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Shift left in software security

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Increased security risks for application development

Growing awareness that open source is vulnerable to exploit and attack

742%

average annual increase in software supply chain attacks over the past 3 years[1]

84%

of open source scanned codebases contained at least one vulnerability[2]

31%

of organizations are not monitoring these open source dependencies[3]

The increase in the number of applications, systems and environments causes organizations to have larger exposure to malicious attacks and compels them to look for strategies that reduce the surface area of attack.

[1] State of the Software Supply Chain | [2] Open Source Security and Risk Analysis

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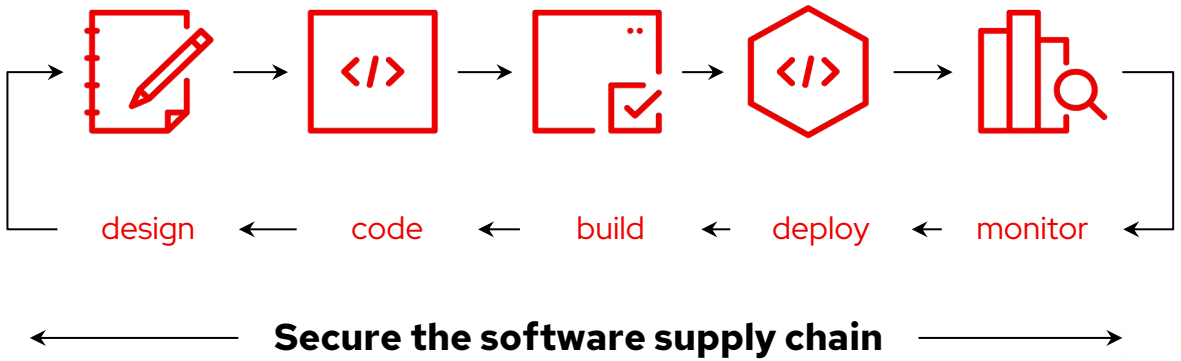
Build security checks into the software development lifecycle

Maintaining security policies and compliance

- **Secure open source production** – identify open source code dependencies
- **Improve vulnerability detection and remediation** – find and fix vulnerabilities in source code and images
- **Continuously monitor for threats** – Monitor applications' codebase risk profile



The Open Source Software Security Mobilization Plan| 2022 Product Security Risk Report | Walk the Line: GitOps and Shift Left Security - ESG Report

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What are the minimum regulatory requirements for trusting the source code?

Access to curated and trusted open and proprietary source code libraries for developers to use on business critical applications

Software Bill of Materials (SBOMs)

Understand where your software comes from (provenance), who created it (licensing) and who certifies it (signatures/attestation)

Vulnerability management

Access to vulnerabilities databases, understand vulnerability exploitability (VEX) and access to fixes and remediations

Software composition analysis

Understand and map relationships to open source software for all business critical applications across all environments

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Why should you care?

Procurement and Audit

Ensure compliance

Assess vendor's risk

Enforce security requirements

Risk Management

Identify surface area of attack

Assess threats to digital assets

Create an incident response plan

Assurance

Meet regulatory compliance

Reduce cyber threats and attacks

Comply security & privacy regulations

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Red Hat Trusted Profile Analyzer

Red Hat Trusted Profile Analyzer provides development and security teams **visibility and insights into the risk profile of an application's codebase** to ensure security threats and vulnerabilities are minimized and caught promptly.

Aggregate, manage and analyze software assets composition and security documentation of custom, 3rd party and open source software without slowing down development or increasing operational complexity.

