

OPC UA security management with GDS

OPC UA Application Discovery

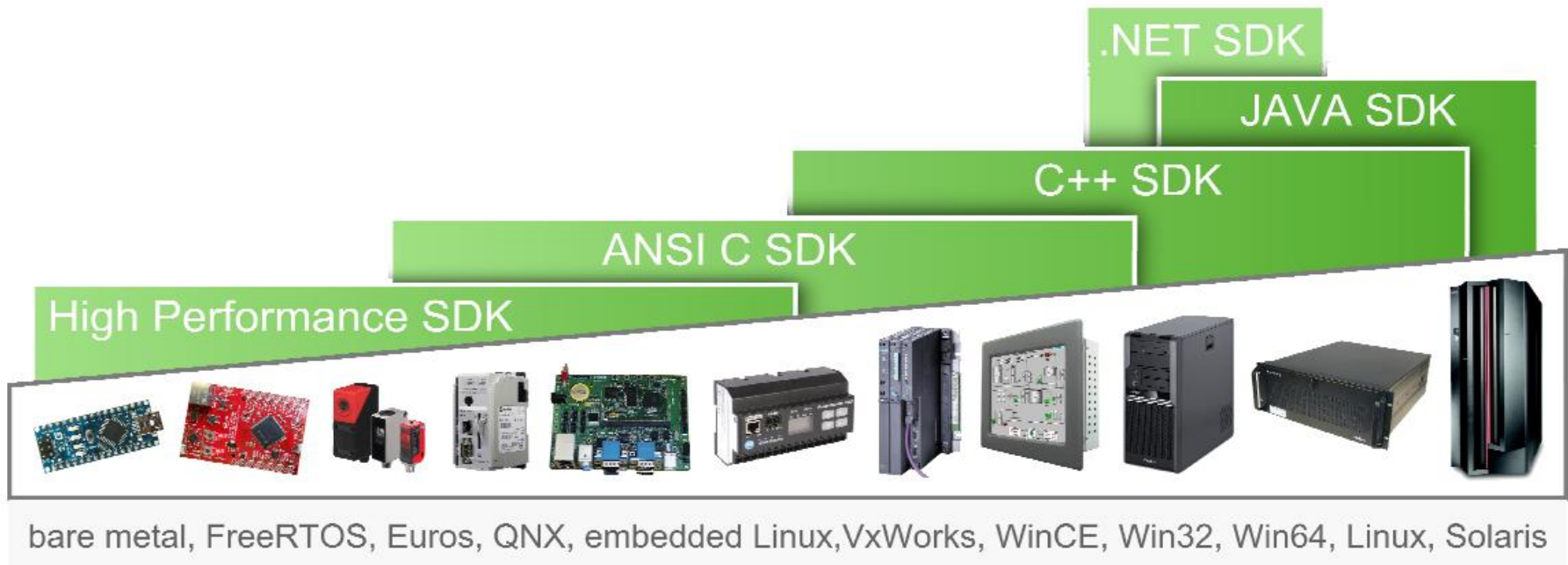
OPC UA PKI Certificate Management

User Management

PubSub Security Key Management

Unified Automation SDK Products

- > Largest OPC UA SDK & Toolkit Vendor
- > All Languages available
- > Scaling on all Targets

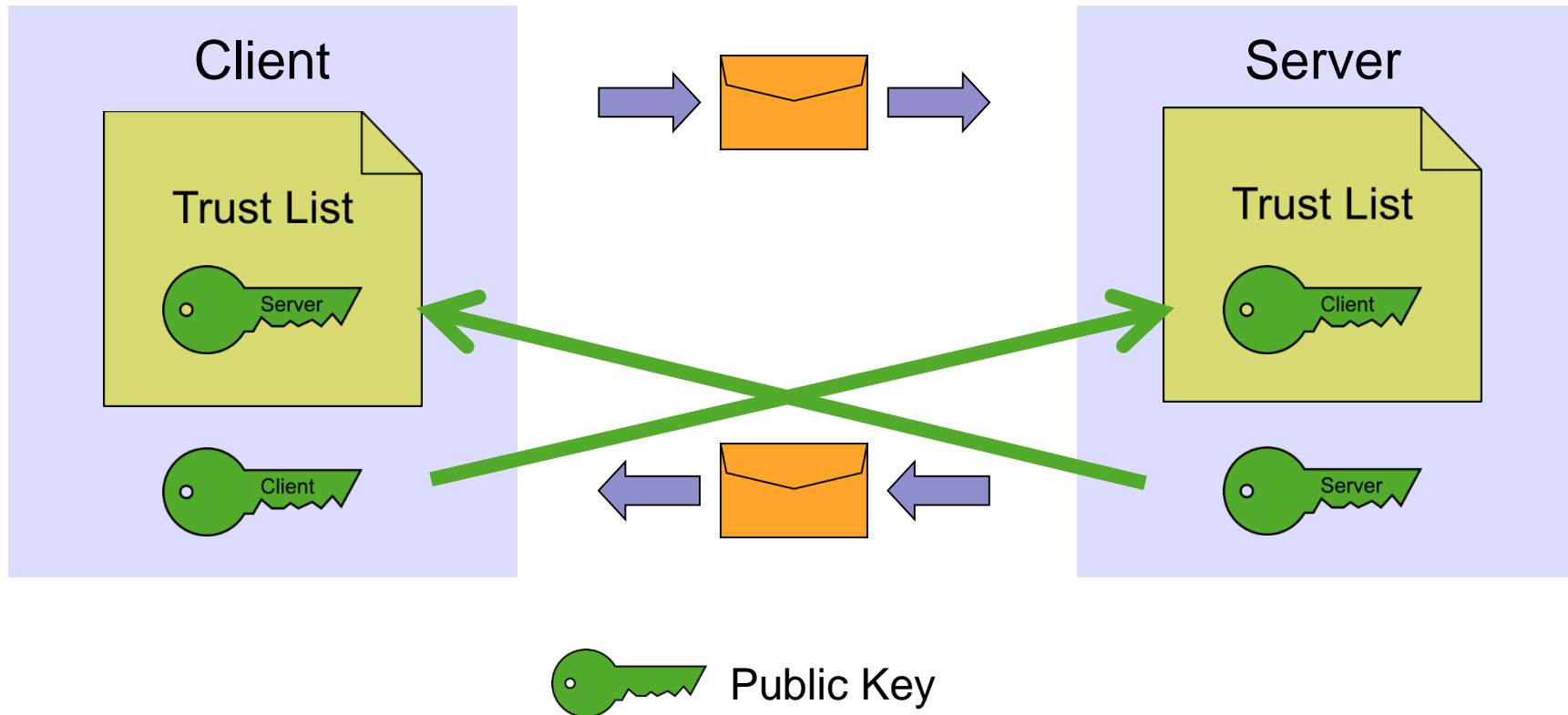


Agenda

- > **PKI / Certificate Management Basics**
- > **Centralized Security Configuration**
- > **GDS from Unified Automation**
- > **Future GDS Features**

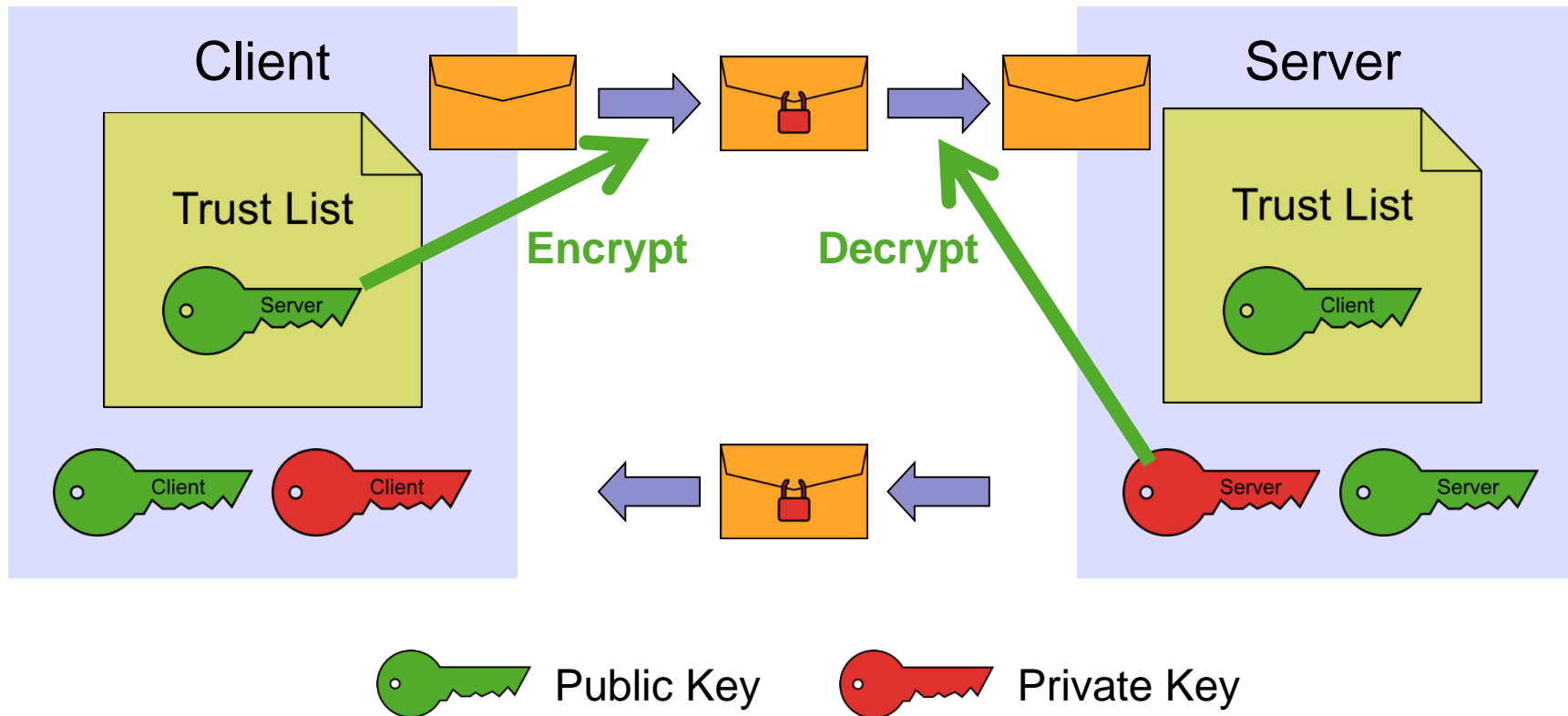
Application Authentication (PKI)

Can I trust my communication partner?



