Tailored Fit Pricing for IBM Z – Software and Hardware

Consumption Solutions for the IBM Z Platform

IBM HW Infrastructure Workshop

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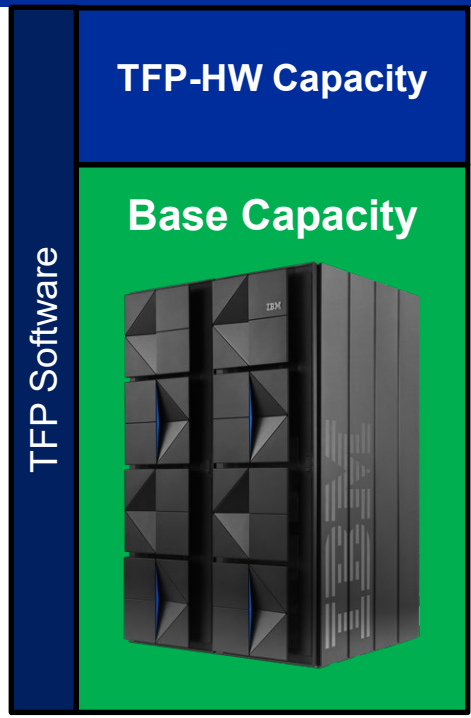
IBM Z



Business and technology

- In a world of ever-increasing digitalization, volatility & unpredictability on IT demand is fast becoming the norm
- Traditional ways of paying for software and hardware are no longer meeting these demands
- With IBM Z® at the core of the world's economy, a commercial reset was essential.

Business agility with Tailored Fit Pricing for IBM Z

Establishing a commercial confidence for our customers to:

a) allow workloads to evolve as they naturally need to do
   - grow organically
   - get spikier

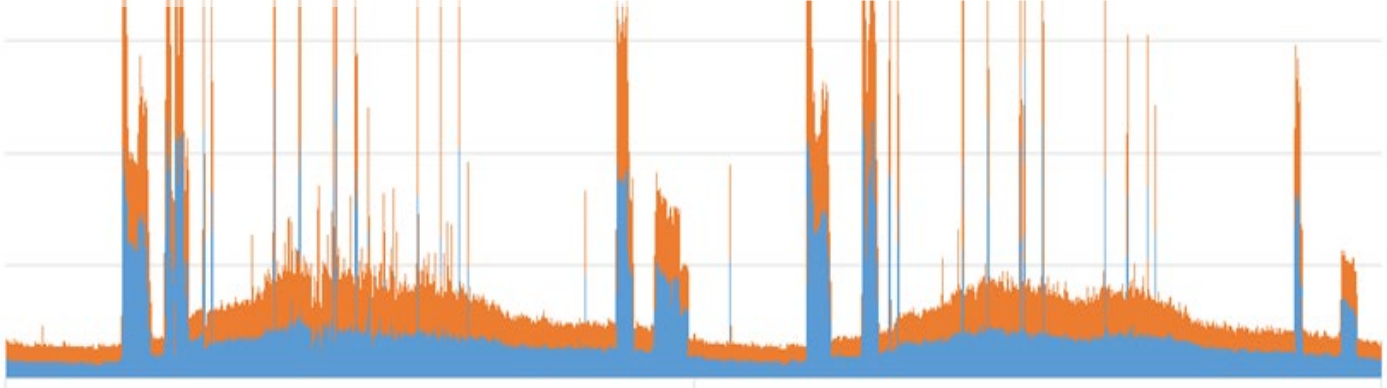
b) do new things with the IBM Z platform (Digital transformation, modernization, exposing existing assets to new channels, new architectures)

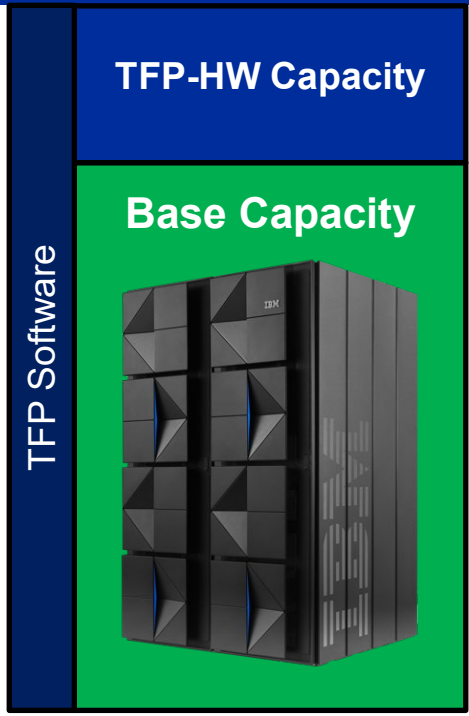
c) be better prepared for the unexpected

Why Tailored Fit Pricing for IBM Z – Software and Hardware

(Un)predictable high spiking business critical workloads

- Social, Mobile and Traditional Media
- Mobile payments
- FinTech companies, Apple Pay, iDeal, etc.
- Regulators (PSD2/Instant Payments)
- New Customer Demands
- Changing Batch to On-Line
- D-DoS attacks
- Pandemic outbreaks like COVID-19
  - Stock & Currency exchange volatility and reactions
  - More card payments / less cash payments
  - Cancellations of Hotel / Flight tickets / Rentals
  - Medical impacts
  - Scattered workplaces (work from home)





Tailored Fit Pricing for IBM Z – Software and Hardware

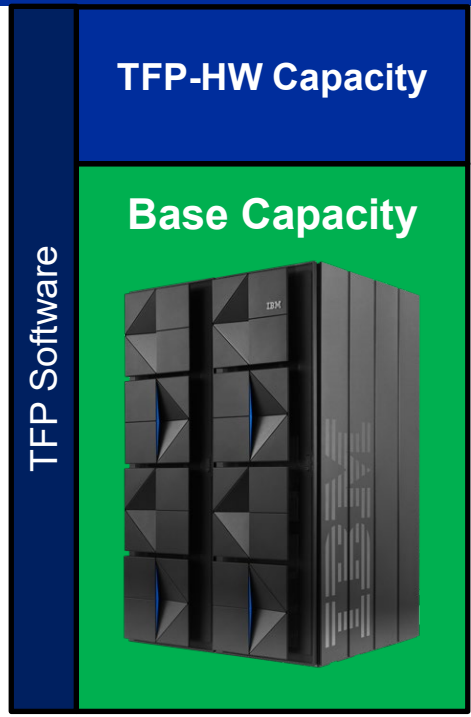
Consumption Solutions for the IBM Z Platform

Tailored Fit Pricing (TFP) – A family of commercial solutions across the IBM Z software & hardware stack

- TFP Software Consumption Solution
- TFP Hardware Consumption Solution
- Complemented by the DevTest Solution

Common themes across the IBM Z TFP Consumption Solutions:

1. Delivering a new level of commercial confidence
2. Consumption based pricing directly linked to usage – no more paying to the peaks
3. Technology & pricing prepared and ready for the unpredictable
4. Running the IBM Z technology as it was designed, with all capping removed
5. SW and HW complementing the value in each other
6. An enabler to IBM Z platform innovation and growth



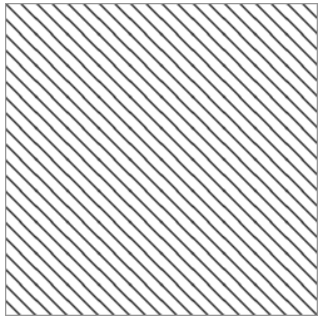
Evolution of IBM Z software pricing

Adapting to customer demand

1970 - 1999

Past

Full Capacity



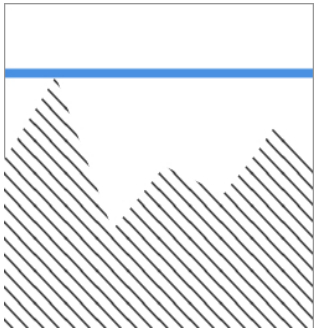
Simple way to charge for IBM z/OS-based software

1999 - 2019

What was prevalent

Sub-Capacity

(R4HA)

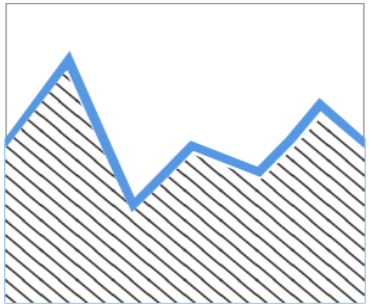


Modelled on >80% utilization

2019 onwards

Present

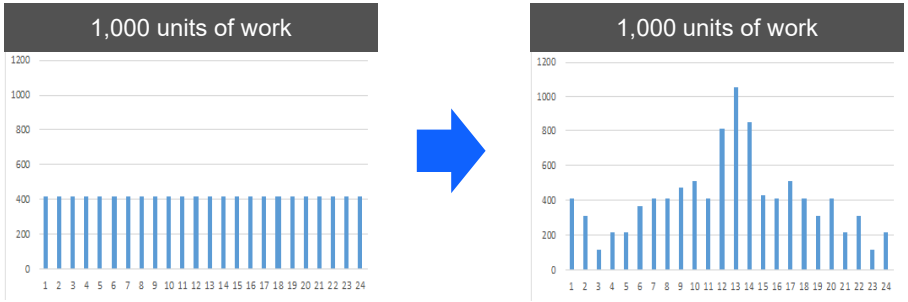
Tailored Fit Pricing



- Consumption pricing to align with business performance
- Removal of 'peak-based' pricing
- Architect to business outcomes, not billing.

