Consumption Solutions for the IBM Z Platform

Tailored Fit Pricing for IBM Z
Greater Flexibility for Improved Resiliency and Operational Efficiency

IBM Z

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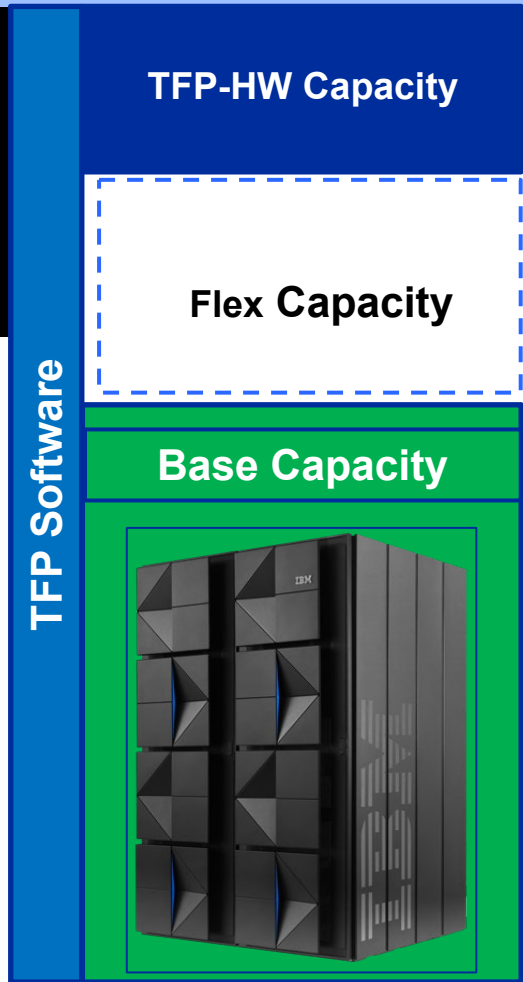


Agenda

- Discuss Tailored Fit Pricing Consumption and understanding business value
  - ❑ TFP Software
  - ❑ TFP HW
  - ❑ Flex Capacity

What Customers are saying about Tailored Fit Pricing for IBM Z

Operational Efficiency and Flexibility:

It is simpler to manage compared to the rolling 4 hour.

Capacity team who every month we always had an idea of where and when our four-hour rolling average period would be, and those guys were focused on.

A lot of unnatural acts around trying to manage jobs and the 4-hour Peak

TFP allows us to run the work much more naturally without that intervention and it simplifies the day to day

Not just having to focus in on your peak periods. It's about overall efficiency. It's not about unnatural acts to spread things out.

No fear on high 4hra, run workload as it comes, no capping anymore, run products on any lpar

The ability to use all the installed capacity when needed

Before we had separate CICS, DB2 and Batch LPARs because of price model, this has changed with tfp completely, much more flexibility where to run the workload

Freed up technical resource which helps optimize cost

Focus is now on overall efficiency, not on peak 4HRA. There is more flexibility on when things can be done, versus avoiding peak periods.

What Customers are saying about Tailored Fit Pricing for IBM Z

Predictable Cost and better budget management

Cost optimization better price on growth and easy calculation for chargeback

Able to calculate and share software costs for each application

I am able to calculate and share SW cost for each application separately like a cloud provider

Well defined/predictable cost for running now and for growth. Less day-to-day management, less unnatural acts. Don't have to constrain business due to peaks or worry about it

Charge back is easy. No need for custom build models to cater for an always changing peak environment. Easily understood by business

Additional capacity to Test

Better testing - more testing

We asked the tester or developer not to test during the pay day. Before we ask them to move their testing jobs, we don't do that anymore

if done correctly it should encourage your application development teams to do a much better job of testing and do more testing

