Enterprise Asset Management Foundation Training Course

Part No. AVTS-TRN-3004

Release 5.1

Table of Contents

Module 1 - Introduction
Section 1 – Course Introduction / Objectives / Agenda 1-3
Section 2 – Introduction to the Enterprise Asset Management Foundation Module 1-7
Section 3 – User Interface Options 1-9

Module 2 – Site Functionality
Section 1 – Multi-site Functionality 2-3
Section 2 – Site Object 2-5
Section 3 – Business Policies 2-7
Lab 1 – Creating a Site 2-9

Module 3 – Database Security and Employee Records
Section 1 – Security Profile Object 3-3
Lab 2 – Creating a Security Profile 3-5
Section 2 – Employee Object 3-11
Section 3 – Database Authentication 3-15
Lab 3 – Creating an EAM Employee Record and a SQL Database Record 3-17
Section 4 – Data Security Function 3-27

Module 4 – Desktops
Section 1 – Desktop Object 4-3
Lab 4 – Creating a Desktop 4-5

Module 5 – Value Lists
Section 1 – Foundational Value Lists 5-3
Section 2 – Functional Value Lists 5-7
Section 3 – User-defined Value Lists 5-11

Module 6 – Categories and Add-ons
Section 1 – Categories 6-3
Lab 5 – Creating a Category 6-5
Section 2 – Add-ons 6-9
Lab 6 – Creating an Add-on 5-6

Module 7 – Other Tools, Functions and Features
Section 1 – Messages 7-3
Section 2 – Notifications 7-5
Section 3 – Custom Extensions 7-9
Section 4 – Processors and Services 7-11
Section 5 – MEVALUELK optimization 7-13
Section 6 – Accounting Options / Chart of Accounts 7-15
Section 7 – Exchange Rates 7-19
Section 8 – Cabinet Customization 7-21
Section 9 – Reports 7-23

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Module 1 – Introduction

Section 1 – Course Introduction / Objectives / Agenda

Section 2 – Introduction to the EAM Foundation Module

Section 3 – User Interface Options

Module Objectives

- Introduce the course objectives, exclusions, audience and prerequisites
- Review the course agenda
- Provide an overview of the Enterprise Asset Management software
- Define the purpose of the Foundation module within the EAM application
- Introduce the Classic and Smart Client user interface options
- Explain the basic differences between the Classic and Smart Client interface options
- Explain the multi-site functionality concept available in EAM
- Define the characteristics of database-scoped objects
- Define the characteristics of site-scoped objects
- Explain the purpose and usage of the site object
- Explain the purpose and configuration of each view and field in the site object
- Explain the purpose and use of the Business Policies
- Explain the purpose and setting options of key 'Enterprise' and 'Site' level business policies
- Create a new site and make it the primary site
- Modify a business policy setting

Section 1 – Course Introduction / Objectives / Agenda

Section Objectives

- Introduce the course objectives, exclusions, audience and prerequisites
- Review the course agenda

Course Overview

The Enterprise Asset Management Foundation course is a 1-day, instructor-led class designed to provide a fundamental understanding of the features and functionality for System Administrators in EAM.

The class provides lectures and hands-on labs to supply and reinforce the knowledge to perform a wide variety of activities.

Course Objective

The main course objective is to provide system administrators (business) and core team members with the knowledge necessary to perform the underlying configuration that supports the use of EAM.

Course Exclusions

The EAM Foundation course is not a technical training course and does not cover software installs, maintenance or upgrades, nor does it cover the development of custom cabinets or the use of SAP Crystal Reports^{TM} to create reports.

Audience

The intended audience for this course is:

- EAM System Administrators (Business)
- Core implementation team members
- Key power users
- Implementation Consultants

Prerequisites

- An understanding of the corporate environment and the organization's processes and requirements
- Basic EAM navigation skills

Agenda

Module 1 – Introduction

Section 1 – Course Introduction / Objectives / Agenda

This section introduces the Enterprise Asset Management Foundation course including the objectives, the intended audience, the assumed prerequisites and the agenda.

Section 2 – Introduction to Enterprise Asset Management Foundation

This section provides a conceptual overview of the EAM application and the positioning of the Foundation module in this application.

Section 3 – User Interface options

This section explains the two user interface options available – Classic and Smart Client – and explains the differences between the two options. It also introduces the functionality offered through the Smart Client option that is not available through the Classic mode.

Module 2 – Database Sites and Business Policies

Section 1 – Multi-Site Functionality

This section introduces the multi-site functionality that is available in EAM and identifies the objects that are database-scoped versus those that are site-scoped.

Section 2 – Site Object

This section explains the purpose of the site object and the purpose and configuration of each field, tab and view on the site object and the various configuration options that are available.

Section 3 – Business Policies

This section explains the purpose and characteristics of the business policy settings that are defined through the site object.

Lab 1 – Creating a Site

Module 3 – Database Security and Employee Records

Section 1 – Security Profile

This section explains the purpose, use and configuration of the security profile object.

Lab 2 – Creating a Security Profile

Section 2 – Employee Record

This section explains the purpose, use and configuration of the fields, related value lists and views on the employee object.

Section 3 – Database Authentication

This section explains the database authentication options and covers the setup of an employee database record in SQL when the SQL Server authentication from a non-trusted connection option is being used.

Lab 3 – Creating an Employee Record and a SQL Database Record

Section 4 – Data Security Function

This section explains the use and configuration of the Database Security function for providing additional storeroom level security.

Module 4 – Desktops

Section 1 – Desktop

This section explains the purpose, use and configuration of the desktop function.

Lab 4 – Creating a Desktop

Module 5 – Value Lists

Section 1 – Foundational Value Lists

This section explains the purpose and configuration of four value lists that are foundational to the use of EAM regardless of the modules or functionality used.

Section 2 – Functional Value Lists

This section identifies value lists that are required for certain modules or that may be required based on the specific functionality within a module that is used.

Section 3 – User-defined Value Lists

This section explains the purpose and use of the user-defined value lists.

Module 6 – Categories and Add-ons

Section 1 – Categories

This section explains the use of the category function to track additional object characteristics in a tree hierarchy format.

Lab 5 – Creating a Category

Section 2 – Add-ons

This section explains the use of the Add-on function to track additional data characteristics of an object.

Lab 6 – Creating an Add-on

Module 7 –Other Tools, Functions and Features

Section 1 – Messages

This section explains the types of messages in EAM, their purpose and the procedures for changing a message severity or the displayed contents.

Section 2 – Notifications

This section explains the purpose and characteristics of the notification function and the basic procedures for creating a new notification.

Section 2 – Custom Extensions

This section explains the basic purpose of the custom extensions function along with some examples of how it has been used.

Section 4 – Processors and Services

This section explains the different types of processors and services that are available to support EAM System Administration functions.

Section 5 – MEVALUELK Optimization

This section explains the ability to limit the population of the MEVALUELK table from indirect transactions.

Section 7 – Exchange Rates

This section explains the use of the exchange rate function in maintaining exchange rate conversions when multiple currencies are in use.

Section 8 – Cabinet Customization

This section introduces the concept of cabinet customization. The details are covered in the EAM.PRO Cabinet Customization course.

Section 9 – Reports

This section introduces the types of reports that are available in EAM. The details for modifying existing reports or for creating new reports are covered in the Crystal Reports for EAM course.

Section 2 – Introduction to EAM Foundation Module

Section Objective

- Provide an overview of the Enterprise Asset Management software
- Define the purpose of the Foundation module within the EAM application

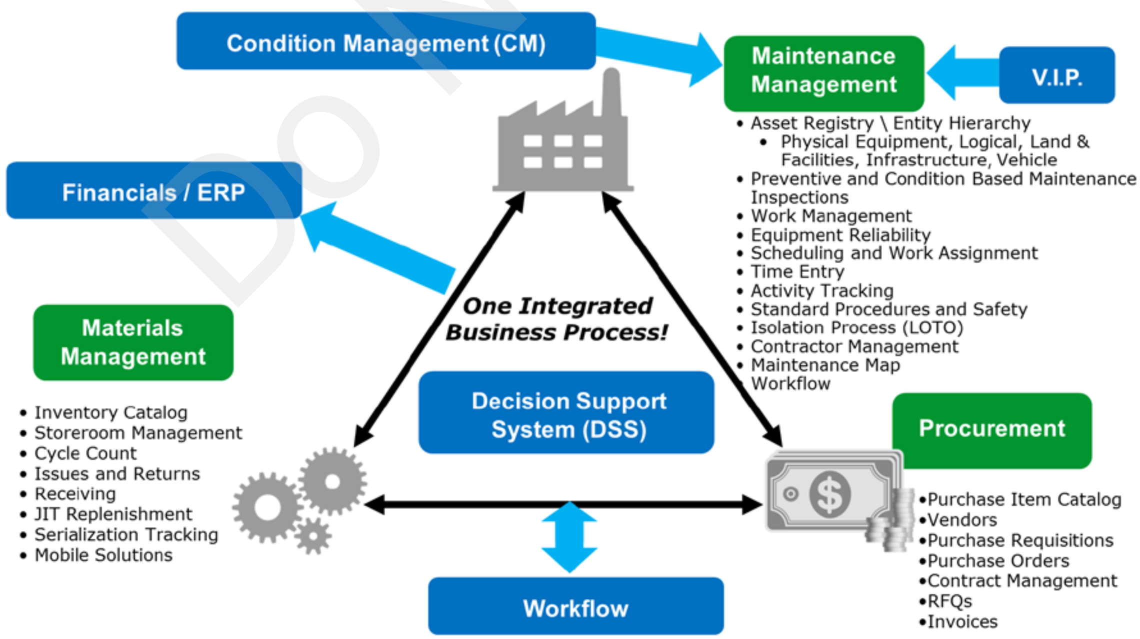
Introduction to Enterprise Asset Management

The Enterprise Asset Management Foundation module is one part of the EAM software application designed to increase equipment uptime, extend equipment life, and reduce maintenance costs. The other major modules in the core product are Maintenance, Inventory and Procurement. Because these modules are fully integrated with each other you are also able to plan and track usage of spare parts maintained in a storeroom as well as the usage of services and parts ordered directly for a work order.

The separation of the different 'modules' – Foundation, Maintenance, Inventory and Procurement – is more of a logical separation based on functionality and purpose than a real separation. The functions for these modules are covered in the EAM install.

The EAM software is integrated with other AVEVA or third-party offerings to provide a seamless approach for managing your physical assets, spare parts inventory and procurement activities. Through an interface, general ledger transactions generated in EAM help to maintain the accuracy and detail required in your Financials / ERP system.

The graphic below illustrates the main functions in the core EAM application and key interfaces with other AVEVA or third-party applications.



Enterprise Asset Management Foundation Module

The EAM Foundation module comprises many objects and functions that support the user interaction with the software application and the configuration of the software to reflect the corporation's business processes. The following table lists alphabetically the objects or functions typically considered to comprise the Foundation module.

Function	General Purpose
Add-ons	Provides additional fields that can be used through EAM that can be used to track client-specific information that does not have an identified location in the delivered EAM application.
Business policies	Enable the customization for how some of the functionality works to better reflect an organization's business processes.
Cabinet customization	Provides ability to customize cabinets and cabinet views to reflect client-specific requirements. This function is often delegated to selected power users.
Categories	Provide additional values in a tree structure that can be used for filtering / selection purposes.
Custom extensions	Provide the ability to customize the way that some functionality works and also provides the ability to interact with external data sources or functions.
Data security	Provides the ability to secure specified storerooms and storeroom functions from individuals generally authorized to use normal inventory-related transactional activities.
Desktops	Defines the desktops with applicable shortcuts that will simplify the user's access to objects or functions within EAM.
Employee records	Identify the individuals who will have access to EAM along with their EAM - related security authorizations, trades and roles.
Messages	Define the content of error or warning messages that might display while using EAM and provides the ability to make the completion of certain fields mandatory.
Notifications	Defines the criteria that are used to send a notification email to someone on the occurrence of an event.
Processors	Run on a given frequency to perform different types of updates or to process transactions.
Security profiles	Define the security authorization levels (Edit, Read-only, No access) for each object and function for each functional role in the organization using EAM.
Site object	Defines the site(s) that are used in the database and some of the rules, settings and default values for a site.
Value lists	Facilitate filtering and sorting needs by providing drop-down lists of valid values for selection by users when populating specific fields. Some value lists also include configuration options that are important for defining how some EAM functionality is applied.

Section 3 – User Interface Options

Section Objectives

- Introduce the Classic and Smart Client interface options
- Explain the basic differences between the Classic and the Smart Client interface options

Interface options

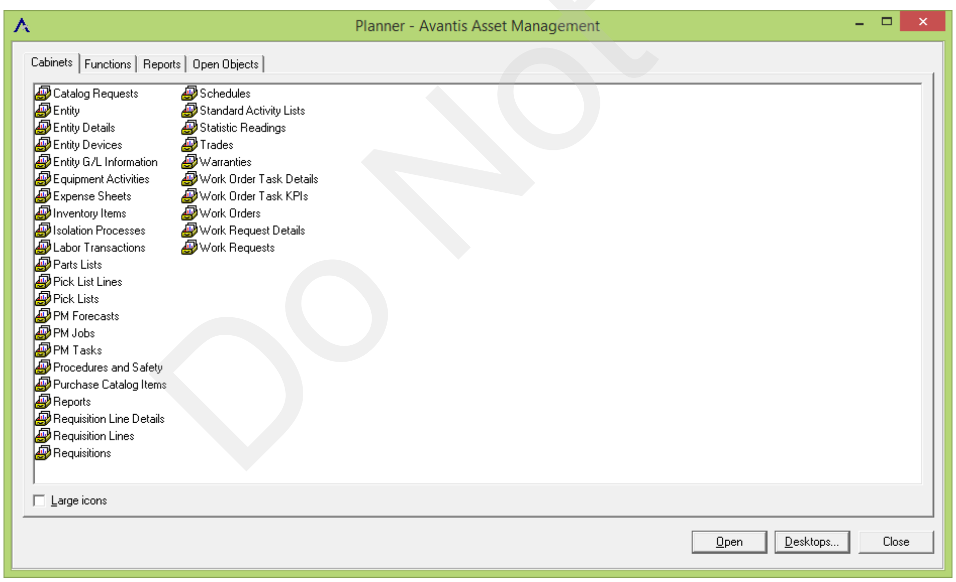
There are currently two interface options available to users.

Classic mode – This option reflects the original EAM interface. Most of the objects and functions available in EAM are only offered in the Classic format.

Smart Client – This option incorporates Microsoft smart client technology to enhance the user experience and to provide some additional user interface options and customized functions that are not available under the classic mode.

Classic mode

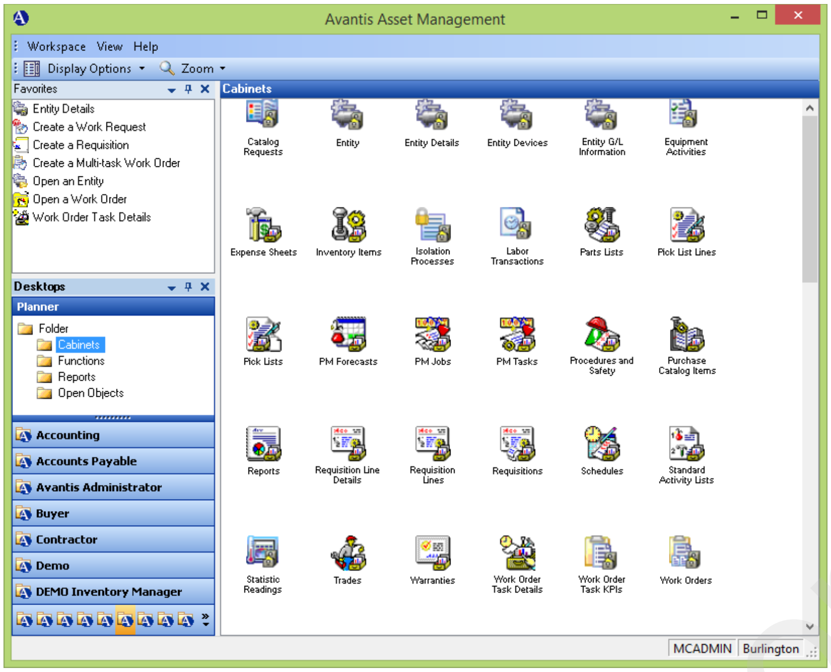
Under the classic mode, cabinets, objects and functions are accessed directly from a desktop object. These desktops can be customized to meet the requirements of individual user groups.



Smart Client mode

Many objects and functions in EAM have been rewritten and enhanced using smart client architecture for easier access, better maintainability and supportability. Using Microsoft ClickOnce technology, smart client applications can be installed on a client machine simply by clicking on a URL provided by an administrator.

Under the Smart Client mode cabinets, objects and functions are accessed through the Smart Client Workspace application which incorporates the classic desktop.



Some of the additional functionality available with the Smart Client technology is:

- New workspace function allows users to create their own list of favorites for easier access
- New cabinet viewer that offers a variety of new features for the user
- New viewing format for smart client objects allows for view listing in a tree format

There are several objects that have been updated with a smart client version of the object [Classic object name identified in parenthesis]:

- Catalog Request Worksheet [Catalog request object]
- Equipment Activity Worksheet [EAR Form and Worksheet]
- Emergency Work Order [Emergency Work Order object]
- Entity [Entity object]
- Statistics Form [Statistic reading Form]
- Time Card Worksheet [Time Card object]
- Work Order [Simple and multi-task Work Order objects]
- Work Request [Work request object]
- Issue transaction worksheet
- Receipt transaction worksheet [Same name}
- Adjustment form, Count form, Reclassification form [Same names]

There is some EAM functionality that is only available using the smart client technology:

- Isolation object
- Maintenance Map function
- Mandatory add-on fields
- Development of custom forms for smart client objects

Module 2 – Site Functionality

Section 1 – Multi-site Functionality

Section 2 – Site Object

Section 3 – Business Policies

Lab 1 – Creating a Site

Module Objectives

- Explain the multi-site functionality concept available in EAM
- Define the characteristics of database-scoped objects
- Define the characteristics of site-scoped objects
- Explain the purpose and usage of the site object
- Explain the purpose and configuration of each view and field in the site object
- Explain the purpose and use of the Business Policies
- Explain the purpose and setting options of key ‘Enterprise’ and ‘Site’ level business policies
- Create a new site and make it the primary site
- Modify a business policy setting

Section 1 – Multi-Site Functionality

Section Objectives

- Explain the multi-site functionality concept available in EAM
- Define the characteristics of database-scoped objects
- Define the characteristics of site-scoped objects

Introduction

Enterprise Asset Management allows for the use of a multi-site configuration. This enables the segregation of data and the limiting of users to certain data records in the database when appropriate.

Sites can be geographic in nature such as when an organization has plants in different locations or even in different countries. Sites can also be logical in nature to reflect different types of assets or operational needs at the same geographic location.

Some of the objects used in EAM Foundation module are database-scoped in nature while others are site-scoped. Individual users are given editing or read-only authorization for selected objects through the security profile function. When an object is a site-scoped object, the user's authorization can be limited to a single site, can be set for multiple (but not all) sites or can apply across all sites

Database-scoped objects

Database-scoped objects are available for use by authorized EAM users regardless of the site or sites to which they have security authorization. Database-scoped objects help provide consistency by all users of the database and reduce the duplication of effort when changes are made to a master file.

Database-scoped objects are owned by the database rather than by a specific site. As such, they are available for reference / use by all EAM users who have read-only or editing authorization for that object type.

Add-ons, categories and cabinets are database-scoped although cabinets can be set to filter to a specific site.

Business policies and messages are database-scoped but many of them have site-scoped attributes that allow for there to be different settings for different sites.

Value lists are database-scoped although some value lists have site-scoped attributes.

Most master files are database-scoped although the entity record is site-scoped and the PM Job record allows for either option.

Site-scoped objects

Site-scoped objects are owned by a specific site and can only be used by EAM users who have been given authorization for its use within a given site. All transactional objects as well as documents such as work requests, work orders, requisitions, purchase orders and invoices are site-scoped. Site-scoped objects provide better control on the use, display and reporting of maintenance, inventory or procurement-related activities.

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Section 2 – Site Object

Section Objectives

- Explain the purpose and usage of the site object
- Explain the purpose and configuration of each view and field in the site object

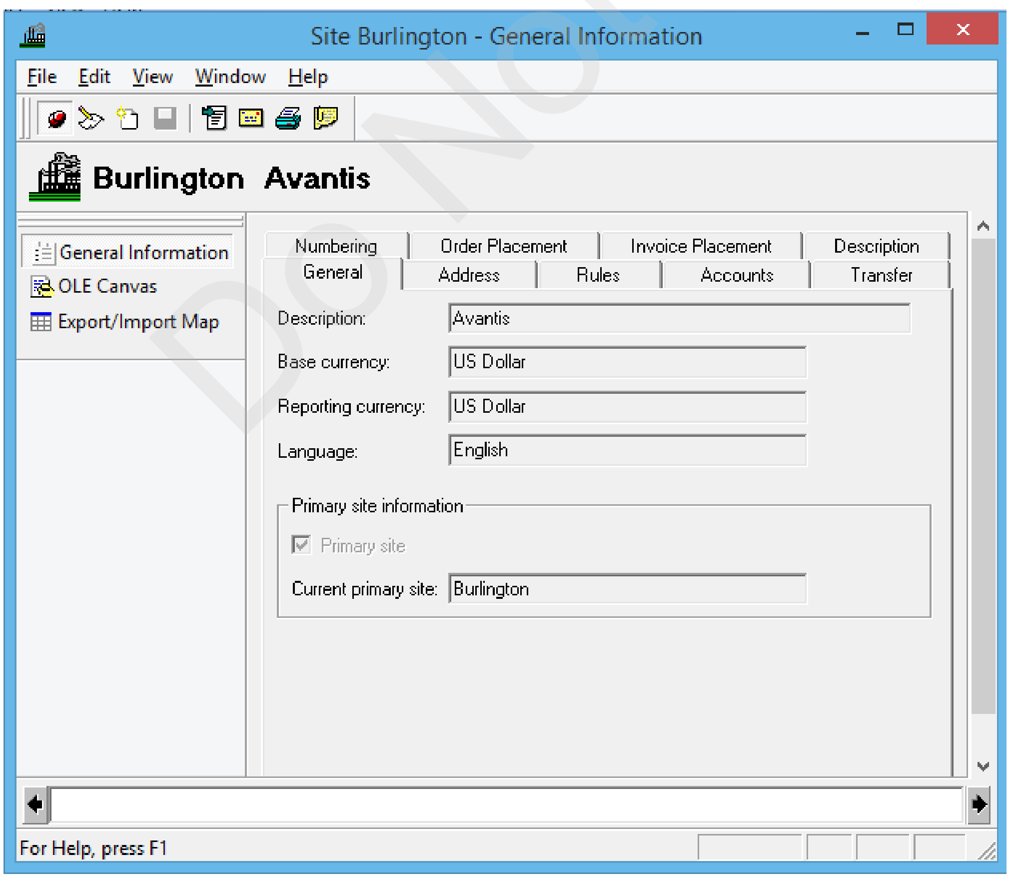
Introduction

The collection of site objects defines the various database sites that are available in EAM for site-scoped objects. Each site object contains information specific to the site including: the site's name, base currency, reporting currency and language.

Other site level values are also defined such as the object numbering rules, default account numbers that apply to the site and rules for determining the site ownership of purchase orders and invoices.

The site object also provides access to the business policies that can be applied on either a global or a site-specific basis. Business policies are explained in greater detail in Section 3 of this module.

For a multi-site environment, one site must be designated as the primary site. The business policy and message settings from the primary site apply unless there is a site-specific override.



Views

Each site object contains three views.

View	Purpose
General Information	This view provides basic descriptive information about the site record through the different tabs that are provided. Tabs are also displayed for each add-on linked to the site record (if applicable).
OLE Canvas	This view provides access to the OLE Canvas function that uses MS Word as the text editing tool. It can include additional text, graphics, pictures and tables relevant to the site object.
Export/Import Map	This view defines the definitions created for exporting schedules between EAM and MS Project™. An export/import map definition must be created in order to export or import schedules from the Schedule object. If you reorder the level definitions they are automatically renumbered.