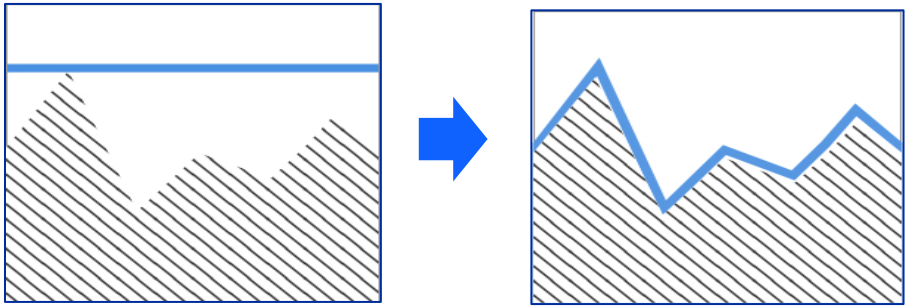
Tailored Fit Pricing for IBM Z Software

Our customers' workloads changing shape



- Our customers' workloads are evolving:
  - Growing organically
  - Evolving to be increasingly spikier
- Innovation on IBM Z being stifled through the R4HA
- A 20+ year old pricing model struggling to remain relevant

Increasing our customers' commercial confidence in IBM Z



Cloud-like consumption-based pricing enabling customers to:

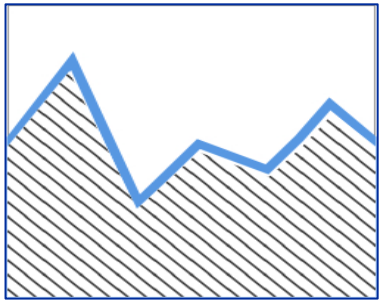
- Take full advantage of all available hardware
- Peak and spike without 'penalty'
- Align usage/billing with business performance
- Commercially enable their IBM Z environment for growth, modernization and innovation

Tailored Fit Pricing for IBM Z Software

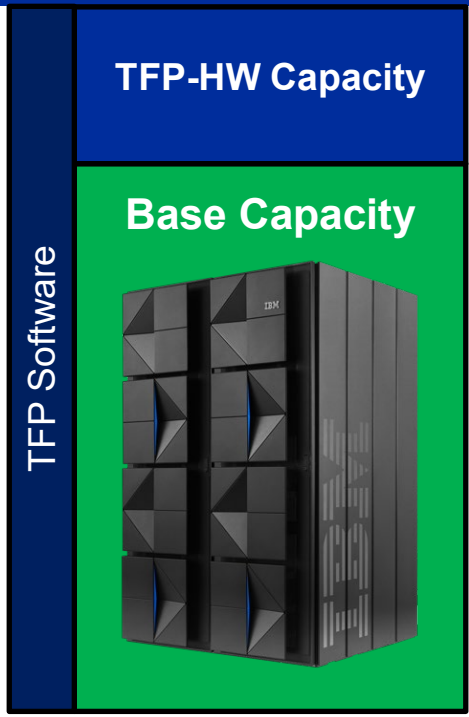
Consumption-based pricing instilling a greater commercial confidence for innovation

- Applicable to IBM Z Monthly License Charge (MLC) & IPLA Software
  - MLC handled through a TFP MSU baseline, annual entitlement and highly competitive price for all forms of growth
  - IPLA entitlements retained, and able to be utilized in an annual consumption entitlement
- No price penalty for peaking/spiking across the entire IBM Software stack
- Advancing from a 20+ year old commercial model to cloud-like pricing for on-prem computing

No longer buying to the peaks



- Architect and manage the IBM Z environment to business results rather than billing
- Removing all capping for improved online & batch performance
- Pricing across the software stack directly aligned to usage, not peaks



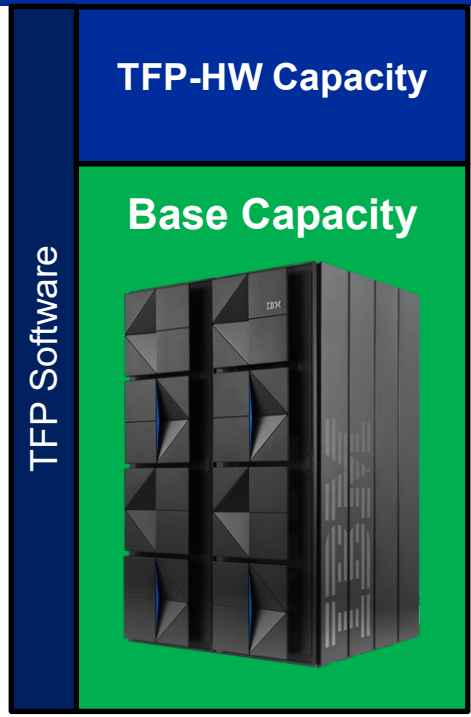
Tailored Fit Pricing for IBM Z – Software and Hardware

Consumption Solutions for the IBM Z Platform

With the IBM Software priced on a consumption basis, customers are now able to increase IT capacity to meet business demands without software billing concerns.

Highly complementary to the TFP Software Consumption Solution, the TFP Hardware Consumption Solution delivers:

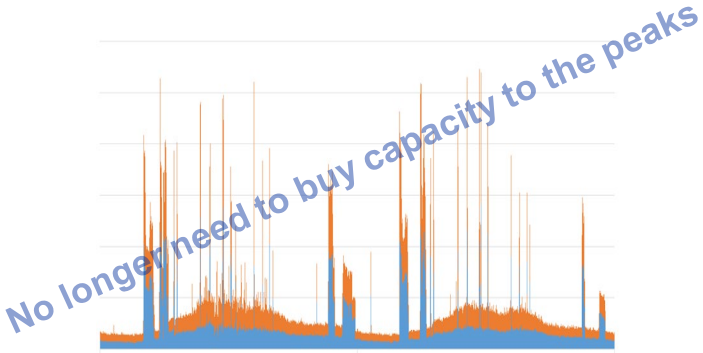
- Always-on TFP-HW capacity, above the customer owned base capacity
- Paid for through a subscription and consumption usage fee
- A full IBM Z stack approach to delivering the commercial confidence for existing workloads to spike as business demands, to be prepared for the unexpected and to fully unleash mainframe innovation



Tailored Fit Pricing for IBM Z – Hardware

Solution for unpredictable, high spiking, business critical workloads

- Fixed size capacity corridor on top of customer owned capacity
- Always-on / activated 365/7/24
- Subscription fee for the always-on capacity
- Cloud-like usage charge granularity of 1 hour, based on actual MSU usage measured, not full engine capacity



- Better efficiency, reduced overhead, shorter response times
- Faster transaction processing, with shorter spikes of high utilization
- Only available on IBM z15™ & z16™ and General-Purpose CPs with Tailored Fit Pricing Software

Tailored Fit Pricing for IBM Z – Software and Hardware

Consumption Solutions for the IBM Z Platform

Tailored Fit Pricing for IBM Z

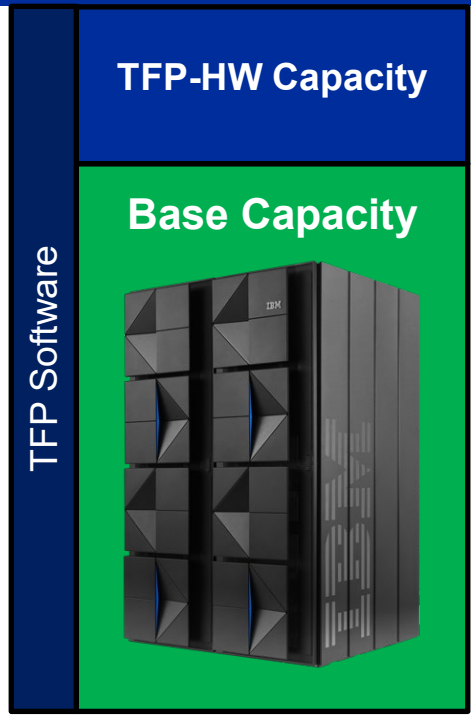
A consistent and complementary family of pricing solutions to increase our client's commercial confidence to:

a) See workloads evolve as they naturally need to do

- ➢ Grow organically
- ➢ Get spikier

b) Increase the amount of modernization & innovation on IBM Z

c) To be better prepared for the unexpected

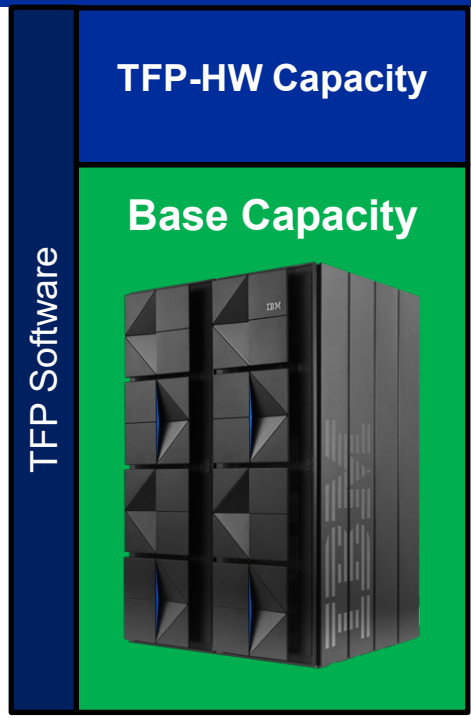


Tailored Fit Pricing for IBM Z – Software and Hardware

Consumption Solutions for the IBM Z Platform

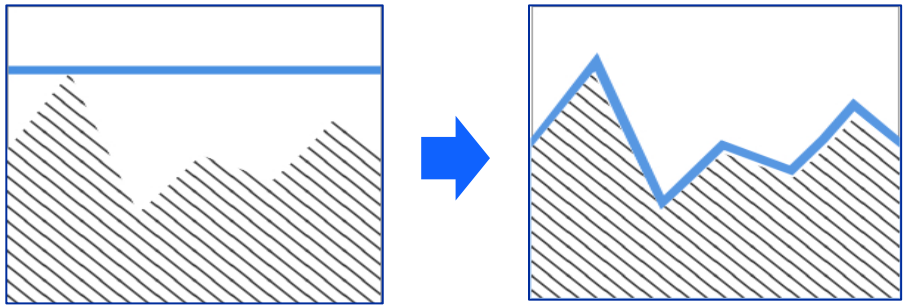
TFP Consumption Solutions Deeper Dive

1. **Software Consumption Solution**
2. Hardware Consumption Solution



Tailored Fit Pricing for IBM Z Software
MLC Software

a. Transitioning MLC from Rolling 4 Hour Average (R4HA) to TFP Software Consumption



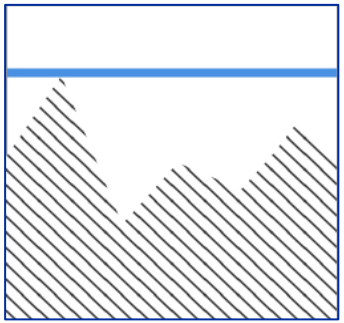
A baseline established using a repeatable approach on each customer's specific data.

