Microsoft Dynamics AX 2012 R2

Licensing Guide

Customer Edition
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Microsoft

Using This Guide

Use this guide to improve your understanding of how to license Microsoft Dynamics AX 2012 R2. It is not intended to guide you in choosing Microsoft Dynamics products and services. The examples presented in this guide are illustrative. Microsoft Corporation reserves the right to revise the existing version without prior 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 document, which is available on the [Microsoft Dynamics AX 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 customers are entitled to run and use based on the licenses they have acquired.

Contents

How Microsoft Dynamics AX 2012 R2 is Licensed

Microsoft Dynamics AX 2012 R2 is designed to be powerful, agile, and simple. 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 much simplified, way for customers to purchase an ERP solution.

One of the key strengths of Microsoft Dynamics AX 2012 R2 is its focus on individual roles and their needs. We are connecting our role-tailored design to a simple licensing model, empowering customers to buy the licenses required to meet the needs of their individual users.
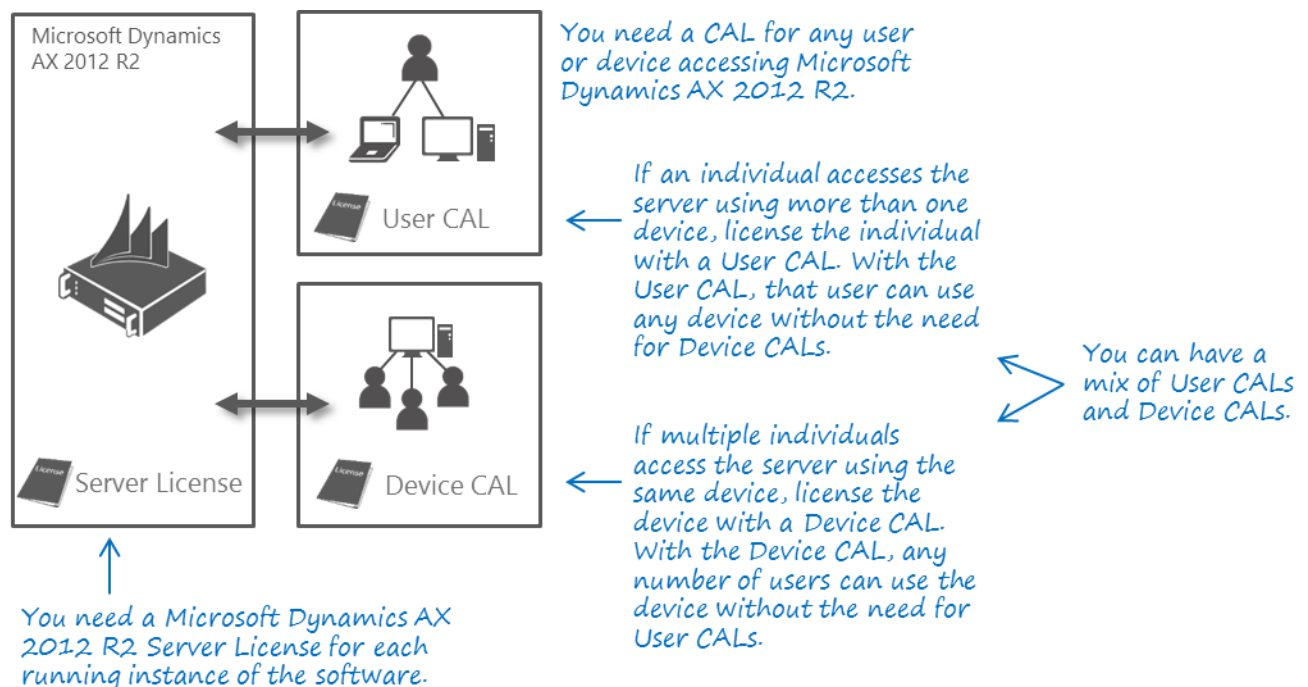
For customers the benefits are simple and clear: It is easy to understand, buy, and pay for what users need while providing the flexibility to grow or change with the organization as needed.

BASIC LICENSING REQUIREMENTS

All Microsoft Dynamics AX 2012 R2 customers need to license:

- Microsoft Dynamics AX 2012 R2 solution functionality, which is licensed through the Microsoft Dynamics AX 2012 R2 Server license, and

- Access to the Microsoft Dynamics AX 2012 R2 solution functionality by users or devices, which is licensed through Client Access Licenses (CALs).

Figure 1: Server/CAL licensing model

Microsoft Dynamics AX 2012 R2

User CAL

You need a CAL for any user or device accessing Microsoft Dynamics AX 2012 R2.

