Integration of YuDash LYNX with Cumulocity IoT platform using MQTT

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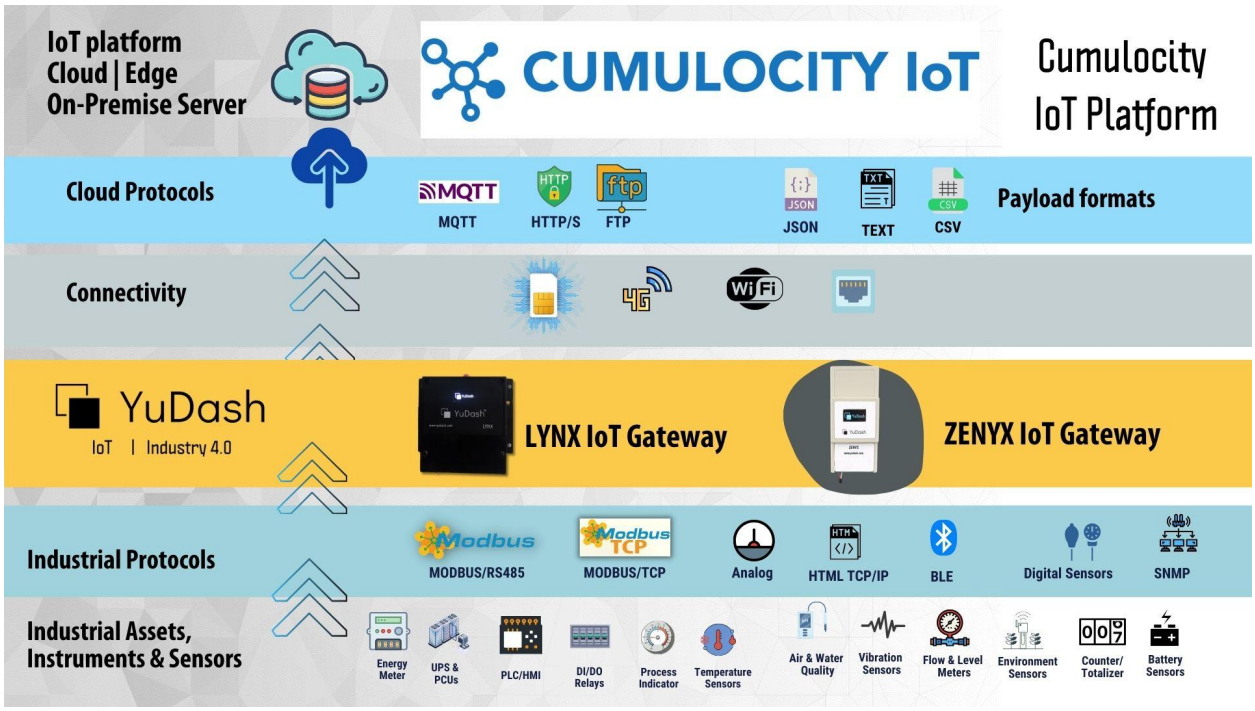
Introduction

This document describes the capability of YuDash LYNX integration with Cumulocity IoT platform through MQTT. Following diagram describes the general architecture of data flow.



Description

YuDash LYNX IoT gateway is a flexible Industrial IoT gateway. Following are key components:

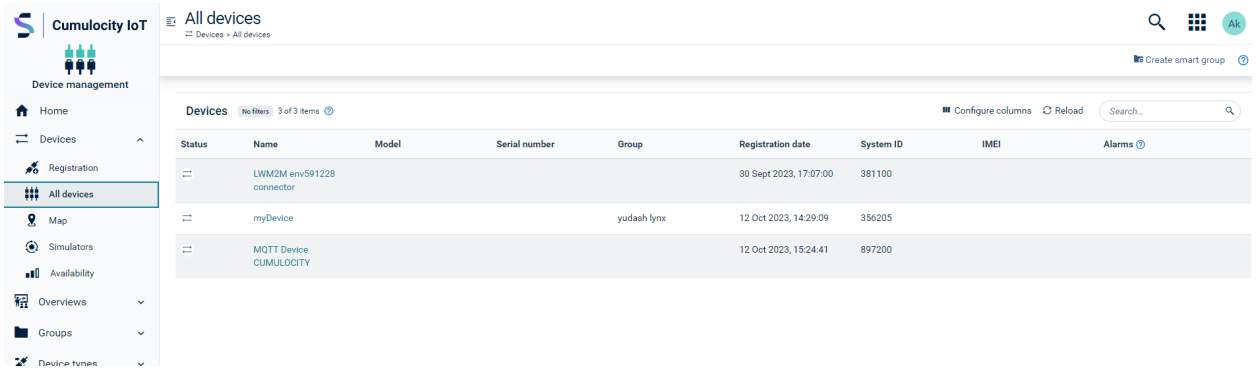
a) Field data read: LYNX read various industrial sensors/instrumentation over different protocols (Modbus RS485, analog inputs, Modbus TCP/IP, I2C sensors, and many more).
b) Network Connectivity: LYNX can connect to the network through WiFi / Ethernet LAN or 4G/LTE Sim card. Network can be cloud OR on-premise solution
c) IoT server: The server on which field data will be stored. It supports HTTP POST API and MQTT to send data to the server.
d) YuDash provides a variety of flexible payload formats to support all popular IoT platforms and use-cases.
e) User need to fill in basic settings of MQTT Server and credentials in YuDash LYNX.

YuDash LYNX IoT gateway connected to Industrial energy meter over MODBUS RS485. LYNX connected to the Cumulocity IoT platform over 4G/LTE network (or WiFi or Ethernet).

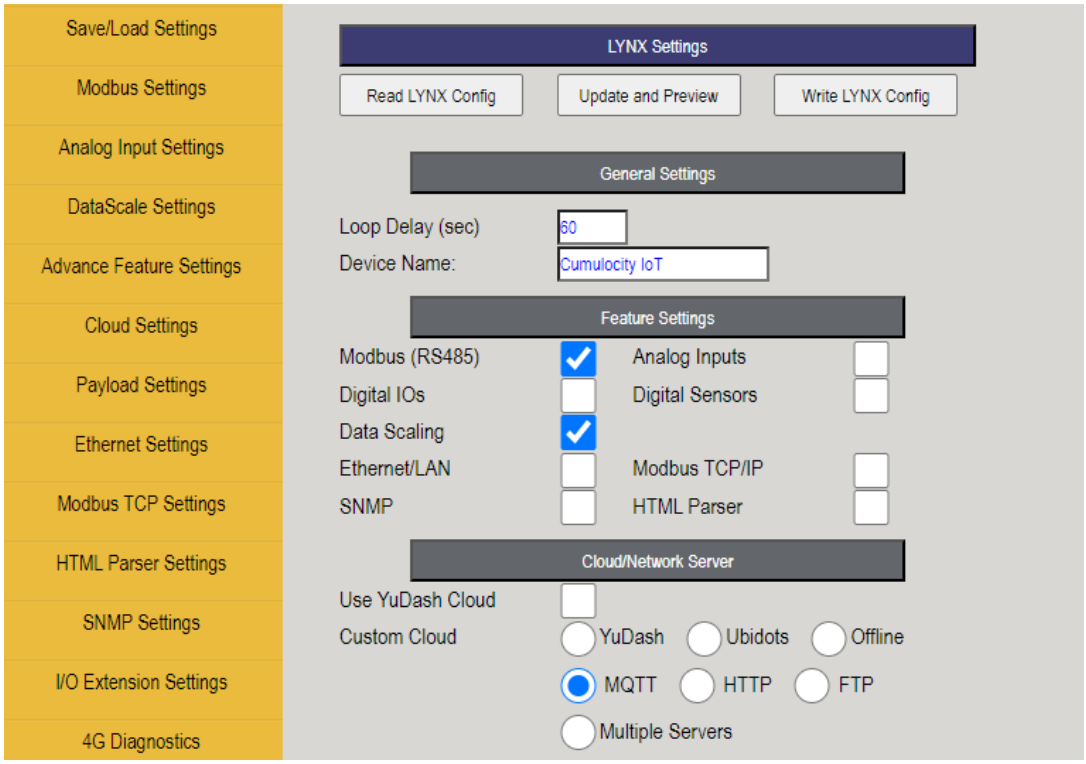
Sample LYNX Configuration with Cumulocity IoT platform using MQTT

In this example, we will send energy parameters from an energy meter to the Cumulocity IoT platform.

