

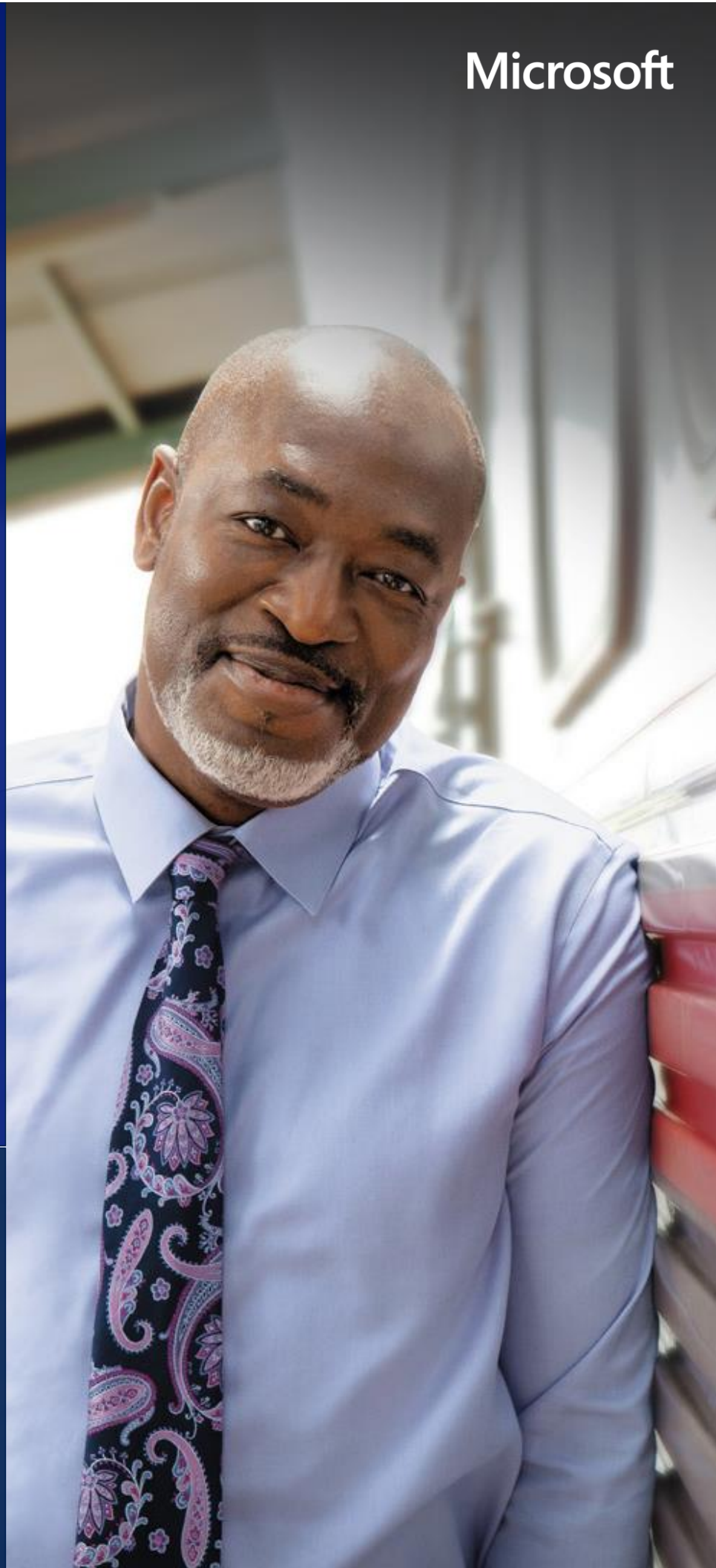
Microsoft
Dynamics AX
2012 R3

Microsoft

Licensing and Pricing Guide

Customer Edition
May 2014

 Microsoft
Dynamics AX



Using This Guide

Use this guide to improve your understanding of how to license Microsoft Dynamics AX 2012. It does not apply to Microsoft Dynamics NAV, Microsoft Dynamics GP, Microsoft Dynamics SL, or prior versions of Microsoft Dynamics AX. This guide is not intended to influence the choice of Microsoft Dynamics products and services. The examples presented in this guide are illustrative. Microsoft Corporation reserves the right to review and/or update the existing version of this document without advanced notice.

For help determining the right technology solution for any given organization, including the license requirements for a specific product or scenario, consult with your Microsoft Dynamics Certified Partner or your Microsoft account team.

This guide does not supersede or replace any of the legal documentation covering use rights for Microsoft products. Specific product license terms are detailed in the Software License Terms (SLT) document, which is available on the [Microsoft Dynamics AX website](#) and the Product Use Rights (PUR) found on the [Volume Licensing website](#).

License Keys vs. License Entitlements

An important distinction to make is between license keys (activation keys) and license entitlements. License keys are used to activate the Microsoft Dynamics software that the customer has licensed. License entitlements are what you are entitled to run and use based on the licenses you have acquired as described in the SLT and the PUR.

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How to License Microsoft Dynamics AX 2012 R3

Microsoft Dynamics AX 2012 utilizes a licensing model that is powerful, flexible, competitive, and optimized for Microsoft's Enterprise Agreement (EA). Consistent with that theme, it is available for on-premises deployments through the familiar Microsoft Server/CAL licensing model. This licensing model provides an innovative, yet simplified, way for you to purchase an ERP solution.

The Microsoft Dynamics AX 2012 R3 model is designed to be powerful. We have included the Microsoft Dynamics AX 2012 R3 functionality, both current and new, in the server software. To obtain access to these powerful features, users and devices are licensed based on the functionality that you require.

Secondly, we have created a flexible multi-tier CAL model so you can choose the functionality for your specific business needs. You can also mix and match various types of users and devices within a single deployment.

Our solution continues to offer a highly competitive total cost of ownership. We have added more functionality and more value with Microsoft Dynamics AX 2012 R3. So be confident that Microsoft Dynamics AX 2012 offers high customer value.

Finally, Microsoft Dynamics AX 2012 is available through multiple licensing programs. The Enterprise Agreement (EA) is the optimal Microsoft Volume Licensing program for saving organizations money. The EA offers large organizations the ability to license certain Microsoft software over a three-year period at the best available price. This licensing solution increases operating efficiencies with rights to the latest versions of Microsoft licensed products when active on Software Assurance.

UPDATES IN THIS VERSION OF THE LICENSING GUIDE

This is a summary of the main updates to this document as part of the Microsoft Dynamics AX 2012 R3 launch.

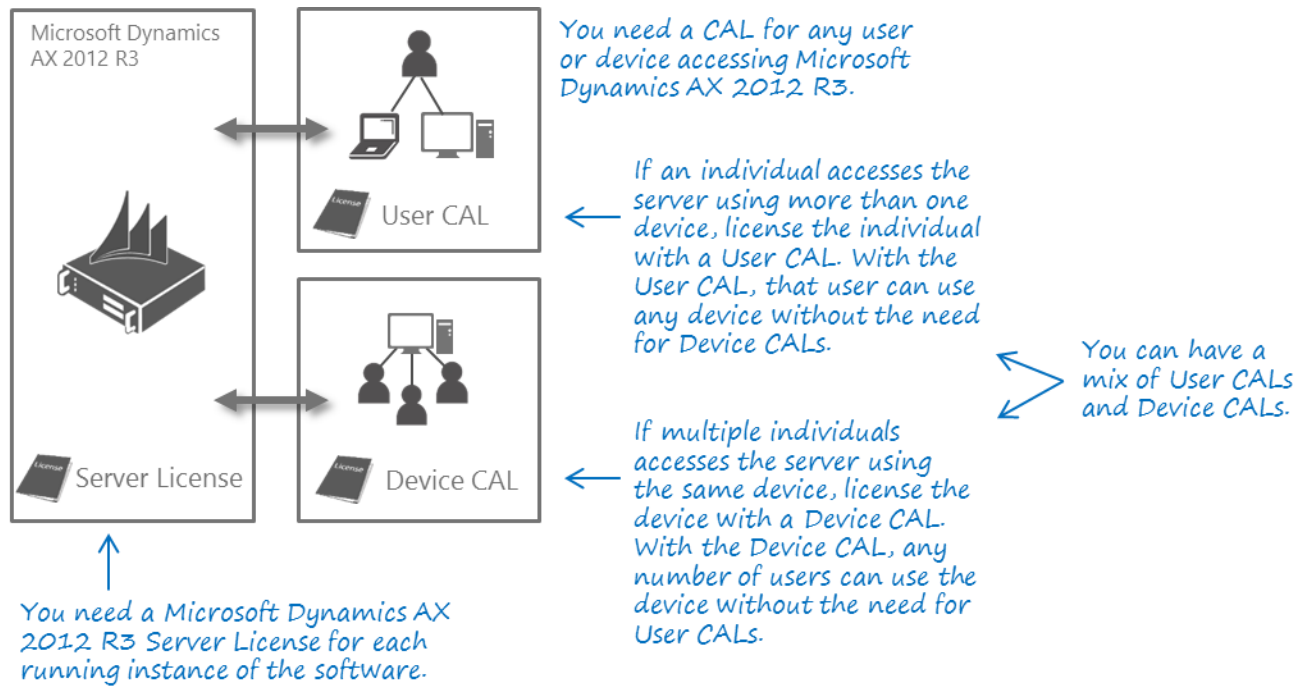
- Updated CAL use rights definitions
- Addition of the Companion Apps licensing requirements
- A description of the License Sizing Estimator tool
- Industry licensing guidance
- Updates to Appendix IV (Security Roles by CAL Level) to reflect R3 changes