Section 3 – Business Policies

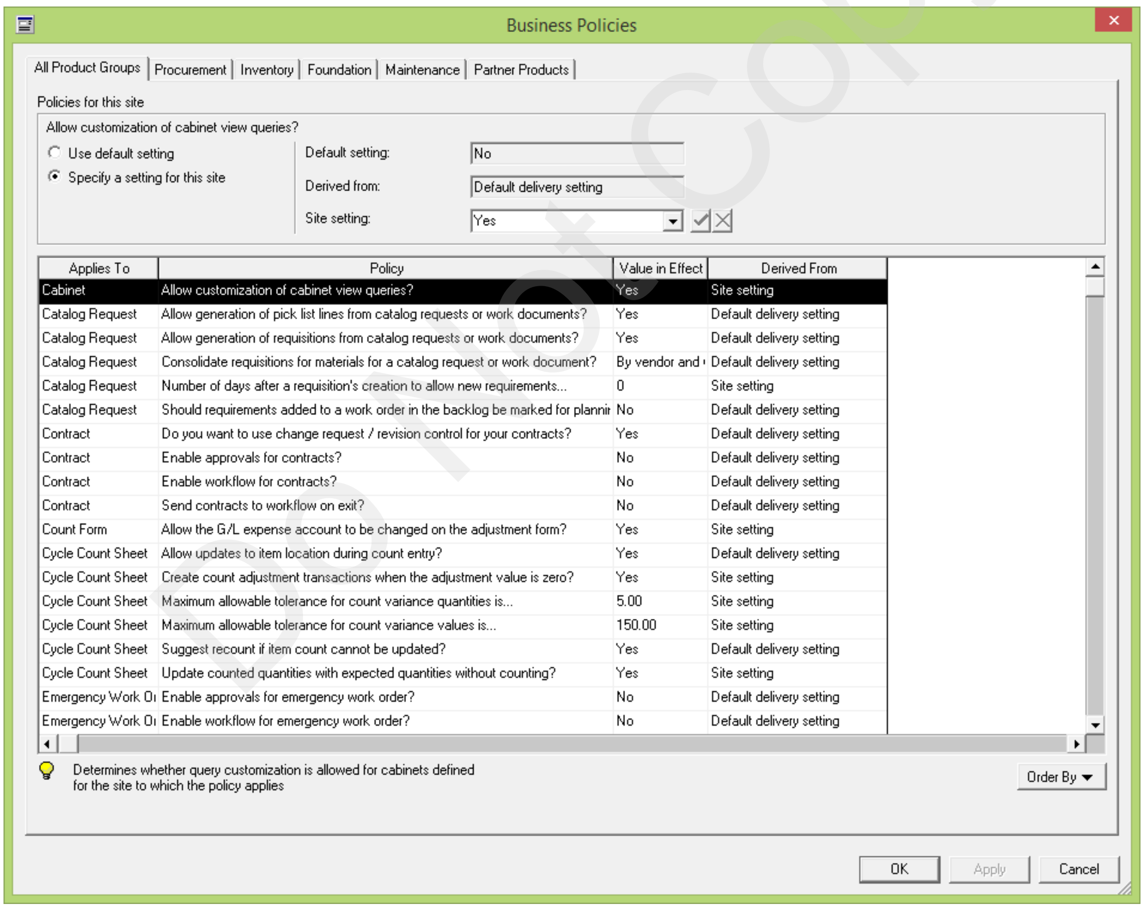
Section Objectives

- Explain the purpose and use of Business Policies
- Explain the purpose and setting options of key 'Enterprise' and 'Site' level business policies

Introduction

Business policies allow you to define rules to determine how specific business situations are to be handled in EAM. The business policies allow you to tailor EAM to suit your company's business needs.

Enterprise Asset Management includes business policies for all the product groups and each product group is found on a separate tab when viewing Business Policies. Some business policies are listed under more than one product group. All business policies are listed on the All Product groups tab.



Enterprise level business policies

There are a number of business policies classified as applying to the Enterprise. Typically – but not necessarily – these business policies are considered to apply across all sites based on the default setting defined on the Primary site object.

Applies To	Policy	Value in Effect	Derived From
Enterprise	Allow charging of work orders or entities to sites other than the site of the issue,	Yes	Site setting
Enterprise	Allow only common symptoms defined per entity classification?	No	Default delivery setting
Enterprise	Allow the creation of follow-up work requests for closed work orders/tasks?	No	Default delivery setting
Enterprise	Allow the unit of measure to be changed on pick list lines, spare parts and mater	Yes	Default delivery setting
Enterprise	Base numbers created from Production shadow resources on....	Use the site/resource ID as	Default delivery setting
Enterprise	Enable named segments for GL accounts and segments?	No	Default delivery setting
Enterprise	Enable synchronization of inventory and catalog item numbers and names?	No	Default delivery setting
Enterprise	Enable synchronization of inventory item, catalog item and parts list descriptions'	No	Default delivery setting
Enterprise	Filter out suspended employees from the cabinet prompt drop down lists.	Yes	Default delivery setting
Enterprise	Identify a company within your account number, using named segments?	No	Default delivery setting
Enterprise	Identify the item that will act as the master for item synchronization.	Inventory Item	Default delivery setting
Enterprise	Include the catalog item's unit type on Production's expected receipt?	Yes	Default delivery setting
Enterprise	Name of the first customer-defined consequence of failure is...		Default delivery setting
Enterprise	Name of the second customer-defined consequence of failure is...		Default delivery setting
Enterprise	Obtain G/L information for production resources from Resource Accounting?	No	Default delivery setting
Enterprise	Processing interval for Maintenance Transaction Processor (MTP) is...	10	Site setting
Enterprise	Processing interval for Procurement Integration Processor (PIP) is...	10	Default delivery setting
Enterprise	Processing interval for sending invoices to Protean Financials is...	-1	Default delivery setting
Enterprise	Processing interval for sending journal entries to Protean Financials is...	-1	Default delivery setting
Enterprise	Production database owner name is...		Default delivery setting
Enterprise	Reduce all accounting value links for entities, work orders and work tasks?	No	Site setting
Enterprise	Resource interval for Procurement Integration Processor (PIP) is...	10	Default delivery setting
Enterprise	Segment group that identifies the company within an account number is...	0	Default delivery setting
Enterprise	What attachment method to use when attaching a document to an Avantis doc	All	Site setting

Site level business policies

There are also a number of business policies that are typically unique at the site level. These are classified as applying to the Site object. As with all other business policies, the initial value is based on the default setting value on the Primary site object.

Applies To	Policy	Value in Effect	Derived From
Site	Allow non-contract employees to access contractor's applications?	No	Default delivery setting
Site	Base currency for Production is...	USD	Default delivery setting
Site	Business week starts on...	Monday	Default delivery setting
Site	Combine work order requirement short and long descriptions when creating cata	Yes	Default delivery setting
Site	Default balance category to use for journal entries created in Procurement is...	DefaultBalanceCategory	Default delivery setting
Site	Default journal to use for journal entries created in Procurement is...	DefaultFinancialsJournal	Default delivery setting
Site	Default trading partner is...	DefaultTradingPartner	Default delivery setting
Site	Derive maintenance G/L segments when work is planned?	Yes	Default delivery setting
Site	Enable approval process for all site objects?	Yes	Default delivery setting
Site	Enable FactorySuite integration with Avantis?	No	Site setting
Site	Enable Financial Integration Processor for this site.	No	Default delivery setting
Site	Enable Procurement Integration Processor (PIP) for this site?	No	Default delivery setting
Site	Enable receipt label printing using Crystal Reports?	Yes	Default delivery setting
Site	Enable validation for G/L accounts?	No	Default delivery setting
Site	Enable validation for G/L segments?	No	Default delivery setting
Site	Enforce allocations and/or reservations for this site?	Allow allocations and reser	Site setting
Site	Expired prices are to be defaulted if no effective price can be found	Yes	Site setting
Site	Identify your workflow engine as...	Avantis Approvals	Site setting
Site	Include held item storerooms when creating parts usage documents or inventory	Yes	Default delivery setting
Site	Include held item storerooms when creating procurement documents?	Yes	Default delivery setting
Site	Include naming convention prefixes used with G/L accounts when passing the	No	Default delivery setting
Site	Launch the smart client application when opening an object from a classic appli	No	Default delivery setting
Site	Number of entities to condense is...	1,000	Default delivery setting
Site	Print receipt labels for direct purchases?	No	Site setting
Site	Print receipt labels for inventory purchases?	No	Site setting

LAB 1 – Creating a Site

Introduction

In this lab you are going to create a new site object representing the corporation and make it the primary site. The various settings for this site – such as business policies, object numbering and message settings – will apply across the database unless overridden by a site specific setting.

Objectives

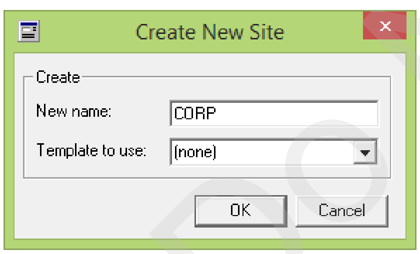
On completion of this lab you will be able to:

- Create a site
- Make the new site the primary site
- Modify a business policy setting on a non-primary site

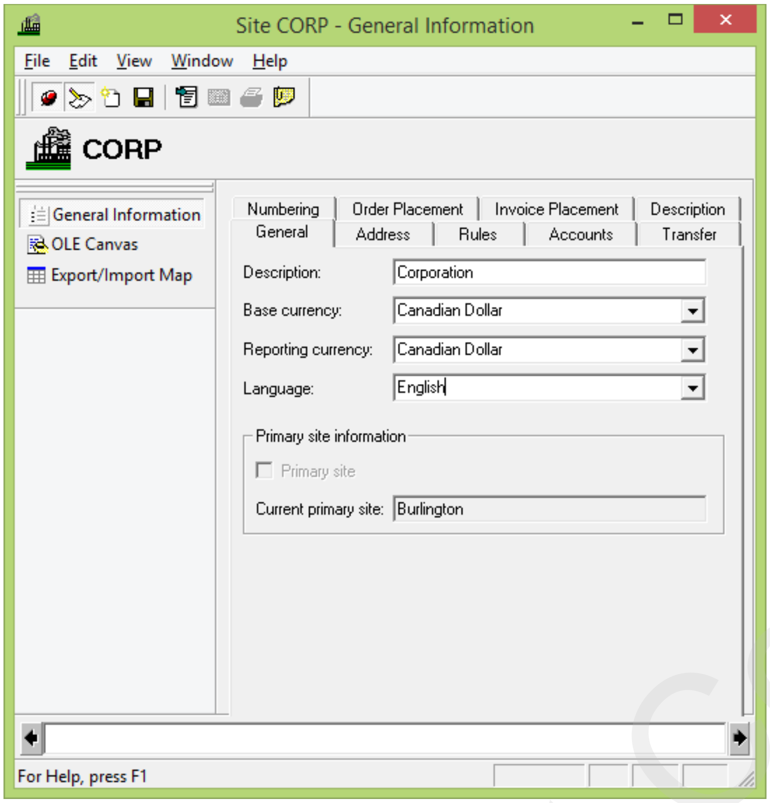
Create a site

In this section of the lab you are going to create a new site and set up basic site level information.

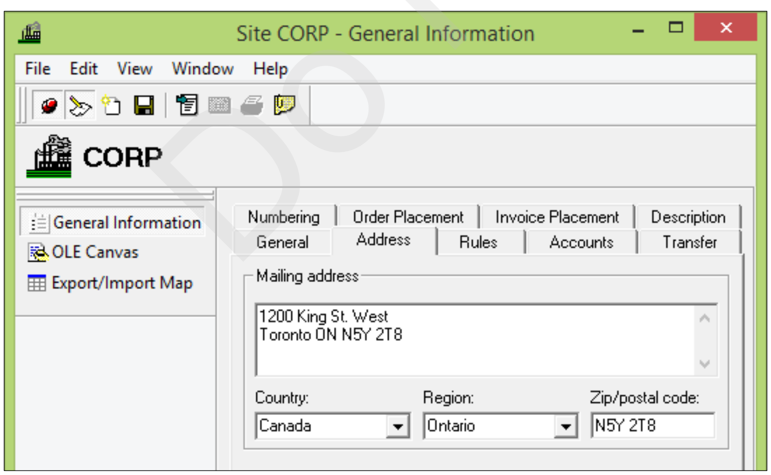
1. Log into EAM as instructed by the trainer.
2. Click the **Desktops** button and select the **EAM Administrator** desktop.
3. Click **OK**.
4. Select the **Templates/Functions** tab.
5. Launch the **Site Template**.
6. Type **CORP** in the **New Name** field.



7. Click **OK**.
8. Type **Corporation site** in the **Description** field.
9. Select the **Canadian Dollar** value from the **Base Currency** field drop-down list.
10. Select the **Canadian Dollar** value from the **Reporting Currency** field drop-down list.



11. Select the **Address** tab.
12. In the **Mailing address** field type: **1200 King St. West, Toronto ON N5Y 2T8**
13. Select **Canada** from the **Country** drop-down list.
14. Select **Ontario** from the **Region** drop-down list.
15. Type **N5Y 2T8** in the **Zip/postal code** field.



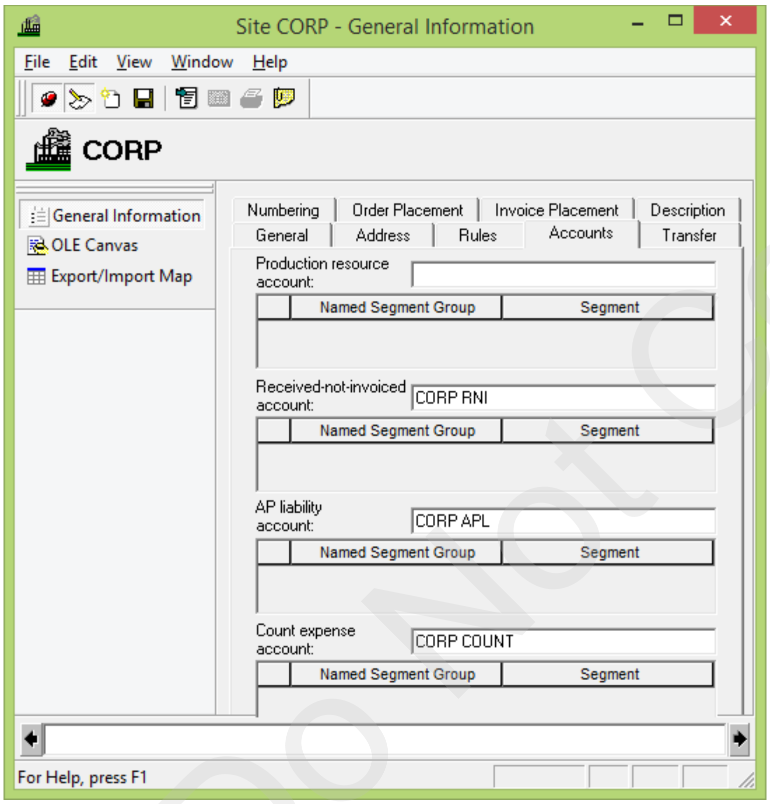
NOTE: The contents of the Mailing address field are picked up for use on site-related documents such as purchase orders and contracts, so it needs to be complete. The Country, Region and Zip/Postal code fields are used to facilitate filtering and sorting.

16. Select the **Rules** tab.
17. Leave the default **Labor** cost group field blank.

18. Select the **Material – Direct** value from the drop-down list in the **Direct purchase** field.
19. Select the **Material – Stores** value from the drop-down list in the **Inventory materials** field.
20. Select the **Accounts** tab.

NOTE: The Production resource account field applies to companies using EAM in conjunction with Protean. Default account numbers are required for the other three accounts listed on this tab. While normally they must be valid G/L account numbers, in this database validation is turned off.

21. Type **CORP RNI** in the **Received-not-invoiced account** field.
22. Type **CORP APL** in the **A/P Liability account** field.
23. Type **CORP COUNT** in the **Count expense account** field.



24. Select the **Transfer** tab.

NOTE: The account numbers on this tab are optional. For purposes of this lab, the Transfer account number is not being defined at the CORP site level.

25. Select the **Numbering** tab.

NOTE: This tab defines the rules for the numbering of objects. If the system-assigned option is used – either alone or in conjunction with manual numbering – the starting number is also defined. Numbering rules defined on the primary site object can be overruled at a specific site for site-specific objects. In this lab the default values will be used on the primary site.

26. Select the **Order Placement** tab.

NOTE: This tab enables you to define rules that EAM uses to determine which site owns a given purchase order. This option allows you to control the ownership of different types of purchase orders. For example, an organization can have all POs exceeding $50,000 owned (and managed) by the corporate site with lower value POs owned by the originating site. In this lab, POs are assumed to be owned by the originating site.

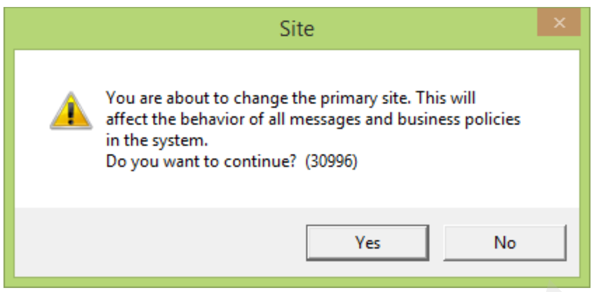
27. Select the **Invoice Placement** tab.

NOTE: This tab enables you to define rules as to which site owns invoices. Since invoicing is often done at the corporate level, this allows you to centralize the invoicing function regardless of the originating site of the related PO. In this lab, invoices are owned by the same site as the site that owns the PO.

Make the new site the primary site

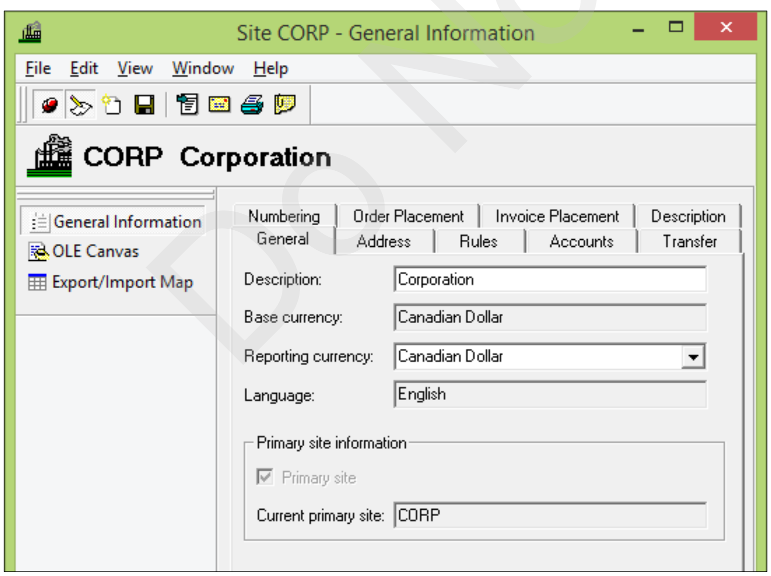
You are now going to save this site and make it the primary site.

28. Click the **Save** icon in the toolbar.
29. Select the **General** tab.
30. Click the **Primary site** check box. A warning message displays.



31. Click the **Yes** button.

The name in the Current primary site field updates with the name of the new primary site.



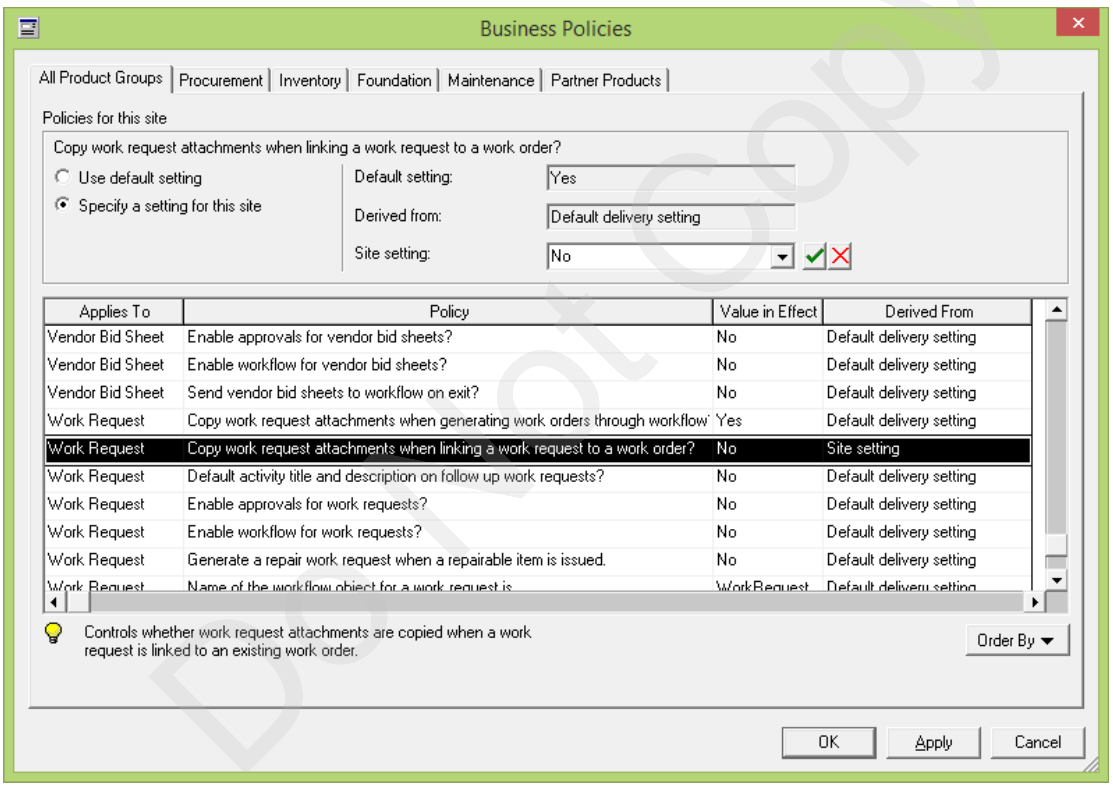
Modify a business policy on a non-primary site

In this section of the lab you are going to modify a business policy on the primary site then go into one of the other sites and modify the site level policy so that it differs from the primary site setting. Site-specific override settings can only be made on objects that are not considered to be database scoped.

32. Ensure that the site object is in editing mode.
33. Select the **View / Business Policies** menu option.
34. Scroll through the list of business policies to the **Applies to Work Request** section and select the **Copy work request attachments when linking a work request to a work order** policy.
35. Refer to the area in the upper part of the window and note that the current setting of **Yes** is the default delivery setting.

You are now going to change the setting on the primary site to No.

36. Click the **Specify a setting for this site** radio button.
37. Select the **No** value from the **Site setting** drop-down list.



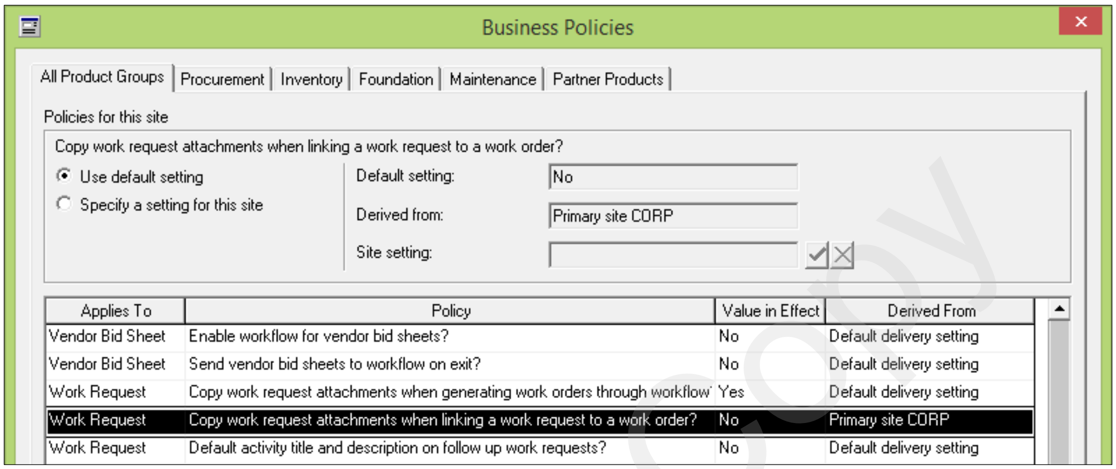
38. Click the green check mark to lock in the change.
39. Click **OK** to close the business policies window.
40. Click the **Save** icon in the toolbar.
41. Exit from the **CORP** site.

