

From Panic to Protocol

Building a Resilient Cybersecurity Program to Safeguard Against Emerging Threats

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Agenda

The Current State of Ransomware

Prevalent Cybersecurity Threats

Building a Resilient Cybersecurity Program

Key Tactical Recommendations / Takeaways





The Current State of Ransomware

123% increase in reported ransomware attacks over a two-year period

2025 Ransomware Report: How Ransomware Wars Threaten Third-Party Cyber Ecosystems, Black Kite Research & Intelligence Team (BRITE)

64% of organizations impacted by ransomware paid the ransom.

2025 Ransomware Trends and Proactive Strategies, Veeam



\$9.48M average cost of data breach in the US³.



Prevalent Cybersecurity Threats



Ineffective Vulnerability Management Program

Threat-actors often access outdated, vulnerable, systems to enter an organization's network



Human Error

Threats initiated via social engineering tactics like Phishing, which often target credential harvesting



Third Party Vulnerabilities

Vulnerabilities can be present in third party applications and supply chains, providing another entry point



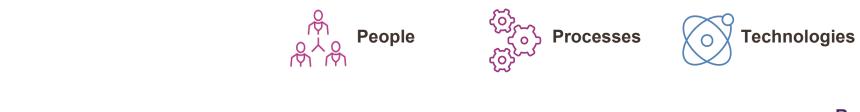
Unsecured Web Applications

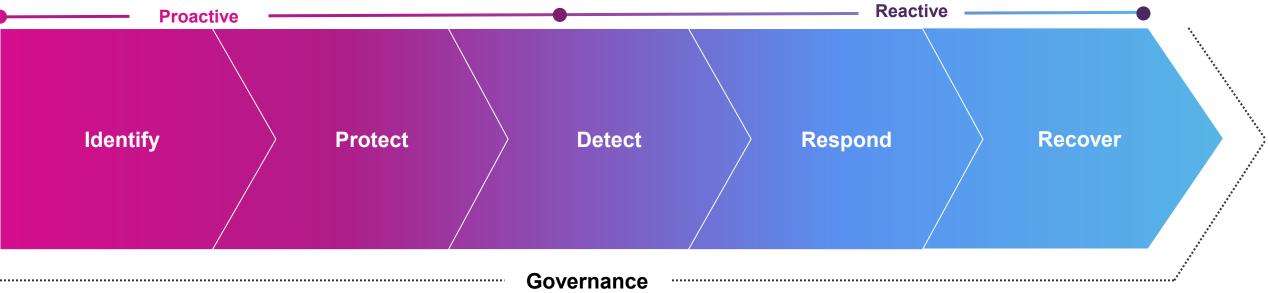
Insecure public-facing webapplications enable easy access to an organization's environment.



Align with a Cybersecurity Framework

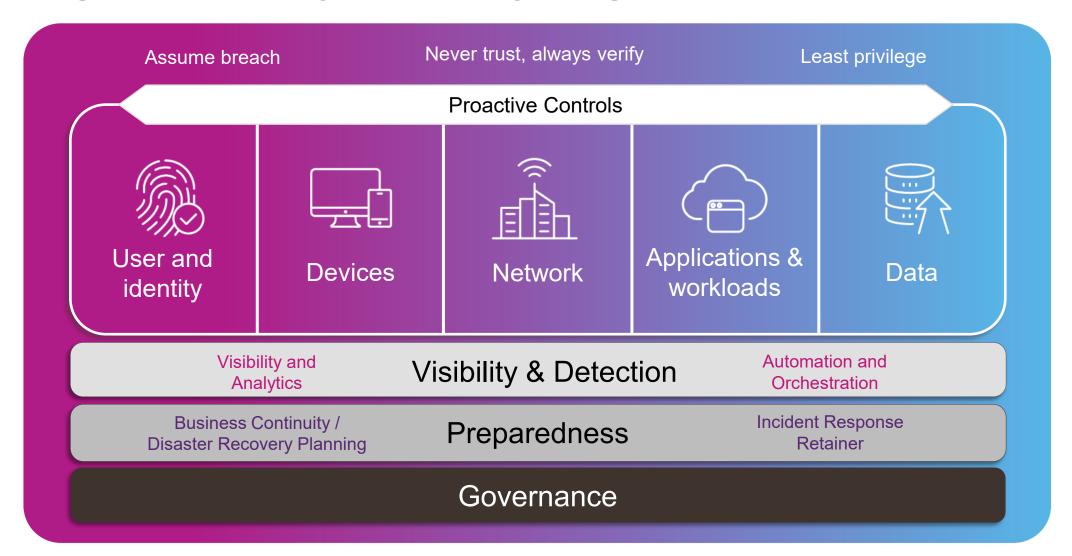
Industry-accepted cybersecurity frameworks





