

On-premises mission-critical workloads: Where do they go from here?

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Introduction

In the digital era, the ability to drive innovation, business value and competitive differentiation is highly IT-dependent, and increasingly cloud- and data-centric. Forward-looking IT leaders are embracing the challenge, but must also address the tasks of rationalizing on-premises (typically pre-cloud) IT infrastructure and modernizing legacy applications. The overheated assertions about all workloads going to the cloud have abated in recent years with the increasing emphasis on hybrid/multi-cloud architectures. However, organizations are pursuing a variety of approaches related to which workloads will remain in on-premises IT environments – what does the modernization journey mean for mission-critical legacy applications?

The 451 Take

Hybrid/multi-cloud IT, once an unintended consequence of unchecked technology sprawl, is emerging as a strategic posture to manage both IT and business transformation. Our data has consistently shown that, while most organizations will continue to leverage multiple environments for IT workloads, the dominance of on-premises IT as the primary workload execution venue will diminish over the next few years in favor of off-premises environments. However, some IT will remain on-premises, particularly infrastructure that supports mission-critical legacy applications. 'Modernization in-place' remains the single-most common approach to upgrading legacy applications, but this model may not endure beyond the next refresh cycle, given that 'refactor and shift' is gaining momentum as organizations look to leverage the hyperscalers' tools and functionality for cloud-forward application modernization. Vendors that expect to continue selling gear into on-premises datacenters should position automation, visibility and professional/managed services alongside the hardware to help the on-premises application modernization process along – before the hyperscalers get there first with cloud-to-ground initiatives, such as AWS Outposts and Google Anthos.

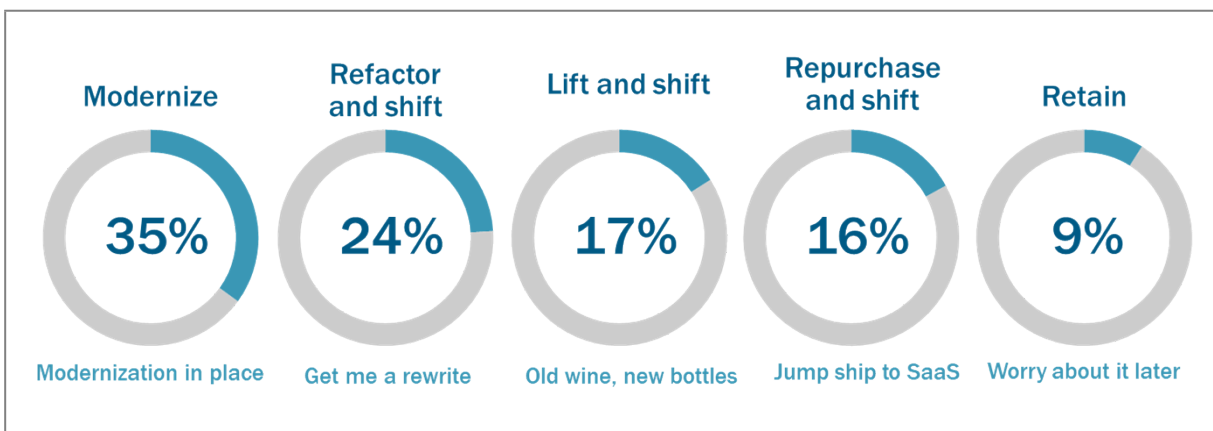
Where are workloads landing?

In 451 Research's recent [Voice of the Enterprise Digital Pulse: Workloads & Key Projects](#) survey, we probed organizations about their primary current and future IT execution venues and inquired into their approaches to modernizing legacy IT infrastructure application environments. At the heart of the hybrid/multi-cloud value proposition is the idea that the on-premises private infrastructure does not go away. Many (but not all) workloads will migrate to public clouds, but most organizations (particularly large enterprises) don't have the luxury of starting all over again on a clean sheet of IT paper. Over time, perhaps all workloads will reside in public cloud environments, but for now 57% of organizations point to on-premises IT as the primary workload execution venue, compared with 22% identifying public clouds (IaaS/PaaS and SaaS) as the principal IT environment. This is expected to change over the next two years when on-premises IT becomes the primary workload deployment venue for only 35% of organizations, versus the 40% of organizations veering toward public clouds.

What's the plan for mission-critical legacy applications?

Current thinking is a bit more conservative when it comes to mission-critical legacy applications. We asked organizations about the overall IT infrastructure approach planned for this class of workload going forward. Keeping the workloads on-premises with updates to the underlying infrastructure and application architecture (modernization in-place) emerged as the most common strategy for dealing with existing applications (35% of respondents). Refactor and shift (cloud-native re-architecting of existing applications, followed by redeployment in off-premises public cloud environments) came next, with 24% of organizations pointing to this modernization model.