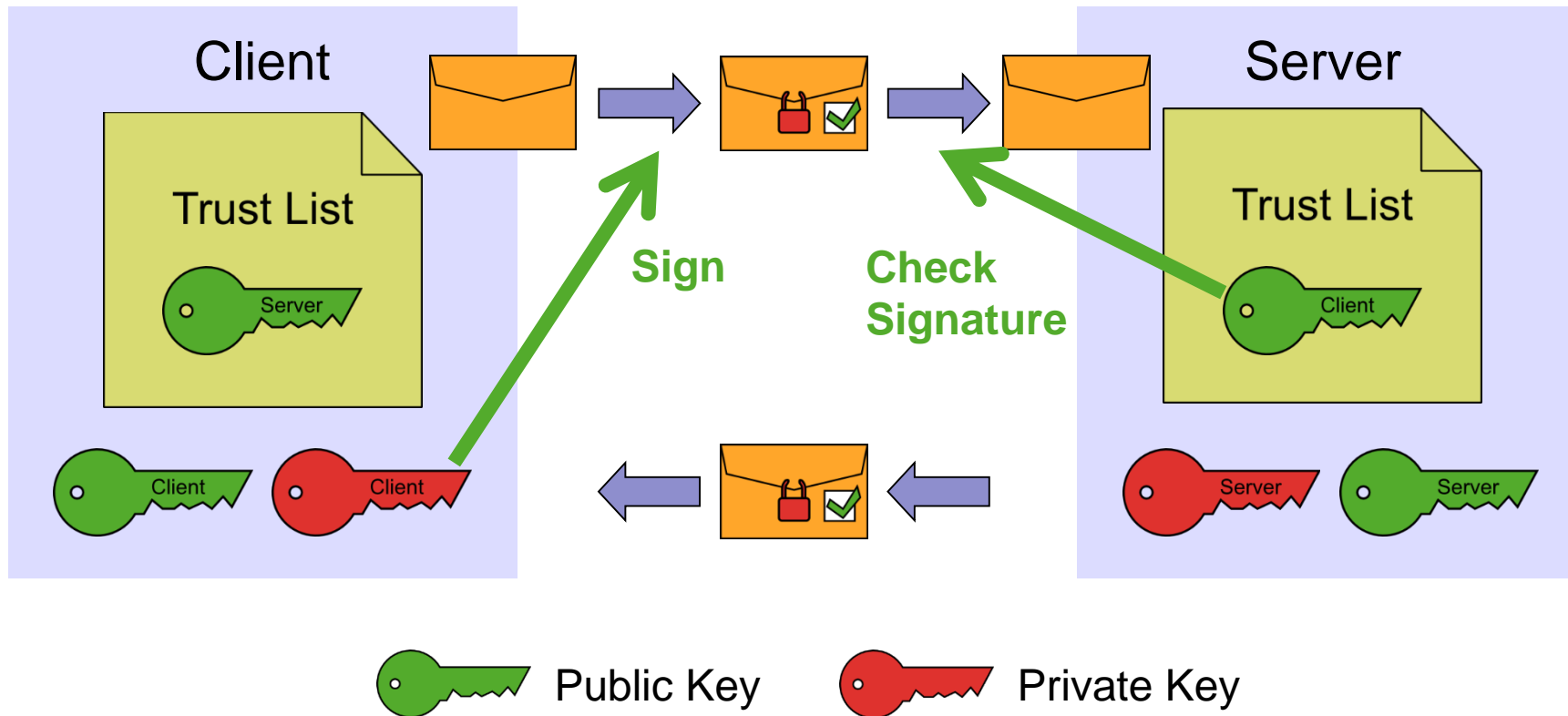
Message Privacy (PKI)

Can I make information private?



Message Integrity (PKI)

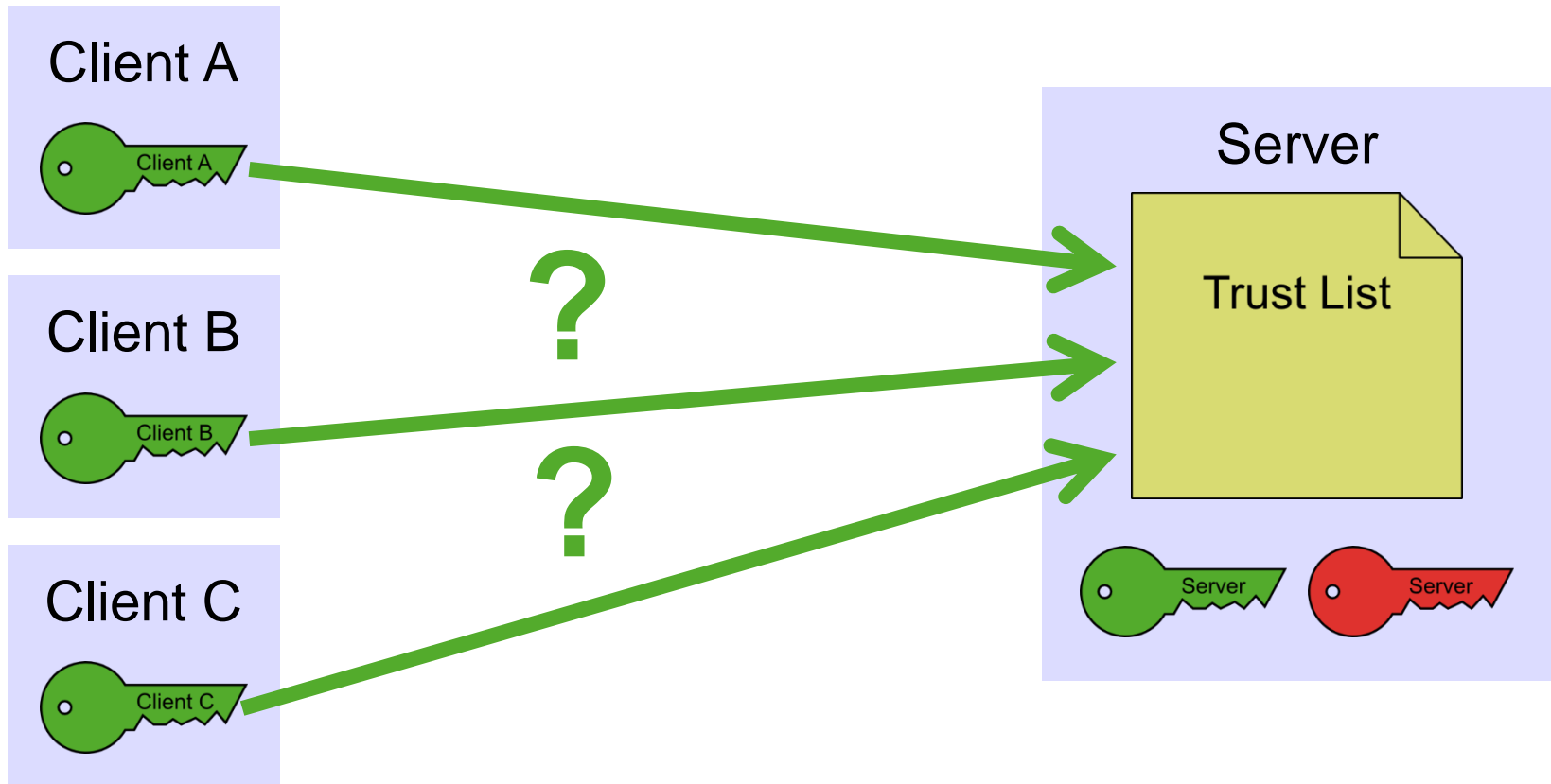
Can I check whether information has been changed?



