IBM Security

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Manage application security risks to help protect your organization’s critical data

Comprehensive IBM Security application security management solutions help identify vulnerabilities and reduce application risk

Making a case for application security

Many organizations use software applications to run critical business processes, conduct transactions with suppliers and deliver sophisticated services to customers. Interestingly, while organizations depend on such applications to run their businesses, many invest little to no effort ensuring that they are adequately secure. While these organizations understand established security technologies for routine tasks such as networking and operations, and for managing security procedures such as access control and authentication, many struggle with implementing, managing and maintaining effective application security programs. But in today's increasingly sophisticated threat landscape, the bar must be raised. Since applications can compromise overall security across the entire organization, securing them needs to become a top priority.

The ramifications of under-secured applications can be dire. Vulnerabilities inadvertently introduced during development can give hackers the ability to destabilize applications and obtain unfettered access to confidential company information or private customer data. This type of data loss can lead to a damaged brand reputation, loss of consumer confidence, disruption of business operations, interruption of the supply chain, threat of legal action and/or regulatory censure—all consequences that can ultimately impact profitability.

Addressing application security can be quite challenging. Large organizations manage thousands of applications, and the task of ensuring their security typically falls on the shoulders of a small, overburdened security team. To protect against these consequences, organizations like yours must enable risk-based application security management. You need solutions that can provide clear visibility across the infrastructure; identify and prioritize applications based on their business impact; assess applications for vulnerabilities; place vulnerabilities in context to determine their risk levels; and mitigate risk by implementing necessary fixes in code or deploying the appropriate policies. Adopting an application security strategy that can protect web-based and mobile applications—during every phase of the application lifecycle—is a solid first step.

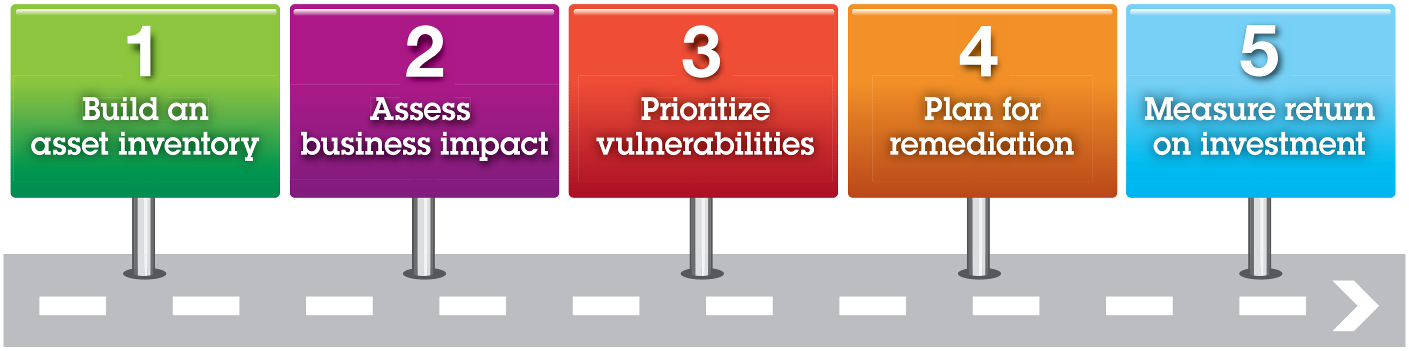
Adopting a strategy for managing application security

Many organizations fail to prioritize application security—leaving their entire environment at risk. According to a research study conducted by the Ponemon Institute, security professionals rated application layer threats as the most significant potential threat to their organizations—32 percent—compared to just 25 percent for threats at the network layer. Yet the same organizations reported spending on average just 18 percent of their total IT security budgets on application security.[1] So, the question is: are you apportioning your security budget appropriately to align with these evolving security risks?

Effective security is really a matter of managing risk. It is imperative that you understand, manage and mitigate the risk to your most critical assets. To develop effective application security, be sure to:

1. **Build an asset inventory:** Know what your assets are and which ones are the most critical. Rather than trying to secure all your applications right away, it is important to focus on the most critical ones first.
2. **Assess the business impact:** After prioritizing your application assets, analyze them for vulnerabilities. Evaluate the risk posed by each application, based on its business impact and the severity of its vulnerabilities.
3. **Prioritize vulnerabilities:** Once you have a risk rating for each application, focus on the ones that present the highest risk and address the most severe vulnerabilities first.
4. **Plan for remediation:** Mitigating risks can involve fixing coding errors, creating virtual patches via a web application firewall or, in some cases, even taking applications temporarily offline.
5. **Measure return on investment:** Various metrics can help you monitor your application security status and measure the effectiveness of your ongoing application security program.