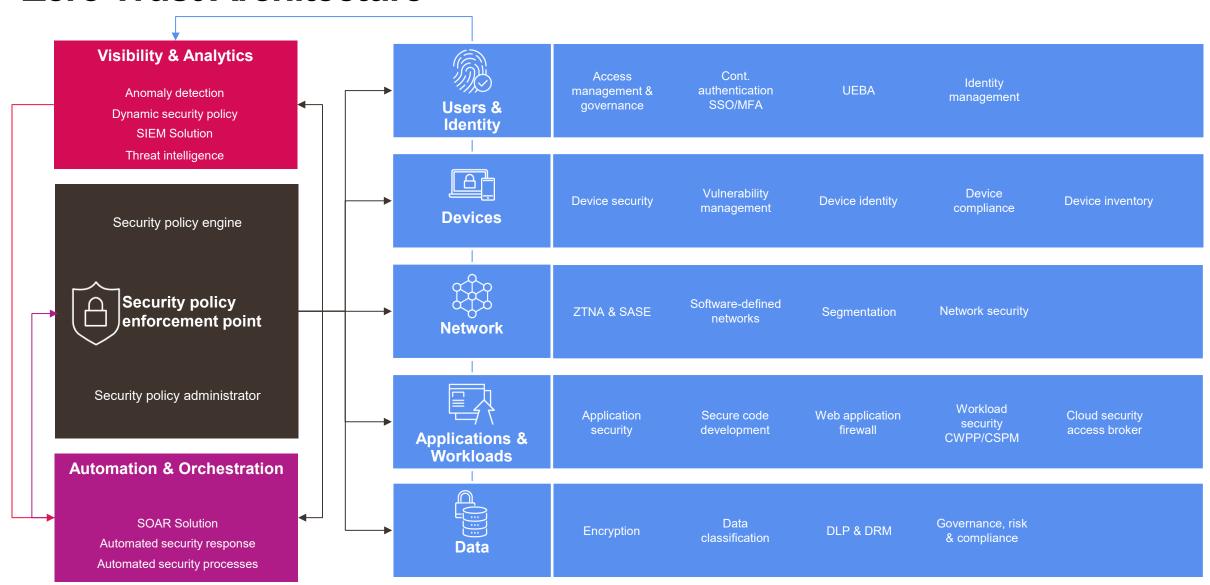


Building a Resilient Cybersecurity Program





Zero Trust Architecture





Business Continuity / Disaster Recovery Planning



Readiness

Primary vehicle for creating the planning structure for the business continuity effort.

The BIA focus quantifies financial and operational interruptions



Tactical and Strategic recommendations to support recovery needs

Response and recovery strategies for plan development



Plans for Critical Business and

IT functions as identified in the BIA

Integration of ERP to all plans



Testing

Testing of plans for Critical Business, IT functions and ERP Unit and Integration of all plans



Maintenance

Maintenance of plans for Critical Business and IT functions and ERP

Change control and update management of plans



Tactical Implementations for Ransomware Prevention & Protection



1. Al-Powered 2. Immutable Backup 5. Secure Endpoint 3. Application 4. Network Ransomware Behavior Storage & Air-Gapping Whitelisting & **Segmentation & Micro-Protection with Anti-Execution Controls Segmentation** Detection Ransomware Al 7. Deception 9. Rapid Incident 6. Patch Management & 8. Email & Web Filtering 10. Privilege Restriction **Technology (Honeypots Vulnerability Mitigation** for Phishing Prevention **Containment &** & Multi-Factor & Fake Admin **Automated Isolation Authentication (MFA) Credentials**) 11. Secure PowerShell 12. Al-Driven Threat 13. Secure Backup 14. Endpoint Isolation 15. Ransomware-**Testing & Recovery Specific SIEM Use** & Scripting Restrictions **Hunting & Early Strategies** Detection **Validation** Cases 19. Ransomware-20. Continuous 16. Behavioral Al for 17. Secure API 18. Secure Removable **Specific Cyber Protection Media & External Cybersecurity Training Insider Threat Detection** Insurance & Risk & Awareness **Storage Policies Planning**



1. Al-Powered Ransomware Behavior Detection



2. Immutable Backup Storage & Air-Gapping

3. Application
Whitelisting &
Execution Controls

4. Network
Segmentation & MicroSegmentation

5. Secure Endpoint Protection with Anti-Ransomware Al

- Deploy Extended Detection & Response (XDR) platforms with Al-driven anomaly detection.
- Utilize machine learning models to track behavioral patterns before encryption starts.

