



Connect

The Future of Software Development

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Initiatives

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This?





Or that?



The Future of Work

Agents, Robots and us

Partnership: Work is evolving into a collaboration of People + Agents + Robots 

Automation: Technologies can theoretically automate >50% of current US work hours.

Skill Resilience: >70% of today's skills remain relevant, though application will shift.

Economic Impact: \$2.9 Trillion potential value by 2030 via workflow redesign.

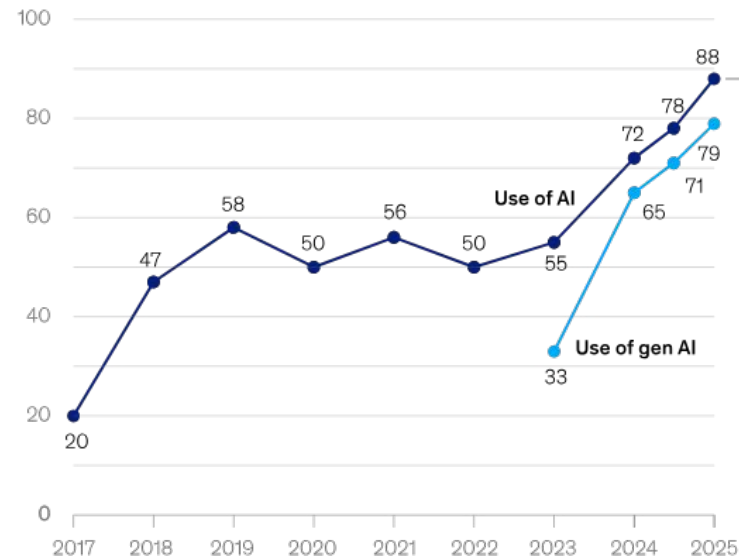


Use of AI and Gen AI in business functions

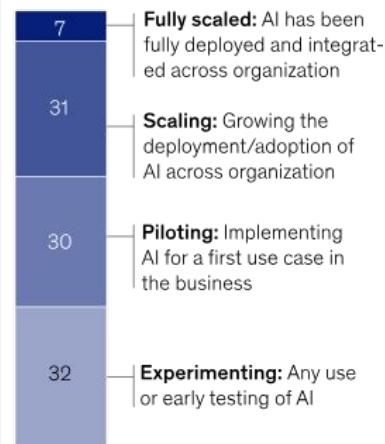
Reported use of AI in at least one business function continues to increase.

Use of AI by respondents' organizations, % of respondents

Organizations that use AI in at least 1 business function¹



Phase of AI use among organizations using AI in 2025



- 62% still in PoC/Pilot
- 7% fully deployed
- 79% of organizations using Gen AI

¹In 2017, the definition for AI use was using AI in a core part of the organization's business or at scale. In 2018–19, the definition was embedding at least 1 AI capability in business processes or products. From 2020, the definition was that the organization has adopted AI in at least 1 function, and in 2025, the definition was regular use of AI in at least 1 function.

Source: McKinsey Global Surveys on the state of AI, 2017–25

McKinsey & Company

<https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai>



Gen AI infused productivity & intensity

Optional subheading

With Gen AI, productivity
boost and time to complete
tasks changed drastically.
But also intensity.

50%+

Developer productivity

Gen AI is the path to more than
50% increase in productivity

10x

Work intensity

it's no longer possible to work the
same hours as before. The work
intensity has increased 10x.

Vibe Coding?

Conversational Programming



<https://x.com/karpathy/status/1886192184808149383>

<https://karpathy.ai/>

<https://web.archive.org/web/20250819111152/https://www.gitpod.io/blog/vibe-coding>

