Security Incident Response Plan

<ORGANIZATION>

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A Security Incident Response Plan is used to support the organized response to security incidents. It documents the roles and responsibilities and steps that will be followed to identify, contain, eradicate, and recover from security incidents.

Steps include Preparation, Identification, Containment, Eradication, Recovery, and Lessons Learned.

Organizations should have a formal, focused, and coordinated approach to responding to incidents, including an incident response plan that provides the roadmap for implementing the incident response capability. Each organization needs a plan that meets its unique requirements, which relate to the organization's mission, size, structure, and functions. The plan should lay out the necessary resources and management support.

National Institute of Standards and Technology (NIST), NIST Special Publication 800-61 Revision 2, http://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.800-61r2.pdf

SysAdmin, Audit, Network & Security (SANS), https://www.sans.org/white-papers/?focus-area=digital-forensics

SysAdmin, Audit, Network & Security (SANS), https://www.sans.org/white-papers/33901/

1 Revision History

This Security Incident Response Plan has been modified as follows:

Date	Version	Modification	Modifier
2022-01-01	1.0	Plan created	<author>

Review Cycle

This Security Incident Response Plan must be reviewed at least annually.

2 Purpose and Scope

Purpose

This Security Incident Response Plan exists to ensure <organization> is prepared to manage cyber incidents in an effective and efficient manner. Security incidents are more frequent and sophisticated than ever. No organization globally is immune to attack. Organizations must ensure they are prepared to respond to incidents as well as prevent and detect. By having a plan, a team, and conducting exercises, organizations will be better prepared for inevitable incidents and will be able to contain the damage and mitigate further risk to the organization. Resources must be deployed in an organized fashion with exercised skills and communication strategies.

This document describes the overall plan for responding to Security Incidents at <organization>. It identifies the structure, roles and responsibilities, types of common incidents, and the approach to preparing, identifying, containing, eradicating, recovering, and conducting lessons learned in order to minimize impact of security incidents.

The goal of the Security Incident Response Plan is to ensure organizations are organized to respond to security incidents effectively and efficiently.

Scope

This Security Incident Response Plan applies to all networks, systems, and data as well as members of the organization including employees and contractors as well as vendors that access the networks, systems, and data. Members of the organization who may be called upon to lead or participate as part of the Security Incident Response Team must familiarize themselves with this plan and be prepared to collaborate with the goal of minimizing adverse impact to the organization.

This document assists the organization with establishing incident handling and incident response capabilities and determining the appropriate response for common security incidents that will arise. This document is not intended to provide a detailed list of all activities that should be performed in combatting security incidents.

3 Authority

Responsibility for the security of government information resides with the <title>. During times when a high or critical security incident is underway this responsibility is entrusted to the <title>.

4 Definitions

Event an observable occurrence in a system or network. Events include a user connecting to a file share, a server receiving a request for a web page, or a user sending email.

Incident an adverse event in an information system, and/or network, or the threat of the occurrence of such an event. An *incident* is a violation or imminent threat of violation of computer security policies, acceptable use policies, or standard security practices. It implies harm or the attempt to harm.

5 Roles & Responsibilities

Internal Contacts*

Role	Name	Title	Phone	Email
Incident Handler (lead)				
Incident Handler (backup)				
Incident Response (lead)				
Incident Response (backup)				
Note-taker				
Communications				
Incident Management				
Security				
Privacy				

Network				
Desktop (Windows)				
Desktop (Other)				
Server (Windows)				
Server (Other)				
Datacentre				
Legal				
Law Enforcement (local)				
Law Enforcement (federal)				
Human Resources				
Executive				
Executive				
CISO				
CIO				

