AUTOMATION&INTEGRATION
globalsecuritygroup

Event Server Platform

Technical Overview

Event Server

"The physical world generates continuous small pieces of information that can be translated to the virtual world. Everything that happens is an EVENT."

- Every end point sensor or device generates or receives information continuously.
- In any given corporation, that can amount to millions of small pieces of data of small value, in and of themselves.
- This amount of EVENTS cannot be handled by operators using regular software.
- EVENT SERVER Automatically Organizes and Processes all the EVENTS following the Logic defined by the Corporation in na EDGE Computing Architecture.

What is an EVENT ?

"Events are the daily things that happen continuously"

- Opening a door
- Activating an Air Conditioner
- Closing a door
- A user click the mouse
- A video recording
- Copying data
- Authorizing a new security guard
- Sitting on a chair
- Turning off a light
- Sensing temperature
- Detecting a barrier crossing
- Sensing a light
- Comparing data received
- Activating an Alert Window
- Playing a sound
- Starting a video stream
- Detecting movement
- Opening a case
- Ringing a bell
- Sensing a gas leak
- Reading Energy Consumption
- Sending a Satellite beacon signal
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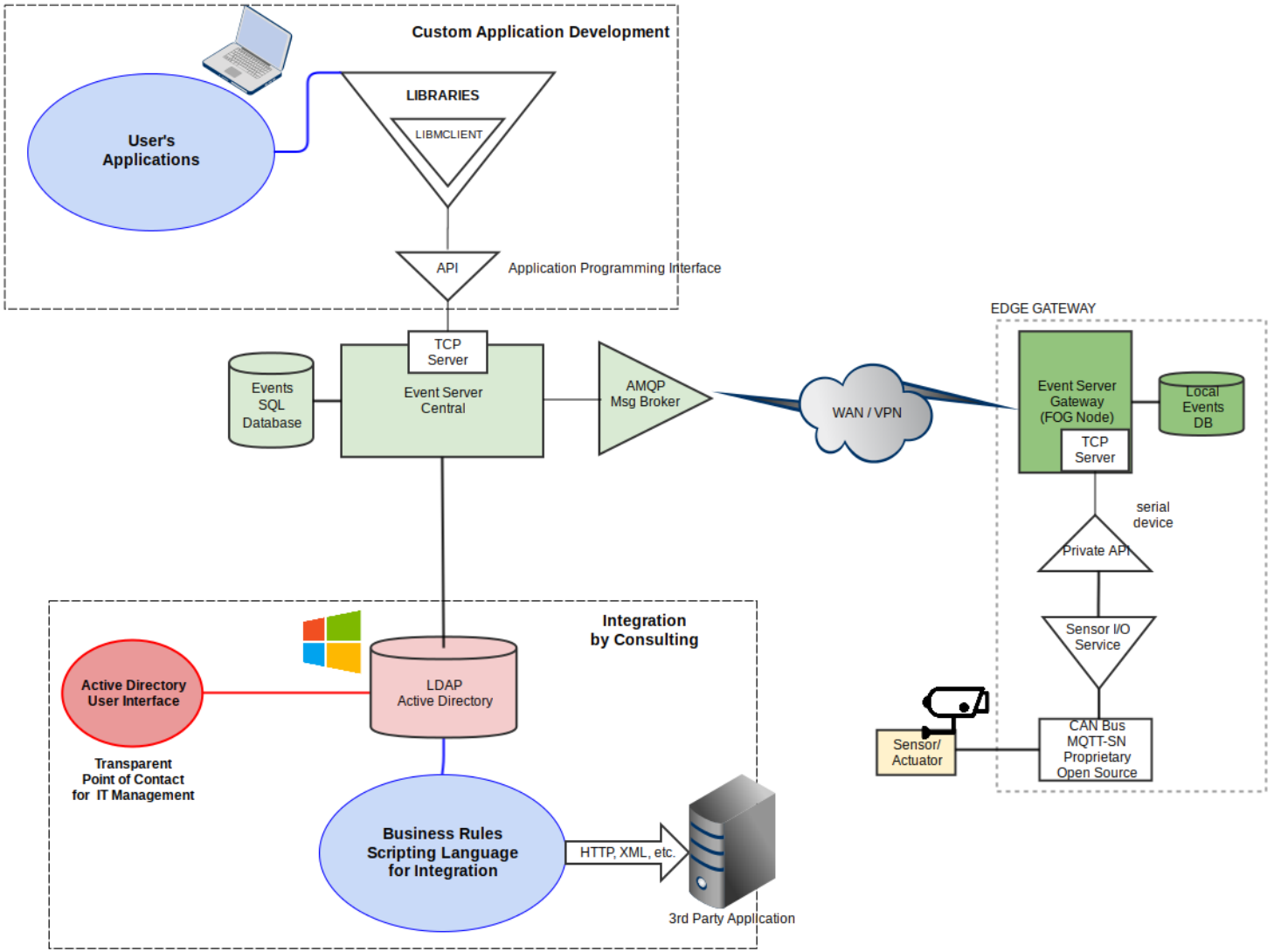
All are EVENTS!

