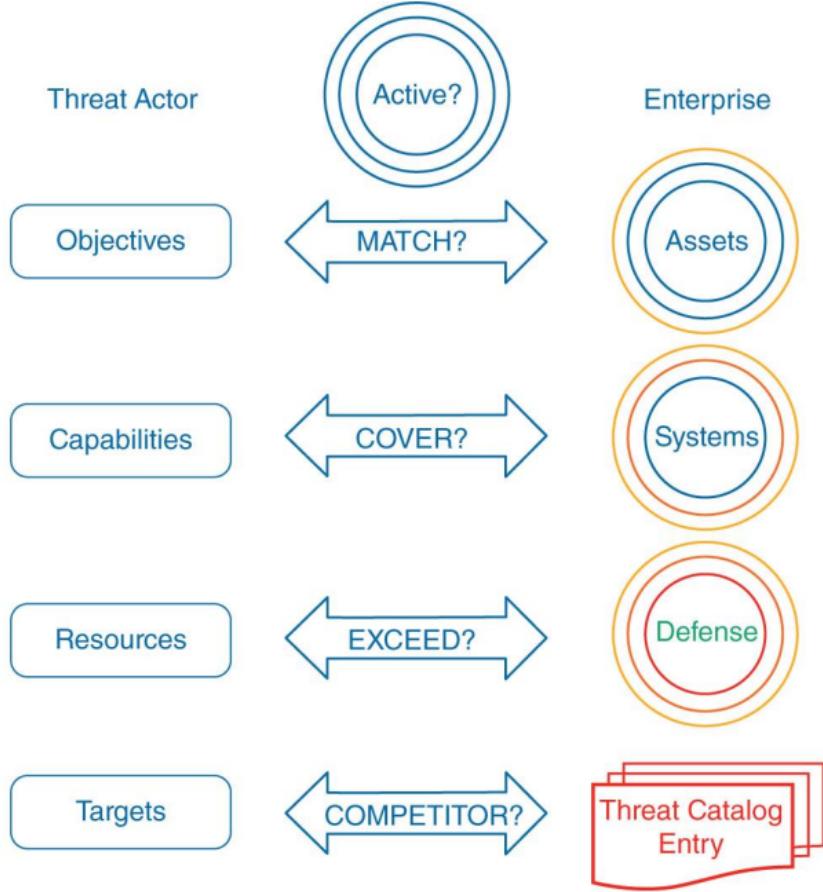


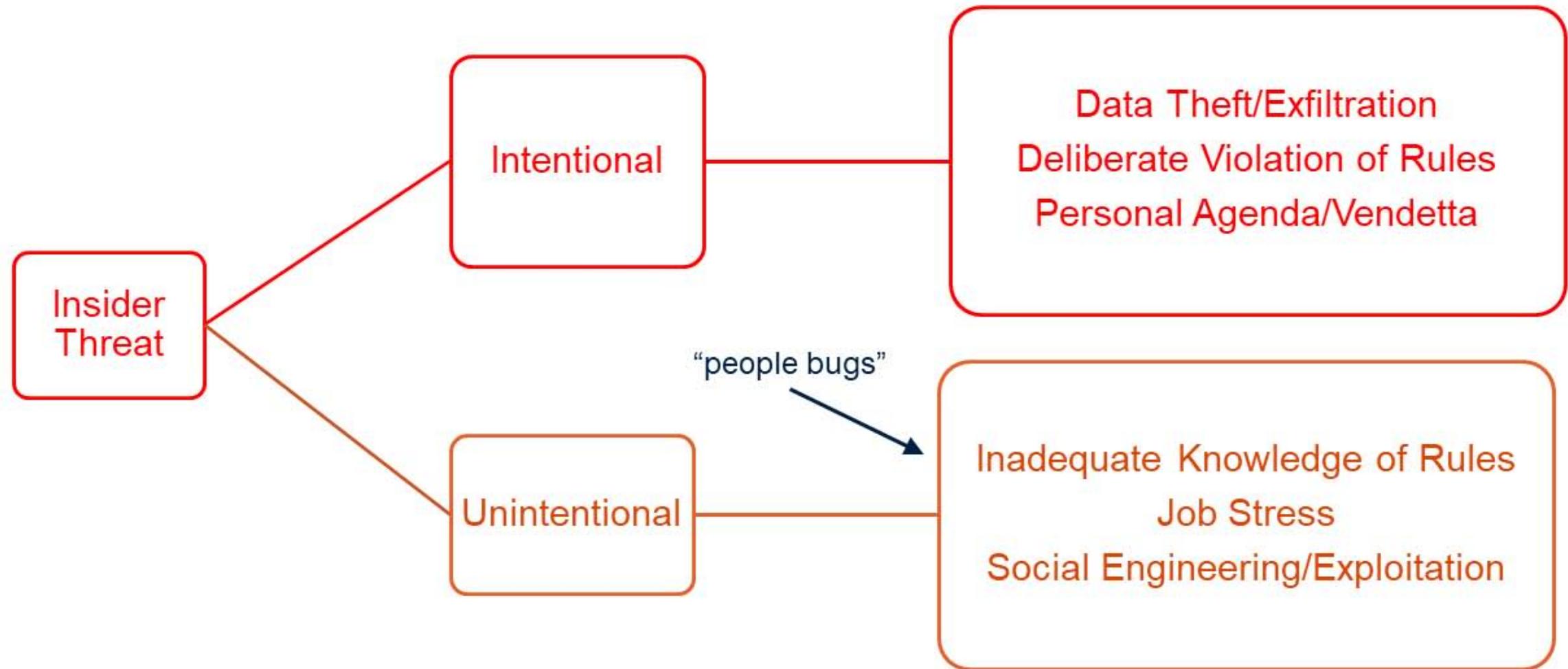
Source: Bayuk, Stepping Through Cybersecurity Risk Management, Figure 2.2