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The value of Red Hat Trusted Profile Analyzer

INCREASE DEVELOPER PRODUCTIVITY

Easy and quick access to trusted, verified content directly from your local IDE

IMPROVE OPERATIONAL EFFICIENCY

Increase team collaboration with a single source of truth for securing source code

GET ACTIONABLE INSIGHTS

Manage and reduce the potential business impact of malicious attacks

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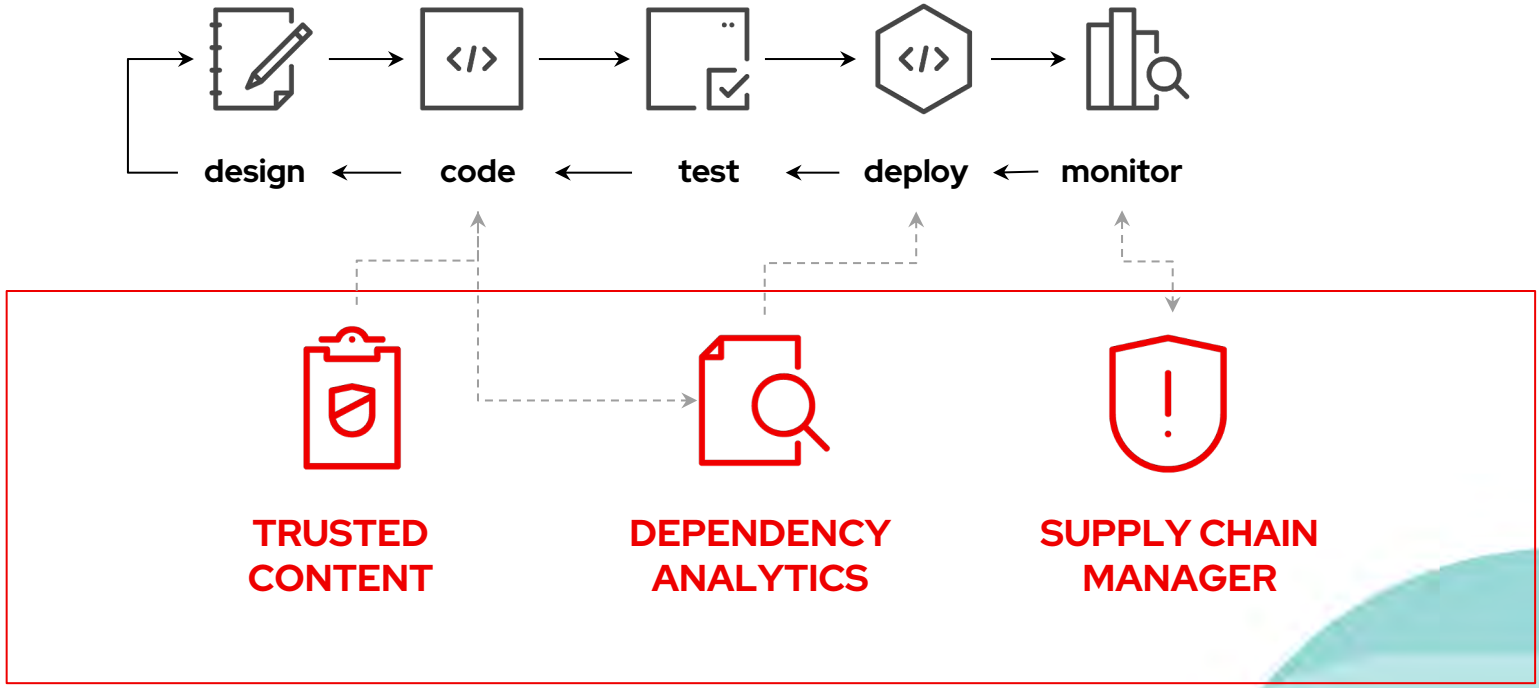
Red Hat Trusted Profile Analyzer

Shift security left providing:

- Simple source of truth for security documentation (SBOMs, and VEXs)
- Single view for vulnerability analysis and risk profiling during design and code
- Simple way for analyzing and measuring the blast radius of a security incident



