



Hyper-V support in DPDK

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Agenda

Hyper-V overview

Architecture

Networking

Hyper-V DPDK Roadmap

17.04 release

Follow on features

Future plans and Issues

Hyper-V Overview

Subtitle

- Integrated since Windows Server 2008
 - Type 1 hypervisor
 - Requires hardware virtualization
 - Core of Azure cloud
- Generations
 - 1 – VM with legacy BIOS and optional emulated devices
 - 2 – VM with UEFI secure boot no emulated devices

Parent Partition

VMI Provider

Virtual Machine
Management Service

VM
Worker
Processes

Child Partition

Applications

User Mode
"Ring 3"

Windows
Kernel

Virtualization
Service Provider
(VSP)

Device
Drivers

Virtualization
Service
Consumer(VSC)

Windows
Kernel

Kernel Mode
"Ring 0"

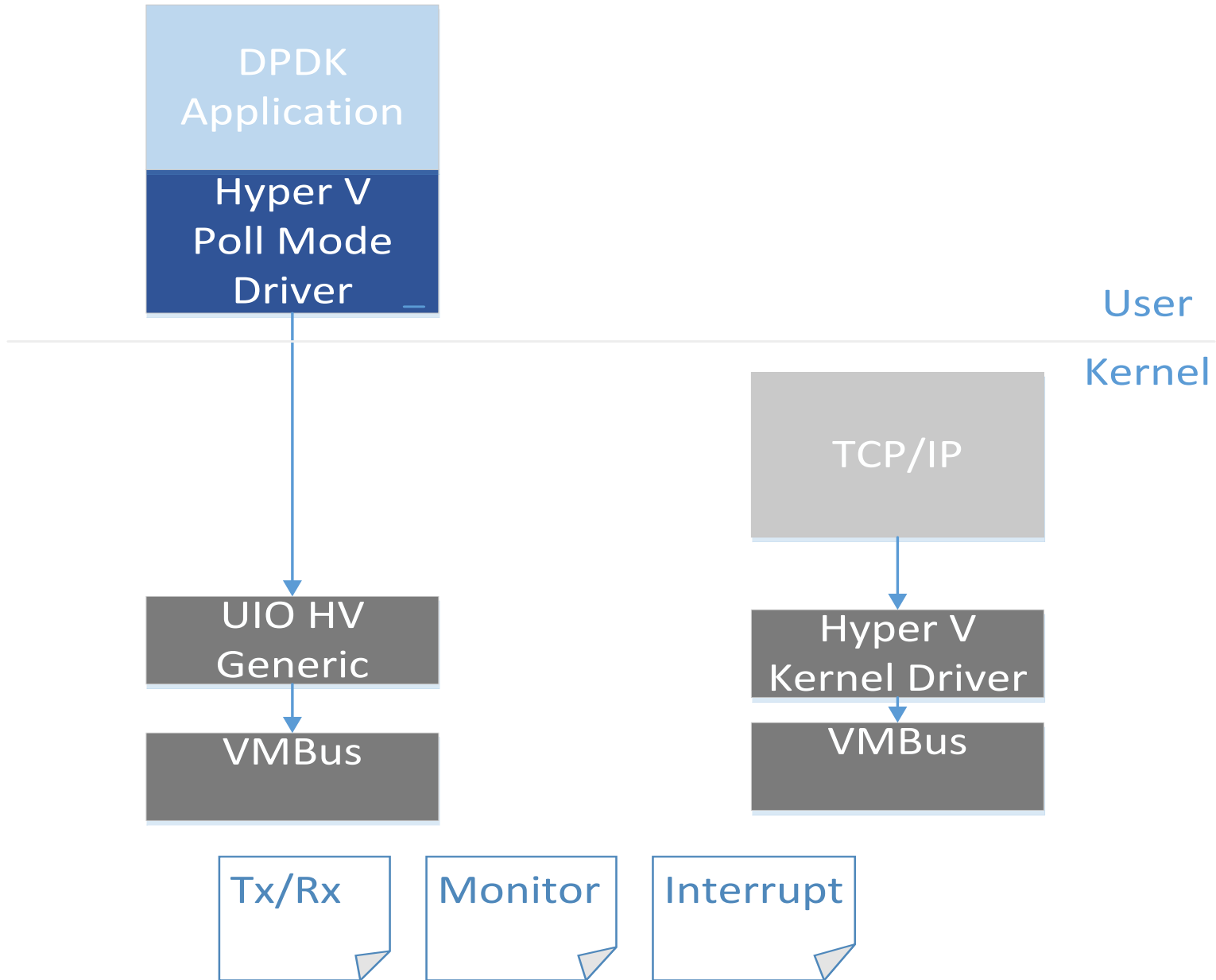
VMBus

VMBus

Hypervisor

"Ring -1"