Threat Actor Type	Objective
Activist/Hacktivist	Make a political statement (Anonymous); voting systems
Competitor	Trade secrets, competitive analysis, or disruption of service
Criminal	Profit; anything they can monetize for cash
Crime-syndicate	Organized crime as a technology business
Hacker	Hacking for thrill or challenge
Insider-accidental	Unintentionally exposes the organization to harm
Insider-disgruntled	Financial gain; personal benefits for retaliation or revenge
Nation-state	World supremacy
Sensationalist	Embarrassment and brand damage
Spy	Cyber espionage
Terrorist	Telecom, energy grid, government defenses
Other, e.g. Lone Wolf	Cybercrime-as-a-service model is furthering the reach of solo actors.



ID: CP	Threat Type: Activist	Threat Role: Director	Threat Level: Intermediate	Example Courtesy of FrameCyber®
Name: Cyber Partisans	Geolocation: Belarusian Diaspora	Aliases:		
Description: Cyber Partisans, is a group advocating for Belarusian civil rights, many of whom are Belarusian refugees. Other than a New York spokesperson, their location is not known and identities remain anonymous even to each other. The group describes its activities as ethical hacking, as it only attacks the state and does no harm to ordinary citizens.				
Tactics:		Skills:		
The group has selected two types of targets: those that have sensitive information that can assist opponents of the Belarus regime and those that disrupt or disable critical infrastructure. For example, they hacked the Ministry of Internal Affairs most sensitive		Member skills included the development of malicious software, penetration testing, and data science.		
Goals:		Resources:		
Expose the crimes of the Belarus government and stop violence and repression from the regime and restore democracy and rule of law.		CP consists of a group of ~50 people assisted by former Belarusian police officers who understand government data structures.		

