NonStop
GTUG Munich 2015 – Customer Workshop II
April 2015

Forward-looking statements

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

This document contains forward looking statements regarding future operations, product development, product capabilities and availability dates. This information is subject to substantial uncertainties and is subject to change at any time without prior notification. Statements contained in this document concerning these matters only reflect Hewlett Packard's predictions and/or expectations as of the date of this document and actual results and future plans of Hewlett-Packard may differ significantly as a result of, among other things, changes in product strategy resulting from technological, internal corporate, market and other changes. This is not a commitment to deliver any material, code or functionality and should not be relied upon in making purchasing decisions.

Agenda

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

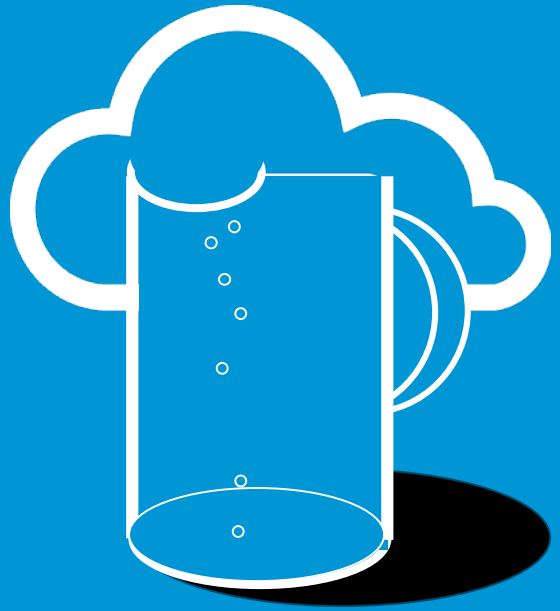
Introductions

- Please introduce yourself
  - Your name
  - Your company
  - Your position/responsibilities
  - What do you hope to get out of today's workshop?

