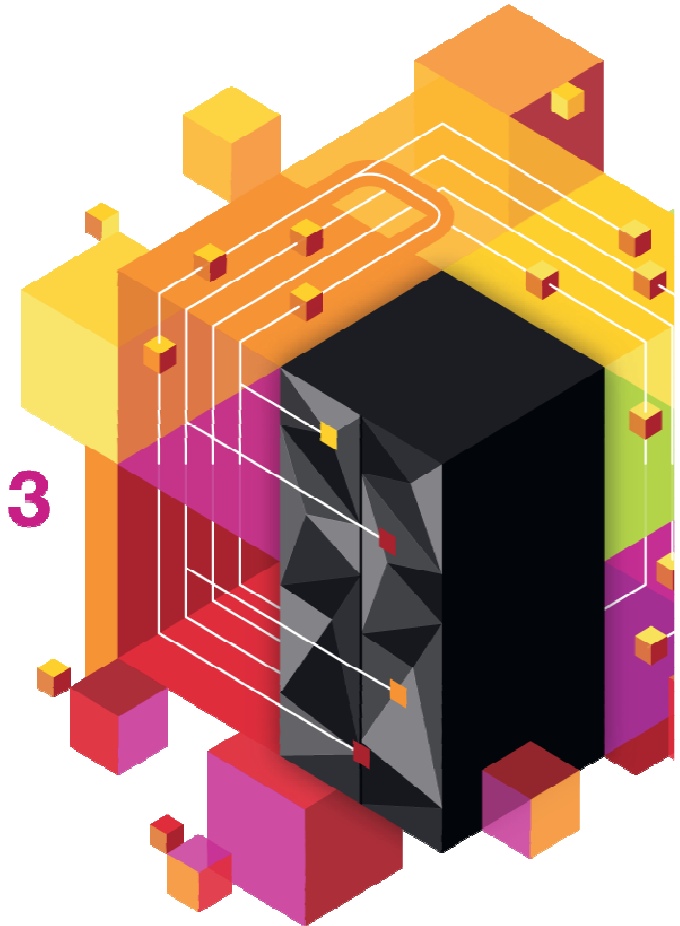




Université du Mainframe 2013

4-5 avril





Capacity on demand sur System z : l'essentiel

Les offres Capacity on sur zEnterprise

Description et mise en oeuvre

Les implications logicielles

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Capacity on demand sur System z : l'essentiel

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Description et mise en oeuvre

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Capacity on Demand with zEnterprise

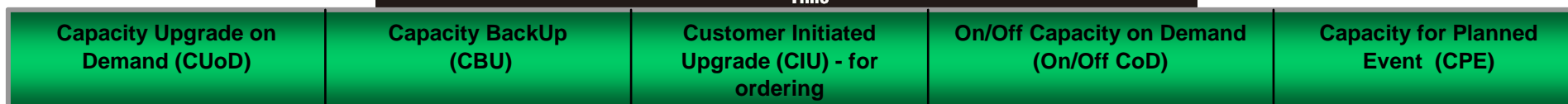
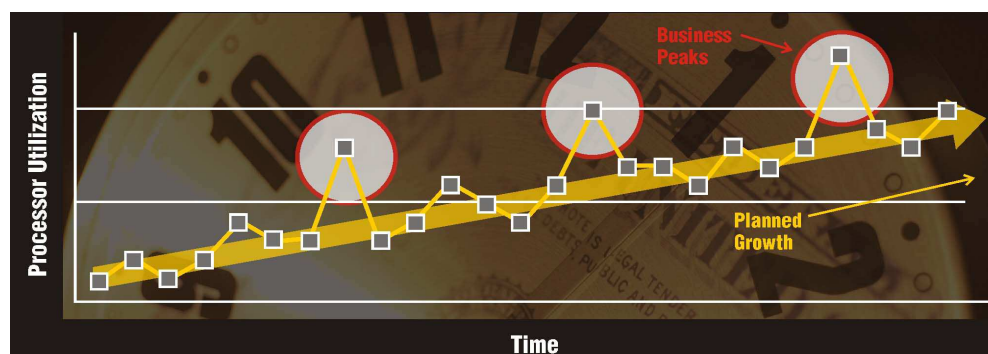
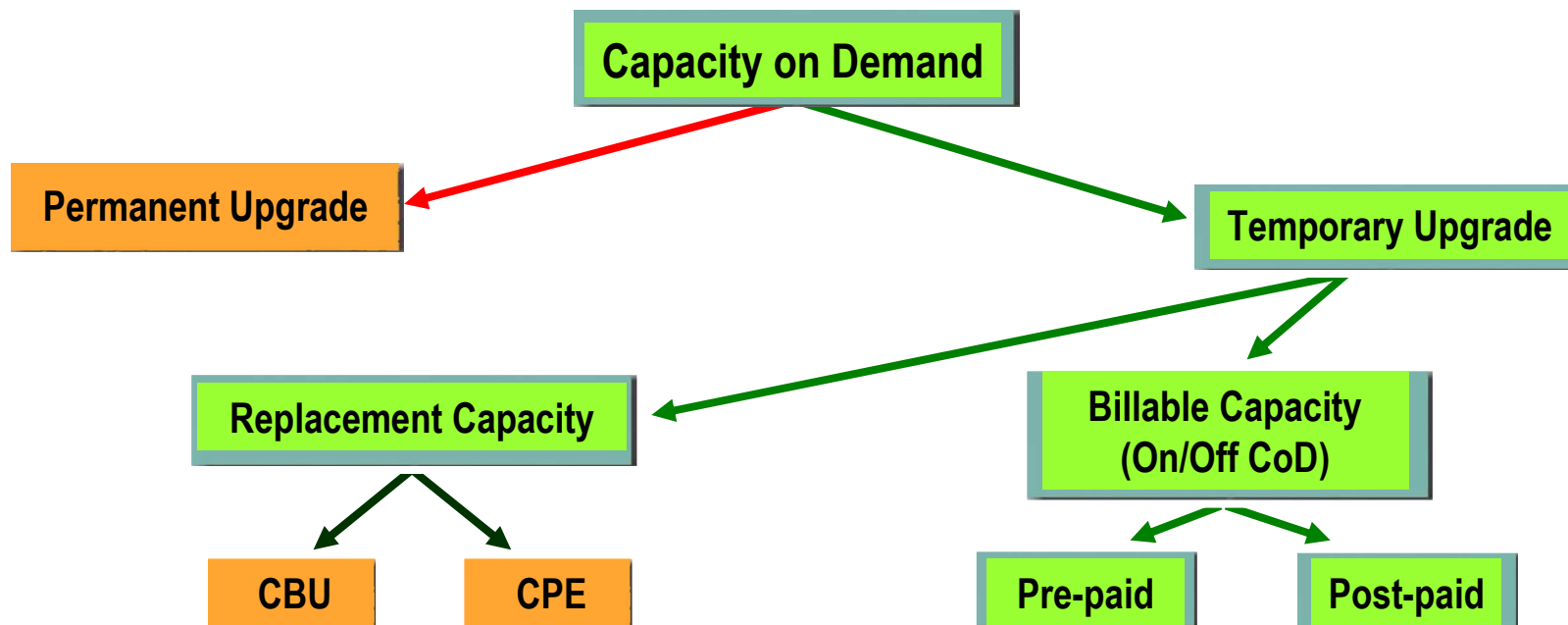
Hardware Side



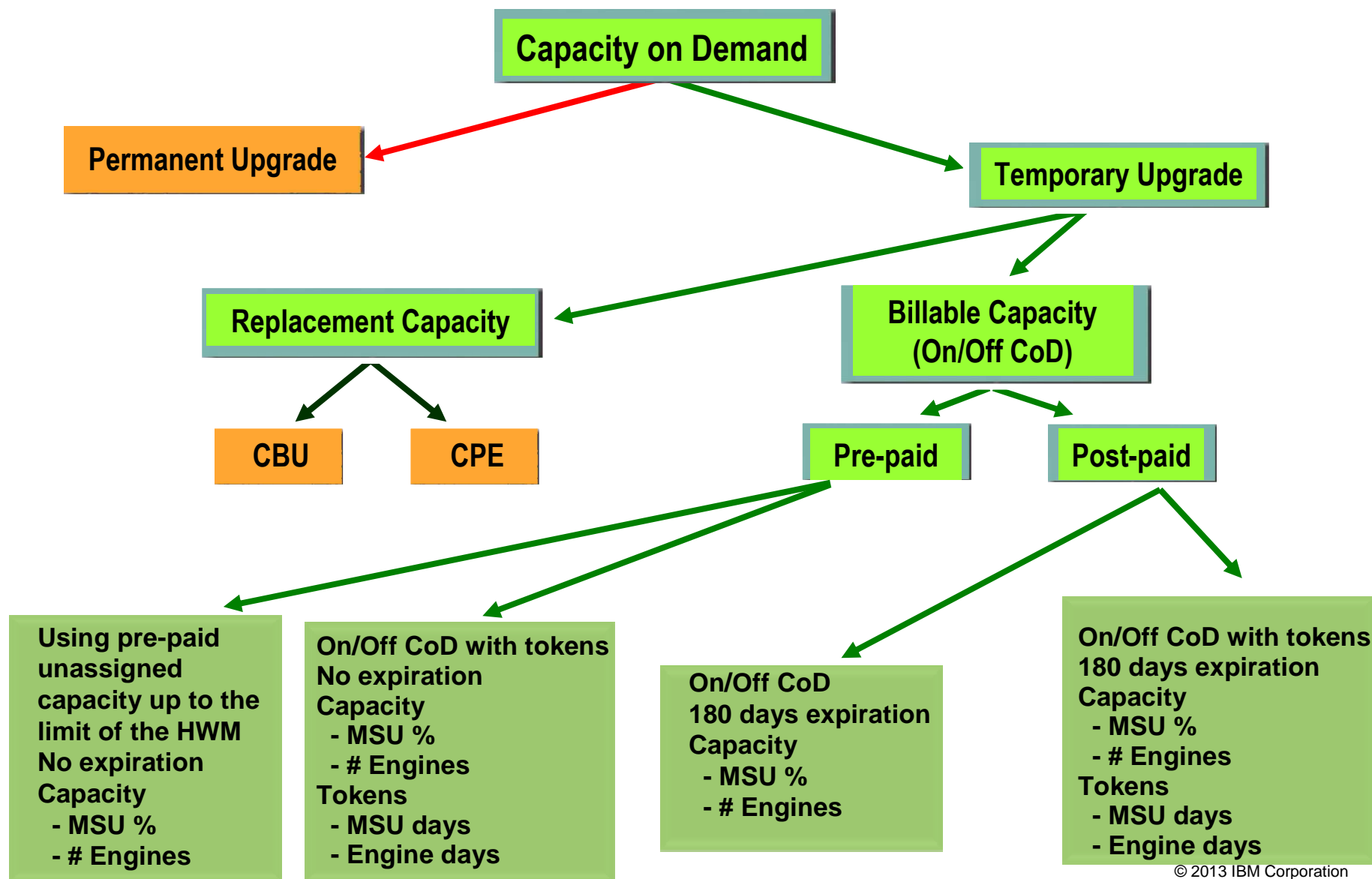
- The Basics - Capacity on Demand
- Elements of the Offerings
- Capacity Backup
- Capacity for Planned Events
- On/Off Capacity on Demand
- Capacity Provisioning Manager
- Additional Enhancements zEnterprise



System z Capacity on Demand



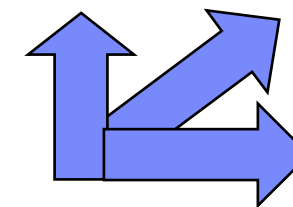
System z Capacity on Demand



Capacity on Demand – after z9

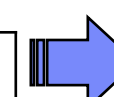
<ul style="list-style-type: none"> ■ Resources can be activated in any amount up to defined limit <ul style="list-style-type: none"> ▶ Customer can customize activation real-time, based on circumstances ▶ Eliminates unique record to be managed for all possible permutations ▶ Dynamic changes in activation level without reloading records 	<ul style="list-style-type: none"> ■ Various record limits can be dynamically updated / <u>replenished</u> <ul style="list-style-type: none"> ▶ Changes possible even if record is currently active
	<ul style="list-style-type: none"> ■ Ability to perform permanent upgrades while temporary capacity is active <ul style="list-style-type: none"> ▶ Allows quick conversion of temporary capacity to permanent
<ul style="list-style-type: none"> ■ As records expire or are consumed, the resources will be deactivated <ul style="list-style-type: none"> ▶ System will not reduce to subcapacity when records expire ▶ Will not deactivate if removing dedicated engines or last of that engine type 	<ul style="list-style-type: none"> ■ Pre-paid resource consumption and capacity liability capping done at the server
	<ul style="list-style-type: none"> ■ <u>API enhancements to support use by Capacity Provisioning Manager</u> <ul style="list-style-type: none"> ▶ Capacity Provisioning Manager provides policy based automation

