The VSwitch, IBM, and a Customer Walk into a Bar

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Abstract

There wasn't actually a bar involved, but "...walks into a conference room" doesn't get the same attention. Besides, this is no joke. The z/VM Virtual Switch (VSwitch) is leading technology that has seen continued enhancements over the past five years. Join IBM Developers and a Customer as they recall the needs that drove enhancements and how they partnered together to produce high quality and high value solutions in the virtual network. This will include Multi-VSwitch Link Aggregation, Improved Load Balancing, and Priority Queuing.

Introductions
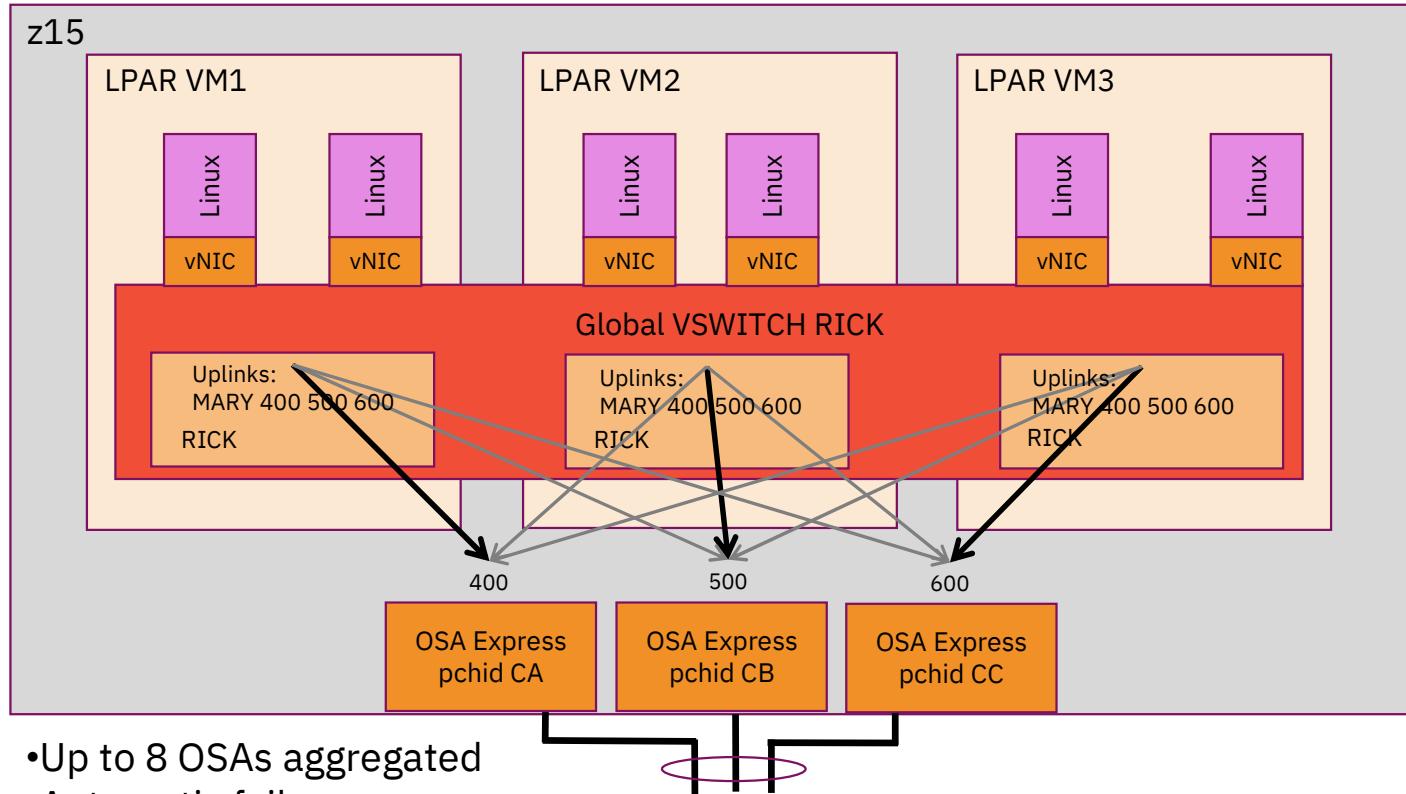

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Global z/VM Virtual Switch

z15

LPAR VM1

Linux

vNIC

Linux

vNIC

LPAR VM2

Linux

vNIC

Linux

vNIC

LPAR VM3

Linux

vNIC

Linux

vNIC

Global VSWITCH RICK

Uplinks:
MARY 400 500 600
RICK

Uplinks:
MARY 400 500 600
RICK

Uplinks:
MARY 400 500 600
RICK

400

500

600

OSA Express
pchid CA

OSA Express
pchid CB

OSA Express
pchid CC

- Up to 8 OSAs aggregated
- Automatic failover
- Automatic balancing

VSwitch Timeline

Focus Area

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
z/VM 4.4		z/VM 5.2		z/VM 5.3	z/VM 5.4	z/VM 6.1		z/VM 6.2		z/VM 6.3			z/VM 6.4		z/VM 7.1		z/VM 7.2	
VSwitch Introduced		Layer 2 (MAC) ESM Access Control Port Isolation		Link Aggregation		VLAN UNAWARE NATIVE NOE		HiperSocket Bridge		VEPA		*Shared Port Link Aggregation	Resetting Counters	*Load Balance Enhancements *NICDEF Security Controls		*Priority Queueing		*IPv6 Query VSwitch Support (est)

