Midrange Performance Group Power Navigator for PowerLinux capacity planning and migrations

Plan, configure, and manage Linux and other OS server upgrades, consolidations and cross-vendor migrations with unfaltering confidence

Highlights

- Compare vendor-to-vendor platforms and specific server-to-server performance characteristics
- Create data-center virtualization and consolidation scenarios for best-practices cost and productivity analyses
- Accelerate all performance-based decisions with intelligently sized metrics

Whether you are a solution provider or a user organization, you are faced with tough challenges to keep up with the rapidly growing and truly unique applications that your IT resources are expected to embrace and maintain. Coupled with other IT support changes, such as using the cloud and consolidating and migrating infrastructures — it is enough to stress anyone's comfort zone. Very simply put, "It is very complicated."

What is needed is a standardized means of comparing and analyzing server technologies and associated services and costs across the vendor spectrum and throughout the product life cycle — while also taking into consideration the mix between physical and virtual servers (and all their virtual components).

Midrange Performance Group (MPG)[1] and International Data Corporation (IDC)[2] have teamed up to harness this IT complexity — that is, to create a method and tool set for producing scientifically reliable performance and capacity-planning analytics, across both the vendor spectrum and a multitude of server models and operating systems (OS) versions.

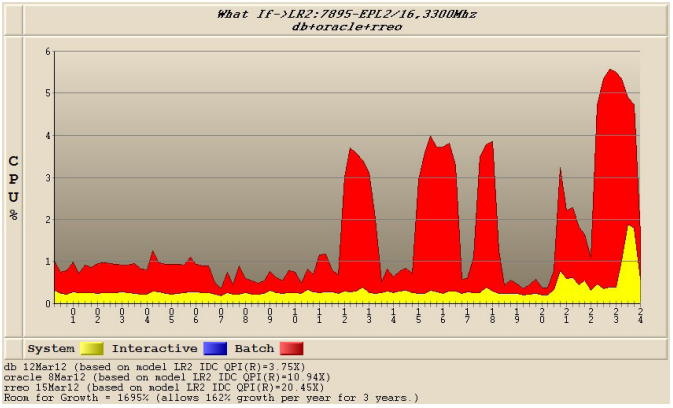
1 Headquartered in Boulder, Colorado, US, Midrange Performance Group (MPG) has been in the arena of measuring systems throughput and capacity planning for its entire existence. This includes more than 25 years of scientifically-based performance analyses across vendor platforms and operating environments in support of migrations, upgrades, consolidations, partition management and capacity needs. To maintain the fail-safe accuracy of its performance-analysis tools, MPG is a longstanding IBM Advanced Business Partner, and also maintains strategic developer ties with other players in the server arena, including Oracle and HP.

2 Framingham, Massachusettes, US headquartered International Data Corporation (IDC) is a premier global provider of market intelligence, advisory services and events for the IT, telecom and consumer-technology markets. Founded almost half a century ago, more than 1000 IDC analysts provide expertise on technology and industry opportunities and trends in over 110 countries.

Why is the IDC Qualified Performance Indicator (QPI) important?
In 2011, Midrange Performance Group and IDC announced a partnership that allows MPG to embed the IDC Qualified Performance Indicator (QPI) into its Power Navigator product. This provides the ability to model server workloads across various manufacturers' server platforms. This was needed because performance is the most difficult to measure when comparing servers of different ages, architectures and brands. IDC provides a common means of measuring four key attributes of a server system: performance, power consumption, density, and cost. The QPI measurements provide values on more than 20 000 individual server configurations spanning 15 years to support system sizing and buying decisions.

The resulting product is named Power Navigator part of the MPG Navigator Family powered by IDC QPI. Your organization can use MPG's Power Navigator to make more informed decisions while helping save time and money.

As mentioned, you can track the historical performance for an almost exhaustive list of Linux® versions that are supported by IBM® Power Systems™ and other UNIX® servers. With the Capacity Planning feature, data that is collected from any listed OS can be modeled to any server; you can also consolidate servers and configure logical partitions to determine optimal performance scenarios. (The IDC Qualified Performance Indicator [QPI] is invaluable in this process; see the QPI discussion in the adjacent side bar.) You can use the Power Navigator on existing systems to scientifically plan for a server consolidation, and then manage the new system with the help of a comprehensive set of graphs and reports.



More than 125 IBM Business Partners already use the MPG Navigator Family as the preferred method of planning and managing server upgrades and consolidations.
MPG is tightly focused on assisting these solution providers who, in turn, need to advise their clients on the optimal configuration for upgrades and vendor migrations — based on the clients' disparate workloads, operating environments and historical performance parameters.

