

Retos de la Automatización del Threat Hunting



BLUE HAT CERT

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```
$ telnet ceo.bluehatcorp.com 27701
# ramiro@bluehatcorp> whoami
```



- Consultor Ciberseguridad
- Certificaciones:
 - (ISC)² CISSP
 - CSA CCSK
 - PCI SSC
 - PCI Professional (PCIP)
 - PCI Internal Security Assessor (PCI ISA)
 - PECB:
 - ISO 27001 Master
 - ISO 27005 Senior Lead Risk Manager
 - ISO 27032 Senior Lead Cybersecurity Manager
 - ISO 27035 Senior Lead Incident Manager
 - EC-Council:
 - LPT, CCISO, ECSA, CEH, CHFI, ECIH, EDRP
- Miembro:
 - OWASP - Open Web Application Security Project
 - ISACA
 - ISA - International Society of Automation
 - ACFE - Asociation of Certified Fraud Examiners
 - HTCIA - High Technology Crime Investigation Association
 - PMI - Project Management Institute



Ciberseguridad basado en Riesgos



- **Seguridad en TI**

ISO 27033: El proceso de tomar medidas preventivas físicas y de software para proteger la infraestructura de TI del acceso no autorizado, mal uso, mal funcionamiento, modificación, destrucción o divulgación indebida, creando así una plataforma segura para que las computadoras, los usuarios y los programas realicen sus funciones críticas permitidas dentro de un entorno seguro.

- **Seguridad de la Información**

ISO 27001: Preservación de la confidencialidad, integridad y disponibilidad de la información

- **Riesgo**

ISO 31000: Efecto de la incertidumbre sobre los objetivos

- **Ciberseguridad**

ISO 27032: Preservación de la confidencialidad, integridad y disponibilidad de la información en el ciberespacio

- **Ciberseguridad (actual)**

ISO 27100: Mantener los ciber-riesgos a un nivel tolerable, a las personas, la sociedad, las organizaciones y las naciones

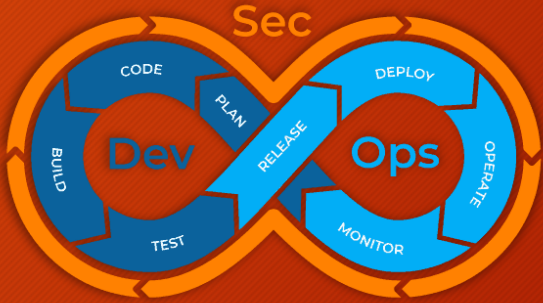
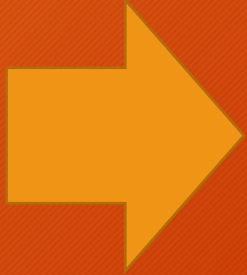
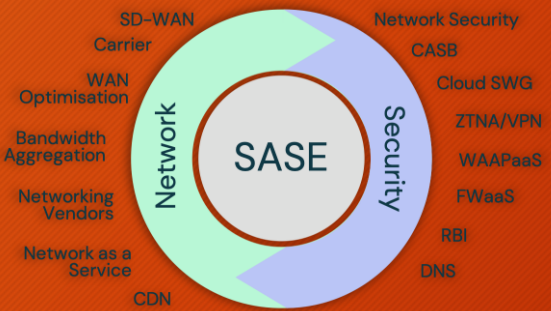


Retos de la Automatización del Threat Hunting



1. Tener claro los Activos Críticos de la Organización o Comunidad Objetivo.

Retos de Arquitectura de Seguridad



Retos de la Automatización del Threat Hunting



1. Tener claro los Activos Críticos **DE** la Organización o Comunidad Objetivo
2. Tener claro el Alcance y la Arquitectura de la infraestructura de TI

NIST Cybersecurity Framework



Identificador único de función	Función	Identificador único de categoría	Categoría
ID	Identificar	ID.AM	Gestión de activos
		ID.BE	Entorno empresarial
		ID.GV	Gobernanza
		ID.RA	Evaluación de riesgos
		ID.RM	Estrategia de gestión de riesgos
		ID.SC	Gestión del riesgo de la cadena de suministro
PR	Proteger	PR.AC	Gestión de identidad y control de acceso
		PR.AT	Conciencia y capacitación
		PR.DS	Seguridad de datos
		PR.IP	Procesos y procedimientos de protección de la información
		PR.MA	Mantenimiento
		PR.PT	Tecnología protectora
DE	Detectar	DE.AE	Anomalías y eventos
		DE.CM	Vigilancia continua de seguridad
		DE.DP	Procesos de detección
RS	Responder	RS.RP	Planificación de respuesta
		RS.CO	Comunicaciones
		RS.AN	Análisis
		RS.MI	Mitigación
		RS.IM	Mejoras
RC	Recuperar	RC.RP	Planificación de recuperación
		RC.IM	Mejoras
		RC.CO	Comunicaciones

General Risk Frameworks and Methods

Generic Frameworks for Cyber Risk Management

- NIST Cybersecurity Framework
- NIST SP 800-39
- COBIT

Risk Modeling Frameworks

- NIST SP 800-30
- CBEST
- FFIEC Cybersecurity Assessment Tool
- RiskIT

General Cyber Threat Modeling Frameworks and Methods

Threat Modeling Frameworks

- ODNI Cyber Threat Framework
- Cyber Prep 2.0 / DACS
- Attack tree modeling
- Cyber attack lifecycle modeling

Modeling to Support Design Analysis & Testing

- STRIDE & DREAD
- NIST SP 800-154
- OCTAVE
- Intel's TARA / TAL

Threat Modeling Resources Oriented to Enterprise IT

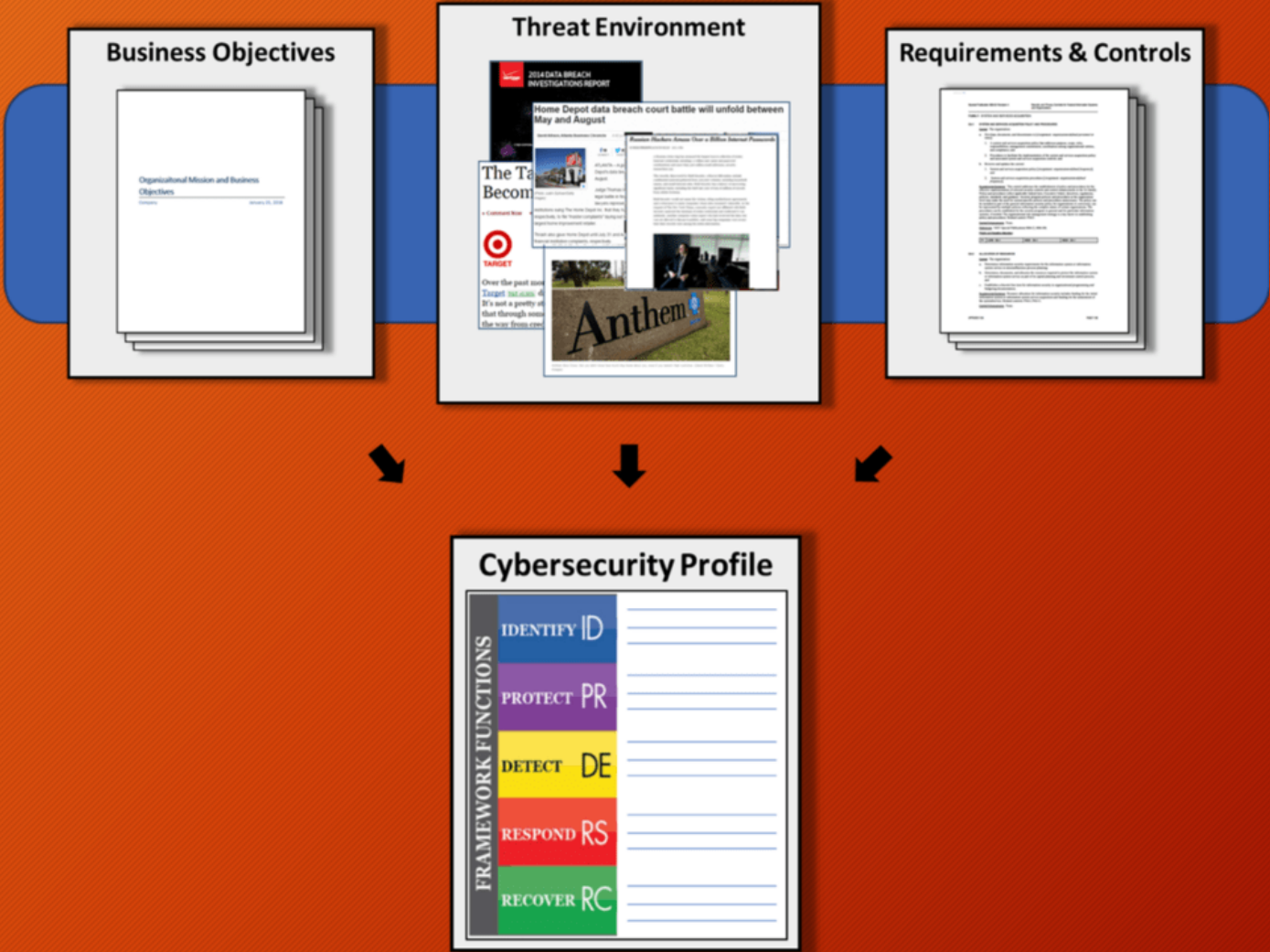
Tactics, Techniques, and Procedures-Oriented

- NIST SP 800-30 list of threat events
- ATT&CK™
- CAPEC™
- MITRE's TARA

Technology-Oriented

- Web Application threat models and methods – OWASP, PASTA
- Threat modeling for cloud computing

NIST CSF - Componentes - Perfiles



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- 4.