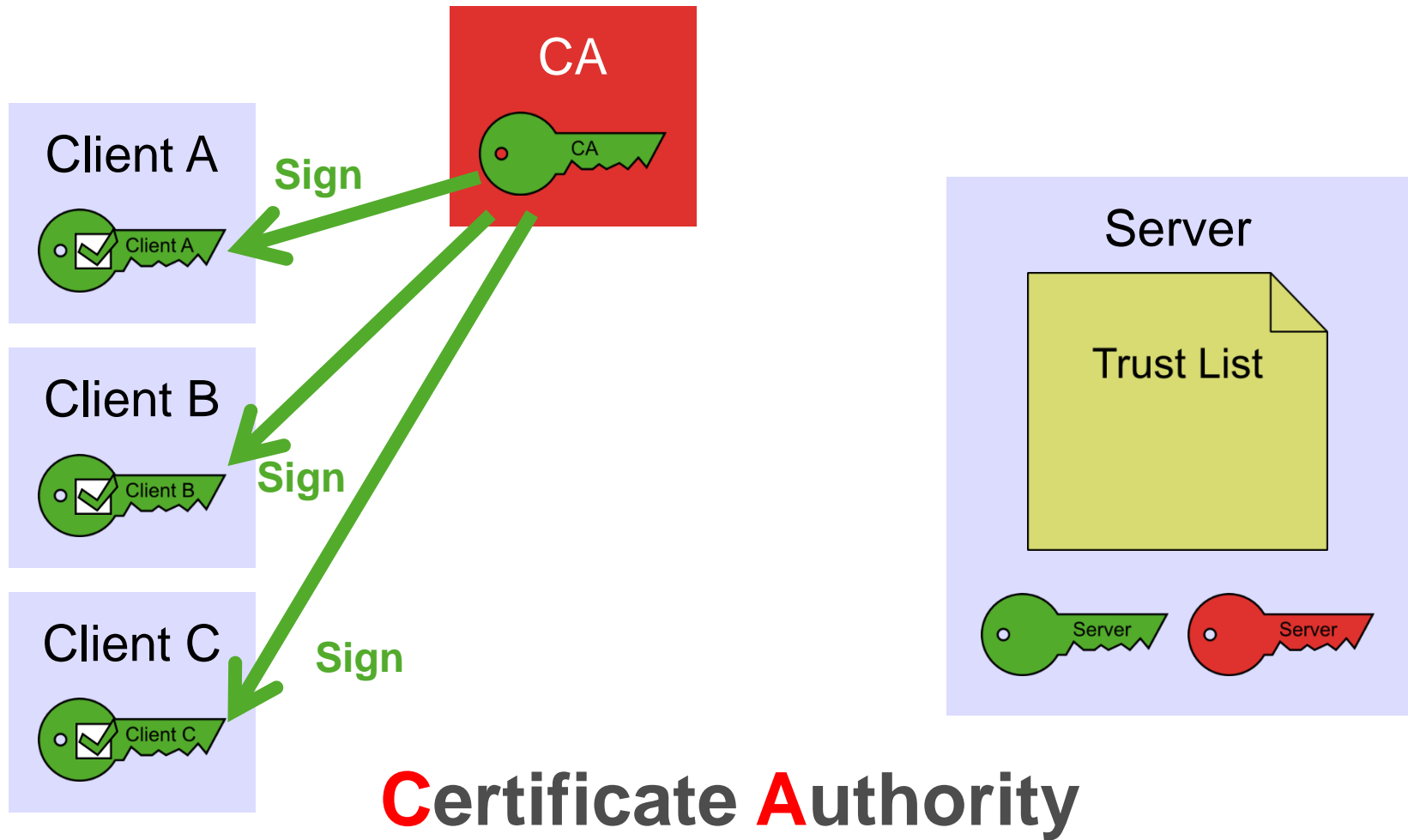
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Enhanced Application Authentication

