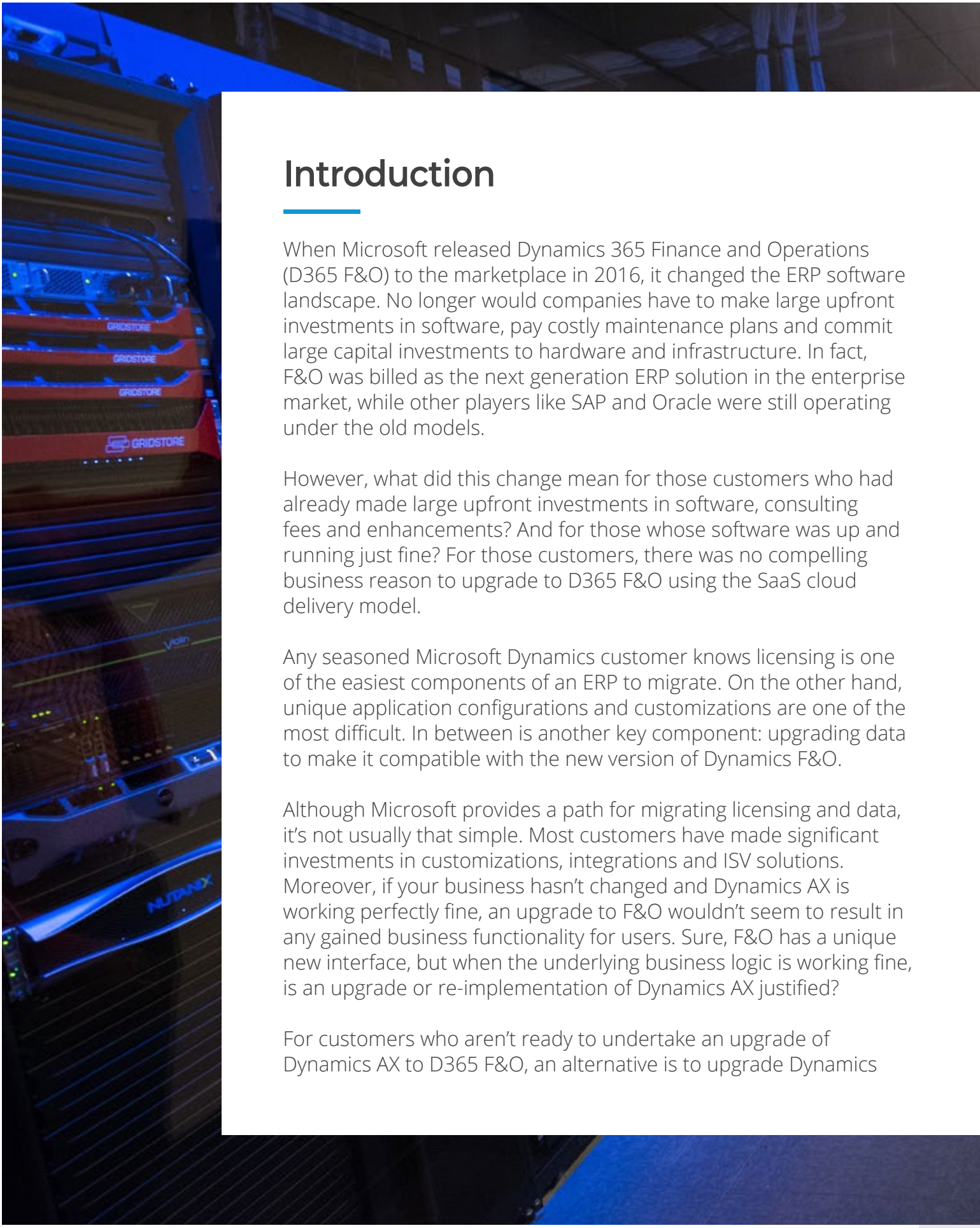
WatServ

Migrate Dynamics AX to Azure While Planning for Dynamics 365 Finance & Operations

