



DESIGNED & ENGINEERED IN TÜRKİYE

INDUSTRIAL SERIAL DEVICE SERVER

Serial Device Server

**Legacy protocol, new network.
Serial lines over IP.**

An industrial terminal server that **carries the RS232 lines of SCADA, RTU, protection-relay, meter and automation equipment to remote sites over the Ethernet network.** Every baud rate from 0 bps to 512 kbps (including the non-standard 200 baud), RS232 concentration from many points onto one port, UDP-based point-to-multipoint (P2MP) operation; 1U chassis, -20 to +75 °C.

4 · 8 · 16
RS232 PORTS

0–512 k
BAUD, INCL. 200

P2MP
+
CONCENTRATION

**–20 to
+75 °C**
INDUSTRIAL
TEMPERATURE



SDS family · 1U 19" chassis, RJ45 serial ports (groups of 4), 1x Gigabit Ethernet

Simgenet Serial Device Server

Product Brochure · SMG-UB-SDS-EN · Rev. 2

Simgenet Mühendislik

Enerji San. ve Tic. Ltd. Şti.



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CORPORATE

Bringing Field Serial Equipment onto the Network Without Replacing It

Simgenet Mühendislik is a Turkish engineering company delivering industrial networking and critical-infrastructure communication systems. Our team builds SCADA/RTU communication, SDH/PDH, FSK modem and IP/MPLS infrastructures in transmission and distribution facilities; we developed the Serial Device Server so that the hundreds of devices in the field that still speak RS232 **can be brought onto the IP network without being replaced.**

2000

FOUNDED

500+

PROJECTS DELIVERED

30+

COUNTRIES SERVED

100+

PRODUCTS

■ Why our own serial device server

- Power automation still has RTUs and relays talking at non-standard rates such as **200 baud**; general-purpose products do not recognize them
- The control centre wants to see dozens of serial lines from different regions **on a single RS232 port** — RS232 concentration was designed for that
- The same poll from one centre to many sites: UDP-based **point-to-multipoint (P2MP)** operation
- Substation environment: -20 to +75 °C, 40–72 V DC or 220 V AC, 1U rack, industrial EMC

■ Who it is for

- SCADA and power automation — RTU, protection relay, meter and recorder communication
- Industrial control — serial interfaces of PLCs, HMIs, sensors and measuring instruments
- Electrical communication infrastructures — modem, multiplexer and legacy terminal connections
- Organizations moving to IP/MPLS while keeping their existing serial equipment

A simple idea, applied to the field. A serial device server is more than "converting RS232 to TCP": baud rate, operating mode, concentration and multipoint distribution must work the way the field protocol expects. The Simgenet Serial Device Server is designed with these details for SCADA and RTU communication.

Our Mission

To deliver innovative, reliable and sustainable technology solutions for industrial networking and critical-infrastructure communication, safeguarding our customers' business continuity.

Our Vision

To become Türkiye's most trusted and innovative network-infrastructure technology partner and a globally recognized brand.



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PRODUCT

RS232 Line, Ethernet Network, Remote Site

The Serial Device Server connects to the device's RS232 port and carries the serial data as TCP or UDP packets over Ethernet to the far end. There, a second Serial Device Server turns the data back into RS232, or the SCADA server talks directly over TCP/UDP. Nothing changes for the field device: same port, same baud rate, same protocol.

■ Serial side

- 4 / 8 / 16 independent RS232 ports (by model)
- Every baud rate from 0 bps to 512 kbps; non-standard 200 baud included
- Separate rate, mode and target per port

■ Network side

- 1× Gigabit Ethernet (10/100/1000Base-T)
- TCP/IP, UDP, ARP, ICMP, DHCP, DNS, HTTP
- End to end over IP/MPLS and routed networks

■ Operating modes

- TCP server / TCP client — point-to-point serial tunnel
- UDP — low-latency, connectionless transport
- P2MP — one port to many targets, many targets to one port

Key Capabilities

■ RS232 concentration

Data arriving from several RS232 ports in different regions is **merged onto a single RS232 port** at the control centre. The single serial port of the SCADA server sees dozens of RTUs in the field; systems limited to classic protocols are integrated without change.

■ Point-to-multipoint (P2MP)

With UDP-based operation a poll sent from the centre reaches many sites at once; the answers return over the same channel. A large number of serial channels is managed with one device and one network connection.

■ Wide baud range

From the 200, 300, 600 and 1200 baud rates of legacy RTUs and protection relays to the 115.2 k and 512 kbps rates of modern devices on the same port; the rate is set per port.

■ Web-based setup

Port rate, mode, target address and concentration mapping in minutes from the TCP/IP- and HTTP-based interface; Telnet and console access as well. Configuration is exported and the same settings applied across the fleet.



