

WHITE PAPER

A STEP-BY-STEP GUIDE FOR

Migrating from Microsoft Dynamics AX 2009 to Microsoft Dynamics 365 for Finance and Operations



Introduction

For companies running their businesses with on-premises enterprise applications such as an ERP solution, moving to a more flexible and secure cloud application has enormous advantages in both cost and efficiency. That's the reason we are seeing existing Dynamics AX 2009 and AX 2012 customers upgrading their business systems to the cloud. And as these on-premises AX versions are reaching their end, now is the time to plan your upgrade path.

Dynamics 365 for Finance and Operations (cloud) offers a bevy of new features, enabling organizations to save a significant amount through cloud deployment options and reduced customization. With the end of mainstream support for Dynamics AX 2009 (SP1), AX 2012, and AX 2012 R2 on October 9, 2018, security hotfixes for these three versions will only be available until October 21, 2021. Thus, it is advisable to upgrade to the latest version, i.e., Microsoft Dynamics 365 for Finance and Operations. If you're using any of the three on-premises versions, it's time to get a plan in place to move from your legacy Dynamics AX to a cloud-enabled intelligent business application: Dynamics 365 for Finance and Operations. The upgrade will take time and planning, so now is a good time to start.

If you're ready to migrate from AX 2009 but want to start on the right foot and avoid unnecessary pitfalls, this white paper will provide the required information and tips for migrating your entire system to the cloud. It will incorporate Synoptek's experience in reusing/preserving/modifying existing customization, data mapping and migration, the new development platform, LCS, and other project concerns.

Dynamics AX 2009 vs. Dynamics 365 for Finance and Operations: Why Upgrade?

It is well known that a powerful ERP system is necessary for consolidating departments, bridging data siloes, and making operations more efficient. What's even more necessary for organizations is to have the latest and most modern ERP in place, to take advantage of new features and capabilities. On-premises ERP such as Dynamics AX lack Azure cloud functionality. As organizations today see the advantage of transitioning their business applications to the cloud, many are considering the latest version of Microsoft Dynamics AX, which is Microsoft Dynamics 365 for Finance and Operations. Dynamics 365 for Finance and Operations brings the power, speed, and intelligence of cloud computing to organizations allowing them to adapt to market demands and drive business growth.

Dynamics 365 for Finance and Operations provides personal workspaces that aid users in carrying out their daily tasks easily and quickly, and a new user experience that allows anytime, anywhere access for improved productivity and user satisfaction. Built-in smart intelligence combines Cortana Intelligence, Power BI, and Azure Machine Learning for deep insights into business performance. Dynamics 365 for Finance and Operations provides all the information you need through rich visuals and dynamic charts on the device of your choice. Additionally, the Common Data Model simplifies data management and integration across apps and business processes, allowing businesses to analyze massive amounts of data to get a unified view, connect this data with information in other Microsoft apps, and empower employees to maximize their efforts.

Given the many benefits that a cloud-ERP like Dynamics 365 for Finance and Operations can bring to the table, migration is a smart choice to make the most of the modern system. However, there is an urgency in making this move because Microsoft is ending support for Dynamics AX 2009. If you're ready to make the change, you may have questions such as the following:

01

How will the end of extended support for Dynamics AX affect my organization?

When the extended support ends in October 2021, organizations that continue to run Dynamics AX 2009 will no longer receive security updates, hotfixes, or patches. If you face any product or security issue, you might not easily find partners or resources to support your old ERP. Also, since the version will no longer be supported, new business initiatives will be even more difficult to push through. Not only will organizations miss out on new and improved features, they will also be highly vulnerable to security breaches, which can put the organization, its data, and its resources at risk.



02

What are the options for preparing for the end of extended support for Dynamics AX 2009?

As Dynamics AX 2009 extended support nears its end, now is the time for organizations to plan their upgrade path. Here are a few options: 1) pay for a custom support contract, and continue receiving security updates for a limited period of time, 2) migrate to Dynamics 2012 R3 and get limited support until October 2021, or better still 3) upgrade to Dynamics 365 for Finance and Operations and transform your business using cloud capabilities.



03

Why does moving to Microsoft Dynamics 365 makes the most sense?

Considering the various options, moving to Dynamics 365 for Finance and Operations is the best way for businesses to continue to innovate and drive value across the organization. By moving to the cloud, organizations can not only eliminate upfront investments in infrastructure, network, storage, and space but also pay only for the services they use in the cloud. Actionable insights can allow for better business results, and unlimited scalability can ensure businesses grow at their own pace. Updated features and functionality, greater productivity features, and the stability and security of Azure can enable better intelligence, analytics, and workflows for improved business outcomes.



