



From Panic to Protocol

Building a Resilient Cybersecurity Program to Safeguard Against Emerging Threats

Don Ikhtiari
vCISO, Principal Cybersecurity Architect



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.

IBM Cost of a Data Breach 2024

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Threat-actors often access outdated, vulnerable, systems to enter an organization's network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 web-applications enable easy access to an organization's environment.

Align with a Cybersecurity Framework

Industry-accepted cybersecurity frameworks



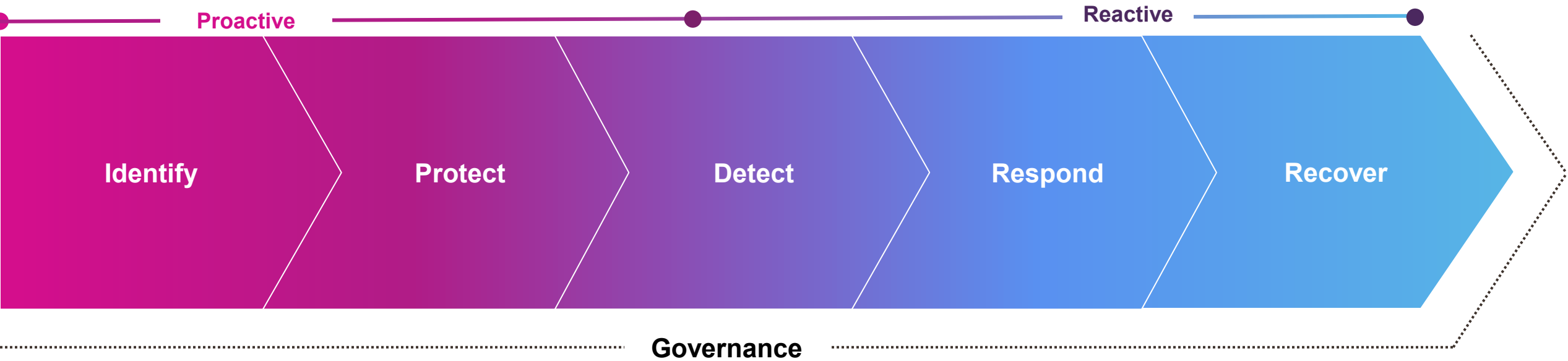
People



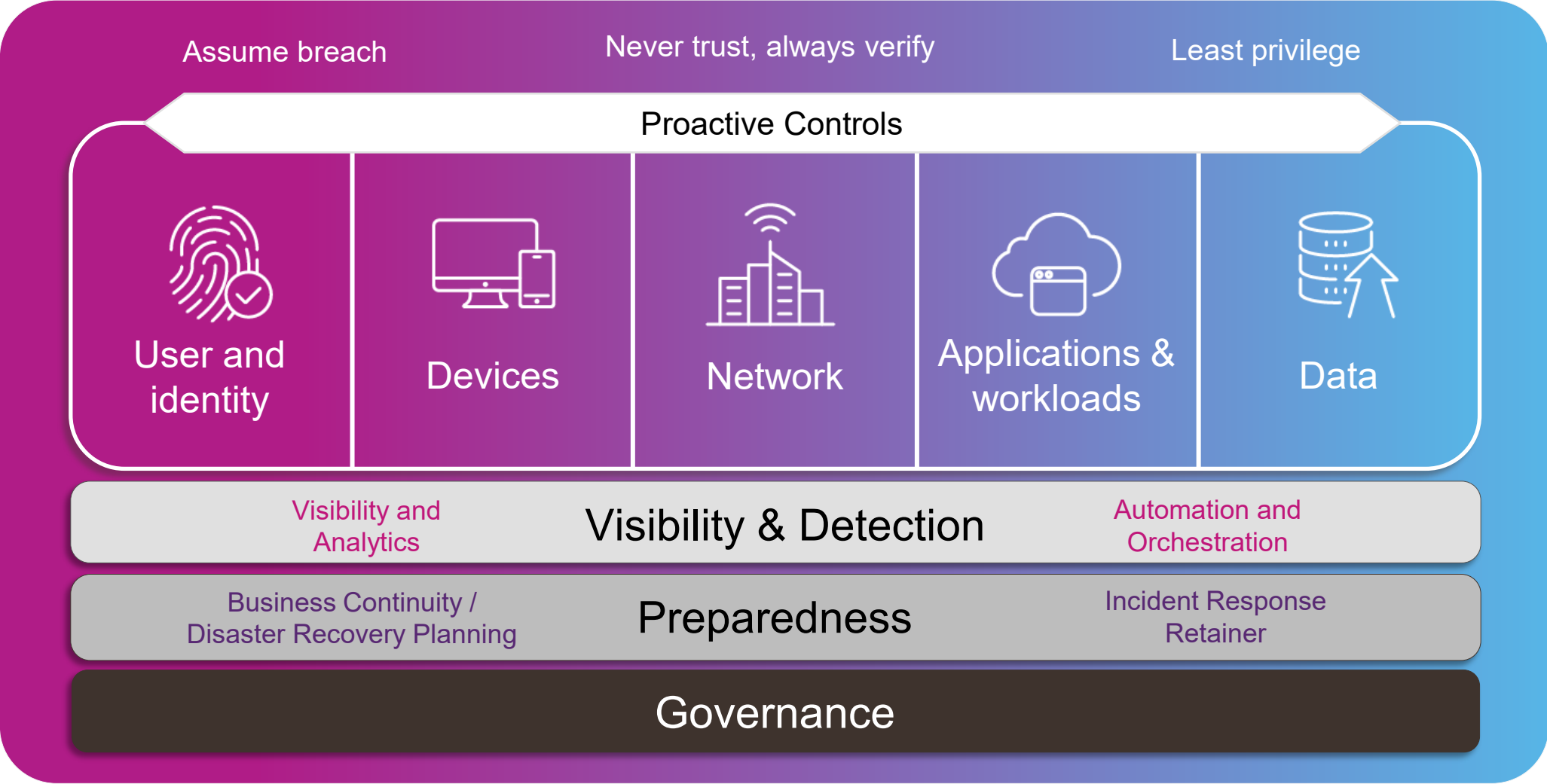
Processes



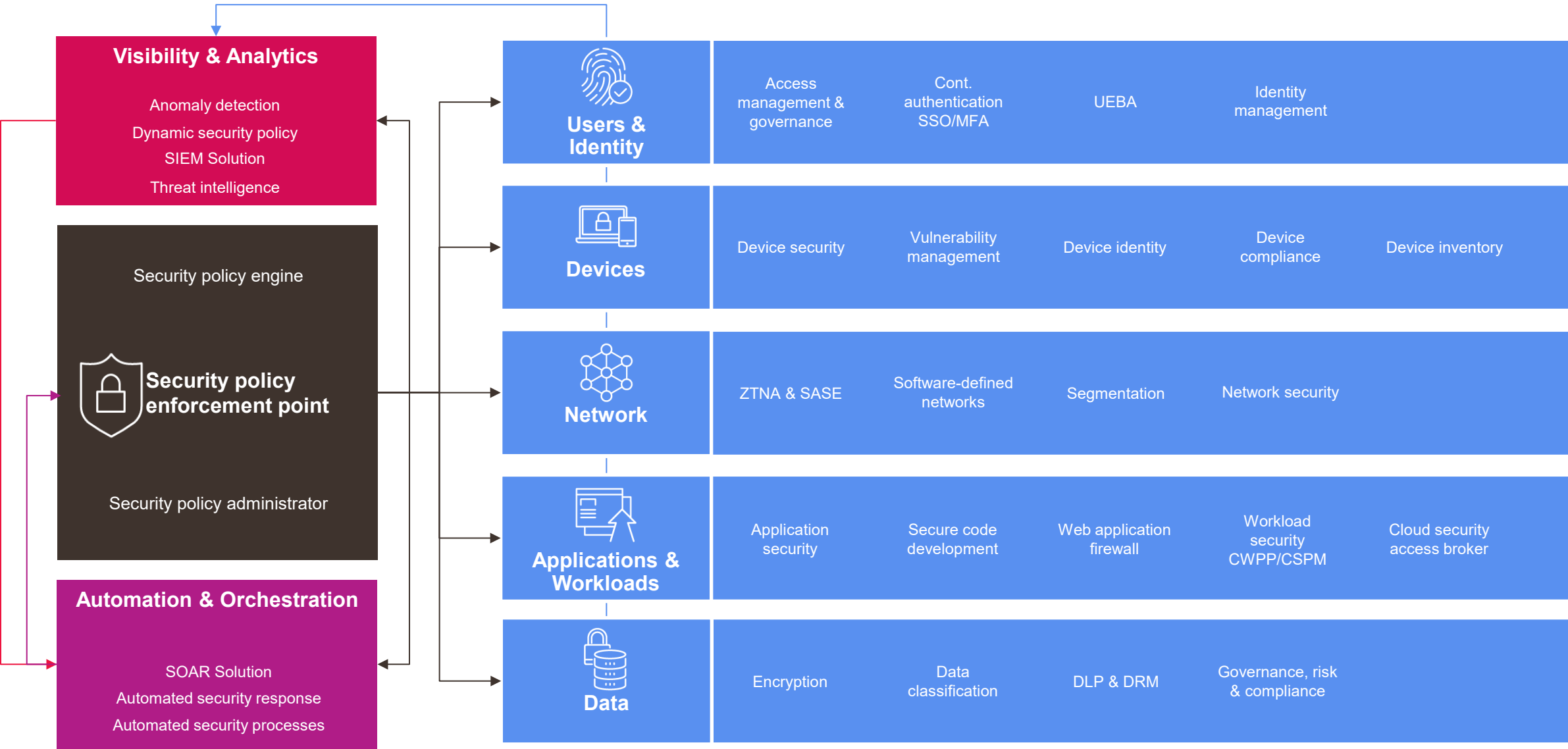
Technologies



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



Strategy

Tactical and Strategic recommendations to support recovery needs

Response and recovery strategies for plan development



Planning

Plans for Critical Business and IT functions as identified in the BIA

Integration of ERP to all plans



Testing