Example Consumption Costs	
Previous 12 months MLC	$12m
Previous 12 months MSUs consumed	12m
TFP Effective price per MSU	$1
Growth price per MSU	$0.50

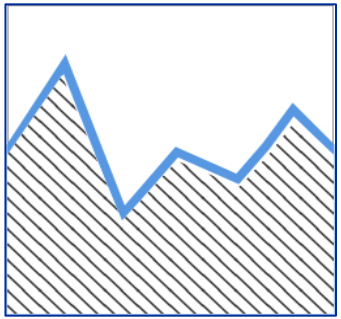
Annual MSU entitlement
+
Price per MSU for all growth above entitlement
(Unused entitlement can be rolled forward during life of term)

Tailored Fit Pricing for IBM Z Software
IPLA Software

b. Transitioning IPLA into TFP Software Consumption



Transitioning license entitlement to a Consumption model (Annual Entitlement)



1. Utilize
2. Annual entitlement to smooth out seasonal variation.
3. Use in any sized machine.
4. Peak & spike without price penalty

All whilst utilizing what's already owned

Note: Full Capacity Software licensing also available for IPLA software in a TFP Consumption model.

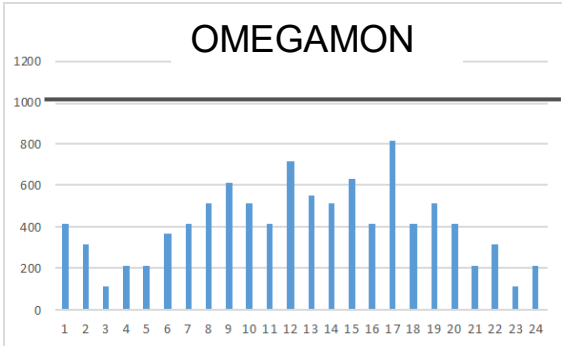
Tailored Fit Pricing for IBM Z Software
IPLA Software (Continued)

b. Transitioning IPLA into TFP Software Consumption (Continued)

OTC Product ***EG OMEGAMON®***

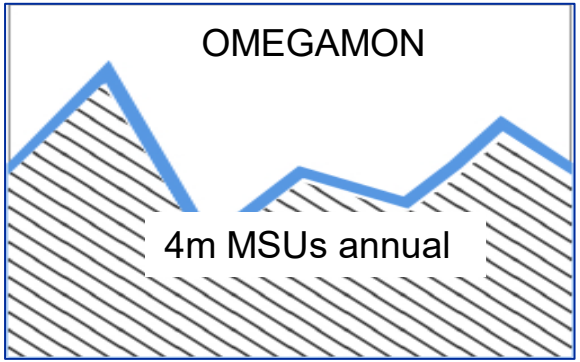
Last 12 months:

Entitled at	800 MSUs
Product peaked at	800 MSUs
Environment Consumed	4m MSUs



OTC Product ***OMEGAMON***

Eligible for	4m MSUs (annual)
License entitlement used	800 MSUs



EG Actual consumption is 6m MSUs, i.e., 2m over entitlement

$$\frac{\text{2m MSUs consumed} * \text{EF}}{\text{5,000}} = \text{400 MSUs additional license required*}$$

*Entitlement Factor also applied:

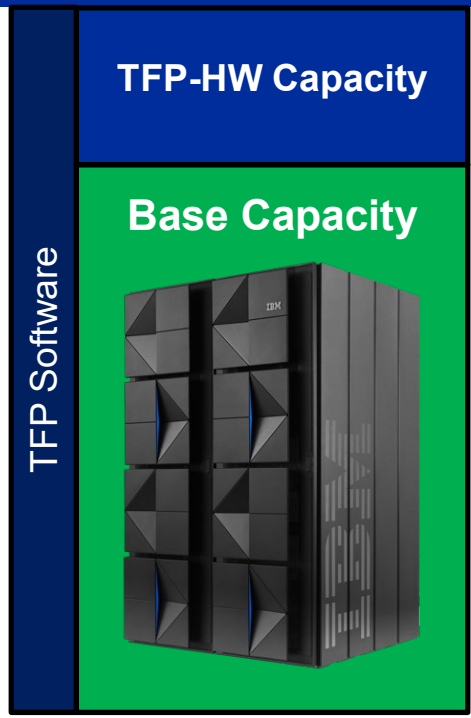
- calculated at time of transition to TFP
- applied against growth requirements
- Helps preserve the nature of some licensing where not deployed in every LPAR (EG Execution based)
- Capped at 1

Tailored Fit Pricing for IBM Z – Software and Hardware

Consumption Solutions for the IBM Z Platform

TFP Consumption Solutions Deeper Dive

1. Software Consumption Solution
2. **Hardware Consumption Solution**



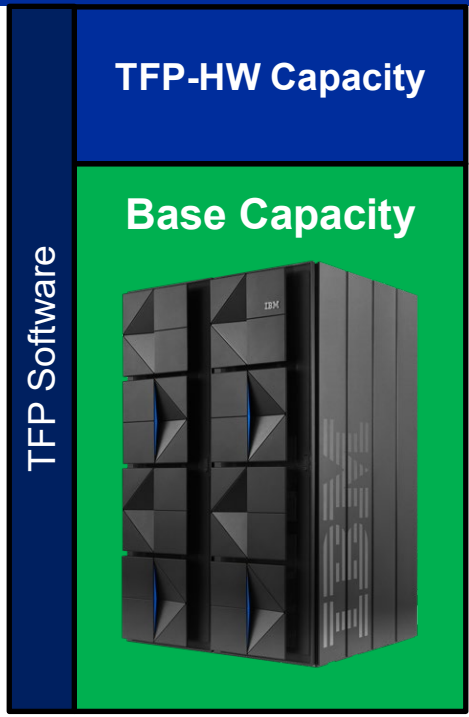
Tailored Fit Pricing for IBM Z – Software and Hardware

Consumption Solutions for the IBM Z Platform

"Our business needs are constantly changing in response to customer demand, market changes and new regulations. IBM Z plays a key role in our operations, and with sudden workload spikes due to online banking and instant-payments, it allows us to scale quickly and deliver high quality customer service. Tailored Fit Pricing for IBM Z Hardware Consumption offers a flexible and transparent pricing solution that delivers optimal business performance in a cloud-like way, so we only pay for what we use."

Spokesperson

Large European Bank

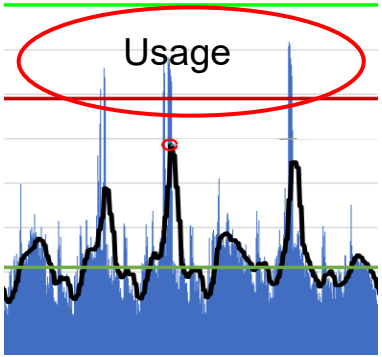


Tailored Fit Pricing for IBM Z Hardware

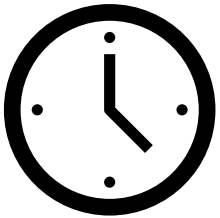
Basis for the measurement

For the purpose of TFP-HW charging,
'Calendar Day' – is a 24-hour period starting at 00:00:00 and ending at 23:59:59

'Hour' – is a 60-minute period starting at the top of the hour (e.g., at 11:00:00, 12:00:00, 13:00:00, etc.) and ending just prior to the top of the following hour (e.g., at 11:59:59, 12:59:59, 13:59:59, etc.)



Where and what we measure



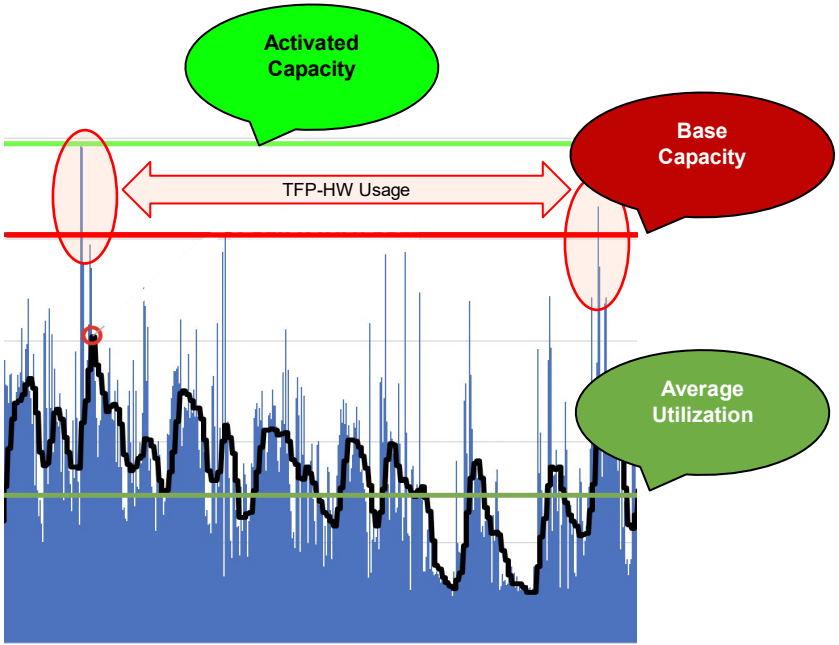
- Using the SCRT Reporting capabilities (I5 and V9 Sections)
- Total MSU measurement minus customers owned capacity = usage

Tailored Fit Pricing for IBM Z – Hardware

Hardware Consumption Solution Pricing

Two dimensions:

- *Subscription Charge*
  - Per machine, per month, based on the purchase price of the capacity
  - Minimum of 12 months contracted
  - Flat charge based on LSPR capacity levels (Ex. delta between IBM z15-712 and IBM z15-714 = 310 MSU / 13.1% TFP-HW Corridor Size)
- *Usage charge* is based on measurements within the TFP-HW capacity per month based on:
  - Millions Service Units (MSU) usage above Base Capacity
  - Number of intervals within TFP Hardware*
  - Hourly charge per MSU**
    - > 4 hours = daily charge
  - Minimum charge is one hour for one MSU



*Using 15-minute intervals that are generated within SCRT V9 section
**Measured usage above Base Capacity = TFP-Hardware Usage

Tailored Fit Pricing for IBM Z – Hardware

How do we calculate TFP HW MSU usage

Hourly usage is defined as the highest of the four 15-minute measurements taken in an hour starting at XX:00:00 (the top of the hour), and will be invoiced at the Hourly Usage charge / rate per MSU for the MSU usage measured above the base capacity.