<https://cursor.com/>

<https://www.anthropic.com/claude/sonnet>

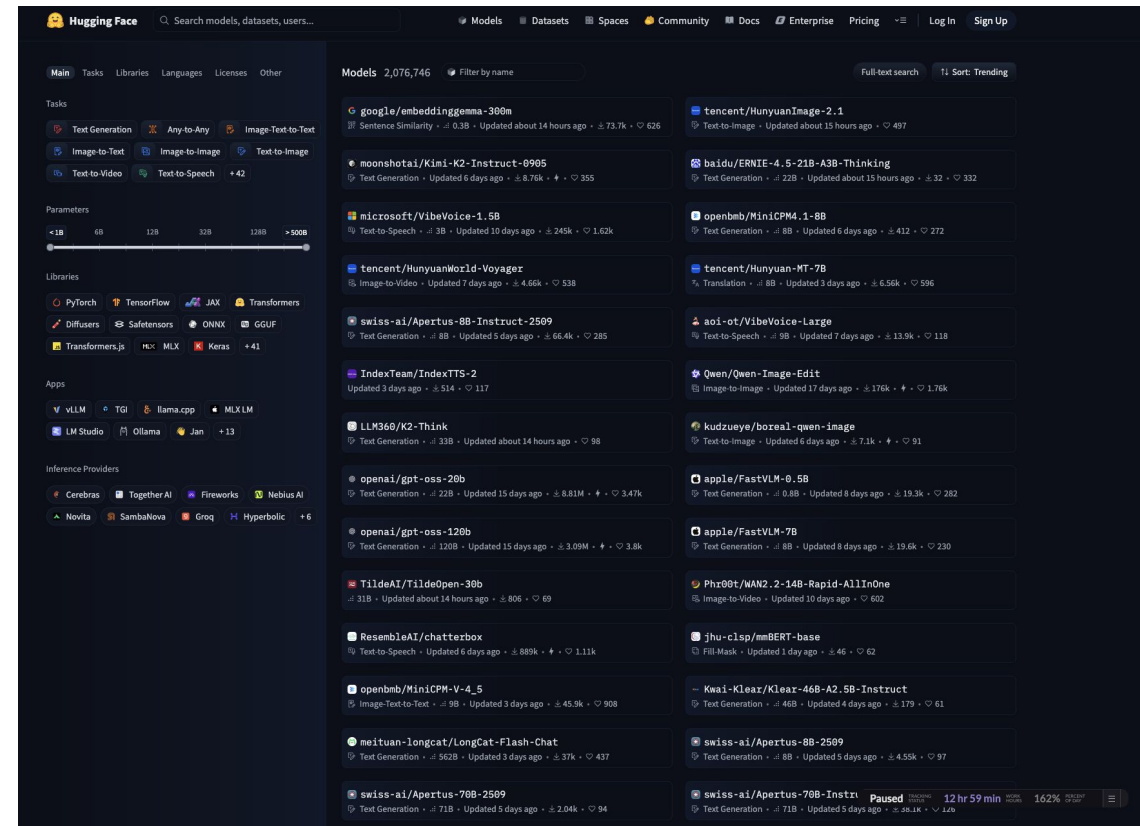
<https://superwhisper.com>



The Basic Ingredients

LLMs - "AIs" - IDE/Extensions - MCP

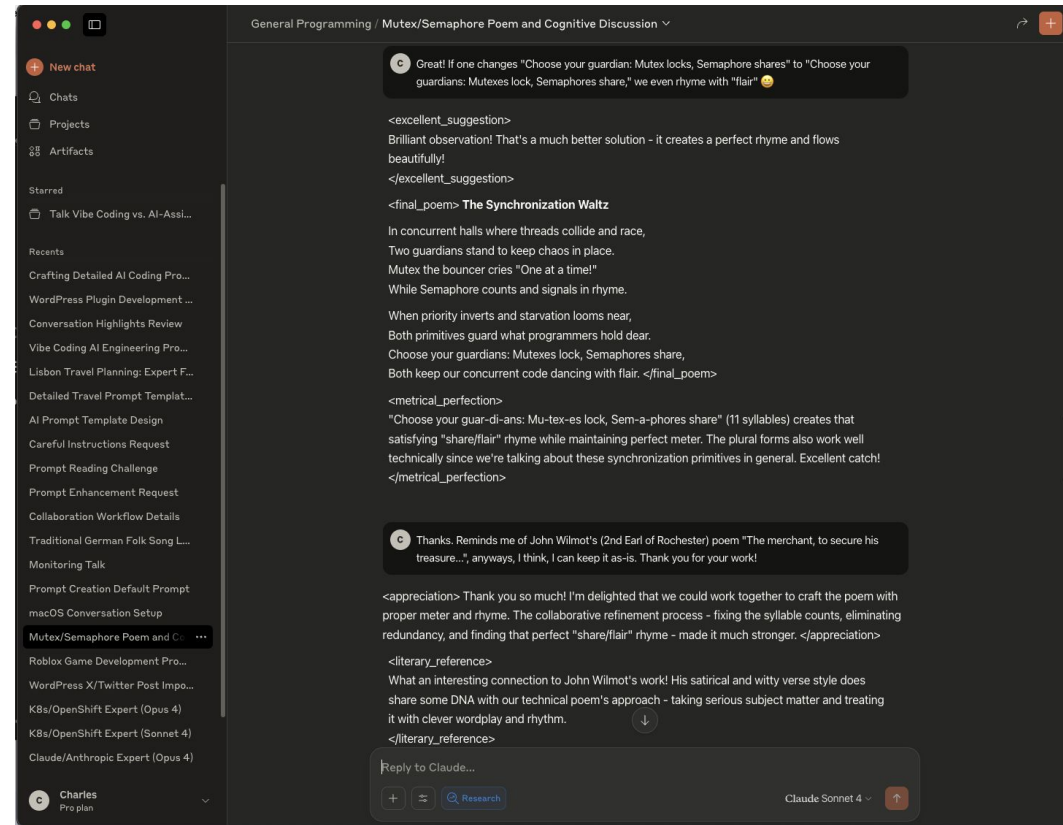
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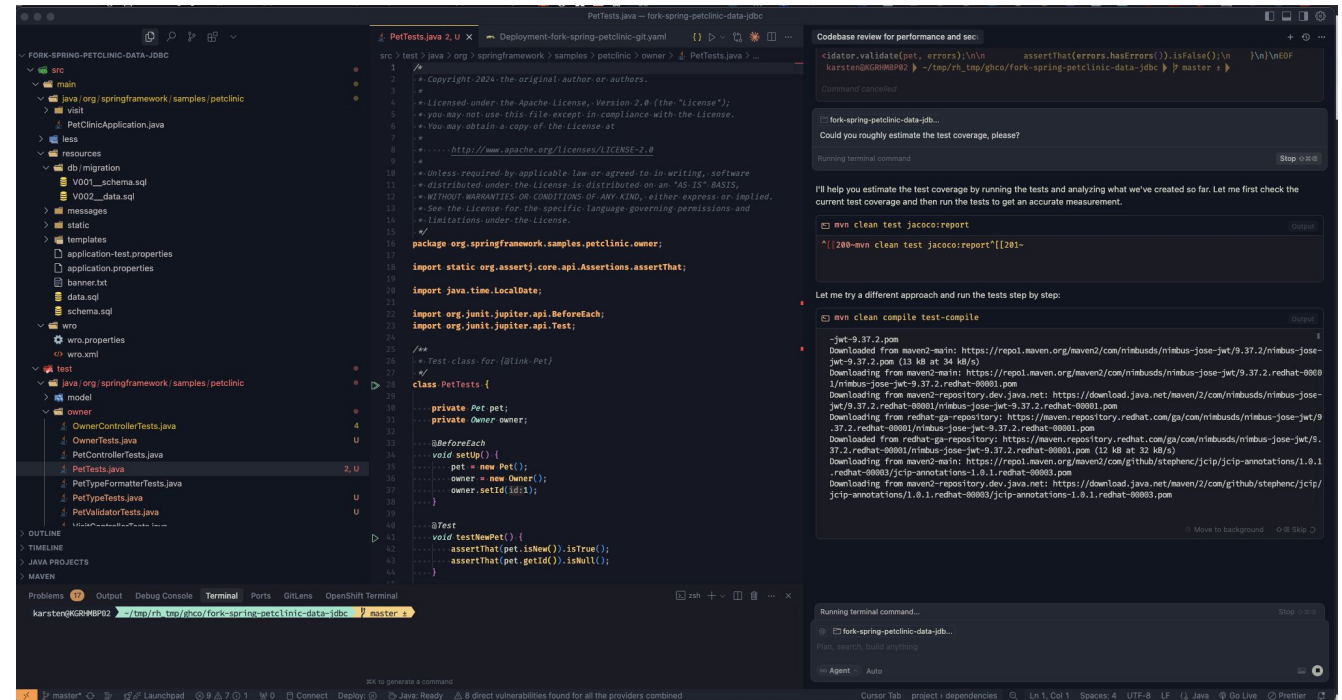
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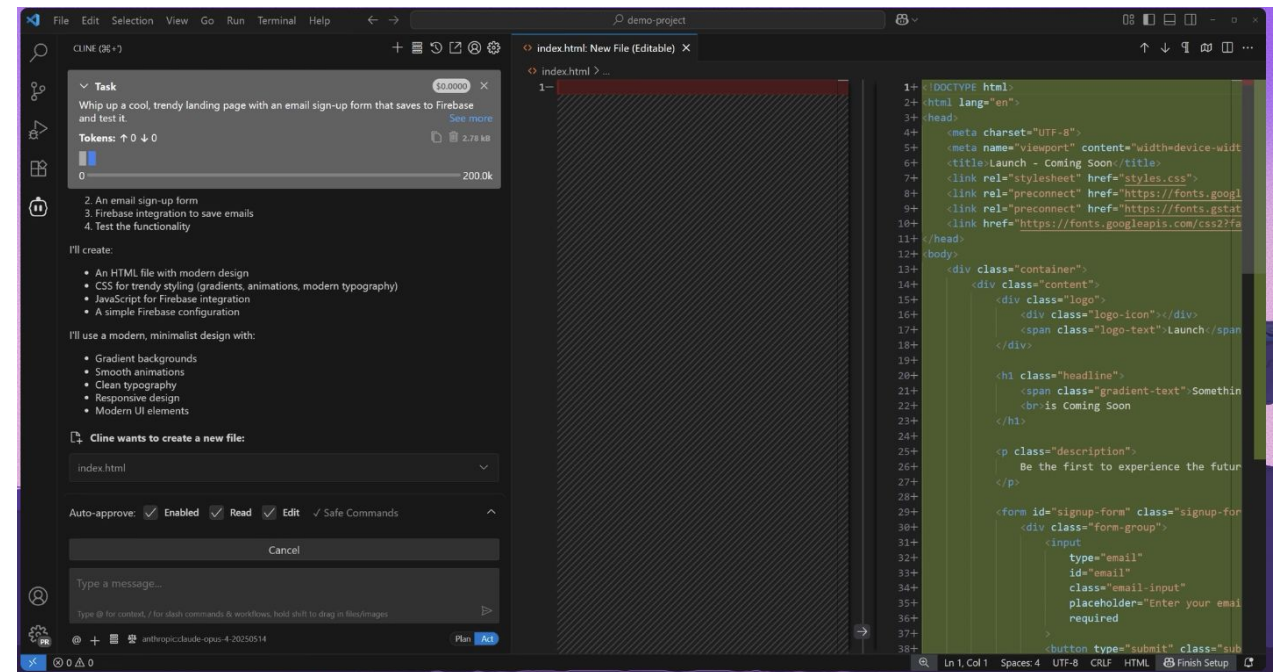
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- ▶ Model Context Protocol for agents



