Power@MOP IBM Client Center

Alain Cyr

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Client Center Montpellier

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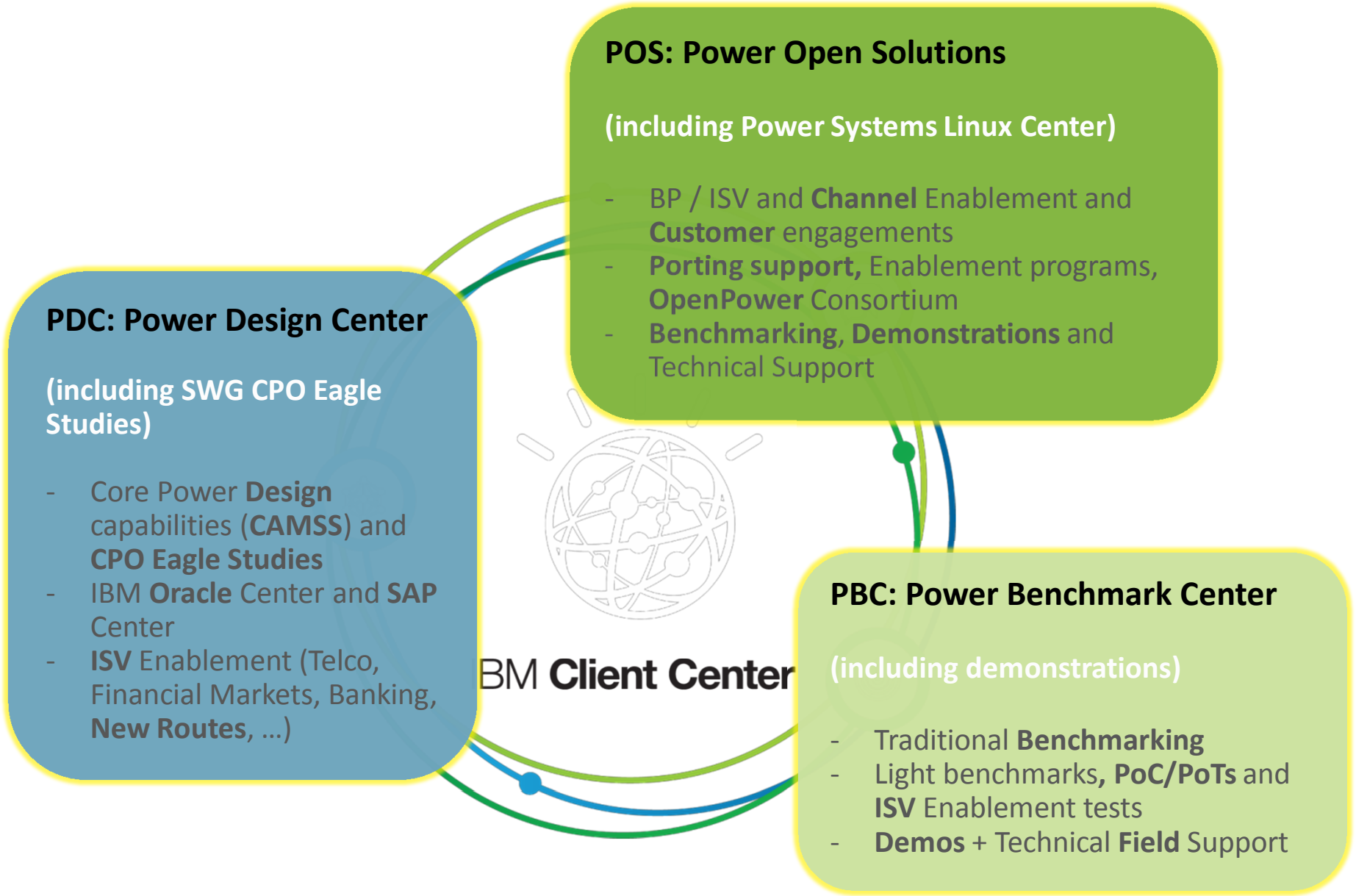
ICC MOP - Technical Pillars for Power