You are now going to change the setting for the same business policy in the Burlington site so that it differs from the setting in the primary site.

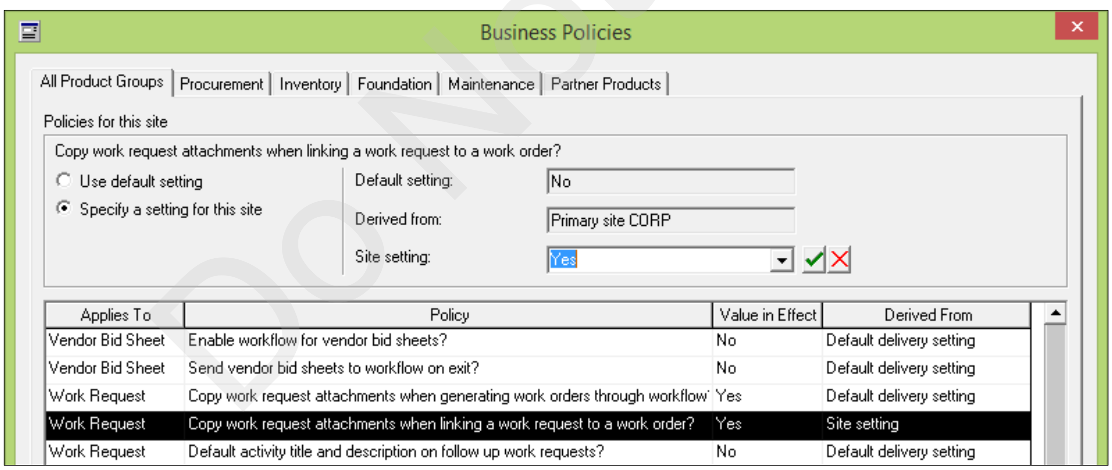
42. Select the **Cabinets** tab on the **EAM Administrator's** desktop.
43. Launch the **Site** cabinet.
44. Click **OK** to close the prompted filter.
45. Launch the **Burlington** site.

46. Select the **Allow editing** icon from the toolbar.
47. Select the **View / Business Policies** menu option.
48. Scroll through the list of business policies to the **Applies to Work Request** section until you locate the **Copy work request attachments when linking a work request to a work order** business policy.

NOTE: The business policy currently shows that the value in effect is **No** and that it originates from the **Primary site CORP**.



49. Click the **Specify a setting for this site** radio button.
50. Select the **Yes** value from the **Site setting** drop-down list.



51. Click the green check mark to lock in the change.
52. Click **OK** to close the business policies window.
53. Click the **Save** icon in the toolbar.
54. Exit from the **Burlington** site.

You have now completed the requirements of this lab.

Module 3 – Database Security and Employee Records

Section 1 – Security Profile Object

Lab 2 – Creating a Security Profile

Section 2 – Employee Record

Section 3 – Database Authentication

Lab 3 – Creating an EAM Employee Record and a SQL Database Record

Section 4 – Data Security Function

Module Objectives

- Define the purpose, use and configuration of the security profile object
- Create a security profile
- Define the purpose and use of the employee record
- Define the purpose and configuration of each field, tab and view in the employee record
- Create an employee record and link it to a trade and a security profile
- Identify the database authentication options when using EAM
- Create and validate an employee login authentication record in the SQL database
- Define the purpose, use and configuration of the data security function
- Define the options for selecting individuals covered by the data security function
- Define the options for selecting the security restrictions in the data security function

Section 1 – Security Profile Object

Section Objectives

- Define the purpose, use and configuration of the security profile object

Purpose

Security profiles are the means by which system users are given the authority to create and edit a type of object, to open an object without editing privileges or are denied access to the type of object.

An employee can be linked to multiple security profiles. The employee's ability to access objects or use different functions is determined based on the highest level of security authorization offered by the assigned security profiles.

The security profile object is only available in the Classic format. If custom forms are being used through the Smart Client functionality, the security profile identifies the custom forms that are available to users with that profile.

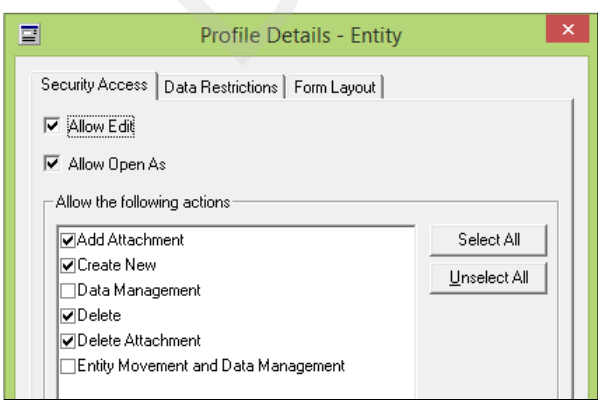
Security levels

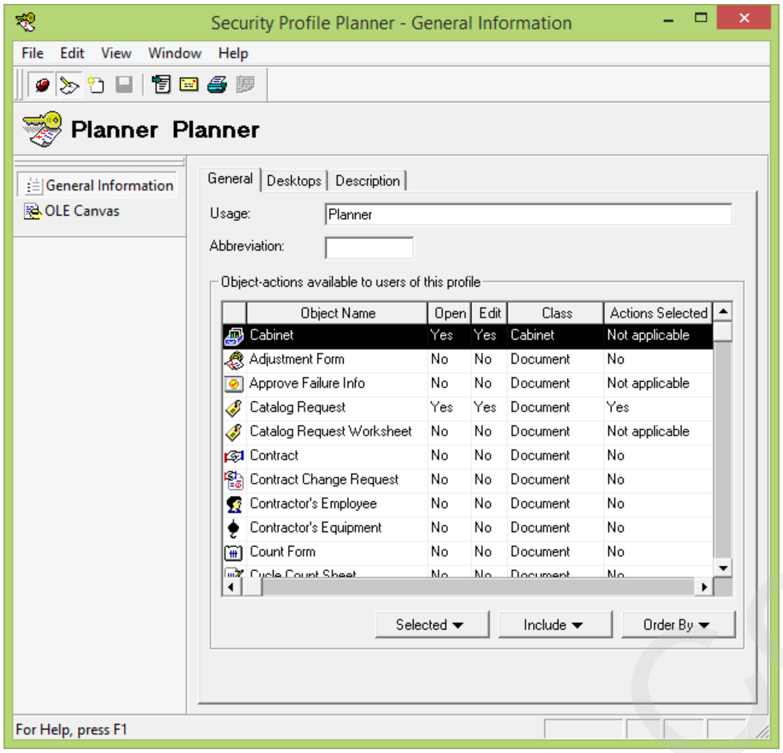
There are three levels of security for each object:

- **Allow no actions** – A user cannot open or modify this type of object.
- **Allow open as** – A user can open this type of object but cannot modify it. The options to add and delete attachments can also be set.
- **Allow edit** – A user can open, modify and possibly create objects of this type.

The security functionality for some objects provides additional security options. For example, a user:

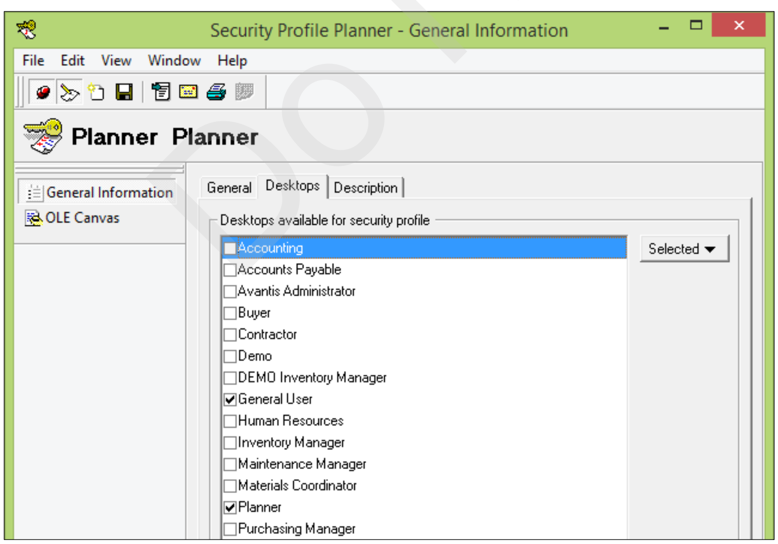
- Might be authorized to edit an object but not create a new record
- Might be authorized to edit an object but not authorized to add or remove attachments
- Might be authorized to delete a record that he or she created but not one that was created by another user





Authorized desktops

Security profiles are linked to one or more desktops. A user can access any desktops permitted by any of the security profiles associated with the employee. If a security profile is not linked to a desktop and the user only has this one security profile, they are not able to launch EAM.



Lab 2 - Creating a Security Profile

Introduction

In this lab you are going to create a security profile for an entry-level planner who is only able to perform some of the maintenance-related functions.

Objectives

On completion of this lab you will be able to:

- Create a basic security profile
- Define read-only access security to selected objects
- Define editing access security to selected objects
- Link the security profile to a desktop

Create a security profile

In this section of the lab you are going to create the basic security profile with the default setting.

NOTE: The default setting for a new security profile is that the Cabinet object is set to **Open** (Read only) as **Yes** and all other objects set to **No** for both the **Open** and **Edit** options.

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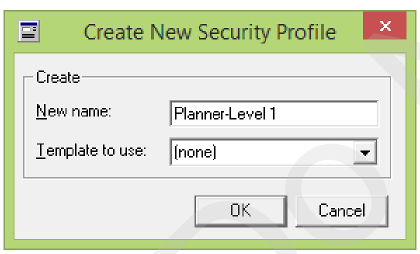
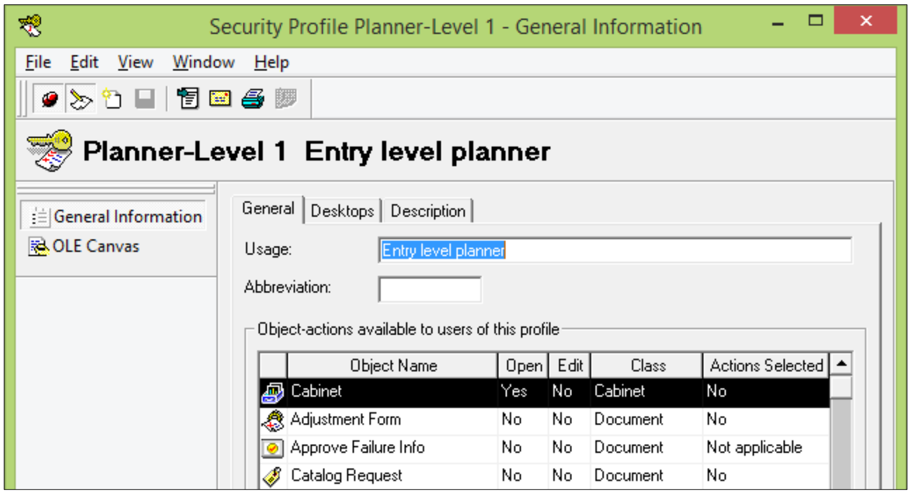
1. Select the **Templates/Functions** tab of the EAM Administrator's desktop.
2. Launch the **Security Profile Template** function.
3. Type **Planner-Level 1** in the **New name** field.



4. Click **OK**.
5. Type **Entry level planner** in the **Usage** field.
6. Click the **Save** icon in the toolbar.

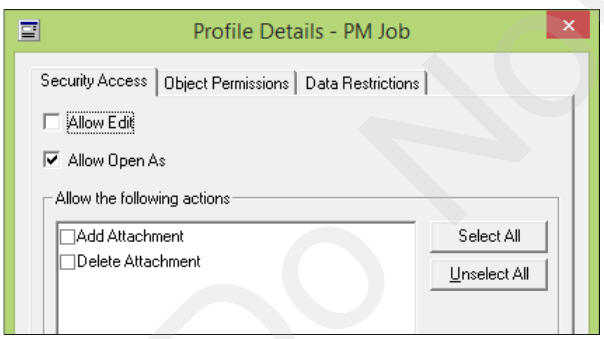


Define read-only access security to selected objects

In this section of the lab you are going to allow read-only access for a number of the available objects. For these objects, the security profile will not allow the addition or removal of attachments.

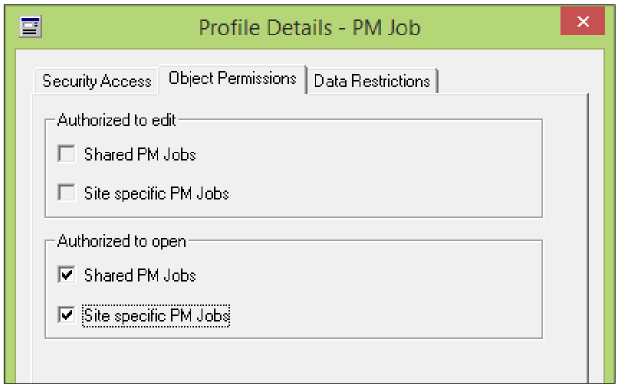
The step-by-step procedures will be given only for the first object.

7. Scroll until the **PM Job** object is displayed in the list and select the line for that Document type of object.
8. Click the **Selected / Details** option.
9. Select the **Allow Open As** check box.



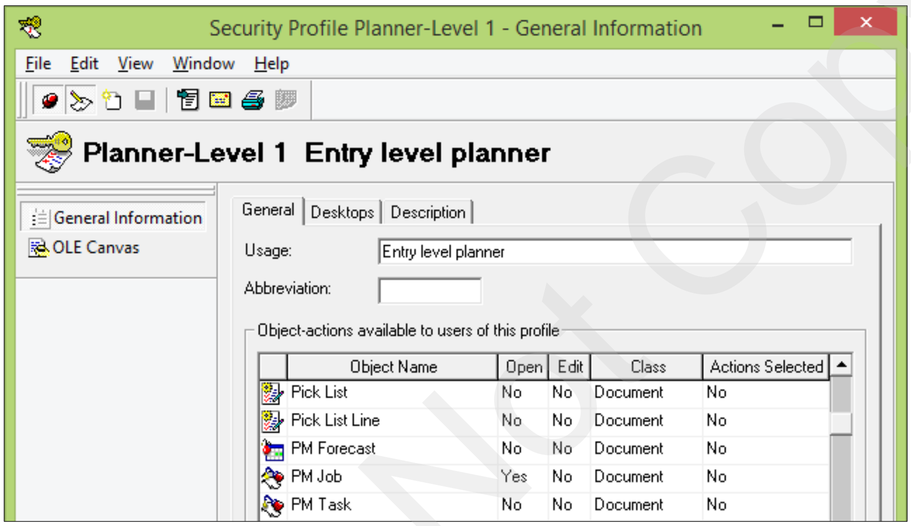
10. Select the **Object Permissions** tab.
11. Select the **Shared PM Jobs** and **Site specific PM jobs** check boxes in the **Authorized to open** section.

NOTE: The **Object Permission** tab is unique to the PM Job object. It reflects the fact that individual PM jobs can be configured as a database scoped record or as a site specific record.



12. Click **OK**.

The Security Profile is updated to reflect the Open authorization for the PM Job object.

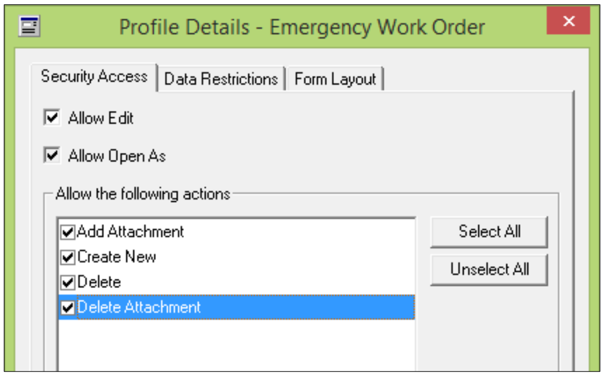


13. Repeat steps 7 through 9 and step 12 for each of the following objects:
    - PM Task
    - Entity
    - Item
    - Parts List
    - Purchase Catalog Item
    - Vendor

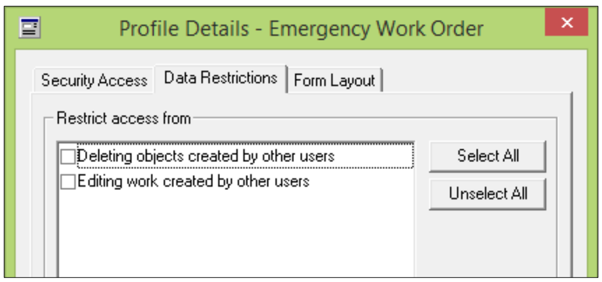
Define editing access security to selected objects

In this section of the lab you are going to set up security to authorize the user to both create and edit records for a number of object types. Users will also be authorized to add and remove attachments.

14. Locate the **Emergency Work Order** object.
15. Click the **Selected** button select the **Details** option and click the **Allow edit** check box.
16. Select the **Add Attachment** and **Delete Attachment** check boxes.

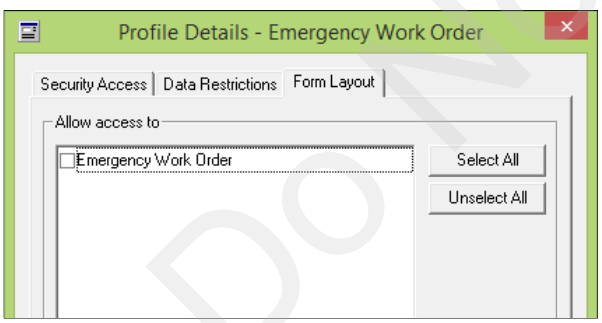


17. Click the **Data Restrictions** button.



NOTE: If one or more check boxes on this tab are selected, users with this profile will be restricted from performing those actions. **For purposes of this lab, ignore any of the restrictions listed on the data Restrictions tab.**

18. Select the **Form Layout** tab.



NOTE: When the Smart Client functionality is used, there is the ability to customize the way that selected objects display in EAM through the creation of custom forms. Through a custom form you are able to hide tabs and fields that are not being used and move the remaining fields around and perhaps combine them on a single tab. When a custom form is created, it displays on the Form Layout tab. A security profile can therefore be authorized to use one form and not another. The EAM Custom Solutions group is required to create a custom form. The default EAM form automatically displays and doesn't need to be selected. **For purposes of this exercise ignore the Form Layout tab.**

19. Click **OK**.
20. Repeat steps 14 – 17 and step 20 for each of the following objects.
    - Multi-task work order
    - Procedures and Safety
    - Warranty

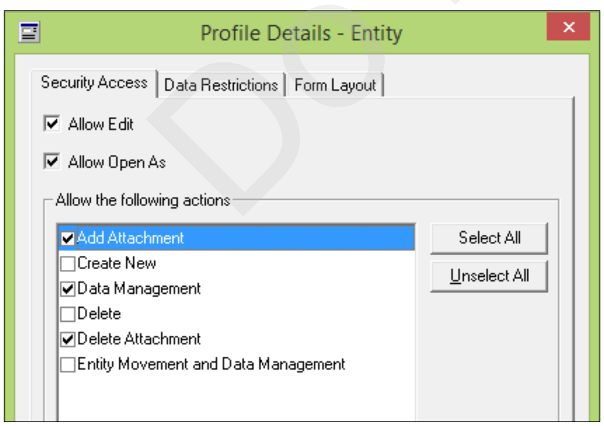
- Work Request
- Simple Work Order
- Work Task

You are now going to set up basic editing ability for a number of other objects.

21. Select the **Equipment Activity Worksheet** object
22. Click the **Selected / Details** option and click the **Allow edit** check box.
23. Click **OK**.
24. Repeat steps 22 through 24 for each of the following objects:
    - Requisition
    - Time Card
    - Equipment Activity Form
    - Equipment Activity Statistic
    - Parts List
    - Requisition Line
    - Standard Activity List
    - Statistic Reading
    - Trade
    - Manufacturer (value list)

You are now going to define security settings for the entity record. There are a few unique options for this object. The entry level planner role will be defined to allow the adding and removal of attachments, but an assigned user will not be able to create a new entity record, delete an existing entity record or use the Entity Movement and Data Management functionality.

25. Select the **Entity** object.
26. Click the **Selected / Details** option.
27. Click the **Allow edit** check box.
28. Select the **Add Attachment** and **Delete Attachment** check boxes.
29. De-select the **Create New**, **Delete** and **Entity Movement and Data Management** check boxes.

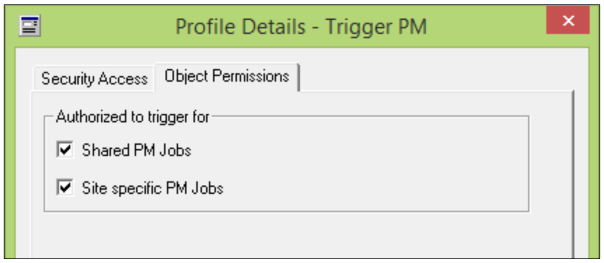


30. Click **OK**.

The final security option you are going to set up is the PM Triggering function. You will enable individuals with this profile to trigger any shared or site-specific PM programs.

31. Select the **Trigger PM** function.
32. Select the **Details** option.

33. Click the **Allow Edit** check box.
34. Select the **Object Permissions** tab.
35. Select the **Shared PM Jobs** and **Site specific PM Jobs** check boxes.

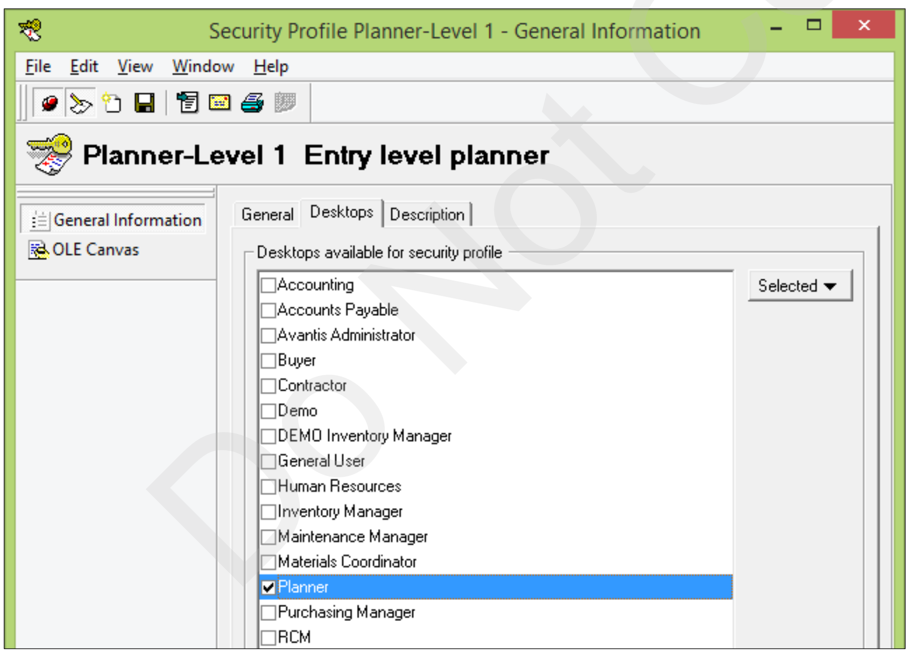


36. Click **OK**.

Link the security profile to a desktop

In this section of the lab you are going to link the new security profile to the existing Planner desktop.

37. Click the **Desktops** tab.
38. Select the **Planner** desktop check box.



39. Click the **Save** icon in the toolbar.
40. Exit the security profile.

You have now completed the requirements of this lab.