If an individual accesses the server using more than one device, license the individual with a User CAL. With the User CAL, that user can use any device without the need for Device CALs.

You can have a mix of User CALs and Device CALs.

Server License

Device CAL

If multiple individuals access the server using the same device, license the device with a Device CAL. With the Device CAL, any number of users can use the device without the need for User CALs.

You need a Microsoft Dynamics AX 2012 R2 Server License for each running instance of the software.

LICENSING MICROSOFT DYNAMICS AX 2012 R2 SOLUTION FUNCTIONALITY

Before you run any instance of the Microsoft Dynamics AX 2012 R2 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 R2 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 R2 Server licenses.

# LICENSING ACCESS TO MICROSOFT DYNAMICS AX 2012 R2 SOLUTION FUNCTIONALITY

Access to Microsoft Dynamics AX 2012 R2 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 R2, each of which grants an increasingly wider spectrum of use rights. This gives customers the flexibility to license the solution based on how their users will use and derive value from the solution.

Figure 2: Available CALs
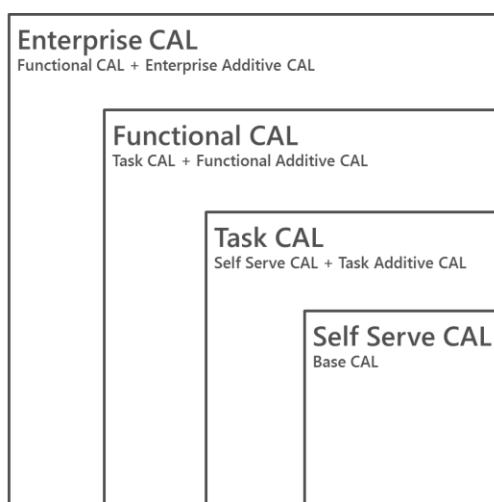
As you progress from the lowest level CAL (Self Serve) to the highest level (Enterprise), the user is licensed to use the solution in ways that will provide more value. Customers therefore have the flexibility to decide which level of investment to make for any given individual based upon the functions that user is performing on behalf of the organization.

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.

ACCESS BY EXTERNAL USERS

External (third party) users do not require CALs. Third party users are users that are not either (i) the customer's or the customer's affiliates' employees, or (ii) the customer's or the customer's affiliates' contractors or agents. In this sense, the definition of third party users does not extend to onsite contractors, vendors, and users performing business processes on the customer's behalf.

Note: Offsite vendors are considered external users when their time is shared in between multiple customer organizations (for example, IT support service vendors serving multiple customer organizations) and they are not in an employee-like relationship.

Figure 3: Internal vs. External Users
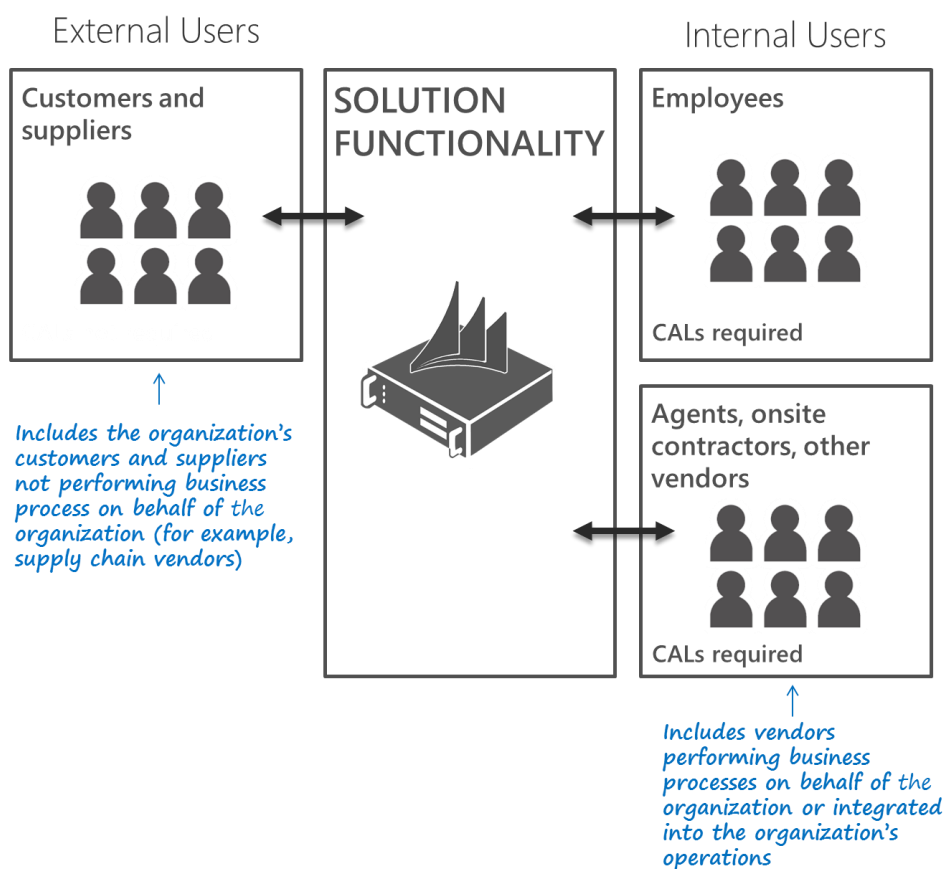
REASSIGNING CALS