6. Patch Management & Vulnerability Mitigation

7. Deception
Technology (Honeypots
& Fake Admin
Credentials)

8. Email & Web Filtering for Phishing Prevention

9. Rapid Incident
Containment &
Automated Isolation

10. Privilege Restriction & Multi-Factor Authentication (MFA)

- 11. Secure PowerShell & Scripting Restrictions
- 12. Al-Driven Thre Hunting & Early Detection

13. Secure Backup Testing & Recovery Validation 14. Endpoint Isolation Strategies

15. Ransomware-Specific SIEM Use Cases

16. Behavioral Al for Insider Threat Detection 17. Secure API

18. Secure Removable Media & External Storage Policies

19. Ransomware-Specific Cyber Insurance & Risk Planning 20. Continuous
Cybersecurity Training
& Awareness



2. Immutable Backup Storage & Air-Gapping

1. Al-Powered Ransomware Behavior Detection



3. Application
Whitelisting &
Execution Controls

4. Network
Segmentation & MicroSegmentation

5. Secure Endpoint
Protection with AntiRansomware Al

- Store backups in write-protected, offline environments to prevent ransomware tampering.
- Apply multi-versioning for historical data restoration in case of attack.

6. Patch Management & Vulnerability Mitigation

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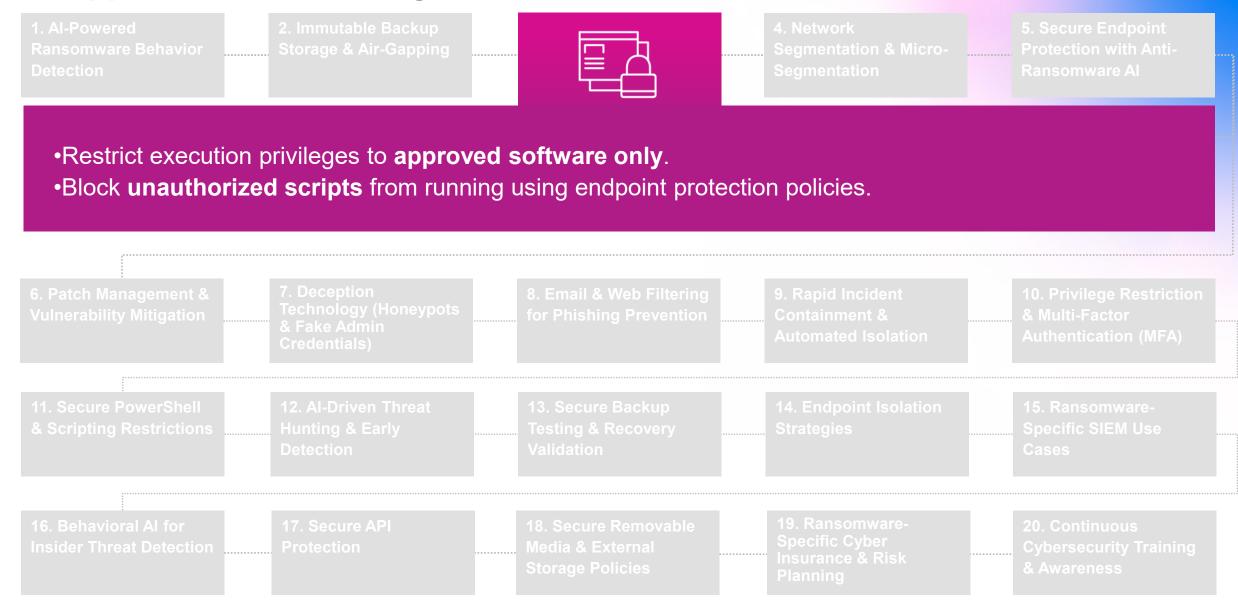
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3. Application Whitelisting & Execution Controls





4. Network Segmentation & Micro-Segmentation



2. Immutable Backup Storage & Air-Gapping 3. Application
Whitelisting &
Execution Controls



5. Secure Endpoint
Protection with AntiRansomware Al

- Isolate critical assets using **firewalls & VLANs** to prevent ransomware lateral movement.
- Apply **zero-trust architecture** for sensitive systems and data zones.





