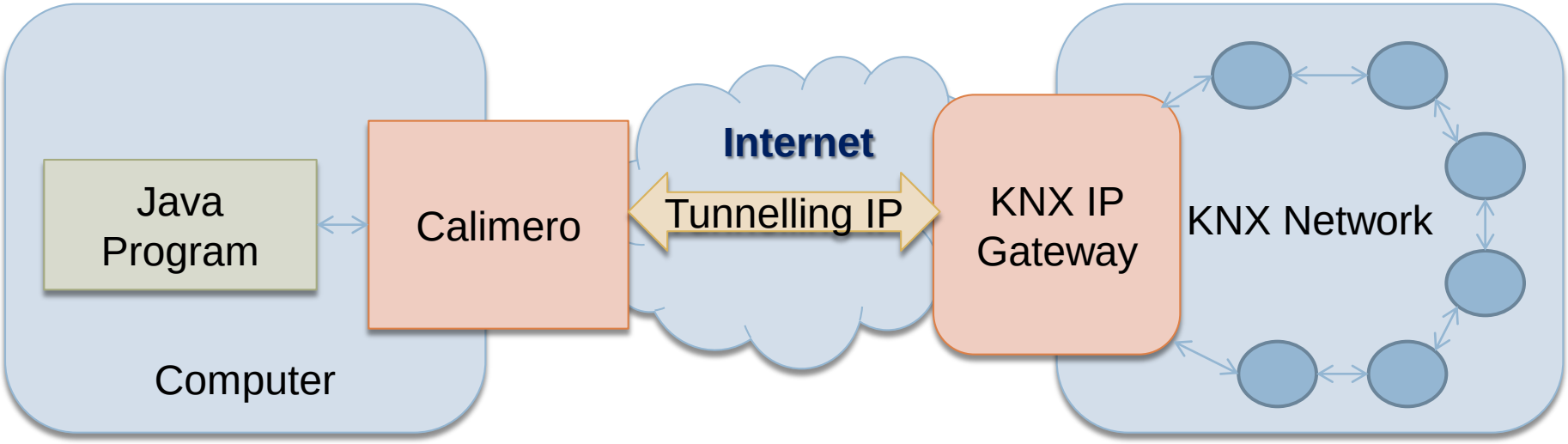
CALIMERO

Add Services to your KNX Network

Architecture



Possibility

- Develop a Java program that can:
  - Read sensor values on a KNX network
  - Monitor evolutions of sensor values on a KNX network
  - Control actuators on a KNX network

Usage

- Develop services with added value to control a Home automation network.
  - Provide Advanced Home-Building automation services integrating Internet Services (Agenda – Weather Forecast …)
  - Provide Advanced automated and adaptive behaviors that are very difficult (impossible) to obtain without.

Instructions

1. Configure your KNX network using ETS
   - Configure each useful KNX object to a separate group ➔ no link made between KNX objects
2. Connect your program to the IP gateway
3. Write your program to implement the desired behavior
   - You can read and write value to a specific group

Operations

- Basic operations
  - Establish a tunnel to communicate with the KNX IP gateway
  - Read a specific group value
  - Write a specific group value
- Advanced operations
  - Discover an IP gateway
  - Listen to particular event from the KNX network

Connecting to a Gateway

- To open a KNX Connection:

```
KNXNetworkLinkIP netLinkIp = new KNXNetworkLinkIP
    (KNXNetworkLinkIP.TUNNEL,  “source address”, “destination
    address”, false, new TPSettings(false));
```

Nat
pport

```
KNXNetworkLinkIP netLinkIp = new KNXNetworkLinkIP (“destination
    address”, new TPSettings(false));
```

- To create a ProcessCommunicator:

```
ProcessCommunicator pc = new
    ProcessCommunicatorImpl(netLinkIp);
```

Read a group value

- Reading a float :

```
Float temp = pc.readFloat(new GroupAddress("0/1/0"));
```

- Reading a Temperature attribute

```
CommandDP temperature = new CommandDP(new
    GroupAddress("0/1/0"),                "Température");
temperature.setDPT(0, "9.001");  // DPT code available on KNX
    specifications
System.out.println("Temperature: " + pc.read(temperature));
```

Write a group value

- Writing a boolean on a group address

```
pc.write(new GroupAddress("0/0/1"), true);
```

Discover Gateway

- Discover Connected Gateways

```
Discoverer disc = new Discoverer(int localPort, boolean useNAT);
disc. startSearch(int timeout, boolean wait) ;
while(disc.isSearching()){
    Thread.sleep(100);
}
for (SearchResponse sr : disc.getSearchResponses()){
    System.out.println("Adresse :" + sr.getControlEndpoint().getAddress());
}
```

Listen to KNX events

```
netLinkIp.addLinkListener(new NetworkLinkListener(){
    public void confirmation(FrameEvent arg0) {
    }

    public void indication(FrameEvent arg0) {
            System.out.println("srcadress " + arg0.getSource());
            System.out.println("targetadress " +
            ((CEMILData)arg0.getFrame()).getDestination());
    }

    public void linkClosed(CloseEvent arg0) {
    }
});
```

Project

- Now it’s your turn ☺