The 3 paths to mainframe modernization through rehosting

How can your organization reliably extend the ROI of its IT systems? Of the options available, modernizing your mainframe, which also improves strategic services in marketing, finance, sales and other areas of the enterprise, is the most dependable. It can quickly pay off with cost savings and greater flexibility and adaptability to quickly changing demands from employees and customers who expect instantaneous, highly personalized experiences similar to those on their mobile devices.

By contrast, rehosting moves existing mainframe applications unchanged to a modern open system, such as an x86 environment on premises or in the cloud.

The adoption of mainframe modernization as an approach for updating decades-old legacy systems and applications is growing. In fact, BMC reports that more than two-thirds of mainframe-driven enterprises either are using or are in the process of starting to use modernization to increase capacity to support modern demands. It is seen as a statistically lower risk option compared with ripping the system out and starting all over again.

Why are so many organizations embracing modernization? For one, modernization builds on the value a system already provides—often a heritage of functionality that has lasted for decades and possibly differentiates you from competitors—protects it, and maintains it for the future. Also, reusing IT applications to support a digital strategy rather than replacing core systems reduces the effort involved and the expense. And, finally, mainframe modernization allows enterprises to take advantage of new, flexible technology such as reusable components, microservices, and containers that can improve strategic services in all areas of the business.

Mainframe modernization through rehosting moves existing mainframe applications unchanged to a modern open system, such as an x86 environment on premises or in the cloud. Three paths exist for enterprises embarking on this journey, depending on the maturity level they plan to reach: reducing MIPS, retiring legacy orphan apps and replacing the mainframe. This brief describes each and explains the benefits so you can discover which path is best for your business and IT organization.

1

Reducing MIPS

A unit of computing speed equivalent to a million instructions per second, MIPS is a measurement of CPU resource consumption most often associated with batch processing and online transaction processing. When you consider how long your mainframe and its applications have been running, it is highly likely that your MIPS measure in the thousands and perhaps in the tens of thousands. Think of the processing power used, the effect thousands of MIPS have on performance and the operational costs they incur.

A 2015 Science of Computer Programming article reported that the amount of MIPS used by the average IT organization is rising significantly, and most large organizations should expect an annual increase of up to 20%. The financial effects are staggering. Each additional MIPS costs $3,285. So, if a company running 5,000 MIPS has an increase of just 10%, the incremental cost will be well over $1.3 million a year.

So, what is to be done? The obvious answer is to reduce MIPS, and this is the first path to mainframe modernization through rehosting. Organizations can drastically reduce MIPS consumption by identifying high consumption workloads in their existing environments and offloading these workloads onto less costly open systems—or the cloud. For example, a Korean insurance agency saw a substantial improvement in performance and reduction in costs and MIPS when it moved 4,000 batch programs and 3,000 online programs from its mainframe to a UNIX server.

If your enterprise chooses this path, it becomes proactive, able to identify and address problems before they happen. By re-platforming your high MIPS consuming workloads, you can reuse the original business logic and other assets from your current mainframe system. The outcome is a functionally equivalent operating environment that decreases total cost of ownership and adds flexibility to infrastructure and underlying software. In addition, the mainframe can better function in today's modernized IT world.

2

Retiring orphaned apps

Although some of the systems and applications on your mainframe have been developed in the last few years, the majority can be as much as 20 years old—or even older. Among these are "orphaned apps," whose original owners and operating details might not be known. They also are likely to rely on old, outdated infrastructure that has since outlived its original vendor support contract. Such apps are often based on old database software, an old operating system or an outdated product or platform that is no longer available. In some cases, mergers and acquisitions have subsumed the original vendors or they have gone out of business.

With orphaned apps, organizations are on borrowed time. These outdated components can become a major drag on the overall performance of your mainframe and affect the ROI of any major IT upgrade. Supporting them is difficult, costly and risky because it is likely that those with the expertise to do so are dwindling in number or are long since gone. *(cont.)*

(cont.) Also, a once-useful orphaned application may now run in the background and traverse multiple servers and therefore be overlooked as a source of performance or cost issues or even problematic in an infrastructure upgrade.

The second path to mainframe modernization through rehosting enables you to migrate the orphaned apps to a new open platform cost-effectively. You can continue taking advantage of the orphaned apps' unique functionality not found in commercial packages and without trying to force it into an existing product. The process of moving many of these applications is fairly straightforward. Automated tools convert the applications, and the data structures are mirrored onto a UNIX-based, x86 or cloud platform. The programs are then compiled, the sequential files are translated, and a new environment is installed and configured. Your mainframe is freed from the burden of running these apps, and they get a new lease on life.

The ROI of this method is remarkable. Organizations that have taken this path have seen a reduction in run costs—as much as a 78%—in the size of the application footprint. In the case of a global financial services company, 71 million lines of code was reduced to 16 million lines. In addition, when you migrate orphan apps off the mainframe, you are better able to support the future growth and innovation of your enterprise.

3

Replacing the mainframe

Sometimes an organization's mainframe has been around for so long that its apps and systems are draining resources and slowing software and application performance. The IT teams know that inaction could leave them vulnerable to more nimble competitors with modern systems and processes. Yet, the MIPS, the leftover applications, the custom programming, the patches, and the fixes have created a convoluted infrastructure that is difficult to untangle so that parts can be moved off the mainframe to open systems. Meanwhile, costs are rising, and the threat of possible extended downtime is looming.

The options at this point are to rewrite the applications on the mainframe, keep patching and fixing while incrementally updating what you can, or the third path: replacement. Since we stated clearly that mainframe modernization through rehosting was an alternative to ripping out and replacing a mainframe, this path might seem confusing. However, this replacement is not about investing in a new mainframe and rewriting applications for it.

This final path of mainframe modernization through rehosting moves the mainframe as-is to an open system where it provides services equivalent to those of the mainframe. There are no changes to the underlying business logic or user interface. There is no negative impact on the enterprise, and it requires minimal training.

Like the other two modernization paths, replacing the mainframe ends the frustration of slow or no response. *(cont.)*

(cont.) It delivers a secure, high-performance and flexible environment that dynamically scales based on business demand so that your end users experience maximum service and reliability even during peak processing. In the case of a multi-billion-dollar Korean financial services firm, for example, their re-hosted solution provided a modern infrastructure that uses UNIX servers to ensure better performance and reliability than the mainframe it replaced. Administration tools and enhanced system integration functions simplify the operation and management of the system.

Mainframe modernization through rehosting can even transform user experiences and unlock the value of your mainframe apps by exposing those apps to web services for mobile and digital applications. Because the operating systems are open with multiple database and utilities options, they integrate well with the newer technology required.

Choosing your path

Now that you know the three paths to mainframe modernization through rehosting, you might be wondering which is right for you. The answer depends on your apps, your systems, your infrastructure and your mainframe. For some enterprises, reduction in MIPS by offloading them brings needed relief and the flexibility to modernize applications and systems. For others, when leftover applications that have lost their owners and their support are moved off the mainframe onto an open system, performance improves and costs savings are realized. And finally, replacing your mainframe through rehosting may be the best path for you in order to move the mainframe as-is to open systems to prevent lengthy downtimes which keeps your business reputation intact and provides the flexibility needed for modern apps and technology.

For more details on mainframe rehosting, check out our guide, *5 reasons to rehost your mainframe*.