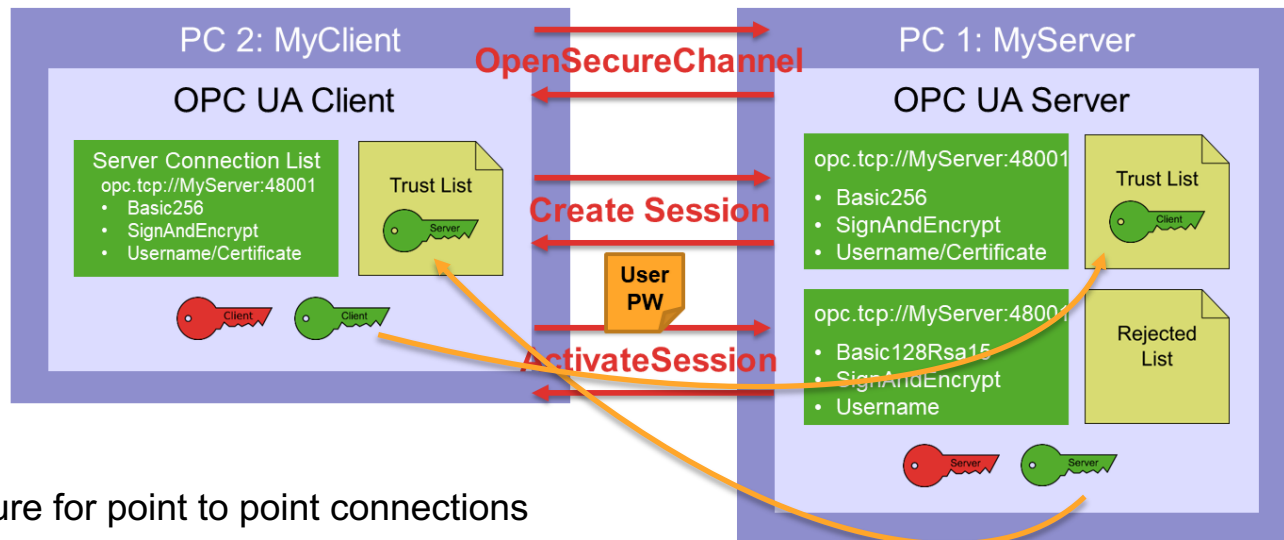


OPC UA Security Management and FX Configuration

Agenda

- > **OPC UA Security Management with GDS**
- > **OPC UA FX Development and Configuration Demo**

