PROSYS OPC

Centralized OT/IT integration with secure, model-based data flow

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Prosys OPC

- Founded in 1995
- Global expert in
  - OPC UA solutions and information modeling
  - IT/OT integration
  - Industrial Security
- An active member of the OPC Foundation and Open Industry 4.0 Alliance

30 Years of Prosys

- 50+ countries
- 1000+ customers

PROSYS OPC

Our Product Family

Developer Tools

OPC UA
SDK for Java

Sentrol
OPC UA & Classic
SDK for Delphi

Integration & Visualization

OPC UA
Forge

OPC UA
Monitor

Simulation & Testing

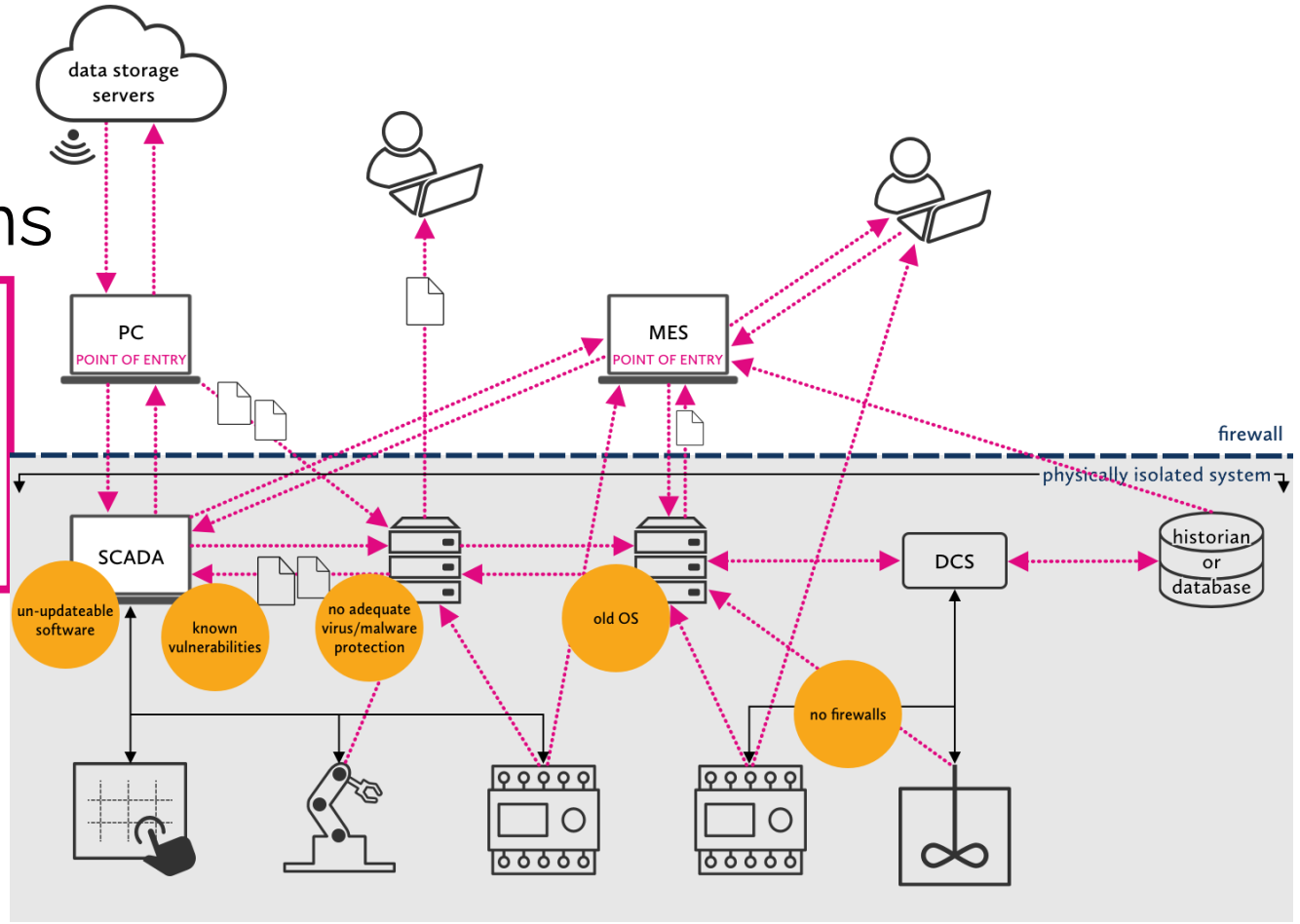
OPC UA
Simulation Server

OPC UA
Browser

State of the art in OT

- Legacy communication
- Point to point connections
- Proprietary data models
- No security
- No access control

- OPC UA should help
  - Does it?



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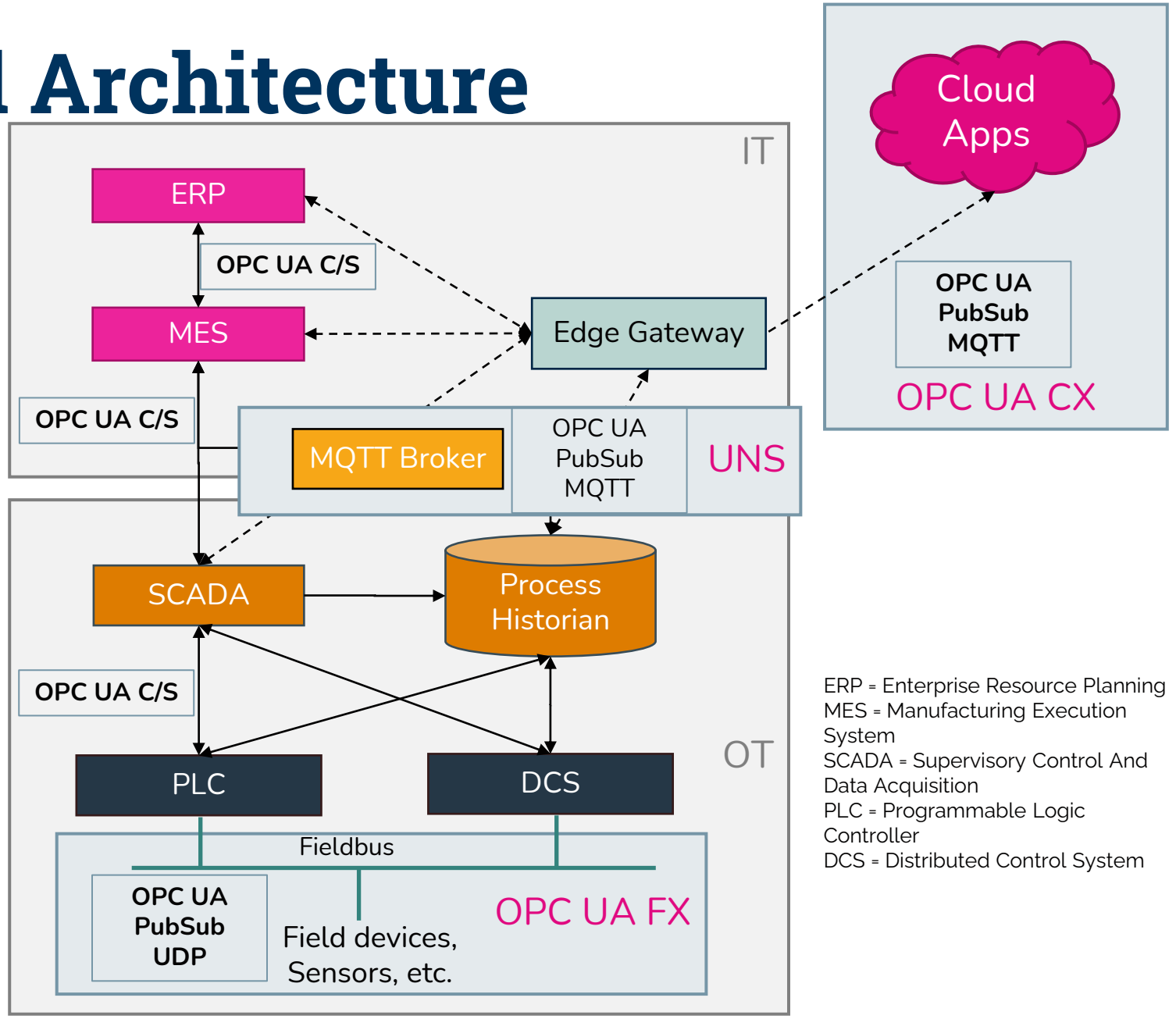
OPC UA Enabled Architecture