BASIC LICENSING REQUIREMENTS

All Microsoft Dynamics AX 2012 R3 customers need to license:

- Microsoft Dynamics AX 2012 R3 solution functionality, which is licensed through the Microsoft Dynamics AX 2012 R3 Server license, and
- Direct or indirect access to the Microsoft Dynamics AX 2012 R3 solution functionality by users or devices, which is licensed through Client Access Licenses (CALs).

Figure 1: Server/CAL licensing model



LICENSING MICROSOFT DYNAMICS AX 2012 R3 SOLUTION FUNCTIONALITY

Before you run any instance of the Microsoft Dynamics AX 2012 R3 Server software under a Server license, you must assign that license to one of your servers. That server is the licensed server for that particular license. You may assign other Server licenses to the same server, but you may not assign the same license to more than one server. A hardware partition or blade is considered to be a separate server. For each Microsoft Dynamics AX 2012 R3 Server license you assign, you may run, at any one time, one instance of the server software in one physical or virtual operating system environment (OSE) on the licensed server. The Server license includes one application object server. If you want additional application object servers or additional server instances, you may purchase additional Microsoft Dynamics AX 2012 R3 Server licenses.

LICENSING ACCESS TO MICROSOFT DYNAMICS AX 2012 R3 SOLUTION FUNCTIONALITY

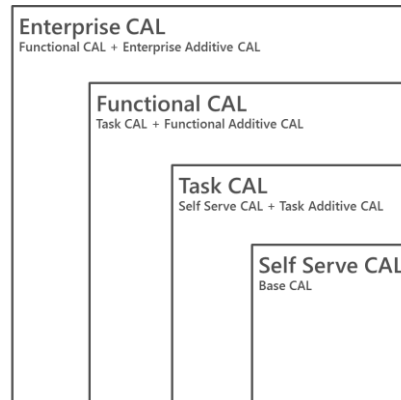
Access to Microsoft Dynamics AX 2012 R3 solution's functionality is licensed through CALs. Any time a user directly or indirectly accesses the solution functionality, that user must be licensed by a User CAL (which licenses a specific user for access via multiple devices) or the device being used must be licensed by a Device CAL (which licenses access through a specific device by any user).

Note: Only the user or the device requires a CAL, not both. If the user of a device is licensed with a User CAL, then the device *does not* need a Device CAL. Likewise, if the device is licensed with a Device CAL, then the user *does not* need a User CAL.

AVAILABLE CALS

There are four available CAL levels for Microsoft Dynamics AX 2012 R3, each of which grants an increasingly wider spectrum of use rights. This gives you the flexibility to license the solution based on how your users will use and derive value from the solution.

Figure 2: Available CALs



As you progress from the lowest level CAL (Self Serve) to the highest level (Enterprise), the user is licensed to use the solution in ways that will provide more value. You therefore have the flexibility to decide which level of investment to make for any given individual based upon the functions that user is performing on behalf of the organization.

Self-Serve CAL (Base CAL) grants an employee rights for your own use and not for or on behalf of other individuals (i) to record time resulting solely for payroll processing, (ii) to record expenses solely for reimbursement, (iii) manage personal information (iv) create requisitions and (v) manage budgets related to these activities.

Task CAL (Self-Serve CAL + Task Additive CAL) grants an employee rights to (i) record and approve any type of time and expenses (ii) approve invoices (iii) approve all Self-Serve related transactions and (iv) operate a point of sale device or a Warehouse device.

Functional CAL (Task CAL + Functional Additive CAL) grants an employee rights to:

- Use established operational cycles and business processes provided by the software; and
- Create and update: (i) position requisitions or (ii) master data records pertaining to applicants, employees, you, vendors, or parts catalogs; and
- Operate a Commerce Manager Device
- Approve all Task and Self-Serve related transactions.

Enterprise CAL (Functional CAL + Enterprise Additive CAL) grants an employee unrestricted access to all the functionality in the server software across the ERP solution.

Note: You can upgrade CALs to a higher level by acquiring additive CALs. For example, to upgrade from the Self Serve CAL to the Task CAL, you can acquire the Task Additive CAL.

LICENSING MICROSOFT DYNAMICS COMPANION APPS

Companion Apps enable new native device experiences helping employees improve your efficiency. Some examples of these apps being made available via smart phones and Window 8 Tablets are Time, Expense, Approvals and Business Analyzer. Access via mobile and desktop apps are included with all Named User CALs as long as you are current on an Enhancement Plan. Since Named Users allow access to multiple devices by one user, that user just needs to be licensed with the applicable CALs or SALs for the task to be performed with the Microsoft Dynamics AX product. Azure services are required and must be acquired separately.

ADDITIONAL LICENSING GUIDANCE FOR SPECIFIC INDUSTRIES

WAREHOUSE AND TRANSPORTATION MANGEMENT

Microsoft Dynamics AX 2012 R3 includes new Warehouse and Transportation Management modules that are enabled by a single configuration key, along with the previously released Warehouse Management II module. Users should enable the configuration key for ONLY ONE of these modules, but not both, in a single-instance, single-partition deployment. Although technically feasible, enabling the configuration keys for both of these modules in a single-instance, single-partition deployment is not supported by Microsoft.

RETAIL AND E-COMMERCE

Microsoft Dynamics for Retail enables retailers of all sizes, all around the world, to be dynamic. It delivers a complete shopping experience, with a seamless and differentiating solution that is more modern, more mobile, and more global. End-to-end capabilities, from point of sale (POS), store operations, merchandising, e-commerce, call center, marketing, and customer care, to supply chain, financials, and more, can be deployed in the way that makes the most sense for your business. To learn more about the Microsoft Dynamics AX 2012 R3 Retail solution please visit [here](#).

To accommodate the great new functionality launched with Microsoft Dynamics AX 2012 R3 we will be creating a new licensing model specific for retail and e-commerce. Details on these updates will be available [here](#).

PUBLIC SECTOR

Enterprise resource planning solutions tailored for government or educational institutions manage finances, constituent relationships, logistics, recruiting, and more to lower costs and to help improve productivity among all facets of the Public Sector industry. Please see [here](#) for additional product details for the Microsoft Dynamics AX 2012 R3 Public Sector solution.

Please refer to the [Microsoft Dynamics AX website](#) to find an industry-specific licensing guidance for Public Sector.

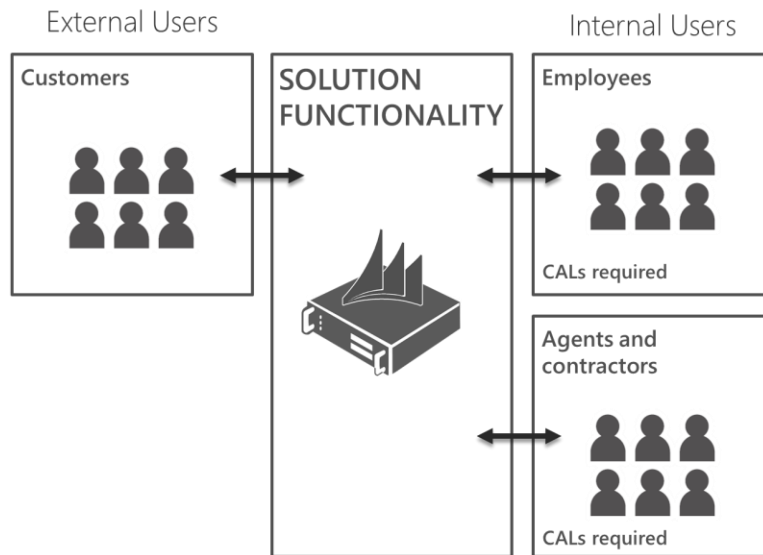
LICENSING WINDOWS AZURE

Microsoft Dynamics AX 2012 R3 supports deployment on Windows Azure. Azure licensing is acquired separately from the Microsoft Dynamics AX 2012 R3 license. This allows you to have flexibility to easily scale infrastructure up or down as needed to meet your business needs. Please see [here](#) for additional information on Azure pricing.

