Forward-looking statements

This is a rolling (up to three year) statement of direction and is subject to change without notice.

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Agenda

• Introductions
• Goals for Today’s Workshop
• NonStop – changing the future of mission-critical
• Use Cases examples
• Team Exercise
• Wrap up
Introductions

• Please introduce yourself
  • Your name
  • Your company
  • Your position/responsibilities
  • What do you hope to get out of today’s workshop?
NonStop leverage Workshop Goals

• Clarify some new capabilities being tested and worked on for NonStop that can change the role NonStop plays in your enterprise

• Help you think differently about ways you might deploy NonStop to solve business problems

• Leave with some ideas that you may want to explore in the future for your business
Let’s get started
The pressure on IT is high.

Enterprise imperatives:
- Speed innovation
- Accelerate services
- Improve flexibility
- Do more with less
- Manage risk

Mega trends:
- Big Data
- Cloud
- Mobility
- Security

Increasing demand for a New Style of IT.
It’s a hybrid IT world

Data explosion and IT complexity will lead to multi-cloud environment with many different hybrid computing architectures.

**Two-fold growth**
in global cloud infrastructure is expected within the next 24 months.*

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*Source: Frank Gens, IDC Directions Conference, Key Battles and Strategies for Dominance on the 3rd Platform.

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NonStop and Linux—a hybrid approach
Increased virtualization requires tighter integration of classic and new environments

Best of both worlds

Hybrid Linux and NonStop environments have already been deployed

NonStop is making significant investments to enable a more seamless hybrid environment

Rock solid scalability
Availability and disaster recovery
New open source frameworks and features from Linux

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Current IT Trends Driving Customer Decisions

- **Virtualization disrupts the way we think about the Data Center**
  - Function driven rather than resource focused
  - IT becomes a business service rather than infrastructure

- **Key Driver is software-defined anything or SDX**
  - Examples include SDN (Software Defined Networks), SDS (Software Defined Storage) and NFV (Network Function Virtualization)
  - Rapid provisioning, greater scale, more focus on High Availability and Disaster Recovery become paramount

Application models are changing, giving customers more flexibility on how they’re thinking about their systems
Investing Beyond 2015 for the Virtualized Future

NonStop has always been integrated in hybrid environments.
Countless customer use cases and examples.

NonStop X provides more than a platform refresh to a new technology.
Introduces InfiniBand, an industry standard – high bandwidth, low-latency interconnect.

InfiniBand allows creation of seamless environments ranging across:
- Front-End / Back-end Hybrid environments
- Private and Hybrid Clouds
- Internet of Things

New investment areas:
- Hybrid
- Virtualized Environments

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The challenge is to bring a Linux server and application closer to NonStop processing to reduce latency and make the two environments operate in a unified manner.
**Trial using NonStop i – Possible hybrid application flow**

Bring the Linux application into the NonStop system.
- Holistic solution managed by the NonStop system
- Specialty CLIM provides some latency improvement
- Traffic still moves through NS OS Kernel & Linux OS
- In this example the CLIM is a Virtual Machine Host
- This type of solution could work on NS X as well

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YUMA

Internal HP NonStop project code name.
Named for YUMA desert in Arizona where rockets and missiles are tested by the U.S. Government.

Provides high-speed user mode transport layer leveraging InfiniBand for application traffic

Phase 1: BETA – This year! Fall of 2015
(IB limited VERB API)

Phase 2: Full Function – GA – 2016
(IB Full VERB API + possible rSockets A)
NonStop X Hybrid Application using YUMA

Speeds up communication with direct connections that bypass the OS space:

- Linux application server operates as an extension of the NonStop X system
- Dramatically improved latency
- YUMA – Limited BETA this fall
**YUMA - Direct User Connection**

Latency improvement estimate over IP CLIM → OS Kernel path:
- 1k messages up to 30X faster
- 4k messages up to 200X faster
YUMA - Connected Applications can be virtual

Possible Virtual Machine connections
- Private cloud
- Server farms
- Global services
- Could run on Linux or Unix or IBM or Windows
- Could be on SuperDome
A couple of use case scenarios
Retail Use Case Example

• Large Retail Company wants to gather transaction data for efficiency and product line analysis of their online catalog sales.

• Beyond being able to see which product lines sell well and make the most money for the company, they want to analyze trends like how often a customer:
  • tries to order a product but there was no inventory available
  • has their transaction fail due to a system or internet error
  • searched for a product which failed to return anything
Retail Use Case Example using YUMA

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Constant Big Data flow to reporting environment in real time thanks to YUMA

- Data moves in constant real time to keep reporting environment up to date
- Models and reports can be generated based on the current or any past status of the business
- Business process improvements can be monitored and tracked as they are implemented
Banking Fraud Detection Solution

• A large European bank needs to be able to detect potential fraudulent transactions as they are being processed.

• Through use of a “hybrid” application environment, transaction details from NonStop could be passed through to “fraud detection” application on Linux with little to no transaction latency impact.
Banking Fraud Detection Use Case

- NonStop is processing ATM and mobile banking transactions.
- Can now pass transaction information to a Fraud Detection Application that runs on Linux.
- Fraud application performs analysis and detection work on the transaction, flags issues and passes back to NonStop.
- NonStop’s application can now take an action to block or reject the transaction or require deeper identification of user.

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Telco Use Case Example

• To achieve “warm SIM” capability and reduce the time it takes to complete a phone sale in the retail store, a telecommunications company wants to provide pre-registered SIM cards already loaded in the central database.

• At the time of sale, the retail seller only needs to collect customer information which is added to the preregistered SIM card database.

• Application lives on a Linux server and feeds the NonStop central database directly.
Telco Use Case Example using YUMA

- Sales person registers SIM with customer data
- Pre-established Warm SIM in DB is updated with customer data
- Whole transaction takes less time (10 mins) vs (30 mins), improving customer's experience.
Team Exercise

• Let’s break into 4 to 5 groups
• You each have a pad of paper + markers
• Part One - Spend 15 mins
  • List business problems you’d like to solve
  • Discuss dreams you have for your business w/NonStop
  • What challenges are you facing?
• Part Two – Spend 15 mins
  • Could these items be solved with YUMA or can you think of another technology?
  • What else could HP offer to help you solve the problem.
• Elect a leader who will speak for your team
• Prepare to share your thoughts with the rest of the workshop
Share Team Results

• Each group will now share their team’s results.
• Workshop votes on items of most general interest.
Closing / Summary

• Around the room:
  • Was the workshop helpful to you?
  • Did you gain any new insights or thoughts?
  • What will you take away?
  • What would you like HP to follow up with you about?
Backup Slides – one additional Use Case
NonStop X – Future offering

YUMA Project

Phase 1: BETA – This year! Fall of 2015
(IB VERB API)

Phase 2: Full Function – GA – 2016
(IB VERB API / possible rSockets API)

Direct RDMA into and out of the NonStop server to move data and transactions quickly and efficiently through NonStop OSS filesystem layer.

InfiniBand

NonStop X

YUMA user traffic

OS system traffic