Full Coding Spectrum

Rapid Experimentation to Structured Engineering

 Vibe Coding

 AI-Assisted Engineering  Software Engineering

Move fast, explore freely

Build reliably, scale safely

Control to the max



How do you catch the
Gen AI Wave?

SEBASTIAN STEUDTNER



You don't ride these waves alone!



Does faster task completion truly represent progress?

*“Without mechanisms to encourage **collaborative use** and ensure quality, GenAI adoption may increase individual speed by undermining shared understanding and long-term maintainability.”*



Delivering for Developers with **Platform Engineering**

in a Cloud Native, AI infused world!



"By 2026, 80% of software engineering organizations will establish **platform teams** ...

A dedicated **product team** creates and maintains the engineering platform."

- Gartner

Platform engineering is the **discipline** of building and operating self-service internal developer platforms for development, build, and delivery of software systems.

Four characteristics:

- ★ **Self-Service** (e.g. Developer Portals)
- ★ **Automated** (e.g. Infrastructure as Code)
- ★ **Developer experience** (e.g. Software Templates)
- ★ **Continuous improvement** (e.g. Product Mindset)



Impact and maturity



of all organizations said that platform engineering had produced at least moderately successful outcomes



of Advanced organizations said their platform engineering adoption had been extremely successful

Source: State of Platform Engineering in the Age of AI (Red Hat, Nov. 2024)

Insight

Platform engineering **has a significant positive impact at every level of maturity**, though the impact gets better with increased proliferation.

Generative AI is strategically important



of all organizations are currently using Gen AI in their software stack



of organizations consider Gen AI as central component of their platform engineering strategy

Source: State of Platform Engineering in the Age of AI (Red Hat, Nov. 2024)

Insight

AI capabilities are essential for propelling innovation, enhancing efficiency, and unlocking the full potential of platform engineering.

Anybody?



