


Zero Trust Networks

Evan Gilman



About Me



 @evan2645



Agenda

The Problem

What is Zero Trust?

Implementations

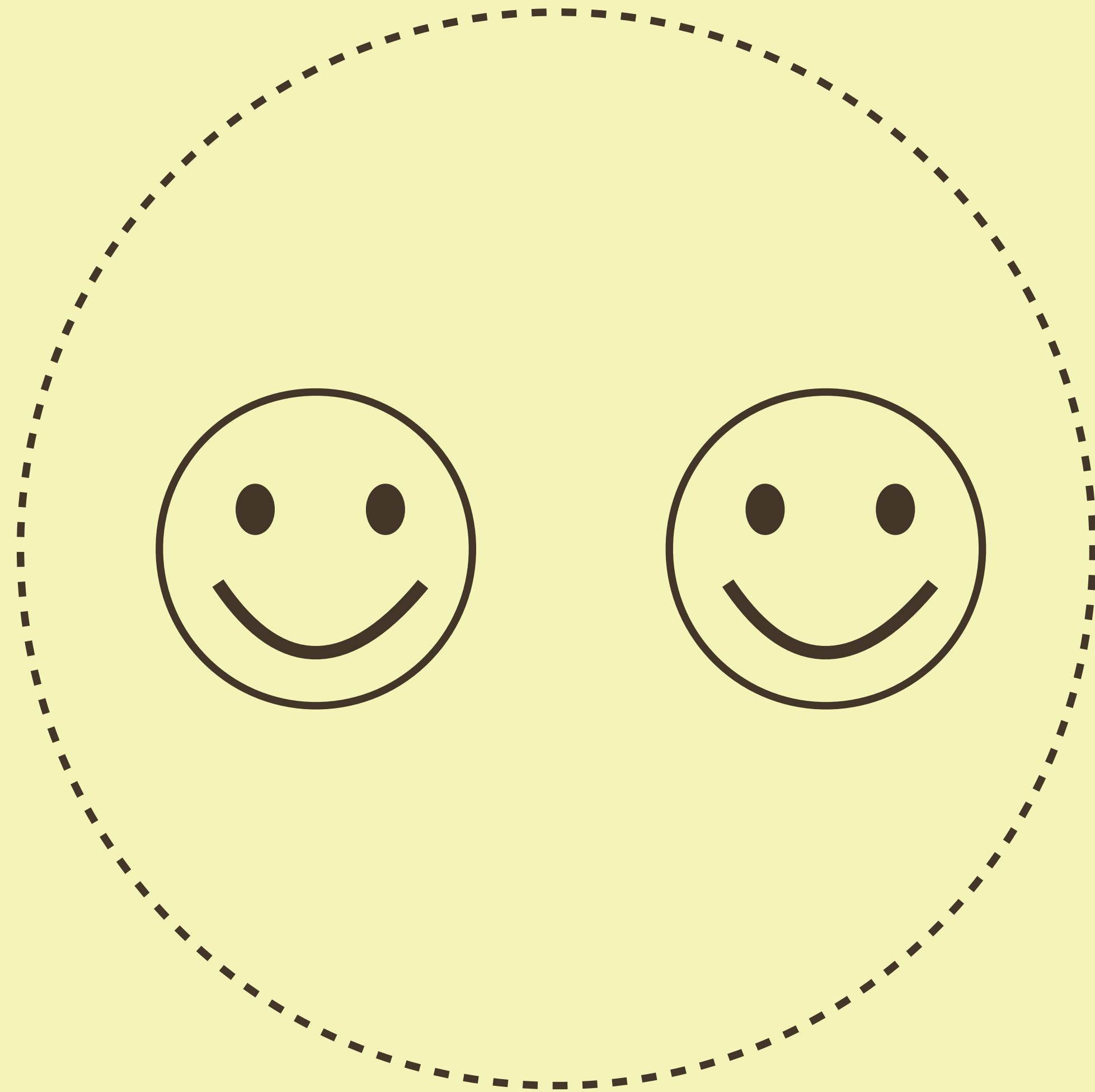
State of the Union



The Problem



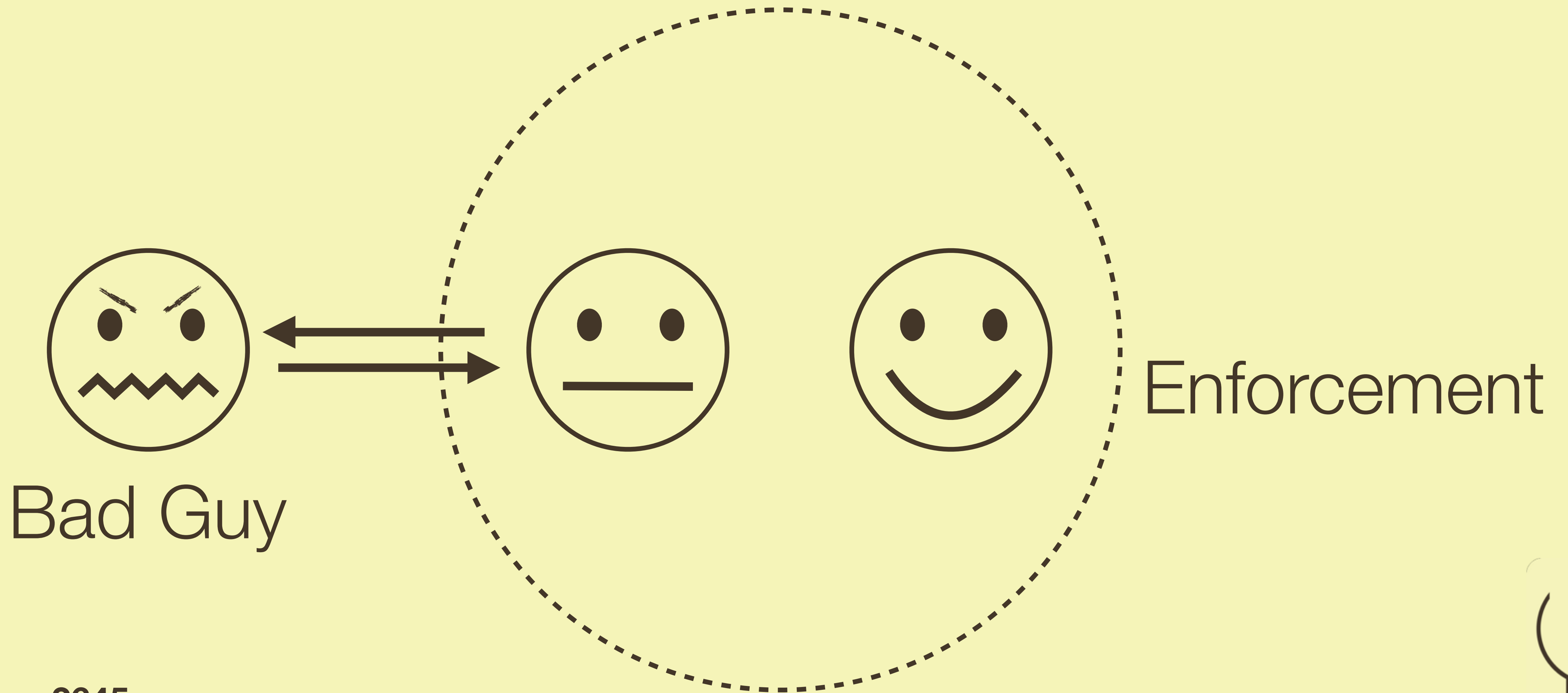
Users feel safe inside



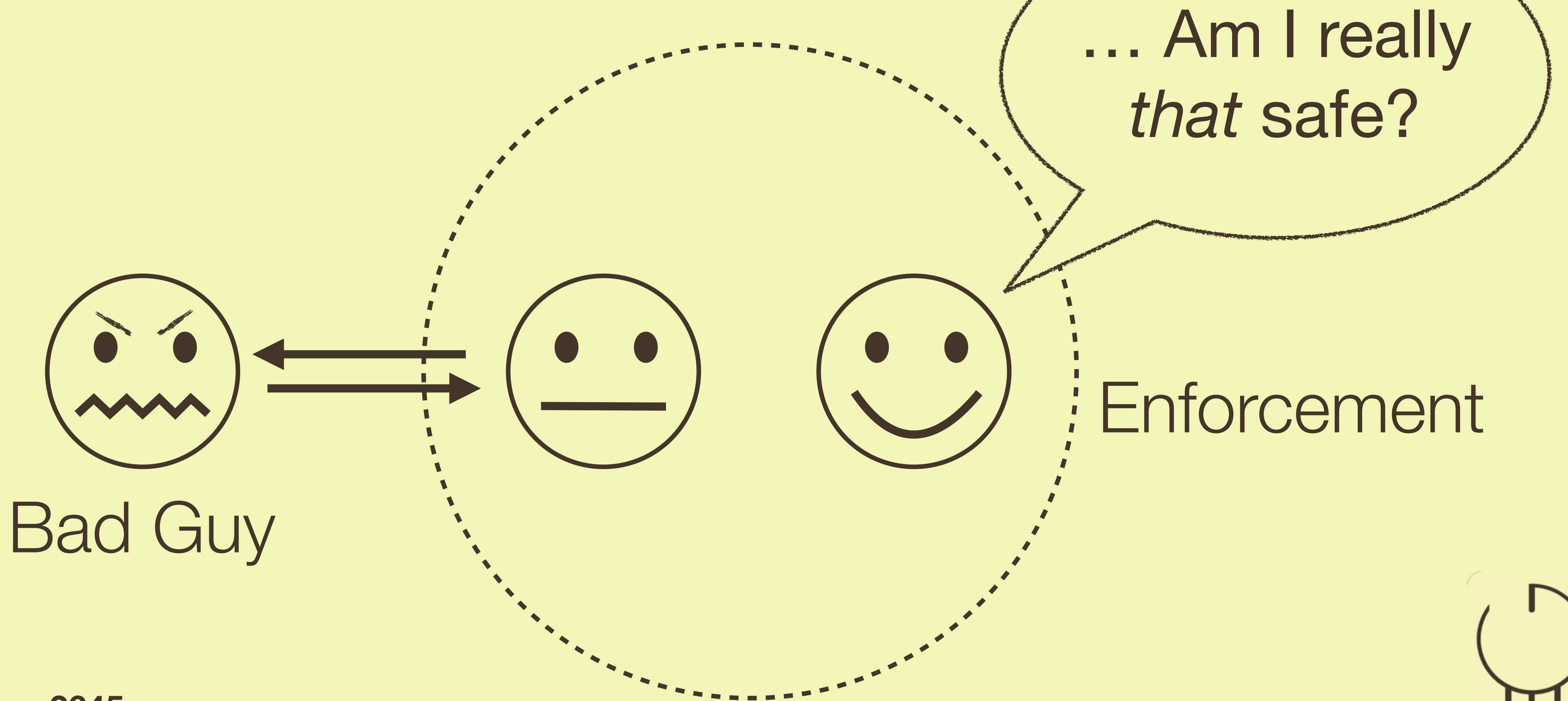
Enforcement



Even if they are not



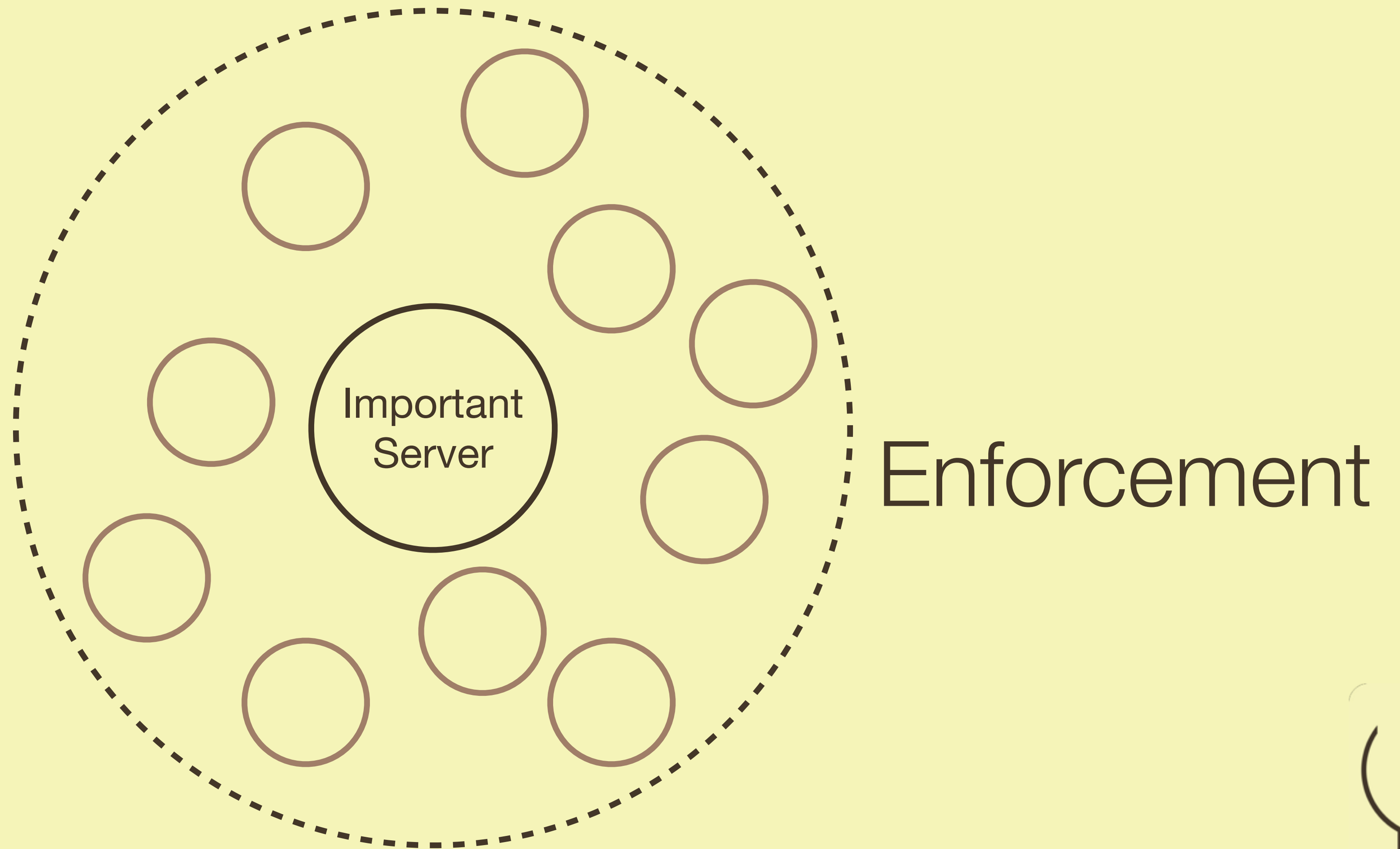
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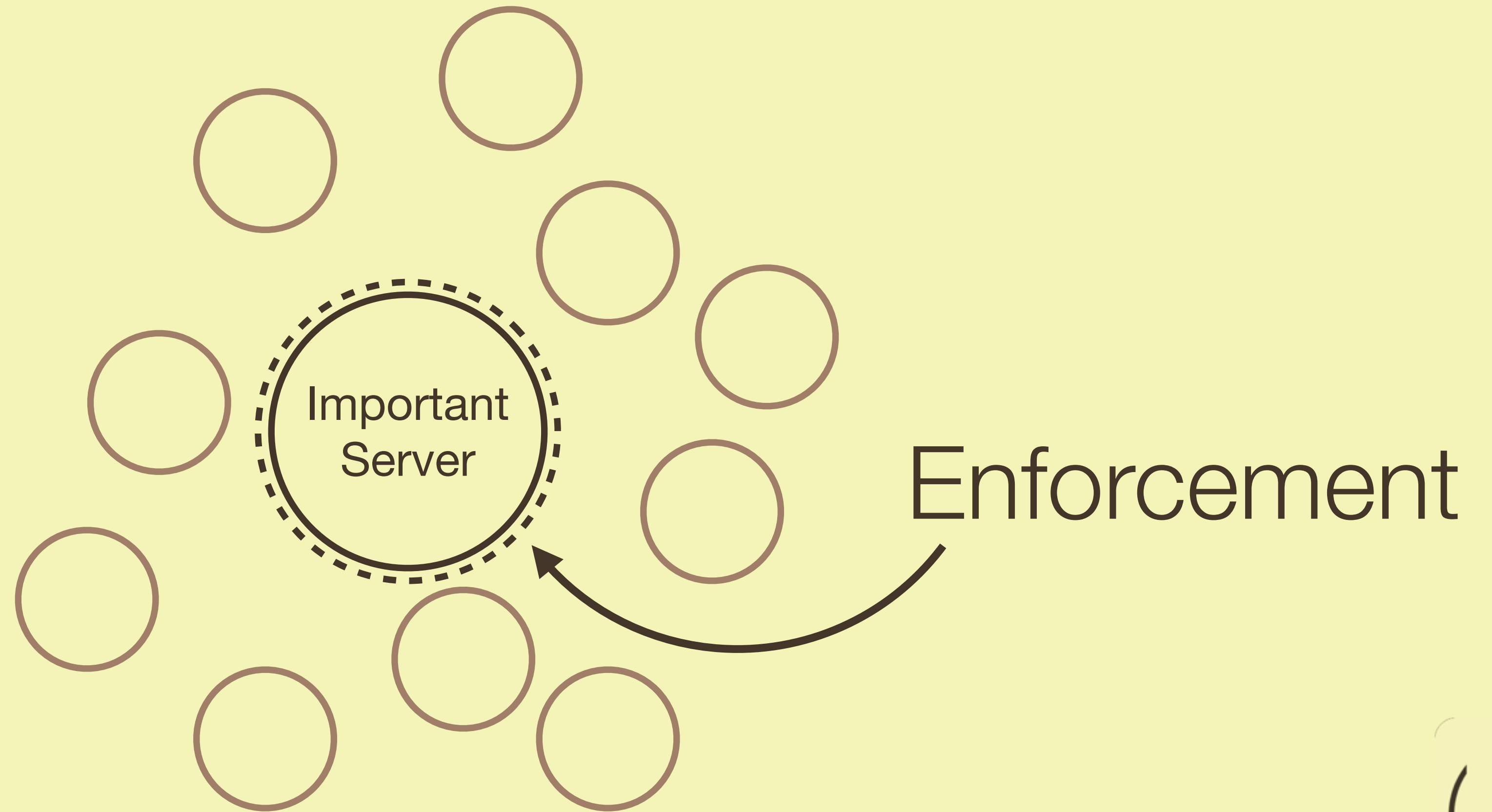
What Are We Protecting?



Common Sense Security



Common Sense Security



What is Zero Trust?



What is Zero Trust?



What is a Zero Trust Network?

No Pools of Trust

Internet Security Everywhere

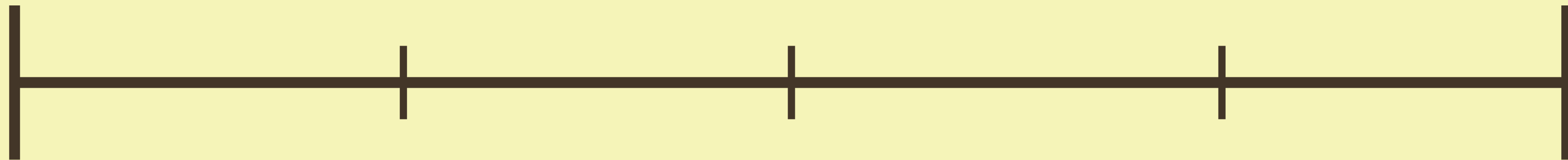
All Flows Strongly Authenticated + Authorized