Named CALs (either User or Device) cannot be shared. They 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 R2 solution by pooling connections. Multiplexing does not reduce the number of licenses required to access the Microsoft Dynamics AX 2012 R2 solution. Any user that accesses the Microsoft Dynamics AX 2012 R2 —whether directly or indirectly—must be properly licensed.

Note: Licensed users may manually rekey information (when coming from non-licensed users) into the Microsoft Dynamics AX 2012 R2 solution. This scenario is not considered to be multiplexing.

Figure 4: Multiplexing

Multiplexing does not reduce the number of CALs required.
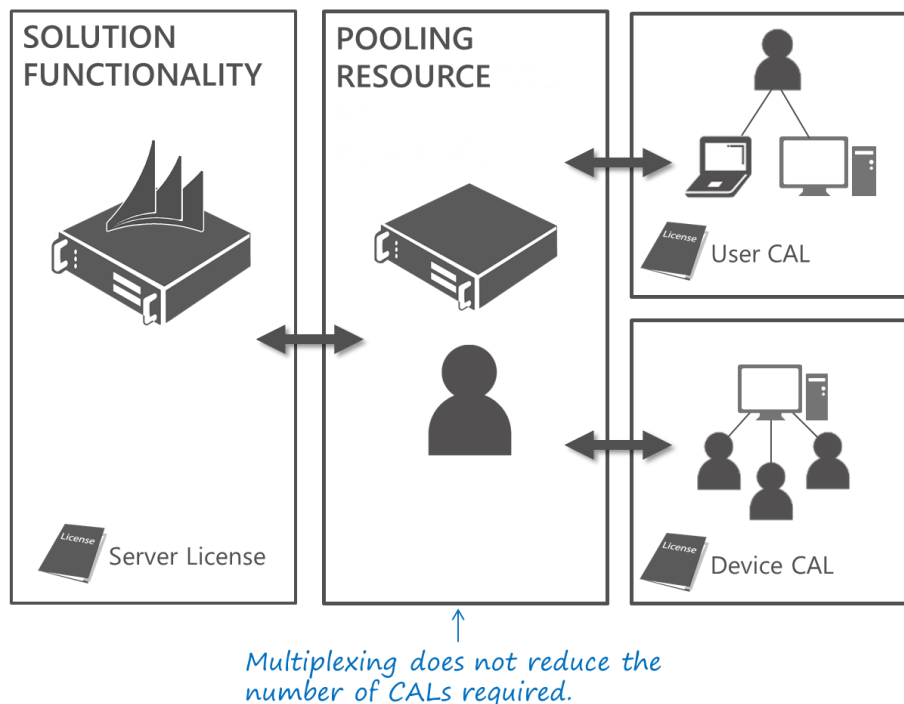
Note: For additional information about Multiplexing please refer to the Microsoft Volume Licensing Brief Multiplexing—Client Access License (CAL) Requirements.

ADDITIONAL LICENSING GUIDANCE FOR SPECIFIC INDUSTRIES

Please refer to the Microsoft Dynamics AX website to check for any available industry-specific licensing guidance.