OPC UA Security with self-signed Certificates



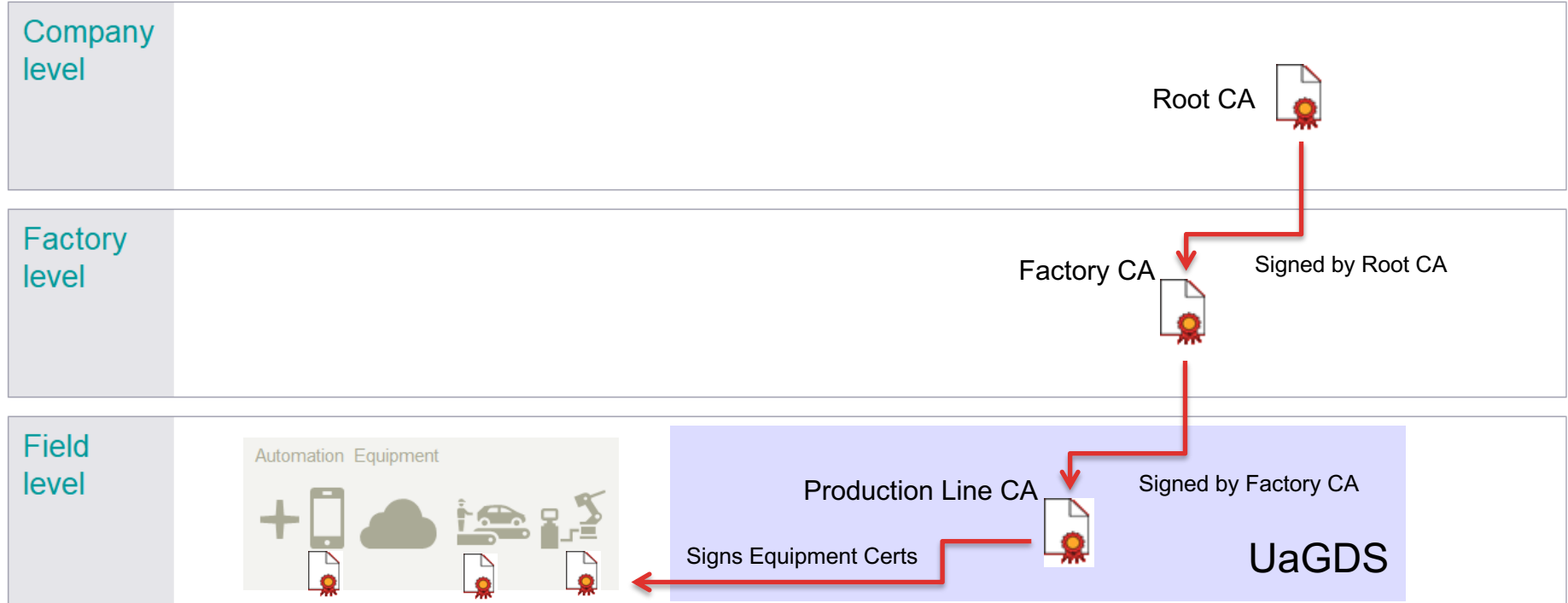
Pro

- ▶ Easy to configure for point to point connections

Con

- ▶ No automatic update of certificates
- ▶ No central management – no central revocation of certificates
- ▶ Not manageable for many clients talking to many servers

Certificate Authority (CA) Certificate Chains



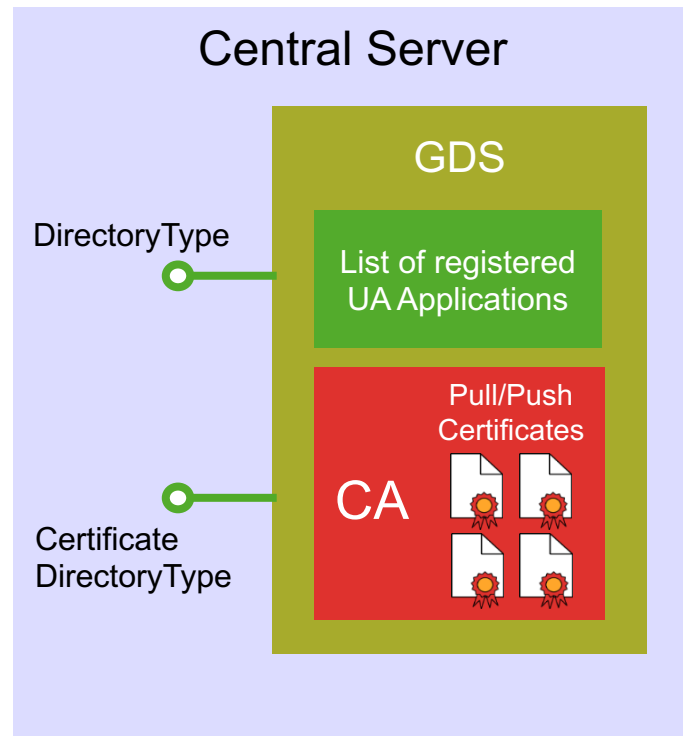
Global Discovery Server (GDS)