A Guide for Dynamics AX Customers Looking for an Interim Solution



Introduction

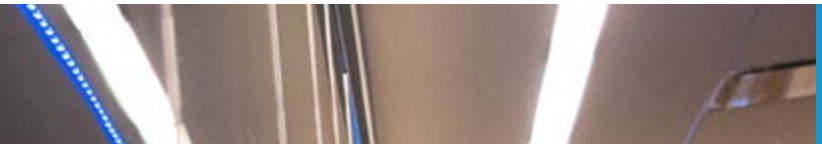
When Microsoft released Dynamics 365 Finance and Operations (D365 F&O) to the marketplace in 2016, it changed the ERP software landscape. No longer would companies have to make large upfront investments in software, pay costly maintenance plans and commit large capital investments to hardware and infrastructure. In fact, F&O was billed as the next generation ERP solution in the enterprise market, while other players like SAP and Oracle were still operating under the old models.

However, what did this change mean for those customers who had already made large upfront investments in software, consulting fees and enhancements? And for those whose software was up and running just fine? For those customers, there was no compelling business reason to upgrade to D365 F&O using the SaaS cloud delivery model.

Any seasoned Microsoft Dynamics customer knows licensing is one of the easiest components of an ERP to migrate. On the other hand, unique application configurations and customizations are one of the most difficult. In between is another key component: upgrading data to make it compatible with the new version of Dynamics F&O.

Although Microsoft provides a path for migrating licensing and data, it's not usually that simple. Most customers have made significant investments in customizations, integrations and ISV solutions. Moreover, if your business hasn't changed and Dynamics AX is working perfectly fine, an upgrade to F&O wouldn't seem to result in any gained business functionality for users. Sure, F&O has a unique new interface, but when the underlying business logic is working fine, is an upgrade or re-implementation of Dynamics AX justified?

For customers who aren't ready to undertake an upgrade of Dynamics AX to D365 F&O, an alternative is to upgrade Dynamics



AX to Azure. If this is an approach you are considering, this ebook provides factors to consider when making the upgrade.

Moving to Azure often means better scalability, increased opportunities to innovate, reduced costs and faster time to market. However, if the upgrade is not carefully planned and executed, users may experience disruptions and your business may be put at risk.

In this guide, you will discover:

- Why you should consider the interim step of migrating to Azure;
- Ten factors to consider prior to migrating Dynamics AX to the cloud; and
- Important elements to take into account when constructing, managing and optimizing a cloud environment for Dynamics AX.

This guide is based on WatServ's years of experience providing clients with cloud consulting, engineering and advanced managed services, with a specific focus on Microsoft Dynamics AX and Azure.

Divided into five sections, the guide covers:

SECTION 1: Cloud Discussion – The natural conversation for Dynamics AX customers is to migrate to D365 F&O, so why perform an Azure migration? This section will provide some examples of the benefits.

SECTION 2: Cloud Planning – This section provides a checklist of items to consider when planning a Dynamics AX to Azure migration. A clear plan will increase your chances of a smooth migration.

SECTION 3: Cloud Construction – After developing a plan, it's time to build the Dynamics AX cloud environment on Azure. This section offers a list of items to consider during cloud construction to help facilitate the process.

SECTION 4: Cloud Management – After you have migrated Dynamics AX to a private cloud or Azure, this section provides a checklist to help ensure your cloud environment is managed optimally.

SECTION 5: Cloud Optimization – This section offers advice on optimizing your cloud for performance and cost.

It is important to remember that each scenario and deployment is unique. Before undertaking any work, we recommend consulting with an organization with cloud migration experience or a certified cloud engineer. If you have any questions or need assistance, please get in touch with our team at info@watserv.com.

