The Dependency Graph
Agenda

Origins
The Dependency Graph
Developer Productivity Impact
The Infra Knowledge Graph
Agenda

Origins

The Dependency Graph
Developer Productivity Impact
The Infra Knowledge Graph
Dependency Hell

Developers
Origins

The Dependency Graph

Developer Productivity Impact

The Infra Knowledge Graph
Software Dependency Graph

Project A

Lib B

Project B
Challenges

Lack of uniformity
Scale of rollout
Accurate, Up to Date, Complete
Challenges

Lack of uniformity
Scale of rollout
Accurate, Up to Date, Complete
Challenges

Lack of uniformity
Scale of rollout
Accurate, Up to Date, Complete
Control Plane

Unified Build

Build → Test → Promote → Deploy
Control Plane

Unified Build
Dependency Graph
Dependency Graph

Build Scans
Build Runtime Metadata
Build Runtime Metadata

Plugins
Build Runtime Metadata

Plugins

Conflict Resolution
Build Runtime Metadata

Plugins

Conflict Resolution

Project Info
Dependency Toolbox
Dependency Toolbox

Automator

Analyzers
Dependency Toolbox

Automator

Analyzers

Dashboards
Origins
The Dependency Graph
Developer Productivity Impact
The Infra Knowledge Graph
Informed Decision Making
Informed Decision Making

Which projects utilize my library?
Informed Decision Making

Which projects utilize my library?
What versions of my library are in active use?
Informed Decision Making

Which projects utilize my library?
What versions of my library are in active use?
Which project generates a specific library?
Automated Dependency Updates
Automated Dependency Updates

Code Maintenance
Automated Dependency Updates

Code Maintenance

Canary Testing
Software Upgrades
Software Upgrades

75%

Day 1
Gradle Upgrades
Software Upgrades

75% 6

Day 1 Gradle Upgrades

Months Shortened Java Upgrades
Origins

The Dependency Graph

Developer Productivity Impact

The Infra Knowledge Graph
Infra Knowledge Graph

Dependency Graph
Key Lessons

Standardization
Control Plane
Global Visibility
Audit Trail
Treasure Chest of Metadata
Key Lessons

Standardization
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Treasure Chest of Metadata
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- Standardization
- Control Plane
- Global Visibility
- Audit Trail
- Treasure Chest of Metadata
Key Lessons

Standardization
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Treasure Chest of Metadata