

eBook

z/OS Cost Transparency:

How Data Visibility,
Analytics, and Automation
Can Boost Mainframe Value



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Overview

For many organizations, the mainframe continues to be a strategic component of their IT infrastructure. It represents not only an important investment but also a significant portion of the IT budget, making it an obvious candidate for efficiency and optimization efforts.

With some planning and the correct tools, there are opportunities just waiting to be discovered. Optimization and efficiency options abound for IT leaders, but choosing correctly is a challenge. Most often, the goal is to lead the organization through digital transformation, along with the conflicting goals of meeting stricter SLAs and meeting budgets. Options vary from code refactoring and new software technologies, to outsourcing, or even retirement/replacement of the mainframe (in spite of anecdotal stories of retirement projects that have failed). Regardless of the approach chosen, there remains a significant roadblock in the path to success: *data transparency*.

Modern mainframe systems have more than 50 years of development and ongoing innovation as a foundation, proving the platform to be an integral component of many IT environments. As one of the best-documented platforms, it also has extensive system statistics and processing reporting capabilities. In spite of this robustness and rich history, to many newer IT managers and stakeholders the mainframe remains a mysterious black box that only a skilled few understand.

While mainframe experts must be involved in any optimization initiative, it's essential to include IT management and the business stakeholders. A key component to the success of such initiatives is collaboration and tools that enable that collaboration. In the meantime, skilled mainframe staff are moving quickly toward retirement, to be replaced with a fraction of Millennials who have been lured to the platform by its flexibility, new open-source tools, and career prospects. This creates a sense of urgency (or it should).



An estimated **15%** of mainframe budgets are consumed by running non-critical applications that do not require specific processing capabilities or features of the platform.

[Source: RSD customer survey](#)

Introduction

Transparency of the IBM® z/OS® platform provides the means to identify actionable optimization initiatives regardless of the planned optimization approach. Application software, technologies for efficiency, or targeting workloads for off-platform processing can all be identified when transparency exists.

If outsourcing is the plan, transparency will provide insight into better agreements and long-term strategies to continually optimize the mainframe and control costs. Next-generation mainframe output, utilization and performance analytics tools can help.

All IT stakeholders across the enterprise benefit from better z/OS transparency. They get meaningful visibility, actionable analytics, and automation that optimizes their time and expertise.

This eBook shows you how, by looking at one optimization approach: [outsourcing](#). In the following pages, you'll learn:

- 1 Three best practices before kickoff
- 2 Strategies for a successful outcome
- 3 Transparency “must-haves” for economical z/OS management

The lessons learned are equally applicable to [digital transformation](#) and other optimization approaches.

Mainframe outsourcing

Look before you leap

An option for decades, mainframe outsourcing has continued to evolve along with the platform. Increasing technological sophistication, different model options, and the number of vendors and experienced consultants make it a buyer's market. Yet, as always, there are risks.

To ensure a successful outcome, you need to be data-driven from the very beginning: from strategy and RFP creation, to vendor selection and rollout, to ongoing management.

z/OS transparency provides critical operating knowledge that can make or break outsourcing success, including:

- ✓ Providing an accurate baseline of workloads
- ✓ Identifying and prioritizing key opportunities for optimization
- ✓ Optimizing the outsourcing time frame
- ✓ Exposing problems or issues that could make outsourcing impractical
- ✓ Streamlining ongoing management

Such knowledge enables the organization to negotiate from an informed position, providing negotiating power, operational awareness, and management efficiency. In the next-to-last case, it could prevent an expensive and disruptive false start on mainframe optimization.

Outsourcing project leaders should start with these three best practices.



Understand your current costs



Understand what you really want



Choose the right model and vendor relationship

BEST PRACTICE #1

Understand your current costs



Mainframe costs comprise two basic components: hardware costs and software costs. (There's also labor and operation components, but most organizations have separate methods to measure and report on these costs.)

Does your organization fully understand the total cost to deliver a workload or application each month? Appoint a team for this project. Be sure to include not only the technical experts but also your software and asset management experts to get a holistic perspective.

Software charges are a significant portion of mainframe costs and are either based on consumption or capacity. If you have not already worked on updating eligible ISV contracts that are based on the capacity of your z/OS environment rather than the consumption, you're missing savings. Where possible, contracts based on consumption will cost less.

To accurately gather costs for consumption-based software, your team needs the correct tools. Investing in a product that can provide metrics based on your consumption and processing trend patterns can be invaluable not only in the planning stages, but also on an ongoing basis to ensure the business continues to benefit from the outsourcing arrangement.