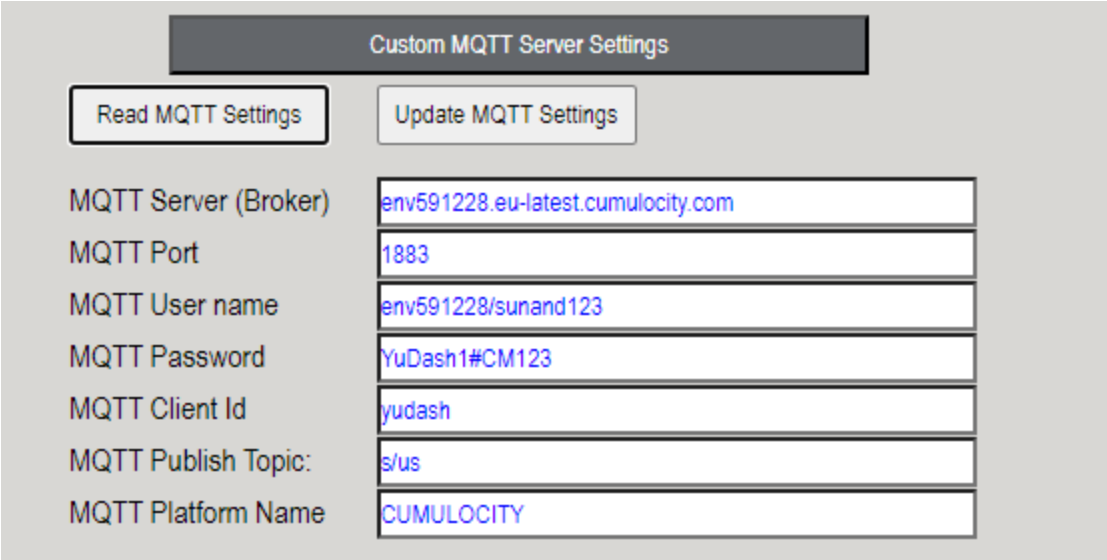
1) Create a device (myDevice created within room2) within the Cumulocity IoT platform.



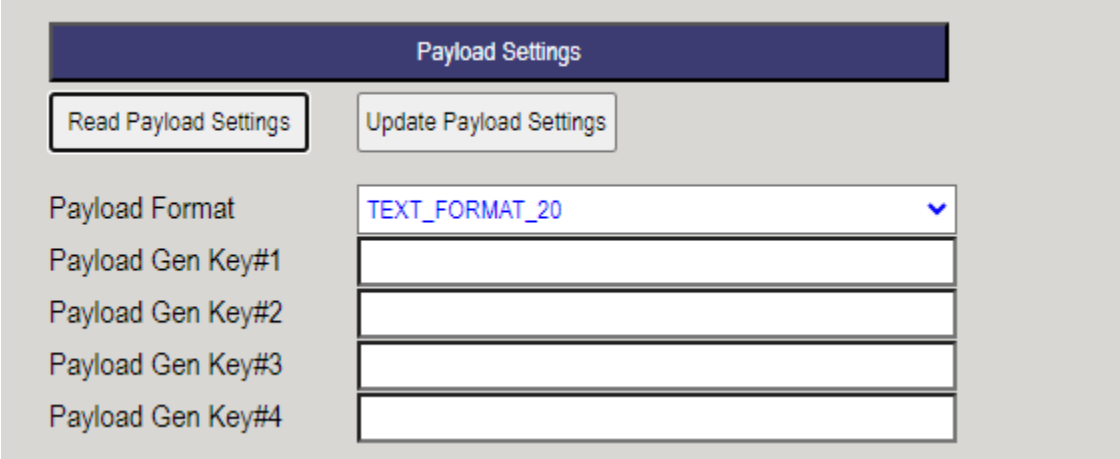
2) Configure YuDash LYNX to send data to Cumulocity IoT over MQTT and enable MODBUS/RS485

