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IBM z Systems Newsletter

N° 26 – 07/08/2017

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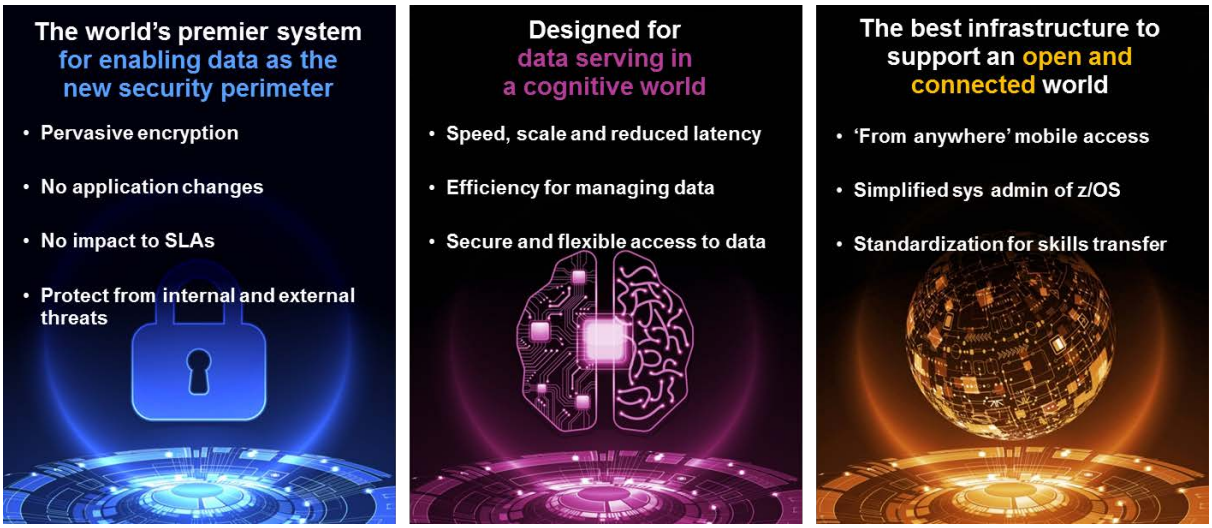
IBM z14: Designed for trusted digital experiences

General Introduction

On July 17 2017, IBM announced the new z14 “IBM z14, designed to help you build leadership in trusted digital experiences” (ZG17-0017). Although the strategy that leads to the technical choices is important, I will mainly concentrate on the technical aspects. Still, I want to share this slide, from a presentation on z14, which really sums up what it is all about.



Whatever platform you are using for your business, its core will always be your data and the applications you build around them.

However, some platforms might be more suitable to serve that purpose than others. And we all know that the mainframe has always been that kind of platform. With the new announcement of the z14, a lot of attention goes to the data.

How can we protect our data? Think about data breaches or compliance regulations like GDPR.

How can we use it to create business advantages? Think about analytics and machine learning.

And how do we expand the reach of our business by providing transparent access to application developers using APIs? Think about how anyone can develop and deliver z/OS-based assets in minutes via RESTful APIs. It is not a coincidence that 80% of the world’s data and transactions reside on or pass through the mainframe.

On to the technical aspects.

No surprises concerning the name: IBM z14. The model is 3906. Do not ask why. The looks have pretty much stayed the same with a nice touch of blue added. And there is the addition of thin covers. However, more about that in the physical planning.
There is the usual growth but once again, there is a big increase on the memory side. We go from a maximum of 10TB to a maximum of 32TB. This means we go from 2.5TB per drawer to 8TB per drawer.

Overview

Here is an overview of the most important new functions and/or improvements:

System, Processor, Memory
Five hardware models (M01 to M05)
Ten cores 14nm PU Single Chip Module (SCM)
Up to 170 processors configurable as CPs, zIIPs, IFLs, ICFs, or optional SAPs
Increased Uni processor capacity (+10%)
Up to 33 sub capacity CPs at capacity settings 4, 5, or 6
CPC Drawers backplane Oscillator (1 to 4 CPC drawers)
2nd generation SMT (for IFLs, zIIPs and SAPs) and enhanced SIMD
Pause-less garbage collection, improved on-chip data compression and data encryption
Enhanced processor/cache design with bigger cache sizes
Up to 32 TB of Redundant Array of Independent Memory (RAIM) – Up to 8 TB per CPC Drawer – 192 GB HSA
New Virtual Flash Memory (VFM)
CPC Drawer/Memory Affinity and enhanced PR/SM
Up to 85 LPARs; up to 16 TB per LPAR (OS dependant)
Dynamic Partition Manager (DPM) enhancements

I/O Subsystem, Parallel Sysplex, STP, Security
PCIe Gen3 I/O fanouts with 16 GBps Buses
6 LCSS and 4th Subchannel Set per LCSS
New FICON Epxress16S+ with increased start I/O rate
New OSA Express6S
New 10 GbE RoCE Express2
New zHyperlink Express
Integrated Coupling Adapter (ICA SR) and new Coupling Express Long Range coupling links
CFCC Level 22
New Crypto Express6S with support for 85 Domains and Cryptographic enhancements
STP Enhancements

RAS, Other Infrastructure Enhancements	
IBM zAware delivered as Software Appliance in IOAz 3.1	Secure/Trusted SE boot and HMC
New N+1 'radiator' design for Air Cooled System	Rack-Mounted Support Elements (SEs) in the CPC
Thin doors option	New Tower or Rack-mounted HMCs and TKEs
Support for ASHRAE Class A3 datacenter	TKE 9.0 LICC

Let us tackle some of the highlights now.