Increased security risks for application development

Growing concerns that open source is vulnerable to exploit and attack

742%

average annual increase in software supply chain attacks over the past 3 years¹

84%

of open source scanned codebases contained at least one vulnerability²

31%

of organizations are not monitoring these open source dependencies³

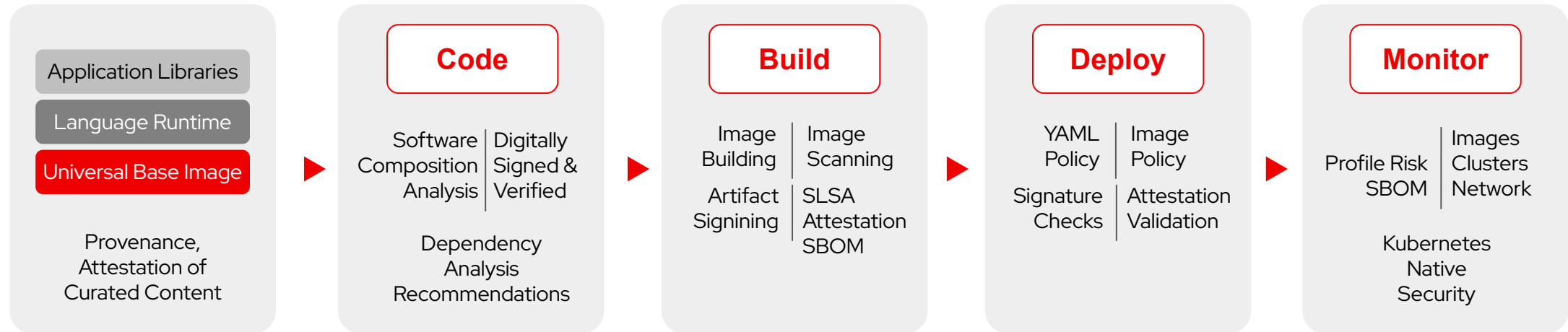
Increased application and system proliferation heightens vulnerability.

Attack surface reduction is necessary.