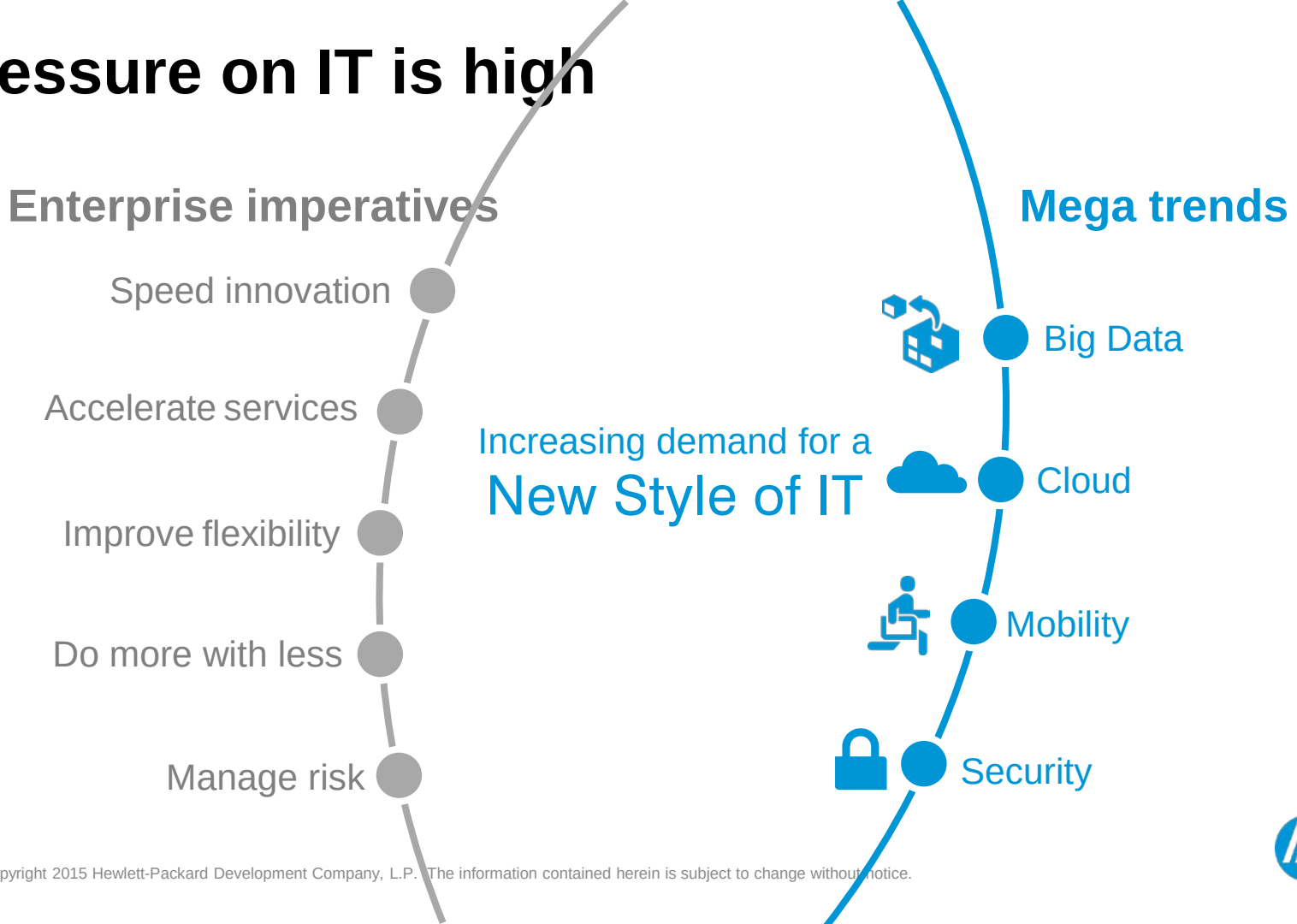
NonStop leverage Workshop Goals

- 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

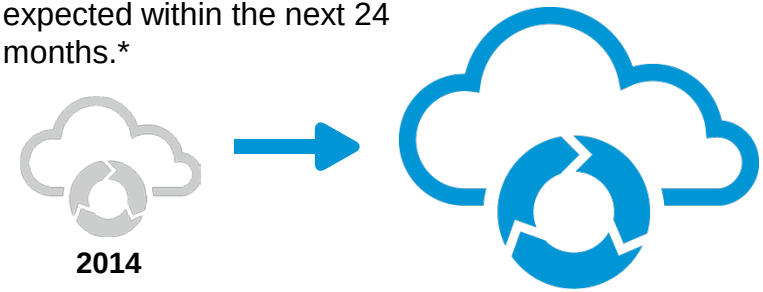


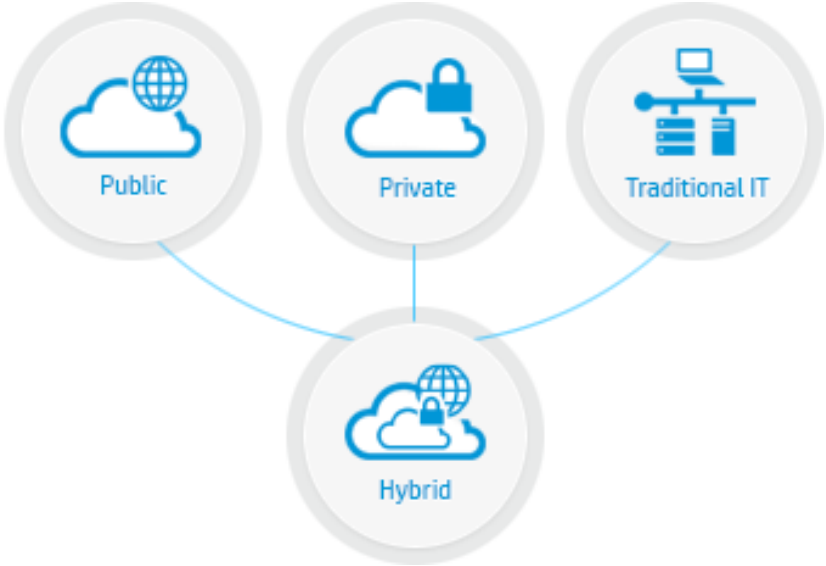
Big Data | Cloud | Mobility | Security

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.*





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

NonStop and Linux—a hybrid approach

Increased virtualization requires tighter integration of classic and new environments