The Basics – Temporary Upgrades



- **Upgrades only (no downgrades)**
 - ▶ Any to Any is not permitted
 - **Capacity Backup**
 - Cannot reduce CP capacity level
 - Cannot reduce the number of engines that are active
 - **Capacity for Planned Event**
 - Cannot reduce CP capacity level
 - Cannot reduce the number of engines that are active
 - **On/Off Capacity on Demand**
 - Cannot reduce CP capacity level
 - Cannot reduce the number of engines that are active
 - Cannot be more than twice the purchased capacity (0-100%) capacity or more than twice the number of specialty processors

7xx	701	702	703	704	705	706	707	708	709	710	711	712	713	714
6xx	601	602	603	604	605	606	607	608	609	610	611	612		
5xx	501	502	503	504	505	506	507	508	509	510	511	512		
4xx	401	402	403	404	405	406	407	408	409	410	411	412		
N-way	1	2	3	4	5	6	7	8	9	10	11	12	13	14



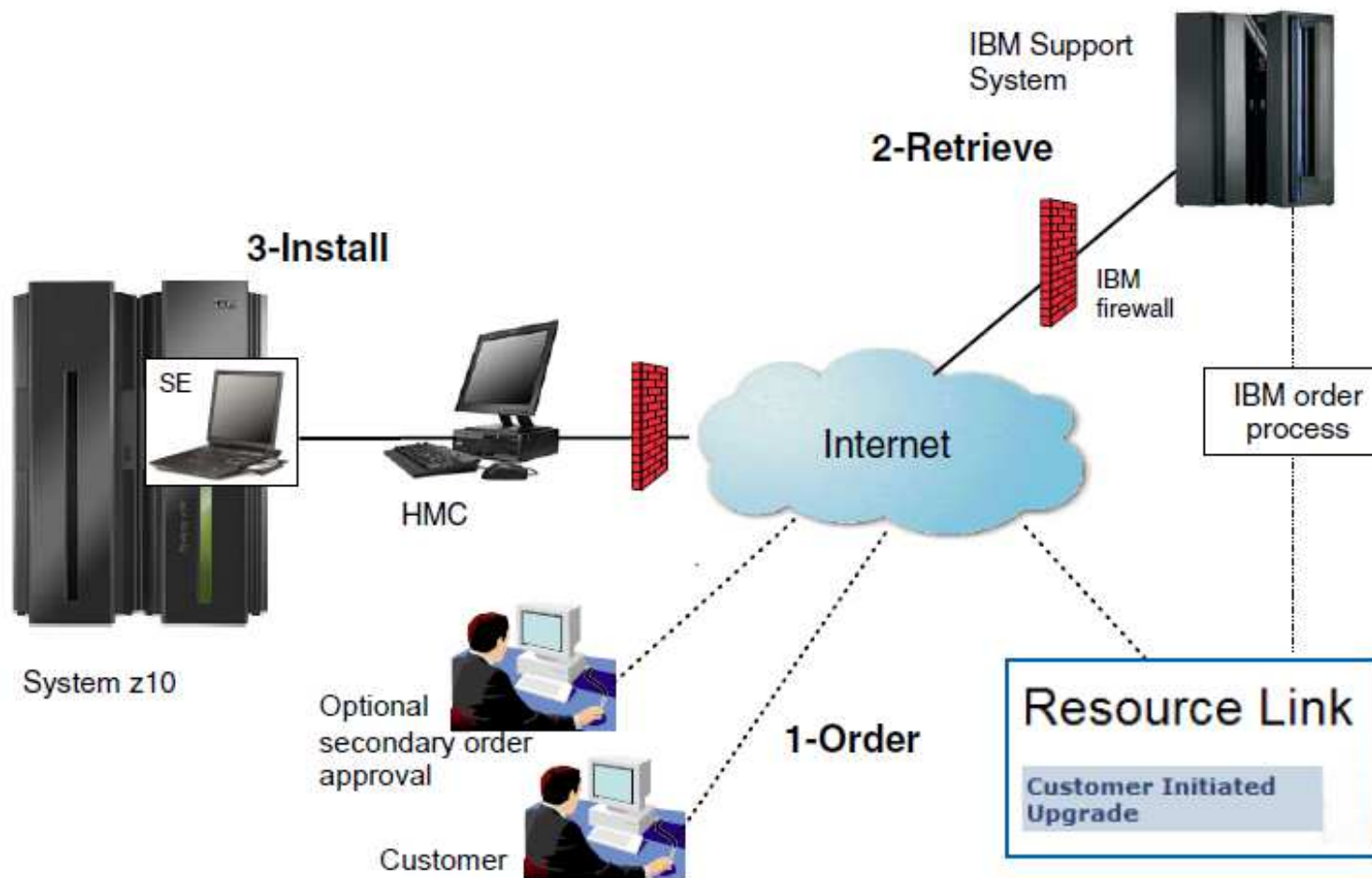
Capacity on Demand with zEnterprise

- The Basics - Capacity on Demand
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- Additional Enhancements



CIU Application

The global picture



www.ibm.com/servers/resourcelink

Resource Link panel 1/2 - CIU application

Machine profile

2817 - CEC19 - 5555556

Current configuration	
Model Capacity:	408 (8 CPs)
ICF:	0
zAAP:	2
zIIP:	2
IFL:	2
SAP:	6
Memory:	32
Unassigned IFLs:	0
Management enablement level: 2. Automate	
Current configuration as of 20 May 2010 15:23:54	

Machine summary

Type, model, serial:
2817 - M32 - CEC19

Customer summary

Company name:
IBM

Customer number:
5555556

GEO, country:
Americas - zDutchy of Merwyn

Ordering options

- Order permanent upgrade
- Order On/Off CoD record
- Order On/Off CoD test record
- Order On/Off CoD record with prepaid upgrades
- Order On/Off CoD record with spending limits
- Order administrative On/Off CoD test record
- Order Capacity Backup (CBU) record
- Order Capacity for Planned Events (CPE) record
- ☐ Display upgrade matrix

About ordering

Authorization to create orders

User ID: ciutestuser@us.ibm.com

Name: ciu testuser

Authorization to approve orders

User ID: ciutestuser2@us.ibm.com

Name: ciu testuser2

Notes:

- A pre-negotiated price agreement exists for this machine.
- On/Off CoD Test: 0 staged out of 1 remaining

Ordering options

CIU Permanent:	Enabled
On/Off CoD:	Enabled
CBU:	Enabled
CPE:	Enabled

To update profile

- ☐ Upload VPD
- ☐ Upload upgrade billing XML data

For more information

- View machine's On/Off CoD order billing history
- View On/Off CoD order history
- ☐ Users authorized to order upgrades

Resource Link panel 2/2 - CIU application

Capacity on Demand records

Open orders All orders

Record number · type · install state

Order number	Order status	Order description
CB85MPBB	· CBU · Installed	
LC85MPBB	· Order approved 20 May 2010 · Installed	+12 FCs model capacity, +1 ICF, +2 zAAP, +3 zIIP, +4 IFL, +2 SAP
CR85MNJM	· On/Off CoD · Installed	
LC85MNJM	· Order approved 20 May 2010 · Installed	+100% model capacity, +0 ICF, +2 zAAP, +2 zIIP, +2 IFL, +6 SAP, to 16 Nov 2010
CR85MPHZ	· On/Off CoD admin test · Installed	
LC85MPHZ	· Order approved 20 May 2010 · Installed	Administrative On/Off CoD test

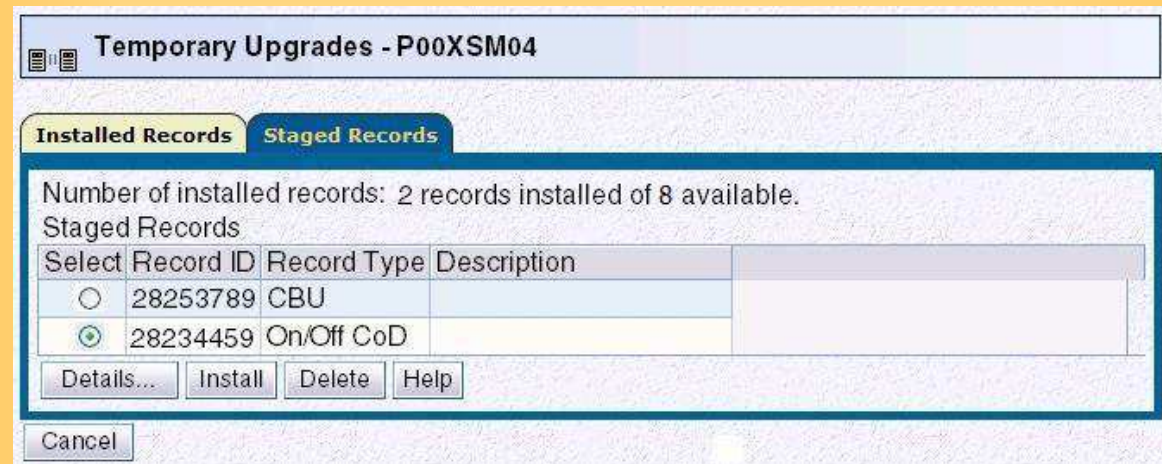
Permanent upgrades

Open orders Complete orders All orders

There are no open orders for this machine.

Installed and Staged CoD Records : staged

- Order and stage up to 200 records on the Support Element
- Records must be moved from Staged to Installed or they won't be reflected in VPD



Installed and Staged CoD Records : Installed

- Order and stage up to 200 records on the Support Element
- Records must be moved from Staged to Installed or they won't be reflected in VPD
- Installs up to 8 records simultaneously

Temporary Upgrades - H51

Installed Records | Staged Records

The following table shows all the installed records on the system.
 - To view a record description, place the mouse over the record.
 - The processors in the table are represented as "Maximum/Active"

Record ID	Record Type	CPs	SAPs	ICFs	IFLs	zAAPs	zIIPs	Status
CR78RS6J	On/Off CoD	*/0	3/0	0/0	0/0	1/0	1/0	Installed
CB78RS8C	CBU	*/0	1/0	1/0	1/0	1/0	1/0	Installed
CP78RS9J	Planned Event	*/0	*/0	*/0	*/0	*/0	*/0	Installed
Active Temporary		0	0	0	0	0	0	
Permanent		2	3	0	0	1	1	
Total Used		2	3	0	0	1	1	

Description:
 * - The maximum value is unlimited.

