

Windows OpenFabrics (WinOF)



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www.openfabrics.org

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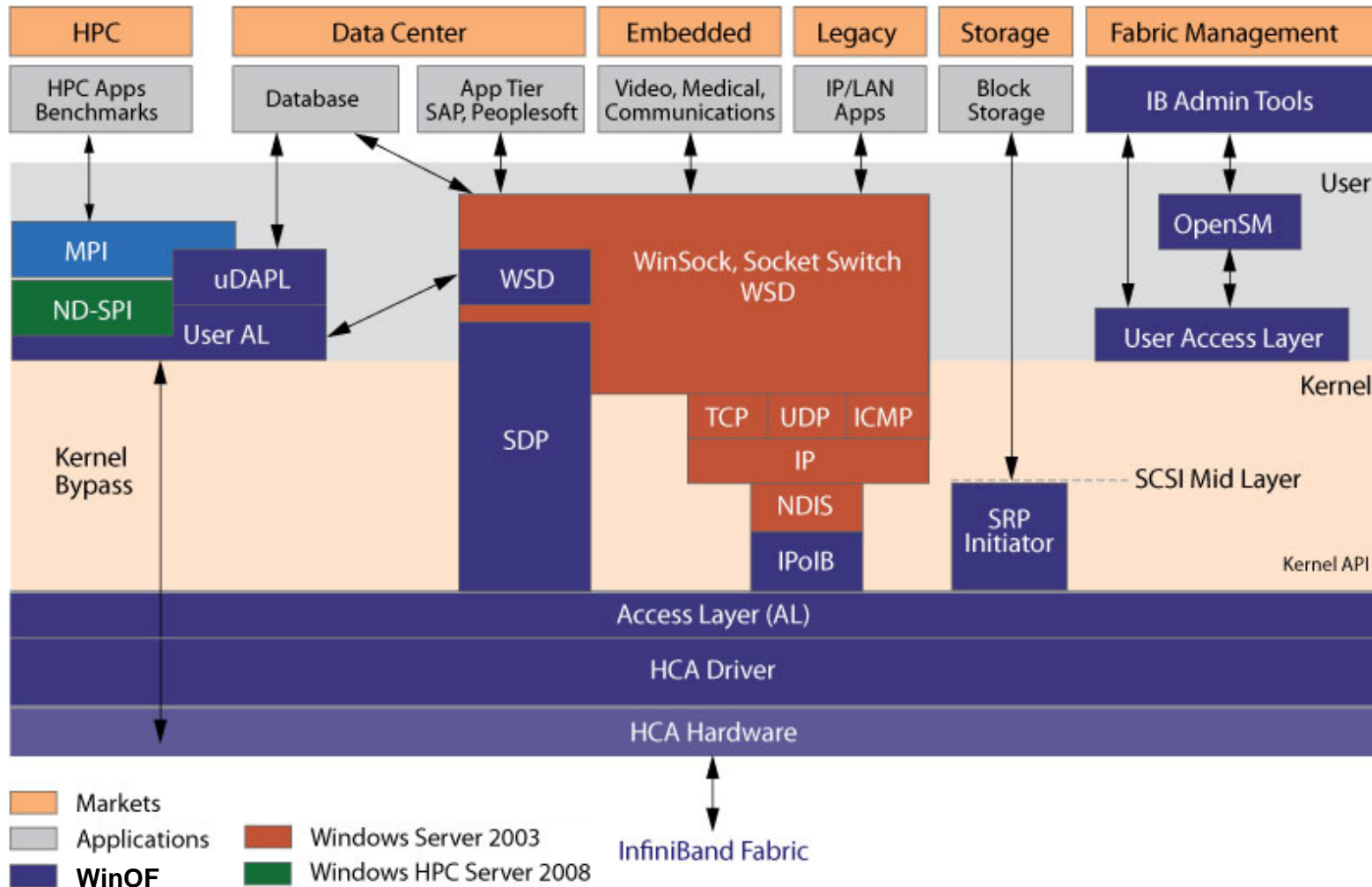
- Collaborative effort to develop, test and release OFA software for Windows
- Components – Kernel and User Space
- Broader test participation
- Add-on components for vendors to differentiate above WinOF

Supported Platforms

- Architectures
 - x86, x86_64, IA64
- Operating systems
 - Windows XP 32&64
 - Windows Server 2003
 - Windows Cluster Compute Server 2003
 - Windows Server 2008*
 - Windows HPC Server 2008*
- WHQL'ed
 - Windows Server 2003
 - Windows Cluster Compute Server 2003



