The best track
to upgrade
to Microsoft
Dynamics 365
Business Central
SaaS

Contents

1. Microsoft Dynamics 365 Business Central overview

Since the creation of the product in 1987, new versions were released continuously and consistently equipped users with new functionality and access to new technologies. With recent years' releases, Microsoft introduced significant changes, such as:

With the changes that were introduced in past years, Microsoft continues the long history of product improvements and provides enhanced business functionality, and more support for ERP computing in the cloud. Whilst embracing Microsoft improvements, Dynamics partners and customers started raising questions regarding the naming of the technologies that became available and how to actually move to Dynamics 365 Business Central.

In April 2018, Dynamics NAV became part of Microsoft Dynamics 365.

In October 2018, Dynamics 365 Business Central became available in the cloud, on-premises, and in a hybrid deployment. Two product code versions, cloud and on-premises, merged into one with a stable bi-annual update release schedule.

With April 2019 all customers across Dynamics 365 were put on a consistent update schedule.

In October 2019, , with the Dynamics 365 Business Central 2019 wave 2 release, Microsoft discontinued the Business Central base application in C/AL and continued in AL language only.
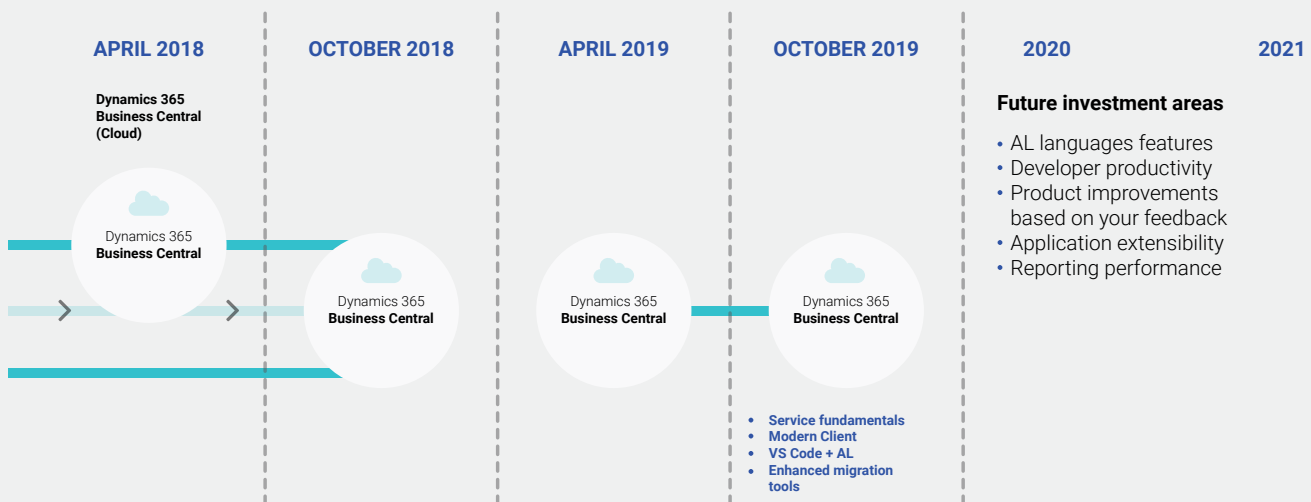
Figure 1. Dynamics 365 Business Central roadmap.

What's new in Dynamics 365 Business Central 2020 wave 2 release

- **Improved and Simplified Administration:**

  - **Improved management of the available database and file capacity** provides an overview of the database and file capacity and how much is in use. Administrators can now purchase additional database capacity when the default limit of 80 GB is exceeded.

  - **Support for an unlimited number of production and sandbox environments** enables the creation of more business branches, a move into more countries or expansion within certain regions. Starting with the 2020 release wave 2, one production environment and three sandbox environments are available at no extra charge for new customers with a Dynamics 365 Business Central Premium or Essential subscription and an unlimited number of additional production environments can be purchased through the CSP Partner.

  - **Restoring environments to a point in time in the past** allows customers to recover data in the event it is damaged and ensures business continuity.

- **Expanded Country and Regional Availability:**

  - Business Central SaaS is now **available in Brazil, Ireland, Lithuania and India.**

- **Integration with a Common Data Service is Improved at Multiple Levels:**
  Users can connect to a Common Data Service environment and associate a Dynamics 365 Business Central company with a Common Data Service business unit since the Business Central 2020 wave 1 release. A Common Data Service enables users to have a 360-degree view of their business and gives users a shared, consistent view of data across Dynamics 365 solutions.

  - **Improved data exchange** between Business Central and Common Data Service decreases the number of conflicts and enables users to be more productive.

  - **Business Central virtual entities leveraged** directly with Power Apps enables consumption for Common Data Service solutions.

  - **Experience increased security** when using the latest version of Dynamics 365 SDK when connecting to a Common Data Service and other business applications that are based on a Common Data Service.

- **Enhanced Data Migration from Dynamics GP, Dynamics SL, and Business Central On-Premises to Business Central SaaS:**

  - **Added support to migrate data** from Business Central On-premises version 14.x or 15.x to Business Central SaaS version 16.x.

  - **New upgrade logic** eliminates the need to upgrade to Business Central On-premises version 14.x or 15.x in order to migrate to Business Central SaaS.

  - **Ability to move historical Dynamics GP data into Azure Data Lake** during the migration to SaaS process allows access to data for reporting, tax and auditing purposes without the need to maintain the system in-house.

- **Boosted Performance Across the Platform and Business Application:**

  - **Extension publishers get telemetry in Azure Application Insights** which provides information about issues in the Extension before Microsoft Partners and customers report it.

  - **More responsive browser experience** with on-demand loading of page elements, server resources are optimized for fast user interaction and the database is tuned to handle more data and faster load times.

  - **Increased service stability** with scheduled upgrades, maintenance during non-working hours and service health practices to ensure maximum uptime.

  - **Improved security infrastructure** and processes to safeguard the solution and secure data.

- **Matured Usability of Modern Client Productivity Features:**

  - **More responsive pages** with FactBoxes allowing users to view and interact with page content quickly.

  - **Increased user productivity** by enabling a report request to open multiple previews one by one without closing the main window.

  - **Quickly open the Role Center home page** when signing into Business Central.

Introduction to Microsoft Dynamics 365 Business Central SaaS

Since 2016, the product became available as a web-based Software as a Service (SaaS) solution accessed via dynamics.com. Microsoft Dynamics 365 Business Central SaaS is a set of applications that transform the way that businesses work as it is designed for organizations to integrate business processes faster, make decisions quicker and connect with their customers in real time. Microsoft Dynamics 365 Business Central SaaS is the next generation of Dynamics NAV for the age of digital transformation, powered by the cloud, data, and intelligence. Businesses consider choosing Microsoft Dynamics 365 Business Central SaaS instead of the on-premises version for many reasons.

Dynamics 365 Business Central – On-Premises vs. SaaS

Business Central on-premises and SaaS have the same application base, but the main difference is related to the different aspects of on-premises and SaaS deployments:

On-Premises	SaaS
Initial costs exist.	No initial costs only pay for what you use
The On-Premises product lifecycle is less than the one in SaaS; always updated.	The lifecycle of the product is unlimited, always updated to the latest version.
You need IT support for maintenance.	Platform maintenance in SaaS is done by Microsoft, no IT support is needed.
The hardware may have to be updated if not hosting.	There is no hardware to update.
The standard base application can be customized.	Robust scalable infrastructure. Operations are scaled to optimize performance.
Internal .NET components can be used.	Customizations are allowed by installing extensions.
System tables can be accessed.	Alternative .NET products can be used, such as Power App.
Direct access to SQL is allowed.	System tables cannot be accessed to increase security.
Folders in server can be reached.	SQL database cannot be accessed directly.
	Only online folders such as Blob storage, OneDrive can be reached.

The main benefits of Business Central SaaS solution for Microsoft Dynamics customers are as follows:

- **Zero infrastructure costs** and maintenance.

- **Enables automated upgrades** with minimal efforts.

- **The ability to choose a pay-as-you-go financing model.** Now customers can turn IT operations into an operational expense (OpEx) model instead of capital expense (CapEx), removing the need for any upfront investments and replacing them with predictable monthly fees.

- **Endless integration** with Microsoft SaaS products (e.g. Flow, AI and Power Platform capabilities).

- **Out of the box apps** allowing a growing ecosystem to support the vertical and horizontal needs of the customer.

- **Ability to try an app at no cost**, avoiding the cost and effort of an install/uninstall on-premises.

- **Business Central SaaS functionality** makes it easy to comply with compliance and regulatory legislation, such as the International Financial Reporting Standards, GDPR and more.

Conclusion

The new cloud-powered Business Central with tailored features and agile interface became a goal for many solutions. Even though it is not possible to move all types of customer installations to Business Central SaaS today, there are a few strategic options to consider that allow upgrade to Business Central SaaS sooner or later.