- OPC UA Client/Server (C/S)
  - Process Monitoring
  - Production Control (SCADA)
  - Production Orchestration (MES)
- OPC UA PubSub UDP
  - Field Level Communication
  - Field Exchange (OPC UA FX)
- OPC UA PubSub MQTT
  - Cloud Connectivity
  - Cloud Exchange (OPC UA CX)
  - Unified Namespace (UNS)



ERP = Enterprise Resource Planning
MES = Manufacturing Execution System
SCADA = Supervisory Control And Data Acquisition
PLC = Programmable Logic Controller
DCS = Distributed Control System

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OPC UA (IEC 62541)

- Base Services
  - Read/Write/DataChange
  - Events
  - Method Calls
  - HistoryRead

- Information Models
  - Data Access
  - Alarms & Conditions
  - Programs
  - Devices & Machinery:
    - Identification (Asset Management)
    - Device Health (Condition Monitoring)
  - Companion Specifications
    - Domain specific details

- Security
  - Confidentiality
  - Integrity
  - Availability
  - Authentication
  - Access Control
  - Auditing

- Transport options
  - UA TCP
  - PubSub
    - MQTT
    - UDP
  - REST
  - …

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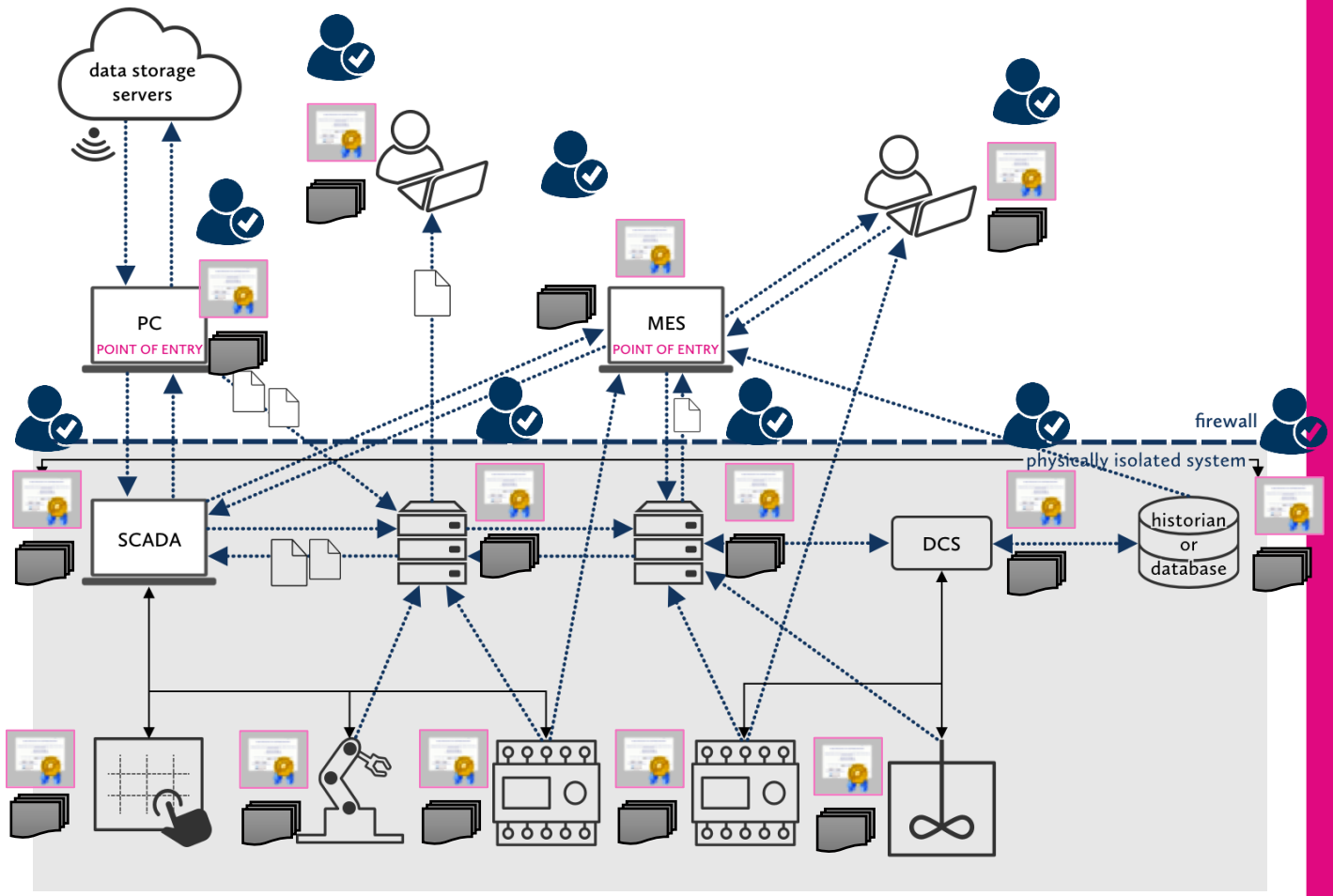
OPC UA Security

- Application Identities
  - X.509 Certificates
- User Identities
- Roles
- Access Control
  - Trust Lists
  - Permissions