Why running POWER Benchmarks in Montpellier

- Montpellier, a unique technical expertise in Europe
  - **1100 benchmarks performed** over the past 11 years (WW unique)
  - Latest technology available for testing from entry to high-end products (POWER8 already available)
  - Montpellier Site and Facilities designed to optimize benchmarking activities

- High-Level expertise available dedicated to run your client benchmark
  - **20 technical experts** tuning Power systems, Virtualization, Storage, …
  - Direct access to IBM development laboratories
  - Wider technical support for key business applications:
    - IBM DB2/WebShpere
    - Oracle/SAP
    - Telco ISV's
    - Banking/finance ISVs such as Oracle FlexCube, Temenos T24 and Finacle

- Our experts are strong contributors of the IBM technical community.
  - benchmark experience with numerous assets, publications, international conferences and the participation in ITSO Redbook residencies.

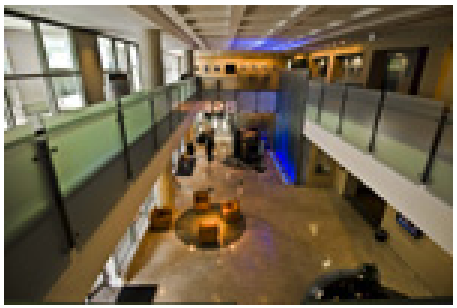
IBM Power Systems Linux Centers

Services for Clients, ISVs, SIs and MSPs:

- Briefings
- Training
- Demonstrations
- Porting and Migration Assistance
- Application Optimization
- Benchmarking
- University Outreach
- Users Groups

Locations

- Beijing, China
- Austin, TX
- New York
- Montpellier, France
- Tokyo, Japan



For more information and to request services: Clients, Partners

MOP Power Systems Linux Center Capabilities & Focus

Power Systems Linux Center for Europe

Strategic Focus on:

- Big Data
- Cloud
- Mobile
- Social Media

Providing Support for :

- Access to platforms (HW + SW + Support)
- Customer architecture design
- General Developer Resources Support
- ISV Resources Support
- Education / Training

Capabilities

Talk and Teach : Customer, BP, CSI & ISV Briefings, Demos, Videos
Design: Pre-sales Customer support, Customer Consultancy, Architecture Design Workshops
Prove : Linux on Power Benchmark & PoCs, Remote Power Linux Platform access

+ Second level of support for technical IIC, IMTs (Infrastructure, Virtualization, OS, Compilers, Certification programs, …)

Marie-Line Reynier
Power Systems Linux Center
Program Manager ((+ Business contact and Bus Dev)

Sebastien Chabrolles
Technical Leader
Linux on Power Specialist
Performance, Virtualization

Julien Limodin
Linux on Power Specialist
(Middleware knowledge, Mobile & Java skills, Cloud)

Fabrice Moyen
Linux on Power Specialist
Performance, Virtualization

Christophe Menichetti
Power Architect
(Big Data knowledge / Competitive knowledge)

Engage with us : PSLCmop@fr.ibm.com

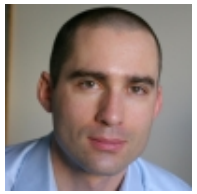
CAMS Together

Porting code to Linux on POWER8 at Altimesh

ISV

Altimesh
Software company specialized in accelerator programming

IBM Contact: Thibaud Besson
IMT / Country: France
Mai 2014



ISV & Challenge

Altimesh solutions allow developers to leverage hardware accelerators (CPU vector units or GPU) without having to deal with the complexity of specific programming language extensions.

This approach is beneficial for the Financial Sector (risk management and front office) as well as Oil and Gas Industry applications, where large grids of compute nodes are used for intensive calculations.

Industry: quantitative finance, oil and gas and other linear algebra users.

Challenges

- Software solutions are built on research on manycore architectures programming which prove to perform much higher computing capabilities than regular CPUs on calculatory algorithms.
- POWER7 and POWER8 processors are good candidates for improving performances of Altimesh solutions, but code needs porting to Linux on Power and CPU / Memory performances need to be proved.
- Benchmark was performed at Montpellier Power Systems Linux Center.