GDS – OPC UA Security Services

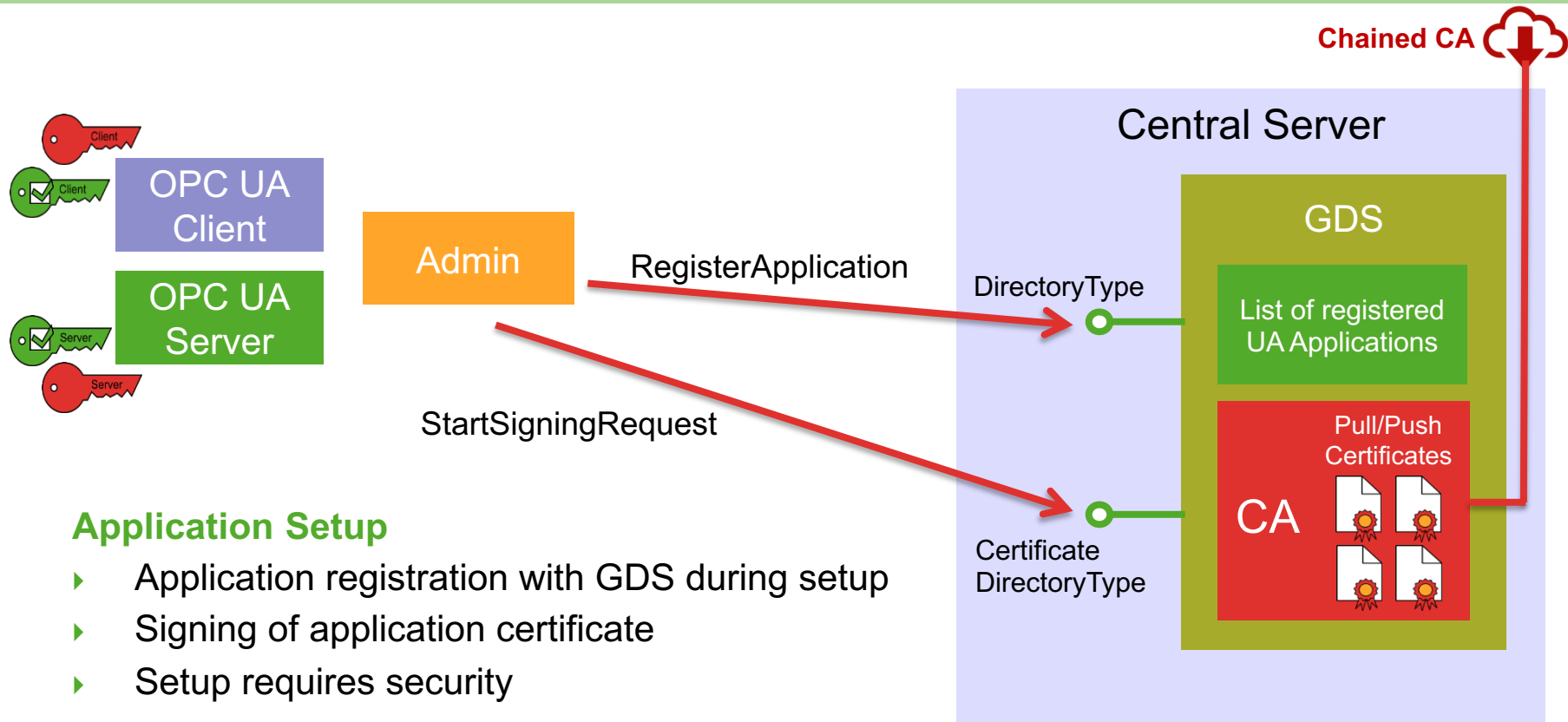
- ▶ Full OPC UA Server (all OPC UA security features)
- ▶ Provides different UA security management services
 - OPC UA server discovery
 - **P**ublic **K**ey **I**nfrastructure (**PKI**) for certificate management
 - PubSub Security Key Server (SKS)
 - User management
- ▶ **PKI** is base for **ALL** security features

GDS as **C**ertificate **A**uthority for PKI

- ▶ Central CA for certificate management
- ▶ CertificateDirectoryType is interface with UA Methods
- ▶ Certificate signing
- ▶ Trust list and revocation list distribution
- ▶ Automated certificate renewal