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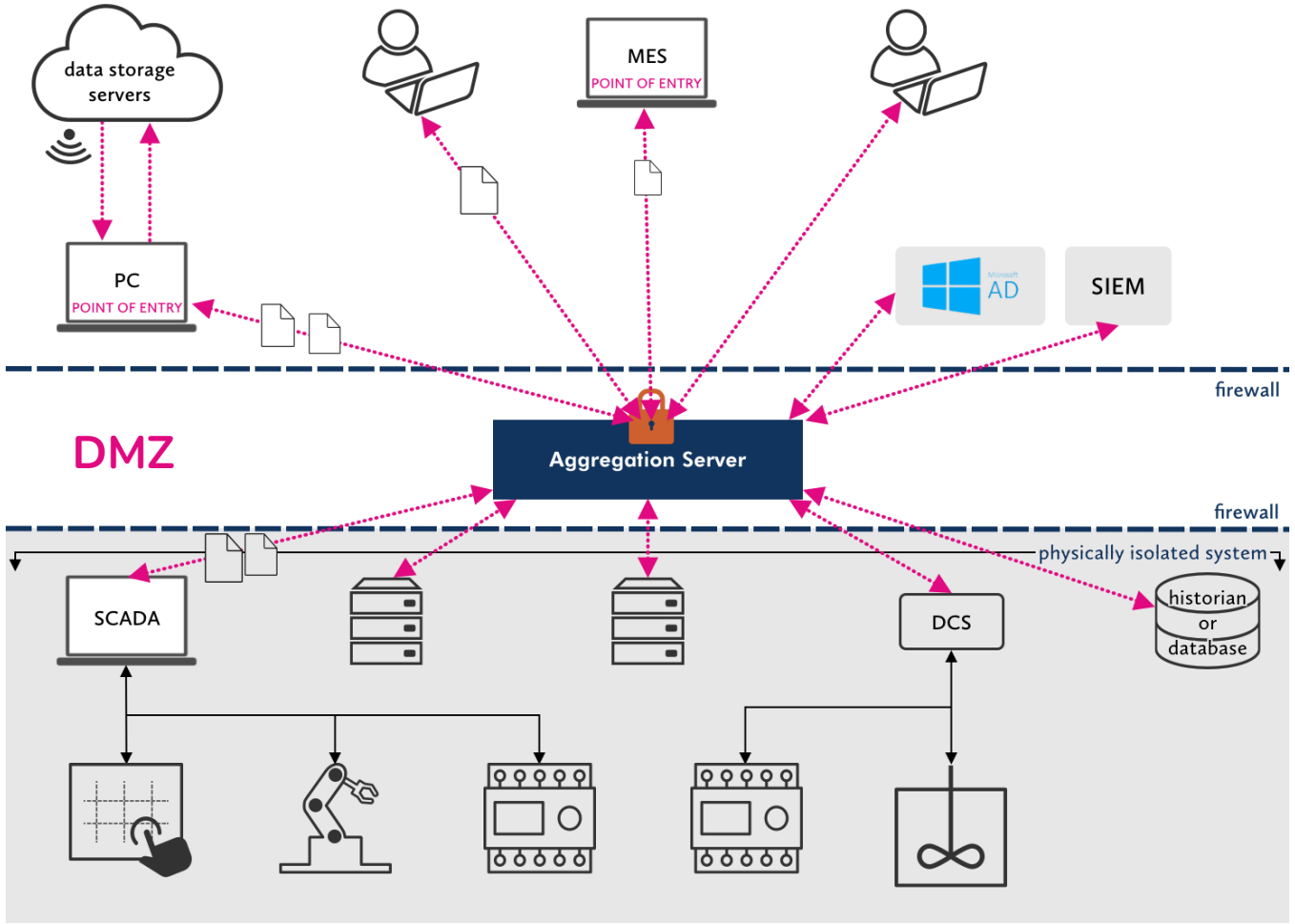
Aggregation Server

