Moving Your Government Agency to the Microsoft Cloud

1,365 U.S. federal government agencies and 8,740 state and local government agencies use Microsoft Cloud services.

InfoStrat

Contents

Executive Summary

The Microsoft Cloud for Government is a complete cloud platform designed specifically for U.S. Federal, State, and Local Governments providing cost savings opportunities, rigorous security and compliance – including FedRAMP, HIPAA, and CJIS-capable features – and the flexibility to run in government, public, or private clouds with an integrated open platform. Governments across the United States – from the biggest federal agencies to the smallest towns – are increasingly turning to the cloud to be more productive and collaborative, and to better harness exponentially growing amounts of data that helps them better support the citizens they serve. View the interactive website for a list of migrated agencies and their selected services.

No major cloud provider is as committed to supporting the needs of government agencies as Microsoft, and Microsoft has built the most trusted, comprehensive cloud for government.   Microsoft is the only Government Cloud provider that has:

- DoD Impact Level 5 readiness
- Signed CJIS agreements in 23 states
- Six dedicated government U.S. datacenters
- Largest compliance portfolio
- Formal eligibility process

This whitepaper is written for government agencies that are determining the most effective approach for moving to the Microsoft Cloud for Government and would like to review some of the key factors to consider as they evaluate the best way forward to meet their needs.

What is the Microsoft Cloud for Government Anyway?

Microsoft recognizes that government agencies have many distinct needs separate from commercial organizations.   These include areas such as security standards and adhering to a variety of mandated government standards.   Consequently Microsoft has created a separate Microsoft Cloud designed exclusively for U.S. Federal Government agencies which has the following characteristics:

- Physically isolated datacenter and network

- Data, applications, and hardware reside in the continental United States

- Provides true geographic redundancy with datacenters located more than 500 miles apart

- Operated by screened U.S. persons

- Committed to meeting rigorous compliance requirements and government policies

- The first major cloud platform to receive a FedRAMP Joint Authorization Board (JAB) Authority to Operate (P-ATO)

- Designed to help meet U.S. government needs and compliance requirements including FedRAMP, CJIS, and HIPAA.

The Microsoft Cloud for Government physically segregates sensitive government data storage and computer power from other non-government cloud servers, while restricting access to data to screened U.S. citizens. All customer data, content, organizational data, hardware, networking, physical infrastructure, and supporting personnel are based in the continental United States. There's even a dedicated East Coast region designed to be close to Washington D.C. and surrounding area customers to help provide high-speed connections due to proximity. Utilizing Microsoft's cloud provides more security and a documented roadmap that can help keep government agencies in compliance with citizens' privacy and other legal standards.

Microsoft's Cloud Offering

Microsoft has the broadest spectrum of cloud services of any vendor. Microsoft offers equivalent capabilities in the cloud for all of its on premise products. Consequently, an association which has standardized on Microsoft products will have a clear path to migrate to the cloud.

Many Microsoft products are released in the cloud before they are released on premise. Microsoft's focus on the cloud has reduced the time between releases for its products.

The Microsoft Cloud falls into four major areas:

- OFFICE 365 is a subscription-based online office and software plus services suite which offers access to various services and software built around the Microsoft Office platform, including email, productivity tools and document management.
  - Exchange Online

  - SharePoint Online

  - Office Web Apps and Office Mobile

  - OneDrive for Business

- MICROSOFT DYNAMICS 365 delivers rich sales automation, service management and marketing automation functionality through your browser and within your everyday productivity applications.
- PLATFORM AS A SERVICE (PAAS) is a cloud model in which providers deliver apps over the Internet and host users' hardware and software on their infrastructure. PaaS is provided through Microsoft Azure. Microsoft Azure is an open and flexible cloud computing platform offering cloud services. You can run not only Microsoft servers, but also Linux servers, Oracle and open source applications in Microsoft Azure. Azure is the only major cloud platform ranked by Gartner as an industry leader for both infrastructure-as-a-service (IaaS) and platform-as-a-service (PaaS). This powerful combination of managed and unmanaged services lets you build, deploy, and manage applications any way you like for unmatched productivity.
- INFRASTRUCTURE AS A SERVICE (IAAS) delivers computer infrastructure on an outsourced basis to support enterprise operations. Typically, IaaS provides hardware, storage, servers and data center space or network components and may also include software. IaaS is provided through Microsoft Azure.