Models and sub-capacity settings

Similar to the z13, the new system has four regular models and one large-sized model, but the naming is a bit different, or should I say, easier. No fooling around with numbers of engines and hexadecimal ingenuities. Just M01, M02, M03, M04 and the larger model M05. For the regular models, every drawer has 41 PUs and with the M05, each drawer has 49 PUs.

There are two designated spares per system. We have five SAPs per book. Therefore, if we take, for example, the M01 with 41 PUs, we subtract the five SAPs and the two spare processors, which leaves us with 34 PUs. Each system also has one IFP. And so, we reach 33 usable processors for the first drawer. Consequent drawers have an additional 36 processors. As usual, processors can be defined as Central Processors (CPs), ICFs, IFLs, zIIPs and optionally as additional SAPs. Here is the overview of the PU allocation on the IBM z14. The z14 continues to support a 2-to-1 ratio for the zIIPs. zAAP are already out of the picture since the z13.

Model	Drawers/ PUs	CPs	IFLs uIFLs	zIIPs	ICFs	Std SAPs	Optional SAPs	Std. Spares	IFP
M01	1 x 41	0-33	0-33 0-32	0-21	0-33	5	0-4	2	1
M02	2 x 41	0-69	0-69 0-68	0-45	0-69	10	0-8	2	1
M03	3 x 41	0-105	0-105 0-104	0-69	0-105	15	0-12	2	1
M04	4 x 41	0-141	0-141 0-140	0-93	0-141	20	0-16	2	1
M05	4 x 49	0-170	0-170 0-169	0-112	0-170	23	0-16	2	1

A full processor (the 701 or a specialty engine) has a capacity of 1.832 mips as opposed to 1.695 on the z13. We have again three sub-capacity levels (4-, 5-, -6) now for up to 33 CPs.

Memory: up to 32TB

As I mentioned already, the amount of memory in the system has again hugely increased. For the z13, the system minimum was 64GB and went up to 2.5TB per book and up to 10 TB for the entire system. Which was already impressive. Now we see the following picture:

z14 Model	Number of CPU drawers	Customer PUs	Maximum Memory
M01	1	33	8 TB
M02	2	69	16 TB
M03	3	105	24 TB
M04	4	141	32 TB
M05	4	170	32 TB

We start at a minimum of 256GB and go up to an amount of 8TB per drawer. An additional 192 GB of memory is reserved next to the customer purchased amount for the Hardware System Area (HSA). Next to that, more memory is in the box and is used for IBM Virtual Flash Memory (VFM) at which we will come back later on.

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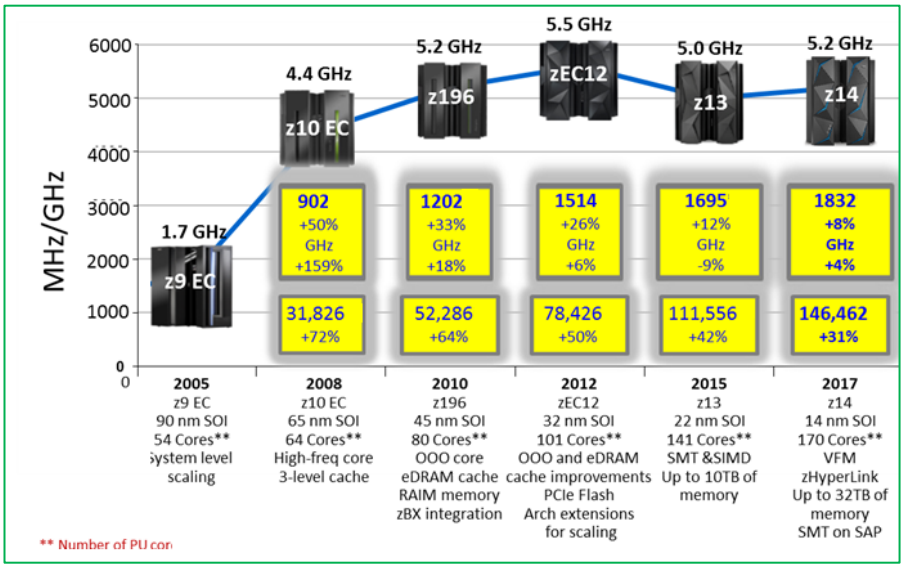
Processor design improvements