With this information in hand, your team of experts can make informed decisions about outsourcing, including determining if other efficiency or optimization projects would better serve the business.

IBM's Tailored Fit Pricing delivers simple, flexible, and predictable cloud-like pricing, with economies of scale for all workloads with transparent, and predictable pricing for IBM Z software running on the z/OS® platform.

[IBM United States Software Announcement 219-014, May 14, 2019](#)



BEST PRACTICE #2

Understand what you really want



IT environments are dynamic. Many factors create change, both planned and unplanned. What happens in your outsourcing agreement when changes occur?

Fully understanding the true costs (hardware, plus software, plus operations) of using the z/OS platform is very important. Outsourcing agreements are usually structured with a minimum base plus additional consumption, so having 12 to 18 months of accurate consumption information is invaluable. Knowing your base will result in an agreement that delivers optimal value to the organization.

Another key factor is understanding your flexibility requirements. Can you take advantage of different or new software pricing that becomes available, and if so, how will that be reflected in your agreement?

Other areas to consider include new hardware or software improvements. Taking advantage of newer hardware can often yield savings on consumption but is often overlooked as an option in agreements. Other not-so-obvious improvements include moving to updated compilers, or implementing technologies that optimize database use or I/O batch

processing, both of which can yield increased efficiency and reduced consumption. Consolidation projects that eliminate redundant software for things like output and print management can also result in savings in software costs, reduced system utilization, and in many cases improved, modern functionality for your users.

Transparency can expose which initiatives to undertake before entering an agreement that will have a significant impact on costs over the life of a contract. If implemented after an agreement, will the resulting savings be passed to you on your monthly bill?

Having an accurate measurement for your baseline and taking a long-term view of your mainframe strategy will provide the predictability that outsourcing can provide, as well as the flexibility needed.



Choose the right model and vendor relationship



There are many models for mainframe outsourcing. To choose the right model, your team needs to have a clear understanding of your SLAs and requirements from all business stakeholders. Remember that security and data protection regulations are also important factors, so ensure these are addressed in any agreement.

Have clear communication from leadership about what's driving the outsourcing decision. Is the initiative focused on reducing hardware/software costs, labor costs, or both? With this information, you can pursue the correct model: hardware, software and labor; hardware and software; hardware only; or some combination of services for labor. You'll be able to narrow your choice of vendors to those who offer the appropriate model.

Finally, what metric will be used to bill the outsourcing charges? Just as there are multiple options for outsourcing models, there are multiple options for metrics. These metrics should be clearly defined and measurable.

- ✓ **CPU time** is a metric calculated monthly that assigns charges based on the total hours of used CPU. Considering that hardware and software costs are based on consumption, however, this metric may not reflect the true costs. Thus, it provides little incentive for the outsourcer to work on savings or optimization.
- ✓ **MIPS** is another common model that's available. However, MIPS is not easily measurable, and we recommend not using MIPS in an agreement.
- ✓ **MSU** is a consumption-based metric that's measurable, flexible, and auditable. It can be used to incentivize the outsourcing vendor to work with you on cost reduction and optimization initiatives. If the agreed-upon model includes labor, the scope for hardware and software charges could be measured by MSU, while labor could be separated and set at the numbers of LPARs and sub-systems level. Including these scope definitions in the agreement aligns the metrics with the service provided.

Ensure a successful transition

Switching to mainframe outsourcing can be transformational if planned well. It's thus important to:



Minimize risk by predefining expectations:

The biggest risk of failure is poor management during the transition phase of the project. No vendor will be an exact match; consider what's most important to you, and be prepared for tradeoffs in secondary priorities. Building a relationship and trust with your vendor is critical, so establish a strong communications channel from the beginning.



Have a strategic vision:

Ensure your plan aligns with your organization's long-term goals and short term objectives. Build your transition plan based on the above expectations and strategic alignment in the financial area (with defined/aligned cost metrics and SLA contracts), organizational area (with identified and assigned people on both sides) and technical area (responsiveness to specific optimization targets, new z/OS infrastructure features, growing complexity, and ongoing needs analysis).



Ensure outsourcing transparency:

Deploy visibility tools and automation that keep everyone—from business stakeholders to IT owners—involved and updated on current and post-project system metrics to demonstrate how the outsourcing arrangement is working. Ideally this is done on a near-real-time basis, so problems and opportunities can be spotted and acted on quickly.