5. Tener claro los Riesgos sobre los activos críticos

NIST Cybersecurity Framework 1.1

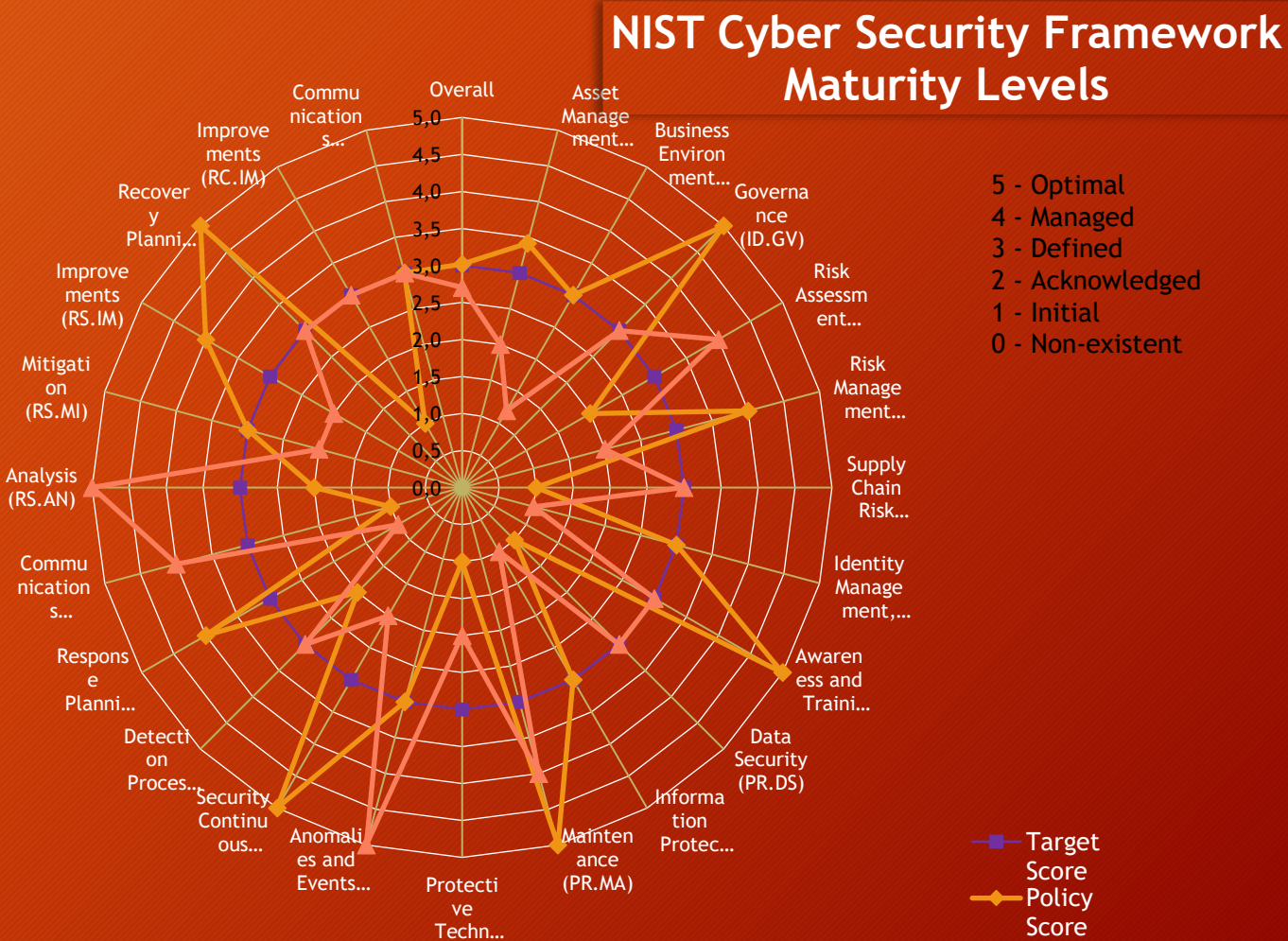


Function	Category	Subcategory	Informative References	Policy Maturity	Practice Maturity
IDENTIFY (ID)	Asset Management (ID.AM): The data, personnel, devices, systems, and facilities that enable the organization to achieve business purposes are identified and managed consistent with their relative importance to organizational objectives and the organization's risk strategy.	ID.AM-1: Physical devices and systems within the organization are inventoried	- CIS CSC 1 - COBIT 5 BAI09.01, BAI09.02 - ISA 62443-2-1:2009 4.2.3.4 - ISA 62443-3-3:2013 SR 7.8 - ISO/IEC 27001:2013 A.8.1.1, A.8.1.2 - NIST SP 800-53 Rev. 4 CM-8, PM-5	4.3	2.0
		ID.AM-2: Software platforms and applications within the organization are inventoried	- CIS CSC 2 - COBIT 5 BAI09.01, BAI09.02, BAI09.05 - ISA 62443-2-1:2009 4.2.3.4 - ISA 62443-3-3:2013 SR 7.8 - ISO/IEC 27001:2013 A.8.1.1, A.8.1.2, A.12.5.1 - NIST SP 800-53 Rev. 4 CM-8, PM-5	4.0	2.0
		ID.AM-3: Organizational communication and data flows are mapped	- CIS CSC 12 - COBIT 5 DSS05.02 - ISA 62443-2-1:2009 4.2.3.4 - ISO/IEC 27001:2013 A.13.2.1, A.13.2.2 - NIST SP 800-53 Rev. 4 AC-4, CA-3, CA-9, PL-8	1.2	2.0
		ID.AM-4: External information systems are catalogued	- CIS CSC 12 - COBIT 5 APO02.02, APO10.04, DSS01.02 - ISO/IEC 27001:2013 A.11.2.6 - NIST SP 800-53 Rev. 4 AC-20, SA-9	4.0	2.0
		ID.AM-5: Resources (e.g., hardware, devices, data, time, personnel, and software) are prioritized based on their classification, criticality, and business value	- CIS CSC 13, 14 - COBIT 5 APO03.03, APO03.04, APO12.01, BAI04.02, BAI09.02 - ISA 62443-2-1:2009 4.2.3.6 - ISO/IEC 27001:2013 A.8.2.1 - NIST SP 800-53 Rev. 4 CP-2, RA-2, SA-14, SC-6	4.0	2.0
		ID.AM-6: Cybersecurity roles and responsibilities for the entire workforce and third-party stakeholders (e.g., suppliers, customers, partners) are established	- CIS CSC 17, 19 - COBIT 5 APO01.02, APO07.06, APO13.01, DSS06.03 - ISA 62443-2-1:2009 4.3.2.3.3 - ISO/IEC 27001:2013 A.6.1.1 - NIST SP 800-53 Rev. 4 CP-2, PS-7, PM-11	3.0	2.0
		Category Maturity Score		3.4	2.0
		ID.BE-1: The organization's role in the supply chain is identified and communicated	- COBIT 5 APO08.01, APO08.04, APO08.05, APO10.03, APO10.04, APO10.05 - ISO/IEC 27001:2013 A.15.1.1, A.15.1.2, A.15.1.3, A.15.2.1, A.15.2.2 - NIST SP 800-53 Rev. 4 CP-2, SA-12	3.0	1.0

Ciberseguridad - NIST Cybersecurity Framework 1.1



NIST CSF Categories		Target Score	Policy Score	Practice Score
IDENTIFY (ID)	Overall	3.00	3.02	2.70
	Asset Management (ID.AM)	3.00	3.42	2.00
	Business Environment (ID.BE)	3.00	3.00	1.20
	Governance (ID.GV)	3.00	5.00	3.00
	Risk Assessment (ID.RA)	3.00	2.00	4.00
	Risk Management Strategy (ID.RM)	3.00	4.00	2.00
PROTECT (PR)	Supply Chain Risk Management (ID.SC)	3.00	1.00	3.00
	Identity Management, Authentication and Access Control (PR.AC)	3.00	3.00	1.00
	Awareness and Training (PR.AT)	3.00	5.00	3.00
	Data Security (PR.DS)	3.00	1.00	3.00
	Information Protection Processes and Procedures (PR.IP)	3.00	3.00	1.00
	Maintenance (PR.MA)	3.00	5.00	4.00
DETECT (DE)	Protective Technology (PR.PT)	3.00	1.00	2.00
	Anomalies and Events (DE.AE)	3.00	3.00	5.00
	Security Continuous Monitoring (DE.CM)	3.00	5.00	2.00
RESPOND (RS)	Detection Processes (DE.DP)	3.00	2.00	3.00
	Response Planning (RS.RP)	3.00	4.00	1.00
	Communications (RS.CO)	3.00	1.00	4.00
	Analysis (RS.AN)	3.00	2.00	5.00
	Mitigation (RS.MI)	3.00	3.00	2.00
RECOVER (RC)	Improvements (RS.IM)	3.00	4.00	2.00
	Recovery Planning (RC.RP)	3.00	5.00	3.00
	Improvements (RC.IM)	3.00	1.00	3.00
	Communications (RC.CO)	3.00	3.00	3.00



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6. Proponer el mejor Tratamiento de los Riesgos

NIST CSF - Implementación



1. Priorización y definición de alcance
2. Orientación e Identificación de activos
3. Identificar la situación actual
4. Realizar un análisis de riesgos
5. Establecer objetivos
6. Determinar, analizar y priorizar las brechas detectadas
7. Implementar el plan de acción





VS



ROLES Y RESPONSABILIDADES

Inicios del “Ethical Hacking”



Reconnaissance is nothing more than the steps taken to gather evidence and information on the targets you want to attack.

Reconnaissance

2

In the gaining access phase, true attacks are leveled against the targets enumerated in the second phase.

Gaining Access

4

In the final phase, attackers attempt to conceal their success and avoid detection by security professionals.

Covering Tracks

1

Scanning and Enumeration

Take the information you gathered in recon and actively apply tools and techniques to gather more in-depth information on the targets.

