



Data is growing exponentially by the second, we help make sense of it...

SERVERS AND STORAGE

HCL ENGINEERING AND R&D SERVICES

Industry Outlook

Companies are increasingly leveraging technology to address the explosion in demand created by virtualization and the shift toward the cloud. They are also turning to cutting-edge tools to overcome back- and front-office challenges such as meeting capacity needs, managing storage assets and complex infrastructure, fulfillment, forecasting, supply chain execution, monitoring customer loyalty, and leveraging big data and analytics.

HCL has over 12 years of experience in Servers and Storage. SNIA certified professionals in HCL's Servers and Storage practice focus on providing design, development, support and maintenance services to the ecosystem.

Servers and Storage Capabilities

- Platform Virtualization & I/O Virtualization

- FCoE, SSD, Storage Virtualization, Flash Storage



Tools

- IPMI, BMC, Cluster Management software, Disaster recovery, High availability Solutions

- SMI-S, IMA, FC MIB, CIM, WBEM, VSS/VDS

- Device level, Network level, Enterprise level



Interconnect

- TCP/IP, OSI, USB, Fire wire, Infiniband

- Fibre Channel (FC-AL, FC-PH, FC-GS, FC-SW, FCP), iSCSI, SCSI, SCSI Architecture Model

- (SAM), OSD, SATA, NAS (NFS, CIFS, Samba, NDMP), PCIe SSD (FTL, NVMe, AHCI)



Host

- x86, x86-64, Ultra Sparc, RISC, PPC, ARM

- ARM, x86, x86-64, Ultra Sparc, RISC, PPC, Switch Fabric ASIC, Storage SOC, SAS Expanders,

- FC-SAS Bridge, FC-SATA Bridge



IDE

Emerging Markets



- Compilers, Debuggers (JTAG), RAS tools, Crash, Dump, Diagnostics & Performance tools
- Protocol Analyzers, Traffic generators/Jammers, Storage and management simulators, Compilers, Debuggers, Crash, Dump, Diagnostics & Performance tools

Management



- UART, Video, PCI, PCI-e, Ethernet
- Switches, Virtualization appliances,
- Multi-protocol routers
- UART, Video, Ethernet

Protocols



- UNIX, Windows, Linux on Rack mounted, Blade and Cluster servers
- Host: Linux, Windows, Solaris, VxWorks, VMware, Blade and Cluster servers
- Virtualization: RAID, Volume Management

ASC/Board Design



- Keil, Green Hills, Xilin
- Green Hills, VMware WorkBench

Services and Solutions



Server System Software Engineering

- Emerging Technologies
- Tools
- Management S/W
- Interconnect
- N/W Protocols
- IO Protocols
- Kernel
- ASIC/Board Design
- Host and Hardware



Testing Services

- Hardware
- Reliability
- Design Verification
- Compliance
- Performance
- Interoperability
- OS
- Firmware
- Test Simulation



Development Services

- System Integration
- Low Volume Manufacturing
- Board Design
- ASIC
- Firmware Development
- Device Drivers
- OS Support



Service Line Units



Acceleration

- Innovation Platform Enablement

Value

- Accelerated Functional Testing
- Performance Engineering
- Interoperability Testing
- VAVE
- eDAT
- Intelligent Sustenance Engineering

Technology

- Product Intelligence

HCL in Servers and Storage



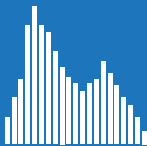
Large resource base with hands-on expertise in Storage technology



Strategic relationship with SNIA in contributing industry standard test suites



Competence in handling multi-core processor design for addressing the design constraint issue of power and performance



Dedicated CoEs for VLSI, System Engineering, Mechanical Engineering and Industrial Design

*%
PROFIT*

Over three decades of R&D and Product Engineering in Operating Systems including SVR4Unix, BSD, SUN Solaris, HP-UX, Windows and Linux



Experience in next generation I/O bus upgrade, higher speed memory and on-chip system interconnect

Experiences Engineered for our customers (Case Studies)

1

Design, development and testing for web based management GUI software. Developed the web client, web server and designed the complete user interface. Under a complete ownership model, the first release was achieved in 5 months

2

For a leading supplier of storage management solutions, streamlined QA processes and performed regression testing. 50 critical issues were reported. The process increased coverage and reduced the cost of testing through test automation tools

3

For a storage and data management solutions provider, achieved a TTM advantage of 2 months by working on 2 releases in parallel. HCL streamlined the QA processes and significantly reduced the testing cost through automation. The resource ramp up time was also reduced to half

4

For a leading NAS vendor, provided L3 support, performance improvement and sustenance for the core module. HCL helped the client reduce the test cycle and identify defects not found otherwise. This led to an improvement in CSAT

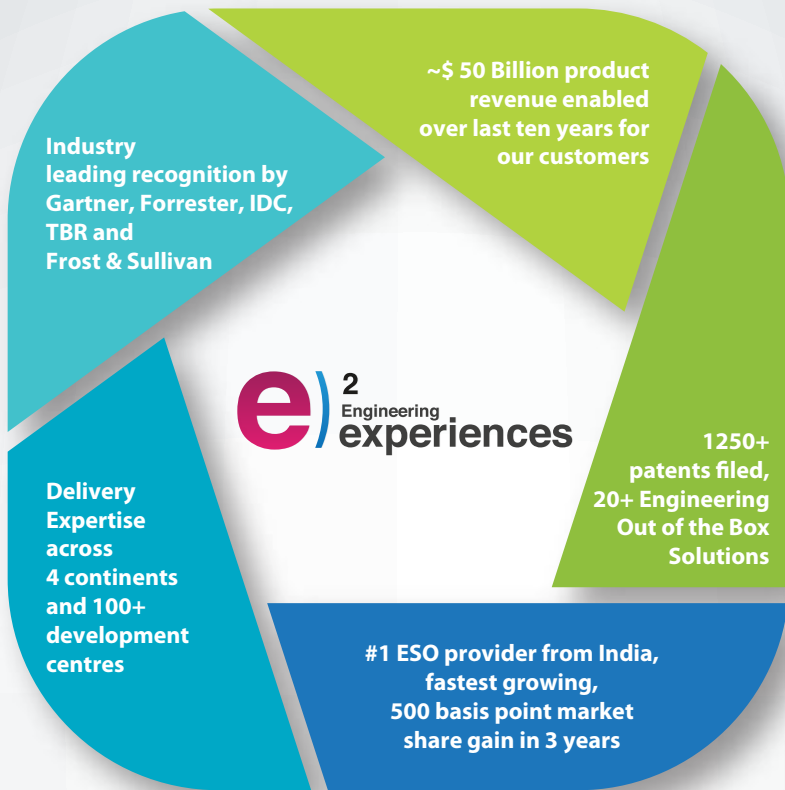
5

For a storage interconnect vendor, HCL owns development and release of a software and majority of firmware. The sustenance cost was reduced by about 33% and the key product release was advanced by 2.5 months



Look here





Hello, I'm from HCL's Engineering and R&D Services. We enable technology led organizations to go to market with innovative products and solutions. We partner with our customers in building world class products and creating associated solution delivery ecosystems to help bring market leadership. We develop engineering products, solutions and platforms across Aerospace and Defense, Automotive, Consumer Electronics, Software, Online, Industrial Manufacturing, Medical Devices, Networking and Telecom, Office Automation, Semiconductor and Servers & Storage for our customers.

For more details contact: ers.info@hcl.com

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