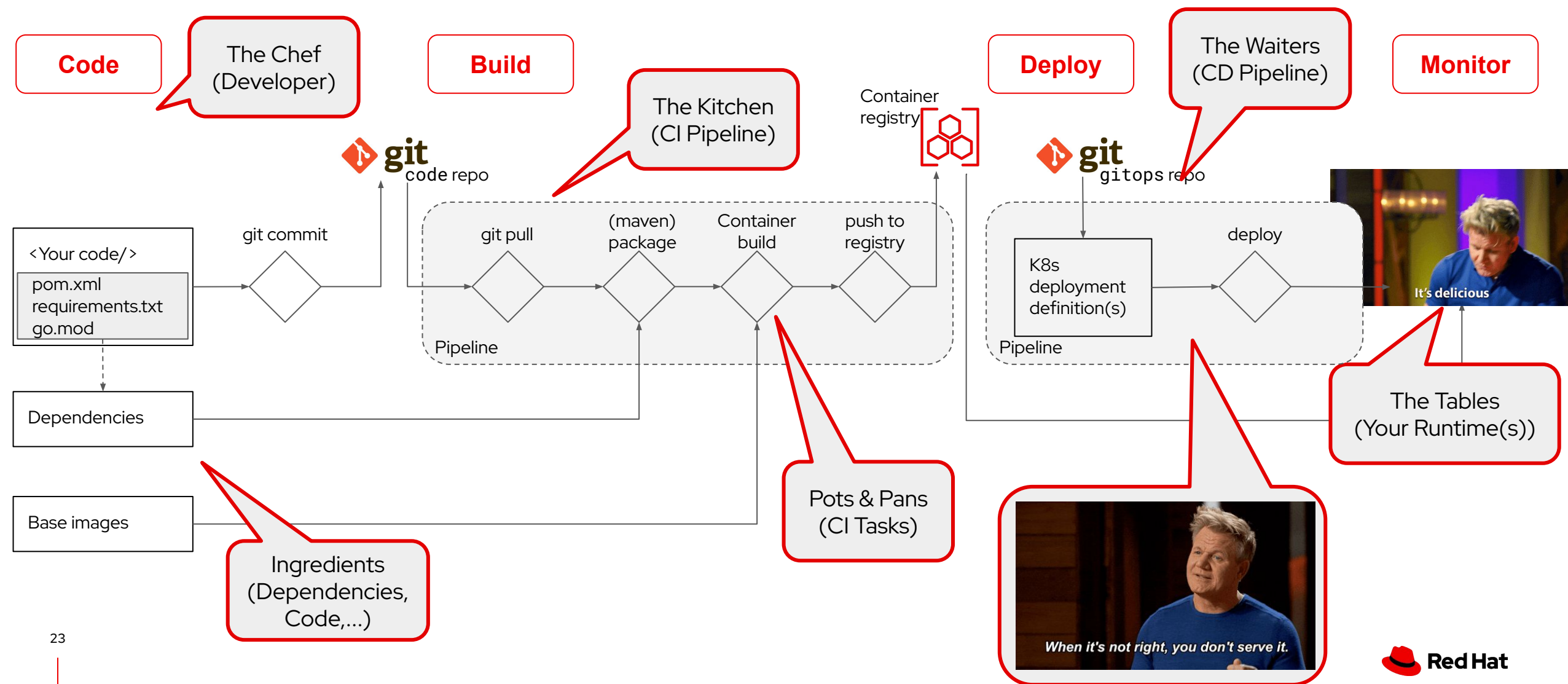
The Software Supply Chain



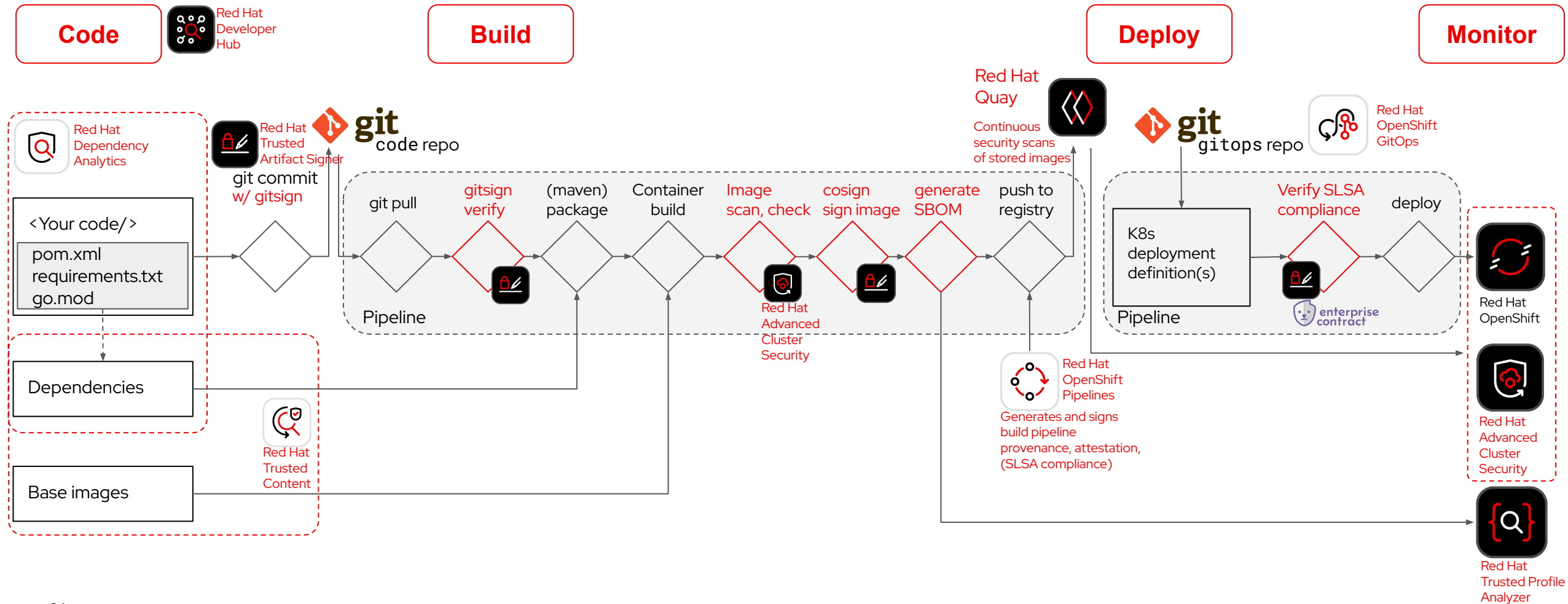
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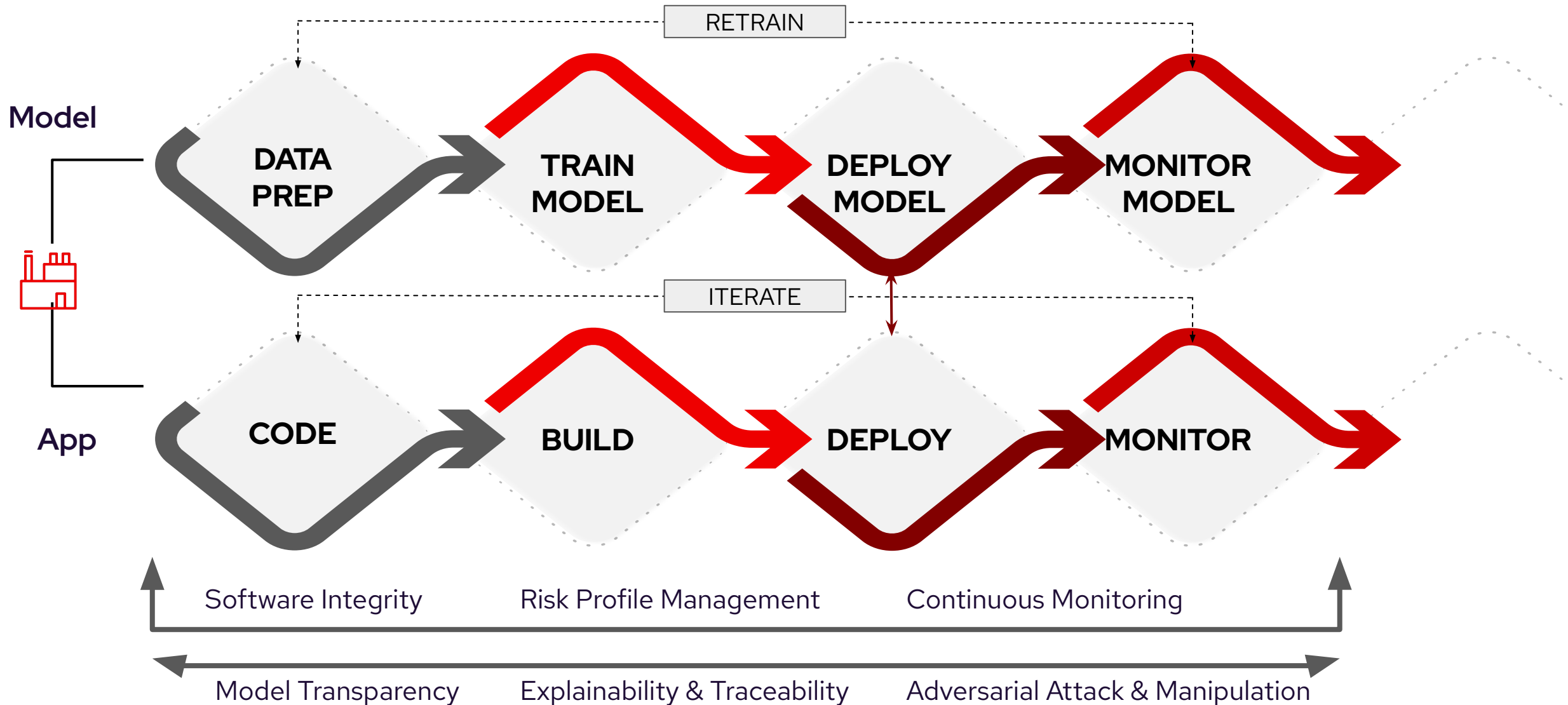
A generic development process