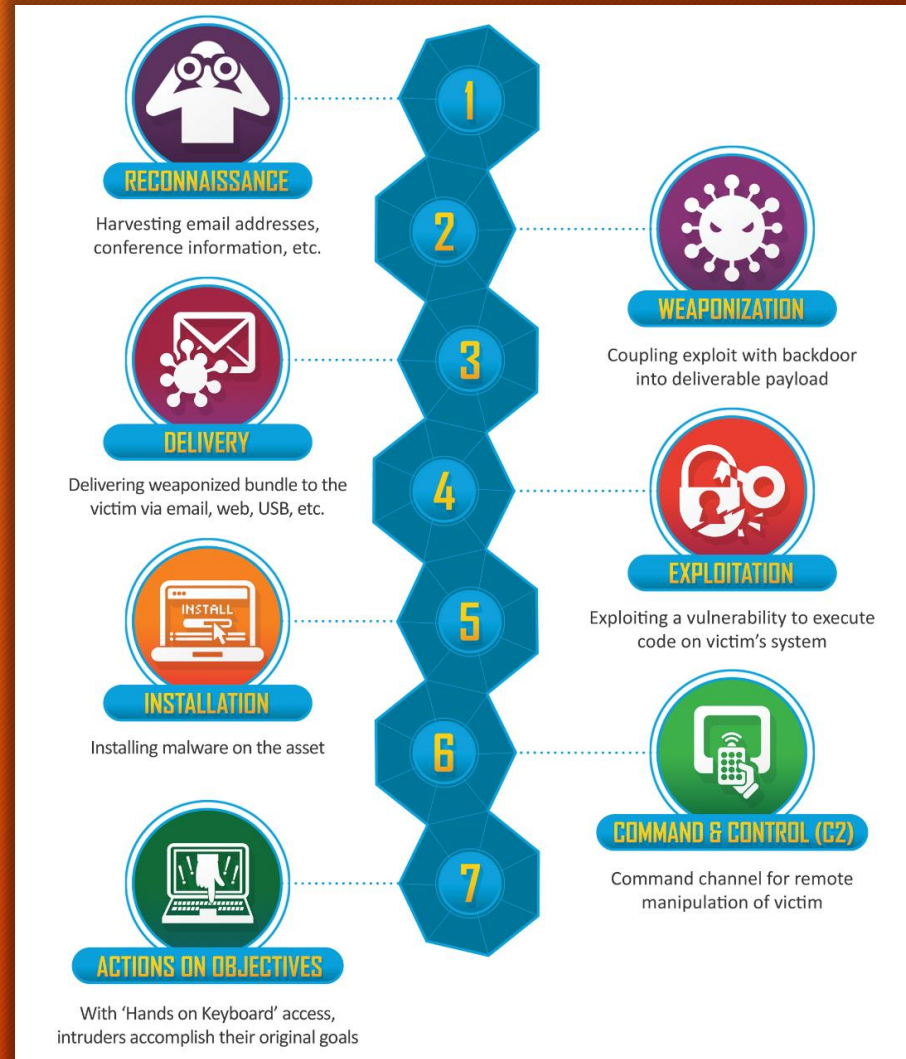
3

Maintaining Access

In the fourth phase, hackers attempt to ensure they have a way back into the machine or system they've already compromised.

5

Cyber Kill Chain



MITRE ATT&CK



Reconnaissance	Resource Development	Initial Access	Execution	Persistence	Privilege Escalation	Defense Evasion	Credential Access	Discovery	Lateral Movement	Collection	Command and Control	Exfiltration	Impact
10 techniques	7 techniques	9 techniques	12 techniques	19 techniques	13 techniques	42 techniques	16 techniques	30 techniques	9 techniques	17 techniques	16 techniques	9 techniques	13 techniques
Active Scanning (3)	Acquire Infrastructure (6)	Drive-by Compromise	Command and Scripting Interpreter (8)	Account Manipulation (5)	Abuse Elevation Control Mechanism (4)	Abuse Elevation Control Mechanism (4)	Adversary-in-the-Middle (2)	Account Discovery (4)	Exploitation of Remote Services	Adversary-in-the-Middle (2)	Application Layer Protocol (4)	Automated Exfiltration (1)	Account Access Removal
Gather Victim Host Information (4)	Compromise Accounts (2)	Exploit Public-Facing Application	Container Administration Command	BITS Jobs	Access Token Manipulation (5)	Access Token Manipulation (5)	Brute Force (4)	Application Window Discovery	Internal Spearphishing	Archive Collected Data (2)	Communication Through Removable Media	Data Transfer Size Limits	Data Destruction
Gather Victim Identity Information (2)	Compromise Infrastructure (6)	External Remote Services	Deploy Container	Boot or Logon Autostart Execution (14)	Boot or Logon Autostart Execution (14)	BITS Jobs	Credentials from Password Stores (5)	Browser Bookmark Discovery	Lateral Tool Transfer	Audio Capture	Data Encoding (2)	Exfiltration Over Alternative Protocol (2)	Data Encrypted for Impact
Gather Victim Network Information (6)	Develop Capabilities (4)	Hardware Additions	Exploitation for Client Execution	Boot or Logon Initialization Scripts (5)	Boot or Logon Initialization Scripts (5)	Build Image on Host	Exploitation for Credential Access	Cloud Infrastructure Discovery	Remote Service Session Hijacking (2)	Automated Collection	Data Obfuscation (3)	Exfiltration Over C2 Channel	Data Manipulation (2)
Gather Victim Org Information (4)	Establish Accounts (2)	Phishing (2)	Inter-Process Communication (3)	Browser Extensions	Boot or Logon Initialization Scripts (5)	Debugger Evasion	Forced Authentication	Cloud Service Dashboard	Remote Services (6)	Browser Session Hijacking	Dynamic Resolution (2)	Exfiltration Over Other Network Medium (1)	Defacement (2)
Phishing for Information (3)	Obtain Capabilities (6)	Replication Through Removable Media	Native API	Compromise Client Software Binary	Create or Modify System Process (4)	Deobfuscate/Decode Files or Information	Forge Web Credentials (2)	Cloud Storage Object Discovery	Replication Through Removable Media	Clipboard Data	Encrypted Channel (2)	Exfiltration Over Physical Medium (1)	Endpoint Denial of Service (4)
Search Closed Sources (2)	Stage Capabilities (5)	Supply Chain Compromise (2)	Scheduled Task/Job (5)	Create Account (2)	Domain Policy Modification (2)	Deploy Container	Input Capture (4)	Container and Resource Discovery	Software Deployment Tools	Data from Cloud Storage Object	Fallback Channels	Exfiltration Over Web Service (2)	Disk Wipe (2)
Search Open Technical Databases (5)		Trusted Relationship	Shared Modules	Create or Modify System Process (4)	Escape to Host	Direct Volume Access	Modify Authentication Process (5)	Debugger Evasion	Taint Shared Content	Data from Local System	Ingress Tool Transfer	Exfiltration Over Web Service (2)	Endpoint Denial of Service (4)
Search Open Websites/Domains (2)		Valid Accounts (4)	Software Deployment Tools	Event Triggered Execution (15)	Event Triggered Execution (15)	Domain Policy Modification (2)	Multi-Factor Authentication Interception	Domain Trust Discovery	Use Alternate Authentication Material (4)	Data from Configuration Repository (2)	Multi-Stage Channels	Exfiltration Over Web Service (2)	Firmware Corruption
Search Victim-Owned Websites			System Services (2)	External Remote Services	Exploitation for Privilege Escalation	Execution Guardrails (1)	Multi-Factor Authentication Request Generation	File and Directory Discovery		Data from Information Repositories (2)	Non-Application Layer Protocol	Scheduled Transfer	Inhibit System Recovery
			User Execution (3)	Hijack Execution Flow (12)	Hijack Execution Flow (12)	Exploitation for Defense Evasion	Network Sniffing	Group Policy Discovery		Data from Network Shared Drive	Non-Standard Port	Transfer Data to Cloud Account	Network Denial of Service (2)
			Windows Management Instrumentation	Implant Internal Image	Process Injection (12)	File and Directory Permissions Modification (2)	Network Share Discovery	Network Service Discovery		Data from Removable Media	Protocol Tunneling		Resource Hijacking
				Modify Authentication Process (5)	Scheduled Task/Job (5)	Hide Artifacts (10)	Network Sniffing	Network Share Discovery		Data Staged (2)	Proxy (4)		Service Stop
				Office Application Startup (6)	Valid Accounts (4)	Hijack Execution Flow (12)	OS Credential Dumping (8)	Network Sniffing		Email Collection (2)	Remote Access Software		System Shutdown/Reboot
				Pre-OS Boot (5)		Impair Defenses (9)	Steal Application Access Token	Password Policy Discovery		Input Capture (4)	Traffic Signaling (1)		
				Scheduled Task/Job (5)		Indicator Removal on Host (6)	Steal or Forge Kerberos Tickets (4)	Peripheral Device Discovery		Screen Capture	Web Service (2)		
				Server Software Component (5)		Indirect Command Execution	Steal Web Session Cookie	Permission Groups Discovery (2)		Video Capture			
				Traffic Signaling (1)		Masquerading (7)	Unsecured Credentials (7)	Process Discovery					
				Valid Accounts (4)		Modify Authentication Process (5)		Query Registry					
						Modify Cloud Compute Infrastructure (4)		Remote System Discovery					
						Modify Registry		Software Discovery (1)					
						Modify System Image (2)		System Information Discovery					
						Network Boundary Bridging (1)		System Location Discovery (1)					
								System Network Configuration Discovery (1)					

Gestión de Vulnerabilidades



Retos de la Automatización del Threat Hunting



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4. Identificar Amenazas Conocidas
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6. Proponer el mejor Tratamiento de los Riesgos

Noticias de Amenazas Avanzadas



Facebook Doesn't Know What It Does With Your Data, Or Where It Goes: Leaked Document

"We do not have an adequate level of control and explainability over how our systems use data," Facebook engineers say in leaked document.



By Lorenzo Franceschi-Bicchieri

April 26, 2022, 8:02am

MOTHERBOARD
TECH BY VICE

EL FINANCIERO

Hackeo a Hacienda: ¿qué es el 'ransomware' de Conti y cómo protegerse de ciberdelincuentes?

Por Carlos Cordero Pérez 19 de abril 2022, 8:45 AM

La advertencia de un ataque tipo *ransomware* sobre los sistemas informáticos del Ministerio de Hacienda habría activado los protocolos protección, que incluían la suspensión de los servicios en línea del sistema de la Autoridad Virtual Tributaria (ATV) y de TICA (Tecnología de Información para el Control Aduanero). Según los

Zero-day bug in uClibc library could leave IoT devices vulnerable to DNS poisoning attacks

Jessica Haworth 04 May 2022 at 14:15 UTC
Updated: 04 May 2022 at 14:23 UTC

A zero-day vulnerability in uClibc and uClibc-ng, a popular C standard library, could enable a malicious actor to launch DNS poisoning attacks on vulnerable IoT devices. The bug, tracked as ICS-VU-638779, which has yet to be patched, could leave users exposed to attack, researchers have warned.

Ukraine Says It Thwarted a Sophisticated Russian Cyberattack on Its Power Grid



April 12, 2022
Kate Conger



Officials said that if the breach had been successful, it would have deprived roughly two million people of electricity and made it difficult to restore power. Rodrigo Abad/Associated Press

Secuestro de datos en Perú y Costa Rica vaticina más problemas para la región

COSTA RICA

3 MAY 2022 POR SCOTT MISTLER-
FERGUSON

Un grupo de ciberdelincuentes que ha amenazado con divulgar ingentes cantidades de datos robados al gobierno de Costa Rica ahora golpeó el organismo de inteligencia de Perú, una muestra de que los gobiernos de la región siguen siendo presa fácil de los ataques de ransomware.