Source: Bayuk, Stepping Through Cybersecurity Risk Management, Figure 2.5

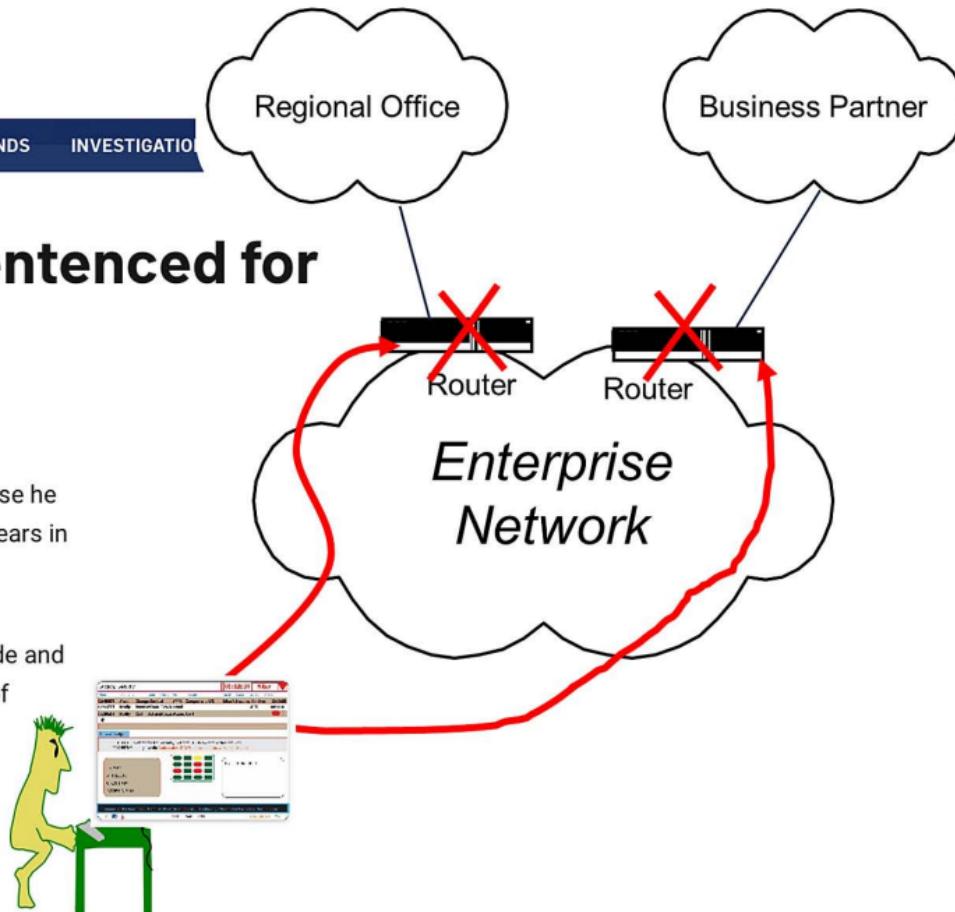


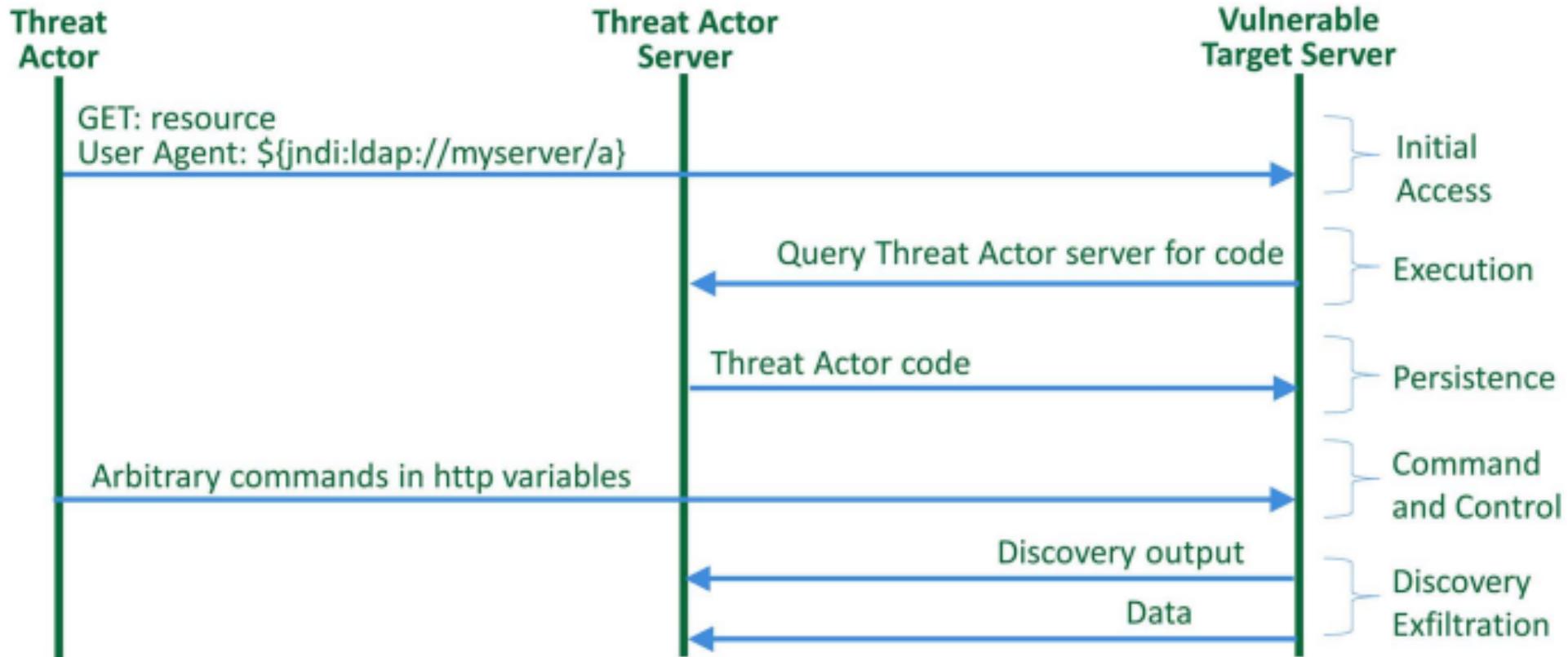
Dallas Citibank Worker Sentenced for Computer Sabotage