Zero Trust Networks

Required

Optional



Primitive

Advanced



Manifestation



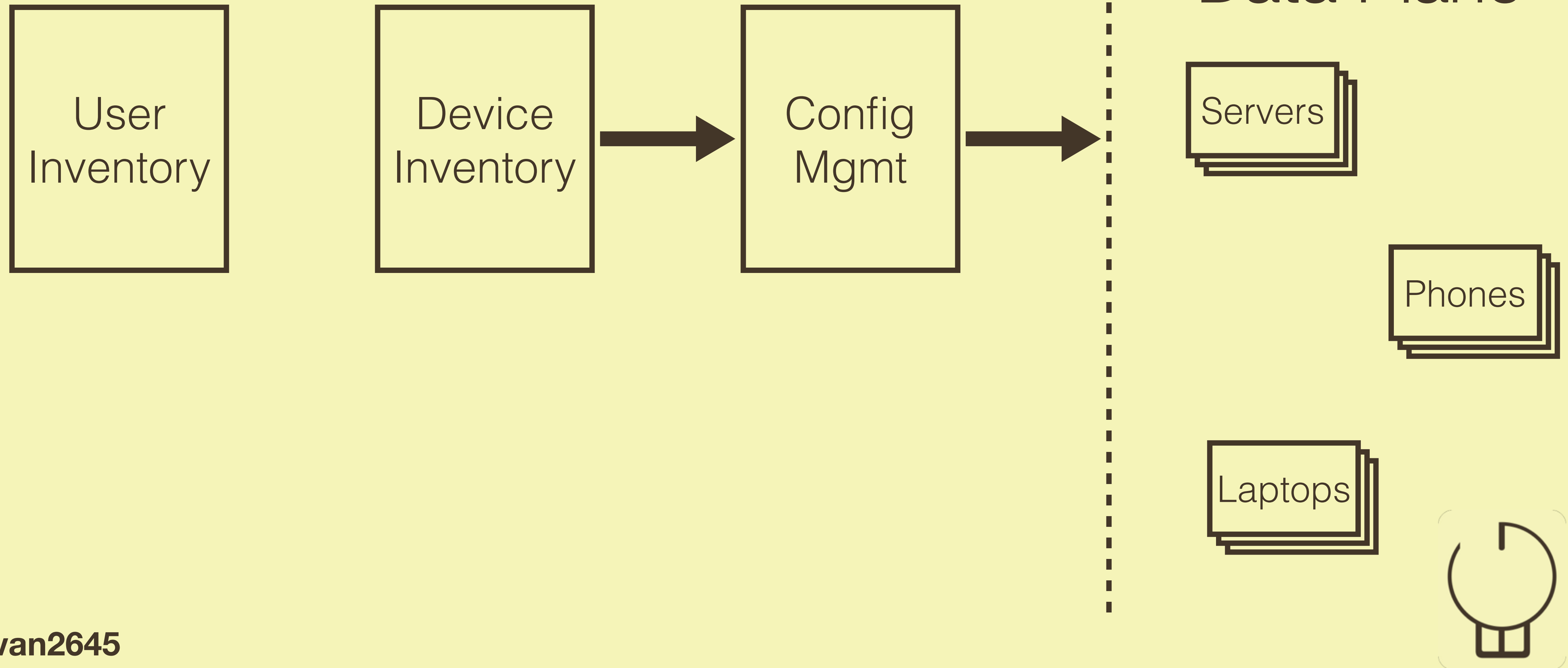
Control Plane Services



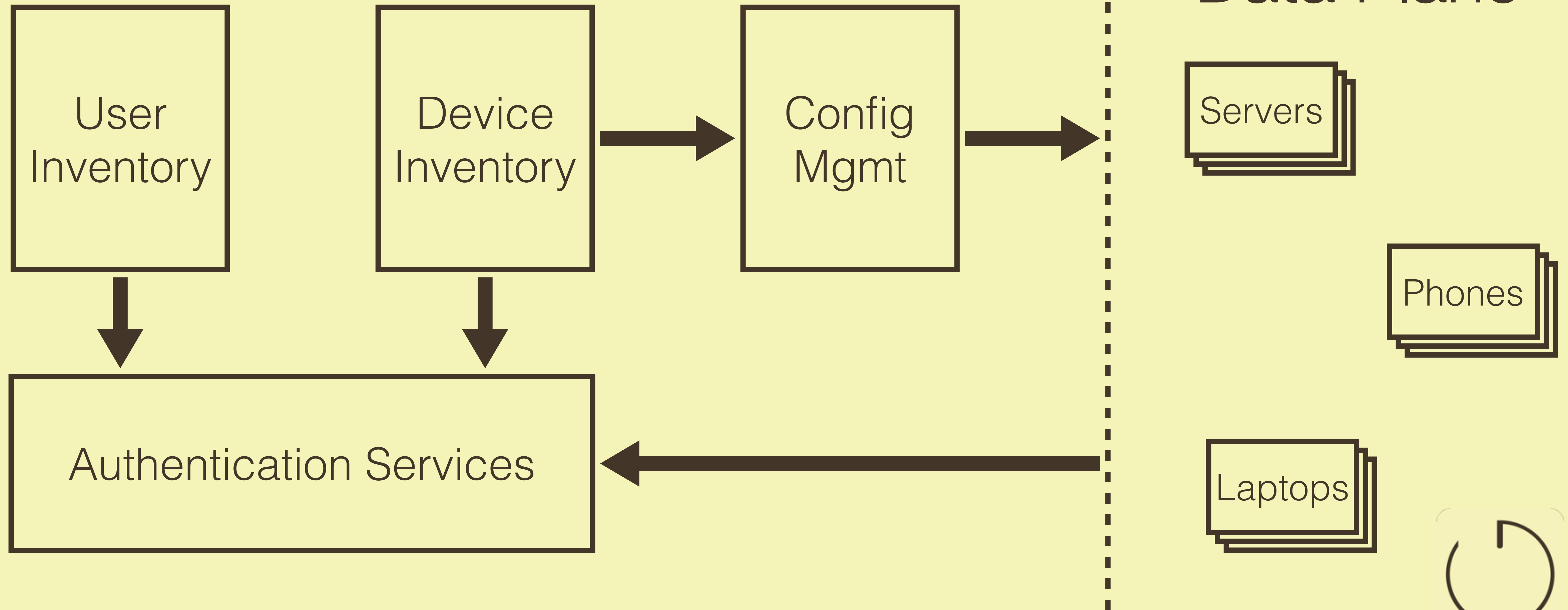
Data Plane



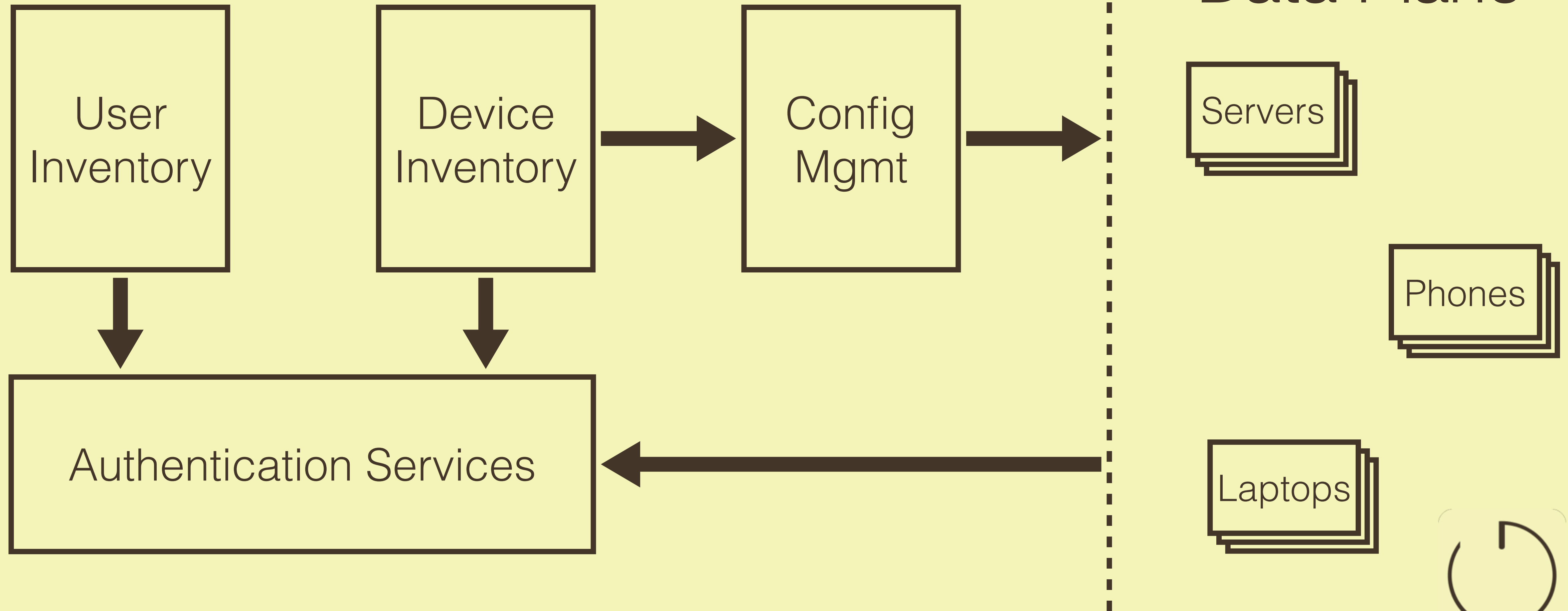
Control Plane Services



Control Plane Services



Control Plane Services



Examples



Server-Side



PagerDuty

Multiple Cloud Providers



PagerDuty

Multiple Cloud Providers



PagerDuty

Multiple Cloud Providers

Cross-WAN



PagerDuty

Multiple Cloud Providers

Cross-WAN

Strong Authenticity + Privacy



PagerDuty

Multiple Cloud Providers

Cross-WAN

Strong Authenticity + Privacy

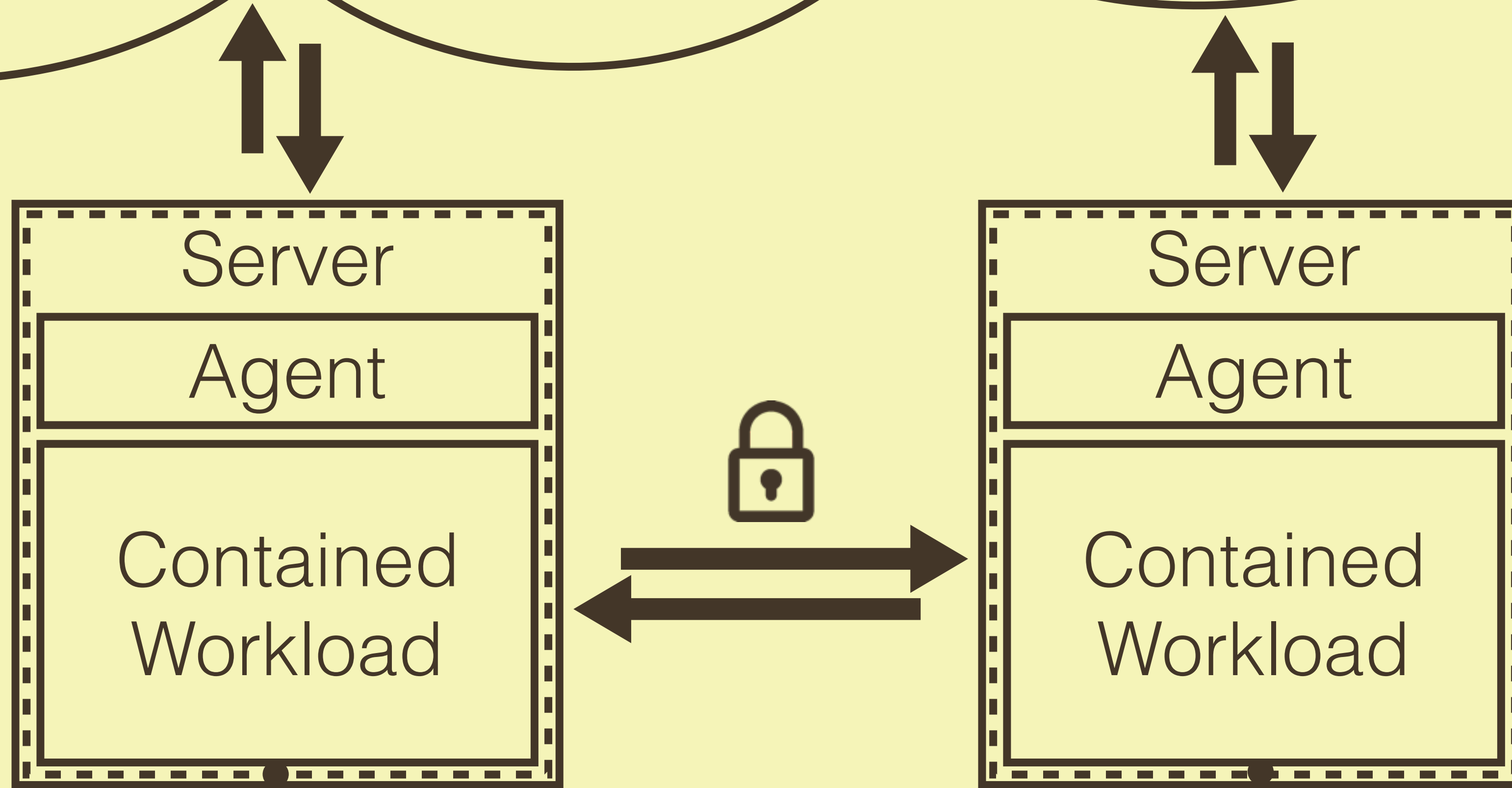
Topology-Manager



Topology-Manager

Control Plane

Data Plane



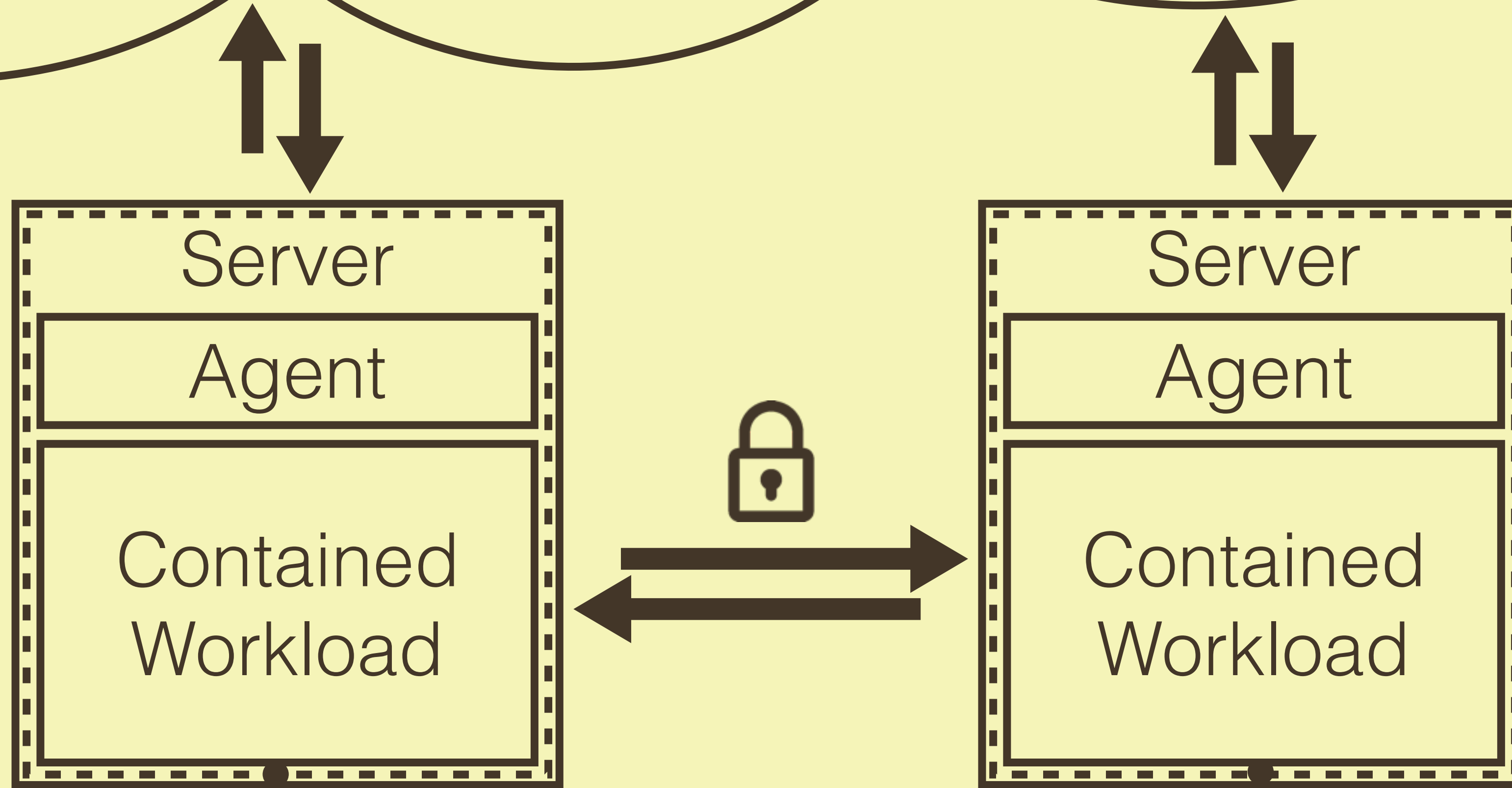
Enforcement



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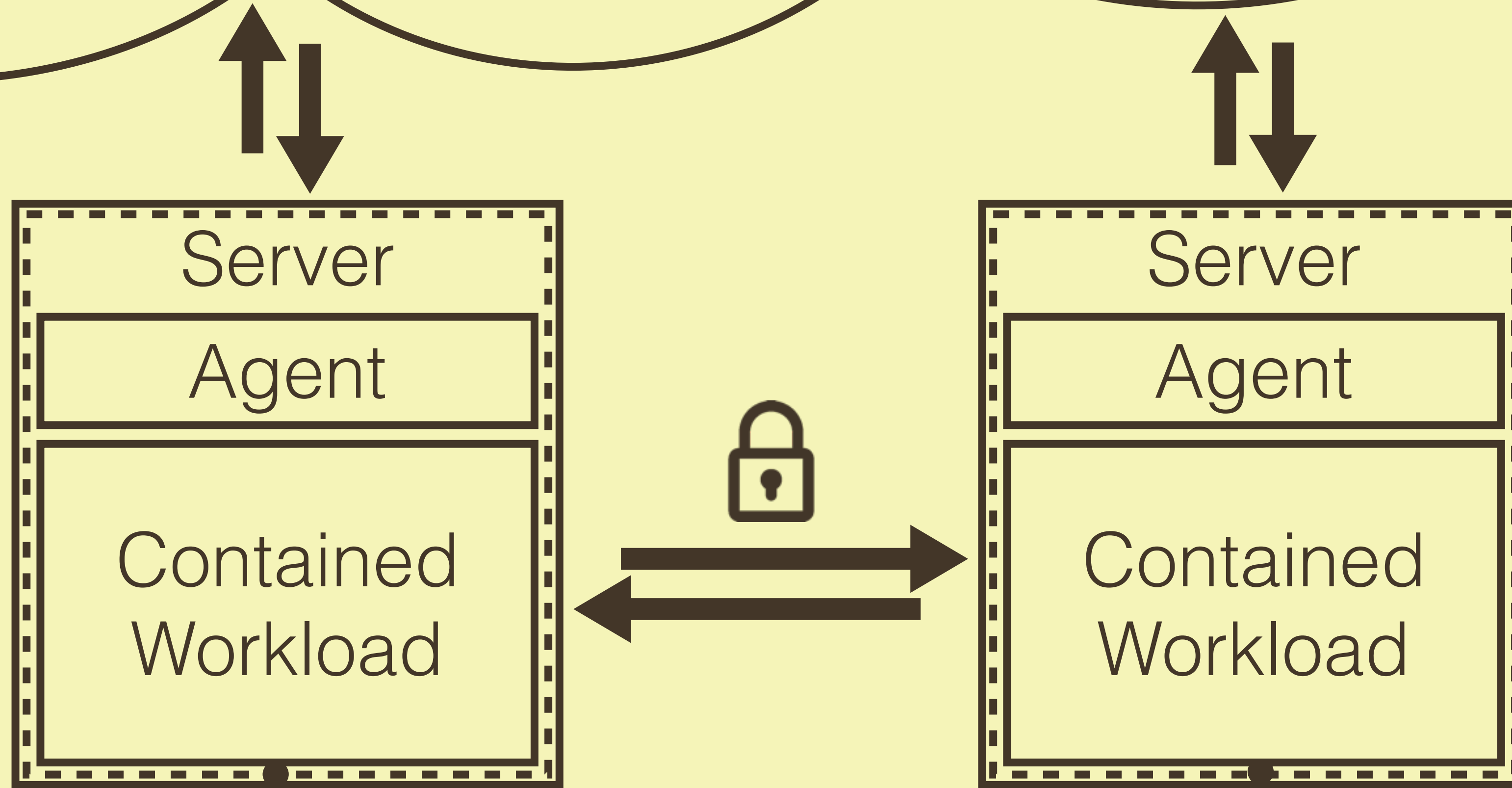
Data Plane