- IT/OT integration
- Single-point of access
- DMZ area



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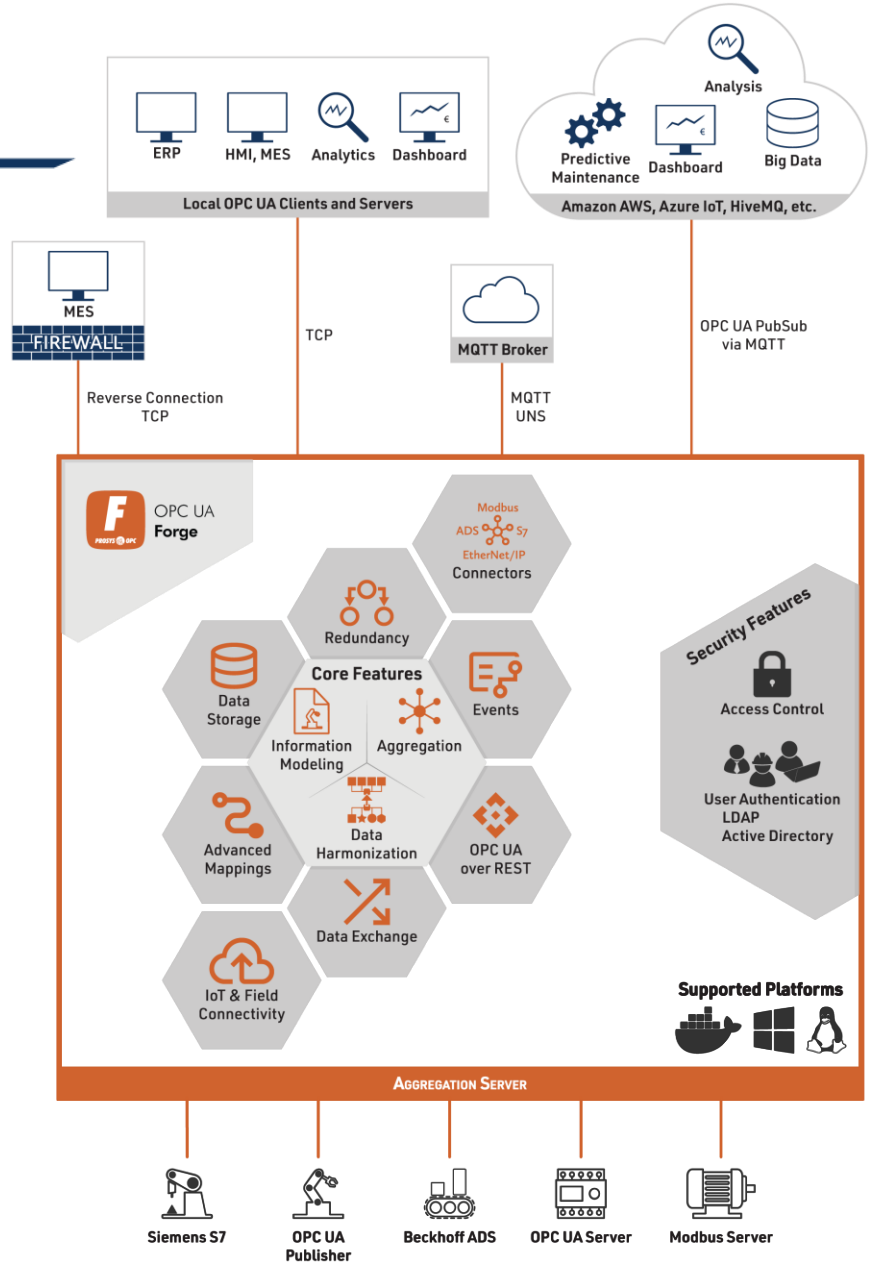
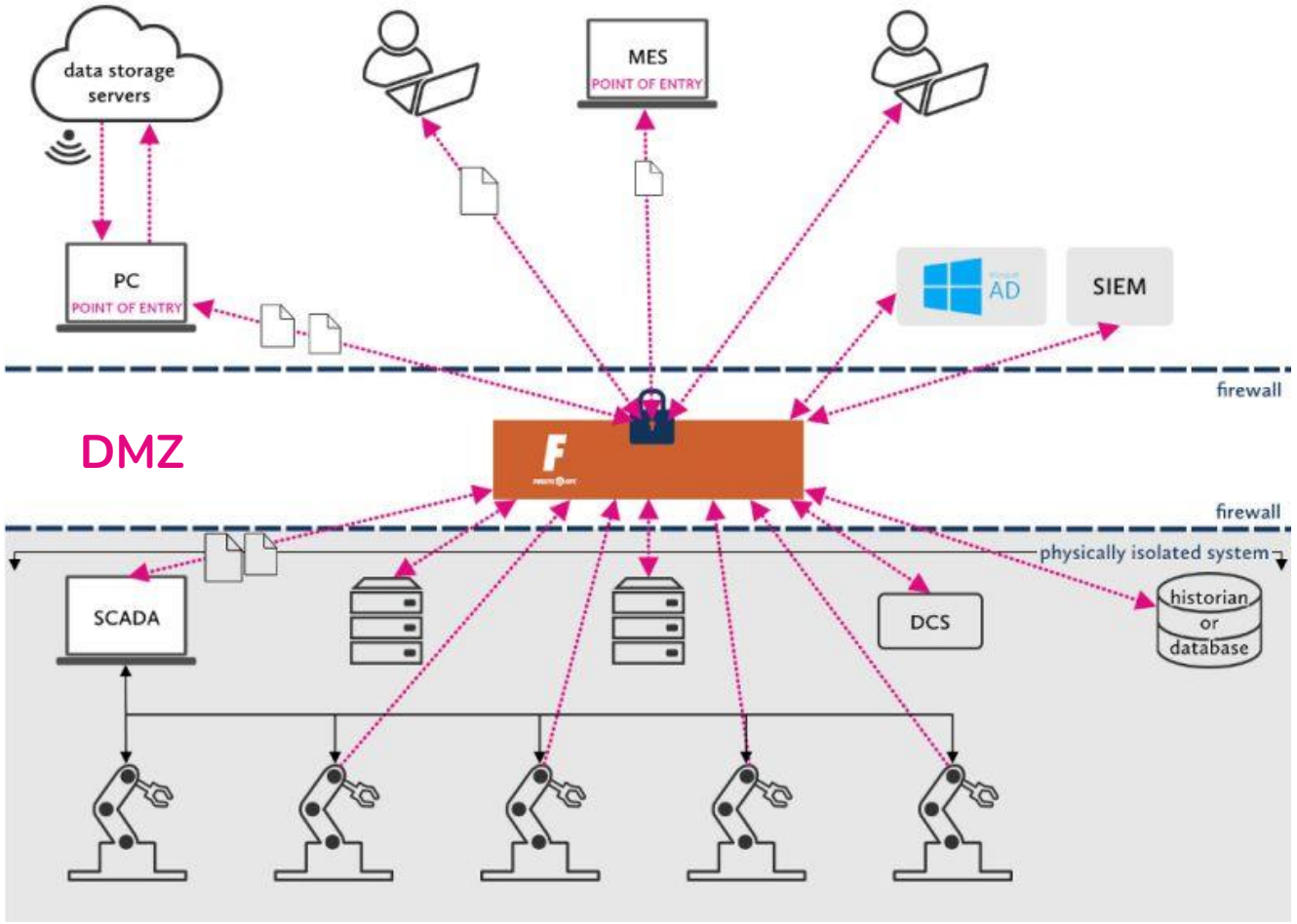
Prosys OPC UA Forge

- Edge application
- OPC UA Server as the core
- Variety of south- and northbound connectivity
- Business logic tools
- Security configuration
- Windows, Linux, Container
- Web configurator
- OpenAPI REST API
- Grafana Plugin!



Aggregation Server with Forge

- Security Gateway
- Communication Protocol Mappings
- Information Model Transformations



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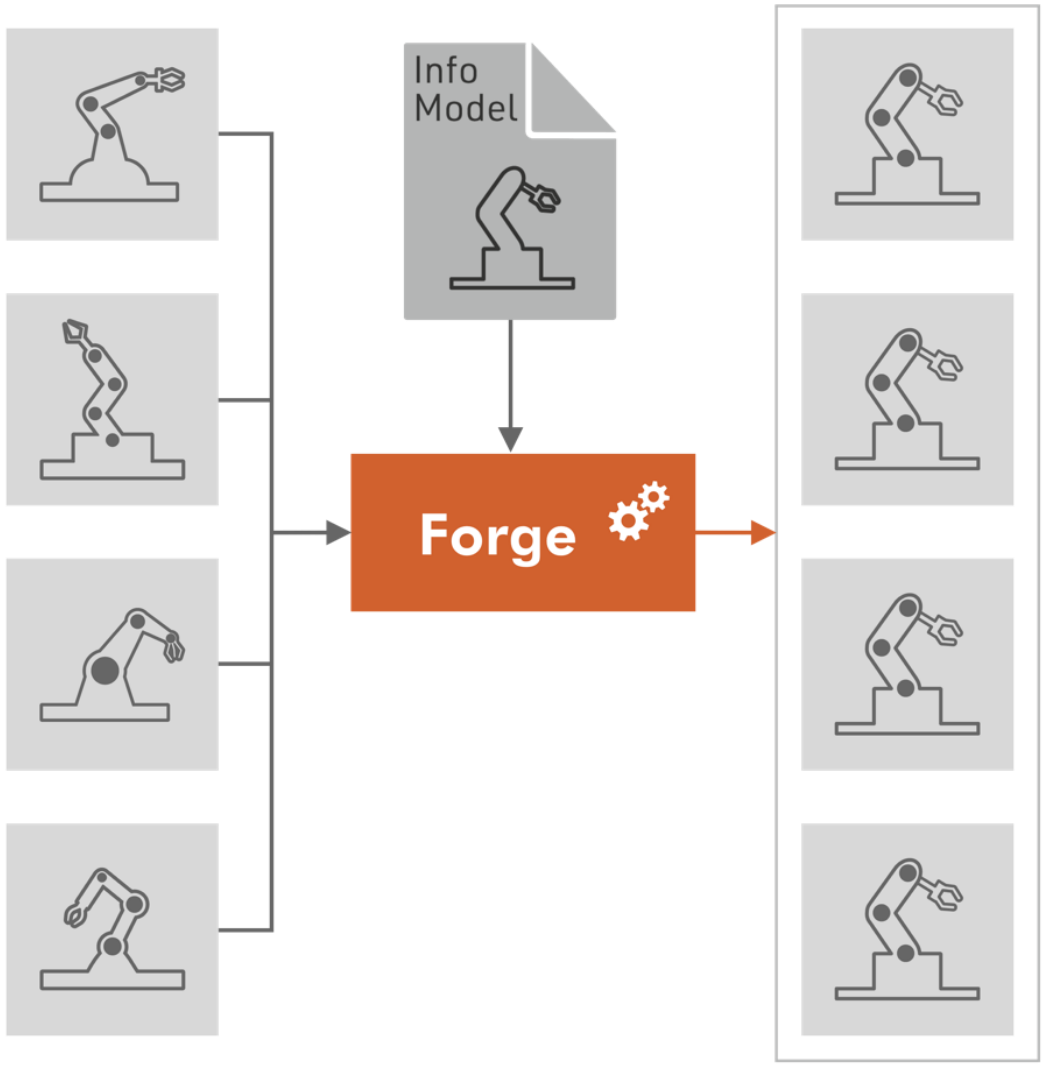
Information Modeling