IBM Linux on Power - Solution and Benefits

Solution

- S824 24 POWER8 cores @ 4.1 GHz
- Fully populated DDR3 memory banks
- 8 threads per core (SMT)
- RedHat Linux operating system
- Open Source gcc compiler

Competition: x86 Linux suppliers

Key ISV Benefit

- Very fast and easy porting to Linux on Power RHEL and gcc plateform, achieved within a few days with excellent performance of code generated by Open Source GCC compiler on POWER.
- First Experimenting with the Power7+ processor, very good performances were obtained.
- Experimenting with POWER8 processor, excellent performances achieved, measured on the utilization rate of the processor compute and the memory bandwidth peak.
- Solid opportunities for Altimesh customers to reduce the footprint of their architectures, or to dramatically increase the computational capacity running on their computing grid.

Lessons learned

- POWER8 fulfiled its promises in terms of performance
- Technical support of Montpellier Power Systems Linux Center (Technical Lead : **Jean-Armand Broyelle**)
- Porting to Linux on Power was straightforward

CAMS Together

Benchmarking Informix with Linux on POWER8

IBM Contact: Fabrice Moyen
IMT / Country: France
August 2014

Begooden-IT
Consulting company specialized in Informix Database

Partner & Challenges

Begooden-IT is a French ISV and consulting company specialized in IBM Informix DBMS and client tools technology. His founding chairman **Eric Vercelletto** is an IBM Champion for Information Management and a member of the board of Directors of the International Informix Users Group (IIUG), a non-profit organization whose goals are to provide support and education for users of Informix products and technology.

Challenges
- Prove that IBM POWER solutions are good candidates for reaching high performances with solutions based on Informix database software.
- Demonstrate Power architecture has unrivaled scalability in the Linux market.
- Determine the efficiency of the firmware-based hypervisor IBM PowerVM

IBM Linux on POWER Solution

Benchmark was performed thanks to Montpellier Power Systems Linux Center resources.

Solution
- S824 16 POWER8 cores @ 4.1 GHz, 512GB DDR3 RAM
- 15 POWER8 cores & 128GB DDR3 allocated to the partition
- 2 threads per core
- RedHat Linux operating system
- Informix Database
- Competition: x86 Linux suppliers

IBM Linux on POWER Benefits

Key Partner Benefits
- Very fast and easy installation and tuning of the benchmark environment to Linux on Power RHEL.

- First testing an **IBM Power 750** by allocating **16 POWER7+ cores @ 4.0 GHz** to Informix partition, very good performances were obtained:
  - **3h25** to populate the database with randomized data.
  - Transactional benchmark runs with **93,000 transactions per minute.**

- Testing an **IBM S824** by allocating **15 POWER8 cores @ 4.1 GHz**, excellent performances were achieved:
  - **1h56** to populate the database with randomized data.
  - Transactional benchmark runs with **128,000 transactions per minute.**

- Application tuning even increased the S824 performances up to **264,000 transactions per minute**.

+180% TPM after application tuning !

- Solid opportunities for Begooden-IT customers to reduce the footprint of their architectures, or to dramatically increase their transactional capacity without any DBMS or Application tuning.

Lessons learned
- Ease of use of Linux On Power (Linux is Linux).
- POWER8 fulfiled its promises in terms of performance
- Technical support of Montpellier Power Systems Linux Center

CAMS Together

OVH : Large MSP POWER8 Linux Adoption

Technical Lead: Eric Camilotte
STG Client Technical Specialist (CTS)
IMT / Country: France
June 2014

Client & Challenge

Client : OVH

- First French and European MSP : 170.000 INTEL x86 servers, 12 Data Centres and 700 000 customers.
- OVH currently support wide public Cloud offerings : VoIP, PaaS & SaaS, Web hosting, VPS, CMS, blogs, e-commerce platforms, Open Source distributions, Anti-DDoS protection, LAMP, Panels, databases.

Challenge :

- Demonstrate that POWER8 can bring higher performance than INTEL for various applications and environments including MySQL, PostgreSQL, Hadoop and Cloud virtualization.
- Demonstrate that POWER8 servers will be able to integrate seamlessly in OVH current Cloud OpenStack infrastructure in compliance to their internal procedures.