Section 2 – Employee Object

Section Objectives

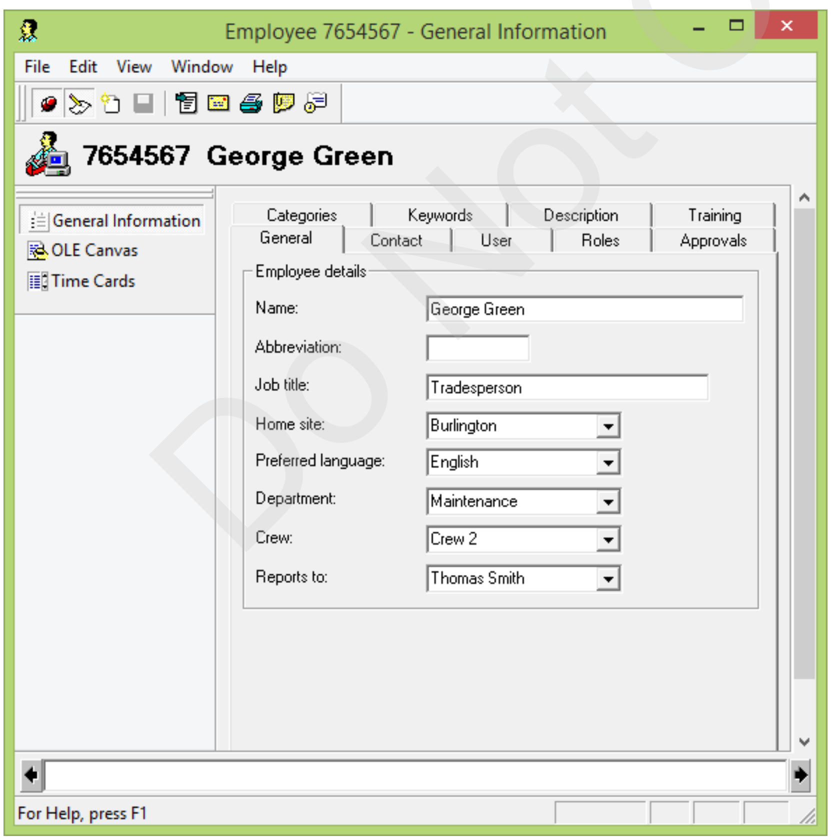
- Define the purpose and use of the employee record
- Define the purpose and configuration of each field, tab and view in the employee record

Introduction

Each employee using EAM or being referenced in EAM must have an employee record in EAM. For example, if a maintenance clerk is entering time cards against an individual, that individual must have an employee record in EAM even if they have no login ID.

Contractors working on site who need to charge time to a work order, receive items from the storeroom or request materials/services through EAM must also have an employee record

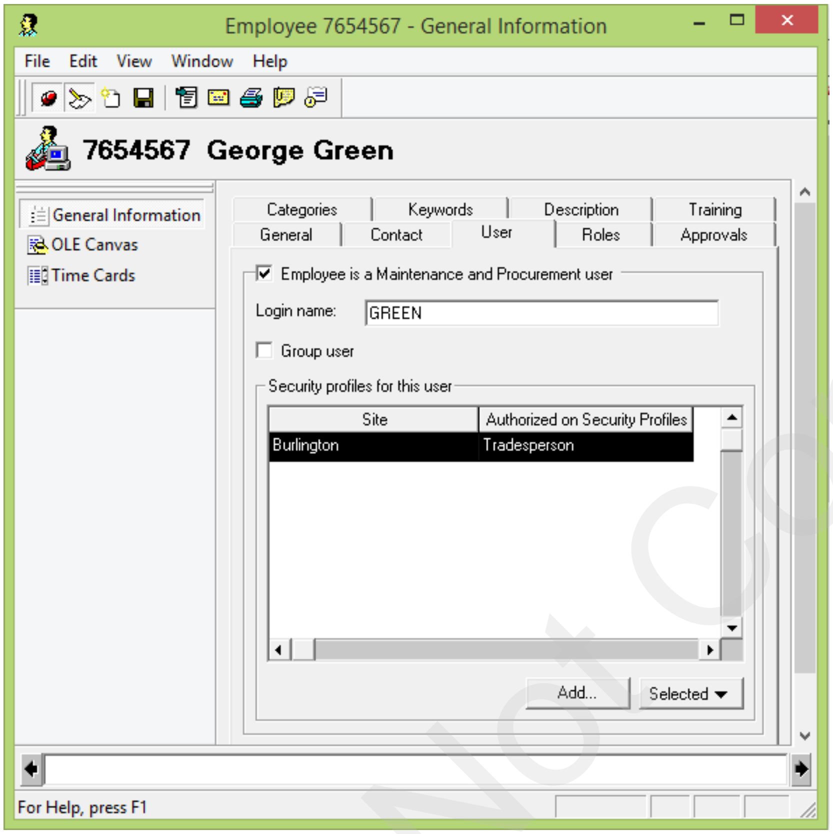
The employee record is a database-scoped object with site-specific attributes.



Security profile assignment

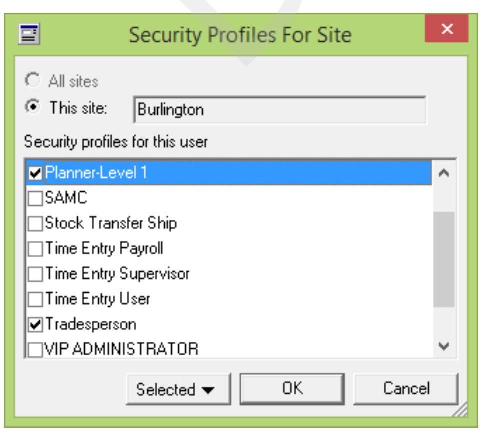
An employee record indicates that the user is an EAM user, provides the Login name and defines the security authorization that the individual for each database site.

The Login name must match with a user record in the SQL or Oracle database or the LDAP directory services value.



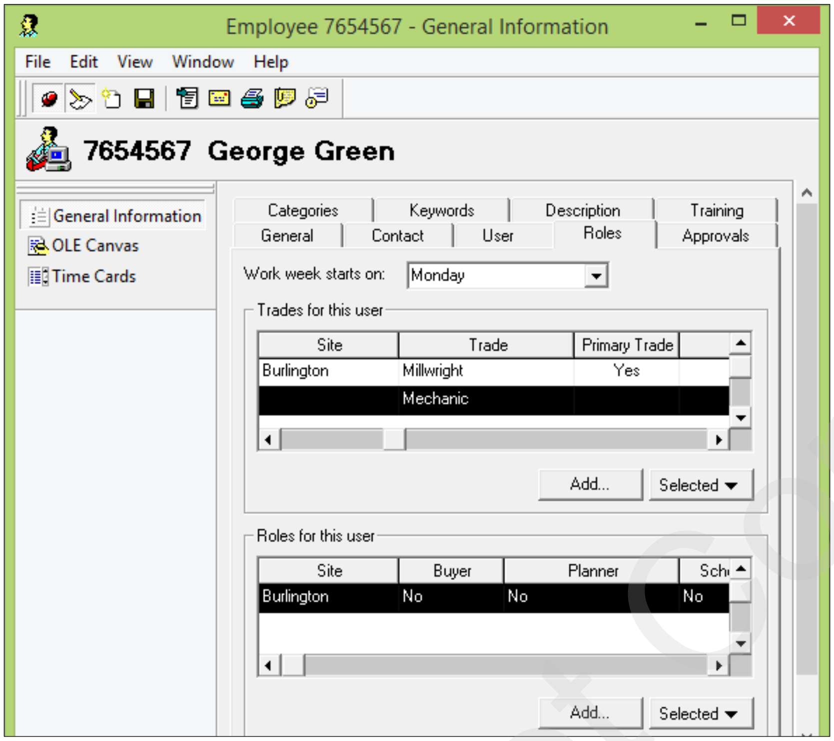
A user can have multiple security profiles for the same site. When this happens, any security profile authorization levels assigned to a specific site take precedence over any assignment for All Sites.

For example, if an individual has a security profile with editing ability for a specific site and a different security profile assigned at the 'All sites' level that allows for read-only access for the same object, the individual will have editing ability in the one site and read only in the other sites.



Trade / role assignment

Employees can be assigned one or more roles or trades. These can be assigned for individual sites or for use in all sites. As with the security profile configuration, a site level setting takes precedence over an 'All sites' setting.

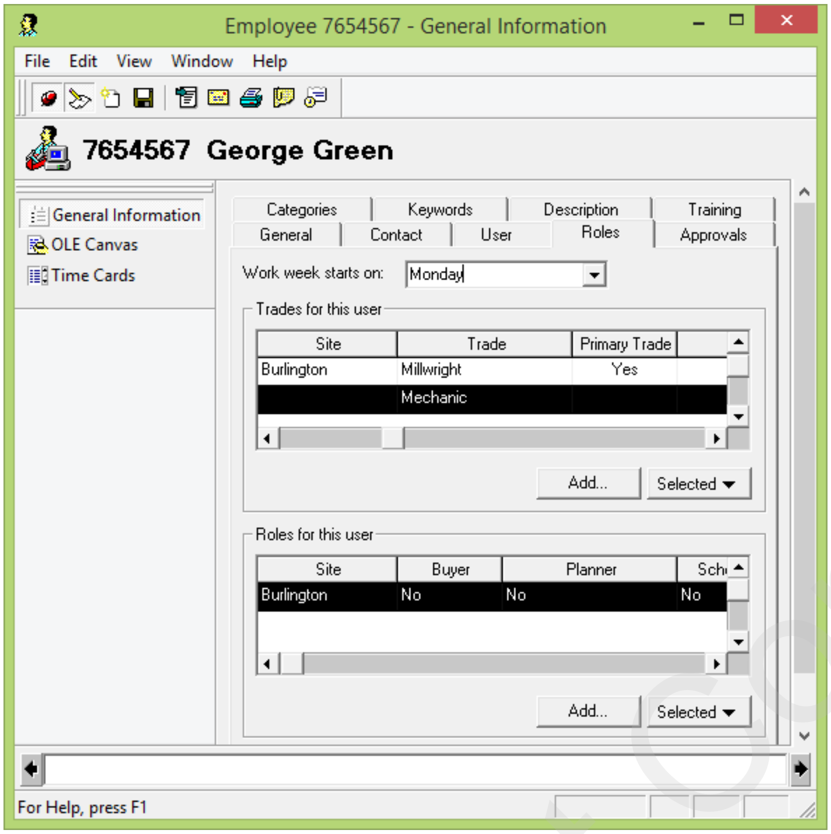


Employees can have multiple trades with one of the trades set as the primary trade.

There are six roles settings:

- Buyer
- Planner
- Scheduler
- Supervisor
- Requestor
- Approver

NOTE: Individuals can have multiple roles. Every user should be assigned the Requestor role. If the approver role is assigned, the fields on the **Approvals** tab are enabled.



Any roles, trades or security profiles assigned to specific sites take precedence over any assigned for All Sites. For example, if you have a security profile for read-only authority for objects in Site 1 as well as a security profile that allows full authority on all objects in All Sites, you will be able to open and edit objects in all sites but Site 1.

Section 3 – Database Authentication

Section Objectives

- Define the database authentication options when using Enterprise Asset Management

Introduction

The Enterprise Asset Management database tracks a user's login ID but not password. The maintenance and authentication of passwords are maintained external to EAM. The security object in EAM does not control one's access to EAM but only the allowable functions and access within EAM.

NOTE: This course uses a SQL Server database.

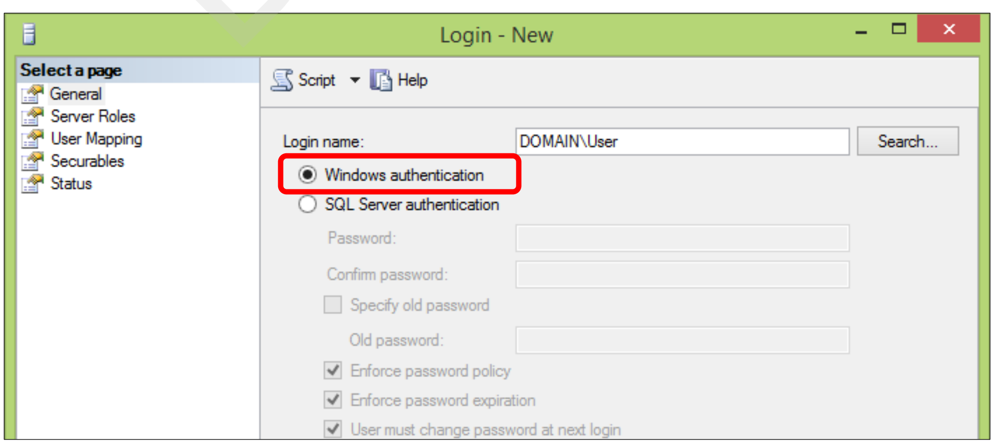
There are three basic options for managing the login accounts on the database side:

- Using Windows authentication from trusted connections
- Using SQL Server authentication from non-trusted connections
- Using LDAP authentication from LDAP directory services

NOTE: SQL / Oracle database security is typically managed by the IT group rather than the EAM System Administer. This section is not intended to provide all the information required by the SQL / Oracle database administrator. It is intended to provide some basic background information to the EAM System Administrator and to support a database setup activity included in Lab 3. Detailed information on these options are contained in the applicable EAM Administrator's Guide (Microsoft SQL Server or Oracle)

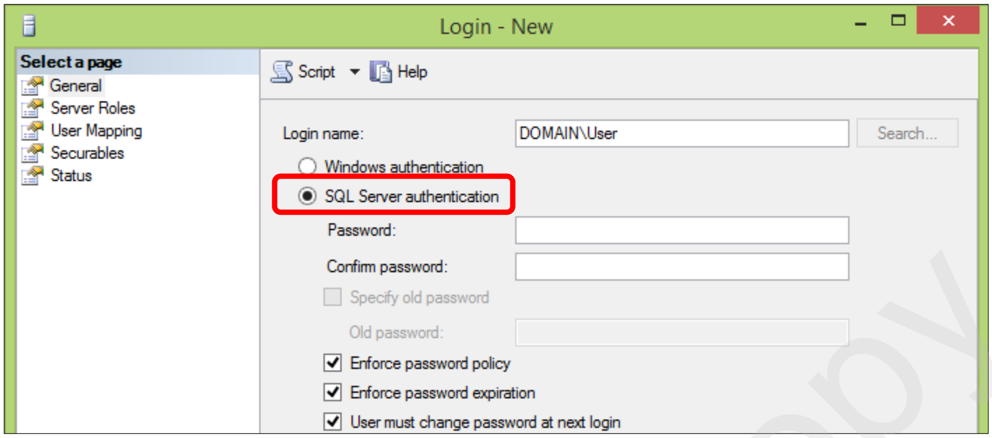
Windows authentication from trusted connections

Under this option, the EAM user name and password are the same as the user name and password in Windows. The EAM logon dialog is not displayed to the user when an object is launched in EAM. This option may be beneficial as you do not have to create separate logins from EAM users and users do not need to log into EAM once they have logged into Windows.



SQL Server authentication from non-trusted connections

Under this option, the EAM user name and password must be set up in SQL. The EAM logon dialog is displayed to the user when an object is launched in EAM and the user must enter their EAM login as defined in SQL. This may or may not be the same as their Windows login as it must be maintained separately. This option is beneficial in training or testing environments and is the approach used in this course.



LDAP authentication from LDAP directory services

Under this option, the network login information (IDs and passwords) is defined and maintained in an LDAP services directory and the information is pulled from there when needed. No separate setup is required in the SQL or Oracle database. This is the typical approach used in a business environment.

Lab 3 – Creating an EAM Employee Record and a SQL Database Record

Introduction

In this lab you are going to create an employee record, link it to the security profile that you created in Lab 2, define trades and roles and set up the matching login ID in the SQL database.

Objectives

On completion of this lab, you will be able to:

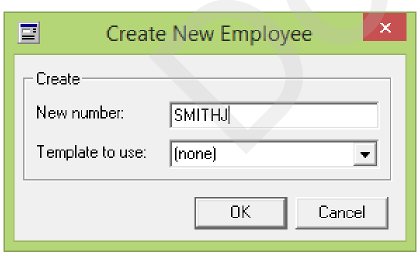
- Create a basic employee record
- Define an employee as an EAM user
- Define the security profile
- Define trades and roles
- Set up an employee in the SQL database using trusted connection authentication
- Verify the trusted connection authentication

Create a basic employee record

In this stage of the lab you are going to create an employee record in EAM for yourself as a new EAM System Administrator.

NOTE: The creation and suspension of employee records in EAM is typically performed through an electronic integration with the human resource system. However, there is setup unique to EAM that must be done in EAM since the required information does not usually exist in the source system.

1. Select the **Templates** tab on the **EAM Administrator** desktop.
2. Launch the **Employee Template**.
3. Type your surname and first initial in the **New number** field (e.g. SMITHJ).

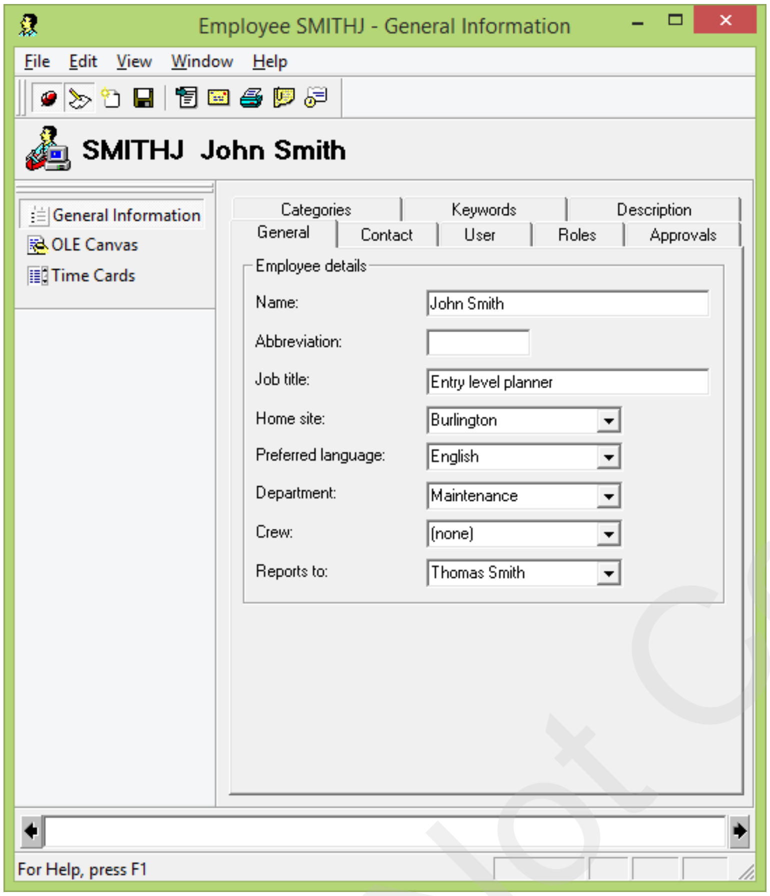


4. Click **OK**.
5. Type your **First name Last name** in the **Name** field.

NOTE: The **Name** field should be populated according to company standards. This is typically **Last name, First name** to facilitate the locating of an employee's record based on the last name. In this database the names are entered in the format First name Last name.

6. Type **Entry level planner** in the **Job title** field.
7. Select the **Burlington** value from the **Home site** drop-down list.

8. Select the **Maintenance** value from the **Department** drop-down list.
9. Select a name from the **Reports to** field drop-down list.



10. Select the **Contact** tab.

NOTE: The email field is typically the only field that gets populated on the Contact tab. It is used in conjunction with email notifications. You will not be able to email from this training database as emailing has not been enabled.

Define an employee as an EAM user

In this section of the lab you are going to define the login ID for this individual.

11. Select the **User** tab.
12. Select the **Employee is a Maintenance and Procurement User** check box.

NOTE: A better label for this check box would be 'This employee is an EAM user'. It must be checked as a part of the steps to enable a user to login to EAM but it has nothing to do with the EAM functionality available to the user.

---

13. Type your surname and first initial in the **Login name** field.

NOTE: For purposes of this lab, this should match your employee record ID as recorded in step 3.

---

14. Press the **Tab** key.

NOTE: When you tab out of the **Login name** field a yellow box displays. This indicates that there is a warning message connected with this field. If you click back in the box, the message displays in the status bar of the window. The message indicates that you do not have a matching record on the database side. This setup will be done later in this lab.

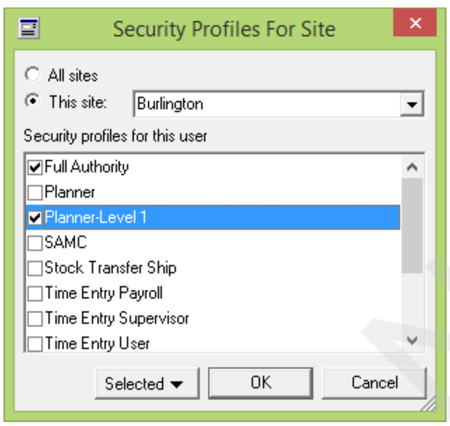
Define the security authorization

In this section of the lab you are going to define the security profile(s) that apply to the employee and the applicable site(s).

15. Click the **Add** button.
16. Click the **This site** radio button and select **Burlington** from the drop-down list.
17. Select the **Planner Level 1** check box relating to the security profile that you created in Lab 2.

NOTE: For purposes of this course, you are also going to link your employee record to the **Full Authority** security profile so that you will be certain of having access to all objects and functions. When multiple profiles are selected, the individual's access to a specific object of function is based on the profile that provides the highest level of authorization

18. Select the **Full Authority** check box.

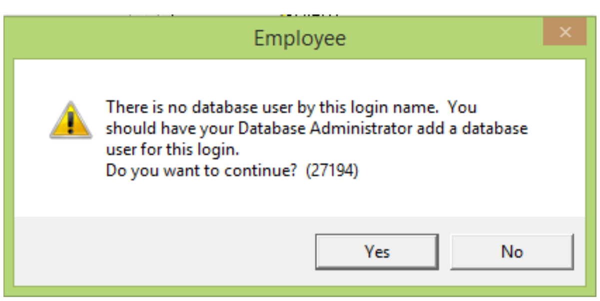


19. Click **OK**.

Define trades and roles

In this section of the lab you are going to link two trades with your profile. One of the trades will be set as the primary trade. You will also assign various roles to your profile so that your name will display in related drop-down lists.

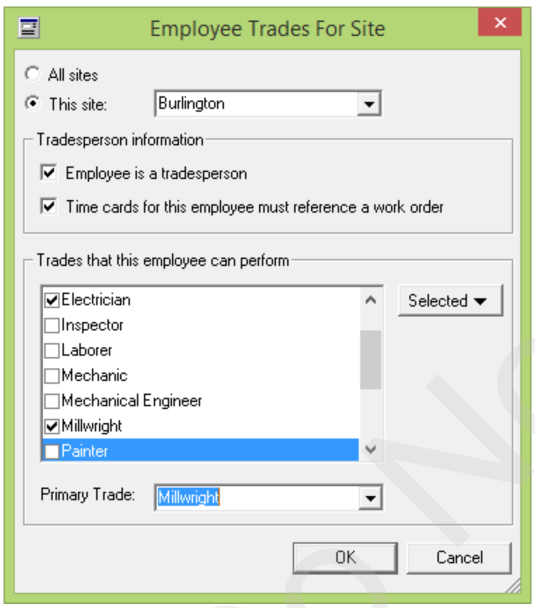
20. Click the **Roles** tab.



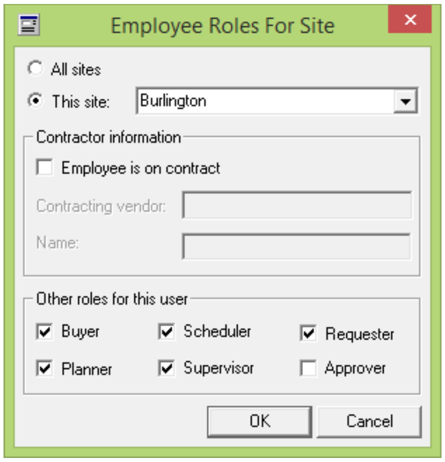
NOTE: A message displays indicating that your name still needs to be set up in the database by the Database Administrator. This message is an official confirmation of the yellow box that displayed in the Login name field. This setup is required before you can use this login ID. This setup activity will be completed later in this lab.

21. Click **Yes** to continue.
22. Select **Monday** from the **Work week starts on** field drop-down list.
23. Click the **Add** button relating to the **Trades for this user** section.
24. Select the **Employee is a tradesperson** check box.
25. Select the **Time cards for this employee must reference a work order** check box.
26. Select the **Electrician** and **Millwright** trade check boxes.
27. Select the **Millwright** value in the **Primary Trade** field drop-down list.