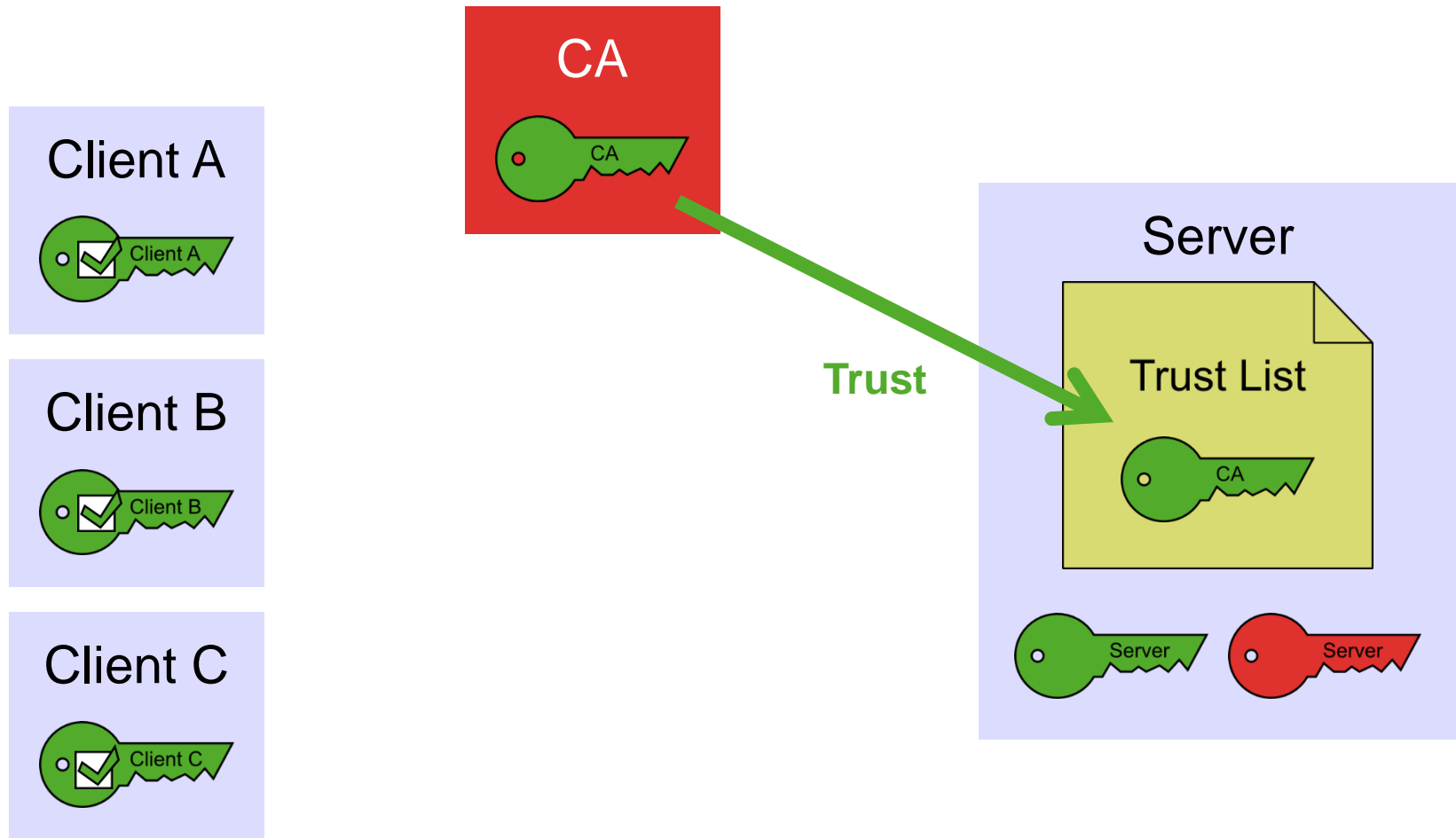


CA Based Application Authentication

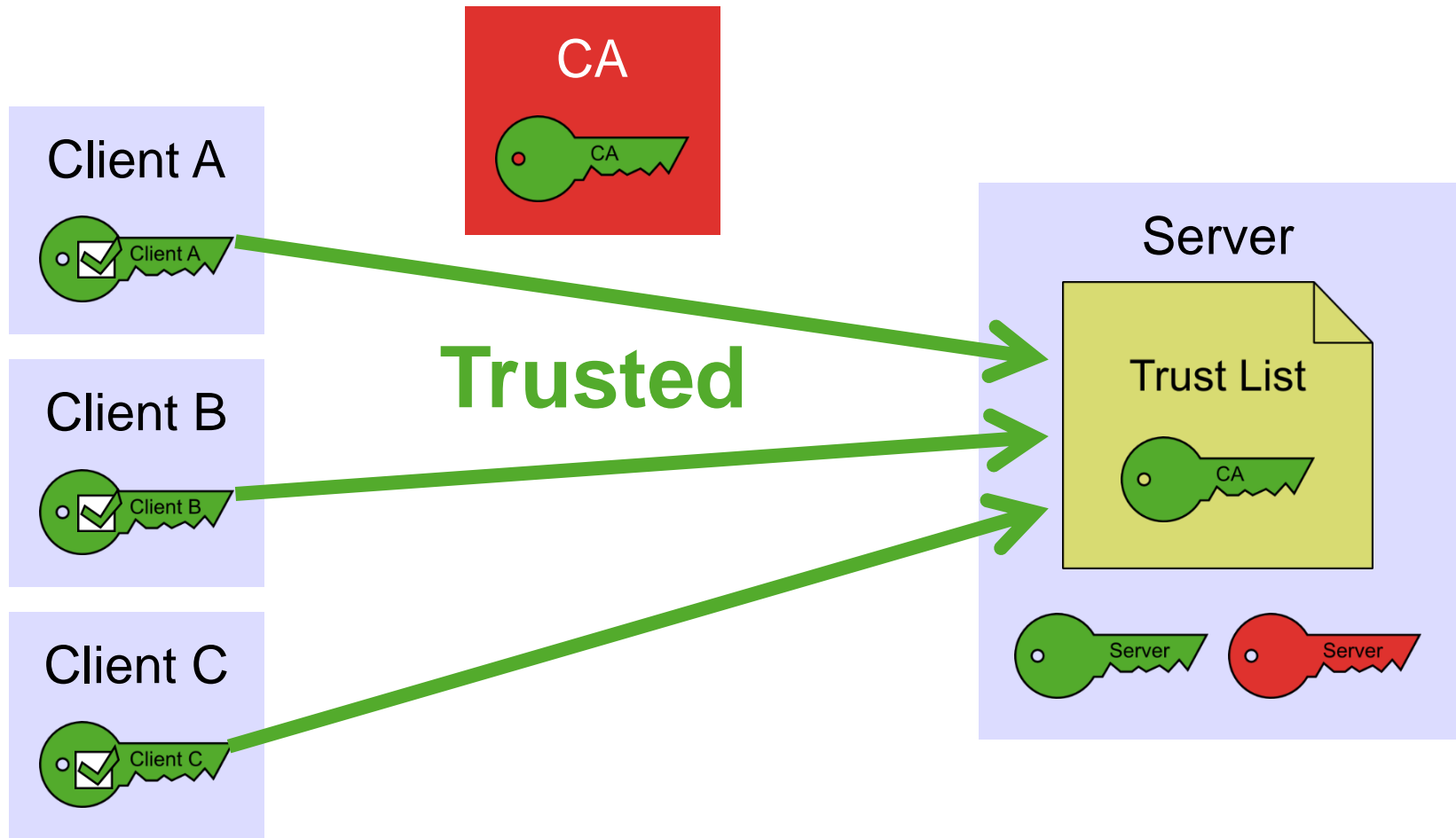


Certificate Authority

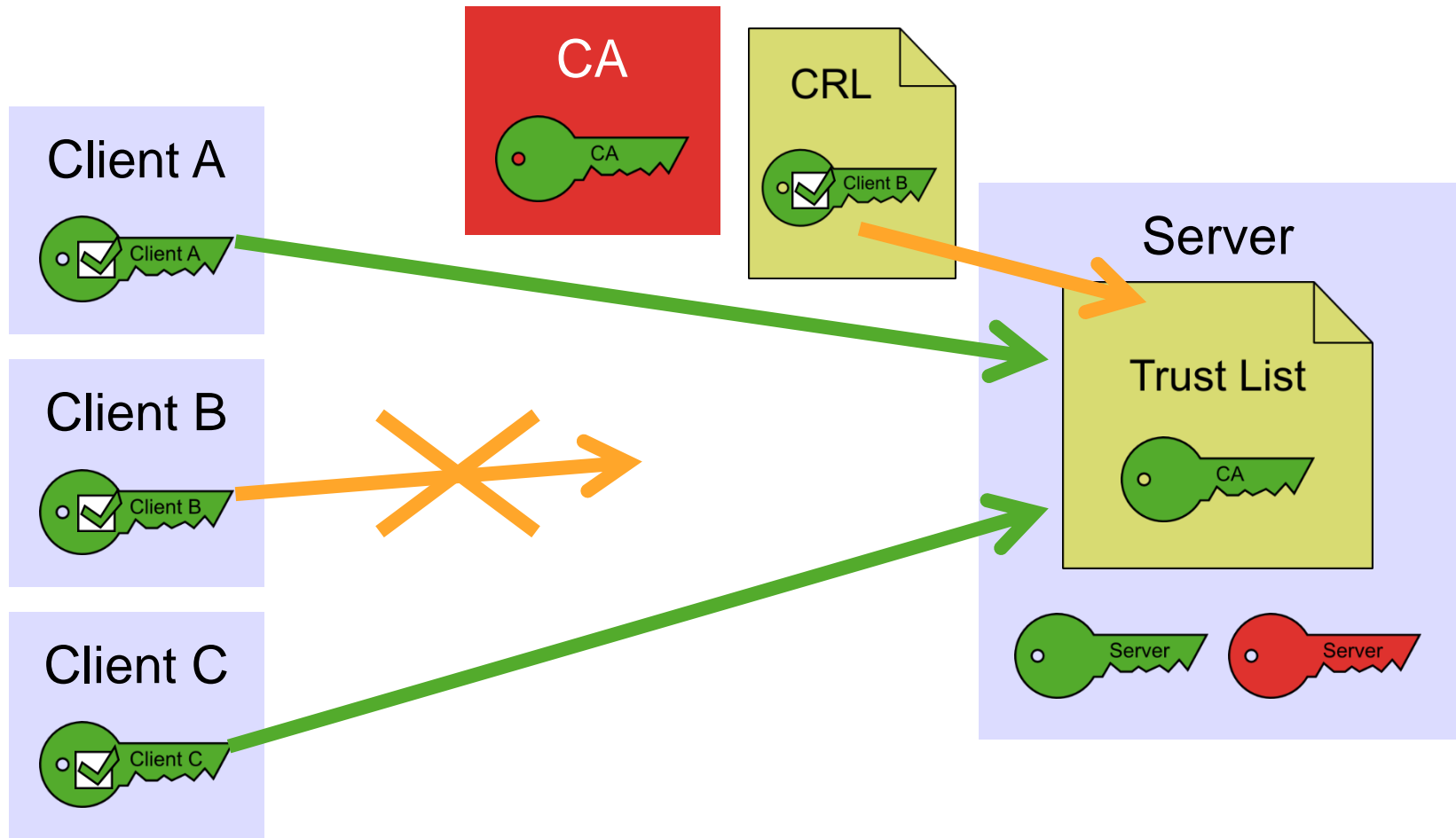
CA Based Application Authentication



CA Based Application Authentication



CA Based Application Authentication



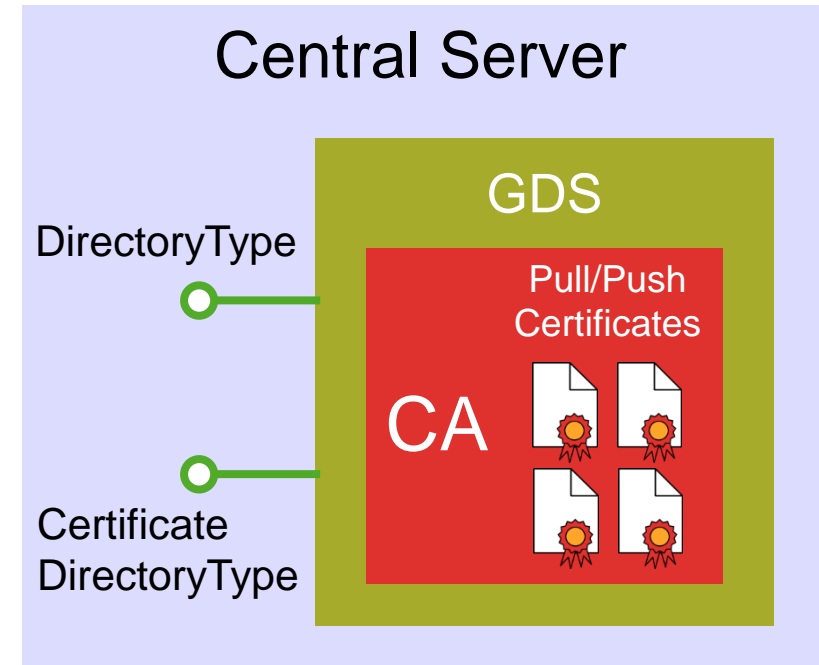
Global Discovery Server (GDS)

GDS as Certificate Authority

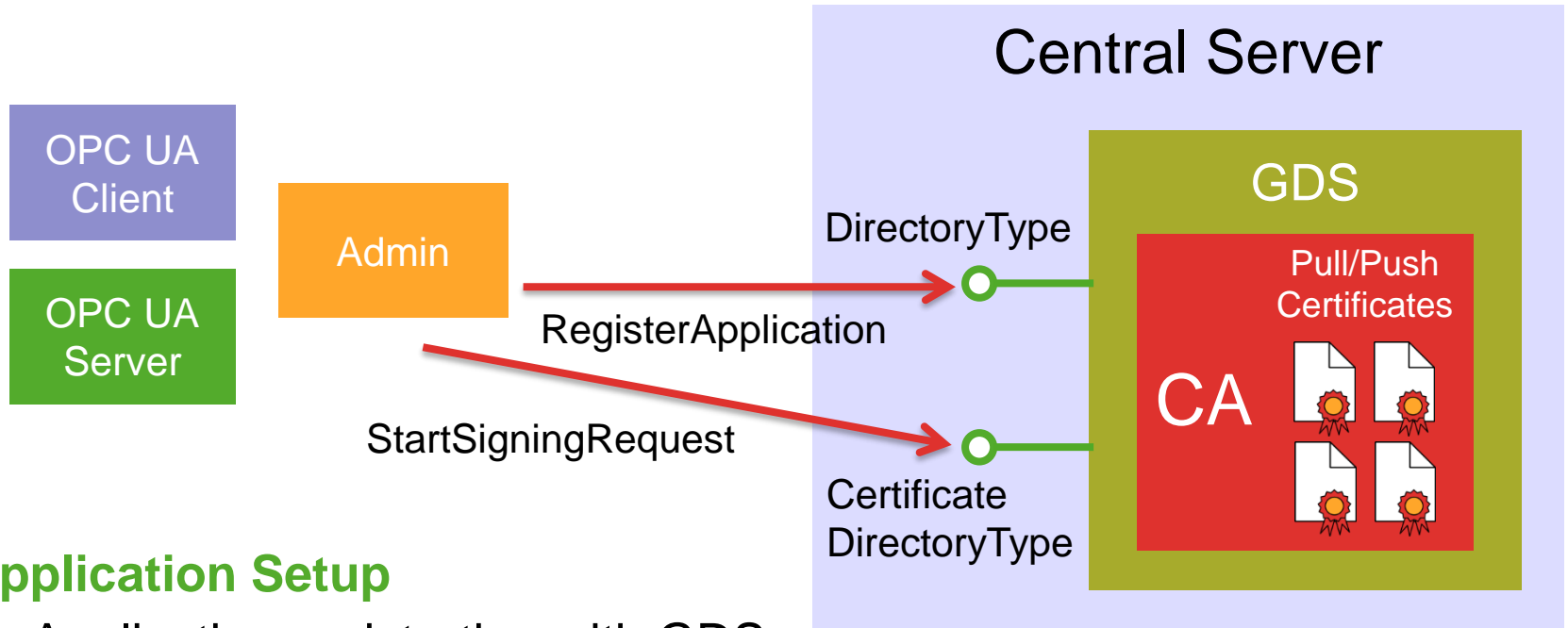
- ▶ Central CA
- ▶ Full OPC UA Server
- ▶ CertificateDirectoryType is interface with UA Methods