Solution

- First WW PowerKVM Power8 signing of a large European MSP with:
  - 133 x S822L POWER8 servers sold for 1 M€
  - Ubuntu PowerLinux
  - PowerKVM Virtualisation
  - Openstack Cloud infrastructure

IBM POWER8 - Solution and Benefits

Key Client Benefit

- POWER8 performance and scalability vs INTEL
- POWER8 saving costs compared to INTEL with better economics compared to VMware / usual solutions
- POWER8 enablement for new workloads

Why we Won and Lessons learned

- Briefed the client on the strong IBM POWER8 and OpenPower Strategy & Roadmap (CAPI)
- OVH CTO – who is very technical working closely with the STG CTA to fully understand the technical capabilities and values for the clients environment
- We did a PoC including some porting/performance improvement efforts on a POWER8 pre-GA system around the OVH OpenSource and hardware stacks. The POWER pre-GA server was shipped to OVH who conducted the performance/benchmark tests with dedicated support from various worldwide IBM Labs.
- OVH tests showing POWER8 superior performance compared to INTEL and better flexibility and VM density with PowerKVM, with large room of improvement convinced OVH to propose to their customers a Cloud POWER8 offering in September 2014.
- Leverage global support - from the labs - both from STG and SWG.

IBM Innovation Centers has Wealth of Resources

Overview

The IBM Innovation Centers provide training and one-to-one guidance from building to marketing and selling your solution. IBM Innovation Center team is ready to help customers with their development objectives.

Value

- **Offer technical skills and hardware access across multiple platforms,** local or remote**, at little or no cost.**
- Shorten development and testing time with hands-on assistance and leading edge technology.
- Qualify for "Ready for" marks to broaden your marketing reach
- Attend **workshops**, seminars, and more conducted by trained subject matter experts.
- Support **Proof-of-concept or prototyping**, Validation testing, Porting and enabling on IBM platforms, IBM operating systems (also specific Linux distributions) and IBM middleware, **migration**, integration testing, and **performance and scalability testing**

Audience

IBM PartnerWorld members

Platforms

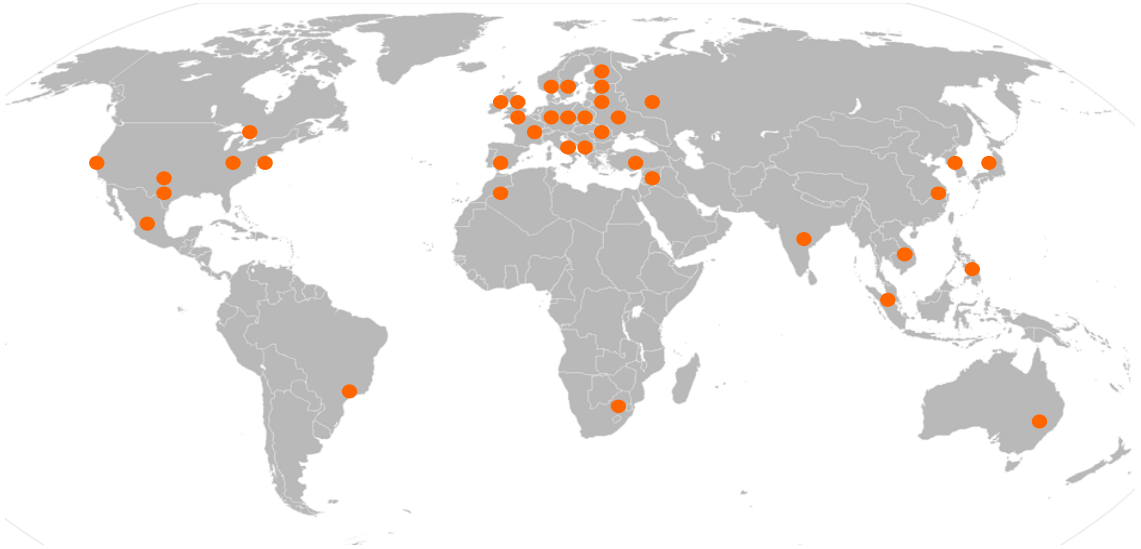
IBM middleware, IBM hardware platforms, and IBM operating systems