NOTE: When multiple trades are added, the first one selected always defaults as the Primary trade but this can be changed as was the case in step 27. The employee is able to enter time cards for either trade but the primary trade is the default value on a time card.

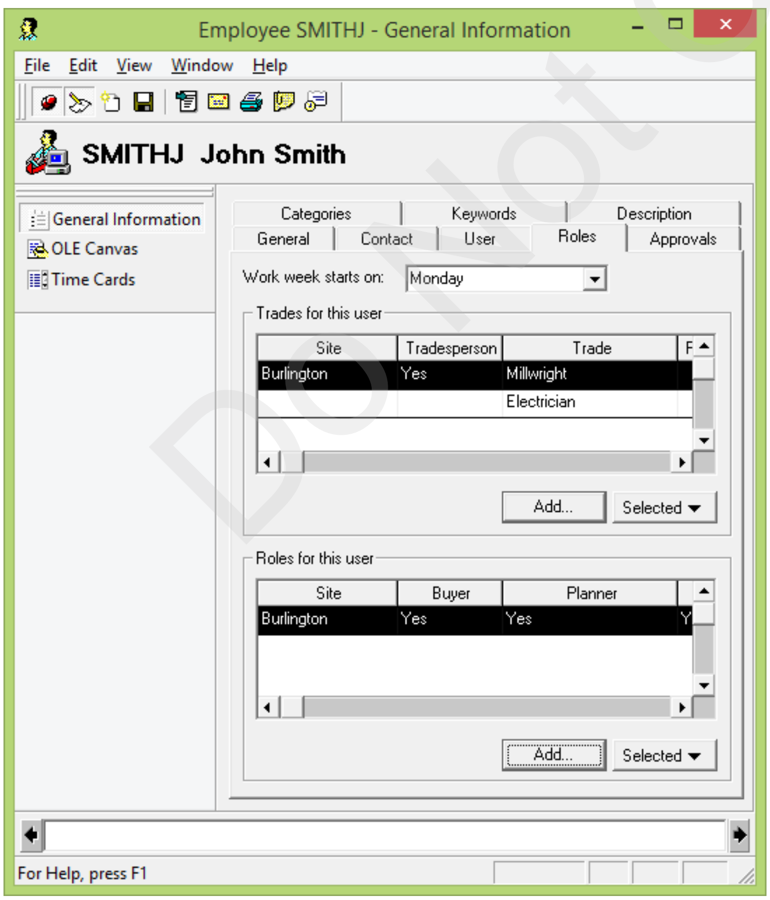


28. Click **OK**.
29. Click the **Add** button in the **Roles for this user** section.
30. Click the **This site** radio button and select **Burlington** from the drop-down list.
31. Select all check boxes in the **Other roles for this user** section except for the **Approver** check box.



NOTE: With the exception of the Approver option, the other five check boxes link this employee with the matching drop-down list. For example, if the planner check box is selected, this employee's name displays in a Planner drop-down list for the applicable site. The Approver option enables the employee to be available for the electronic routing of documents requiring approval. Selection of this check box also enables the fields on the Approval tab of the employee record. Approval routing is not being used in this course.

32. Click the **OK** button.
33. Click the **Save** icon in the toolbar.



34. Exit the employee record.

You are now going to logout of EAM so that you can set up and then test the trusted connection authentication.

35. Right click on the **EAM Session Manager** icon in the status bar of the virtual machine desktop.
36. Select the **Close all objects and log off** menu option.

Set up an employee in the SQL server database

In this section of the lab you are going to set the employee up in the SQL server database so that the SQL server authentication option can be used for logging into EAM.

NOTE: This activity is not normally carried out by the EAM System Administrator nor is it normally a manual process. Normally the LDAP approach is used for managing connections and authentications. This activity is being performed in this lab to help you understand that there is more to being able to use EAM than the creation of an employee record with a defined security profile.

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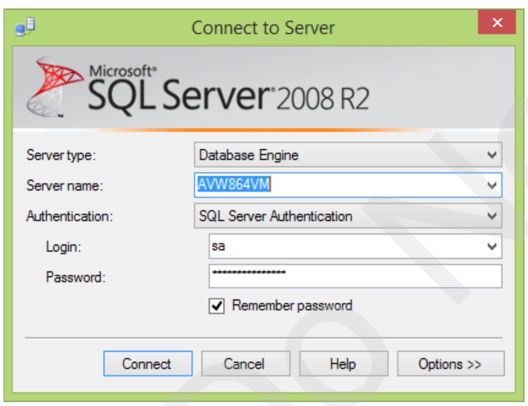
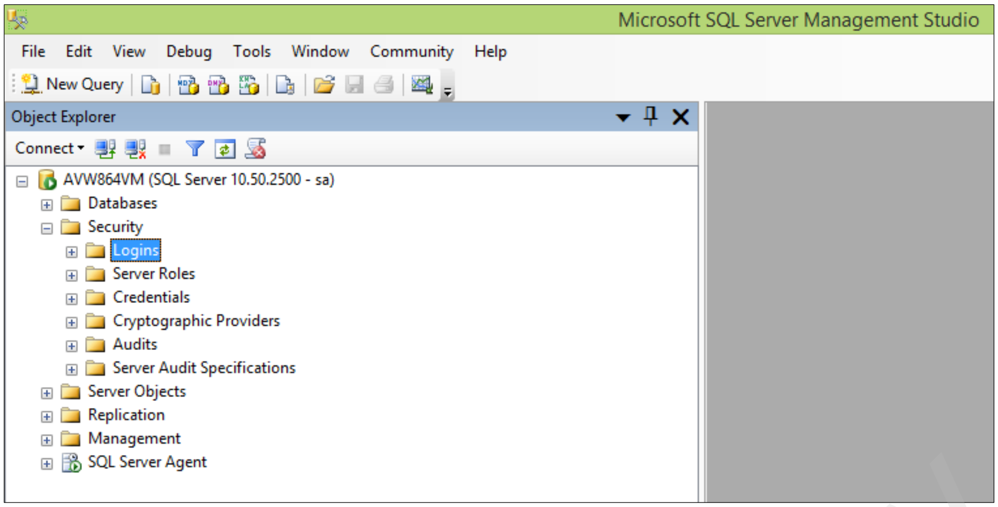
37. Click the **Start** button and select the **SQL Server Management Studio** tile.

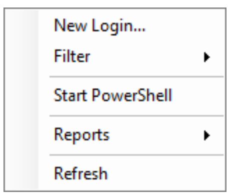
NOTE: If your desktop does not have tiles, the function can be located through the **All Programs | Microsoft SQL Server | SQL Server Management Studio** path.



38. Click the **Connect** button.
39. Expand the **Security** tree option in the Object Explorer section.



40. Right-click on the **Logins** folder.
41. Select the **New Login** option.



42. Type your *<last name first initial>* in the **Login name** field.

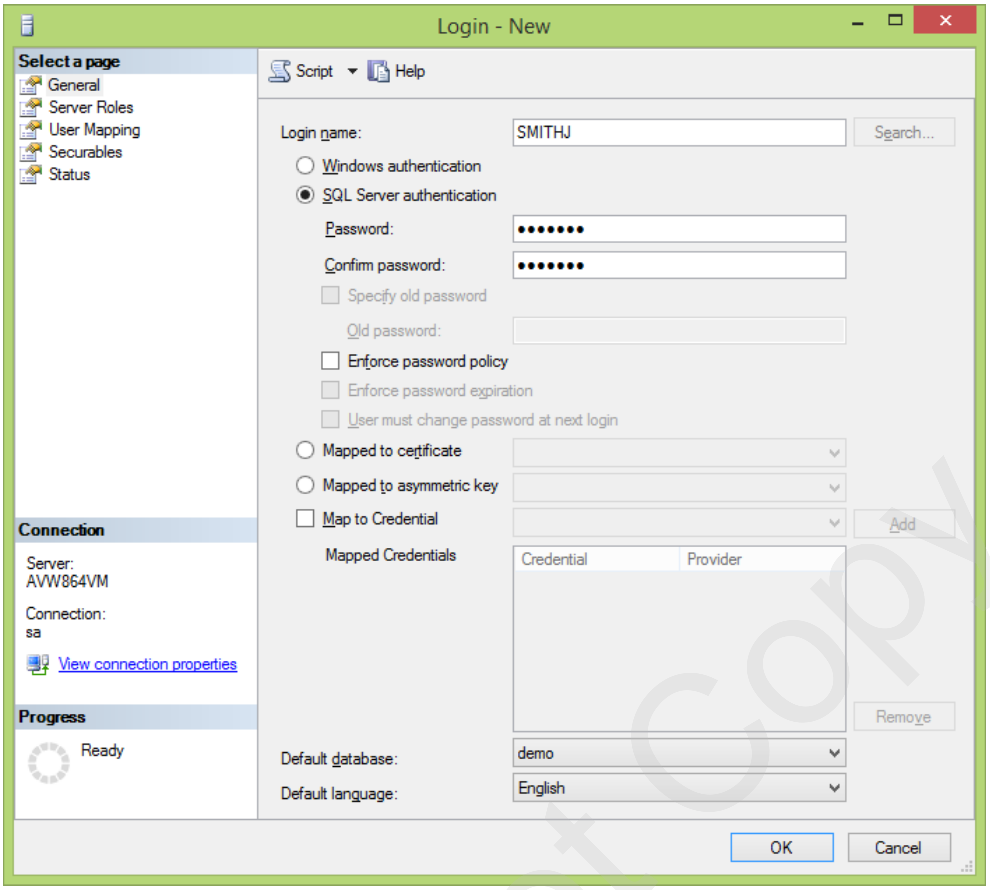
NOTE: The entry in this field must match the entry made in the **Login name** field on the EAM employee record. (Step 13)

---

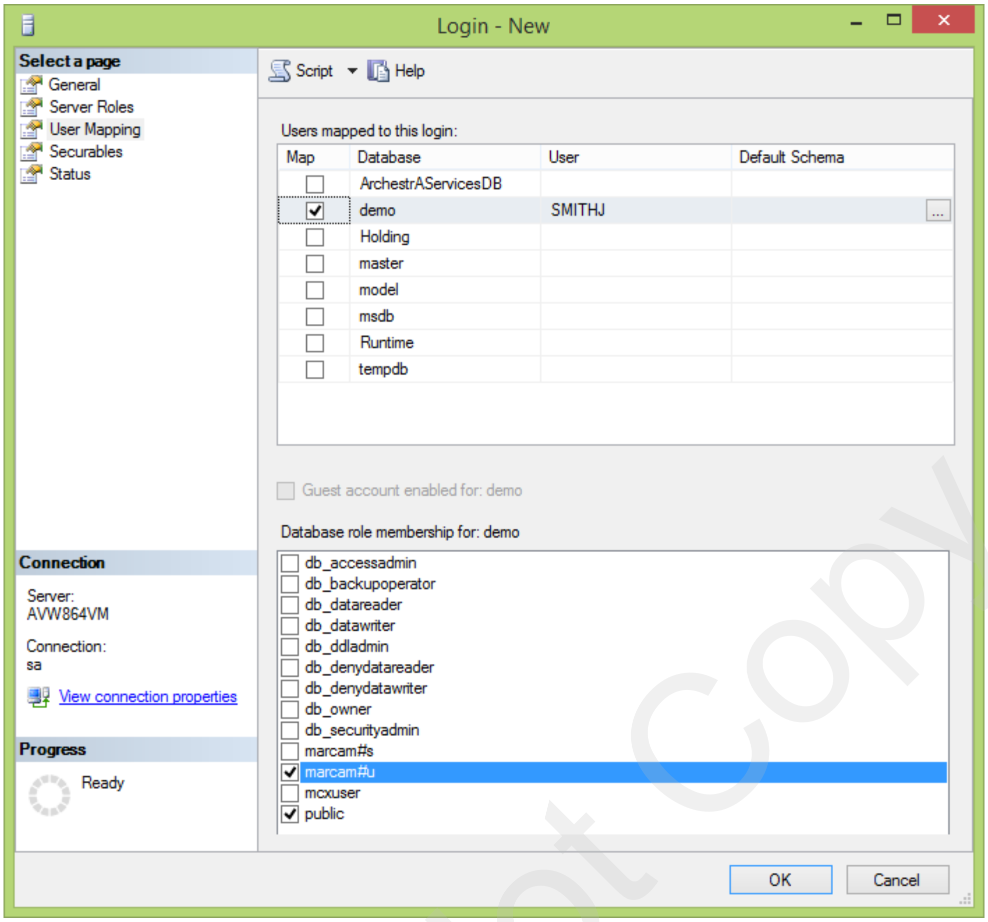
43. Select the **SQL Server Authentication** radio button.
44. Type **avantis** as the password in the **Password** field.
45. Type **avantis** in the **Confirm password** field.
46. Uncheck the **Enforce password policy** check box.

The other two check boxes are automatically de-selected and disabled.

47. Select **demo** from the **Default database** drop-down list.
48. Select **English** from the **Default language** drop-down list.



49. Select the **User Mapping** page.
50. Click the **Demo** database check box.
51. Select the **marcam#u** check box.
52. Leave the **public** option checked.



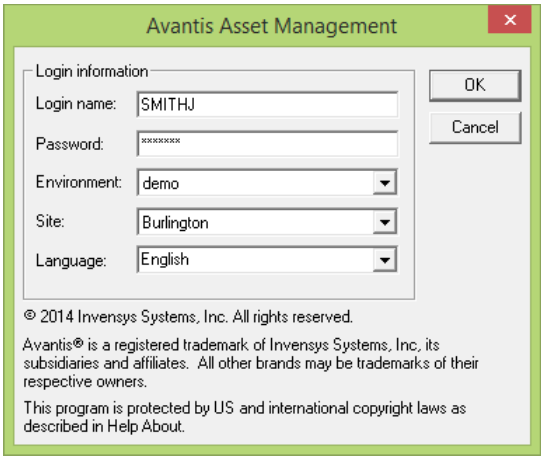
53. Click **OK**.
54. Exit from the SQL Management Studio function.

You should now be able to log into EAM using this login ID and password.

Verify the trusted connection authentication

In this section of the lab you are going to verify that you can log into EAM using the new database user account.

55. Launch EAM from the virtual desktop.
56. Type the **Login ID** of the employee record you created in step 13 and step 42.
57. Type your **Password** as entered in step 44.



58. Click **OK**.

The Classic EAM Administrator desktop displays.

You have now completed the requirements of this lab.

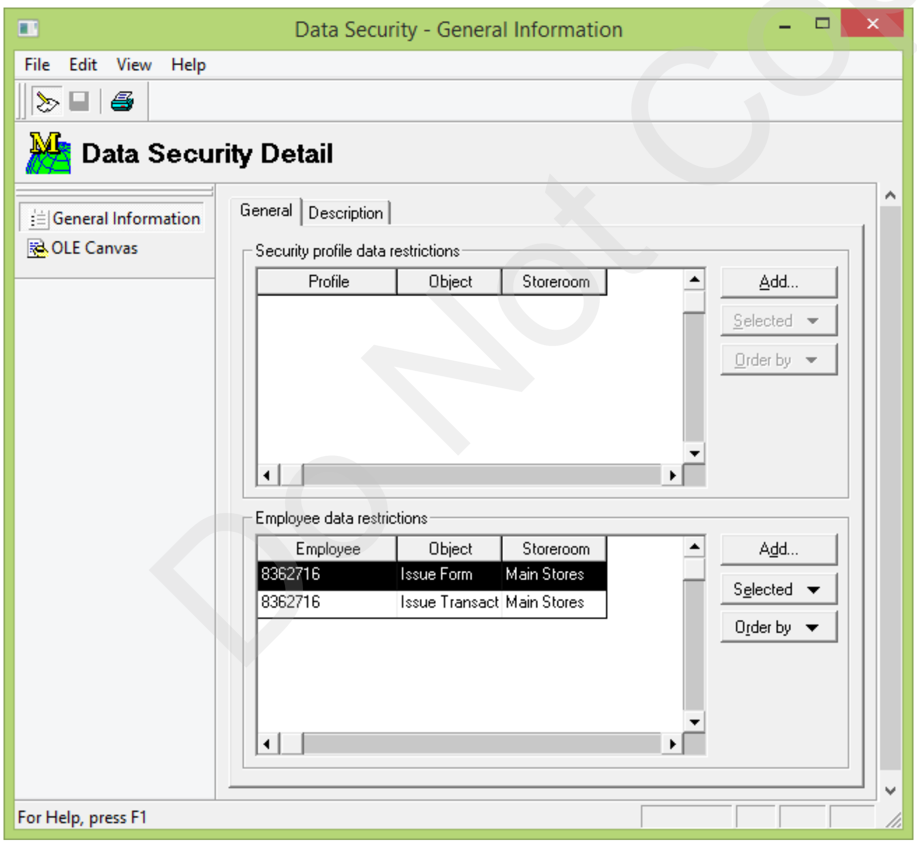
Section 4 – Data Security Function

Section Objectives

- Define the purpose, use and configuration of the Data Security function
- Define the options for selecting individuals covered by the data security function
- Define the options for selecting the security restrictions in the data security function

Introduction

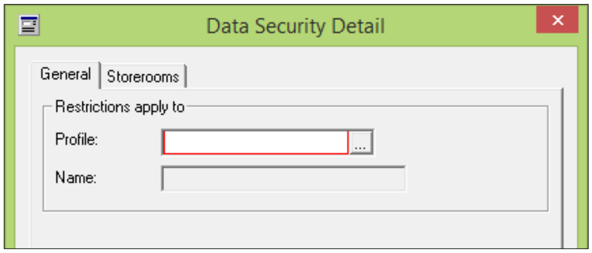
The Data Security function provides you with the ability to add an additional level of security for individuals or user groups (based on a security profile) who are authorized to use various inventory-related transactional forms. The Data Security function allows you to grant or prohibit this ability on a storeroom by storeroom basis.



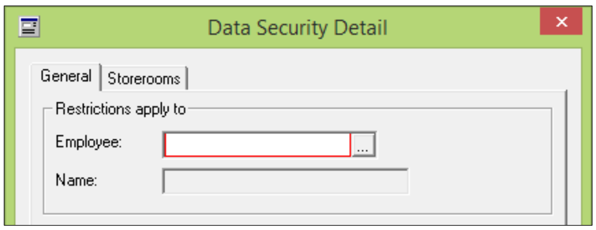
Restricted users

Restrictions can be assigned:

- To all employees linked to a specified security profile



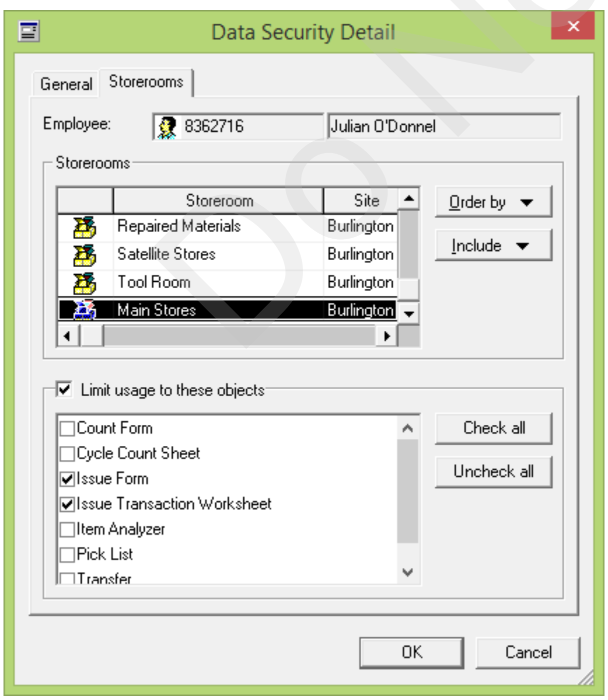
- To individual employees



Data restrictions

Data restrictions are assigned:

- By storeroom, and
- By inventory transactional object



Module 4 – Desktops

Section 1 – Desktop Object

Lab 4 – Creating a desktop

Module Objectives

- Define the purpose, usage and structure of the desktop object
- Identify the procedures for linking different types of objects to a desktop
- Create a desktop and define the desktop folders
- Link different types of objects to the desktop
- Link the desktop to a security profile

Section 1 – Desktop Object

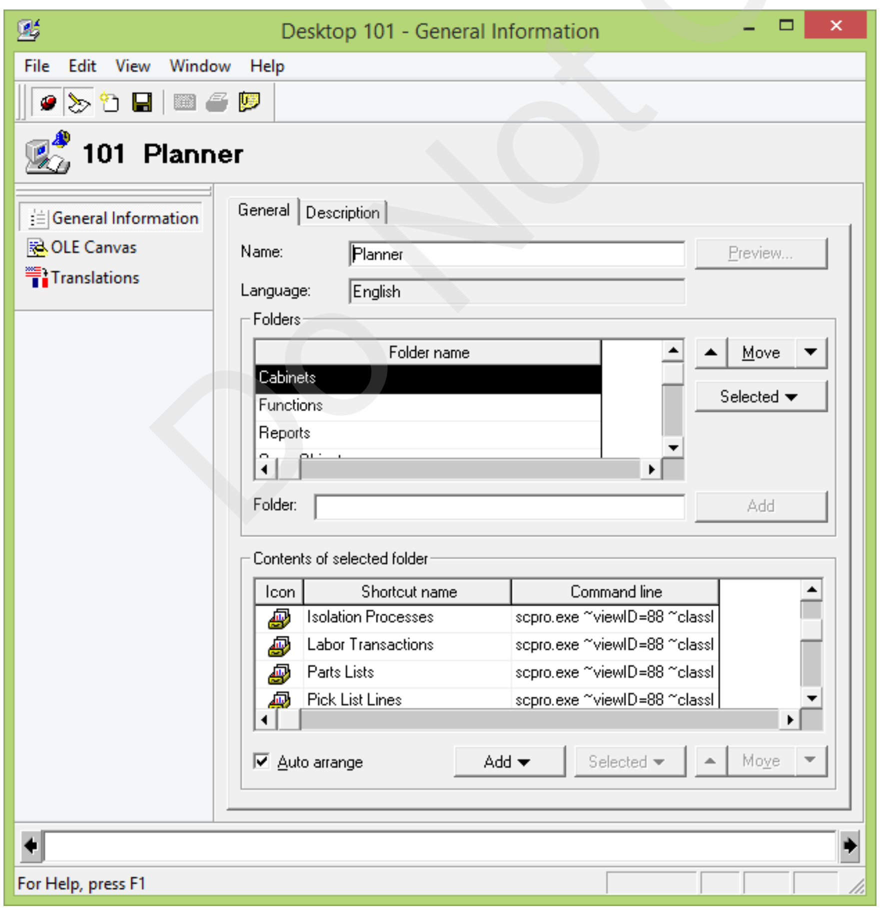
Section Objectives

- Define the purpose, usage and structure of the desktop object
- Identify the procedures for linking different types of objects to a desktop

Desktop object

The Desktop object is a database-scoped object that defines the objects or functions available to an individual user or to a group of users. EAM is delivered with a series of role-based desktops but custom desktops can be created to reflect client-specific requirements. Desktop shortcuts typically represent different EAM objects or functions but can include external links such as Word, Excel or pdf documents or other non-EAM functions.

Each desktop requires at least one folder in which the objects are placed. Multiple folders are typically used when there are a significant number of functions or objects available to the desktop user. This allows for the organization of the icons onto different folders by type or purpose.



A desktop must be linked to at least one security profile for it to be available for use.

If any users are using a Smart Client login, the desktop or desktop available to the individual based on their assigned security profiles are available through the Workspace.

The following table identifies the different types of links that can be made through the **Add** button.

Add button menu option	Purpose
By security profile	When a specific security profile is selected under this menu option, templates are added for all objects for which the security profile indicates that the user has editing authorization. There is an option to add cabinets and / or the open object function for any object that the security profile allows read only or editing authorization.
Templates	This menu option allows for the selection of EAM delivered and / or custom templates for specific objects. Note that if a template is linked to the desktop but the user's security profile does not allow for editing / creating ability, the template will not display.
Other	This menu option allows for the linking to various worksheets, wizards, as well as some specialized functions such as the data security function, the exchange rate object, the PM triggering function and the Chart of Accounts.
Value lists	This menu option allows for the linking to any of the EAM-delivered or user-defined value lists.
Cabinets	This menu option allows for the linking to any EAM-delivered or custom cabinets.
Reports	This menu option allows for the linking to any EAM-delivered or custom-developed KPI reports.
Utilities	This menu option allows for the linking to the Maintenance Transaction Processor, the Pick List Processor and the Invoice Processor. It also enables linking to various functions that might be used in conjunction with the Approvals module.
Documents	This menu option allows for the linking to various technical reference manuals provided with EAM if the manuals were installed as recommended.
Custom	This menu option allows for the linking to other documents or applications available on the network.