Topology-Manager

Control Plane

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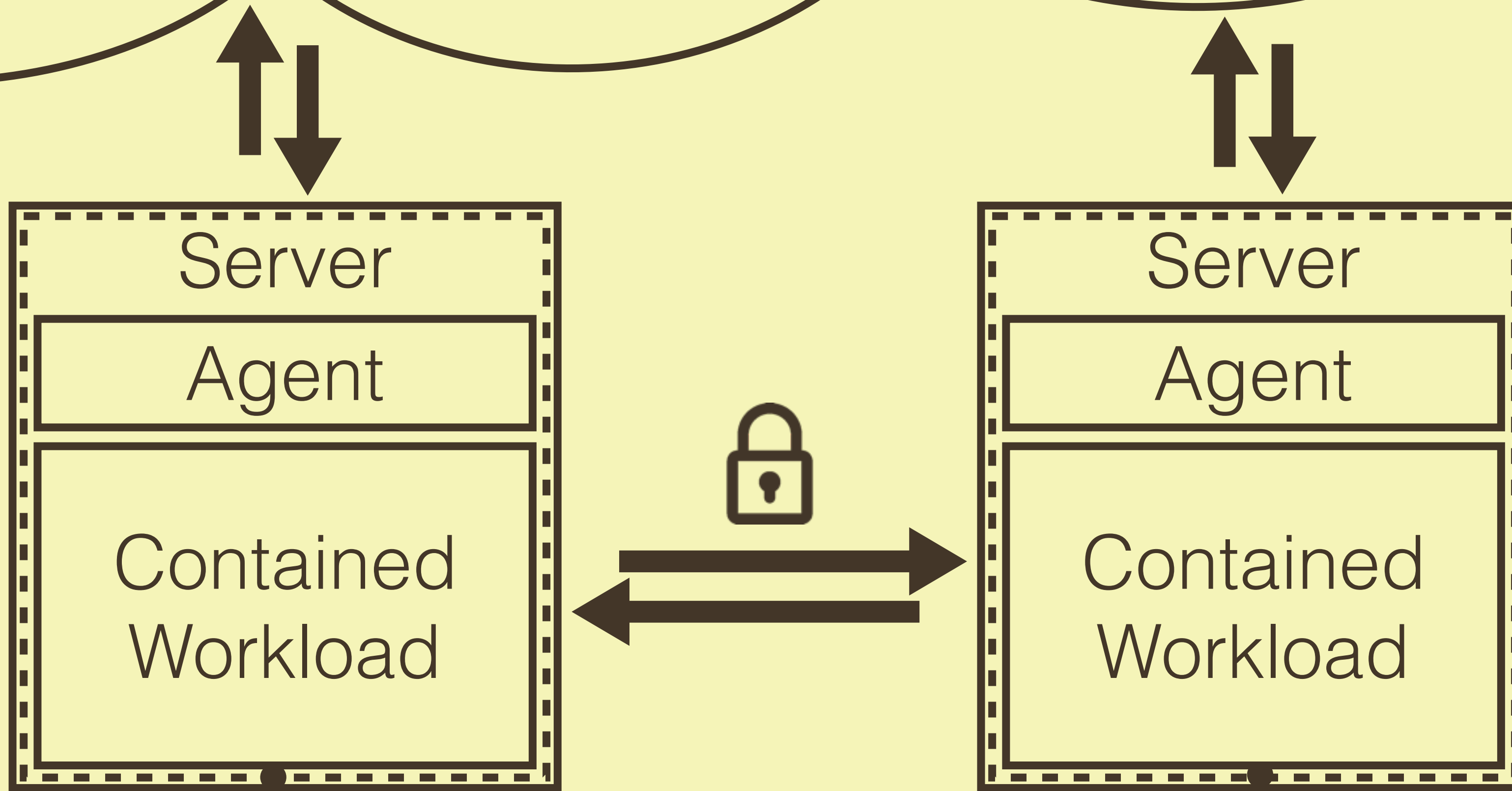
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Control Plane