The journey to application security



1 Build an asset inventory

2 Assess business impact

3 Prioritize vulnerabilities

4 Plan for remediation

5 Measure return on investment

There are five key considerations in a risk-based approach to application security management.

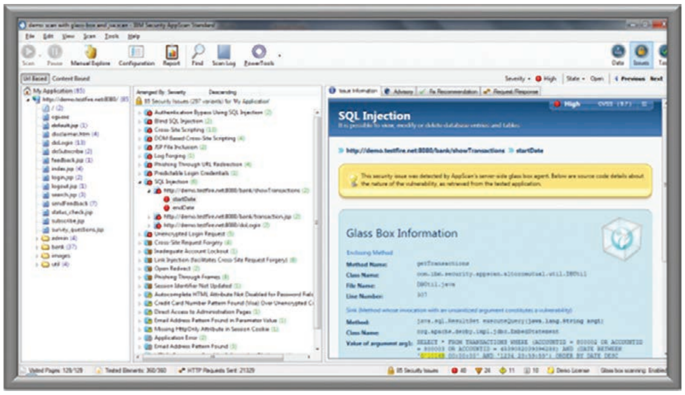
Exploring integrated application security management from IBM

Running an application security initiative in a large organization can be quite challenging. A small security team is often responsible for securing thousands of applications built by multiple development teams. IBM provides integrated capabilities for application security management, enabling security teams to address the vulnerabilities they grapple with on a daily basis. The portfolio includes on-premises and cloud-based options, as well as solutions from IBM Business Partners.

On-premises solutions

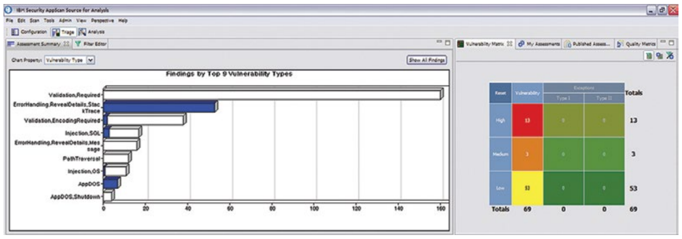
IBM® Security AppScan® solutions offer components specially designed to benefit application security managers and development teams at organizations of all sizes. The on-premises offerings include:

- **IBM Security AppScan Standard:** Helps decrease the risk of web application attacks and data breaches by automating application security vulnerability testing and leveraging advanced DAST capabilities



AppScan Standard software includes glass-box testing with runtime analysis to identify more vulnerabilities, simplify scan configurations and provide more actionable results.

- **IBM Security AppScan Source:** Helps lower costs and reduce risk exposure by identifying software vulnerabilities in web and mobile applications early in the development lifecycle, so they can be eliminated before deployment


IBM Security AppScan Source for Analysis
File Edit Scan Tools Admin View Perspective Help
Configuration
Triage
Analysis
Assessment Summary
Filter Editor
Chart Property: Vulnerability Type
Show All Findings
Findings by Top 9 Vulnerability Types
Validation.Required
ErrorHandling.RevealDetails.StackTrace
Validation.EncodingRequired
Injection.SQL
ErrorHandling.RevealDetails.Message
PathTraversal
Injection.OS
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Vulnerability Matrix
My Assessments
Published Asses...
Quality Metrics

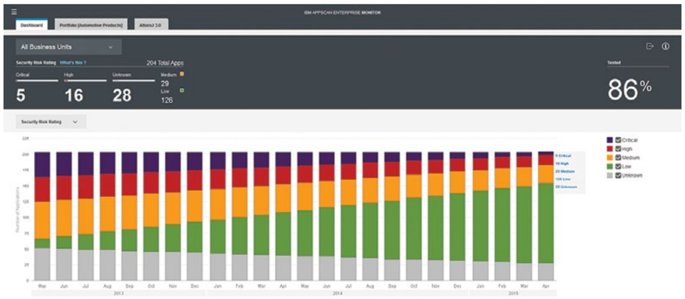
Reset	Vulnerability	Exceptions		Totals
		Type I	Type II	
High	13	0	0	13
Medium	3	0	0	3
Low	53	0	0	53
Totals	69	0	0	69

AppScan Source software provides assessment summaries that map to application risk and provide insight into vulnerabilities that affect your applications.

