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Integration Apps



Master Data Management System

Effective communication
in corporate groups

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Effective master data management

Many multi-subsidiary companies face daily problems with data structure and communication between subsidiaries, as well as individual users.

By default, companies in Dynamics 365 Business Central (and also previously in Microsoft Dynamics NAV) manage their data on their own. This implies the data inconsistency if there is no application or extension is used for data synchronization. The data inconsistency has business drawbacks in many operational areas. The lack of standardized data management triggers problems with monitoring subsidiary performance as well as applying uniform pricing and distribution policies. Processes get more and more inefficient.

Master Data Management System

[Master Data Management System](#) is an app for Microsoft Dynamics 365 Business Central (Dynamics NAV) designed for multinational organizations that use this system. Sooner or later, such organizations are confronted with challenges regarding data consistency in their companies. From the group's perspective, it is recommended to standardize critical data categories (e.g. items) in all companies instead of permitting inconsistencies at a local level. This approach can be extended with new sets of features to meet growing demands of users and markets during the digital transformation.

Typical problems solved with Master Data Management System



Lack of unified database, integrated across all company locations, that would facilitate the introduction of changes in the entire organization



Different inventory numbering systems - hindering the comparison of stock levels between locations



Inability to enter central pricelists, design BOMs, etc., as well as facing difficulties in their distribution between subsidiaries



Difficulties in entering group contracts for vendors



The need to monitor data in each company separately



Additional communication difficulties within EDI



Lack of unified data



Introduction to Master Data Management System functionality

As an extension of [Microsoft Dynamics 365 Business Central](#), Master Data Management System allows users to configure sets of data within the Master Company (i.e. central company in a group) and replicate this data to the local companies (Receivers) that use Business Central in order to ensure data consistency within the corporate group.

Users are allowed to set up any number of Receivers, which are target companies, to which data is replicated. The structure of data replicated can be set up as data sets.

Users can use any number of created data sets and set them up to be replicated to a particular Receiver, by using the replication card. Replication can be either Full or Incremental. While processing Incremental replication, only data changed during the last replication will be exported.

The app is particularly useful when a company wants to create and maintain certain Dynamics 365 Business Central cards (e.g. items, BOMs, vendors) in one company – called “Master” company – and afterwards synchronize the data to all of the subsidiaries (“Receiver” companies).

The app uses web services in shared folders as a data transport layer.

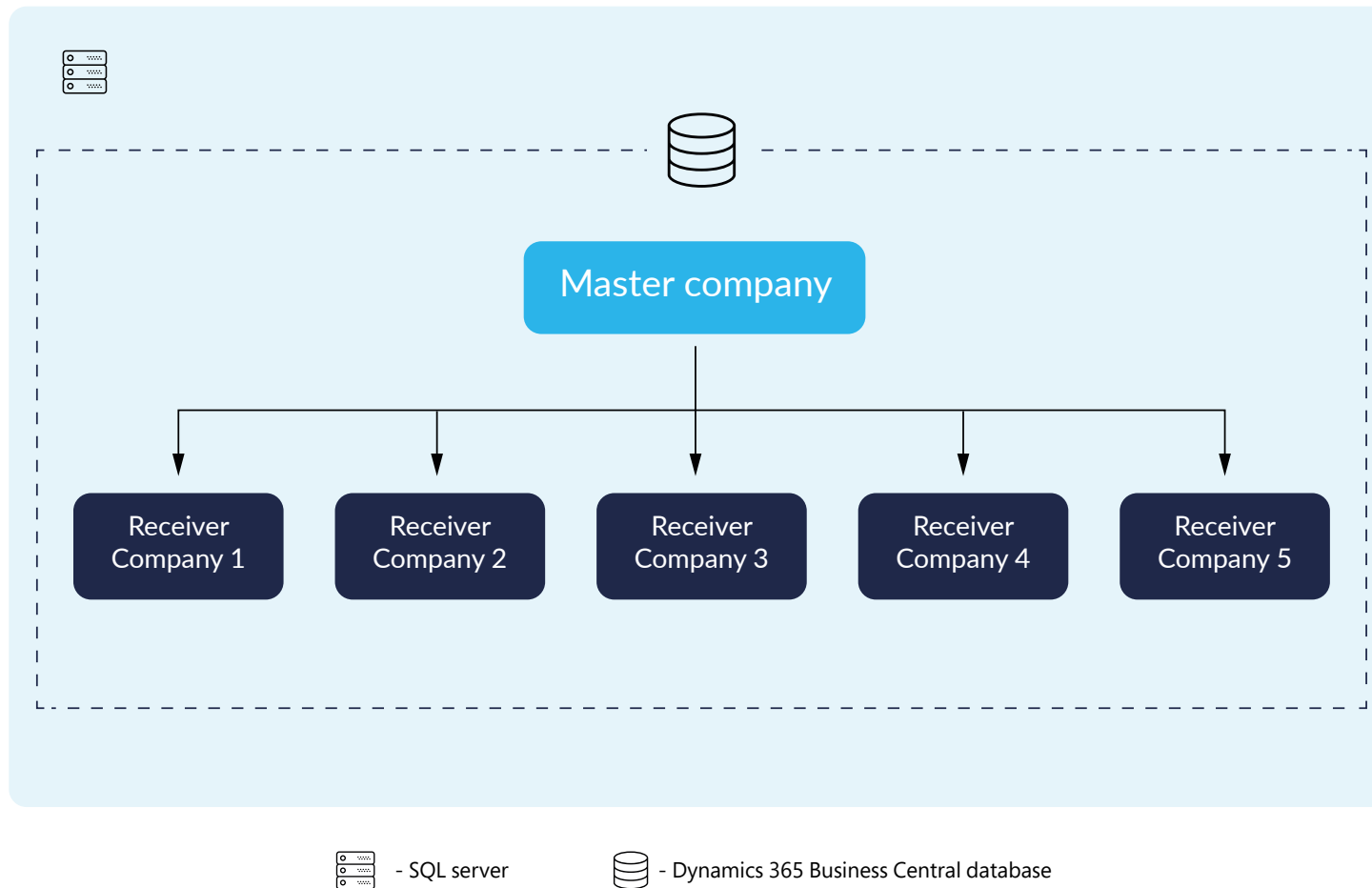
Replication – Master Company and Receiver Companies

In [Master Data Management System](#), data exchange is always performed from the Master Company to Receiver Companies. A Master Company is a company where all data considered global is stored. Receiver Companies are the companies to which data is sent.

Depending on the type of Dynamics 365 Business Central (Dynamics NAV) installation in the organization, data exchange is managed within one database, or within multiple databases, or within databases located at multiple SQL servers or in the scenarios using corporate ERP systems such as SAP, Oracle, etc.