¿Cómo funciona Pegasus? Así infecta este software maligno los teléfonos de políticos

— Paula García

Madrid • Espionajes, softwares secretos, conversaciones pinchadas... Las noticias que copan titulares estos días parecen más propias de películas que de la actualidad política.

Hackers Are Targeting U.S. Banks, And Hardware May Give Them An Open Door

Mar 17, 2021, 03:50am EDT | 5,302 views

Identificando vulnerabilidades no conhecidas



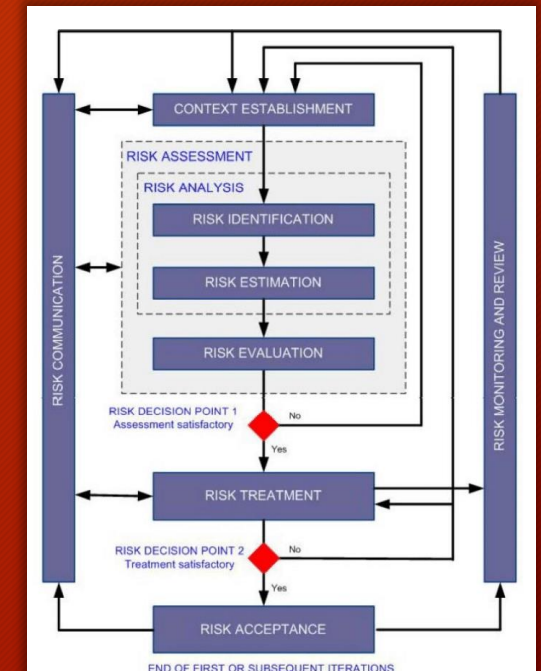
Red Team Operations Attack Lifecycle



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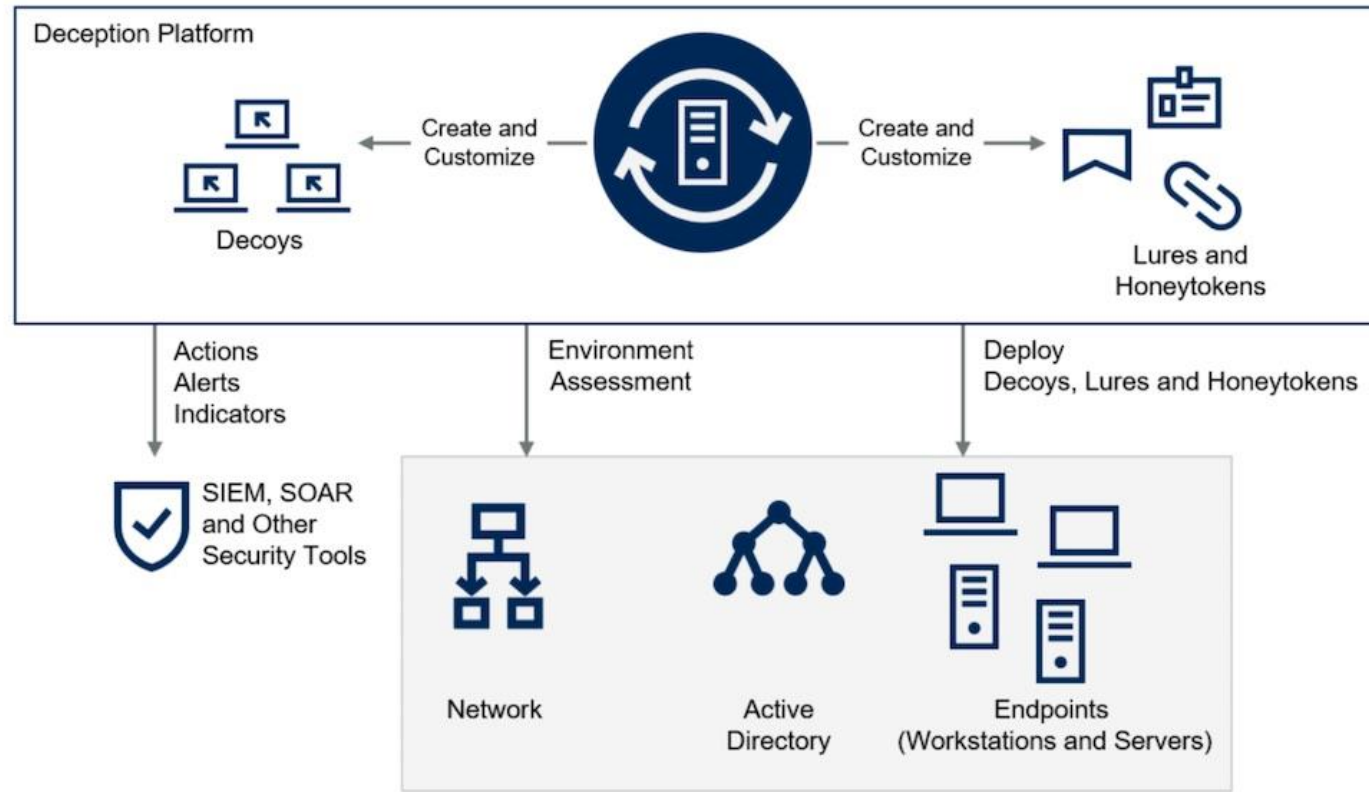
War Gaming

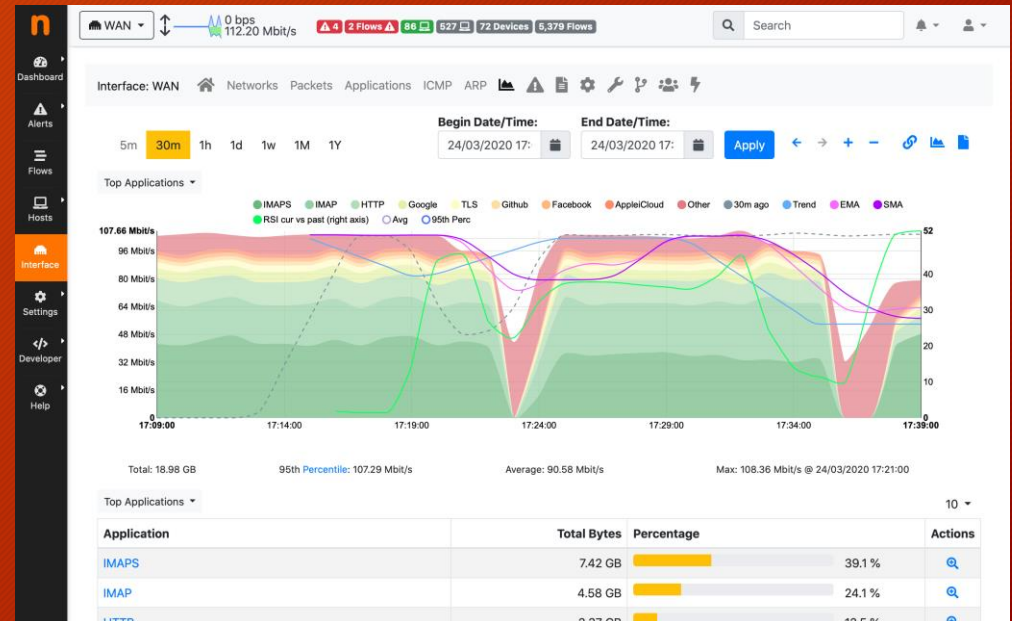


Plataformas de Decepción - HonetNets



Deception Platform Example



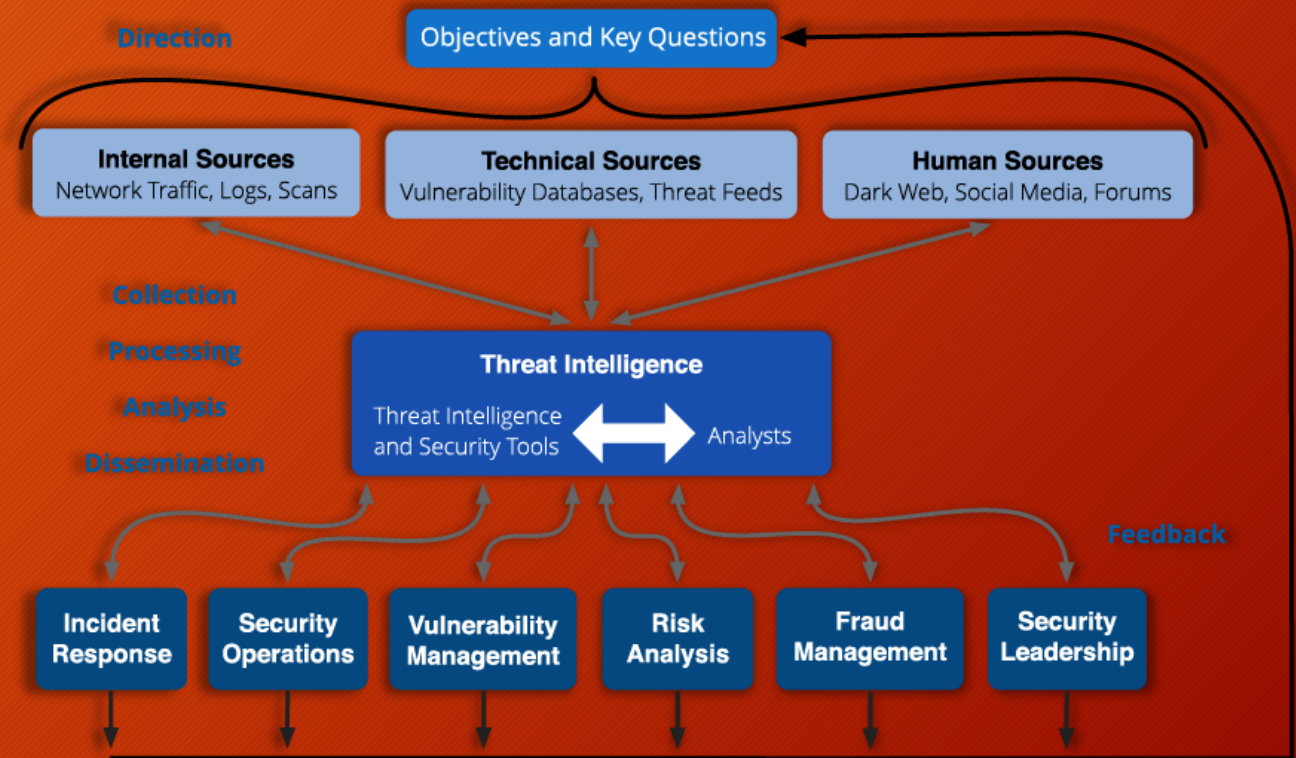
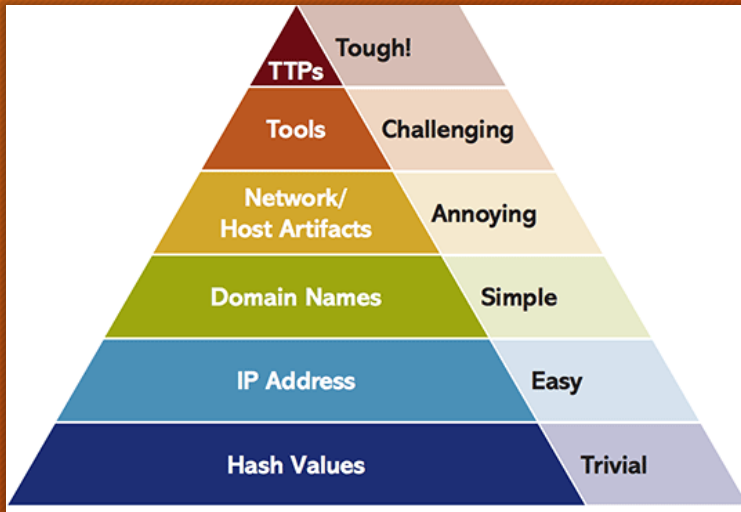


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4. Identificar Amenazas Conocidas y No Conocidas
 - Actividades Proactivas de Detección
5. Tener claro los Riesgos sobre los activos críticos
6. Seleccionar el mejor Control en Tratamiento de los Riesgos

Cyber Threat Intelligence



Análisis de IoC



Cortex

+ New Analysis

Job details

VirusTotal_GetReport_3_0

Artifact

[HASH] 08fabadbcf7811709fd9da698dae9d12238d02b36287111629a0e07eaf04e9d8

Date

a few seconds ago

TLP

TLP:AMBIER

PAP

PAP:AMBIER

Status

Success

Report summary

VT:GetReport=12/61

Job report

Report

```
{  "summary": {    "taxonomies": [      {        "level": "malicious",        "namespace": "VT",        "predicate": "GetReport",        "value": "12/61"      }    ]  },  "full": {    "scans": {      "8kav": {        "detected": false,        "version": "1.3.0.9899",        "result": null,        "update": "20210719"      },      "Lionic": {        "detected": true,        "version": "4.2",        "result": "Trojan.ZIP.Generic.41c",        "update": "20210719"      }    }  }
```

Case # 29 - [MISP] #645 OSINT - OSX Malware is Catching Up, and it wants to Read Your HTTPS Traffic

Created by Antoine Steganas

Fri, Apr 28th, 2017 4:18 - 04:00

Close Flag Merge

Summary Tasks Observables 1-Identification

[HASH]: e8bde90574d5b7285d9abb0c8a113a8

VT:Scanned 2017 Scanned 11

Observable Information

TLP

TLP:WHITE

Date added

Fri, Apr 28th, 2017 4:18 - 04:00

Is IOC

☆

Labels

vt:MISP:SEM0 msp:demo msp:taggerMISP:category=Payload delivery

Description