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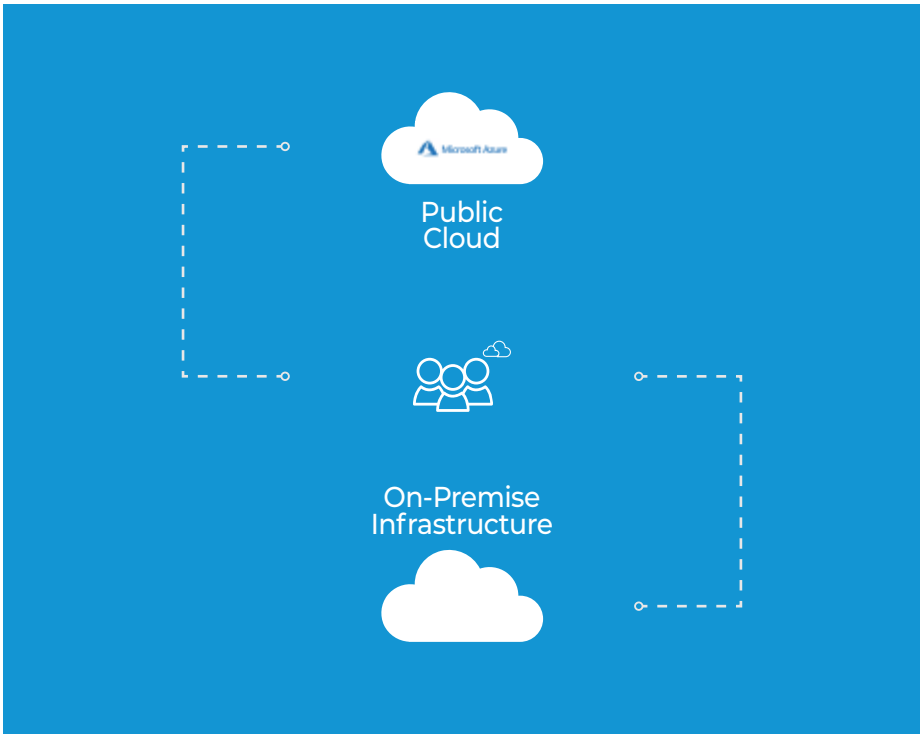
Section 1: Cloud Discussion

Why undertake an Azure migration when F&O is already cloud based?

Building on our discussion in the introduction, let's begin by examining why an existing customer would conduct an Azure migration instead of going straight to D365. First, the process of upgrading an existing Dynamics AX deployment to D365 F&O can involve months, and in some cases, years to fully plan and execute. While you're undertaking this process, you still have a business to run and your existing AX environment still needs to be maintained. Normally the teams that maintain and support your existing environment are the same ones that would be involved in an upgrade project, and there are only so many hours in each day. By migrating your existing environment to Azure, you free up your teams' time to focus on other priority work.

Furthermore, let's imagine that your business hasn't changed, nor have your needs for AX. However, you are running on aging infrastructure, which is starting to cause performance and reliability issues. Knowing an AX upgrade is going to be required by Microsoft at some point, it doesn't make sense to spend hundreds of thousands of dollars on new on-premise hardware and licensing. For these reasons, migrating your existing environment to Azure is a viable alternative that will improve performance and reliability, as well as support a longer-term plan to upgrade to F&O.



At WatServ, our most successful clients are those who have embraced the fact that the role of IT in organizations is evolving from "maintaining business systems" to "finding technology solutions to business problems". By migrating your on-premise AX environment to Azure, you are enabling your teams to do exactly that.