Published July 26, 2016 • Updated on July 26, 2016 at 9:15 am

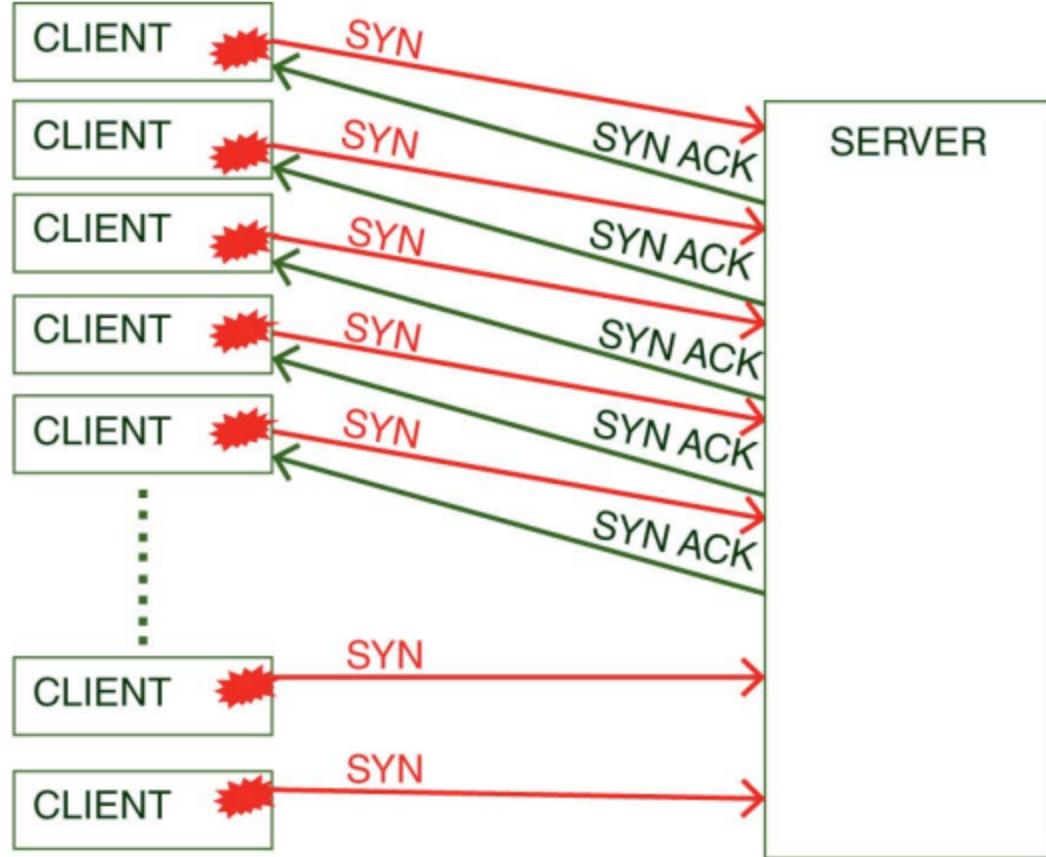
An employee who sabotaged Citibank's computer system because he believed he was about to be fired was sentenced to nearly two years in prison.

Investigators said Lennon Ray Brown of Dallas transmitted a code and command in 2013 leading to loss of connectivity to 90 percent of Citibank networks in North America.