System Summary

Model-Capacity Identifier: 602 MSUs: 105
 Model-Temporary-Capacity Identifier: 602 Available PUs: 8
 Model-Permanent-Capacity Identifier: 602

Buttons: Details... | Add processors... | Remove processors... | Delete | Help

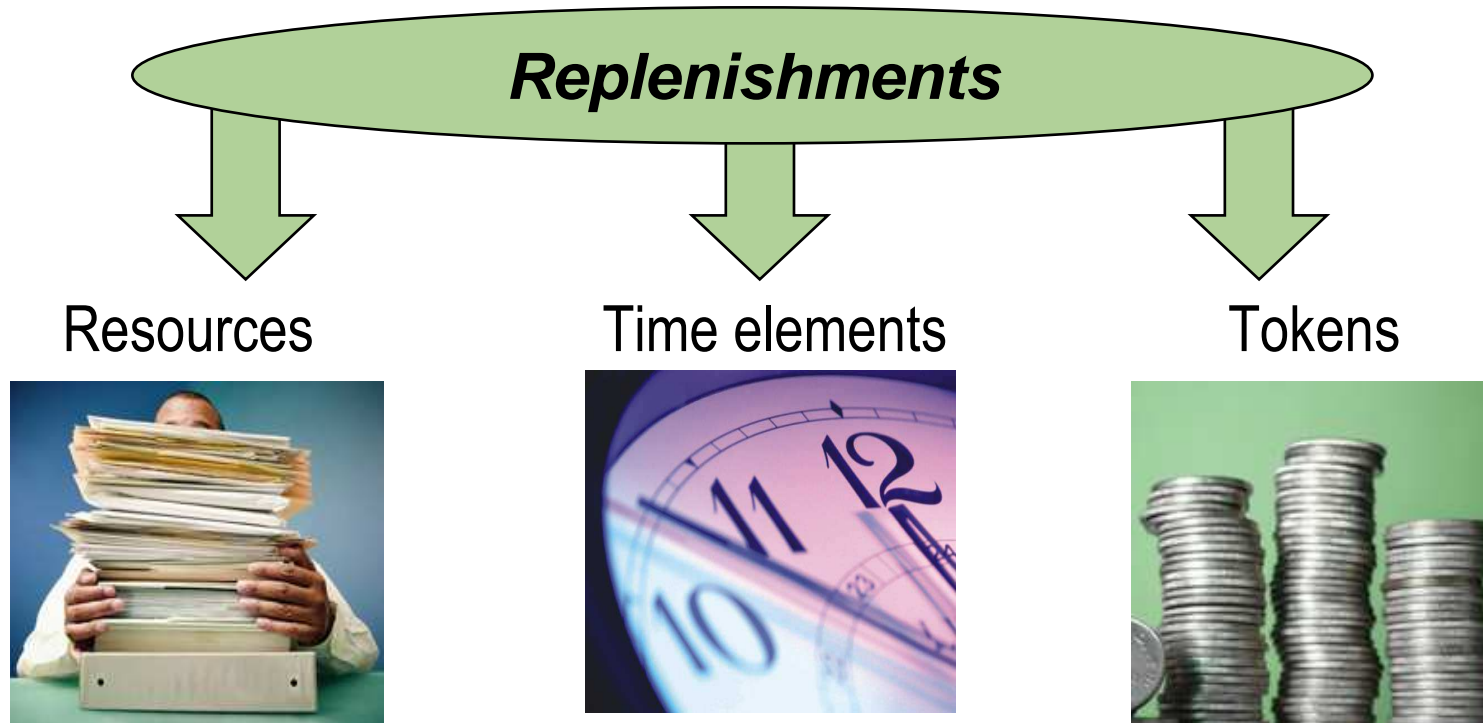
Cancel

Done | 9.56.193.157:9950

Key Enhancements (starting from z10)

- **All offering records are resident on machine**
 - ▶ No connection or passwords required at time of activation
- **Multiple records can be simultaneously active**
 - ▶ Each has independent controls and policy
 - ▶ Each can be activated / deactivated in any sequence
- **Individual record can be used to temporarily reach multiple configurations**
 - ▶ Customer determines level of resources activation real time based on circumstances (i.e. multiple use for a single On/Off CoD record, even during a permanent upgrade)
 - ▶ All movement between configurations is concurrent
- **Ability to perform upgrades while temporary resources are active**
 - ▶ Modification of record entitlement performed dynamically and concurrently
- **“Capacity Provisioning Manager” provides policy based advice and automation**

Elements of the Offerings



Order process limits

Machine limits

Contract terms and conditions



zEnterprise CoD Resources, Time elements and Tokens Summary

Resources	CBU	CPE	On/Off CoD	Remarks
CP	CP	CP	up to 100% more MSU CP capacity	
Specialty	zIIP, zAAP, ICF, IFL, SAP			
Time Elements	CBU	CPE	On/Off CoD	Remarks
Test Duration	10 days	NA	NA	
Real activations	90 days	3 days	Post-paid – Unlimited Prepaid - Limited	
Grace Period	2 days	N/A	One hour	Auto deactivation upon end of grace period
Expiration Date	1-5 years	No Expire	180 days	Auto deactivation upon expiration
Tokens	CBU	CPE	On/Off CoD	Remarks
Number of test	Up to 15	0	1	On/Off CoD tests are managed via a separate record
Number of real activation	1	1	Post-paid – Unlimited Prepaid - Limited	

Expiration Date

- **Definition: Last day a record is usable**
 - ▶ Regardless of whether the record is installed, active or staged.

- **Offering specific**
 - ▶ CBU - quantity of FC 6817 (CBU years) from date of order
 - ▶ On/Off CoD - 180 days from date of order

- **GMT (UTC) vs. Local time**
 - ▶ A record will expire and its associated resources made unavailable at 23:59 GMT on the date of expiration.

- **Warning messages will begin at least 5 days prior to expiration for installed records**
 - ▶ Warning messages appear on ResourceLink as well as the CoD panels on the HMC

Capacity on Demand with zEnterprise

- The Basics - Capacity on Demand
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System z Capacity Backup – CBU

Resources

CP Capacity Features
Specialty engines:
zIIP, zAAP, ICF, IFL,
SAP

Time elements

Test duration = 10 days
Real activation = 90 days
2 day grace period
Expiration date set to 1
through 5 years

Tokens

Number of Tests = 5
(default)
Up to 15 can be
ordered
Number of Real
activations = 1

Order process limits

- Total CP Capacity features = number of net new engines + number of permanent engines changing capacity level
 - ▶ No limit to the resources ordered
- Number of zIIPs or zAAPs can not exceed total number of permanent + temporary CPs
- No more than 15 tests per record

Machine limits

- Can not decrement capacity level
- Can not remove permanent engines from configuration
- No Tests while in Real activation
- No Tests if number of Real activations equals zero
- Auto deactivation of activated resources upon time limit
 - ▶ If any resource can not be removed all resources stay active
 - ▶ Ability to remove resources checked every 24 hours

Contract terms and conditions

- To be used only for replacement capacity within an enterprise
- Priced for H/W. No IBM S/W charges

Use of CP CBU Feature Codes

7xx		702									4			714
6xx		1 ↑			3			608						
5xx		502												
4xx	401		2 →	404										
N-way	1	2	3	4	5	6	7	8	9	10	11	12	13	14

1. **Increasing capacity of permanent engines**

502 → 702 requires 2 CP_FCs to change capacity of 2 CPs

2. **Adding additional engines at same capacity**

401 → 404 requires 3 CP_FCs to add 3 new engines at same capacity

3. **Additional engines and increasing capacity of permanent engines**

502 → 608 requires 8 CP_FCs which adds 6 new engines and a change of capacity of 2 CPs

4. **Additional engines and increasing capacity of permanent engines**

It is assumed that customer realizes they are exceeding the available capacity of Model E12 and must have a E26 installed, and also after 12 CPs, all engines are full capacity – no sub capacity engines

502 → 714 requires 14 CP_FCs to add 12 new engines and a change of capacity of 2 CPs

Note: You can't decrease engines nor decrease capacity – nor can you move to an invalid configuration

CBU – Capacity Backup

■ Example

- ▶ High Water Mark = 602
- ▶ Add 10 CBU CPs
- ▶ 5 Year Contract
- ▶ $10 \times 5 = 50$

On Demand Capacity Selections:

NEW00001 - CBU - CP(10) - IFL(1) - ICF(1) - zAAP(1)
 zIIP(1) - SAP(1) - Tests(10) - Years(5)

	6602	2-Way Processor CP6	1
	6809	CP6	2
	6817	Total CBU Years Ordered	5
	6818	CBU Records Ordered	1
	6819	5 Additional CBU Tests	2
	6821	25 CBU CP-Year	2
	6822	Single CBU IFL-Year	5
	6824	Single CBU ICF-Year	5
	6826	Single CBU zAAP-Year	5
	6828	Single CBU zIIP-Year	5
	6830	Single CBU SAP-Year	5
	7126	602 Capacity Marker	1
	9898	CIU Enablement (flag)	1
	9900	CBU Enablement (flag)	1
	9910	CBU Enablement	1

7xx	701	702	703	704	705	706	707	708	709	710	711	712	713	714
6xx	601	602	603	604	605	606	607	608	609	610	611	612		
5xx	501	502	503	504	505	506	507	508	509	510	511	512		
4xx	401	402	403	404	405	406	407	408	409	410	411	412		
N-way	1	2	3	4	5	6	7	8	9	10	11	12	13	14

Record Details

Record Details - R52
i

Record ID: **CB85M242** Status: **Installed** User: **Panel**
 Record Type: **CBU(pre-paid)** CIU order #: **LD85M242**
 Status details: **N/A**
 Activation Time:
 Description: **+10 FCs model capacity, +0 ICF, +0 zAAP, +0 zIIP, +4 IFL, +0 SAP**
 Original Description: **+10 FCs model capacity, +0 ICF, +0 zAAP, +0 zIIP, +4 IFL, +0 SAP**

Resources

Model-Capacity Identifier (Maximum/Active): **710/504** Maximum MSU Percentage: **N/A**
 Resource Counts (Maximum/Pending/Active)

CLIs	CPs	SAPs	ICFs	IFLs	zAAPs	zIIPs
*0/0	*0/0	0/0/0	0/0/0	4/0/0	0/0/0	0/0/0

Capacity Pools (Remaining/Consumption Rate)

Processor Tokens

CPs	SAPs	ICFs	IFLs	zAAPs	zIIPs
N/A	N/A	N/A	N/A	N/A	N/A

MSU Tokens: **N/A**
 Real Activations: **1**
 Test Activations: **3**

Time Limits

Record Expiration Date: **5/19/13 11:59:59 PM GMT**
 Real Activation Days Remaining: **90**
 Test Activation Days Remaining: **10**

Note: Fields containing the value "N/A" are not applicable for this record.

OK
Add processors...
Remove processors...
Update Description
Set as Default CBU
Help

709 upgrade with CBU to 714

Change Activation Levels - SCZP201

Record ID: CB7BKU9T Record Type: CBU Status: Installed
 Description: +9 CP FCs, +4 zAAP, +4 zIIP
 Model-Capacity Identifier: 709 CPs: 0 MSU Value: 663

--- Select Action ---

Select ^	Target Model-Capacity ID ^	CPs ^	Target MSU Value ^	MSU Cost ^
<input type="radio"/>	711	2	944	146
<input type="radio"/>	712	3	1011	215
<input type="radio"/>	713	4	1076	282
<input checked="" type="radio"/>	714	5	1139	347
<input type="radio"/>	715	6	1202	410

Processors

Select the counts you would like for each processor type.

SAPs: * 0 Current: 0
 ICFs: * 0 Current: 0
 IFLs: * 0 Current: 0
 zAAPs: * 2 Current: 0
 zIIPs: * 1 Current: 0

Activation Options

Test Activation
 Real Activation

Force activation

When you change the activation levels, press the "OK" button to save your changes.

OK Cancel Help

Starting with z10: Running Production workload with CBU Test

- **Customers may now execute production workload during a CBU test provided:**
 - ▶ An amount of System z production workload Capacity equivalent to the CBU Upgrade is shut down or otherwise made unusable by the Customer for the duration test
 - ▶ The appropriate contracts are in place. All new CBU contract documents contain these new CBU Test terms
 - ▶ Existing CBU customers will need to execute IBM Customer Agreement Amendment for IBM System z Capacity Backup Upgrade Tests
 - ▶ Applies to any System z capable of CBU

CBU characteristics starting with z196

- There is no requirement for a CBU password
- CBU upgrades can be from a sub-capacity model to another sub capacity
- Multiple CBU records can be installed and staged at the same time
- The sum of resources of installed CBU records may exceed physical capacity
- Resource activation of an installed CBU record can be incremental manner
- When a CBU record is deactivated, the record stays in the installed "slot"
- It is possible to replenish a CBU record
- The activation period for a test is 10 days with a 2 day grace period
- A real activation is set to 90 days with 2 days grace period
- When the CBU record has been active for it's allotted number of days, the CPU no longer gets kneecapped
- After the 2 day grace period is over, system will automatically deactivate CBU resources
- The CBU record has an expiration date
- More then 1 CBU record can be ordered

Capacity on Demand with zEnterprise

- The Basics - Capacity on Demand
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- **Capacity for Planned Events**
- On/Off Capacity on Demand
- Capacity Provisioning Manager
- Additional Enhancements



System z Capacity for Planned Events

Resources

CP Capacity Features
Specialty engines:
zIIP, zAAP, ICF, IFL,
SAP

Time elements

Test duration = NA
Real activation = 3 days
No grace period
No Expiration date

Tokens

Number of Tests = 0
Number of Real
activations = 1

Order process limits

- No more than 1 real activation per record

Machine limits

- Can not decrement capacity level
- Can not remove permanent engines from configuration
- Auto deactivation of activated resources upon time limit
 - ▶ If any resource can not be removed all resources stay active
 - ▶ Ability to remove resources checked every 24 hours
- All dormant resources are available for use during the activation

