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Australasian Computer Science Week

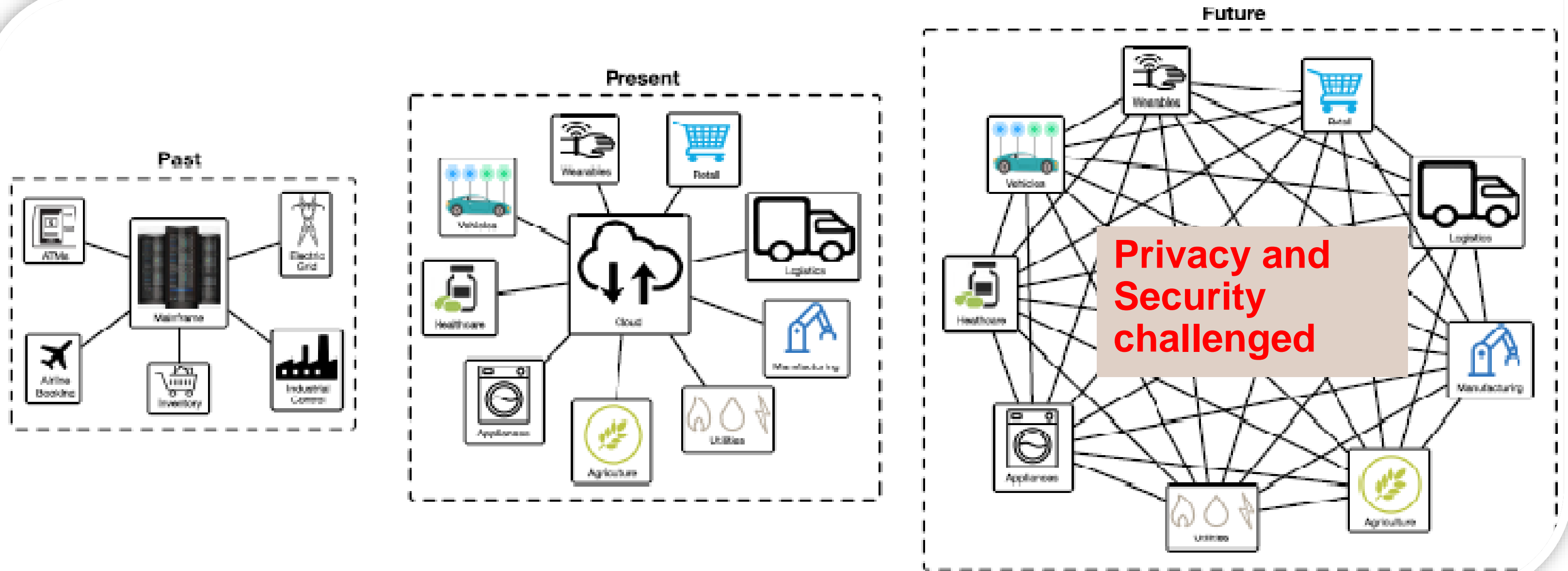
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Blockchain Oriented IoT Monitoring Architecture with an Efficient Miner Selection