WinOF Software Stack



WinOF Maintainers

- IBAL, HCA drivers – Leonid Keller (Mellanox)
- NetworkDirect – Leonid Keller (Mellanox)
- SRP – Leonid Keller (Mellanox) & Eleanor Witiak (QLogic)
- IPoIB (and CM) – Tzachi Dar (Mellanox) & Anh Duong (QLogic)
- WSD – Tzachi Dar (Mellanox)
- OpenSM – Yevgeny Kliteynik (Mellanox)
- DAPL/DAT, Installer – Stan Smith (Intel)
- VNIC – Alex Estrin (QLogic)

- Qualifications sites
 - Intel, Mellanox, QLogic, Voltaire and others

WinOF 1.0.1 Release

Components

- HCA Drivers
- Access Layer (IBAL)
- NDIS 5.1 (IPoIB)
- WSD provider *
- SRP initiator **
- uDAPL
- OpenSM
- VNIC
- MSI installer
- Tools
 - Verbs per Benchmark
 - FW update tools
 - More

ADD-ONS

- MPI Components
 - Microsoft
 - Intel
 - HP
- SDP
- Cluster management

Components supported by individual vendors may vary

* Not available on Windows XP

** Not available on Windows XP 32 bit

Microsoft WHQL Logo

- Microsoft qualification program
- WHQL can be obtained only by IHV
 - OFA Can not WHQL WinOF
- IB WHQL includes IPoIB and WSD
 - Low level drivers and hardware
- WinOF 1.0 - WHQL version

WinOF 1.1 Plans

- Release schedule: April
 - OSs: Windows Server 2003 and XP

 - Mellanox ConnectX support (desirable)
 - IPoIB partitioning support
 - WSD fixes
 - VNIC (QLogic) fixes
 - SRP fixes and performance optimizations
 - uDAT/DAPL, Socket CM DAPL Provider
 - Device drivers Digitally signed by OFA
- Components:
 - HCA Drivers
 - Access Layer (IBAL)
 - NDIS 5.1 (IPoIB)
 - WSD provider *
 - SRP initiator **
 - uDAPL
 - OpenSM
 - VNIC
 - MSI installer
 - Tools

* Not available on Windows XP

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Futures

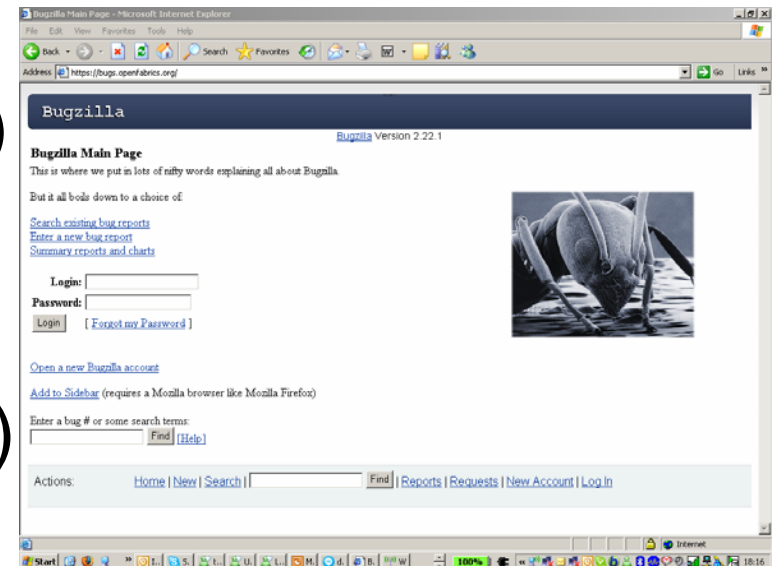
- WinOF 1.2 (July 2008)
 - ConnectX support
 - Windows Server 2008 (HPC), Vista 32/64 support
 - NetworkDirect component
 - Performance optimization Windows HPC 2008
 - IPoIB CM

- WinOF 1.3 (November 08)
 - WinVerbs 1.0
 - Diagnostics



We need your help

- Developing code
- Sending patches and comments to the mailing list
(ofw@lists.openfabrics.org)
- Doing QA
- Opening bugs in Bugzilla
(<https://bugs.openfabrics.org/>)
 - When opening a new bug you can choose [OpenFabrics Windows](#)