5. Secure Endpoint Protection with Anti-Ransomware Al

1. Al-Powered Ransomware Behavior Detection 2. Immutable Backup Storage & Air-Gapping 3. Application
Whitelisting &
Execution Controls

4. Network
Segmentation & MicroSegmentation



- Implement Next-Gen Antivirus (NGAV) & Endpoint Detection and Response (EDR) solutions.
- Enable **real-time process monitoring** to block suspicious encryption attempts.

7. Deception Technology (Honeypots & Fake Admin Credentials)

11. Secure PowerShell & Scripting Restrictions

12. Al-Driven Threat Hunting & Early Detection

13. Secure Backup Testing & Recovery Validation

14. Endpoint Isolation

Strategies

Strategies

15. Ransomware-Specific SIEM Use Cases

16. Behavioral AI for

17. Secure API

18. Secure Removable

19. Ransomware20. Continuous



6. Patch Management & Vulnerability Mitigation

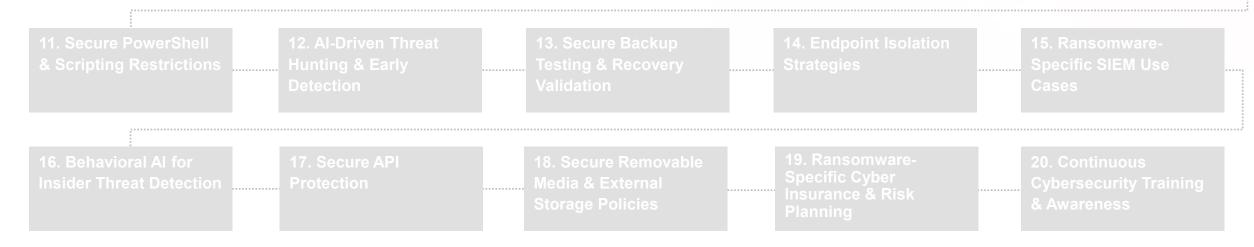
Automate updates with centralized patch management systems. Apply virtual patching for legacy systems to close known exploit gaps.



7. Deception Technology (Honeypots & Fake Admin Credentials)



- Deploy fake high-value data to lure ransomware attacks into early detection traps.
- · Use decoy accounts to mislead attackers attempting credential theft.

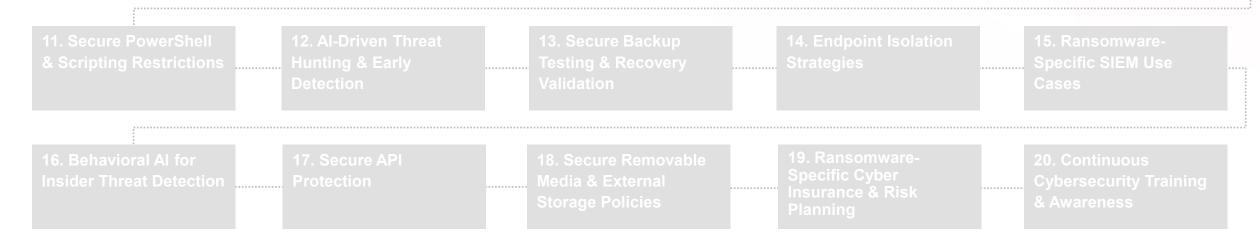




8. Email & Web Filtering for Phishing Prevention



- Block malicious attachments and phishing links using secure email gateways (SEG).
- Implement AI-based URL analysis for detecting fraudulent sites in real-time.





9. Rapid Incident Containment & Automated Isolation

1. Al-Powered
Ransomware Behavior
Detection

2. Immutable Backup
Storage & Air-Gapping
Whitelisting & Segmentation & Micro-Segmentation
Segmentation
Segmentation

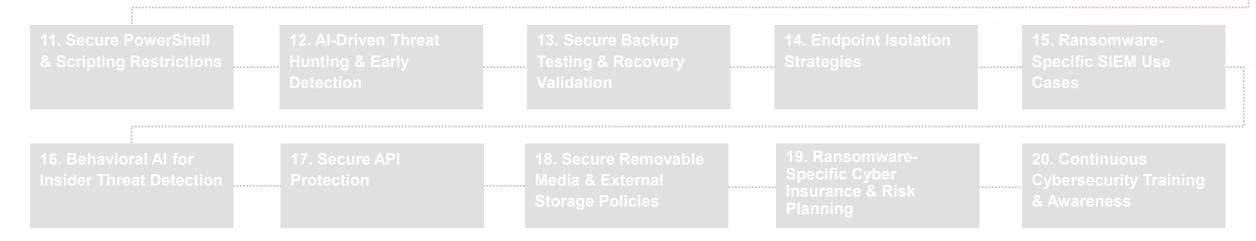
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10. Privilege Restriction
& Multi-Factor
Authentication (MFA)

