A Two-Tier PV Gateway for Channel Access from J–PARC Office Network to the Accelerator Control Network

Shuei Yamada
KEK/J–PARC Center
Accelerator Control Group
J-PARC

- Japan Proton Accelerator Research Complex
- Joint project of: KEK (High Energy Accelerator Research Organization) and JAEA (Japan Atomic Energy Agency)

**INFRASTRUCTURE**

- **LINAC**: 400 MeV/c @ 25Hz
- **RCS**: 3 GeV/c @ 25Hz
- **Main Ring**: 30 GeV/c @ 2.48 sec (FX to NU) @ 5.52 sec (SX to HD)
- **Materials and Life Science Facility**
- **Neutrino Experiment Facility**
- **Hadron Experiment Facility**

**LOCATIONS**

- KEK
- J-PARC (in site of JAEA)
- Tokyo

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I’d like to monitor our Acc. from my office
I wish I could use the same app. as control LAN

Acc. Control LAN → DMZ → Office LAN

Allowed (NAT)  Allowed (routing)

Forbidden

Acc. Equipment (EPICS IOCs)
Idea: 2-Tier Gateway

Requirements from J-PARC IT section:
Operation of any devices in the control LAN shall be prohibited from the office LAN
CA w/ TCP-only mode

Both gateways are configured to be read-only
Access control by iptables on both gateway
Hardware

PiNON sabataro®

- Celeron J1900 (4 cores @ 2.4GHz) / 8GB
- SL6 + EPICS base R3.15.5 + Gateway R2.1.0
An one-way gateway system was constructed, which allows Channel Access thru two-layer firewall. It has been in operation since Apr 2018.