Business and technology

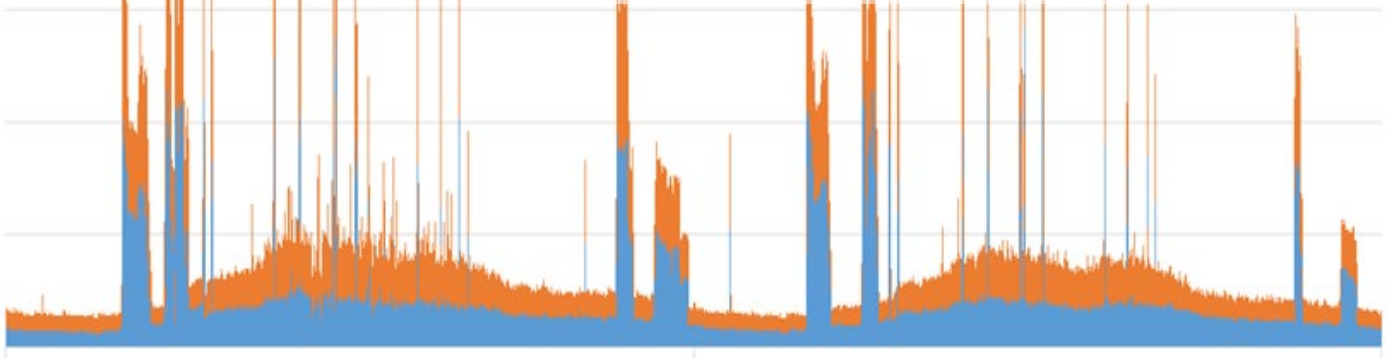
- In a world of ever-increasing digitalization, volatility & unpredictability on IT demand is fast becoming the norm
- Traditional ways of paying for software and hardware are no longer meeting these demands
- With IBM Z® at the core of the world's economy, a commercial reset was essential.

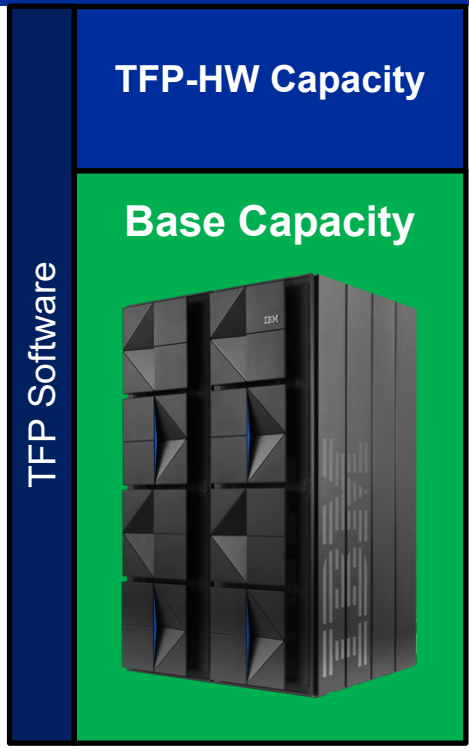
Why Tailored Fit Pricing for IBM Z – Software and Hardware

(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)
  - Supply Chain disruptions





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

Tailored Fit Pricing for IBM Z – Software and Hardware

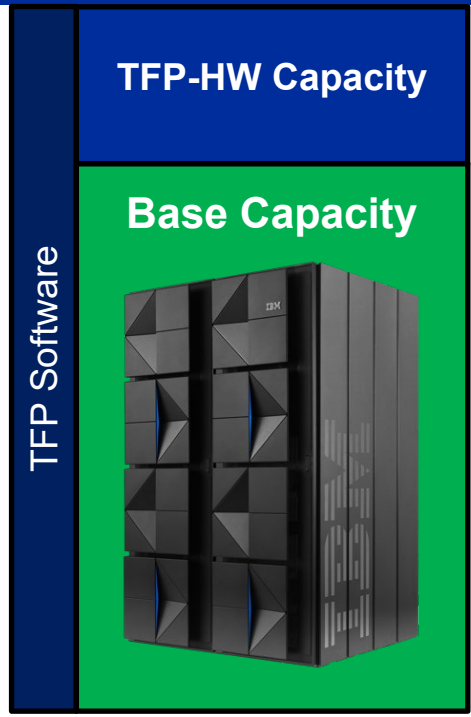
Consumption Solutions for the IBM Z Platform

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



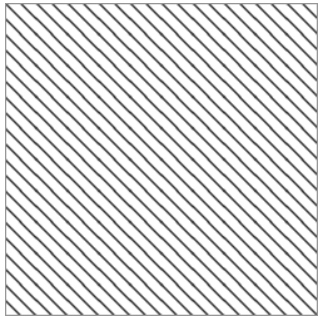
Evolution of IBM Z software pricing

Adapting to customer demand

1970 - 1999

Past

Full Capacity

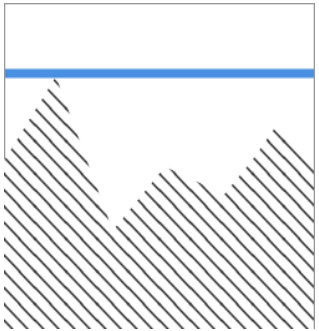


Simple way to charge for IBM z/OS-based software

1999 - 2019

What was prevalent

Sub-Capacity
(R4HA)