For more information

ibm.com/partnerworld/iic

Complete the engagement request form **ibm.com**/events/idr/idrevents/member/engagementrequest.action
For questions, send an email to iici@us.ibm.com

IBM Innovation Center Locations



North America
- Austin
- Chicago
- Dallas
- Silicon Valley
- Toronto
- Cambridge

Latin America
- Mexico City
- Sao Paulo

NE Europe
- Amsterdam
- Barcelona
- Copenhagen
- Dublin
- Ehningen
- Hursley
- La Gaude
- Milan
- Paris
- Southbank
- Stockholm
- Tel Aviv
- Zurich

CEE
- Bratislava
- Bucharest
- Budapest
- Istanbul
- Kiev
- Ljubljana
- Moscow
- Prague
- Warsaw

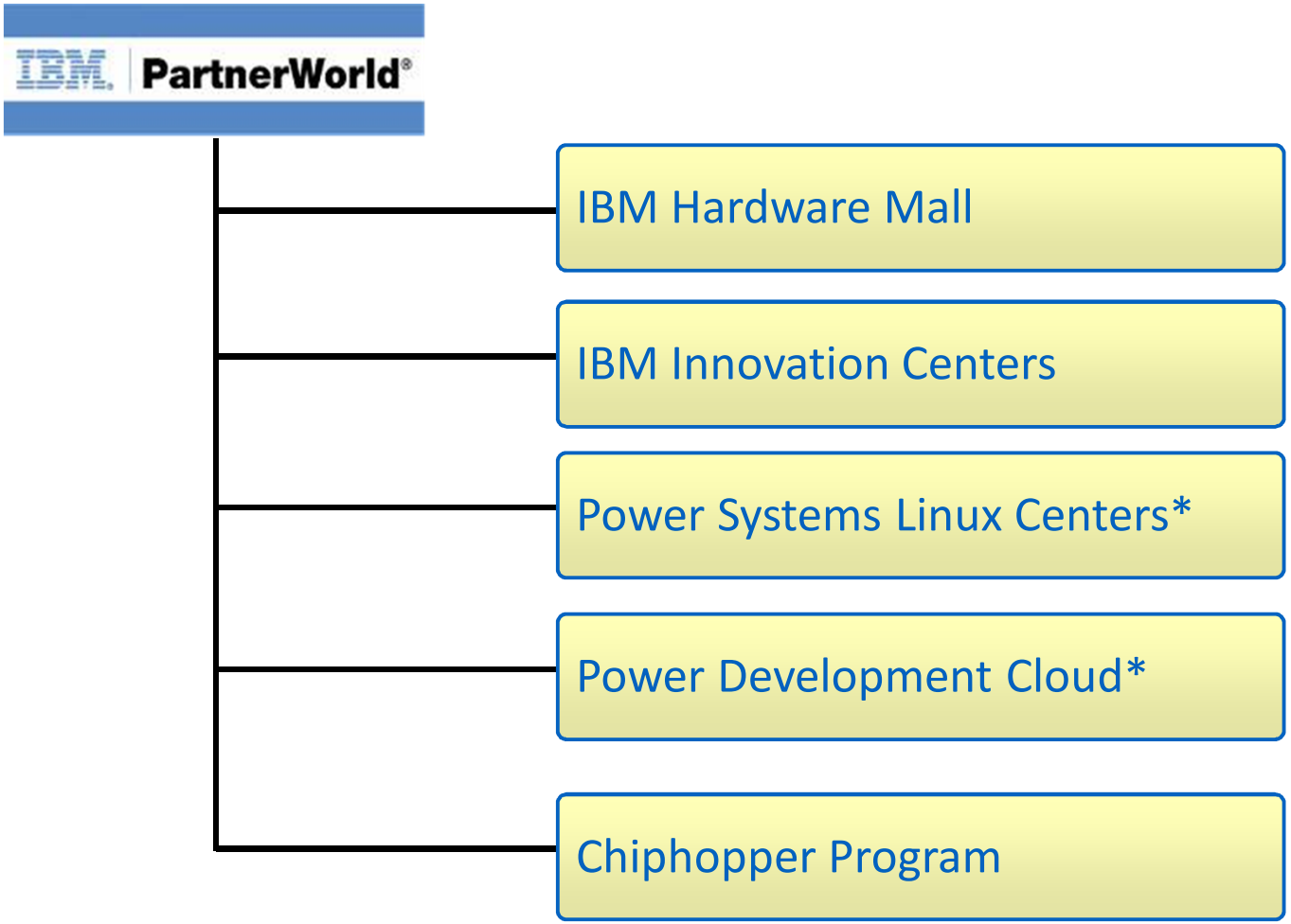
MEA
- Casablanca
- Johannesburg

Asia Pacific
- Bangalore
- Ho Chi Minh City
- Kuala Lumpur
- Manila