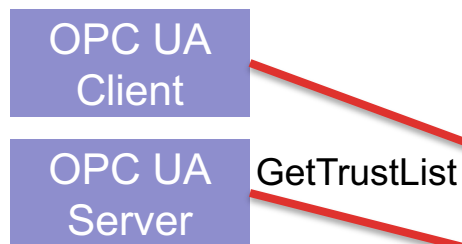
GDS – Application Setup



GDS – Application Security Update – PULL

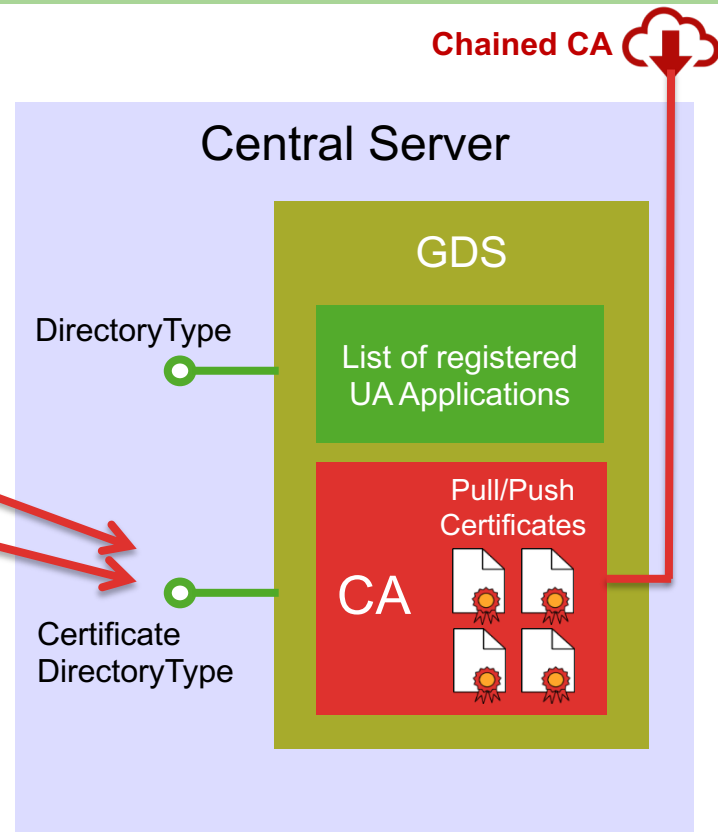
Pull

- Applications are clients for GDS

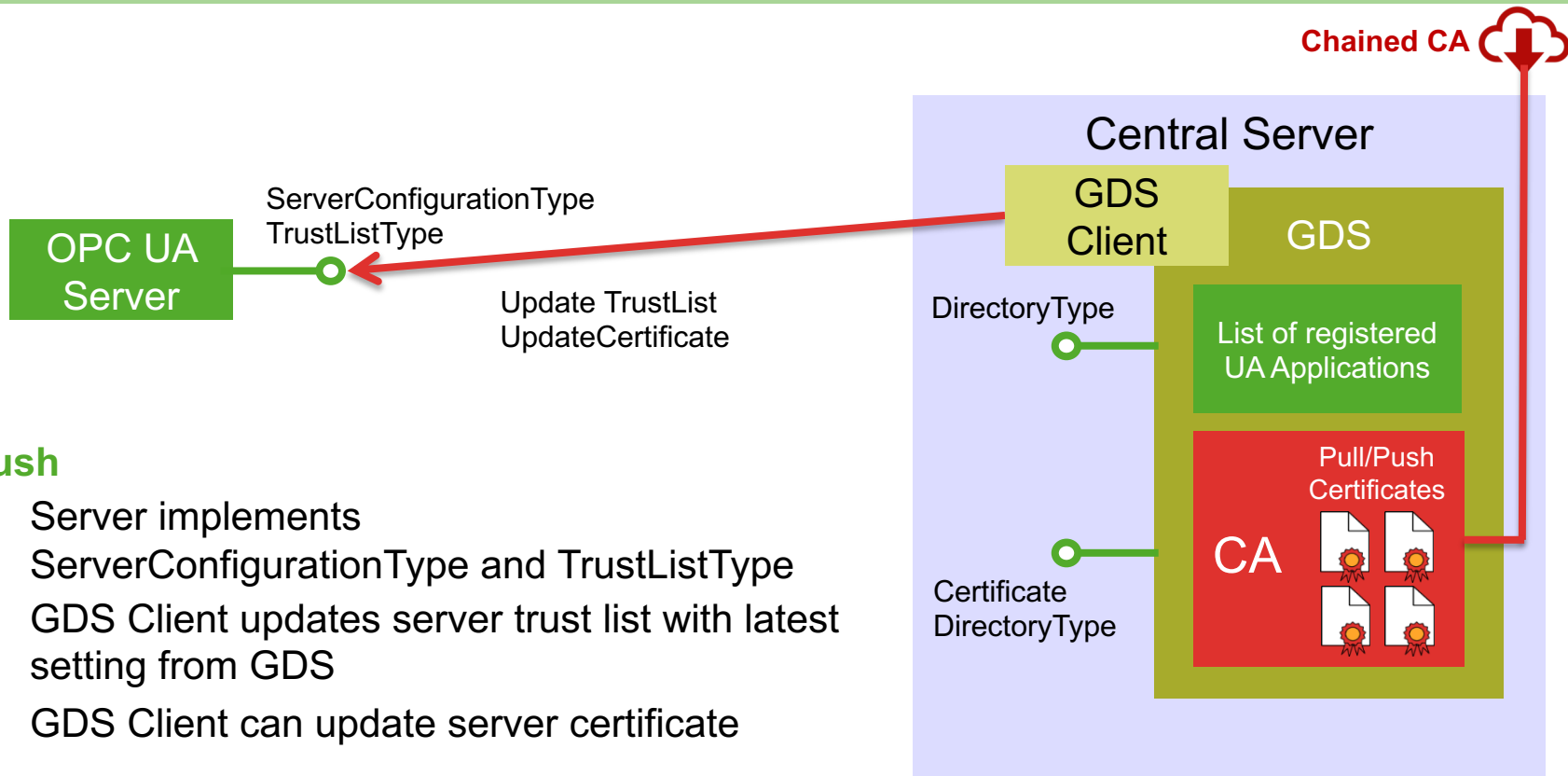


Application Security Update

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



GDS – Application Security Update – PUSH

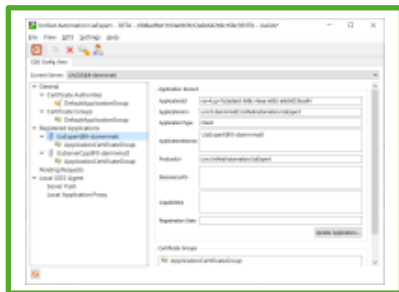


Push

- ▶ Server implements ServerConfigurationType and TrustListType