LAB 4 – Creating a Desktop

Introduction

The Enterprise Asset Management desktop provides the shortcuts that the user needs to perform their functional role. Desktops are completely customizable by the EAM System Administrator and are linked to one or more security profiles.

Objective

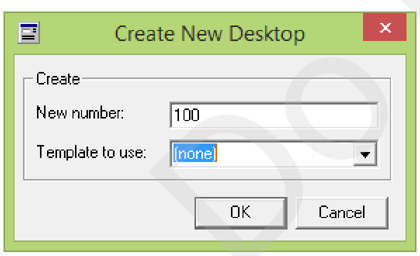
On completion of this lab you will be able to:

- Create a desktop and define the desktop tabs
- Link cabinets to the desktop
- Link templates to the desktop
- Link a special function and a value list to the desktop
- Link the open object function to the desktop
- Link the desktop to two security profiles

Create a desktop and define the desktop folders

In this section of the lab you are going to create the desktop shell and set up the folders. Your desktop will partially reflect the requirements for the Planner-1 security profile that you created in Lab 2 for an entry level planner. If time permits, you can use the guidelines in this lab to complete the setup to match the Planner-1 security profile.

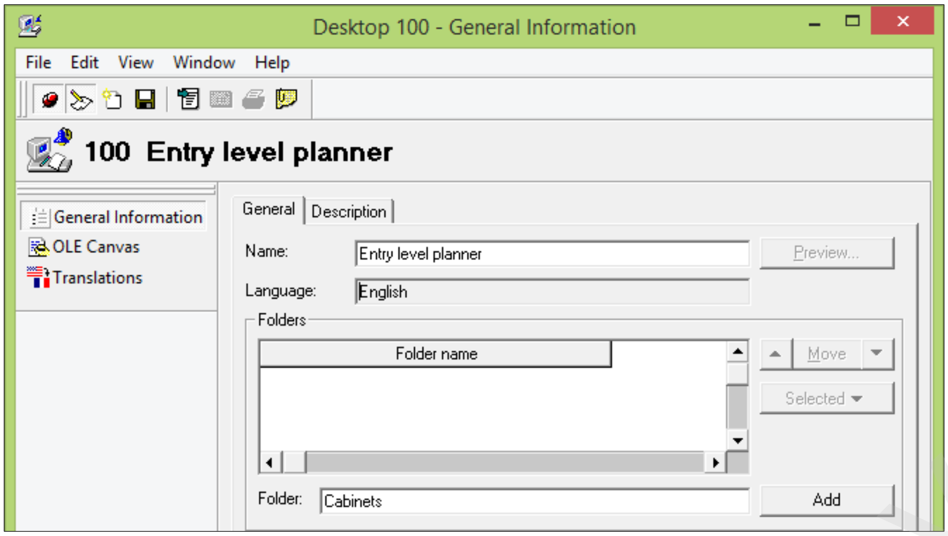
1. Select the **Templates** tab of the EAM Administrator desktop.
2. Launch the **Desktop Template**.
3. Type **100** in the **New number** field.



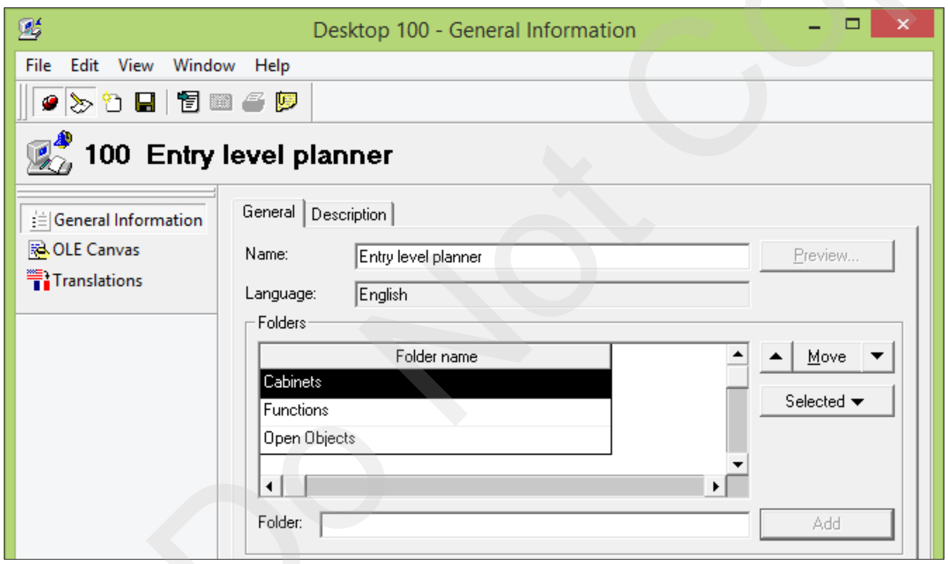
4. Click **OK**.
5. Type **Entry level planner** in the **Name** field.
6. Press the **Tab** key to update the banner.

You are now going to create the desktop tabs. In this instance you are going to create only three tabs: Cabinets, Functions, Open objects.

7. Type **Cabinets** in the **Folder** field.



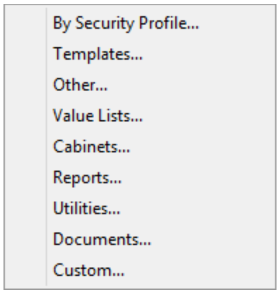
8. Click the **Add** button to the right of the **Folder** field.
9. Repeat steps 7 and 8 to create a **Functions** folder and an **Open Objects** folder.



Link cabinets to the desktop

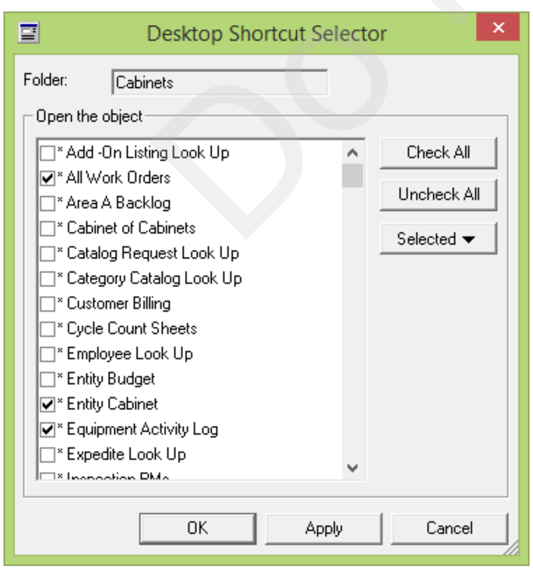
In this section of the lab you are going to create the short cuts on the desktop for selected cabinets applicable to the entry level planner role. You will also re-arrange the order of a couple of cabinets and change the displayed name of one of the cabinets.

10. Click the **Add** button near the bottom of the window.
11. Select the **Cabinets** option.

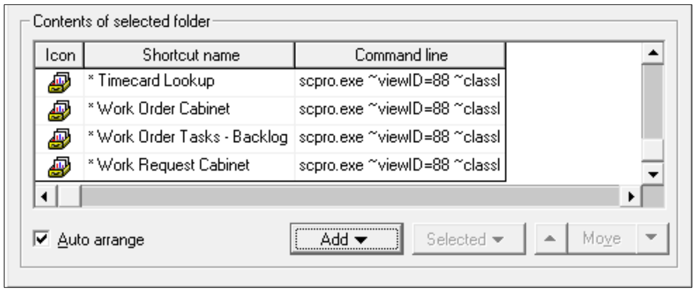


NOTE: All cabinets in the database display in this window. This includes EAM delivered cabinets that cannot be modified (generally located near the bottom of the list) as well as EAM-delivered copies of these cabinets that can be modified (prefaced with an *). The list also includes any custom cabinets developed by authorized users in the client organization. Organizations typically have a cabinet naming format that eases the identification of custom cabinets. Any of the cabinets in the list can be added to a custom desktop.

12. Select the check boxes for a selection of cabinets such as:
    - *All Work Orders
    - *Entity Cabinet
    - *Equipment Activity Log
    - *Inventory Look-up
    - *PM Job Cabinet
    - *Procedures / Safety Look-up
    - *Purchase Item Catalog
    - *Standard Activity List
    - *Statistic Readings
    - *Time Card Lookup
    - *Work Order Cabinet
    - *Work Order Tasks – Backlog
    - *Work Request Cabinet



13. Click **OK** to add the cabinets to the desktop.



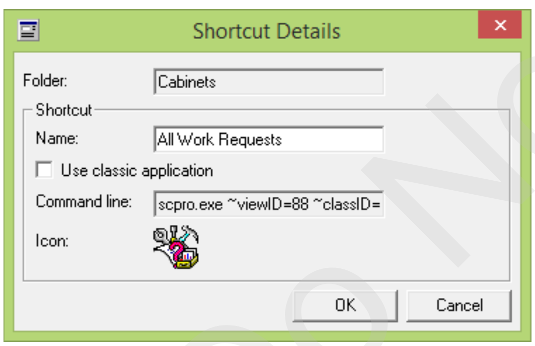
You are now going to adjust the order of a couple of cabinets.

14. De-select the **Auto arrange** check box.
15. Select the ***Work Request Cabinet** and click the up arrow until the cabinet moves to the top of the cabinet listing above the *All Work Orders cabinet.
16. Click the ***Work Order Tasks – Backlog** cabinet and click the up arrow until the cabinet is the second cabinet in the list.

You are now going to change the name of a cabinet as it is to display on the desktop.

17. Double-click on the ***Work Request Cabinet**.
18. Change the content of the **Name** field to **All Work Requests**.

NOTE: When the cabinet name is changed in the setup of the desktop, it is only the displayed name that changes. Once the cabinet is launched, the actual cabinet name displays. Changes to the official cabinet name can be done in the cabinet by a user authorized to edit cabinets.



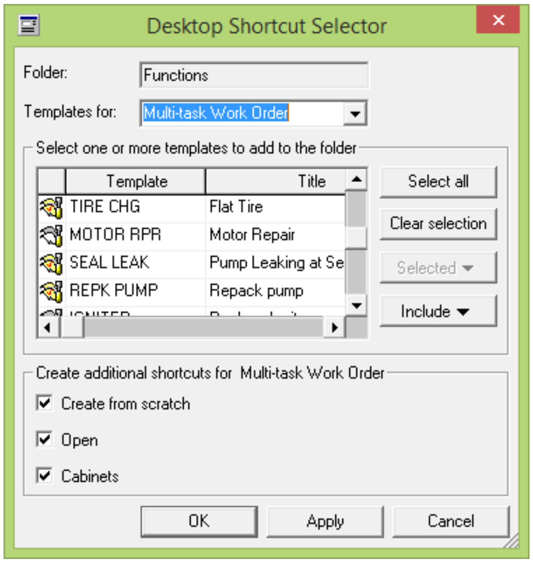
NOTE: Each shortcut for cabinets or templates includes the check box **Use classic application**. If this check box is selected, the classic version of the cabinet or object launches when a user selects the icon from the desktop. All cabinets can be displayed in either classic or Smart Client mode. If an object does not have a Smart Client version, the check box is automatically selected and the field is disabled. The setup of a database to use either the classic or the Smart Client version is normally done through the running of a script that in essence selects or deselects this check box. When the manual approach is used, the organization can have the users of one desktop using the classic cabinet format and the users of a different desktop using the Smart Client format. For purposes of this lab, either approach can be used.

19. Click **OK**.

Link templates to the desktop

In this section of the lab you are going to link some templates to the custom desktop.

20. Select the **Functions** folder.
21. Click the **Add** button at the bottom of the dialog box and select the **Templates** option.
22. Select the **Multi-task work order** value from the **Templates for** drop-down list.



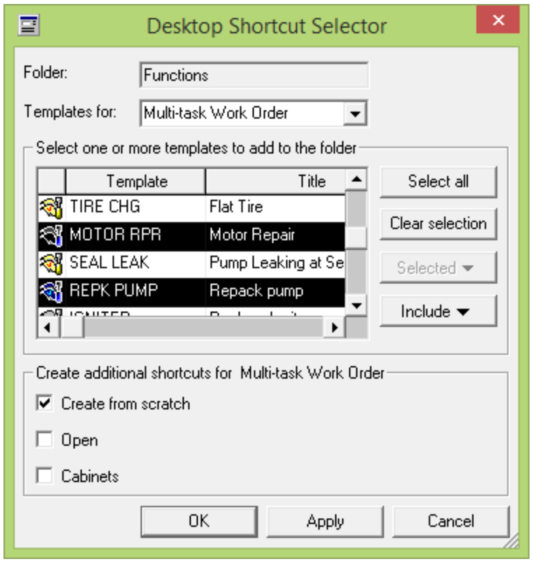
NOTE: When a specific object is selected, a list of all custom templates associated with the object also displays. If there is a desire to include any of these templates on the desktop, they need to be selected. These can be multi-selected if applicable. The EAM delivered template for the object does not display. Therefore, if the **Select one or more templates to add to the folder** section is empty, there are no custom templates – only the EAM-delivered template. The selection of the EAM-delivered template is controlled by the **Create from scratch** check box. If that option is selected, the EAM-delivered template is added to the desktop. If it is not selected, it isn't added.

You are now going to add the EAM-delivered template and a couple of custom multi-task work order templates to the desktop.

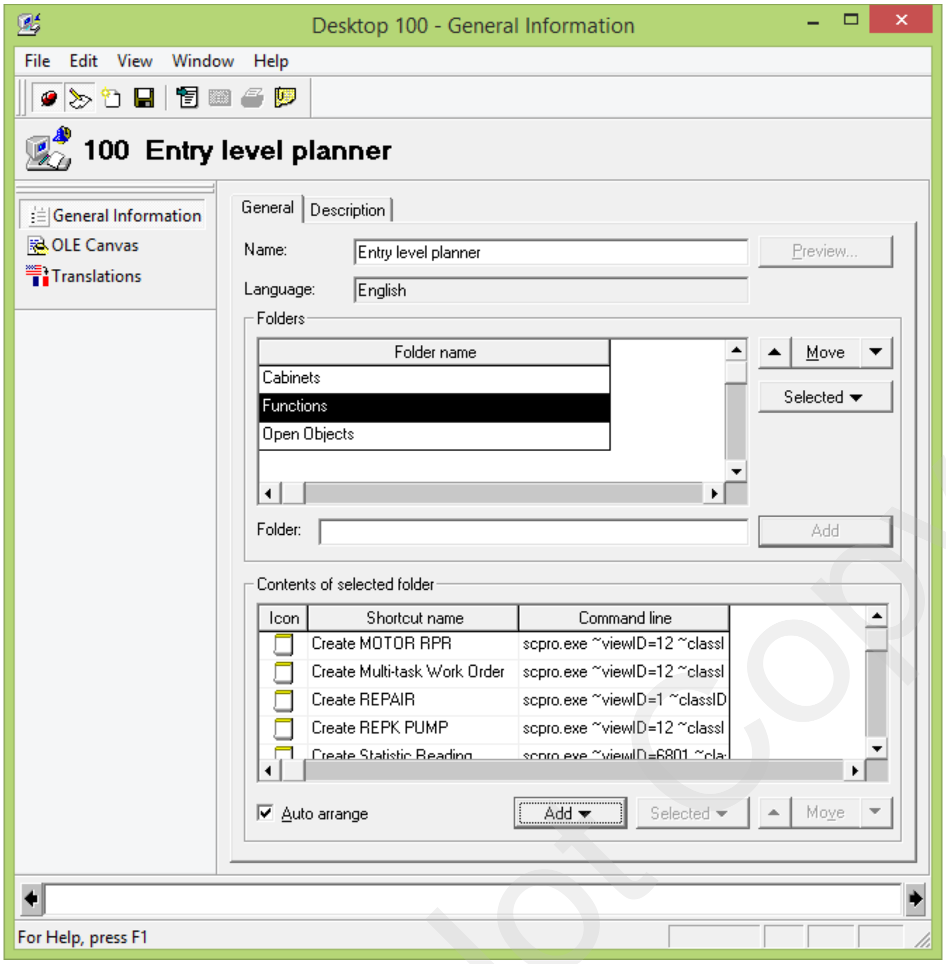
23. Hold the **Ctrl** key down and select a couple of templates such as **MOTOR RPR** and **REPK PUMP**.

NOTE: The **Open** check box in the lower area of the Desktop Shortcut Selector dialog box determines whether or not the **Open objects** function for the selected object is added to the desktop. In this lab we are going to place this type of function on a separate folder. Similarly, the **Cabinets** check box determines whether or not all cabinets based on this object get linked to this folder. Normally this check box should be deselected with selected cabinets using the function covered earlier n this lab.

24. Keep the **Create from scratch** check box selected.
25. De-select the **Open** check box.
26. De-select the **Cabinets** check box.



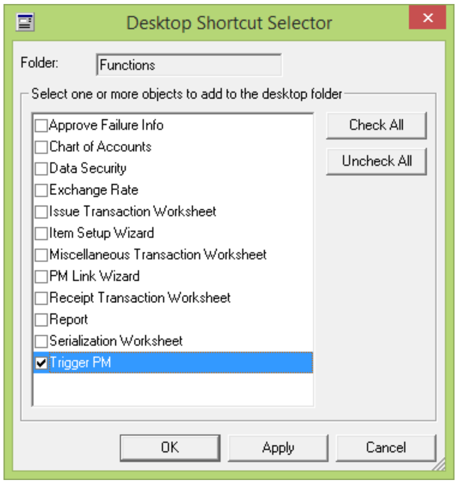
27. Click **OK**.
28. Use steps 21 through 27 as a guideline and add the generic EAM-delivered templates for the following objects:
    - Time card
    - Statistic reading
    - Work request (Include the REPAIR customer template)
29. Click **OK**.



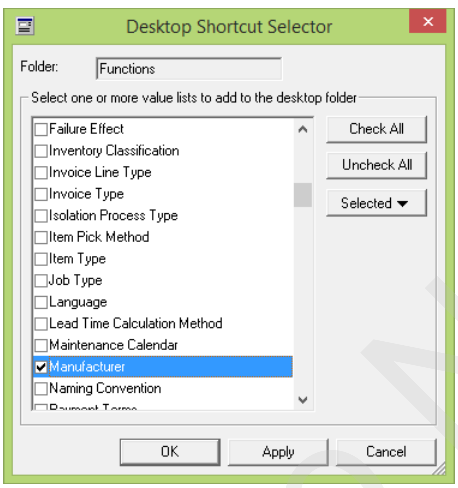
Link a special function and a value list to the desktop

In this section of the lab you are going to link the PM triggering function and the Manufacturer value list to the custom desktop. These will be added to the **Functions** tab.

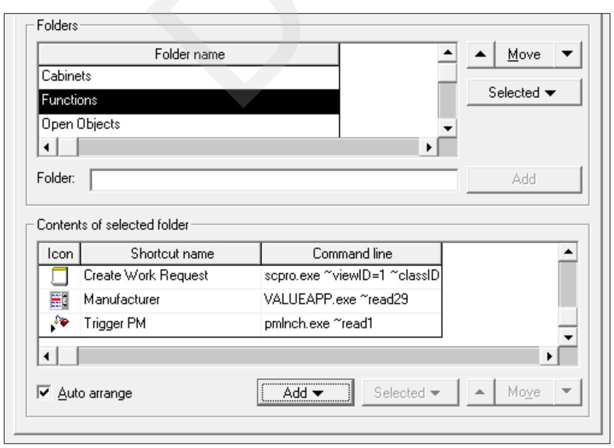
30. Select the **Functions** folder.
31. Click the **Add** button at the bottom of the dialog box.
32. Select the **Other** option.
33. Select the **Trigger PM** check box.



34. Click **OK.**
35. Select the **Value lists** option.
36. Select the **Manufacturer** check box.



37. Click **OK**.

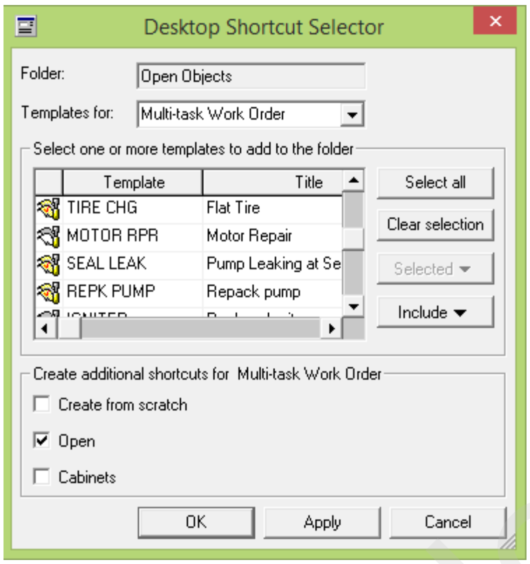


Both the value list and the Trigger PM utility display in the folder contents section.

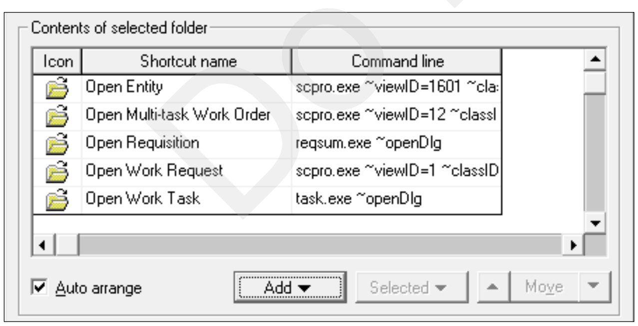
Link open objects to the desktop

In this section of the lab you are going to add the open objects function for the same objects to match the selected templates. This function is only required once for each type of object regardless of the number of templates that were previously selected.

38. Select the **Open Objects** folder.
39. Click the **Add** button at the bottom of the dialog box and select the **Templates** option.
40. Select the **Multi-task work order** value from the **Templates for** drop-down list.
41. De-select the **Create from scratch** check box.
42. De-select the **Cabinets** check box.

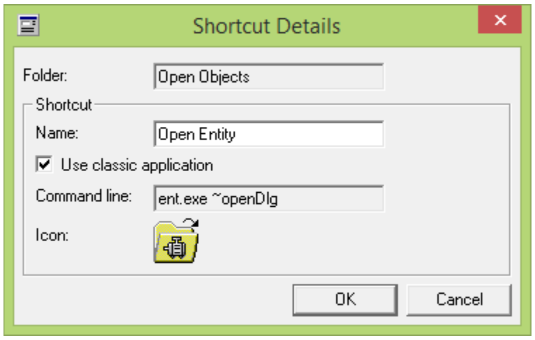


43. Click **OK**.
44. Repeat steps 39 through 43 to add the Open objects icon for the **Work task, Entity, Work Request** and **Requisition** objects.

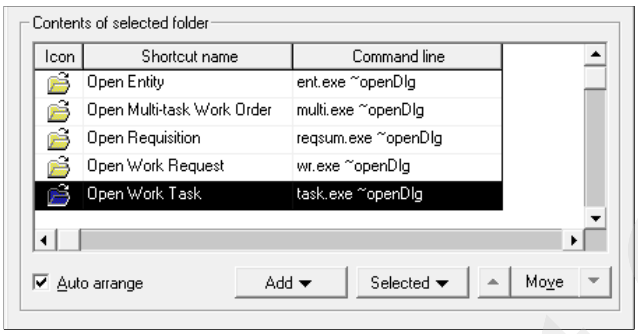


You are now going to set each of the open object functions to launch the classic version of the object.

45. Double-click on the first listed open object.
46. Select the **Use classic application** check box.



47. Click **OK**.
48. Select the next listed item in the list and repeat steps 45 through 47 until this setting has been applied to all listed functions.



