



LimeVI: a Platform for Virtual Cluster Live Migration over WAN

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Introduction

- **Why virtual cluster live migration over WANs?**

- Support parallel job migration/fault-tolerant
- Load balance in/among Cloud(s)

- **VC live migration vs. VM live migration**

- Support parallel job
 - no message loss or disorder during migration
 - VM- same IP address after migration
- Support multiple VMs migrate concurrently

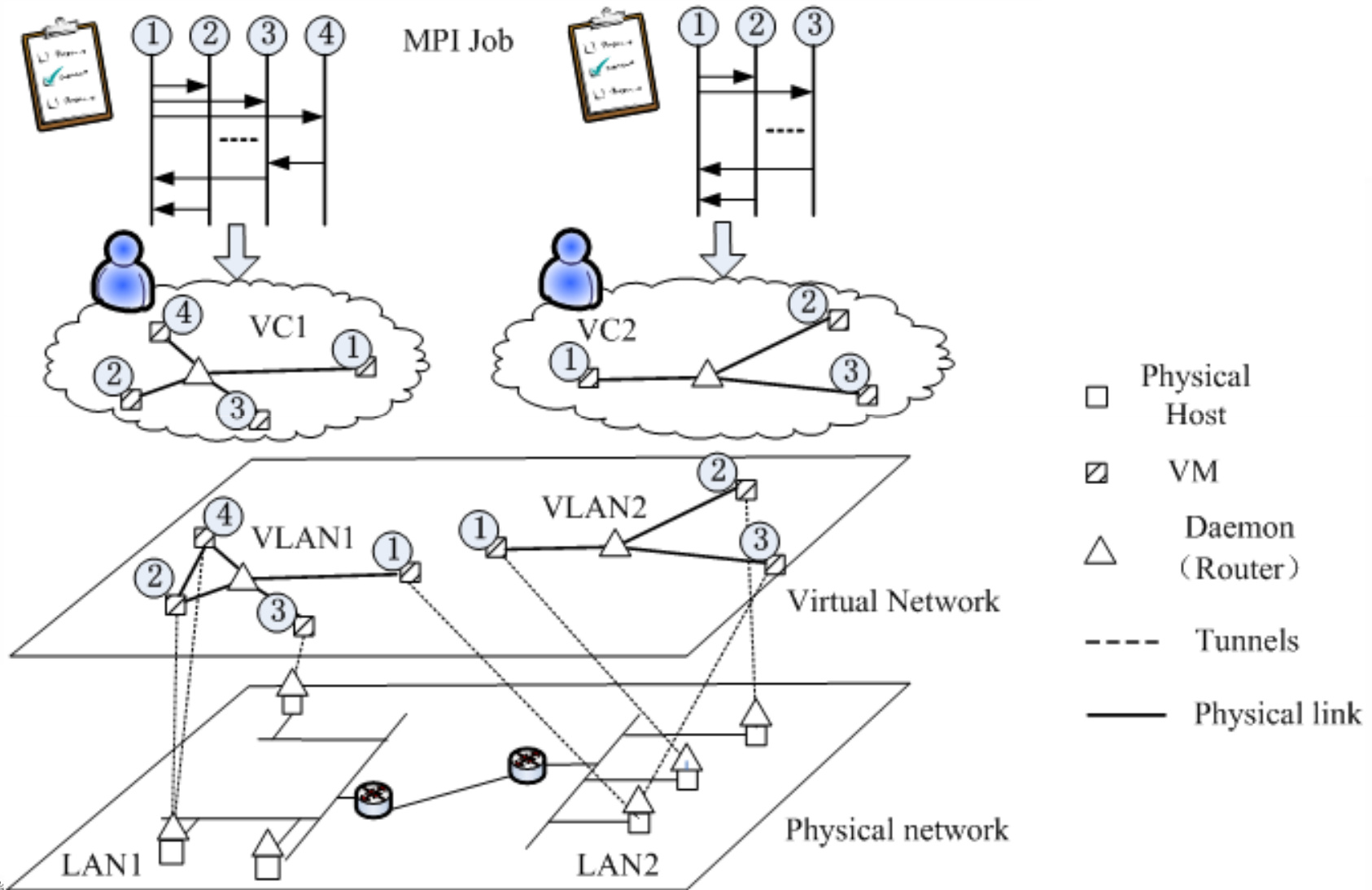
- **Problems**

- Support WAN
- Virtual Network efficiency
- VC topology change
- Potential package loss
- Concurrent Live Migration Protocol

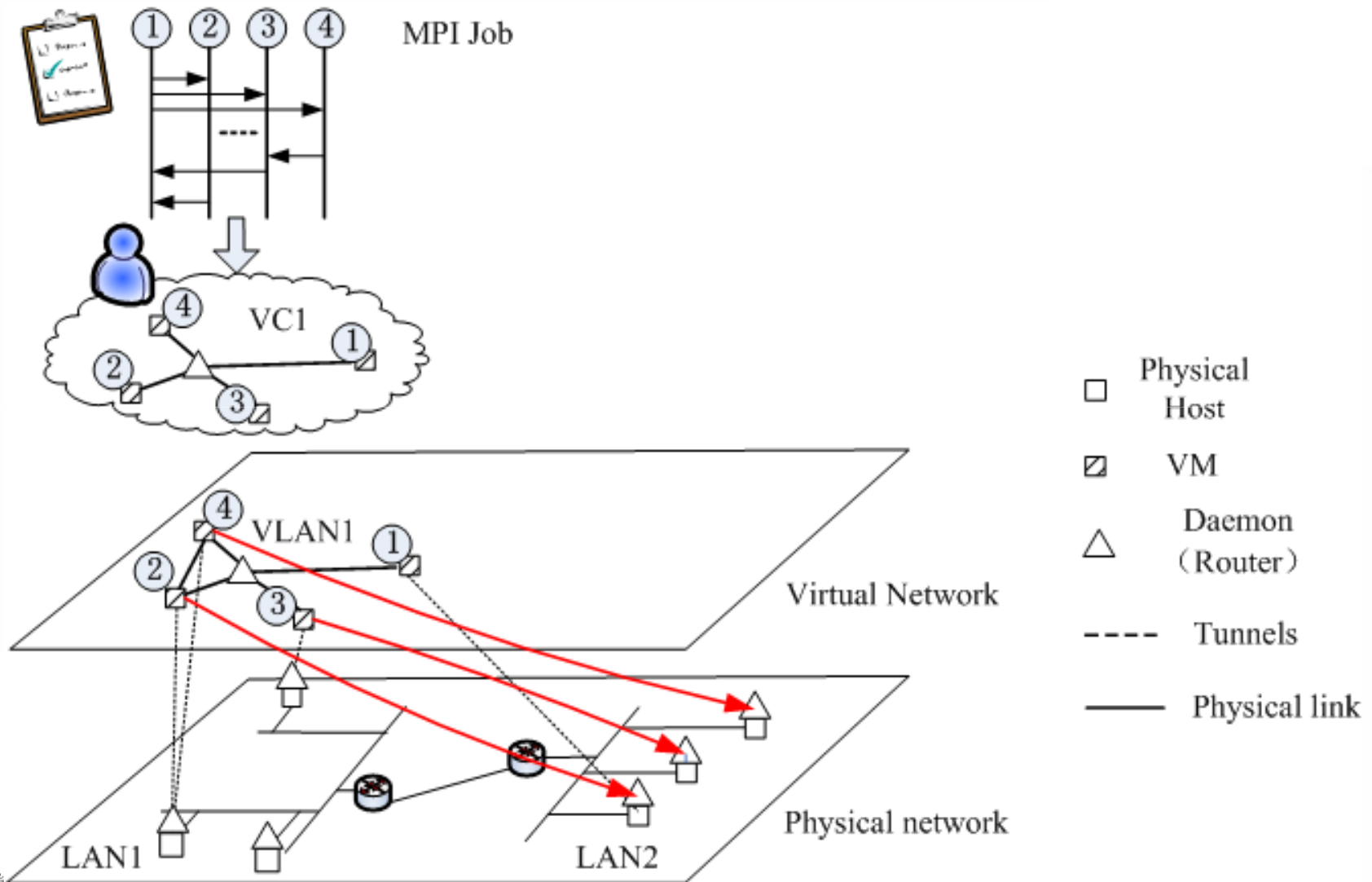
kernel level
dynamic routing
data buffering