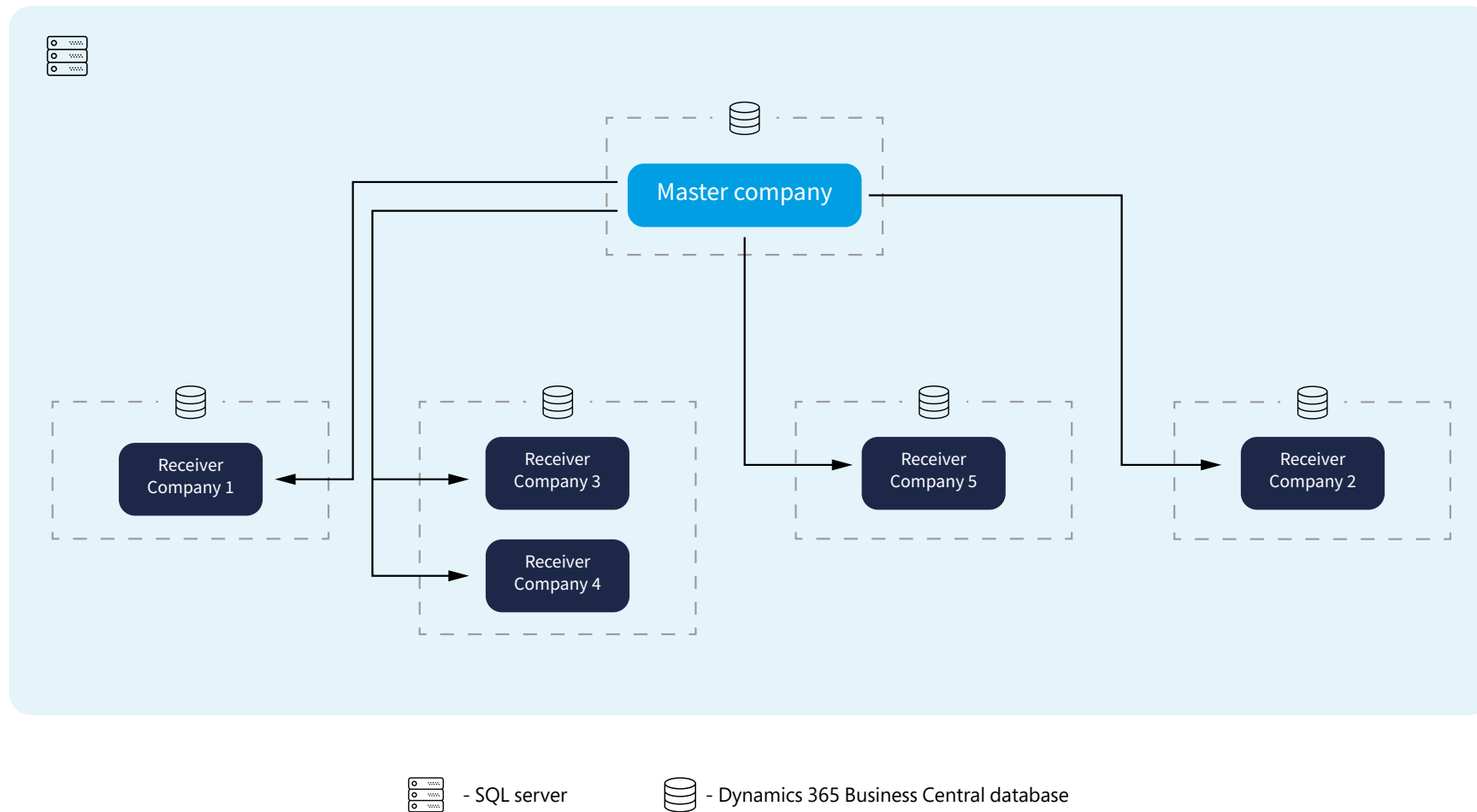
It is possible to synchronize data across the companies on different Business Central or NAV versions. Master Data Management System also supports the scenario with some Business Central companies installed on-premises whereas the others are in SaaS.

Single database (both on-premises and on-cloud)



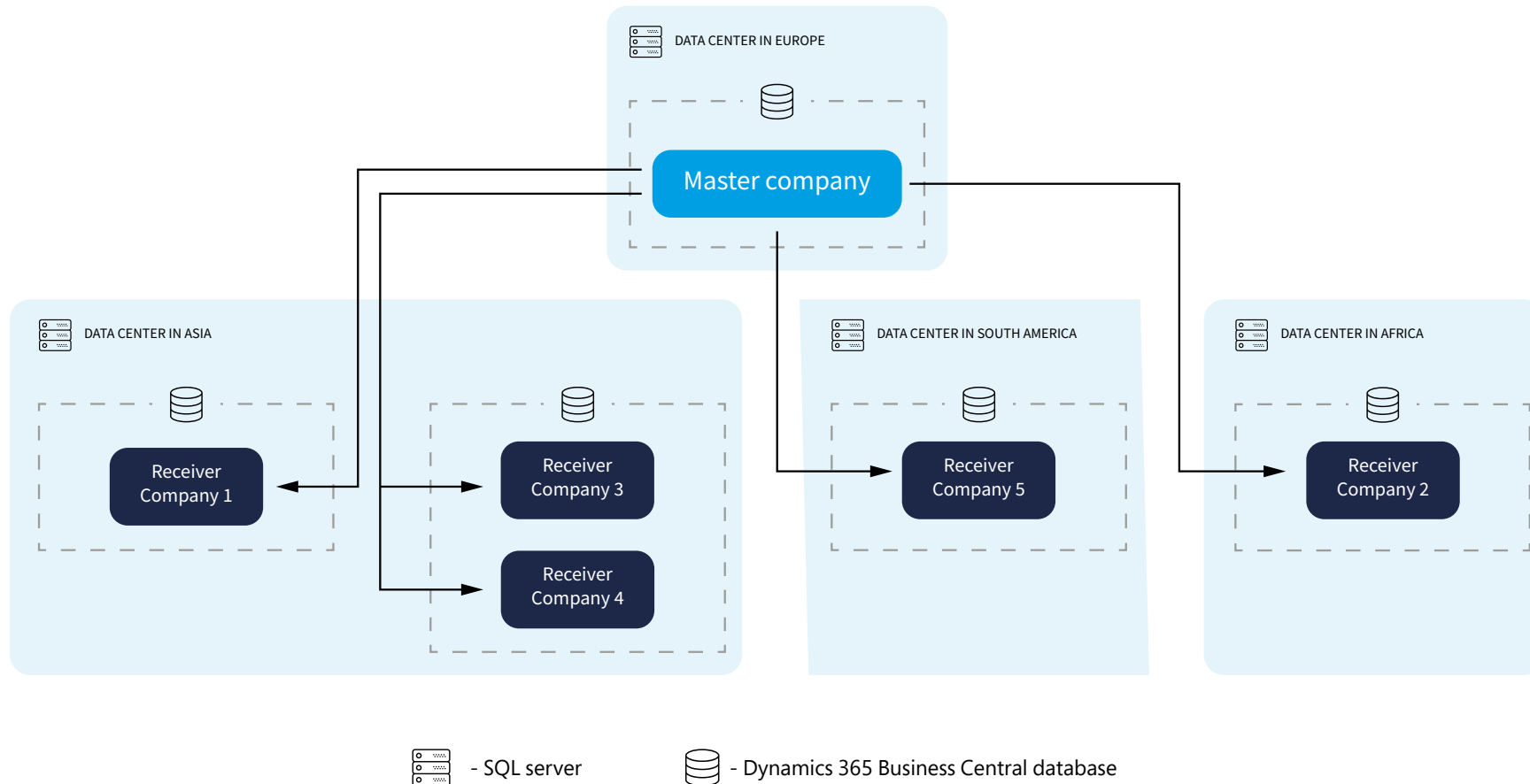
An example of data synchronization using Master Data Management System in an organization with a single Dynamics 365 Business Central (Dynamics NAV) database/tenant.