- ▶ GDS Client updates server trust list with latest setting from GDS
- ▶ GDS Client can update server certificate

UaGDS Product Components

UaGDS Config Tool



Configuration using OPC UA

Unified Automation defined

Standard Interfaces

Pull



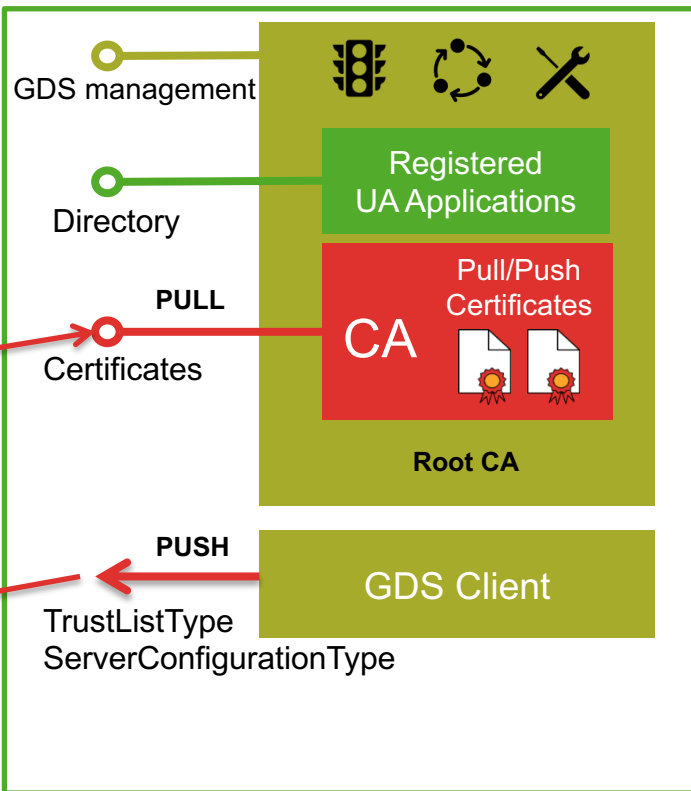
OPC UA Applications
with GDS support

- ▼ UA
 - > Discovery
 - ▼ pki
 - ▼ issuer
 - ▼ certs
 - ▼ crl
 - > own
 - > rejected
 - > trusted