2. Upgrade to Business Central SaaS strategies

When moving to Business Central SaaS, the biggest consideration is discerning how to successfully move customers from Microsoft Dynamics NAV (any version) or Dynamics Business Central on-premises to Dynamics 365 Business Central SaaS smoothly, safely, and in a timely way. To help with that, 1ClickFactory distinguishes three upgrade strategies that allow you to separate out and compare different approaches in order to make the best choice for your solution.

Migrate data and reimplement in SaaS

About the strategy

The migrate data and re-implement in SaaS strategy is based on migrating outdated NAV/Business Central solutions to an updated version of Business Central SaaS without any customizations, and reimplementing missing functionalities from scratch. It can be done with the data migration tools that greatly help Microsoft Dynamics partners to migrate customer data from any older version to the latest version of Microsoft Dynamics 365 Business Central. If add-on products (i.e. ISV solutions) are used in the previous outdated solution and are available for the newer version, these can also be added during the upgrade project.

When to choose it?

This strategy is the best choice for Microsoft Dynamics partners and their customers that have outdated NAV/Business Central versions. Frequently, organizations running such outdated versions do not see a viable means of getting their solution up to date and back on track because the upgrade becomes too complex and too expensive, as many customizations in the solution are not relevant anymore or have been replaced by standard Dynamics 365 Business Central functionality.

If you are ready to adapt the business processes and best practices of Business Central instead of customizations, this is where the migrate data and reimplement in SaaS strategy for NAV/Business Central solution comes in. Otherwise, if you want to keep customizations, upgrade the solution including most of the customizations to SaaS in one step.

Upgrade solution including most of the customizations to SaaS

About the strategy

With this strategy, solutions are upgraded to SaaS in one step and it is the fastest upgrade approach if you need to keep customizations. Many customizations and **constraints to go to SaaS** raise the upgrade price as they accumulate many development hours to transition customizations to extensions and solve constraints. To reduce the price to upgrade to Business Central SaaS, it is recommended that, before upgrading, you clean up the solution of unused customizations and upgrade only the necessary customizations and data to the latest version.

When to choose it?

The upgrade solution to SaaS in one step strategy is recommended for small and medium-sized solutions that experience no constraints to go to SaaS straight away, such as:

- Do not have a lot of customizations.

- Localizations are available (For a list of currently available localization, see [here](#).

- Add-ons are released on AppSource as extensions

If you have many customizations and need to keep all of them, and if you are experiencing constraints to go to SaaS straight away, the lift and shift to SaaS strategy is recommended.

Lift and Shift to SaaS

About the strategy

With the lift and shift to SaaS strategy, the migration to Business Central SaaS happens in two phases over a 1–2-year period. During the first "lift" phase, the solution is moved to Microsoft Dynamics 365 Business Central on-premises. After that, you should wait for product improvements from Microsoft, and then proceed to the second "shift" phase. During the "shift" phase, the solution is moved to a SaaS deployment smoothly resolving limitations along the way.

When to choose it?

This is an ideal strategy for larger and more complex solutions that are ready to transition to Business Central SaaS but are experiencing one or more of the technical limitations listed below:

- Add-ons are not yet available in Microsoft AppSource

- Integrations with non-SaaS-ready software are required (software that you cannot integrate through Web Services)

- Budget challenges when the technical limitations for extensions or SaaS versions require significant re-design/investment

- The need to manage your own requirements for availability and backups.

Strategy	When is it relevant?	What is moved?	Pros	Cons
Migrate data and reimplement in SaaS (develop the necessary but not available functionalities from scratch)	Very outdated solution with no direct upgrade path. A large percentage of customizations are not used or have been replaced by standard functionality.	Upgrades all data to the latest version (including custom tables) but does not include any customizations (these would have to be designed and developed from scratch).	New implementation with all historic data and design with new technologies in mind. No unused customizations, therefore, easier future upgrades.	Usually, the project lasts longer because it not only requires to move data but also to do the development. Waste of initial investment in customizations.
Upgrade solution including most of the customizations to SaaS	Small and medium-sized solutions that want to keep customizations and have no or few constraints to go to SaaS.	Brings all or selected customizations and data forward to the latest version in one step.	The fastest way to achieve SaaS benefits.	Resolving SaaS-related technological constraints may significantly increase costs.
Lift and shift to SaaS	Large and complex solutions that experience technological constraints to transition to SaaS.	Brings all data and customizations forward as extensions in two phases.	Reduced transition risk. Ability to leverage and influence standard product development reduces transition costs.	Migration happens in two phases; therefore, SaaS benefits are delayed, and on-premises infrastructure renewal is required.

Figure 2. A comparison of an upgrade to Business Central SaaS strategies

3. The best path to upgrade to Dynamics 365 Business Central SaaS

Once you know which upgrade to Business Central SaaS strategy fits your business situation best, it is easy to make a choice and proceed with the execution. To help you make the right choice, we highlighted the key factors that you should consider when choosing the upgrade to Business Central SaaS strategy. These considerations are visualized in the flowchart below and reviewed in detail throughout this document, aiming to demystify the options and facilitate the decision-making process.

Is your solution **version supported** by Microsoft?

NO

YES

Do you want to keep your **customizations** and **business processes**?

YES

Do you have a demand for the **new features**?

NO

Wait until your **solution version** is supported by Microsoft

NO

YES

Do you have **constraints** to go to SaaS now?

YES

Microsoft **improves** product

NO

LIFT

SHIFT

Migrate data and reimplement in SaaS

Migrate **customizations and data** on On-Prem

Upgrade solution **including most of customizations** to SaaS

1ClickFactory CleanStart to SaaS

1ClickFactory Upgrade to On-Prem

1ClickFactory Upgrade to SaaS

1ClickFactory Phased transition upgrade

LEGEND:

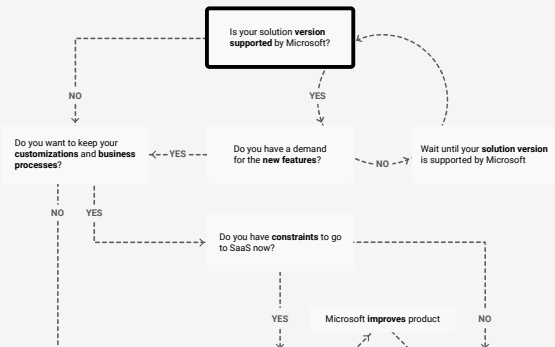**Strategies:**

● 1ClickFactory **offers**
● Migrate data and reimplement in SaaS
● Upgrade solution including most of customizations to SaaS
● Lift and Shift to SaaS

Figure 3. Options and strategies to upgrade to Dynamics 365 Business Central SaaS.

4. Is your solution version supported by Microsoft?

The first question to ask when choosing the upgrade to Business Central SaaS strategy is whether your solution version is supported by Microsoft. Knowing key dates in the Microsoft support lifecycle helps to make informed decisions about when to upgrade or make other changes to your software. It helps to maximize the management of your IT investments and strategically plan for a successful IT future.

What can the end of support mean for the customers?

While the Microsoft Dynamics NAV/Business Central solution is supported by Microsoft, it receives incident support and can benefit from new features, security, and non-security updates. When a solution moves out of support, there is no possibility to request any design changes, warranty support or new features anymore. As an example, when the General Data Protection Regulation was instigated, Microsoft released update packages for all products that had support. Doing this simplifies the update process and reduces customer costs.

Contrarily, if support is finished, customers will most likely have to pay for the full cost of the required programming work themselves, in order to adapt to the newly applied changes. Further, within the time, you will no longer receive any security updates to your core ERP, which could become vulnerable, putting your business at risk of catastrophic system downtime and/or failure.

Not upgrading to the latest versions of Dynamics NAV/Business Central means that you are missing out and cannot take advantage of numerous functionality improvements and useful features.

Support policies

The Dynamics NAV/ Business Central support policies are as follows:

- **Mainstream Support** – the product is receiving incident support, new features, security updates, and non-security updates.

- **Extended Support** – the product is receiving security updates once warranty claims end and Microsoft is no longer accepting requests for new features or design changes.

- **Beyond Extended Support** – no updates of any kind.

Until the Dynamics 365 Business Central 2019 wave 2 release, Dynamics NAV/Business Central had a fixed support lifecycle policy which includes 5 years mainstream support, then extended support.