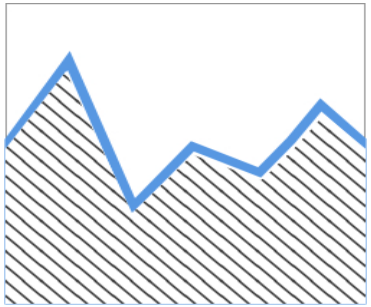


Modelled on >80% utilization

2019 onwards

Present

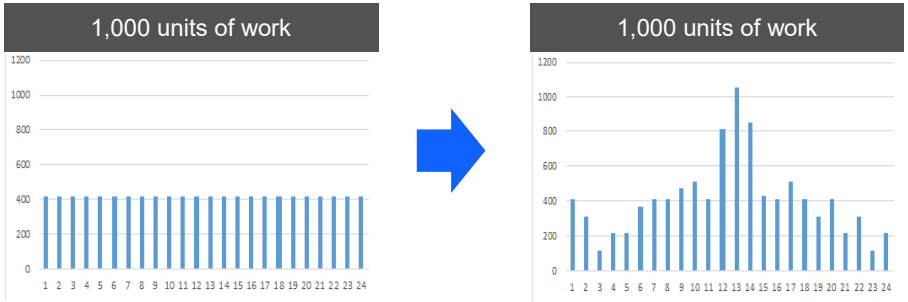
Tailored Fit Pricing



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

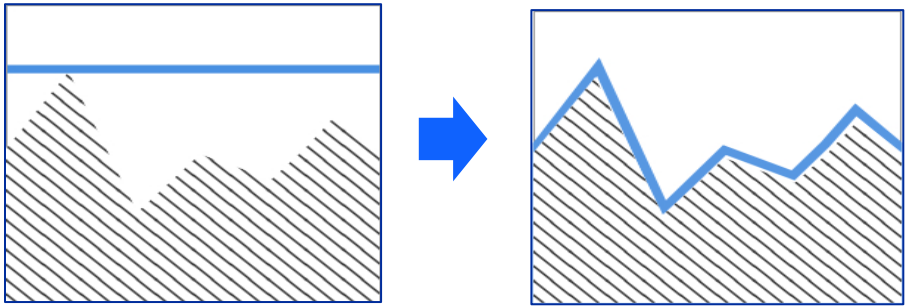
Tailored Fit Pricing for IBM Z Software

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:

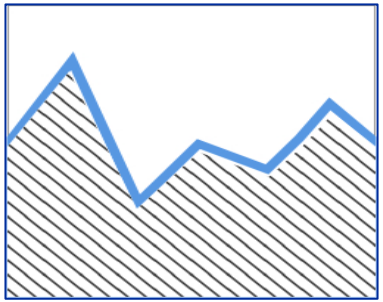
- Take full advantage of all available hardware
- Peak and spike without 'penalty'
- Align usage/billing with business performance
- Commercially enable their IBM Z environment for growth, modernization and innovation

Tailored Fit Pricing for IBM Z Software

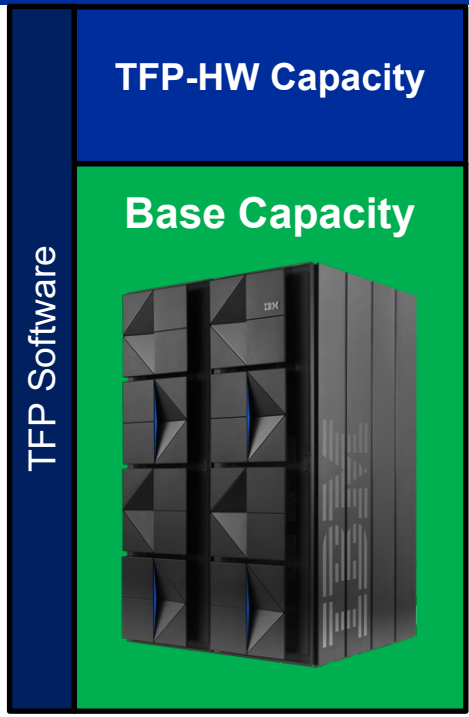
Consumption-based pricing instilling a greater commercial confidence for innovation