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:

SIMPLICITY
of determining
required licenses

FLEXIBILITY
of providing
users access to
functionality

ASSURANCE
of compliance
with the license
terms

COST
of the
solution

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.
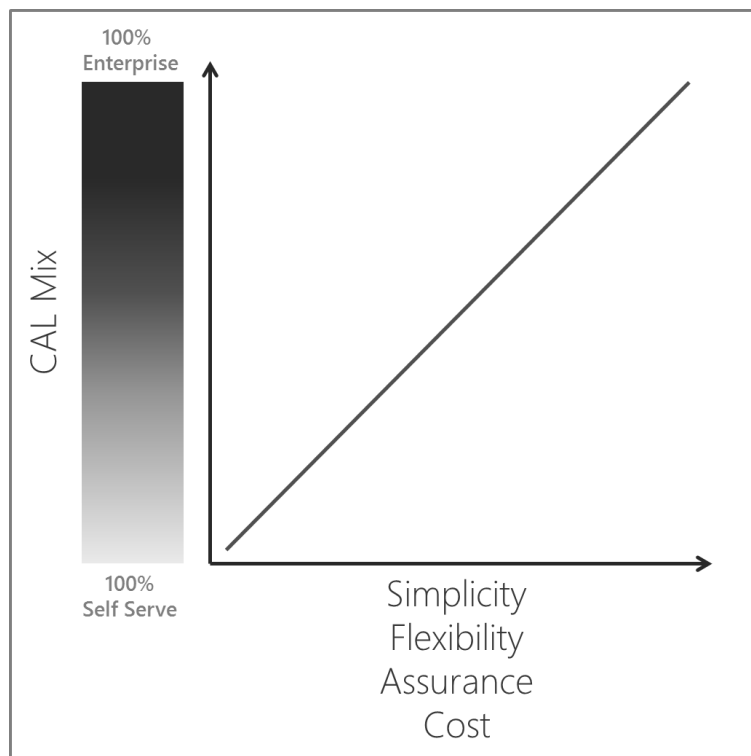
Each solution will have an optimal mix of CALs.

Figure 6: Example CAL mixes

Mix A

Enterprise 100%

Mix B

SS 5%	Task 10%	Functional 10 %	Enterprise 75%

Mix C

SS 10%	Task 20%	Functional 30 %	Enterprise 40%

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 they 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 they will need. We do not recommend this approach, because you severely limit simplicity, flexibility, and assurance.
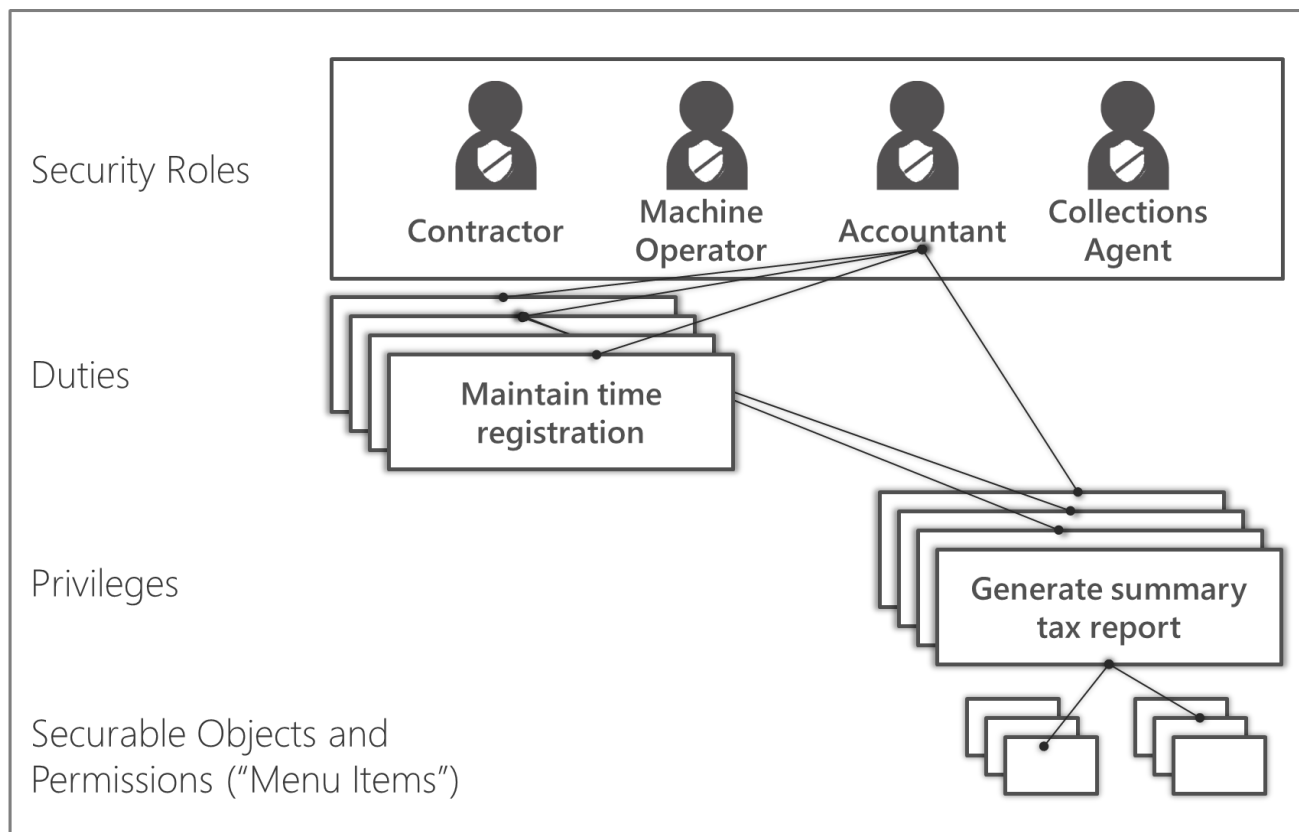
Instead, we recommend the following approach, in which you determine the mix of CALs based on Security Roles.