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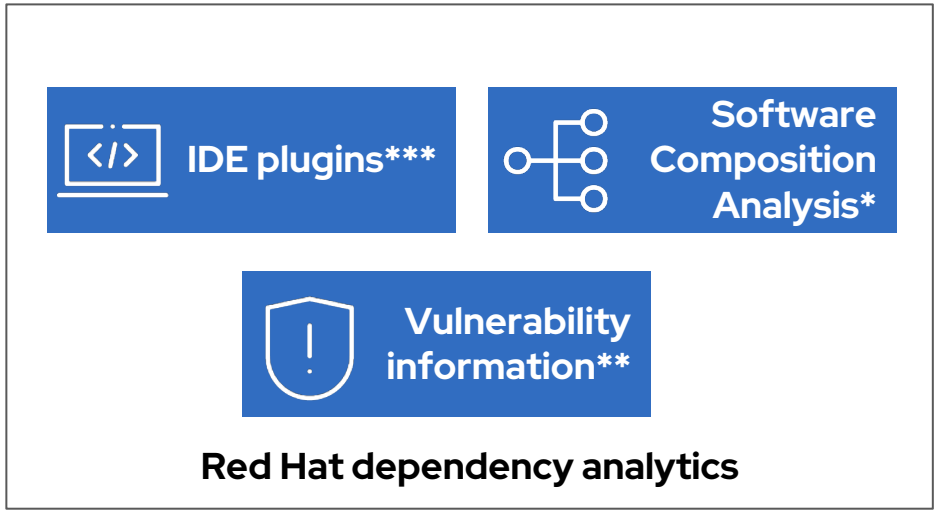
Dependency Analytics

Find and fix vulnerabilities during the development process



- **Run on-demand software composition analysis** to identify transitive dependencies and potential vulnerabilities in the code
- Identify the right open source component to use and **apply suggested recommendations** in your application code to minimize your risk profile
- **Allow developers to solve problems locally** in their preferred integrated development environment (IDE)

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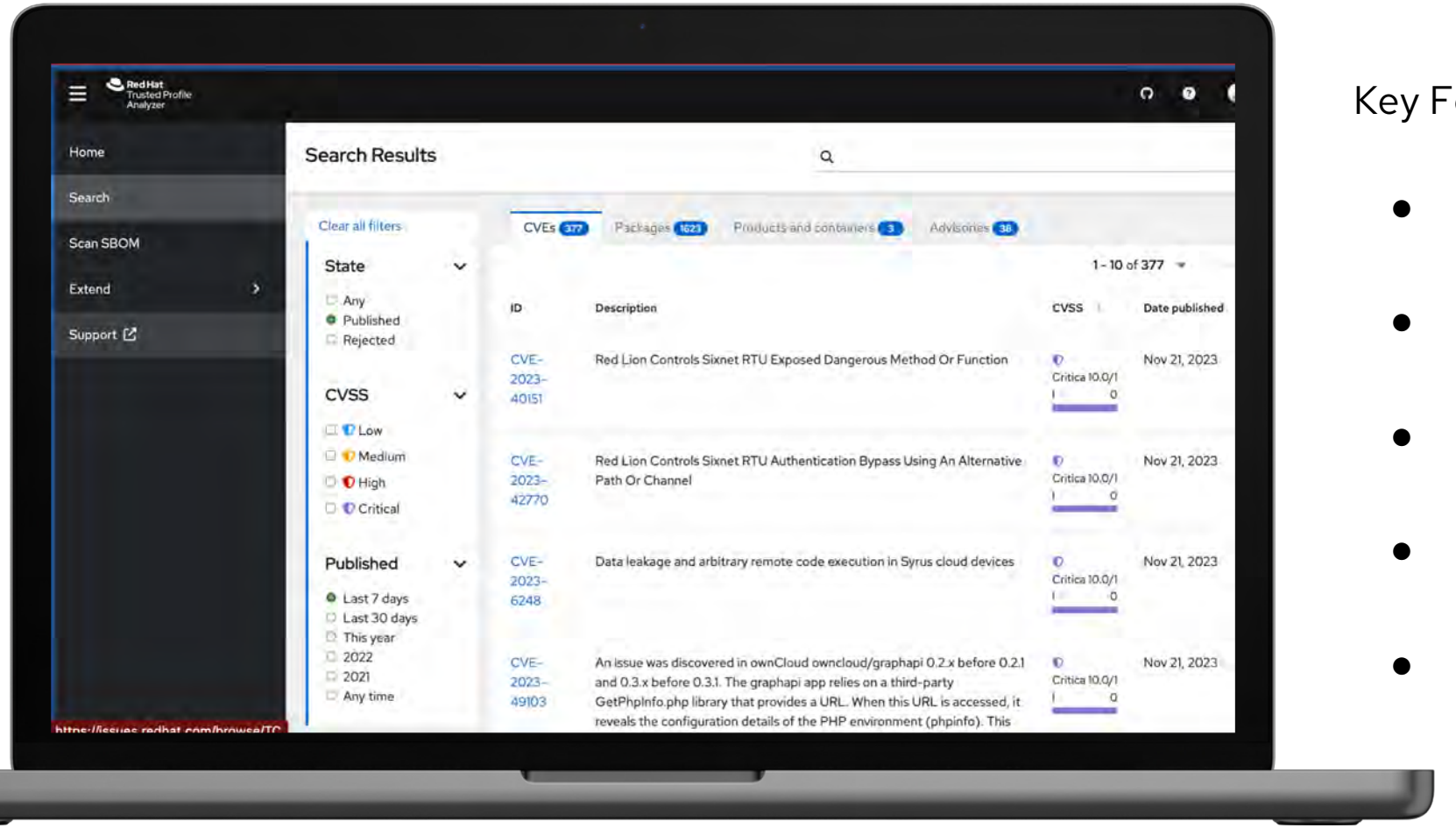
Simplify vulnerability management at code-time