Office 365 is arguably the most straightforward cloud solution to understand and one of the easiest to migrate from on premise. Users will require very little retraining when switching to Office 365 from Exchange, Outlook and Office on premise.

SharePoint Online is available bundled with Office 365 or as a standalone service. Like Office 365, it is familiar to users of SharePoint on premise and migration is straightforward. Be sure to budget some time for cleaning up your SharePoint intranet and document repositories as part of the migration effort, because they tend to become cluttered and out of date over time.

Dynamics 365 can be the centerpiece of a constituent management system, and includes many features such as mobile apps, social listening, and marketing tools. A trial subscription is a powerful way to evaluate the capabilities of Dynamics 365.

Microsoft Azure can provide the cloud infrastructure for other applications that are not addressed by Office 365 and Dynamics 365. It is a powerful and flexible platform that IT specialists can use to host many legacy software applications an association may be using.

Evaluating the Benefits and Risks of Moving to the Cloud

How do you make the decision to move your applications to the Microsoft Cloud? What are the motivations for your move?

Cloud computing can provide a number of benefits such as:

- **Guaranteed uptime** – Cloud providers offer service level agreements and stand behind high availability which is difficult to achieve for most on premise data centers

- **Wide availability** – If your users are scattered around the country or around the world, cloud deployment puts them on an equal footing, and response time is likely to improve for remote users.

- **Business continuity** – Cloud providers can give you the capability to fail over to a remote data center in case of a disaster as part of a broader disaster recovery plan.

- **Data center best practices** – Cloud providers such as Microsoft, Amazon and Google set the standards for managing large data centers and are committed to be completely up to date in their updates and security procedures which are managed and deployed by them. The customer is ultimately responsible for the security of their systems in the cloud by keeping up with best practices. Poor passwords would not be Microsoft's responsibility, for example

- **Reduced labor costs** – You may not need as many employees or outside contractors to help with your computing infrastructure compared to on premise computing.

- **Linear cost scaling** – Cloud computing is usually charged based on consumption, whereas on premise computing requires periodic large capital investments on hardware as well as ongoing connectivity. The cloud model eliminates capital spending spikes on server infrastructure.

- **Temporary servers** – Cloud infrastructure allows you to create temporary environments for developing new solutions.

- **Cost savings** – You may save money compared to on premise computing. These savings are not guaranteed, because they depend on the particulars of your need and environment.

- **Upgrades -** Perpetual upgrades can be installed with minimum impact to the business. One benefit Microsoft Cloud customers enjoy is the constant software updates. Customers are always on the latest version of the office web applications, such as SharePoint and Office desktop apps, without having to schedule downtime or person hours to perform updates.

We recommend looking at each application or server separately and then comparing the total costs of ownership for both the current "on premise" deployment versus the possible cloud deployment over a multi-year timeframe for each application.

Costs for each scenario include people, software licenses, hardware, data center charges, storage costs, support, and other costs. If applications are projected to be sunsetted within the next one or two years you could exclude them from this analysis, as the short remaining lifespan might not justify further investment to move them to the cloud.

First, take an inventory of all the applications in use and classify them to make the business case and prioritize the order in which to proceed.

Make an Inventory of Your Applications

Applications may be classified by several factors to plan migration to the Microsoft Cloud. Complete the table like the one shown below for all your applications. Be sure to include any third party products required for each application and also list these third party applications as a separate row in the table as well.

The next step is to analyze the best targets to move to the cloud.

Application	Expected Growth	Customization Level	Projected Lifespan	Vendor	Financial Stability of Vendor	Cloud Version of Product?	Associated required 3rd party software
Microsoft Office	Steady state	None	10+	Microsoft	Excellent	Yes	None
Membership Application	Increasing	Lightly	5-10		Excellent	Yes	SQL, SharePoint
SharePoint	Steady	None	10+	Microsoft	Excellent	Yes	None
Dynamics	Steady	Lightly	10+	Microsoft	Excellent	Yes	None
Accounting	Steady	None	10+		Good	No	None
Grant System	Steady	Heavily	0-5		Questionable	No	SQL Server
Custom Application	Steady	Heavily	5-10		N/A	No[1]	SQL Server

If a software vendor's financial stability is in question, this may raise the urgency for possibly migrating to a different product from a vendor with greater stability.