Planning for a Dynamics 365 Finance and Operations implementation

For organizations looking to make smarter and faster decisions, and ensure they make the most of their resources, Dynamics 365 for Finance and Operations can bring the business to a whole new level if implemented successfully. You have two options: implementing Dynamics 365 from scratch, or upgrading your workloads from AX 2009. Fresh implementation works if you've outgrown most of your AX customization and you need to align your system with new business processes. It enables you to bring about significant business process changes, and drive better processes. With a fresh implementation, you can also reduce the amount of customization, bring in new integrations, and more easily leverage the benefits of the new system. However, with fresh implementation, data migration is usually a challenge. Also, you will have to train users not only on new business processes, but also on how to use and make the most of the new platform.

On the other hand, upgrade works when you want to preserve all of your customizations while adding greater value through the new features and capabilities. An upgrade allows you to move your code and data as is; and though it demands more technical work, training is limited to the new platform. However, with an upgrade, you will need to first upgrade to AX 2012 R3 and then to the Dynamics 365. You also stand the risk of taking unnecessary data and systems into the new platform, and have to put in efforts to precisely analyze all of your customizations – most of which are standard features in the new version. No upgrade is straightforward; you must take a sundry list of factors into consideration. Careful planning and executing of the implementation is crucial. Here are a few things to keep in mind while planning for the implementation:

Depending on what works better for your organization, you need to choose between fresh implementation and upgrade. No matter what route you choose, remember that no implementation is going to be straightforward; you must take a sundry list of factors into consideration. That's why due diligence and assessment is critical. Here are the steps to successful due diligence:

01

Define your goals and vision

It takes real planning to achieve a successful Dynamics 365 for Finance and Operations implementation.

Before you start, it is crucial to define your goals and vision. Do you want to use the same processes or move to better processes? Are you concerned about business sustainability and growth? What problems are you facing in your existing system? What features of the new solution are you looking to implement? How much of your existing data are you planning to migrate? How do you plan to move your current modules into the cloud? Do you have the necessary network bandwidth to move your workloads? How will you ensure continuity of operations? How will you ensure redundancy? Strategizing your planning and considering all the critical issues beforehand will help avoid potential headaches later.

02

Build a skilled team

Successful Dynamics 365 for Finance and Operations implementation is never the result of the work of one person.

Cross-functional teams who excel at understanding migration concepts, ensuring timely communication, identifying gaps, and mitigating quality control issues are key to your success. Make sure to build a team of experts that can ensure every task is completed on time and within budget. A skilled team can not only implement process improvements along the way, but also can offer recommendations to overcome bottlenecks.

03

Engage a partner from the very beginning

Although you might have a pool of expert resources who can help plan and upgrade from AX 2009 to the cloud version, considering the complexity of the project, it is advisable to engage a Microsoft partner from the very beginning. A qualified partner can bring the required experience and expertise and will know how to leverage the right skills and knowledge of everyone involved in order to achieve the project's goals. Choosing an experienced partner with the required industry knowledge will lead to a more rapid implementation, at a lower cost, and will result in a more successful outcome.

04

Go through an assessment

While implementing Microsoft Dynamics 365 for Finance and Operations it is important to go through an assessment with your partner to finalize the approach. This includes deciding what data and workloads need to be moved during the upgrade process. Account for extra hardware capacity, network connectivity, as well as redundancy to make sure there is least disruption to your business. Allow your partner to put up a proper business continuity plan in place, and ensure there are proper KPIs in place for disruptions. Since there are various license options at hand, you also need to work with your partner and choose one that best fits your needs. Start by understanding all the possibilities, and then go about deciding the number of licenses you need, how much they will cost, and how you can scale as your business grows. You can either go for user licenses or device licenses, or a mix of both – depending on your business requirements.

The upgrade path - configuration and data migration

An upgrade to Dynamics 365 for Finance and Operations from Dynamics AX 2009 typically involves two activities: code upgrade, through which you upgrade your business logic, or 'code' and data migration through which you migrate your business data to the new data model. Let's look at both the activities in detail:

Code migration

Given the significant changes Microsoft has made to the development experience in Dynamics 365 in terms of the programming language, development environment, browser-based client, and new Application Lifecycle Model, understanding the code upgrade process is critical for a smooth and seamless transition. Once you've familiarized yourself with the various concepts, you can plan for the code upgrade process:

01

Start by choosing the right package to make sure your code is automatically re-baselined into the appropriate package based on your current architecture.