Modern Lifecycle Policy

Starting from the Dynamics 365 Business Central 2019 wave 2 release, an updated software lifecycle policy has been established, named the Modern Lifecycle Policy. For products governed by the Modern Lifecycle Policy, Microsoft will provide a minimum of 12 months' notification prior to ending support if no successor product or service is offered, excluding free services or preview releases. Products with existing lifecycle policies will continue to be supported according to the published end of support dates.
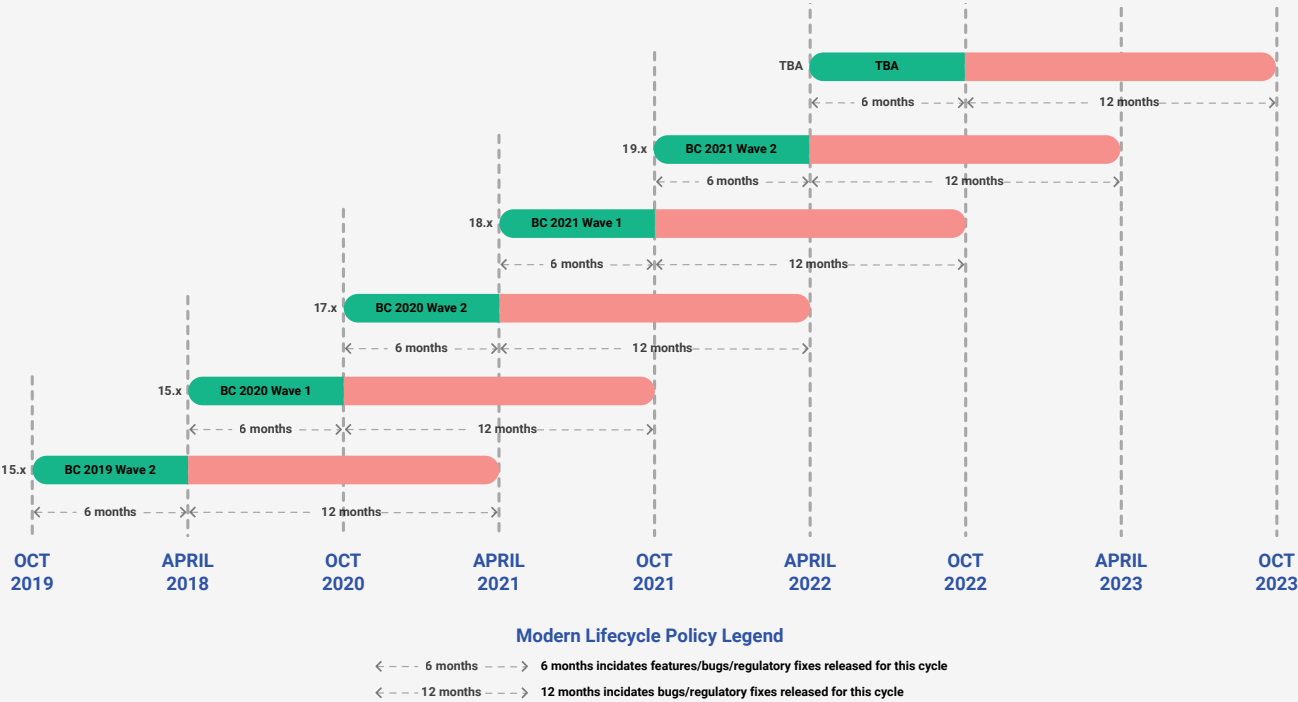

Figure 3. Modern Lifecycle Policy.

How long your Dynamics NAV/Business Central version will be supported?

Products released	Lifecycle Start Date	Mainstream Support End Date	Extended Support End Date
Dynamics NAV 2009 R2	03/15/2011	1/13/2015	1/14/2020
Dynamics NAV 2009 Service PAck 1	8/28/2009	1/13/2015	1/14/2020
Dynamics NAV 2013	12/19/2012	1/9/2018	1/10/2023
Dynamics NAV 2013 R2	12/30/2013	1/9/2018	1/10/2023
Dynamics NAV 2015	12/17/2014	1/14/2020	1/14/2025
Dynamics NAV 2016	1/3/2016	4/13/2021	4/14/2026
Dynamics NAV 2017	10/27/2016	1/11/2022	1/11/2027
Dynamics NAV 2018	12/1/2017	1/10/2023	1/11/2028
Dynamics 365 Business Central On-Premises (Version: October 2018 Update, Build number: 24630)	10/1/2018	4/14/2020*	Not Applicable
Dynamics 365 Business Central On-Premises Spring 2019 Update (Version: April 2019 Update, Build number: 29537)	4/1/2019	10/10/2023	10/14/2025
Dynamics 365 Business Central On-Premises 2019 release wave 2	10/1/2019	Lifecycle Start Date + 6 months**	Lifecycle Start Date + 18 months**
Dynamics 365 Business Central SaaS	October and April every year	Lifecycle Start Date + 6 months**	Lifecycle Start Date + 18 months**

* To obtain Mainstream Support afterwards, customers must update to the Business Central 2019 April release or later version.

** Microsoft's Modern Lifecycle Policy.

Licensing and maintenance programs

As important as it is to have your Dynamics NAV/Business Central version supported by Microsoft, it is equally important to obtain the rights to use the software which is defined by licensing and maintenance programs. While the Microsoft support policy allows you to benefit from new features, bug and regulatory fixes, etc., licensing and maintenance programs help increase employee productivity by giving access to the Microsoft knowledgebase which is packed with thousands of timesaving tips, troubleshooting steps, and answers to technical questions. Licensing and maintenance programs allow you to use unlimited online training and certifications and help your business grow while taking advantage of the latest technology and expanding the license by adding additional users.

Dynamics 365 Business Central is licensed through one of three licensing models:

If your Dynamics NAV/Business Central version is supported by Microsoft, you may consider postponing the upgrade, though it might be appropriate to time your upgrade so that it is successfully completed before the product version becomes unsupported.

- **Solution Provider Agreement (SPA) Perpetual Licensing** (known as BREP) - means you have bought the license and it's yours forever. As long as you pay the annual maintenance fee, you are also entitled to access the latest versions. However, if you stop paying the annual maintenance fee, you will also be prevented from amending the license, i.e. adding more users. This type of licensing only applies to Business Central on-premises implementations.

- **SPA Subscription Licensing** - means you pay a per user per month fee and it includes the annual maintenance fee charged by Microsoft, giving you access to future versions. This option provides flexibility in terms of increasing and reducing numbers of users, particularly helpful if you have any seasonal changes in the number of people using the system. This type of licensing only applies to Business Central on-premises implementations.

- **Cloud Solution Provider Program** (CSP) is designed to provide users with Microsoft public cloud subscriptions, but it is more than just a licensing program. CSP is a program that helps Microsoft partners to create their own bundle of cloud solutions and cloud services, combined with their own IP and IP-related services. Via the CSP program, those partners can manage, offer, order, deliver, invoice and support that unique bundle to their end customers all over the world. The CSP program strengthens the partner-customer relationship and improves the partner's profitability. Moreover, the end customers benefit from a flexible and simple pay per month fee for subscriptions and services which also include the support and the ability to increase or decrease licenses instantly at any point. In addition, Microsoft CSP takes care of renewals and software upgrades. This type of licensing applies to Business Central on-premises and Business Central SaaS implementations.

5. Do you have a demand for the new features of Dynamics 365 Business Central SaaS?
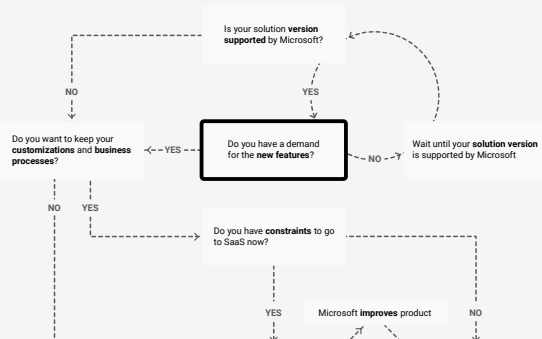
With continuous Microsoft product improvements, you may consider the upgrade in order to benefit from having access to more advanced technology and new features. Below, you can find the new key features that became available with the latest Microsoft Dynamics 365 Business Central releases.

Dynamics 365 Business Central 2019 April release

With the 2019 April release, Dynamics 365 Business Central brings **enhanced performance**, **reliability**, and **scalability**, such as:

50% faster Role Center load time.

40% 40% faster in lead to cash scenarios.

2x RapidStart optimization: the import of a RapidStart package is approximately 2 times faster, and the deletion of a package is more than 3 times faster.

- **Enhanced productivity for users, administrators, and developers.** Microsoft made changes according to the user experience to make everyday tasks easier, and introduced such new features as autosave indicator appearance, and the ability to add internal notes to business data captured and processed in Business Central and more.

- **New self-help and support possibilities.** With this release, users and developers can improve Dynamics 365 Business Central by discussing ideas, providing suggestions, and giving feedback. You can find the Business Central forum at https://aka.ms/businesscentralideas. Simplified help and support experience allow users to easily find links to self-help content, to seek advice from the community, or post new ideas.

