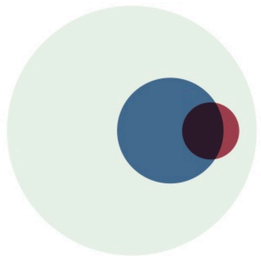
EMPIRICAL

Empirical Security builds precision AI tuned to your cybersecurity environment



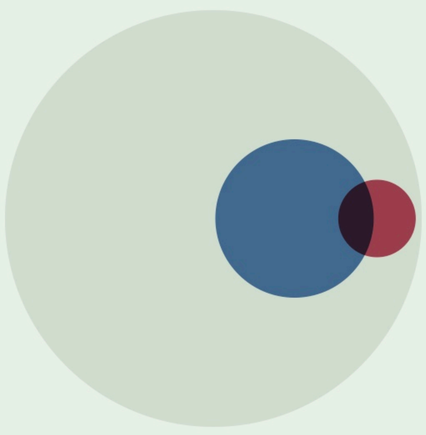
Methodology

Modern AI enables us to model security posture, asset value, and attacker behavior with real precision—but only if we adapt to the enterprise's actual environment. Local models let us reflect your infrastructure, your priorities, and your risk—not someone else's.

Our models are trained on over 16,000 known exploited CVEs

Compare Effort:
CVSS, EPSS, Empirical Local

Empirical Models outperform CVSS as the way to prioritize vulns. When comparing performance measures (such as effort or coverage) it's undeniable.



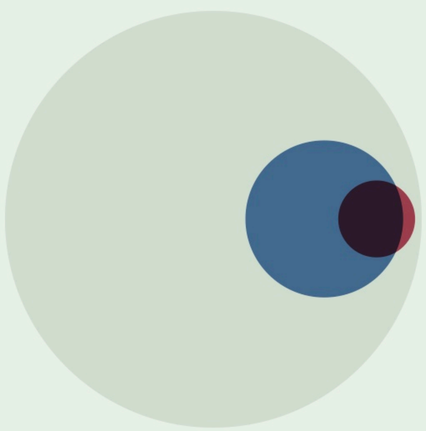
CVSS 9+ (Critical)

THRESHOLD: 0.9

EFFORT: 14.4%

COVERAGE: 40.4%

EFFICIENCY: 9.5%



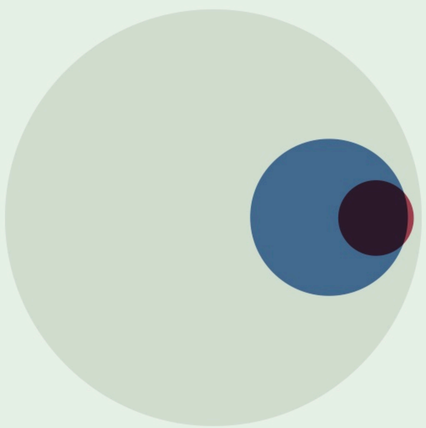
EPSS V4 (Same Effort)
Better Coverage & Efficiency

THRESHOLD: 0.029

EFFORT: 14.4%

COVERAGE: 87.6%

EFFICIENCY: 20.6%



Empirical Local (Same Effort)
Better Coverage & Efficiency

THRESHOLD: 0.028

EFFORT: 14.4%

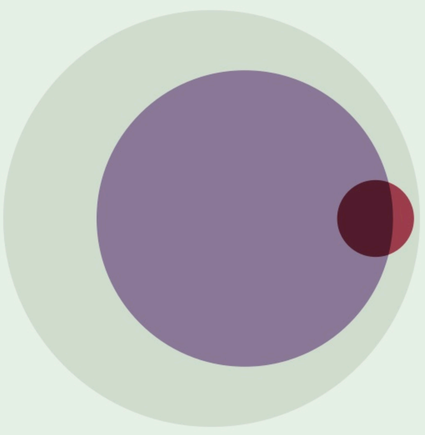
COVERAGE: 95.4%

EFFICIENCY: 22.4%

Local model results may vary depending on your security dataset.

Compare Coverage:
CVSS, EPSS, Empirical Local

Empirical Models reduce the required effort to achieve the same coverage compared to CVSS. Empirical Global models are 6x more efficient.



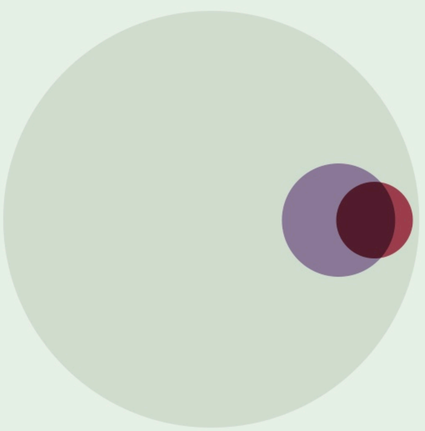
CVSS 7+
(High to Critical)

THRESHOLD: 0.7

EFFORT: 50.5%

COVERAGE: 76.8%

EFFICIENCY: 5.1%



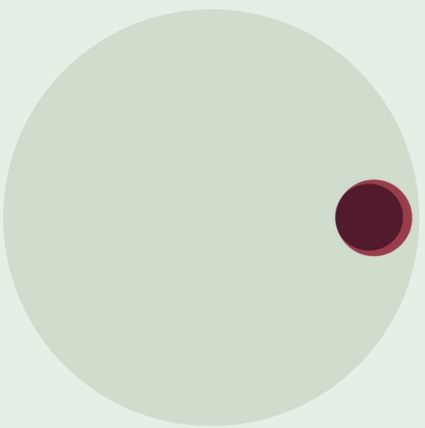
EPSS V4 (Same Coverage)
Less Effort, More Efficiency

THRESHOLD: 0.098

EFFORT: 7.4%

COVERAGE: 76.8%

EFFICIENCY: 34.8%



Empirical Local (Same Coverage)
Less Effort, More Efficiency

THRESHOLD: 0.968

EFFORT: 2.6%

COVERAGE: 76.9%

EFFICIENCY: 99.3%

Local model results may vary depending on your security dataset.