02

Use the LCS code upgrade service to get an estimate of the effort required to upgrade the solution.

03

Run migration rules to auto-migrate parts of the solution, convert metadata into the latest format, and check-in the upgraded solution into your Visual Studio Team Services project.

04

Configure developer VM & VSTS to connect to the upgraded code branch.

05

Fix all compilation errors and conflicts to enable automatic compilation of packages.

06

Resolve certain best practice warnings (prefixed as BP) to comply with the Best Practice framework and complete the migration.

07

Make sure to constantly be aware of code upgrade to-dos and best practice warnings.

08

Change (or turn off) certain project debugging settings (default values help improve debugging speed) to ensure smooth debugging.

09

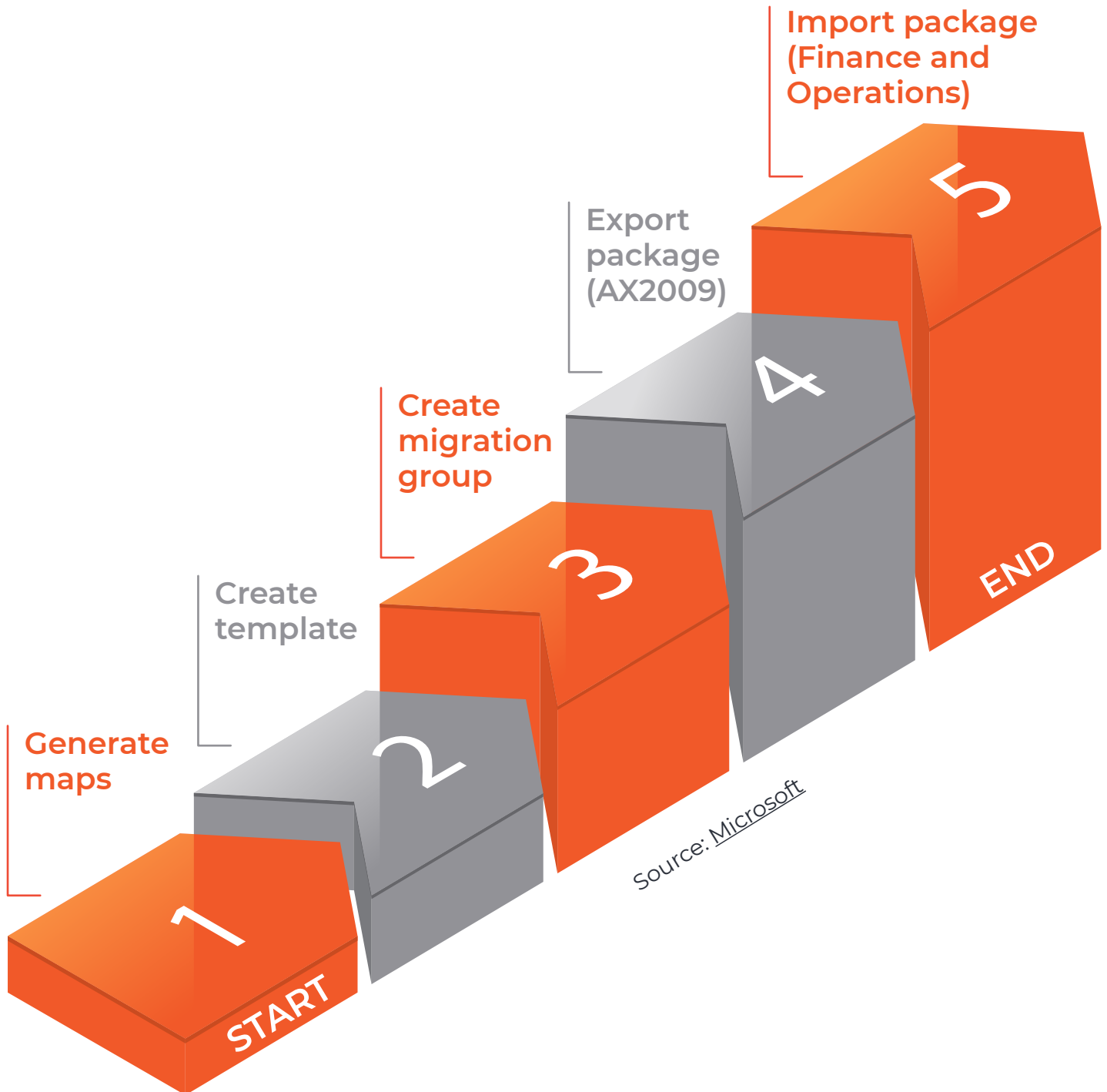
Fix certain to-dos and best practice upgrade specific rules as part of the code upgrade process to complete manual migration tasks.