Sample - Xchecked via VT: 7819ae7d72fa045baa77e9c8e063a69d439146b2779c3bb10aef52dccc77c145

Observable Links

Observable seen in 0 other case(s)

Observable Analyzers

Analyzer	Cortex Server	Last analysis	Action
VirusTotal_GetReport_2_0 Get the latest VirusTotal report for a file, hash, domain or an IP address	local	✓ Fri, Jun 16th, 2017 12:21 - 04:00	🔄
PassiveTotal_Ssl_Certificate_History_1_0 PassiveTotal Ssl Certificate History Lookup	local	None	🔴
VMRay_1_0 VMRay Sandbox file analysis	local	None	🔴
MISP_Search_1_1 Search MISP events that have the observable provided as input	local	None	🔴

Added by Antoine Steganas

Job VirusTotal_GetReport_2_0 terminated

status: Success

startDate: Fri, Jun 16th, 2017 12:21 - 04:00

endDate: Fri, Jun 16th, 2017 12:21 - 04:00

🔍 #29 - [MISP] #645 OSINT - OSX Malware is Catching Up, and it wants to Read Your HT TPS Traffic

🔄 Updated by Antoine Steganas

🔍 1-identification

flag: true

🔍 #29 - [MISP] #645 OSINT - OSX Malware is Catching Up, and it wants to Read Your HT TPS Traffic

🔄 Updated by Antoine Steganas

🔍 [MISP] #645 OSINT - OSX Malware is Catching Up, and it wants to R ead Your HTTPS Traffic

flag: false

🔍 #29 - [MISP] #645 OSINT - OSX Malware is Catching Up, and it wants to Read Your HT TPS Traffic

🔄 Updated by Antoine Steganas

🔍 [MISP] #645 OSINT - OSX Malware is Catching Up, and it wants to R ead Your HTTPS Traffic

flag: true

🔍 #29 - [MISP] #645 OSINT - OSX Malware is Catching Up, and it wants to Read Your HT TPS Traffic

🔄 Updated by Antoine Steganas

🔍 1-identification

status: InProgress

owner: Antoine Steganas

🔍 #29 - [MISP] #645 OSINT - OSX Malware is Catching Up, and it wants to Read Your HT TPS Traffic

Added by Antoine Steganas

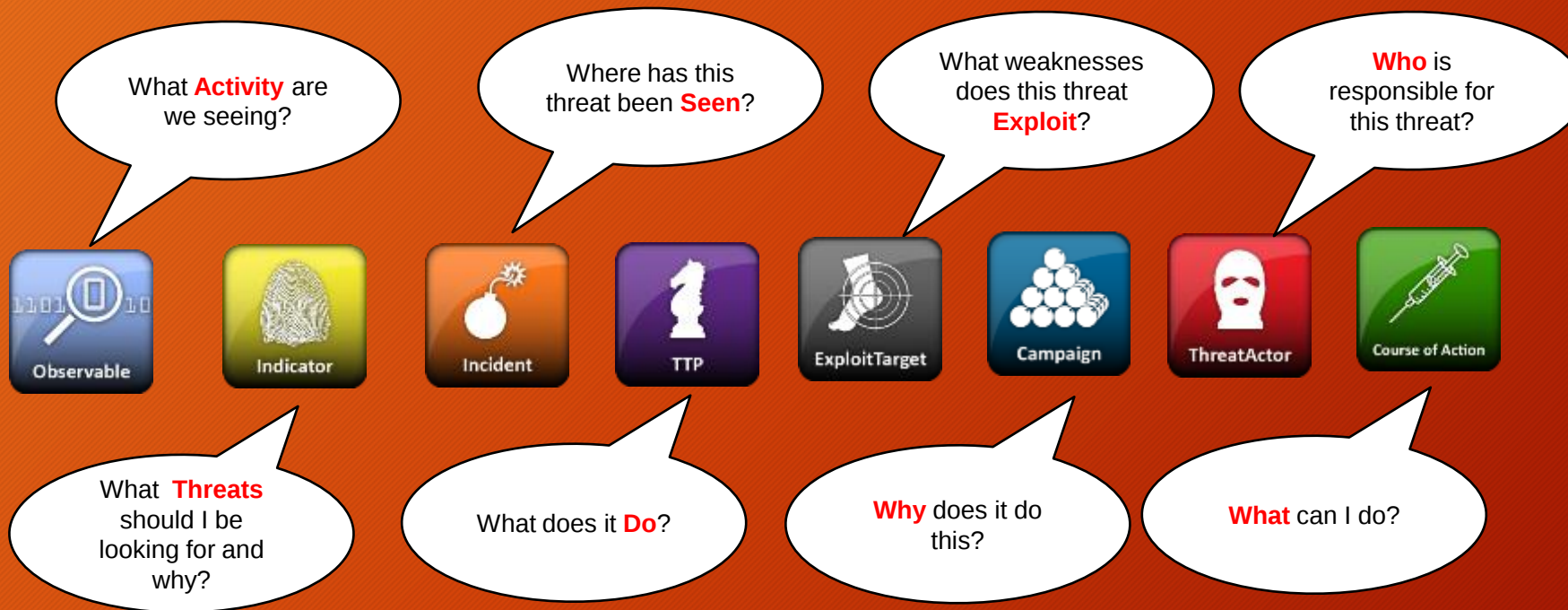
🔍 [MISP] #645 OSINT - OSX Malware is Catching Up, and it wants to R ead Your HTTPS Traffic

This case contains 5 tasks See all

This case contains 14 observables See all

description: Imported from MISP Event #645, created at Fri Apr 28 10:18:

Compartir Información de Ciberamenazas



Retos de la Automatización del Threat Hunting



1. Tener claro los Activos Críticos **DE** la Organización o Comunidad Objetivo
2. Tener claro el Alcance y la Arquitectura de la infraestructura de TI
3. Identificar las Vulnerabilidades Conocidas y No Conocidas
4. Identificar Amenazas Conocidas y No Conocidas
 - Actividades proactivas de Detección
 - Colaboración y Compartición !!!
