CyberSagacity

EXECUTIVE BRIEF

Understanding application security's alphabet soup.
Why CWEs, CVEs, CVSS and KEVs are only the beginning.

The industry's core standards give software risk a common language — but they were never built to answer the question every leader asks: what should we fix first?

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EXECUTIVE SUMMARY

AppSec is not about finding vulnerabilities. It is about making decisions.

Security teams routinely receive thousands — even millions — of findings from static, dynamic, and composition analysis, AI-assisted scanners, and runtime monitoring. The challenge has shifted from detection to decision-making.

Each finding may reference a **CWE**, a **CVE**, a **CVSS** score, or appear on CISA's **KEV** Catalog. These standards are indispensable — but they answer only part of the problem. A CWE identifies what type of weakness exists. A CVE identifies a specific published vulnerability. CVSS estimates its technical severity. KEV indicates whether attackers are actively exploiting it.

None of them determines whether the vulnerability actually threatens your organization, whether it is truly exploitable in your environment, what business impact it represents, or whether fixing it should take priority over hundreds of competing issues. Organizations no longer suffer from a lack of vulnerability data — **they suffer from an excess of it.**

THE NEXT EVOLUTION

CyberSagacity is Application Security Intelligence. Rather than replacing industry standards, it integrates them with statistical validation, exploitability analysis, runtime context, financial modeling, and compliance intelligence.

It transforms raw security findings into trusted, decision-grade intelligence.

WHY APPSEC FEELS SO COMPLICATED

An ecosystem of acronyms, not a single discipline.

Conversations fill with CWE, CVE, CVSS, KEV, SAST, DAST, SCA, ASPM, ASOC, EPSS, SBOM and dozens more. So many acronyms exist because application security is an ecosystem — standards bodies, agencies, researchers, vendors and open-source communities, each solving a different part of the problem.

Together they provide a common language. But these standards were never designed to answer the questions executives ask every day: Does this vulnerability actually affect us? How much risk does it create? What will it cost if exploited? Should we fix it now — or are there more important issues competing for limited resources?

Understanding the core standards is an essential first step. Understanding how they fit together — and where their limits begin — is what moves an organization toward true Application Security Intelligence.

THE HIERARCHY OF APPSEC INTELLIGENCE

Software Defect
A programming mistake in the code

↓

CWE
Common Weakness Enumeration — the root cause

↓

CVE
Common Vulnerabilities & Exposures — a specific disclosed vulnerability

↓

KEV
Known Exploited Vulnerability — actively exploited in the wild

UNDERSTANDING CWES · THE ROOT CAUSE

A CWE tells you what kind of weakness exists.

Every vulnerability begins with a programming mistake. The **Common Weakness Enumeration**, maintained by MITRE, is the industry's standardized taxonomy for describing those software weaknesses. Rather than naming individual vulnerabilities, CWEs classify the *types* of mistakes developers make.

- **CWE-89** — SQL Injection
- **CWE-79** — Cross-Site Scripting (XSS)
- **CWE-787** — Out-of-Bounds Write
- **CWE-306** — Missing Authentication for Critical Functions

But identifying a CWE is not the same as identifying a risk. A CWE says nothing about whether the weakness is exploitable, exists in production, or represents meaningful business risk. Two apps may both contain CWE-89 — one fully mitigated by parameterized queries, the other exposing customer data on an internet-facing service. The CWE alone cannot tell them apart.

WHERE CYBERSAGACITY CHANGES THE CONVERSATION

Security tools answer "what kind of weakness?" Not "should we fix it first?"

Tools are very good at identifying categories of weaknesses, but they provide little guidance on which findings are accurate, exploitable, or worthy of immediate remediation. An application may contain thousands of CWEs, yet only a small fraction present material risk.

> **CyberSagacity uses CWEs as a starting point — not the final answer.**

Every detected weakness is validated, normalized, and correlated with additional evidence — vulnerability data, exploitability analysis, runtime exposure, threat intelligence, compliance requirements, and financial risk models. Rather than assuming every reported weakness deserves equal attention, CyberSagacity determines whether the defect is real, whether it can actually be exploited, how likely it is to cause loss, what regulatory obligations it triggers, and whether remediation delivers meaningful risk reduction and ROI.

UNDERSTANDING CVES · A SPECIFIC VULNERABILITY

A CVE tells you where a weakness has been found.

If a CWE is a disease category — say, influenza — a **CVE is the individual patient diagnosed with it.** Each CVE, managed through MITRE's CVE Program, represents a unique vulnerability affecting a specific product, version, or component, giving the whole industry one universally recognized reference.

But not every CVE is an equally important problem. A CVE documents that a vulnerability exists — it does not indicate whether the software is deployed in your environment, whether the code is reachable, whether controls reduce the risk, or whether attackers are exploiting it. Two organizations can face the same CVE with dramatically different real risk.

With hundreds of thousands of CVEs published and thousands added yearly, treating them as a flat backlog creates alert fatigue and wasted engineering effort.

ANATOMY OF A CVE

Identifier · Description
Affected products · References
Severity (CVSS) · Associated CWEs

EXAMPLE

CVE-2025-12345
Product: Apache XYZ
Weakness: CWE-89 SQL Injection
Severity: CVSS 9.8

CyberSagacity treats CVEs as one source of evidence, not the final measure of priority — correlating each with its CWEs, AST findings, composition analysis, runtime telemetry, asset criticality, threat intelligence, and compliance requirements. The question shifts from *"how many CVEs do we have?"* to **"which of these actually matter, and what should we remediate first?"**

UNDERSTANDING CVSS · MEASURING TECHNICAL SEVERITY

A CVSS score tells you how severe it appears — 0.0 to 10.0.

