Using Modern Practices and Tools to Operate Networking in the Cloud

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Cloud Networking. ***Simplified.***

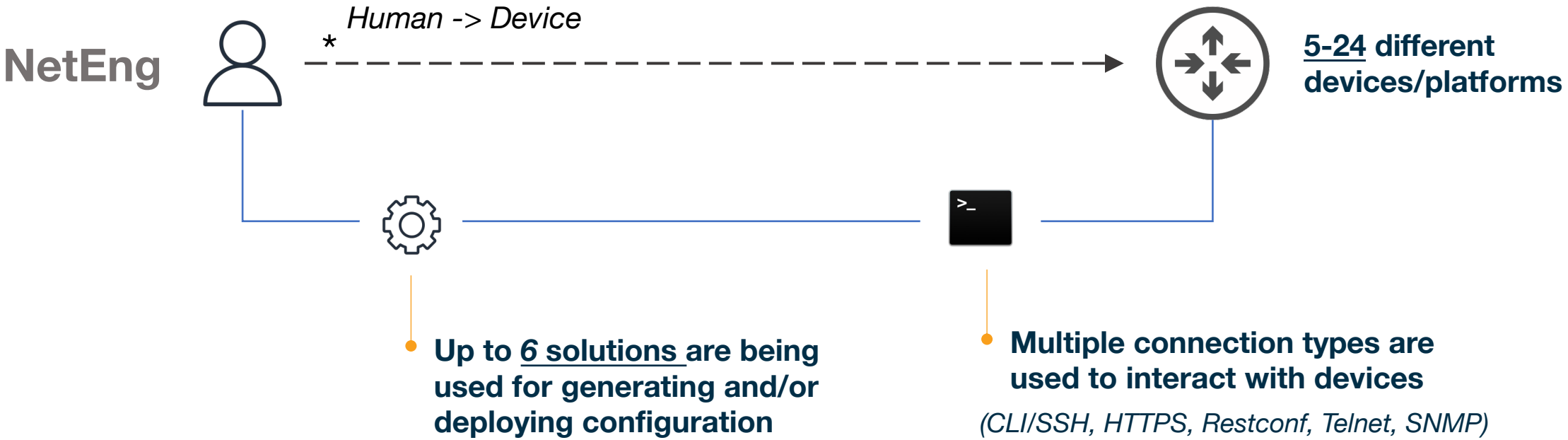
Network Management Historically

Network Management *(Historically)*

Complex dictionary.com

"characterized by a very complicated or involved arrangement of parts, units, etc"