ACCESS BY EXTERNAL USERS

Your or your affiliates' employees, agents, or contractors require a CAL to access your Microsoft Dynamics AX 2012 solution. You do not require a CAL to access your Microsoft Dynamics AX 2012 solution to manage your accounts and orders. However, you may not use your software to manage any portions of your business. Notwithstanding the foregoing, CALs are required for access through Microsoft Dynamics AX 2012 clients.

Figure 3: Internal vs. External Users



REASSIGNING CALS

Named CALs (either User or Device) cannot be shared. You can only be reassigned in specific cases as follows:

- Permanently reassigning a CAL from one user or device to another, due to permanent personnel or device replacement.
- Temporarily reassigning a CAL to a temporary worker while the assigned user is absent or to a temporary loaner device while an assigned device is out of order.

MULTIPLEXING

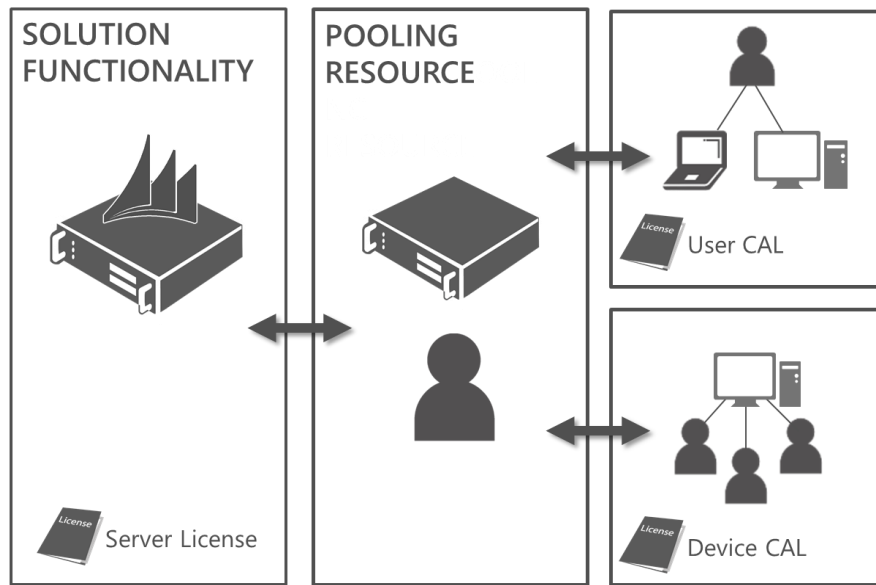
Multiplexing is the use of hardware or software (including manual procedures) to reduce the number of devices or individuals that access or use the Microsoft Dynamics AX 2012 R3 solution by pooling connections. Multiplexing does not reduce the number of licenses required to access the Microsoft Dynamics AX 2012 R3 solution. Any user that accesses the Microsoft Dynamics AX 2012—whether directly or indirectly—must be properly licensed.

For additional information about Multiplexing please refer to the Microsoft Volume Licensing Brief [Multiplexing—Client Access License \(CAL\) Requirements](#).

Note: Licensed users may manually rekey information (when coming from non-licensed users) into the Microsoft

Dynamics AX 2012 R3 solution. This scenario is not considered to be multiplexing.

Figure 4: Multiplexing



Multiplexing does not reduce the number of CALs required.

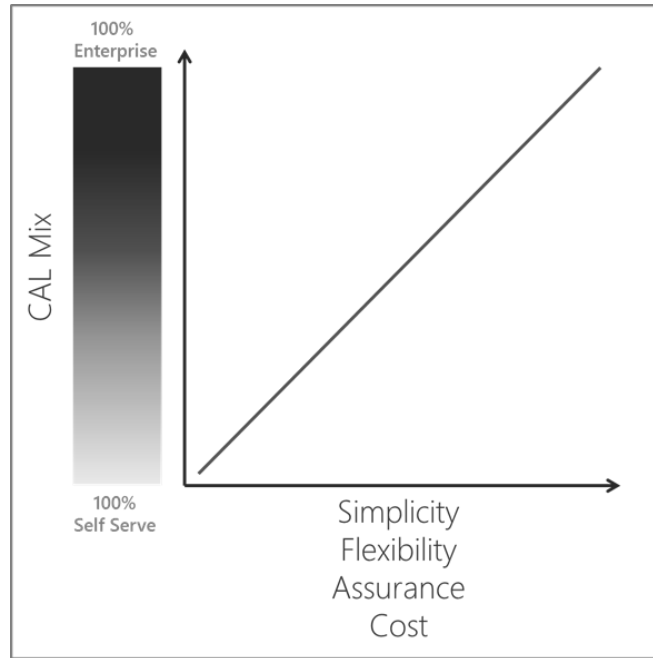
Scoping the Solution

The goal of scoping the solution should be to determine an estimated mix of CAL types that provides the right balance of the following:



As the mix of CALs becomes more heavily weighted toward Enterprise CALs, the licensing increases each of these four areas. Likewise, as you alter your mix to include lower CAL levels other than Enterprise CALs, you lower each of these four areas.

Figure 5: Effect of CAL mix on simplicity, flexibility, assurance, and cost.



Each solution will have an optimal mix of CALs.

Figure 6: Example CAL mixes

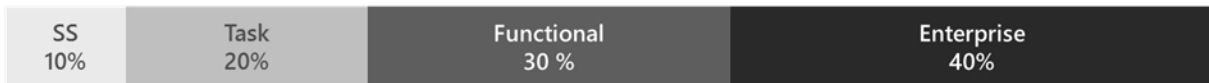
Mix A



Mix B



Mix C



Licensing every user and/or device with an Enterprise CAL (Mix A above) maximizes each area:

- ⊕ **Simplicity:** All you need to know is total number of users and/or devices being licensed.
- ⊕ **Flexibility:** You can provide every user with access to any functionality you need.
- ⊕ **Assurance:** You know that every user is licensed to access all functionality.
- ⊕ **Cost:** Enterprise CALs have the highest price.

For many organizations, particularly smaller organizations, this may be the preferred approach, as the cost savings achieved by licensing a relatively small number of users with a lower level CAL may be negligible

compared to the reduction in simplicity, flexibility, and assurance.

Larger organizations, for which licensing everyone with Enterprise CALs may be cost-prohibitive, may prefer to make some trade-offs in order to lower the cost. The extreme version of this would be to look at every single user in the organization and determine the lowest level CAL you will need. We do not recommend this approach, because you severely limit simplicity, flexibility, and assurance.

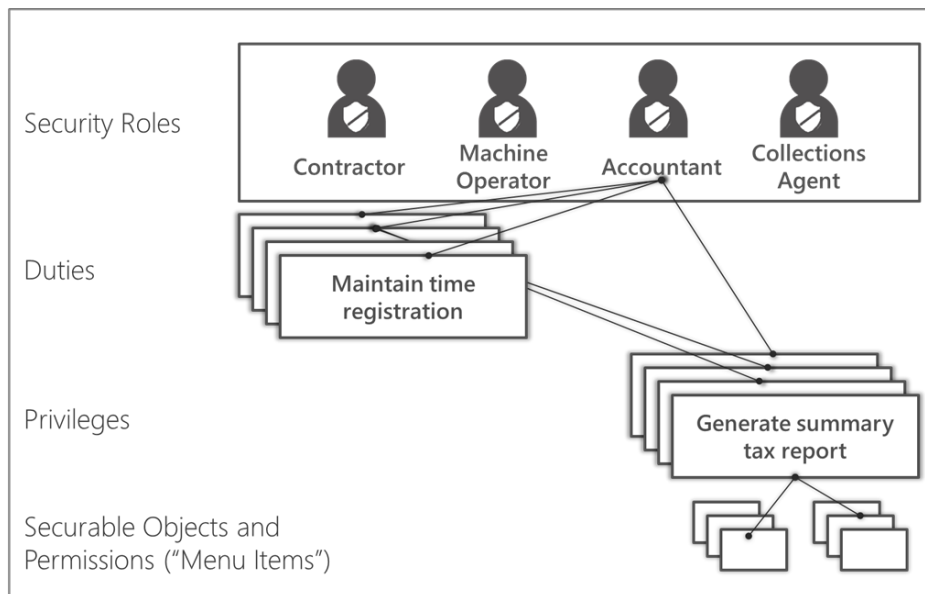
Instead, we recommend the following approach, in which you determine the mix of CALs based on Security Roles.