- OPC UA Information Models
  - Engineering Units
  - Asset Management: Device Nameplate
  - Condition Monitoring: Device Health
  - Machine States
  - Job Control
- Domain Specific Models
  - Robots
  - Machine Tools
  - Etc.
- Custom models
  - Vendor specific
  - User specific



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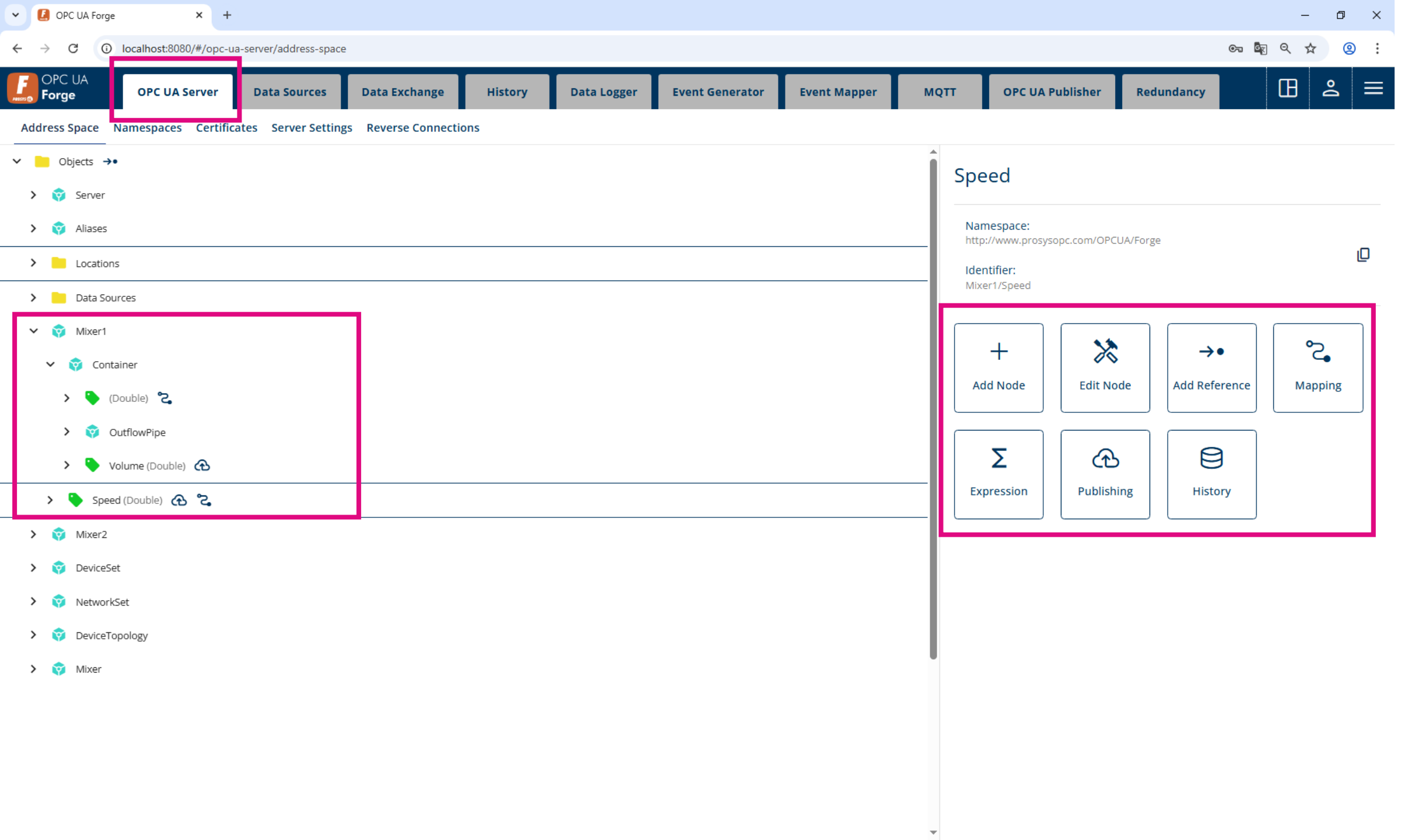
