



LifeKeeper[®] for Linux in IBM POWER LPARs Configuration Guidelines

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The virtual machine technology on the IBM POWER platform, including the IBM eServer p5 (pSeries) and OpenPower systems, is implemented as a combination of hardware, firmware, and software. The IBM POWER hardware and its associated firmware support the configuration of virtual machines (logical partitions, or LPARs in the IBM terminology) and the allocation of physical resources to those virtual machines. To perform sharing of I/O resources such as network interfaces and storage controllers among multiple LPARs, an additional software component, known as the Virtual I/O Server, is required. The Virtual I/O Server operates as an LPAR itself, running either a specialized version of AIX or an instance of Linux with some additional management tools, and manages the physical resources that it shares among the other LPARs on the system.

Network interfaces and storage controllers that are assigned to a given LPAR by the POWER hardware/firmware layers are referred to as *dedicated* resources. When those resources are instead managed by the Virtual I/O Server and made available to multiple LPARs, they are referred to as *shared* or *virtual* resources, for example virtual Ethernet or virtual SCSI.

For more information about the IBM POWER virtualization technology, refer to the IBM Redbook *Advanced POWER Virtualization on IBM eServer p5 Servers: Introduction and Basic Configuration*, available at <http://www.redbooks.ibm.com/abstracts/sg247940.html?Open>.

IBM POWER systems can run Linux in either a standalone, non-partitioned mode, or within a virtual machine or LPAR on a partitioned system. LifeKeeper for Linux works in both non-partitioned and partitioned POWER configurations and supports all of the usual LifeKeeper cluster configurations. In partitioned configurations, the following specific Linux LPAR options are supported:

- Linux LPARs with dedicated network interfaces and storage controllers.
- Linux LPARs with shared (virtual) network interfaces.
- Linux LPARs in which the local storage for the operating system is virtualized. This includes data replication configurations in which the local side of the mirror is on virtualized storage.

LifeKeeper will not work in LPARs with shared storage controllers accessing shared storage, if LifeKeeper is expected to manage that storage.

In summary, LifeKeeper for Linux supports partitioned POWER configurations using either dedicated or shared (virtual) network interfaces, but requires that any storage controllers used for accessing LifeKeeper-managed shared storage devices be dedicated to the Linux partition on which LifeKeeper is running.