SCOPING BASED ON SECURITY ROLES

OVERVIEW OF SECURITY ROLES

Providing users with access to the solution functionality is done by assigning each user one or more Security Roles. Microsoft Dynamics AX 2012 R3 Security Roles combine meaningful bundles of solution functionality and access rights required to perform actions relevant to that role.

Figure 7: Assigning a Security Role to a user provides access to solution functionality



To make it easier to understand the licenses required, each of the Microsoft Dynamics AX 2012 R3 Security Roles has a pre-determined CAL. When you assign Security Roles to users, you then know what CAL those users require.

For example, in a manufacturing organization, the Accountants, Shop Supervisors, and Field Service Technicians require different use rights. By assigning those user groups to the appropriate Security Role, you get the functionality you need and you know the CAL type that is required.

Figure 8: Examples of CALs based on use rights

User Examples	Use Rights	CALs
Accountant	Financials	Enterprise CAL
Shop Supervisor	Adjust inventory	Functional CAL
Field Service Tech	Maintain service logs	Task CAL
All employees	Update personal HR information	Self Serve CAL

Notes:

- You can assign multiple Security Roles to one user, in which case the highest CAL type required covers all the user rights.
- You have the flexibility to configure or customize Security Roles. This may impact the license required for the new/modified Security Roles. Please refer to the [Appendix I](#) for more information about how such customization can impact licensing requirements.

Refer [Appendix IV](#) for a list of Security Roles and your associated CALs.

COUNTING LICENSES

Using Security Roles as a proxy to count CALs provides a much more convenient and manageable process than trying to determine the required CAL for every individual in the organization. This approach involves identifying groups of users who will be satisfied by Security Roles that require lower level CALs and groups of users who will access the solution functionality through a licensed device, and then licensing all remaining users with the Enterprise CAL.

The following provides a step-by-step overview of this approach:

- 1 Determine the total number of users.
- 2 Determine groups of users who require only the Self Serve CAL (for example, maintenance employees).
- 3 Subtract from this users who will access the functionality using a licensed device.
- 4 The result is the number of required Self Serve User CALs.
- 5 Count the number of devices that will be licensed with a Self Serve Device CAL for the users counted in step #3.
- 6 Add the number of User CALs and Device CALs to get the total number of required Self Serve CALs.

7 Repeat for Task, Functional, and Enterprise CALs.

Figure 9: Example of counting licenses

Here you see the approach described above applied to an organization with 900 total users.

	1 900 Total Users	Users Accessing via Licensed Device	User CALs Required	Device CALs Required	Total CALs
Self Serve	2 150	3 - 20	4 = 130	5 + 5	6 = 135
Task	200	- 0	= 200	+ 0	= 200
Functional	300	- 100	= 200	+ 25	= 225
Enterprise	250	- 0	= 250	+ 0	= 250

As you continue through the purchasing cycle, you can continue to fine tune the CAL requirements and final costs using this exercise.

LICENSE SIZING ESTIMATOR

[Microsoft Dynamics Lifecycle Services \(LCS\)](#) provides a cloud-based collaborative workspace that you and your partners can use to manage Microsoft Dynamics AX projects from pre-sales to implementation and operations. Based on the phase of your project and the industry you are working in, the site provides checklists and tools that help you manage the project. It also provides a dashboard so that you have a single place to get up-to-date project information. LCS has many other tools available including the License Sizing Estimator.

The License Sizing Estimator is an online tool that helps Microsoft Dynamics customers estimate the configuration of the different types of CALs that an organization will need. This services supports Microsoft Dynamics AX 2012 R2 and higher license sizing. The License Sizing Estimator will help you:

- Determine the estimated required mix of user licenses based on the roles and activities in your organization to help lower license acquisition costs.
- Model the effect of duty-level customization of roles on your license requirements.
- Provide reports showing the total number of Client Access Licenses (CALs) needed by type and level.

How Microsoft Dynamics AX 2012 R3 Licenses are Sold

Licenses for Microsoft Dynamics AX 2012 R3 are sold through the following three channels:

Figure 10: Sales channels



The following provides more information about each of these sales channels.

MICROSOFT VOLUME LICENSING



WHAT IS VOLUME LICENSING?

Simply stated, volume licensing of software makes it easier and more affordable to run software on multiple computers within an organization.

Software Assurance is also included or available for purchases with licenses. This comprehensive maintenance offering can help organizations get the most out of your software investment. It combines the latest software with phone support and IT tools.

Participating in a Volume Licensing program typically involves signing an agreement and/or enrollment, meeting a minimum purchase requirement, and ordering licenses through a Microsoft Reseller.

APPLICABLE VOLUME LICENSING PROGRAMS

Microsoft Dynamics AX 2012 R3 Server licenses and CALs are available to Microsoft Volume Licensing you under the Server/CAL licensing model through the Microsoft Enterprise Agreement (EA).

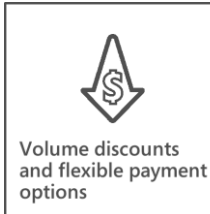
Note: For qualifying education institutions, Microsoft Dynamics AX 2012 R3 is available through the Enrollment for Education Solutions when purchasing through a LAR under the CASA+EES contract option. For more information about EES, visit the [website](#).

ABOUT THE EA

The EA gives the customer the flexibility to choose among on-premises software and cloud services to best suit your user needs, and helps you optimize your technology spend as business priorities change. The EA offers the following benefits:



The EA provides you with the best overall pricing based on your organization's size, the benefits of Software Assurance, as well as simplified licensing management via your organization-wide agreement. With a single agreement, you can enjoy the flexibility of being able to choose on-premises software and cloud services for different user needs, optimize technology spend, and streamline management of your Microsoft purchases.



The EA is appropriate for organizations with more than 250 PCs, devices and/or users and want to license software and cloud services for the customer organization for a minimum, three-year period. At the onset of your agreement, pricing is based on a tiered volume discount structure, meaning the greater the size of the customer organization, the less you'll pay for individual licenses. In addition, the cost of your EA may be spread across three annual payments, helping you predict future budget requirements. Finally, Microsoft Financing offers even greater payment flexibility by providing custom payment options that let you bundle software, services and equipment in a single investment.



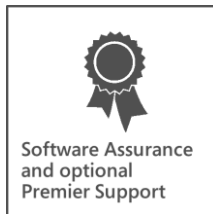
With the EA you can take advantage of various Enrollments. These can be a very cost-effective way to purchase software and solutions to address key organizational objectives such as building secure and well managed data centers, maintaining line-of-business applications, or standardizing on Microsoft's popular productivity software and comparable cloud services across the customer's organization.

EA Enrollments

You can choose to either purchase your software licenses via the EA Enrollments or subscribe to licenses through the Enterprise Subscription programs. Based on a three-year term, with the ability to add and adjust products and cloud services over time, the EA offers pricing advantages beyond standard license and subscription pricing. Should you add new users or devices during your EA, you can equip them with software and online services you are already using and then account for these changes once a year, through an annual reconciliation process known as "True Up."

Subscription Option

The EA Subscription provides similar advantages as the EA Enrollments with lower annual costs based on a three-year subscription and the ability to increase or decrease licenses and subscription counts on an annual basis. This ability to grow or downsize subscription counts may be appropriate, especially if you expect significant fluctuations in workforce size and IT requirements. However, unlike the EA Enrollments where you retain perpetual use rights for the licenses you purchase, with subscription programs you gain access to Microsoft software and cloud services for as long as you maintain your subscription.



All EAs include [Software Assurance](#) for on-premises software to help you boost productivity across your organization with new software versions, deployment planning, 24x7 phone and web support, training and unique technologies such as Windows Enterprise Edition and the Microsoft Desktop Optimization Pack. Finally, to your EA you may add a variety of Microsoft Premier Support offerings to provide the optimum level of pro-active and reactive support for your Microsoft software environment.



Microsoft Volume Licensing you have access to the [Volume Licensing Service Center \(VLSC\)](#), an online hub for license and agreement management. Here you can access your licensing information in one location, view all agreements or purchases in your organization, easily access a licensing summary that illustrates all entitlements by product and version, view all assigned product keys, and download products.