For example, if the measured usage for the four 15-minute intervals between 00:00 and 01:00 is: 15 MSU, 10 MSU, 18 MSU and 12 MSU above the base capacity, then the TFP-HW usage for that hour is 18 MSU (yellow bar).

When usage during more than 4 hours is detected within a calendar day, then we charge for usage at the Daily Usage charge / rate per MSU for the highest measured 15-minute interval in that calendar day (red bar). All lower intervals during the same calendar day will be ignored for usage charging.

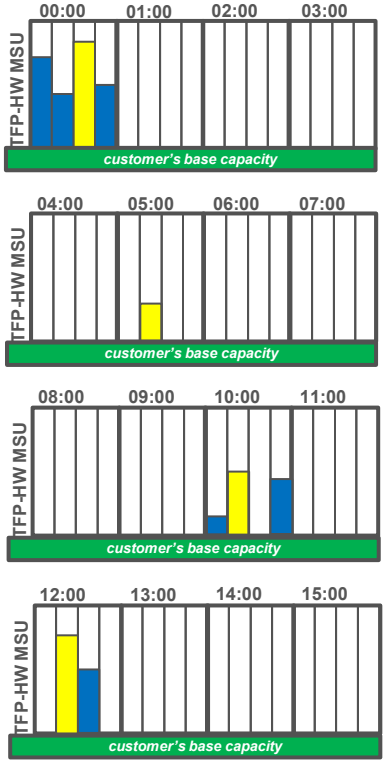
The standard MSU-HOUR rate is 4/24th of the MSU-DAY (24/24) rate.

15-minute measurement

Hourly Usage

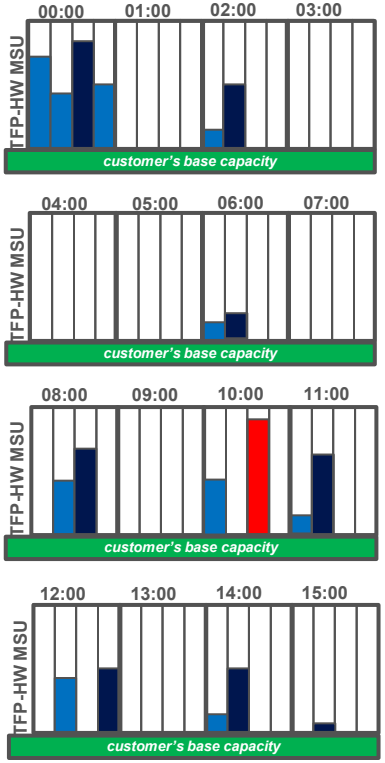
Daily Usage

Example of four hourly charges



One Calendar day

Example of a daily charge



One Calendar day

Tailored Fit Pricing for IBM Z – Hardware

Efficiency benefits of TFP-HW

Positive performance effect from additional active processing capacity, even when no usage is measured

- Improved & more predictable response times with lower latency (especially when compared to a public cloud solution)
- Faster transaction processing, with shorter spikes of high utilization
- Higher number of active processor engines have a positive n-way effect (higher parallelization) and delivers more cache; less contention and overhead
- Optimized workload handling under customer defined utilization thresholds
- Improved insight for future capacity planning
- Improved balance between physical and logical Central Processor (CPs)
- Reduced Processor Resource/System Manager (PR/SM) logical partitions (LPAR) management, less overhead

Tailored Fit Pricing for IBM Z – Hardware

MSU Consumption Sensitivity to Utilization: The 4-10 Rule of Thumb

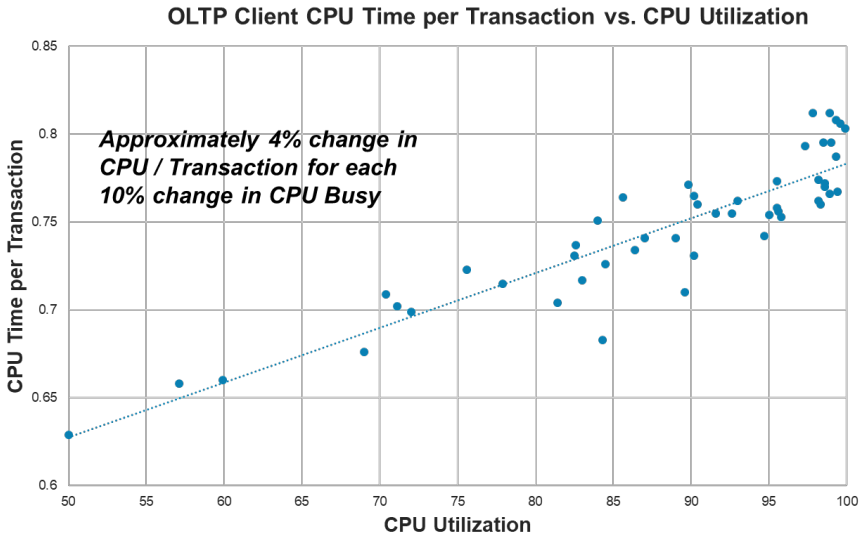
Machines run more efficiently at lower utilizations
- More HW cache per SW work unit
- Cost per transaction drops

Magnitude of effect varies by workload and n-way
- Lower n-ways see a smaller effect
- Lower RNI workloads have smaller effect

On average, a **10%** change in processor utilization results in a **4%** change in resource consumption (CPU time, MIPS, MSUs) per transaction (**3%** for low RNI, and **5%** for high RNI).

Processor utilization can be lowered by:

- running less workload on a constant HW configuration
- **running a constant workload on a larger HW configuration**