- Seoul
- Shanghai
- Sydney

Japan
- Tokyo

Blue = site with PureFlex Systems

PartnerWorld Resources for Power ISVs



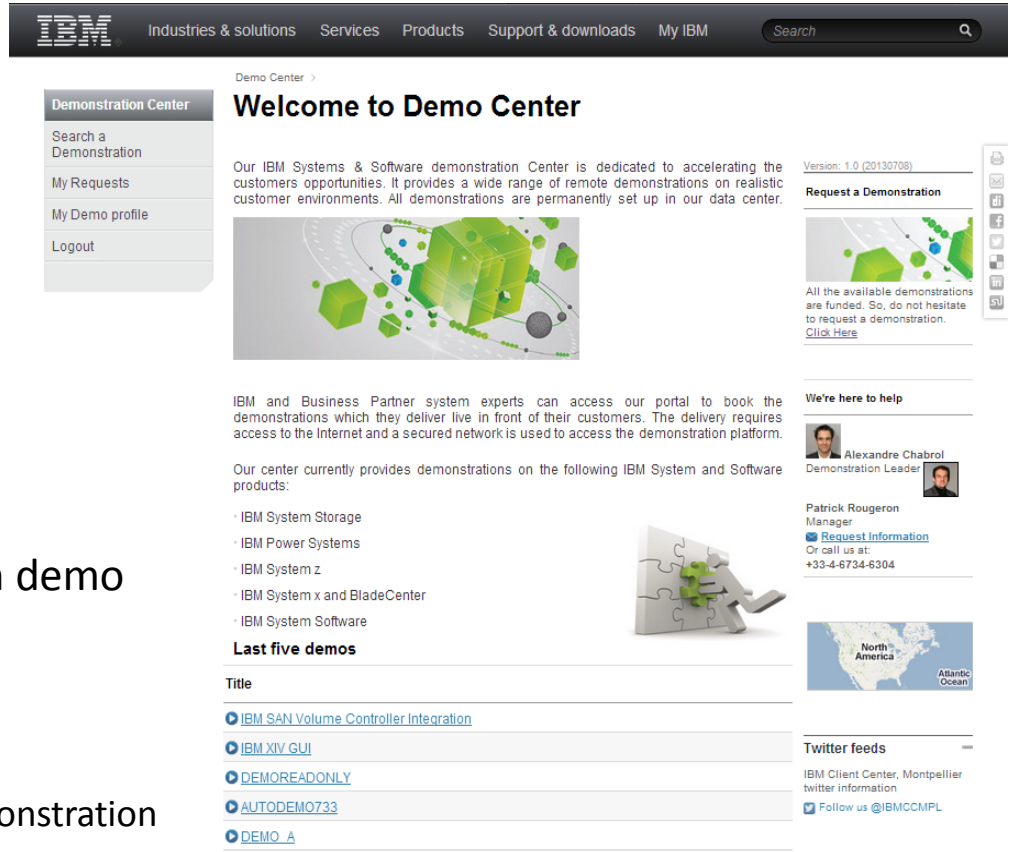
*These resources are not limited to Business Partners

IBM Client Center Demonstrations Website

http://www.ibm.com/systems/clientcenterdemonstrations

Purpose of this Website :

- Fully automated WebSite
- Online Shared schedule
  - Displays booking and availability
- Demonstration Requests
- Secure access to delivery platform
- Catalog: Detailed information for each demo
  - Client Powerpoint Presentations
  - “Roadbooks” detailing steps
  - Video for most scenarios
  - Subject matter expert in charge of the demonstration
  - **Growing number of live and recorded demos**