While it's at the end of this list, transparency is the foundation of every successful, long-term outsourcing strategy. It provides leverage in negotiations with your vendor, metrics for meaningfully and efficiently communicating among stakeholders, and the impetus for continually improving operational efficiency and awareness.

▼ Read on for **three transparency "must-haves"** for your outsourcing strategy

Visibility



Understanding the use of your mainframe platform from a capacity and consumption perspective is vitally important, particularly when working through the outsourcing plan.

It's important to be able to identify granular baseline metrics that all stakeholders agree on. And, ideally, to do this quickly and efficiently so it doesn't slow down the project timeline.

Unfortunately, there's generally not a lot of innate visibility of mainframe processing, in spite of the ocean of performance data the system continuously generates from utilities such as SMF and RMF. What's running on the mainframe? What resources are consumed for each application? How are the rolling four-hour average (R4HA) and other consumption measurements tracked? Questions like these—critical to understanding capacity and performance—can be complex, time-consuming and expensive to answer.

The same data can be used to inform an assessment of the mainframe infrastructure, including a review of initial capacity, the sysplex architecture, and the exploitation of mainframe technologies.

Next-generation performance analytics tools can provide this level of granular detail in seconds, not hours. Getting to a “golden baseline” is much easier and faster, as is detecting increases in program consumption or capacity gaps during operations. Easy-to-understand analytics can provide immediate visibility of key processes executing on the mainframe, replacing after-the-fact, mostly manual analysis.

With the agreed-upon baseline, you're in the true power position—able to shape the agreement to meet your goals. Further, with a continuously updated view of capacity and performance, you have vastly improved operational awareness.

Finally, you have the visibility you and your vendor will need to show the business the improved IT efficiency both during transition and over the long term.

TRANSPARENCY MUST-HAVE #2

Actionable analytics



How will you ensure success and communicate it to your vendor, your business stakeholders and your management? What metrics and analytics will enable you and your vendor to collaborate in delivering the best results?

Metrics should be clearly defined and measurable using a known and verifiable tool or method to gather the data. Ensure the use of an agreed measurement –MIPs, MSUs, time—and a common definition for each of those terms.

During the outsourcing transition, anticipate some of the friction that can happen to manage expectations between the business and the vendor. Agreed-upon metrics and terminology will help you here in solving unplanned performance issues or addressing hidden or unforeseen costs.