Source: Bayuk, Stepping Through Cybersecurity Risk Management, Figure 2.8



```
login = username_field_contents
pwd = password_field_contents
user_data = select user from CustomerData where (user.name = login) and (user.password = pwd)
display user_data
```

USERNAME:

JDOE

JDOE or 'TRUE = TRUE'

PASSWORD:

3yp@3iVS=q

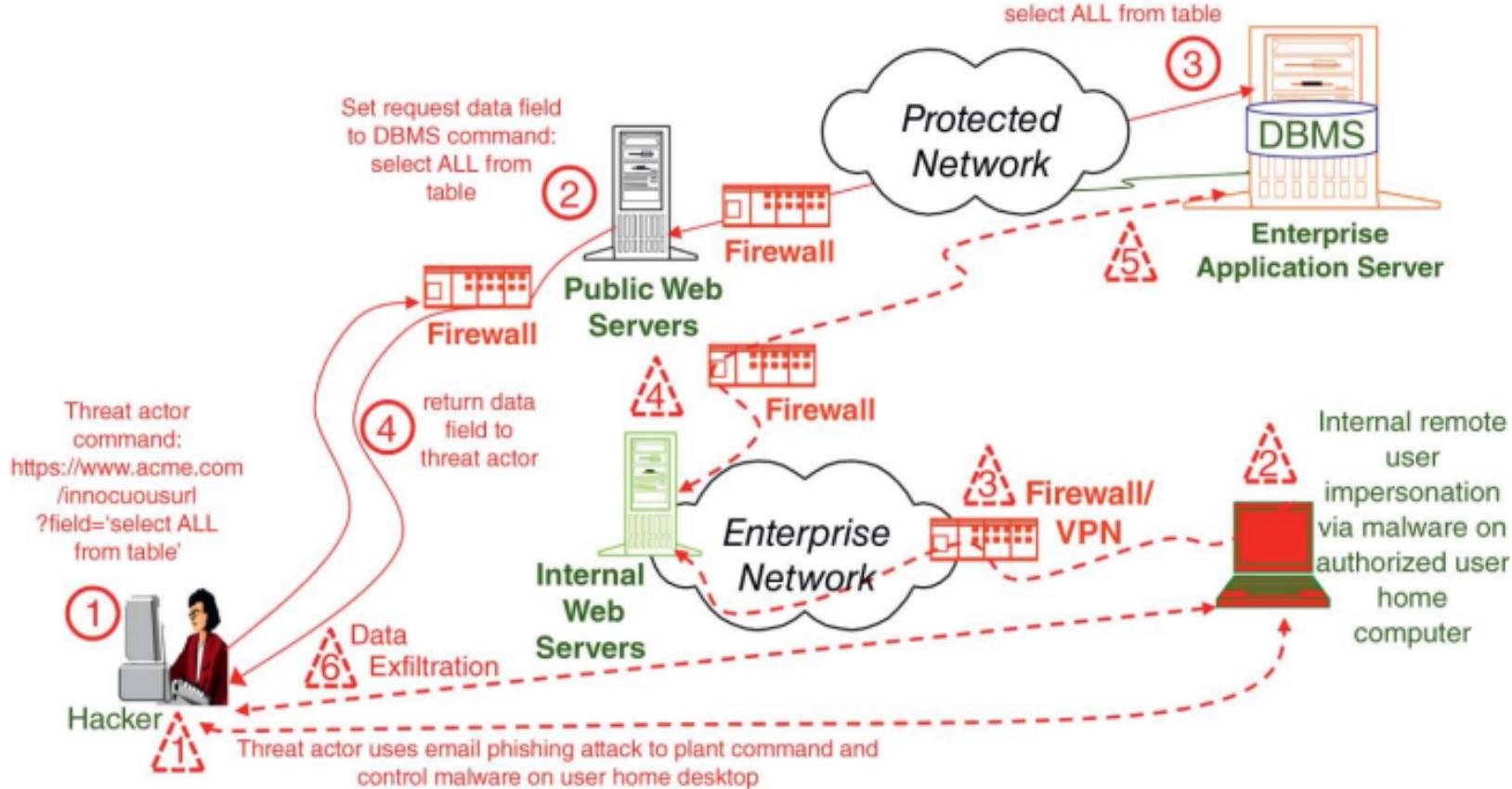
JDOE or 'TRUE = TRUE'