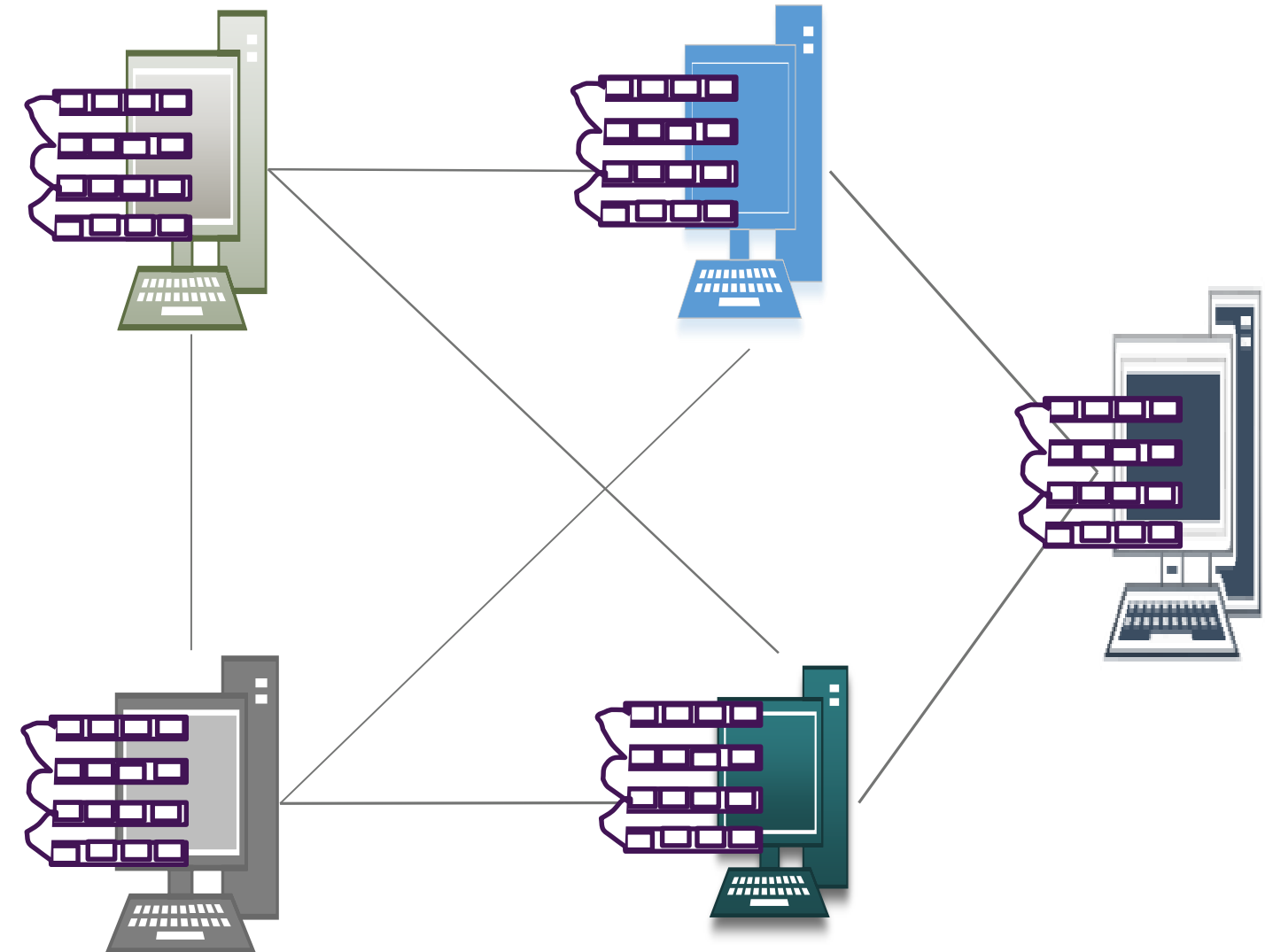
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Current architectures can't handle streams of IoT data