49. Click the **Save** icon in the toolbar to save the desktop.

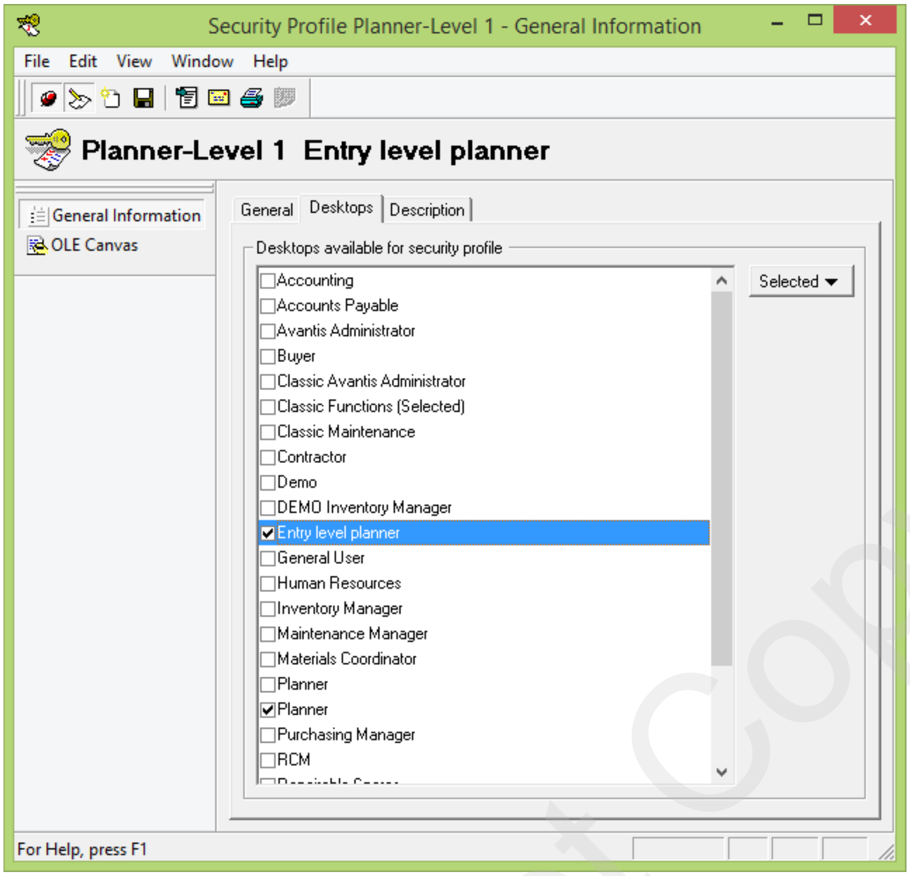
NOTE: Before exiting from a custom desktop, you can see its visual image to see if there are any changes that you would like to make. For example, you might want to change the displayed shortcut name or the displayed order. To view the desktop, take it out of edit mode then click the **Preview** button. You will not be able to test the connections as this is read only.

50. Exit the custom desktop.
51. Close the **Desktops** cabinet.

Link the desktop to two security profiles

In this final section of the lab you are going to link your desktop to two security profiles so that it will be available to any user who is linked to either of those profiles. This is done through the security profiles.

52. Launch the **Security Profiles** cabinet.
53. Type **planner** in the **Security profile contains** field.
54. Click **OK**.
55. Double-click on the security profile for the entry level planner that you created in Lab 2.
56. Select the **Allow editing** icon in the toolbar.
57. Select the **Desktops** tab.
58. Select the **Entry level planner** desktop.



59. Save the security profile.
60. Exit the security profile.
61. Click the **Filter** button in the cabinet view.
62. Type **full** in the **Security profile contains** filter.
63. Click **OK**.
64. Double-click on the **Full Authority** profile.
65. Repeat steps 56 through 61 to link the **Entry level planner** desktop to the **Full authority** security profile.
66. Click the **Save** icon in the toolbar.
67. Exit the security profile.
68. Exit the cabinet.

You have now completed the requirements of this lab.

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Module 5 – Value Lists

Section 1 – Foundational Value Lists

Section 2 – Functional Value Lists

Section 3 – User-defined Value Lists

Module Objectives

- Define the purpose and general types of value lists
- Define the configuration of key foundational value lists
- Identify the functional value lists by applicable module
- Define the purpose, usage and configuration of user-defined value lists

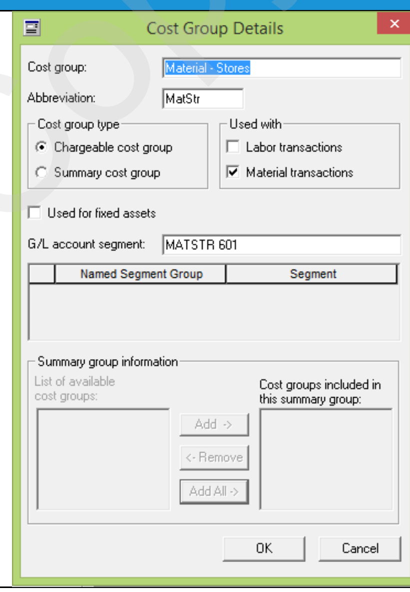
Section 1 – Foundational Value Lists

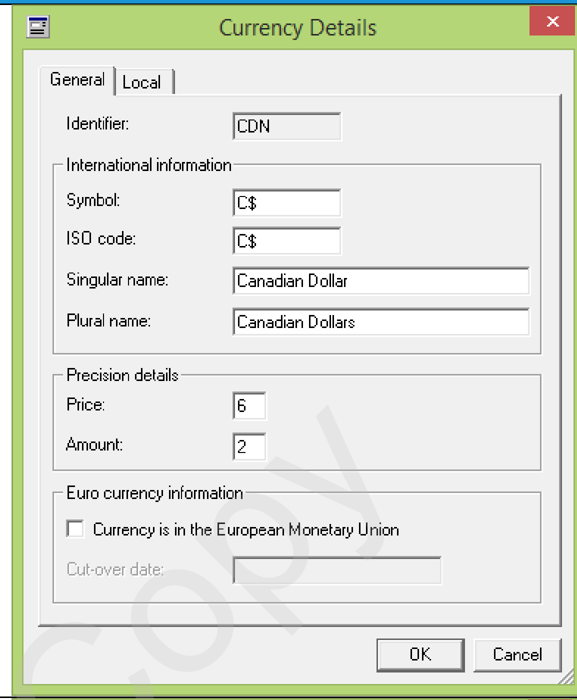
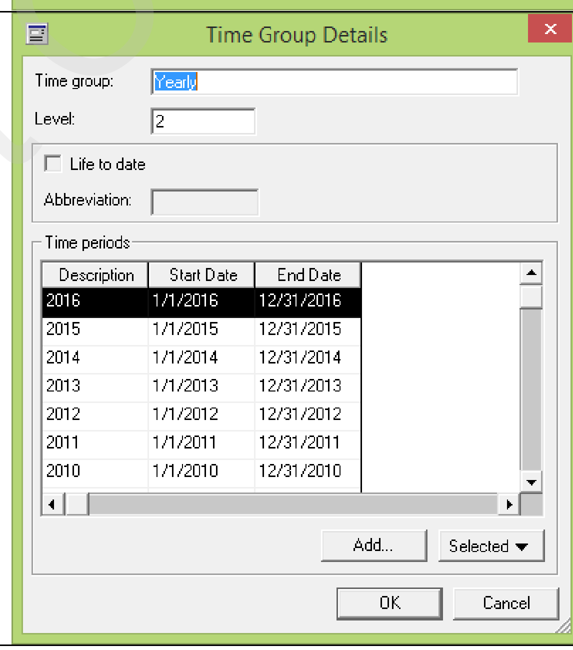
Section Objectives

- Define the purpose and general types of value lists
- Define the configuration of key foundational value lists

The following table identifies the value lists that can be considered as being a foundational value list. Although they are not identified anywhere as such, these value lists are required by the EAM application regardless of the module(s) being used.

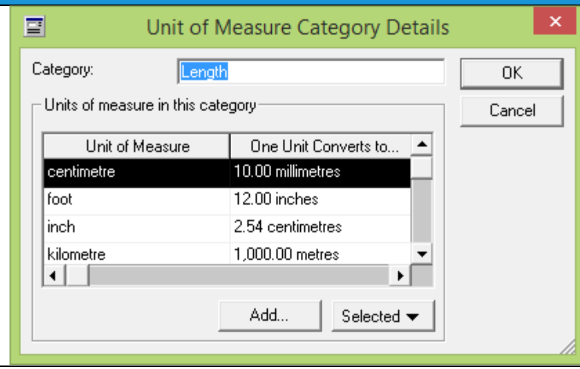
<table>
<tr><th>Value list name</th><th>General purpose</th><th>Sample value</th></tr>
<tr><td>Cost group</td><td>Defines the chargeable and summary cost groups used for tracking costs on work orders and entities. Chargeable cost groups include a G/L account segment that reflects the tracking of the chargeable cost in the G/L accounting system.

Default cost groups are defined on item records, purchase catalog items and on trades.</td><td>
</td></tr>
</table>

Value list name	General purpose	Sample value
Currency	Defines the currencies that can be used in EAM along with the currency symbol (must be unique) and the number of decimal places displayed for an individual price and for the extended value.	
Maintenance calendar	Defines the time groups and the start and end date for each group in which costs and statistics will be tracked and summarized on entities. The time groups are normally structured in a Life-to-date, Year and Month although others options are possible.	

<table>
<tr><th>Value list name</th><th>General purpose</th><th>Sample value</th></tr>
<tr><td>Unit of measure</td><td>Defines the unit of measurement ‘families’ and the values within each family that are used throughout EAM.

Each value within a family (usually the smallest value) is defined as the base value and all other values must be defined relative to the base or another value.

The database comes populated with some common default families.</td><td>
</td></tr>
</table>

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Section 2 – Functional Value Lists

Section Objectives

- Identify the functional value lists by applicable module

The value lists referred here as functional-value lists are used in one or more of the four major functions – Foundation, Maintenance, Inventory, Procurement – in the core EAM product. The following table identifies these value lists and the module or modules in which they are encountered.

Value list	Foundation	Maintenance	Inventory	Procurement
ABC Usage			X	
Action taken		X		
Activity result		X		
Activity type		X		
Business unit				X
Common symptoms		X		
Conditions				X
Contact type				X
Contract set-up rules				X
Contract type				X
Country				X
Crew		X		
Criticality		X		
Custom extension		X	X	X
Cycle count frequency			X	
Cycle count priority			X	
Deliver to location			X	X
Department	X			
Device type		X		
Entity classification		X		
Entity status		X		
Entity type		X		
Failure effect		X		
Inventory classification			X	
Invoice line type				X
Invoice type				X
Item pick method			X	

Value list	Foundation	Maintenance	Inventory	Procurement
Item type			X	X
Job type		X		
Language	X			X
Lead time calculation method			X	
Manufacturer		X		X
Naming convention	X			
Payment terms				X
Performance indicator				X
Price tolerances				X
Priority		X		
Purchase order type				X
Reason canceled		X	X	X
Reason for delay		X		
Reason for downtime		X		
Reason for failure		X		
Reason for lost time		X		
Reason for transaction		X	X	
Reason held		X	X	X
Reason not performed		X		
Reason rejected		X	X	X
Reference classification			X	
Replenishment group			X	
Replenishment message			X	
Request for quotation type				X
Requisition priority		X	X	X
Requisition type		X	X	X
Root cause		X		
Schedule type		X		
Schedule priority		X		
Service level target			X	
Shift		X		
Shutdown period		X		
Sourcing list		X		
Standard price break				X
Statistics		X		
Storeroom			X	
Supplementary document type			X	
Taxes				X

Value list	Foundation	Maintenance	Inventory	Procurement
Unit type				X
Vendor resource type				X
Vendor type				X
Work classification				X
Work region				X
Work type		X		

The purpose and configuration of the key functional value lists are covered during the detailed object discussions in one or more of the following courses:

- Enterprise Asset Management Maintenance
- Enterprise Asset Management Inventory
- Enterprise Asset Management Procurement

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Section 3 – User-defined Value Lists

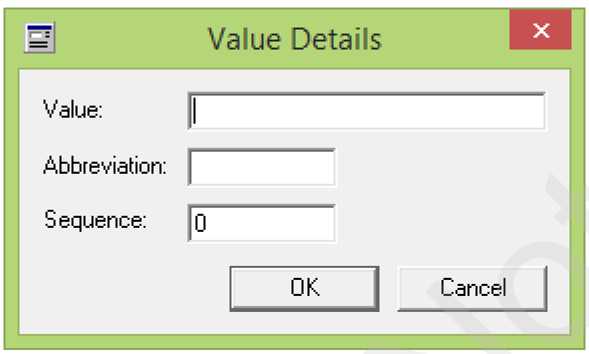
Section Objectives

- Define the purpose, usage and configuration of user-defined value lists

User-defined value lists

EAM includes 60 user-defined value lists that can be used when there is a need for the add-on field to reflect a specific list of values. These lists require basic configuration:

- Value
- Abbreviation (optional)
- Sequence (number greater than 0 required)



While appropriate values can be added to this value lists through the EAM Administrators desktop, these value lists are only used through an add-on linked to the applicable object record.

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Module 6 – Categories and Add-Ons

Section 1 – Categories

Lab 5 – Creating a Category

Section 2 – Add-Ons

Lab 6 – Creating an Add-On

Module Objectives

- Define the purpose of the category function
- Define the characteristics of categories
- Create a category
- Define the purpose and usage of the add-on function
- Define the characteristics of an add-on
- Identify the login ID required to create or modify an add-on
- Identify the types of fields that are available for selection in an add-on
- Create an add-on

Section 1 – Categories

Section Objectives

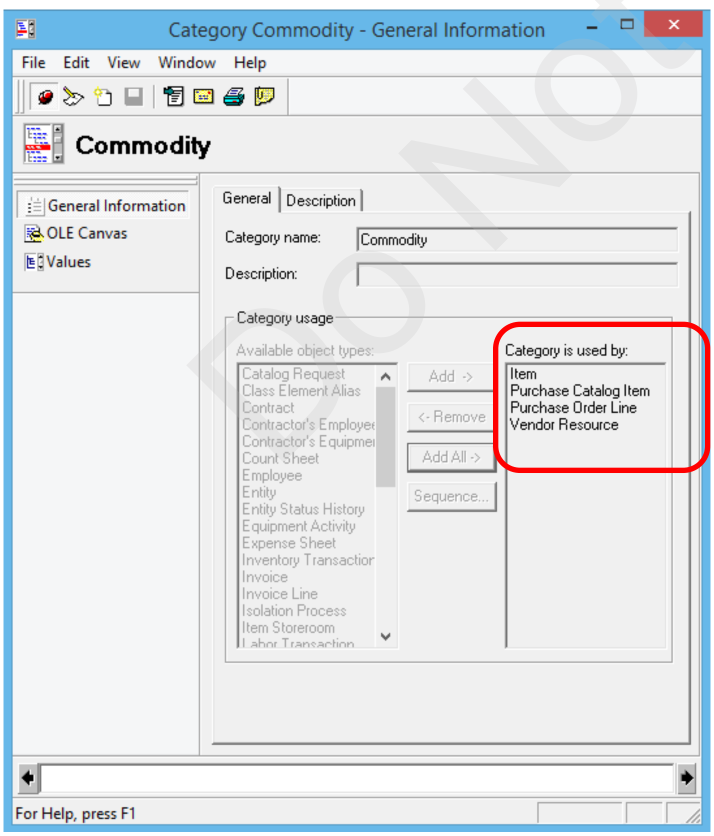
- Define the purpose of the category function
- Define the characteristics of categories

Introduction

Categories are a user-defined means of organizing objects with similar characteristics into meaningful groups. When categories are used to classify objects, a cabinet view can be used to search easily and quickly for all objects that share a specific category value.

For example, an organization might want to have a category that identifies the category code of materials used by the maintenance department. Some broad category code values might be Abrasives, Adhesives, Belts and Fasteners. Classifying a large collection of objects such as maintenance entities, items, and work orders into smaller groups allows you to search easily and quickly for specific objects, to group similar objects on reports and lists, and to analyze objects according to their similarities.

Categories can be shared across object types. When you define a category you indicate what types of objects can use the category.



Shared across different object types

Each object type can have up to 8 categories

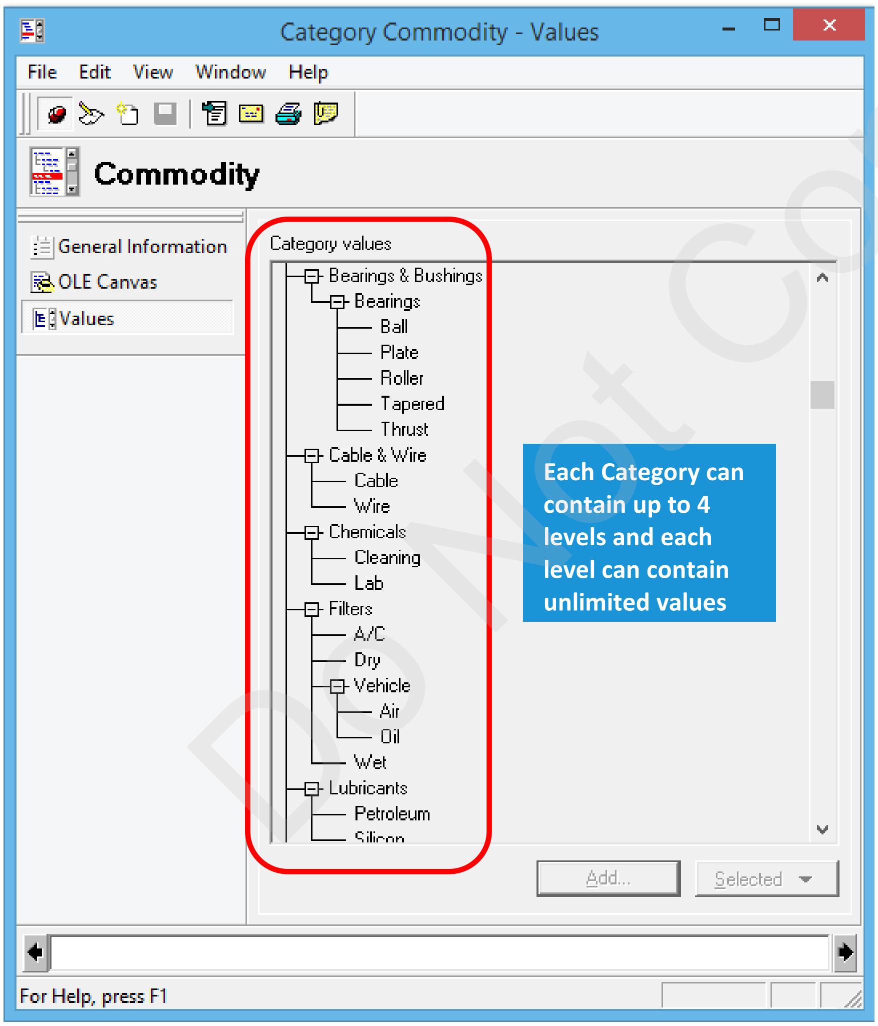
Categories share the following characteristics:

- Each object type is permitted to have up to eight different categories.
- Each category can have up to four levels.
- Each level is permitted an unlimited number of values.

Category structure

For each category, values are identified that reflect how objects should be grouped in the category. It is possible to use the category function with only a single value but most categories have multiple values and even multiple levels of values up to the maximum of four levels.

For example, the commodity code value ‘Abrasives’ might have the following values on the second level: Belts, Blades, Discs, Emery, Paper, Stones and Wheels. Each of the values might have multiple sub-category values.



Categories can be made mandatory on a given object type through the messages function.

LAB 5 – Creating a Category

Introduction

In this lab you are going to create a category that will be used in conjunction with the entity object. This category is going to be a work order class category that displays on all PM tasks and all work order tasks. This category allows for a broader filtering / sorting of work order tasks than that which is available through the work type value.

Objectives

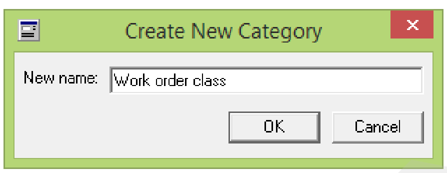
On completion of this lab you will be able to:

- Create a category and link it to two object types
- Define category values on two levels
- Verify the category on a valid object and select a value

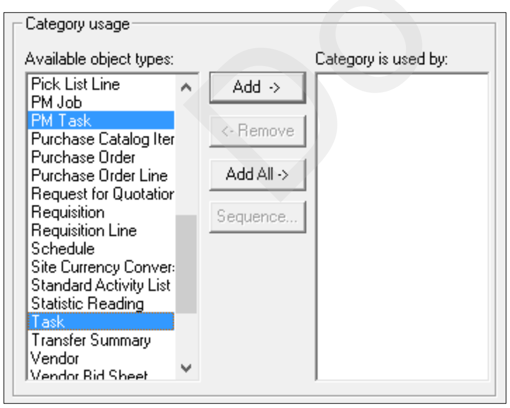
Create a category and link it to two objects types

In this section of the lab you are going to create a category and add it to the work order task and PM task objects. Your category is going to contain two values.

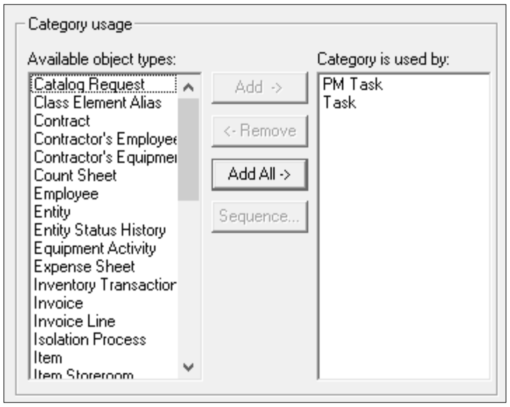
1. Select the **Functions** tab on your desktop.
2. Double-click the **Category Template** icon.
3. Type **Work order class** in the **New Name** field.



4. Click **OK**.
5. Hold the **Ctrl** key down and multi-select the **PM task** and **Task** options under the **Available Object Types** list.



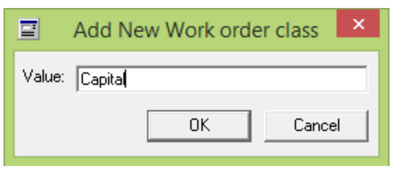
6. Click **Add** to add the two object types to the **Category is Used By** list on the right.



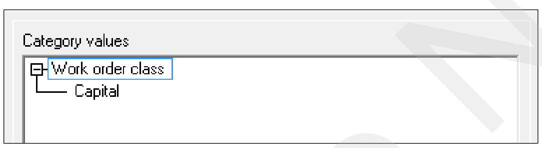
Define the category values

In this section of the lab you are going to define the category value. In setting up the values you will add some values to the first level and some to the second level.

7. Select the **Values** view of the category object.
8. Click on the **Work order class** category name.
9. Click the **Add** button and type **Capital** in the **Value** field.



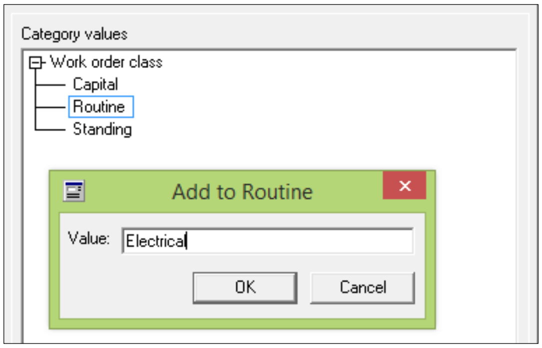
10. Click **OK** to add the value under the Work order class category.



11. Repeat steps **9** and **10** and add the values **Routine** and **Standing**.

You are now going to add values that are a sub of the **Routine** value.

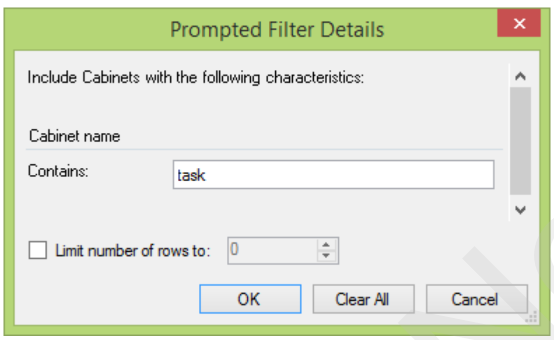
12. Select the **Routine** value.
13. Click **Add**.
14. Type **Electrical**.