- Use automated isolation playbooks to quarantine infected endpoints before ransomware spreads.
- Apply network-level behavioral analytics to detect ransomware activity instantly.

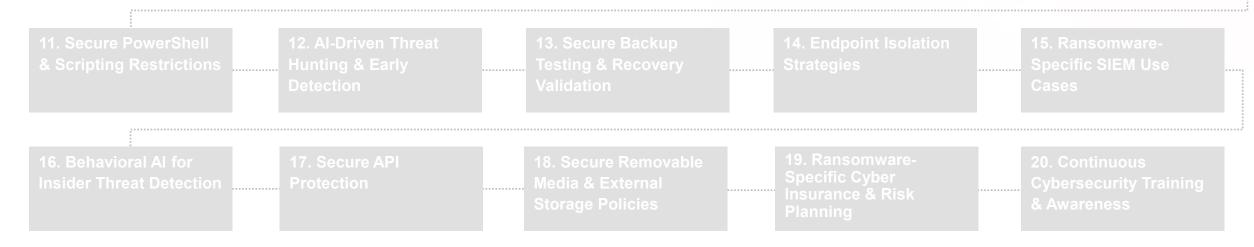




10. Privilege Restriction & Multi-Factor Authentication (MFA)

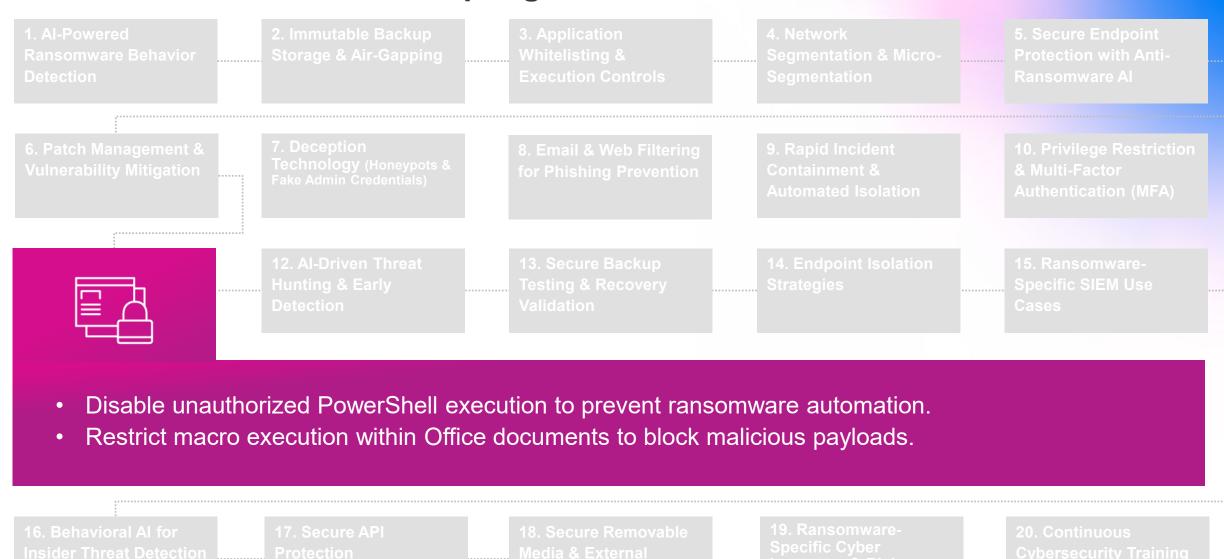


- Remove default administrator access on endpoints to prevent ransomware escalation.
- Enforce phishing-resistant MFA for all sensitive system logins.