Power Development Platform (PDP)*

A Cloud for Power Development

No cost

Overview

The fully automated Power Development Platform is a **no-charge**, **Platform as a Service that can be utilized to develop and demonstrate software solutions with IBM platforms.**

Value

The PDP offers:

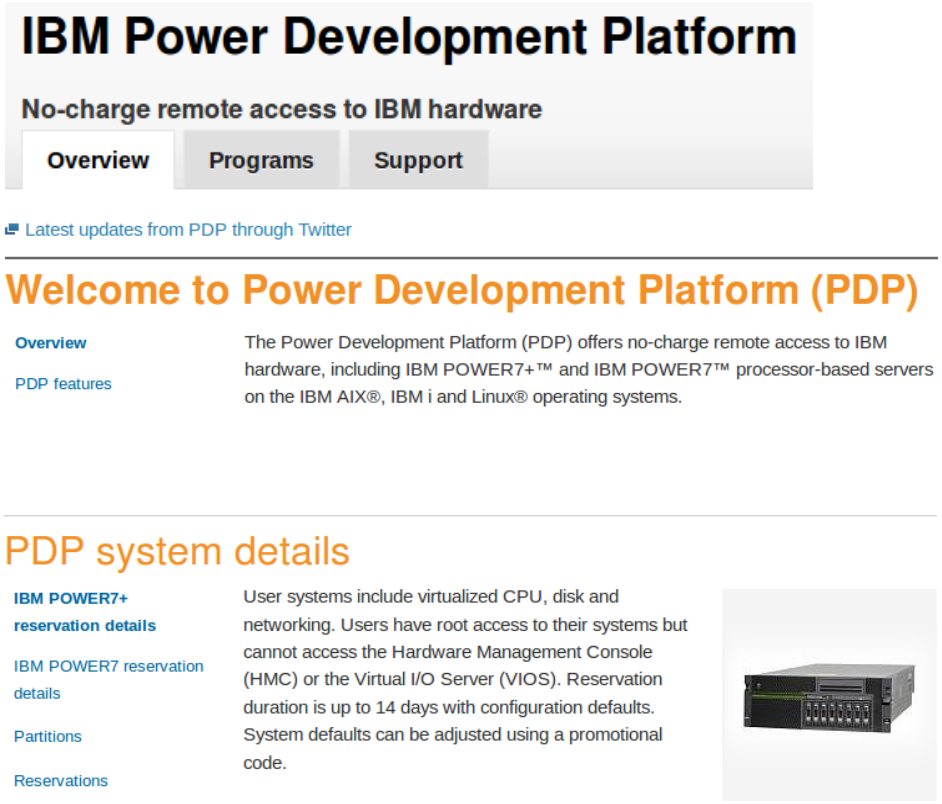
- No-charge, Cloud access available Worldwide
- Highly secure, on-demand access to IBM platforms and IBM middleware
- Save and restore images for future engagements
- Live Web chat and email based user support
- Develop, test, certify, port and demonstrate your applications
- Access to IBM middleware through the IBM Software Access Catalog

Audience

IBM PartnerWorld members

Platforms

IBM hardware, including IBM POWER7+™, IBM POWER7™, processor-based servers on Linux®, IBM AIX®, and IBM i operating systems.



For more information
www.ibm.com/partnerworld/pdp

PartnerWorld Portal Access for IBM Employees
w3.ibm.com/transform/worksmart/docs/PartnerWorld+portal+access+for+IBM+employees.html

*IBM Power Development Platform was formally the Virtual Loaner Program (VLP)

Chiphopper Program Helps ISVs to Port Their Applications to Linux on Power at no Charge

No cost

Overview

The Chiphopper offering is an application porting or rehosting program that is **designed to help IBM Business Partners enable, test and support their existing Linux applications running on competitive platforms onto IBM Power Systems or System z running Linux and middleware platforms** — **at no cost.**

