Support for Collaborative Memory Management Assist (CMMA) on System z by which z/VM and Linux guests exchange information to optimize their use and management of memory.

Up to 32 real processors in a single z/VM image.

Enhanced memory utilization using Virtual Machine Resource Manager (VMRM) between z/VM and Linux guests.

More extensive workloads and systems resource management features with VMRM including functions that may be called by client applications to allocate and manage resources for guests.

Enhanced I/O performance and operation of SCSI disks including support for N-Port Identifier virtualization on System z servers.

DVD installation to SCSI disks or 3390-format disks.

IPL of SCSI disks attached to FCP channels by z/VM for Linux and other guest operating systems.

Usability enhancements for the z/VM virtual switch (VSWITCH) and guest LAN environments.

Guest access to the system ASCII console to facilitate recovery of the guest during an emergency.

TCP/IP and guest LAN Support for HiperSockets using IPv6 protocol.

IBM System Storage™ SAN Volume Controller (SVC) Model 2145 support to access IBM disk subsystems.

Support for up to 262,668 cylinders for devices dedicated to a Linux guest with the PTF for APAR VM64709, planned to be available by year-end 2009 and double the number of cylinders, up to 65,520, available for CMS use with the PTF for APAR VM64711.

FICON Express8 for increased channel connectivity, increased data transfer rates, and enhanced performance.

Crypto Express2 and Crypto Express3 support including accelerating SSL transactions.

Enhanced guest performance assists for OSA-Express, FCP, and HiperSockets.

OSA-Express2 and OSA-Express3 support including TCP/IP stack enhancements to allow additional connections to virtual machines, particularly Linux images.

Recognition of all four ports on z10 OSA-Express3 Gigabit Ethernet (GbE) and 1000Base-T Ethernet features (including the OSA-Integrated Console Controller (OSA-ICC) in first quarter 2010) and two ports on the z10 BC OSA-Express3 GbE SX 2P and 1000BASE-T 2P features.

OSA-Express QDIO data connection isolation providing additional networking security with the PTFs for APARs VM64463 and PK67610 and required MCLs.

zVM VSWITCH support for OSA-Express, OSA-Express3 for Layer 2 mode.

z/VM VSWITCH support for OSA-Express2 and OSA-Express3 link aggregation for increased throughput and provides more seamless nondisruptive failover in the event that an OSA port in the group becomes unavailable.

Coordinated near-continuous availability and disaster recovery for Linux guests with HyperSwap™ support and a Geographically Dispersed Parallel Sysplex™ GDPS® solution.

Access to a Linux Environment

IBM has established a Linux environment that delivers virtual Linux servers so developers can port, test and develop new software technologies for the System z platform. For registration procedures and terms of service for the Community Development System for Linux, go to:

ibm.com/systems/z/os/linux/lcds/

Additional opportunities for Independent Software Vendors (ISVs) to test drive the Linux experience are the Linux for System z Test Drive offerings. PartnerWorld® for Developer members who qualify for enterprise server benefits are eligible to participate in the Linux for System z Test Drive offerings. For more information, visit:

ibm.com/servers/enable/site/testdrive/zseries

For more information:

- IBM System z:
  ibm.com/systems/z
- z/VM:
  ibm.com/vm
- Linux on System z:
  ibm.com/systems/z/os/linux/

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Linux on the IBM System z™ platform can help in infrastructure simplification and legacy modernization. Running Linux as a guest of z/VM™ exploits new technology such as Linux on System z™, z/OS®, z/VSE®, and z/TPF. With Linux on System z, the combination of the z/VM™ hypervisor and IBM mainframes can address infrastructure simplification issues faced by many large enterprises while providing greater availability, scalability, virtualization, security, and reliability. System z environments with z/VM offer flexibility and management characteristics that can make it possible for you to satisfy the requirements of a Dynamic Infrastructure and deploying new Linux servers in minutes. The complexity of maintaining large numbers of distributed servers can be relieved with a single IBM mainframe, and can help to reduce costs by requiring less floor space. Simplification of the network by using HiperSockets™ may provide savings and reduce cabling, hubs, switches, and routers, as well as help to reduce maintenance effort. Using Linux on System z can enhance the value of your applications and data by allowing your Linux applications to communicate with other System z applications and access your critical data where it resides. This can help to improve responsiveness and reduce unnecessary duplication of data.

With the portability of Linux, applications may be moved quickly and easily to System z servers. The capacity of the System z platform makes it ideal to help simplify your operation and reduce your costs by consolidating to decrease the number of servers in your business. z/VM offers advanced technology to help achieve these results.

Multiple Linux systems on System z servers can be easily created and managed with z/VM. Linux server images can share physical resources as well as programs and data and internal high-speed communications. z/VM V5 supports Integrated Facility for Linux (IFL) processors, the attractively-priced hardware feature for Linux and OpenSolaris workloads available for System z. Linux on System z supports IBM z/Architecture® (64-bit) on System z platforms.

IBM mainframe servers

Business benefits from an infrastructure that provides optimal performance, real-time responsiveness, application flexibility, power, and virtualization, all with easy-to-use management. At the heart of this infrastructure is System z technology for the enterprise-class platform, optimized for integration and designed to handle the transactions and data of an on demand world.

IBM mainframes include the IBM System z10® Enterprise Class (z10 EC®) and IBM System z Business Class™ (z10 BC™), IBM System z9® Enterprise Class (z9 EC) and Business Class (z9 BC), and IBM eServer® zSeries® 990 (2990) and 890 (2890). The z10 EC includes five models with up to 64 customer processor units (PUs) and up to 1.5 TB of memory. Each PU can be configured as a central processor (CP), IFL, Integrated Coupling Facility (ICF), System z Application Assist Processor (zAAP), System z10 Integrated Information Processor (zIIP), or additional System Assist Processor (SAP). In addition, four Logical Channel SubSystems (LCSSs) allow up to 256 I/O channels per LCSS, up to 1024 I/O channels total, and up to 60 logical partitions (LPARs) when properly configured.

The z10 BC includes one model with ten customer-configurable PUs with 130 capacity indicators and up to 248 GB of memory. PUs can be configured for up to 5 CPs, 10 IFLs or 10 ICFs, and 2 SAPs. For each CP purchased, provided there are sufficient PUs available, a zIIP and/or zAAP can also be purchased. In addition, 2 LCSSs allow up to 256 I/O channels per LCSS, up to 480 I/O channels total, and up to 30 LPARs when properly configured.

System z environments with z/VM offer flexibility and management characteristics that can make it possible for you to satisfy the requirements of a Dynamic Infrastructure and deploying new Linux servers in minutes. The complexity of maintaining large numbers of distributed servers can be relieved with a single IBM mainframe, and can help to reduce costs by requiring less floor space. Simplification of the network by using HiperSockets™ may provide savings and reduce cabling, hubs, switches, and routers, as well as help to reduce maintenance effort. Using Linux on System z can enhance the value of your applications and data by allowing your Linux applications to communicate with other System z applications and access your critical data where it resides. This can help to improve responsiveness and reduce unnecessary duplication of data.

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