Hybrid Linux and NonStop environments have already been deployed

Best of both worlds

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

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

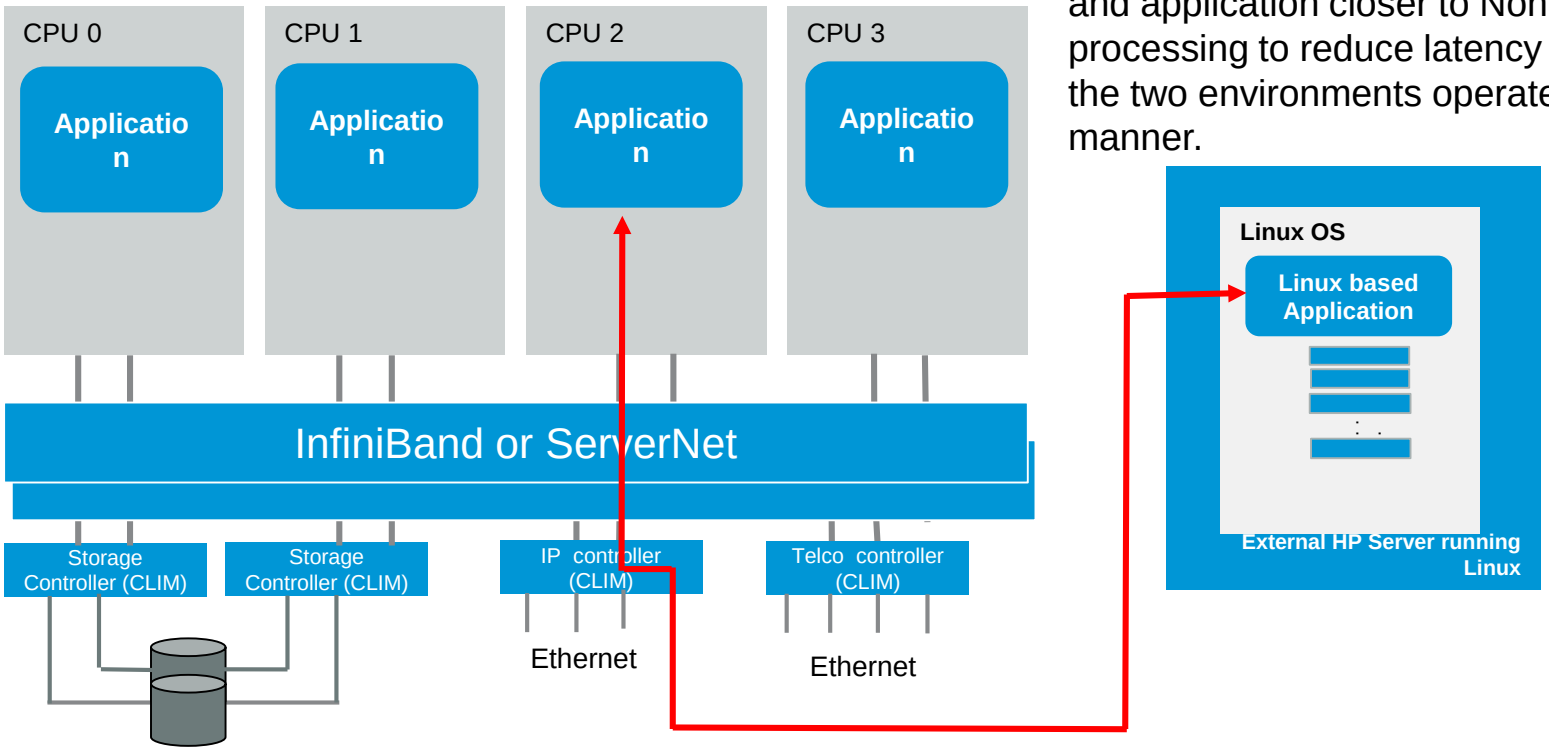
- Front-End / Back-end Hybrid environments
- Private and Hybrid Clouds
- Internet of Things

New investment areas:

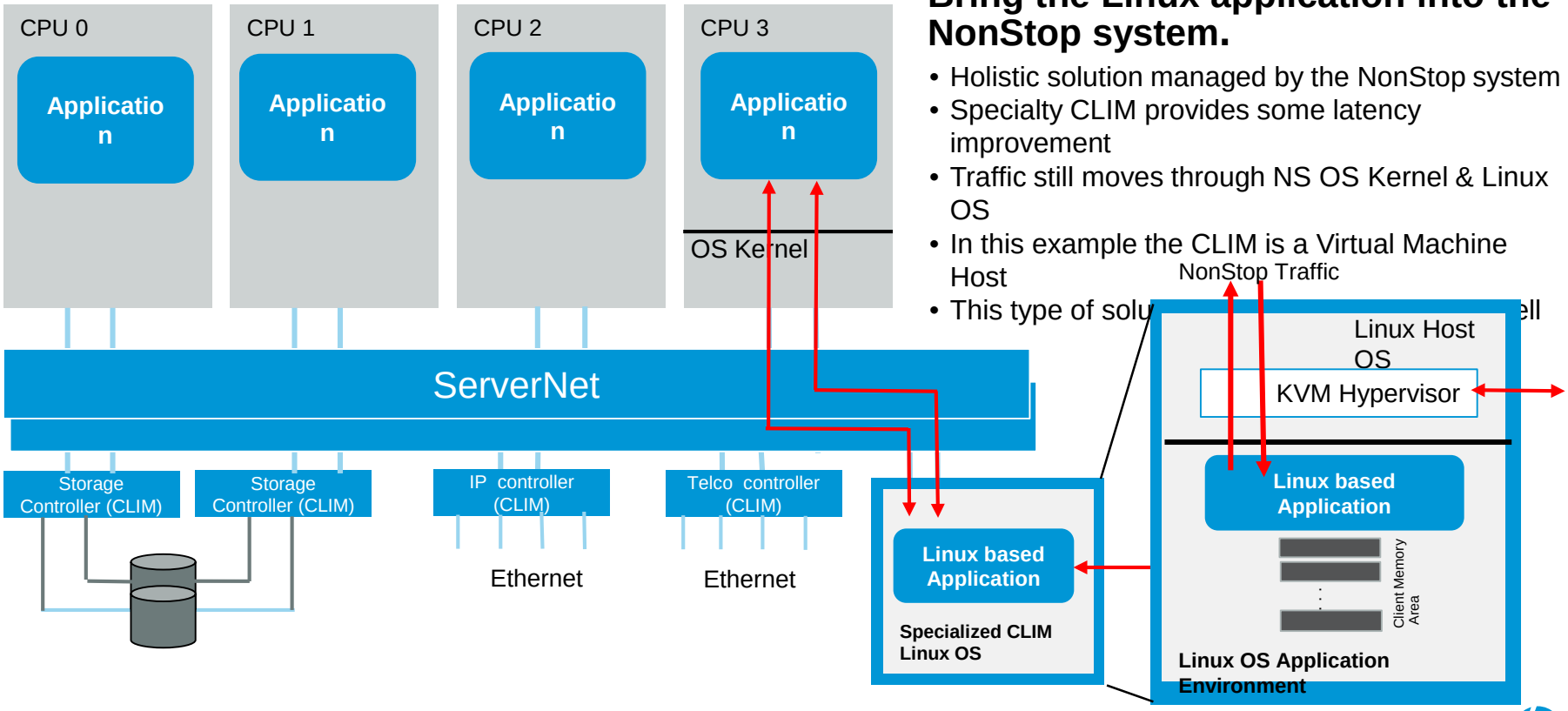
- Hybrid
- Virtualized Environments

Current NonStop Architecture Application flow

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 solu ell

YUMA

Internal HP NonStop project code name.

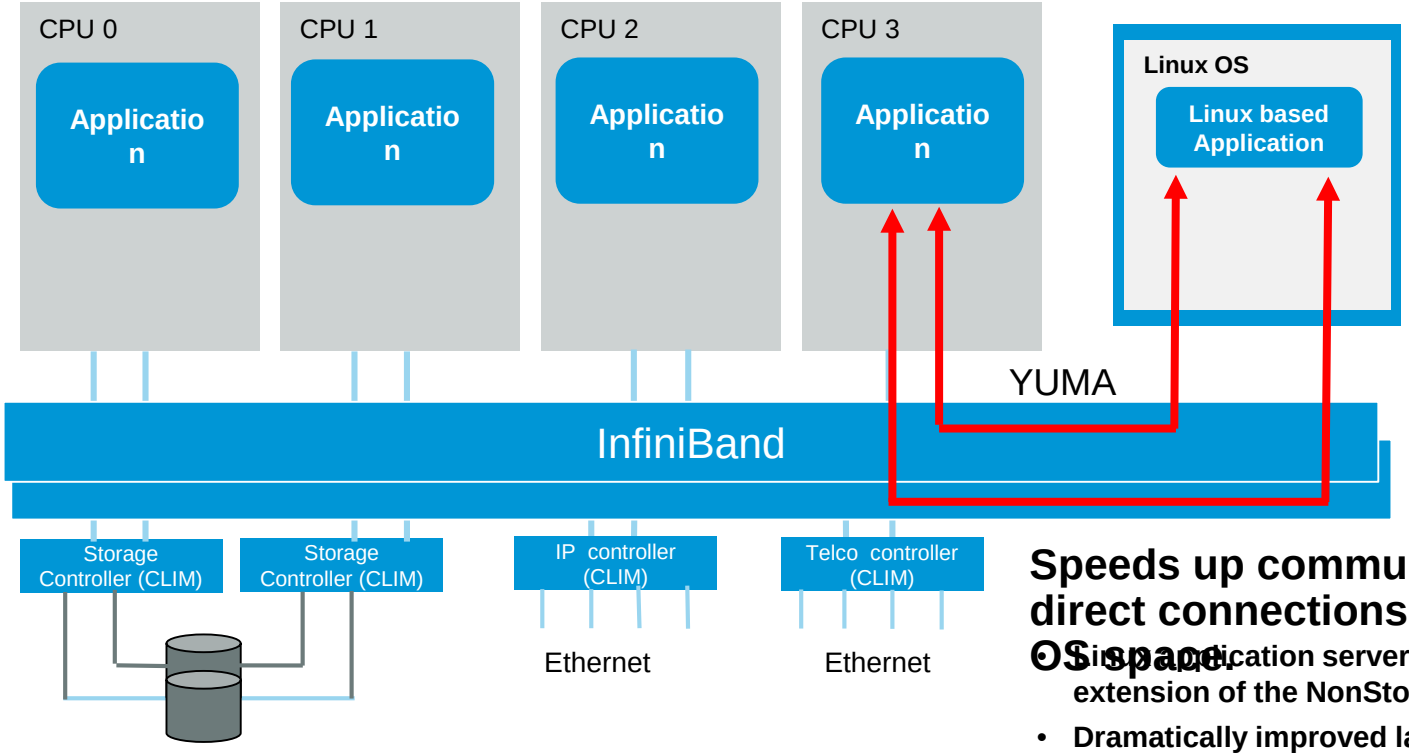
Named for YUMA desert in Arizona where rockets and missiles are tested by the U.S. Government.