* every role should have a secondary and often a tertiary identified

External Contacts

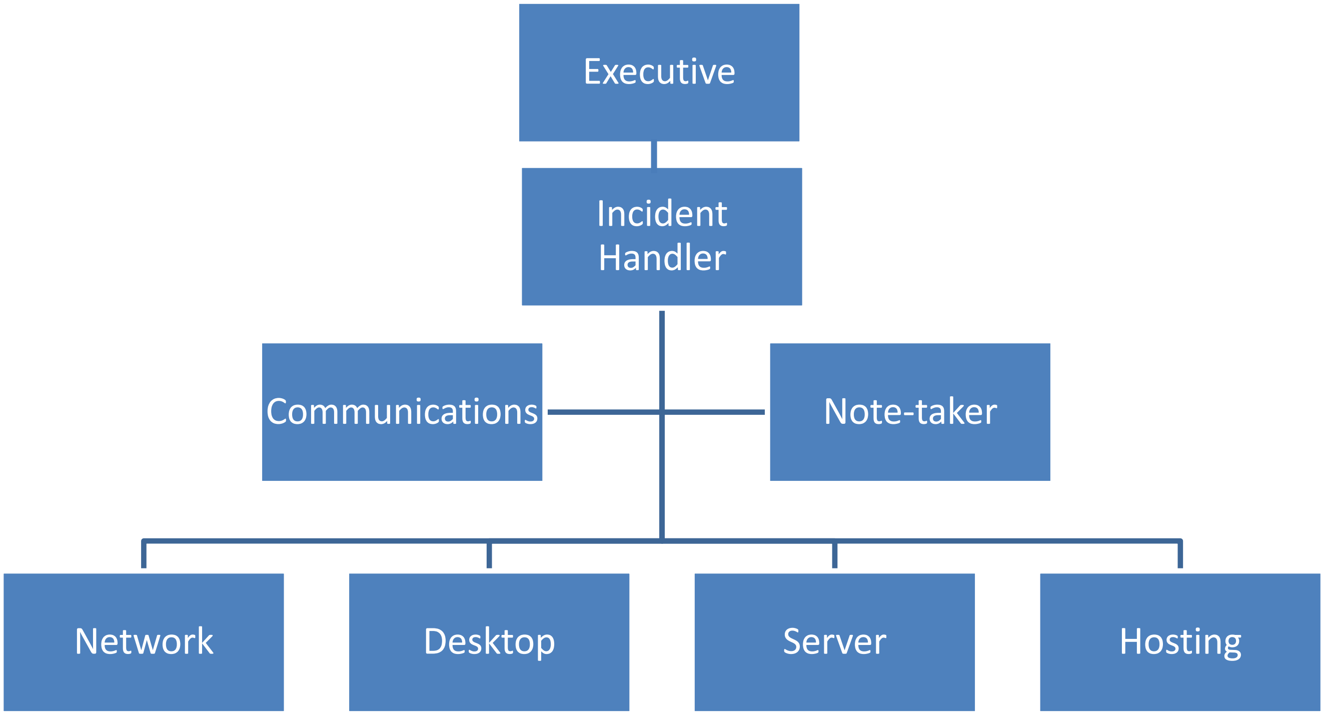
Role	Organization	Name	Title	Phone	Email
Vendor	IR on retainer				
Vendor	IR on retainer				
Vendor	Service Provider				

Vendor	Service Provider				
Vendor	Service Provider				
Vendor	Technology vendor				
Vendor	Technology vendor				
Vendor	Technology vendor				
Connected organization	Peer				
Connected organization	Peer				
Connected organization	Peer				

Other Stakeholders

Role	Organization	Name	Title	Phone	Email
Customers/ Clients					
Shareholders					
Board of Directors					

6 Team Structure



7 Incident Types

Type	Description
Unauthorized Access or Usage	Individual gains physical or logical access to network, system, or data without permission.
Service Interruption or Denial of Service	Attack that prevents access to the service or otherwise impairs normal operation
Malicious Code	Installation of malicious software (eg. virus, worm, Trojan, or other code)
Network System Failures (widespread)	An incident affecting the confidentiality, integrity, or availability of networks
Application System	An incident affecting the confidentiality, integrity, or availability of

Failures	applications or systems
Unauthorized Disclosure or Loss of Information	An incident affecting the confidentiality, integrity, or availability of data
Privacy Breach	Incident that involves real or suspected loss of personal information
Information Security/Data Breach	Incident that involves real or suspected loss of sensitive information
Other	Any other incident that affects networks, systems, or data

8 Severity Matrix

The Incident Response team will determine the severity of the incident taking into consideration whether a single system is affected or multiple, the criticality of the system(s) affected, whether impacting a single person or multiple, whether impacting a single team or multiple, or impacting the entire organization. The Incident Response Team will consider whether a single business area or multiple and the impact of the incident. The Incident Handler must consider the relevant business context and what else is happening with the business at the time to fully understand the impacts and urgency of remediation.