 - Indicadores de Compromiso
 - Indicadores de Amenaza
5. Tener claro los Riesgos sobre los activos críticos
6. Seleccionar el mejor Control en Tratamiento de los Riesgos

NIST CSF y CIS Controls



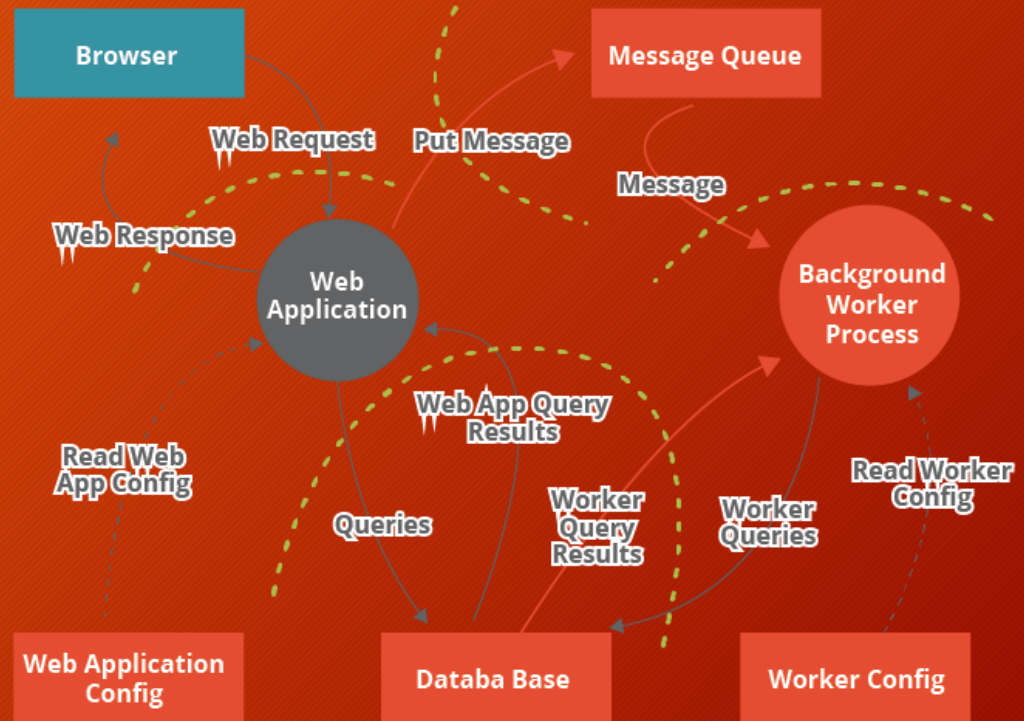
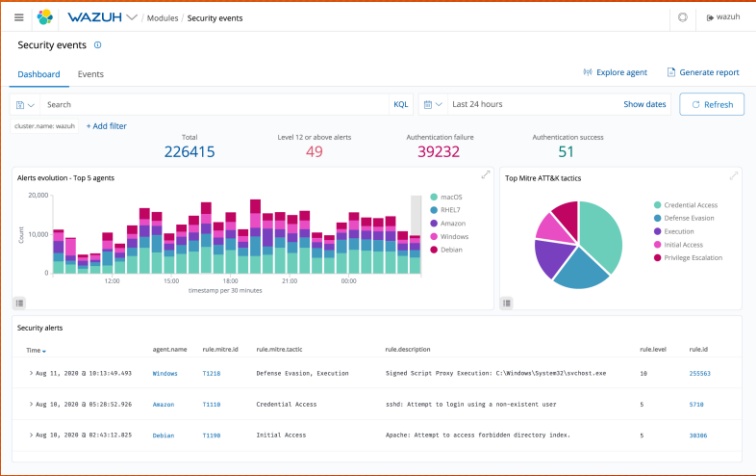
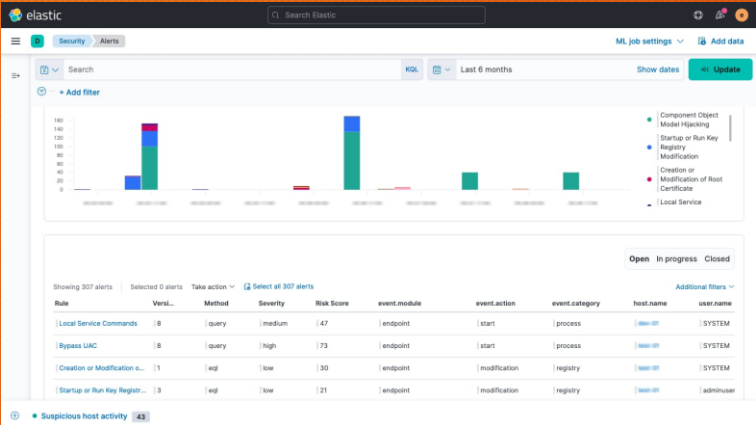
Identificador único de función	Función	Identificador único de categoría	Categoría
ID	Identificar	ID.AM	Gestión de activos
		ID.BE	Entorno empresarial
		ID.GV	Gobernanza
		ID.RA	Evaluación de riesgos
		ID.RM	Estrategia de gestión de riesgos
		ID.SC	Gestión del riesgo de la cadena de suministro
PR	Proteger	PR.AC	Gestión de identidad y control de acceso
		PR.AT	Conciencia y capacitación
		PR.DS	Seguridad de datos
		PR.IP	Procesos y procedimientos de protección de la información
		PR.MA	Mantenimiento
		PR.PT	Tecnología protectora
DE	Detectar	DE.AE	Anomalías y eventos
		DE.CM	Vigilancia continua de seguridad
		DE.DP	Procesos de detección
RS	Responder	RS.RP	Planificación de respuesta
		RS.CO	Comunicaciones
		RS.AN	Análisis
		RS.MI	Mitigación
		RS.IM	Mejoras
RC	Recuperar	RC.RP	Planificación de recuperación
		RC.IM	Mejoras
		RC.CO	Comunicaciones



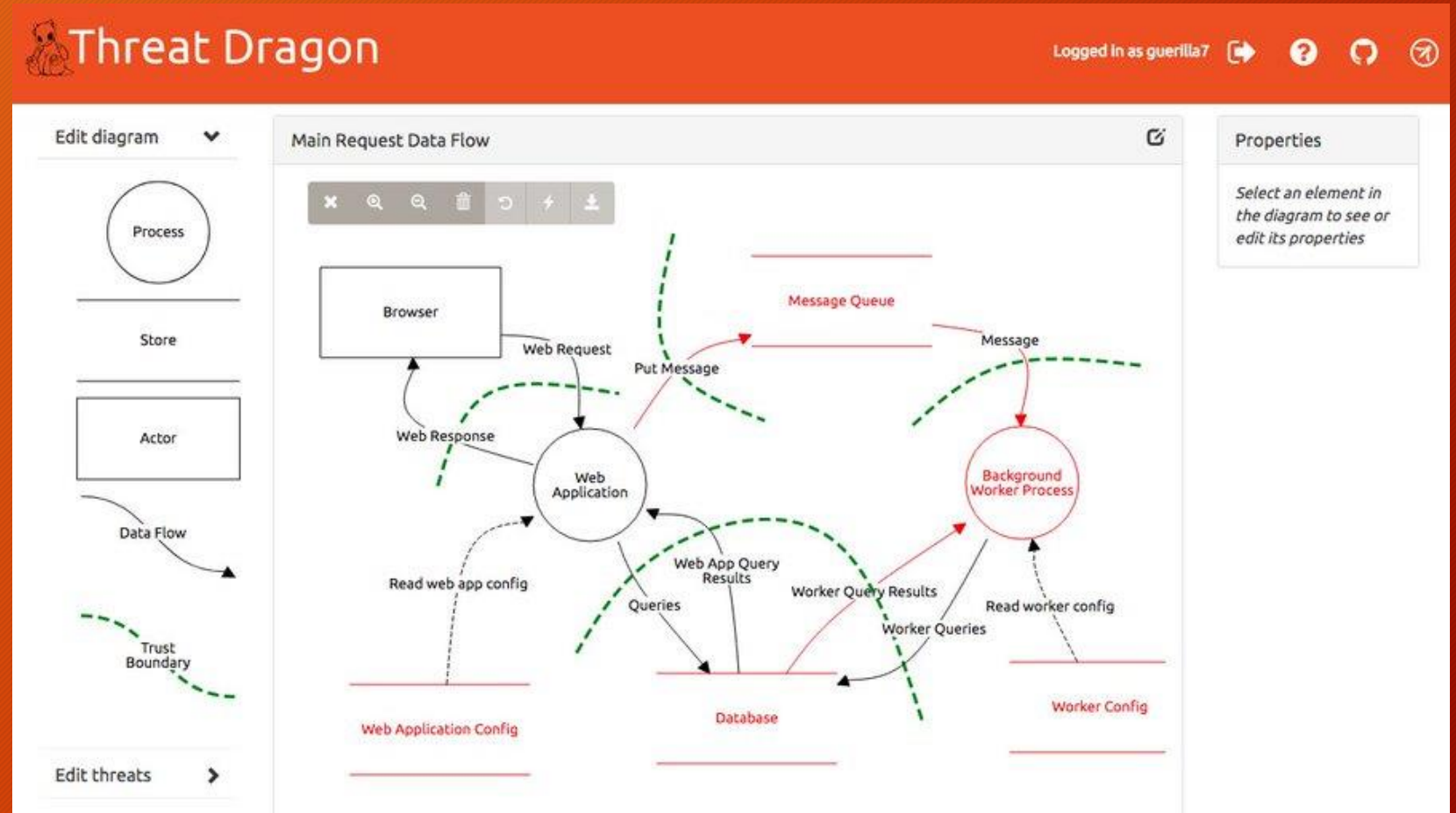
CONTROL 01 Inventory and Control of Enterprise Assets 5 Safeguards 161 2/5 162 4/5 163 5/5	CONTROL 02 Inventory and Control of Software Assets 7 Safeguards 161 3/7 162 6/7 163 7/7	CONTROL 03 Data Protection 14 Safeguards 161 6/14 162 12/14 163 14/14
CONTROL 04 Secure Configuration of Enterprise Assets and Software 12 Safeguards 161 7/12 162 11/12 163 12/12	CONTROL 05 Account Management 6 Safeguards 161 4/6 162 6/6 163 6/6	CONTROL 06 Access Control Management 8 Safeguards 161 5/8 162 7/8 163 8/8
CONTROL 07 Continuous Vulnerability Management 7 Safeguards 161 4/7 162 7/7 163 7/7	CONTROL 08 Audit Log Management 12 Safeguards 161 3/12 162 11/12 163 12/12	CONTROL 09 Email and Web Browser Protections 7 Safeguards 161 2/7 162 6/7 163 7/7
CONTROL 10 Malware Defenses 7 Safeguards 161 3/7 162 7/7 163 7/7	CONTROL 11 Data Recovery 5 Safeguards 161 4/5 162 5/5 163 5/5	CONTROL 12 Network Infrastructure Management 8 Safeguards 161 1/8 162 7/8 163 8/8
CONTROL 13 Network Monitoring and Defense 11 Safeguards 161 0/11 162 6/11 163 11/11	CONTROL 14 Security Awareness and Skills Training 9 Safeguards 161 8/9 162 9/9 163 9/9	CONTROL 15 Service Provider Management 7 Safeguards 161 1/7 162 4/7 163 7/7
CONTROL 16 Applications Software Security 14 Safeguards 161 0/14 162 11/14 163 14/14	CONTROL 17 Incident Response Management 9 Safeguards 161 3/9 162 8/9 163 9/9	CONTROL 18 Penetration Testing 5 Safeguards 161 0/5 162 3/5 163 5/5



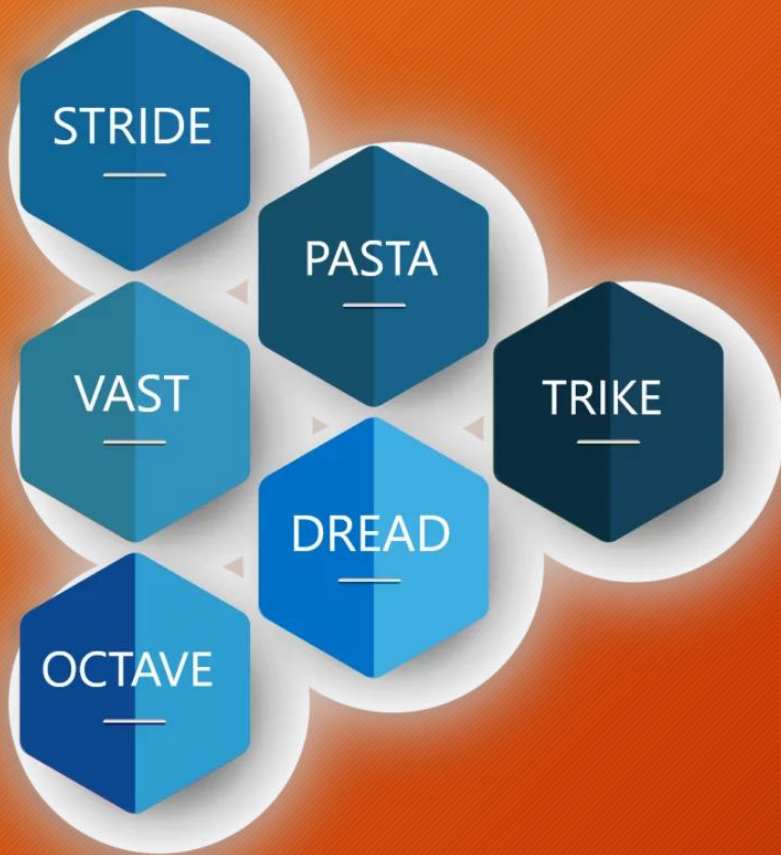
Monitoreo de Amenazas Reales



Monitoreo de Amenazas



Modelamiento de Amenazas



Stages of Process for Attack Simulation & Threat Analysis (PASTA)