Section 2: Cloud Planning

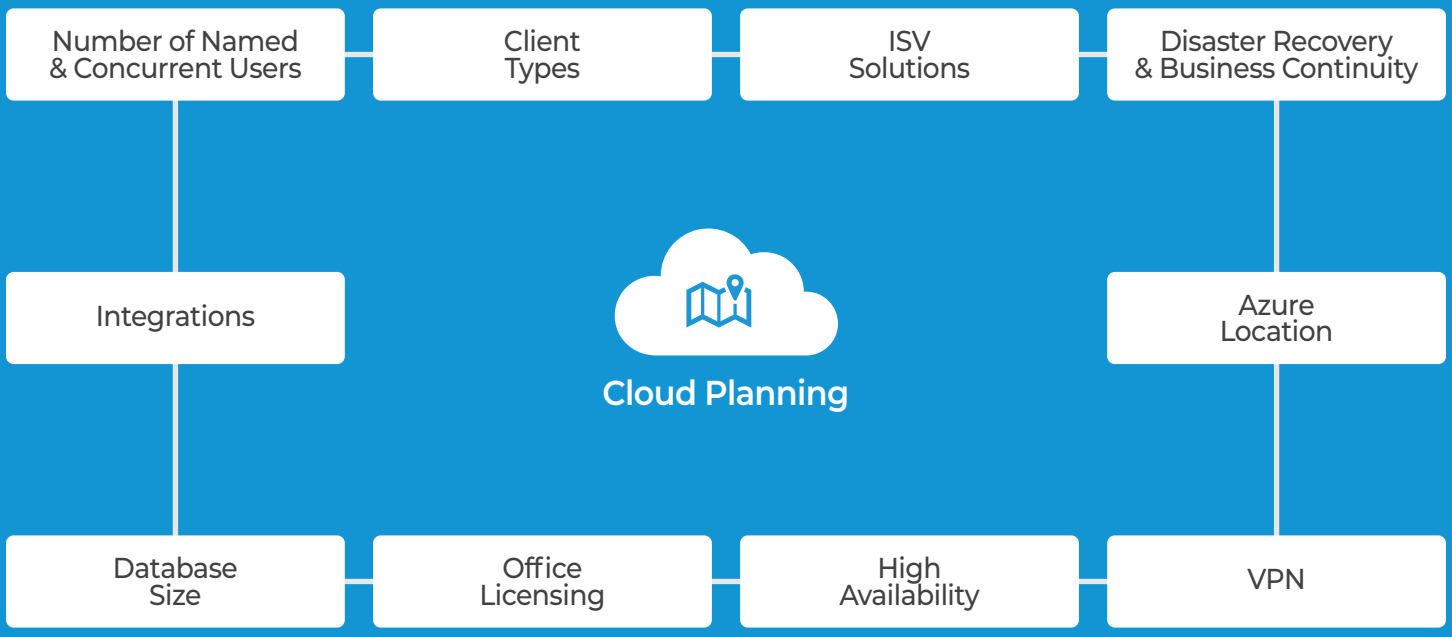
Ten factors to consider when planning your Dynamics AX migration.

In many cases, your plan for migrating to the Azure cloud will be similar to the one that was completed for your original deployment of AX on premise. Most customers will have already defined their key metrics and designed an effective solution, which makes this step much easier than it would be for a new deployment. Here are some questions to consider:

1. **How many concurrent and named users do you have?**
   From a load perspective, you only need to scale your infrastructure to meet the needs of your concurrent users, however you need to have licensing in place for all named users. Also, depending on the licensing mix (Enterprise, Functional, Device, Task) you may want to allocate more resources to the design. For example, enterprise users tend to be power users and need more resources allocated to their job function versus a task user.

2. **What client type will be ideal?**
   Dynamics AX has multiple client types depending on the user licensing. For instance, you may consider providing a direct connection (though not recommended), an RDP or Citrix server, or even potentially web portal access. What you select will depend on licensing considerations and the type of user experience you want to provide.

3. **How will you handle your existing ISV solutions?**
   In older versions of Dynamics AX, ISV solutions were commonly deployed inside the application and were seamless to the end users. However, you should pay close attention to third party solutions that require direct connectivity such as EDIs, bar code scanners (think: pick, pack, ship), or certain printers. These can require additional infrastructure considerations.