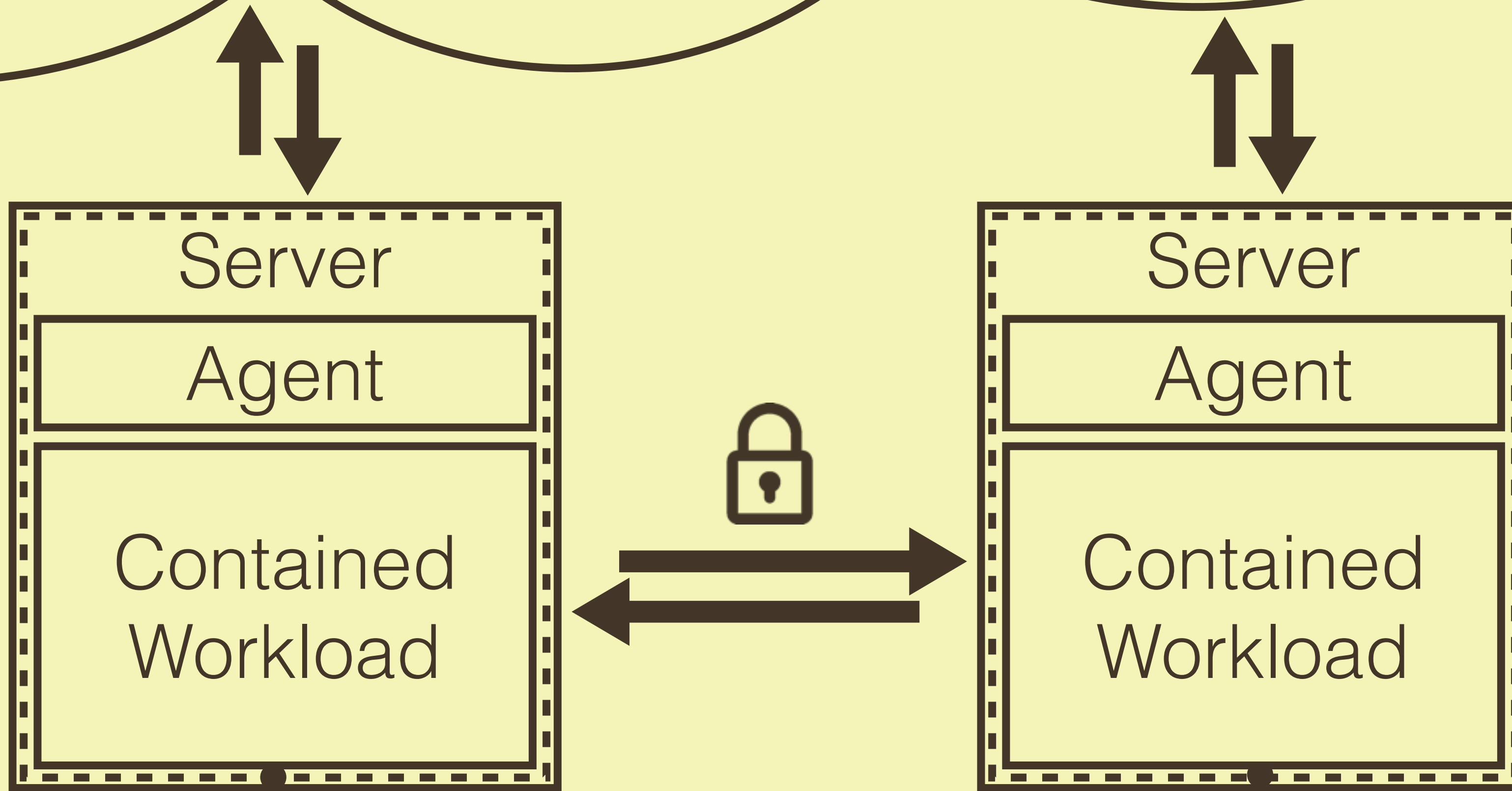
Data Plane



Topology-Manager

Control Plane

Data Plane



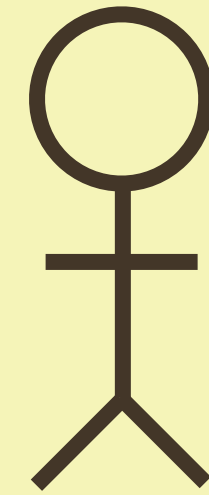
Topology-Manager

Control Plane

Data Plane



Topology-Manager



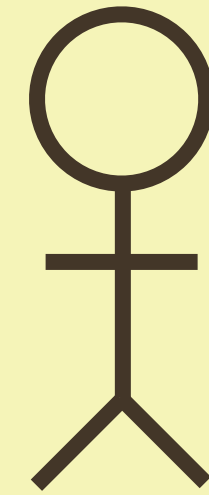
Authorized User

Control Plane

Data Plane



Topology-Manager



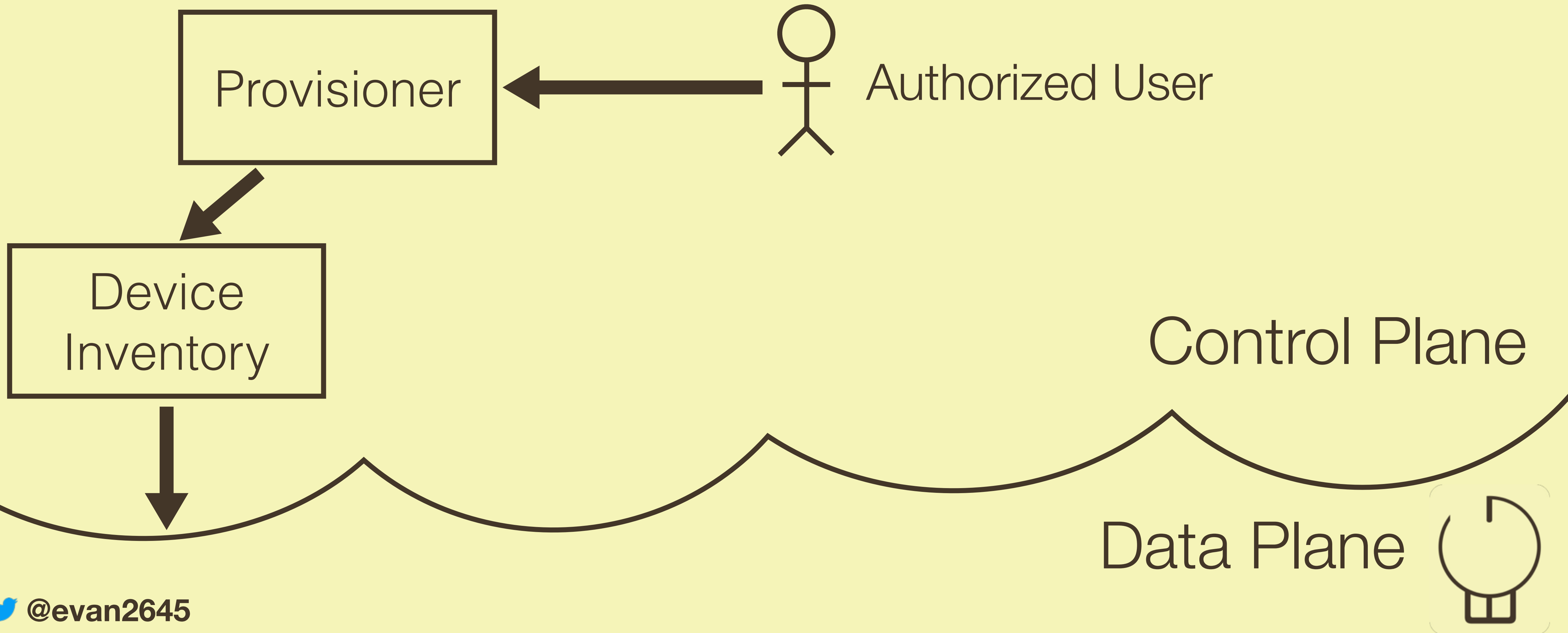
Authorized User

Control Plane

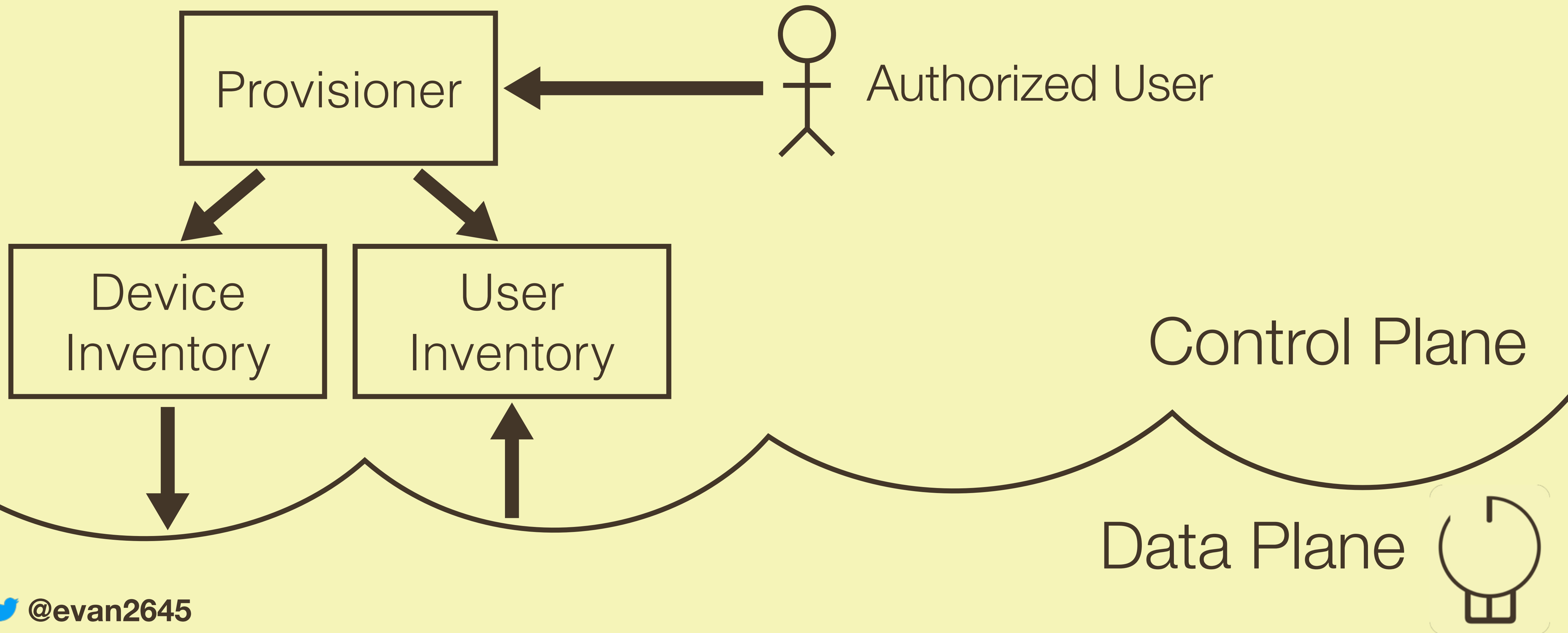
Data Plane



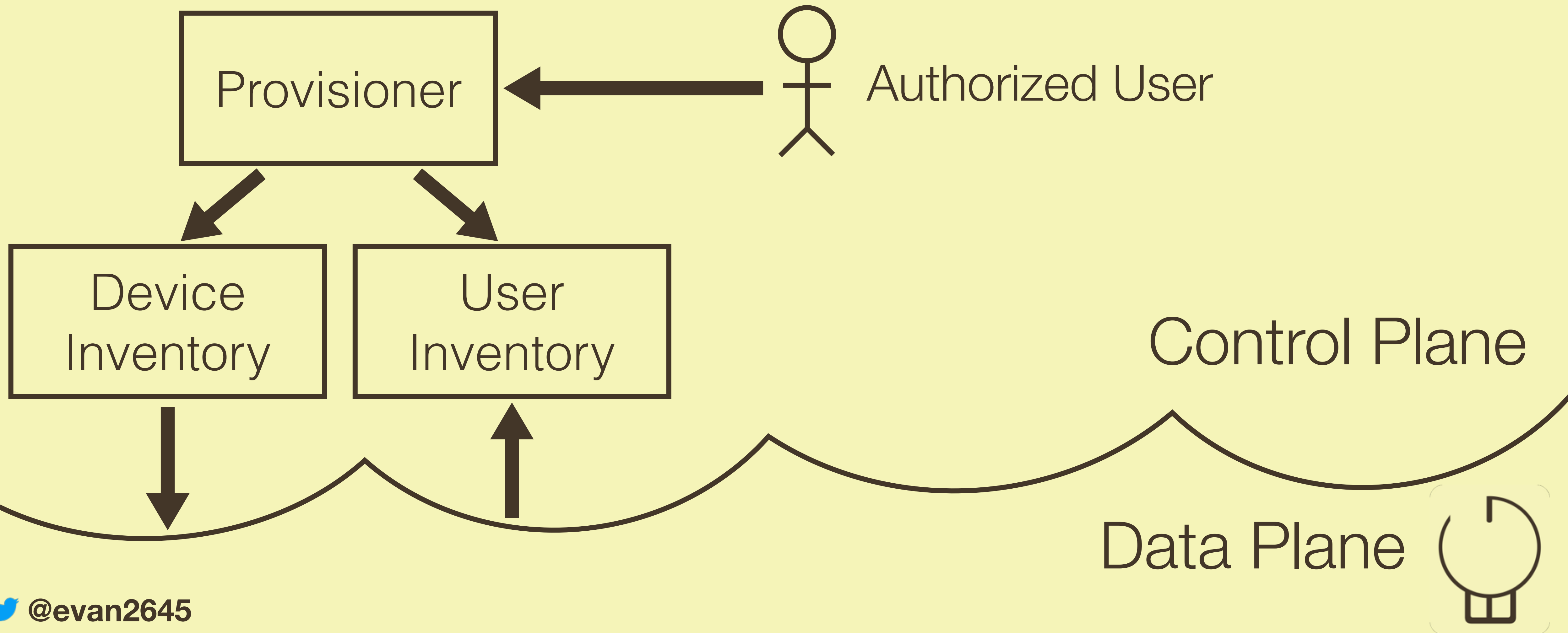
Topology-Manager



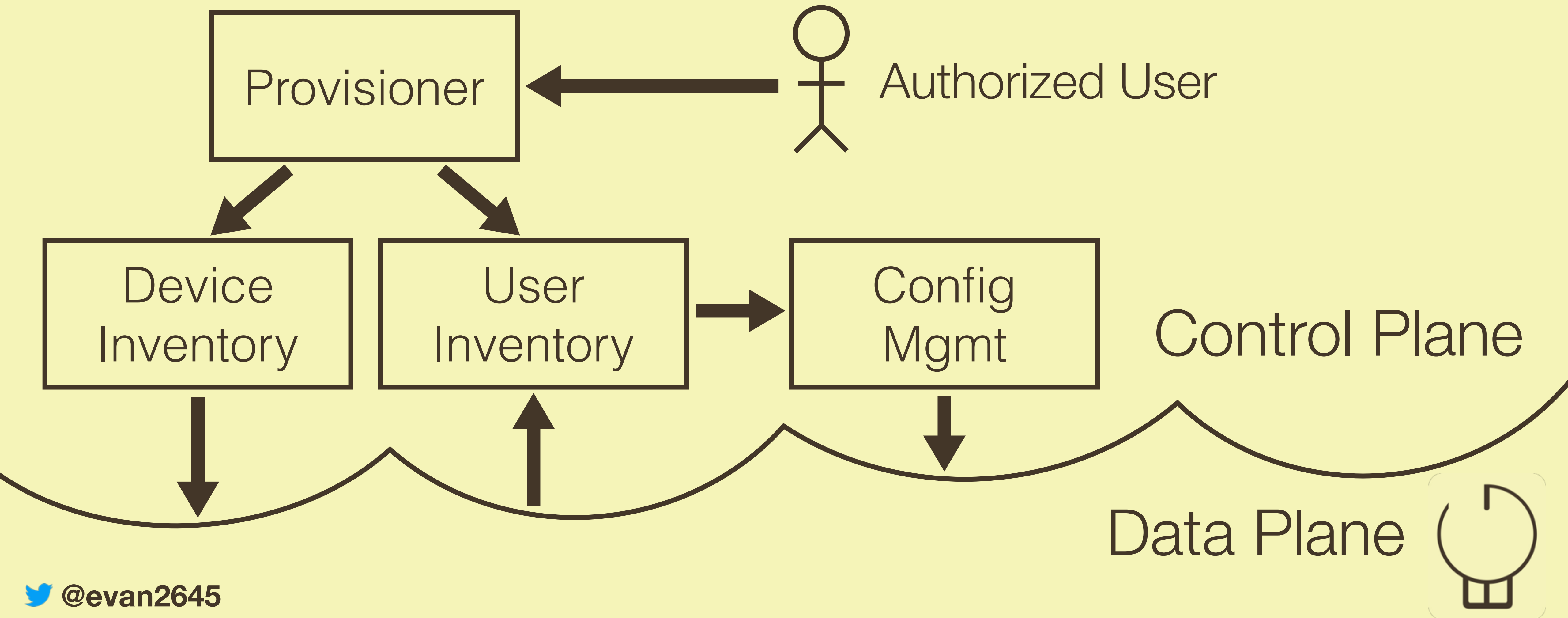
Topology-Manager



Topology-Manager



Topology-Manager



Topology-Manager

No Trust In Network



Topology-Manager

No Trust In Network

Compute Can Be Bootstrapped Anywhere



Topology-Manager

No Trust In Network

Compute Can Be Bootstrapped Anywhere

All Flows Get Strong AuthN/AuthZ



Client-Side



Client-Side