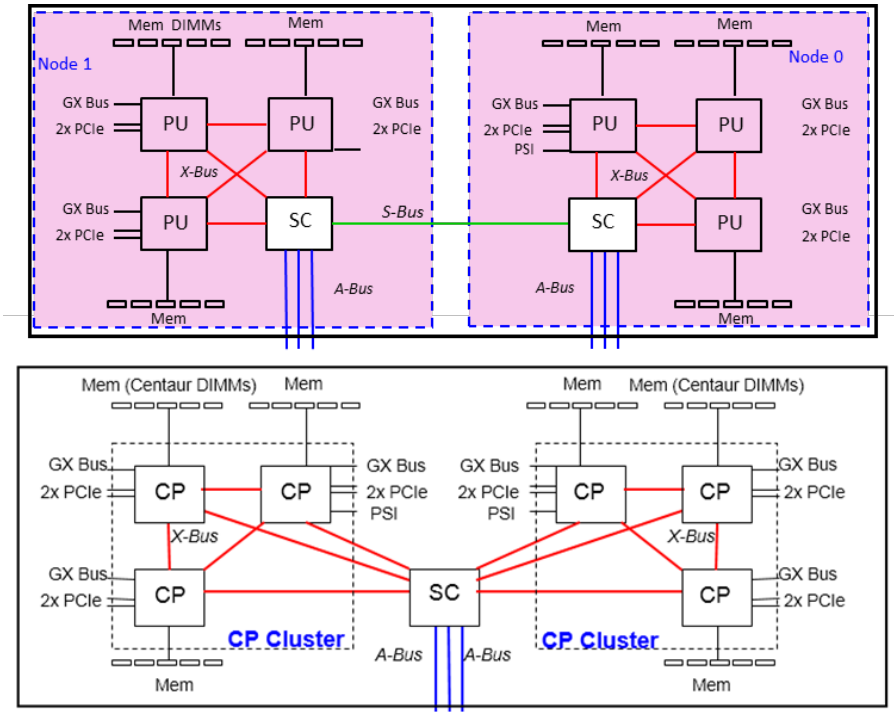
Processor speed

Last time we went down from 5.5GHz to 5.0GHz. Now we are going up again to 5.2GHz.



CPC changes and cache

The z13 also saw the introduction of drawers with Single Chip Modules instead of Multi-Chip Modules in previous versions. The 8-core chip has now become a 10-core chip. For the techies I add an illustration of a fully populated z13 CPC drawer compared to a fully populated z14 CPC drawer.



The main difference is that the two SC SCMs have been reduced to one per drawer on the z14. The on-core level 1 and level 2 caches have increased just as the on-chip level 3 cache. The level 4 cache has decreased a bit but this is countered by the fact that a single system controller means less latency.

Additional improvements

- New instructions in the single instruction, multiple data (SIMD) facility offer a boost for traditional workloads using decimal operations (i.e. COBOL 6.2, PL/I 5.2) and new application like analytics (i.e. Apache Spark for z/OS).
- The z14 delivers next generation simultaneous multithreading (SMT). SMT on the z14 improves throughput up to 25 percent for an IFL or zIIP to benefit exploiters. SMT has been extended to support the dedicated I/O processors called System Assist Processors (SAPs).
- The new Guarded Storage Facility (GSF) will deliver ‘as good as’ pause-less garbage collection to enable enterprise scale Java applications to run with fewer and shorter pauses for garbage collection.
- The compression co-processor in each core has been improved to use fewer CPU cycles for compression and expansion and to support DB2 index compression. These features enable further improvements in DB2 memory usage, data transfer, and storage efficiency.

Upgrades

What are the upgrade scenarios?

You can upgrade from any air-cooled zEC12 and z13 model to any z14 model. Upgrading from a water-cooled model is only possible to a z14 water-cooled model.

Another remark: upgrading from a z14 model M01-M04 to a model M05 is not supported. The M05 is factory-built only.

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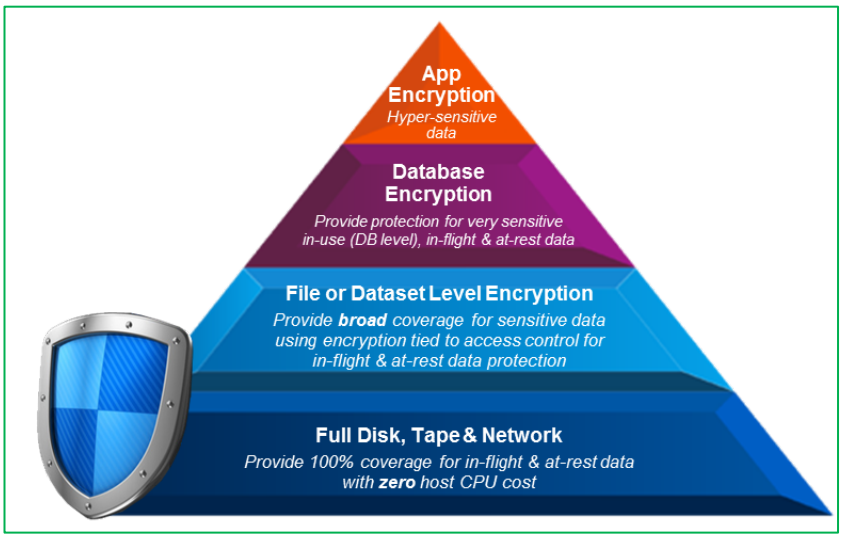
Pervasive encryption

This is an important one. In short, encryption should be pervasive, transparent and without performance nor application impact.
Therefore, the z14 brings pervasive encryption at all levels as indicated in the illustration below. It is set up in order to defend and protect your critical assets with encryption but without compromising transactional throughput or response times. It requires no application changes.



By encrypting as much of your data and transactional pipeline as possible, you can reduce potential data breach risks and financial losses - and comply with complex regulatory mandates like GDPR. The IBM z14 gives you a transparent approach to encrypt virtually all of in-flight and at-rest data.