- 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



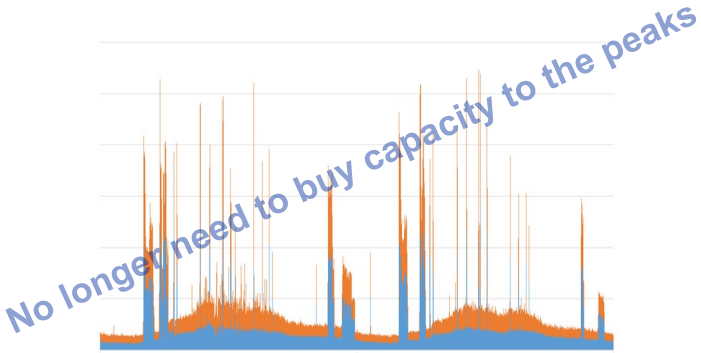
How do customers get IBM Z HW capacity?

	Purchase / Lease	OOCoD	*Customers are asking for:*
	Custom Bid per contract, in Engine Increments - can be sub-capped to lower available capacity, 3-year lease is common	Per Day in Engine increments, Pay upon activation of capacity	*More Granular: Smaller Increments, Shorter duration* *Cloud-like consumption pricing*
	Known workload behavior Managed within capacity, (bought, banked, etc.) and SW pricing practices	Predictable Spikes (ex. end of month) Longer spikes (ex. Batch workloads, 5+ hours)	*Short spikes* *Unpredictable spikes*
	Always on / available per policy enforced, Available to add via MES, up to full system capacity	Activation initiated by customer, up to 1x purchased capacity	*No latency, instantly available*

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



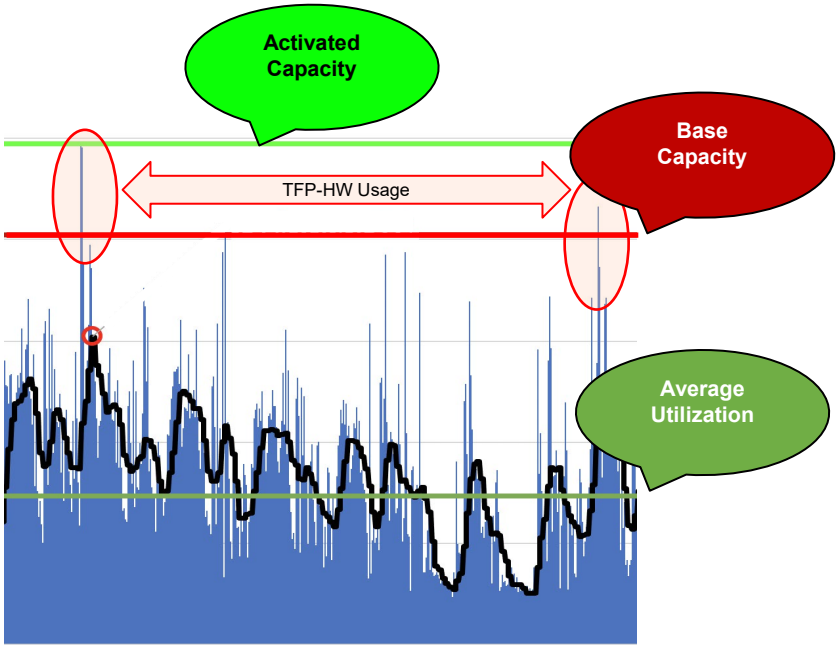
- Better efficiency, reduced overhead, shorter response times
- Faster transaction processing, with shorter spikes of high utilization
- Only available on IBM z15™ & z16™ and General-Purpose CPs with Tailored Fit Pricing Software

Tailored Fit Pricing for IBM Z – 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**
  - 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