Contract terms and conditions

- To be used only for replacement capacity within an enterprise
- Priced for H/W use BUT like CBU, no IBM S/W charges

Capacity on Demand with zEnterprise

- The Basics - Capacity on Demand
- Elements of the Offerings
- Capacity Backup
- Capacity for Planned Events
- On/Off Capacity on Demand
- Capacity Provisioning Manager
- Additional Enhancements



System z On/Off Capacity on Demand

Resources

CP Capacity
 % increase in capacity
 Specialty engines:
 zIIP, zAAP, ICF, IFL,
 SAP

Time elements

Test duration = NA
 Real activation =
 Unlimited
 1 hr grace period
 Expiration date set to
 180 days

Tokens

Number of Tests = 0
 Number of Real
 activations = Unlimited

Order process limits

- Temporary CP capacity up to 100% of purchased capacity
- Number of temporary zIIPs or zAAPs can not exceed total number of permanent + temporary CPs
- Number of temporary IFLs up to the total of purchased IFLs
- Number of temporary ICFs plus permanent ICFs not to exceed 16

Machine limits

- Can not decrement capacity level
- Can not remove permanent engines from configuration
- Positive increase in capacity with temporary activations

Contract terms and conditions

- H/W and S/W charges
- No administrative tests

On/Off CoD authorization space

Permanent capacity 402

purchased capacity high water mark (HWM) 504 (207 MSU)

=> authorization area up to 414 MSU (2 x 207)

7xx		702 (215)	703 (312)	704 (401)	(488)									
6xx		602 (149)	603 (215)	604 (277)	605 (339)	606 (398)	(455)							
5xx		502 (110)	503 (160)	504 (207)	505 (252)	506 (296)	507 (340)	508 (382)	(422)					
4xx		402 (51)	403 (75)	404 (97)	405 (118)	406 (139)	407 (160)	408 (180)	409 (199)	410 (218)	411 (237)	412 (255)		
N-way	1	2	3	4	5	6	7	8	9	10	11	12	13	14



Zero Hardware cost

On/Off CoD on-line order

Order On/Off CoD record

Step 1 of 3: Configure the record

The On/Off CoD upgrade options on this order form are initialized to the maximum selections for upgrades that have prices set for this machine. Maximizing selections creates an On/Off CoD record that supports the widest possible range of On/Off CoD upgrades for the current machine configuration. Adjust the selections only if you want to change the type or range of On/Off CoD upgrades that can be activated with this record.

(*) indicates setting a replenishment due date is required to continue. Its initial setting is the maximum date allowed.

Replenishment due date: (mm/dd/yyyy) Renew automatically

Enable upgrades for up to:

Model capacity: more model capacity
 ICF: more ICF engines
 zAAP: more zAAP engines
 zIIP: more zIIP engines
 IFL: more IFL engines
 SAP: more SAP engines

Continue

Machine summary

Type: 2817 M32
 Model: 408
 Serial number: CEC19

Current configuration

Model capacity: 8 CPs
 ICF: 0
 zAAP: 2
 zIIP: 2
 IFL: 2
 SAP: 6
 Available engines: 18

Supported upgrades

Show upgrades

Show upgrade prices

On/Off CoD on-line order: review/submit

Order On/Off CoD record

Step 3 of 3: Review and submit your order

Review the range of upgrades you selected on the previous page. The On/Off CoD record you are about to order will be configured to support activating any configurations within the range.

(*) Indicates accepting the [Terms and Conditions of this order](#) is required to submit it. Mark the checkbox to indicate acceptance.

Note: the FL upgrade daily price includes ₪10.00 per IFL for the management enablement level in effect for this machine.

Replenishment due date: 20 Feb 2011

Renew automatically: Yes

Model capacity: 100% more model capacity

Upgrade daily prices
[Show upgrade prices]

ICF: 0 more ICF engines

zAAP: 2 more zAAP engines

₪2,000.00 per engine

zIIP: 2 more zIIP engines

₪2,000.00 per engine

IFL: 2 more IFL engines

₪2,010.00 per engine

SAP: 6 more SAP engines

₪3,000.00 per engine

Description: +100% model capacity, +0 ICF, +2 zAAP, +2 zIIP, +2 IFL, +6 SAP, to 2

Machine summary

Type: 2817 M32

Model: 408

Serial number: CEC19

Current configuration

Model capacity: 8 CPs

ICF: 0

zAAP: 2

zIIP: 2

IFL: 2

SAP: 6

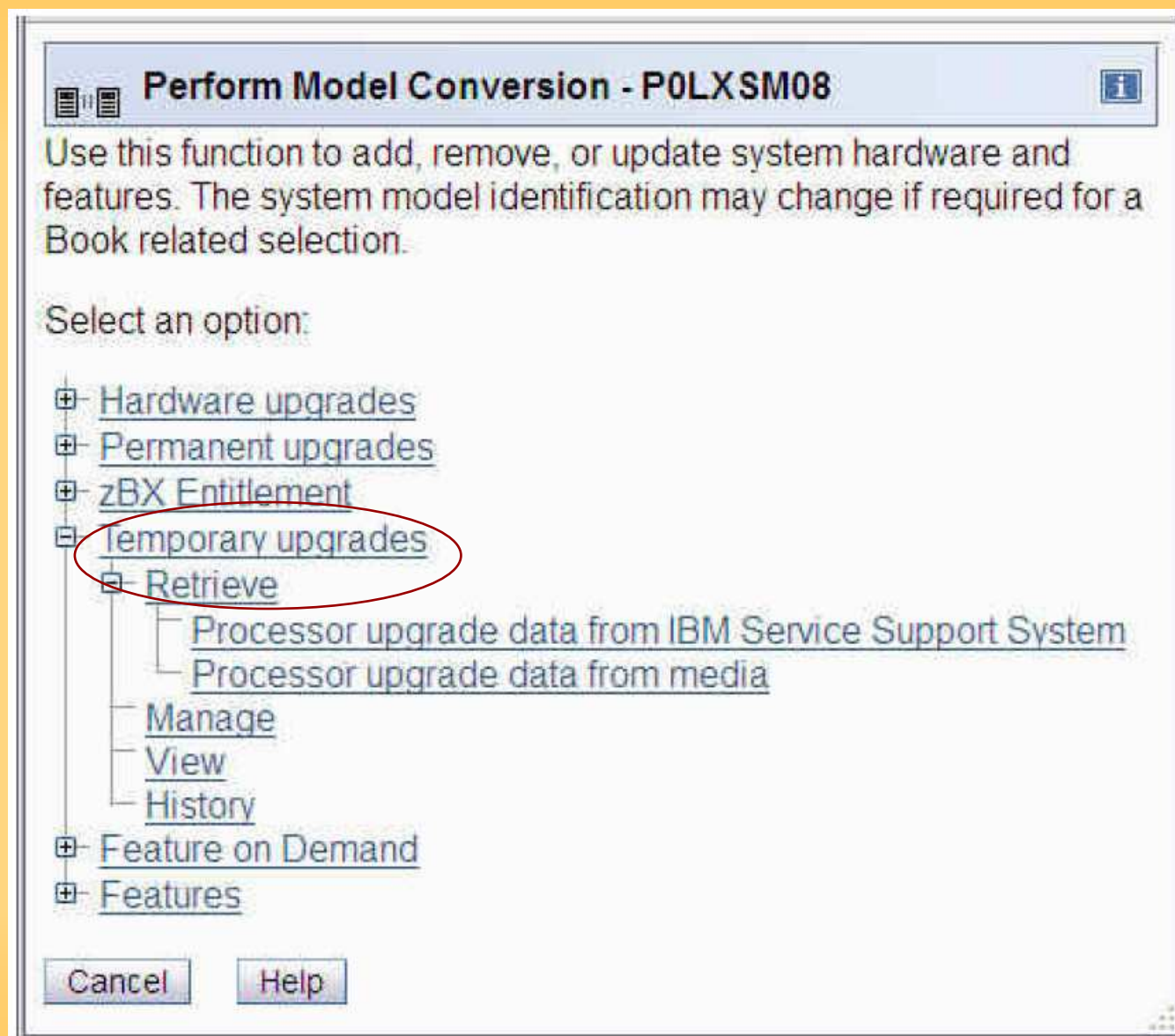
Available engines: 18

Supported upgrades

Show upgrades

Show upgrade prices

On/Off CoD – from the HMC



On/Off CoD - HMC

Temporary Upgrades - P00CEC19

Installed Records | **Staged Records**

Number of installed records: 5 records installed of 8 available.

Staged Records

Select	Record ID	Record Type	Description
<input type="radio"/>	CR85MPSX	On/Off CoD(post-paid)	Administrative On/Off CoD test, to 16 Nov 2010
<input checked="" type="radio"/>	CR85MPR7	On/Off CoD(post-paid)	+100% model capacity, +0 ICF, +2 zAAP, +2 zIIP, +2 IFL, +6 SAP

On/Off CoD - HMC

https://sczhmc7.itso.ibm.com:9950 - SCZP201: Perform Model Conversion - Mozilla Firefox

Temporary Upgrades - SCZP201

Installed Records

The following table shows all the installed records on the system.
 - To view a record description, place the mouse over the record.
 - The processors in the table are represented as "Maximum/Active"

Record ID	Record Type	CPs	SAPs	ICFs	IFLs	zAAPs	zIIPs	Status
CB7BKU9T	CBU	*/0	0/0	0/0	0/0	4/0	4/0	Installed
CR7BKUEQ	On/Off CoD	*/0	6/0	4/0	0/0	2/0	2/0	Installed
Active Temporary		0	0	0	0	0	0	
Permanent		9	6	4	0	2	2	
Total Used		9	6	4	0	2	2	

Description:
 * - For CPs, the maximum value is determined by an offering specific algorithm that accounts for engines, speed changes, and resulting capacity. For all other processor types, the maximum value is unlimited.

System Summary

Model-Capacity Identifier: 709 MSUs: 804
 Model-Temporary-Capacity Identifier: 709 Available PUs: 9
 Model-Permanent-Capacity Identifier: 709

Details... Add processors... Remove processors... Delete Help

Cancel

Done sczhmc7.itso.ibm.com:9950

On/Off CoD – 709 to 710

https://sczhmc7.itso.ibm.com:9950 - SCZP201: Perform Model Conversion - Mozilla Firefox

Change Activation Levels - SCZP201

Record ID: CR7BKUEQ Record Type: On/Off CoD Status: Installed
 Description: +100% model capacity, +4 ICF, +2 zAAP, +2 zIIP, +0 IFL, +6 SAP, to 08/04/2008
 Model-Capacity Identifier: 709 CPs: 0 MSU Value: 663

--- Select Action ---

Select ^	Target Model-Capacity ID ^	CPs ^	Target MSU Value ^	MSU Cost ^
<input type="radio"/>	709	0	804	0
<input checked="" type="radio"/>	710	1	875	75
<input type="radio"/>	711	2	944	146
<input type="radio"/>	712	3	1011	215
<input type="radio"/>	713	4	1076	282

Processors

Select the counts you would like for each processor type.

SAPs: * 0 Current: 0
 ICFs: * 0 Current: 0
 IFLs: * 0 Current: 0
 zAAPs: * 0 Current: 0
 zIIPs: * 0 Current: 0

When you have finished changing the activation levels, press the "OK" button to save your changes.

OK Cancel Restore Current Levels Help

Done sczhmc7.itso.ibm.com:9950

On/Off CoD - Confirmation

https://sczhmc7.itso.ibm.com:9950 - SCZP201: Perform Model Conversion - Mozilla Firefox

? Temporary Upgrades - SCZP201

Are you sure you want to change the activation levels for this record?