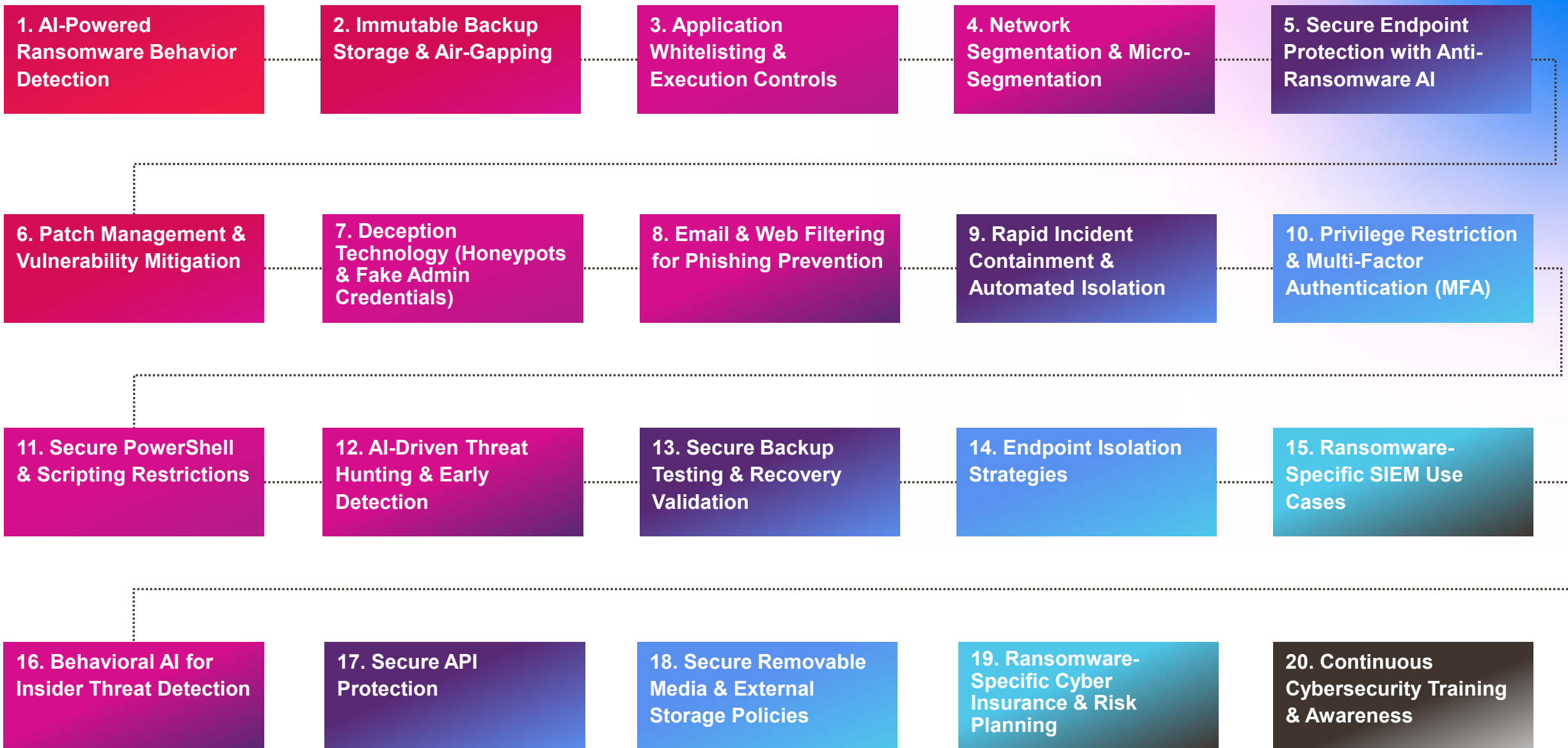
Testing of plans for Critical Business, IT functions and ERP
Unit and Integration of all plans



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. AI-Powered Ransomware Behavior Detection



2. Immutable Backup Storage & Air-Gapping

3. Application Whitelisting & Execution Controls

4. Network Segmentation & Micro-Segmentation

5. Secure Endpoint Protection with Anti-Ransomware AI

- Deploy **Extended Detection & Response (XDR)** platforms with **AI-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. AI-Driven Threat Hunting & Early Detection

13. Secure Backup Testing & Recovery Validation

14. Endpoint Isolation Strategies

15. Ransomware-Specific SIEM Use Cases

16. Behavioral AI for Insider Threat Detection

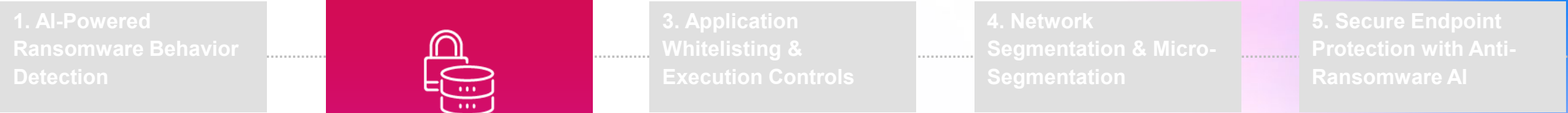
17. Secure API Protection

18. Secure Removable Media & External Storage Policies

19. Ransomware-Specific Cyber Insurance & Risk Planning

20. Continuous Cybersecurity Training & Awareness

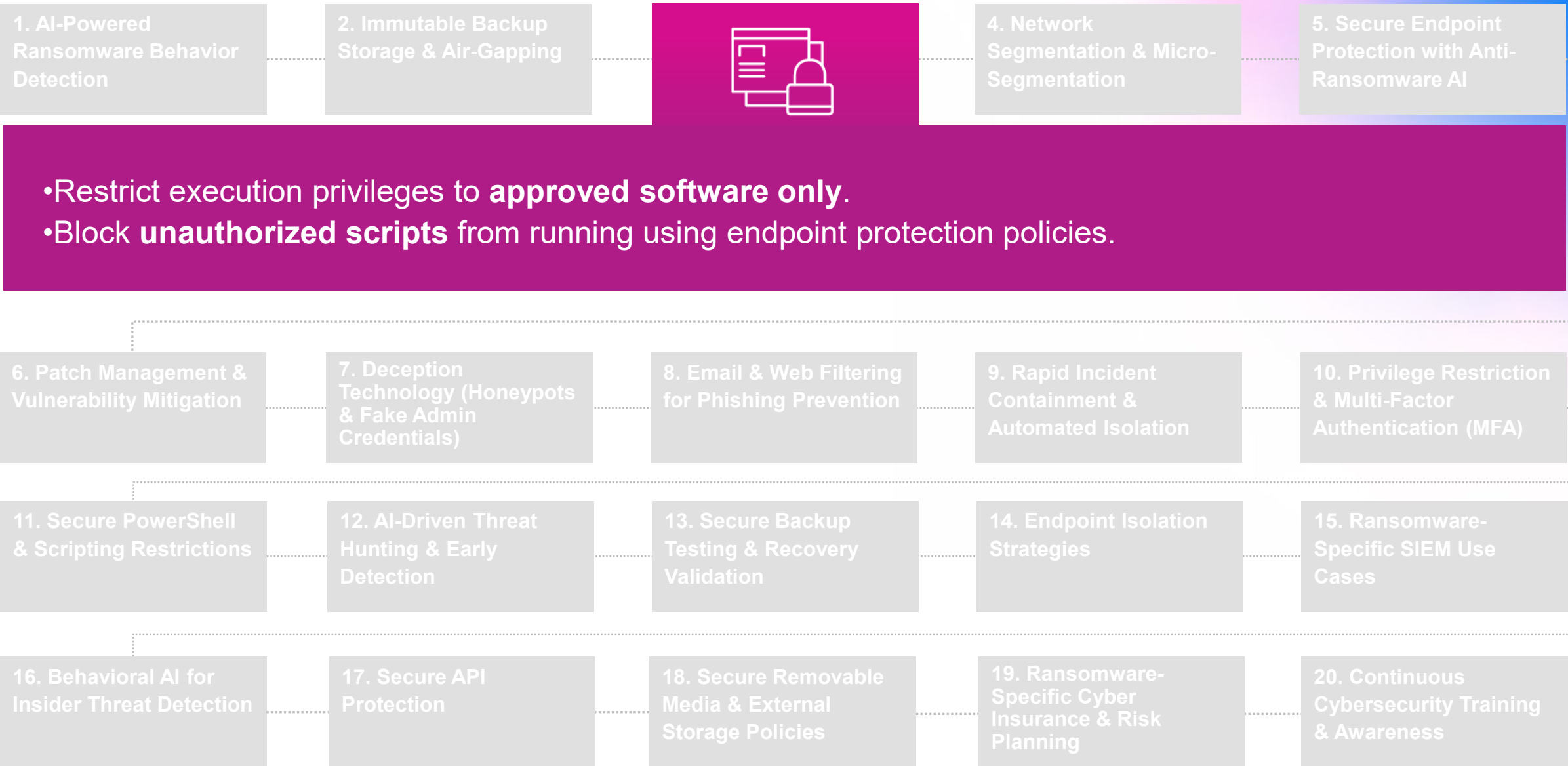
2. Immutable Backup Storage & Air-Gapping