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TOPOLOGIES

Three Layouts, One Device

The same device works in three roles depending on configuration. The number of field devices, what the control centre expects and the network structure decide which one is chosen; all three can coexist on the same network.

1 · Point-to-point serial tunnel

RTU / relay

RS232 → Serial Device Server (field) · TCP client

IP / MPLS network

Serial data as TCP packets; routed, redundant path

SCADA

Serial Device Server (centre) → RS232 · TCP server; or a direct TCP socket

2 · RS232 concentration

Site A · B · C ...

RTUs at each site connected to their own Serial Device Server

Aggregation

Serial streams from all sites to the centre over the network

Centre · one port

The Serial Device Server merges them on one RS232 output → SCADA serial port

3 · Point-to-multipoint (P2MP)

Centre

Poll from one RS232 port; UDP to many targets

Network

The same packet to every target site; answers over the same channel

Sites

Each Serial Device Server passes it to its RTU; addressed protocols work unchanged

■ Designed for SCADA and RTU

- Timing preserved in poll–response protocols; rate and mode per port
- The classic serial SCADA server at the centre keeps working without change
- No new card, no new protocol for the RTU / relay / meter in the field

■ Together with the network

- Redundant transport with Simgenet IP/MPLS routers and SMG-SW series switches
- OT segmentation on the substation LAN: the serial server in its own VLAN
- End-to-end communication acceptance delivered with a Simgenet SVP report



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MODELS AND COMMISSIONING

From Four Ports to Sixteen



One chassis, three port densities

1U 19" rack chassis; RJ45 serial ports in groups of four, Gigabit Ethernet port on the right. Power 40–72 V DC (substation –48 V bus) or 220 V AC.

MODEL	RS232 PORTS	ETHERNET	BAUD RANGE	POWER	FORM
SDS-4	4 × RS232	1 × GbE	0 – 512 kbps	40–72 V DC / 220 V AC	1U 19"
SDS-8	8 × RS232	1 × GbE	0 – 512 kbps	40–72 V DC / 220 V AC	1U 19"
SDS-16	16 × RS232	1 × GbE	0 – 512 kbps	40–72 V DC / 220 V AC	1U 19"

Commissioning in Four Steps

1 · Mounting

1U rack, –48 V DC or 220 V AC, Ethernet

2 · Network

IP address (static / DHCP), web interface

3 · Ports

Baud, mode (TCP / UDP / P2MP) and target per port

4 · Verification

End-to-end SCADA poll; concentration and P2MP check

■ Management

- Web interface (HTTP), Telnet and console
- Port status, connection counters, error indicators
- Configuration export / import

■ Environment

- Operating temperature –20 to +75 °C
- Industrial EMC/EMI compliance certificate
- Fanless metal chassis with no moving parts

With the Simgenet ecosystem. The Serial Device Server is deployed in the same substation project, from one source, with the Simgenet IP/MPLS router, SMG-SW series switch, Teleprotection Unit SMG50 and GNSS Server; acceptance testing is done with Simgenet SVP.



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SPECIFICATIONS

Simgenet Serial Device Server

FEATURE	VALUE
Product type	Industrial serial device (terminal) server — remote access to RS232 lines over Ethernet
Models	SDS-4 (4 ports) · SDS-8 (8 ports) · SDS-16 (16 ports)
Serial ports	RS232, independent; rate and mode per port
Baud rate	0 bps – 512 kbps; every rate including the non-standard 200 baud
Ethernet	1 × Gigabit Ethernet 10/100/1000Base-T
Operating modes	TCP server / TCP client · UDP · P2MP (point-to-multipoint, UDP based)
RS232 concentration	Merging of several RS232 ports in different regions onto a single RS232 port at the control centre
Protocols	TCP/IP, UDP, ARP, ICMP, DHCP, DNS, HTTP
Management	Web interface (HTTP) · Telnet · console · configuration export / import
Power	40–72 V DC / 220 V AC
Form factor	1U, 19" rack mount, metal chassis
Operating temperature	–20 to +75 °C
EMC / EMI	Industrial EMC/EMI compliance certificate
Applications	SCADA · power automation · RTU communication · industrial control · electrical communication infrastructures



Why Simgenet Serial Device Server

The field device stays

RTU, relay and meter keep the same RS232 port and baud rate; the network moves to Ethernet.

From 200 baud to 512 kbps

The whole range including non-standard rates; settings per port.

Concentration + P2MP

Many sites onto one port, one port to many sites — the SCADA polling structure is preserved.

Built for the substation

–20 to +75 °C, –48 V DC / 220 V AC, 1U, industrial EMC; from one source with Simgenet network products.

GET IN TOUCH

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Engineered in Türkiye