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 R2 Security Roles combine meaningful bundles of solution functionality and access rights required to perform actions relevant to that role.

Security Roles

Contractor | Machine Operator | Accountant | Collections Agent

Duties

Maintain time registration

Privileges

Generate summary tax report

Securable Objects and Permissions ("Menu Items")

To make it easier to understand the licenses required, each of the Microsoft Dynamics AX 2012 R2 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 retail organization, the Accounts, Store Managers, and Cashiers require different use rights. By assigning those user groups to the appropriate Security Role, they get the functionality they 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
Store Manager	Retail Management	Functional CAL
Cashier	Operate POS	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 their 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 **7**	+ 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.

How Microsoft Dynamics AX 2012 R2 Licenses are Sold

Licenses for Microsoft Dynamics AX 2012 R2 are sold through the following three channels:

Figure 10: Sales channels

MICROSOFT VOLUME LICENSING	BUSINESS VALUE LICENSING	SERVICES PROVIDER LICENSE AGREEMENT
Through the Enterprise Agreement	Through a Microsoft Dynamics Certified Partner	For partners offering Software as a Service

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 their 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 R2 Server licenses and CALs are available to Microsoft Volume Licensing customers under the Server/CAL licensing model through the Microsoft Enterprise Agreement (EA).

Note: For qualifying education institutions, Microsoft Dynamics AX 2012 R2 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 you 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:

Cloud on your terms

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 your technology spend, and streamline management of your Microsoft purchases.

Volume discounts and flexible payment options
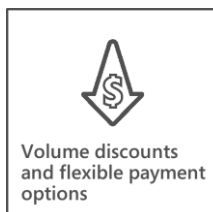
The EA is appropriate for your organization if you have more than 250 PCs, devices and/or users and want to license software and cloud services for your organization for a minimum, three-year period. At the onset of your agreement, pricing is based on a tiered volume discount structure, meaning the greater the size of your 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.

Enrollments for cost-effective licensing

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 your 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.
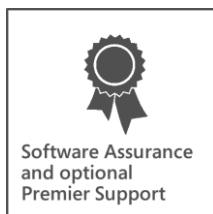
All EAs include Software Assurance for on-premises software to help you boost productivity across your organization with new software versions, deployment planning, 24x7 phone and web support, training and unique technologies such as Windows Enterprise Edition and the Microsoft Desktop Optimization Pack. 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 customers 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, customers purchase their Microsoft Dynamics AX 2012 R2 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 they 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 customers 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 R2
Customers upgrading to Microsoft Dynamics AX 2012 R2 from a prior version will need to convert from their current license model to the Server/CAL model used for Microsoft Dynamics AX 2012 R2.

Additional Resources

Licensing Requirements for Specific Industries

Please refer to http://www.microsoft.com/en-us/dynamics/erp-buy-ax-software.aspx to check for any available industry-specific licensing guidance.