CertificateDirectoryType

- ▶ StartSigningRequest
- ▶ StartNewKeyPairRequest
- ▶ FinishRequest
- ▶ GetCertificateGroups
- ▶ GetTrustList
- ▶ GetCertificateStatus



GDS – Application Setup



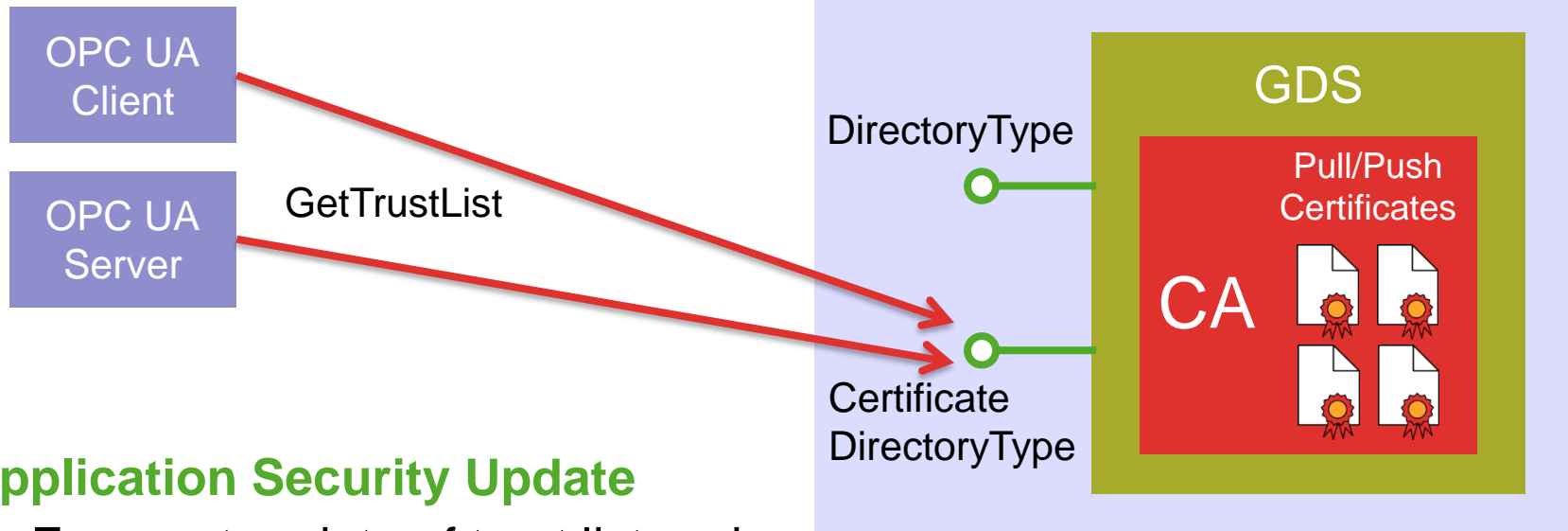
Application Setup

- ▶ Application registration with GDS during setup
- ▶ Signing of application certificate
- ▶ Setup requires security

GDS – Application Security Update – Pull

Pull

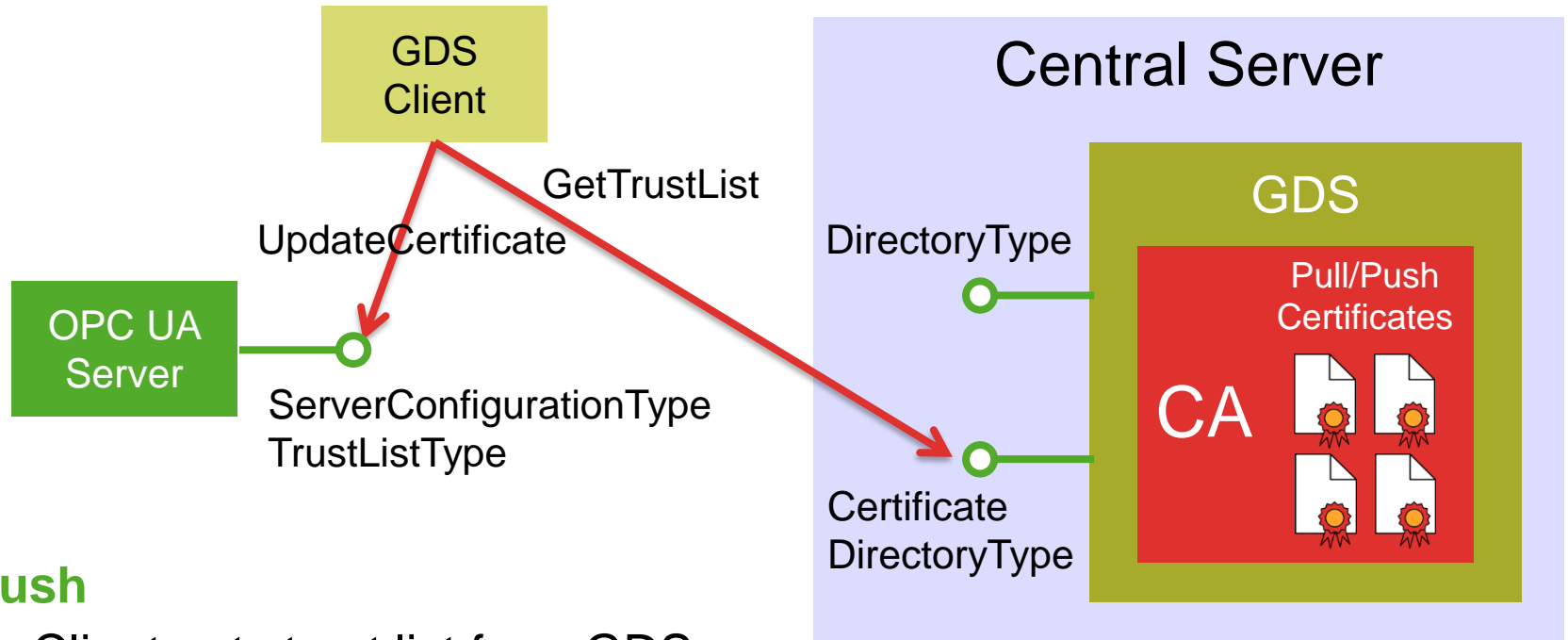
- ▶ Applications are clients for GDS



Application Security Update

- ▶ Frequent update of trust list and CA revocation list
- ▶ Update requires security

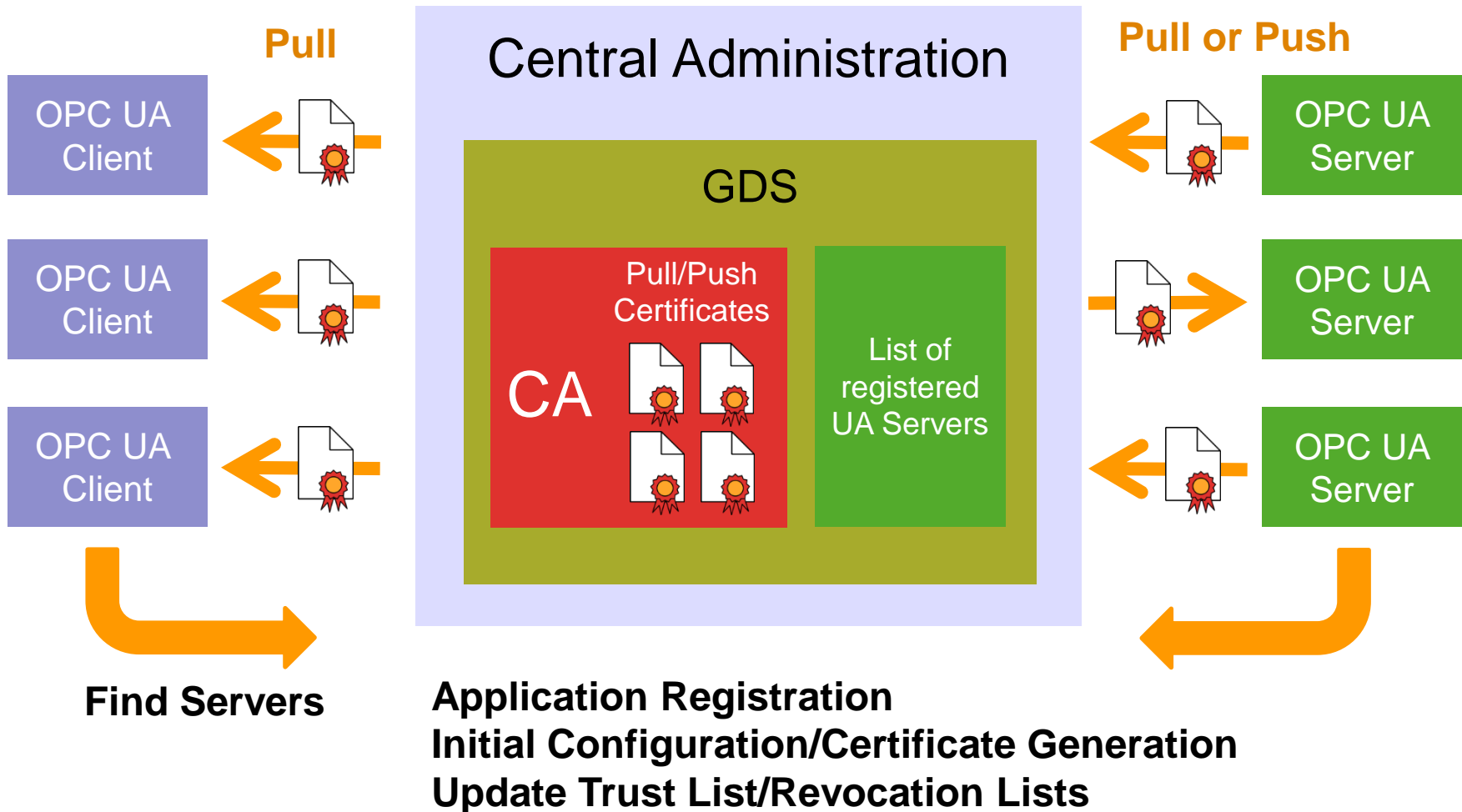
GDS – Application Security Update – Push