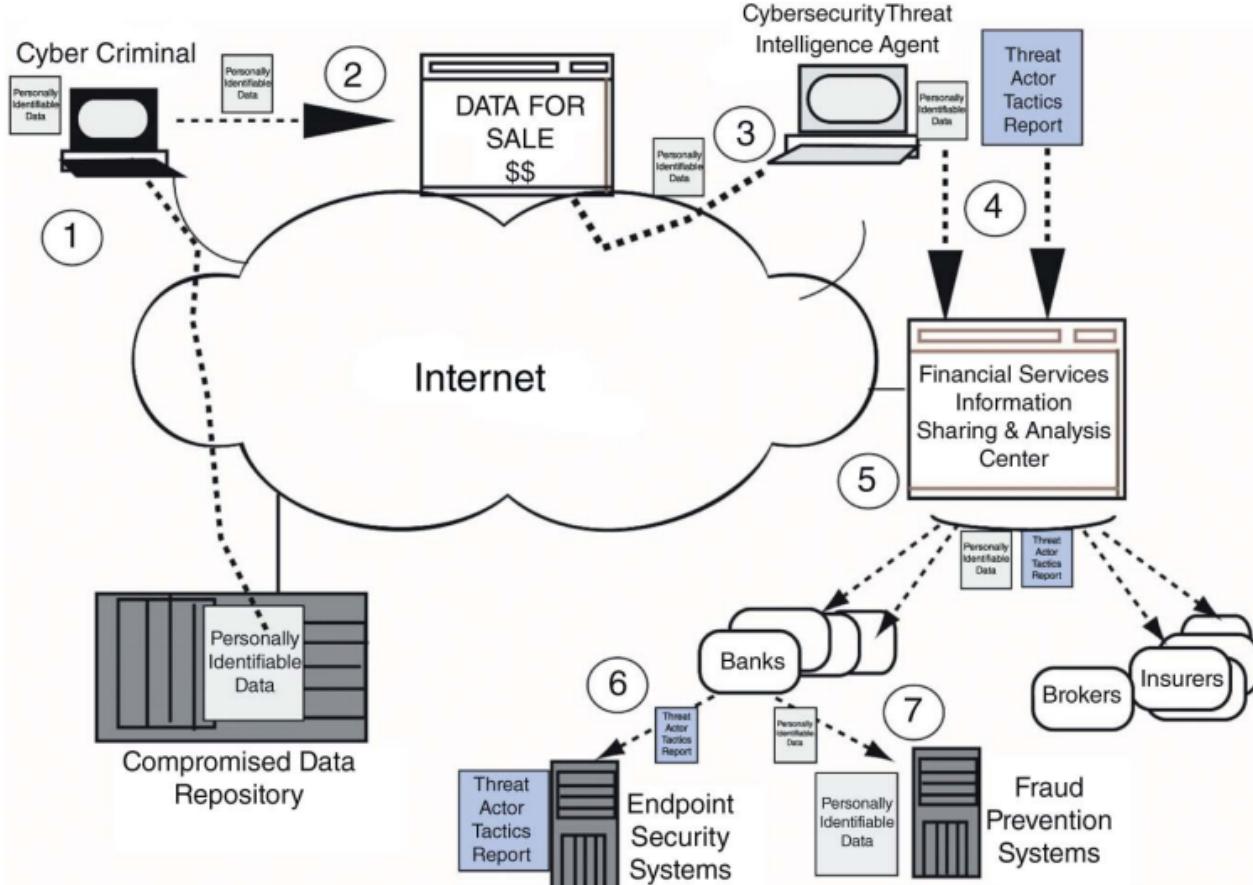


JDOE's data



All user data

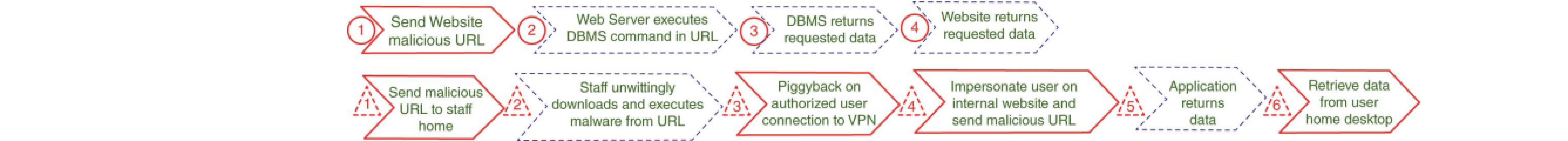




Zero-Day Vulnerability Market



Reconnaissance	Gather information to plan future operations.
Resource Development	Establish resources to support operations.
Initial Access	Access target system or network.
Execution	Run malicious code on target system.
Persistence	Maintain a foothold within target systems.
Privilege Escalation	Gain higher-level permissions.
Defense Evasion	Avoid being detected.
Credential Access	Steal account names and passwords.
Discovery	Map out target environment.
Lateral Movement	Move through target environment.
Collection	Gather data of interest to goal.
Command and Control	Communicate with compromised systems to control them.
Exfiltration	Steal data.
Impact	Manipulate, interrupt, or destroy target systems and data.