GET THE DETAILS

For details about the EA, visit the Microsoft Volume Licensing [website](#).

BUSINESS VALUE LICENSING (BVL)



With BVL, you purchase your Microsoft Dynamics AX 2012 R3 solution directly from a Microsoft Dynamics Certified Partner. These partners can sell the required licenses under the Server/CAL model and also provide planning, implementation, customization, support, and services. [Find a Microsoft Dynamics Certified Partner](#).

SERVICE AND SUPPORT PLANS UNDER BVL

You can maximize the value of your ERP solution with a Microsoft Dynamics Service Plan. Plan benefits include the ability to upgrade to newer versions of the software when you become available, as well as to receive fixes, updates, service packs, and tax and regulatory releases. [Find additional information about the plans](#).

Software License Terms

Download the software license terms from the [Microsoft Dynamics AX website](#).

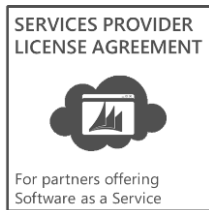
CustomerSource

Microsoft Dynamics [CustomerSource](#) is a password-protected site for you who use Microsoft Dynamics products. Included as a benefit of your service plan, CustomerSource allows you to search a powerful Knowledge Base for Microsoft Dynamics, view online training for Microsoft Dynamics, download updates, and find other timely information and resources virtually 24 hours a day. (Sign-in required.)

Upgrading to Microsoft Dynamics AX 2012

When upgrading to Microsoft Dynamics AX 2012 R3 from a prior version, you will need to convert from your current license model to the Server/CAL model used for Microsoft Dynamics AX 2012. For details on how to do so, please refer to the Microsoft Dynamics AX 2012 R3 Upgrade Policy document on [CustomerSource](#).

SERVICES PROVIDER LICENSE AGREEMENT (SPLA)



OVERVIEW OF SERVICES PROVIDER LICENSE AGREEMENT

Microsoft Services Provider License Agreement (SPLA) is a licensing program that enables service providers with hosted services to license Microsoft products on a monthly basis to provide services and hosted applications to your end user. Some examples of Service Providers include Web Hosters, application services providers, messaging and/or collaboration services providers, platform infrastructure providers, business process outsourcers, streaming media Service Providers, and Independent Software Vendors (ISVs) with hosted applications running on Microsoft technologies. Software services exclude any services that involve installing a Microsoft licensed product directly on any device to permit a customer to interact with the Microsoft licensed product.

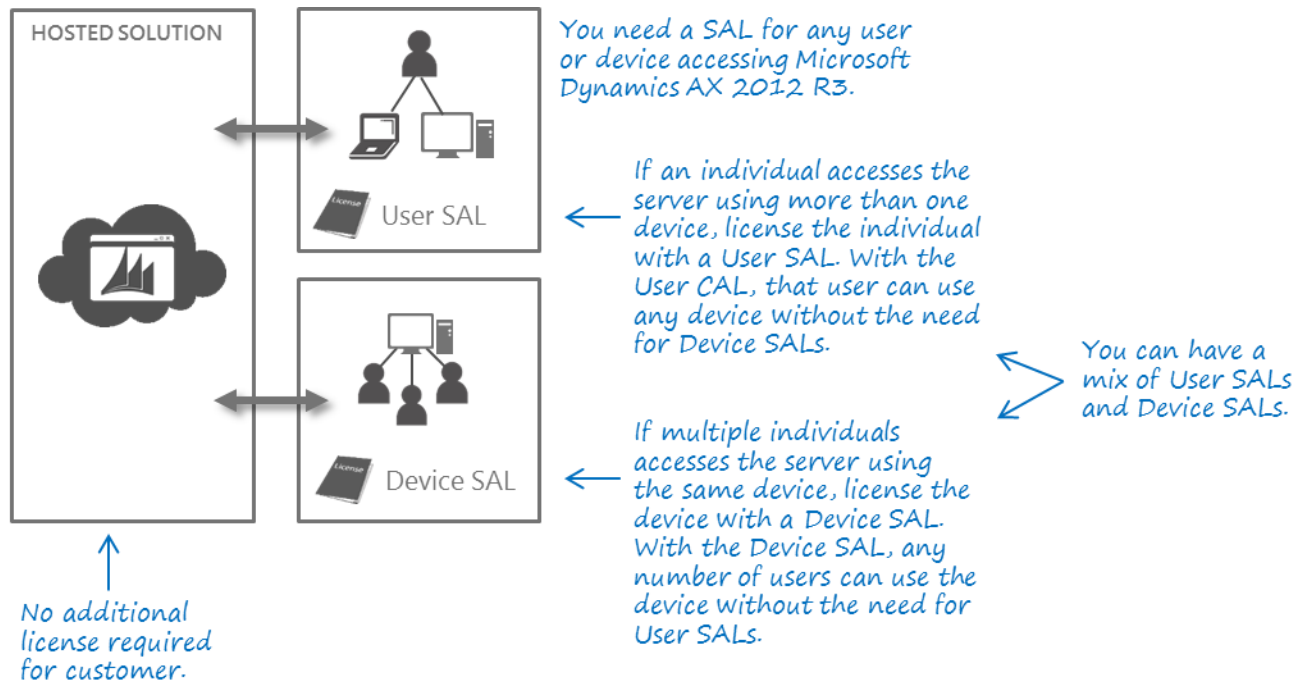
The SPLA provides third party commercial use rights to service providers, who will be the holder of these Microsoft licenses and provide the software service. Unlike with Business Ready Licensing for on-premise deployments, with SPLA the end customer organization receiving the software service is not required to obtain your own Microsoft licenses. End user receive the right to interact with functionalities of Microsoft software through the Service Provider's SPLA licenses. Service Providers cannot use products purchased through retail or purchased in your name through Microsoft Volume Licensing to provide software services.

LICENSING MODEL

The licensing model for SPLA is the same as the Server/CAL model used for Volume Licensing and Business Value Licensing, with the following exceptions:

- Licenses under the SPLA are non-perpetual (or subscription) licenses that can be used during the term of the agreement only.
- Because the solution functionality is running on the solution provider's premises and not on the customer premises, the customer does not need to purchase Server licenses.
- Instead of CALs for licensing access to the solution functionality, SPLA uses Subscriber Access Licenses (SALs).

Figure 11: SPLA licensing model



POTENTIAL CHANGES TO FUNCTIONALITY

With SPLA, you are leasing the rights to use the software functionality for a limited period of time. The software made available through your SPLA licenses is always the most current version and functionality. Over time, that functionality may change, and previous versions may no longer be available. Therefore, if you deploy your solution using a certain version and then re-download your license keys at a later time, the functionality may have changed. For that reason, we strongly recommend carefully reading the SPLA Mapping Guideline and testing the new license keys in a non-production environment prior to deployment. Please understand the differences between the current functionality and your existing Microsoft Dynamics software to avoid any unexpected result.

SPLA

For more information about SPLA, visit the [website](#).

Additional Resources

Product Localizations & Translations Availability

For Microsoft Dynamics AX country-specific functionality and languages for currently supported versions, go to <http://www.microsoft.com/en-us/dynamics/products/ax-availability.aspx>.

Statement of Direction for Microsoft Dynamics AX

For information on our vision, product strategy and roadmap, go to <https://mbs.microsoft.com/customersource/documentation/whitepapers/statementofdirection.htm>

Appendix I - Customization and Licensing Requirements

Microsoft Dynamics AX 2012 R3 is fully customizable to provide you with the right experience for every user. Microsoft Dynamics AX 2012 R3 has over 10,000 Menu Items which are mapped to the four user types. To make it faster and easier to deploy the solution and determine licensing requirements, these Menu Items are associated with certain Security Roles.

The required CAL for a given user is determined by the highest CAL type classification of the Menu Items to which the user will have access. For example, if you assign an Accountant to a Role that includes access to a Menu Item classified as "Enterprise", then that person requires an Enterprise CAL. Menu items that are classified at the "Self Serve" level are available to all users to which you have assigned a Self Serve CAL or higher level CAL. Likewise, Menu Items classified at the "Task" level are available to all users with a Task CAL or higher level CAL, and so on.

For an even better fit in your organizations, you can change which actions may be performed by specific individuals or Roles. When customizing, it is important to remember that the license required is determined by the highest level Menu Item to which that individual has access.