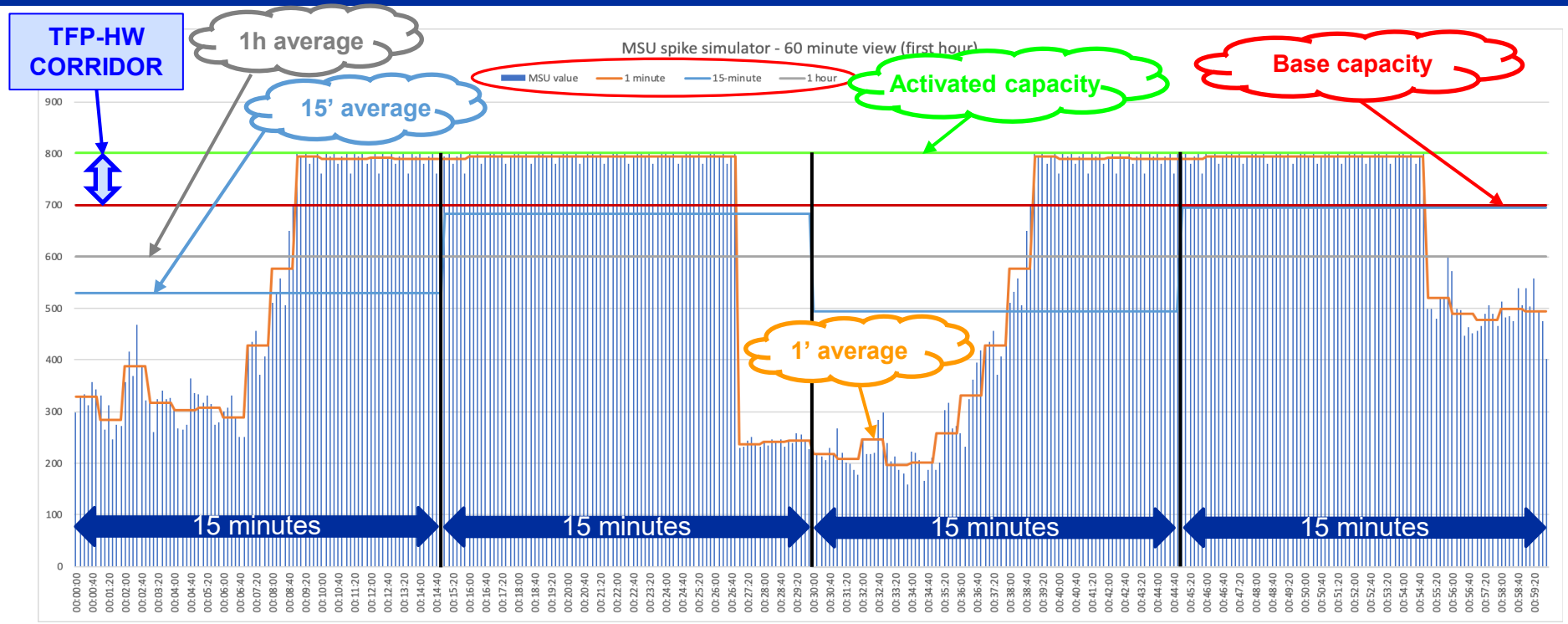


RNI = Relative Nest Intensity

Source: David Hutton, STSM, IBM Z Performance and Design

Tailored Fit Pricing for IBM Z – Hardware

Averaging effect when measuring usage*

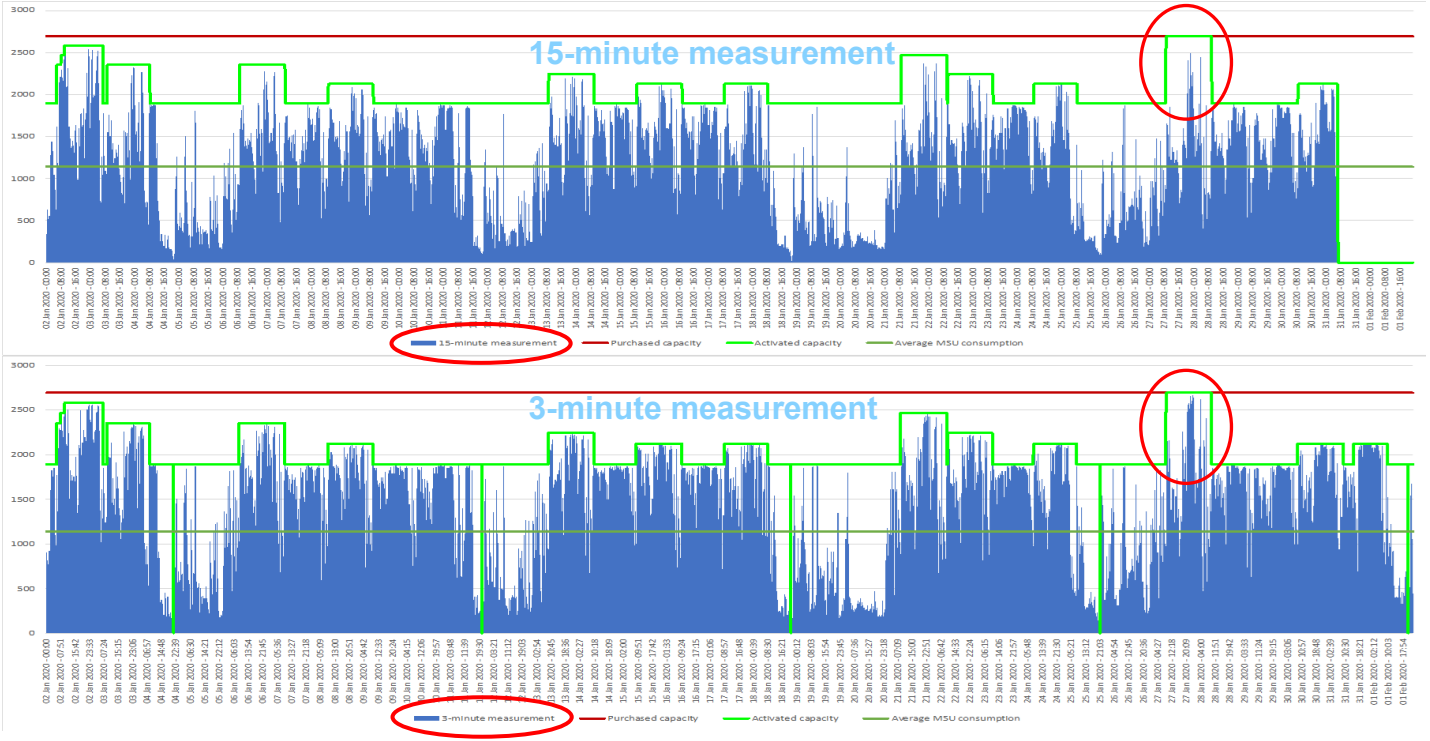


One hour usage simulation to show the effect of average

(* NOTE: Simulated data 10-second utilization data)

Tailored Fit Pricing for IBM Z – Hardware

Averaging effect when measuring usage

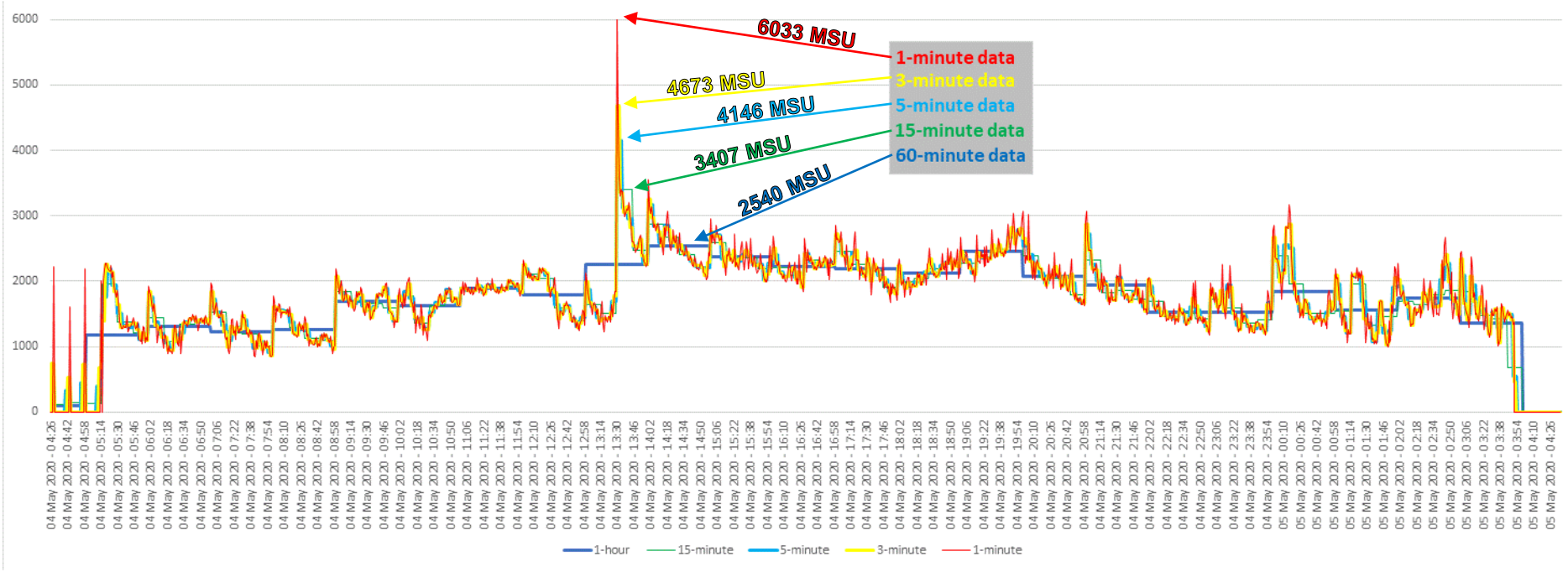


Compare:
3 and 15-minutes intervals

Real customer data: same machine/ period

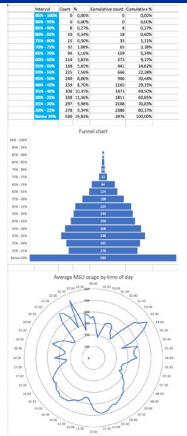
Tailored Fit Pricing for IBM Z – Hardware

Averaging effect: Comparison of 1-minute measured data to recalculated 3-, 5-, 15- and 60-minute MSU usage



Tailored Fit Pricing for IBM Z – Hardware

Free of charge TFP-HW assessment



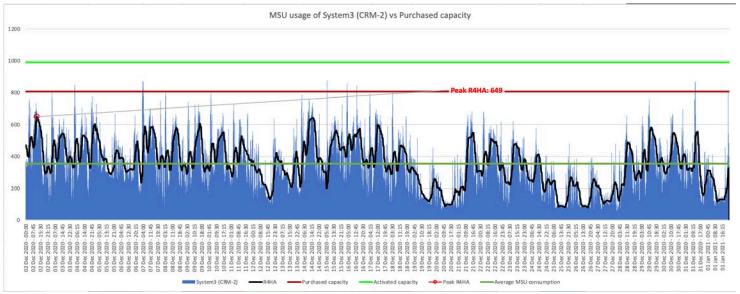
- Specify the following command on the SCRT SPECIAL DD statement:

  DETAIL_INTERVAL_RATE_DATA

- Production requires SCRT version 28
- We need a minimum of 3 Months SCRT V9 reports to analyze for the involved machines
- The SCRT report needs to be in *.csv format and not modified

This generates an optional SCRT report section V9 (as part of the standard SCRT report), which contains machine-level SMF interval data (15 minutes is the default)

SCRT Manual



The V9 section contains the following data:

- Start and end time for each interval
- Interval length (in minutes)
- MSU consumption rates
- Hourly R4HA values
- Permanent machine model and capacity levels
- Temporary machine model and capacity levels

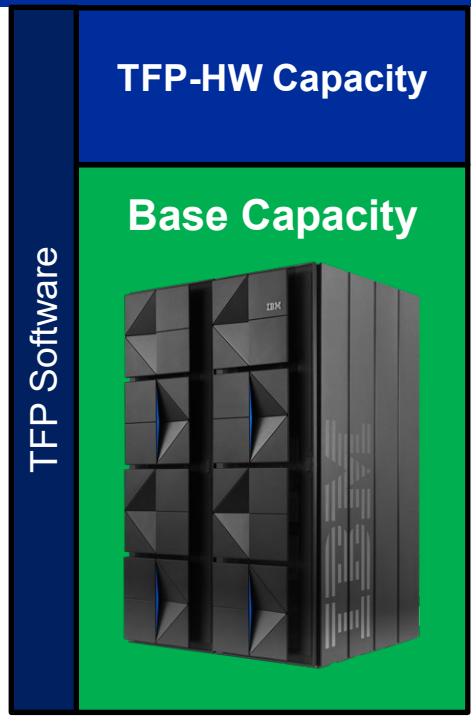
TFP-HW Capacity

Base Capacity

Tailored Fit Pricing for IBM Z – Software and Hardware

Consumption Solutions for the IBM Z Platform

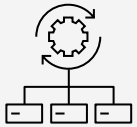
Complementary solutions to Tailored Fit Pricing



IBM Z

IBM Z Flexible Capacity for Cyber Resiliency

Plan and mitigate risk of potential future outages



Greater Flexibility

Dynamically shift production capacity between IBM z16 systems in different sites in seconds

Flexibility and elasticity for proactive outage avoidance, facility maintenance, compliance and disaster recovery – test and actual DR scenarios

Works in conjunction with other temporary record types

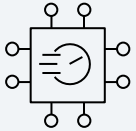
Complete Client Control

Remotely transfer capacity – no on-site personnel (IBM or client) required after initial set up

Flexibility over duration of capacity transfer, up to 1 year

Fully automatable using solutions such as GDPS

Integrates with System Recovery Boost for faster system and workload startup



Improved Compliance for Disaster Recovery

Simplify compliance and improve confidence both for testing and real DR scenarios

Closer mapping between test and production scenarios

IBM Z Flexible Capacity for Cyber Resiliency

Use Cases

Disaster Recovery & DR Testing

Transfer the capacity you need at your DR site to continue to run your business workloads. Automate and test recovery procedures for unplanned outages, including cyber attacks to provide near-continuous availability and disaster recovery.