NetDevOps - Survey

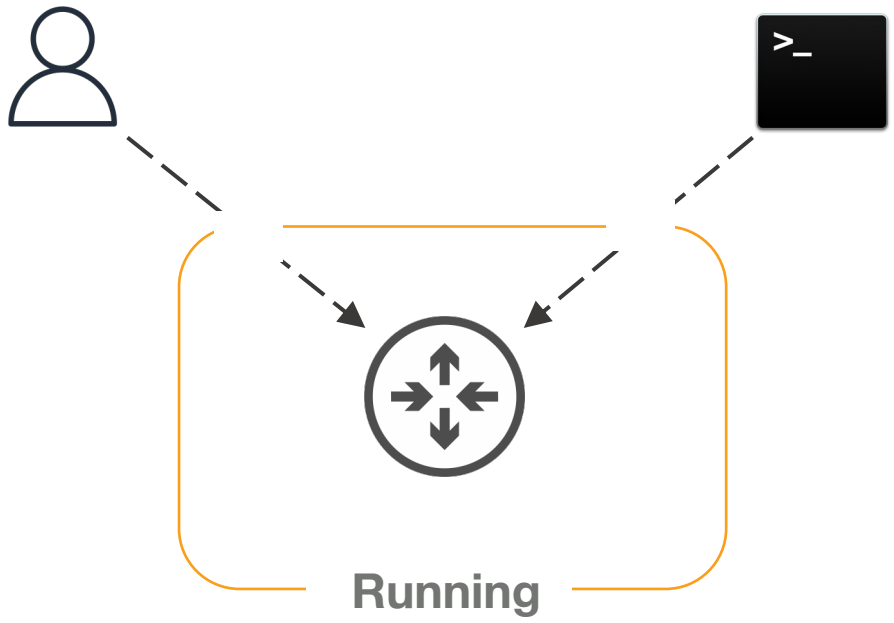


Network Management *(Historically)*

Runtime Automation *(Mutable)*

Deploy

Procure hardware, install / cable, and apply a base configuration



Automate

Configure, update, and modify network infrastructure *“in-place”*

Managing Cloud Networks
(Infrastructure-as-Code)

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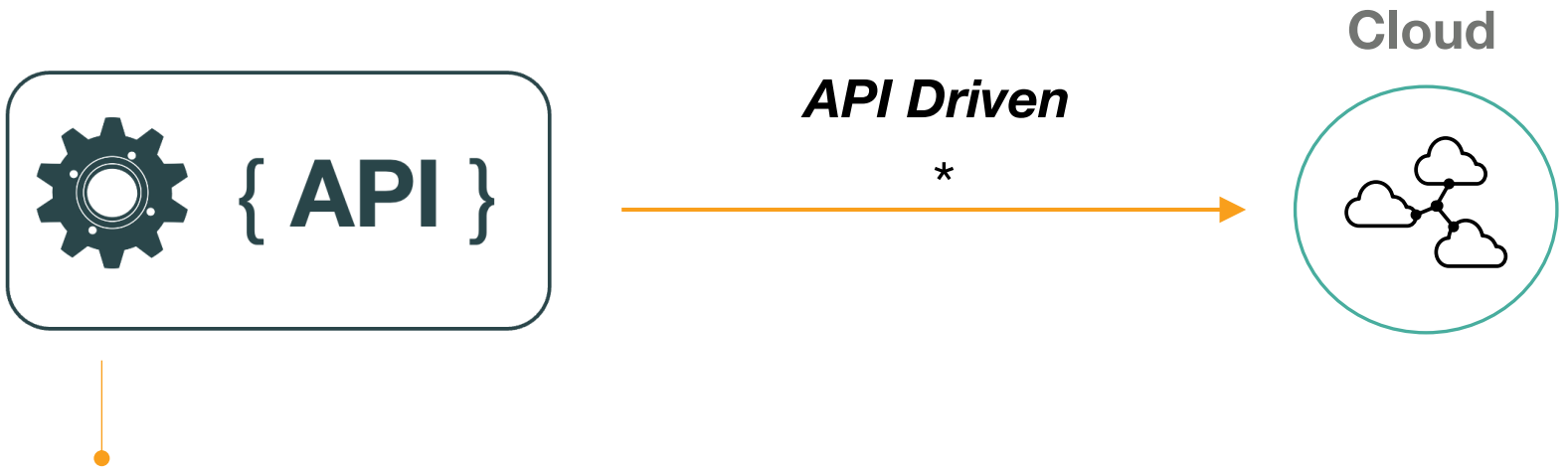
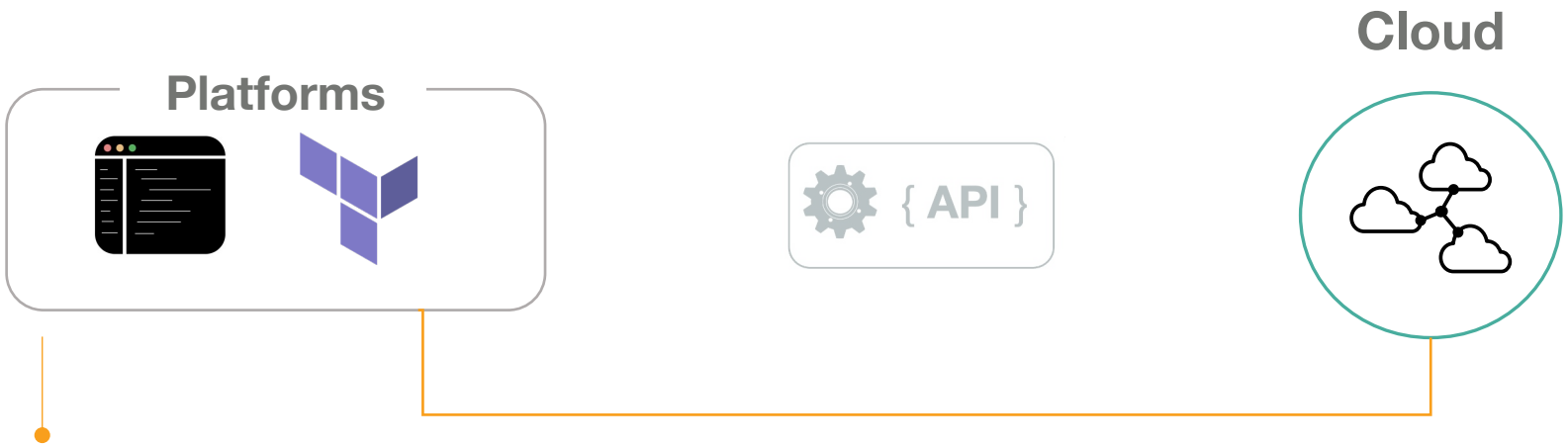
Network Management *(Cloud)*