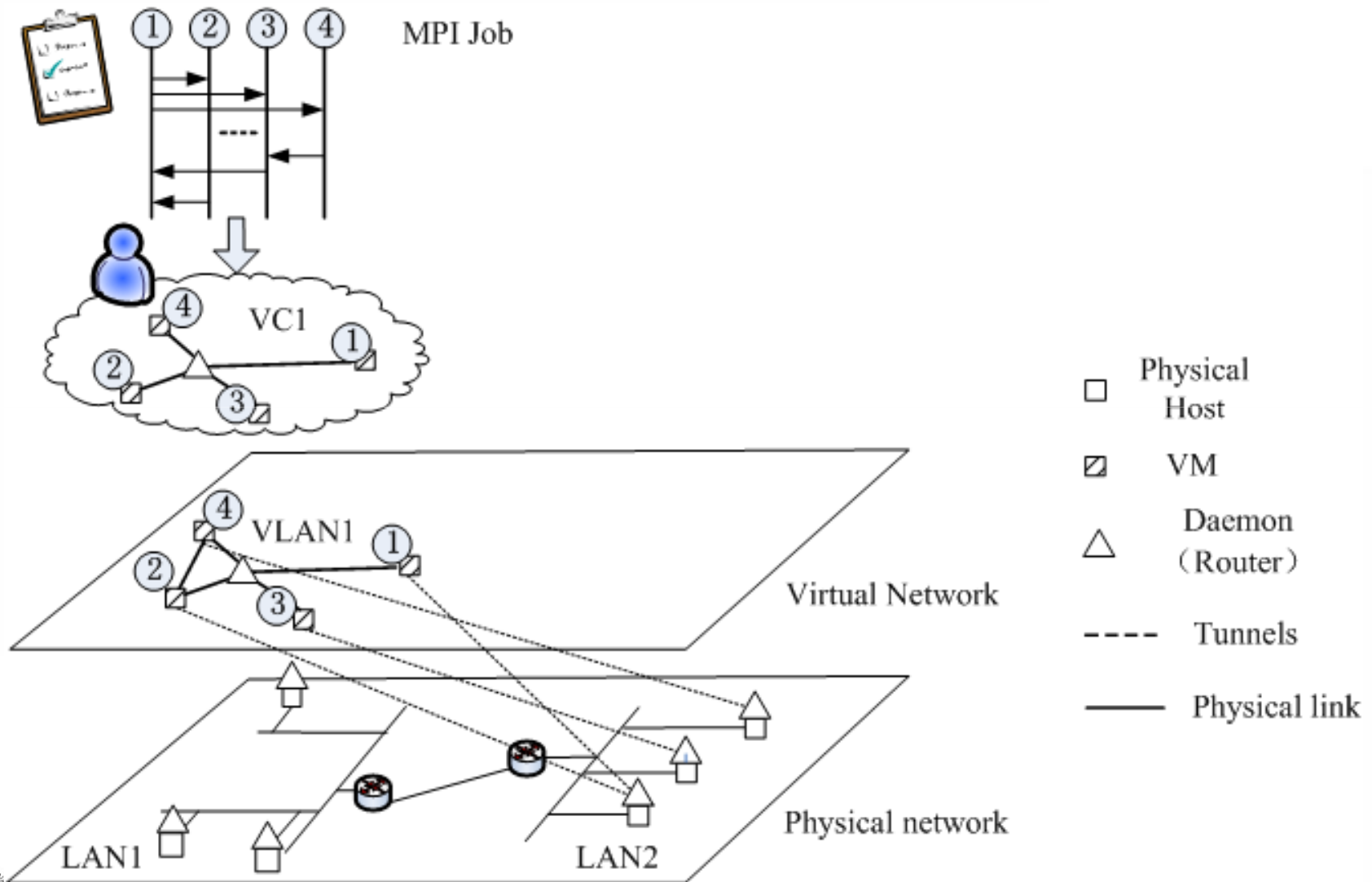
Architecture



VC Live Migration (1)



VC Live Migration (2)