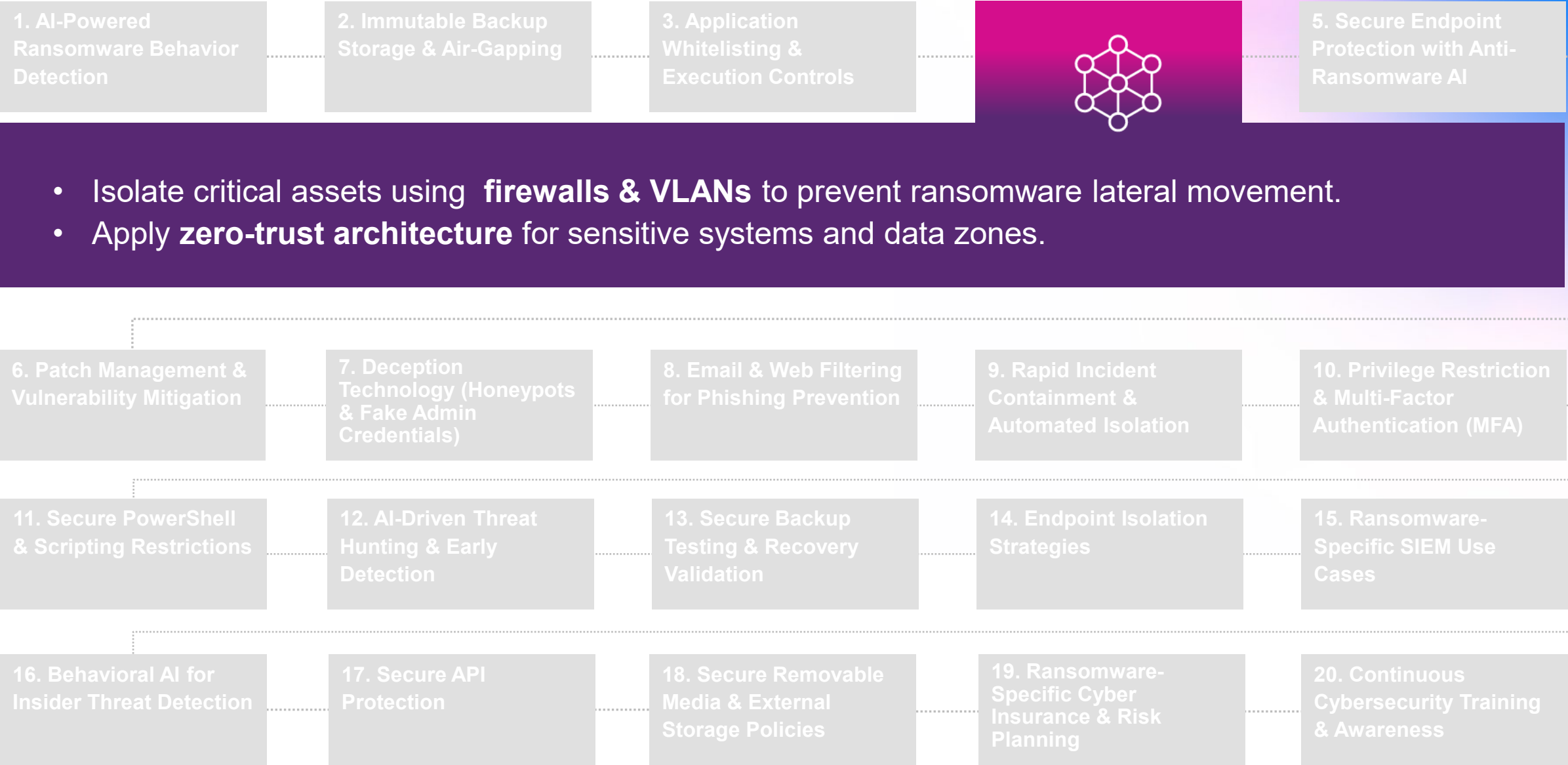
- Store backups in **write-protected, offline environments** to prevent ransomware tampering.
- Apply **multi-versioning** for historical data restoration in case of attack.



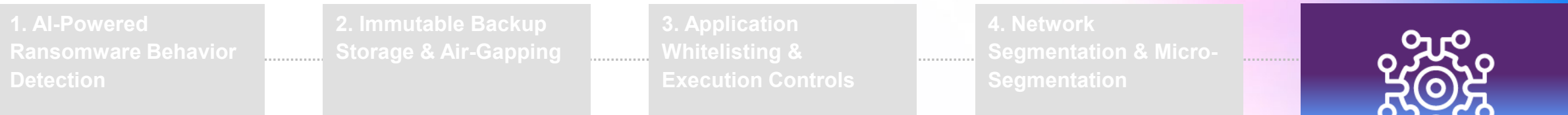
3. Application Whitelisting & Execution Controls