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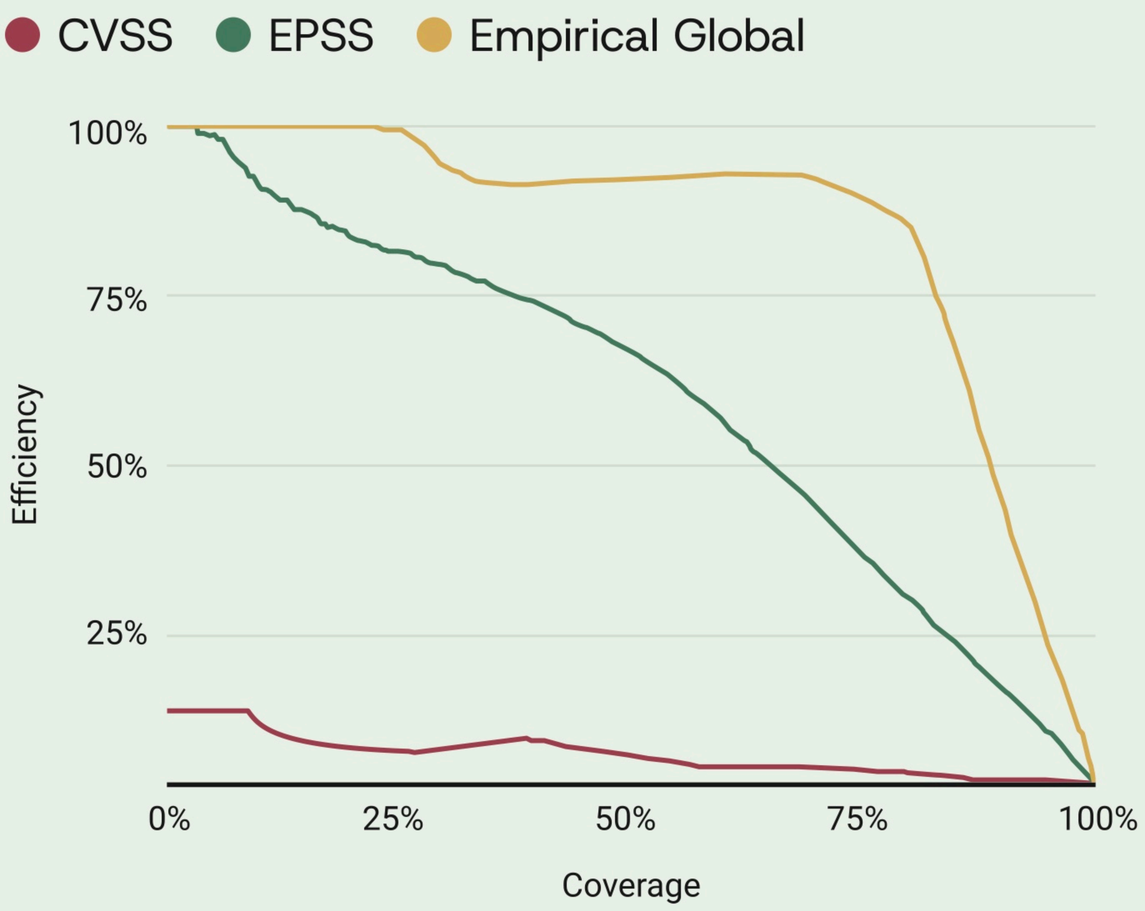
Compare Model Threshold Performance



Empirical Models combine real-time internet exploitation telemetry with EPSS predictions to provide the most accurate view of exploitation.

Empirical monitors activity on over 16,000 exploited CVEs—10 times more than the next best model—and offers hourly exploitation evidence and volume, an industry first. Compare to DHS CISA KEV: ~1200.

How do we define Efficiency?

Efficiency considers how efficiently resources were spent by measuring the percent of prioritized vulnerabilities that were exploited. Prioritizing mostly exploited vulnerabilities would be a high efficiency rating (resources were allocated efficiently), while prioritizing perhaps random or mostly non-exploited vulnerabilities would result in a low efficiency rating. Efficiency is calculated as the number of exploited vulnerabilities prioritized (True Positives, Correctly Identified) divided by the total number of prioritized vulnerabilities (True Positives + False Positives).

How do we define Coverage?

Coverage considers how well is the percent of exploited vulnerabilities that were prioritized, and is calculated as the number of exploited vulnerabilities prioritized (True Positives, Correctly Identified) divided by the total number of exploited vulnerabilities (True Positives + False Positives). Having low coverage indicates that not many of the exploited vulnerabilities were remediated with the given strategy.

We bring measurable impact

Past solutions can’t prioritize, assess, and handle effective inference at scale.
With Empirical, our models provide understanding and superior prioritization.

6x

More efficient than CVSS (comparison vs. EPSS, our free model, at 87% coverage)

12.4x

A 1249.04% increase in total exploited CVEs as of January 9th, 2025 compared to CISA Known Exploited Vulnerabilities (KEV)

23x

4925 newly exploited CVEs in the last 12 months, compared to 204 in CISA KEV

See how your model would differ — book a walkthrough | empiricalsecurity.com | info@empiricalsecurity.com