Multiple databases (for on-premises)



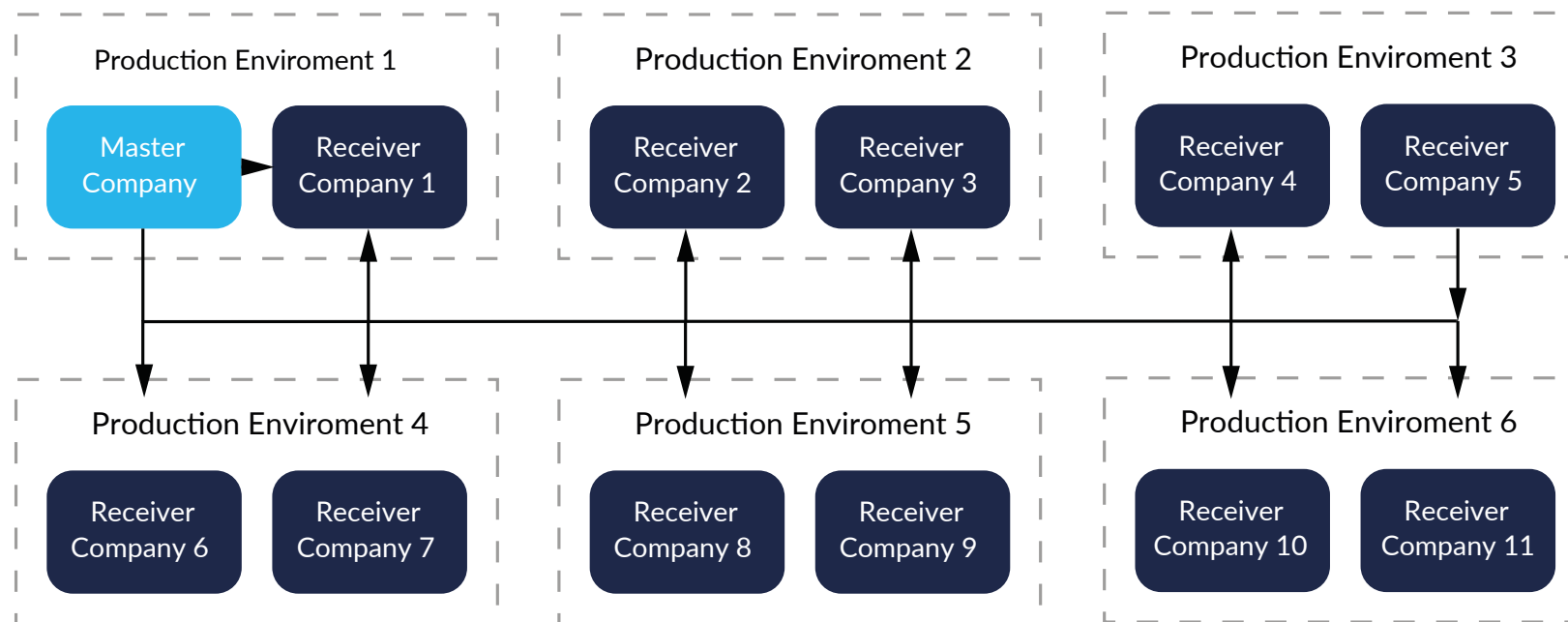
An example of data synchronization using Master Data Management System in an organization with multiple databases on the SQL server.

Multiple data centers (for on-premises)