Retos de la Automatización del Threat Hunting



1. Tener claro los Activos Críticos **DE** la Organización o Comunidad Objetivo
2. Tener claro el Alcance y la Arquitectura de la infraestructura de TI
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5. Tener claro los Riesgos sobre los activos críticos
6. Seleccionar el mejor Control en Tratamiento de los Riesgos
7. **Detectar Amenazas**

Manejo de Incidentes - NIST 800-61

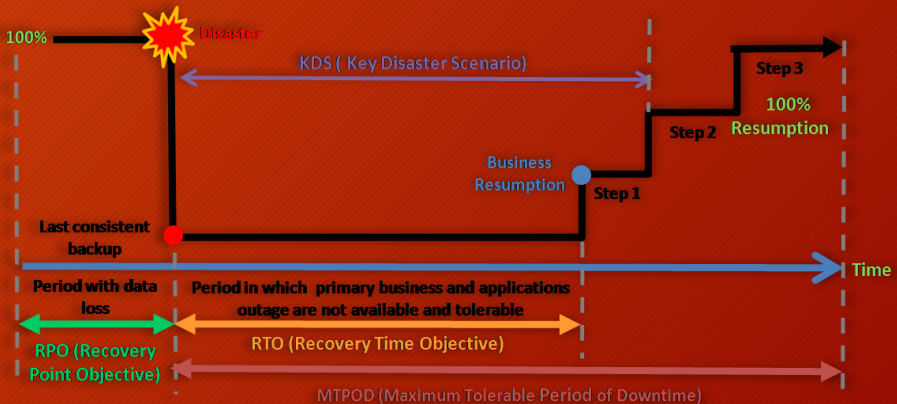


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RC	Recuperar	RC.RP	Planificación de recuperación
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		RC.CO	Comunicaciones



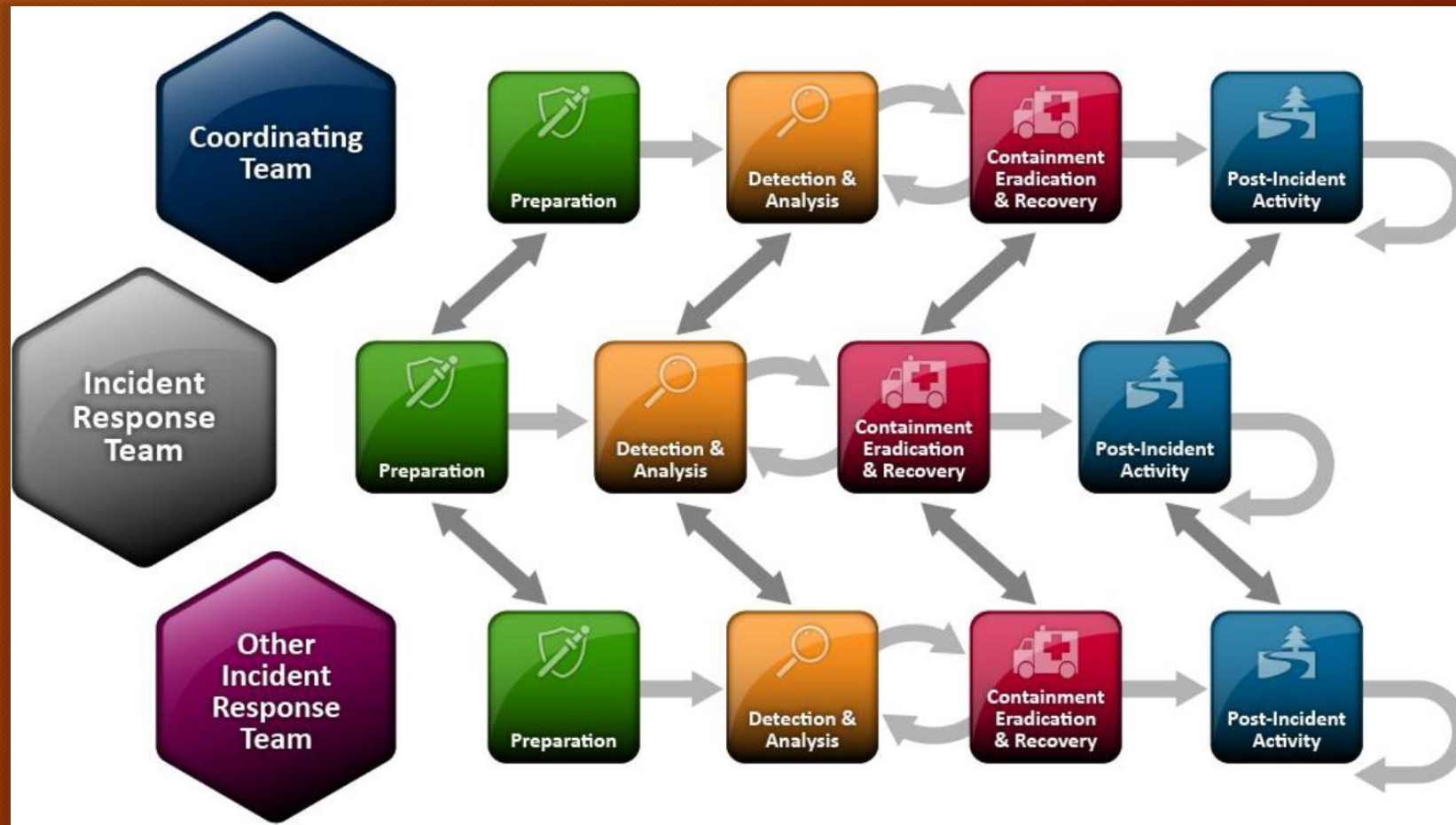
REGISTRAR INC.

SIMULACIÓN



MEJORAR MÉTRICAS, PROCEDIMIENTOS Y RTO

Manejo de Incidentes entre CSIRTs



Reto: Co-Administración



★ Queries

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Last 7 Days

Enter search query (Ctrl+F)

Time	...	...	...	Origin	Source	Source User...	Destination	Service	Ac...	Access Rule N...	Policy...	Description
Today, 7:29:27 PM	🔍	🔴	🔗	myngfw	asa-172.17.78.1...		asa-172.17.23.1...	http (TCP/80)	1	asa-accept-172....	Standard	http Traffic Dropped from 172.17.78.163 to 172.17.23.180
Today, 7:29:24 PM	🔍	🔴	🔗	myngfw	asa-172.17.78.1...		asa-172.17.23.1...	http (TCP/80)	1	asa-accept-172....	Standard	http Traffic Dropped from 172.17.78.163 to 172.17.23.180
Today, 7:29:24 PM	🔍	🔴	🔗	myngfw	asa-172.17.78.1...		asa-172.17.23.1...	http (TCP/80)	1	asa-accept-172....	Standard	http Traffic Dropped from 172.17.78.163 to 172.17.23.180
Today, 7:28:52 PM	🔍	🔴	🔗	myngfw	asa-172.17.78.1...		asa-172.17.23.1...	http (TCP/80)	1	asa-accept-172....	Standard	http Traffic Dropped from 172.17.78.163 to 172.17.23.180
Today, 7:28:24 PM	🔍	🔴	🔗	myngfw	asa-172.17.78.1...		asa-172.17.23.1...	http (TCP/80)	1	asa-accept-172....	Standard	http Traffic Dropped from 172.17.78.163 to 172.17.23.180
Today, 7:28:21 PM	🔍	🔴	🔗	myngfw	asa-172.17.78.1...		asa-172.17.23.1...	http (TCP/80)	1	asa-accept-172....	Standard	http Traffic Dropped from 172.17.78.163 to 172.17.23.180
Today, 7:28:19 PM	🔍	🔴	📄	myngfw	169.254.169.123		myngfw (172.16....	ntp-udp (UDP/123)			Standard	ntp-udp Traffic Dropped from 169.254.169.123 to 172.16.18.152
Today, 7:28:19 PM	🔍	🔴	📄	myngfw	169.254.169.123		myngfw (172.16....	ntp-udp (UDP/123)			Standard	ntp-udp Traffic Dropped from 169.254.169.123 to 172.16.18.152

Search For: Group All Log Source Groups Go Add Edit ☒ Enable/Disable Delete Bulk Actions ▾ ☒ Extensions Parsing Order Assign <input data-kind="parent" data-rs="2" type="button" value="?"/>													
Name	Desc	Status	Protocol	G...	Log Source Type	Enabled	Log Source Identifier	Tai De	Credibility	Autodiscc	Last Event Time	Creation Date	Modificati Date
Check Point source - 172...	Check P...	Success	Syslog		Check Point...	True	172.16.1...	e...	5	False	Sep 22, 2019, ...	Sep 22, ...	Sep 22, ...