OPC

Push

UaGDS Service

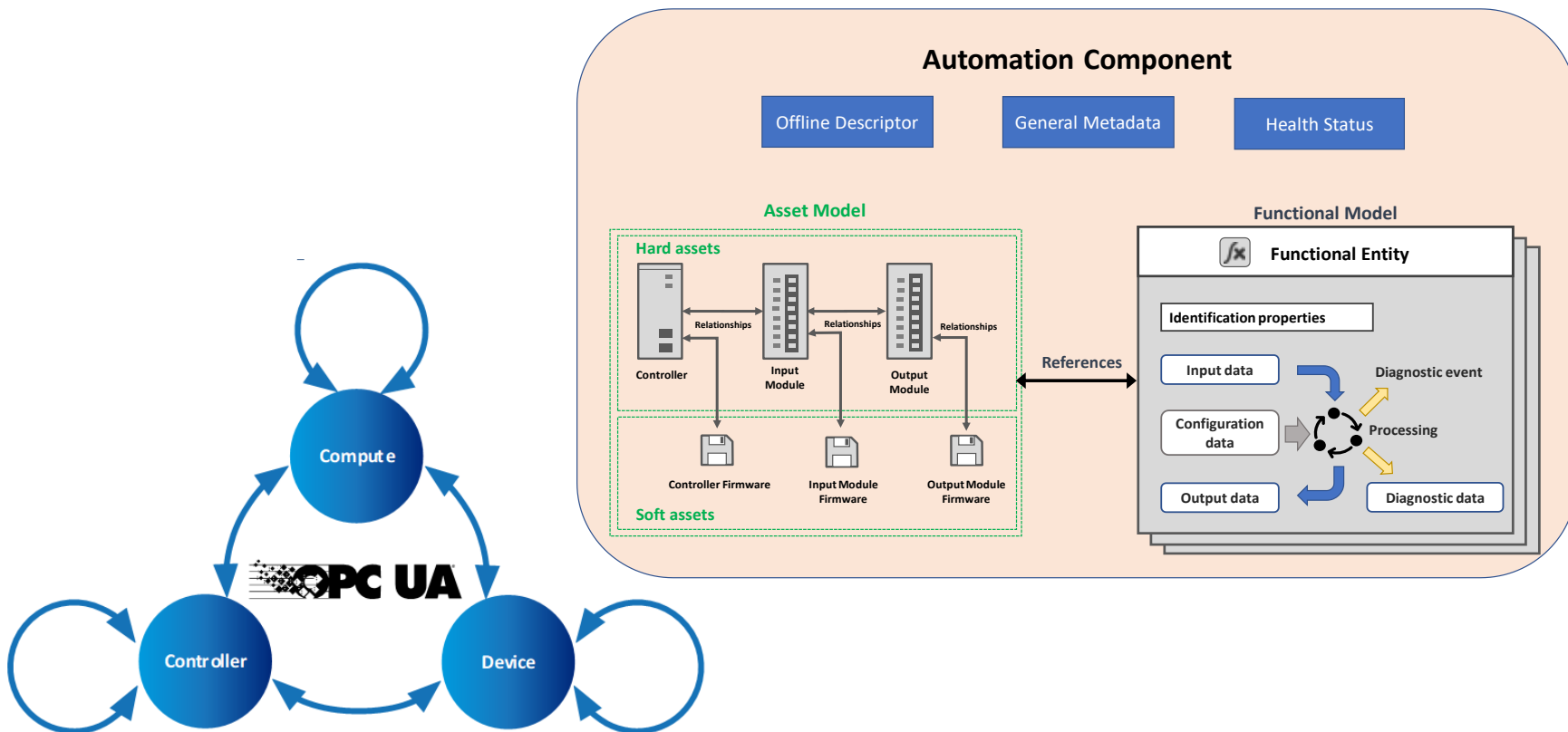


Agenda

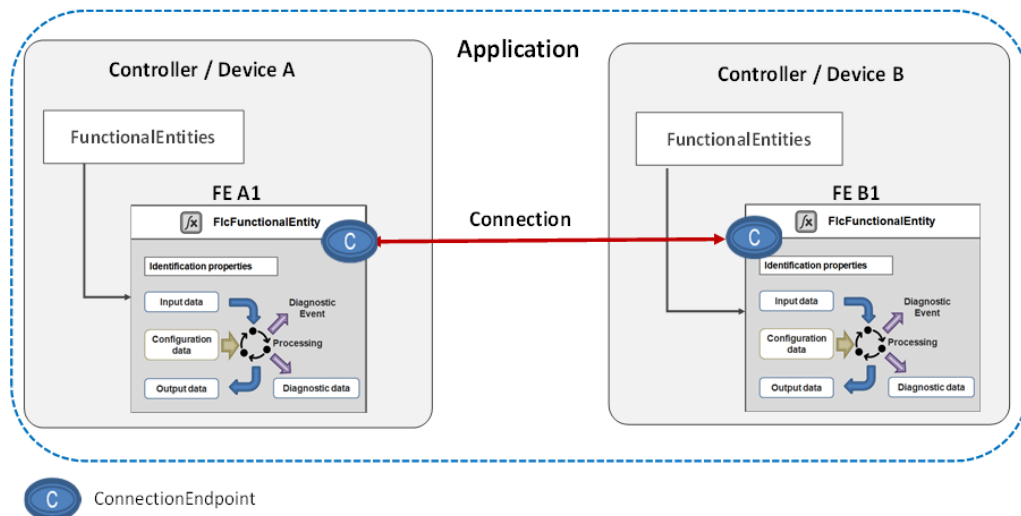
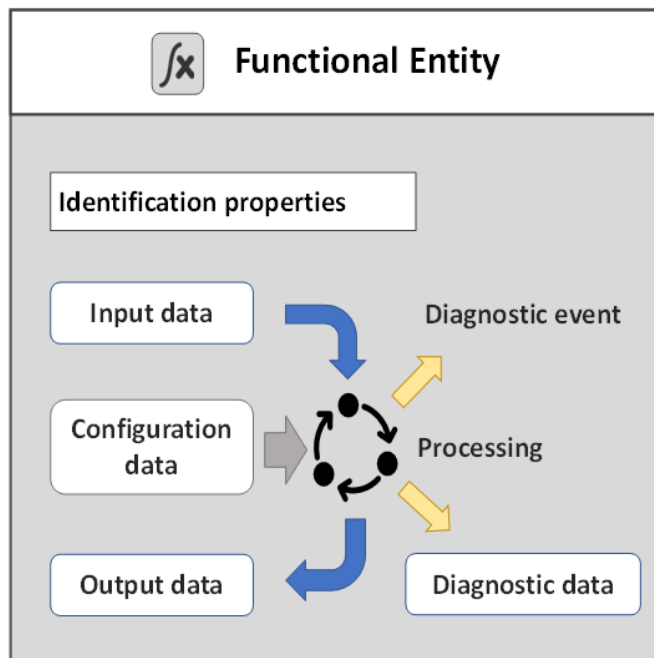
> OPC UA Security Management with GDS

> OPC UA FX Development and Configuration Demo

Interaction Model / FX Automation Component



FX Functional Entity + Communication Connections

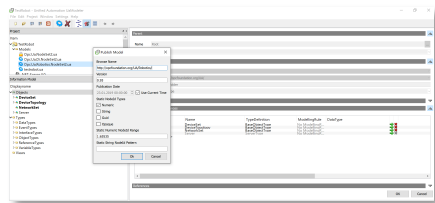


OPC UA FX Development Tools from Unified Automation

OPC UA FX Model



UaModeler



Device Model

OPC UA SDKs ready for OPC UA FX