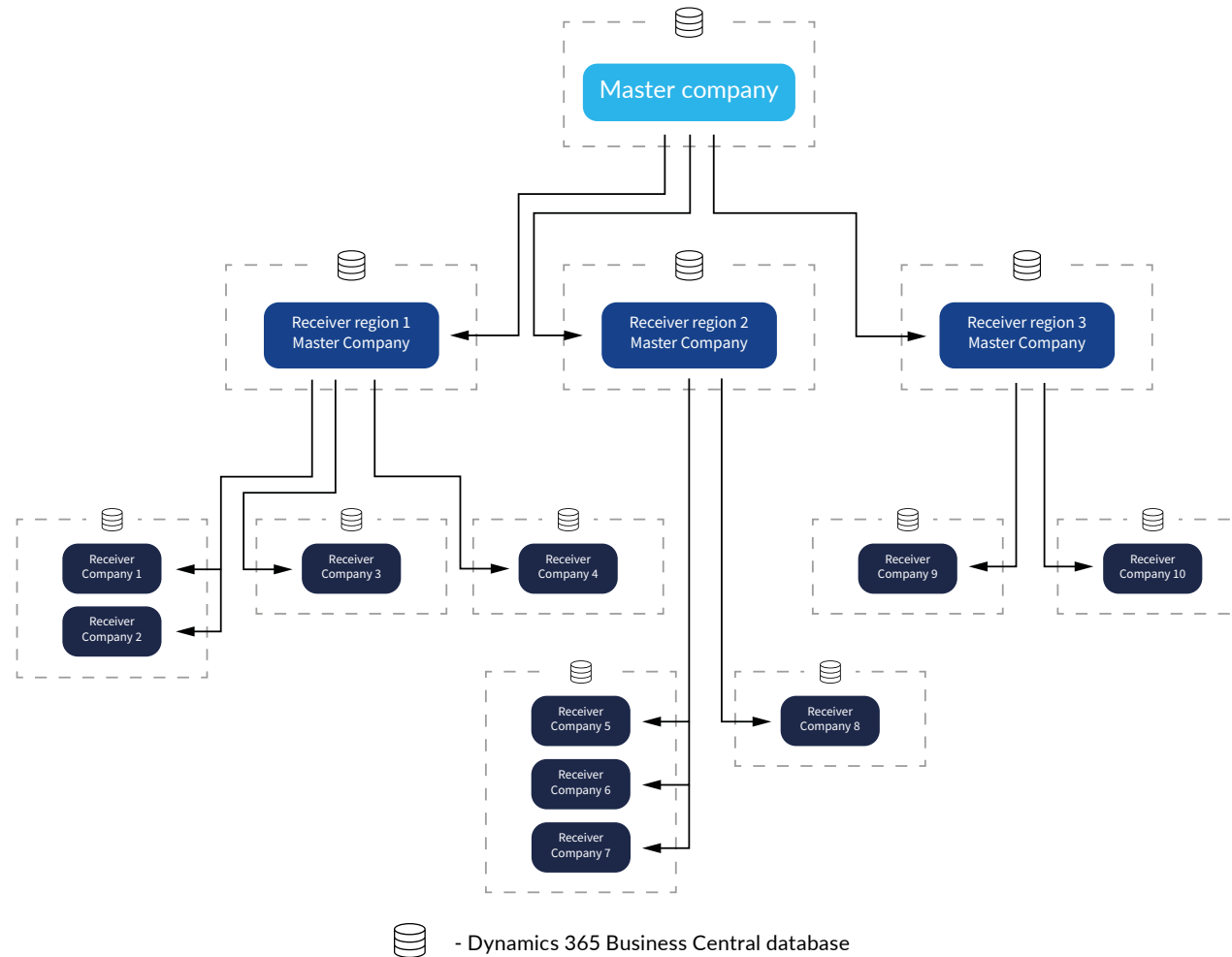
An example of data synchronization using Master Data Management System, during which Dynamics 365 Business Central (Dynamics NAV) data bases are synchronized on servers located in different data centers (usually because of insufficient bandwidth). The primary assumption of the Master Data Management System architecture is that some of the subsidiaries in the organization use their own Dynamics 365 Business Central installations deployed on different servers.

Multiple production environments (for SaaS)



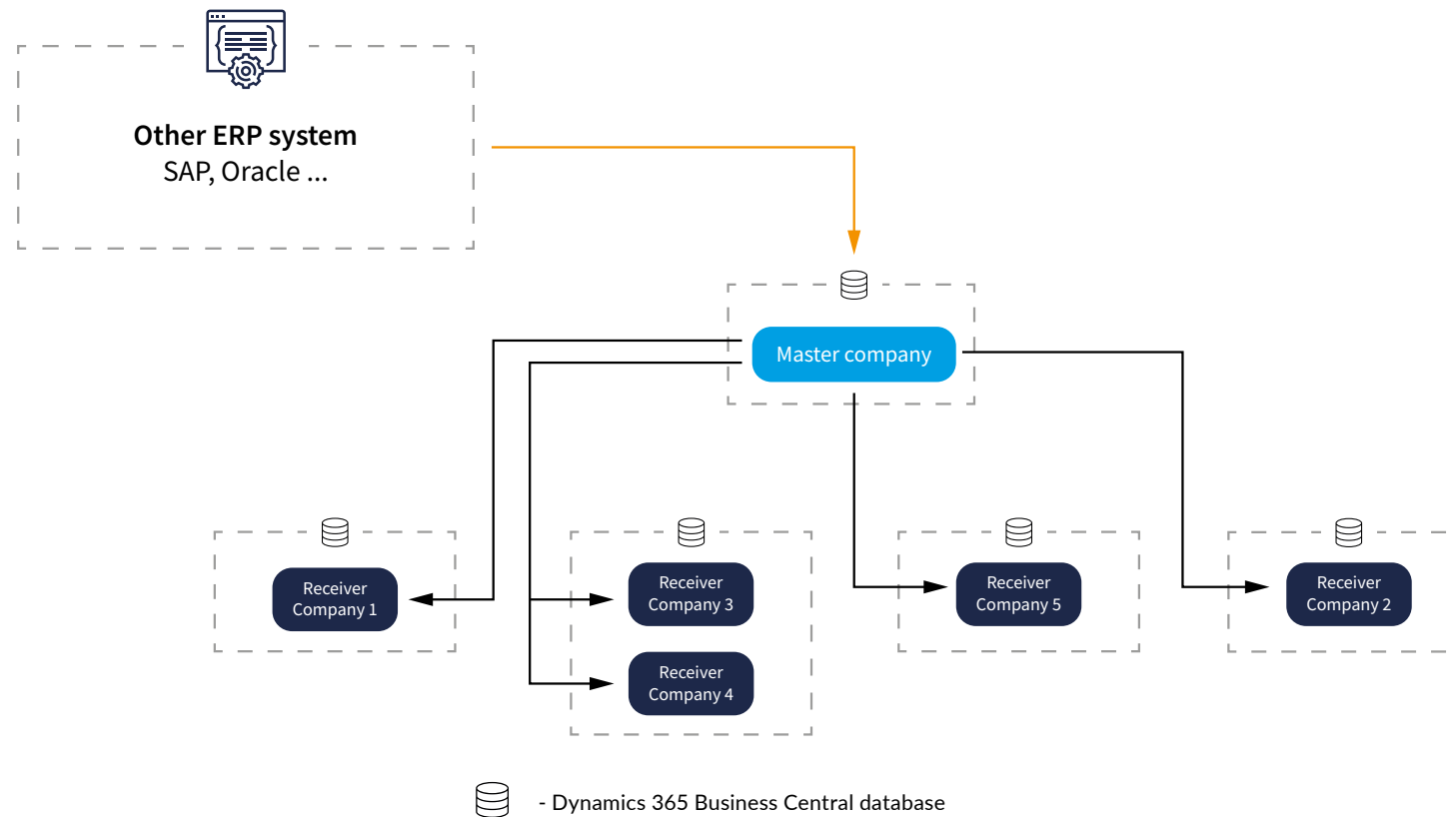
With the SaaS version, it is no longer needed to keep separate countries in different databases because of the location of a company/subsidiary, or to keep them on separate data centers because of the bandwidth. Therefore, it is recommended for such organization to simply create different production environments within the same tenant (one production environment for each country). This approach simplifies the architecture ([please watch this video if you would like to learn more about using Dynamics 365 Business Central SaaS in a multinational organization](#)). Master Data Management System can be used to synchronize data across the companies. Obviously, if you decide to keep different companies on different tenants, data synchronization will be also possible.