Further, pervasive encryption can dramatically simplify data protection and reduce the costs of regulatory compliance. Using simple policy controls, z14 pervasive computing streamlines data protection for mission critical DB2 for z/OS, IMS and virtual storage access method (VSAM) datasets.

The Central Processor Assist for Cryptographic Function (**CPACF**), standard on every core, supports pervasive encryption and provides hardware acceleration for encryption operations. It does this 2-6X faster than the z13 for data in-flight and at-rest.
In addition, the **new Crypto Express6S** card gets a performance boost on z14. It gives on average a 1.5X to 2X performance increase over Crypto Express5S.
Combined, these two enhancements perform encryption more efficiently on the z14 than on earlier IBM Z servers.

Here is an overview of the possibilities with the new Crypto Express6 card.

Accelerator	
TKE	N/A
CPACF	NO
UDX	N/A
CDU	N/A

Clear Key RSA operations and SSL acceleration

CCA Coprocessor	
TKE	OPTIONAL
CPACF	REQUIRED
UDX	YES
CDU	YES(SEG3)

Secure Key crypto operations

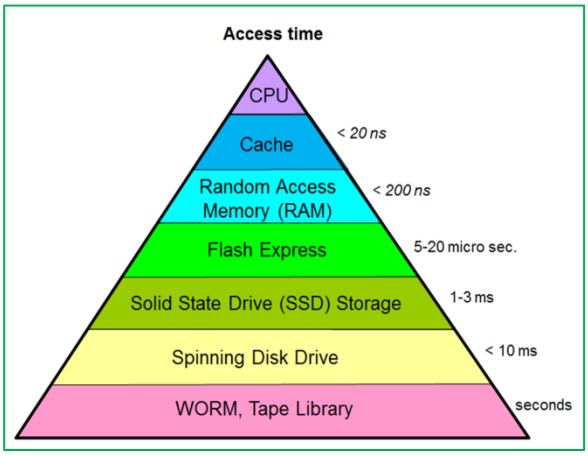
EP11 Coprocessor*	
TKE	REQUIRED
CPACF	REQUIRED
UDX	NO
CDU	NO

Secure Key crypto operations

**TKE is required for EP11 mode*

New features: IBM Virtual Flash Memory

IBM Virtual Flash Memory (VFM) entirely replaces the Flash Express card and has the same use cases. It is however more performant. Estimations give up to 10% end-to-end performance improvement and (yes) 1000X improvement in Read/Write latency. You might remember the picture that was often shown to illustrate the performance gain you had with Flash Express. Well, we go one step further up the ladder.



As far as capacity, you can go from 1.5TB up to 6TB, which means 1.5TB per drawer.

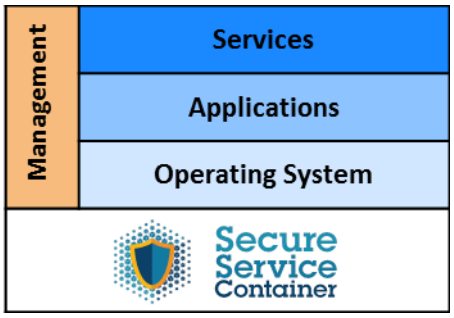
Moreover, you can compare VFM to HSA. It is memory but it does not take away any memory from the purchased user memory.

For those who already have Flash Express: during the upgrade there is a feature conversion for it towards VFM. Additional advantage: it saves you the two PCIe I/O drawer slots and there is less power consumption.

And to be complete: the same will be happening with zEDC. Its functionality will also move to the CP in the next generation.

New features: Secure Service Containers

Apart from the name, I do not think I should call this new. The first occurrence of this one was zAware introduced with the z12 back in 2012.



You could call zAware a container-like solution *avant la lettre*. But then again, what to say about Coupling Facilities. Later on with the z13, zAware was renamed to zACI or z Appliance Container Infrastructure. So now, Secure Service Containers is the new name for it. By now, containers 'conquered' the world and it illustrates once again that the mainframe is quite a modern platform. For those not familiar with it, here is a definition of Docker containers.

> "Docker containers wrap up a piece of software in a complete file system that contains everything it needs to run: code, runtime, system tools, and system libraries – anything you can install on a server. This guarantees that it will always run the same, regardless of the environment it is running in."

Software appliances are zAware, z/VSE Network Appliance and Operations Analytics for z Systems.

As we already talked about Pervasive Encryption, the secure aspect is definitely important here. Here is a couple of characteristics in favor of Secure Service Containers

- Reduces tampering or malware risk by validating application code during appliance installation and runtime
- Ensures confidentiality of data and code running within the appliance with automatic encryption – both at flight and at rest
- Provides simplified mechanism for fast deployment and management of packaged solutions
- Management provided via Remote APIs (RESTful) and web interfaces

You can find more information in Redbook SC28-6971 User's Guide. Not yet published when this eZine was issued.

Connectivity

Here are the new connectivity features

- FICON Express16S+ (FC/FCP/zHPF)
- 1 GbE OSA Express6S (LX or SX)
- 10 GbE OSA Express6S (LR or SR)
- OSA Express6S 1000BASE-T
- 10GbE RoCE Express2 (new feature)
- zHyperLink Express

Before I get to some of those, here are a couple of graphs of what can be ordered on a new z14 and what can be carried forward. Everything that is not mentioned such as FICON Express8, Crypto Express4S and of course Flash Express cannot be ordered nor carried forward.