11. Secure PowerShell & Scripting Restrictions





12. Al-Driven Threat Hunting & Early Detection

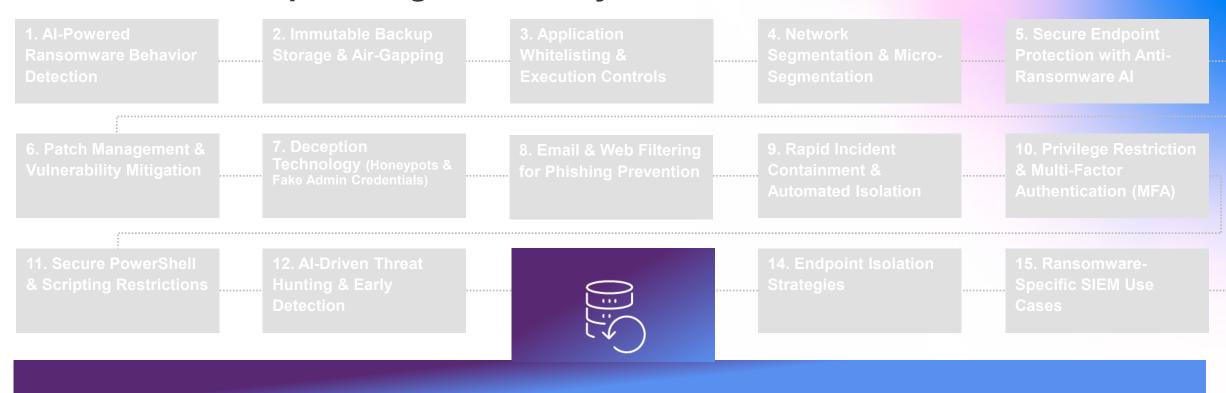


- Use behavioral analytics to detect early-stage ransomware reconnaissance actions.
- Deploy threat intelligence feeds to monitor known ransomware actors.

16. Behavioral Al for Insider Threat Detection	17. Secure API Protection	18. Secure Removable Media & External Storage Policies	19. Ransomware- Specific Cyber Insurance & Risk Planning	20. Continuous Cybersecurity Training & Awareness



13. Secure Backup Testing & Recovery Validation



- Conduct frequent backup integrity tests to ensure restoration capabilities.
- Implement instant rollback mechanisms for encrypted files.

Storage Policies Insurance & Risk Planning & Awareness		navioral Al for Threat Detection		17. Secure API Protection				Insurance & Risk		
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14. Endpoint Isolation Strategies

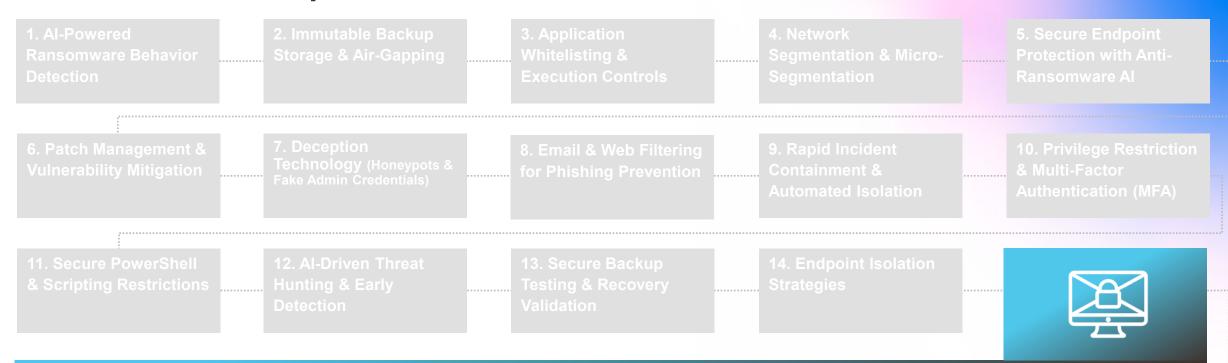


- Enforce remote kill-switch protocols to halt ransomware encryption in real-time.
- Monitor USB device connections to prevent ransomware payload delivery.