Assigning Multiple Roles to a Single User

The most straight forward way to customize which actions a specific employee may perform in Microsoft Dynamics AX 2012 R3 is by assigning multiple Roles to that employee. For example, an employee could be assigned both the Customer Service Rep and the Field Technician Roles, and could therefore perform actions associated with both Roles. In this case, the employee would still only need a single CAL. Since the Customer Service Rep Role is designated at a higher user type level (Functional) than the Field Technician Role (Task), the employee would only need the Functional CAL in order to perform actions associated with both Roles.

Changing Menu Items Associated with a Role

Another way to customize what actions users may perform is by changing which Menu Items are associated with a Role. For example, if a customer wants everyone who is assigned the Customer Service Rep Role to be able to also approve customer credit limits (which is designated as an Enterprise level action), then you can customize the Role to include the "Approve customer credit limit" Menu Item. Because the required CAL is determined by the highest level action the user may perform, all users assigned to the Customer Service Rep Role would then require the Enterprise CAL.

Changing Menu Items Associated with an Individual

Further, you may assign specific actions to specific users. Following the example above, if the customer has 20 employees assigned to the Customer Service Rep Role and wants to allow only five of those employees the ability to approve customer credit limits, you may assign the "Approve customer credit limit" Menu Item to those five individuals. Those five individuals would then require the Enterprise CAL, while the remaining 15 employees assigned to the Customer Service Rep Role would require the Functional CAL.

Creating Menu Items

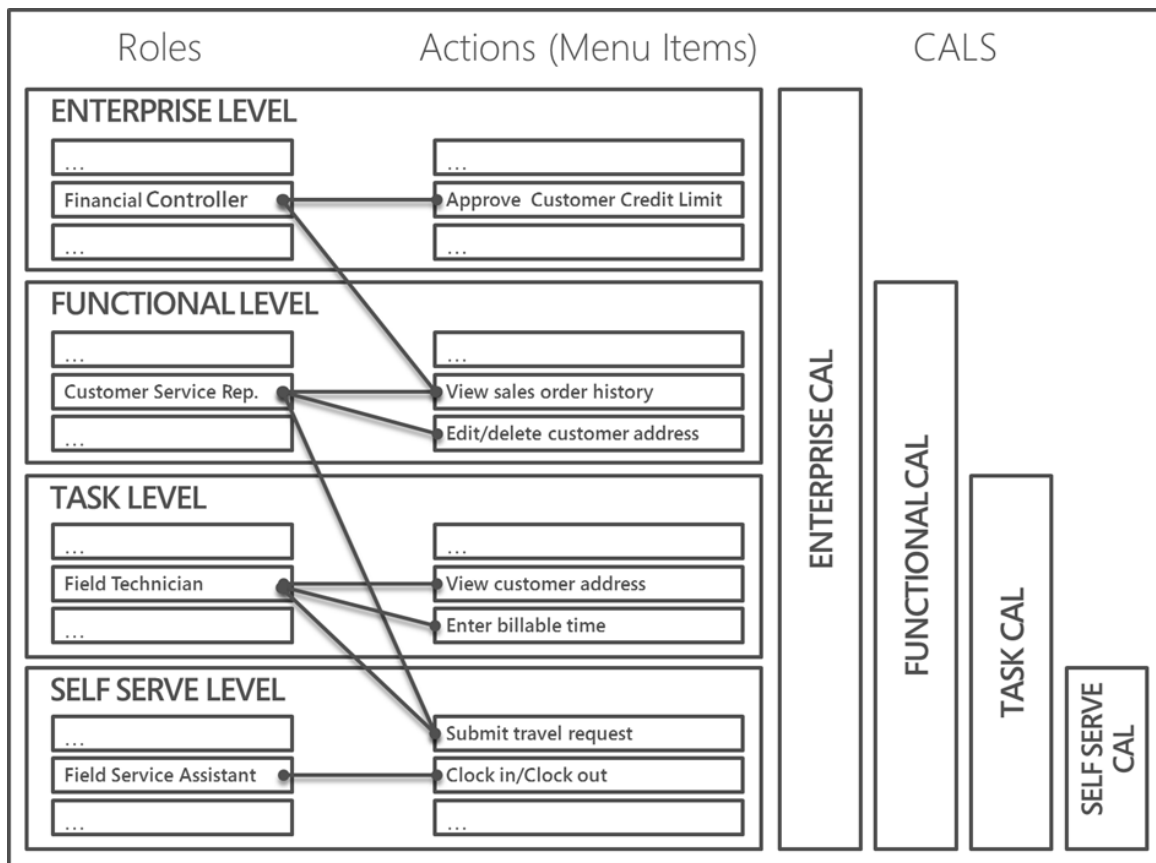
Partners and you may also create Menu Items to fit specific customer scenarios. When doing so, those new Menu Items must be mapped to the CAL type that best matches the type of use. Refer to Software License Terms for further details on mapping usage scenarios to CAL types.

Notes:

- Roles in Microsoft Dynamics AX 2012 R3 are not the same as job titles.
- “Menu Item” means an object that allows users to display or view a form, sub-form, or URL in a browser application; run a task that triggers a system class, function, workflow or web-action initiated by a user; or cause an output in the ERP solution or a separate device. For additional information about the Menu Items associated by each CAL level please refer to https://mbs.microsoft.com/customersource/documentation/userguides/MSDYAX2012_SoftwareLicensingTermsAddendum.
- For any given Menu Item, a user may be granted “View” or “Maintain” access. For some Menu Items, “View” access is classified at a different User Type level than “Maintain” access, in which case the required CAL is determined by the specific level of access to the given Menu Item.

Figure 1: Menu Item Access Determines Required CAL.

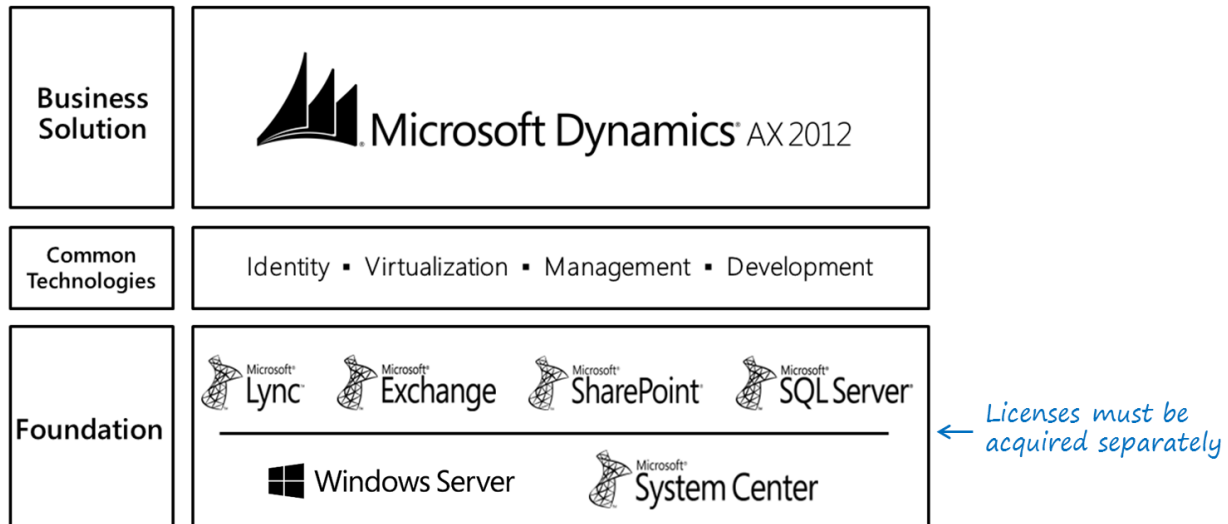
Menu Items are classified at one of the CAL types. Users with a given CAL have access to each Menu Item classified at—or below—that CAL type.



Appendix II - Licensing Additional Software

Licenses for additional software that may be required for the solution, such as Windows Server, Microsoft SQL Server, and Microsoft SharePoint Server and your corresponding CALs are not included with the Microsoft Dynamics AX licenses. You must be acquired separately in accordance with licensing models for those products. These licenses may be purchased through traditional Microsoft Volume Licensing channels.