```
[student<X>@ansible-1 ~]$ ssh ec2-user@snort
Last login: Fri Sep 20 15:09:40 2019 from 54.85.79.232
[ec2-user@snort ~]$ sudo grep ddos_simulation /etc/snort/rules/local.rules
alert tcp any any -> any any (msg:"Attempted DDoS Attack"; uricontent:"/ddos_simulation"; classtype:successful-dos; sid:99000010; priority:1;
```

Reto: Co-Administración



```
[ec2-user@snort ~]$ journalctl -u snort -f
-- Logs begin at Sun 2019-09-22 14:24:07 UTC. --
Sep 22 21:03:03 ip-172-16-115-120.ec2.internal snort[22192]: [1:99000030:1] Attempted SQL Injection
Sep 22 21:03:08 ip-172-16-115-120.ec2.internal snort[22192]: [1:99000030:1] Attempted SQL Injection
Sep 22 21:03:13 ip-172-16-115-120.ec2.internal snort[22192]: [1:99000030:1] Attempted SQL Injection
```

	Event Name	Log Source	Event Count	Time
	Snort Open Source IDS Message	Snort rsyslog source - 172.16.18.39	1	14 Sep 2021, 10:21:30
	Snort Open Source IDS Message	Snort rsyslog source - 172.16.18.39	1	14 Sep 2021, 10:21:30
	Snort Open Source IDS Message	Snort rsyslog source - 172.16.18.39	1	14 Sep 2021, 10:21:30

```
---
- name: Blacklist attacker
  hosts: checkpoint

  vars:
    source_ip: "{{ hostvars['attacker']['private_ip2'] }}"
    destination_ip: "{{ hostvars['snort']['private_ip2'] }}"

  tasks:
    - name: Create source IP host object
      checkpoint_host:
        name: "asa-{{ source_ip }}"
        ip_address: "{{ source_ip }}"

    - name: Create destination IP host object
      checkpoint_host:
        name: "asa-{{ destination_ip }}"
        ip_address: "{{ destination_ip }}"

    - name: Create access rule to deny access from source to destination
      checkpoint_access_rule:
        auto_install_policy: yes
        auto_publish_session: yes
        layer: Network
        position: top
        name: "asa-accept-{{ source_ip }}-to-{{ destination_ip }}"
        source: "asa-{{ source_ip }}"
        destination: "asa-{{ destination_ip }}"
        action: drop

    - name: Install policy
      cp_agent_install_policy:
        policy_package: standard
        install_on_all_cluster_members_or_fail: yes
        failed_when: false
```

```
[student<X>@ansible-1 ~]$ ansible-navigator run incident_blacklist.yml --mode stdout
```

No.	Name	Source	Destination	VPN	Services & Applications	Action	Track	Install On
1	asa-accept-172.17.199.94-to-172.17.30.140	 asa-172.17.199.94	 asa-172.17.30.140	* Any	* Any	 Drop	 Log	* Policy Targets

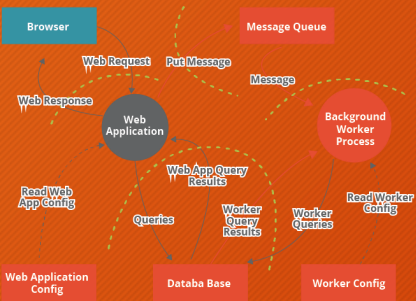
Reto: Playbooks para Automatización



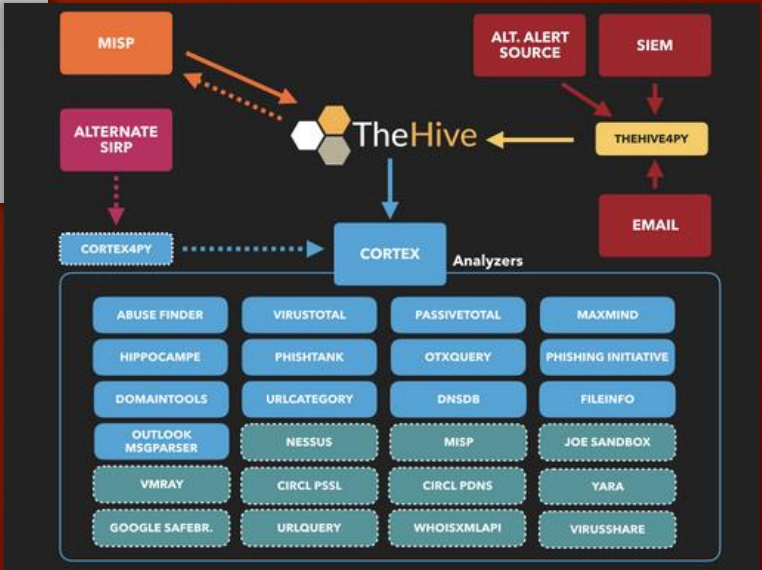
shuffler.io



n8n.io



PROCEDIMIENTOS PLAYBOOKS



flexibleir.com

Retos de la Automatización del Threat Hunting



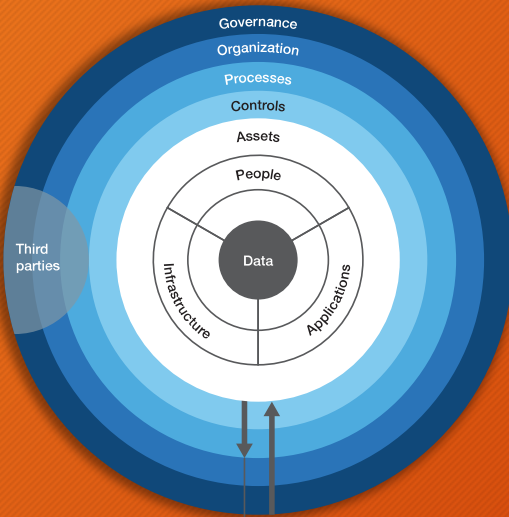
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8. **Responder ante Amenazas**

Gestión Riesgos Integral



The holistic approach to managing cyber risk proceeds from a top-management overview of the enterprise and its multilayered risk landscape.

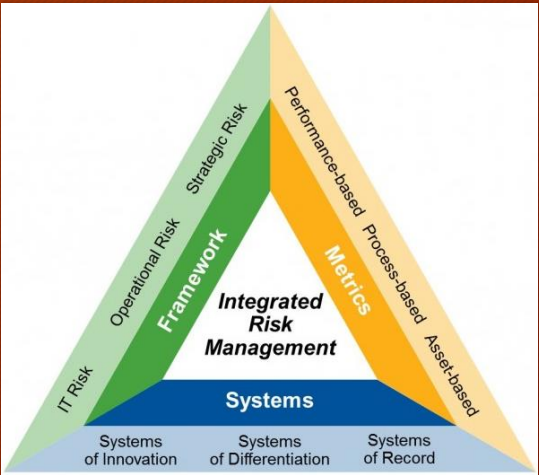
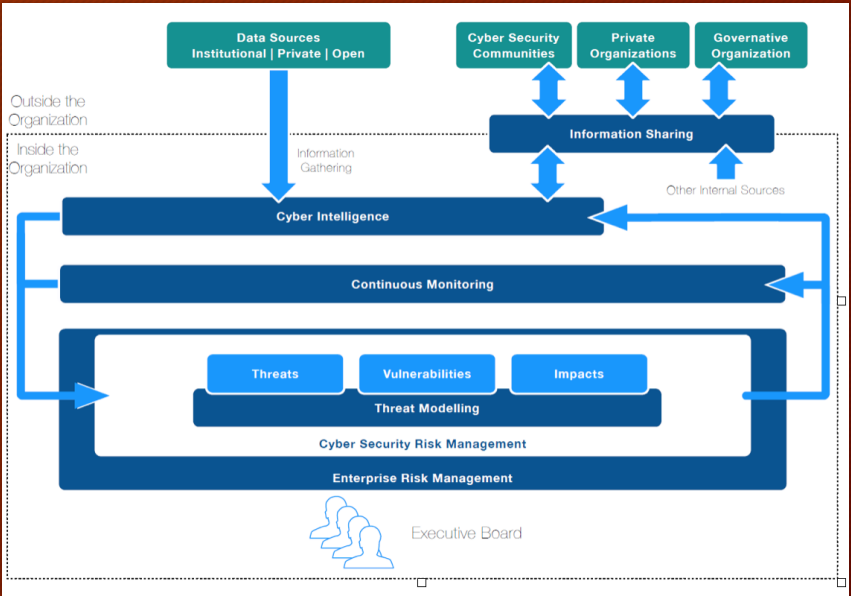
Holistic cyber risk-management approach



- Assets. Clearly defined critical assets
- Controls. Differentiated controls to balance security with agility
- Processes. State-of-the-art cybersecurity processes focused on effective responses
- Organization. Right skills, efficient decision making, and effective enterprise-wide cooperation
- Governance. Investments in operational resilience prioritized based on deep transparency into cyber risks
- Third parties. Coverage of the whole value chain, including third-party services

Traditional cybersecurity focus Holistic approach

McKinsey&Company



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8. Responder ante Amenazas
9. **Personal preparado en Ciber Riesgos**

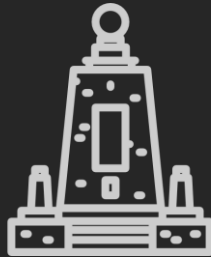
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7. Detectar Amenazas
8. Responder ante Amenazas
9. Personal preparado en Ciber Riesgos
10. Implementar una estrategia de Ciberseguridad Basado en Riesgos
ORGANIZACIONAL



ramiro.pulgar@bluehatcorp.com



GRACIAS DESDE ECUADOR