- **Accessibility to solutions such as Microsoft Flow and Power BI.** It delivers significant value by providing access to different types of artificial intelligence to solve more complicated problems for customers.

- **Implementing customer feedback.** With the Business Central 2019 April release, Microsoft implemented over 100 app enhancements, such as:

  - Dynamically visible dimensions
  - Bulk import item images
  - Refreshed Role Centers
  - Report selection from Warehouse documents
  - Possibility to select multiple items in the sales document
  - View comments on approvals and more.

To find out more about Business Central 2019 April release, check out Microsoft notes.

Dynamics 365 Business Central 2019 wave 2 release

The Dynamics 365 Business Central 2019 wave 2 release has introduced many small and bigger changes:

Improved service fundamentals with boosted performance, reliability, supportability, and security. Now Business Central runs much faster and the browser is more responsive. In addition to continual improvements in security infrastructure and processes, Business Central meets ISO27001, ISO27017, ISO27018, SOC 1 & 2 Type 2, HIPPA BAA, and FERPA industry security and privacy compliance standards.

Accelerated speed and productivity features for Modern Clients. Users can efficiently access Business Central in the browser, Windows 10 desktop app, mobile apps on Android and iOS, or in Outlook. Modern Clients now support so many productivity features that the Windows Client is discontinued.

Modern development environment. The Business Central 2019 wave 2 release is the first version that does not include the classic development environment. The modern developer experience based on Visual Studio Code with Azure DevOps, and an AL language that supports an extension-based approach to customization, now supports developing large apps such as the base application from Microsoft.

Simplified ISV development. The Business Central 2019 wave 2 release delivers a set of features designed to simplify ISV development for new solutions and, specifically, for streamlining the migration from the source code customization model of Dynamics NAV to Business Central. For the Business Central 2019 wave 2 release, the focus is streamlining the path for ISVs to bring their add-on solutions, and in turn their customers, to Business Central SaaS.

Enhanced set of migration tools. A set of tools are enhanced with the Business Central 2019 wave 2 release that simplifies the journey for existing Dynamics SMB customers coming from Dynamics NAV, Dynamics GP, or Dynamics SL to migrate from their current on-premises solutions to Business Central SaaS.

To find out more about the Business Central 2019 wave 2 release, check out Microsoft notes.

6. When should you move your customizations to Business Central SaaS, and when not?
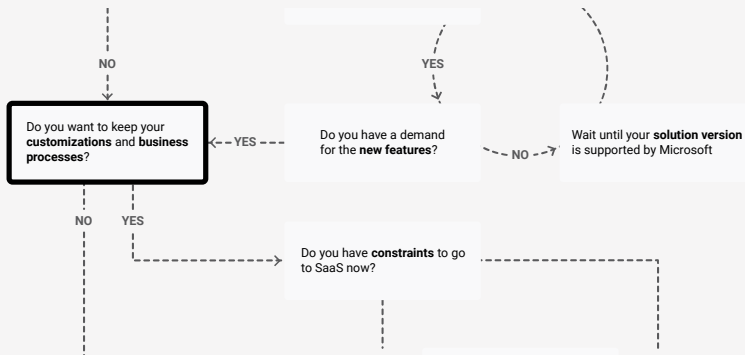
Even though a significant investment is usually made into building new custom functionalities, within the time it might be worth taking a closer look and re-evaluating their relevance. The customizations may become no longer relevant for several reasons, such as:

The company wants to get closer to a standard Business Central solution. When Microsoft releases new versions, the standard Business Central SaaS solution is upgraded automatically. Customizations (Base App customizations and extensions), though, have to be upgraded manually which can become expensive. Therefore, by getting closer to a standard, companies eliminate the challenge of upgrading customizations and the costs that go along with it.

Many outdated customizations can be replaced by standard Dynamics 365 Business Central functionality.

Business processes change and some older processes might not be in place anymore. **Because of** that, the customizations that were initially created based on the older processes become no longer relevant.

The company does not know what customizations they have and what they need. In such a case, the company needs to re-evaluate the customizations and see if they still need the functionality that was originally developed in the customization. To re-evaluate, use the newest version of the standard Business Central solution and check whether this functionality is enough for your business processes or if you need additional functionality on top of the existing one. If you need additional functionality, check if it can be acquired by purchasing an independent solution through Microsoft AppSource.

The outdated solution version without a straightforward upgrade path. Many Microsoft Dynamics partners and their customers that are on severely outdated Microsoft Dynamics NAV versions do not see a viable means of getting their solution up to date and back on track. This happens because the upgrade becomes too complex and too expensive.

If the upgrade becomes too complex and risky, and you are ready to move forward without bringing customizations, you should choose to use the migrate data and reimplement in SaaS strategy.

7. Upgrade strategy: Migrate data and reimplement in SaaS if you are ready to adapt to standard Business Central processes.
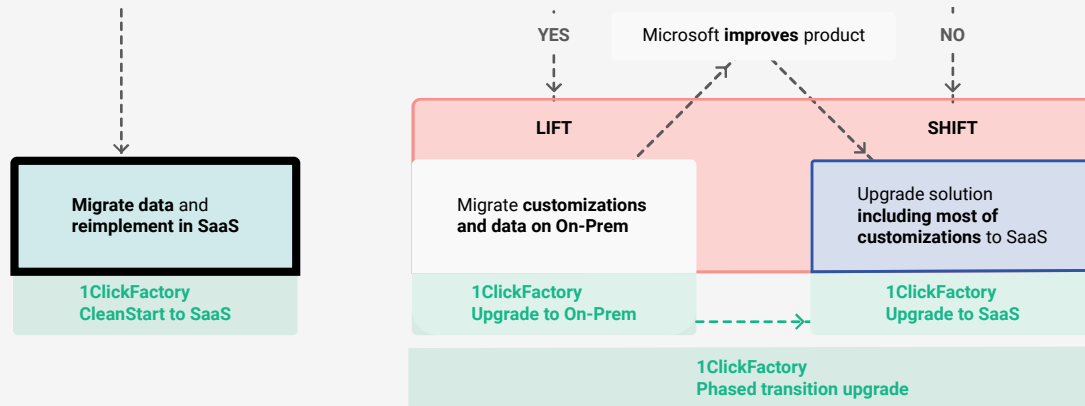
If you made a decision that you could move on without your current customizations, you should use the migrate data and reimplement in SaaS strategy, the main process of which is to move data to Business Central SaaS and reimplement needed customizations.

When you migrate data to Business Central SaaS, this migration is performed in two steps – a test migration followed by a live migration:

Step 1: Remove all customizations from the solution and move only data into Business Central SaaS. You should use standard Microsoft data migration tools to migrate data from any NAV/Business Central version to the newest Business Central on-premises version. If there are any ISV solution add-ons in the solution, you should use data migration tools provided by the ISV partner. When you have all data in the newest Business Central on-premises version, you should use the Intelligent Cloud tool to migrate data to SaaS.

Step 2 (Optional): In case the standard Business Central solution does not cover the full functional needs of the business, consider the following options to resolve gaps between business needs and out of the box functionalities offered by Dynamics 365 Business Central:

Look for an app that would cover your business needs. Microsoft AppSource contains plenty of apps to help organizations solve their business challenges. You can easily experience your chosen app in seconds by clicking on the app trial button.

Reimplement missing functionalities by developing and implementing per-tenant extensions (PTE).

Step 3: When a customer and Microsoft Dynamics partner test everything and agree on a go-live date, then the live data migration can be performed, which includes Intelligent Cloud Sync, after which the customer can start using the Business Central SaaS solution.

8. Constraints on going to SaaS
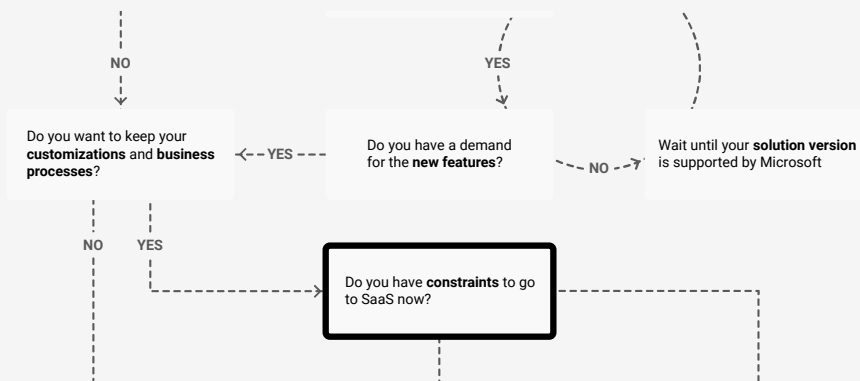
While Business Central SaaS functionality and scalability open up a lot of new opportunities, there may be different challenges to upgrade an on-premises solution to SaaS. Solutions cannot transition to SaaS straight away due to limitations, such as listed below:

- High availability for backups and database management demand.