Figure 1: Licenses for Additional Software are not included with Microsoft Dynamics AX 2012 R3 Licenses



Appendix III - Ensuring Accurate Licensing

Microsoft Dynamics you have asked for easier ways to implement Software Asset Management (SAM) across your organization, because you realize that SAM can help them:

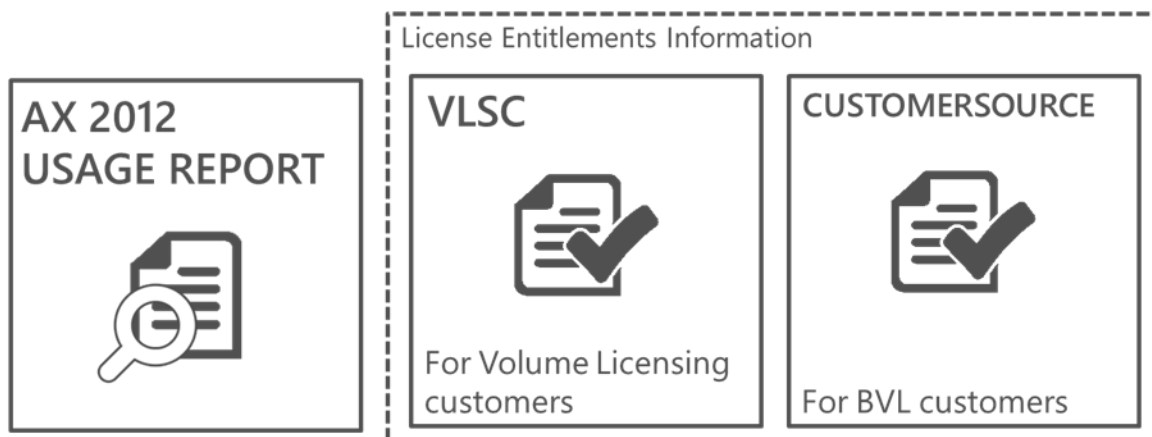
- streamline IT resources and improve visibility and control of your environment now and in the future,
- increase awareness of the organization's overall software purchasing needs and better work with software vendors to meet those needs, and
- get greater insight into how to manage the organization's assets, helping them to make more informed decisions to reduce risk and plan for the future.

To help you navigate through the product flexibility and its impact on licensing, we have created a report within the application that looks at all of the Menu Items associated to each user directly accessing Microsoft Dynamics AX 2012 R3 and computes the assigned number of users by user type. You are responsible for determining the number and CAL level of third party users directly accessing Microsoft Dynamics AX 2012 R3 and subtracting these users from the report generated by the system. You are also responsible for determining the number and CAL level of internal users indirectly accessing Microsoft Dynamics AX 2012 R3 and manually adding these users to the report generated by the system. As the actions of indirect users are not associated with Menu Items tracked by Microsoft Dynamics AX 2012, the customer determines appropriate CAL levels for indirect users according to the access rights detailed in the Software License Terms or the Product Use Rights.

By comparing this to your license purchase information from the Volume Licensing Service Center (if purchasing through Volume Licensing) or CustomerSource (if purchasing through BVL), you can identify discrepancies in your licenses. You not currently on a plan can get your license purchase information by contacting your partner.

You are advised to check licensing by running the report whenever you make a change, but are required to run the report at least annually per the Software License Terms. You may voluntarily share the results of the Usage Report with Microsoft or any other third party, but are not required to do so. Running the report before and after changing Roles, security, and user permissions will help confirm the impact of changes to the license requirements.

Figure 1: Compare Usage Report to License Purchases



Remedying License Discrepancies

The license review may expose discrepancies between the number of licenses required for certain user types and what the customer has purchased. Here are the options for remedying those discrepancies:

Remedying License Discrepancies		
Scenario	Remedy	Example
Customer has too few CALs for a certain level, but has excess CALs for a lower level	Convert the excess lower level CALs to higher level CALs through the CAL step-up, which allows you to convert a lower level CAL to a higher level CAL by paying the difference in price between the two CAL types.	A customer has 20 users accessing Enterprise level Menu Items, but only 10 Enterprise CALs. The customer also has 20 users accessing Functional level Menu Items (and below), but has purchased 30 Functional CALs. The customer may convert the 10 excess Functional CALs to Enterprise CALs by paying the difference in price.
Customer has too few CALs for a certain level, but has at least the same number of excess CALs for a higher level to cover those users.	No action required. The higher level CALs include access to lower level Menu Items, so the customer is sufficiently licensed.	A customer has 40 users accessing Task level Menu Items, but only 32 Task CALs. You also have 10 excess Functional CALs. The 8 users that need a Task CAL are covered by 8 of the excess Functional CALs.
Customer has too few CALs for a certain level and does not have excess licenses.	Purchase the necessary additional CALs.	A customer has 25 users accessing Functional level Menu Items, but only 20 Functional CALs and no excess CALs. The customer must purchase five additional Functional CALs.

Appendix IV - Security Roles by CAL Level

The list of Security Roles out of the box can be modified granting different access rights to allow user access what you need to perform your activities. Those changes may impact the required CALs. If multiple Security Roles are going to be assigned to a user then the higher level CAL required must be acquired to properly license the user.

Role	Role Name	Description	CAL
BOMProductDesigner	Product designer	Designs new and modifies existing BOM structures	Enterprise
BOMProductDesignManager	Product design manager	Reviews the product BOM structures	Enterprise
BudgetBudgetClerk	Budget clerk	Documents budget events and responds to budget inquiries	Enterprise
BudgetBudgetManager	Budget manager	Reviews budget process performance and enables the budget process	Enterprise
CollectionLetterCollectionsAgent	Collections agent	Documents collections events and responds to collections inquiries	Enterprise
CollectionLetterCollectionsManager	Collections manager	Reviews collections process performance and enables the collections process	Enterprise
CompanyChiefExecutiveOfficer	Chief executive officer	Reviews the financial and operational performance	Enterprise
CompanyChiefFinancialOfficer	Chief financial officer	Reviews the financial performance	Enterprise
ComplianceMgmtComplianceManager	Compliance manager	Reviews compliance process performance and enables the compliance process	Enterprise
CustInvoiceAccountsReceivableClerk	Accounts receivable clerk	Documents customer invoice events and responds to customer inquiries	Enterprise
CustInvoiceAccountsReceivableManager	Accounts receivable manager	Reviews customer invoice process performance and enables the customer invoice process	Enterprise
DMFAdministrator	Data import/export framework administrator	Administrator for data import/export framework	Enterprise
FBTaxAccountant_BR	Tax accountant	Documents fiscal events and responds to fiscal inquiries	Enterprise
HcmCompensationAndBenefitsManager	Compensation and benefits manager	Documents compensation and benefit events, responds to compensation and benefit inquiries and records the financial consequences of compensation and benefit events	Enterprise
HcmHumanResourceManager	Human resource manager	Periodically reviews human resource process performance and enables the human resource process	Enterprise

HcmPayrollAdministrator	Payroll administrator	Documents payroll events, responds to payroll inquiries and records the financial consequences of payroll events	Enterprise
HcmPayrollManager	Payroll manager	Authorizes activity in the payroll process	Enterprise
InventCostAccountant	Cost accountant	Documents and responds to costs, inventory valuations, and cost accounting events and inquiries	Enterprise
InventCostCostClerk	Cost clerk	Authorizes and maintains costs, inventory valuations, and cost accounting calculations; responds to costs, inventory valuations, and cost accounting inquiries	Enterprise
InventMaterialsManager	Materials manager	Enables and reviews processes, maintains master data, and responds to inquiries within logistics and material management	Enterprise
LedgerAccountant	Accountant	Documents accounting events and responds to accounting inquiries	Enterprise
LedgerAccountingManager	Accounting manager	Reviews accounting, customer invoice, vendor invoice, and payment process performance and enables those processes	Enterprise
LedgerAccountingSupervisor	Accounting supervisor	Reviews accounting process performance and enables the accounting process	Enterprise
LedgerFinancialController	Financial controller	Reviews all accounting process performance and enables those processes	Enterprise
Mdm	Master data management	Master data management	Enterprise
PaymAccountsPayableCentralPaymClerk	Accounts payable centralized payments clerk	Documents accounts payable centralized payment events and responds to centralized payment inquiries	Enterprise
PaymAccountsPayablePaymentsClerk	Accounts payable payments clerk	Documents accounts payable payment events and responds to payment inquiries	Enterprise
PaymAccountsReceivableCentralPaymClerk	Accounts receivable centralized payments clerk	Documents accounts receivable centralized payment events and responds to centralized payment inquiries	Enterprise
PaymAccountsReceivablePaymentsClerk	Accounts receivable payments clerk	Documents accounts receivable payment events and responds to payment inquiries	Enterprise
PaymPositivePaymentClerk	Accounts payable positive payment clerk	Document accounts payable positive pay events	Enterprise
PaymTreasurer	Treasurer	Documents treasury events and responds to treasury inquiries	Enterprise