4. **Do you have an adequate disaster recovery and business continuity plan in place?**
   Many businesses fail to put a sufficient disaster recovery and business continuity plan in place. The level of investment required is dependent on a risk-reward conversation. What sort of downtime, for instance, are you willing to accept and what is the cost to your business? How much would you pay to have that risk and business disruption go away? There are no right or wrong answers; the tolerance of each business in the event of a disaster is different. Some organizations have fully tested and documented disaster recovery plans. Others are fine with offsite backups and a manual rebuild of the system in the event of a disaster. With Azure, the options for RTO and RPO's are almost endless. Furthermore, it is important to remember that with Azure, you will be able to perform certain actions quicker than you could on premise, such as replicating data with the click of a button.

5. **Which Azure data center location will you choose?**
   Azure's data centers are located in several regions across the globe, each with different pricing options. The data center(s) you select could be based on location or cost considerations. However, if you have data residency or data sovereignty requirements, your choices may be constrained (e.g., government departments may need to deploy within certain geographies to ensure compliance).

6. **Will you still need a VPN?**
   In most cases, you will be able to eliminate your VPNs. However, you will likely need to retain them for certain equipment such as warehouse handheld devices or printers.

7. **Is high availability high on your list?**
   During its growth years, Azure outages were common. However, in recent years, downtime has become significantly less frequent. It is important to assess your organization's needs to see if you will be satisfied by the reliability provided by Azure. There are options for more resilient infrastructure, but this will come with a higher price tag.

8. **How will you manage Office licensing?**
   Did you know that there are hundreds of different Office 365 SKUs available? This becomes a consideration when migrating to the cloud since your AX users will need to be licensed in a way that is compatible with your cloud deployment. For instance, if you are using a Citrix server, you will require a copy of Office on the server, as well as on each machine. Furthermore, Office 365 can come with 5 different licenses depending on the SKU, so you will need to keep track of which ones you are using. Also, not all Office 365 SKU's have license portability rights to use in a cloud environment, so understanding your Office 365 licensing is key to avoiding redundant or duplicate licensing fees.

9. **What is your database size, and how many do you have?**
   This consideration is applicable more so for your migration efforts, rather than for ongoing hosting costs, since the cost of storage in Azure is usually quite minimal.

10. **How will you handle integrations?**
    Many AX customers continue to do integrations manually through the DIF tool in Dynamics AX or through a third-party product. Whether you are bringing data in on a periodic basis, or automatically, will have a bearing on your deployment and configuration.

Section 3: Cloud Construction

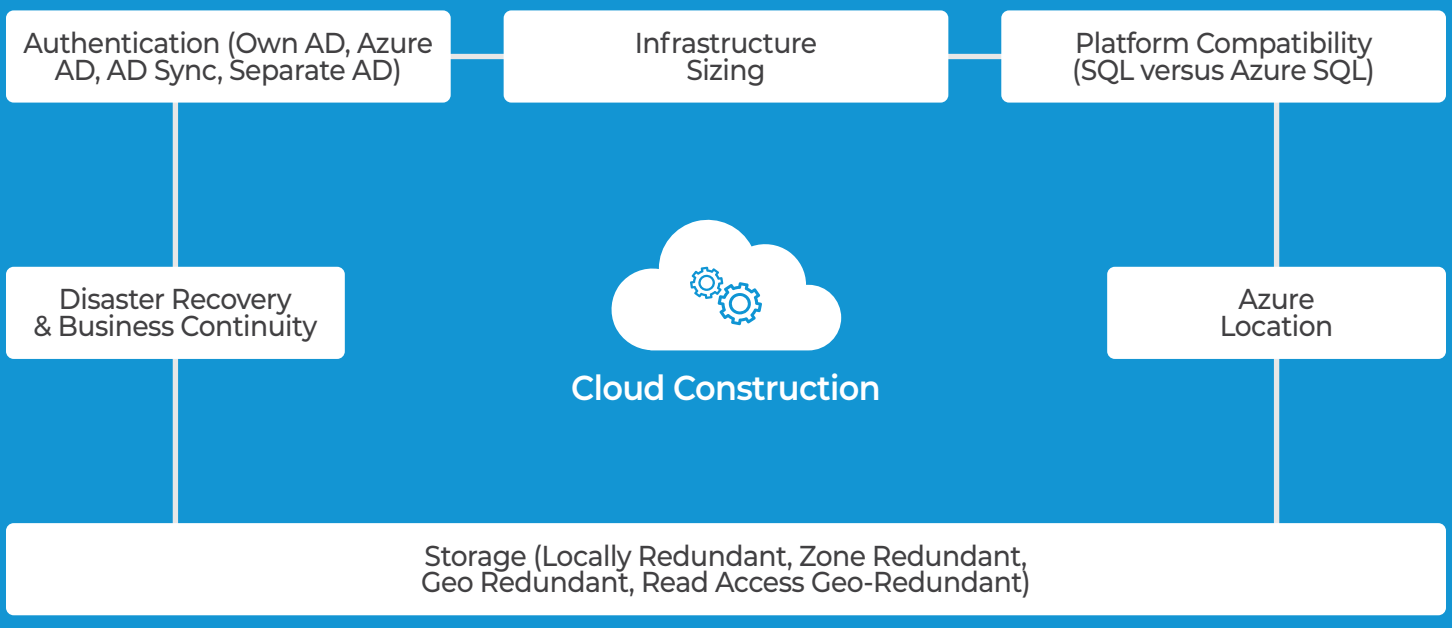
Three things to remember when constructing your Azure environment.