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

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

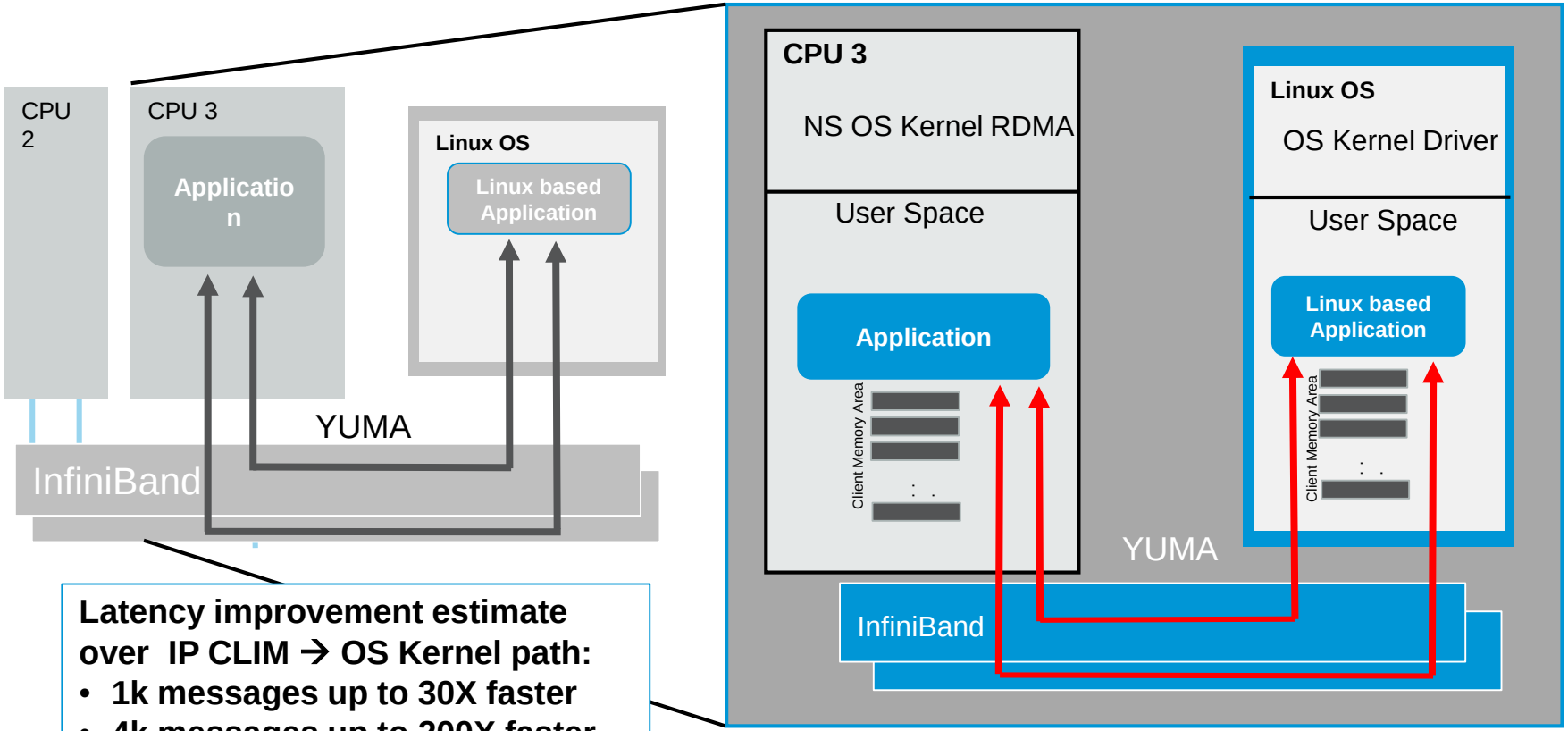
NonStop X Hybrid Application using YUMA



Speeds up communication with direct connections that bypass the OS stack.

