Adaptive AI Defense

Revolutionizing Preemptive Security in the Age of AI-Driven Threats

Challenge

As artificial intelligence reshapes innovation and cybercrime, attackers are leveraging AI-driven tools to:

- Craft evasive malware.
- Mutate payloads in real time.
- Mimic legitimate processes seamlessly.

Traditional EDR, XDR, and AV solutions, which rely on signatures, behavior detection, or post-compromise analysis, cannot keep pace with the automation and speed of AI-generated attack tactics.

Organizations need a preemptive defense that learns and adapts as fast as AI threats evolve.

The Solution

Adaptive AI Defense, powered by Morphisec's patented Automated Moving Target Defense (AMTD), expands the Anti-Ransomware Assurance Suite with AI that thinks like an attacker and blocks them before execution.

Unlike detection-based tools that react, Adaptive AI Defense integrates machine-learning risk scoring with deterministic runtime prevention to proactively neutralize:

- Zero-day threats.
- AI-mutated malware.
- Memory-based exploits.

Core capabilities

- Behavior Prevention
- AI-guided Encryption Interception
- Forensic AI Recovery
- AMTD + Co-Engineered
- Explainable AI Telemetry

Benefits

Eliminate the Guesswork:
Prevention happens before execution— no signatures, no delays.

Amplify Existing Tools:
Seamlessly integrates with major EDRs to close gaps left by behavior-based models.

Reduce Analyst Fatigue:
Achieve up to 90% fewer false positives with deterministic AI validation of runtime events.

Accelerate Response:
AI-driven correlation and forensic insights reduce containment time by 65%.

Adapt Continuously:
Feedback loops automatically update AI profiles and AMTD memory randomization patterns.

Morphisec Adaptive AI Defense

Prevent. Predict. Harden. Continuously.

- **AI-Powered Threat Prediction:** Continuously analyzes attack telemetry and runtime signals to anticipate new threat patterns before they emerge.

- **Contextual Risk Scoring:** Combines EPSS, CISA KEV, and organizational usage data to assign prioritized risk values to assets and software components.

- **Autonomous Attack Surface Management:** Dynamically restructures memory and application space using AMTD, reducing the attack surface in real time.

- **Adaptive Response Logic:** Learns from blocked events to auto-adjust runtime mitigations without manual tuning or rules.

- **Cross-EDR Enhancement:** Elevates existing EDR tools (e.g., Microsoft Defender, CrowdStrike, SentinelOne) by locking unknown execution paths that machine-learning models alone cannot predict.

- **AI Incident Insights:** Provides SOC analysts with explainable AI context, linking blocked execution events to root causes and attack patterns.

Adaptive AI vs. Traditional Detection

Morphisec's Adaptive AI Defense enhances the Anti-Ransomware Assurance Suite with a layered, proactive, predictive, and self-improving defense.

Capability	Traditional AI/EDR Detection	Morphisec Adaptive AI Defense
Threat Recognition	Reactive – after the pattern is seen	Predictive – before the pattern exists
Threat Surface	Static	Continuously randomized by AMTD
Learning Model	Global signatures	Environment-specific, contextual
Response Latency	Seconds to minutes	Deterministic real-time blocking
Manual Tuning	High SOC burden	None required – self-optimizing
False Positives	High	Up to 90% reduction

The Morphisec Difference

✔ **Behavior Prevention:** Stops AI-driven zero-days by dynamically altering endpoint memory maps.

✔ **AI-Guided Encryption Interception:** Prevents data loss by intercepting ransomware encryption keys in runtime.

✔ **Forensic AI Recovery:** Secures evidence in tamper-proof storage and prioritizes file restoration automatically.

✔ **AMTD + AI Co-Engineered:** Combines deterministic memory mutation with adaptive intelligence for zero-knowledge prevention.

✔ **Explainable AI Telemetry:** Provides transparent insights into blocked activity for compliance and SOC audits.

Stop AI-Driven Threats Before They Start.

See Adaptive AI Defense in action today.

Get a Demo

Ransomware-Free Guarantee

Morphisec offers an **industry-first Ransomware-Free Guarantee:**

• **100% Money-Back Assurance:** Full reimbursement of subscription fees if a ransomware breach occurs.

• **Expert Incident Support:** Dedicated Morphisec IR team for rapid containment, forensic investigation, and remediation.

About Morphisec

Morphisec is the trusted global leader in prevention-first Anti-Ransomware protection, redefining cybersecurity with our industry-leading Automated Moving Target Defense (AMTD) technology. Our solutions are trusted by over 7,000 organizations to protect more than 9 million endpoints worldwide, stopping 100% of ransomware attacks at the endpoint and safeguarding businesses against the most advanced and dangerous threats, including zero-day exploits and ransomware. Shrink your attack surface faster to prevent ransomware entry. Eliminate blind spots across complex environments that attackers exploit for ransomware campaigns.

At Morphisec, we don't just fortify defenses – we proactively prevent attacks before they happen, delivering unmatched protection and peace of mind to our customers. With our Ransomware-Free Guarantee and commitment to Preemptive Cyber Defense, we set the standard for accountability and innovation in the fight against modern cybercrime.