The Incident Response Team will consider the available information to determine the known magnitude of impact compared with the estimated size along with likelihood and rapidness of spread. The Incident Response Team will determine the potential impacts to the organization whether financial damage or brand and reputational damage or other harms.

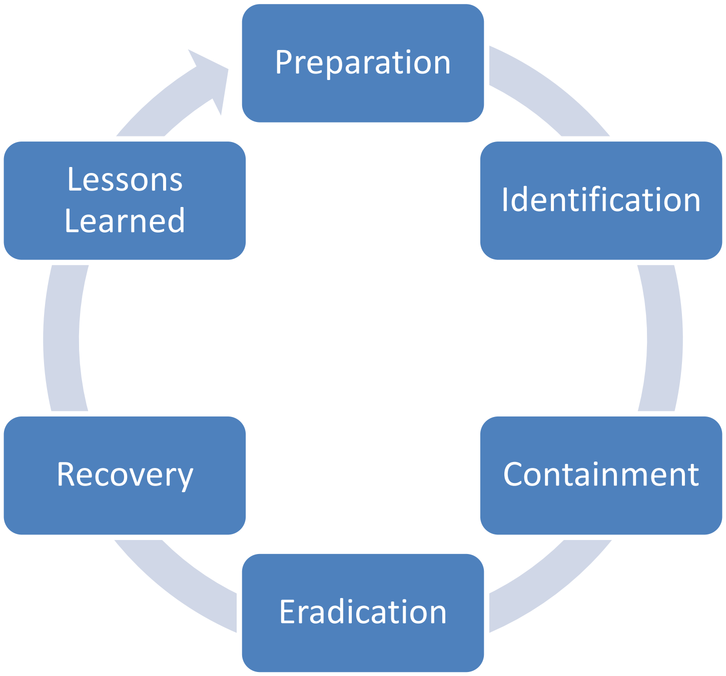
The incident may be the result of a sophisticated or unsophisticated threat, automated or manual attack, or may be nuisance/vandalism.

The Incident Response Team will determine whether there is a vulnerability, whether there is an exploit, whether there is evidence of the vulnerability being exploited, and whether there is a known patch. Finally the team will determine if this is a new threat (eg. zero day) or a known threat and the estimated effort to contain the problem.

Category	Indicators	Scope	Action
1 – Critical	Data loss, Malware	Widespread and/or with critical servers or data exfiltration	Implement SIRT, Incident Response Plan, create Security Incident, Organization-wide
2 – High	Theoretical threat becomes active	Widespread and/or with critical servers or data exfiltration	Implement SIRT, Incident Response Plan, create Security Incident, Organization-wide
3 – Medium	Email phishing or active spreading infection	Widespread	Implement SIRT, Incident Response Plan, create Security Incident, Organization-wide
4 - Low	Malware or phishing	Individual host or person	Notify SIRT, create Security Incident

9 Incident Handling Process

In the event of a Security Incident the Security Incident Response Team will adhere to the PICERL process as follows:



Preparation

- □ Build an incident response plan
  - o Establish mandate, delegate authority decision making process and chain of command
  - o Review/update annually
- □ Ensure you have an incident response team
  - o Dedicated, virtual, or on-retainer
  - o Provide training as necessary
- □ Document roles and responsibilities
  - o Delegate authority
  - o Provide training as necessary
- □ Conduct exercises, drills regularly
  - o Consider that most incident types are known in advance
  - o Prepare for the known so can focus on the unknown
  - o Test the plan, team and tools
- □ Understand the environment
  - o Diagrams, location of critical systems and data
  - o Ensure adequate visibility into networks and systems to respond to an incident
  - o Vendor environment
  - o Understand dependencies
- □ Understand what controls are in place
  - o Are they sufficient to mitigate risk to an acceptable level
- □ Understand impacts
  - o Determine Maximum Tolerable Downtime (MTD) and Acceptable Interruption Window (AIW)?
  - o Prioritized list of assets and downtime
- □ Prepare war room and/or conference bridge(s)
  - o Require a location physically or logically to convene
  - o Ensure location is secure and appropriately equipped
- □ Establish communications plan in advance
- □ Establish agreements in advance
  - o Eg. Incident Response on Retainer
  - o Ensure annual plan review/update
  - o Regular exercises
  - o Familiarity with environment in advance
  - o Preferred pricing
  - o Established SLA, response times

