DATA SHEET

Multi-tenant vs. single-tenant cloud deployment

Infor solutions

Industry analysts sometimes squabble over the pros and cons of single-tenant versus multi-tenant deployment. While single-tenant deployment may have been a viable solution for some organizations in the recent past, multi-tenant deployment offers numerous benefits for organizations looking to modernize their operations. As a true cloud-based platform, multi-tenant deployment can offer vast amounts of storage, a speedy implementation, and advanced security capabilities. Read on to learn more why multi-tenant deployment is the better choice as a long-term solution.

The difference between single-tenant and multi-tenant

It's important understand the characteristics of these two deployment platforms so we can take note of key differences between them. Here are basic definitions:

Single-tenant architecture typically provides separate software and server resources for each customer. This gives the customer's enterprise plenty of control over the system, but it also requires more effort and a larger investment than with multi-tenant. Some organizations "lift" their legacy system with all its existing strengths and shortcomings and "shift" it to the cloud in a single-tenant deployment. Unfortunately, this process perpetuates many of the same outdated processes organizations are hoping to evolve away from.

In addition, single-tenant architecture requires the same resource-intensive and expensive upgrade processes as on-premises solutions. Also, the often-rigid structure of a single-tenant deployment limits the extent of changes that can be implemented; such lack of flexibility can impede an organization's growth. As business activities increase, single-tenant system performance can suffer until the system is redeployed on new servers, requiring downtime and potential business disruption.

A multi-tenant environment gives several customers the use of the application within the same operating environment on the same shared hardware. This model provides all the benefits of cloud computing—such as greater agility and security—plus the costs are shared across more business users. This helps reduce the cost for the provider even while it leverages more robust technology. This in turn, enables providers to offer lower prices. A multi-tenant environment also requires the customer to adopt and adhere to proven, standardized processes; this approach helps avoids a "modification mindset," which can unnecessarily complicate upgrades. Well-engineered cloud-based software, such as Infor CloudSuite™ industry solutions, enable personalization by using extensibility and platform tools, rather than code modifications. With multi-tenant deployment, organizations get flexibility, scalability, reliability, and value.

Single-tenant vs. multi-tenant

	SINGLE-TENANT	MULTI-TENANT	WINNER
Routine maintenance and backups	In self-hosted, single-tenant solutions, you provide your own maintenance and backups. Some single-tenant providers may also require this. Infor®, though, provides backups, and addresses uptime via the service level agreement (SLA).	The multi-tenant provider takes care of routine maintenance and backups for you.	With **multi-tenant** platforms, the provider's experts focus on maintenance for you, applying best practice standards for reliability.
Full redundancy and disaster recovery	With a single-tenant deployment, implementing full redundancy and disaster recovery could more than double your costs because you need duplicate systems. Infor achieves this by utilizing various availability zones and elastic load balancers.	Multi-tenant solutions are built on auto-scaling technologies that provide full redundancy.	A **multi-tenant** deployment is more reliable and less expensive.
Security	Some single-tenant providers make their customers responsible for the security of their solutions. Infor provides security for its single-tenant customers that's just as secure as our multi-tenant customers. Not all single-tenant providers can make that claim.	With multi-tenant, security is managed for you by experts who stay on top of new types of threats.	Unlike some single-tenant providers (not Infor), **multi-tenant** providers won't charge extra for security capabilities or require you to manage your solution's own security.
Updating features and functionality	When working with some single-tenant providers, the responsibility for performing upgrades may rest with you, unless you pay extra for a service contract. Infor manages upgrades for its single-tenant customers, but upgrades are scheduled less frequently than for multi-tenant customers.	Multi-tenant providers perform regular updates (monthly for Infor), ensuring your solution is always up-to-date with modern technology.	With **multi-tenant**, monthly updates are more easily implemented and less disruptive. Business users can be trained on new features as they are rolled out.
Scaling for fluctuations of high traffic and workloads	With single-tenant, you need to invest in extra capacity to prepare for peak periods, whether you use it or not.	The elastic capacity of a multi-tenant deployment means your capacity automatically expands as needed, and you only pay for what you need.	**Multi-tenant** offers more flexibility and greater savings.