- **IBM Security AppScan Enterprise:** Enables organizations to mitigate application security risk and achieve regulatory compliance, and helps security and development teams build inventory of their applications, classify applications based on business impact, and prioritize and remediate vulnerabilities throughout the application lifecycle

Cloud-based solutions

IBM Application Security on Cloud permits you to easily manage the security risk of your application portfolio and perform web and mobile application security testing from the cloud. The solution supports static application security testing (SAST) and dynamic application security testing (DAST) analysis, in a comprehensive all-in-one offering.



AppScan application security management capabilities enable security teams to address the vulnerabilities they grapple with on a daily basis.

IBM Business Partner solutions

IBM Business Partners also offer diverse solutions for application security testing, including:

- **Arxan Application Protection for IBM Solutions:** Extends vulnerability analysis capabilities to mobile application hardening, cryptographic key protection and runtime protection.
- **Cigital Application Security Testing Managed Services:** Delivers flexible application security testing as a service model to map your changing application portfolio. The offering is designed to mitigate security risks at scale across an application portfolio through actionable vulnerability insight, penetration testing and expert remediation provided by Cigital, a leading application security partner.

Solution capabilities

IBM solutions for application security testing enable organizations to manage security throughout the application lifecycle. Key capabilities include:

- **Scalable application security testing—**AppScan enables you to choose the solution that is right for your organization and add components to customize it as your application security program matures.
- **High-level visibility—**Via an application-risk dashboard, AppScan provides enterprise-level visibility into security status and compliance risk of applications and processes across the organization.
- **Management of regulatory requirements—**To help meet the needs of the many organizations that face key compliance demands associated with their web applications, AppScan enables users to choose from more than 40 predefined reports and map scan results to key industry and regulatory compliance standards.
- **Security testing governance—**With AppScan, you get test policies and scanning templates that enable you to create, push and enforce consistent security policies you can use throughout the organization.
- **Issue remediation—**AppScan creates a fully prioritized list of vulnerabilities found with each scan, enabling the highest-priority problems to be fixed first.
- **Security intelligence—**AppScan integrates with other IBM Security offerings to further enhance threat evaluation and the prioritization of security issues.

Advanced application testing

Because there are different ways to approach application security, AppScan software uses a variety of testing techniques to enable deep application analyses during all phases of the application lifecycle.

Application security testing solutions from IBM provide dynamic and static application security testing—as well as innovative technologies such as glass-box testing and runtime analysis—to help users stay ahead of the latest threats and drive precise, actionable results. AppScan testing methods include:

- **Static analysis** examines source code for potential vulnerabilities, which facilitates detection of vulnerabilities early in the development cycle.
- **Dynamic analysis** tests running applications at later stages in the development cycle by probing them in a similar fashion as potential hackers might. This makes it easier for your organization to connect vulnerabilities with potential exploits.

- **Interactive analysis** places runtime agents on the application machine and analyzes applications as they are tested. By combining aspects of dynamic and static analysis at run time, you can detect more vulnerabilities with higher accuracy.
- **Hybrid analysis** brings dynamic and static analysis together to correlate and verify results. It traces issues identified through dynamic analysis to the offending line of code and validates issues identified in static analysis with external testing.
- **JavaScript client-side analysis** helps you analyze code downloaded to the client. The more functionality the organization performs client-side, the greater the potential for client-side vulnerabilities and exploits.

Who benefits from application security testing solutions from IBM?

Application security testing solutions from IBM are designed to benefit three primary groups:

- Line-of-business owner or chief information security officer (CISO): Those ultimately responsible for application security—and the consequences of inadequate protection—can benefit from a better understanding of the organization's security risks and overall compliance status.
- Application security team: The team responsible for managing—and mitigating—application security within the organization can benefit from knowing exactly which assets they have, the priority of their importance, their level of security and which vulnerabilities are most critical.
- Application development team: The team developing applications can benefit from the knowledge of which critical vulnerabilities to address first, and how to fix them.