Regionalization



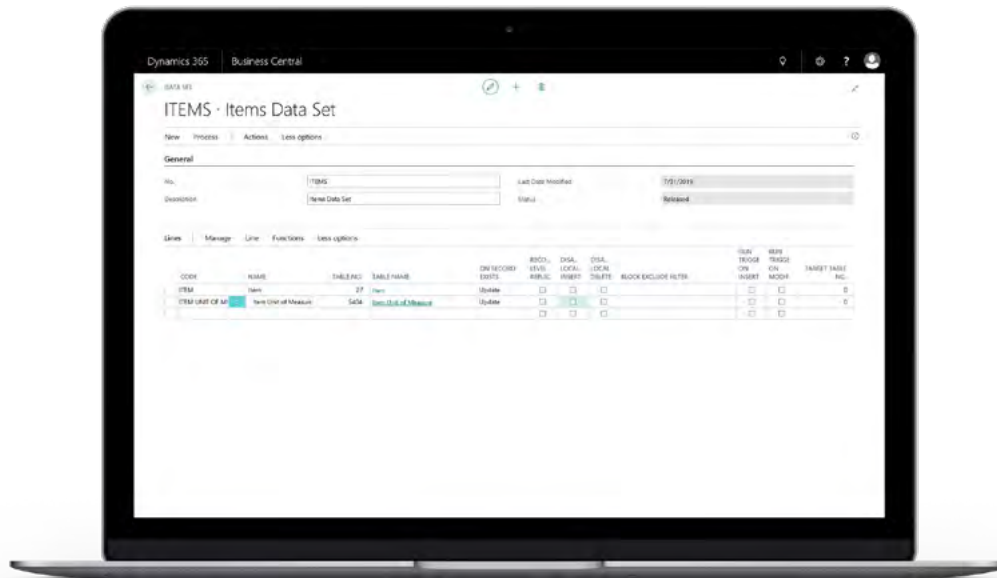
The other variant of the Master Data Management System installation is an organization with subsidiaries with uniform master data. However, this data can be different depending on the region in which a subsidiary operates. In such cases, a layer is created between the main Master Company and all the Receivers. Regional companies become Receivers for the main Master Company in the group, but at the same time they are Master Companies for the subsidiaries in their respective regions. The above diagram represents the overview of such regionalization in the on-premises environment. However, this approach can also be applied to SaaS - one or more production environments have to be used to maintain the “proxy”, regional companies.

Corporate ERP (e.g. SAP)

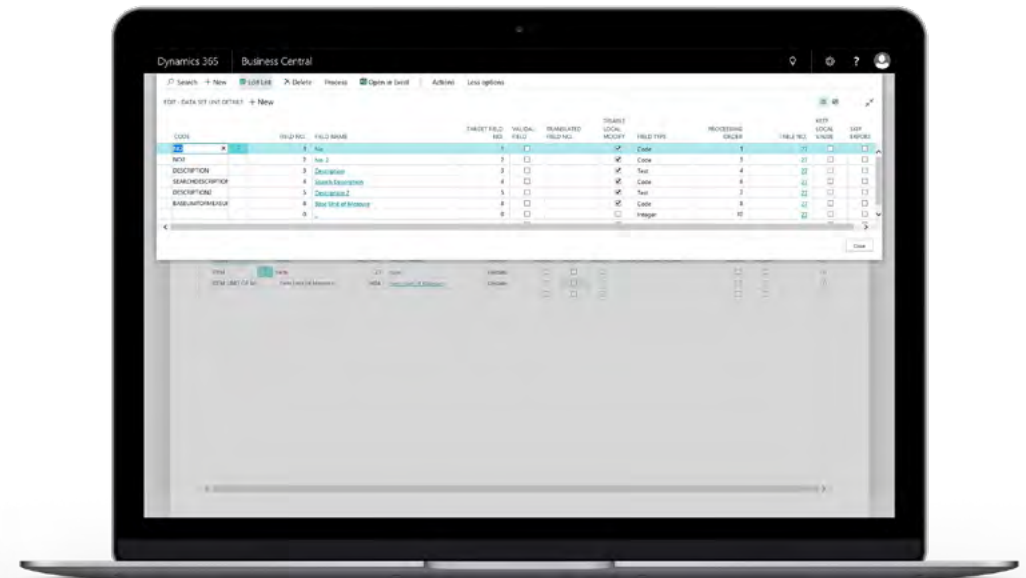


An example of data synchronization using Master Data Management System in an organization where Dynamics 365 Business Central (Dynamics NAV) is used by subsidiaries in the group and another ERP system e.g. SAP is used as a corporate system. In such a case, SAP can be a source of data for the Master Company (as shown in the diagram), but there are other scenarios. In such scenarios, Master Data Management System is a source of data both for SAP and Dynamics 365 Business Central, or data is sent directly from SAP to Receiver Companies, and part of typical Dynamics 365 Business Central data is still maintained in the Master Company. In the last example, a separate Master Company is required for Dynamics 365 Business Central, because of the differences between the SAP and Dynamics 365 Business Central data structures. Therefore, it is necessary to maintain e.g. accounting groups, dimensions and charts of accounts in the Master Company. Please note that integration with SAP is not part of the standard Master Data Management System functionality.

The data set contains information about the structure of data to be replicated. The user can set up which fields should be included in a data set. In the replication process, data sets are linked to a selected Receiver and the scope of data to be replicated is set up.



Under the Data Set header the user can specify the name of the data set, the number of the table to be replicated and many other settings including: On Record Exists – Specifies the action which will be taken if it is found that a replicated record already exists in the target database. The optional actions are Update and Skip; or Disable Local Insert – if this field is selected, users are not able to insert any new records in their local database.

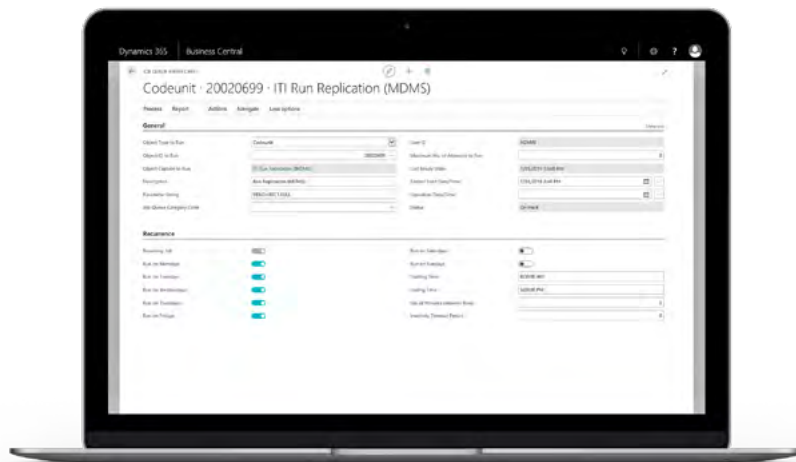


Item line details

The Master Data Management System setup (for Data Sets) enables users to specify the fields to be replicated. This way, even if due to the company's policy data is synchronized e.g. for items, subsidiaries are still allowed, for example to define different prices for the items.

