A **RELIABLE** Advantage

Use z/OS resources and tools for data protection

The IBM z/OS* platform, with its unmatched reliability, availability and serviceability, outstanding I/O bandwidth and secure environment, provides an excellent platform for data protection. This is especially true if that client data already is on the mainframe, as the features of this hardware and software platform promote reliable and scalable data protection.

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If your organization has already joined the club and is running Linux* on the mainframe, you should also use the mainframe as your data protection platform. Use existing z/OS resources and systems already present.

Mainframes are inherently more scalable than other platforms in many ways.

Capacity on Demand
The distributed world uses a decentralized model where virtually every application comes with its own set of hardware. By running the Linux application and a backup solution on IBM Z*, you get the benefit and ability to more efficiently manage the distribution of resources. During peak utilization, the mainframe is better able to get the resources needed. With Capacity on Demand, clients can dynamically activate one or more resources on the z/OS server as business peaks dictate.

Virtual Tape Library
A virtual tape library (VTL) is the norm for backup and recovery in z/OS data centers. Therefore, your data protection solution benefits from its efficiency. VTL helps eliminate streaming problems that often impair efficiency in tape drives and increases performance of both backup and recovery operations. VTLs also provide a significant wall clock improvement with concurrency, as clients aren't limited by the number of

physical tape drives. This allows you to run a large of number of simultaneous backups.

Hardware Acceleration

IBM zEnterprise Data Compression (zEDC), IBM z Integrated Information Processor (zIIP) and IBM zEnterprise Application Assist Processor (zAAP) specialty engines provide an attractively priced execution environment for communication and storage management supported features (e.g., TCP/IP and vendor implemented compression).

When workloads use zIIP or zAAP, they're running on an engine that doesn't affect the pricing of the software running on the platform. Although processors are being added to assist the platform's work, you're not changing the model number or millions of service units rating of your platform. Because the zIIP processes specific work, capacity is freed on the CPU to do other tasks, which is a win-win situation.

zEDC has many benefits:

- It's relatively straightforward and inexpensive to implement
- It can be leveraged by many widely used access methods and products
- It reduces disk storage requirements and I/O elapsed times by delivering very good compression ratios
- The CPU cost is very minimal since almost all the processing is offloaded to the hardware

High-Speed Communications

IBM Z offers three high-speed transmissions solutions: HiperSockets*, OSA-Express and FICON*.

To efficiently attach Linux to

By implementing Linux on z Systems data protection that leverages the reliability, availability and serviceability of the new z/OS mainframe, you can achieve the maximum protection

z/OS, IBM provides HiperSockets for high-speed TCP/IP connectivity within a central processor complex. The communication is through the system memory of the processor, so servers are connected to form an internal LAN, allowing Linux virtual servers to communicate with z/OS at memory-to-memory speed. Using the HiperSocket feature to transmit backup data results in extremely fast throughput and efficient CPU utilization. Because the production network isn't impacted, the frequency of backup and volume of data protected is extended.

OSA-Express is an integrated hardware feature that provides an accelerated direct connection to clients on Ethernet LANs. The OSA-Express feature plugs into an I/O slot like a channel card.

FICON, a high-speed disk and tape channel connectivity product that supports full duplex data transfers, enables greater throughput rates over longer distances. FICON uses a mapping layer that is based on technology developed for Fibre Channel and multiplexing technology, which allows small data transfers to be transmitted at the same time as larger ones.

Scalable Solution

The IBM z/OS platform, known for its reliability, availability and serviceability, is more scalable because of its:

- Capacity on demand
- Virtual tape library
- Hardware acceleration
- High-speed communications
- Virtualization
- Proven support and software

Virtualization

Forty years before VMWare, the original virtualization engine, z/VM*, provides the ability to centralize administrative tasks while improving scalability and overall hardware-resource utilization. It has been optimized to support a large number of Linux VMs.

Proven Support and Software

By using systems that are the foundation of the mainframe, this z/OS ecosystem offers a finite number of options that results in a well-tested and stable solution. These systems have evolved over 50 years resulting in more robust solutions, including:

Leverage existing expertise and practices: Existing mainframe administrators already have procedures and methods in place to keep selected data for long-term storage. For example, to comply with government mandated data retention periods and legal discovery needs, they have developed existing processes, schemes and techniques.

Disaster recovery: Linux on z Systems data to be protected is stored on platform, and not on a large number of physical servers, reducing the complexity of the challenge of data protection, as it's much simpler to develop and implement recovery on one mainframe than on hundreds of distributed servers.

Protect Your Environment

By implementing Linux on z Systems data protection that leverages the reliability, availability and serviceability of the z/OS mainframe, you can achieve the maximum protection. Take advantage of existing IBM Z assets to provide security to your most important information. **z**