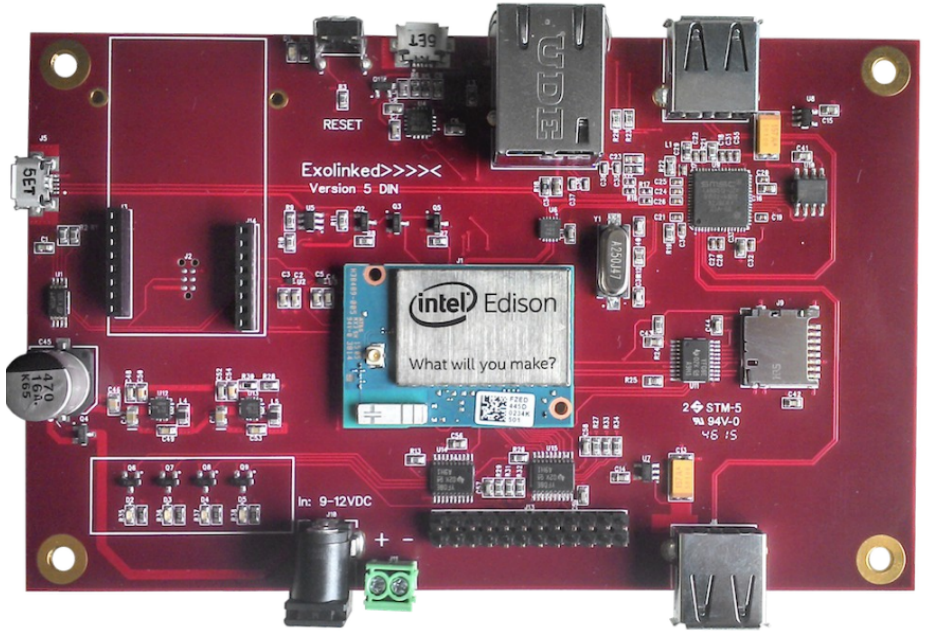
Architecture



Event Server

- EDGE Computing Event Processing solution for IoT
- 100% Java
- Can run on Windows or Linux
- Any Hardware size (Servers to Micro Gateways)
- Configuration and Customization in Active Directory / LDAP
- PostgreSQL or MSSQL database for central or node event storage
- High Performance: Designed for processing a large number of events
- Can also be clustered or run in the cloud

Edge Gateway



- Responsible for collecting events from sensors and processing or forwarding them to central Event Server
- Real EDGE Computing
- Requires simple TCP/IP connection to Event Server
- Can be over WAN / VPN
- Edge Gateways are registered in LDAP
- Once registered, Event Server automatically detects them and collect events

Custom Event Processing

- Event Server supports scripting for custom event processing
- Scripts are stored directly in Active Directory
- Scripts are written in LUA
- Scripts can be arbitrarily complex, but are usually extremely short and simple

  (less than 20 lines of code)
- Examples:
  - Send E-Mail when sensor over threshold
  - Send HTTP/XML request to 3rd party system on sensor alarm
  - Activate/Deactivate relay switch to control A/C when temperature over threshold

Example Event Processing Script

```
### Temperature Sensor activates Air Conditioner ###
relay = object.get(”Air Conditioner Relay")
ctx = script.context()

if sensor.get_value() >= 27.0 and ctx.state == false then

    sensor.set_value(relay, false)
    ctx.state = true
    event.send({msg = "High temperature! Turning FAN ON"})

elseif sensor.get_value() <= 26.9 and ctx.state == true then

    sensor.set_value(relay, true)
    ctx.state = false
    event.send({msg = "Cooled down. Turning FAN OFF"})

end
```


Event Server API

- Full featured, portable C++ Library to connect to Event Server
- Uses highly efficient custom TCP/IP protocol
- Can be used to create custom applications:
    - e.g. desktop clients, mobile clients, web front-ends, etc.
- Possibility to create bindings for other programming languages (Java, C#, PHP, etc.)