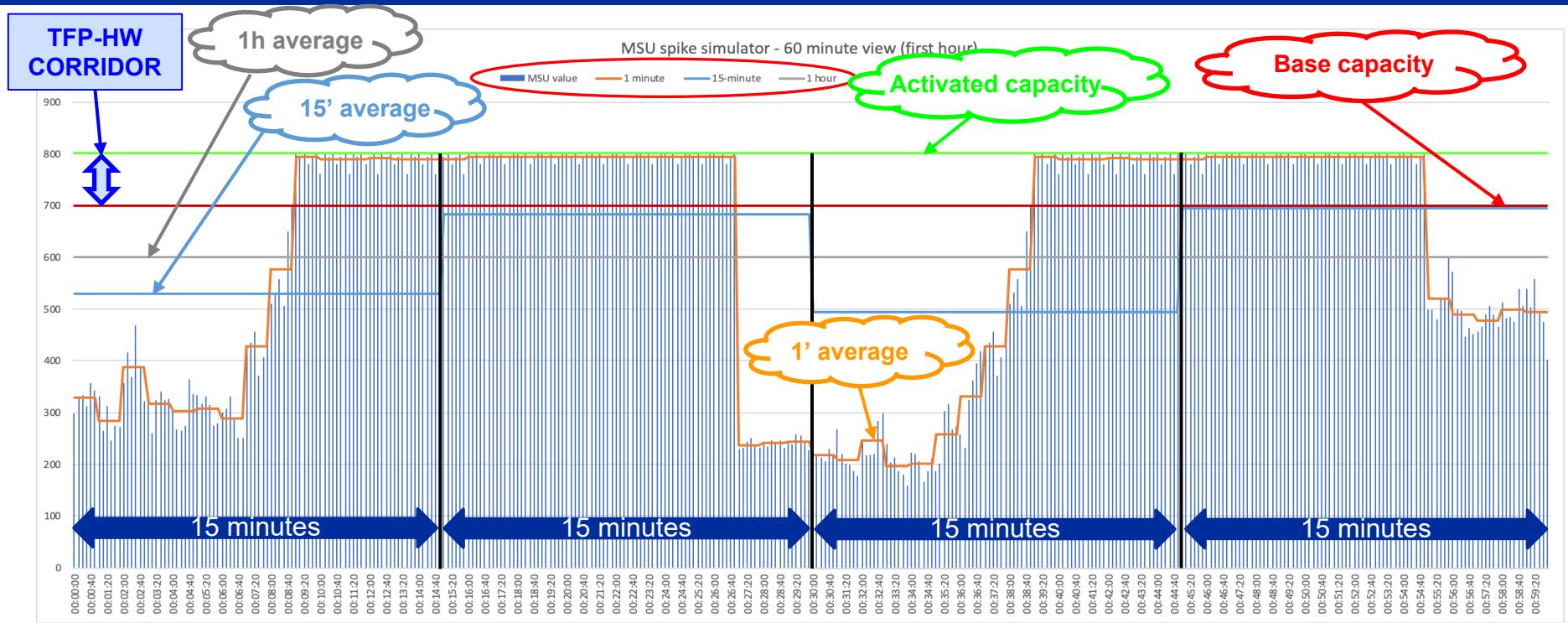
Efficiency benefits of TFP-HW

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

Averaging effect when measuring usage*

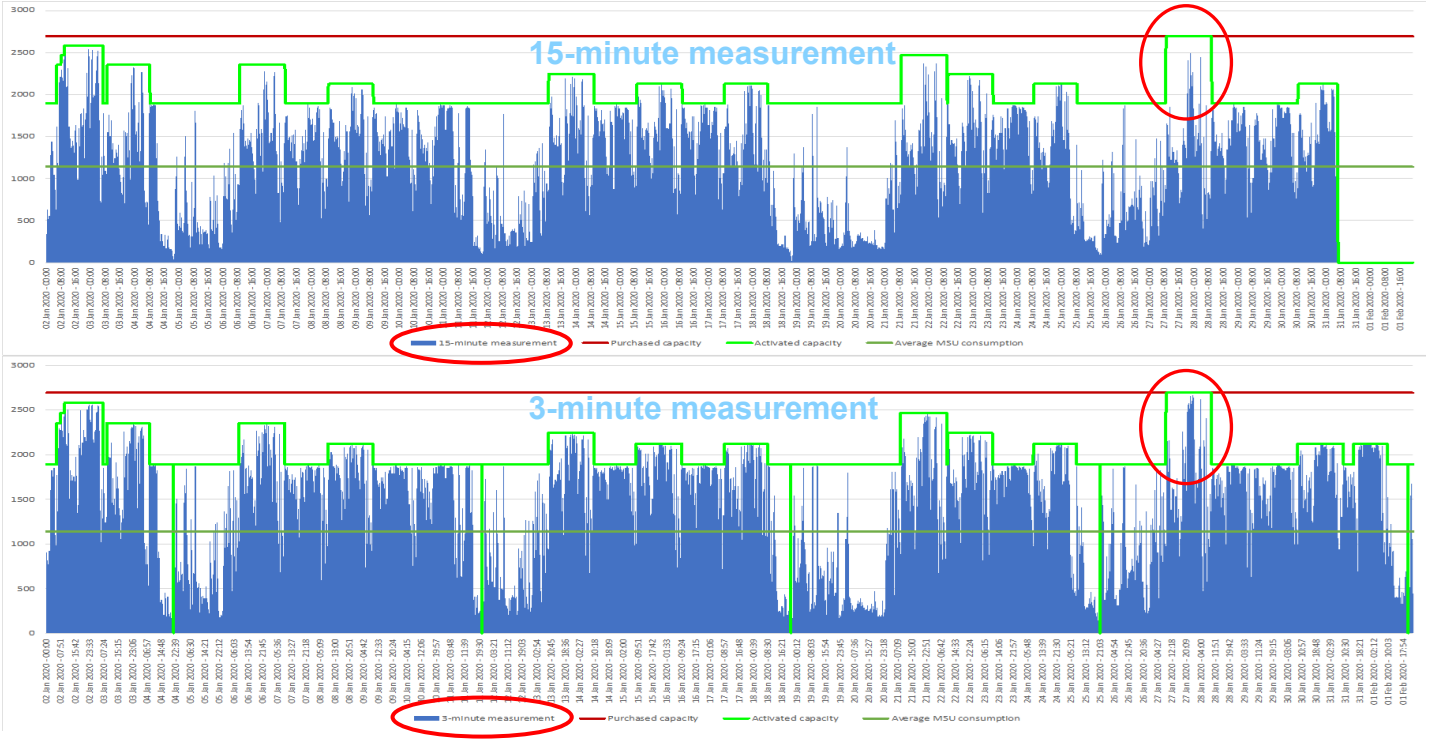


