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# AIX Cloud Migration Guide

## Rehosting Your AIX Applications in IBM Cloud for Skytap Solutions (ICSS)

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### Introduction

The adoption of cloud has become so prevalent today, it is an assumed part of enterprise IT strategy. What's not usually clear is how enterprises will apply cloud computing and infrastructure models to existing applications that are responsible for core business functionality.

The majority of Fortune 500 companies, along with many other enterprises, are currently running business critical applications on AIX and IBM Power Systems. For these businesses, incorporating AIX workloads into an enterprise cloud strategy can present significant challenges, most notably the lack of support for these workloads from typical cloud infrastructure providers.

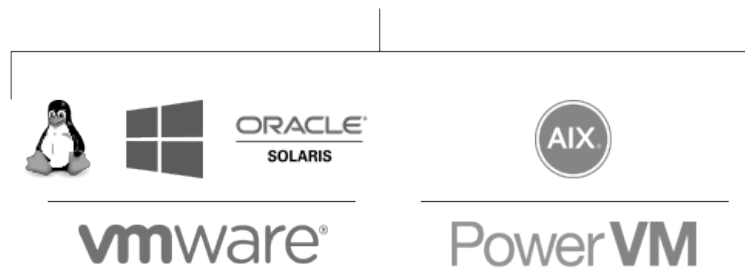
IBM Cloud for Skytap Solutions (ICSS) is the only public cloud that offers support for AIX workloads alongside traditional applications running on x86 architectures. This guide details the considerations involved and best practices for migrating your AIX workloads to ICSS.

#### Cloud Myth #1 - We Can't Move AIX to the Cloud

ICSS is the first and only public cloud offering support for AIX workloads. Most cloud providers only support new applications or cloud-native development, and hosting providers only provide limited, single instances of AIX. ICSS is different: it's designed to support your enterprise's traditional applications, including those running on x86 architectures, without refactoring or rearchitecting them.



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# AIX Cloud Migration Guide

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### Migration Goals - What's Driving Your Move?

Your migration strategy, including your destination cloud, should support your organizational objectives. Typically, enterprise initiatives fall into four general groups:

1. **Cloud-First Initiative:** For organizations whose primary goal is to go all-in in the cloud, performing an accurate assessment of the enterprise application portfolio is critical to the organization's success. Traditional applications, like AIX, are often overlooked because they are not supported by typical public clouds. IBM Cloud for Skytap Solutions (ICSS) supports AIX applications natively, enabling their inclusion in an overall cloud-first strategy.
2. **Datacenter Consolidation or Cost Reduction:** Lengthy rewrites can quickly eat up the expected cost savings of datacenter consolidations. ICSS makes it possible to migrate AIX applications without refactoring or rewriting them, accelerating the migration journey and decreasing migration costs and resources. ICSS also provides IT teams with increased visibility and control over resource utilization and costs including role-based access and granular quota management.
3. **Improvements to Business Agility:** Lack of access to production-ready development and test resources is the one of the biggest barriers to agile development. ICSS's unique, environments-first approach to infrastructure provides teams with instant, self-service access to complete application environments that are maintained and governed by IT.
4. **Modernization or Digital Transformation:** Many enterprises view cloud migration as the first step in a broader modernization journey. ICSS enables enterprises to introduce cloud-native functionality incrementally, so organizations maximize the ROI on existing investments and modernize at their own pace.

### Assessing Your AIX Workloads

The first step in your migration is to evaluate your existing AIX workloads and identify their requirements. Your organization will need to perform its own assessment that is inclusive of any business-specific considerations, however the list below provides a good basis for beginning your evaluation:

# AIX Cloud Migration Guide

## IBM Cloud for Skytap Solutions (ICSS)

Consideration Category	Consideration Type	ICSS Cloud Support
On-Demand Capacity	Always-On	Industry standard SLA and simple, predictable monthly billing
	Bursting	Enterprises who need the capacity to scale quickly to meet seasonal or irregular demand benefit from the ability to burst usage without incurring exorbitant penalties
	Variable	Payment options are provided for teams who need to smooth out the costs associated with erratic or unpredictable workloads
Cloud Deployment and Workload Requirements	Multi-tenant or single-tenant	Choose between public or private global datacenter regions
	Datacenter regions	Ten global datacenter regions with the ability to spin up regions on-demand
	Scale	Scale up to 12 CPUs and 256 GB of memory or scale out by adding multiple VMs/LPARs to the same ICSS environment
	Networking	Unique support for complex layer 2 and layer 3 networking
	External Dependencies	High-speed VPN connections to on-premises datacenters or other clouds
	Hardware Configurations	ICSS operates IBM POWER8 hardware in its datacenter regions
	OS Configurations	ICSS currently supports AIX 7.1 and 7.2 and is actively exploring support for AIX 5.3 and 6.1.
Workload Sizing and Capacity	Sizing	ICSS will work with you to collect the CPU, memory, and storage requirements for each LPAR
	Capacity	When sizing your workloads, ICSS will work with you to translate your existing requirements to capacity requirements in ICSS. Enterprises normally experience a significant reduction in concurrently running LPARs using ICSS infrastructure compared to existing infrastructure, eliminating idle resources and over-provisioning.

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# AIX Cloud Migration Guide

## IBM Cloud for Skytap Solutions (ICSS)

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### Evaluating Migration Methods

Many enterprises create unnecessary migration roadblocks by starting with the wrong migration method. In this section, we'll discuss the migration methodologies available to enterprises and provide a recommendation for the best choice for AIX workloads.