New Build Features

Features – PCIe I/O drawer

- FICON Express16S+ (SX and LX, 2 SFPs, 2 CHPIDs)
- OSA-Express6S
  - 10 GbE LR and SR (1 SFP, 1 CHPID)
  - GbE SX, LX, and 1000BASE-T (2 SFPs, 1 CHPID)
- 10GbE RoCE Express2 (new 10GbE feature code)
- zEDC Express
- Crypto Express6S
- zHyperLink Express (up to 16 features / 32 ports)
- Coupling Express LR

PCIe Coupling Link Feature (Fanout)

- ICA SR two 8GBps PCIe Gen3 Coupling Links

InfiniBand Coupling Features (Fanouts)

- HCA3-O two 12x 6GBps InfiniBand DDR Coupling Links
- HCA3-O LR four 1x 5Gbps InfiniBand DDR or SDR Coupling Links

Carry Forward Features

Features – PCIe I/O drawer

- FICON Express16S (SX and LX, 2 SFPs, 2 CHPIDs)
- FICON Express8S (SX and LX, 2 SFPs, 2 CHPIDs)
- OSA-Express5S (All)
- OSA-Express4S 1000BASE-T (from zEC12 only)
- 10GbE RoCE Express
- zEDC Express
- Crypto Express5S
- Coupling Express LR (from z13) NEW; GA September 13, 2017

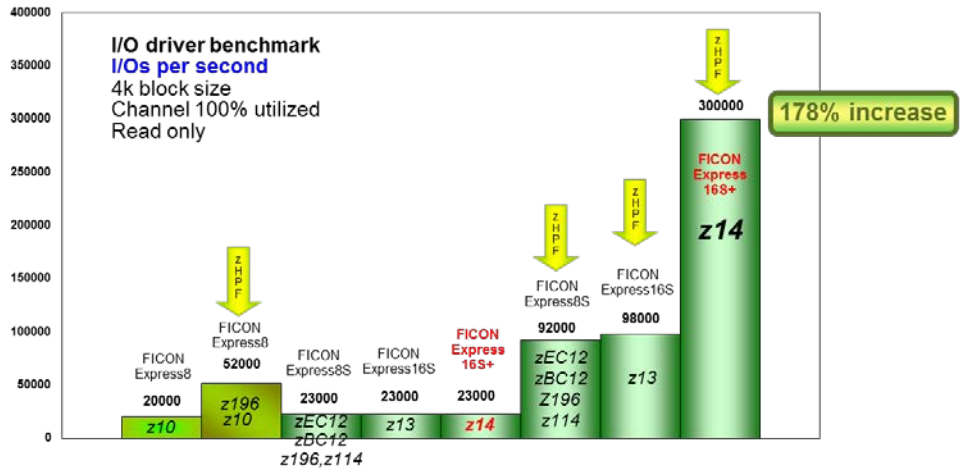
PCIe Coupling Link Feature (Fanout)

- ICA SR two 8GBps PCIe Gen3 Coupling Links

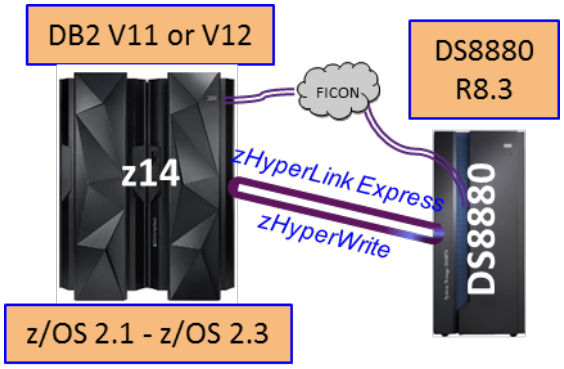
InfiniBand Coupling Features (Fanouts)

- HCA3-O two 12x 6GBps InfiniBand DDR Coupling Links
- HCA3-O LR four 1x 5Gbps InfiniBand DDR or SDR Coupling Links

In combination with zHPF, **FICON Express16S+** should give a real performance boost for FICON as well as FCP performance. Below is an example with FICON.



zHyperlink Express is entirely new and starts off where zHPF ends. For the moment, it only works with DS8880.



zHyperLink is a short distance mainframe attach link designed for up to 10x lower latency than High Performance FICON. zHyperLink will initially speed DB2 for z/OS transaction processing and later improve DB2 active Log throughput and VSAM applications.

zHyperLink Express should give 7x faster read access and 10x faster writes of data.

Coupling Technology enhancements: Coupling Express LR
These are new Ethernet-based Coupling Links using 10GbE RoCE technology. As a matter of fact, as you can read in the Statements of Direction, the IBM z14 will be the last z Systems high-end server to support HCA3-O LR fanout for 1x IFB (#0170). Customers should begin to think about a migration strategy for moving from 1X PSIFB to Coupling Express LR.
Another difference with its predecessor: this is a card taking up a slot in the PCIE I/O drawer. It is the same adapter as RoCE Express2 but with Coupling Optics and firmware. The distance is 10 km unrepeated and up to 100 km with a qualified DWDM. The cabling utilizes the same 9u Single Mode fiber type as 1X IFB.
It becomes also available on the z13/z13s systems but it will require an IML before the first Coupling Express LR may be utilized. Therefore, a planned outage is necessary on those machines.

Physical planning

For the physical planning, nothing much has changed.