Figure 1: Approaches to mission-critical application modernization for the digital era



Source: 451 Research's *Voice of the Enterprise Digital Pulse: Workloads & Key Projects*

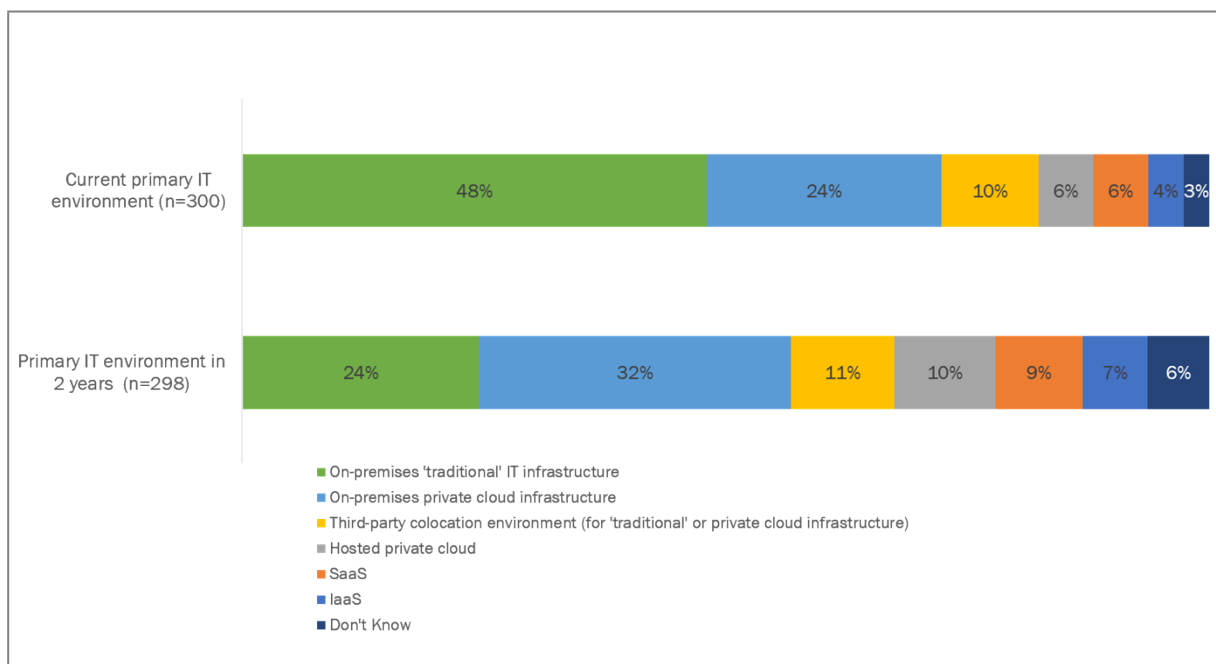
Beyond the obvious (i.e., sunk investments in infrastructure or datacenters), enterprises cite multiple reasons for keeping mission-critical workloads in on-premises environments, including application dependencies with other systems, latency issues, regulatory/compliance and security/control concerns. The refactor-and-shift crowd is also staying on-premises for the time being, and existing applications could take years to be rearchitected for optimal performance in public clouds. However, cloud-native-lite approaches such as containerized VMs could make lift-and-shift more attractive, while smaller companies may opt to go straight to SaaS.

The extent to which hybrid/multi-cloud and the hyperscalers' cloud-to-ground initiatives (e.g., AWS Outposts and Google Anthos) end up being rest stops on the journey toward all-in public cloud is a wild card. It all depends on who you ask.

Modernizers in-place: IT workload environment evolution

A considerable proportion of organizations are taking a modernization in-place approach to on-premises mission-critical applications, and nearly three-quarters of these identified on-premises IT (either 'traditional' noncloud or private cloud infrastructure) as their primary IT workload execution environment. But for how long? According to our VotE survey results, for at least the next two years, given that 56% of organizations in this group will still be mainly on-premises IT shops in 2021. Private cloud is the big winner here, taking on half of the refugees from noncloud on-premises infrastructure. Hosted private cloud is also poised to benefit over the next two years, indicating that dedicated infrastructure is important to organizations inclined toward maintaining mission-critical workloads in more controlled environments.

Figure 2: Current and future IT workload deployment venues (organizations with 'modernize in-place' strategies for mission-critical legacy workloads)



Source: 451 Research's Voice of the Enterprise Digital Pulse: Workloads & Key Projects

For the traditional enterprise IT incumbent vendors, the 'modernize in-place' crowd is fertile ground for private cloud/hyperconverged infrastructure refresh plays. However, emerging hybrid-enabling initiatives from the likes of AWS and Google introduce cloud-tethered alternative infrastructure options into the on-premises IT mix.