standards > Cyber Hygiene Best Practices **Cyber Hygiene Best Practices** Cyber Hygiene is a set of best practices users should follow to improve the safety and security of their devices. For detailed information on minimum security standards for Servers, Endpoint, and Multi-Function Devices based on UH Institutional Data Category type (Public, Restricted, Sensitive, and Regulated), please visit the following page: https://www.hawaii.edu/infosec/minimum-standards/ When working with Regulated Data, please refer to the applicable Standard, Act, or Policy (e.g., CMMC, PCI DSS, HIPAA, FERPA, NIST SP800-171, etc.) for specific details on any additional controls needed. **Best Practice** Anti-Malware . US-CERT Security Tip (ST18004) Protecting Install Anti-Malware software and ensure its signatures are Software and Host Based Against Malicious Code: https://usregularly updated. Anti-Malware software is a key protective measure to detect, quarantine, and remove various types of cert.cisa.gov/ncas/tips/ST18-271 ITS MSS 8.1 — Ensure Anti-Malware Software and Signatures are Updated McAfee anti-virus software is licensed by the University of . US-CERT Security Tip (ST04004) Understanding Hawaii (UH), Information Technology Services (ITS) site license Firewalls for Home and Small Office Use: for use by active UH faculty, staff, and students: https://us-cert.cisa.gov/ncas/tips/ST04-004 https://www.hawaii.edu/askus/1254 · ITS MSS 9.1 - Apply Host-Based Firewalls or In addition to installing Anti-Malware software, most modern Port Filtering Operating Systems include built-in firewalls, which are commonly referred to as Host Based Firewalls. Host Based Firewalls run on your device and provide an additional layer of protection from network cyberattacks.

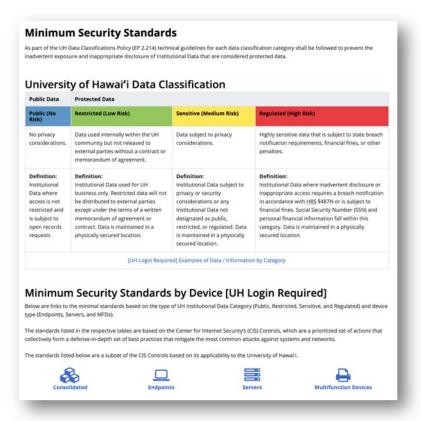
- 1. Anti-Malware Software and Host Based Firewalls
- 2. Regularly Update Software
- 3. Multi-Factor Authentication
- 4. Set Strong Passwords
- 5. Use Encryption
- Back Up Your Data
- 7. Lock Your Devices
- 8. Limit the use of Administrative Accounts
- 9. Recognize Phishing
- 10. Mobile Device Security

Source: https://www.hawaii.edu/infosec/minimum-standards/cyber-hygiene/



UH ITS Minimum Security Standards





Per Executive Policy 2.214 - Institutional Data Classification Categories and Information Security Guidelines:

D. DATA SECURITY MEASURES: 1. Technical guidelines for each data classification category shall be followed to prevent the inadvertent exposure and inappropriate disclosure of Institutional Data that are considered Protected Data.

Source: https://www.hawaii.edu/infosec/minimum-standards/



UH ITS Minimum Security Standards Mapping

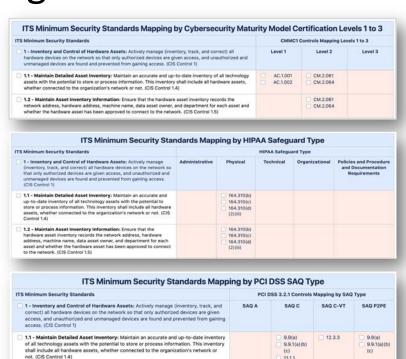


ITS has mapped the Minimum Security Standards (MSS) against:

- Cybersecurity Maturity Model Certification (CMMC) Levels 1 to 3
- Health Insurance Portability and Accountability Act (HIPAA)
- Payment Card Industry Data Security Standard (PCI DSS)

Points to remember:

- When working with Regulated Data, please refer to the applicable Standard, Act, or Policy for specific details on any additional controls needed.
- When comparing Standards, Acts, or Policies to the ITS MSS, the more stringent standard takes precedence.
- Standard, Act, or Policy requirements still apply when there is no equivalent ITS MSS.



9.9(a)

1.2 - Maintain Asset Inventory Information: Ensure that the hardware asset inventor

records the network address, hardware address, machine name, data asset owner, and department for each asset and whether the hardware asset has been approved to

connect to the network. (CIS Control 1.5)



Fall DG & IS Briefings



- Fall Data Governance and Information Security briefings:
 - Two identical sessions
 - Friday, Oct. 30: 9 11am
 - Monday, Nov. 9: 12 2pm
- Topics to be covered:
 - Current threats & vulnerabilities
 - Policy and regulation updates
 - Zoom guidelines and issues
 - Open records request handling
 - ADA updates
- One more DG & IS session RESEARCH FOCUSED
 - Tentative date: Dec. 3 time: TBD



And.... Drum roll please!





(More details at DG & IS Briefing next week!)







Questions?

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