Notification

- □ Ensure a central point of contact exists for employees to report real or suspected security incidents
- □ Ensure all employees are required to report security incidents
- □ Ensure all employees know they are required to report security incidents and how
- □ Ensure all employees do report security incidents in a timely fashion

Convene

- □ Bring together those who are aware of the incident
- □ Engage Incident Response Team members
- □ Remind all of responsibility to maintain need-to-know
    - o Otherwise leads to managing misinformation
- □ Communicate effectively and efficiently
- □ Convene in war room or conference bridges
    - o Ensure location is secure and appropriately equipped
- □ Often more than one location is required for different needs (eg. management and technical team)

Identification

- □ Determine whether an incident has occurred
    - o Is it an event or an incident?
    - o Search for correlating information to increase confidence there is a real incident
- □ Perform triage and ensure common understanding of how it was detected and who is aware
- □ Analyze the precursors and indicators
- □ Perform research (eg. search engines, knowledge base)
- □ Document investigation and evidence gathering
- □ Prioritize handling of incident based on relevant factors (functional impact, information impact, recoverability effort, etc)
- □ Determine severity, urgency and initial impact
- □ Review information and actions taken to date
- □ Report incident to appropriate internal personnel and external organizations

Communication

- □ Invoke communications plan respecting need-to-know
- □ Develop stakeholder relationship map, to determine the level of stakeholder involvement
- □ Ensure reported information is factual based on evidence available at the time
- □ Ensure a point of contact knows the current status at all times

Containment

- □ Implement incident response playbook
- □ Prevent further damage and problem from getting worse by containing the incident
- □ Determine the source, what vulnerability was exploited and plug the holes
- □ Continue impact/damage assessment and confirm the scope of the incident
- □ Determine what was changed (eg. files, connections, processes, accounts, access)
- □ Acquire, preserve, secure and document evidence and preserve chain of custody
- □ Continue taking notes, ensuring a detailed log about what was found and what you did about it

Eradication

- □ Eradicate the incident
- □ Remove all traces of the infection or other incident
  - o Identify and mitigate all vulnerabilities that were exploited
  - o Remove malware, inappropriate materials, and other components
- □ If more affected hosts are discovered (e.g., new malware infections), ensure to perform the identification steps on the newly identified examples, then contain
- □ Ensure the incident cannot re-occur
- □ Further understand the attack vector
- □ Continue taking notes, ensuring a detailed log
- □ Ensure any compromised machines are removed or formatted before placing back into service
  - o Ensure necessary evidence has been collected

Recovery

- □ Return affected systems to an operationally ready state one by one
- □ Monitor closely to ensure incident does not re-occur or is not still ongoing
- □ Ensure systems are restored from a trusted source
- □ Confirm the affected systems are functioning normally
- □ Implement additional monitoring to look for future related activity if necessary

Lessons Learned

- □ Hold lessons learned meeting within 2 weeks
- □ Create a follow up report
- □ Walk through and review play-by-play of incident report
  - o How was the incident detected, by whom, and when
  - o Scope and severity of incident
  - o Methods used in containment and eradication
- □ Identify opportunities for improvement to better prepare for next time
- □ Ensure accountability to follow up on identified opportunities

[*] Multiple sources including NIST Special Publication 800-61 revision 2 and SANS

10 Approvals

Responsible Party

Responsibility for the security of government information resides with the following responsible party:

Responsible Party Name and Title	Responsible Party Signature

The Responsible Party has reviewed the Security Incident Response Plan and delegates the responsibility for mitigating harm to the organization to the Incident Handler.

During times when a high or critical security incident is underway this responsibility is entrusted to the Incident Handler or their delegate.

Incident Handler

The Incident Handler has reviewed the Security Incident Response Plan and acknowledges that when a high or critical security incident is underway, responsibility for managing the incident is entrusted to the Incident Handler or their delegate.

The Incident Handler or their delegate is expected to handle the incident in a way that mitigates further exposure of the organization. The incident will be handled according to process including identification, containment, eradication, recovery, and lessons learned.

Incident Handler Name and Title	Incident Handler Signature

11 References

National Institute of Standards and Technology (NIST), NIST Special Publication 800-61 Revision 2, http://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.800-61r2.pdf

SysAdmin, Audit, Network & Security (SANS), https://www.sans.org/reading-room/whitepapers/incident

SysAdmin, Audit, Network & Security (SANS), https://www.sans.org/reading-room/whitepapers/incident/incident-handlers-handbook-33901