- **Rehost:** Casually known as “lifting and shifting”, this option enables enterprises to migrate AIX applications to new infrastructure without fundamentally changing architecture or code. This is the fastest and most cost-effective migration option and is our recommended migration approach for your existing AIX workloads. However, rehosting is only possible if the destination cloud can support the application as is. IBM Cloud for Skytap Solutions (ICSS) mirrors your on-premises datacenter environments, making it possible to rehost AIX applications unchanged.
- **Replatform:** Organizations that have a goal of replatforming AIX applications to Linux-based operating systems or infrastructure will encounter increases in time, resource requirements, and expense. This guide addresses organizations looking to migrate their AIX applications without changing operating systems or major application functions.
- **Refactor, Rearchitect, or Rewrite:** Each of these three steps requires organizations to make wholesale changes to the application architecture and codebase. For traditional applications, like those running on AIX, the cost of a such a project - in terms of time, expense, and resources - often outweighs the impact of moving that application to the cloud. These options are not recommended for your AIX cloud migration.

#### **Cloud Myth #2 - My Migration Will Be Long, Difficult, and Costly**

ICSS makes it possible to rehost your AIX applications on public cloud infrastructure, eliminating the need for dedicated resources to spend months trying to figure out how to change your applications so they'll run in the cloud.

#### **Other Considerations**

There are other business factors organizations will want to consider when planning for any cloud migration, and especially one involving AIX applications. In the section below, we'll cover some of the primary considerations when evaluating migration time and expense for your organization.

#### **Licensing, including AIX and Oracle**

Ensuring license compliance is critical to governing your organization's cloud computing costs. ICSS includes AIX licensing in the cost of its Power Compute resources. ICSS provides support for Oracle licensing by allocating dedicated resources for Oracle workloads. This includes LPARs as well as dedicated server hosts in single-tenant regions based on customer needs for applications running in ICSS.

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# AIX Cloud Migration Guide

## IBM Cloud for Skytap Solutions (ICSS)

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### Read More: Licensing Oracle in Skytap Cloud

For more information on licensing Oracle program in Skytap Cloud, read the white paper.

<https://www.skytap.com/research-center/white-papers-analysis/licensing-oracle-skytap-cloud/>

### Data Migration

Skytap Cloud offers different solutions for customers needs depending on the data volumes that need to be moved, including transfer via secure FTP, database replication, and encrypted physical hard drives.

## Making the Move

When planned for effectively, your physical migration to ICSS will be simple and straightforward. Here's how it works:

1. **Export Your AIX LPARs:** ICSS will provide you with a customized script enabling you to export your AIX LPARs from your existing environment.
2. **Import Your AIX LPARs:** From there, your LPARs will be imported into ICSS using secure FTP.
3. **Create AIX Environments:** Use public templates or create your own environments to start sharing AIX resources in ICSS.

## After the Migration

After your migration is complete, ICSS's unique approach to infrastructure enables your organization to accelerate application delivery and innovation while providing robust control and governance over resource utilization and costs.

### Enabling Agile Development

ICSS supports DevOps and agile initiatives by enabling self-service access to production-ready environments. A ICSS environment encapsulates compute, networking, storage, and software into a single unit of work that can be saved as a template, cloned, and shared in seconds. Teams can encapsulate their entire application in a ICSS environment, including x86 VMs, Power LPARs, and even containers.

This on-demand access eliminates resource constraints, bottlenecks, and configuration drift. As a result, enterprises are able to accelerate release cycles, include more functionality per release, and release higher quality software with less defects in production.

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# AIX Cloud Migration Guide

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### Cloud-Driven Modernization

Once in our cloud, enterprises are able to extend the life of their traditional applications by using IBM Cloud for Skytap Solutions (ICSS) environments to improve agility and accelerate modernization. The most natural way we see organizations doing this is in a phased approach to modernization, using ICSS environments-first infrastructure to facilitate modern development processes that, in turn, enable more rapid modernization of application architectures and services.

#### MODERNIZING TRADITIONAL APPLICATIONS WITH SKYTAP CLOUD

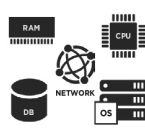
##### MIGRATE RAPIDLY

Rehost applications unchanged, without rearchitecting or rewriting



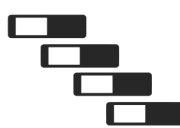
##### MODERNIZE INFRASTRUCTURE

Provide complete application environments instead of individual components



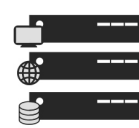
##### MODERNIZE PROCESS

Transition from waterfall to agile development with self-service, production-ready environments



##### MODERNIZE ARCHITECTURE

Introduce cloud-native architectures and services to traditional applications



### Maintaining Visibility and Control

This environments-first approach to cloud infrastructure enables IT teams to provide the self-service resources needed for agile development while maintaining control over costs and resources. Environments are managed by IT teams and need only be created and configured once before being saved as templates. From there, IT can set access controls and quotas by users, department, or region to ensure usage is authorized and audited. End users can self-provision their environments and delete them when no longer needed, eliminating idle infrastructure.

### Conclusion

ICSS offers the first Infrastructure as a Service offering for enterprises looking to easily move AIX applications from on-premises datacenters to public cloud infrastructure.



Start Your Cloud Migration: [ibm.com/cloud/skytap](https://ibm.com/cloud/skytap)