Running Replication

While running the replication process, the system first checks whether all data sets included in the current replication are released and displays an error message if otherwise. Moreover, replication itself has to be released as well. There are several options of running and performing the replication.



Manual / Automatic

In manual replication, the user can run replication manually, from the Replication Card or the Replication List pages. It is also possible to set up replication to be run automatically by using the Dynamics 365 Business Central (Dynamics NAV) Job Queue module.

Full / Incremental

Full replication loops through all the records from the Data Set, including filters set up on a selected replication line (if any). If no filters have been set up, all records will be exported each time replication is run. Incremental replication includes only data that has been recently modified (since the dates set in Last Run Date and Time on the replication card).

Direct Replication

It is also possible to use the internal CHANGECOMPANY function in Dynamics 365 Business Central to replicate data – available only for the companies within the same database.

Receiver Company Processing

To manually process any new incoming messages, the user should run the Read function in the Replication Inbound Entries window. It is also possible to set up a job queue to handle incoming transmissions.

Record Level / One-time

There are two options in Master Data Management System that add flexibility to the full or incremental replications: Record Level Replication and One Time Replication. By default, replication processes all the records from a selected table. However, in the course of incremental replication only recently modified records are exported. It may be necessary to specify a certain subset of records to be replicated to specified receivers. By using the Record-level Replication function, each Receiver can mark manually which records they want to receive. You may also prefer to synchronize only one list (e.g. items) instead of running Full or Incremental Replication. For this purpose, you can use the One Time Replication option.

Advanced features

Group Receivers

When using the Group Receivers feature, it is possible to process one replication for multiple receivers simultaneously.

History of Sent Records

The history of records sent from all replications is stored.

Deleting Records

It is possible to delete records in the Master Company. Records that have never been replicated yet can be deleted when the “Allow Deleting Before Replicated” field is enabled in the Master Data Management System Setup window. For records that have been replicated, the system will automatically issue a webservice call to all receiving companies that have ever received this particular record, and will attempt to delete the record. If the process is completed successfully, the records will be deleted from the Master Company.

Master Data Management System Events

In order to incorporate advanced business logic efficiently, Master Data Management System now publishes the following events:

Codeunit Replication Mgt.

- OnBeforeExportRecord – allows you to specify if a given record should be exported (e.g. when exporting the list of currencies – to prevent publishing a local currency). This can be also done by setting up filters on the replication card. Example usage (Currency CAD to be skipped from export).
- OnBeforeExportField – allows you to override a default field value with your own function. Sample usage (Currency Code CAD on the Customer Card to be changed to <Blank> when exporting to a receiver in Canada).
- OnAfterExportRecord – allows you to perform actions on exported records. Sample usage (Fill in “Replication Comment” = new field on the customer card).

Codeunit Replication Import Mgt.

- OnAfterImportedRecordModify – allows you to perform actions on imported records. Sample usage (Updating Currency Code on the customer card, this time on the side of the receiving company).

Implementation

The deployment of the module usually takes only a few days and does not require time-consuming initial training for the implementer. However, data preparation tasks before the deployment may be more time-consuming. Before Master Data Management System is implemented, the company where Master Data Management System is implemented has to undergo the process involving the following steps:



Define the scope of data managed locally (e.g. only items and price lists).

Standardize data and perform data cleansing for all global data in every company to be involved in synchronization. This usually means that data numbering has to be set up with consideration.

Define the change/modification process for global data (e.g. appoint a person/persons at the headquarters to make decision on the changes to be introduced).

Only after these preparations can Master Data Management System be implemented as a tool that will ensure that data consistency is maintained at the global data level.

Sample process: extending the assortment in a local company

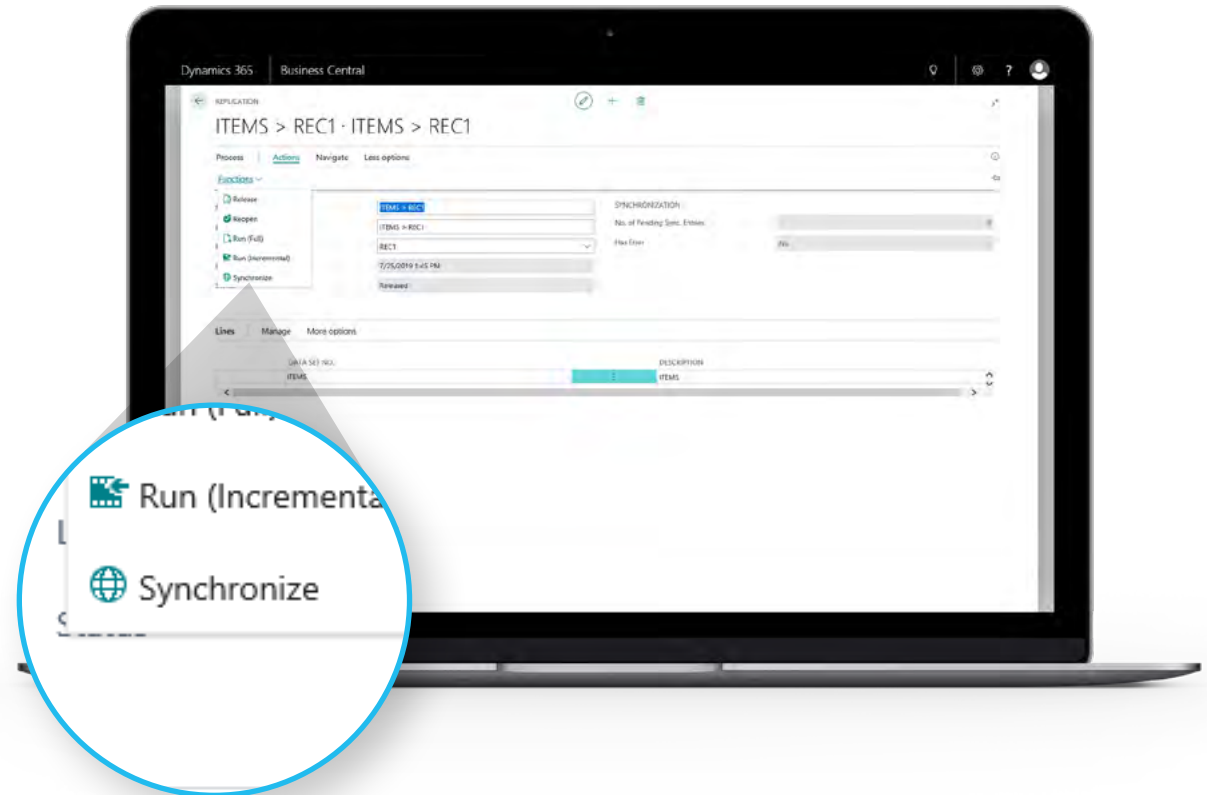
When implementing Master Data Management System, companies usually indicate items as one of the first areas to be synchronized. It is difficult to explain why a group that offers exactly the same items in its all subsidiaries does not use at least a uniform item numbering. The lack of such unification/standardization brings about unnecessary complications e.g. in communication within the group.