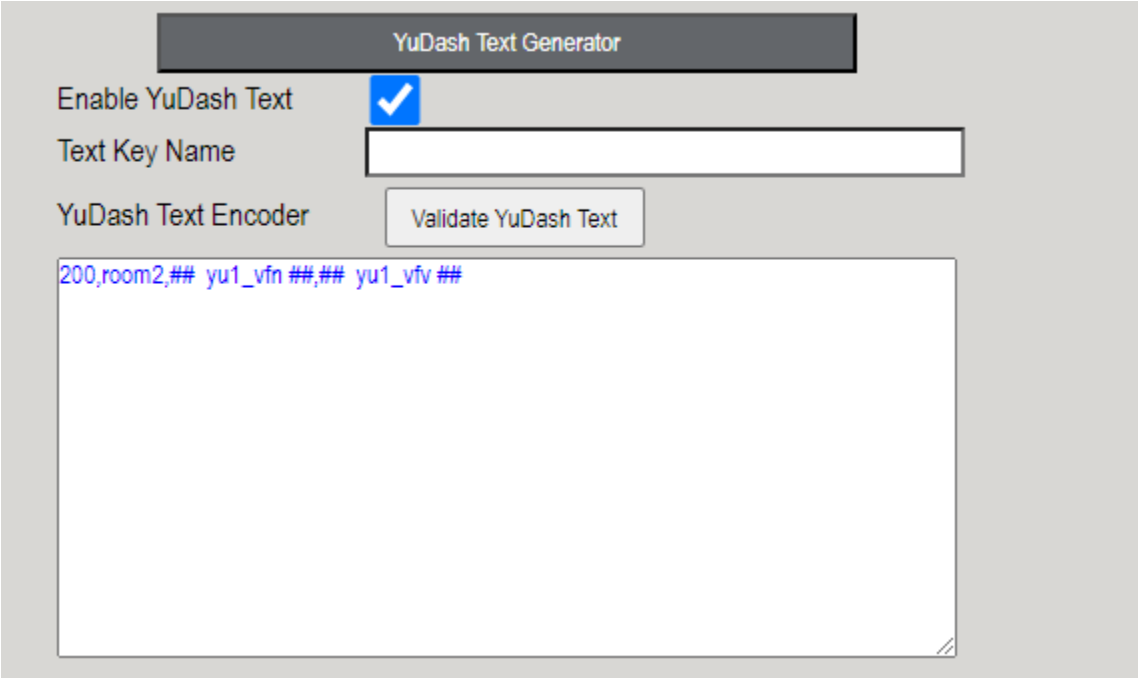


3) Cumulocity IoT MQTT credential settings in YuDash LYNX as per device information:



4) Payload settings to send process parameters to Cumulocity IoT. YuDash IoT devices provide generic text payload generator to create CSV payload as per Cumulocity. It also supports various pre-defined JSON formats.