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 R2 is fully customizable to provide customers with the right experience for every user. Microsoft Dynamics AX 2012 R2 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 their organizations, customers 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 R2 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 they 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, customers 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, they 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 customers 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 R2 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.
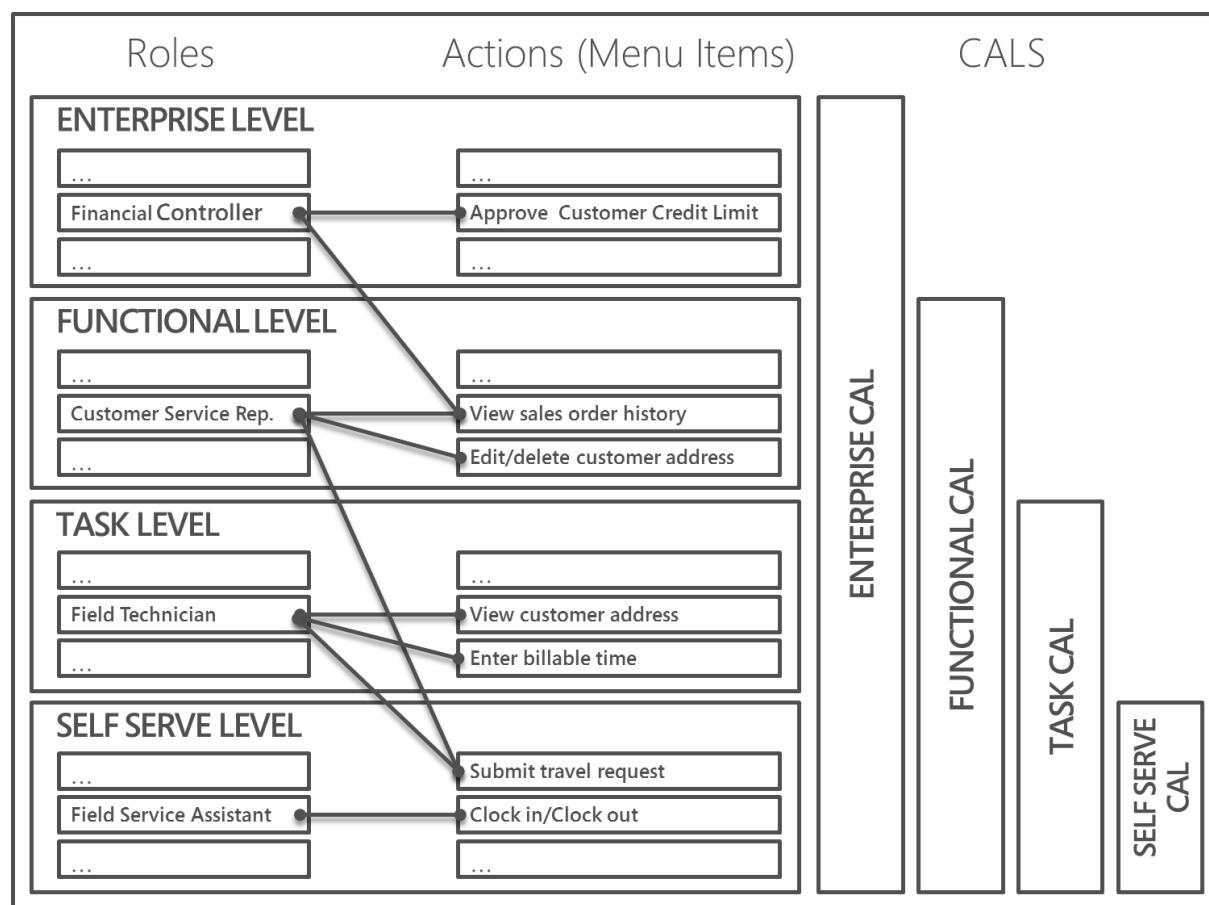
Appendix II - Licensing Additional Software

Licenses for additional software that may be required for the solution, such as Windows Server, Microsoft SQL Server, and Microsoft SharePoint Server and their corresponding CALs are not included with the Microsoft Dynamics AX licenses. They 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 R2 Licenses

Appendix III – Ensuring Accurate Licensing

Microsoft Dynamics customers have asked for easier ways to implement Software Asset Management (SAM) across their organization, because they realize that SAM can help them:
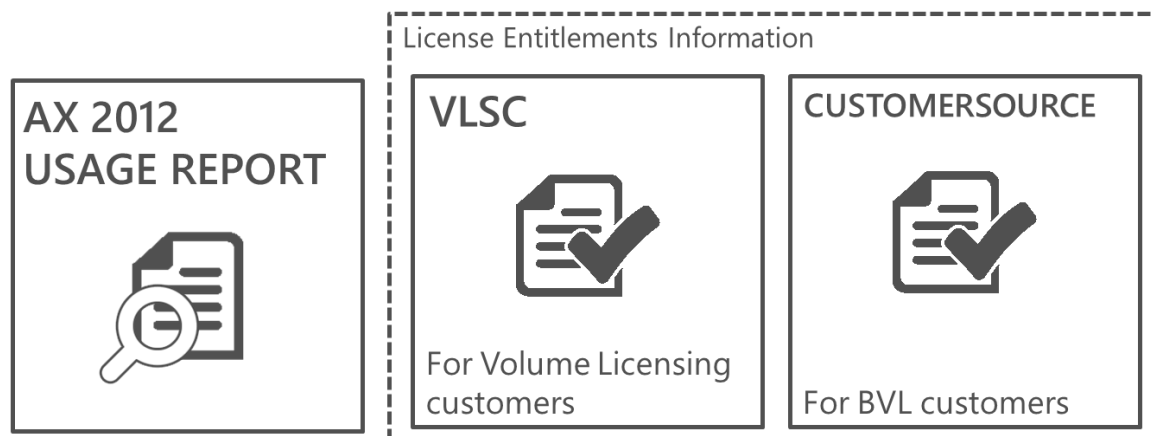
- streamline IT resources and improve visibility and control of their environment now and in the future,

