IBM **Security**

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Advanced persistent threats: Three steps to safety

Visualize threats. Uncover patterns. Stop attacks.

Contents

It’s not “if” you will be attacked, but “when”

Today’s advanced persistent threats can be hard to prevent. Automation and intelligence are your keys to closing the gap between threat detection and remediation.

Threats to your data can come from anywhere: from a cybercriminal on the other side of the globe, or the employee down the hall. Either way, they’re harder to prevent than ever before.

As threats grow in number, they also grow up
Securing data, applications and networks from today’s onslaught of advanced threats means moving a step beyond looking for the usual malware and obvious points of entry. As threats evolve in scale and sophistication, you need to:

- Clearly visualize threats looming over the horizon, attacks at the gate and malicious behavior that already made it through your defenses.
- Intelligently analyze and correlate events to focus your limited resources toward advanced threats that are real risks, rather than wasting valuable time listening to white noise.
- Seamlessly stop attacks with a tightly orchestrated flow of information and actions between tools.

Attackers are holding data for ransom because they know you can’t do business without it. They’re establishing a beachhead on the Internet of Things (IoT) because it’s everywhere. They’re weaponizing artificial intelligence (AI) because they intend to outsmart defenses.

Today, in fact, even the most innocent-appearing action — like clicking on a web link or an email attachment — might open the door to a malicious actor. With malware and phishing schemes on a steeply rising, rocket-like trajectory, valid credentials are falling into the hands of cybercriminals in record numbers, paving an easy path to data breaches.

What are advanced persistent threats?

Watch the video

Advanced threats

$3.9M

The average cost of a data breach in 2018[1]

Insider threats

2X cost

The total cost of a data breach nearly doubles for companies without AI automation versus those where AI is fully deployed[2]

Why is it so hard to protect against advanced and insider threats?

What’s stopping you from keeping the *Dyre* wolves at bay? What’s missing in security strategies that makes security leaders *WannaCry* about hijacked and lost data?

Fuzzy vision

- Most security information and event management (SIEM) solutions simply aren’t seeing or presenting the full picture of your security posture.
- Gone are the days of simply scouring security system log files and intrusion prevention systems.
- As the enterprise has moved out in the world, your SIEM needs to follow suit. Also, your SIEM can no longer act alone. With more and more advanced persistent threats making it past the firewall, your SIEM needs to see more information inside the enterprise.

Disconnected dots

- Attackers no longer rely simply on the obvious frontal assault. They are smart, patient and sneaky. They infiltrate through the most seemingly benign places, then lie in wait for days or months before they strike.
- **You must be smarter to ferret them out. But you also need help in discerning between real threats and white noise. Only Pac-Man earns points for chasing ghosts.**
- You not only need to see what the threats are, you also need ways to discover who’s attacking, what they’re attacking, attack severity and what you can do to triage.

Tools talk, but can’t act

- Data — even when integrated across the environment, so you know who’s doing what and where they’re doing it — can’t automatically stop attacks.
- Your threat defense needs SIEM to see what’s happening, AI to help identify the connection points of suspicious activity and automated systems to shut down the threat.
- You also need to align your people, processes and technology to properly orchestrate incident response. Of course, all this needs to start happening in a more rapid fashion. Months, weeks, even days are simply too long to be exposed to an advanced attack.

Advanced threats

62%

Security experts who expect hackers will use AI within a year[3]

Insider threats

197 days

Average time to detect a breach[4]

How serious are these attacks, really?

Many organizations find it difficult to protect themselves from attack, preserve their brand value, avoid erosion of customer trust and prevent financial loss.

In the real world:

- The WannaCry ransomware attack used open ports to attack 200,000 computers in 150 countries.[5]
- An average of 858 new malware signatures were created each hour in 2017.[6]
- A single, successful phishing campaign kicked off an organization-wide attack.[7]
- A firm lost network connectivity when a disgruntled employee sabotaged passwords.[8]
- A terminated employee used another employee's credentials to transmit codes and commands that impair the availability of data, programs and systems.[9]
- Employees were paid by a cybercriminal to install malware on systems that allowed the unlocking of codes to hundreds of thousands of mobile phones.[10]

Industries that present greatest risks

Financial Services

Healthcare

Communications

Retail

Manufacturing

Advanced threats

58%

Financial service organizations suffer more cyberattacks than any other industry[11]

71%

Healthcare faces highest proportion of insider attacks[12]

90%

In communications, retail and manufacturing, most attacks come from the outside[13]

Three key security steps you need to take — and the benefits of each

Ideally, the goal of security is to quickly and accurately detect and stop threats. But effective security isn't an instant, one-step process. It's a journey, requiring the right tools and skills for the next destination in your business growth.