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WinVerbs

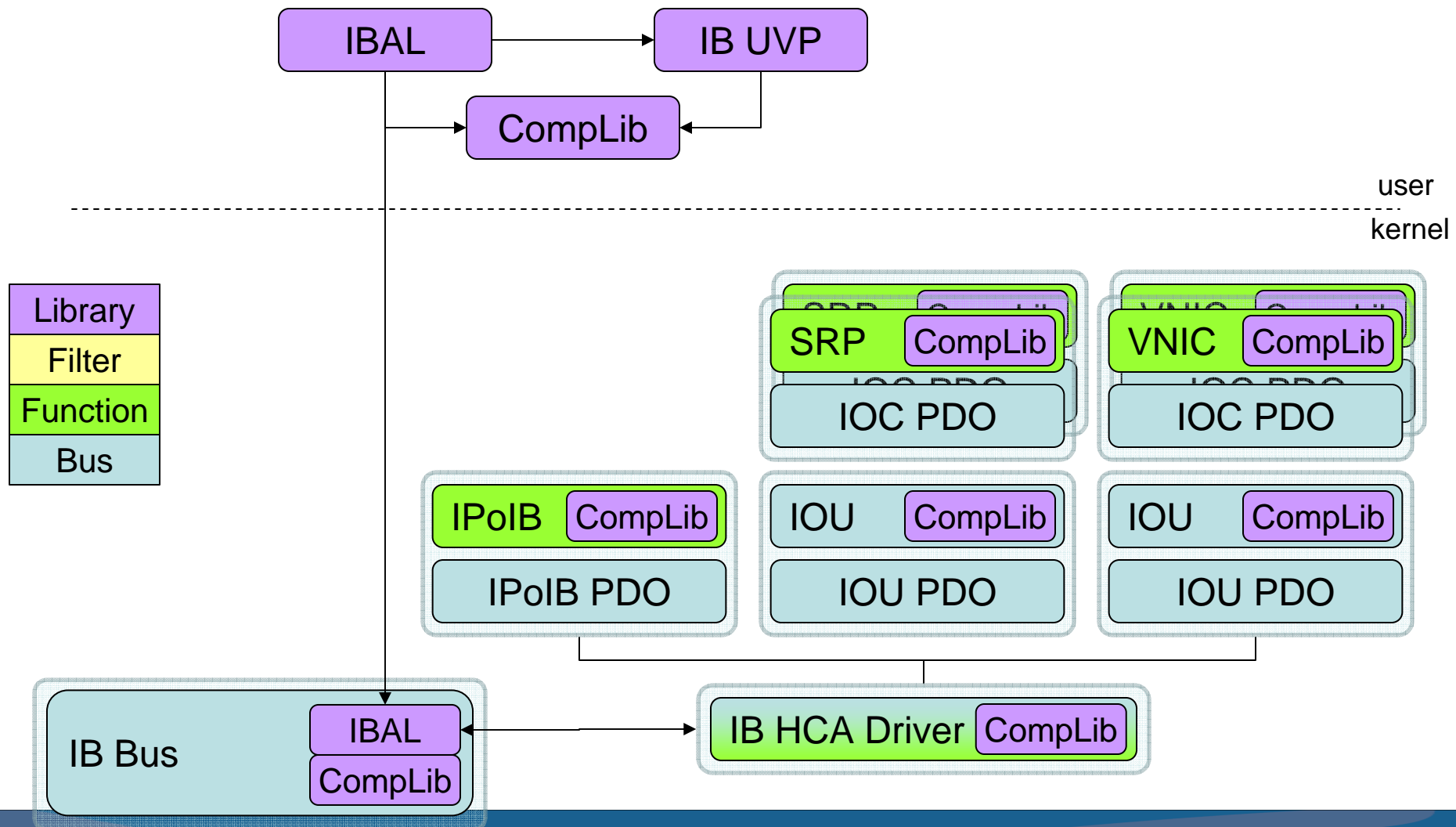
Sean Hefty, Intel

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WinVerbs Goals

- Provide solution optimized for Windows
- Support for multiple RDMA transports
- Ensure existing stack stability
 - Evolutionary development
- Simplify porting applications/tools between Linux and Windows

Current WinOF Driver Stack



“Win Verbs”



- Adds asynchronous userspace interface
 - Application controls all threading
 - Use standard Windows OVERLAPPED I/O structures and operations
- Adds RDMA CM interfaces
 - Keep generic for multiple applications
 - Network Direct, DAPL, OFED RDMA CM interfaces