The cloud offers flexibility and adaptability that cannot be replicated in an on-premise environment. Here are some questions to ask to achieve better performance, lower costs and an enhanced user experience for your AX environment.

1. **How will you handle authentication?**
   Whether you chose to use your own Active Directory or Azure Active Directory, how you manage roles, permissions, compliance and administration need to be considered. You have options for SSO and MFA that might not have been previously available, or enhanced security available through Azure Active Directory Premium.

2. **What size and configuration of server will you need?**
   Your user count and load will drive the size of the servers and infrastructure needed. Azure realizes that no two customers are the same and offers approximately 30 unique server sizes and configurations, all of which you can access with the click of a button from a dropdown menu. Conveniently, if you choose the wrong one or want to move to the next size, you can easily change your selection.

3. **What are your storage requirements?**
   Locally redundant. Zone redundant. Geo redundant. Read-access geo redundant. Azure offers many different options to store your data and VMs. While each option has different costs associated, you can have different setups for different workloads. For instance, you can make your SQL server geo redundant and your AX application reside in one data center only.



Section 4: Cloud Management

Nine things to consider after deploying Dynamics AX in Azure.

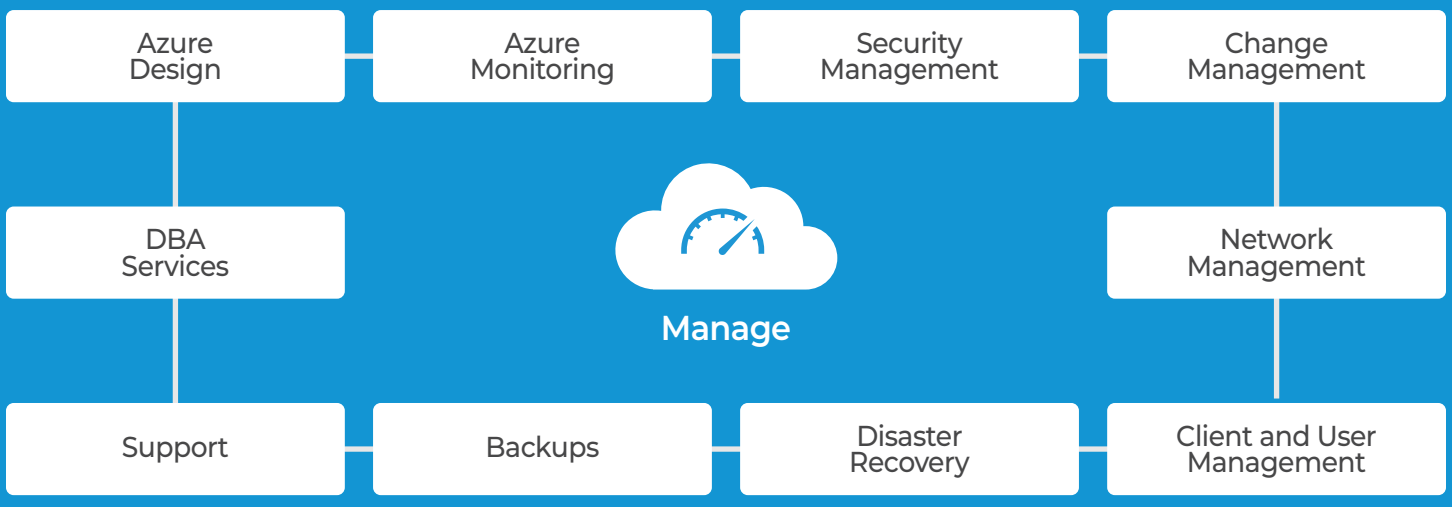
If you've been running Dynamics on premise for years, most of the considerations discussed in this section have probably been taken care of by your internal IT departments. However, many IT organizations don't have the experience or exposure to manage an AX environment in Azure, since the skillsets required are different from on premise. If the goal is to enable your internal teams to stop maintaining business systems and focus on adding value to the business, these are practical tasks that can be outsourced. It's important to note that some people assume that these tasks are handled by Microsoft, but unfortunately they're not.

1. **How will you manage the ongoing design of your Azure environment?**