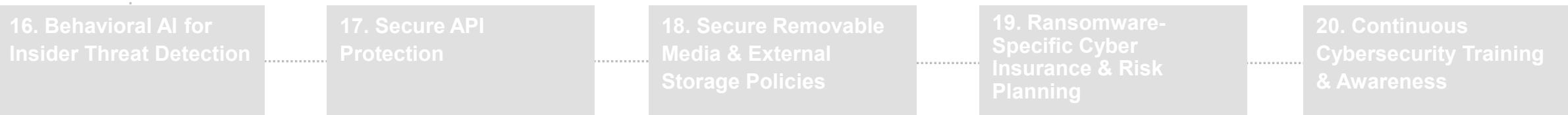
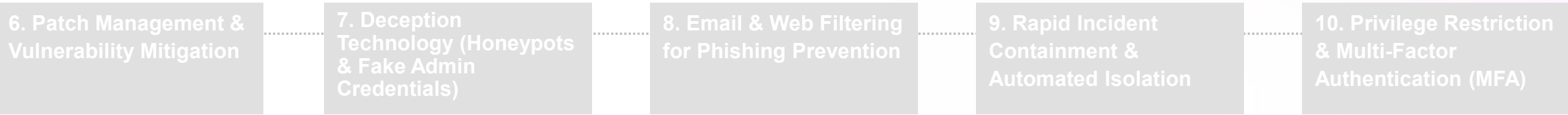
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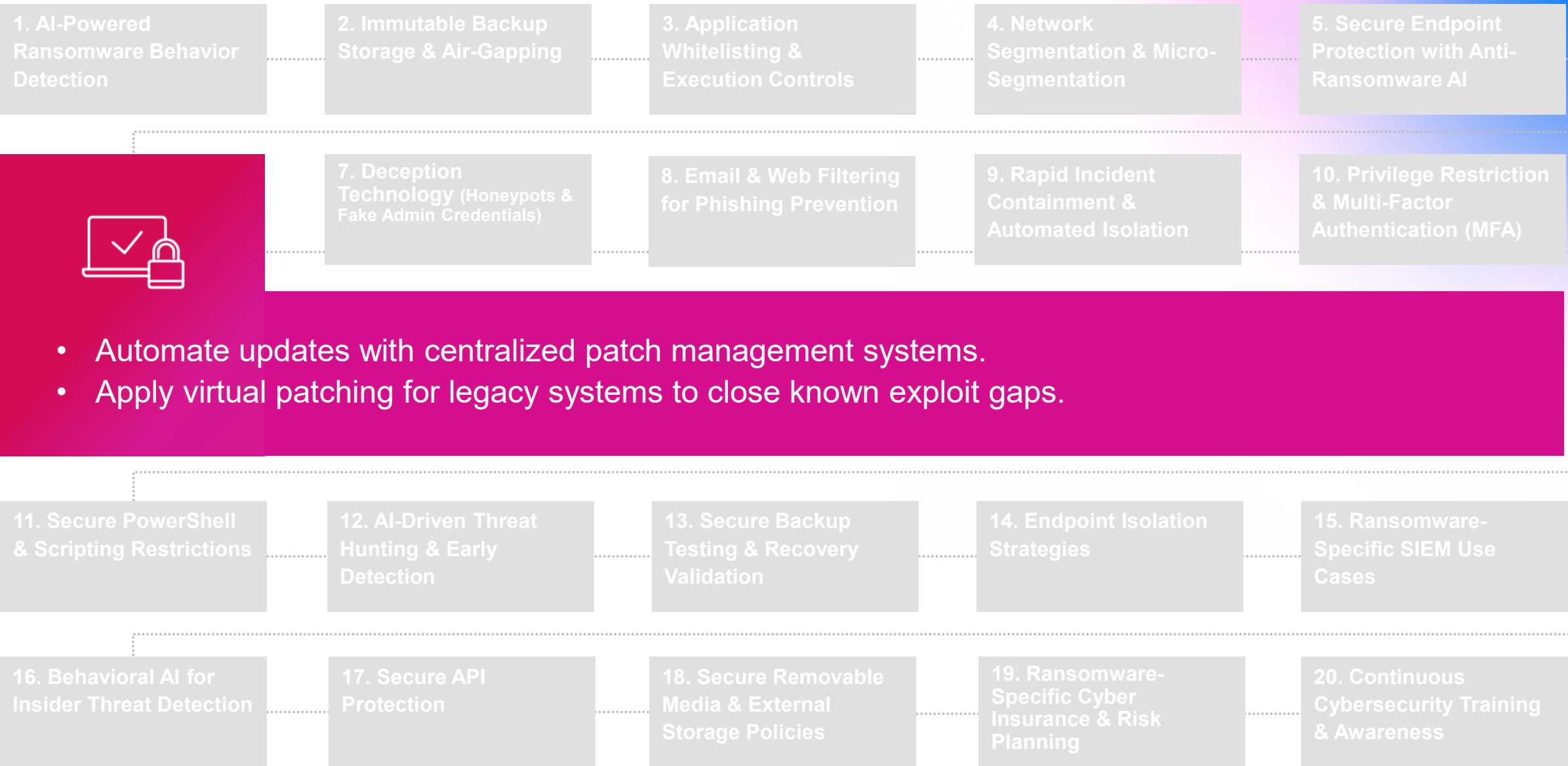
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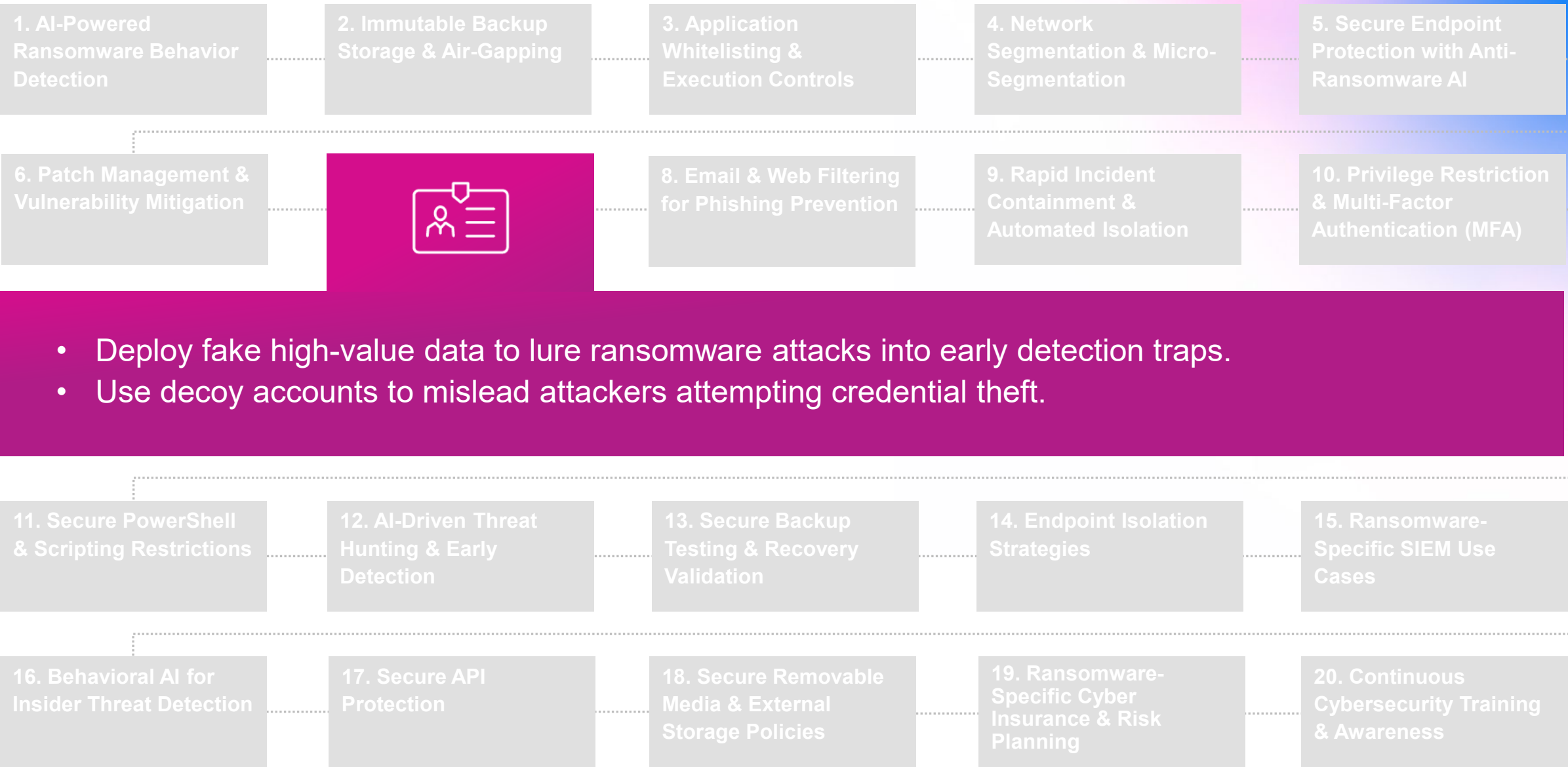
- Implement **Next-Gen Antivirus (NGAV) & Endpoint Detection and Response (EDR)** solutions.
- Enable **real-time process monitoring** to block suspicious encryption attempts.