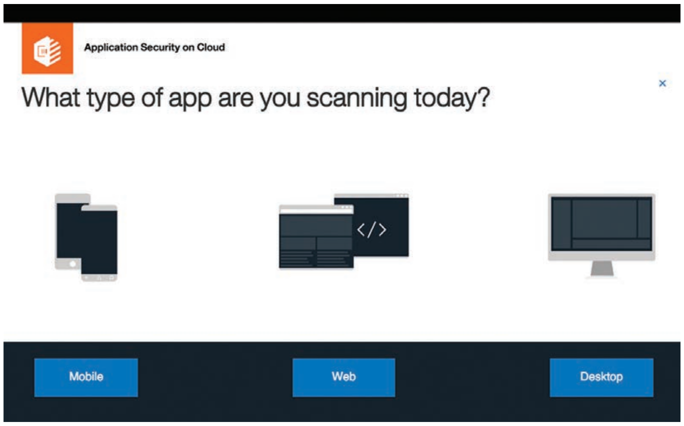
Creating end-to-end security solutions

Application security is not just about performing scans and finding vulnerabilities, it's about managing risk. Deploying integrated and automated solutions for application security can provide more streamlined, cost-effective and reliable outcomes. Integration enables a risk-based approach that can help your organization deal with the impossibility of immediately protecting all applications. Security intelligence, for example, is necessary to prioritize applications and determine which ones should be addressed when, and how.

That's why application security testing solutions from IBM are designed to integrate with complementary IBM Security products, to provide organizations with not only application security, but also the capabilities to better assess threats and prioritize vulnerabilities based on the risks they present. These products include:

- **IBM QRadar® Security Intelligence Platform,** which provides a unified architecture for integrating security information and event management (SIEM), log management, anomaly detection, incident forensics, and configuration and vulnerability management.
- **IBM Security QRadar Vulnerability Manager,** which proactively discovers network device and application security vulnerabilities, adds context, and supports prioritization of remediation and mitigation activities.
- **IBM Security Network Intrusion Prevention System,** which is designed to stop constantly evolving threats before they impact your business.

- **IBM Security Guardium®,** which offers a comprehensive data-security platform providing a full range of capabilities—from discovery and classification of sensitive data, to vulnerability assessment of data and file activity to monitoring, masking, encryption, blocking, alerting and quarantining to protect sensitive data.
- **IBM mobile security solutions,** which integrate with IBM Application Security on Cloud mobile application security testing capabilities to help you proactively resolve potential security vulnerabilities on mobile applications and improve operational efficiency.
- **IBM cloud security solutions,** which provide on-demand computing resources—everything from applications to data centers—over the Internet on a pay-for-use basis.


Application Security on Cloud
What type of app are you scanning today?
×
Mobile
Web
Desktop

IBM Application Security on Cloud makes it extremely easy to scan mobile, web and desktop applications. Users simply choose which type of application they want to scan.

Summary

The seriousness of application security is clear, and the challenges are complex. Without the necessary infrastructure visibility and the right security solutions, protecting your organization can seem overwhelming. IBM has outlined a clear roadmap for application security, providing you with critical steps your organization can take to create an effective, successful application security testing program.

With advanced security testing and a platform for managing application risk, the IBM Security AppScan solution is designed to help organizations more easily roll out and manage the latest security strategies. This solution delivers both the security expertise and the critical integrations with application lifecycle management you need to not only identify vulnerabilities, but also to reduce overall application risk.

Along the way, as your organization advances to different application security maturity levels, you can customize IBM application security testing solutions using components best suited for your specific needs.

To access a trial of IBM Security AppScan today at no charge, please visit the IBM Security AppScan web page.

To access a free trial plan of IBM Application Security on Cloud, please visit the IBM Application Security Analyzer web page.

For more information

To learn more about application security testing solutions from IBM, please contact your IBM representative or IBM Business Partner, or visit: **ibm.com**/applicationsecurity

For more information on complementary IBM Security offerings, please visit: **ibm.com**/security

To view detailed system requirements for each application security testing solution, click on the following links:

- IBM Security AppScan Standard
- IBM Security AppScan Source
- IBM Security AppScan Enterprise
- IBM Application Security on Cloud
- Arxan Application Protection for IBM Solutions
- Cigital Application Security Testing Managed Services

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[1] “IBM Survey on Application Security Risk Management,” Research study by the Ponemon Institute, Sponsored by IBM Corp., January 7, 2016.

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