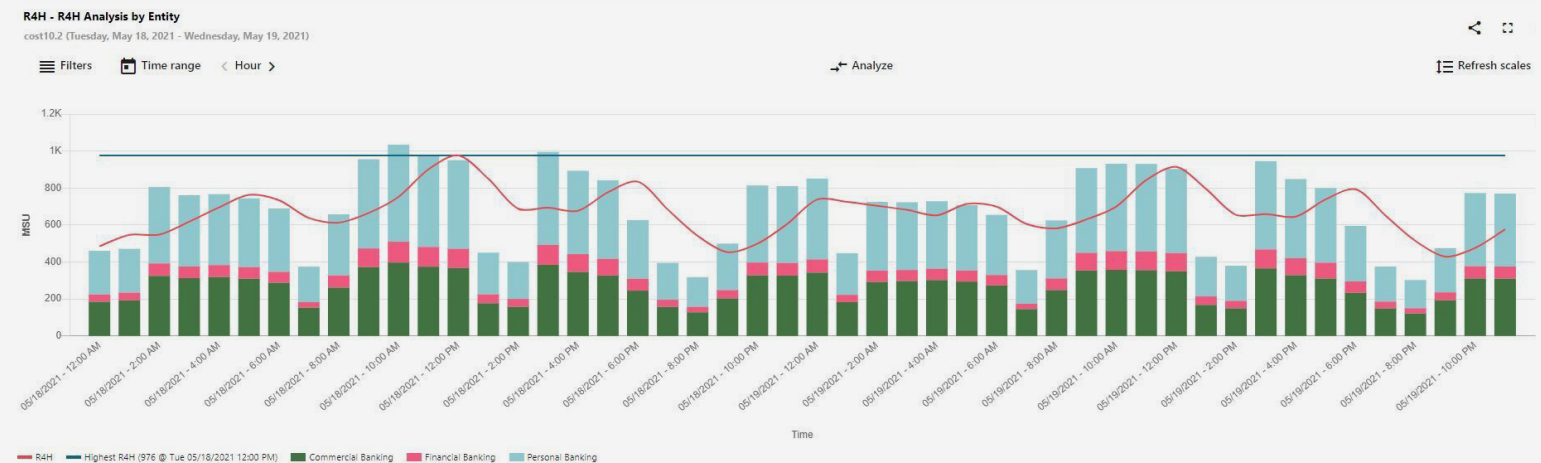


Figure 1: R4H by Entity

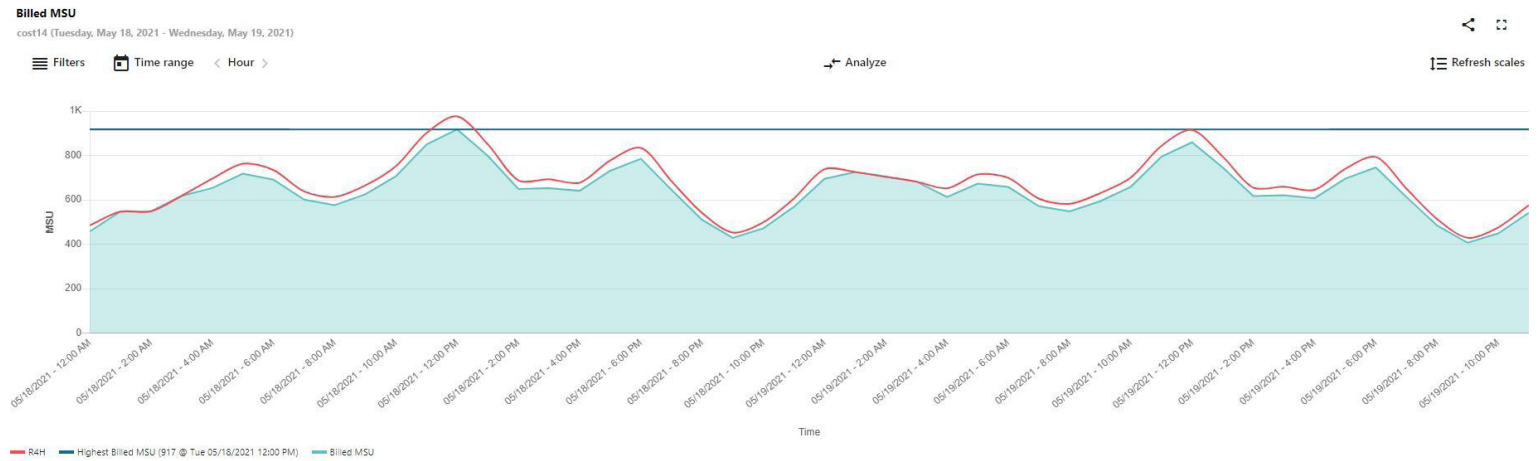


Figure 2: Billed MSU

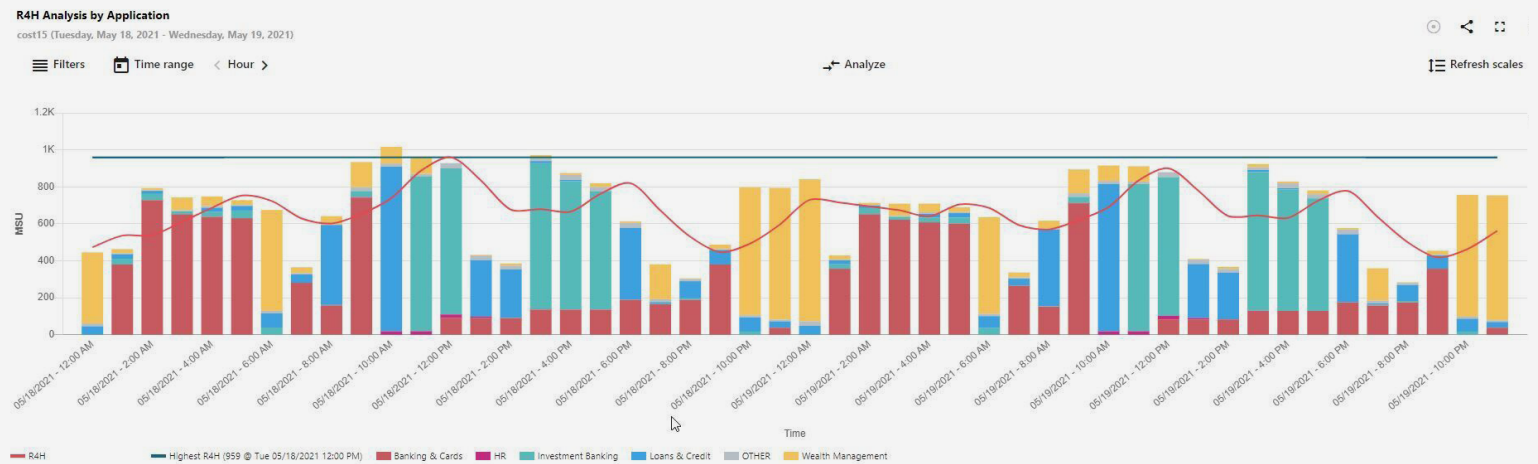


Figure 3: R4H by Application

Automation



Any outsourcing initiative should be viewed as an opportunity to implement or improve operational analytics. Automating capacity and performance analytics reporting will improve ongoing mainframe transparency for all stakeholders—from z/OS experts to senior management. This is essential for a successful transition to outsourcing and will pay dividends far into the future.

Using next-generation automated tools, limited mainframe staff can:

- ✓ Know the drivers of the consumption on the mainframe by system, entity, application, program, and workload in minutes instead of hours.
- ✓ Understand the resource impact of business-critical and non-critical processes.
- ✓ Have the baseline metrics necessary to push for software pricing incentives.
- ✓ Provide data that is easily understood by nontechnical business stakeholders.
- ✓ Understand and demonstrate what's running on your mainframe and the resource impact of each process, filtered by various dimensions including entity, program and application optimizing a program or an application.
- ✓ Easily see an application footprint and what optimization opportunities are available.
- ✓ Quickly estimate how much you'll save by optimizing a program or an application.
- ✓ Enable users to create/customize their own dashboards.

Automating delivery of reports to stakeholders via subscription will help them stay apprised of mainframe activity

Rocket your way to z/OS transparency

1

Rocket Mainframe Utilization and Analytics solutions help organizations gain transparency to better manage their z/OS mainframe outsourcing programs and other optimization initiatives. You'll always know exactly how your applications are using the mainframe with finegrained utilization analysis, timely performance analytics, and easy-to-understand reports.

3

Rocket® EOS 360 provides all z/OS stakeholders—whether employees, partners or customers—with simple, web-based access to business reports. Rocket EOS 360 integrates with mainframe environments to capture output from applications, manage the storage of that data, and provide fast and secure access for users, all with a modern, digital user experience—and without eating up costly MSUs. Easily ensure data security compliance and adherence. Streamline report workflows and build customized experiences for users such as customers or partners.

2