6. Patch Management & Vulnerability Mitigation

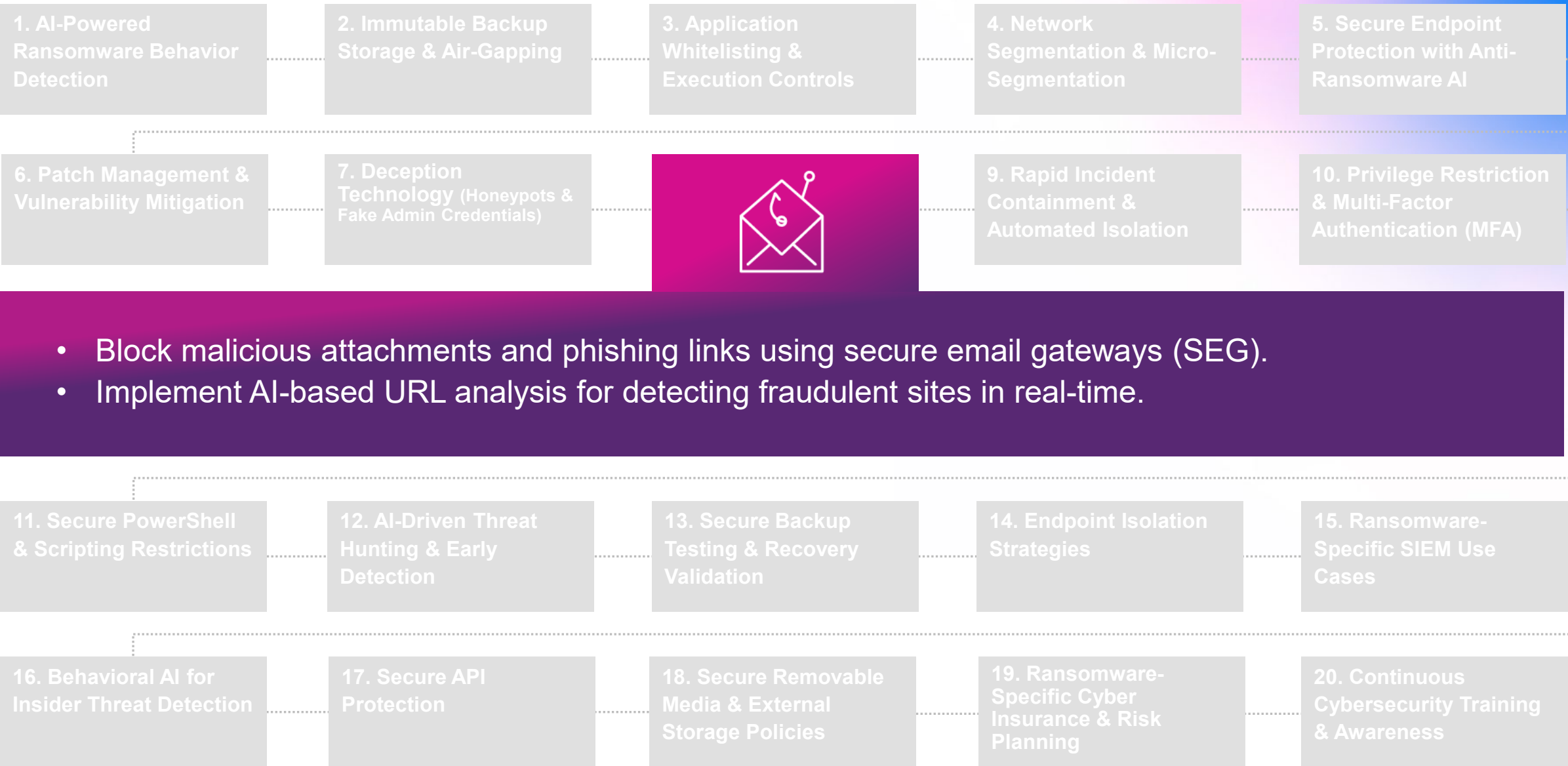


7. Deception Technology (Honey pots & Fake Admin Credentials)

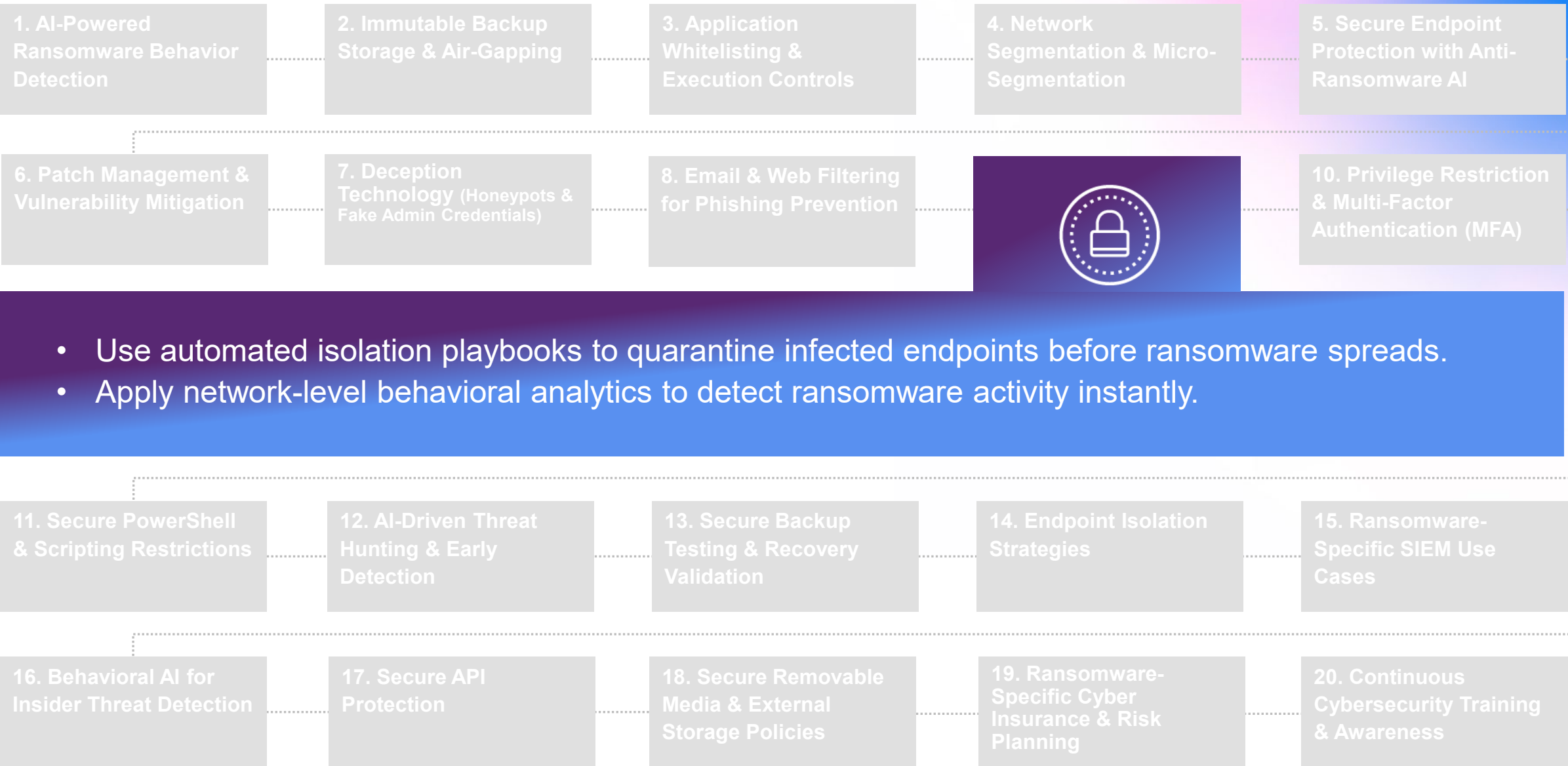


- Deploy fake high-value data to lure ransomware attacks into early detection traps.
- Use decoy accounts to mislead attackers attempting credential theft.

