

EUROPROT +

EuroProt+ in ethernet networks



Budapest, October 2012

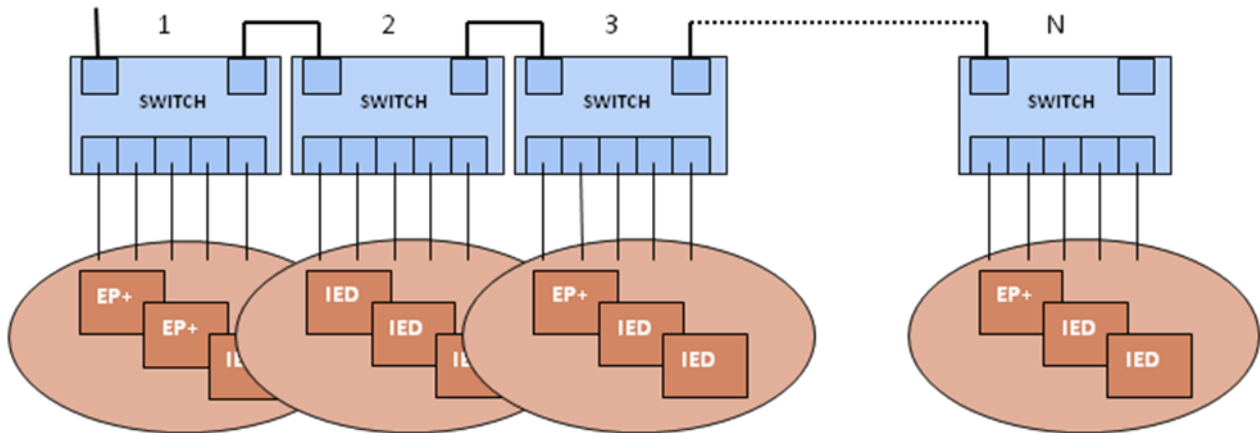
Version information

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1 CASCADING ARCHITECTURE



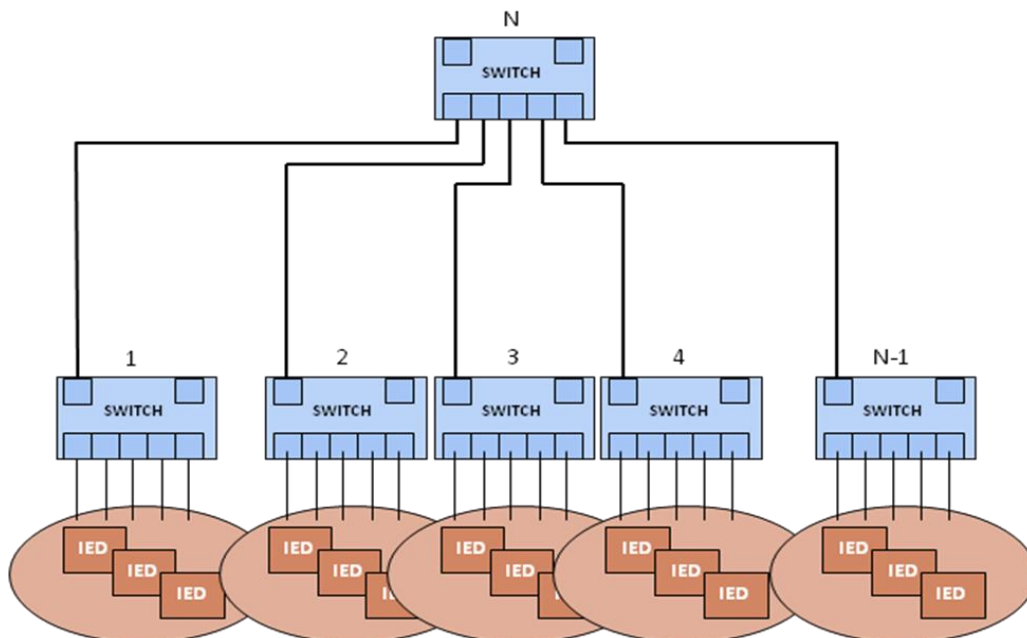
Advantages:

- Cost effective - allows shorter wiring runs

Disadvantages:

- No Redundancy – if one of the cascade connections is lost the remaining IEDs are also lost
- Latency – every switch adds its propagation delay

2 STAR ARCHITECTURE



Advantages:

- Lowest Latency

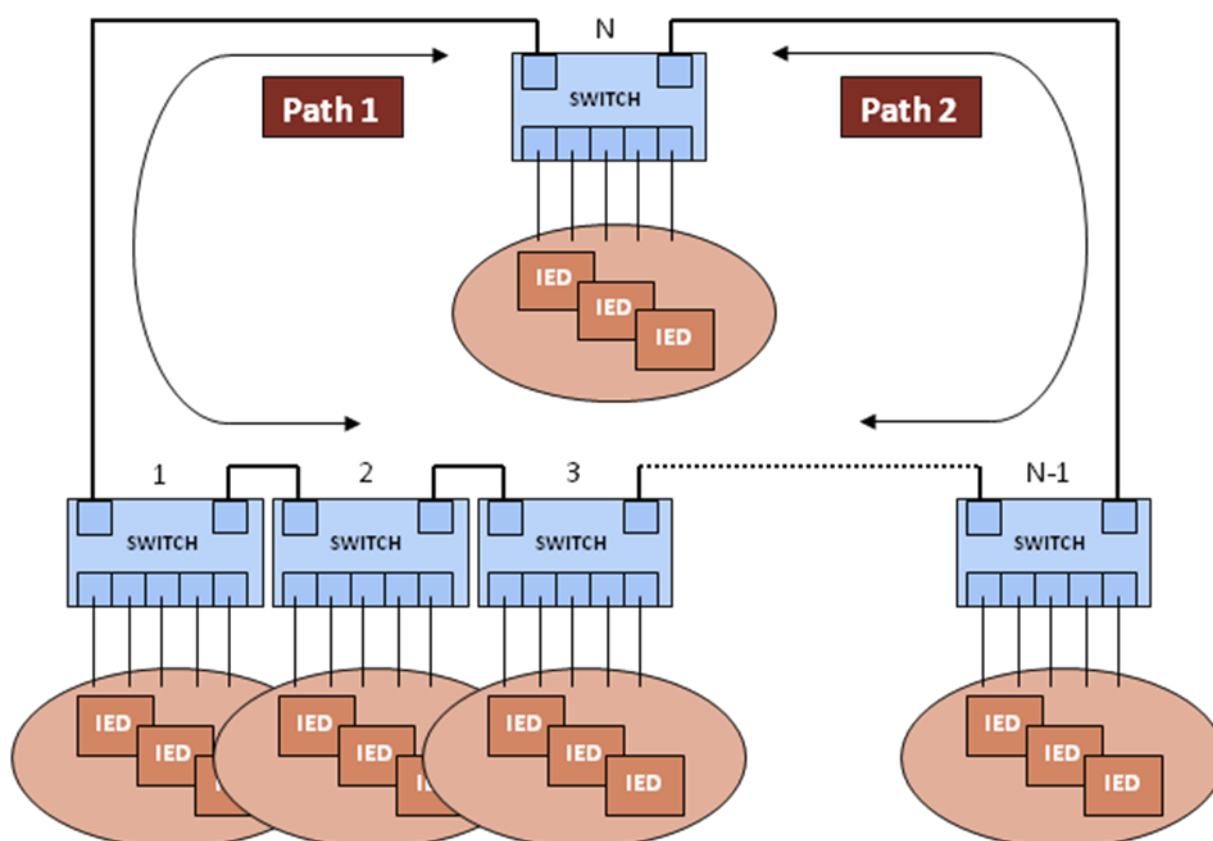
Disadvantages:

- No Redundancy

Redundancy:

- High availability in case of device or link failure
- Automatically follows network topology change
- Multiple paths to reach certain IED
- Need managed switches: isolates looped network segments
- Ethernet network does not tolerate loops in the network: STP, RSTP for loop free operation