   Many customers find that the longer they leave a VM sitting in Azure, the more expensive it becomes in relation to newer technologies released by Microsoft. When using the cloud, it is important to conduct ongoing design evaluations. Conveniently, the process to update background infrastructure in Azure is quite simple and usually involves the click of a button.

2. **How will you conduct ongoing monitoring of Azure?**
   Azure offers many native monitoring tools, making it simple and accessible to monitor elements like utilization, users, the network, and so on, on an ongoing basis.

3. **How will you deal with ongoing security management?**
   Unfortunately, the cloud does not eliminate the need to consider security. Rather, it simply changes the strategy. Security management must be consistently managed in your Azure environment.

4. **When it comes to network management, how will this be handled?**
   This is something to think about if you have interconnectivities between on-premise or multiple sites and Azure. It is critical to ensure you have these integrations well documented and managed appropriately.



5. **Who will provide client and user management?**
   It is true that most customers find moving to Azure creates more work in terms of user management. However, if your organization does not have a significant turnover, it is feasible to handle this extra task assuming there is a defined process in place.

6. **How will you handle disaster recovery?**
   Now is the time to make sure you have a run-book built and that you are performing annual tests and simulations.

7. **What is your protocol for conducting backups?**
   The truth is, when operating on premise, most customers do not perform the correct backups, at the right times. However, in Azure, you can set backups to occur automatically, making the process more efficient and less complex to manage.

8. **Who can provide DBA services?**
   Having a certified SQL DBA on call to make changes, troubleshoot and provide support is recommended. In some cases, these services may be provided by your Dynamics VAR partner. In other cases, they are provided by your internal IT teams. Regardless, this is a critical task that needs to be performed by someone to ensure the optimal functioning of AX.

9. **Who can provide support when you need it?**
   Who can you call for platform or Dynamics AX support? What about cybersecurity support? Having a plan in place will safeguard your business and bring you peace of mind, knowing you are covered.

Section 5: Cloud Optimization

Questions to ask when optimizing Dynamics AX in Azure.