Client-Side



Google

Large Network, Large Perimeter



Google

Large Network, Large Perimeter

Many Remote Employees



Google

Large Network, Large Perimeter

Many Remote Employees

Perimeter + Remote Access Untenable



Google

Large Network, Large Perimeter

Many Remote Employees

Perimeter + Remote Access Untenable

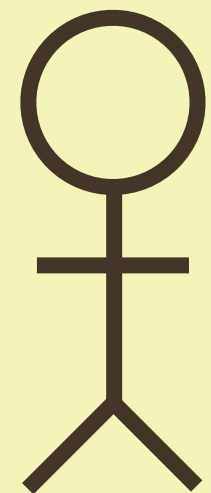
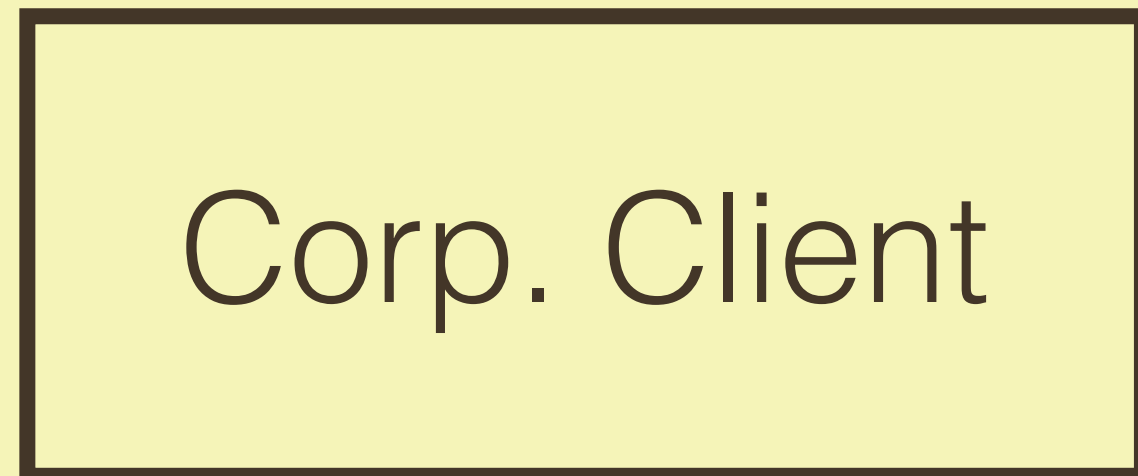
BeyondCorp



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Control Plane

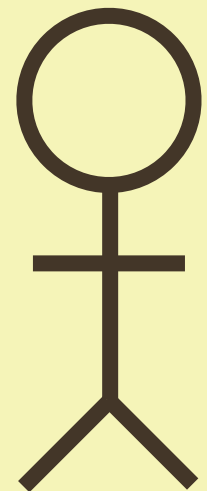
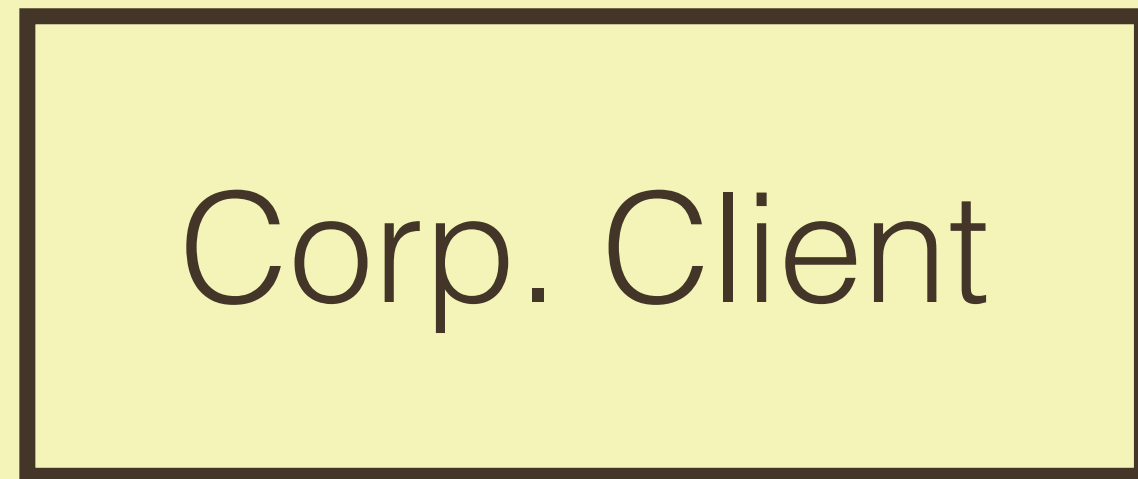
Data Plane



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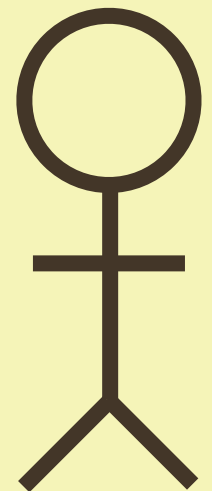
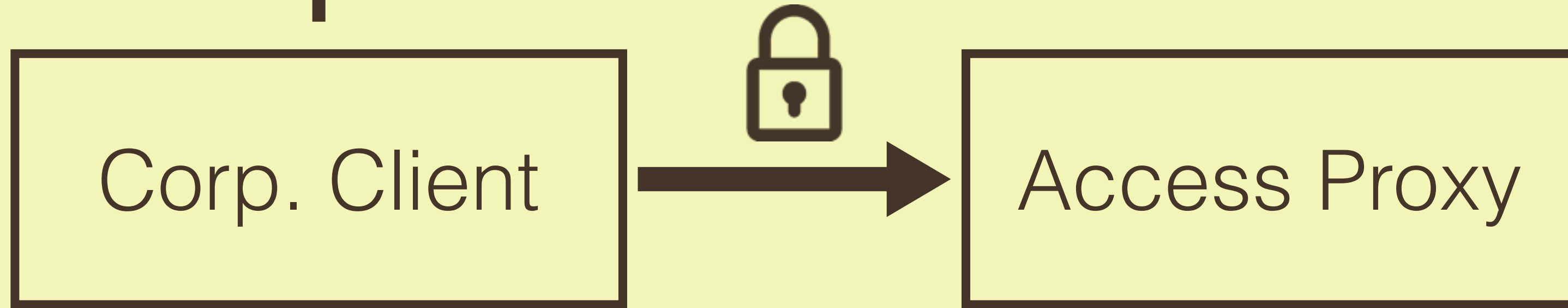
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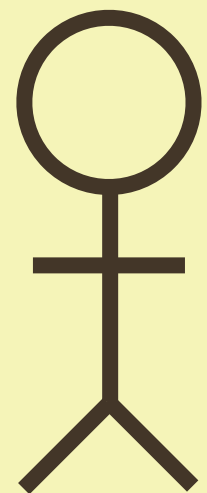
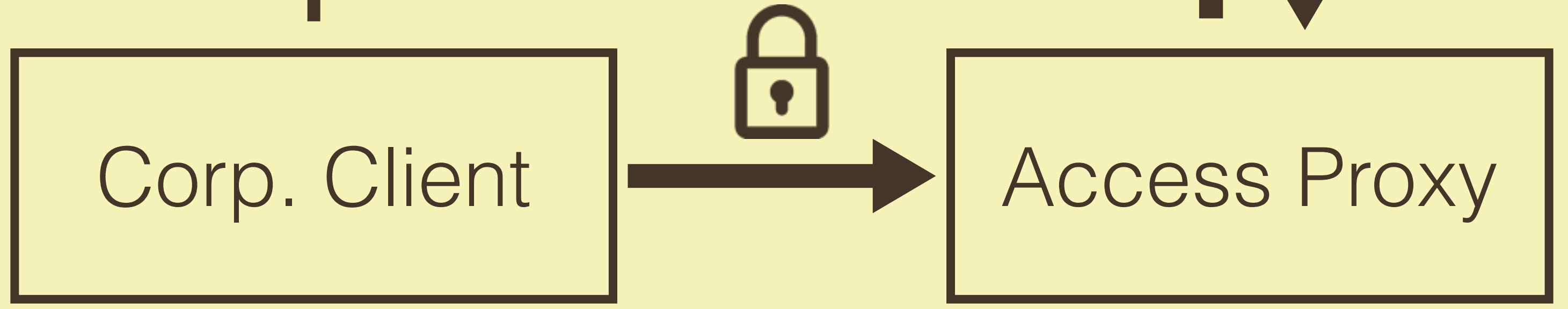
Data Plane