Frictionless Compliance

Meet the ever-evolving stringent requirements of global regulators, allowing a highly automated and fast process to demonstrate a production site swap.

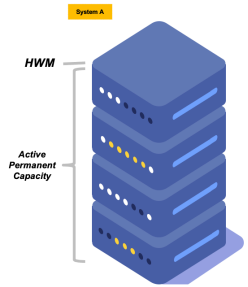
Facility Maintenance

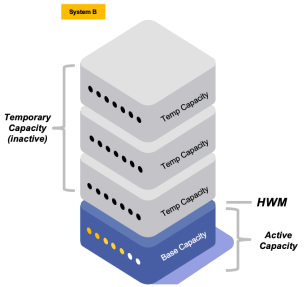
Run your production workload from your alternate site while you perform maintenance at your primary site with the capacity you need.

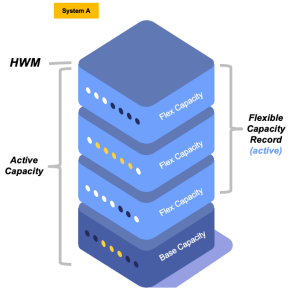
Pro-active Avoidance

Protect your critical business services from natural disasters. Avoid rolling power outages. Migrate your critical workloads to an alternate site before your business gets impacted and stay there for up to one year.

Technical Overview

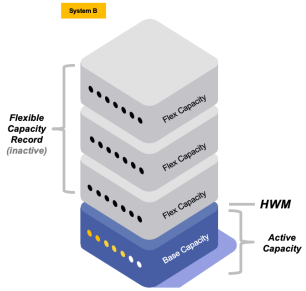




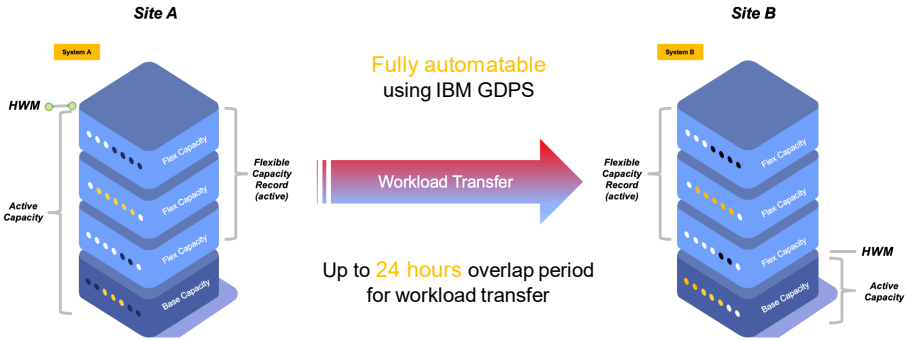


New Flexible Capacity temporary capacity record

All Engine Types supported (GPs, zIIPs, ICFs, IFLs)



Workload Transfer



Fully automatable using IBM GDPS

Up to 24 hours overlap period for workload transfer

Swap completed

Run production from your alternate site for up to 12 months

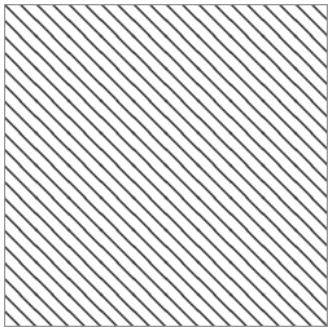
Transfer your production up to 12x a year

Terms and Conditions

Cross site movement	Inter site moves can be done - regardless of distance, mirroring or coupling technology. Intra site moves are NOT allowed (2 machines in the same datacenter cannot move capacity back and forth).
Entitlement	The owner of the machine holds a title to the physical hardware, the capacity of that machine is enabled and controlled via the LIC of the machine, which is licensed, not sold.
Overlap period	Up to 24 hr period, where the temporary record can be active on both system.
Activation limit	12 activations/deactivations per record in a year (12 activations translates to 6 round trips) .
Activation period	Keep the flexible capacity record active on your alternate site for up to ONE year.
License transfer	LIC is licensed only to one serial numbered machine, and its transfer to another machine is not permitted.
License expiration	The LIC license is expired 5 years past WFM. An invalid LIC license resumes if the System Z machine gets upgraded or replaced to a System Z machine not older than N-2.
TFP for SW	Offering requires TFP for software, CMP will get grandfathered in.
Maintenance	Continue with same pricing scheme as for zDR Cloud (price based on active capacity). Overlap time determined by the customer.
Microcode only	IBM Z Flexible Capacity for Cyber Resiliency is Microcode only. Additional Memory, IO Cards, drawers and other infrastructure related components need to be prepared by the client.
Call home	Customer agrees to use ”**Call Home**” data to monitor capacity usage.
Charges for capacity exceeding the temp record	Capacity used beyond purchased capacity will be charged at previously defined OOCoD prices.
Multiple TER records	If all purchased MIPS are made eligible for IBM Z Flexible Capacity for Cyber Resiliency, a client can install multiple TER records and move capacity to all servers of his installation (keeping the defined rules).

The DevTest Solution - Overview

Complementary to the TFP Consumption Solutions, and lowering the cost of increased DevTest Capacity



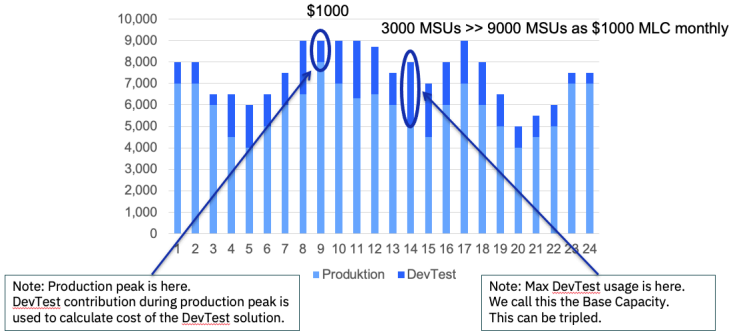
- Highly discounted full-capacity pricing, for standalone DevTest workloads.
- Always available DevTest, even at the busiest times

Up to a **3x** peak DevTest capacity, with no additional IBM MLC costs

IBM OTC DevTest licenses offered at uniquely discounted prices

Information required for calculation:

- The last 3 months of BAU SCRT reports (available)
- The last 3 months of Prod only SCRT reports
- The last 3 months of DevTest on SCRT reports



Note: Also underpins the zBurst Offering

IBM Z Temporary Capacity Offerings

	IBM Z **Flexible** Capacity for Cyber Resiliency	zDR CLOUD (Replaced with Flexible Capacity)	Tailored Fit Pricing for Hardware (TFP HW)	On/Off Capacity On Demand (OOCoD)	Capacity Backup (CBU)	Z Bulk Resiliency Stress Test (zBuRST)	System Recovery Boost Upgrade
Description	Allows active MIPS flexibility for all engine types between z16 servers to allow capacity swaps for an extended term.	Allows active MIPS flexibility between z14 or z15 production servers and DR servers to allow production and DR site swaps for an extended term	Additional capacity corridor above customer purchased capacity in whole engine increments, per CEC. Provides headroom capacity. Pre-req, z15and or z16.	Allows to temporarily add additional capacity or specialty engines due to seasonal activities, period-end requirements, peaks in workload, or application testing.	Allows to replace model capacity and specialty engines to a backup server in the event of an unforeseen loss of server capacity because of an emergency.	Allows to increase DevOps code quality by introducing massive quality assurance and/or stress tests	Allows you to make additional zIIPs temporarily available for a system recovery zIIP boost after planned or unplanned outages.
Use case	DR testing, **Emergency DR,** **Compliance Testing,** **Facility Maintenance,** **Pro-active Avoidance Site Swap** **Can be Automatic with GDPS**	DR testing and site swaps with 2 week notice to IBM with on-site CE at primary and backup facilities Planned Events	Unpredictable workload spikes, workload efficiency and improved response times, capacity planning for growth	Workload spikes peaks, application testing Activate by customer through Microcode	DR testing, Emergency DR	Volume / stress test of full production environment to address quality and scale	Planned or unplanned outages and recovery
Temp capacity engine type	Standard capacity, specialty engines	Standard capacity, specialty engines	Standard capacity	Standard capacity, specialty engines	Standard capacity, specialty engines	Standard capacity, specialty engines	zIIP engines
Max. number of activations / max. activation period	**12 times per year** / for maximum period of **12 months** **365 days**	4 times per year for maximum period of 6 months a year.	Always on / activated 365/7/24 During the term of the TFP HW contract	Used when needed, no limit on number of activations	10 day test per year additional tests may be ordered	Activated for maximum of 15 business days	30 activations (replenishable), 6 hours
Temp capacity limit	Up to production capacity. Without restrictions ie multi site or we don't care	Mirrored production only A to B	Corridor size defined at the time of contract	Defined at the time of configuration (up to double of owned capacity)	Defined at the time of purchase. CBU may back up multiple systems on a single system	Min. of 10 000 MIPS, Min 50% of prod. MIPS.	20 zIIP engines
Pricing	TFP SW pre-req. Pricing based on number of production MIPS moved. Special uplift price avail. for existing zDR customer	CMP or TFP SW Pricing required. 50% off regular MIPS/Specialty Engine price	TFP SW pre-req. Cloud-like consumption pricing based on Subscription and Usage if measured above customer owned capacity per CEC	Billed after usage, based on amount of capacity activated and duration of activation Best if used with TFP for Software.	Pricing based on the number of CBU Engines, and duration of the contract	Pre-paid zBuRST Token. zBuRST Tokens are discounted at 80% off the cost of prepaid On/Off CoD capacity. Best is used with Dev/Test Container and/or TFP software solutions.	1 to 5 year subscription

IBM Z Capacity offerings to optimize your capabilities

Capacity to comply with Regulators and Protect and Grow your Business and Customers

Data Corruption

IBM Z Cyber Vault

- IBM Z Solution that extends Safeguarded Copy on IBM storage to protect clients from malicious or accidental data corruption
- Uses a separate Logical Partition (LPAR) to automate the detection and analysis of data corruption for the purposes of assessing data integrity and data recovery actions
- Pricing based on Millions of Instructions per Second (MIPS)
- 50% off regular MIPS/Specialty Engine pricing

Quality Assurance

IBM Z Business Resiliency Stress Test (zBuRST)

- Solution for clients looking to increase DevOps code quality by introducing massive quality assurance and/or stress tests
- Pricing based on number of Tokens
- Special On/Off Capacity on Demand (OOCoD) Tokens priced at 80% off regular OOCoD pricing, includes zIIP for SRB

Disaster Recovery (DR) & Role Swap

Capacity Backup (CBU)

- Traditional approach to provide replacement capacity in case of a machine or site outage
- Solution for *unplanned* events
- 10 days of testing per event
- Pricing based on number of CBU Engines

System Recovery Boost Upgrade

- Optional capacity-on-demand offering for IBM z15 T01 that extends the base System Recovery Boost capabilities
- Unlock up to 20 additional zIIP processors that can be used for up to six hours
- Available via a 1-5-year subscription in one-year increments.