Push

- ▶ Client gets trust list from GDS
- ▶ Server implements `ServerConfigurationType` and `TrustListType`
- ▶ Client updates server trust list with latest setting from GDS

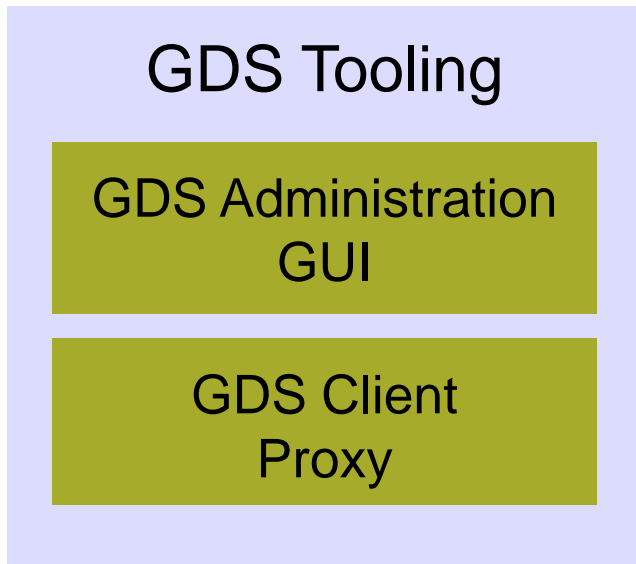
Global Discovery Server (GDS)



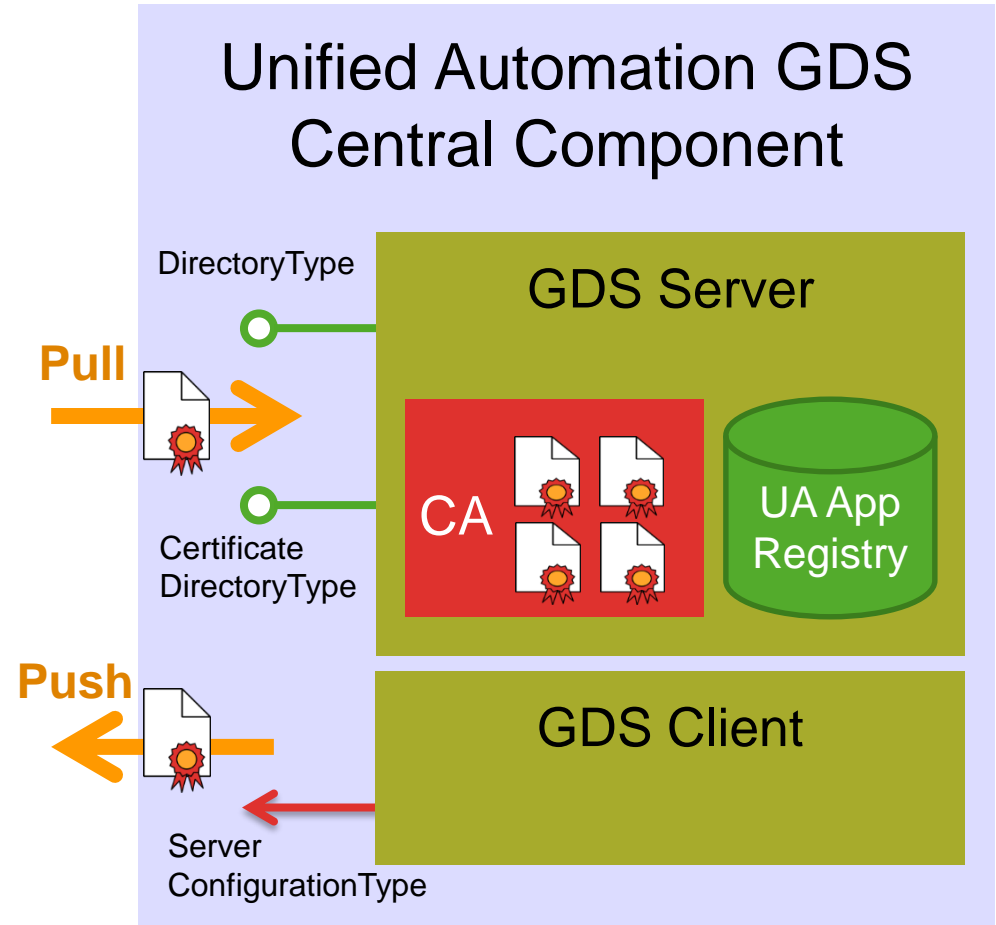
Agenda

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Unified Automation GDS Components