16. Behavioral Al for	17. Secure API Protection	 18. Secure Removable Media & External	19. Ransomware- Specific Cyber	20. Continuous Cybersecurity Training
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15. Ransomware-Specific SIEM Use Cases

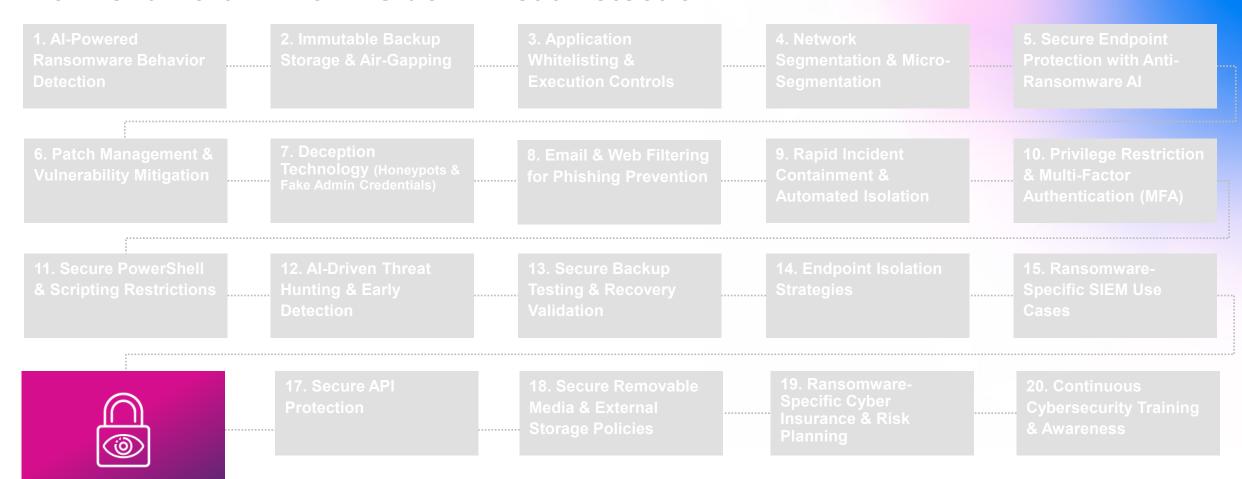


- Integrate ransomware detection rules within SIEM to trigger alerts upon suspicious encryption.
- Use log correlation techniques to track initial intrusion behaviors.

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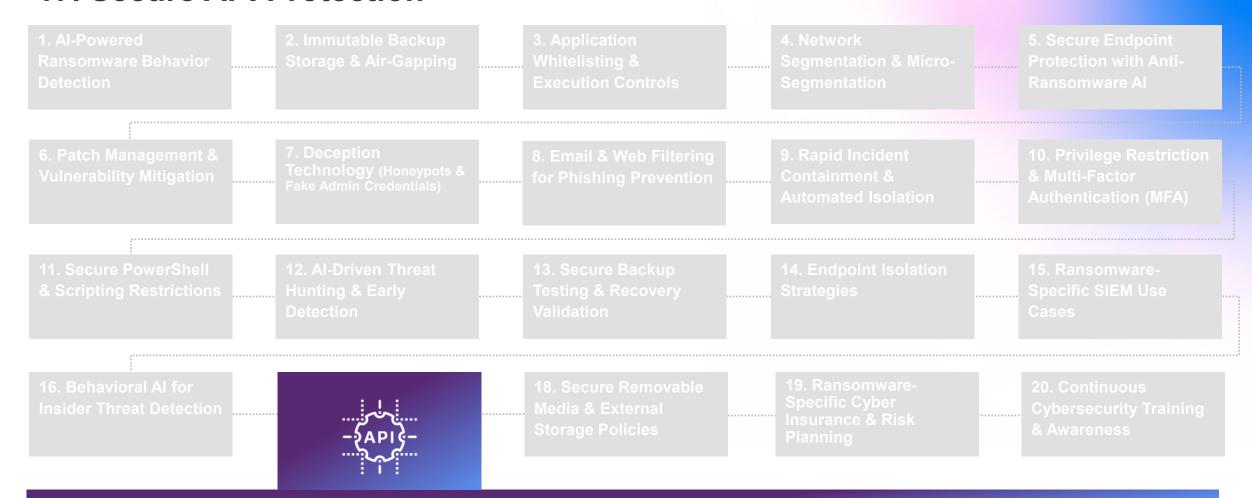
16. Behavioral Al for Insider Threat Detection



- Monitor employee access patterns for potential internal ransomware execution.
- Implement zero-trust insider controls for privileged users handling sensitive data.