Next we will want to look at the applications that have a long projected life span (10+ years) for which there are already cloud equivalent products available from the vendor in the marketplace and are not customized. If an application is experiencing rapid growth in usage, this factor will raise the priority for

---

[1] There may not be a cloud SaaS offering for some of these, but nearly anything can run on an Azure Virtual Machine. Microsoft provides migration tools to move Virtual Machines (VMWare and Hyper-V) into the cloud as-is. VMWare machines have to first be converted to Hyper-V, but those tools are available as well.

cloud migration as moving to the cloud will enable the ability to easily add resources to accommodate increased demand. Applications with projected declining usage will be lowered in priority.

After you have prioritized the list of applications, you will create a cost model for each application. For each application we will need to build a cost model over five years that examines the costs of the "as is" application relative to the cloud implementation as follows:

TABLE 1. HYPOTHETICAL COST ANALYSIS

Deployment	Licensing	Support	Datacenter	Technical Staff	Migration Costs	Cost
Current	$20,000	$1,500	$5,000	$100,000	$0	$126,500
Cloud*	$40,000	$0	$0	$20,000	$20,000	$80,000
Differential	($20,000)	$1500	$5000	$80,000	($20,000)	$46,500

*It is important to note that the actual cloud cost can be variable depending on the product and resources being used. For example SQL Server is priced based on database throughput.

In this hypothetical example, it will cost $20,000 to migrate the application to the cloud, but the cost savings due to reduced need for technical staff and reducing datacenter charges will more than offset the migration cost resulting in an overall savings of $46,500.

Microsoft Office 365 ROI Calculator
The Return on Investment (ROI) calculator uses the details you provide about your company, including number of users and the type of solution you need to implement. It calculates your ROI based on default

values taken from the Forrester Total Economic Impact (TEI) report. Provide a few basic details to get started. Choose View calculations to see how much you can gain by implementing Office 365.

This ROI calculator may be overkill for some customers, so a simpler approach can be used as follows:

Cost of Hosting		On Premises Costs
	$	Exchange Server
	$	Exchange CALs
	$	SharePoint Servers (and SQL)
	$	Lync Server (and SQL)
$_____	$	Storage for all above
	$	Other third party apps in use such as Box, video conferencing and on-line meeting solutions
	$	Administration of all the above

Be sure to consider the non-monetary benefits that are unavailable on-premises such as Office Mobile and Yammer. Also, essentially unlimited Exchange/OneDrive storage.

Microsoft Dynamics 365 Pricing

InfoStrat provides an easy to use calculator for all of the Dynamics 365 options:

	Plan 1*	Plan 1 Team Members*	Power Apps	Sales	Field Service	Customer Service	Project Service Automation
Number of Users	0	0	0	0	0	0	0
Contact	📄🖉	📄🖉	📄	📄🖉	📄🖉	📄🖉	📄🖉
Marketing List	📄🖉	📄	📄	📄🖉	📄	📄	📄
Leads	📄🖉	📄	📄	📄🖉	📄	📄	📄
Custom	📄🖉	📄🖉	📄🖉	📄🖉	📄🖉	📄🖉	📄🖉
Per User	$60 - $115	$4 - $10	$40	$95	$95	$95	$95
Sub-Total	$0	$0	$0	$0	$0	$0	$0

Microsoft Azure (IaaS) Cost Estimator Tool

For an overview of the cloud cost estimation process, consult the Microsoft Azure Cost Estimator Tool.

The Azure Cost Estimator Tool will profile VMware/ESX, Virtual Machine Manager, Hyper-V, and Physical servers over a period of time and report resource consumption and align it to resources and VM sizes within Microsoft Azure.

Select the First Target Application and Conduct a Trial

The results of the analysis will yield one or two "no brainers" that are either obvious cloud opportunities or low risk, or both. That's really where we recommend you start to dip your toes in the cloud and help your staff gain some experience and get comfortable with the platform. We recommend migrating one application for an initial trial period of one month. Note that Microsoft provides 30-day free trials for both Microsoft Office 365 and for Microsoft Dynamics 365. We suggest starting with the application which will be the least costly to migrate which will also in all likelihood be one for which there is a cloud equivalent product available.

As with all new product rollouts, start with a core group of end users who are willing to be early adopters of the new system and to provide feedback early on and later will be strategic peer mentors to the rest of the company. Carefully evaluate the performance of the system using the most common user scenarios and modify system resources to make sure that performance will meet or exceed expectations.