- 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 customers 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 R2 and computes the assigned number of users by CAL type. Customers are responsible for determining the number and CAL level of third party users directly accessing Microsoft Dynamics AX 2012 R2 and subtracting these users from the report generated by the system. Customers are also responsible for determining the number and CAL level of internal users indirectly accessing Microsoft Dynamics AX 2012 R2 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 R2, the customer determines appropriate CAL types for indirect users according to the access rights detailed in the Product Use Rights or Software License Terms.

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

Customers are advised to check licensing by running the report whenever they make a change, but are required to run the report at least annually per the Software License Terms. Customers 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

AX 2012 USAGE REPORT

License Entitlements Information

VLSC — For Volume Licensing customers

CUSTOMERSOURCE — For BVL customers

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 customers 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. They 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 they need to perform their 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 & Description	CAL Level
1	Accountant Documents accounting events and responds to accounting inquiries	Enterprise
2	Accounting manager Reviews accounting, customer invoice, vendor invoice, and payment process performance and enables those processes	Enterprise
3	Accounting supervisor Reviews accounting process performance and enables the accounting process	Enterprise
4	Accounts payable centralized payments clerk Documents accounts payable centralized payment events and responds to centralized payment inquiries	Enterprise
5	Accounts payable clerk Documents vendor invoice events and responds to vendor inquiries	Enterprise
6	Accounts payable manager Reviews vendor invoice process performance and enables the vendor invoice process	Enterprise
7	Accounts payable payments clerk Documents accounts payable payment events and responds to payment inquiries	Enterprise
8	Accounts receivable centralized payments clerk Documents accounts receivable centralized payment events and responds to centralized payment inquiries	Enterprise
9	Accounts receivable clerk Documents customer invoice events and responds to customer inquiries	Enterprise
10	Accounts receivable manager Reviews customer invoice process performance and enables the customer invoice process	Enterprise
11	Accounts receivable payments clerk Documents accounts receivable payment events and responds to payment inquiries	Enterprise
12	Budget clerk Documents budget events and responds to budget inquiries	Enterprise
13	Budget manager Reviews budget process performance and enables the budget process	Enterprise
14	Chief executive officer Reviews the financial and operational performance	Enterprise
15	Chief financial officer Reviews the financial performance	Enterprise
16	Collections agent	Enterprise

	Documents collections events and responds to collections inquiries	
17	Collections manager Reviews collections process performance and enables the collections process	Enterprise
18	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
19	Compliance manager Reviews compliance process performance and enables the compliance process	Enterprise
20	Cost accountant Documents and responds to costs, inventory valuations, and cost accounting events and inquiries	Enterprise
21	Cost clerk Authorizes and maintains costs, inventory valuations, and cost accounting calculations; responds to costs, inventory valuations, and cost accounting inquiries	Enterprise
22	Customer (external) Buys products from legal entities	Enterprise
23	Customer self-service administrator (external) External user in customer relation role with legal entities maintaining external party access and information	Enterprise
24	Environmental manager Enables and reviews the environmental process	Enterprise
25	Financial controller Reviews all accounting process performance and enables those processes	Enterprise
26	Human resource manager Periodically reviews human resource process performance and enables the human resource process	Enterprise
27	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
28	Manager Supervisor in reporting relationship with subordinates	Enterprise
29	Marketing manager Manages product marketing	Enterprise
30	Materials manager Enables and reviews processes, maintains master data, and responds to inquiries within logistics and material management	Enterprise
31	Payroll administrator Documents payroll events, responds to payroll inquiries and records the financial consequences of payroll events	Enterprise
32	Payroll manager Authorizes activity in the payroll process	Enterprise
33	Process engineer Defines processes to make new products	Enterprise
34	Process engineering manager	Enterprise