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Control Plane

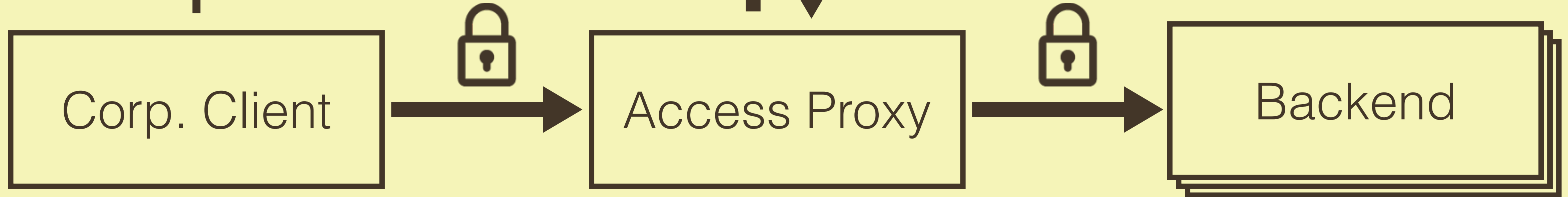
Data Plane



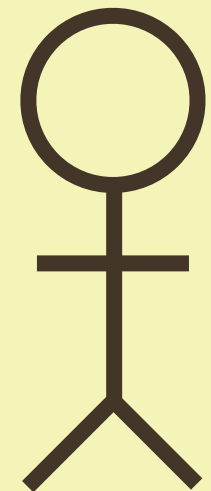
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Control Plane

Data Plane



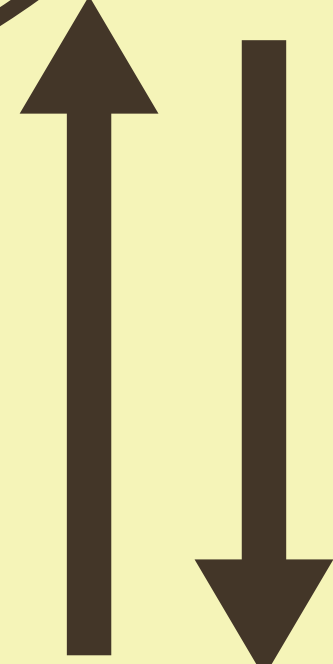
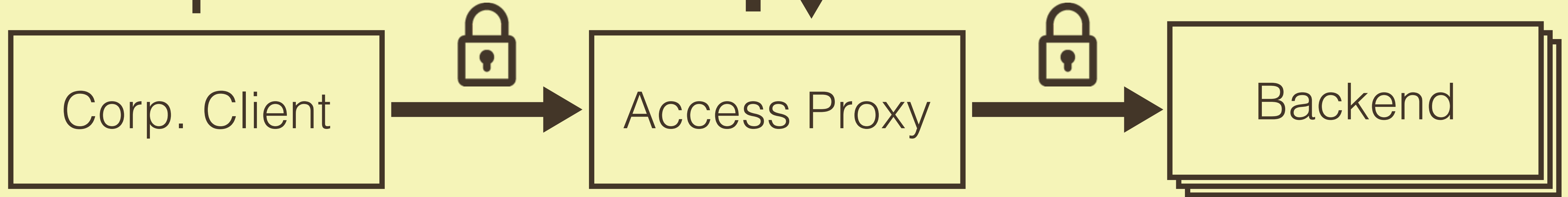
Enforcement



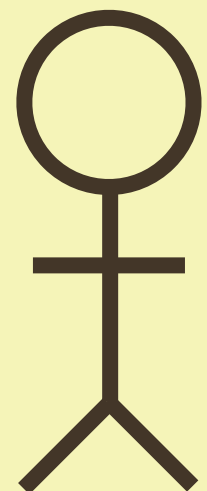
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Control Plane

Data Plane



Enforcement



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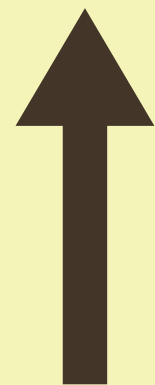
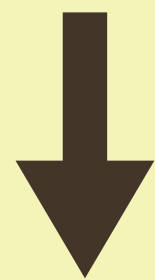
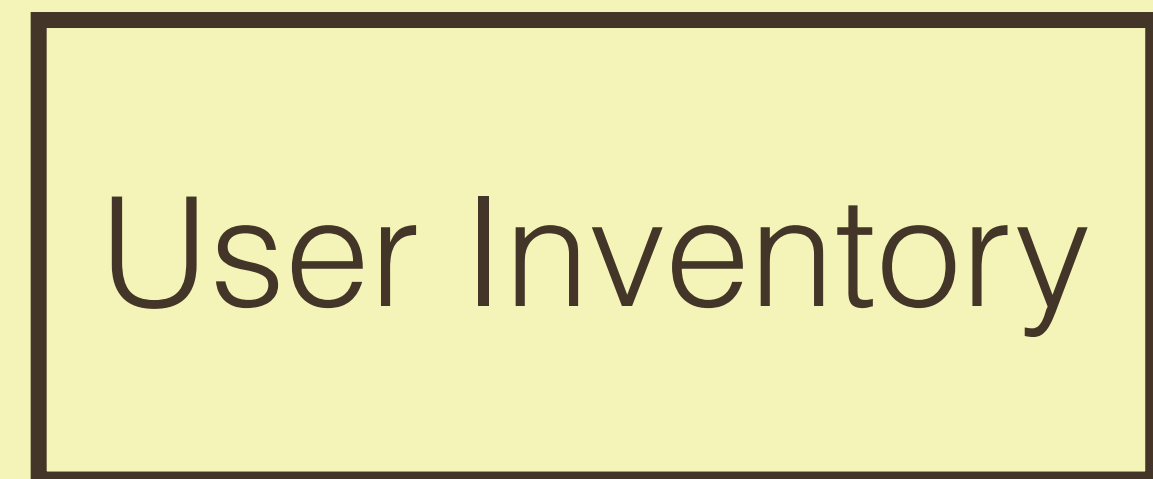
User Inventory

Control Plane

Data Plane



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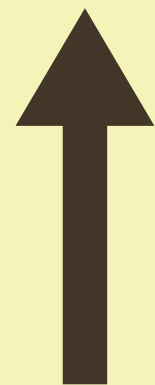
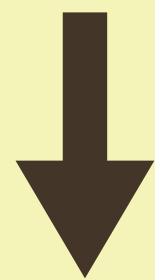
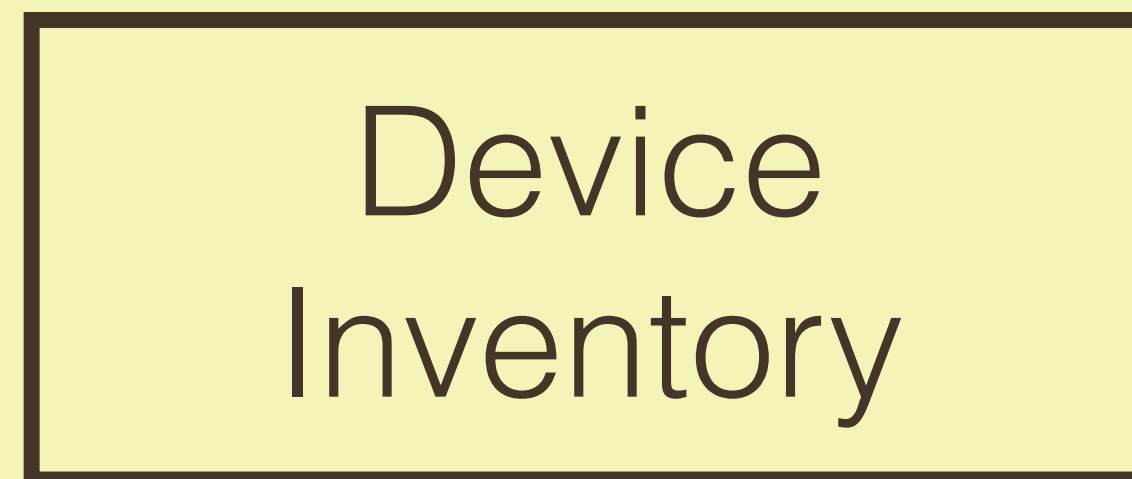
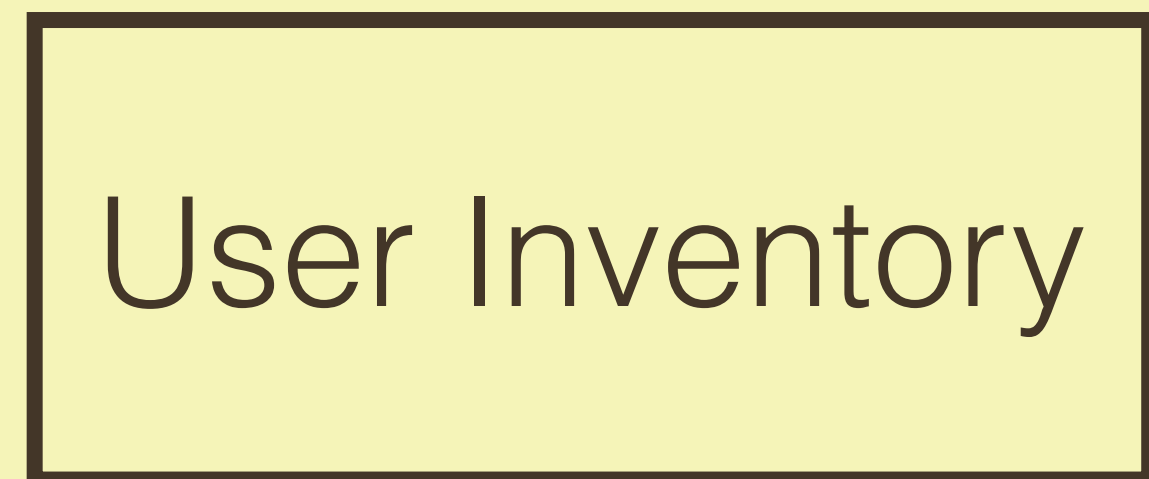


Control Plane

Data Plane



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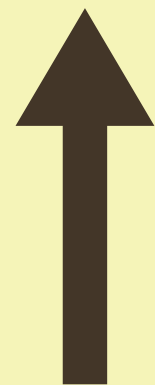
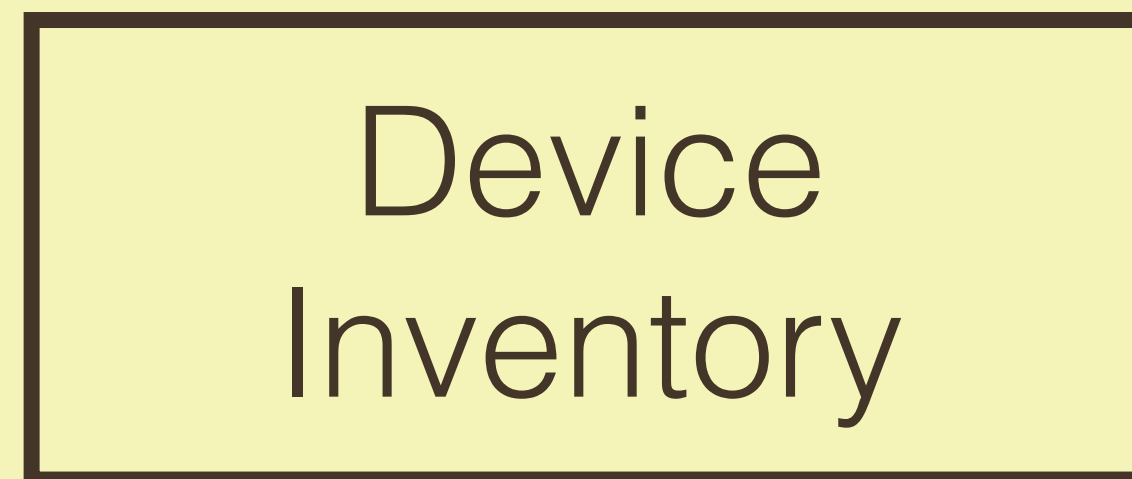
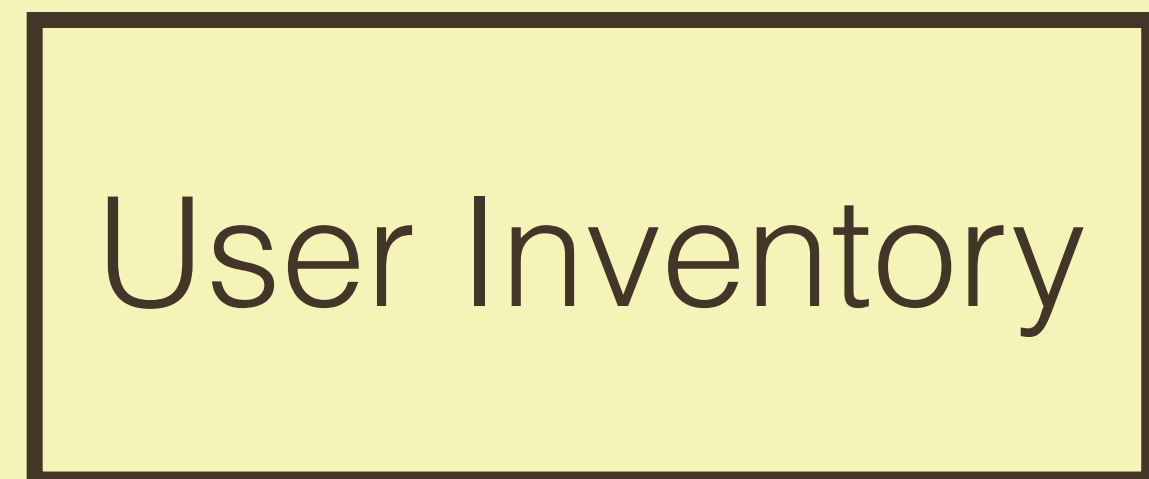