Value

- Helps reduce the costs and complexity of porting or rehosting.
- Enables ISVs to test Linux applications in a proof-of-concept environment on a new platform for go-to-market readiness.
- Allows ISVs to contact Chiphopper with any post-porting issue after the application is in-market through renewable **18-month assurance benefit** — at no cost.
- Gives ISVs **access to IBM hardware platforms** and middleware, as well as select supported Linux distributions through the IBM Innovation Centers or the IBM Power Development Platform (PDP), or both
- **Offers technical assistance during the port**

Audience

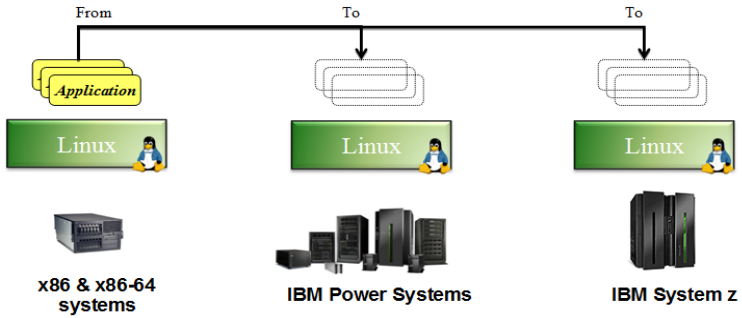
IBM PartnerWorld members

Platforms

IBM Power Systems and System z hardware platforms with Linux operating systems Red Hat Enterprise Linux or SUSE Linux Enterprise Server

Technical capabilities/specs

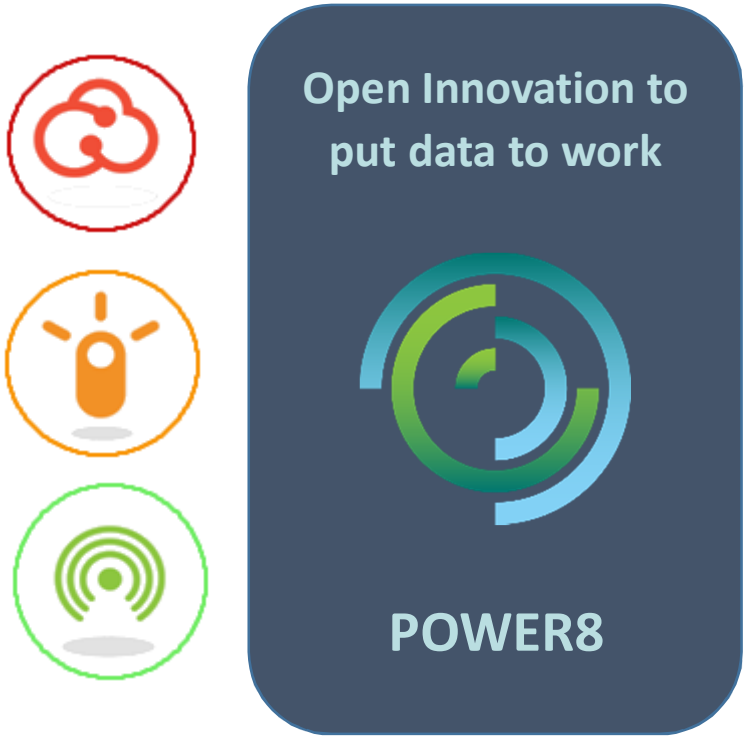
- Application run on a Linux
- Application written in C/C++, Java, COBOL, SmallTalk, PHP, Perl, Python or Shell
- Application does not have hardware-specific code nor using own kernel modules



For more information

Chiphopper web page: www.ibm.com/isv/go/chiphopper
For questions, send an email to chiphop@us.ibm.com

Engage with us for for all Power related matters !



Technical Focal Point: Alain Cyr

Cloud & Design: Marc Bouzigues

Big Data / Analytics: Jean-Armand Broyelle

Mobile/WAS: Alain Cyr

Linux: Marie-Line Reynier

Oracle / SAP: Francois Martin & Sylvie Lemariey

Benchmarks: Bastien Pino

Briefings: Alain Roy / Christophe Cavelier D'Esclavelles

Power8 in action: www.youtube.com/watch?v=4ZyXc12J6FA