Track source code provenance and attestations for actionable insights



Key Features:

- Identify, analyze dependencies to map, evaluate impact radius
- Generate, manage SBOM/VEX to stay regulatory compliant
- Curate content that's verified, trusted to prevent malicious code
- Act on recommendations directly from the IDE, as code is written
- System of record to store, index, query security documentation

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Dependency Analytics

my-quarkus-app > pom.xml

```
45          <groupId>io.quarkus</groupId>
46          <artifactId>quarkus-arc</artifactId>
47      </dependency>
48      <dependency>
49          <groupId>io.quarkus</groupId>
50          <artifactId>quarkus-junit5</artifactId>
51          <scope>test</scope>
52      </dependency>
53      <dependency>
54          <groupId>io.rest-assured</groupI
55          <artifactId>rest-assured</artifa
56          <scope>test</scope>
57      </dependency>
58
59      <dependency>
60          <groupId>org.apache.logging.log4j</group
61          <artifactId>log4j-api</artifactId>
62          <version>2.15.0</version>
63      </dependency>
64      <dependency>
65          <groupId>org.apache.logging.log4j</group
66          <artifactId>log4j-core</artifactId>
67          <version>2.15.0</version>
68      </dependency>
69
```

```
org.apache.logging.log4j/log4j-core@2.15.0

osv-nvd(osv-nvd) vulnerability info:
Known security vulnerabilities: 3
Highest severity: CRITICAL

snyk(snyk) vulnerability info:
Known security vulnerabilities: 3
Highest severity: CRITICAL
```