	Reviews new products, materials, and processes	
35	Product design manager Reviews the product BOM structures	Enterprise
36	Product designer Designs new and modifies existing BOM structures	Enterprise
37	Production manager Reviews the production plan and ensures the proper resources are available	Enterprise
38	Production planner Schedules and plans productions	Enterprise
39	Production supervisor Enables the production process	Enterprise
40	Project accountant Maintains project accounting policies	Enterprise
41	Project supervisor Enables and reviews the project accounting process	Enterprise
42	Purchasing manager Reviews purchasing process performance and enables the purchasing process	Enterprise
43	Quality control manager Enables and reviews processes, maintains master data, and responds to inquiries within quality control	Enterprise
44	Sales manager Reviews sales process performance and enables the sales process	Enterprise
45	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
46	Service delivery manager Reviews and enables the service order process	Enterprise
47	System administrator Maintains the Microsoft Dynamics AX system, has access to all artifacts in the system, and cannot be modified	Enterprise
48	Treasurer Documents treasury events and responds to treasury inquiries	Enterprise
49	Vendor (external) External user in vendor relation role with legal entities	Enterprise
50	Vendor account manager Documents vendor events and responds to vendor inquiries	Enterprise
51	Vendor portal administrator (external) External user in vendor relation role with legal entities maintaining external party access and information	Enterprise
52	Warehouse manager Enables and reviews processes, authorizes recordings, maintains master data, and responds to inquiries within warehouse management	Enterprise

53	Buying agent Documents purchase events and responds to purchase inquiries	Functional
54	Customer service manager Reviews customer service process performance and enables the customer service process	Functional
55	Customer service representative Documents customer service events and responds to customer service inquiries	Functional
56	Dispatcher Organizes the service technicians and prioritizes service orders	Functional
57	Environmental clerk Documents environmental sustainability events	Functional
58	Human resource assistant Documents human resource events and responds to human resource inquiries	Functional
59	Machine operator Works on production orders and makes registrations in Manufacturing execution	Functional
60	Marketing coordinator Produces and distributes marketing materials	Functional
61	Project assistant Documents project accounting process events and responds to project accounting process inquiries	Functional
62	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
63	Project manager - Public Sector 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
64	Purchasing agent Documents purchasing events and responds to purchasing inquiries	Functional
65	Purchasing Agent - Public Sector Documents purchasing events and responds to purchasing inquiries	Functional
66	Quality control clerk Documents quality control events and responds to quality control inquiries	Functional
67	Receiving clerk Documents receiving operation events and responds to warehouse receiving operation inquiries	Functional
68	Recruiter Documents recruiting events, responds to recruiting inquiries and records the financial consequences of recruiting events	Functional
69	Retail catalog manager At the head office, the retail catalog manager maintains and publishes retail catalogs	Functional
70	Retail merchandising manager	

	At the head office, the retail merchandising manager maintains and replenishes retail products and assortments	Functional
71	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
72	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
73	Retail warehouse clerk The retail warehouse clerk performs picking, receiving, and stock counting in a store or warehouse	Functional
74	Sales clerk Documents sales events and responds to sales inquiries	Functional
75	Sales representative Documents sales events and responds to sales inquiries	Functional
76	Shipping clerk Documents shipping operation events and responds to warehouse shipping operation inquiries	Functional
77	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
78	Training manager Documents training events, responds to training inquiries and records the financial consequences of training events	Functional
79	Vendor prospect (external) External user in process of obtaining vendor relation role with legal entities	Functional
80	Warehouse worker Documents warehouse operation events and responds to warehouse operation inquiries	Functional
81	Contractor Worker in contractor relationship with legal entities	Task
82	Customer anonymous (external) Browse products published in sales catalogue on customer portal	Task
83	Employee Worker in employment relationship with legal entities	Task
84	Field service technician Visits customers in the field to perform service orders	Task
85	Project timesheet user Enables creation and approval of project timesheets	Task
86	Time registration worker Worker enabled to use advanced features for time registration	Task
87	Waterspider Responds to inventory needs on the production line	Task
88	Applicant anonymous (external)	Self Serve

	Documents accounts receivable payment events and responds to payment inquiries	
89	Guest Guest	Self Serve
90	Vendor anonymous (external) External user access to unsolicited vendor master self service	Self Serve

Important notes:

- External Users assigned with security roles does not require a CAL.

- Management Reporter functionality is included in the Microsoft Dynamics AX 2012 R2 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