A key difference between an on-premise and an Azure-based AX environment is the ability to easily make changes to the environment to ensure optimal performance and cost. Here are some questions to consider when approaching cloud optimization:

1. **Do you need the environment as currently deployed?**
   When engineering an on-premise deployment, you have to oversize infrastructure and servers to make sure the performance is as good possible. Since it can be difficult, expensive and time consuming to make changes to an environment once built, most companies err on the side of over-engineering, but this can also be expensive and wasteful. With an Azure deployment, you can monitor the usage of the environment on a server-by-server basis to see where a server might be over-sized or under-utilized, and easily adjust the specifications of that server. Conversely, you can monitor when a server might be overloaded or reaching capacity and make changes quickly to ensure the environment is reliable and performing properly. Since each server has its own price point, you get peace of mind that you are paying only for what you need.

   In some cases, we've seen customers reduce the number of AOS's required to deliver the solution by approximately 20%. The remote desktop environment can also be reduced, in some cases also by 20%, by simplifying the entire environment.

2. **Do you need the entire environment available 24x7x365?**
   Most AX customers require their production environment be available 24x7x365. However, many have also made significant investments in development and testing environments. If this is you, ask yourself: Do I require the same availability for these non-production environments? Since Azure resources are billed by the minute, and there are 744 hours in a month, if you can reduce the number of minutes used, you reduce the spend. For example, if you need a development environment available from 9am-5pm, Monday to Friday, that adds up to 160 hours per month. Why pay for 744 hours if you only need the development environment for 160 hours? Reducing the availability in this way could potentially save you up to 80% each month, yet still give your developers an adequate environment.

   By moving to a reduced availability environment for pre-production and development environments, our customers have been able to reduce their monthly bills by 33%.

3. **How will you deal with ongoing security management?**
   We discussed the environments that aren't required 24x7x365 above, but what about the environments that are? Once you have right-sized the environment, you can then lock the servers in for either a 1 or 3-year term, yet still pay monthly. When you combine this with the Hybrid Benefit, which allows you to leverage your existing licensing in Azure, you can save up to 80% as compared to pay-as-you go pricing.

   Our customers have realized savings by selecting a reserved instance, some reducing their monthly spend by over 25%.

The combination of the points above can result in a 40% reduction in the number of servers required, when compared to on premise.

Real Life Results

What can you expect to achieve after optimizing Dynamics AX on Azure?

Optimization Matters
At WatServ, we conducted a migration for a global manufacturing company, moving them from on-premise to Azure. After their migration, we monitored their cloud environment for utilization and infrastructure needs, and then conducted optimizations. Through this process, we were able to help the company achieve the following results.

- 20% reduction in the number of AOS's required
- 20% reduction in the number of terminal servers required for users to access AX
- 40% reduction in the total number of servers in the AX environment
- 50% reduction in the number of development/test environments
- Savings of 33% when moving to reduced availability where possible
- Savings of 26% when compared to Azure pay as you go pricing

By following the advice provided above, you can achieve cost savings too.

Conclusion

While some organizations have already migrated to D365 F&O, and others are actively planning or undertaking a migration, there are still some that are not. Many companies simply aren't ready to upgrade, don't want to upgrade, or can't migrate at this time.

The first iteration of D365 F&O was released in November 2016. Even if you were one of the last organizations to implement AX 2012 R3, that makes your infrastructure at least 4 years old. The normal life cycle for hardware replacement is every 3-5 years, making your infrastructure in need of replacement to keep Dynamics AX running properly to support your business.

This guide has outlined another option. By migrating AX to Azure, you can avoid the costs of replacing your aging on premise infrastructure or upgrading to D365 F&O.

Additional Resources

1. Microsoft Dynamics 365 Licensing Guide
2. AX 2009 Upgrade: Use the Data Migration Tool to Migrate from Dynamics AX 2009 to Finance and Operations
3. Upgrade from AX 2012 to Finance and Operations

Need additional support?

Our team of Dynamics AX and cloud experts would be pleased to assist.
Please contact us at info@watserv.com.

WatServ is an IT solutions provider helping clients digitally transform their businesses through cloud technologies and services.

For more information, visit www.watserv.com