- Integrations should be done using Web Services.

- Localizations are not available.

- Add-ons do not exist as apps.

- Technological constraints.

- High pricing for full extension and budget challenges.

We'll review each of these limitations in detail throughout this chapter.

High availability for backups and database management demand

Business Central SaaS is running on Microsoft Azure and databases are protected by automatic Azure SQL backups that are retained for 30 days. However, Microsoft Dynamics partners and customers do not have direct access to the SQL server that the customer database is running on and cannot request a copy of the backup of the production database from Microsoft at the current time.

To manage backups, partners can manually export the database from the Business Central administration center for Business Central online environments as .bacpac files to an Azure storage container. To restore this backup, partners need to use Azure SQL database as an intermediate step. The Azure SQL database should be synchronized with the SaaS tenant afterwards. To find out more about exporting databases, visit here.

This limits partners and customers who want to automate the backup process themselves, instead of manually exporting .bacpac files. Partners who want to get involved in changing SQL parameters to optimize the database to increase performance or writing scripts are also restricted.

Integrations should be done using Web Services

While on-premises integrations were done directly writing queries to the Business Central database, on SaaS it is done using Web Services. Microsoft Dynamics provides Web Services to make it easy for other systems to integrate with Dynamics Business Central. However, not every old third-party software is compatible with Web Services. If there is a demand to integrate with third party-software that is not compatible with the Web Services type of integration, it can be a constraint to go to SaaS.

Localizations are not available

Business Central SaaS localizations are important for companies in order to comply with laws, regulations and common commercial practices of regions in which they operate. There are 2 types of Business Central SaaS localizations available:

With the Business Central 2019 Wave 2 release, Microsoft made multiple production environments available that can be used across multiple countries. With this update, multinational companies can create a Business Central production environment for business divisions, subsidiaries, and so on, that operate in different countries or regions across the world.

Microsoft localizations for Business Central SaaS are released for many countries and Microsoft is continuously expanding in multi-geo locations around the world. You can find a complete list of currently supported localizations here.

Localizations released by partners as apps. In some countries where localizations for Business Central SaaS are not available, you can find localizations available as apps on AppSource that are released by Microsoft localizations partners. For more information on building localization apps, look here or get in touch with 1ClickFactory for more help.

Add-ons do not exist as apps

Business Central SaaS comes with the AppSource app store to make it easier to find vertical solutions that extend standard product and functionality needs, in the same way as the Independent Software Vendors (ISVs) add-ons were used for on-premises versions. There is a very high probability that the add-ons that were used in the past will also be needed in the future, therefore, the add-on providers (most of the time ISV Partners) should update and release add-ons as apps for Business Central SaaS.

If customers use add-ons that haven't been released as apps and their business processes depend on it, in order to upgrade to SaaS they can choose the lift and shift strategy and during the "lift" phase wait until add-ons are released as apps.

There are a number of reasons for Microsoft Dynamics partners to transform add-ons and make them available as apps. Apps on AppSource are **easily distributed worldwide** which helps Microsoft Dynamics partners to add a new sales and marketing channel that enables lead generation, making the solution more visible to customers worldwide. Apps run as Business Central extensions and can be added or removed easily. This makes **upgrading Business Central an easier process** compared to how it was done previously, where any customizations were interlaced with the old version of NAV, making upgrades more difficult.

Technological constraints

When transitioning to Business Central SaaS, there are a number of technical considerations to be looked at to ensure that it meets the customers' expectations and business needs. It is important to note that technological constraints are constantly decreasing, and within a short period of time, it might be a very different picture. Currently, having the latest Dynamics 365 Business Central 2019 wave 2 release, the main technological constraints are as follows:

Database management

- Access to the database is not available in SaaS extensions.

- Direct access to server resources is not available in SaaS extensions. Check for the declaration of record variables with subtype "Drive", "File", "Printer", "Database", "SID - Account ID", and "Server Instance".

- Object import and export are not supported in SaaS extensions. Check for the calls of system methods OBJ IMP and OBJ EXP in custom code.

- Managing user passwords is not supported in SaaS extensions. Check for the occurrence of database method CHANGE PWD and SETPWD.

Direct access to BC system layer (system tables and functions)

- Restricted access to Dynamics 365 Business Central SaaS security tables.

- Direct access to media tables is restricted for Dynamics 365 Business Central SaaS extensions.

- Direct access to debug tables is not available in SaaS extensions.

- Reference to application level system tables is restricted for SaaS extensions.

- Reference to Web Service management is restricted for SaaS extensions.

- Access to NAV app tables is restricted for Dynamics 365 Business Central SaaS extensions.

- Reference to object tables is restricted for SaaS extensions.

Direct manipulation of files

- Only stream file operations are allowed for SaaS extensions. Check for direct file manipulation methods (ERASE, RENAME, COPY, GETSTAMP, SETSTAMP, EXISTS, UPLOAD. DOWNLOAD), and methods for saving the results of an object directly to file (SaveAsXml, SaveAsCsv, SaveAsHtml, SaveAsPDF, SaveAsWord, SaveAsExcel).

Restriction of .NET usage

- Only stream file operations are allowed for SaaS extensions. Check out for direct file manipulation methods (ERASE, RENAME, COPY, GETSTAMP, SETSTAMP, EXISTS, UPLOAD. DOWNLOAD) and methods for saving the results of an object directly to file (SaveAsXml, SaveAsCsv, SaveAsHtml, SaveAsPDF, SaveAsWord, SaveAsExcel).

High pricing to transition to extension

What increases the price?

The upgrade to Business Central SaaS price depends on extension compatibility with SaaS. When you have a customization in a standard NAV/Business Central object, it needs to be moved to custom Codeunits using events technology. However, for significantly customized solutions, there is usually quite a lot of code left that is not possible to move out, because the necessary Microsoft Standard Event Publisher (extensibility point) does not exist. If you upgrade the solution to SaaS in one step, you will have to redesign and reimplement all of these customizations using Standard Event Publishers with their current limited availability. In upgrading to the SaaS project this type of reimplementation is the most time consuming and has the biggest impact on reimplementation efforts and therefore the price.

How to reduce the price

Choose to upgrade using a lift and shift strategy. After the first upgrade and move to events task, during the "lift" phase, you can request Microsoft to add Standard Event Publishers (extensibility points) in the places in which the solution still has customizations. Microsoft releases Standard Event Publishers with each minor and major release and when a request is submitted there might be a wait of several months, which fits well the lift and shift strategy. When doing the next "shift" phase of the upgrade, Microsoft might implement most of the requests and you will be able to simply move out code to custom Codeunit instead of having to do complex reimplementation work. To understand the difference in pricing, you can compare the time it takes to move customization to the existing Standard Event and the time it takes to reimplement customization. To move customization to the existing Standard Event is 5-10 minutes' work. Reimplementing customization without having a Microsoft Standard Event Publisher can take more than 10 hours of work.

9. Upgrade strategy: upgrade solution including most customizations to SaaS
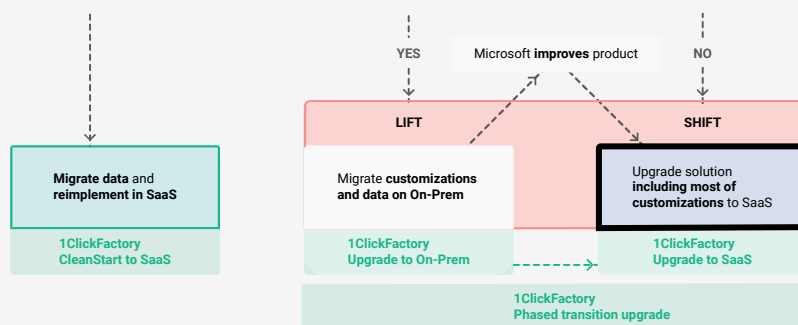
If you do not experience many constraints to go to SaaS – such as the solution doesn't have many customizations, localizations are available, and add-ons are released on AppSource as extensions – you are ready to upgrade to SaaS straight away. The upgrade to SaaS process is as follows:

Step 1. Cleanup of the solution. To upgrade the solution including most of the customizations to SaaS in one step you need to investigate and determine which customizations need to be removed and which ones need to be kept.

Step 2. Upgrade to the newest Business Central version. After determining what customizations to keep, execute the upgrade (including objects upgrade, data migration, reports upgrade, and transformation to Web Client) to get to the latest version of Dynamics 365 Business Central.

Step 3. Create an extension.

Move customizations to custom objects. If you need customizations, you have to transition the customized code into extensions. Extensions simplify customizations by keeping them separate from the standard application objects and code base. Before creating an extension, you need to eliminate customizations from the standard code by moving customized code out of Standard Objects into Custom Objects by creating Custom Event Subscribers that subscribe to Standard Event Publishers. Data structure customizations in Standard Tables and other non-code customizations should be moved to Custom Objects of new object types (TableExtension and PageExtension).