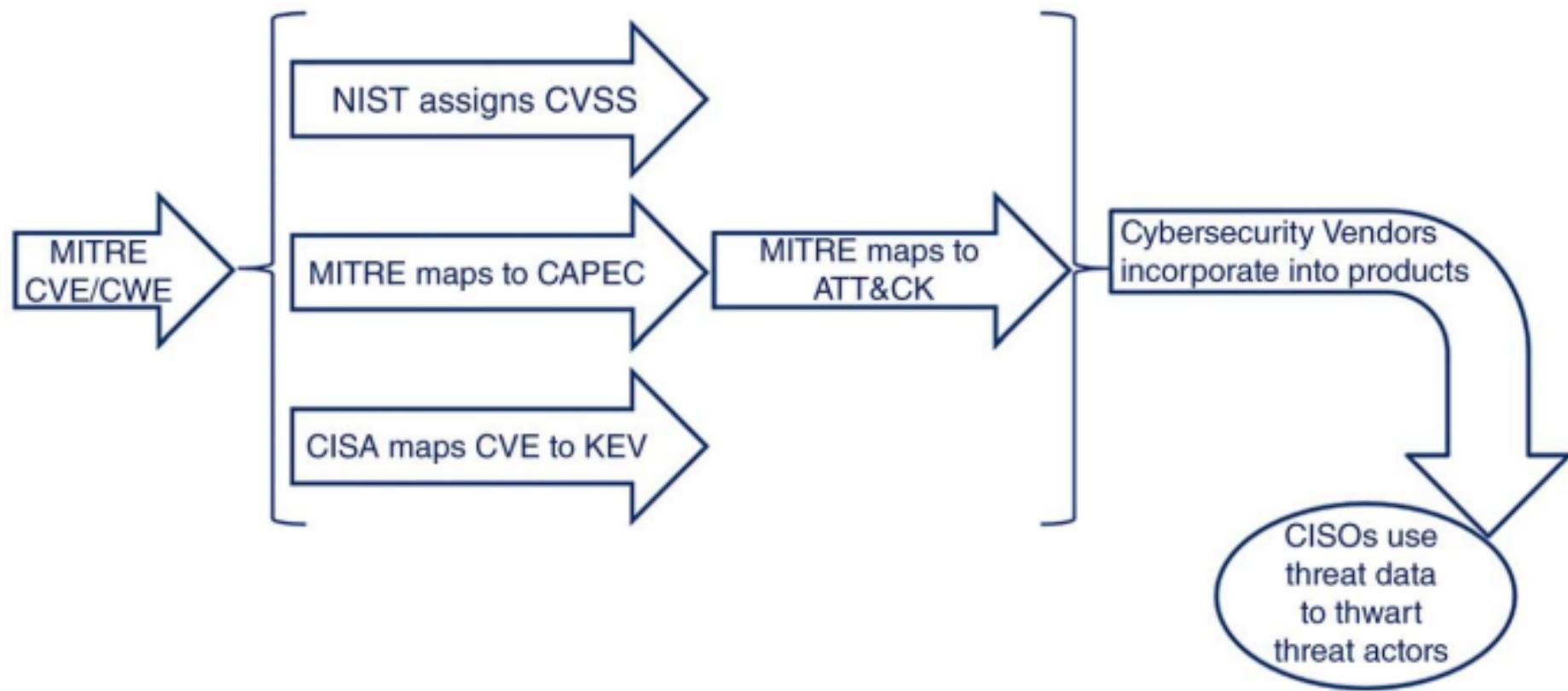


Source: Bayuk, Stepping Through Cybersecurity Risk Management, Figure 2.15

Table 1 - Vulnerability Tower of Babel, 1998

Organization	Name referring to vulnerability
AXENT (now Symantec)	phf CGI allows remote command execution
BindView	#107—cgi-phf
Bugtraq	PHF Attacks—fun and games for the whole family
CERIAS	http_escshellcmd
CERT	CA-96.06.cgi_example_code
Cisco Systems	HTTP—cgi-phf
CyberSafe	Network: HTTP ‘phf’ attack
DARPA	0x00000025 = HTTP PHF attack
IBM ERS	ERS-SVA-E01-1996:002.1
ISS	http—cgi-phf
Symantec	#180 HTTP server CGI example code compromises http server
SecurityFocus	#629—phf Remote Command Execution Vulnerability