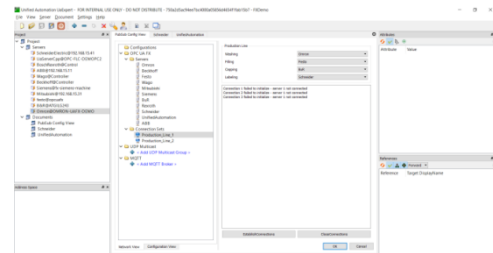


Product specific
code generated
for SDK



bare metal, FreeRTOS, Euros, QNX, embedded Linux, VxWorks, WinCE, Win32, Win64, Linux, Solaris

UaExpert with OPC UA FX Connection Management



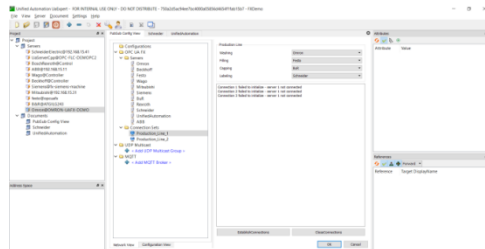
Test
product

Develop
product



OPC UA FX enabled product

UaExpert with OPC UA FX Connection Management



FX Connection configuration and establishment

FX Connection

High Performance SDK

Unified Automation SDK Demo Servers