Review customizations that were not moved from the standard code and **technological constraints** of the SaaS product and decide how best to reimplement these kinds of conflicts.

Extensions allow you to extend and customize the Microsoft Dynamics Business Central application without modifying the original objects. Extensions allow you to install, upgrade, and uninstall functionalities in on-premises or SaaS deployments. Customers can easily add or remove functionality from their solution that upgrades much more easily than past solutions. Extensions significantly reduce the effort to support frequent Dynamics 365 Business Central updates, making upgrades easier by enabling smooth and regular updates of your solution and annual upgrades of the Business Central platform to capitalize on new technologies as well as to offer new services to end customers.

To package an extension, you need to wrap up all Custom Objects and put it into a package. Only customizations that are in Custom Objects can be a part of the extension. If there is any customization left in the base application, you will not be able to create an extension.

Business Central
with Extension

Standard Objects

P P P P

S S S S
Custom Objects

Business Central base application
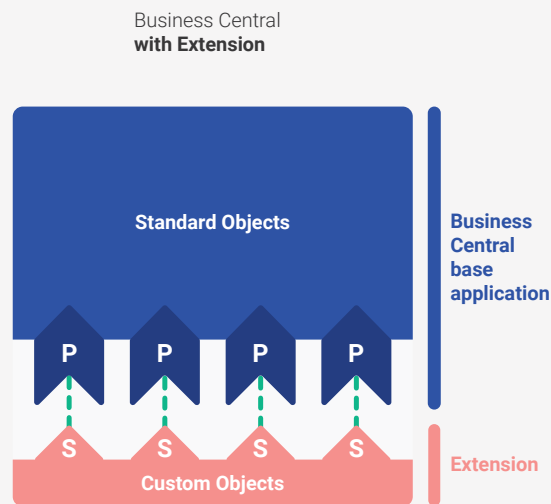
Extension

LEGEND:

P **Standard** Event **Publisher**

S **Custom** Event **Subscriber**

Step 4. Set up a testing environment on Business Central SaaS. Install your created per-tenant extension, migrate data using Intelligent Cloud Sync and test business processes.

Step 5. Go-live. When the customer and the Microsoft Dynamics partner test everything and agree on a go-live date, then the live data migration can be performed, which includes Intelligent Cloud Sync, after which the customer can start using the Business Central SaaS solution.

10. Upgrade strategy if you cannot go to SaaS now: Lift and shift
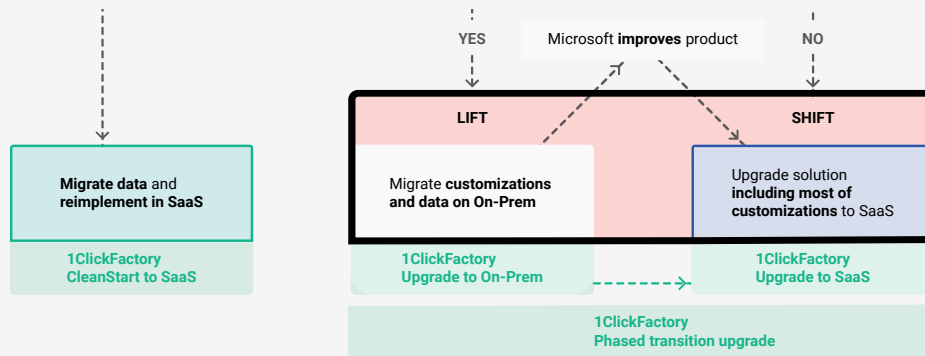
If you cannot upgrade to Business Central SaaS now, you can use lift and shift strategy and move to Business Central on-prem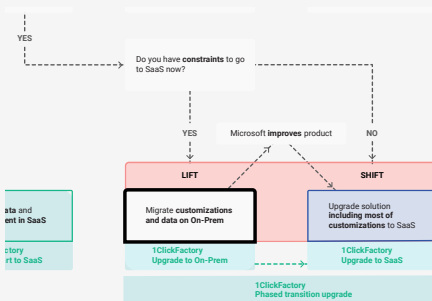ises as the first "lift" step. When the limitations to go to SaaS are resolved, you can make the second step, "shift", to the SaaS version and experience the full benefits.

"Lift": migrate customizations and data to on-premises

You can do the "lift" to the newest Business Central on-premises version any time and it does not have any of the above-mentioned limitations. Ever since the release of Business Central 2019 wave 2, customizations need to be converted to Visual Studio code AL language. This can be achieved using the tools provided by Microsoft. However, not everything is fully automated, and manual work is required to complete the conversion.

The good news is that any investment you make moving to Business Central On-Premises will count as an investment towards moving to the SaaS version. Because upgrade to the newest Business Central version On-Premises, doesn't matter if you migrate to SaaS in one go or use Lift and Shift strategy, is a mandatory step.

When migrating customizations and data to Business Central On-Premises during the first "Lift" phase, the upgrade process is as follows:

Business Central with a lightly customized base app

Moving standard code customizations to Custom Objects is the most time-consuming part of the transition to the extension process because not all Standard Event Publishers might be available in Business Central. Because of that,

Step 1. Cleanup of the solution. Investigate and determine which customizations need to be removed and which ones need to be kept.

Step 2. Upgrade to the newest Business Central version. After determining what customizations to keep, execute the upgrade (including objects upgrade, data migration, reports upgrade, and transformation to Web Client) to get to the latest version of Dynamics 365 Business Central.

re-implementing old functionalities with currently available Standard Event Publishers may become too costly.

If that is the case, you can consider the other option: to build Custom Event Publishers for not yet available Standard Event Publishers. Using Custom Event Publishers, you need to move out all customizations to Custom Objects. The only customizations left in Standard Objects should be Custom Event Publishers.

Then request Microsoft to create Standard Event Publishers in the places where you have created Custom Event Publishers.
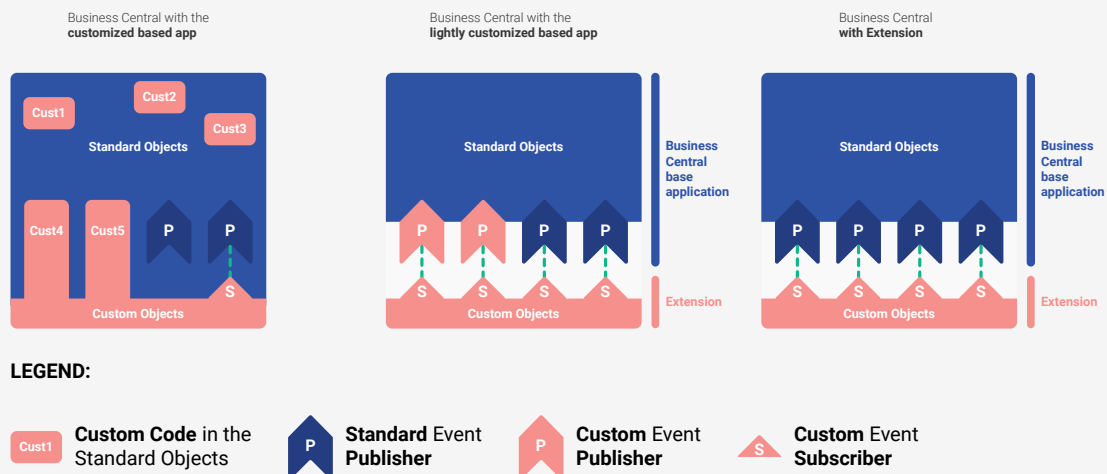
Such Business Central with a lightly customized base app is displayed in the picture below.

Step 3. Create an Extension. Execute preparation work for migrating customizations to Extensions and SaaS by moving code customizations into events using the Standard Event Publishers in Microsoft Dynamics 365 Business Central. For the customizations that are left in the standard code, request that Microsoft create Standard Event Publishers so that these can be utilized in the second "Shift" phase of the project.

Conclusion

Having Business Central with a lightly customized base app allows you to have an extension ready for Business Central on-premises. In such a case, once the technology is ready (when Microsoft implements your Standard Event Publisher request), you can easily move the solution to extensions that are compatible with Business Central SaaS. In addition, the solution becomes more maintainable as all customizations are implemented in custom object range: easier adoption of new Business Central releases and little or no conflicts with standard code customizations of ISV solutions because there will be no need to merge your customizations with the new version of Dynamics Business Central.

Business Central with the **customized based app**

Business Central with the **lightly customized based app**

Business Central **with Extension**

LEGEND:

| Cust1 | **Custom Code** in the Standard Objects | P | **Standard** Event Publisher | P | **Custom** Event Publisher | S | **Custom** Event Subscriber |

Can you do customizations in the Dynamics 365 Business Central 2019 wave 2 release instead of extensions?