10

Migrate context menus by adding a constant for each menu option, building the context menu, and processing the user selection from the menu.

Data migration

For migrating data from Dynamics AX 2009 to Dynamics 365 for Finance and Operations, the only option you have is to use the Microsoft Dynamics AX 2009 [Data Migration Tool](#) (DMT). Not only does it allow you to move your data, the DMT also helps find and fill gaps between table schemas.



Using the DMT, you can find and fill gaps between the table schemas of AX 2009 and Dynamics 365 for Finance and Operations, as well as successfully move your data to the new model. For a successful data migration, here's what you need to do:

- Map the table fields between the source and target environments.
- Apply conversions to the source data, and set up default values for the source data.
- Apply query filters, and select the legal entities that contain the data to migrate.
- For the selected legal entities, review the source tables and their row counts.
- Make sure to map the source table to an equivalent target data entity - you set up the mapping by using a Microsoft Excel mapping file that allows for automatic mapping of the source and target fields of each table.
- Select target dimensions that correspond to the source dimensions that are populated based on the selected legal entities.
- Review the inventory dimensions that are included with the selected legal entities.
- Select the chart of accounts for each legal entity, or consolidate multiple legal entities into a single chart of accounts.
- Complete the basic ledger setup.
- Apply data conversions to the source data, based on the extended data type (EDT) of the field.

Preparing for go-live

Once the code and data are ready to be migrated, it is time to prepare for go-live. Microsoft Dynamics Lifecycle Services (LCS) is the best way to improve the predictability and quality of your Dynamics 365 implementations. LCS simplifies and standardizes the implementation process, and offers a collaborative environment along with a set of regularly updated services to help you effectively manage the application lifecycle of your implementation. Delivering the right information, at the right time, to the right people ensures a successful implementation. Listed below are the steps you will need to carry out in order to prepare for go-live with LCS:



Update the go-live date in LCS, and make sure to complete and send the checklist.

Carry out a thorough project assessment, and review until all questions are clarified and mitigations are in place.



Once the assessment has been successfully completed, submit the production request and start the deployment.

Once the deployment is done, send a request for deployable package installation and follow the instructions as mentioned.



Carry out the tasks listed for database copy from sandbox request, and have your partner take over the production-ready environment for go-live.

Pro tips

No ERP implementation or migration project is ever straightforward. With a zillion things to take into consideration, chances of overshooting deadline and budget, dissatisfied users, poor outcomes, and so on are fairly high. Having said that, ERP implementation or migration is also not an impossible task; with the right tips and tricks, you can successfully set up your Dynamics 365 for Finance and Operations platform.

Here are some pro tips for a successful implementation:

Assess existing systems and tools

01

Before embarking on the implementation journey, it is important to take an inventory of all of your current systems, databases, and applications. Assessing existing systems and tools is recommended to minimize delays, waste, and the chances of a failed implementation.

Understand every new functionality

Before you start migrating your data and workloads, analyze all the customizations and create plans for your code upgrade.

This is important for understanding if simple customizations will work, or whether a complete refactoring is required. Work with your value-added reseller and software vendors (ISVs) to ensure all the necessary upgrade scripts are in place for your upgrade.

02

Build a cross-functional team of experts

03

Successful Dynamics 365 implementation is a result of members from teams coming together, who can identify inefficiencies, and work around bottlenecks, time gaps, and quality control issues. They can provide timely recommendations and ensure every task is completed on time and within budget.

Appoint a qualified leader

Having a leader who knows how to leverage the right skills and knowledge of everyone involved for project success is an important aspect of Dynamics 365 implementation. A leader will not only have good time, communication, and management skills to meet project goals, he/she will also be able to track data, follow-up with staff and deal with day-to-day issues and bottlenecks.