https://www.vm.ibm.com/virtualnetwork/enhance.html

Multi-VSwitch Link Aggregation (aka **Shared Port Link Aggregation**)

2011	2012	2013	2014	2015	2016	2017
z/VM 6.2		z/VM 6.3			z/VM 6.4	

Support ships!

Hands-on Demo

Endicott Visit

Requirement → ACCEPT

"The" Meeting at IBM

IBM Design Approaches

"Unacceptable, please try again"

IBM answered "REJECT"

Request for Enhancement

Load Balancing
Enhancements ships
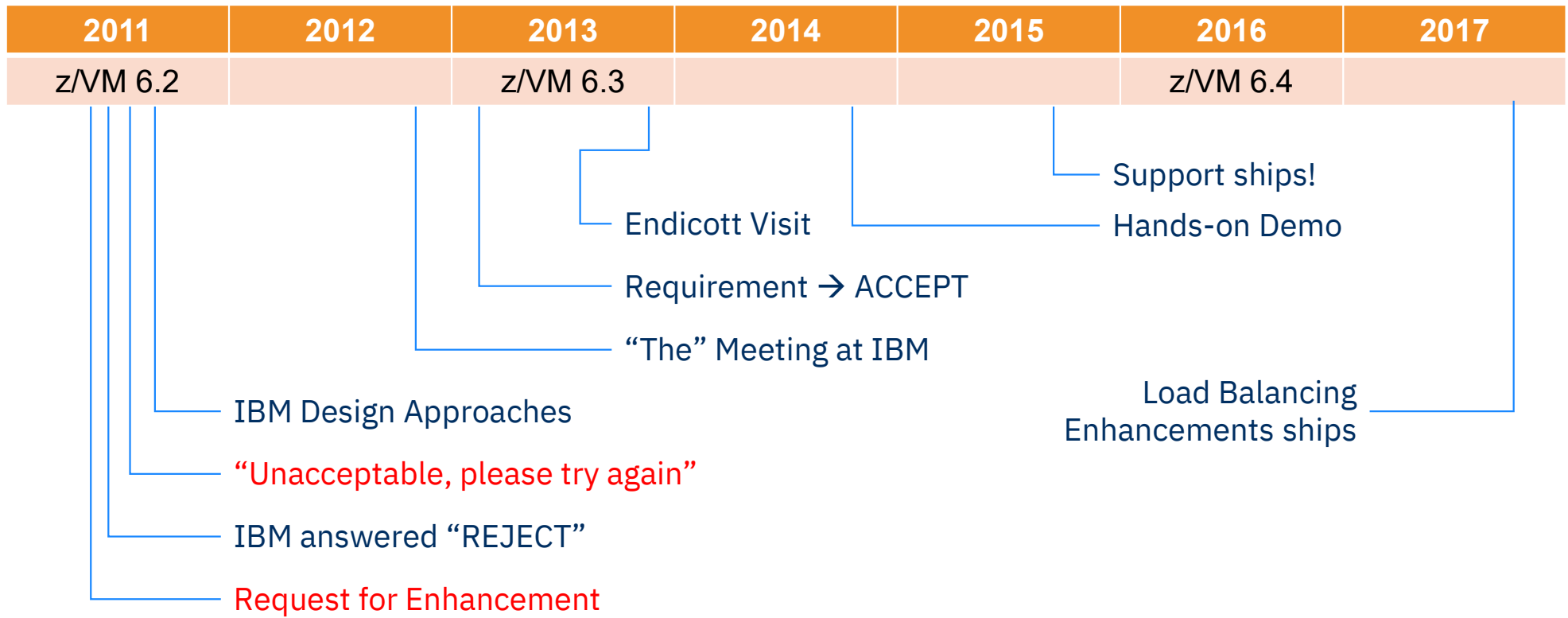
Dedication

Mary Ellen Carollo

1955 – 2015

Sponsor Users

Communicating sponsor user projects

- Gives an overview of new function that is under consideration. Allows clients to:
  - Express interest in being a sponsor user for an item.
  - Plan for new support coming out in the future.
  - Understand the value, benefit, and impact of new enhancements.

- http://www.vm.ibm.com/newfunction/

- Subscribe for updates via "Notify me" link on left navigation bar.