Many Dynamics partners believe that the Business Central base application in AL cannot be customized. The truth is that Microsoft allows base app customizations for the on-premises

Step 4. Set up a testing environment. After doing the test data migration, create a testing environment for partner and customer to execute all testing.

Test data migration happens in two phases; therefore, the benefits of Business Central SaaS are delayed, and on-premises infrastructure renewal is required. To resolve this, host the Business Central on-premises solution on Microsoft Azure.

version. However, we recommend making customizations by creating Custom Event Publishers instead of customizing the code. If you customize the code and you plan to go to SaaS in the future, you will have to move the custom code to the events. Instead of customizing code, you can straight away create Custom Event Publishers for that part of the code that requires reimplementation (For the other part which does not require reimplementation, you can move the custom code using standard Microsoft events). After creating Custom Event Publishers, you can request Microsoft to create Standard Event Publishers so that these can be utilized in the second phase of the lift and shift to SaaS process.

With 1ClickFactory Self-Provisioning for Dynamics NAV / Dynamics 365 Business Central on Azure service, Microsoft Dynamics Partners can easily deploy Dynamics NAV/Business Central solutions on Microsoft Azure through our platform in 1 hour or less. It's a self-service, available 24/7 on a highly secure and readily supported environment.

Step 5. Go-live. When customer and partner test everything and agree on a go-live date, the live data migration can be performed, after which the customer can start using the Business Central on-premises solution.

Microsoft improves product
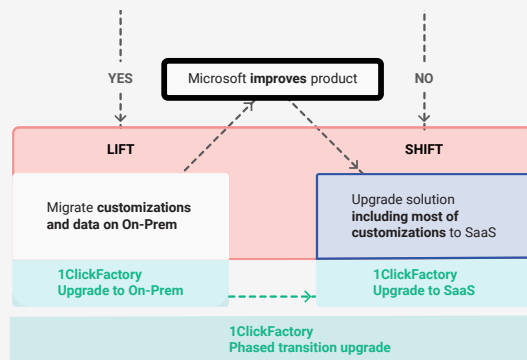
The world's widespread digital transformation has accelerated Microsoft Dynamics 365 Business Central release cycles. In turn, the feedback from the Microsoft Dynamics community is more critical than ever before for Microsoft to improve the product, embrace the changing business landscape, and help the community to keep up with the continuous digital development.

Standard Event Publishers.

When upgrading to Business Central SaaS, one of the most common requests for Microsoft is to create Standard Even Publishers. When the requests are submitted on GitHub, you should wait until Microsoft reviews each query and marks it as approved or rejected. The requests that Microsoft approves are usually released in the future major or minor Business Central releases. If Microsoft rejects the request, you should do reimplementation instead of using Standard Event Publishers.

Limitations to upgrade to Business Central SaaS.

The constraints in upgrading to Business Central SaaS involve not only code customizations but also other limitations such as user interface or .NET limitations. To overcome these limitations, submit your requests on the Dynamics 365 Business Central ideas page and help Microsoft to improve the product. The Microsoft community votes for each idea submitted to notify it that they also find the request necessary. The ideas that get a substantial number

of votes are implemented by Microsoft. To implement, it might take longer than one major release. The Dynamics 365 Business Central ideas page was released during the Directions EMEA event in October 2018 and the first 10 most popular requests were implemented within a year.

"Shift": upgrade solution to SaaS
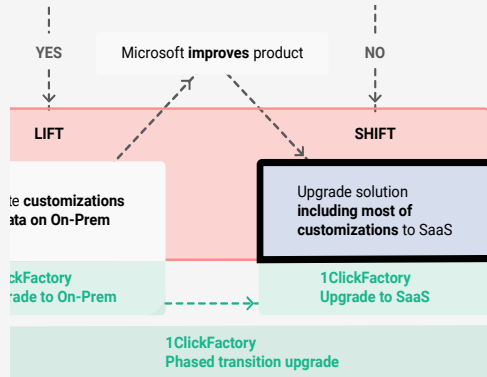
When using the lift and shift strategy, during the "shift" phase, once you request Standard Event Publishers from Microsoft, it is recommended to check on GitHub whether Microsoft has approved the request and wait no longer than 1–2 major Business Central releases before proceeding further. With other limitations submitted on the Business Central ideas page, it is recommended to wait around 1–2 years. It is important to ensure that the gap between the "lift" and "shift" phase is no longer than 1–2 years.

When everything is ready for the second "Shift" phase, the upgrade process is as follows:

- **Step 1. Upgrade.** Execute upgrade tasks (object merge and data migration) to get to the latest version of Dynamics 365 Business Central.

- **Step 2. Create an extension.** Move the remaining code to the events that Microsoft has added and execute the remaining work to create an extension out of all customizations.

- **Step 3. Reimplementation.** Review all customizations that were not moved from the standard code and the limitations of Business Central SaaS and decide how best to reimplement these conflicts.

- **Step 4. Set up a testing environment on Business Central SaaS.** Install the created per-tenant extension, migrate data using Intelligent Cloud Sync and test business processes.

- **Step 5. Go-live.** When the customer and the Microsoft Dynamics partner test everything and agree on a go-live date, the live data migration can be performed, which includes Intelligent Cloud Sync, after which the customer can start using the Business Central SaaS solution.

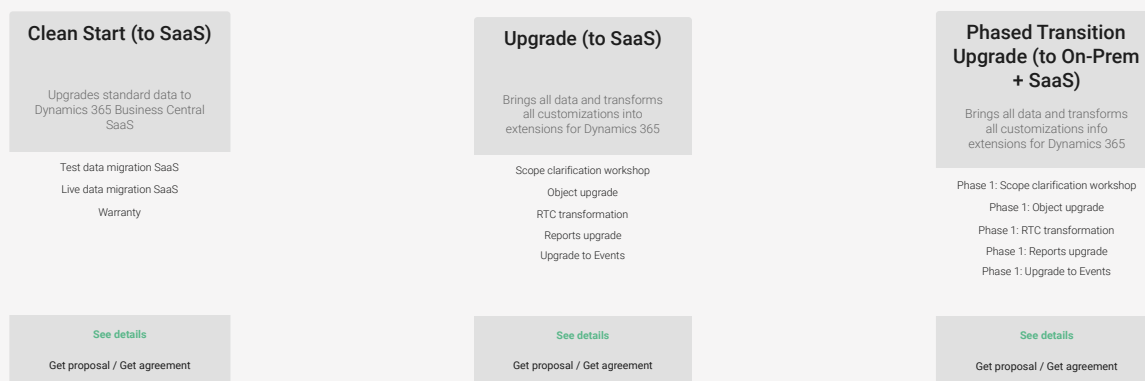# 11. The three out of the box 1ClickFactory offers
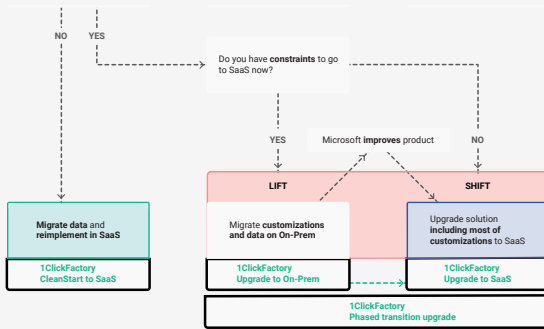
Microsoft Dynamics Partners can get a fixed price proposal for all 3 out-of-the-box 1ClickFactory upgrade to SaaS options using Upgrade Analyzer.

Free of charge

1ClickFactory Upgrade Analyzer is an automated online service that analyzes the NAV/ Business Central solution (.fob file) and in 5 business days provides the fixed price proposal for all possible upgrade paths, allows you to review the included service components, and to compare the outcomes and investment needed.

- **Save time** on analyzing technical upgrade options

- **Compare** easy-to-understand technical upgrade options and the investment needed

- **Understand** the economic impact of all these choices with the online pricing configurator

- **Minimize the risk** while budgeting upgrade costs for your customers with a fixed price

- **Create a detailed plan** of the next steps

1ClickFactory's Upgrade Analyzer provides fixed price upgrade options that support the 3 upgrade strategies. 1ClickFactory delivers technical upgrade services exclusively for Microsoft Dynamics partners only, who then proceed implementing it with end customers.

Clean Start (to SaaS)	Upgrade (to SaaS)	Phased Transition Upgrade (to On-Prem + SaaS)
Upgrades standard data to Dynamics 365 Business Central SaaS	Brings all data and transforms all customizations into extensions for Dynamics 365	Brings all data and transforms all customizations info extensions for Dynamics 365
Test data migration SaaS	Scope clarification workshop	Phase 1: Scope clarification workshop
Live data migration SaaS	Object upgrade	Phase 1: Object upgrade
Warranty	RTC transformation	Phase 1: RTC transformation
	Reports upgrade	Phase 1: Reports upgrade
	Upgrade to Events	Phase 1: Upgrade to Events
See details	**See details**	**See details**
Get proposal / Get agreement	Get proposal / Get agreement	Get proposal / Get agreement

Supports the migrate data and reimplement in SaaS strategy. Fixed price offering does not include reimplement in SaaS (development PTE) services.