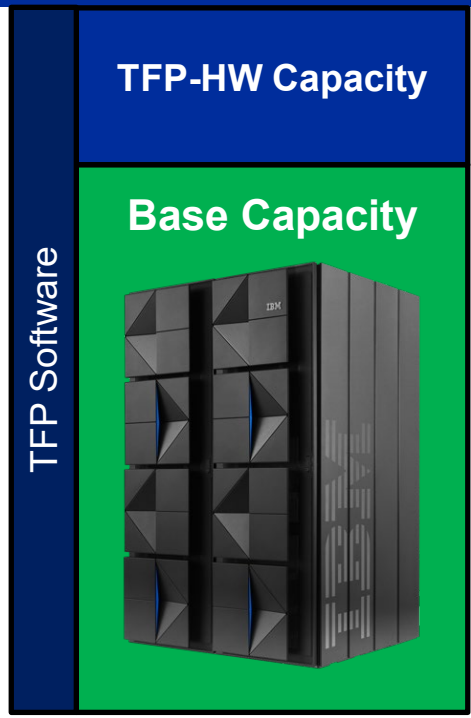
Flexible Capacity for Cyber Resiliency

- Dynamically shift production capacity between IBM z16 systems at different sites
- Flexibility for DR test, planned maintenance, proactive outage avoidance, and actual DR scenarios
- Works in conjunction with other temporary record types and Tailored Fit Pricing for Hardware
- No on-site personnel (IBM or customer) required after initial set up
- Flexible duration of capacity transfer, up to 24 hours after record activation
- Swap and stay for up to 1 year
- Automate using solutions such as GDPS

Tailored Fit Pricing for IBM Z – Software and Hardware

Consumption Solutions for the IBM Z Platform

Backup



IBM Z

Tailored Fit Pricing for IBM Z + System Recovery Boost

How System Recovery Boost works together with TFP-HW Usage charging

Speed Boost

Enables general-purpose processors on sub-capacity machine models to run at full-capacity speed in the boosting image(s).

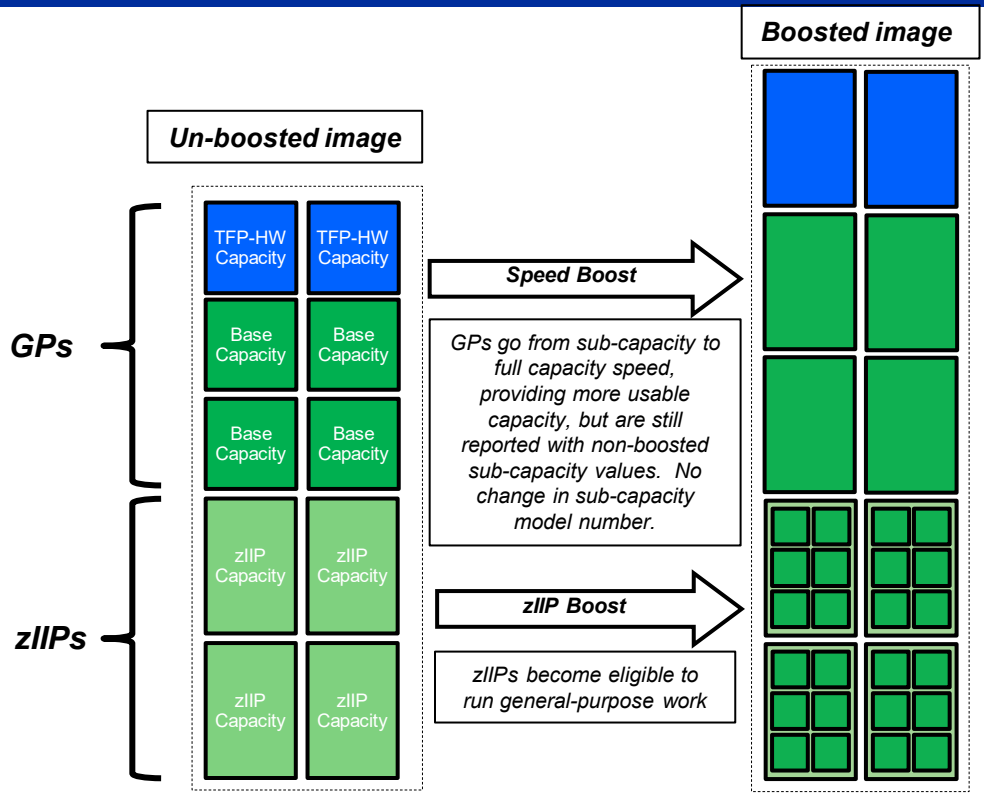
During the boosted period, the base and TFP-HW capacity are reported as non-boosted, despite the increase in true usable capacity due to the boost. MSU values are calculated on the percentage of processor utilization, and then applied to the *non-boosted* capacity values. With Speed Boost the workload needs to consume 100% of the *increased usable base capacity* before it spills into the TFP-HW capacity corridor, making it harder to do so.

zIIP Boost

Provides additional capacity and parallelism by enabling general-purpose workloads to run on zIIP processors that are available to the boosting image(s).

zIIP utilization is not counted towards any reported MSU counts

When some of the general-purpose work runs on zIIPs instead of GPs, due to zIIP Boost, that work does not count towards MSU consumption at all. Again, that makes it even harder for the workload to consume 100% of the usable base (GP) capacity and spill into the TFP-HW capacity corridor.



Tailored Fit Pricing for IBM Z + Capacity On / Off On Demand

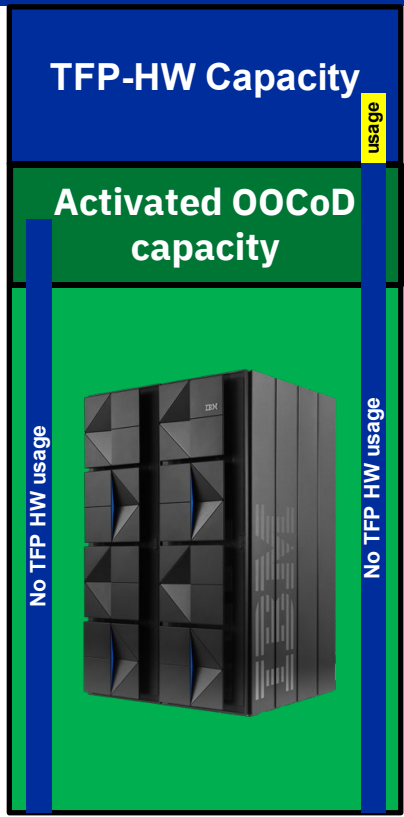
How OOCoD works together with TFP-HW Usage charging

- The OOCoD capacity limit is always based on the Base Capacity
- The presence/activation of TFP HW does not impact the amount of capacity that can be activated by an OOCoD record

- The OOCoD record is always considered to be the first record activated, regardless of the order in which temporary records and/or TFP HW were activated

Example:
- The customer has a Base Capacity of 10 engines (710 capacity setting)
- The customer adds 2 engines as TFP HW (for 712 total activated capacity), and then activates 2 additional engines using OOCoD
- The machine will have a total activated capacity of 714
- The OOCoD engines will be engines #11 to #12, and TFP HW engines will be #13 and #14 – even though the TFP HW corridor was activated (present on the machine) first

- This applies in general to all temporary engine types – the TFP HW capacity always “floats on top” of any other activated capacity, for the purpose of TFP HW usage charging
- This means that no double charging can occur



Tailored Fit Pricing for IBM Z + Flexible Capacity for Cyber Resiliency

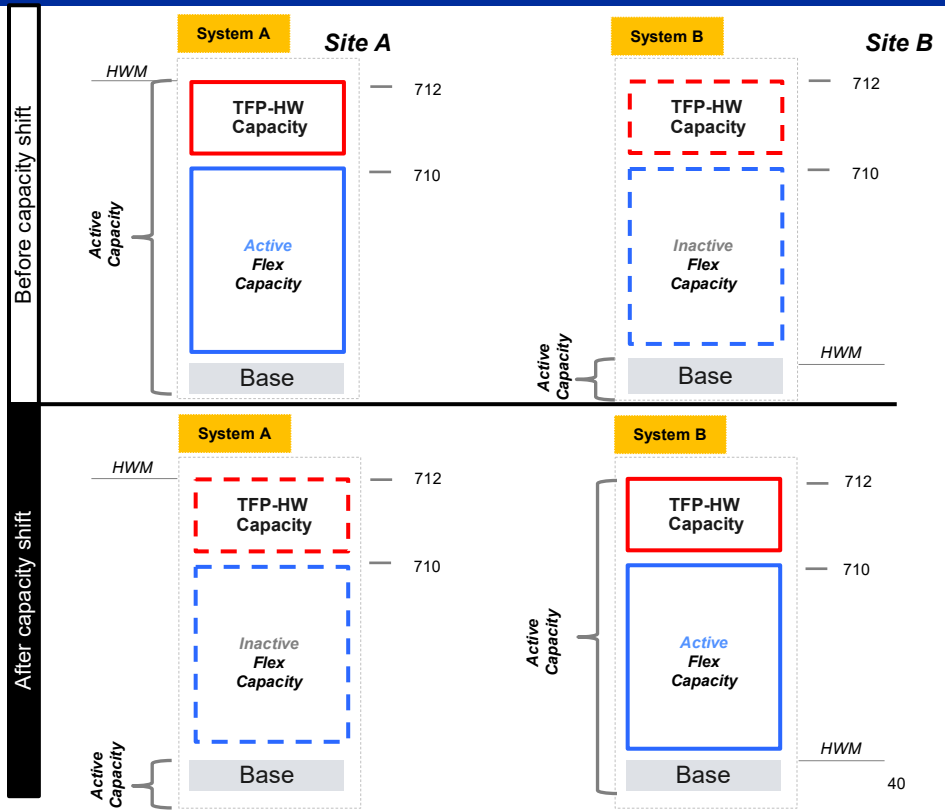
How Flex Capacity works together with TFP-HW

- The Flexible Capacity Transfer record is always considered to be the first record activated, regardless of the order in which temporary records and/or TFP HW were activated.
- The presence/activation of TFP HW does not impact the amount of capacity that can be activated by a Flexible Capacity Transfer record.
- After the activation of the Flexible Capacity record, the TFP HW corridor always floats on top of activated Flexible Capacity record.