8. Email & Web Filtering for Phishing Prevention



9. Rapid Incident Containment & Automated Isolation



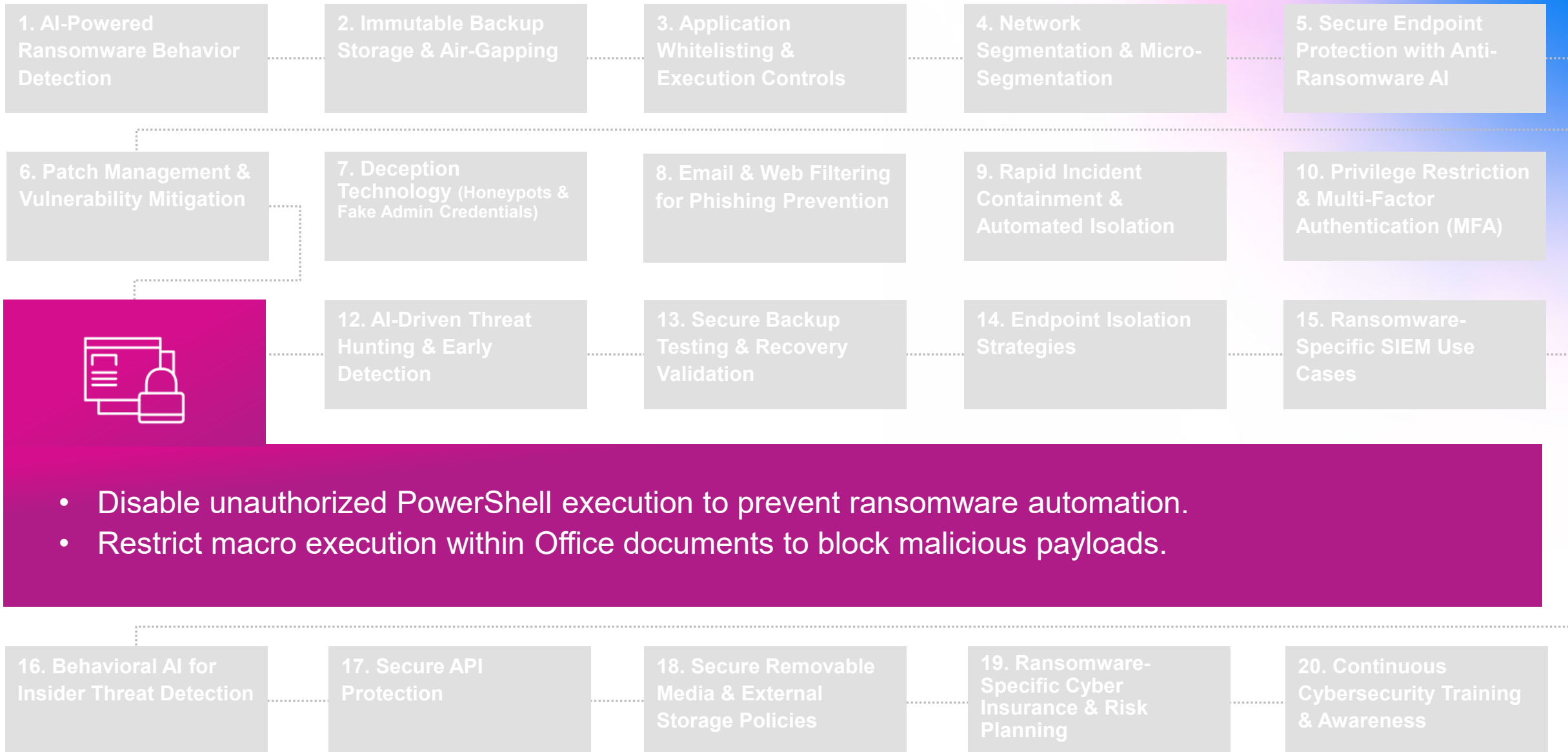
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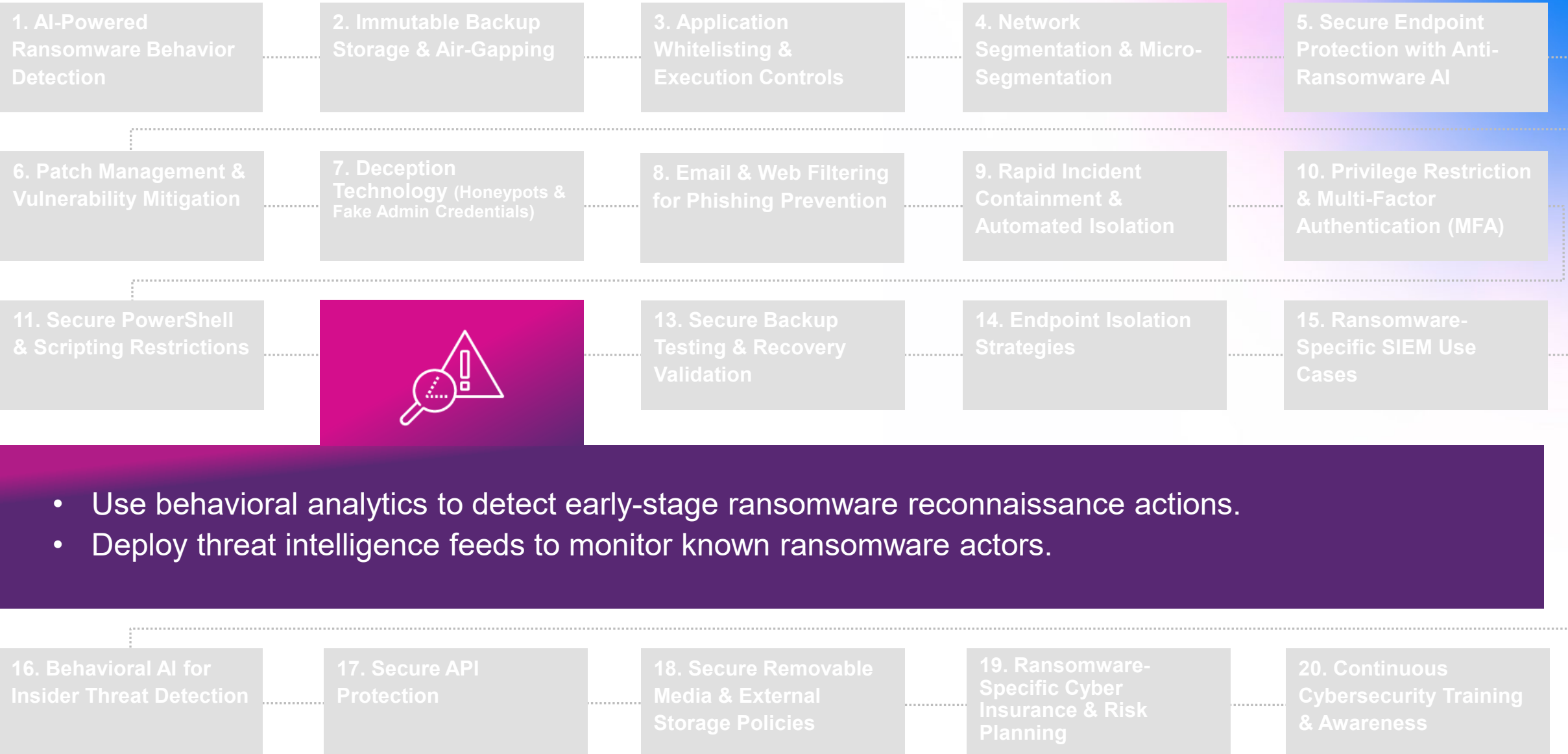
- Remove default administrator access on endpoints to prevent ransomware escalation.
- Enforce phishing-resistant MFA for all sensitive system logins.