- Record ID: CR7BKUEQ
- Description: +100% model capacity, +4 ICF, +2 zAAP, +2 zIIP, +0 IFL, +6 SAP, to 08/04/2008
- Activation type: Real activation

	Original	New
Model-Capacity Identifier	709	710
CPs	0	1
SAPs	0	0
ICFs	0	0
IFLs	0	0
zAAPs	0	0
zIIPs	0	0

ACT37464

Done sczhmc7.itso.ibm.com:9950

On/Off CoD - Result

https://sczhmc7.itso.ibm.com:9950 - SCZP201: Perform Model Conversion - Mozilla Firefox

Temporary Upgrades - SCZP201

Installed Records

The following table shows all the installed records on the system.
 - To view a record description, place the mouse over the record.
 - The processors in the table are represented as "Maximum/Active"

Record ID	Record Type	CPs	SAPs	ICFs	IFLs	zAAPs	zIIPs	Status
CB7BKU9T	CBU	*0	0/0	0/0	0/0	4/0	4/0	Installed
CR7BKUEQ	On/Off CoD	*1	6/0	4/0	0/0	2/0	2/0	Active-Real
Active Temporary		1	0	0	0	0	0	
Permanent		9	6	4	0	2	2	
Total Used		10	6	4	0	2	2	

Description:
 * - For CPs, the maximum value is determined by an offering specific algorithm that accounts for engines, speed changes, and resulting capacity. For all other processor types, the maximum value is unlimited.

System Summary

Model-Capacity Identifier: 710 MSUs: 875
 Model-Temporary-Capacity Identifier: 710 Available PUs: 8
 Model-Permanent-Capacity Identifier: 709

Details... Add processors... Remove processors... Delete Help

Cancel

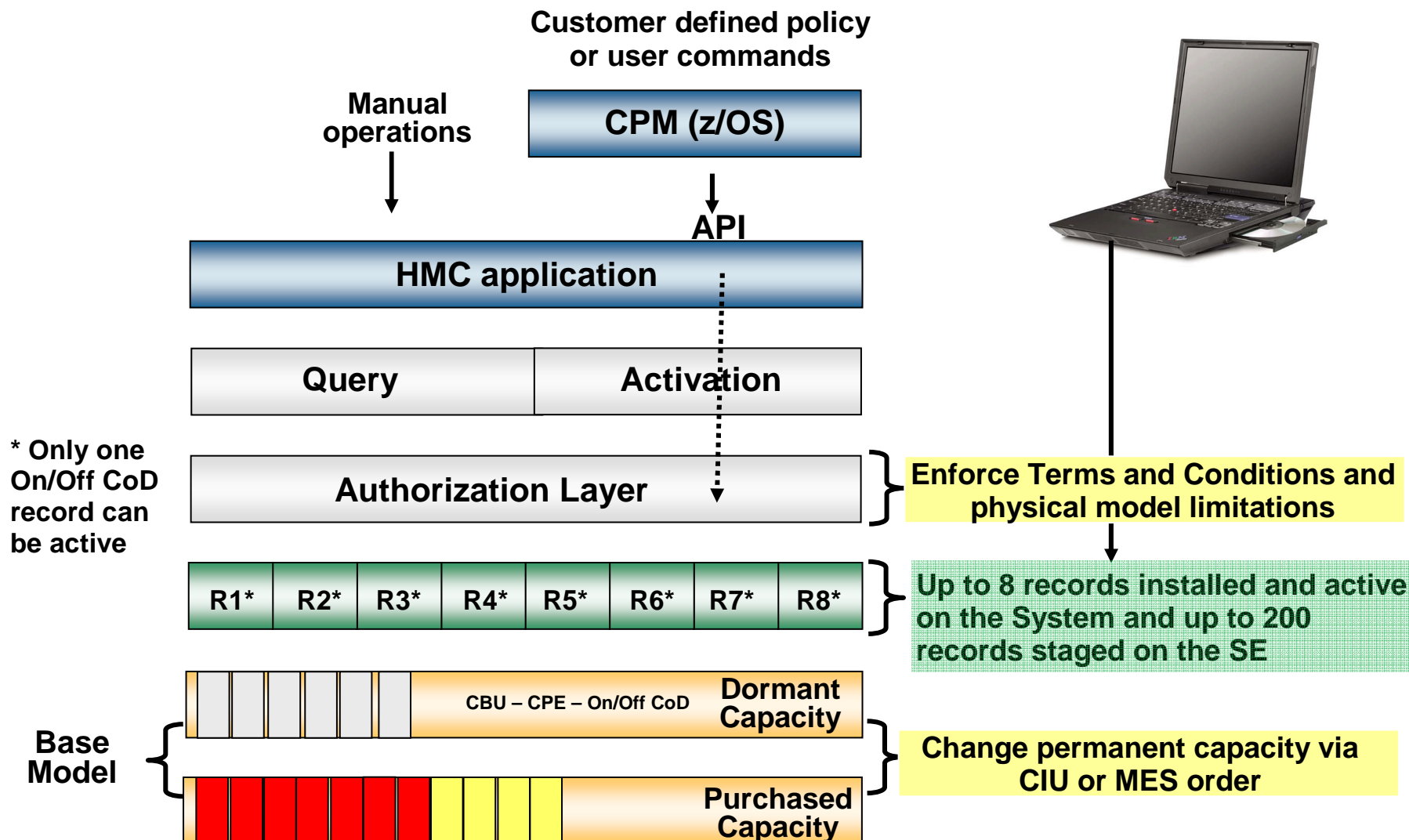
Done sczhmc7.itso.ibm.com:9950

Capacity on Demand with zEnterprise

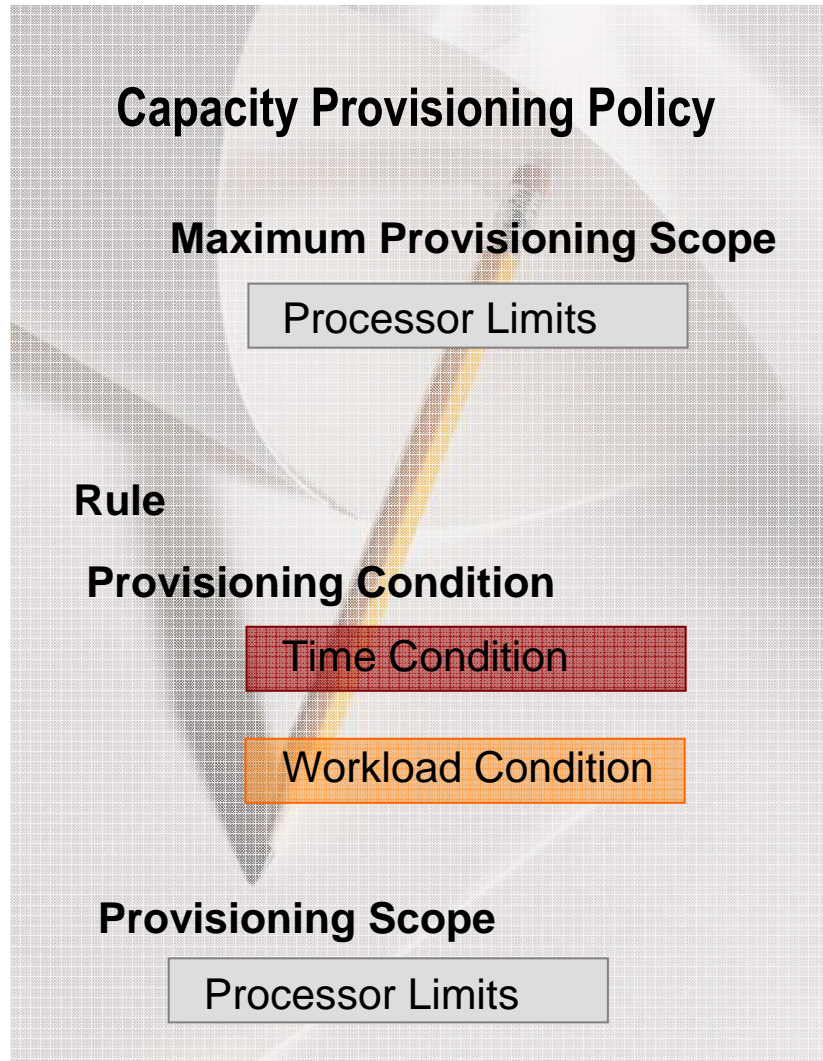
- The Basics - Capacity on Demand
- Elements of the Offerings
- Capacity Backup
- Capacity for Planned Events
- On/Off Capacity on Demand
- **Capacity Provisioning Manager**
- Additional Enhancements



zEC12 Capacity on Demand Provisioning Architecture



Capacity Provisioning Policy



- A policy may consist of **multiple rules**
 - ▶ Based on a variety of things, such as specific applications (bank transactions for example)
- The “**Maximum Provisioning Scope**” defines the maximum additional capacity that may be activated at any time for **all** contained rules
 - ▶ Expressed in MSUs, zIIPs, zAAPs
- “**Provisioning Condition**” is simply a group of Time and Workload Conditions that can be referred to
 - ▶ WLM Service Class conditions
 - ▶ Time Condition (start/deadline/end)
 - ▶ Workload (critical workload conditions)
- “**Provisioning Scope**” defines the maximum capacity that may be activated
 - ▶ Expressed in MSUs, zIIPs, zAAPs

Capacity on Demand with zEnterprise

- The Basics - Capacity on Demand
- Elements of the Offerings
- Capacity Backup
- Capacity for Planned Events
- On/Off Capacity on Demand
- Capacity Provisioning Manager
- Additional Enhancements z196/z114/zEC12



Starting on z196 Capacity on Demand Enhancements

z10

Separate orders for purchase of unassigned engines

On/Off CoD records must be replenished manually

CoD records staged on machine deliver

No On/Off CoD administrative test

z196

Unassigned engine purchase via CIU

Auto replenishment of On/Off CoD records

Manufacturing install of up to 4 CoD records with system ship. This is for new z196s only

On/Off CoD Administrative tests

Capacity on Demand – Auto renewal of On/Off CoD records

■ Auto-renewal of On/Off CoD records

- ▶ With System z10, IBM introduced an expiration date on On/Off CoD records
 - New On/Off CoD records gave considerable flexibility, but increased IBM's exposure
 - Date was introduced to limit IBM's asset exposure
 - All On/Off CoD records expire within 180 days of download
 - When records expire, any active capacity is automatically deactivated on the SE
- ▶ Expiration of records has met with universal customer complaints
- ▶ For z196: Resource Link will monitor all installed On/Off CoD records
 - Process will only support installed records
 - Records staged on the SE or on RETAIN and not installed will not be auto-renewed
 - Auto-renewal will only be available to machines that can connect to RETAIN – not available to RPQ customers.
- ▶ Every 90 days, Resource Link will generate a replenishment record for each installed record that will move the expiration date out 180 days
 - Machine must have connected to back to IBM in past 14 days with updated VPD / Billing history
 - Record must be “enabled” for auto-renewal
 - IBM Reserves right to disable auto-renewal if customer does not meet contracts terms and conditions
- ▶ Next time the machine connects to RETAIN, replenishment record is pushed to the machine and installed

Auto renewal of On/Off CoD records

- Allow for the automatic renewal of installed records - this function is intended for use with On/Off CoD, to automatically update the expiration date for "customers in good standing".
 - ▶ Customer in good standing = consistent transmittal of VPD and regular and timely payment of bills. This would be managed at the Resource Link level.
- The request is to auto-replenish the expiration date of installed On/Off CoD records, there is no intent to replenish tokens automatically, *only the expiration date*.
- Staged records are not subject to automatic replenishment.
- Participation in this program is a customer option.
- Not available for records on RPQ machines
- Resource Link will “disable” auto replenishment on a per machine profile basis
 - ▶ Customer does not pay bills
 - ▶ Customer drops off IBM Maintenance

Order On/Off CoD record

Step 1 of 2: Configure the record

The On/Off CoD upgrade options on this order form are initialized to the maximum selections for upgrades that have prices set for this machine. Maximizing selections creates an On/Off CoD record that supports the widest possible range of On/Off CoD upgrades for the current machine configuration. Adjust the selections only if you want to change the type or range of On/Off CoD upgrades that can be activated with this record.

(*) indicates setting a replenishment due date is required to continue. Its initial setting is the maximum date allowed.