- Floor space – No change unless ordering Thin Covers
- Overhead I/O or Power – No change
- Power – No change to typical power consumption
- Environment – New ASHRAE A3 Classification (40C°/104F° maximum ambient temperature)
- Customer Water – No change

- Weight – Slight increase in weight depending on configuration
- Airflow – No change
- New Feature - Thin Covers: System depth for air-cooled machines with thin covers is reduced by 14.7 inch or 37.33 cm and weight is reduced by 108 lbs or 49 kilo.

Operating systems support

z/OS Support Plan:

- z/OS 2.3 Sept. 29, 2017 GA
- z/OS 2.2 with PTFs
- z/OS 2.1 with PTFs
- z/OS 1.13 (compatibility only)
    - IBM Software Support Services purchase
    - September 2016, EoS

z/VM Support Plan:

- z/VM 6.4 with PTFs
- z/VM 6.3 with PTFs

z/VSE Support Plan:

- z/VSE 6.2 Preview 4/11/17
- z/VSE 6.1 with PTFs
- z/VSE 5.2 with PTFs
    - October 31, 2018 = EoS
- z/VSE 5.1
    - June 30, 2016 = EoS, limited toleration
- Earlier releases cannot IPL

Linux for System z Support Plan: Minimum Distributions

- SLES 12 SP2
- SLES 11 SP4
- RHEL 7.3
- RHEL 6.8
- Ubuntu 16.04

One remark from IBM: “IBM cannot legally discuss z14 exploitation prior to GA from distributors”

Software pricing

MLC – AWLC pricing

The software pricing is again straightforward this time. It remains the same for MLC: AWLC. Still, there is a benefit of on average 5%. How is it realized? Quite simple, there is a reduction on some software depending on the MSUs of the machine, as also happened with the z13.

NEW: Statement of Direction: Container Pricing

IBM is introducing Container Pricing for IBM Z for qualified solutions running on IBM z13 and z14 servers. Container Pricing will provide simplified software pricing for qualified solutions.

Container Pricing can scale from collocated solutions within existing LPARs, through to separate LPARs, up to multiple-LPAR solutions, without directly affecting the cost of unrelated workloads.
Additionally, Container Pricing will simplify pricing and billing on the IBM Z platform, by superseding a number of existing price offerings and by fully automating the billing process.

One example: **The Payments Solution** will provide a "per payment" pricing option for IBM Financial Transaction Manager for z/OS deployments. This new offering directly ties operational cost to business value by basing the price on the number of payments processed, rather than capacity used to process them.

Container Pricing for IBM Z is planned to be available by year-end 2017 and enabled in z/OS V2.2 and z/OS V2.3. You can find the announcement (ZP17-0462) over here.

NEW: Sub-capacity pricing for z/VM and z/VM based programs
Sub-capacity pricing for the z/VM V6 operating environment is available to clients running z/VM Version 6 Release 3 or higher. Software pricing at less than full machine capacity can provide more flexibility and improved cost of computing as a client manages the volatility and growth of new workloads. Through the implementation of sub-capacity pricing for select z/VM programs, clients can pay for z/VM programs based on defined workload requirements and not necessarily the full engine capacity of the machine.
You can find the announcement (ZP17-0346) over here.

Statements of Direction

- **Stabilization of z/VM V6.3 support:**
  IBM z14 is planned to be the last z Systems server supported by z/VM V6.3 and the last z Systems server that will be supported when z/VM V6.3 is running as a guest (second level). z/VM V6.3 will continue to be supported until December 31, 2017, as announced in announcement letter # 915-025.
- **Future z/VM release guest support:**
  z/VM V6.4 will be the last z/VM release supported as a guest of z/VM V6.2 or older releases.
- **Disk-only support for z/VM dumps:**
  z/VM V6.4 will be the last z/VM release to support tape as a media option for stand-alone, hard abend, and snap dumps. Subsequent releases will support dumps to ECKD DASD or FCP SCSI disks only.
- **IBM z14 will be the last z Systems server to support FICON Express8S:**
  IBM z14 will be last z Systems high-end server to support FICON Express8S (#0409 and #0410) channels. Enterprises should begin migrating from FICON Express8S channels to FICON Express16S+ channels (#0427 and #0428). FICON Express8S will not be supported on future high-end z Systems servers as carry forward on an upgrade.
- **IBM z14 will be the last z Systems server to support HCA3-O:**
  IBM z14 will be the last z Systems high-end server to support HCA3-O LR fan-out for 1x IFB (#0170) and HCA3-O fan-out for 12x IFB (#0171). Enterprises should begin migrating from HCA3-O channels to ICA SR and/or Coupling Express Long Range.
- **IBM z14 will be the last z Systems server to support zEDC:**
  IBM z14 will be the last z Systems high-end server to support zEDC (#0420). In the future, z Systems high-end server zEDC functionality will move from the zEDC adapter to the Central Processor (CP).
- **OSA-Express6S 1000BASE-T adapters:**
  OSA-Express6S 1000BASE-T adapters (#0426) will be the last generation of OSA 1000BASE-T adapters to support connections operating at 100 Mb/second link speed. Future OSA-Express 1000BASE-T adapter generations will support operation only at 1000 Mb/second (1Gb/s) link speed.

