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Understanding Your Mainframe Reality

A practical guide to uncovering the full cost of running your most critical system

Early-stage mainframe conversations often begin with a simple directive: reduce cost, increase resilience, or address the talent gap. Many leaders don't have a complete view of what their mainframe environment truly costs, supports, or depends on.

This guide offers a starting point—a way to clarify what you already know and build a more complete understanding of your mainframe environment before taking any next steps. It's not a technical playbook or a replacement for formal analysis. Instead, it reflects patterns and practical guidance shared by mainframe experts who support these environments every day.

The four pillars of mainframe clarity

These areas often come into focus when IT leaders begin examining how well their current environment supports their long-term needs.

1 Seeing the full picture of mainframe TCO

When leaders describe their mainframe costs, licensing is typically the first number that comes to mind. But the reality of mainframe ownership extends well beyond that.

Seeing these elements together reinforces that mainframe cost is made up of multiple interconnected components, not a single line item.

A QUICK EXERCISE

Take stock:
List every function required to keep your mainframe running.

Don't calculate anything yet; just look for areas where line items or responsibilities aren't fully known. This simple diagnostic often reveals the first gaps in understanding true mainframe TCO.

Cost category	What this includes
Facilities and hosting	Colocation space, power, security, and environmental requirements for operating the hardware.
Hardware lifecycle	CPUs, storage, switches, and other components, plus the ongoing cycle of hardware refreshes—typically every 60 months.
24×7 operations	Continuous operational work, including weekend change windows, restarts, incident response, monitoring, and general system upkeep.
Specialized staffing	Hiring, training, and retaining mainframe personnel, especially where institutional knowledge sits with a few long-tenured experts.
Operational workload	The recurring staff effort involved in routine mainframe activities—such as capacity planning, reporting, and software maintenance—separate from compute-driven costs.
Capacity-driven costs	Costs tied to how much compute and storage is provisioned versus actually used, reflected in basic indicators like peak versus average CPU consumption, cyclical demands, and storage growth trends.

2 Assessing your skills inventory and knowledge risk

In many environments, decades of critical mainframe knowledge sit with one or two long-tenured individuals, much of it undocumented.

This creates two types of risk:

Retirement or attrition risk: If a key expert leaves, operational continuity may be threatened.

Coverage risk: When only a small group—or a single person—can perform essential tasks, even vacations and sick time become operational hurdles.

A QUICK EXERCISE

Ask yourself:
"If this person were unavailable tomorrow, what would break?"

Organizations usually know the answer. It's rarely written down but widely recognized. Knowing this better positions an organization to stabilize operations, plan succession, and avoid reactive decisions.

3 Getting clarity on workloads and dependencies

Most leaders have a solid understanding of their core, mission-critical workloads. If something breaks and senior leadership calls at 2 a.m., you know that workload matters.

But our SMEs often discover:

Legacy processes continue running unnoticed, sometimes for years, adding unnecessary overhead while bringing little or no business value.

Hidden dependencies within long-standing mainframe applications often remain poorly understood, especially in systems built decades ago by people who are no longer with the organization.

A QUICK EXERCISE

Identify:
- Your top five "if this stops, everything stops" workloads.
- The jobs, scripts, or processes that consistently run alongside them.

The aim isn't a full dependency map—it's recognizing where unknowns may exist. The challenge is gaining enough visibility to understand how these processes fit into the broader environment.

4 Knowing whether you're rightsized

IT teams can pull basic usage information, such as peak versus average CPU utilization or storage consumption.

However, our SMEs note two common issues:

Organizations often lack context to interpret whether utilization patterns are healthy.

Software licensing models tied to capacity (e.g., monthly license charges based on actual utilization) can create cost implications that aren't obvious.

A QUICK EXERCISE

Ask your operations team:
- "What were our peak and average CPU usage levels last quarter?"
- "When did we last evaluate whether our hardware size aligns with actual need?"

If the answers aren't clear or easily accessible, that's a signal that a capacity review may be overdue.

Gaining clarity across these areas—cost, skills, workloads, and utilization—helps leaders move beyond isolated cost-cutting directives and toward informed decisions about optimization, modernization, or alternative operating models.

Where you can go from here

The purpose of this guide is to help you build a clearer view of your current state so future decisions are grounded in a more complete understanding of your environment.

The quick exercises are designed to make that easier by highlighting where your view is strong and where there may be gaps. Once you see which areas need more clarity, you can explore topic-specific resources or bring additional stakeholders into the discussion.

From there, you can more confidently decide whether deeper analysis, external perspective, or a different operating approach is warranted.

Have questions?

Our mainframe experts are here to help.

Let's connect

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