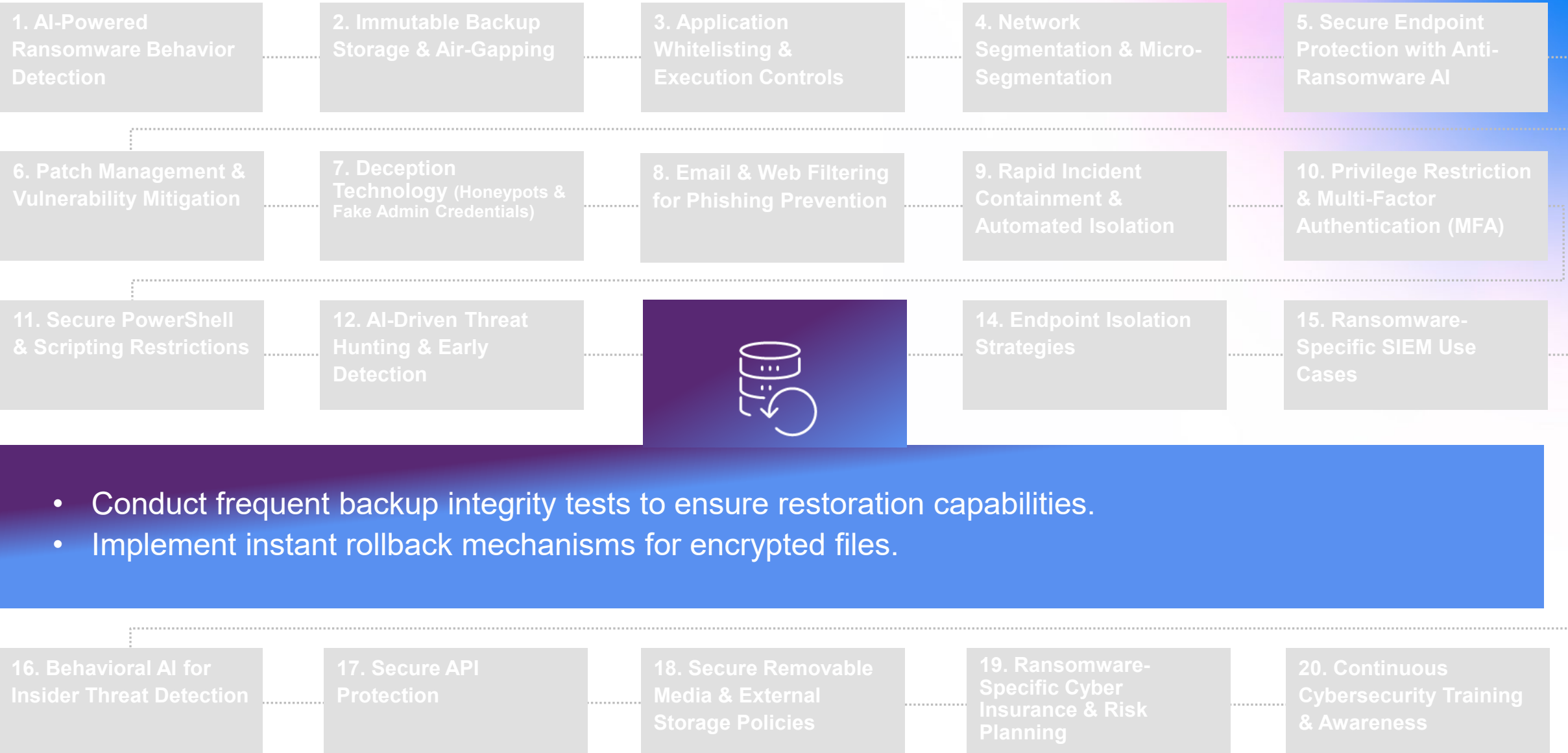
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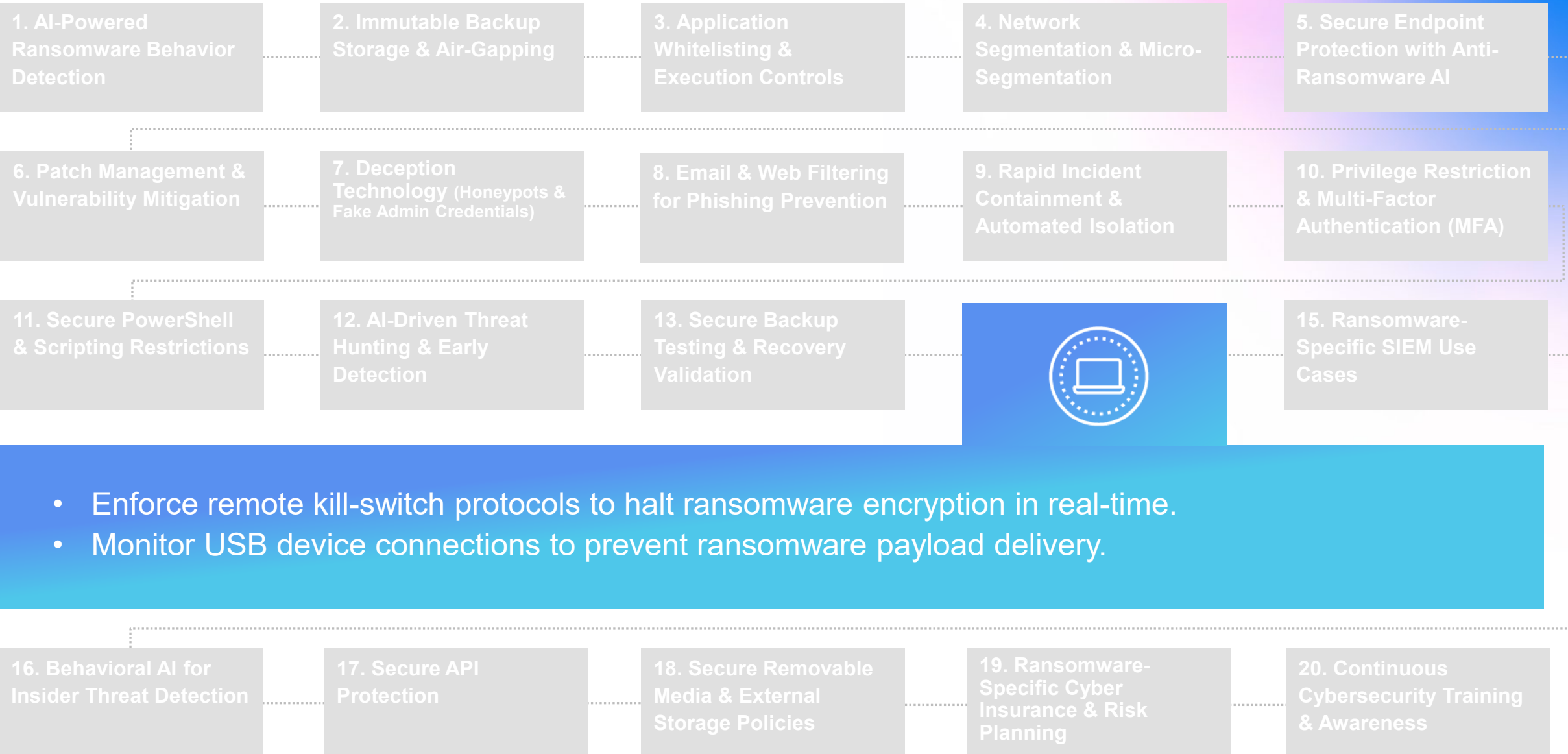
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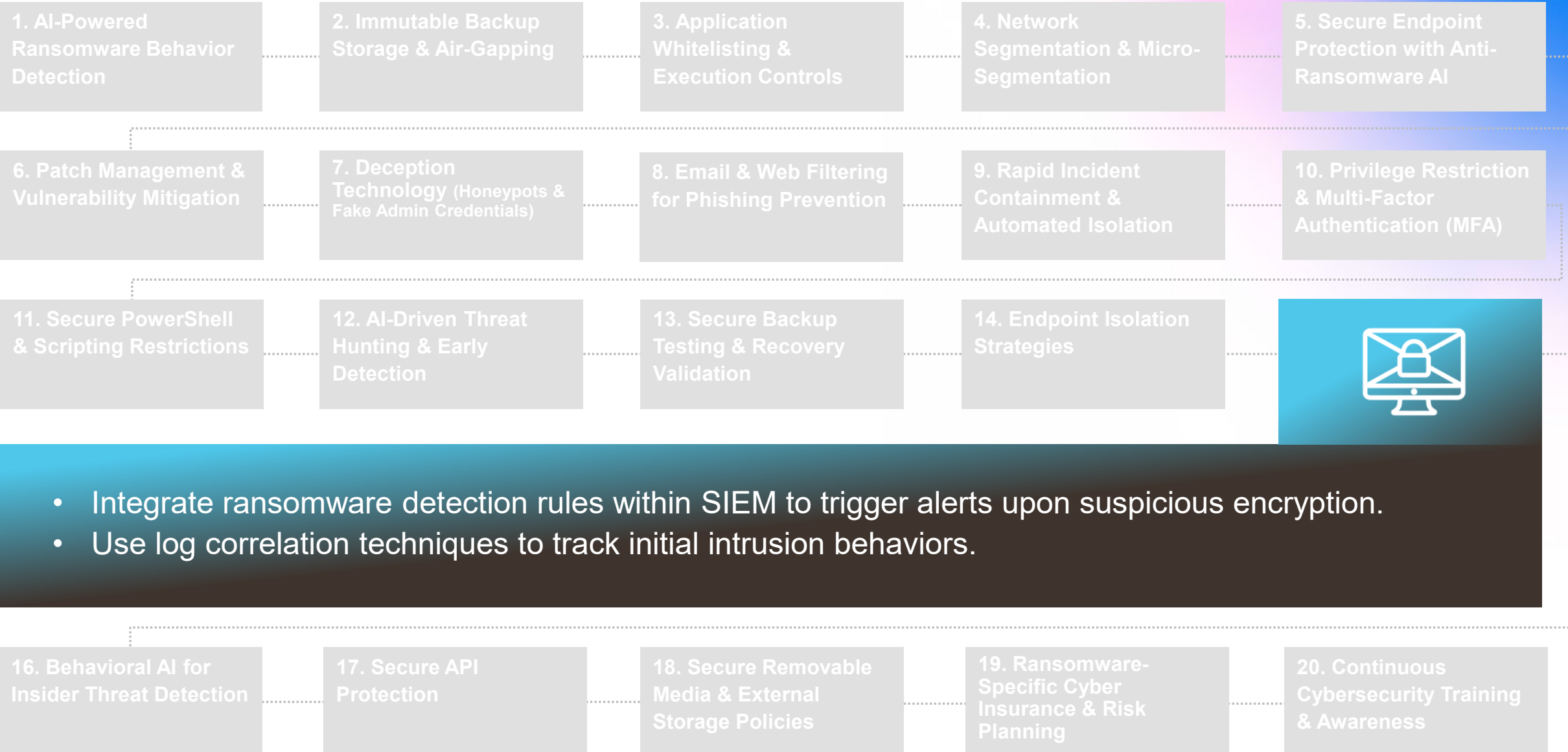