Supports the upgrade solution including most of the customizations to SaaS strategy.

Supports the lift and shift to SaaS strategy.

On Upgrade Analyzer, you can view details of your selected upgrade option and add or remove service components until you are satisfied with the result and click "Get proposal / Get agreement" when you are ready.

After you click "Get proposal / Get agreement", 1ClickFactory will provide the proposal or agreement document for you to review (it won't be binding, you will still be able to make changes later). If you are not ready to get a proposal, you can save your upgrade analysis results at any time by clicking "Save" and return later.

1ClickFactory delivers Business Central SaaS upgrades for Microsoft Dynamics solutions using standardized processes to ensure quality, consistency, and successful project delivery. All upgrades include a 3-month warranty.

Service components	1ClickFactory Upgrade Offers		
	Clean Start (to SaaS)	Upgrade (to SaaS)	Phased Transition (OnPrem + SaaS
Scope clarification workshop For more complex solutions we recommend a scope clarification workshop to discuss which modifications should be upgraded, which ones should be eliminated or restructured to minimize touching standard objects and thus decrease the cost of future upgrades, and change the upgrade project scope, timeline and price	+	+	+
Object upgrade With the object upgrade service, we define and implement an upgrade action per each of the object. We assure you that all customizations in the current version will work with the new functionality provided by Microsoft in the new version after the upgrade and take the latest standard Microsoft functionality into consideration when deciding on how the current customizations should be implemented.		+	+
Data structure redesign With the data structure redesign and the Clean Start upgrade service, we cover data migration to a standard Microsoft Dynamics Business Central version with no customizations. At 1ClickFactory, we prepare and supply data migration tools that can help Microsoft Dynamics Partners migrate customer data from any older version to the latest version during the upgrade. The data that was stored in the customized fields will be migrated so that no data is lost.	+		
Web Client redesign Inspecting and reimplementing limitation to successfully use Web Client.		+	+
Upgrade to Events With the customizations upgrade to Events service we get the solution code simplified and closer to the standard Business Central code. We could upgrade customizations to standard Business Central Events or to standard Business Central Events and custom Events.		+	+
Test data migration on-prem Data migration of one test database on-prem			+
Live data migration on-prem Customer's Live Database migration on-prem			+
Test environment With the testing environment we can deploy a testing environment for the upgraded solution on Microsoft Azure: 1. Standard testing environment (Windows/Web/Tablet NAV Clients) for the upgraded solution on Microsoft Azure. 2. Private sandbox (Windows/Web/Tablet NAV Clients) for the upgraded solution on Microsoft Azure.			+

Service			
Conversion to Extension Transforming solution to Extension and resolving limitations		+	+
Test data migration SaaS With the test data migration service, 1ClickFactory modifies the standard Microsoft Upgrade toolkit to reflect object customizations in the data, the test data transformation process and resolve data transformation issues. We will also integrate the toolkit with the tools provided by the add-on suppliers to keep the required functionality working in the right sequence. With these tools, the Partner should be able to perform the data migration throughout the weekend (56 hours). We also offer a live data migration service if the Partner wants 1ClickFactory to do the customer's data migration in the customer's environment.	+	+	+
Live data migration SaaS. 1ClickFactory provides the data migration tools and tests the data migration in the 1ClickFactory environment as a standard part of each upgrade project. You can use 1ClickFactory to perform live data migration to instantly resolve any live data migration issues.	+	+	+
Solution CU update. (This service is applicable for Phased Transition phase 1 – Upgrade to On-prem). As Microsoft releases monthly product updates, the new version may have enhancements during the execution of the upgrade project. With CU update for the upgraded solution, we can perform a cumulative update (CU) upgrade to the newer CU version that will be the latest CU at the time of the Partner's and customer's choice (within the term of warranty).			+
Automated test development Development of automated tests to cover the functionality of the Solution.		+	+
Extension maintenance subscription Continuous monitoring for breaking changes in upcoming D365 BC minor and major releases and proving patches according to agreed SLA. This service is applicable after you have live solution in SaaS.		+	+
Warranty With our warranty service, we eliminate any defects (if any) free of charge that were reported to 1ClickFactory during the warranty term. Partners are invited to access a support system to monitor our response time SLA and to track the response and resolution history.	+	+	+

Figure 4. The three 1ClickFactory upgrade offers and their service components.
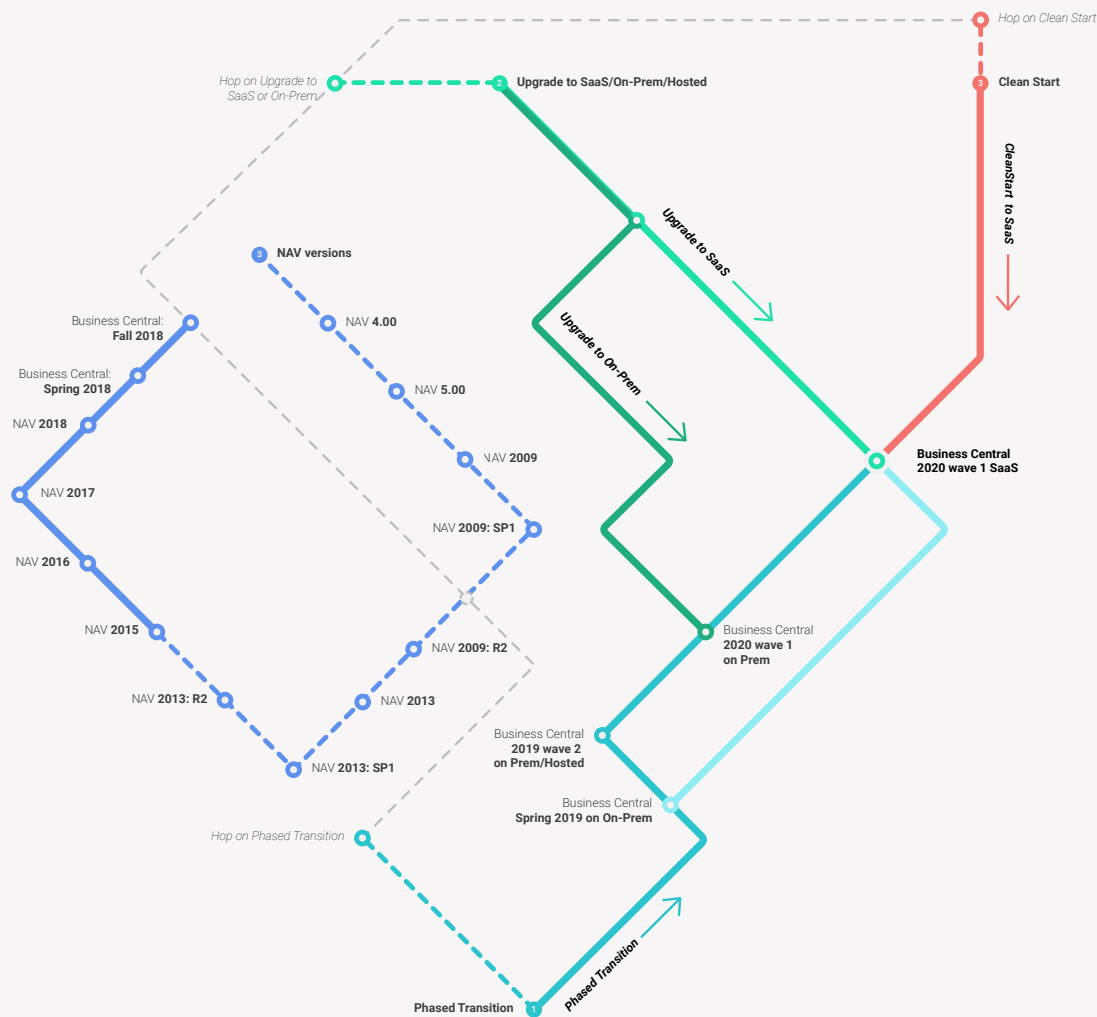
About 1ClickFactory

Microsoft Dynamics solution providers are faced with a myriad of challenges, navigating new business models, technologies, competitors and much more. As with any problem, these challenges could be seized as opportunities. By partnering with 1ClickFactory, Dynamics Partners can move forward to the future with less risk and more profit.

1ClickFactory helps Microsoft Dynamics Partners scale their businesses, building upon our vast experience upgrading 600+ Dynamics solutions at a fixed price, provisioning 13,000 users on Dynamics NAV and Dynamics 365 Business Central on Azure and developing ISV solutions as Extensions.

Have questions or need more information?

Please contact a 1ClickFactory subsidiary in your country or our Global office.