Source: Red Hat Dependency Analytics Open detailed vulnerability report

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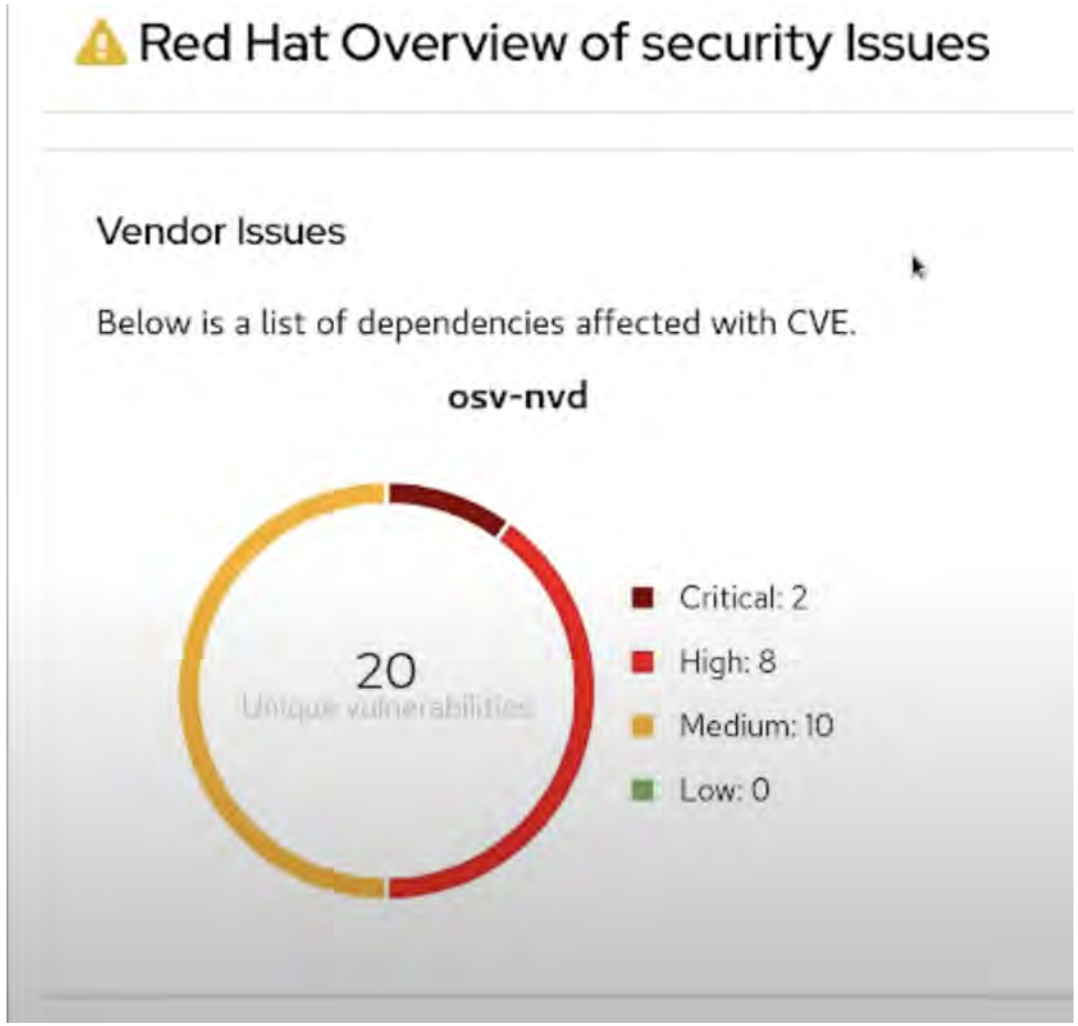
Dependency Analytics



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Dependency Analytics

Dependency Name	Current Version	Direct Vulnerab...	Transitive Vuln...	Remediation a...
io.quarkus:quarkus-resteasy	2.11.3.Final	1 1	31 8 14 9	Yes
io.quarkus:quarkus-smallrye-openapi	2.11.3.Final	0	39 10 17 12	Yes
io.quarkus:quarkus-arc	2.11.3.Final	0	22 4 9 9	Yes