Source: Bayuk, Stepping Through Cybersecurity Risk Management, Figure 2.16



Source: Bayuk, Stepping Through Cybersecurity Risk Management, Figure 2.17

Initial Access	Execution	Persistence	Privilege Escalation	Defense Evasion	Credential Access	Discovery	Lateral Movement	Collection	Command and Control	Exfiltration	Impact
Valid Accounts		Scheduled Task/Job		Modify Authentication Process		Network Sniffing	Remote Services	Data from Local System	Data Obfuscation	Exfiltration Over Other Network Medium	Data Destruction
Replication Through Removable Media	Windows Management Instrumentation		Valid Accounts		CSC Credential Dumping	Application Window Discovery	Software Deployment Tools	Data from Removable Media	Fallback Channels	Application Layer Protocol	Data Encrypted for Impact
Trusted Relationship	Software Deployment	Hijack Execution Flow		Direct Volume Access	Input Capture	System Network Configuration Discovery	Replication Through Removable Media	Proxy	Scheduled Transfer	Scheduled Transfer	Service Stop
Supply Chain Compromise	Tools	Boot or Logon Initialization Scripts	Create or Modify System Process	Rootkit	Brute Force	System Network Internal Spearphishing	Input Capture	Data Staged	Communication Through Removable Media	Data Transfer Size Limits	Inhibit System Recovery
Hardware Additions	Shared Modules	Event Triggered Execution		Obfuscated Files or Information	Two-Factor Authentication Interception	System Owner/User Discovery	Screen Capture	Clipboard Data	Clipboard Data	Exfiltration Over C2 Channel	Defacement
Exploit Public-Facing Application	User Execution	Boot or Logon Autostart Execution			Exploitation for Credential Access	System Network Connections Discovery	Use Alternate Authentication Material	Web Service	Multi-Stage Channels	Exfiltration Over Physical Medium	Firmware Corruption
Phishing	Execution	Account Manipulation	Process Injection		Access	Permission Groups Discovery	Lateral Tool Transfer	Automated Collection	Ingress Tool Transfer	Exfiltration Over Web Service	Resource Hijacking
External Remote Services	System Services	External Remote Services	Access Token Manipulation		Steal Web Session Cookies	File and Directory Discovery	Taint Shared Content	Audio Capture	Data Encoding	Exfiltration Over Network Denial of Service	Endpoint Denial of Service
Drive-by Compromise	Command and Scripting Interpreter	Create Account	Abuse Elevation Control Mechanism		Unsecured Credentials	Peripheral Device Discovery	Exploitation of Remote Services	Video Capture	Traffic Signaling	Automated Exfiltration	System Shutdown/Reboot
	Native API	Traffic Signaling	Escalation		Credentials from Password Stores	Remote Service Session Hijacking	Man in the Browser	Man in the Browser	Remote Access Software	Exfiltration Over Alternative Protocol	Disk Wipe
	Inter-Process Communication	BITS Jobs		Trusted Developer Utilities	Steal or Forge Kerberos Tickets	Information Repositories	Data from Network Shared Drive	Dynamic Resolution	Protocol Tunneling	Transfer Data to Cloud Account	Data Manipulation
		Server Software Component		Proxy Execution	Forced Authentication		Data from Cloud Storage Object	Non-Standard Port	Encrypted Channel		
		Pre-OS Boot		Signed Script Proxy Execution	Steal Application Access Token						
		Compromise Client		Rogue Domain Controller	Man-in-the-Middle						
		Software Binary		Indirect Command Execution							
		Implant Container Image		BITS Jobs							
				XSL Script Processing							
				Template Injection							
				File and Directory Permissions Modification							
				Virtualization/Sandbox Evasion							
				Unused/Unsupported Cloud Regions							
				Use Alternate Authentication Material							
				Impair Defenses							
				Hide Artifacts							
				Masquerading							
				Deobfuscate/Decode Files or Information							
				Signed Binary Proxy Execution							
				Exploitation for Defense Evasion							
				Execution Guerrillas							
				Modify Cloud Compute Infrastructure							
				Pre-OS Boot							
				Subvert Trust Controls							

Legend

High Confidence of Detection

Some Confidence of Detection

Low Confidence of Detection

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