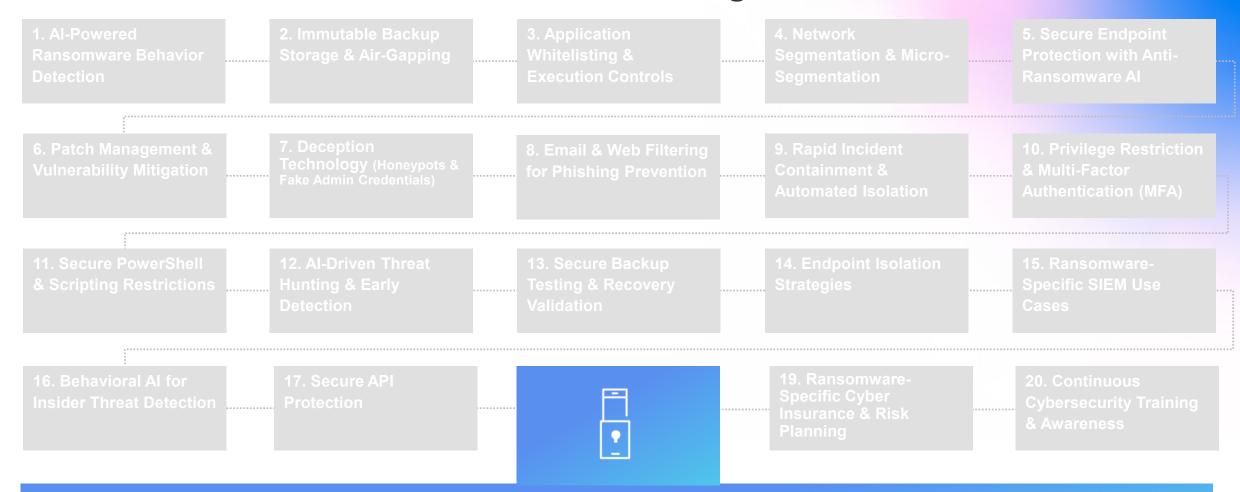
17. Secure API Protection



- Enforce strict API security controls to prevent malware injection into cloud services.
- Utilize OAuth 2.0 & JWT authentication for secure API communications.



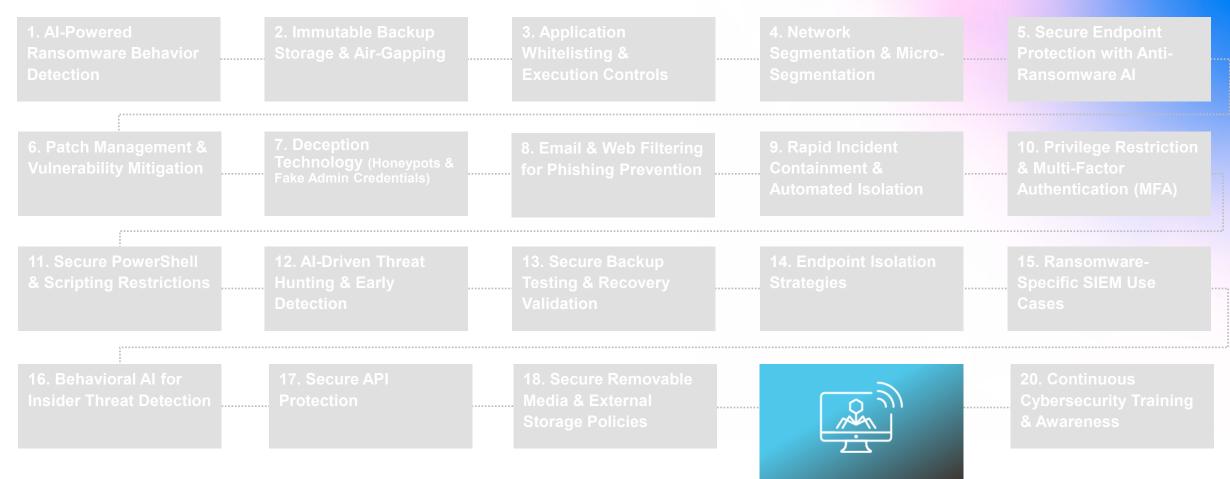
18. Secure Removable Media & External Storage Policies



- Disable unauthorized USB devices to prevent ransomware infection vectors.
- Enforce automatic scanning of removable media before access is granted.



19. Ransomware-Specific Cyber Insurance & Risk Planning



- Establish insurance-backed response plans to mitigate ransomware impact.
- Deploy legal response frameworks for ransomware negotiations (if required).



20. Continuous Cybersecurity Training & Awareness



- Conduct regular ransomware tabletop exercises for IT and executive teams.
- Train employees with Al-driven phishing simulations to recognize malware-laden emails.



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Thank you