Blockchain can't be integrated into IoT

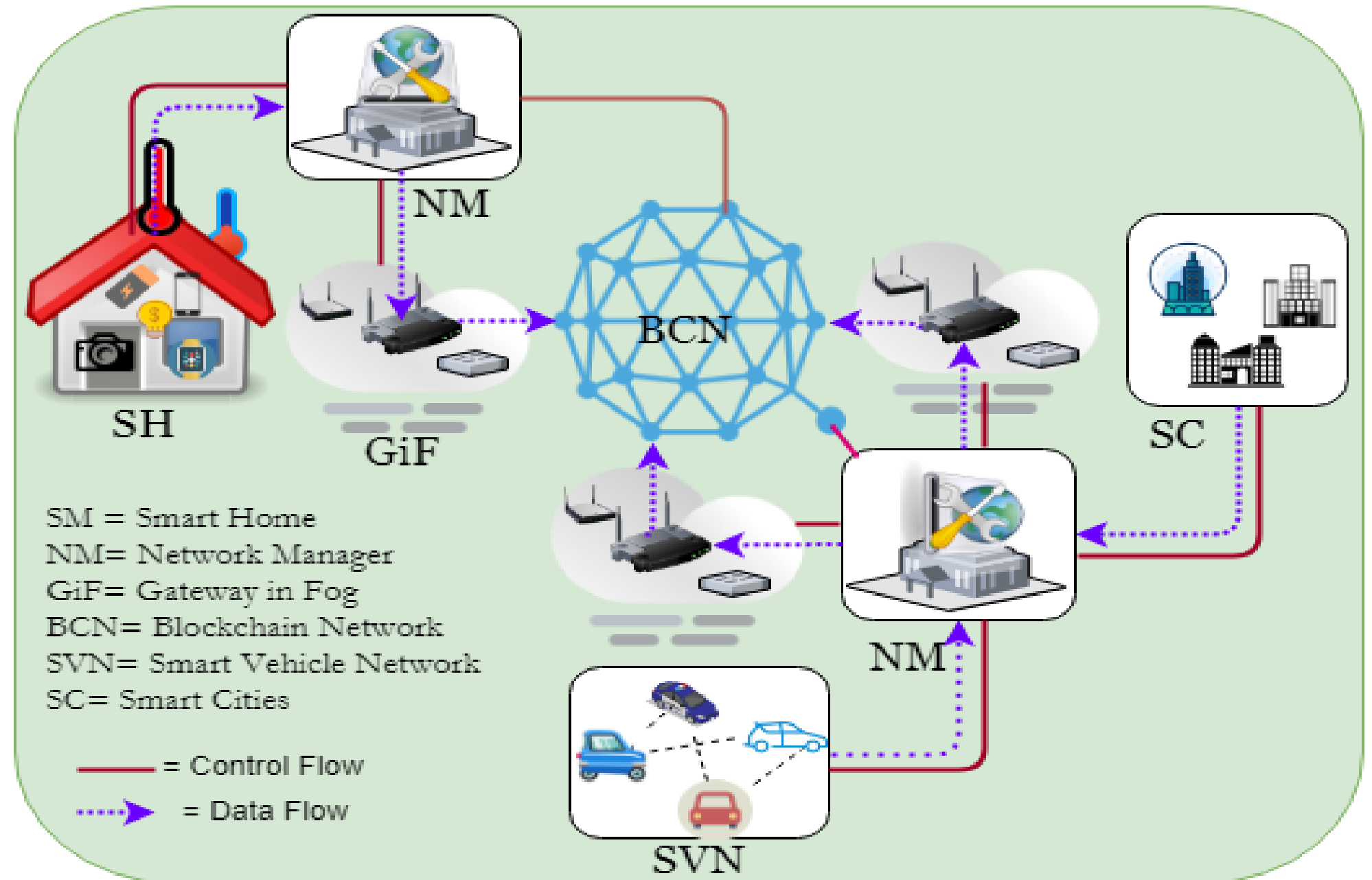
- ❖ Blockchain-a shared, distributed tamper proof ledger
- ❖ IoT power, memory constraints
- ❖ Miner selection can't keep up with IoT streams in real time
- ❖ Key management for IoT is difficult