Clearly visualize

- Reduce time to detect potential offenses and suspicious behavior
- Receive precise analysis of the threat landscape to reduce false positives
- See a comprehensive picture of risky activities to proactively address potential threats
- Employ automated rules and sophisticated algorithms without lengthy and complex SIEM setup

Intelligently uncover

- Radically increase the speed of analysis and insight generation
- Address any lack of resources for analysis and investigations
- Add to the capabilities of security analysts to address skills gaps
- Ingest internal and external data, structured or unstructured, with AI to rapidly reason through and identify likely threats

Seamlessly stop

- Reduce the impact on employee productivity, brand value and customer trust as you protect against interruptions and financial loss
- Shorten the dwell time of cybercriminals' activity on your systems
- Truncate the time it takes to respond to data security incidents
- Lessen the impact of advanced persistent threats with a layered security approach to critical data protection

Learn more in this IBM solution brief about protecting your enterpise from advanced threats.

Read the solution brief →   Watch the video

Clearly visualize

Gather and filter information so you can see what’s really going on

What you want to do

- Start seeing threats in faster cycles with integrated systems displayed from a single window
- Cut through the noise created by false positives amid huge volumes of network activity

What stands in your way

- Lack of visibility into the activities of rogue users or cybercriminals who have gained access to your environment
- Inability to identify the information, data and events that must be collected to detect threats
- Disparate systems that are unable to share security-related information or communicate with each other

What you need to get there

- Big-picture views of your environment’s overall health and risk posture, along with trends in users’ activities and behavior patterns
- Event chaining that enables spotting threats quickly, with the ability to escalate automatically and triage based on criticality and risk
- Data-agnostic and threat-agnostic solutions that can connect with your existing systems
- A single command console that catalogs users by name, their anomalous activities, the severity of events and risk scores, along with other data and incident information that is contextually relevant
- The ability to create a one-click watchlist of the riskiest users and potential exploits, with drill-down views into underlying log and flow data, and the ability to create your own notes for follow up
- Security expertise, systems deployment and managed services designed to quickly increase your visibility into threats
- Consulting services to modernize your security operations across people, processes and technology

Clearly visualize attacks, threats and malicious behavior

Intelligently uncover

Use advanced technologies to understand the threats you face

Intelligently uncover suspicious activity by transforming data into intelligence using AI, machine learning and advanced rules engines — so you can focus on the real threats to your organization and stop chasing ghosts.

What you want to do

- Turn data and information into intelligence
- Detect and analyze advanced threats using artificial intelligence and machine learning

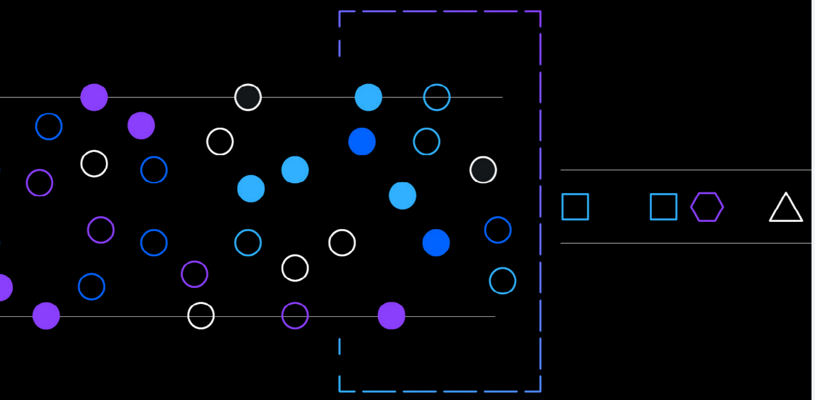
What stands in your way

- Inability to effectively process high volumes of data to uncover threat-related activities
- The need to minimize network noise to avoid wasting time and security resources with chasing false positives
- Lack of resources or skills to quickly and effectively research and analyze threats

What you need to get there

- Incident investigation capabilities that use AI for automated threat analysis and threat hunting to aid security analysts
- Unstructured threat data analysis and correlation based on local security incidents across security bulletins, blogs, research papers and more
- Greater speed in analysts' investigations (an increase of as much as 60 times is possible using AI[14])
- Advanced analytics and machine-learning algorithms to quickly identify high-risk activities, prioritize the riskiest users, uncover compromised credentials and deliver alerts about serious incidents
- Alerts that let you know when users alter normal application practices, deviate from the normal practices of their peers, perform invalid operational sequences or conduct data exfiltration
- Abilities beyond traditional analyst capabilities to pinpoint risky users and suspicious incidents in a vast volume of threat data
- Services to help with system deployment, integration and automation that deliver best-in-class attack detection, threat intelligence and analysis

Intelligently analyze events to focus on real threats



Watch to see how malicious activity can be spotted and stopped with a combination of user behavior analytics and strong access controls.

Watch the video

Seamlessly stop

Take action quickly to halt all threats and minimize damage

Seamlessly stop threats and reduce their impact with the orchestration of people, processes and systems automation.