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

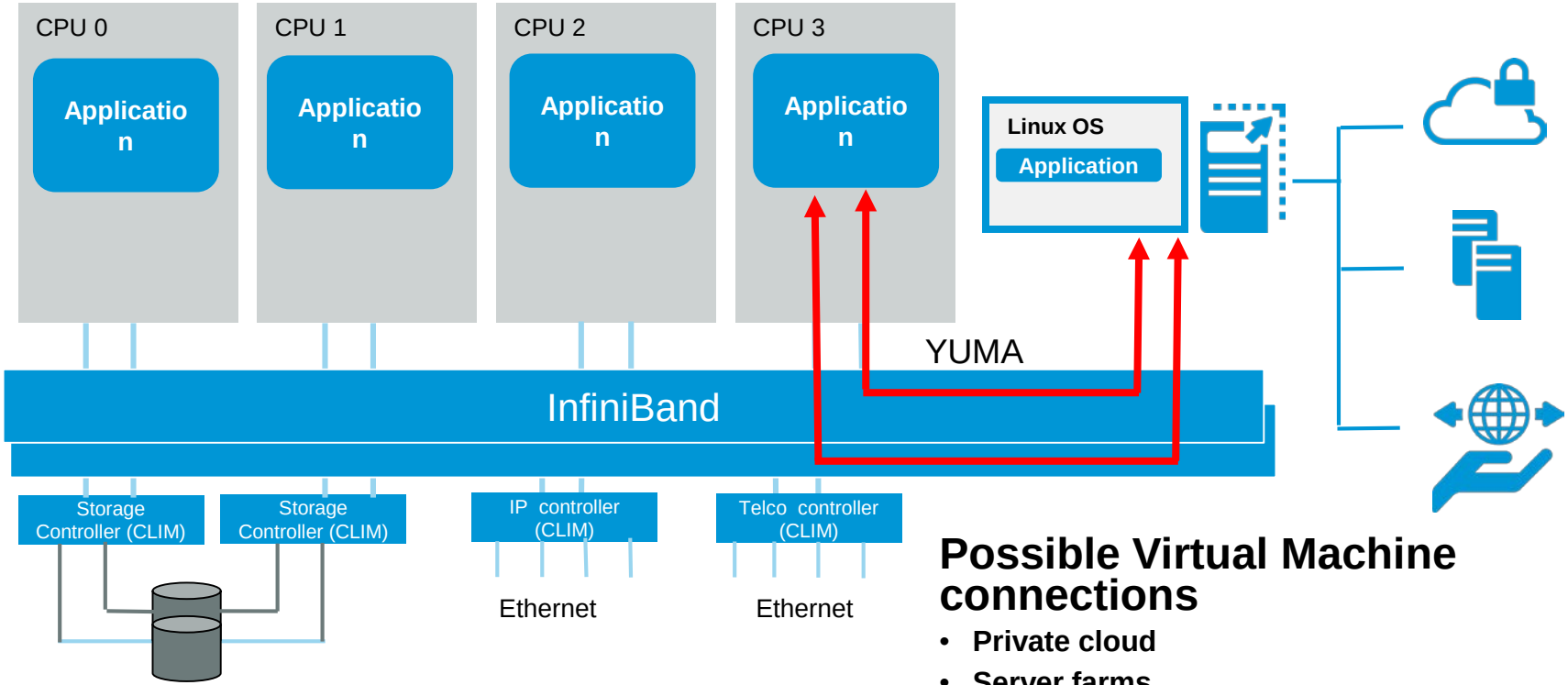
YUMA - Direct User Connection



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**

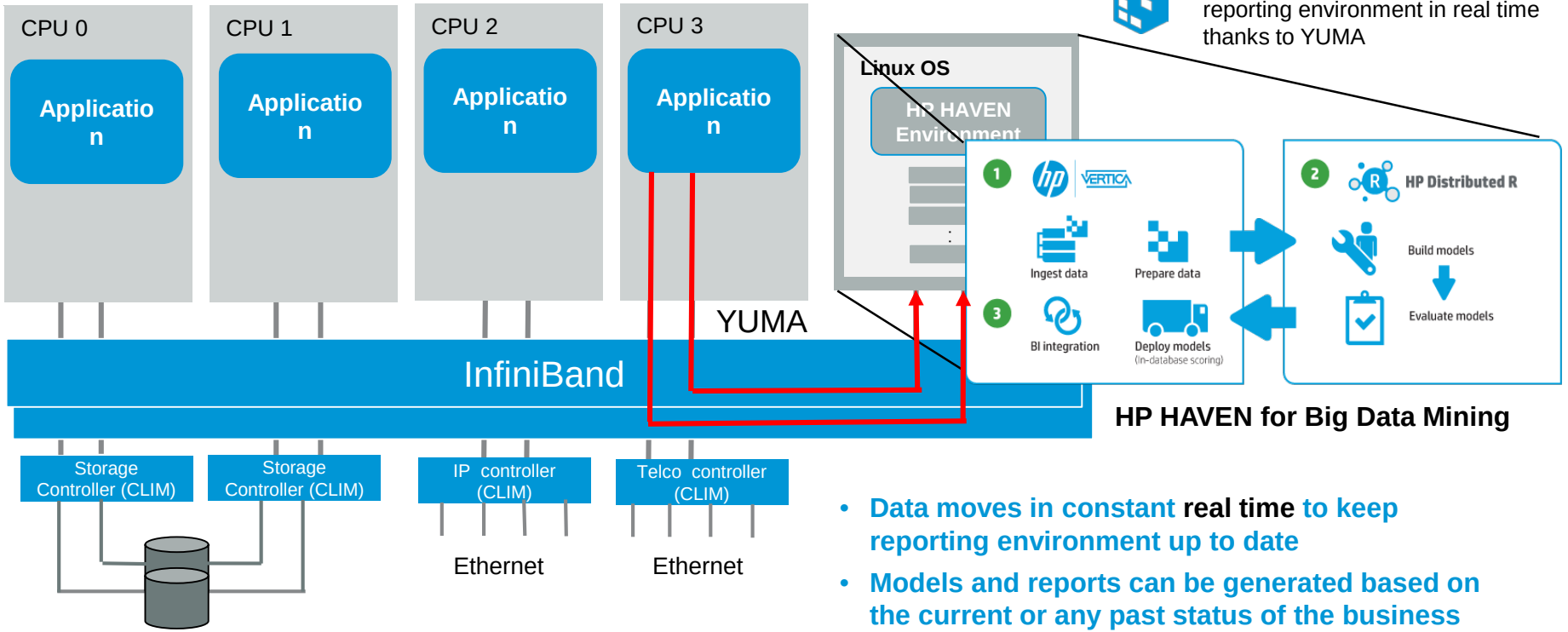
A couple of use case scenarios

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