Blockchain based IoT Monitoring

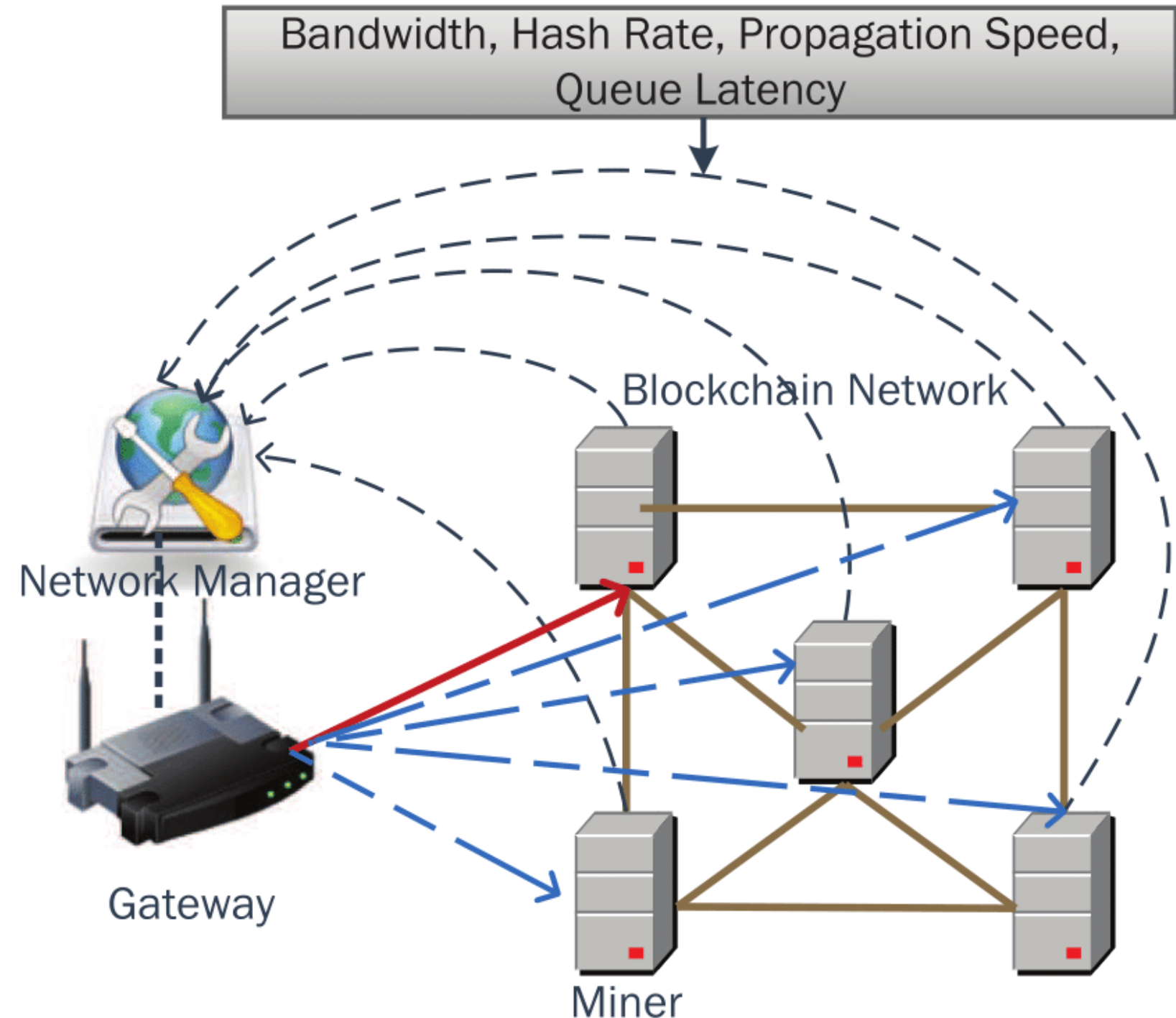
New architecture includes:

- A semi-trusted “**Network Manager**”
- A Gateway executing a user’s personal “**Software Agent**”
- **Sign encryption** for secure communication between sensor and Network Manager



Software agent performs Miner Selection

- ❖ A Software Agent executing on the Gateway selects a Miner node based on Miner's performance - bandwidth, hash rate, speed and queue latency



Acknowledgment

Thanks to Core for Travel Grant



Publications

1. **Md. Ashraf Uddin**, Andrew Stranieri, Iqbal Gondal, Venki Balasubramanian
"Continuous Patient Monitoring with a Patient Centric Agent: A Block Architecture",
IEEE Access, 2018[Impact Factor: 3.557].
2. **Md Ashraf Uddin**, Andrew Stranieri, Iqbal Gondal and Venki Balasubramanian, **A Patient Agent to Manage Blockchains for Remote Patient Monitoring. Studies in health technology and informatics**, 2018. 254: p. 105-115.[Scopus Indexed, Q3 SJR=0.24]
3. **Md Ashraf Uddin**, Andrew Stranieri, Iqbal Gondal and Venki Balasubramanian, **An Efficient Selective Miner Consensus Protocol in Blockchain Oriented IoT Smart Monitoring**, IEEE International Conference on Industrial Technology, Feb 13-15, 2019, Melbourne, Australia(Accepted).