"Power Navigator accesses the organization's own data, collected by NMON, and uses precise math modeling to provide an impartial and highly accurate projection of the size and capacity needed for the destination server."
– William (Randy) Watson,
President Midrange Performance Group

Peace of mind during migrations and server consolidations

Platform migrations and server consolidations can be particularly daunting. The huge number of mergers and acquisitions in today's competitive business environment compels IT shops to plan for large-scale server consolidations as well as platform changes from one server vendor to another. Although these migrations might still involve the same workloads, applications and operating system (such as Linux or IBM AIX®), the complexity is still enormous. Vendor migrations require a huge leap of faith for the IT teams who are involved. Each OS, as well as its underlying hardware, handle various processes in distinct ways internally, which means that there are going to be variations in performance (disk utilization, memory availability and processor speed)[3].

3 MPG Performance Manager provides performance-management, problem-determination and capacity-planning tools for use specifically on the IBM System i platform.

Power Navigator uses data collected from the users' systems by the NMON Collection Manager (which is included along with Power Navigator) to produce conservative models of that same workload performing on a specified IBM POWER® processor-based server configuration.

Power Navigator is a math-modeling algorithm that also incorporates published performance figures that are supplied by IBM and other server vendors[4], as well as the relevant IDC QPI performance figures that have been normalized for the purpose of comparing these platforms. Power Navigator makes it possible to collect and access historical performance and capacity data that is stored on the system to perform comparisons for any time period that is relevant (days, months, or even years).

What Power Navigator means for IBM PowerLinux

Perhaps more than any other widely-used OS, Linux can be challenging for those who need to predict its postmigration, upgrade or consolidation performance. Linux is so easily customizable and, therefore, there are so many versions of it in the IT community. For example, there are more than 60 versions of Linux alone. That is why the QPI and other performance indicators that are part of the Power Navigator math-modeling algorithm are particularly important when consolidating x86 Linux applications on PowerLinux.

"Power Navigator not only recommends the number of cores needed to support the workload but recommends the IBM PowerVM® configuration for each partition."
– Randy Watson

Why PowerLinux

Making the decision to run your Red Hat or Novell SUSE Linux applications on PowerLinux servers brings exceptional value to your Linux IT investments. The IBM Power Systems family of IBM POWER7® processor-based systems is designed to provide outstanding performance, availability, scalability and dynamic-resource allocation. Unique IBM virtualization features allow you to process more information on a single server, creating the potential to save on total cost of system ownership, as well as space and energy costs.

Equally important, both Red Hat and Novell SUSE Linux run natively on Power Systems. IBM has worked to enable its entire server and storage product line to interoperate with Linux. This includes ensuring that Linux uses the unique advantages and enhanced functions provided by IBM Systems. IBM pioneered the use of Linux for mission-critical workloads on Power Systems servers, while also ensuring that key business application workloads and the IBM software family run with the stability and efficiency demanded of IBM Systems.

4 For example, these performance figures include:

- Commercial processing workload (CPW), a relative measure of performance of systems running the IBM i operating system
- SPEC CPU2000, a compute-intensive performance measurement that is portable across platforms
- rPerf, the metric of relative performance for IBM Power servers

IBM delivers new PowerLinux solutions, optimized to deliver high-value Linux services, and specifically designed to bring the capabilities of POWER7 to customers of competitive x86. IBM Watson is a prime example of optimized PowerLinux. These solutions deliver Linux services faster, with higher quality, and more economically than ever before.

"With one customer, the MPG analysis showed that the customer would be able to consolidate 23 images and 13 different hardware x86 platforms onto one of IBM's PowerLinux servers."
– Randy Watson

IBM delivers Linux focused technical expertise to customers and solution providers through the Linux Integration Center. This includes help with proof-of-concept implementations, best practices and initial deployment, as well as enablement of integrated software solutions on Linux. The IBM Linux Integration Center can also help define and build the right solution stack, including the hardware, operating system, middleware, applications and tools.

For more information

To learn more about this Midrange Performance Group solution and IBM Power Systems running Linux, contact your IBM marketing representative or Midrange Performance Group, or visit the following websites:

ibm.com/partnerworld/wps/pub/overview/SOH1001 and www.mpginc.com

IBM Corporation
IBM Systems and Technology Group
3039 Cornwallis Road
RTP, NC 27709

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