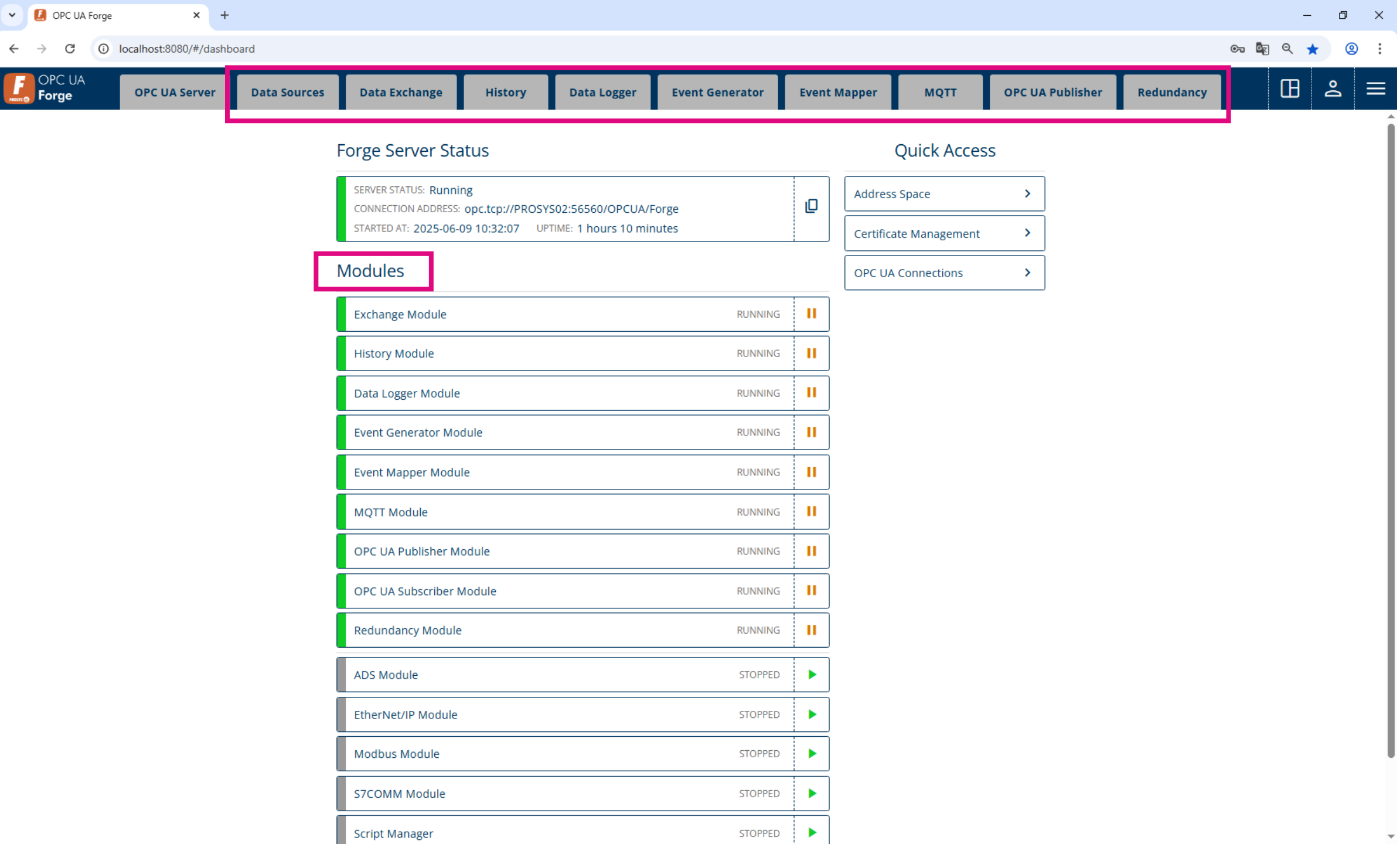
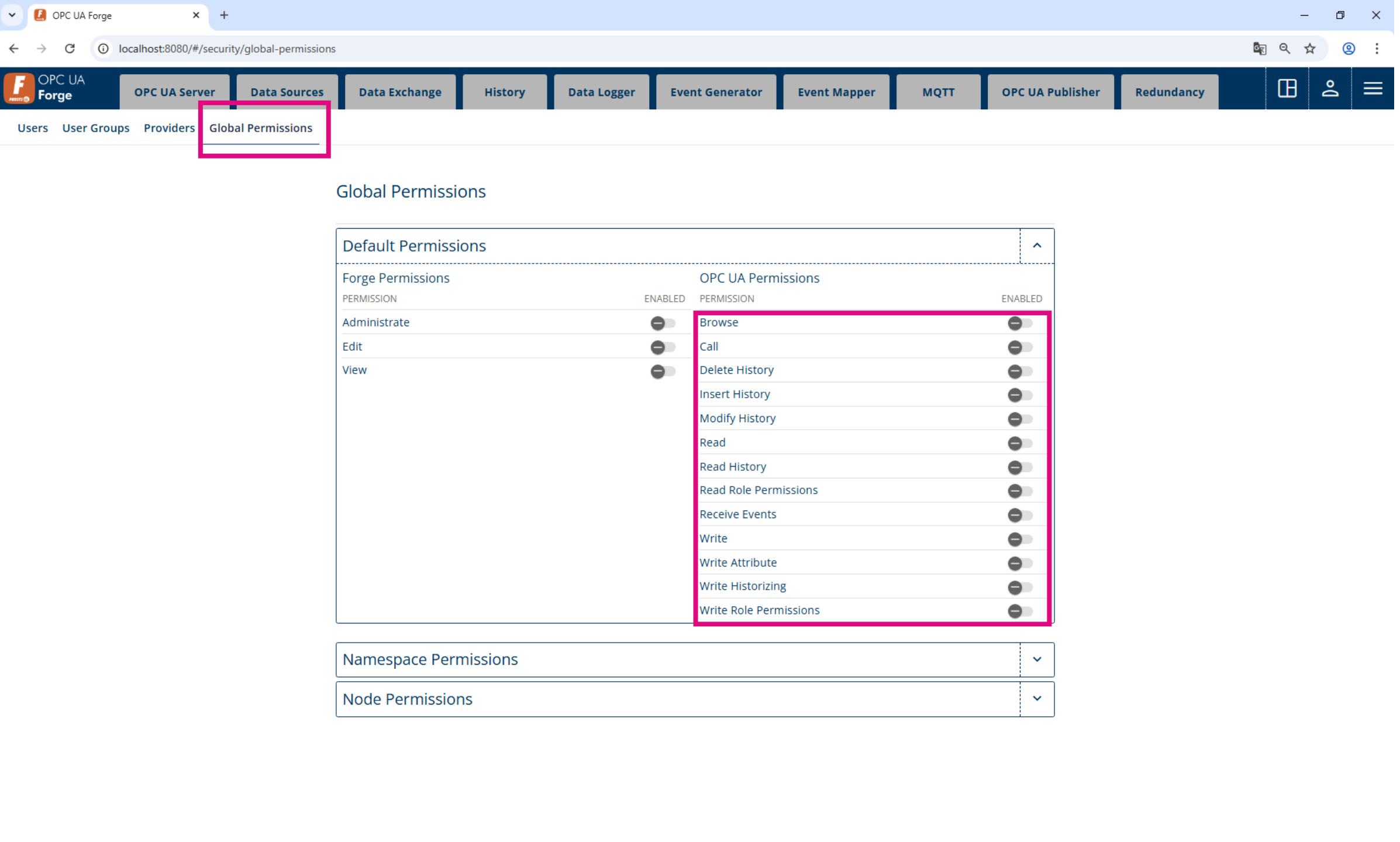
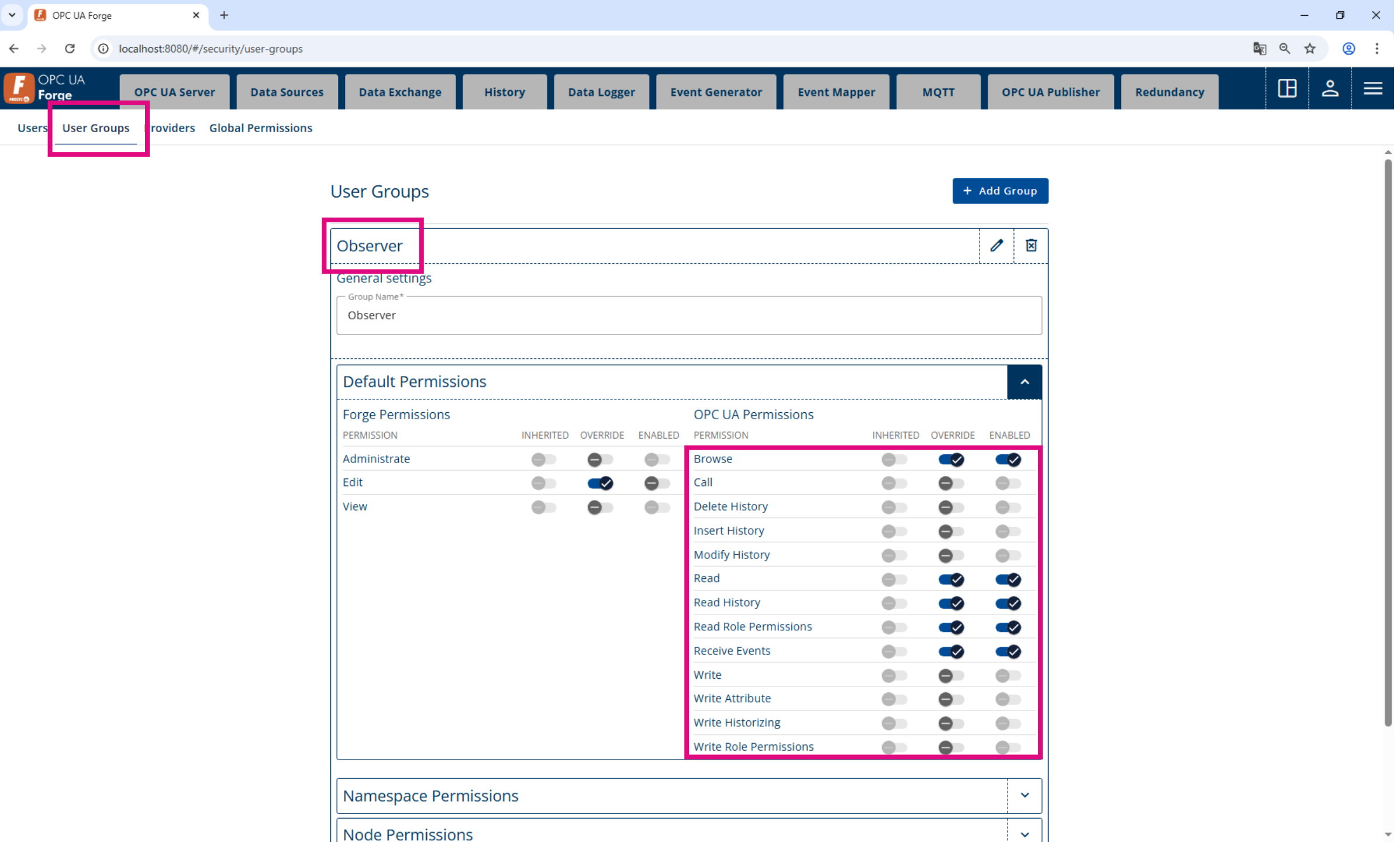
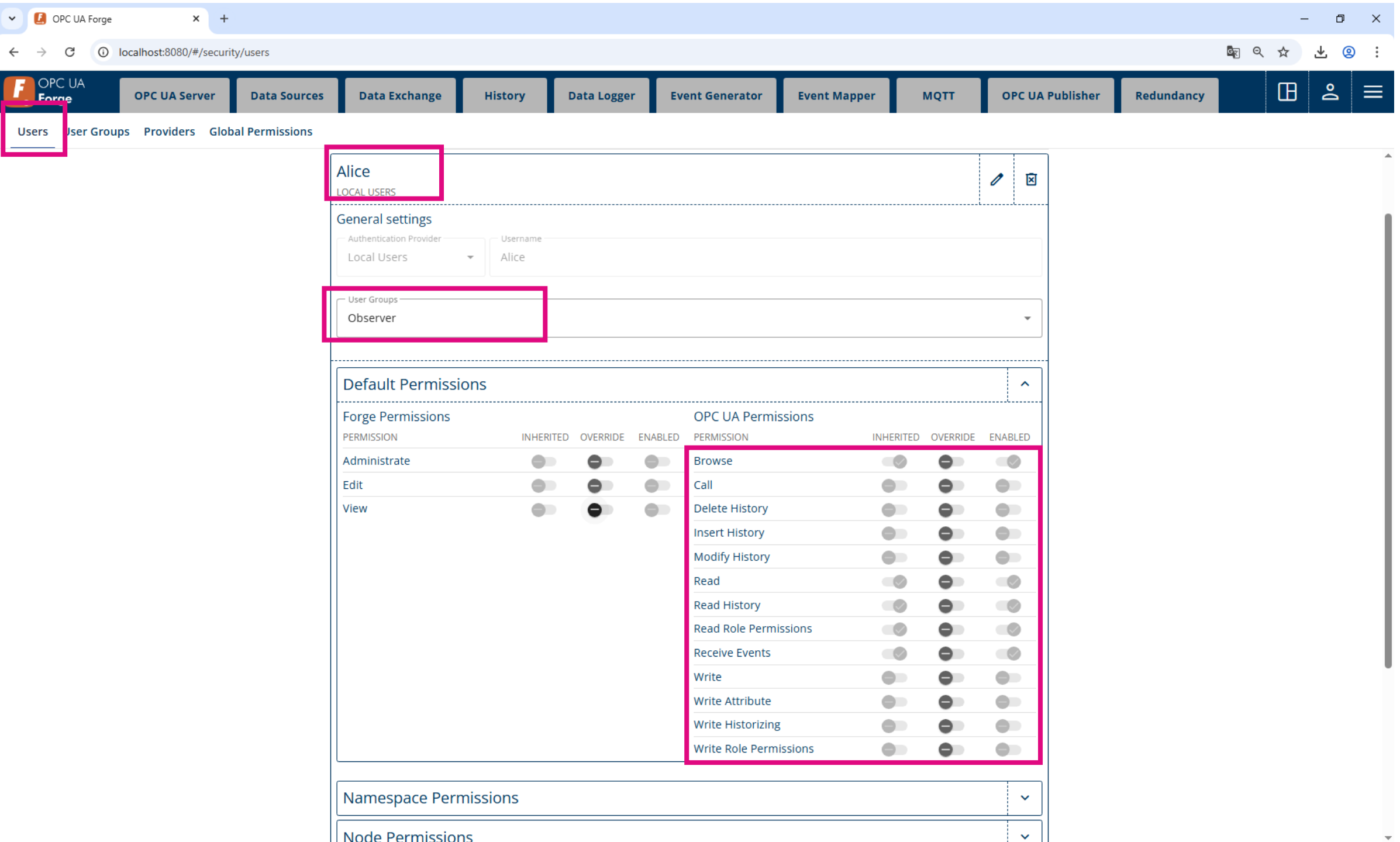