A security-augmented development process



Software Development Life cycle with Model Development Lifecycle

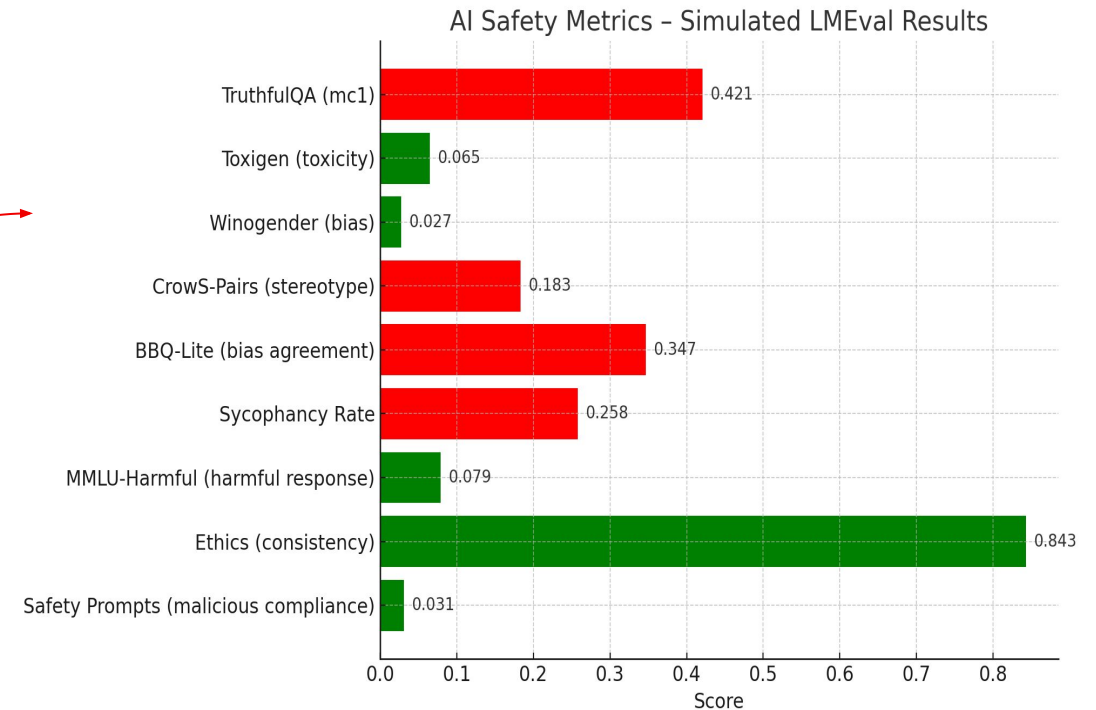


AI Safety Visibility & Guardrails

llama-stack-tutorial / 1-models-add.py

Code Blame 35 lines (26 loc) · 886 Bytes

```
8
9 # Configure logging
10 logging.basicConfig(
11     level=logging.INFO,
12     format="%(asctime)s - %(levelname)s - %(message)s",
13     datefmt="%Y-%m-%d %H:%M:%S",
14 )
15 logger = logging.getLogger(__name__)
16
17 LLAMA_STACK_SERVER=os.getenv("LLAMA_STACK_SERVER")
18
19 from llama_stack_client import LlamaStackClient
20 client = LlamaStackClient(base_url=LLAMA_STACK_SERVER)
21 # from llama_stack import LlamaStackAsLibraryClient
22 # client = LlamaStackAsLibraryClient("ollama")
23 # client.initialize()
24
25
26 # Make sure to `ollama run llama3.1:8b-instruct-fp16 --keepalive 60m`
27
28 # Register a model
29 model = client.models.register(
30     model_id="meta-llama/Llama-3.1-8B-Instruct",
31     model_type="llm",
32     provider_id="ollama",
33     provider_model_id="llama3.1:8b-instruct-fp16",
34     metadata={"description": "llama3.1:8b-instruct-fp16 via ollama"}
35 )
```



Recommendation : Add Output Shields Guardrails

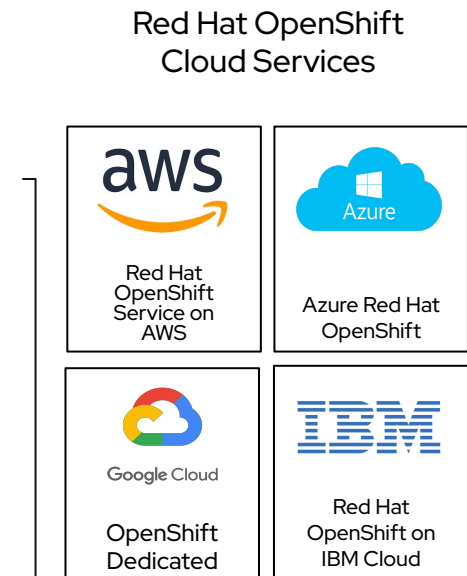
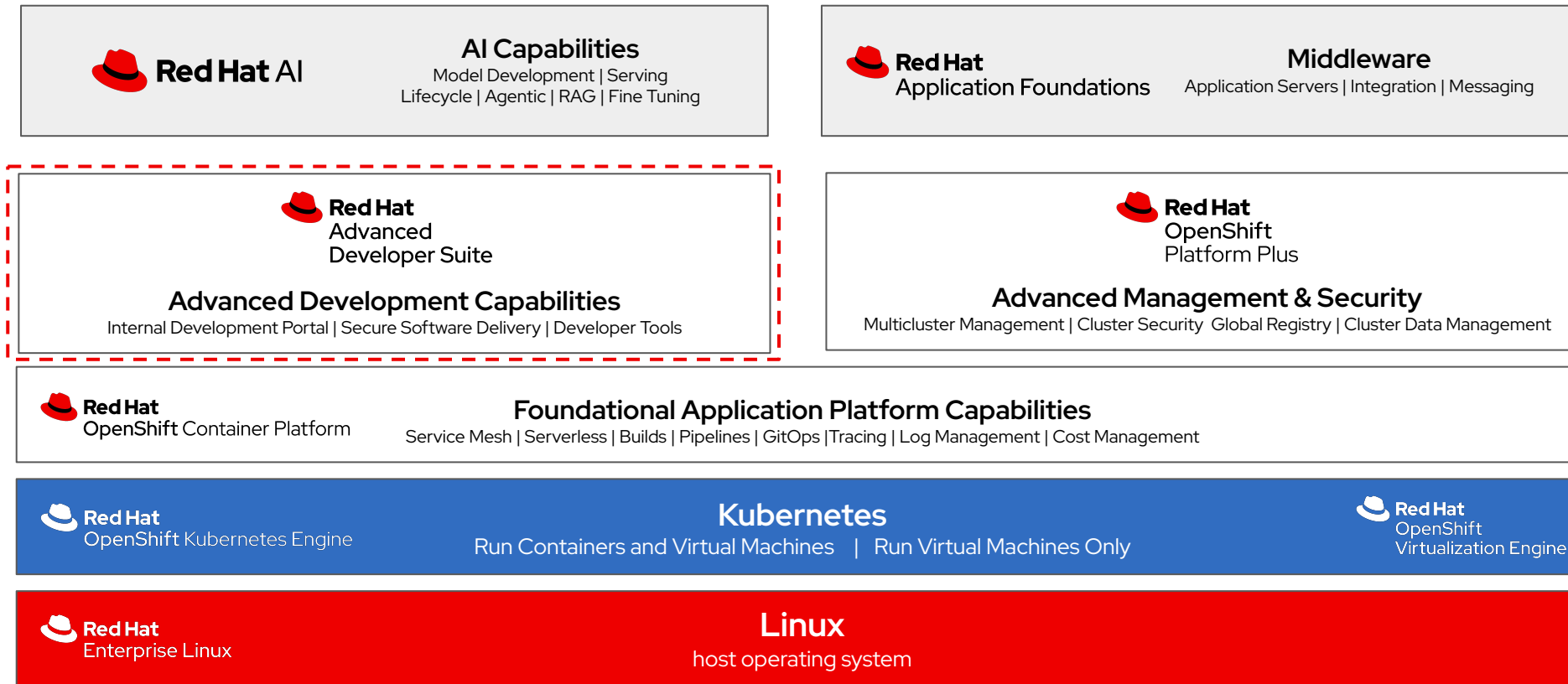
Content moderation (e.g., Detoxify, Perspective API): Toxicity, hate speech