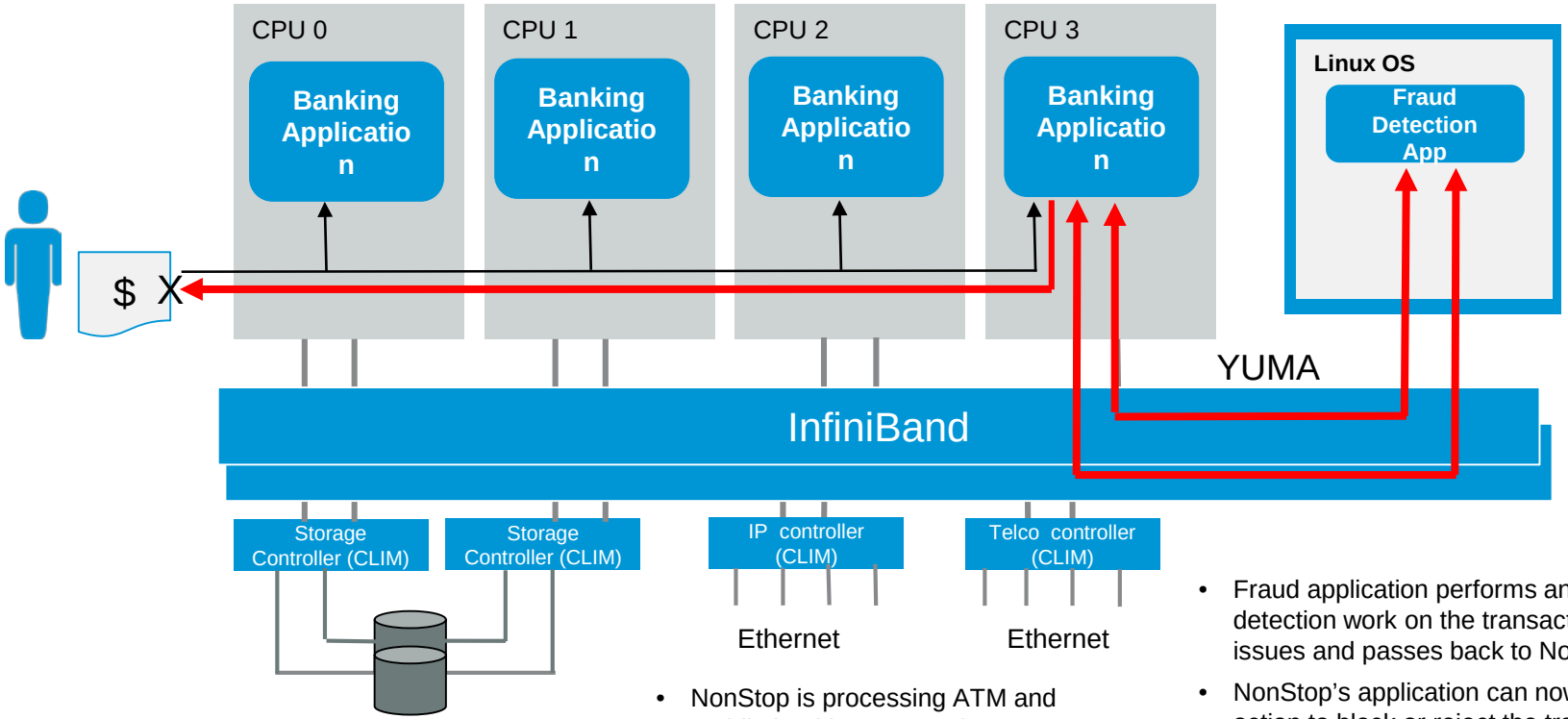
- **Data moves in constant real time to keep reporting environment up to date**
- **Models and reports can be generated based on the current or any past status of the business**
- **Business process improvements can be monitored and tracked as they are implemented**