Replenishment due date: (mm/dd/yyyy) Renew automatically

Enable upgrades for up to:

Model capacity: more model capacity

ICF: more ICF engines

zAAP: more zAAP engines

zIIP: more zIIP engines

IFL: more IFL engines

SAP: more SAP engines

[Continue](#)

Default is to renew records automatically

Machine summary	
Type:	2817 M15
Model:	604
Serial number:	2817D
Current configuration	
Model capacity:	4 CPs
ICF:	1
zAAP:	1
zIIP:	1
IFL:	1
SAP:	3
Available engines:	7
Supported upgrades	
Show upgrades	
Show upgrade prices	

Capacity on Demand – On/Off CoD Administrative Test

- On/Off CoD Administrative Test
 - ▶ IBM Introduced On/Off CoD administrative tests on the System z9
 - On/Off CoD records that could be activated, but did not activate any capacity
 - Records allowed for testing of processes / procedures without any resulting HW or SW charges
 - ▶ With new Capacity on Demand architecture on System z10, administrative test function was dropped.
 - New reusable record was thought to eliminate need for administrative test capability
 - New record structure did not readily support administrative tests
 - ▶ For z196, Resource Link reintroduces the “Order Administrative On/Off CoD test” option
 - Standard order flow, including approval steps – “tests” order process
 - Default will be for 180 day expiring record
 - Customer optionally may select renewal
 - Customer optionally may select “record does not expire” (unique to admin test)
 - ▶ Resource Link generates On/Off CoD LICCC request
 - All capacity levels set to zero
 - If non-expiring, no expiration date set
 - “Training record” bit set – instructs SE to not allow any capacity activations
 - ▶ SE changes to support admin test
 - Training bit results in no engine upgrade choices (0% records)
 - Record can be “activated” without actually changing activation levels

On/Off CoD Administrative Test

1. Customers use for operations training

- ▶ Allows multiple tests to train a number of personnel
- ▶ Allows customers to do periodic retraining

2. API testing

- ▶ Customers using APIs needed way to test their code without running up charges

Order On/Off CoD admin test record

Step 1 of 2: Configure the record

*Auto renewal available
Record can be set to never expire*

The On/Off CoD upgrade options for this administrative test are fixed at 0.

(*) indicates setting a replenishment due date is required to continue. Its initial setting is the maximum date allowed.

Replenishment due date: (mm/dd/yyyy) Record does not expire Renew automatically

Enable upgrades for up to:

Model capacity:	0%	more model capacity
ICF:	0	more ICF engines
zAAP:	0	more zAAP engines
zIIP:	0	more zIIP engines
IFL:	0	more IFL engines
SAP:	0	more SAP engines

No Capacity selections are allowed

[Continue](#)

Machine summary

Type:	2817 M32
Model:	504
Downgraded from model:	506
Serial number:	2817C

Current configuration

Model capacity:	4 CPs
ICF:	0
zAAP:	1
zIIP:	1
IFL:	4
SAP:	6
Available engines:	22

Supported upgrades

[Show upgrades](#)

[Show upgrade prices](#)

- **Resource Link provides “Order On/Off CoD admin test” option**
 - Standard order flow, including approval steps – “tests” order process
 - Default will be for 180 day expiring record
 - Customer optionally may select auto-replenishment
 - Customer optionally may select “record does not expire” (unique to admin test)
- **Resource Link generates On/Off CoD LICCC request**
 - All capacity levels set to zero and will not allow activation of any capacity
 - If non-expiring, no expiration date set

Capacity on Demand – additional Enhancements

■ Other CoD Enhancements

▶ Purchase of unassigned CP or IFL capacity

- New ordering option on Resource Link
- Has been available via eConfig (Standard MES process) before, but not via CIU
- Allows customer to create an upgrade that move the HWM without moving the active capacity marker

Purchase of permanent unassigned engines

- Purchase of unassigned CP or IFL capacity
 - ▶ New ordering option on Resource Link
 - ▶ Has been available via eConfig (Standard MES process) before, but not via CIU
 - ▶ Allows customer to create an upgrade that moves the HWM without moving the active capacity marker
- On z10/z196, via CIU, you can: add active engines; activate already purchased, but inactive engines; deactivate engines
 - ▶ All transactions must be separate and distinct
 - ▶ Each CIU order takes 2 hours
 - ▶ VPD must be transmitted and processed between transactions
 - ▶ Net: to purchase and deactivate and engine takes approx: 4-6 hours
- Deactivation of engines is a “priced” feature

Order permanent upgrade

Step 1 of 3: Configure the record

Current HWM

Use this form to order a permanent upgrade. Select the upgrade configuration you want to order then click Continue.

First select the total upgrade configuration you want to order. Then, optionally, select the model capacity and IFLs you want in the active configuration. Model capacity and IFLs in the total configuration but not in the active configuration will be unassigned upon installing the upgrade.

	Current configuration	Upgrade configuration	Total configuration	Active configuration	Upgrade price
Model Capacity:	504 (4 CPs)	606 (6 CPs)	606 (6 CPs)	504 (4 CPs)	≈1,036,800.00
ICF:	0	0	0	0	≈0.00
zAAP:	1	1	1	1	≈0.00
zIIP:	1	1	1	1	≈0.00
IFL:	4	4	4	4	≈0.00
SAP:	6	6	6	6	≈0.00
Memory:	112 GB	112	112		≈0.00
Total purchase price:					≈1,036,800.00

Continue

Machine summary

Type: 2817 M32

Model: 504

Downgraded from model: 506

Serial number: 2817C

Current configuration

Model capacity: 4 CPs

ICF: 0

zAAP: 1

zIIP: 1

IFL: 4

SAP: 6

Available engines: 20

Pre-Installed Records

- Starting with z10, the manufacturing process puts temporary records that have been ordered with the system into the staging area, but not automatically install them.
- The record installation (which is a pre-req for being able to activate the record) is not performed until the Service Representative at the customer site does it (guided by install instructions) during the initial install of the machine.
 - ▶ This step is sometimes not executed during initial machine install and then causes problems because customers cannot find their records in the installed area.
- With z196/z114/zEC12, system will come with records pre-installed
 - ▶ Limitations: Manufacturing will only install 1st 4 records

Note: If there are more than 4 temporary records on the z196/z114/zEC12, all will be staged, and none will be installed. This is only available on an initial new-build order. Not available on an MES upgrade to the z196/z114/zEC12.

zBX and Capacity on Demand

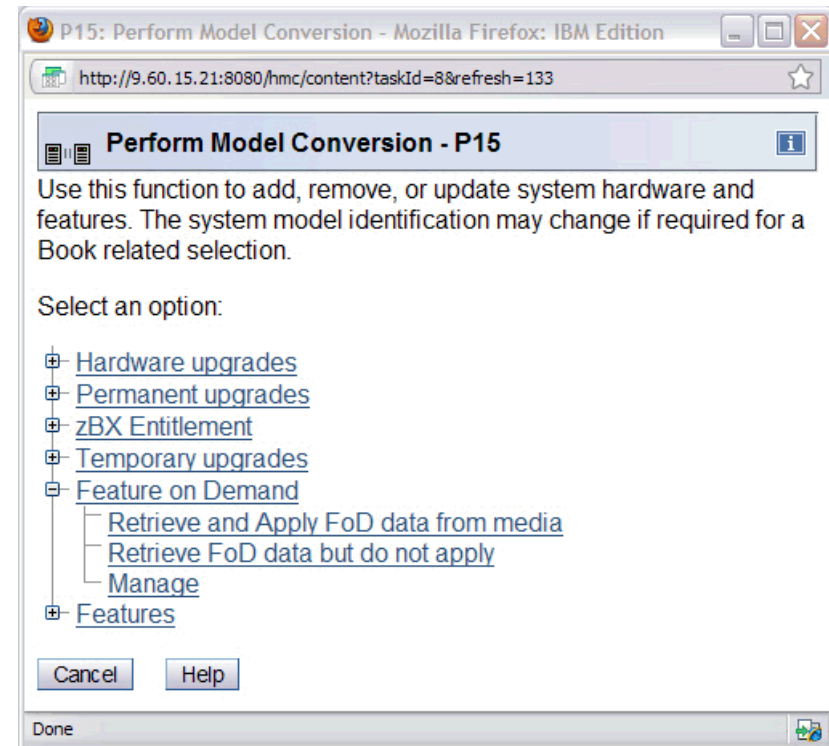
- There are no Capacity on Demand offerings for zBX
 - ▶ Customer Initiated Upgrade (CIU), Capacity Backup (CBU), On/Off CoD, and Capacity for Planned Event (CPE) will not be applicable for Blades on zBX. These functions only apply to CPs and specialty engines as they do on z10 today.
 - ▶ zBX Blades and features will only be ordered via eConfig no ordering will be done by Resource Link.

- Resource Link will be aware of Unified Resource Manager pricing to be used for IFLs

zEC12 - Capacity on Demand

- **Zero CP model now 400 vs 700 on z196**

- **Feature on Demand (FoD)**
 - ▶ A flexible LICCC record layout (providing easier LICCC enhancements)
 - ▶ The support for multiple FoD records (providing more space for LICCC data)
 - ▶ A concept to install delta records (needed for example to handle the zBX blade counts independently).



zEC12 Capacity on Demand

■ Changes to Perform Model Conversion Panels

- ▶ SE panel changes to remove defaults on some panels to prevent false CBU test activations.

Remove default
Yes

Force user to
click on
Yes or No

Temporary Upgrades - P00MNK4

Are you sure you want to change the activation levels for this record?

- Record ID: CB7BCLGW
- Description: 708 (8 CPs) model capacity (+2 FCs), +0 ICF, +0 zAAP, +0 zIIP, +1 IFL, +0 SAP
- Activation type:

	Original	New
Model-Capacity	706	706
Identifier		
CPs	0	0
SAPs	0	0
ICFs	0	0
IFLs	0	0
zAAPs	0	0
zIIPs	0	0
		ACT37464

ACT37464

Done 9.60.15.41:9950

Remove default radio selections

Panel today is preselected for zero Capacity CBU

Activating an On/Off CoD, CPE, or CBU Ord

Change Activation Levels - P00MNXX4

Record ID: CB7BCLGW Record Type: CBU Status: Installed
 Description: 708 (8 CPs) model capacity (+2 FCs), +0 ICF, +0 zAAP, +0 zIIP, +1 IFL, +0 SAP
 Model-Capacity Identifier: 706 CPs: 0 MSU Value: 474

--- Select Action ---

Select ^	Target Model-Capacity ID ^	CPs ^	Target MSU Value ^	MSU Cost ^
<input checked="" type="radio"/>	706	0	474	
<input type="radio"/>	707	1	540	
<input type="radio"/>	708	2	602	

Processors
 Select the counts you would like for each processor type.

SAPs: * 0 Current: 0
 ICFs: * 0 Current: 0
 IFLs: * 0 Current: 0
 zAAPs: * 0 Current: 0
 zIIPs: * 0 Current: 0

Activation Options

Test Activation
 Real Activation

Force activation

When you have finished changing the activation levels, press the "OK" button to save your changes.

OK Cancel Restore Current Levels Help

Done 9.60.15.41:9950

You can choose to create a test activation or a real activation of a record.
 We will create a test activation.

Remove default radio selections

User must specify

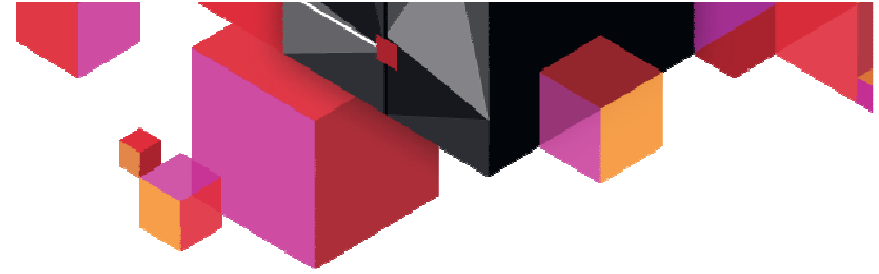


Capacity on demand sur System z : l'essentiel

OOCOD - On/Off Capacity Upgrade on demand -

Ses implications logicielles

Isabelle Silvain
Chef de Produit Logiciels System z - IBM France
Systèmes d'exploitation et Tarification logicielle
isabelle_silvain@fr.ibm.com



Evénements CPE et CBU : Règles logicielles

- Il n'y a pas d'impact logiciel sur la machine où une capacité de remplacement CBU ou CPE est activée.

4. Prix et redevances du Service de maintenance de Machines et Logiciels IBM

L'autorisation accordée au Client d'Activer une Mise à niveau RC ne lui donne pas droit à d'autres autorisations d'utilisation de Logiciels IBM. A condition d'un préavis raisonnable et d'une intervention pendant les heures ouvrées normales, limitant au minimum toute perturbation des activités du Client, le Client consent à accorder à IBM un droit d'accès suffisant aux Machines Éligibles RC, y compris et sans restriction aux informations relatives à l'utilisation des Logiciels IBM sur les Machines Éligibles RC, à seule fin de vérifier la conformité du Client avec les dispositions de Licences logicielles IBM.