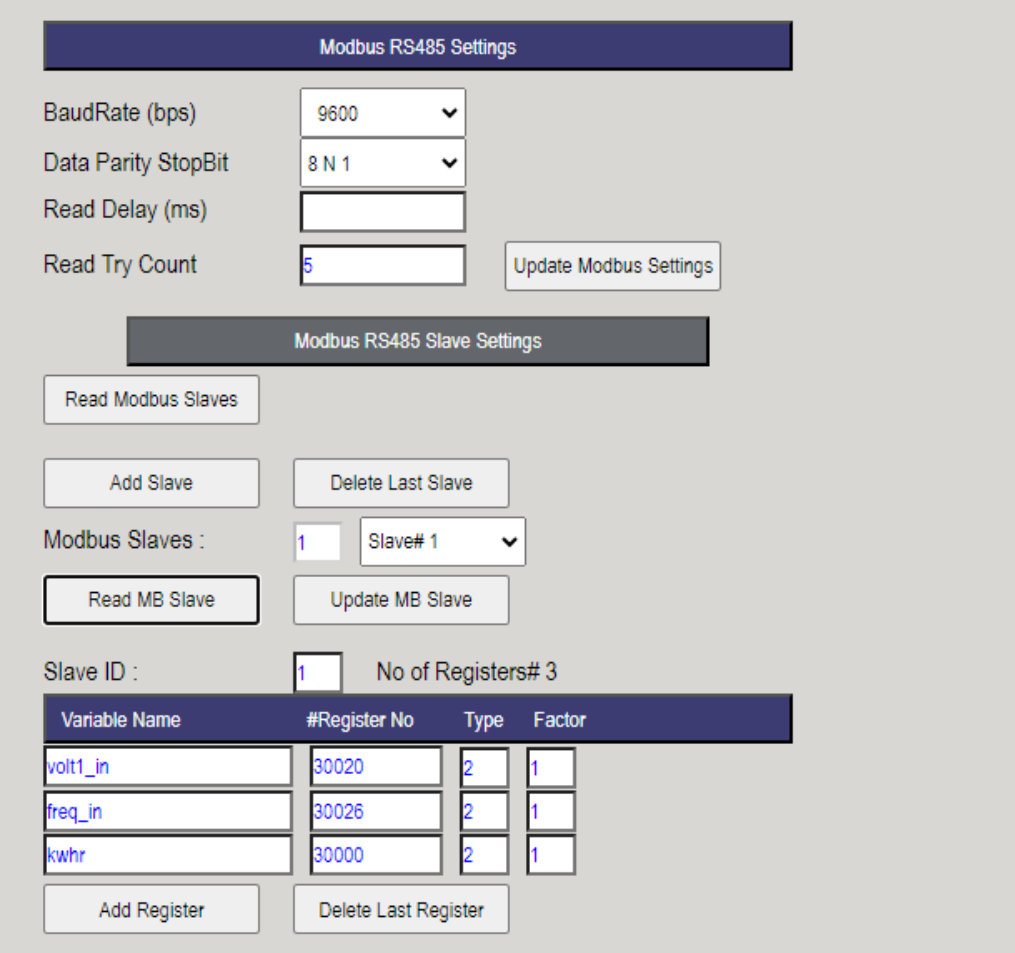




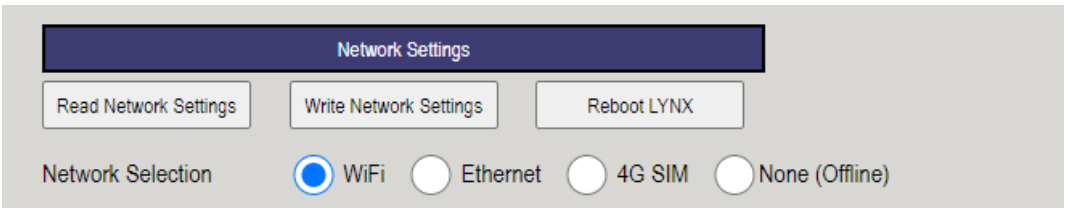
Usingthe above text generator format, the CSV payload with actual variable name and value for each input is created. For instance ***200,room2,volt1_in,223.56***

Generic LYNX Settings and Features:

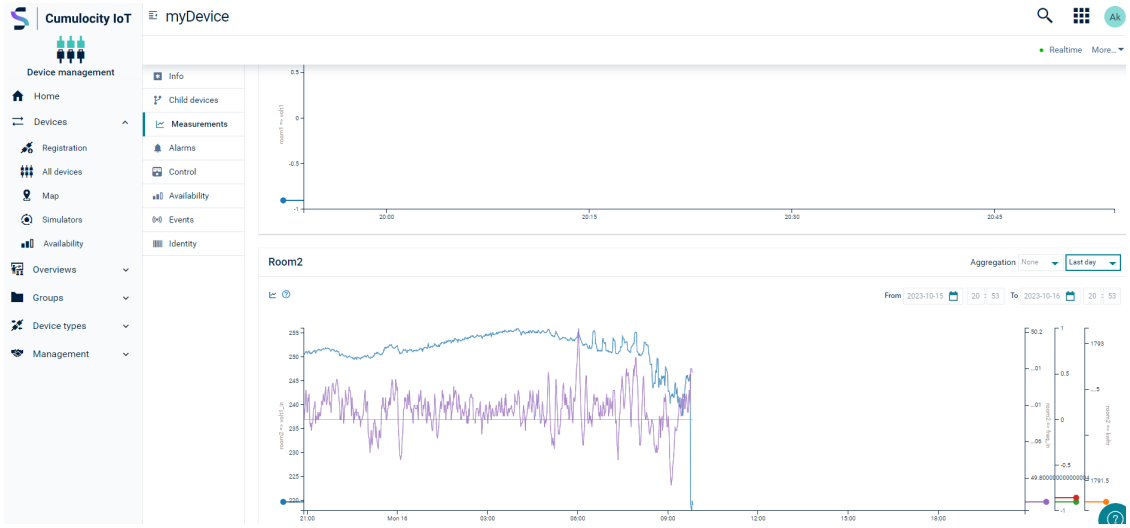
1) The variable names (fields) are filled in Modbus settings of LYNX. This is a generic Modbus/RS485 setting of LYNX. Similar to Modbus/RS485, we can use MODBUS/TCPIP, Analog inputs and many other protocols
2) In this example, the variable names **volt1_in**, **freq_in** and **kwh** are sent to the Cumulocity IoT platform by YuDash LYNX IoT gateway.