Hardware



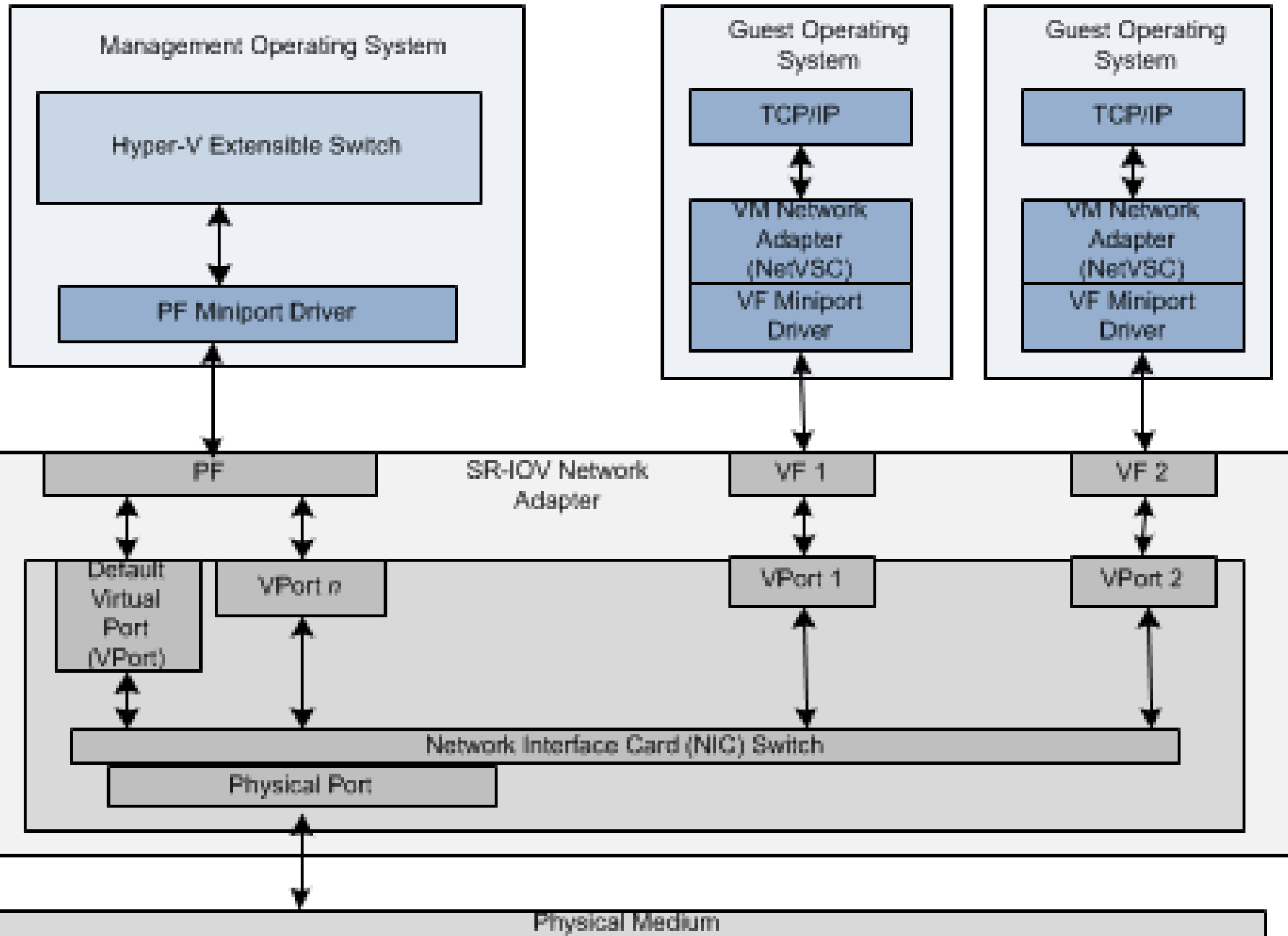
Hyper-V driver Roadmap

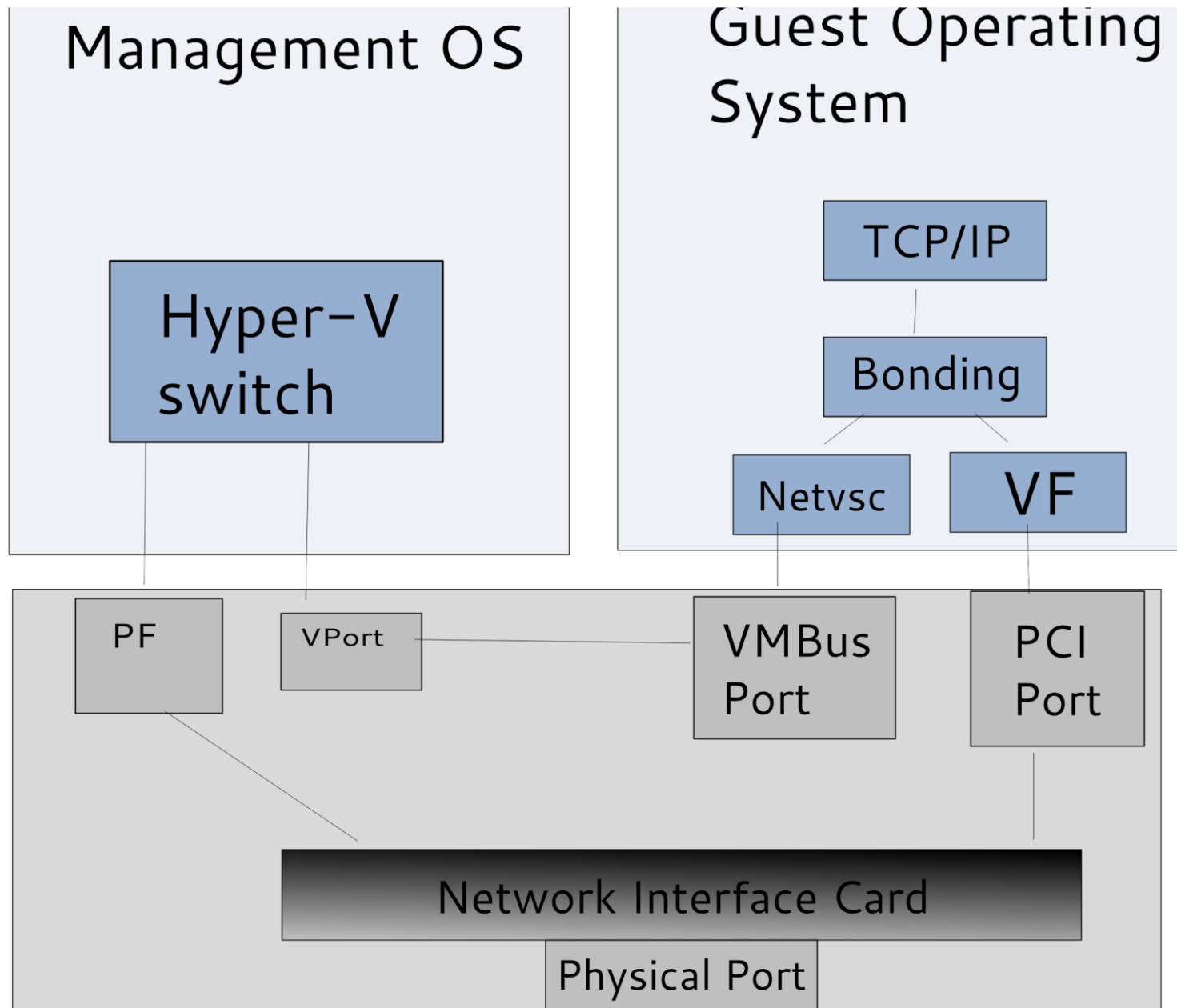
- 0.1 – Unreleased
 - Developed by Brocade as part of vRouter
- 1.0 – 17.04 DPDK
 - Joint development
 - Basic functionality
- 1.1 – 17.07 DPDK
 - Performance
 - Multi queue
 - SR-IOV
 - VFIO API
 - Integration (tests, examples) etc.

Parent Partition

Child Partition 1

Child Partition 2





SRIOV issues

- Ethernet driver model
 - Notification on other device state changes
 - Inject packets from other device
 - Multiple devices same MAC
- Bonding driver
 - Zero conf setup?

Future plans

- Improved Host/Guest communication
 - Leverage Direct path
 - Better layout
 - Security
- DPDK support in Windows guest?