3 RING ARCHITECTURE



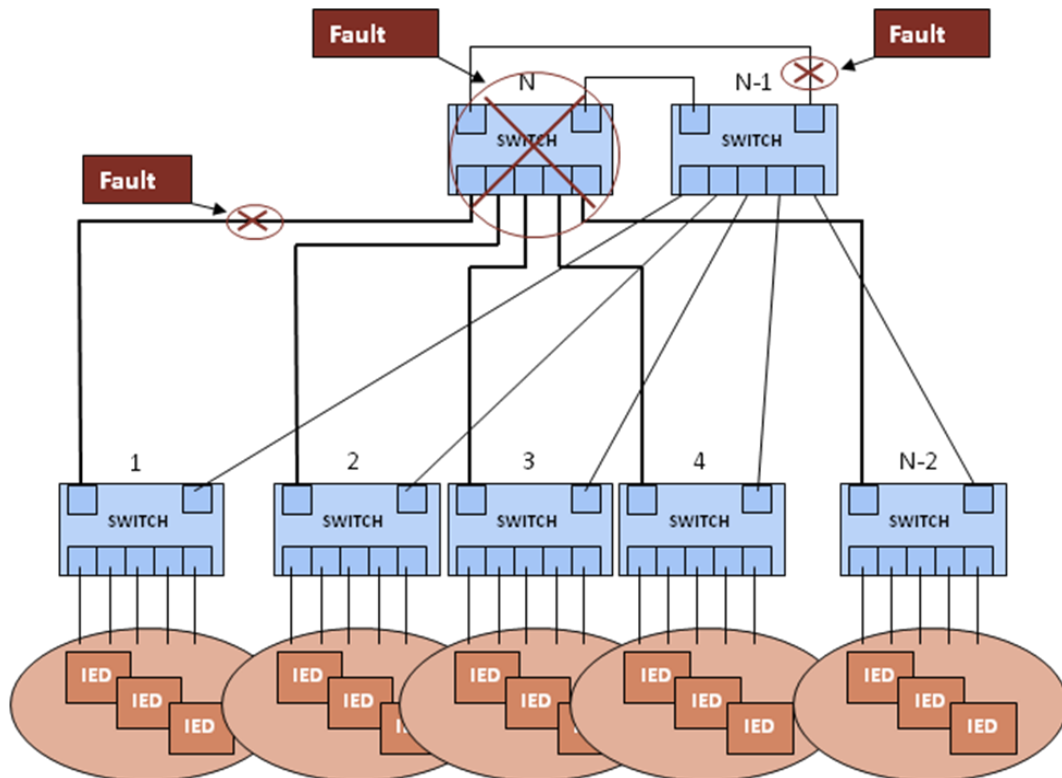
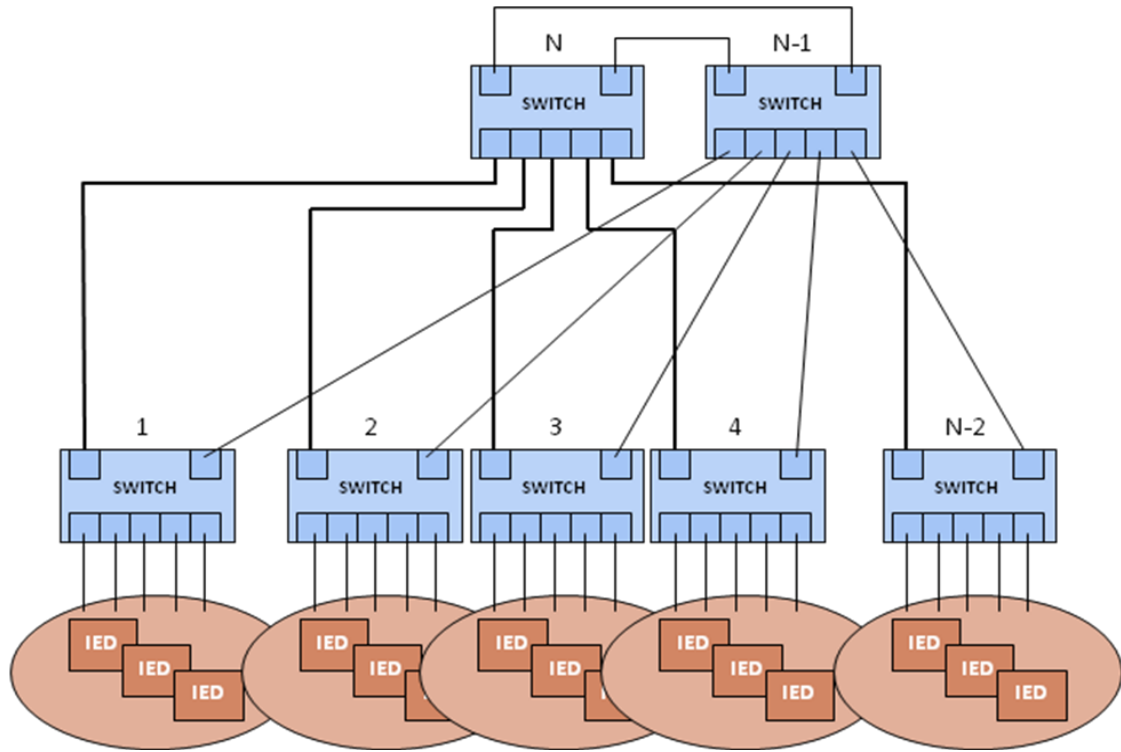
Advantages:

- Fault tolerant
- Simple wiring
- STP, RSTP for loop free operation

Disadvantages:

- Latency

4 FAULT TOLERANT HYBRID (Star/Ring) ARCHITECTURE



5 High Redundancy Architecture via IED's with Dual Ethernet Ports