Rocket® Consumption Insights for z/OS allows you to easily visualize your mainframe resource consumption and have meaningful conversations with business and IT leaders about mainframe utilization and optimization. With transparency and understanding across all stakeholders, businesses are empowered to make informed decisions about the mainframe, quickly driving down costs and helping you avoid agreement penalties. You can:

- **Quickly improve mainframe efficiency:**
Access data quickly in order to identify optimization opportunities and drive better resource use across applications. Give mainframe managers insight into mainframe MSU usage and let them share easy-to-understand metrics with leadership about MSUs consumed by dimensions such as applications, or workloads, and their specific impacts to the budget.
- **Increase visibility and understanding of mainframe utilization:**
Get single-click visibility to your in-house and outsourced mainframe resource consumption. Interact with data on the fly to better understand multiple dimensions of usage. See the details about consumption or present in a format for business stakeholders, including chargeback reporting.
- **Save time with automation:**
Automate mainframe MSU consumption reports that enable the identification of detailed consumption in a few minutes. Free up experienced mainframe personnel to work on more business-critical tasks.



Get started today

If you're launching an initiative to optimize your z/OS system, the smartest, up-front investment you can make is in early understanding: z/OS cost transparency. Contact us for a demonstration or to talk with one of our z/OS experts. We'll show you how better visibility, analytics, and automation of mainframe performance data can steer and propel you to success.

We're helping a new generation of managers and stakeholders to not only understand and leverage the mainframe, but also merge modern technology with legacy infrastructure to deliver a competitive edge and propel the user experience for today and tomorrow. Come join us on our mission.



Identifying the mainframe MSU consumption of my application portfolio took three hours of one of my mainframe experts with our previous mainframe performance analysis tool. It now takes a few seconds and does not require mainframe expertise with Consumption Insights. //

Customer, large Europe insurance group



Rocket® Software

Rocket Software empowers organizations to create legendary impact in the world through innovation in legacy technology. With deep expertise in IBM Z, IBM Power, and embedded database systems and application servers, Rocket solutions power ten of thousands of global businesses, solving real problems and making real-world impact. Rocket is a privately held U.S. corporation headquartered in the Boston area with centers of excellence strategically located in Europe, Asia, and Australia.



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