Become a Sponsor User
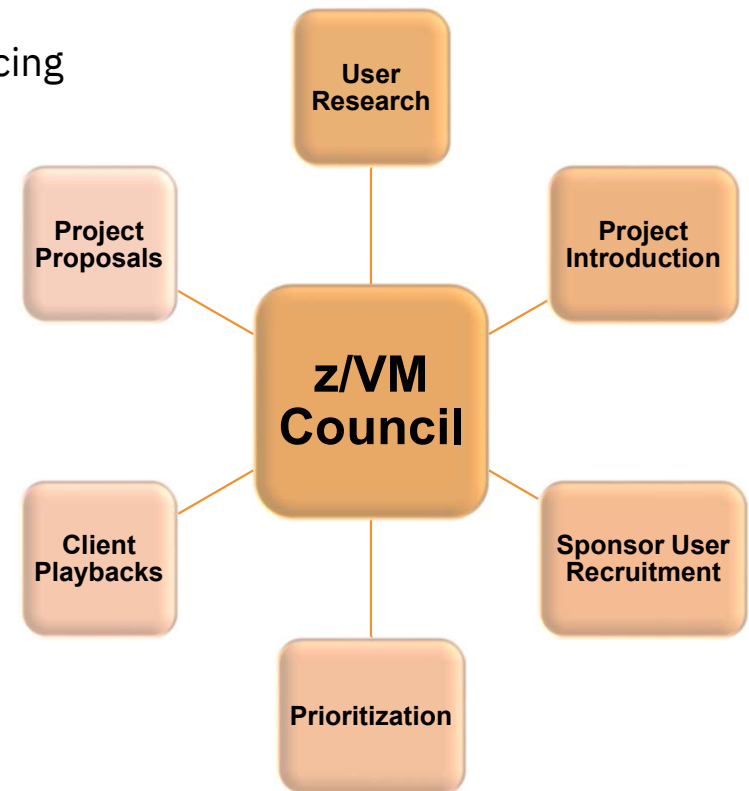
- Look for items that interest you and you'd work to make a reality with IBM
  - New web page to subscribe to:
    - http://www.vm.ibm.com/newfunction/
  - Request For Enhancements (RFE) that you submit
  - Other dialogues with IBM

- Express interest in being a sponsor user for an item
  - Link on the continuous delivery page
  - Email to Kerry Wilson (kerryw@us.ibm.com)

- Requirements
  - Program is free
  - Must have an IBMID
  - Must sign Feedback Program Agreement (FPA)
  - Commit to work with IBM on the candidate items

z/VM Council – Client Communication and Collaboration

- z/VM-centric community started in June 2018
  - Meeting about once a month via telephone and web conferencing
  - User research
  - Propose, define, and prioritize new project proposals
  - Sponsor User Recruitment and Playbacks
  - Other collaboration done via membership web site

- Membership Requirements
  - IBM Z Feedback Program Agreement (FPA)
  - Regular participation
  - Sponsor User for at least one project per year
  - Homework assignments

- Additional details:
  - http://www.vm.ibm.com/sponsor_user/zvm_council.html
  - Contact: Kerry Wilson – kerryw@us.ibm.com

z/VM Council (center) with connections to: User Research, Project Introduction, Sponsor User Recruitment, Prioritization, Client Playbacks, Project Proposals

Additional Material

Timeline – Virtual Switch Technology

VSwitch Introduction	z/VM 4.4	2003-08-15
Layer 2 (MAC) frame transport	z/VM 5.1	2004-09-24
External Security manager access control	z/VM 5.1	2004-09-24
Link Aggregation	z/VM 5.3	2007-06-29
Virtual / Physical Port Isolation	z/VM 5.3	2007-06-29
SNMP Monitor	z/VM 5.3	2007-06-29
Uplink port can be OSA or guest	z/VM 6.1	2009-10-23
VLAN UNAWARE NATIVE NONE	z/VM 6.1	2009-10-23
Port-based configuration provides separate VLAN per virtual access port	z/VM 6.2	2011-12-02
HiperSocket bridge	z/VM 6.2	2011-12-02
Shared port link aggregation	z/VM 6.3 (New Function Service)	2015-06-23
VEPA	z/VM 6.3	2013-07-26
SET VSWITCH SWITCHOVER	z/VM 6.3	2013-07-26
Resetting counters for QUERY VSWITCH	z/VM 6.4	2016-11-11
VSwitch Link Aggregation Load Balance Enhancements	z/VM 6.4 (New Function Service)	2017-12-11
NICDEF Security Controls	z/VM 6.4 (New Function Service)	2017-0804
Priority Queueing	z/VM 7.1 (New Function Service)	2019-05-23
IPv6 Layer 2 Query VSwitch Support	z/VM 7.2 (New Function Service)	2021-07-15 (estimated)