Minimize changes to existing infrastructure

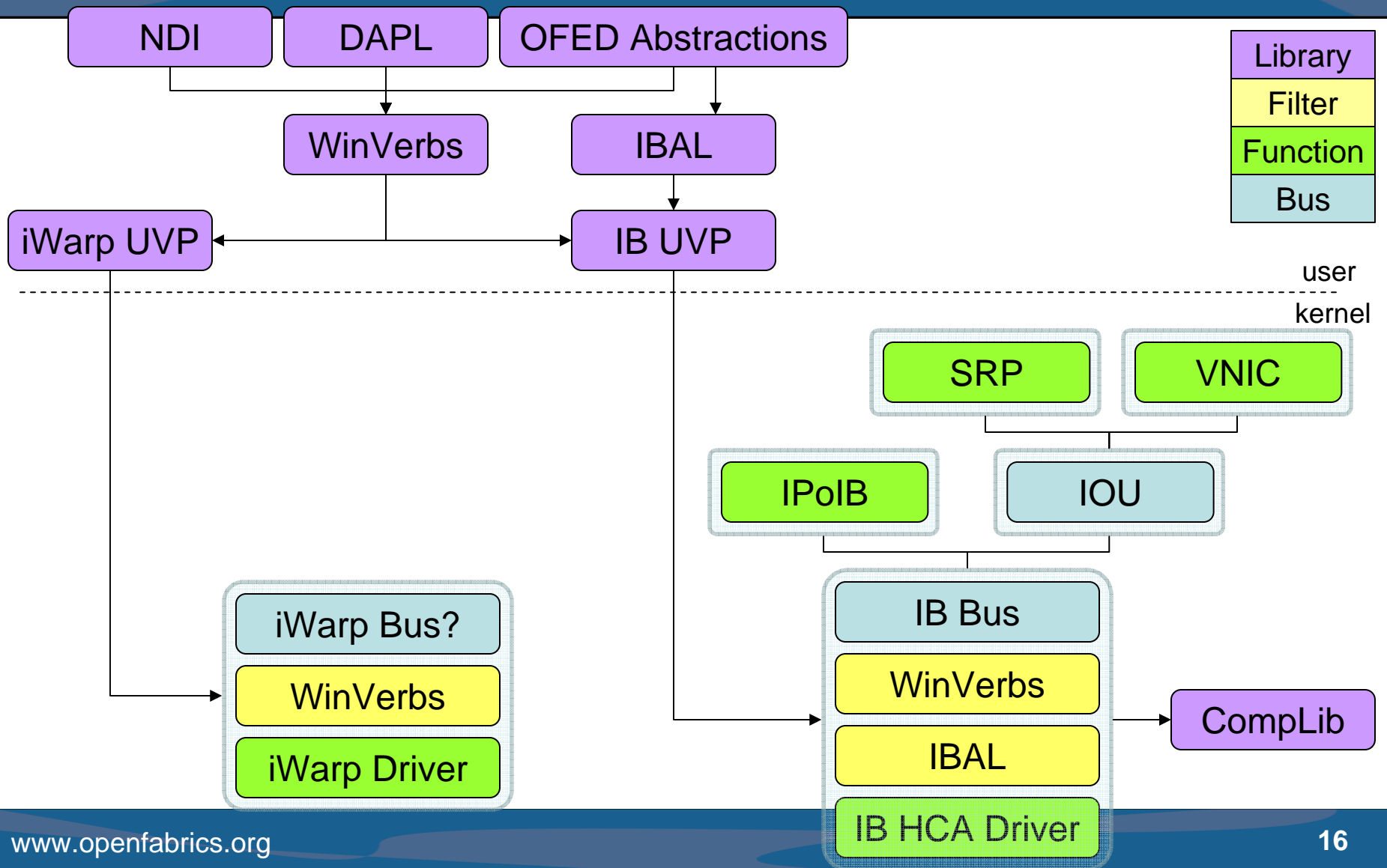
Stack Enhancements

- Follow standard Windows device stacks
 - Migrate IB Bus driver over HCA devices
 - Replace WinOF PnP with Windows PnP
- Optimize user to kernel transitions
 - Continue to provide common IOCTL framework
 - Let UVP control issuing IOCTL
 - Take asynchronous I/O down to driver

***Restructuring of kernel bus driver
and enhancements to UVP***



WinOF Total Solution





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ALLIANCE

THANK YOU!

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