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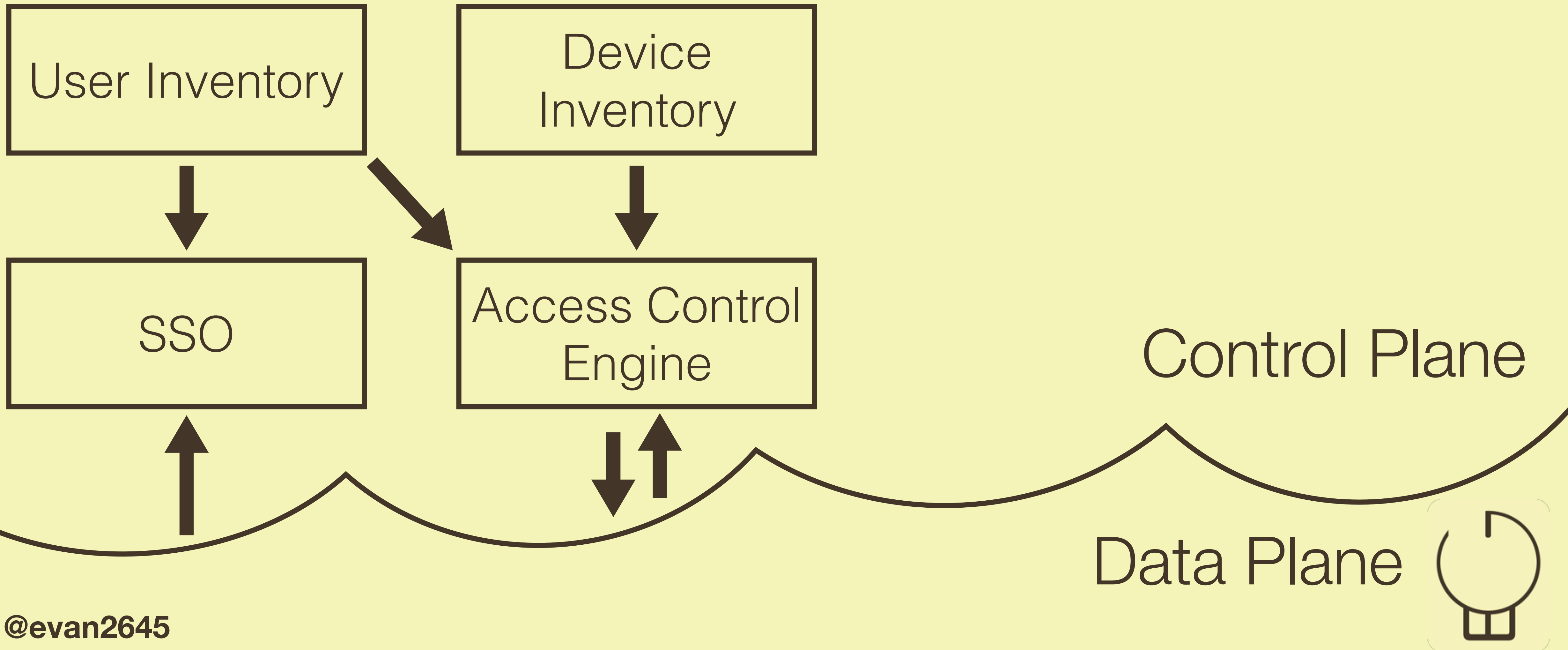