When Master Data Management System is implemented, it may however transpire that only a part of the items are offered by all the subsidiaries. Therefore, in the case of distribution companies, Master Data Management System is set up for local companies to show only the items they need.

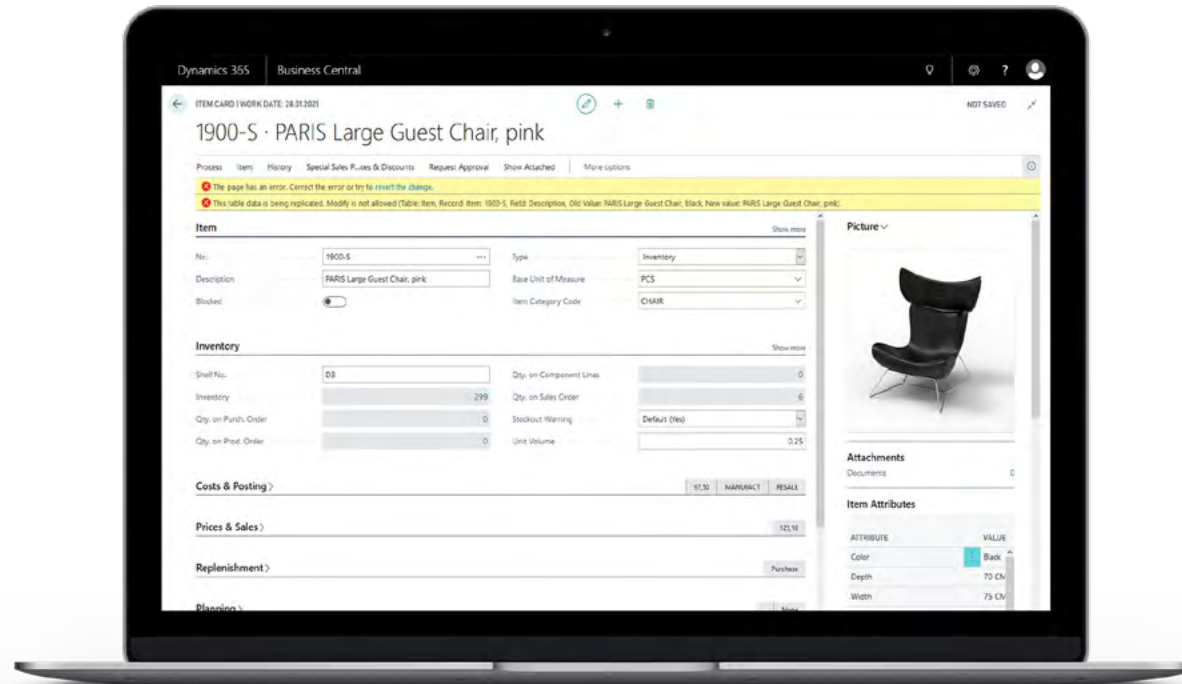
If a company wants to extend its assortment, the first step is to check if the item to be offered and does not exist in the local company yet, have already been created in the Master Company. If it exists, you need just to add the local company to the subscribers (receivers) of the item, and wait until the data is synchronized automatically (depending on the organization such a synchronization is set up with intervals ranging from several minutes to a day. Alternatively, you can run the Run Incremental function that triggers the synchronization.

Synchronize

If the item is not available in the Master Company, it should first be created in such a company with all the data to be synchronized for the item, including the No., Description, Base Unit of Measure fields etc.). Then, all receivers of the item have to be defined and set in the Master Data Management System module.



After the first synchronization, the item will be displayed in a local company. The local company will be allowed to fill in all empty fields on the item card i.e. the fields that the group considers locally managed e.g. an item vendor, posting dimension and planning parameters.



Error message

Please note that at the level of a local company, it will still not be possible to modify fields that are managed in the master company/headquarters. The example above shows the error message that is displayed when the user attempts to change a value in a field that is managed globally. The message notifies the user that modifications are not allowed at the local level.

Objects

Objects – certification and standard objects

Master Data Management System is an app certified by Microsoft for Dynamics 365 Business Central (Dynamics NAV). Therefore, its installation does not require the purchase of additional development objects. Starting from the NAV 2017 version, Master Data Management System modifies only one standard object, and starting from the Dynamics 365 Business Central version, the app was redesigned to be provided as an Extension.

Benefits of implementing Master Data Management System



faster implementation of changes within the organization



a good basis for setting up integration with other external systems and standardization at the group level which reduces maintenance costs



faster deployment of new companies in the group by using predefined data and global setup



easier control over customer relationship management e.g. the information on blocking a customer in one company can be shared with all the companies in the group



easier communication between companies in the group (standardized data)



slow moving stock reduction thanks to insight into inventory stored at different companies in the group



possibility to implement centralized purchasing



easier data comparison for the headquarters (Data is sent from subsidiaries in a standardized form)



easier Shared Service Center management



Master Data Management System



Available on
Microsoft AppSource



Microsoft AppSource
<https://appsource.microsoft.com>



Documentation
<https://docs.it.integro.pl/en-us/>

Must have apps for Dynamics 365 Business Central used globally

Learn how our apps can help you synchronize data across your corporate group and partner companies, streamline intercompany transactions and get global overview of the inventory across multiple locations.

Improved intercompany trade



Global data consistency



All applications
are available on AppSource

Information shared across companies



Our global customers

Presently, 140 international capital groups use Master Data Management System. Each of them uses the tool for synchronizing data between a dozen or several dozen companies. In total, approximately 2000 companies in these 140 groups use Master Data Management System to synchronize their data.



