

MODULES

Channels, devices and tags

The project hierarchy, scan rates and scan modes, scaling, tag groups, addressing helpers, tag generation.

Online: mergenhub.envest.com.tr/docs/connectivity

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The project is a three-level tree: **channel** → **device** → **tag**. Everything else (alarms, log groups, virtual tags, screens) refers to tags by their full path `Channel.Device.Tag`.

The screenshot displays the MergenHub web interface. On the left, a sidebar shows the project hierarchy: PROJE (Bağlantılar, Simulation Examples (24), Functions (24), Eklentiler (Virtual Tag'lar, Tag Kısayolları, Alarmlar, Veri Logları, Data Bridge, MCP (AI))). The main area shows a table titled 'Simulation Examples cihazları' with columns Ad, Model, ID, and Tag. The table contains one row: Functions, —, 4, 24. Above the table are buttons: Özellikler, Yeniden Adlandır, Kopyala, Sil, and Cihaz Ekle. The top right shows status: Sadece Konfig, Canlı Veri, 0/24 aktif tag, Deneme 24/500. The bottom left shows the user 'admin' (Root (super-admin)) and the language 'TR TR'.

Connectivity – channel list, device tree and the live tag table

Channels

A channel is one driver instance with its transport settings. Create one per physical connection:

DRIVER FAMILY	ONE CHANNEL PER...
Modbus TCP, S7, OMRON, DNP3, IEC 104, IEC 61850, OPC UA client	network segment or group of devices you want isolated
Modbus RTU/ASCII	serial port (COM1, COM2 ...) or Ethernet-encapsulation gateway
MQTT	broker connection
Simulator	as many as you like

Channel settings include network adapter binding, connection/request timeouts, retry count, inter-request delay and the driver-specific options (e.g. Modbus block size, S7 PDU size). Channels are **isolated**: a device that stops answering never slows down devices on another channel.

Devices

A device is one PLC, RTU, IED, meter or broker topic set. Key settings:

- **ID / address** — IP:port and unit ID (Modbus), IP + rack/slot (S7), IED address (61850), station addresses (DNP3/104), topic root (MQTT).
- **Scan rate** — how often the device is polled (ms). Tags inherit it unless they override.
- **Scan mode** — *respect client rate* (OPC UA subscribers can request faster/slower), *fixed*, or *client-driven*.
- **Timeouts and retries** — after the configured failures the device is marked *Bad* and retried with back-off; it recovers automatically.
- **Demand-driven scanning** — a device is polled only while some consumer needs its tags; idle devices are left alone (saves bandwidth on GSM/radio links).
- **Diagnostics** — hex request/response trace, counters, last error.
- **Copy** — duplicates a device with all tags (addresses can be shifted).

MergenHub
OPC UA Gateway - v3.119

Ayarlar

24/24 aktif tag Deneme 24/500

PROJE +

- Bağlantılar
 - Simulation Examples 24
 - Functions 24
- Eklentiler
 - Virtual Tag'ler
 - Tag Kısayolları
 - Alarmlar
 - Veri Logları
 - Data Bridge
 - MCP (AI)

OPC UA SUNUCU

- OPC UA Sunucu
- OPC UA Kullanıcıları
- Güvenilen Client'lar
- Sunucu Sertifikası

WEB & BAĞLANTI

- Web & REST API
- Data Bridge

BİLDİRİMLER

- E-posta
- SMS
- İletişim Merkezi

GÖRÜNÜM

- Marka

SİSTEM

- Lisans
- Denetim
- Saklama

admin
Root (super-admin)

TR TR

OPC UA SUNUCU

Çekirdek servislerin durumu + sunucu kaynakları (MergenHub süreci ve makinenin toplamı AYRI gösterilir; uyarı eşikleri buradan ayarlanır). Ayrıca Windows servis başlatma davranış: açılışta otomatik başlasın mı, çıkınca kendini toparlasın mı. [Detaylı yardım](#)

Sunucu Kaynakları

MERGENHUB (BU SERVİS)

CPU 0% RAM 218 MB (%0.7) Thread 28 thread - 842 handle

MAKİNE (TOPLAM SİSTEM)

CPU 12% - 32 çekirdek RAM 22941 / 32530 MB (%70.5) Disk 144.8 GB boş / 930.6 GB

UYARI EŞİKLERİ CPU ≥ 85 % RAM ≥ 85 % Disk uyarı < 5 GB Disk kritik < 1 GB Kaydet

Eşik açılıncı ekranın üstünde uyarı çıkar.

24 tag - 24 taranan - 0 OPC - 0 izlenen - GC-gen2 4

Servisler & Alt Sistemler

Her modül bağımsız bir arka plan servisdur. Kontrol edilebilirler başlat/durdur/yeniden başlat satır- içindedir.

Servis	Durum	Metrik	Çalışma süresi	Oto-restart	İşlem
OpcUaServer	Çalışıyor	00:01:27 0 yeniden başlatma	☒	Durdur Yeniden başlat	
ScanEngine	Çalışıyor	00:01:27 0 yeniden başlatma	☒	Durdur Yeniden başlat	
Historian (Veri Logları)	Bos	0 grup - 0 etkin - 0 tag	—	—	
Alarmlar	Çalışıyor	0 onaysız	—	—	

Settings > Services shows every channel worker and its health at a glance

Tags

A tag maps an address in the device to a typed value:

FIELD	MEANING
Name	unique inside the device; used in OPC UA node ids and REST paths
Address	driver-specific (40001 , DB10.DBD24 , D100 , ns=2;s=... , AI:3 , IOA 1001 , LD0/MMXU1.TotW.mag.f , plant/line1/temp) — the ? shows the formats
Data type	Boolean, Byte, Short, Word, Long, DWord, LLong, QWord, Float, Double, String, Date, BCD/LBCD, arrays where the driver supports them
Read/Write	read-only or read/write (writes go to the device immediately and are audited)
Scaling	linear or square-root scaling with raw/scaled ranges and clamping; writes are un-scaled
Scan rate	optional override of the device rate
Description / unit	shown in OPC UA (Description, EngineeringUnits) and the UI

Tag groups organise large devices into folders and appear as OPC UA folders.

Creating many tags at once

- Generate tags** — from an address range (start, count, step, naming pattern).

- **Online browse** — reads the tag list from the device: OPC UA servers, IEC 61850 (SCL/ICD import or live GVA walk), DNP3 integrity poll, IEC 104 general interrogation, OMRON NJ/NX symbols, MQTT topic discovery with JSON pointers.
- **Import** — Kepware or MergenHub JSON exports; CSV via the tag table's import button.

Quality and timestamps

Every value carries an OPC quality: **Good**, **Bad** (device unreachable, error, or trial window expired), **Uncertain** (stale/cached). Both the *source timestamp* (device time when available) and the *server timestamp* are kept and exposed over OPC UA.

Aliases

Extensions › Aliases let you publish a tag under a second, friendlier name (for example `Plant.Intake.Flow` instead of `Modbus_1.RTU_3.AI_40011`). Aliases appear in OPC UA and REST like normal tags.

System tags

Each device has `_System` tags (`_Error` , `_NoError` , `_LastRead` , `_SuccessfulReads` , `_Enabled` ...) that report communication health and can be logged or alarmed like any tag. `_Enabled` can be written to pause a device.