14. Endpoint Isolation Strategies

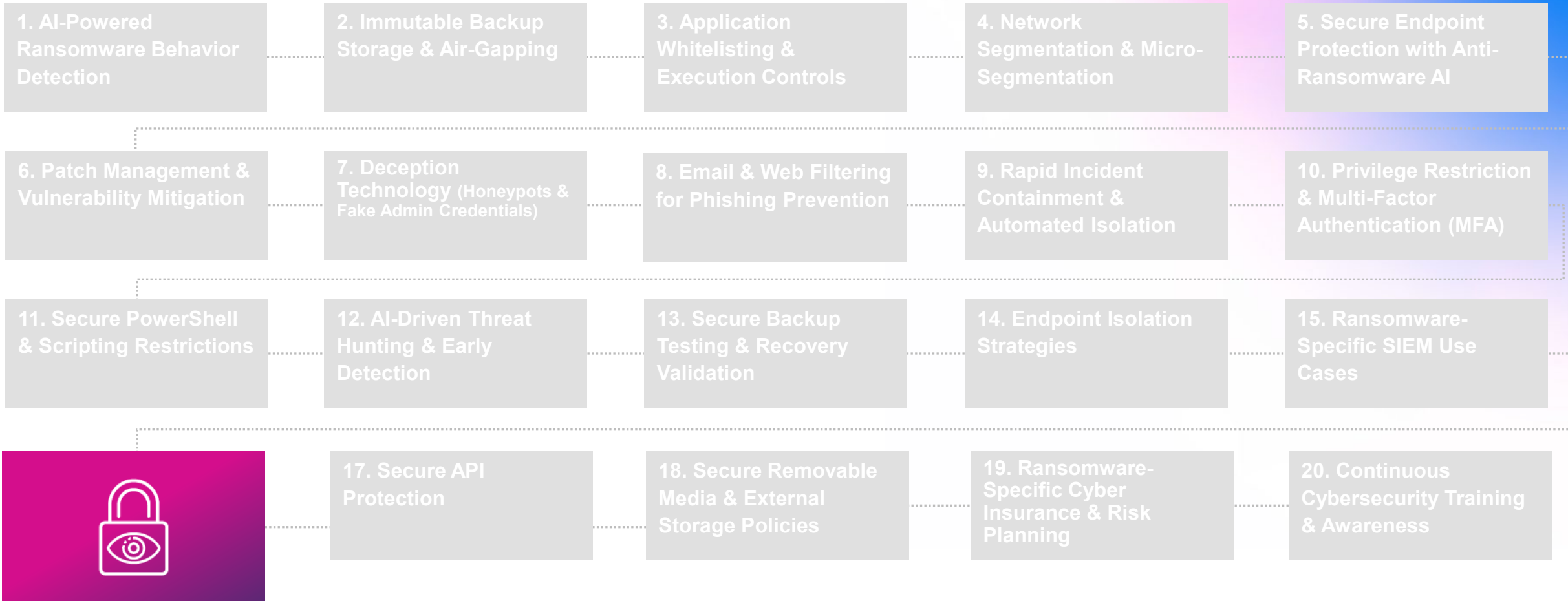


- Enforce remote kill-switch protocols to halt ransomware encryption in real-time.
- Monitor USB device connections to prevent ransomware payload delivery.

15. Ransomware-Specific SIEM Use Cases



16. Behavioral AI 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



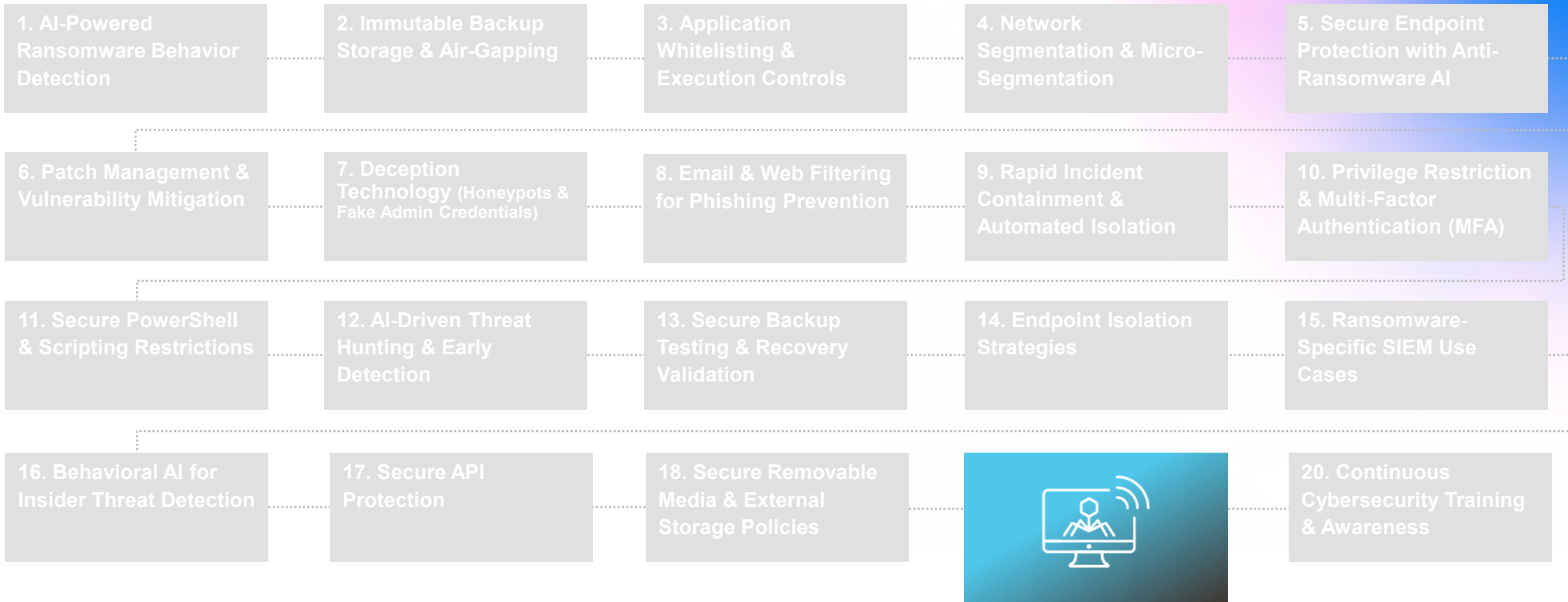
- Enforce strict API security controls to prevent malware injection into cloud services.
- Utilize OAuth 2.0 & JWT authentication for secure API communications.

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

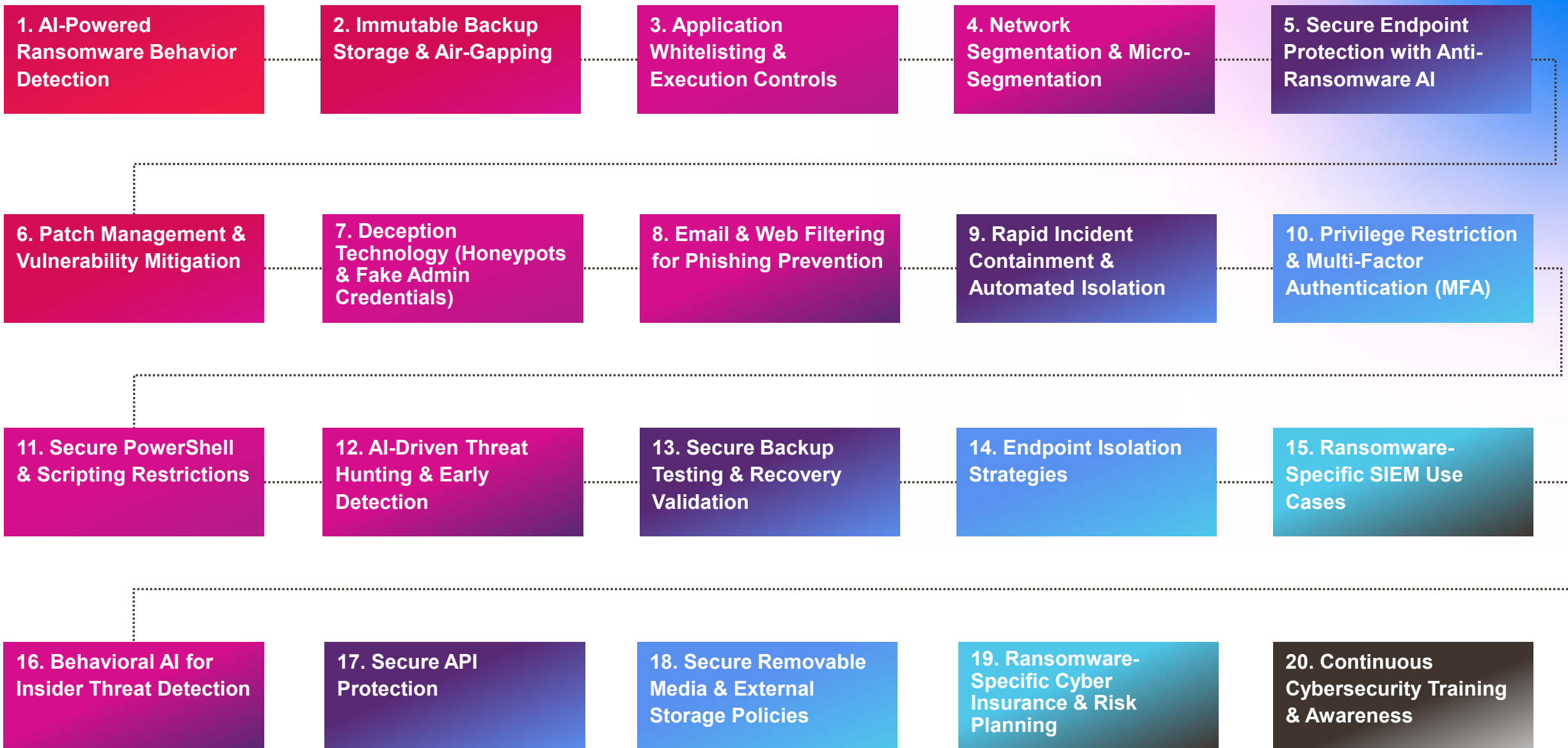


- Establish insurance-backed response plans to mitigate ransomware impact.
- Deploy legal response frameworks for ransomware negotiations (if required).

20. Continuous Cybersecurity Training & Awareness



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



Thank you