One hour usage simulation to show the effect of average

(* NOTE: Simulated 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 + Flexible Capacity for Cyber Resiliency

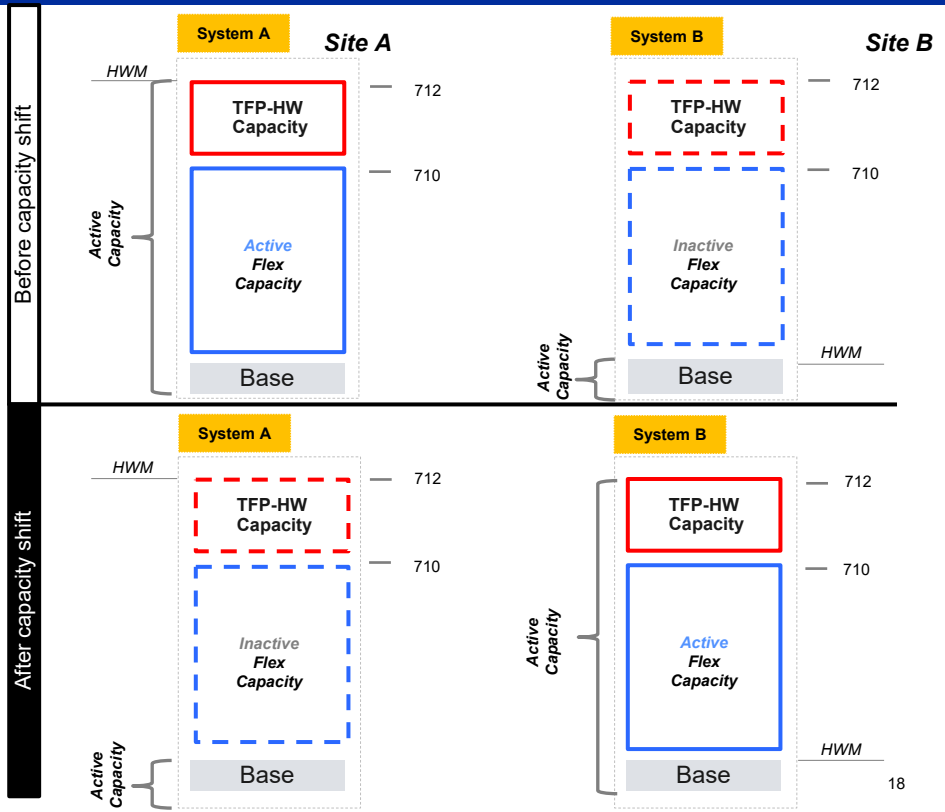
How Flex Capacity works together with TFP-HW