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Documentation

There are some new and updated Redbooks available. They are grouped on a special page dedicated to z14, which is over here. Here is a short overview of a couple of them. Not all of them are already available now.

- New – IBM z14 Technical Introduction, SG24-8450-00
- New – IBM z14 Technical Guide, SG24-8451-00
- New – IBM z14 Configuration Setup, SG24-8460-00
- Updated – IBM z Systems Connectivity Handbook, SG24-5444-17
- Updated – IBM z Systems Functional Matrix, REDP-5157-02

Of course, you can also find all manuals in the Library section of Resource Link.

And always an interesting read: the IBM z14 FAQ.

Key dates

Here is just a small selection of items and key dates.

July 17, 2017

- Announcement day
- First Day Orders for GA Systems
- Resource Link support (e.g. Manuals available in Library section)

September 13, 2017

- Features and functions for the IBM z14
- GA for IBM z14 Models M01, M02, M03, M04 and M05
- Upgrades from zEC12 and z13 models

December 15, 2017

- z/VM Guest exploitation support for pause-less garbage collection
- z/VM support for encrypted paging

December 31, 2017:

- MES features for Models M01, M02, M03, M04, and M05
- IBM HMC Mobile for z Systems and LinuxONE

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Announcements

Quite a few announcements were done together with the announcement of the z14. I pick out a couple of them but there are still a lot I do not cover here. Check out the IBM Announcements page for more. Do have a look, first of all because of the announcements and secondly because the interface changed. It is a bit getting used to, but I actually like it. You can now at least make it remember that you are looking for e.g. English announcements for your home country. Or whatever settings you want to choose.

IBM z/OS Version 2 Release 3 - Engine for digital transformation (ZP17-0316)

"IBM z14 and z/OS V2.3 are intended to help clients in their efforts to keep applications and data available, system resources secure, server utilization high and programming environments adaptable while maintaining compatibility for existing applications". I guess this pretty much sums up everything you also find back in the z14 announcement. No wonder encryption is also the major topic for z/OS 2.3.
"z/OS is designed to provide new policy-based encryption options that take full advantage of the improvements in the z14 platform and can help clients protect their critical business data. These new capabilities include:

- Enhanced data protection for many z/OS data sets, zFS file systems and Coupling Facility structures gives users the ability to encrypt data without needing to make changes to applications to imbed encryption APIs within applications.
- New z/OS policy controls make it possible to use pervasive encryption to protect user data and simplify the task of compliance.
- z/OS Communications Server includes encryption-readiness technology to enable z/OS administrators to determine which TCP and Enterprise Extender traffic patterns to and from their z/OS systems meet approved encryption criteria."

Following the two-year lifecycle, z/OS 2.3 becomes available on September 29, 2017 and requires at least a z12.

You can find more information on the IBM z/OS page, which contains also a link to the Data Sheet.

New releases of Cobol and PL/I

IBM Enterprise COBOL for z/OS, V6.2 delivers support for the new IBM z14 hardware and IBM z/OS V2.3 operating system (ZP17-0409)

Some of the highlights:

- Compiler support for the new IBM z14 hardware and IBM z/OS™ V2.3 operating system so applications can take advantage of the latest IBM Z architecture and operating system features and capabilities
- Ability to exploit the new Vector Packed Decimal Facility of z14
- New and changed COBOL statements, such as the new JSON PARSE statement
- Improved interfaces to optional products and tools such as IBM Debug for z Systems™ (formerly Debug Tool for z/OS) and IBM Application Discovery and Delivery Intelligence (formerly EzSource)
- Compile-time and runtime performance enhancements
- Support for the latest middleware, including IBM CICS®, IBM DB2® and IBM IMS™

Enterprise COBOL for z/OS V6.2 requires z/OS V2.1 (5650-ZOS), or later.
IBM Enterprise PL/I for z/OS, V5.2 delivers significant usability and performance enhancements (ZP17-0443)

Some of the highlights:

- Exploitation of the new IBM z14 hardware
- Several performance enhancements, particularly to SELECT and INLIST
- More messages to help improve code quality
- Over five additional client-requested enhancements that include:
    - Microseconds for improved accuracy in REPATTERN
    - Improved diagnosis of missing returns from functions
    - Support for inlining of nested functions
    - Message to explain when a function is not inlined
    - Flagging of incorrect PLIXOPT declares

It also requires z/OS V2.1 (5650-ZOS), or later

IBM Record Generator for Java, V3.0 (ZP17-0375)

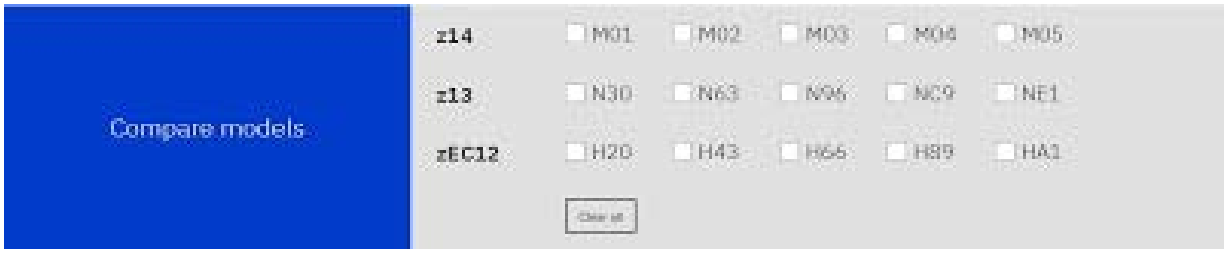
IBM Record Generator for Java is a stand-alone utility that imports the generated associated-data (ADATA) that is produced from compiling COBOL copybooks or Assembler DSECTs, and generates Java helper classes. These Java helper classes can then be used in Java applications to marshal data to and from the record orientated record structures commonly used in z/OS applications such as CICS® COMMAREAs or VSAM files.