Une Mise à niveau RC que le Client Active conformément aux dispositions stipulées soit dans la présente Annexe RC soit dans une Annexe associée RC ne change pas le prix et les redevances du Service de maintenance IBM et des Logiciels IBM (sous réserve que le Client respecte les licences d'utilisation des Programmes et Logiciels IBM). Pendant la période d'Activation d'une Mise à niveau RC, le Client continue d'acquitter toutes les redevances périodiques relatives au Service de maintenance des Machines IBM et des Logiciels IBM présents dans l'Entreprise du Client au tarif applicable antérieurement à l'Activation de la Mise à niveau RC et conformément aux dispositions de chaque contrat de Service de maintenance IBM et de Licence logicielle IBM. Si le Client outrepassé ses licences d'utilisation des Programmes et Logiciels IBM, le Client sera redevable, en sus des réparations dues en regard des dispositions du contrat ou de la législation en vigueur, de toutes les redevances additionnelles dues au titre des licences concernées.

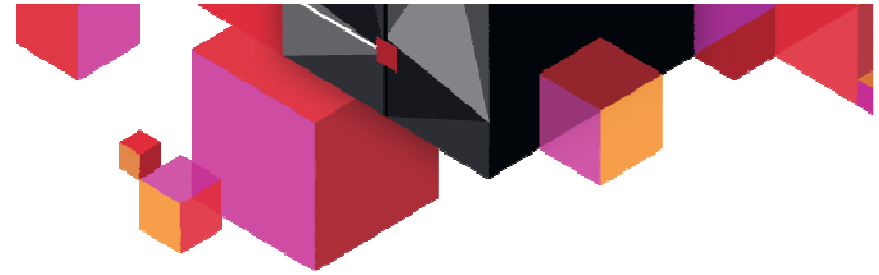
(Annexe relative aux offres IBM System z Replacement Capacity référence INTC-7880)



CBU Capacity Backup : Règles logicielles (1)

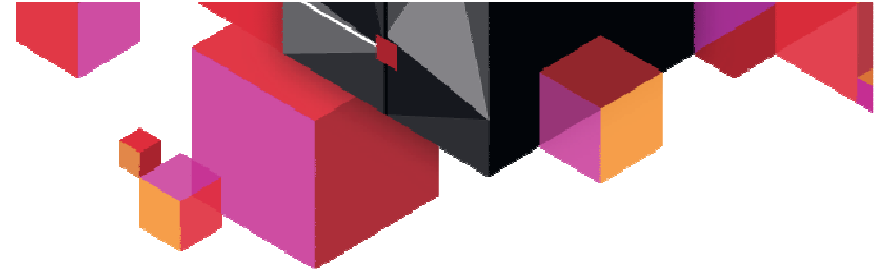
- Mise en oeuvre CBU en cas d'urgence -Disaster Recovery- et de tests des procédures de backup
 - ▶ **Urgence** – Événement suite à d'une perte importante et **imprévue** de Capacité sur une Machine
 - ▶ **Test** = procédure menée par le client pour **tester le processus d'activation d'urgence**

- Charges autorisées lors d'un Test CBU
 - ▶ **Au cours d'un Test CBU**, avec la Capacité résultant de la Mise à niveau CBU, le Client peut :
 - (1) **Exécuter une charge de travail hors Travail de production** (qui peut comprendre une ou plusieurs copies du Travail de production du Client, à condition que le Travail de production s'exécute simultanément sur la Machine de production du Client)
ou
 - (2) **exécuter un Travail de production**, à condition que pendant la durée du test CBU, la capacité de production System z équivalente à celle apportée par la Mise à niveau CBU soit effectivement mise hors service ou rendue inutilisable de toute autre façon par le Client.



CBU Capacity Backup : Règles logicielles (2)

- Il n'y a pas d'impact logiciel sur la machine où la capacité CBU est activée pendant une situation d'urgence ou un test
- Cas d'une machine en mode sub-capacity
 - ❖ **Si facturation en mode sub-capacity, possibilité d'un impact SCRT**
 - Le calcul automatique de la moyenne des 4 heures glissantes (4HRA) sur les intervalles de temps où une capacité CBU est activée peut être affectée par une utilisation accrue.
 - ❖ **Utilisation du paramètre EXCLUDE**
 - Le client doit annoter le rapport SCRT avec le paramètre EXCLUDE
 - Exclusion des partitions impliquées pour les intervalles de temps d'activation CBU
 - Note : valeur RESUME = 3 heures après la fin de l'activation CBU (impact 4HRA)
 - ❖ **Explications dans CUSTOMER COMMENTS**
 - Tous les détails dans le SCRT user's guide : chapitre 14 Common SCRT problems
 - page 253 de la dernière édition d'octobre 2012, paragraphe 'providing alternate msu values'



On/Off Capacity on Demand : Règles logicielles

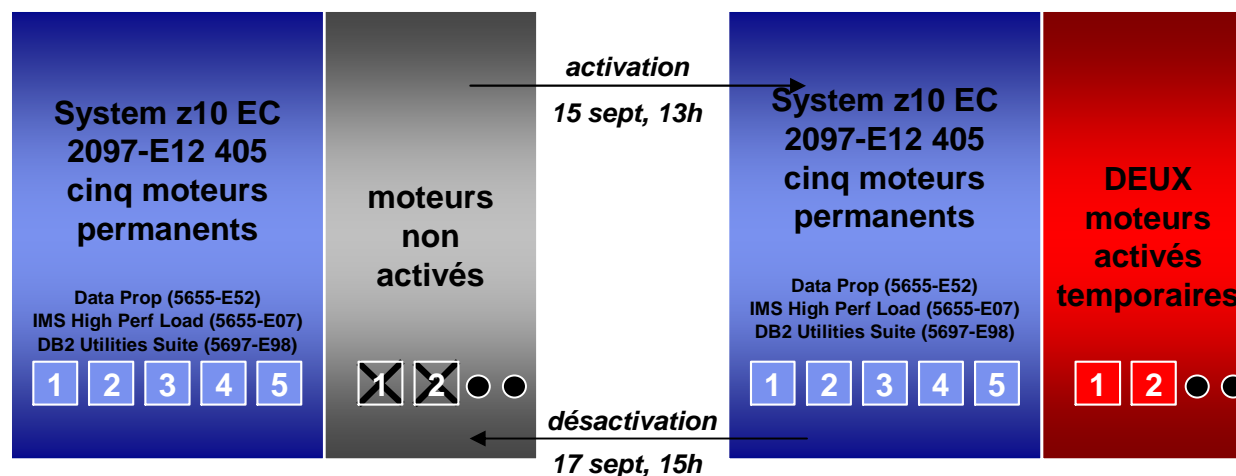
- La facturation **à la journée** de l'offre On/Off CoD sur zEC12, z196, z114 et z10 s'applique aux logiciels z en IPLA :
 - ❖ Liée à la durée en jours et à la capacité temporaire en MSU
 - ❖ Applicable aux logiciels IPLA d'un serveur donnant droit à l'offre On/Off CoD
 - ❖ Applicable aux logiciels éligibles et en IPLA
 - Clients doivent avoir une licence à la capacité totale (permanente + temporaire) pour les logiciels en IPLA non éligibles à cette offre

- La facturation **au mois entier** s'applique aux logiciels ayant une redevance mensuelle MLC :
 - ❖ Pour les logiciels en PSLC, en WLC ou en EWLC à la capacité totale de la machine la redevance est basée sur la capacité totale de la machine prenant en compte la capacité de l'événement OOCOD (**permanente + temporaire**)
 - ❖ Pour les logiciels en WLC ou EWLC à l'utilisation de la capacité de la partition, la redevance est basée sur la valeur moyenne sur 4 heures glissantes (4HRA) la plus haute du mois.

 - ❖ Il n'y a pas de facturation à la journée.



Facturation des logiciels MLC avec OoCoD : environnement en pleine capacité



Facturation IBM standard
MLC septembre
(émission fin août)

Tous les logiciels MLC
sont facturés à hauteur
de 118 MSUs

+

Facturation spéciale
OoCoD
(émission après
l'événement OoCoD)

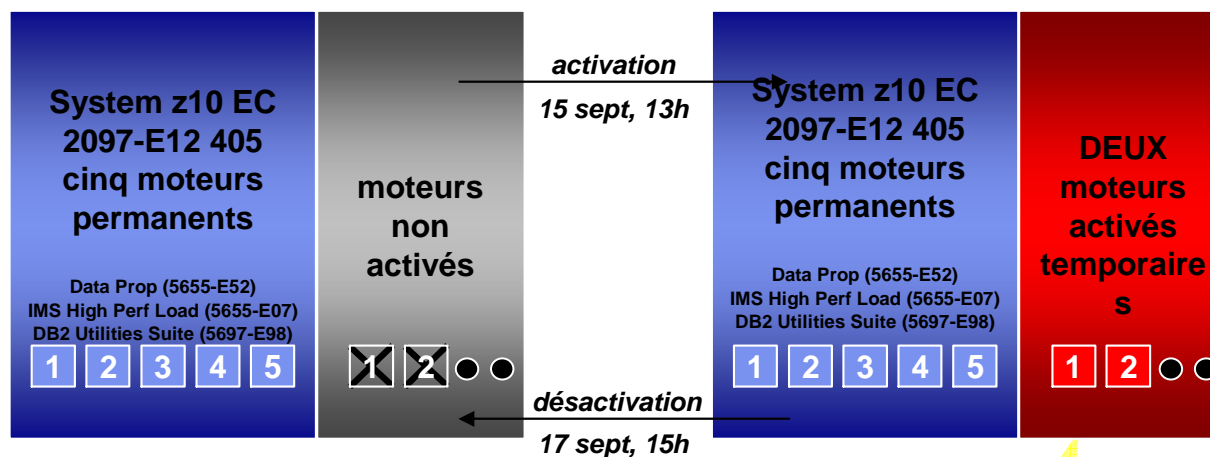
Application du delta MLC
entre 160 MSUs et 118
MSUs sur tous les logiciels

=

Au titre de
septembre, le
client est
facturé à
hauteur de 160
MSUs



Facturation des logiciels MLC avec OOCoD : environnement variable en sub-capacity

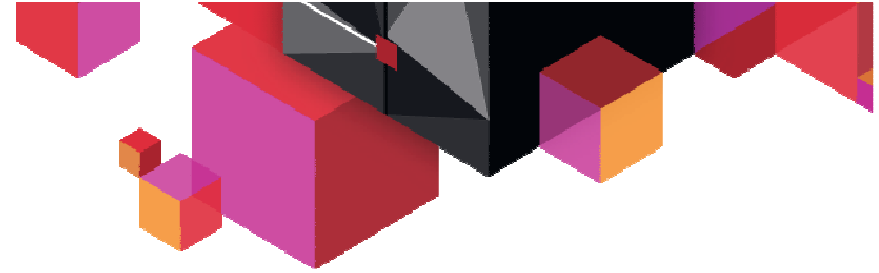


Facturation émise en Novembre
(sur la base des mesures SCRT
du mois de Septembre)