04

Here are some pro tips for a successful migration:

01

Start small

Considering how massive a migration project is, taking a big bang approach is more likely to result in catastrophe. To get the most out of the migration, what works best is starting small. Begin by choosing a few areas of business that would benefit the most from the migration, and see how it all works out with time. If possible, do an in-place migration on your existing environment instead of migrating servers to reduce the complexity of the migration. Check whether the source and target test systems are working correctly before you start with the upgrade process in your production environment.

02

Review your licensing

A lot has changed from the AX 2009 era to the Dynamics 365 for Finance and Operations era – not only with respect to features and functionality, but also in terms of licensing. Hence, when migrating to the cloud version, make it a point to talk to your partner about your licensing needs. Since Microsoft offers different types of licenses and plans for different types of users and devices, it is important you get the conversation going from the beginning.

03

Analyze customizations

Before you start migrating your data and workloads, analyze all the customizations and create plans for your code upgrade. This is important for understanding if simple customizations will work, or whether a complete refactoring is required. Work with your value-added reseller and software vendors (ISVs) to ensure all the necessary upgrade scripts are in place for your upgrade.

04

Clean up and back up data

With AX 2009 having existed for more than a decade, there is a ton of information that resides in the system, a lot of which is unnecessary and redundant. Run the Intelligent Data Management Framework (IDMF) against your Dynamics AX 2009 database, and make sure to get rid of redundant and unnecessary data. A clean database can not only reduce the processing time but also help you in operating your business more efficiently.

05

Make documentation a habit

Dynamics 365 offers a host of new and improved features, many of which organizations are unaware of. In a bid to embrace all the features, organizations end up customizing the solution to a great extent. This can not only add to the cost of migration but also makes it extremely complex and time-consuming. Documenting your customization needs with the business functionality that Dynamics 365 offers is essential to avoid any overlap of features and ensure you still get the most out of the migration.

06

Always compare code

Any migration project is sure to result in several code conflicts. If not identified and resolved in time, they can stall the entire migration project and lead to an unfavorable migration outcome. Using the Dynamics code compare tool, you can identify code conflicts in time; not only see code changes between the two versions, but also view detailed information about the conflicts and handle renamed codes more efficiently.

07

Optimize the configuration of the database server

Another important step you must take to get the best out of the migration is optimizing the configuration of the database server. When your database is configured for the highest possible performance and throughput, you can make sure that other applications that are running on the server do not compete with the upgrade process for resources. Constantly review performance benchmarks of your existing database server, and add more resources if needed.

08

Test, test, test

No migration can be 100% successful if you don't make continuous testing a mantra! Not only should you test for functionality, but also test to see how various migration processes are affecting your business performance. For best outcomes, automate your testing and outline user acceptance testing in a clear, well-defined project plan. Clearly state each individual step required for the downtime window. Make sure your testing plan is as granular as possible to ensure there are no surprises and that everything works as expected.

Get future-ready

In the cloud-era, businesses need to constantly embrace new technologies and innovations to enable agility and drive value. Yet, the decision to migrate to the latest version of AX plagues many. Given the fact that extended support for AX is scheduled to end soon, and given the constantly evolving features of Dynamics 365 for Finance and Operations, switching to a cloud-based instance of Dynamics AX has become a business imperative. Organizations can migrate in a number of ways: they can transition their current licenses to the new platform. Those with Software Assurance can stop their current maintenance payments once they hit their renewal date and move to the cloud service; and others can leverage the cloud add-on service to continue with their maintenance plan while adding a Dynamics 365 license on top whenever necessary. While the data migration tool can enable seamless upgradation, what's important is to get an experienced partner onboard who can ensure the move is relatively easy and provide the required support throughout the migration timeline. A partner can not only ensure the migration goes as planned, but also perform rigorous testing and compare the results for the best outcome.

About Synoptek

Synoptek is a global systems integrator and managed IT services provider offering comprehensive IT management and consultancy services to organizations worldwide. Founded in 2001, headquartered in Irvine, CA, we have offices and resources across North America and delivery centers in Europe and India.

Our key services include:

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- Business IT Services Cost Optimization Assessment
- Risk Management: Availability & Data Protection Assessment
- Program & Project Management
- Retained CIO/CTO/CISO/Service Management Services

Business Process and Software Solutions

- Business Applications
- Data Insights
- Product Development Services
- Workforce Productivity

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Synoptek focuses on providing maximum “business value” to our clients, enabling them to grow their businesses, manage their risk/compliance, and increase their competitive position by delivering improved business results.

 19520 Jamboree Road #110 Irvine, CA 92612

 888-796-6783

 www.synoptek.com