The TFP HW capacity always “floats on top” of any other activated capacity, for the purpose of TFP HW usage charging. This applies in general to all temporary engine types. No double charging can occur

Example:

- The customer has a Base Capacity of 10 engines (710 capacity setting)
- The customer adds 2 engines as TFP HW (for 712 total activated capacity)



IBM Z

Tailored Fit Pricing for IBM Z + CBU activation

How CBU works together with TFP-HW Usage charging

- If during CBU activation (test / real activation) the total usage of two or more machines' capacity with TFP HW is below the total Purchased capacity for these machines, there is no TFP HW usage charge

Tailored Fit Pricing for IBM Z – "runaway/looping/defect" workload

How will we handle TFP-HW Usage charging in case of a defect

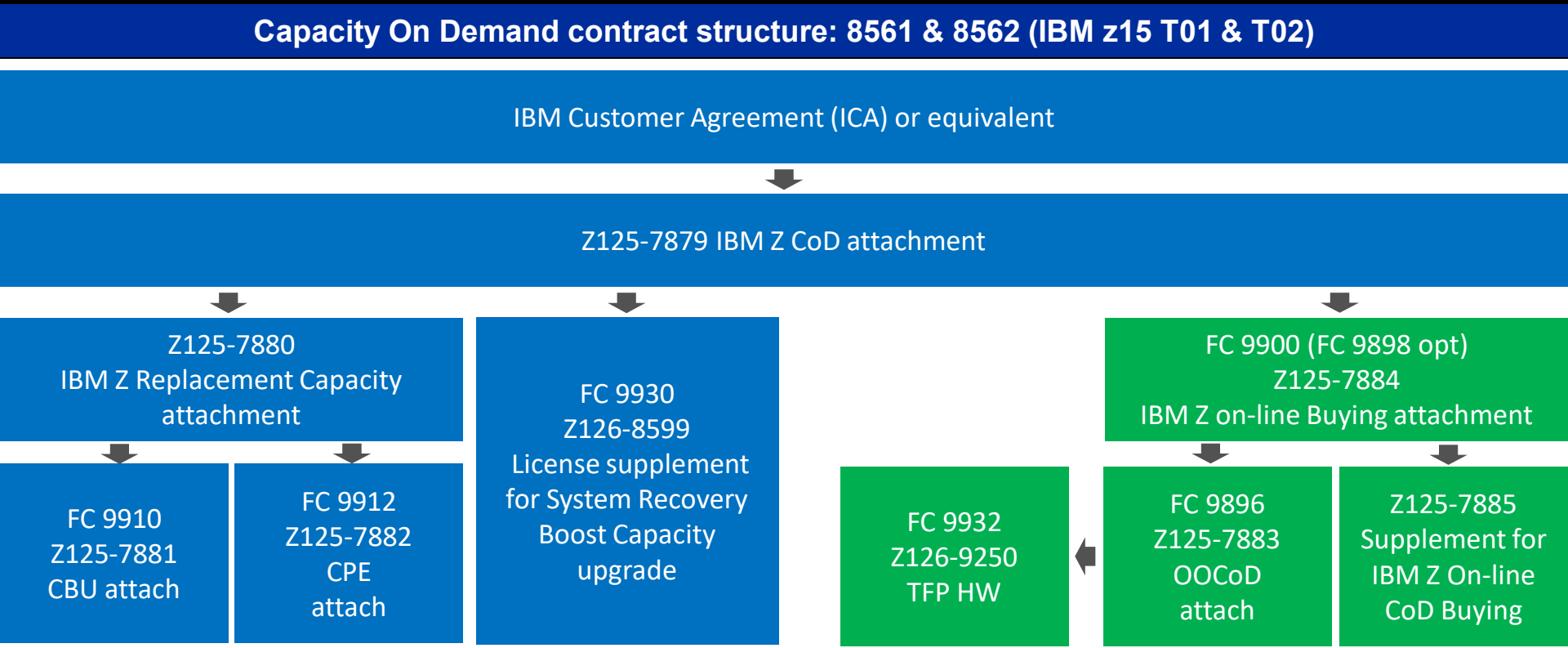
- If IBM recognizes a period of higher MSU consumption as an IBM SW defect, and therefore approves excluding MSU consumption from SW billing during that time, it will also be excluded from TFP HW usage charge

Tailored Fit Pricing for IBM Z – things to remember

Some basic principles and rules

- Term contracts between 12 and 36 months; no automatic renewal
- General Purpose CPs Only (MSU), No specialty engines
- No additional HW is part of the TFP HW offering (example: CPC drawers, memory, etc.)
- If additional HW is needed to enable the TFP HW capacity, it needs to be purchased by the customer
- Tailored Fit Pricing for SW is a pre-requisite, because it protects the customer against unexpected IBM SW invoices
- TFP HW is not open to outsourcers
- A TFP HW contract is not transferable
- On a technical level, the TFP HW capacity is enabled using a Capacity On Demand record
- TFP HW usage measurement and invoicing is always per machine (one S/N)
- Additional contracts next to a TFP HW contract need to be in place for activation of TFP HW capacity corridor
- Machine warranty applies to the TFP HW capacity corridor
  - Beyond the warranty period, the TFP HW capacity corridor is subject to TSS Subscription and Usage Charges

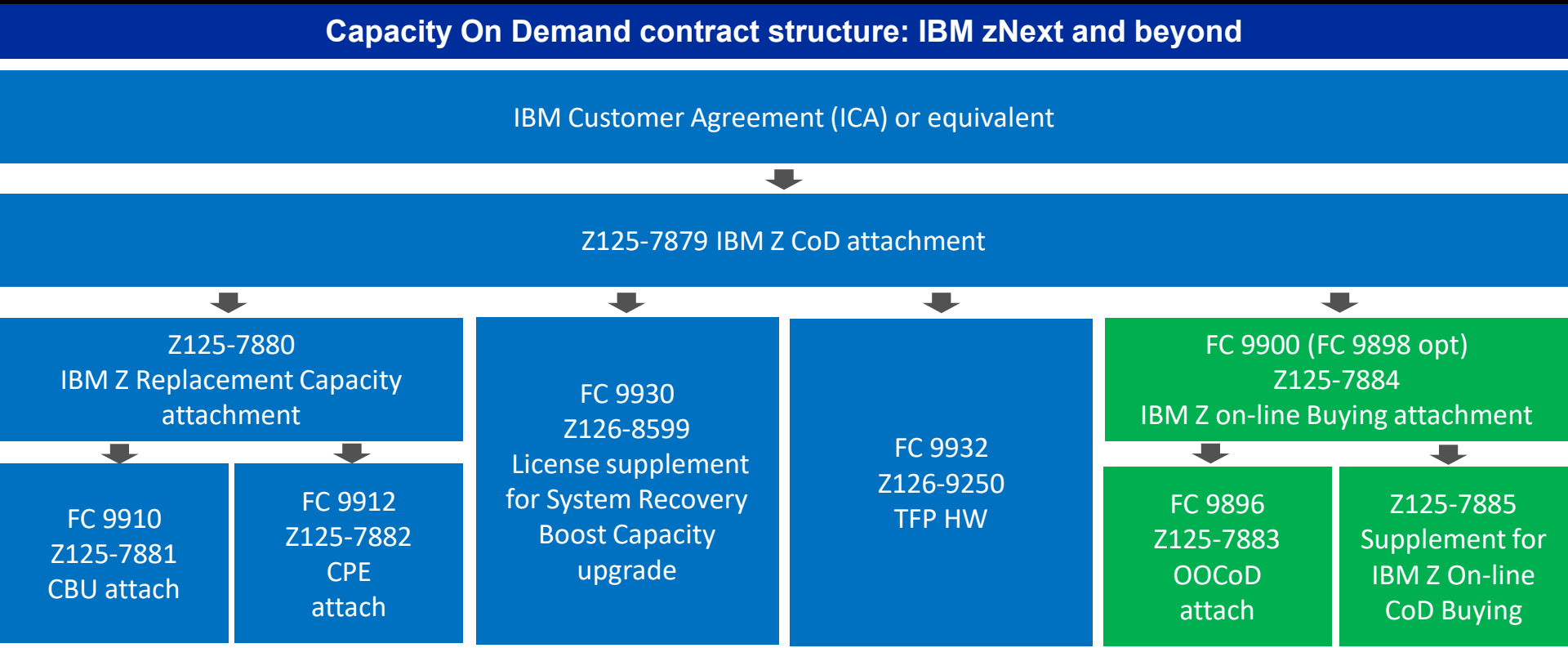
Capacity on Demand contract structure



Blue items will ”stop ship” if contract is not signed

Green items will not “stop ship” if there is no contract

Capacity on Demand contract structure



Blue items will ”stop ship” if contract is not signed

Green items will not “stop ship” if there is no contract

Tailored Fit Pricing for IBM Z – Who to contact

Worldwide team

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