



Research Report

Not Lost in z Shuffle: IBM's System z Storage Enhancements

Executive Summary

Separate IBM's newest mainframe announcement into two parts:

1. The new z Enterprise mainframe; and,
2. A new hybrid (an integrated mainframe/blade environment).

On July 22nd, IBM announced a new mainframe — the zEnterprise—as well as a new hybrid environment that tightly couples the zEnterprise with an IBM z BladeCenter Extension(or zBX) and a firmware/virtualization management environment called the Unified Resource Manger (or zManager). Clabby Analytics is truly impressed with the new zEnterprise and hybrid environments — we see the hybrid as a major “game changer” because it can unite distributed and centralized computing environments, providing a highly integrated, well governed management environment for enterprise information systems.

But, not to be overlooked, IBM also announced several important advances related to mainframe storage, including a new distributed data backup facility for the DS8700 and IP-based native replication for the TS7680 ProtecTIER Deduplication Gateway that was introduced earlier this year. Now to many casual readers, these announcements may seem mundane — but they should be viewed in the greater scheme of things and especially as they relate to the above mentioned zEnterprise announcement. The zEnterprise hybrid is all about unifying distributed and centralized management to free-up information technology (IT) managers and administrators to do other things. It is also about efficiency. And it is about “touch” (or lack thereof) — because IBM claims that the new hybrid may be able to reduce IT operational costs by a whopping 71% by automating functions that operators currently manage manually.

A closer look at IBM's DS8000 z/OS Distributed Data Backup announcement reveals that IBM's storage group has made it possible to use a single process to perform backup for mainframe and non-mainframe (distributed) systems. The feature does not require any separate back-up servers (so hardware cost is decreased) or any data transfer over TCP/IP (it uses high-speed FICON channels to perform this back-up so network congestion is reduced and reliability is increased). By using a single process to perform backup processes, the amount of manual activity involved for storage managers/-administrators is greatly reduced (a single process is launched and IBM's integrated distributed data backup facility kicks-in to perform backup automatically). “Touch” is reduced — leading to lower operational costs as manual labor is decreased — and leading to improved reliability (as human intervention and associated errors that may occur are eliminated). And note, this is the same theme that IBM is emphasizing as part of its hybrid systems announcement.

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Reliability is also greatly improved because open data is backed up over FICON and the System z I/O architecture, which is much more reliable than distributed backup environments.

A closer look at IBM's new TS7680 ProtecTIER Deduplication Gateway for System z shows that this product has been designed to reduce storage hardware costs (through better utilization); and to reduce network congestion — while providing better return-on-investment (ROI) in storage subsystems. What this gateway does is provide native replication capabilities for System z with automated electronic transmission of data to another data center or data recovery site. No tape is required, so there is no need to manually transport tapes to the remote site. This solution also includes a deduplication engine, helping to get rid of redundant data by ensuring that only unique data is replicated. What this means is that the bandwidth required is dramatically reduced -so a 100 TB backup could be reduced to 4-5 TB of unique data that is actually being transmitted. (According to IBM this could result in a decrease of about 95 % in bandwidth utilization). Not only is data replicated more quickly and reliably to the alternate site, but this feature can also speed recovery at the backup site in the event of a disaster.

On the surface, the TS7680 appears to only be aimed at cost reduction: It reduces bandwidth requirements so less storage is needed at both primary and backup site, and the need to transport and store tapes is eliminated. But in the bigger picture, this product can automate a function that storage managers and administrators are now performing manually; the transportation of data for disaster recovery. And this automation of manual-tasks theme is consistent with IBM's overall zEnterprise hybrid management theme (tight integration, automated management, and mainframe governance that unifies both distributed and centralized systems).

The bottom line of these storage announcements is this: critical features like data deduplication and backup/replication are being added to mainframe environments so mainframe and distributed systems can be more easily and thoroughly integrated. And, when viewing a data deduplication manager and a distributed data backup manager in this way, a seemingly mundane announcement of new z storage facilities takes on a new and more business critical meaning as these facilities become part of IBM's strategy to reduce operator intervention in the management of integrated centralized and distributed systems..

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