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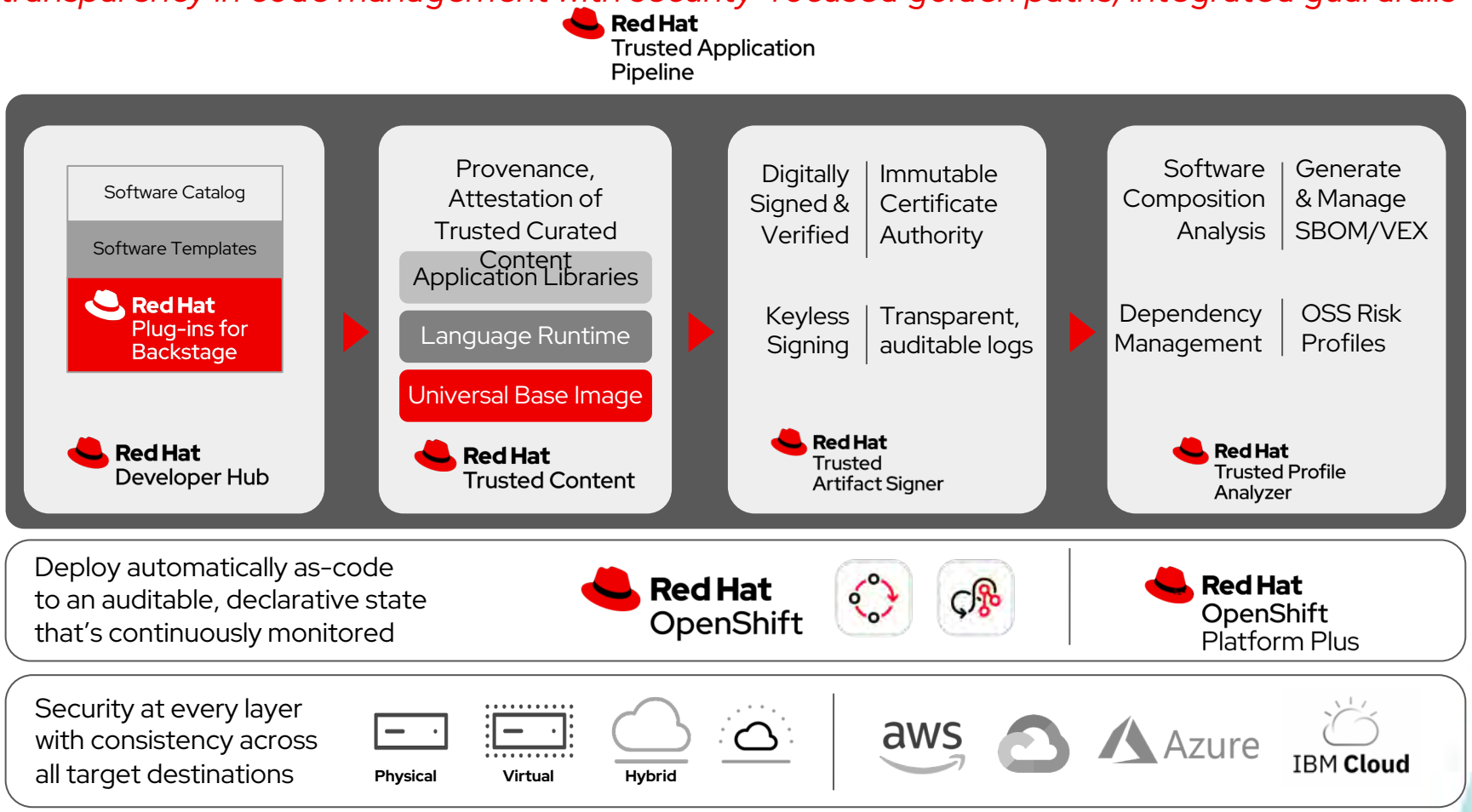
Shift Left Security early across the software supply chain

Trust, transparency in code management with security-focused golden paths, integrated guardrails



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Customer Benefits

- Meet compliance regulations for SBOM management and archiving
- Deploy applications with fewer vulnerabilities
- Know that trusted components are in use as early as possible
- Reduce alert fatigue with fewer false positive by getting vendor vulnerability information from the actual vendor (VEX)
- Analyze applications without downloading and installing

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