You may hire an experienced Microsoft partner like InfoStrat to guide you through this process and help use all the Microsoft Cloud services. Below are some high level steps required for migrations for some of the more popular Microsoft Products.

Authentication

Microsoft Dynamics 365 is part of the Microsoft Office 365 collaboration and productivity tools delivered in the cloud. The Microsoft Office 365 portal provides a single sign-on experience for Office 365 customers where they can sign in once and access any Office 365 application, including Microsoft Dynamics 365. In addition, system user accounts in Microsoft Dynamics 365 can be provisioned in the Microsoft Online Services admin portal. Using federation, applications can connect to Microsoft Dynamics 365 in the cloud using the same system user identities and credentials available in an Active Directory based network. Additional documentation on authentication can be found here.

Migrating from Exchange to Office365

Detailed steps to migrate your on-premises Exchange mailboxes to Exchange Online in Office 365 are provided here.

Migrating from Dynamics CRM On-Premise to Dynamics 365

- Export the solution which includes the customizations from the On Premise system and import to Dynamics 365.

- Download Custom Reports and import them to Dynamics 365 custom application. You may have to refactor the reports for the online environment.

- If plug-ins are used in the solution, install and refactor the plug-ins for the online environment.

- Data Migration: Microsoft provides a utility called Microsoft Dynamics 365 Data Migration Manager that enables you to convert and upload data from another CRM system to Microsoft Dynamics 365: There are also third party tools such as Scribe and COZYROC that migrate data between systems.

Migrating from SharePoint On-Premise to SharePoint Online

Prior to migration, we recommend that organizations take a step back and inventory their existing sites to determine current owners, and let it be a collaborative effort with the content owners. To move from SharePoint On-Premise to Online you can use a third-party tool or you can do it manually. If you migrate your content manually (via windows explorer view or mass uploads) you will lose the metadata associated with the documents (for example, when the document was created and who created it). Third-party tools that we recommend include Metalogix and ShareGate.

Azure Cloud Services

For systems not being migrated to one of the Microsoft Cloud products (Office 365, Dynamics 365) either initially or at a later date, these systems can be migrated to Azure "as is" in order to still get them off-premise. When you create an application and run it in Azure, the code and configuration together are called an Azure cloud service. By creating a cloud service, you can deploy a multi-tier web application in Azure, defining multiple roles to distribute processing and allow flexible scaling of your application. A cloud service consists of one or more web roles and/or worker roles, each with its own application files and configuration. Azure Websites and Virtual Machines also enable web applications on Azure. The main advantage of cloud services is the ability to support more complex multi-tier architectures. . A detailed comparison can be found here.

Monitor and Optimize the Cost

Since the cost of Azure is in part variable, it is important to monitor your usage and add or remove resources as needed to maintain performance without overspending.

One benefit of having an application or process in Azure is the metrics that you get for free. Having an exact monthly breakdown of usage costs for each application and or process can shed light on where the money goes. Once on Azure, you can accurately measure costs such as, storage, bandwidth and CPU on a per application basis. This makes ROI much easier to calculate.

Microsoft provides a tool called MetricsHub offered as a free service for all Azure customers. You can sign up and provision MetricsHub through the Windows Azure Store and then use MetricsHub to monitor your applications. You can add the service directly from the management portal in the Add-Ons section (Windows Azure Store). MetricsHub supports both Windows Azure Cloud Services and Windows Azure Virtual Machines.