What you want to do

- Block threats using dynamic systems orchestration and automation
- Reduce false positives so that real users, true customers and valid partners can continue to access the resources they need

What stands in your way

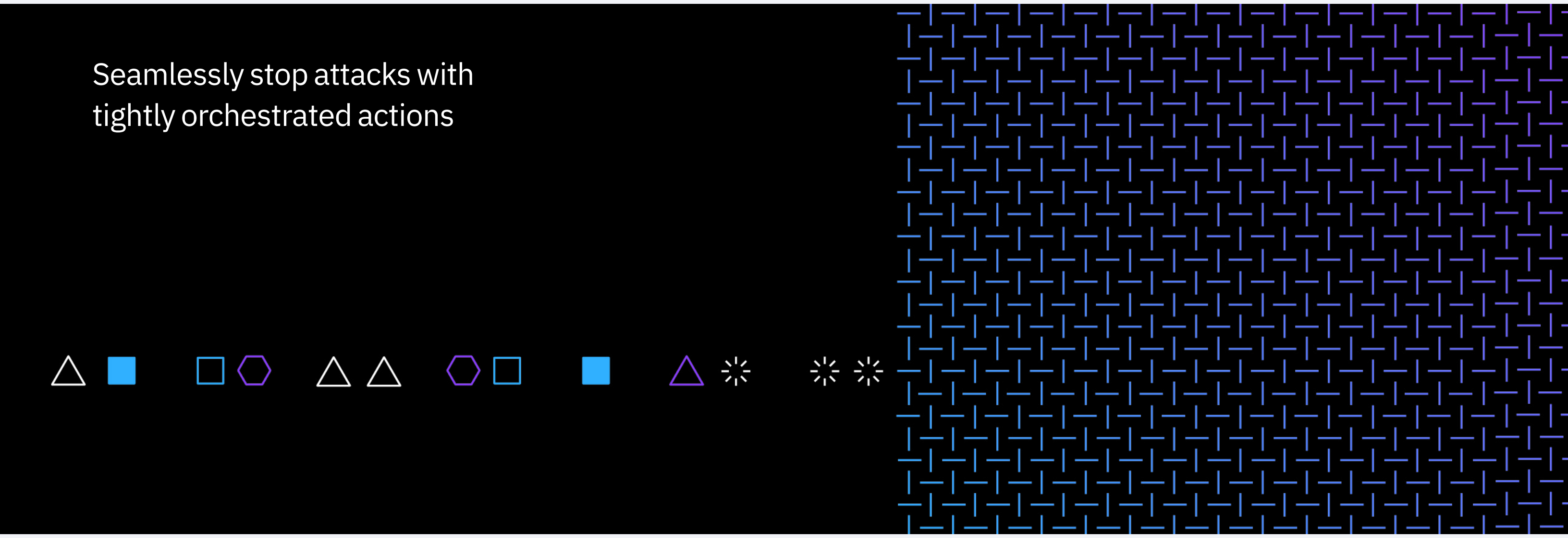
- Disparate systems that don't work in concert to act on threats
- Inability to reduce the dwell time an attacker remains active on your systems and network
- Can't respond quickly to potential attacks without disrupting business

What you need to get there

- Proactively contain insider threats by automatically suspending high-risk users' accounts
- Customizable identity and access policies ranging from complete shutdown of malicious users' access to layered step-up or multi-factor authentication
- Dynamic policies to change risky users' access across applications or databases
- Integration with incident response solutions to automatically initiate remediation processes
- Threat blocking measures for your endpoints, including mobile devices
- Security expertise as well as system deployment and managed services designed to respond quickly to threats
- Consulting services to determine and help establish your strategy for incident response across people, processes and technology

Learn more in this infographic about the risks of advanced threats and how to stop them.

Learn more →



Seamlessly stop attacks with tightly orchestrated actions

Visualize, understand and stop threats with IBM

Partner with IBM and you can get clear visibility coupled with the ability to respond dynamically to help protect against both insider and advanced threats.

IBM integrated solutions deliver advanced capabilities for automation, AI and machine learning, along with strong user and systems management capabilities, for end-to-end security — all supplemented with a full range of security consulting and managed services.

Security solutions inform IBM identify who is doing what — as well as when and where they're doing it — on our systems and networks. Additional integrations with IBM solutions for analytics, management and monitoring for individuals, systems and data give you superior insight into and control over threats and security-related activities.

The result? You can shorten your response time and reduce the risk of data loss due to threats stemming from unintentional user errors or malicious theft and sabotage.

Clearly visualize

- IBM QRadar Security Intelligence Platform
- IBM Security Intelligence Operations and Consulting Services
- IBM Managed Security Information and Event Management (SIEM)

Intelligently uncover

- IBM QRadar Advisor with Watson
- IBM QRadar User Behavior Analytics
- IBM Managed Detection and Response

Seamlessly stop

- IBM X-Force Incidence Response Intelligence Services (X-Force IRIS)
- IBM Security Access Manager
- IBM Security Identity Governance and Intelligence

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