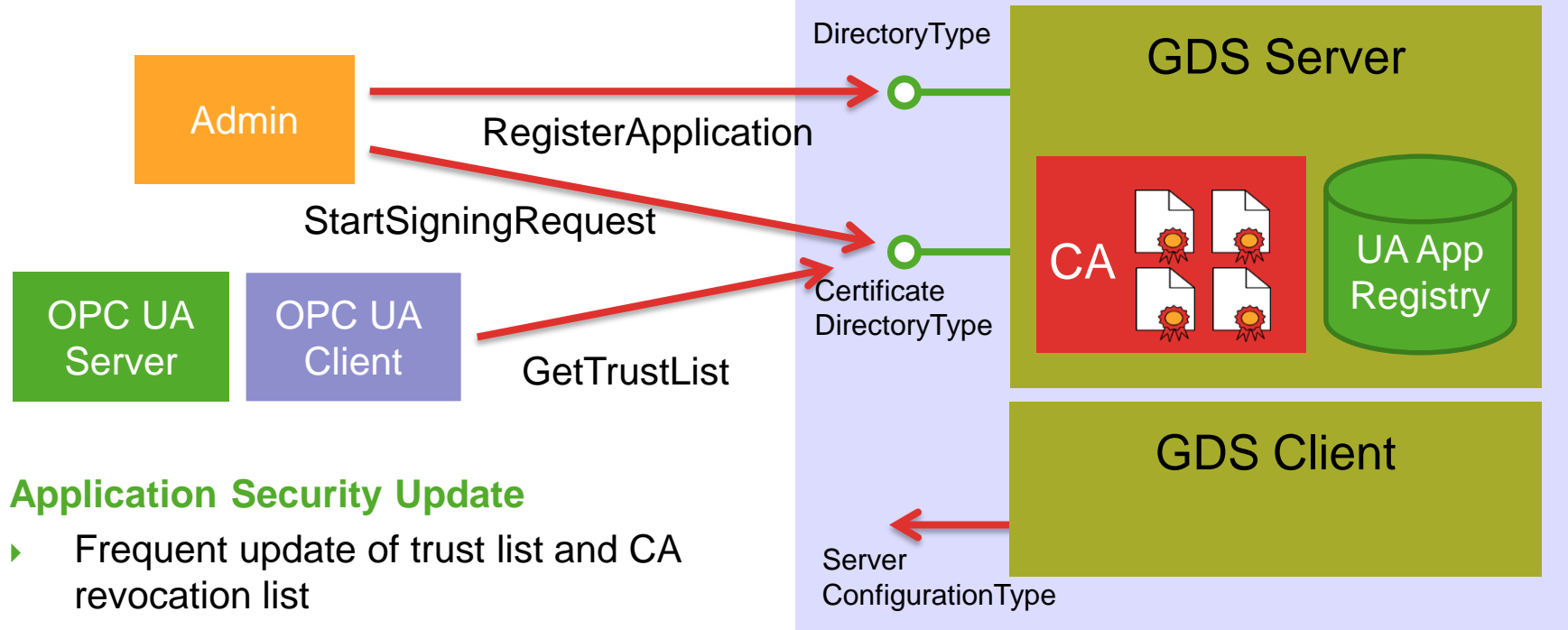
Managed OPC UA Applications



PULL configuration Server / Client Applications

Application Setup

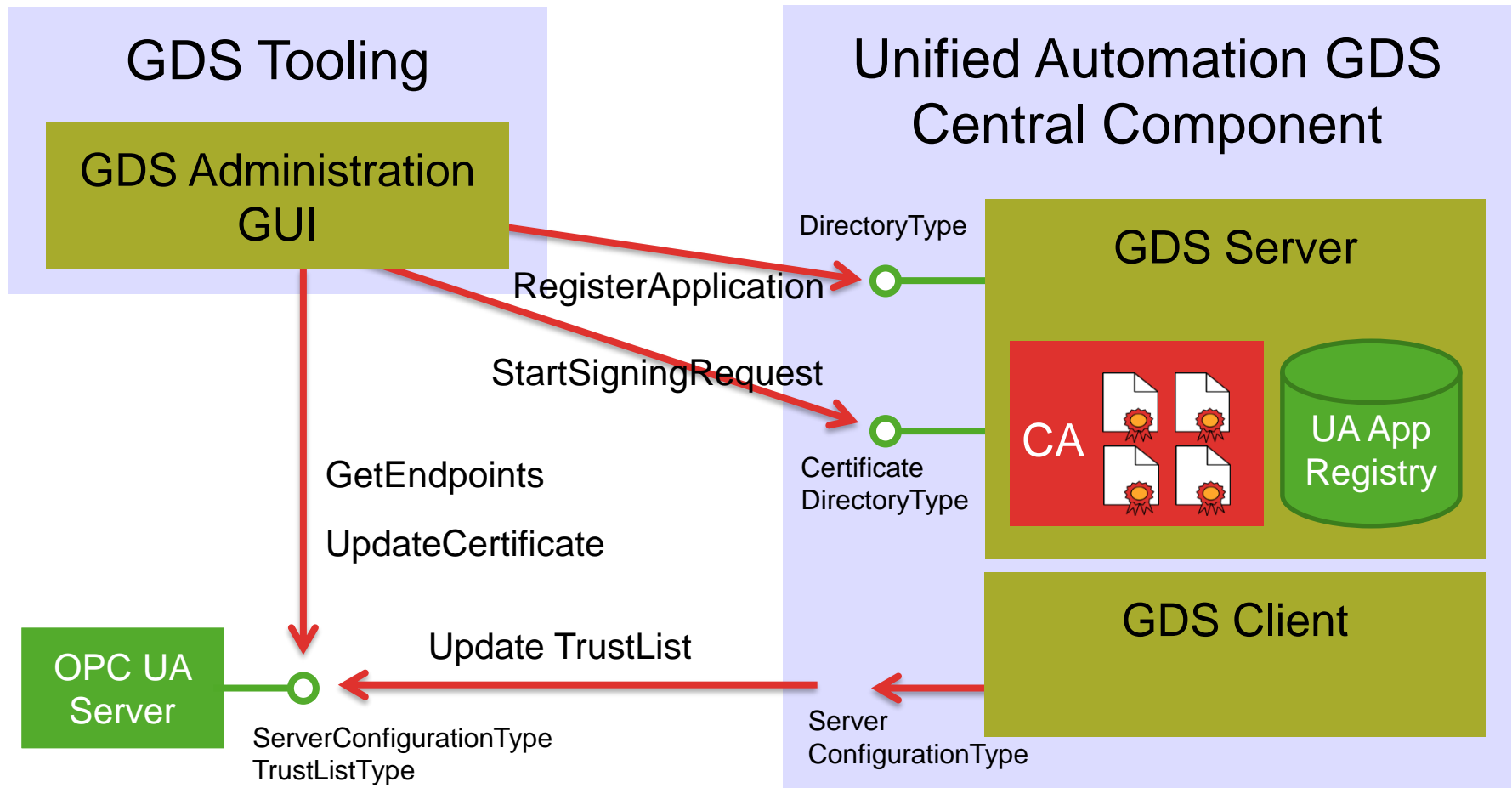
- ▶ Application registration with GDS during setup requires GDS admin rights
- ▶ Signing of application certificate
- ▶ Setup requires security



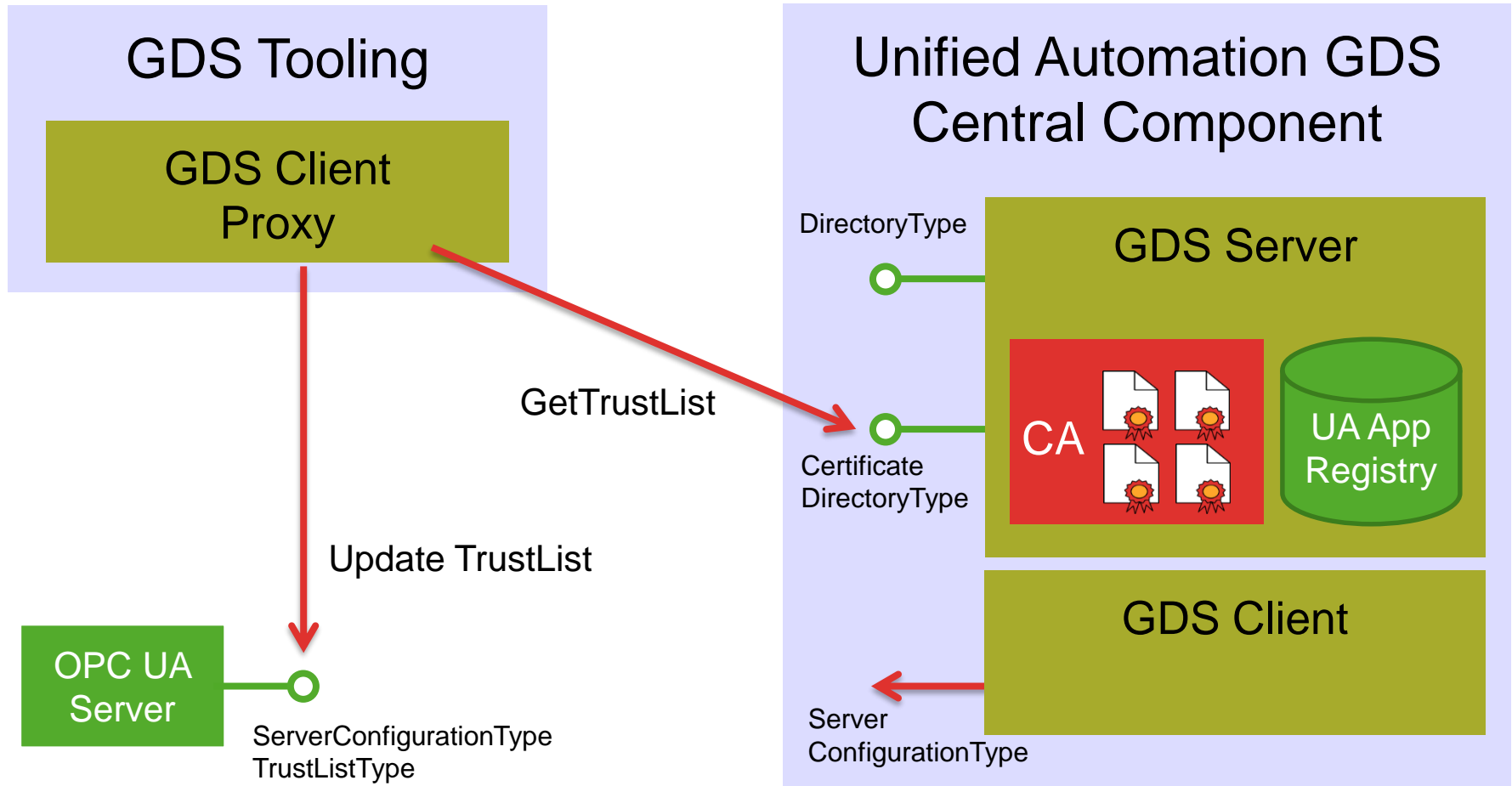
Application Security Update

- ▶ Frequent update of trust list and CA revocation list
- ▶ Update requires security

PUSH configuration Server Applications



PUSH with GDS Client Proxy



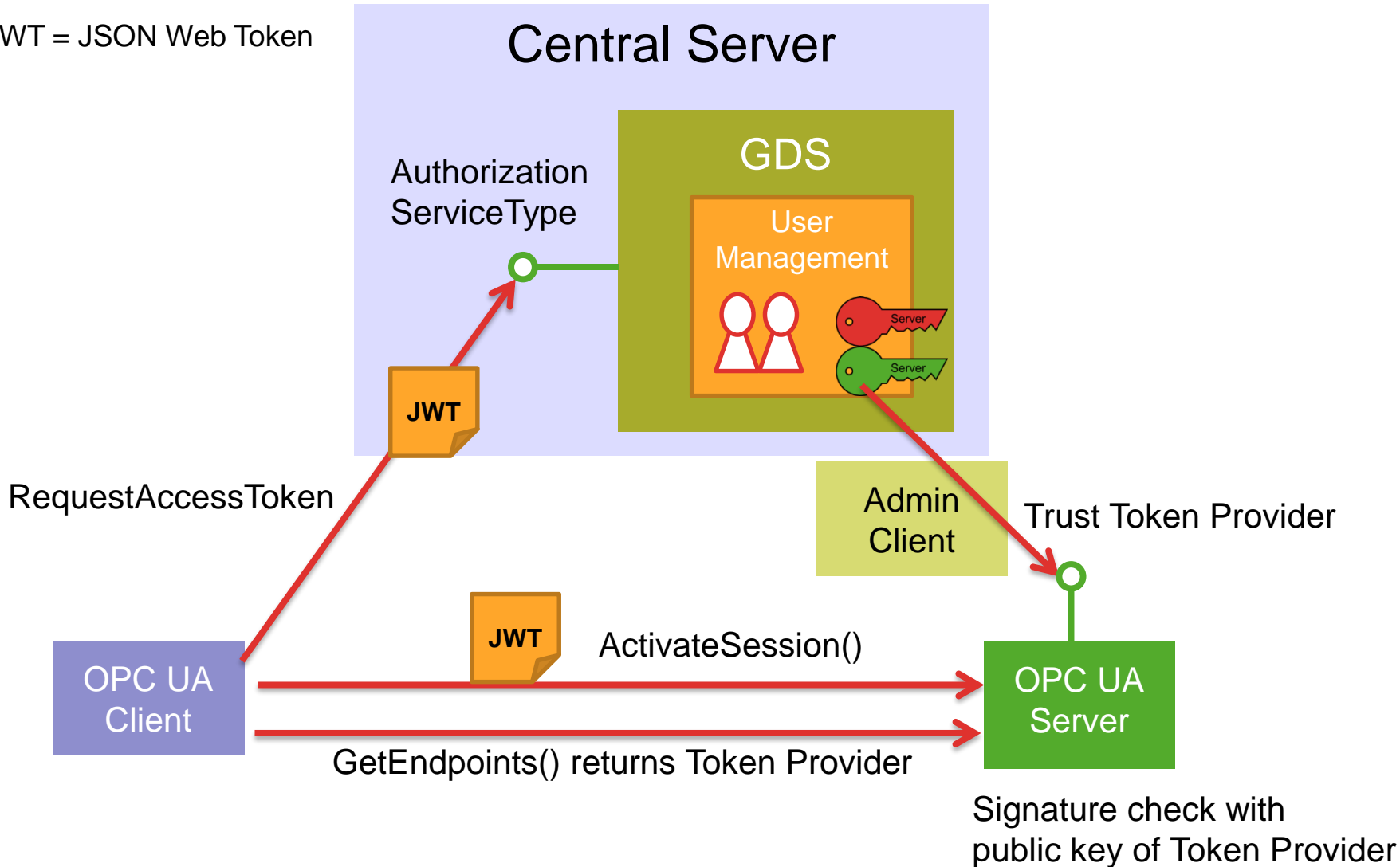
Used if OPC UA server is not directly reachable by central GDS client