The MetricsHub portal offers different thresholds for maintaining a healthy cloud environment, based on parameters such as target CPU range and number of messages in a queue. It also provides a cost forecast before and after applying the auto scaling options, truly automating the provisioning process in the smartest way possible, balancing cost with performance.
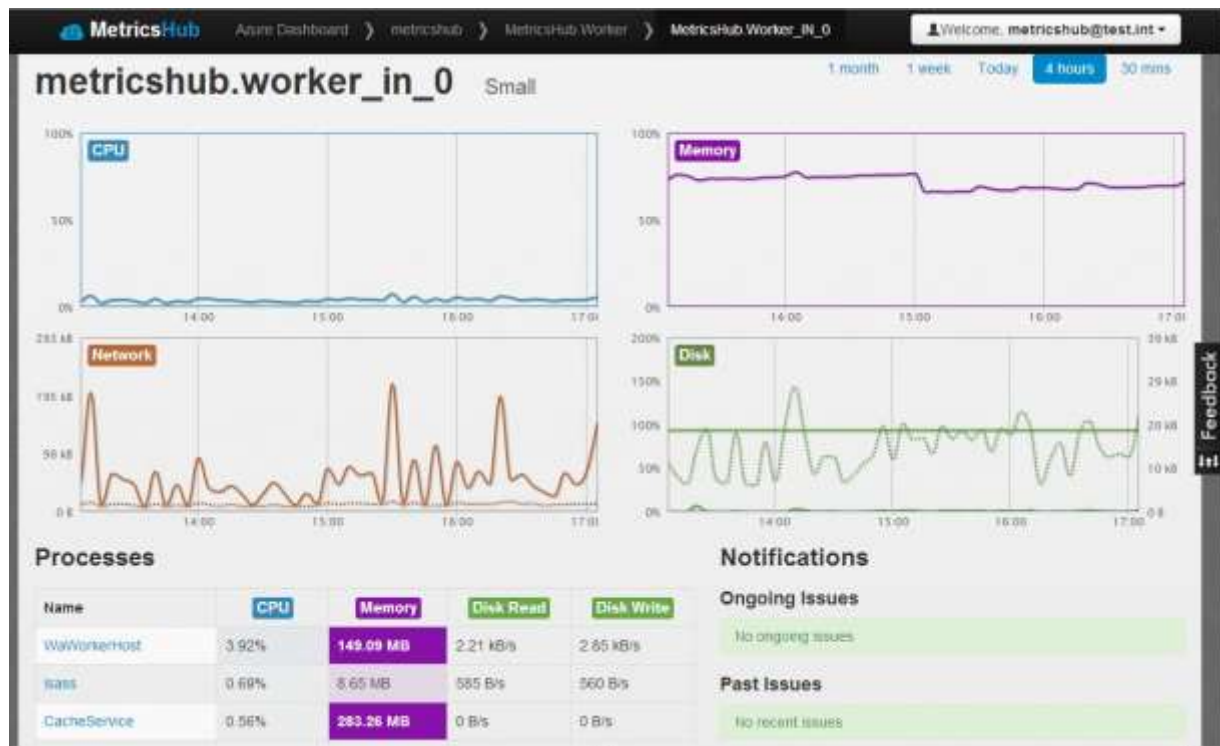
Conclusion

Moving to the Microsoft Cloud can increase flexibility and help organizations rapidly adapt their systems to changing business requirements. As of May 2017, 1,365 U.S. federal government agencies and 8/740 state and local government agencies have already moved to use Microsoft Office 365. More than 3 million U.S. government workers currently use Office 365. Additionally, 215 U.S. federal government agencies and 459 state and local government agencies use Microsoft Dynamics CRM Online. 302 U.S. federal government agencies and 1198 state and local government agencies are using Microsoft Azure. Clearly the move towards the Microsoft Cloud is compelling and getting stronger every day.

The Microsoft Cloud allows for easier access and better performance for users away from the office. Some of the benefits of moving to the Microsoft Cloud include outsourcing the hassle of managing extremely complex software systems, eliminating most hardware acquisition and maintenance and improved uptime. Moving to the cloud can reduce overall cost by reducing or eliminating the need for private data centers and expensive system administrators.

By having Microsoft take care of the management of these systems and services, government agencies can focus their attention on serving their constituents and improve their overall efficiency in accomplishing their missions.

About Information Strategies

Information Strategies, Inc. ("InfoStrat") is a national Information Technology ("IT") consulting firm. We are trusted advisors to many state and local governments and institutions. We have been in business for over 28 years and have a proven track record of success. InfoStrat began with a focus on implementing relational database management systems and evolved into developing sophisticated web applications, portals, customer relationship management systems, and multi-touch applications. InfoStrat is recognized as one of the nation's leaders in adopting Microsoft development technologies, more recently in the areas of multi-touch devices, business intelligence, and social networking.

InfoStrat is one of the top Microsoft Application Development Partners in the nation and is a Gold Certified Partner, the highest partner category. InfoStrat has Gold Certifications in Customer Relationship Management and Collaboration and Content.

InfoStrat

5101 Wisconsin Avenue, NW

Suite 420

Washington, DC 20016

202.364.8822

www.infostrat.com