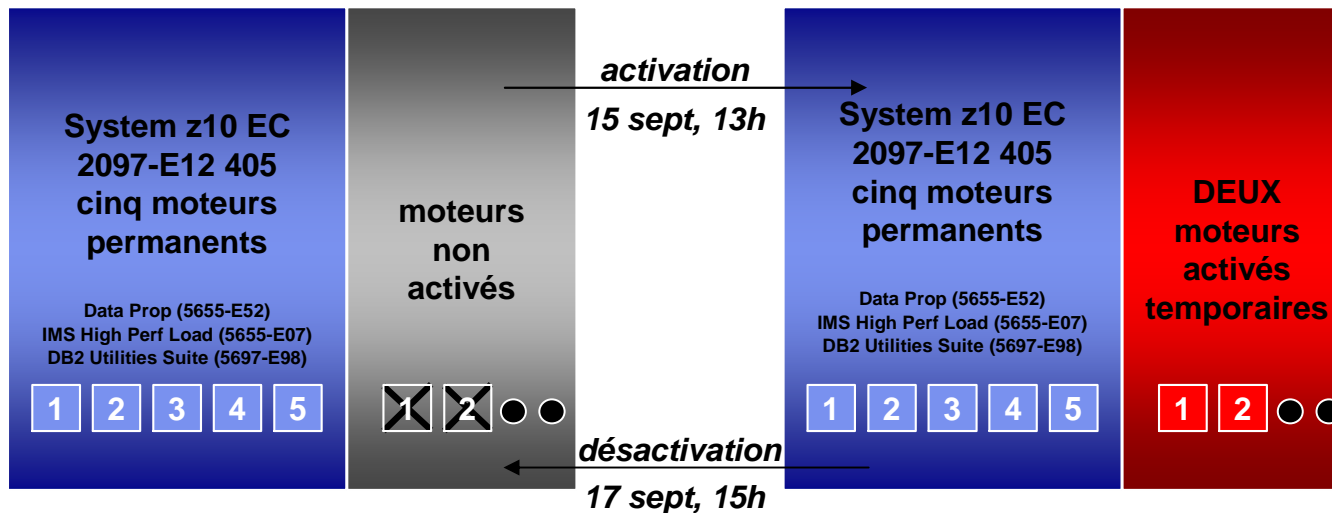
Moyenne des 4 heures
glissantes
(4HRA)

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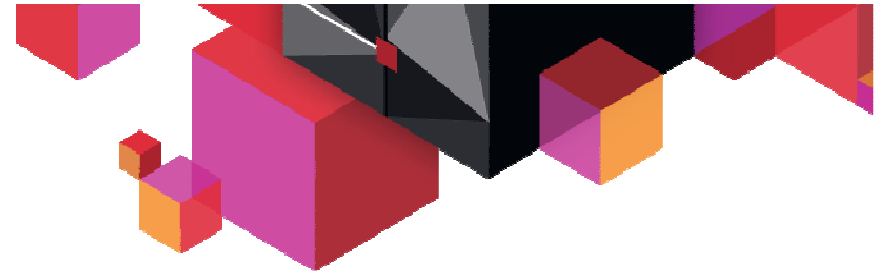
**Au titre de
septembre, le
client est facturé à
hauteur de la
pointe de charge
mesurée**



Offre On/Off Capacity on Demand : principe IPLA



- La durée en jours se calcule par tranches entières de 24 heures
 - ❖ Dans cet exemple 3 jours
- OOCoD est facturé en fonction de la capacité MSU mise en oeuvre temporairement
 - ❖ Dans cet exemple $160 - 118 = 42$ msu
- Facturation OOCoD sur une base de $3 * 42$ msu-jours



OOCoD et implications IPLA

- La tarification OOCoD des activations de capacité temporaire pour les logiciels IPLA est calculée sur une base d'utilisation estimée d'environ 90 jours.
 - ❖ Un achat permanent de capacité doit être considéré pour une activation OOCoD d'une durée proche de 90 jours.
 - ❖ OOCoD est facturé en fonction de la capacité MSU mise en oeuvre temporairement et de la durée en jours de cette mise en oeuvre.

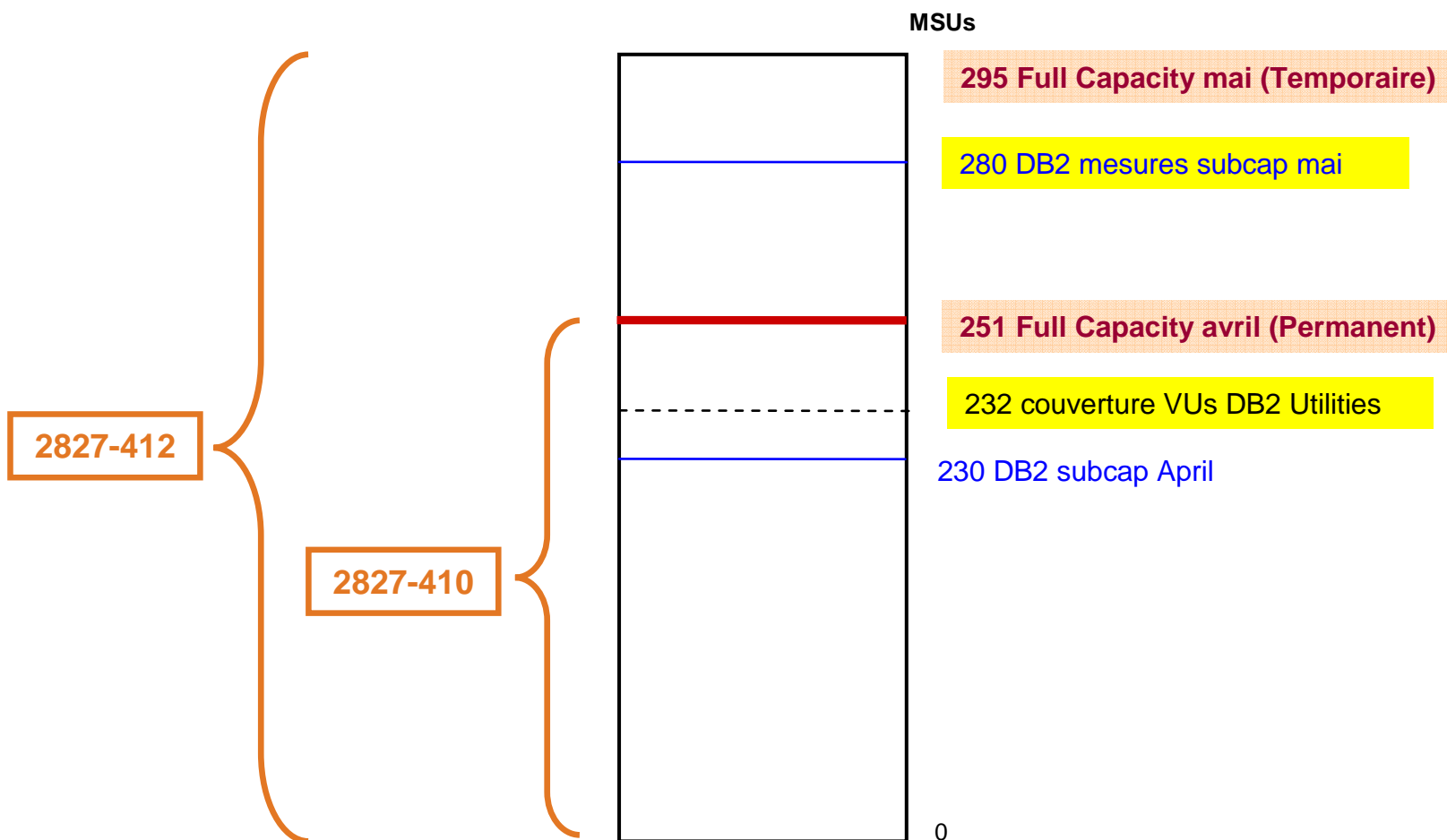
- Les charges OOCoD couvrent les parties OTC et S&S.

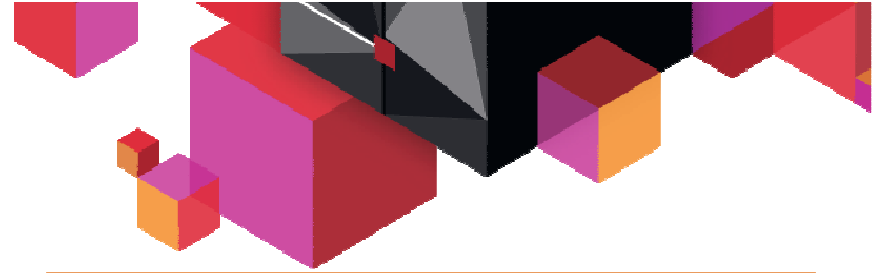
- Les charges logicielles IPLA pour une utilisation OOCoD ne concernent que les VUs temporaires en dépassement des VUs permanentes.
 - ▶ Seule la capacité temporaire au delà des licences acquises de façon permanente - VU entitlement - est facturée au titre du OOCoD.
 - ▶ Contrats : l'avenant pour 'On/Off CoD Software Charges' doit être signé pour pouvoir prendre en compte les VUs permanentes acquises et ne facturer que les dépassements (INTC-7391-00 4/2006)



Un exemple d'application:

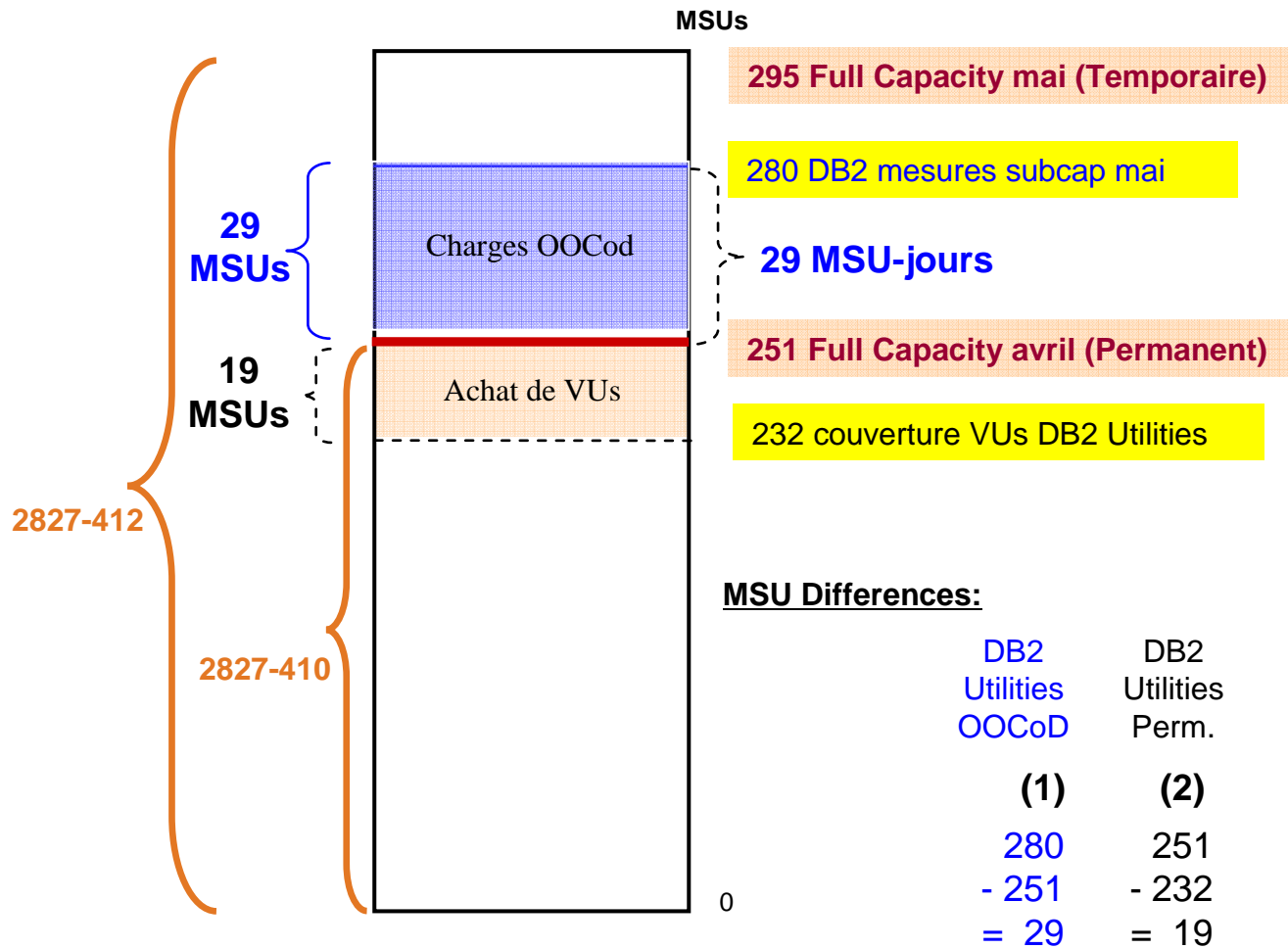
Événement OOCoD en mai :
Activation de 2 moteurs pendant 1 jour





Un exemple d'application

Evénement OOCod en mai
 Activation de 2 moteurs pendant 1 jour



Des charges OOCod sont applicables au dépassement MSUs au delà de la capacité permanente (29). (1)

Un achat de VUs permanentes est requis au delà de la couverture VU pour couvrir la capacité permanente de la machine (19) (2)