ProdProductionManager	Production manager	Reviews the production plan and ensures the proper resources are available	Enterprise
ProdProductionSupervisor	Production supervisor	Enables the production process	Enterprise
ProjProjectAccountant	Project accountant	Maintains project accounting policies	Enterprise
ProjProjectSupervisor	Project supervisor	Enables and reviews the project accounting process	Enterprise
ReqProductionPlanner	Production planner	Schedules and plans productions	Enterprise
RouteProcessEngineer	Process engineer	Defines processes to make new products	Enterprise
RouteProcessEngineeringManager	Process engineering manager	Reviews new products, materials, and processes	Enterprise
-SYSADMIN-	System administrator	Maintains the Microsoft Dynamics AX system, has access to all artifacts in the system, and cannot be modified	Enterprise
SysSecSecurityAdministrator	Security administrator	Maintains user and security setup in Microsoft Dynamics AX, grants the ability to create and maintain security roles, duties, and privileges and the ability to assign users to roles, define role assignment rules, and maintain data security policies	Enterprise
SysServerITManager	Information technology manager	Maintains servers and software for Microsoft Dynamics AX. Maintains and configures settings for batch servers, load balancing, databases, Enterprise Portal, Services, and Workflow	Enterprise
TradeCustomer	Customer (external)	Buys products from legal entities	Enterprise
TradeCustomerAdmin	Customer self-service administrator (external)	External user in customer relation role with legal entities maintaining external party access and information	Enterprise
TradePurchasingManager	Purchasing manager	Reviews purchasing process performance and enables the purchasing process	Enterprise
TradeSalesManager	Sales manager	Reviews sales process performance and enables the sales process	Enterprise
VendInvoiceAccountsPayableClerk	Accounts payable clerk	Documents vendor invoice events and responds to vendor inquiries	Enterprise
VendInvoiceAccountsPayableManager	Accounts payable manager	Reviews vendor invoice process performance and enables the vendor invoice process	Enterprise
VendVendor	Vendor (external)	External user in vendor relation role with legal entities	Enterprise

VendVendorPortalAdministrator	Vendor anonymous (external)	External user access to unsolicited vendor master self service	Enterprise
WMSWarehouseManager	Warehouse manager	Enables and reviews processes, authorizes recordings, maintains master data, and responds to inquiries within warehouse management	Enterprise
CRMMarketingCoordinator	Marketing coordinator	Produces and distributes marketing materials	Functional
CRMMarketingManager	Marketing manager	Manages product marketing	Functional
EMSEnvironmentalClerk	Environmental clerk	Documents environmental sustainability events	Functional
EMSEnvironmentalManager	Environmental manager	Enables and reviews the environmental process	Functional
HcmHumanResourceAssistant	Human resource assistant	Documents human resource events and responds to human resource inquiries	Functional
HcmManager	Manager	Supervisor in reporting relationship with subordinates	Functional
HcmRecruiter	Recruiter	Documents recruiting events, responds to recruiting inquiries and records the financial consequences of recruiting events	Functional
HcmTrainingManager	Training manager	Documents training events, responds to training inquiries and records the financial consequences of training events	Functional
InventQualityControlClerk	Quality control clerk	Documents quality control events and responds to quality control inquiries	Functional
InventQualityControlManager	Quality control manager	Enables and reviews processes, maintains master data, and responds to inquiries within quality control	Functional
JmgShopSupervisor	Shop supervisor	Ensures the day-to-day execution of orders/jobs so Machine operators know what to work on, who is available and can respond to the main requests from Machine operators	Functional
ProjProjectClerk	Project assistant	Documents project accounting process events and responds to project accounting process inquiries	Functional
ProjProjectManager	Project manager	Documents the project forecast/budget events and responds to project forecast/budget inquiries. Maintains project accounting master information and responds to project accounting master information inquiries. Authorizes project accounting process events	Functional
ProjProjectManager_PSN	Project manager - Public Sector	Documents the project forecast/budget events and responds to project	Functional

		forecast/budget inquiries. Maintains project accounting master information and responds to project accounting master information inquiries. Authorizes project accounting process events	
RetailCatalogManager	Retail catalog manager	At the head office, the retail catalog manager maintains and publishes retail catalogs	Functional
RetailMerchandisingManager	Retail merchandising manager	At the head office, the retail merchandising manager maintains and replenishes retail products and assortments	Functional
RetailOperationsManager	Retail operations manager	The retail operations manager is responsible for all non-merchandising operations at the head office, such as configuring stores, registers, and staff	Functional
RetailStoreManager	Retail store manager	The retail store manager performs store management functions at the store, such as managing sales reports, inventory movements, and inventory counts	Functional
RetailWarehouseClerk	Retail warehouse clerk	The retail warehouse clerk performs picking, receiving, and stock counting in a store or warehouse	Functional
SMAServiceDeliveryManager	Service delivery manager	Reviews and enables the service order process	Functional
TMSLogisticsManager	Logistics manager	Set up, maintain, and configure the network planning that are used in transportation management processes	Functional
TradeBuyingAgent	Buying agent	Documents purchase events and responds to purchase inquiries	Functional
TradeCustomerServiceManager	Customer service manager	Reviews customer service process performance and enables the customer service process	Functional
TradeCustomerServiceRepresentative	Customer service representative	Documents customer service events and responds to customer service inquiries	Functional
TradeSalesClerk	Sales clerk	Documents sales events and responds to sales inquiries	Functional
TradeSalesRepresentative	Sales representative	Documents sales events and responds to sales inquiries	Functional
VendPurchasingAgent	Purchasing agent	Documents purchasing events and responds to purchasing inquiries	Functional
VendPurchasingAgent_PSN	Purchasing Agent - Public Sector	Documents purchasing events and responds to purchasing inquiries	Functional
VendVendorAccountManager	Vendor (external) - Public sector	External user in vendor relation role with legal entities	Functional
VendVendorPortalAdministrator_PSN	Vendor portal administrator (external)	External user in vendor relation role with legal entities maintaining external party access and information	Functional

VendVendorProspect	Vendor portal administrator (external) - Public sector	External user in vendor relation role with legal entities maintaining external party access and information	Functional
VendVendor_PSN	Vendor prospect (external)	External user in process of obtaining vendor relation role with legal entities	Functional
WHSWarehousePlanner	Warehouse planner	Warehouse planner	Functional
InventReceivingClerk	Receiving clerk	Documents receiving operation events and responds to warehouse receiving operation inquiries	Task
InventShippingClerk	Shipping clerk	Documents shipping operation events and responds to warehouse shipping operation inquiries	Task
JmgMachineOperator	Machine operator	Works on production orders and makes registrations in Manufacturing execution	Task
LeanWaterspider	Waterspider	Responds to inventory needs on the production line	Task
ProjTimesheetUser	Project timesheet user	Enables creation and approval of project timesheets	Task
SMADispatcher	Dispatcher	Organizes the service technicians and prioritizes service orders	Task
SMAFieldServiceTechnician	Field service technician	Visits you in the field to perform service orders	Task
TMSTransportationCoordinator	Transportation coordinator	Enables inbound, outbound, rating, routing, and handling of transportation process	Task
WMSWarehouseWorker	Warehouse worker	Documents warehouse operation events and responds to warehouse operation inquiries	Task
HCMEmployee	Employee	Worker in employment relationship with legal entities	SelfServe
AnonymousApplicant	Applicant anonymous (external)	External user application for employment	None
AnonymousCustomer	Customer anonymous (external)	Browse products published in sales catalogue on customer portal	None
ConnectorAdministrator	Connector administrator role	Maintains access to connector APIs	None
Guest	Guest	Guest	None
HcmContractor	Contractor	Worker in contractor relationship with legal entities	None
JmgAdvTimeWorker	Time registration worker	Worker enabled to use advanced features for time registration	None
SysBusinessConnectorRole	BusinessConnector Role	Role Used to Decide if user can logon to Business Connector or not	None

SysSearchCrawler	Search crawler	Defines permissions for the search crawler role	None
SystemUser	System user	System role for all users	None
VendVendorAnonymous	Vendor account manager	Documents vendor events and responds to vendor inquiries	None
WHSMobileDeviceService	Warehouse mobile device user	Used to access the Warehouse Mobile Device Portal service	None

Important notes:

- External Users assigned with security roles does not require a CAL.
- Management Reporter functionality is included in the Microsoft Dynamics AX 2012 R3 Server. In order to get the use rights, the Management Reporter Designers require an Enterprise CAL and Management Reporter Viewers require a Functional CAL.
- Microsoft Forecaster functionality is included in the Server License. Users accessing Mcirosoft Forecaster requires the Functional CAL

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