- 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

TFP-HW offering details

Capacity	Additional capacity corridor above purchased capacity, rounded up to nearest engine, per CEC • Based on sizing and customer dynamics • GPs Only • Microcode Only
Pricing	Non-Cancelable subscription fee that scales up with the amount of variable capacity (Per CEC with minimum 1-year commitment) Hourly Usage Fee = Customer Hourly Rate * Peak Usage in this hour per MSU, *TSS has similar structure of Subscription Fee + Hourly Usage Fees
Customer Requirements	• Available only for z15 generation, customers required to remain current N, N-1 going forward • Tailored Fit Pricing in place or planned to be in place • Customer workload analysis must be completed to determine if workload qualifies • Available only as part of a transaction to customers that are committed to IBM Z as a strategic growth platform • Additional Capacity activated and billed monthly using OOCoD infrastructure, usage measured via SCRT. Requires z/OS 2.2+, SCRT Version 28.1+

Tailored Fit Pricing for IBM Z – Software and Hardware

Consumption Solutions for the IBM Z Platform

Tailored Fit Pricing for IBM Z

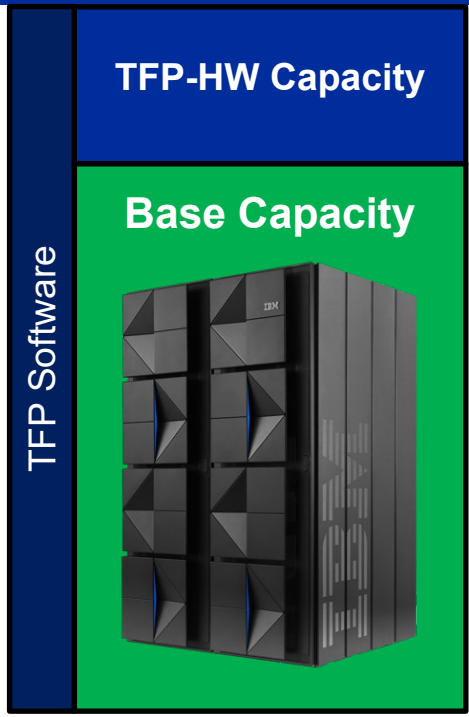
A consistent and complementary family of pricing solutions to increase our client's commercial confidence to:

a) See workloads evolve as they naturally need to do

- ➢ Grow organically
- ➢ Get spikier

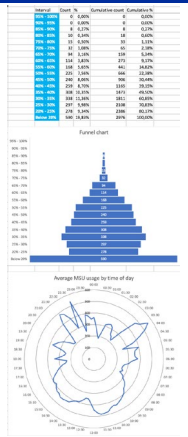
b) Increase the amount of modernization & innovation on IBM Z

c) To be better prepared for the unexpected



Tailored Fit Pricing for IBM Z – Hardware

Free of charge TFP-HW assessment



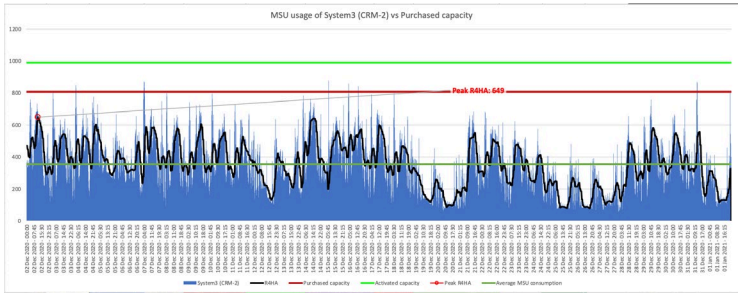
- Specify the following command on the SCRT SPECIAL DD statement:

  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 – 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

Tailored Fit Pricing for IBM Z – Who to contact

Worldwide team

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