Agenda

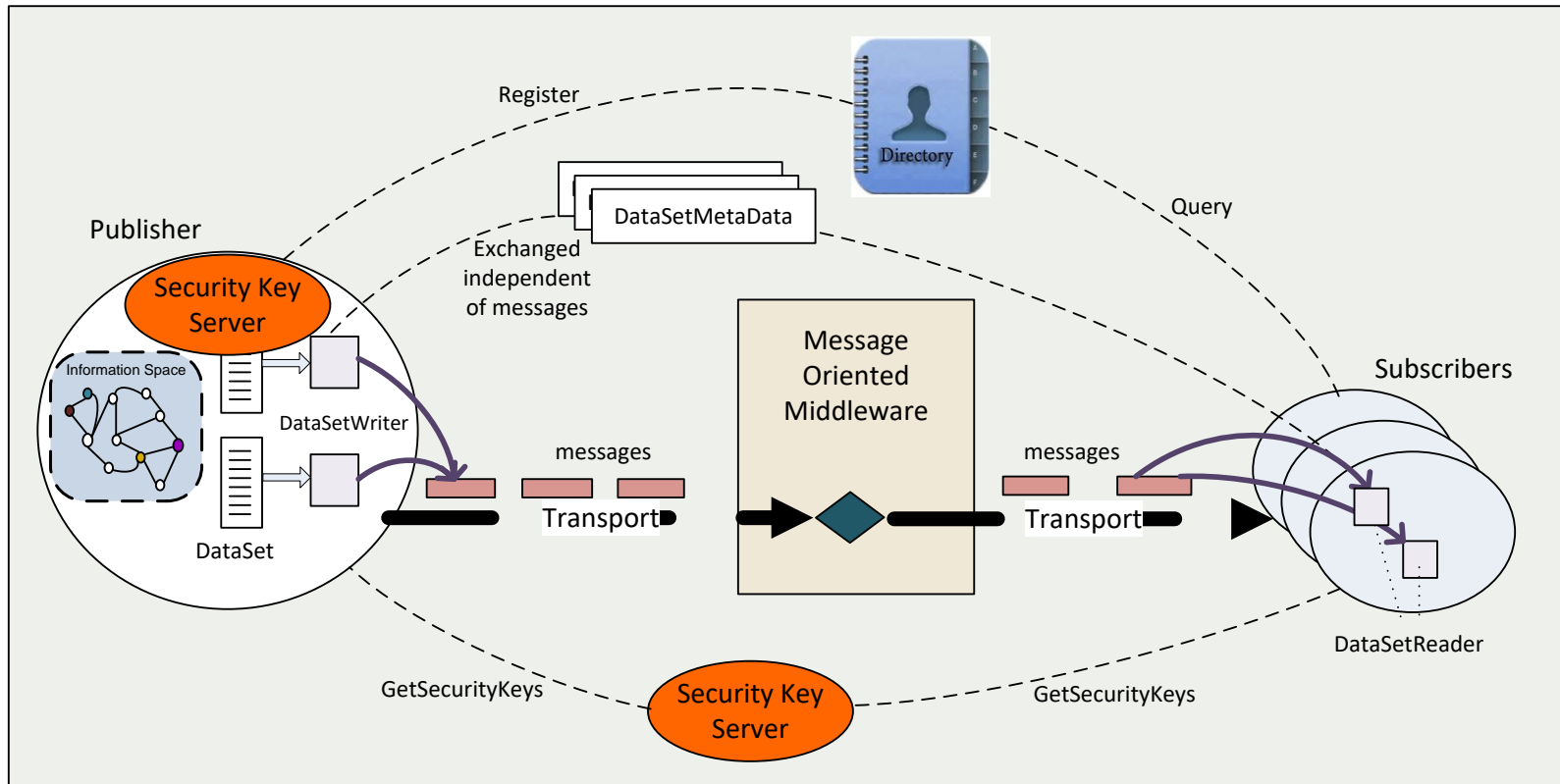
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User Authorization with GDS / JWT

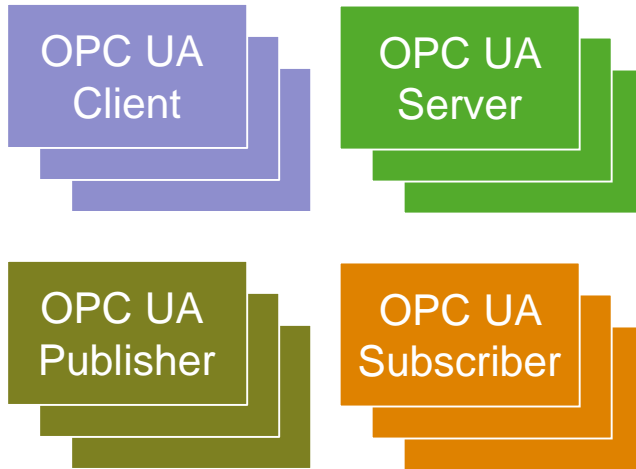
JWT = JSON Web Token



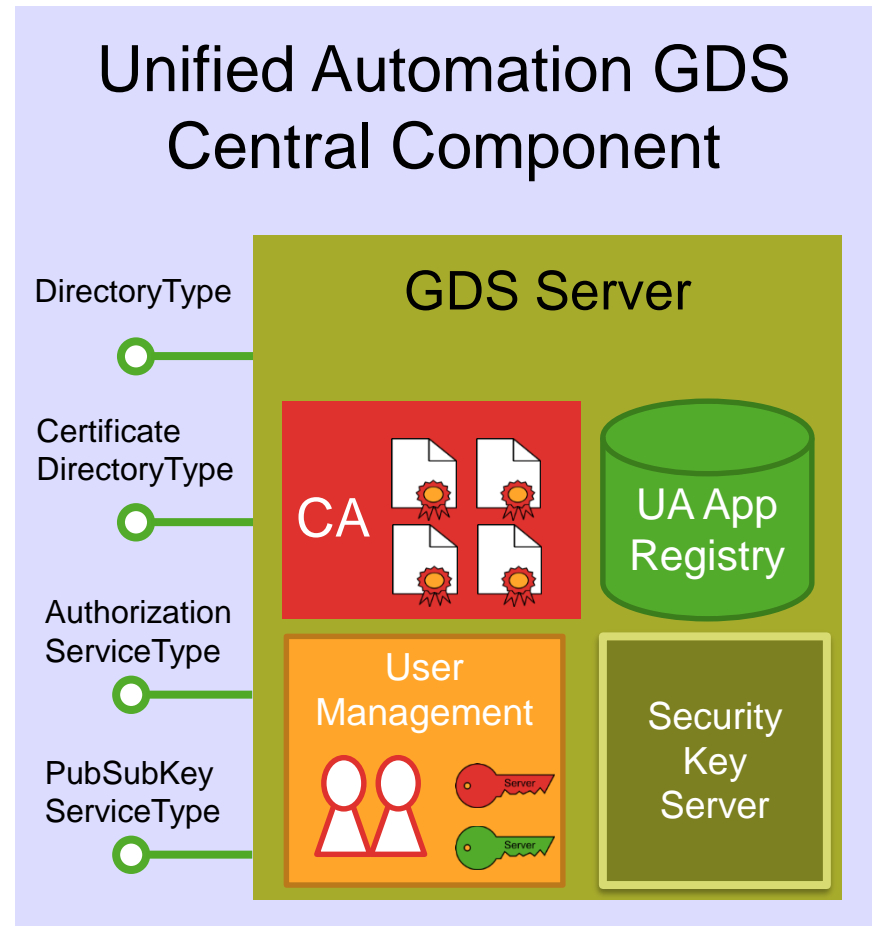
Security Key Server for OPC UA PubSub



Unified Automation GDS – Feature Complete



Managed OPC UA Applications



Unified Automation your OPC UA Partner