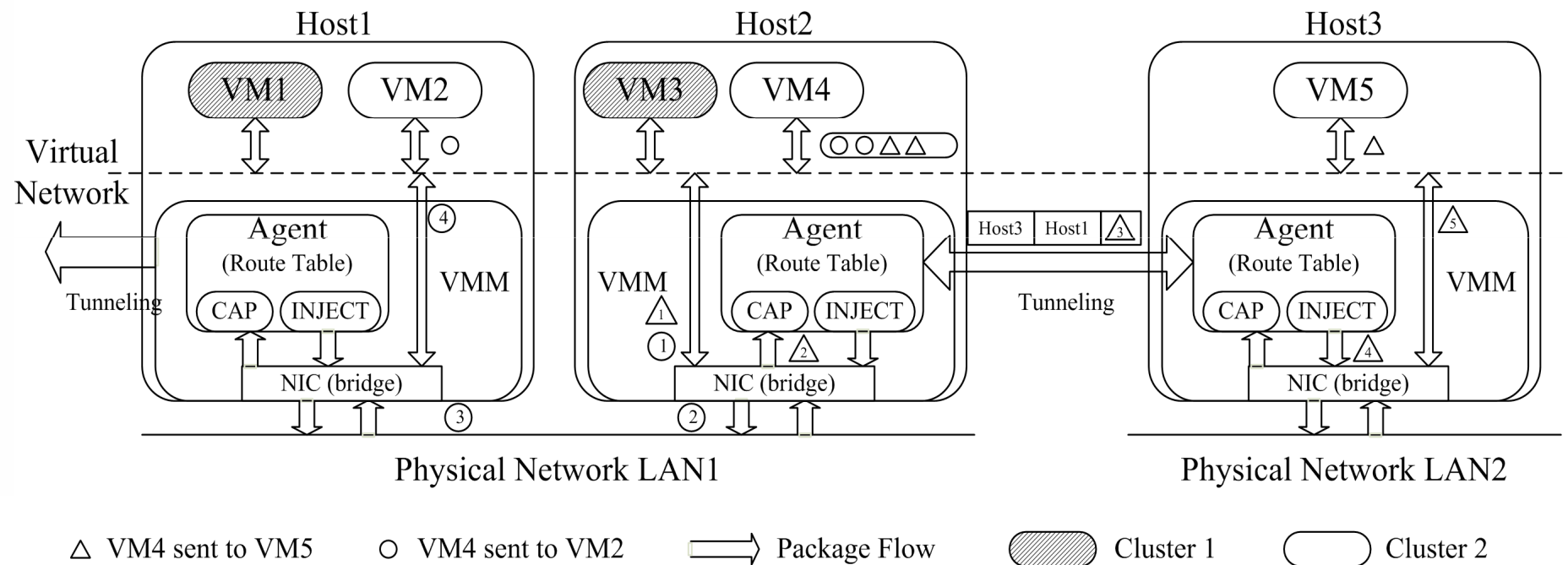


Solution

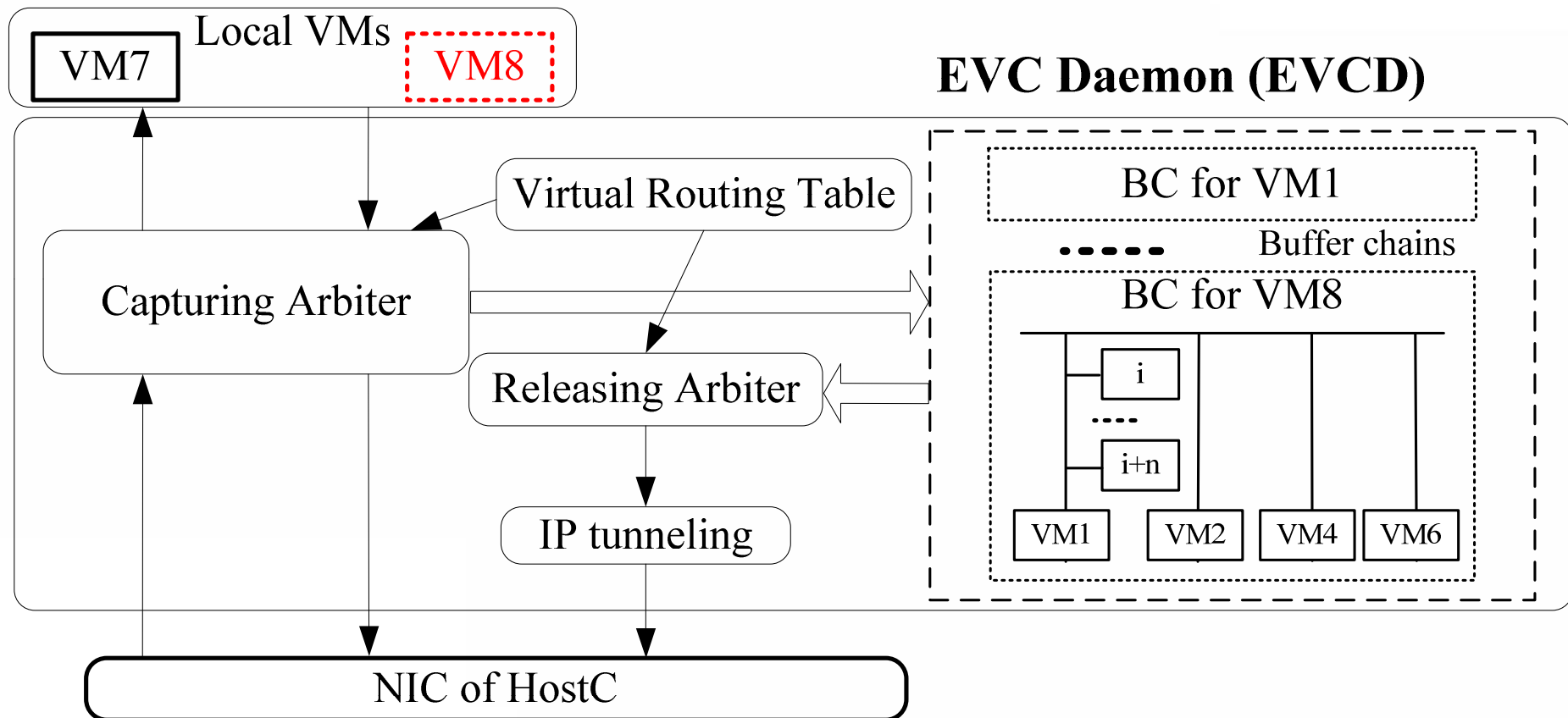
- **Hybrid Virtual Network**
 - Communication over WAN
 - Dynamic routing
 - Package control
 - Efficiency
- **Data Buffering Mechanism**
 - Message buffering structure
 - Buffer transfer (prevent message loss)

Virtual Network

- **kernel level & hybrid**



Data Buffer Structure



Data Buffer Transfer

