

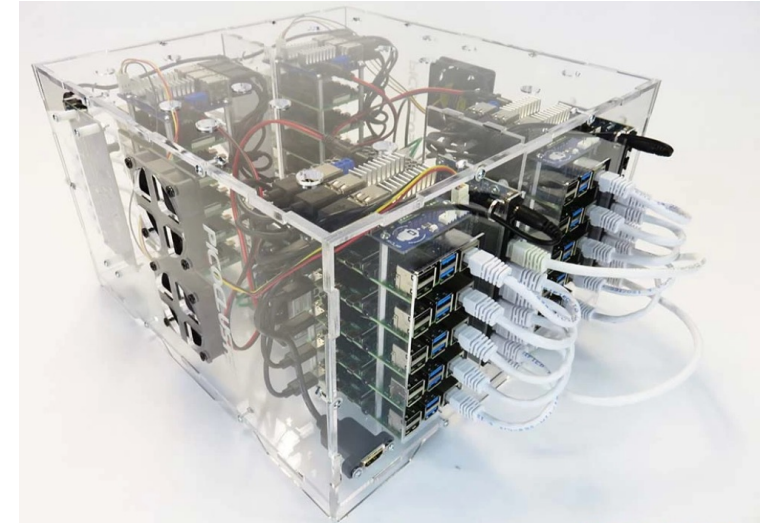


Decentralized ICN-based Dataflow System Implementation

Laura Al Wardani, T M Rayhan Gias, Dirk Kutscher
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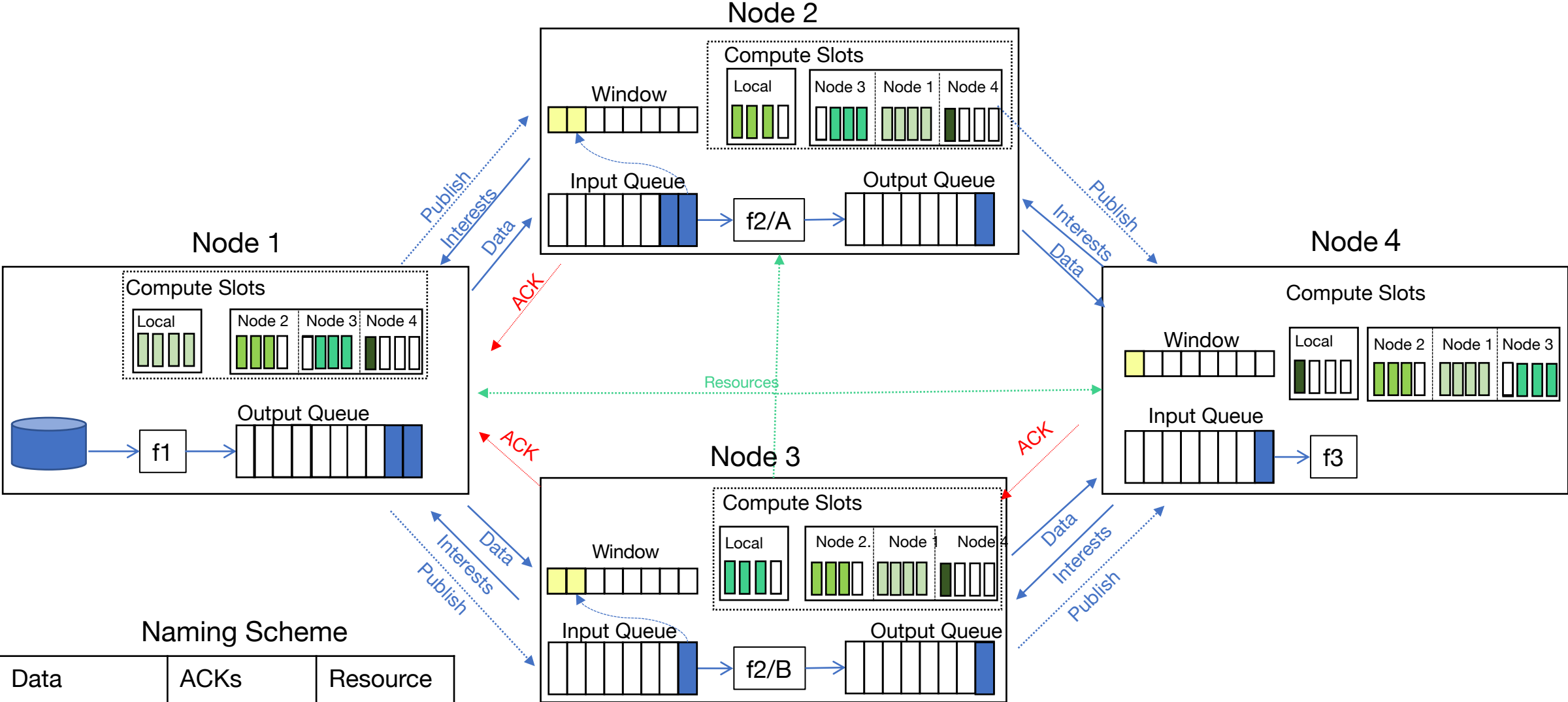
ICN-based Dataflow System Features

- **Name-based access to computation results**
 - Location independence – no address namespace, no mappings
 - Named data objects instead of communication channels
 - ICN-idiomatic reuse of computation results by multiple consumers
- **Decentralized operation**
 - Data Set Synchronization (NDN Psync)
 - Scaling decision by upstream function
 - Every node can trigger scaling and maintain a global view of the available resources in the infrastructure
- **Joint optimization of network and compute/memory resources**
 - Receiver-driven
 - Windowing approach combined with input queue



Dataflow Example

ICN-based Dataflow System Design



Naming Scheme

| Data | ACKs | Resources |
|-------------|------------|-----------|
| f1/item1 | f2/A/item3 | node1/5 |
| f2/B/item24 | f1/item12 | Node2/42 |

Thank you

Details and Q&A are in the breakout room