Developed by FIRST, CVSS scores measurable technical characteristics — attack complexity, required privileges, and impact to confidentiality, integrity and availability — into three complementary groups.

GROUP 1

Base Score

The intrinsic technical characteristics of the vulnerability. "How severe is this under normal circumstances?" — the value most commonly published with a CVE.

GROUP 2

Temporal Score

Adjusts the base for factors that change over time — more urgent when reliable exploit code is released, less urgent once an effective patch is widely available.

GROUP 3

Environmental Score

Recognizes that the same vulnerability has different consequences in different organizations — incorporating asset importance, architecture, and controls.

Together these make CVSS an invaluable technical standard, deeply embedded in scanners, patch management, advisories and regulatory guidance. But a persistent misconception is that a higher CVSS score automatically means a higher remediation priority.

THE MISCONCEPTION

CVSS measures technical severity — not organizational risk.

9.8

EXTREMELY HIGH SEVERITY

But the component exists only in an isolated development environment, is inaccessible externally, protected by multiple compensating controls, and stores no sensitive data.

7.2

LOWER SEVERITY · GREATER RISK

But it affects a public customer portal that processes financial transactions and appears on CISA's KEV Catalog because threat actors are actively exploiting it.

Although the second vulnerability has a lower technical score, it almost certainly represents the greater business risk and should receive immediate attention. A CVSS score does not determine whether the software is deployed, whether the code is reachable, whether attackers are targeting it, or what financial losses could result.

CyberSagacity treats CVSS as one valuable input within a broader model — combining it with statistical validation, exploitability, runtime exposure, threat intelligence, KEV status, asset criticality, compliance obligations and financial modeling to determine the **true** priority of every defect.

UNDERSTANDING KEV · ACTIVE EXPLOITATION

KEV tells you what attackers are exploiting today.

Maintained by CISA, the **Known Exploited Vulnerabilities Catalog** contains only a curated subset of CVEs confirmed to be actively exploited in real-world attacks. Every entry has moved beyond theoretical risk to become an operational threat.

Of the hundreds of thousands of published CVEs, only a small percentage are observed being actively exploited. KEV helps teams distinguish between what *could* be exploited and what *is* being exploited — reflecting real attacker behavior rather than theoretical severity.

But KEV has limits too. A KEV entry does not mean your organization is vulnerable — the software may not be deployed, the function may be unreachable, and controls may reduce the likelihood of success. Nor does it estimate financial loss, regulatory consequences, or remediation cost.

9.8

SEVERE — BUT NO ACTIVE EXPLOITATION

A serious vulnerability, yet no public evidence of attacks. Immediate operational risk may be relatively low.

7.2 · KEV

ACTIVELY EXPLOITED

Added to the KEV Catalog because threat actors are using it in ransomware campaigns worldwide. For most organizations, this is far more urgent.

CyberSagacity incorporates KEV as one element within a broader evidence-based model: a KEV listing raises confidence and potential priority, but the platform still evaluates deployment, reachability, compensating controls, asset exposure, compliance mapping and financial loss before recommending action.

FROM VULNERABILITY MANAGEMENT TO INTELLIGENCE

These standards were never intended to make remediation decisions.

Traditional AppSec

- Security scanner
- Software findings
- CWE classification
- CVE identification
- CVSS severity
- **Patch everything**

Overwhelms teams with thousands of alerts, creates developer fatigue, and prioritizes by technical severity rather than actual business risk.

The CyberSagacity decision model

- **Is the finding real** — and statistically validated?
- **Is it exploitable** — and is the code reachable?
- **Is it actively exploited?** What assets are exposed?
- **What compliance obligations** are affected?
- **What financial loss** could occur — and the ROI of remediation?
- **Should we fix it now?**

WHERE CYBERSAGACITY FITS

Each standard is essential — and each has a limit.

LAYER	PURPOSE	LIMITATION	CYBERSAGACITY VALUE
CWE	Identifies software weakness classes	No indication of exploitability or business impact	Validates findings and maps them to technical, financial and compliance context
CVE	Identifies specific published vulnerabilities	Does not determine organizational priority	Correlates CVEs with runtime exposure, asset criticality and financial risk
CVSS	Measures how technically severe it is	Ignores operational and financial risk	Refines prioritization using real-world evidence and business impact
KEV	Identifies vulnerabilities known to be actively exploited	No local context or remediation economics	Incorporates active threat intelligence into a broader, evidence-based model
CyberSagacity	Delivers Application Security Intelligence	Goes beyond technical severity alone	Validated, prioritized and dollarized decisions — optimized by accuracy, exploitability, business impact, compliance and expected ROI

IN ONE LINE EACH

The standards describe risk. CyberSagacity tells you what to do about it.

CWE	**What is wrong** — the underlying software weakness or programming error.
CVE	**Where it exists** — a specific, publicly disclosed vulnerability in a product or version.
CVSS	**How severe it appears** — a standardized technical severity score, not a business priority.
KEV	**What attackers are exploiting today** — the subset of CVEs confirmed active in real-world attacks.
CyberSagacity	**What to do about it** — validated, prioritized and dollarized intelligence that determines which defects actually matter, which to remediate first, and where remediation delivers the greatest reduction in business risk.

Success will no longer be measured by the number of vulnerabilities discovered or patched — it will be measured by the quality of security decisions. **The future of application security is not more findings. It is better intelligence.**

Learn more at www.cybersagacity.com →