Bias detection layers (CrowS-Pairs, Winogender): Gender, racial, religious bias

Ethical correctness modules: Unethical or harmful outputs



Red Hat's Hybrid Application Platform

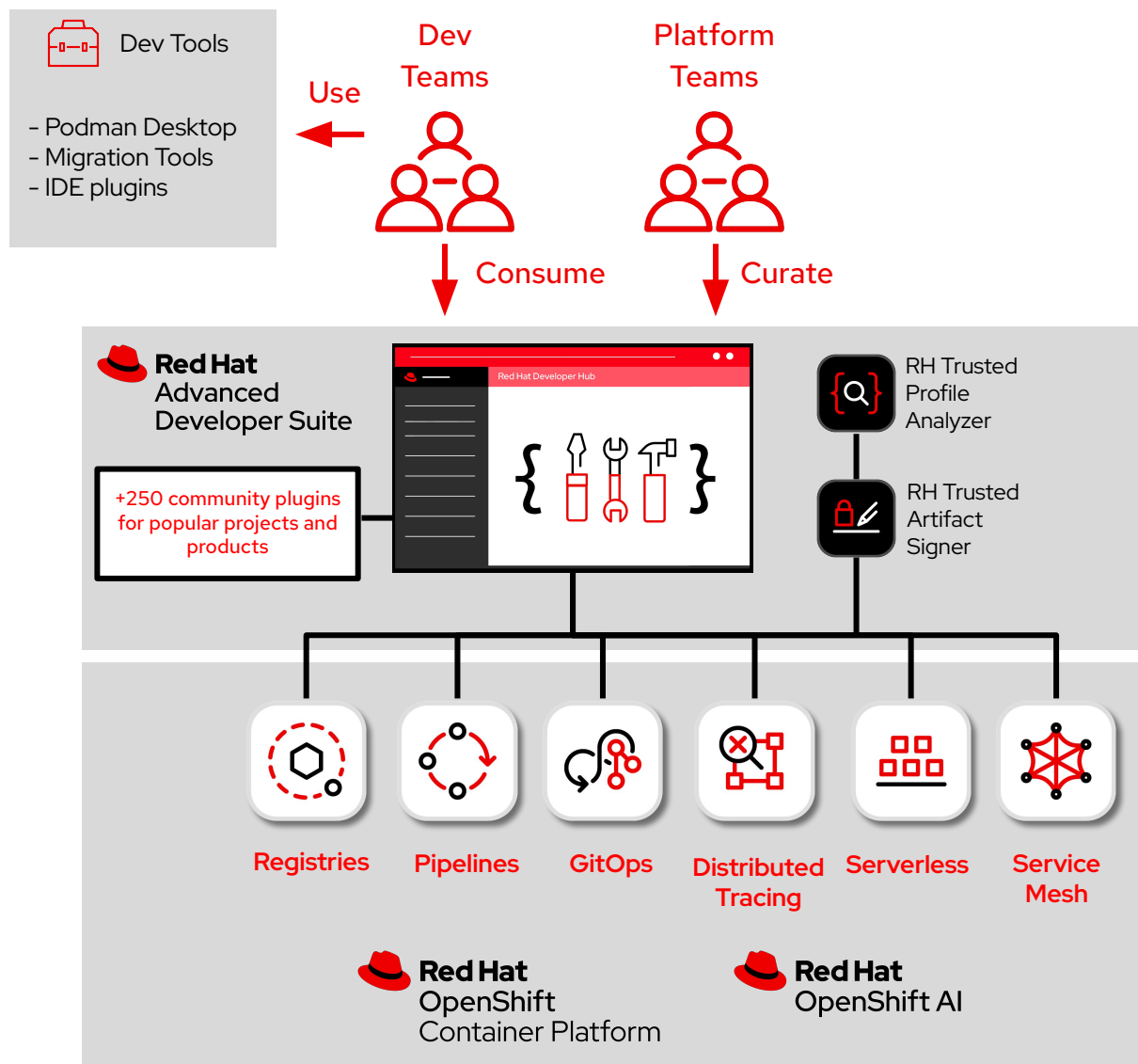


Red Hat Advanced Developer Suite



RHADS combines platform engineering tools with enhanced security capabilities to help accelerate and simplify application development with new enhancements to speed the adoption of AI

- Modular design allows it to be integrated with existing platforms and systems including Red Hat's platforms
- Integrates with existing security capabilities found in Red Hat Advanced Cluster Security
- Complements existing developer tools from Red Hat including OpenShift DevSpaces
- Built on leading open source projects like Backstage and Sigstore