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



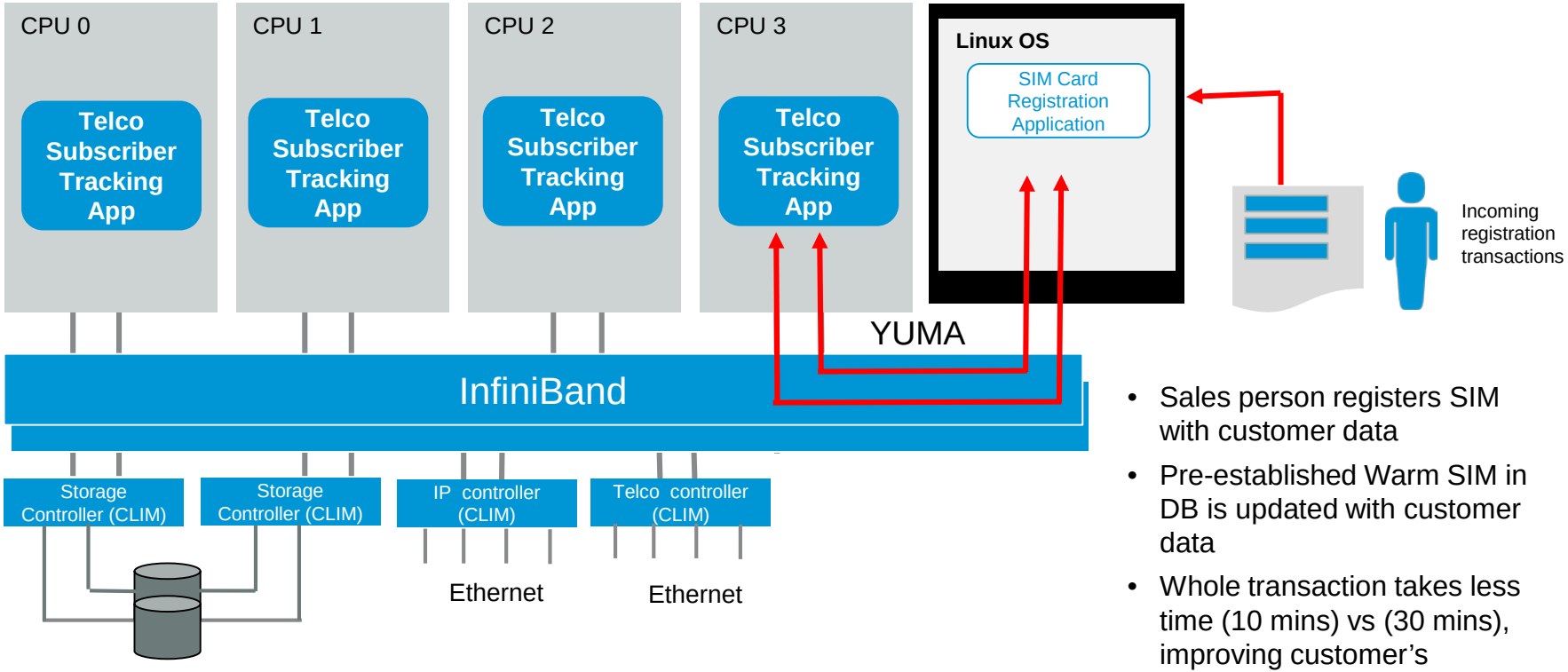
- NonStop is processing ATM and mobile banking transactions.
- Can now pass transaction information to a Fraud Detection Application that runs on Linux

- 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

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.

Workshop

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?

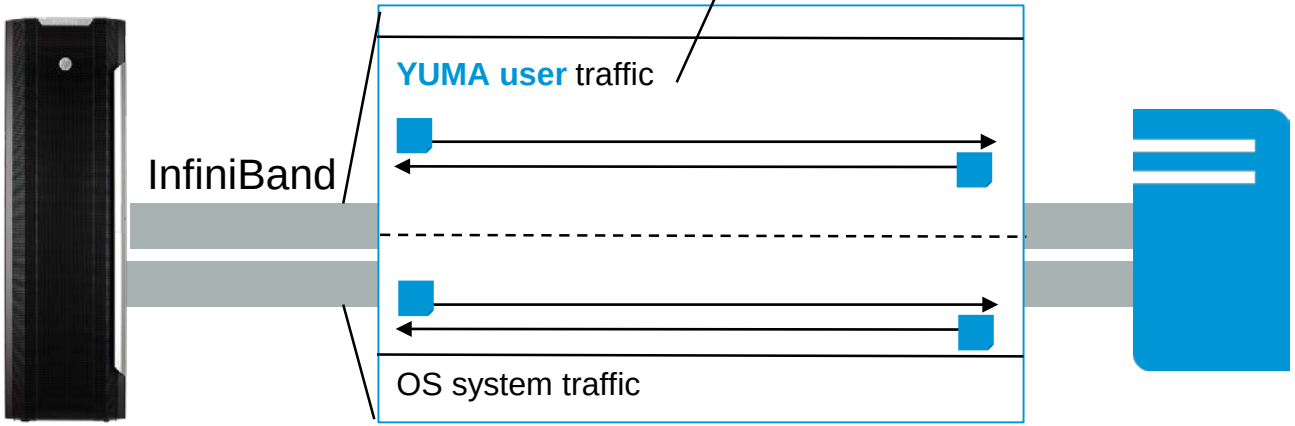
Backup Slides – one additional Use Case

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)



NonStop X

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