Why deployment matters

In the rush to the cloud, some organizations make hurried decisions about whether to leverage single-tenant or multi-tenant deployment. CIOs and IT directors planning a cloud strategy need to be well-versed in the pros and cons and fully understand the long-term ramifications or each approach. Some risk-adverse organizations assume single-tenant deployment is safer and adopt that model, only to be surprised at the limitations. If the single-tenant deployment falls short of expectations, it may eventually need to be re-implemented on a true multi-tenant cloud solution. This is how wrong decisions can waste resources, capital, and time.

The additional resources and costs of single-tenant deployment

The difference between single-tenant and multi-tenant is often greater than people think. The responsibilities retained by the organization also differ. The chart above shows the impact that single-tenant and multi-tenant deployment can have on some key processes.

Nine benefits of multi-tenant deployment

1. **Security expertise**: Benefit from the continuous scrutiny of experts who are vigilant to new attack approaches. In self-hosted, single-tenant environments, organizations need to hire an entire team of highly experienced IT security specialists. In some regions, those skills may be difficult to find in the available talent pool.

2. **Continuous upgrades**: Ensure your solution stays modern. You don't have to schedule large-scale events every two to three years, where you conduct a major upgrade. Instead, multi-tenant deployments typically receive smaller updates as they are released and implemented by the provider, which means you don't need to make your own changes that can potentially break future upgrades. In addition, regular updates mean that you'll have access to the latest changing regulations, even across multiple regions.

3. **Cost control**: Save your resources. You won't need to dedicate extra staff or security, or have to pay for excess capacity for peak periods and extra space for full redundancy and disaster recovery.

4. **Agility**: Support growth and change of your organization. Because a multi-tenant solution is kept modern, it will have the localizations needed for new regions. In addition, you can easily adjust capacity as needed for mergers or new branches.

5. **Innovation**: Free your IT team from maintenance tasks, so that they can focus on more strategic issues. Also, multi-tenant provides elastic storage capacity, which is the type needed for advanced technologies relying on large amounts of data, such as the internet of things, artificial intelligence, and machine learning.

6. **Platform as a service**: Create reports, personalize interfaces, and more without having to alter code because the multi-tenant architecture's no code/low code tools. Modern multi-tenant solutions should provide tools to support extensibility and offer the ability to personalize without the need for cumbersome modifications.

7. **Top-quality, sophisticated solution**: Be confident that the multi-tenant solution has been and continues to be highly scrutinized by the provider. For software to be viable in a multi-tenant environment, it must meet continued, rigorous testing and quality control standards.

8. **Opportunity to streamline**: Adopt proven best practices and get away from processes that have prevailed simply because "we've always done it this way." Migrating to a multi-tenant deployment is the chance to change workflows, priorities, and even workers' attitudes. For example, you can put the customer at the center of your enterprise or focus on product innovation. Eliminating modifications will help keep teams focused on new accomplishments, rather than preserving a familiar methodology. It also enables discipline for the future, providing a barrier to add-on projects that could adversely impact the software code.

9. **This is the future**: Leverage multi-tenant deployment as the basis for a long-term strategy and operational action plan. The benefits listed here are the foundation of a digital transformation. In addition, migrating to a multi-tenant deployment is likely the last major implementation you'll ever have to do because it will continue to adapt as technology changes.

Embarking on a digital transformation journey

Choosing between single-tenant and multi-tenant deployment is a critical part of your upgrade strategy. It's often a decision that's rushed or, by default, left to the IT team. The IT team may favor the single-tenant option to retain more control. The CEO and executive leadership, however, may be seeking an end-to-end transformation. If digital transformation is the goal and you want a long-term solution, multi-tenant is the best option for you. Choosing multi-tenant deployment is the first step in a digital transformation journey.

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