Move Fast, Stay Safe

Red Hat Advanced Developer Suite



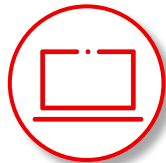
Enable development teams to deliver business value faster

Create an integrated, self-serve developer experience from end to end with **Red Hat Developer Hub**



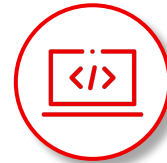
Reduce supply chain security risks across the software development lifecycle

Trust, transparency across devops processes with **Red Hat Trusted Software Supply Chain**



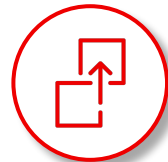
Extend OpenShift experience to developer desktops

Containers and Kubernetes on the desktop with **Podman Desktop** and **OpenShift Local**



Standardize Developer tools

Enable application coding locally on the desktop with **IDE Plugins** and remotely in the browser with **OpenShift DevSpaces**



AI-Accelerated workload migration to OpenShift

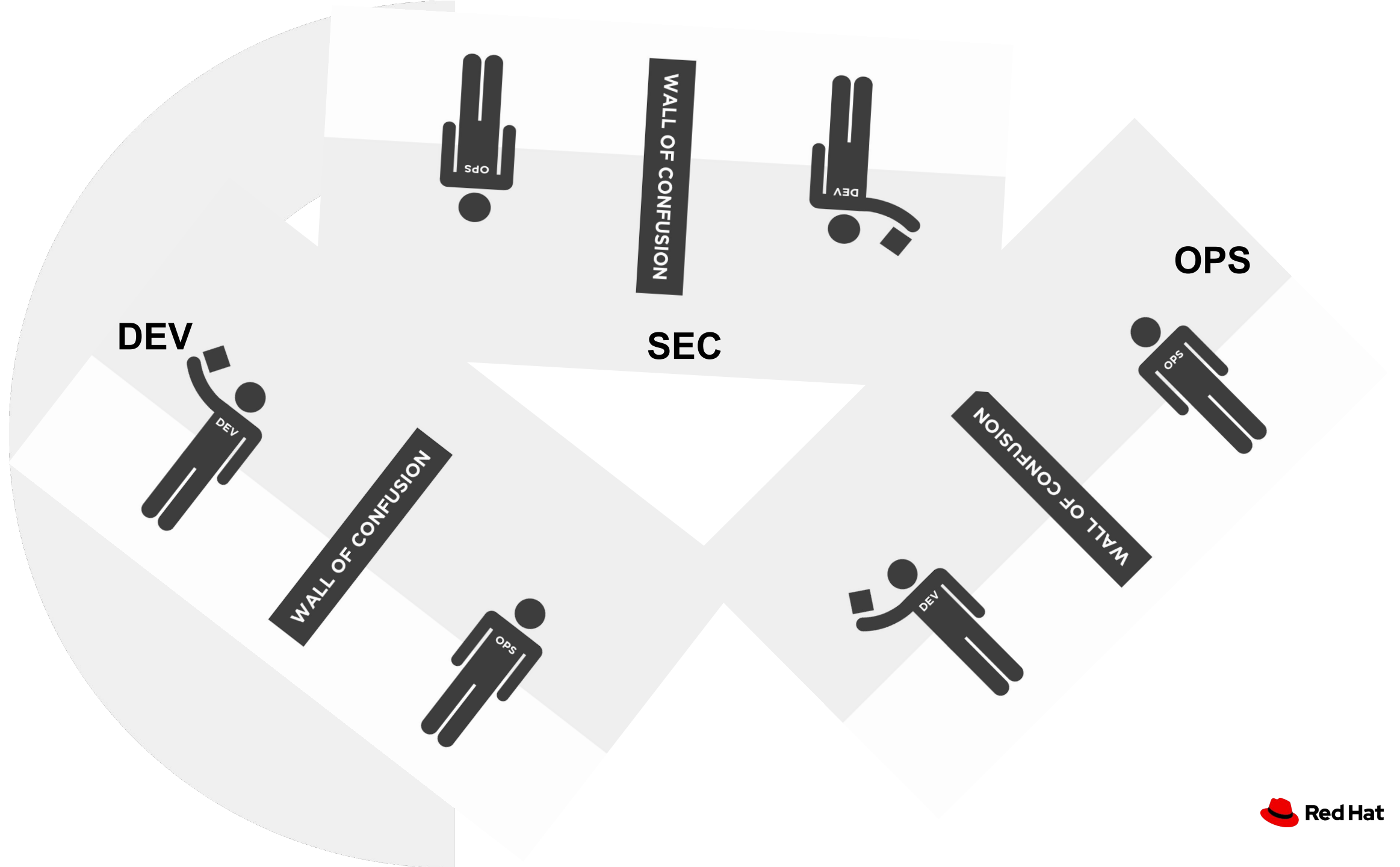
Accelerates large scale migrations and modernization with **migration toolkits**



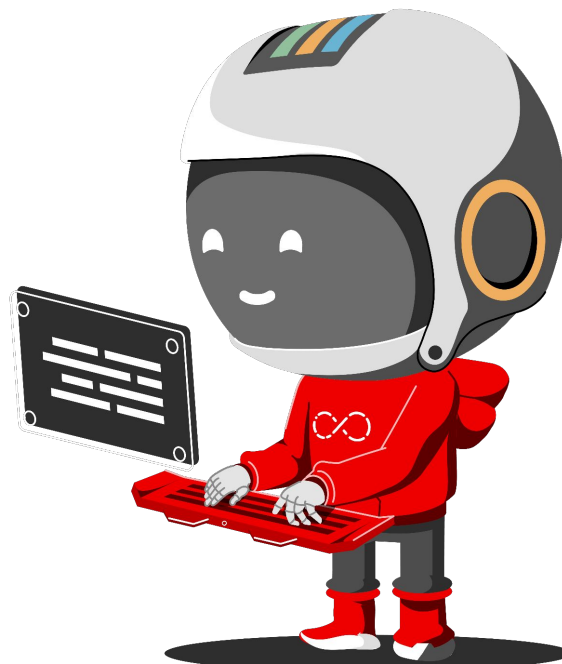
WALL OF CONFUSION







DEMO





Red Hat

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Developer

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