This is free software, which can be downloaded from the IBM site. Although for the moment, it says “coming soon” and brings you to a nice informational page.

Hints and Tips

Mainframe Comparison page

Here is a nice little page comparing the z14 with its predecessors. It is straightforward, but it immediately gives you an idea of what to expect compared to your current machine.



So let us say you have a z13 N30 and you are considering upgrading to a z14 M01 or perhaps even an M02. Well, just select the systems you want to compare and you immediately have the most important items: model id, memory, new functionalities such as Java Garbage collection, security and crypto cards, connectivity, networking, coupling links etc. Strangely enough, OSA cards are missing.

By the way, you can also select the Business Class but I must warn you: no z14s there … yet!

IBM Training and Skills blog

This is quite an interesting IBM blog for those who want to stay up to date on any kind of training from IBM. The main categories are:

- Global Training Providers
- Conferences
- Badging & Certification
- Business Development

Here is how the blog introduces itself: “The IBM Training & Skills Blog is an IBM-owned, cross-geographic blog. It is a forum for posts related to IBM Training and Conferences across all geographies”. There is also a link to the ‘real’ IBM training site, now called ‘The IBM Skills Gateway’.

You can also subscribe to the newsletter over here.

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KVM and Linux on z Systems – Live Virtual Classes

I talked about z/VM and z/VSE Live Virtual Classes before, but I do not know whether they have always been on the same site and I just overlooked them or if they put everything together now. It does not matter that much. It gets even better: now you can also find KVM and Linux Live Virtual classes on the same site including all past classes. Some topics to draw your attention?

- OpenStack for KVM with Ubuntu on IBM z Systems (Replay)
- Establish an Enterprise Analytics Hub on Linux on IBM z Systems and LinuxONE (Replay)
- IBM Blockchain High Secure Business Network (powered by LinuxONE) (Replay)
- An integrated Single Sign-On Solution with Linux on z Systems, z/OS, and Microsoft Active Directory (Replay)

There are a lot more of course, so just have a look at the site itself.

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EOS dates Operating Systems

In this topic, we give you an overview of the EOS-dates of the operating systems. If you have questions regarding this topic or End of Support dates of other software you can always contact us at Realdolmen and we will gladly help you out.

Product-Version-Release	Date Availability	Date Withdrawn from Marketing	Date End Of Support (EOS)	Date End of Extended Support
z/OS V1.12 (*)	09/2010	10/2011	09/2014	09/2017
z/OS V1.13	09/2011	01/2014	09/2016	09/2019
z/OS V2.1	**09/2013**	**01/2016**	**09/2018**	**09/2021**
z/OS V2.2	**09/2015**	**09/2017**	**09/2020**	**09/2023**
z/OS V2.3	**09/2017**			
z/VM V5R3	06/2007	09/2008	09/2010	
z/VM V5R4 (**)	**09/2008**	**03/2012**	**12/2017 (no longer tied to the EOS vor z9)**	
z/VM V6R1	10/2009	11/2011	04/2013	
z/VM V6R2	12/2011	07/2013	06/2017	
z/VM V6R3	**07/2013**		**12/2017**	
z/VM V6R4	**11/2016**			
z/VSE V4R3	11/2010	06/2012	10/2014	
z/VSE V5R1	11/2011	05/2014	06/2016	
z/VSE V5R2	**04/2014**	**03/2017**	**10/2018**	
z/VSE V6R1	**11/2015**			
z/VSE V6R2	**4Q2017**			

Green : active versions
Blue : available versions
Red : announced versions

(*) First version with a 3-year extended support after End of Support. Fee-based corrective service.
(**) No longer supported by the z13 and z13s

Agenda

Our agenda informs you of events that may be of interest to you: webcasts, Proofs of Technology, events in the Brussels IBM Forum and GSE Working Group meetings.

Datum	Meeting	Agenda	Information and registration
19-22/09/2017	WW IBM z Systems Security Conference - Montpellier, France	How to meet security challenges with z Systems and discover the new pervasive encryption concept and the latest version of z/OS in its version 2.3.	Information and registration
1-5/10/2017	IDUG DB2 Tech Conference in Lisbon, Portugal 2017	This is the annual EMEA DB2 conference. In short: • Five days of education sessions • Half and full-day workshops • More than 100 one-hour technical sessions • Three expert panels on z/OS, LUW & Application Development • Opportunities to get certified Not a free event.	Information and registration
9-13/10/2017	IBM z Systems Technical University – Munich Germany	This is the annual System z event. The conference agenda will include more than 300 knowledge-packed technical sessions and hands-on training delivered by top IBM developers and experts. Not a free event.	Information and registration

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Small print

We would like to point out that all texts in this newsletter are based upon the interpretation by Realdolmen of the information that is at our current disposal. Therefore, Realdolmen cannot be held responsible for an incomplete interpretation of the data at hand.

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