Opinions about Master Data Management System solution



Thanks to MDMS, we managed to standardize data between the databases maintained in two different data centers (in Europe and North America), ensuring the high quality of the data at the same time. This way, the exchange of inter-company documents became much more effective. With standardized and harmonized data, we are also able to streamline report creation in our BI tools.

**MORTEN SØRENSEN - VICE PRESIDENT GROUP IT
DLF**

CROSS JEANS®

We decided to implement Microsoft Dynamics NAV integrated with LS Retail because the existing ERP system limited the growth of our business - it worked only locally and lacked scaling capabilities.

We were looking for a global solution – the one that was unified and could be used by all company locations. The solution that would provide secure and instant access to a coherent database and reliable analytical tools. To achieve the desired effect, MDMS - a module supporting the management of central data was implemented. The new tool allows more effective monitoring of business activities carried out in individual subsidiaries and seamless data synchronization.

**PRZEMYSŁAW MADEJSKI - CHIEF OPERATING OFFICER,
Cross Poland Sp. z o. o.**



MDMS was implemented in June 2017. The solution, powered by IT.integro, was developed to facilitate central control of all master data related to financial transactions, customers, vendors, items and system settings.

The system has helped Kleen-Tex to effectively administer our master data and keep it consistent between the databases. Due to the high volume of intercompany transactions we have, this has helped a lot in streamlining the documents between systems.

We are currently testing the new version of MDMS that will give us additional functionality, such as direct SQL to SQL replication. We are happy to comment on those features after we have time to test them and use them in a productive setting.

**EDWARD BAKER - IT DIRECTOR
Kleen-Tex Industries**



I must say the design that went into this add-on is extremely clean and one of the best I've seen! It is also very simple and transparent. IT.integro's team has done wonderful work here!

**DON SAITO - CEO
ERP Efficiency Experts, LLC**

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Join our partner network to provide the must have apps for your global customers!

We are running partner network distributing Global Integration Apps that associates 70 partners from 30 countries worldwide. Join our partner network and provide your customers with add-on modules to synchronize data, handle intercompany trade, share the information across the group and much more.

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Microsoft Dynamics 365 Business Central

We are entering the world of digital transformation that changes the market, customers and competition. It also has an impact on the strategies and business models applied in modern companies.

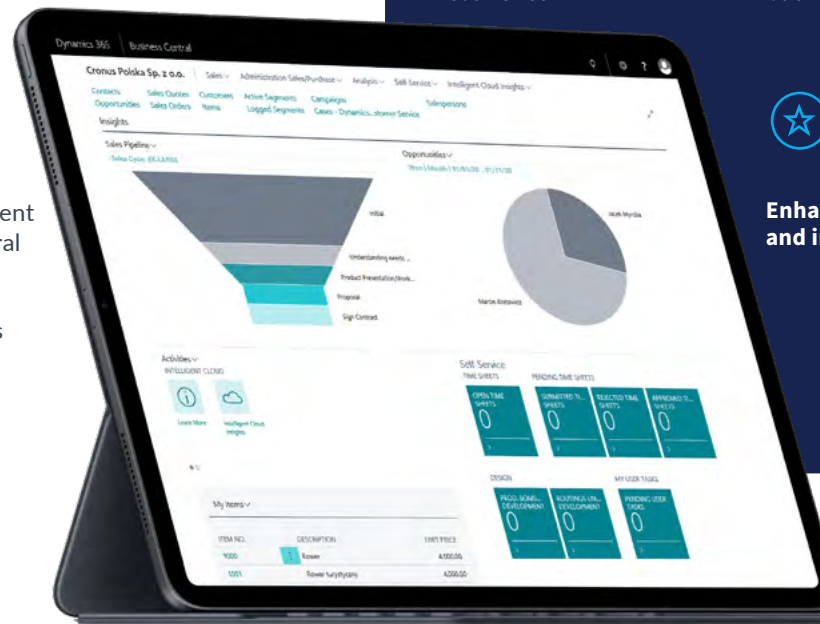
Innovative technological solutions keep appearing at a surprising pace. The emerging trends indicate the direction of this evolution. The evolution, that is based on mobility, artificial intelligence, the Internet of Things, cloud computing, social media networks and analytics.

Presently business growth depends on the tight integration of business processes. Having access to complete information, modern entrepreneurs gain a comprehensive insight into proven, reliable data at any time from anywhere.

This enables conscious, fact-based decision making, ongoing control over business performance, high productivity and readiness to respond to changes.

Dynamics 365 Business Central (former Dynamics NAV) is an ERP system which will transform your business to a higher level, adding up a new value to it.

It will enable you to enter the path of digital transformation. As a set of integrated and intelligent business solutions, Dynamics 365 Business Central will stimulate your organization to grow and your employees to develop as professionals. Keeping up with the latest trends, Dynamics 365 Business Central will turn your organization into an intelligent digital company.



ERP system chosen by hundreds of thousands of companies worldwide



Rich and powerful functionality



Available both in the cloud model or on-premise servers



Intuitive and flexible business solution



Works efficiently in 195 countries



Integrates all areas of business activity



Solution that won the trust of millions of users



Enhanced with business and industry solutions



Integrated with Microsoft 365, Microsoft Azure and Power Platform

IT.integro

The strategic Microsoft Dynamics 365 Business Central Partner

As a leading Microsoft ISV from Central and Eastern Europe, IT.integro has always been keeping pace with the latest innovations. We specialize in the provision of comprehensive services in the area of domestic and international implementation projects, consulting, audits, training, technical support, roll-outs and upgrades as well as delivery of cloud-based solutions for Dynamics 365 Business Central.

Since 2008, we have successfully completed hundreds of international implementation projects. We support corporations and groups of companies in almost 60 countries worldwide. Our experience with international projects allowed us to meet expectations of international customers and create a set of unique solutions – Global Integration Apps that consist of Master Data Management System, Advanced Intercompany and Intercompany Insights.

We have also developed other business applications for Dynamics 365 Business Central that are distributed by a network of 200 Partners worldwide. Our products have been, certified by Microsoft, and are available on AppSource.



Our apps on AppSource



Global
Integration Apps



Polish
Localization



Electronic
Banking
BASE APP



Master Data
Management System



Polish
Language



Electronic
Banking
EXTENSION



Advanced
Intercompany



Bonuses
& Accruals



Intercompany
Insights

Microsoft Partner



Gold Data Analytics
 Gold Enterprise Resource Planning
 Silver Application Integration
 Silver Cloud Platform
 Silver Small and Midmarket Cloud Solutions

Finalist for Microsoft Dynamics
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Master Data
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Advanced
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