OPC UA Forge
localhost:8080/#/opc-ua-server/address-space
OPC UA Forge
OPC UA Server
Data Sources
Data Exchange
History
Data Logger
Event Generator
Event Mapper
MQTT
OPC UA Publisher
Redundancy
Address Space
Namespaces
Certificates
Server Settings
Reverse Connections
Objects
Server
Aliases
Locations
Data Sources
Mixer1
Container
(Double)
OutflowPipe
Volume (Double)
Speed (Double)
Mixer2
DeviceSet
NetworkSet
DeviceTopology
Mixer
Speed
Namespace:
http://www.prosysopc.com/OPCUA/Forge
Identifier:
Mixer1/Speed
Add Node
Edit Node
Add Reference
Mapping
Expression
Publishing
History


OPC UA Forge
localhost:8080/#/dashboard
OPC UA Forge
OPC UA Server
Data Sources
Data Exchange
History
Data Logger
Event Generator
Event Mapper
MQTT
OPC UA Publisher
Redundancy
Forge Server Status
SERVER STATUS: Running
CONNECTION ADDRESS: opc.tcp://PROSYS02:56560/OPCUA/Forge
STARTED AT: 2025-06-09 10:32:07
UPTIME: 1 hours 10 minutes
Modules
Exchange Module RUNNING
History Module RUNNING
Data Logger Module RUNNING
Event Generator Module RUNNING
Event Mapper Module RUNNING
MQTT Module RUNNING
OPC UA Publisher Module RUNNING
OPC UA Subscriber Module RUNNING
Redundancy Module RUNNING
ADS Module STOPPED
EtherNet/IP Module STOPPED
Modbus Module STOPPED
S7COMM Module STOPPED
Script Manager STOPPED
Quick Access
Address Space
Certificate Management
OPC UA Connections

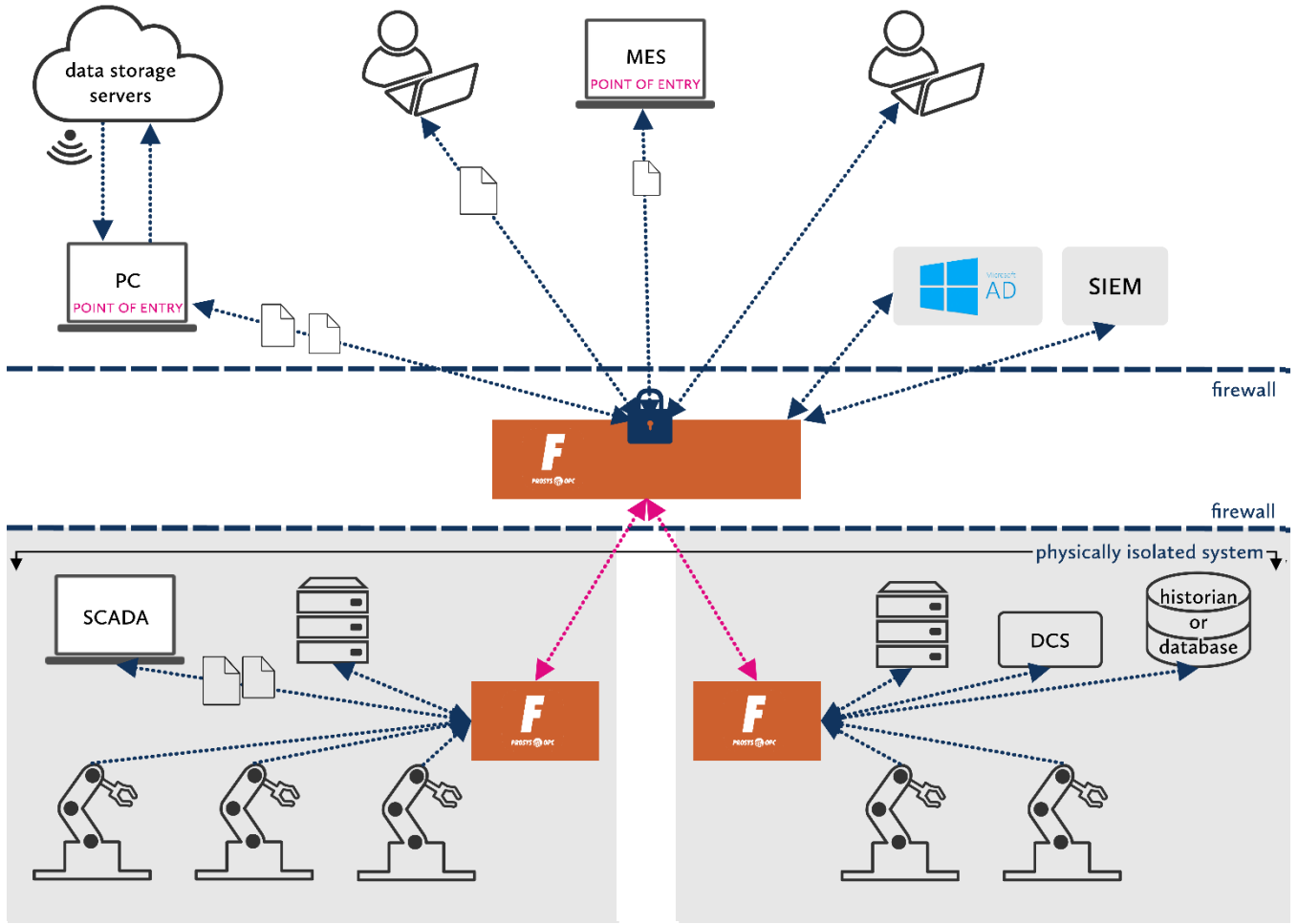

OPC UA Forge
localhost:8080/#/security/global-permissions
OPC UA Forge
OPC UA Server
Data Sources
Data Exchange
History
Data Logger
Event Generator
Event Mapper
MQTT
OPC UA Publisher
Redundancy
Users
User Groups
Providers
Global Permissions
Global Permissions
Default Permissions
Forge Permissions
PERMISSION
ENABLED
Administrate
Edit
View
OPC UA Permissions
PERMISSION
ENABLED
Browse
Call
Delete History
Insert History
Modify History
Read
Read History
Read Role Permissions
Receive Events
Write
Write Attribute
Write Historizing
Write Role Permissions
Namespace Permissions
Node Permissions


OPC UA Forge
localhost:8080/#/security/user-groups
OPC UA Forge
OPC UA Server
Data Sources
Data Exchange
History
Data Logger
Event Generator
Event Mapper
MQTT
OPC UA Publisher
Redundancy
Users
User Groups
Providers
Global Permissions
User Groups
+ Add Group
Observer
General settings
Group Name*
Observer
Default Permissions
Forge Permissions
PERMISSION
INHERITED
OVERRIDE
ENABLED
Administrate
Edit
View
OPC UA Permissions
PERMISSION
INHERITED
OVERRIDE
ENABLED
Browse
Call
Delete History
Insert History
Modify History
Read
Read History
Read Role Permissions
Receive Events
Write
Write Attribute
Write Historizing
Write Role Permissions
Namespace Permissions
Node Permissions


OPC UA Forge
localhost:8080/#/security/users
OPC UA Forge
OPC UA Server
Data Sources
Data Exchange
History
Data Logger
Event Generator
Event Mapper
MQTT
OPC UA Publisher
Redundancy
Users
User Groups
Providers
Global Permissions
Alice
LOCAL USERS
General settings
Authentication Provider
Local Users
Username
Alice
User Groups
Observer
Default Permissions
Forge Permissions
PERMISSION
INHERITED
OVERRIDE
ENABLED
Administrate
Edit
View
OPC UA Permissions
PERMISSION
INHERITED
OVERRIDE
ENABLED
Browse
Call
Delete History
Insert History
Modify History
Read
Read History
Read Role Permissions
Receive Events
Write
Write Attribute
Write Historizing
Write Role Permissions
Namespace Permissions
Node Permissions

IEC 62443 Zones & Conduits

- Separate Networks (Zones)
- One Forge per Network
- All communication via Forge
  - Within networks
  - Between networks (conduits)



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Thank You!

Please contact us for more information.

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OPC UA **Forge**

OPC UA **Simulation Server**

OPC UA **Forge Plugin**

OPC UA **Browser**