New Connection Method



Network Management *(Cloud)*

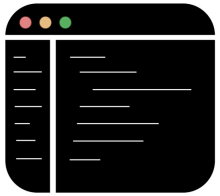
Additional Abstractions



Terraform Providers are a logical abstraction of the upstream API

Network Management *(Cloud)*

Build-Time Automation *(Immutable)*



Codify

Describe the constructs and configuration using code files at *build-time*

Version *(git)*

Track, stage, and promote changes with consistency

CI/CD

Deploy networking “in-tact” using repeatable pipelines

Change Management

Traditional

- Oversight of changes to manually configured networks *(pre-cloud)*
- Ticket-Driven with a lengthy vetting process and extensive coordination
- Numerous teams receive tickets with varying dependencies / SLAs

Modern

- Oversight of changes to networks made via automation *(post-cloud)*
- Pipeline-Driven with automated and manual approvals
- Increased number of changes with smaller impact completed routinely

Network-*as-a-Service*

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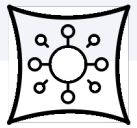
Building a Common *Foundation*

NaaS

Operate networking without the necessity of deploying and maintaining network infrastructure



Cloud

Sites

Users

Building a Common *Foundation*

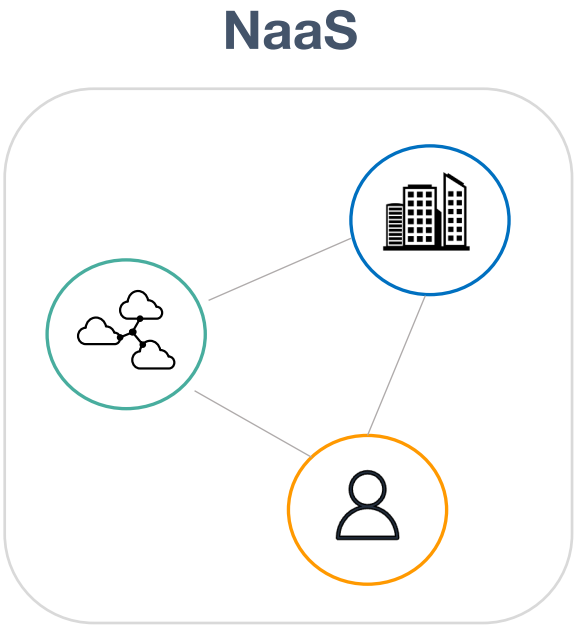
Cloud Grade

Minimize operational friction by reducing touchpoints and interaction surfaces

Push

Pull

Provision



Let’s Build!

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