Control Plane

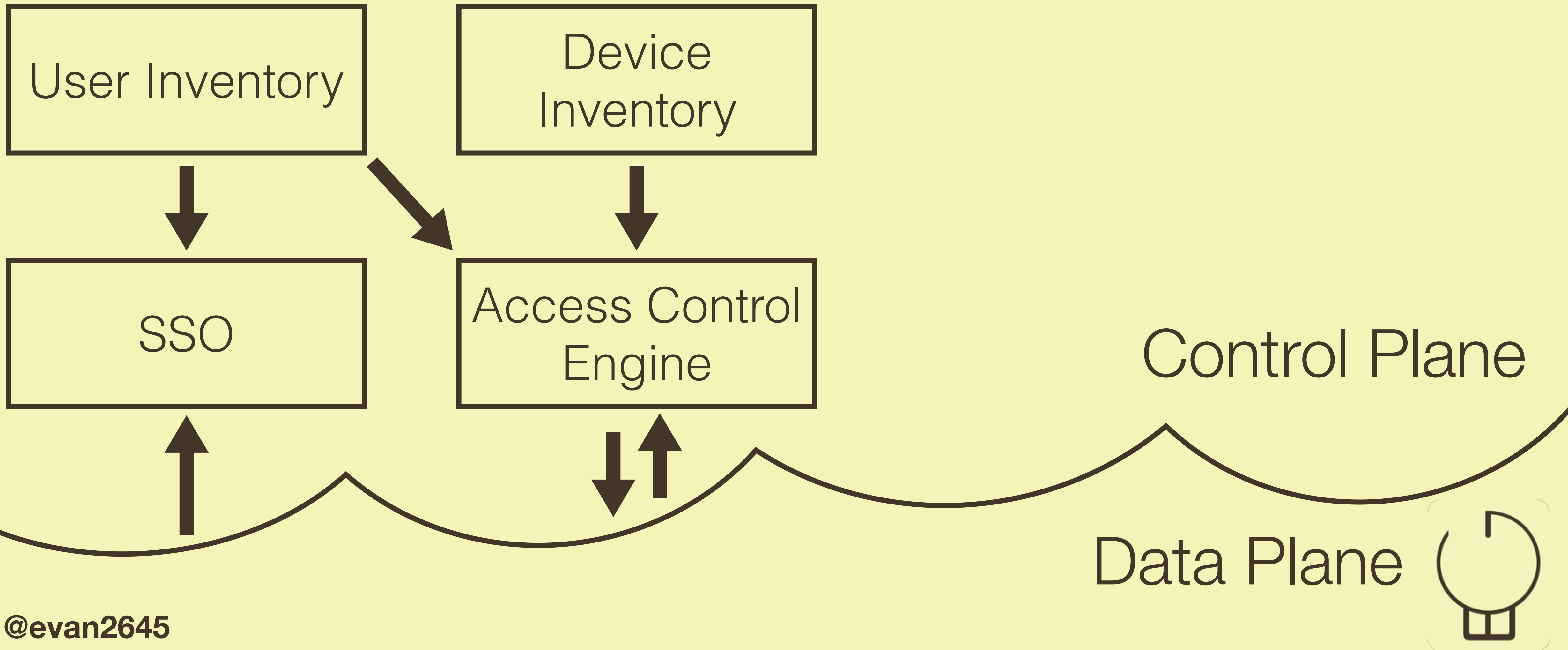
Data Plane



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No Trust In Network



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No Trust In Network

Users Safely Roam Free



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Users Safely Roam Free

All Requests Get Strong AuthN/AuthZ



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No Trust In Network

Users Safely Roam Free

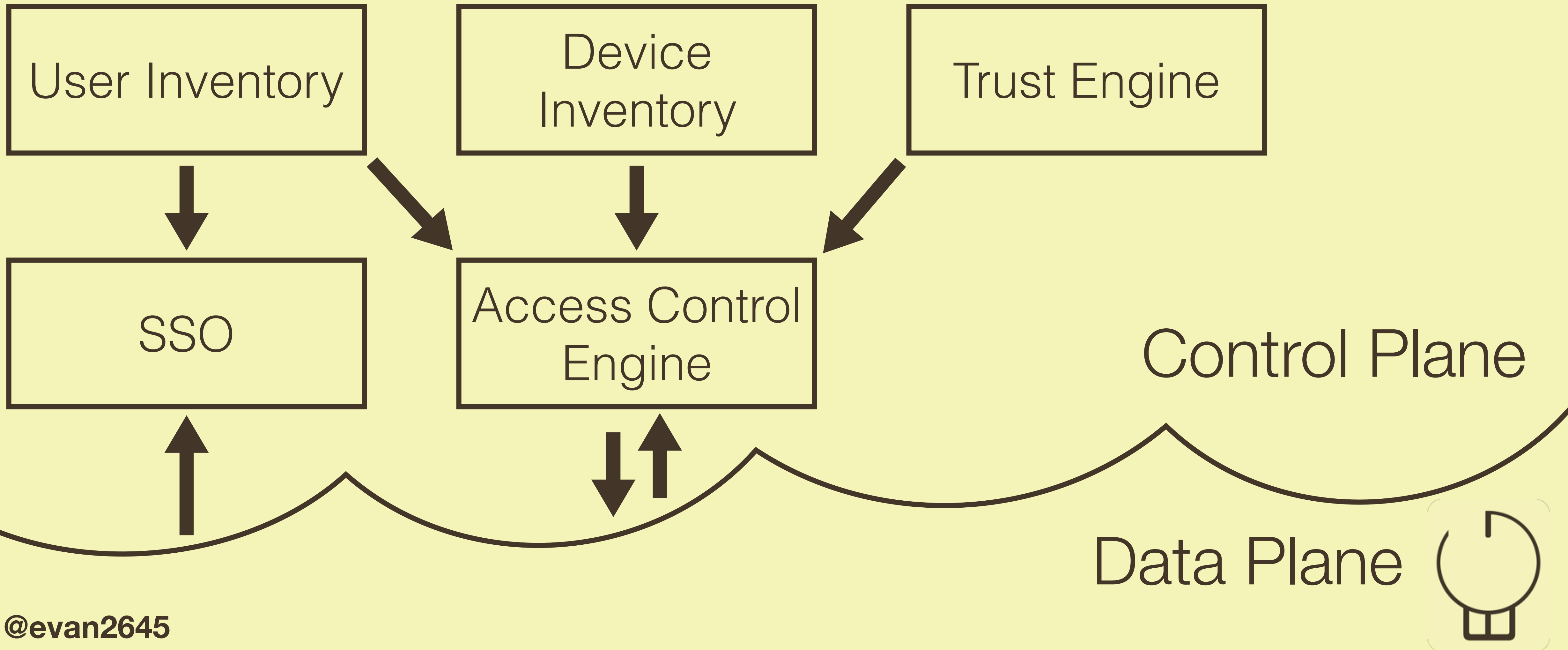
All Requests Get Strong AuthN/AuthZ



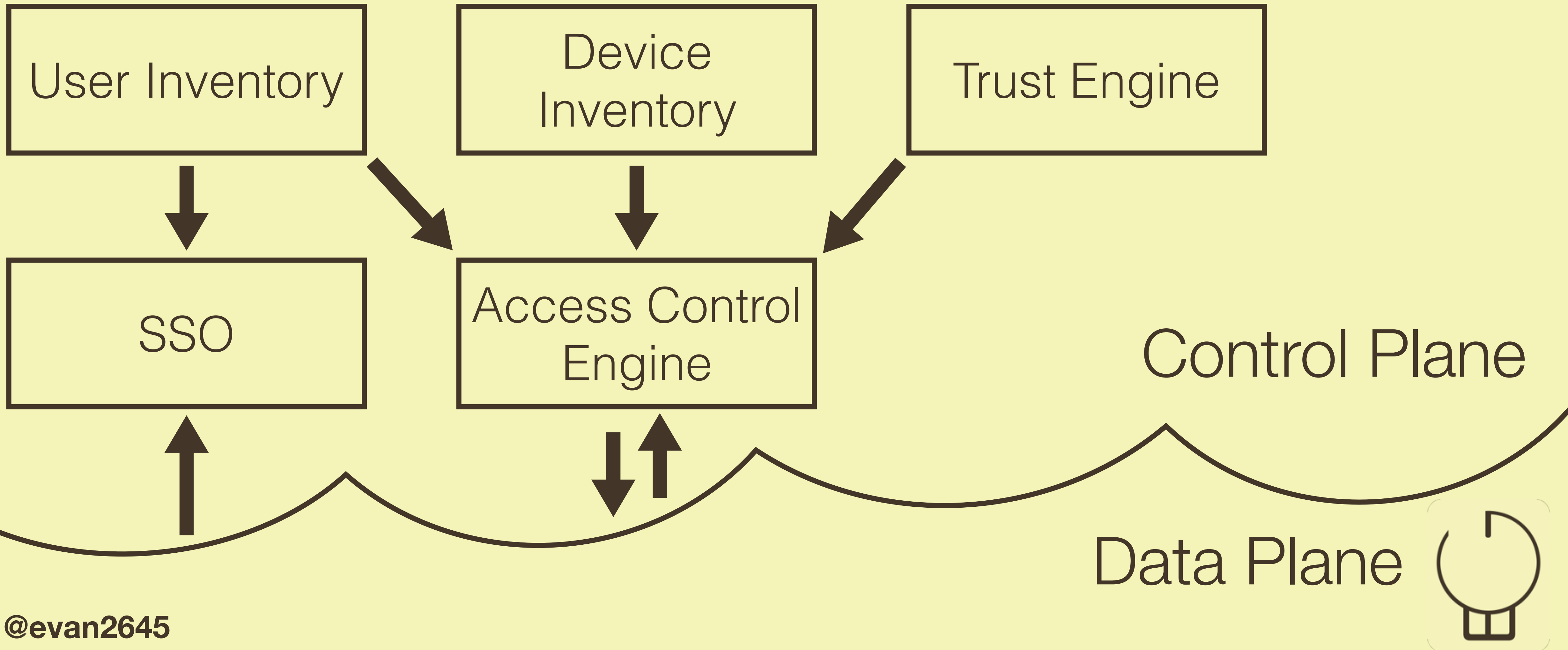
Mature Zero Trust



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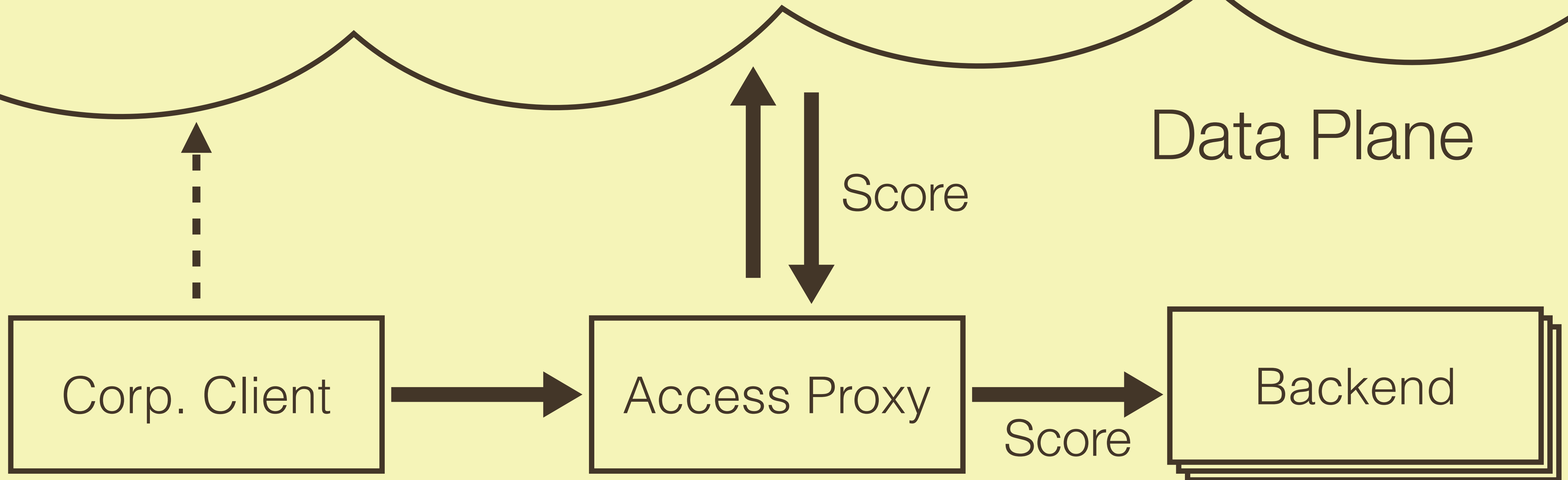
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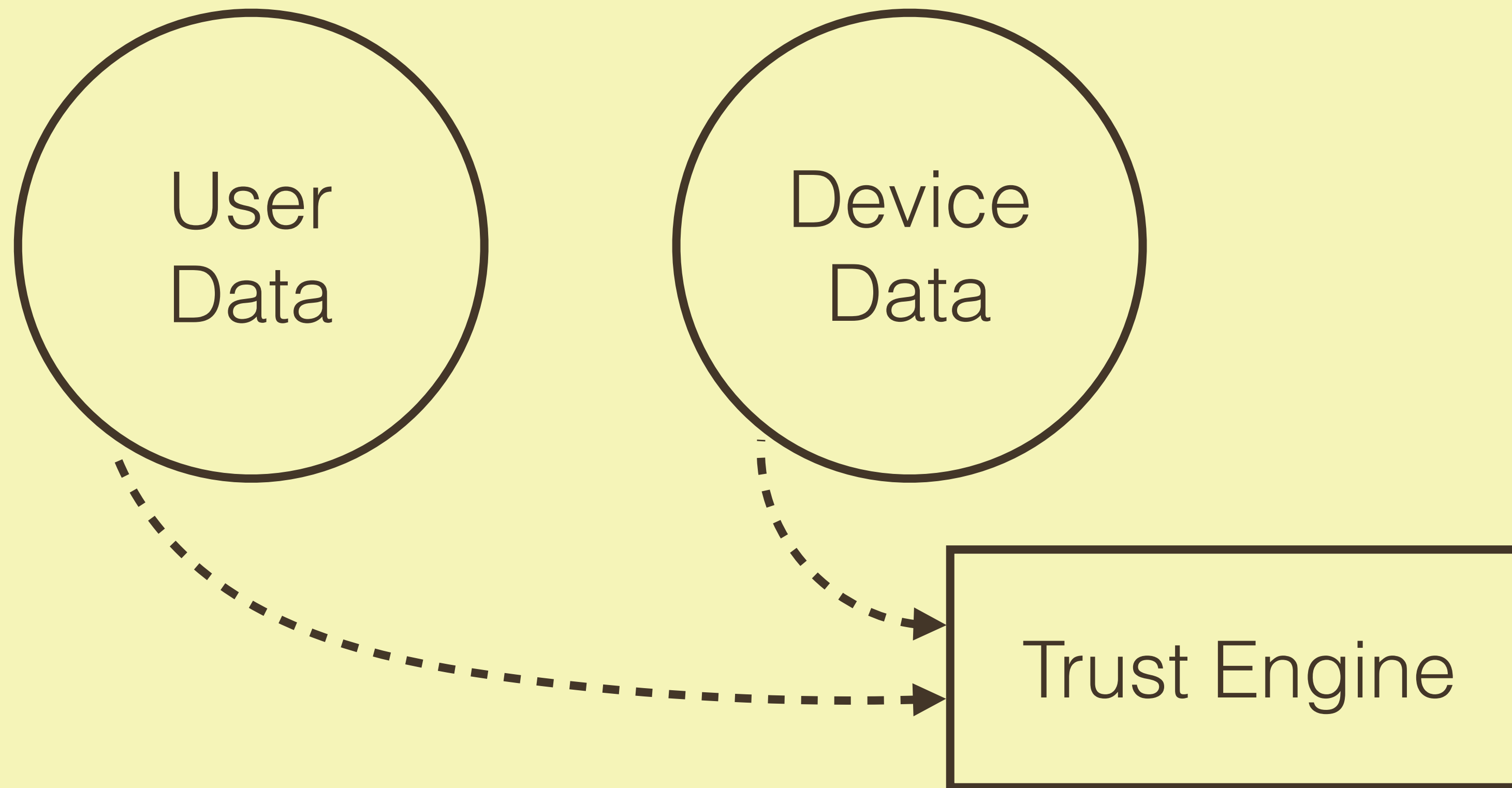
BeyondCorp

Control Plane

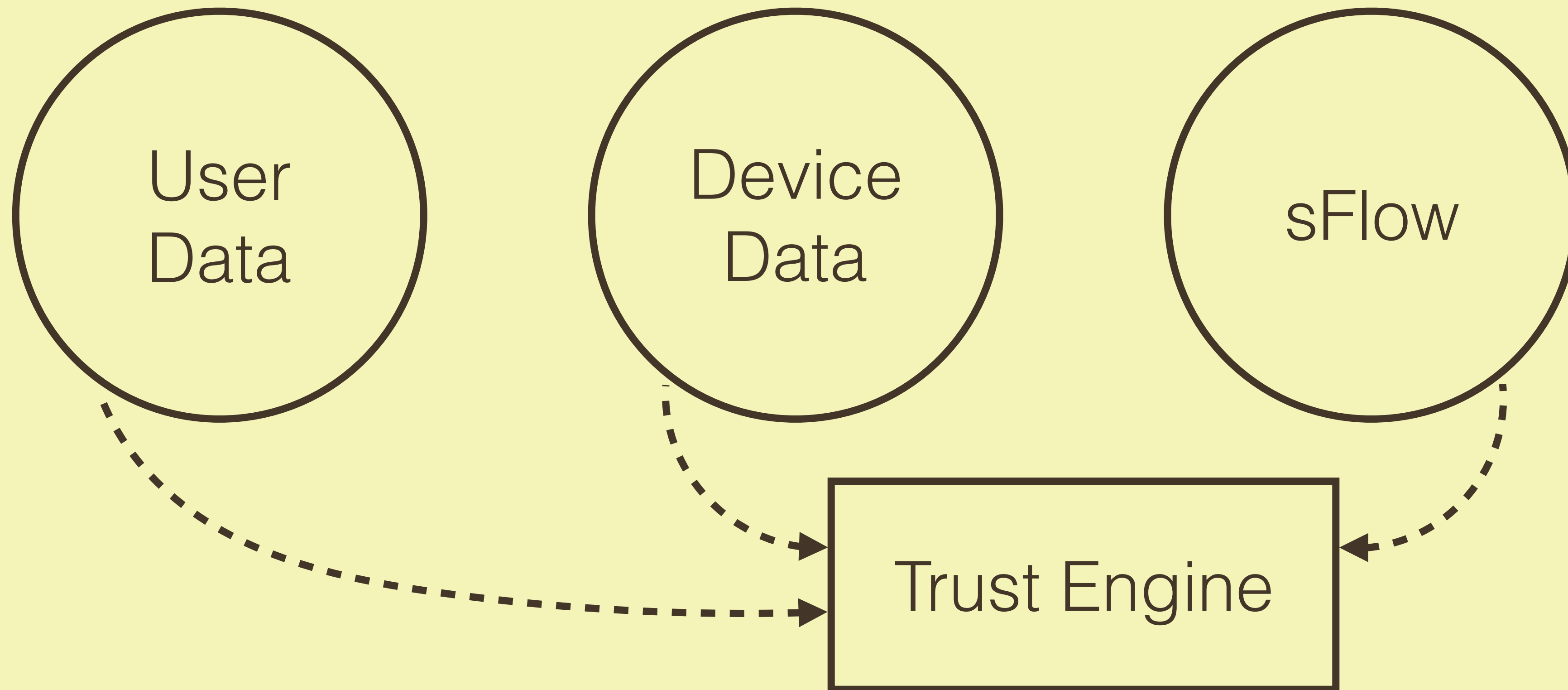
Data Plane



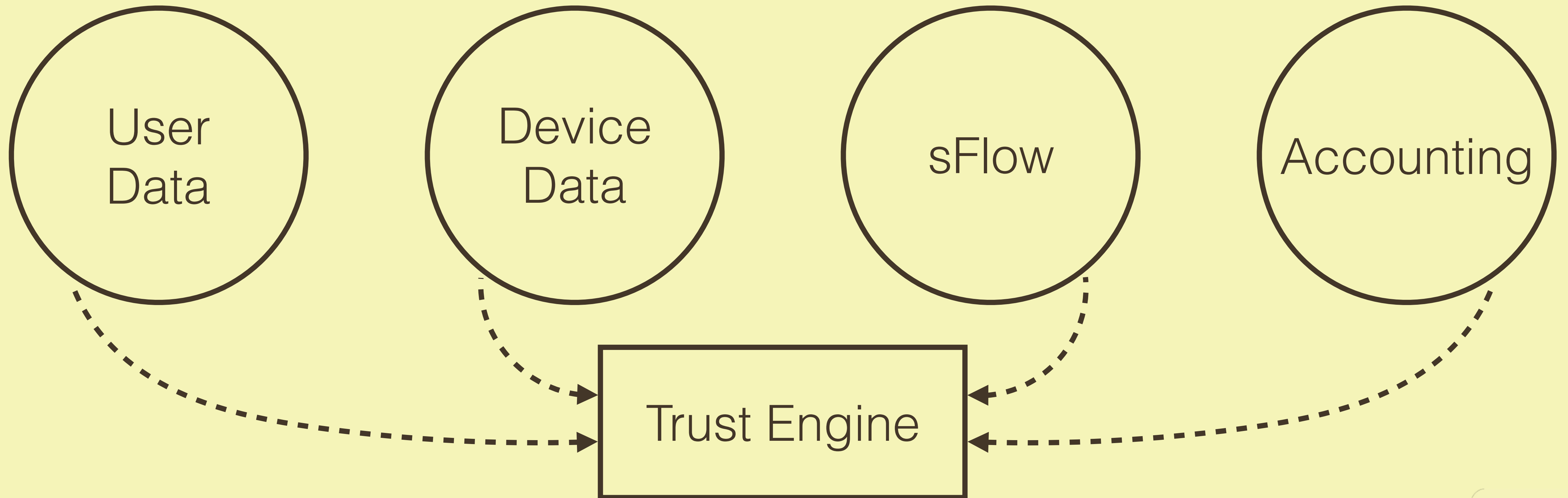
Mature Zero Trust



Mature Zero Trust



Mature Zero Trust



UX is
Important



UX is
Important



Earth is
Calling...



Earth is
Calling...



Earth is
Calling...



Zero Trust Networks

Evan Gilman