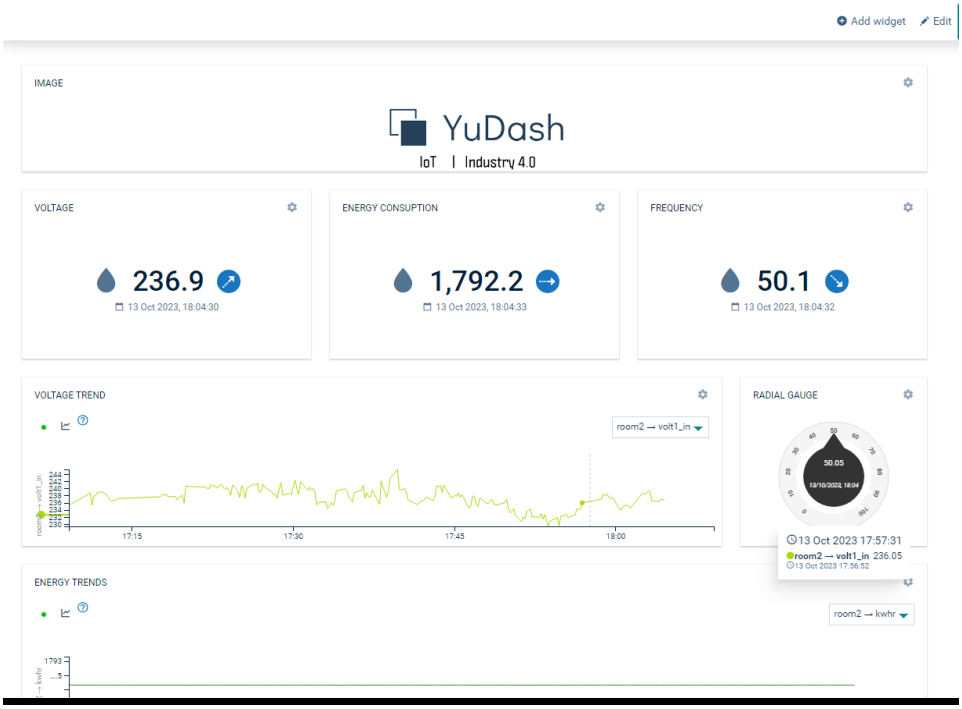


3) LYNX provides flexible network connectivity options: WiFi, Ethernet, 4/LTE SIM card.



After configuration is completed, YuDash LYNX reads the MODBUS/RS485 instrument and sends data to the Cumulocity IoT cloud at the given time interval. Cool Dashboard boards can be created on Cumulocity IoT platform:


Cumulocity IoT
Device management
myDevice
Realtime
More...
Info
Child devices
Measurements
Alarms
Control
Availability
Events
Identity
Home
Devices
Registration
All devices
Map
Simulators
Availability
Overviews
Groups
Device types
Management
Room2
Aggregation
None
Last day
From
To


Add widget
Edit
IMAGE
YuDash
IoT | Industry 4.0
VOLTAGE
236.9
13 Oct 2023, 18:04:30
ENERGY CONSUPTION
1,792.2
13 Oct 2023, 18:04:33
FREQUENCY
50.1
13 Oct 2023, 18:04:32
VOLTAGE TREND
room2 → volt1_in
RADIAL GAUGE
50.05
13 Oct 2023 17:57:31
room2 → volt1_in 236.05
13 Oct 2023 17:56:52
ENERGY TRENDS
room2 → kwhr

Please refer to www.yudash.com for details of YuDash IoT gateways and edge devices.

Help Section: https://www.yudash.com/resources/help-section

IoT platform: https://www.yudash.com/resources/iot-platform-integration

IoT Ecosystem Page: https://www.yudash.com/partners