15. Click **OK**.
16. Repeat steps 13 to 15 and add the values **Mechanical** and **Instrumentation**.
17. Save and exit the new category.

You are now going to verify the category listing on a work order task.

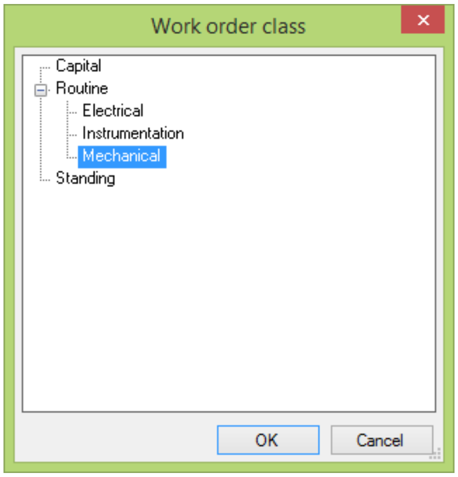
18. Select the **Cabinets** tab on the **EAM Administrator's** desktop.
19. Launch the **Cabinet of Cabinets**.
20. Type task in the **Cabinet name contains** field.



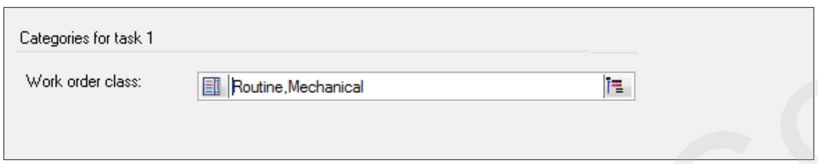
21. Click **OK**.
22. Launch the *** Work Order Tasks – Backlog** cabinet.
23. Click **OK** to close the prompted filter and display a number of records.
24. Launch the task for work order **10033**.

NOTE: If the selected work order task is not a task from a multi-task work order form, you will get a message indicating this. Click **OK** to proceed or select a different record. If the work task you launch relates to a simple work order form or an emergency work order form, the work order is displayed in classic mode and the Category is available from the Category tab on the General view. The following instructions assume that you have launched a multi-task work order in Smart Client.

25. Click the **Allow editing** button in the Tasks area in the lower half of the window. This enables all the views on the work order tasks for editing.
26. Select the **Categories** sub-view.
27. Click the icon to the right of the Work order class field.
28. Select the **Mechanical** option under the **Routine** value.



29. Click **OK** to add the category value to the work order task.



NOTE: Category values display with each tier level value separated from the higher level value by a comma with no spaces. When using the category value as a filter criterion in the prompted view of a cabinet view, the field should be set with a 'contains' operator.

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30. Save the work order task
31. Exit the work order task.

You have now completed the requirements of this lab.

Section 2 – Add-Ons

Section Objectives

- Define the purpose and usage of the add-on function
- Define the characteristics of an add-on
- Identify the login ID required to create or modify an add-on
- Identify the types of fields that are available for selection in an add-on

Introduction

An add-on is a user-defined set of fields that collects information currently not collected by the Asset Management software. In a classic display of EAM, add-ons appear as a tab in an object's General Information view. In a Smart client display of EAM, add-ons display as sub-views under the General Information view.

Add-ons are database-scoped and are available for use by all designated objects within any database site. Unlike the category functionality, add-ons are not automatically added to all objects of the assigned object type(s) but can be added selectively when appropriate.

Characteristics of add-ons

Add-ons share the following characteristics:

- Can be linked to one or more object types.
- Can be attached to a user-defined template so that all objects subsequently created from that template automatically include the add-on.
- Can be manually linked to any existing records of a valid object type.
- Addition of a new field in an add-on is automatically reflected in all objects using that add-on.
- Deletion of an add-on field results in the deletion of the field and all stored data across all objects in the database.
- Data in an add-on field on one object generally flows to the matching field on another object when the add-on is linked to both types of objects and the second object is created from the first.

Login ID for creating / modifying an add-on

Because the add-on function requires the addition of tables to the database, all users must be logged out of EAM before an add-on is created. This includes users such as the approvals engine and the maintenance transaction processor.

A special login ID is required: **MCX**. The password is controlled by the IT group.

The MCX login ID only works if there are no other users logged into the database environment. When MCX is logged in, no other users can log in.

Types of add-on information fields

The following types of fields can be used in add-ons:

- Free-form text (10, 20, 30, 40, 50 or 200 characters in length)
- Value from a user-defined value list
- Reference to another object
- Number (No decimal places)
- Quantity (Maximum of 6 decimal places)
- Currency amount
- Price (Includes unit of measure)
- Check box
- Date
- Date and time

LAB 6 – Creating an Add-On

Introduction

In this lab you are going to create an add-on that you will link to two objects – work order task and work request. The add-on will include a field of every type of field available with the field name reflecting the type of field. This allows you to see the characteristics of each type of field when it displays on a specific record.

Objectives

On completion of this lab you will be able to:

- Create an add-on and link it to one or more object types
- Create the fields to display on the add-on
- Link the add-on to a specific record and check the field set-up

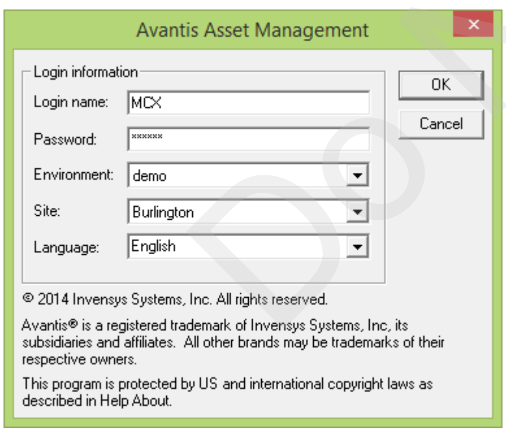
Create an add-on and link it to an object type

In this section of the lab you are going to log into EAM using the login ID required for creating an add-on. You will then create a basic add-on and link it to the entity object.

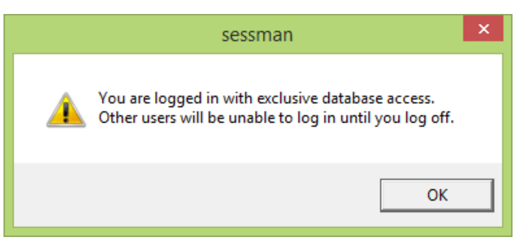
1. Ensure that you are logged out of EAM.
2. Launch the **avlaunch.exe** shortcut on the EAM desktop.

NOTE: You must use the classic option when logging in to the add-on function.

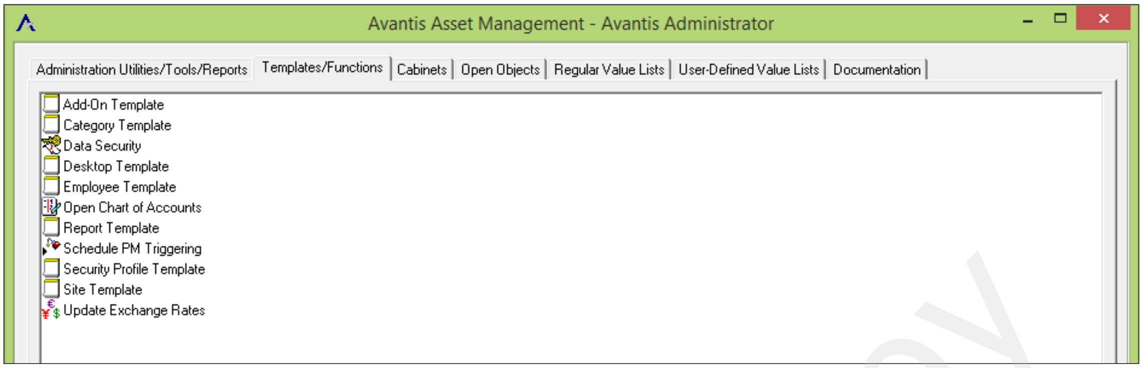
3. Type **MCX** in the **Login name** field.
4. Type **client** in the **Password** field.



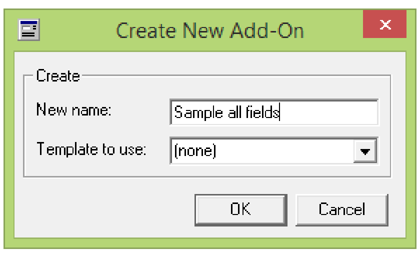
5. Click **OK**.



6. Click **OK** to close the message that reminds you that other users are unable to login.
7. Select the **Desktop** button.
8. Select the **Classic EAM Administrator** desktop.
9. Click **OK**
10. Select the **Templates/Functions** tab.



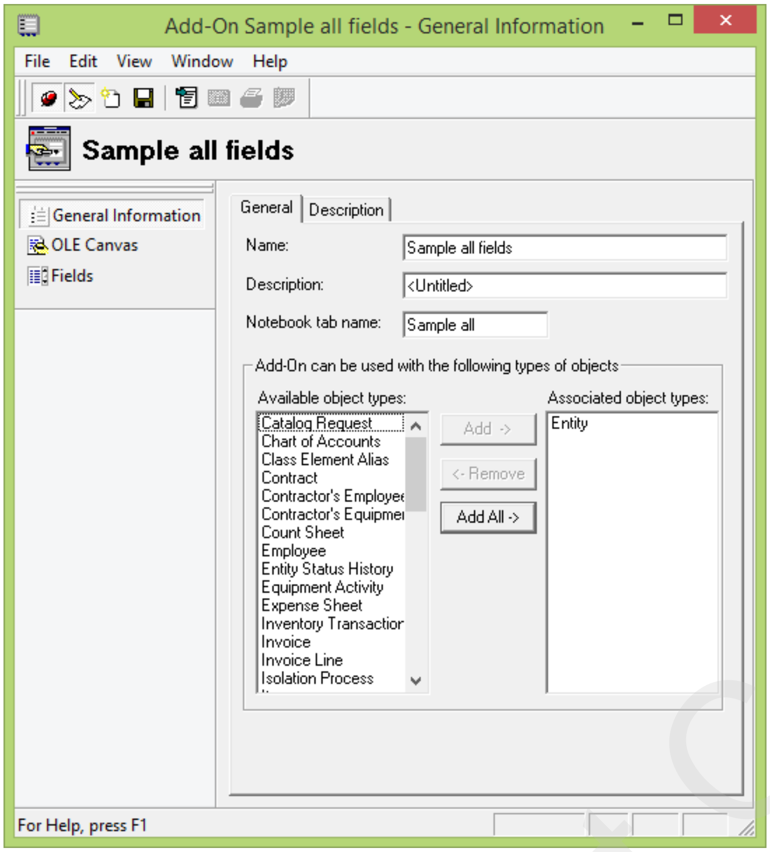
11. Double-click the **Add-on Template**.
12. Type **Sample All fields** in the **Name** field.



13. Click **OK**.

NOTE: The value in the **Tab name** field defaults from the add-on name but can be changed. It is limited to 10 characters including spaces.

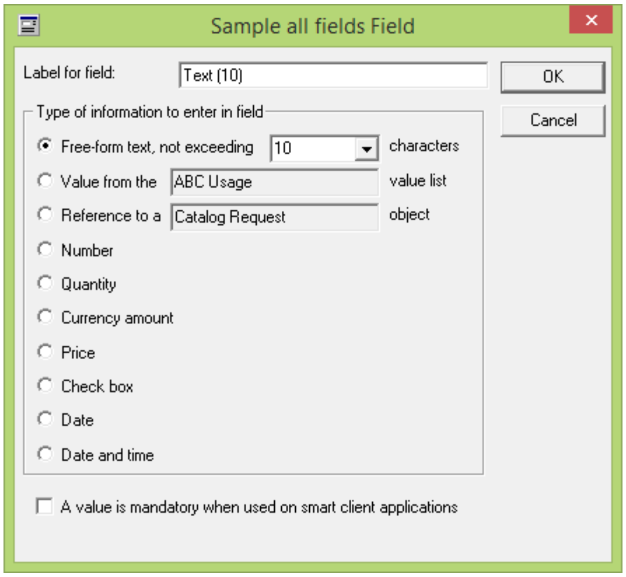
14. Select one or more object types from the **Available object types** section of the window.
15. Click the **Add** button to move the type(s) to the **Associated object types** section.



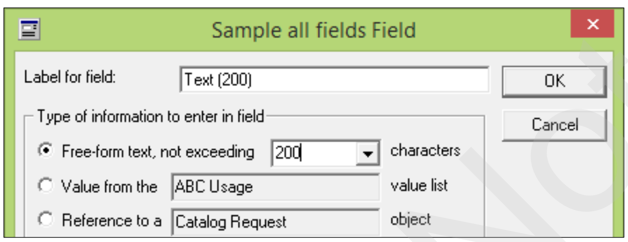
Create the fields to display on the add-on

In this section of the lab you are going to define the fields that will display on the add-on and provide the field name. In this example, you are going to add every available type of field to the add-on and use the field name to indicate the field type. For the text fields, you will include the 10 character text field and the 200 character text field options

16. Click the **Fields** view.
17. Click the **Add** button.
18. Type **Text (10)** in the **Label for field**.



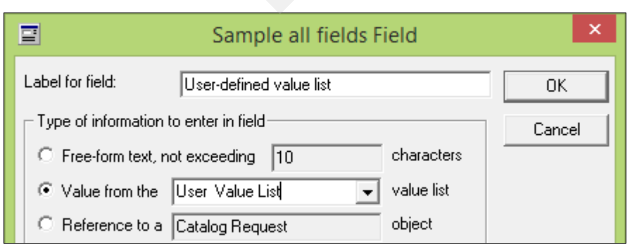
19. Click **OK**.
20. Click the **Add** button.
21. Type **Text (200)** in the **Label for field**.
22. Select the **200** value from the **Free-form text not exceeding _____ characters** field drop-down list.



23. Click **OK**.

You are now going to link to a value list and select one of the user-defined value lists.

24. Click the **Add** button.
25. Select the **Value from the**... radio button option.
26. Type **Value list** in the **Label for field**.
27. Select the **User Value List** option from the drop-down list.

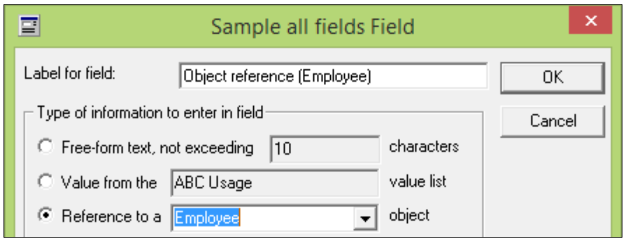


28. Click **OK**.

You are now going to create a field that is linked to another object.

29. Click the **Add** button.
30. Type **Object reference (Employee)** in the **Label for field**.

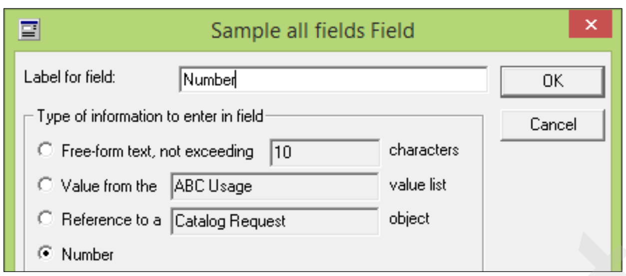
31. Select the **Reference to a**... radio button option.
32. Select the **Employee** object from the drop-down list.



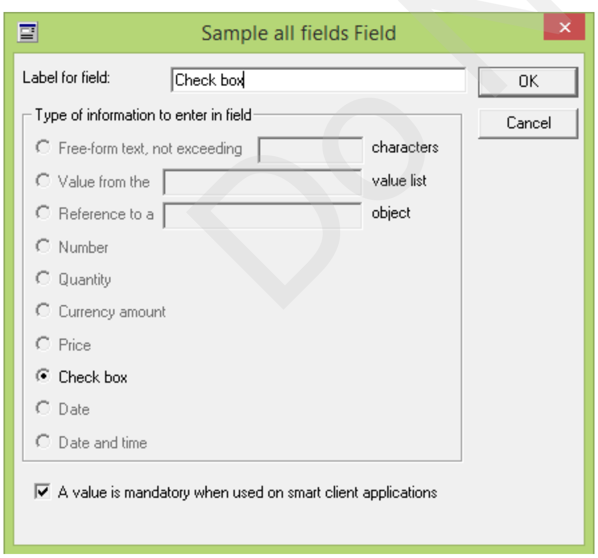
33. Click **OK**.

You are now going to set up an add-on field for tracking a number.

34. Click the **Add** button.
35. Type **Number** in the **Label for field**.
36. Select the **Number** radio button option.

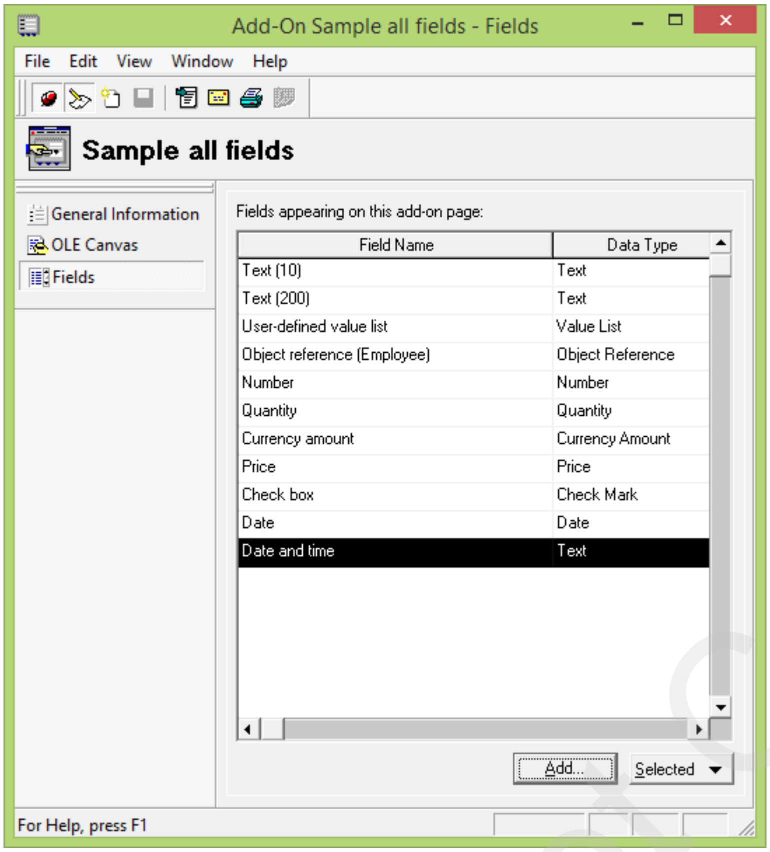


37. Click **OK**.
38. Use steps 34 through 37 as a guideline and create fields for the other available options. When you get to the Check box option, also select **A value is mandatory when used on smart client** applications check box.



NOTE: An add-on field can only be made mandatory when it is created. Once you click OK, this option is disabled and the only way to change the setting (on or off) is to delete the field from the add-on and re-add it. The deletion process deletes all values populated in the field in any of the objects. The only change that can be made to an existing add-on field is the label name. The mandatory option is only available on Smart Client applications.

Once you have completed the creation of the add-on, it should look similar to the following screen shot.



39. Click the **Save** icon to save the add-on.
40. Exit the add-on.
41. Log out of EAM.

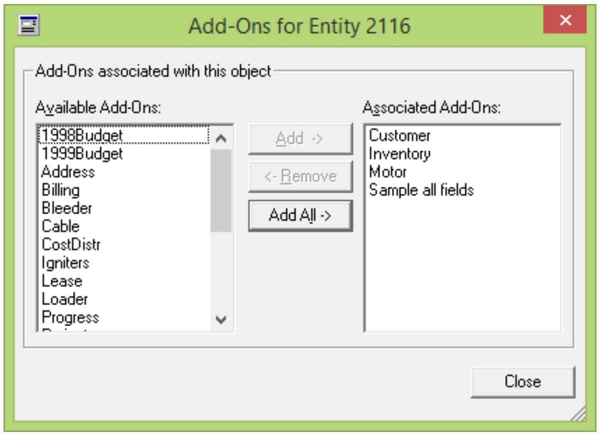
Link the add-on to a record and check the field set-up

In this section of the lab you are going to link the add-on to a specific entity record and check its set-up. You are also going to test the mandatory nature of the check box field in both a smart client venue (setting is applied) and in a classic venue (setting is not applied). In the first example, you are going to launch an entity in classic mode.

42. Log in using the **avlaunch.exe** function and the regular training login name and password.
43. Click the **Desktops** button.
44. Select the **Classic Maintenance** desktop option and click **OK.**
45. Launch the **Entity Details** cabinet.
46. Click **OK** on the prompted filter dialog box.
47. Double-click on any of the listed entities.

You are now going to link the add-on you created with entity.

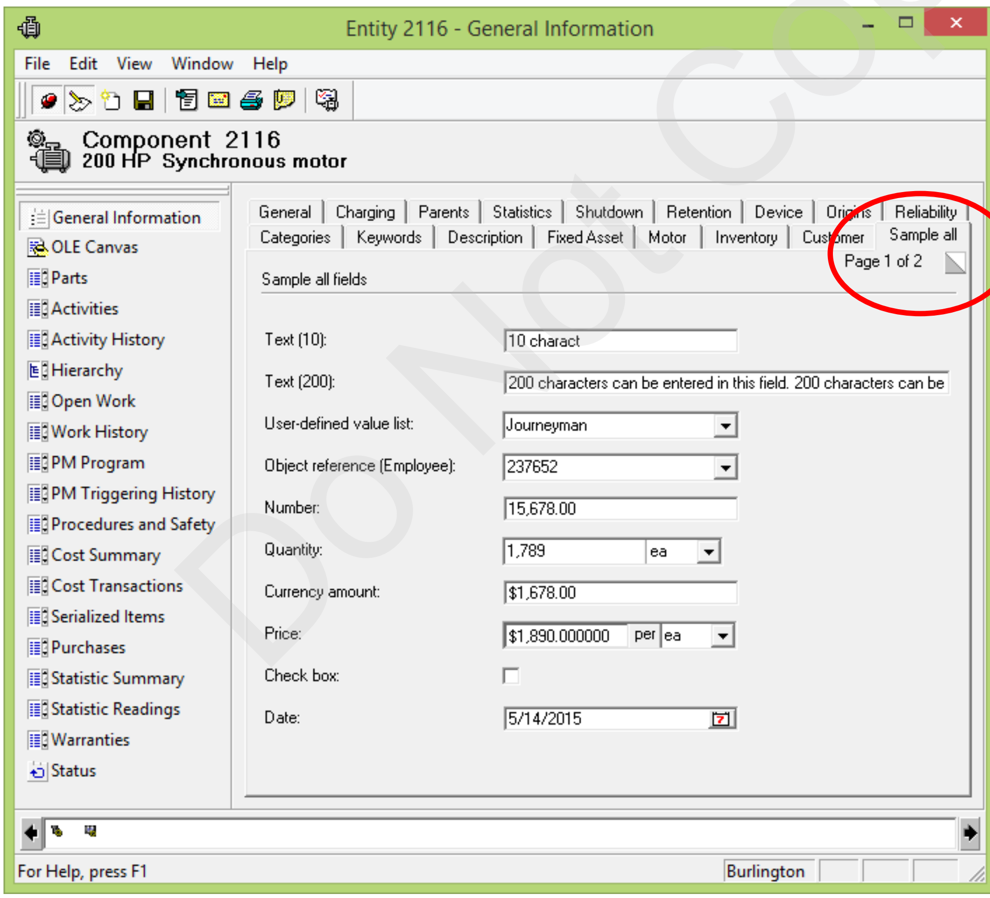
48. Select the Allow **Editing** icon in the toolbar.
49. Select **View / Entity Add-Ons** menu option.
50. Select the **Sample All fields** add-on option from the add-ons listed on the left-hand side.
51. Click the **Add** button to transfer the selected add-on to the right-hand side.



52. Click the **Close** button.

A new tab with the name **Sample all** displays in the **General information** view.

53. Click the **Sample all** tab.
54. Enter data in each field except for the **Check box** field to see how it displays.



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NOTE: When an add-on displays in classic mode, only 10 fields can display at a time. Additional fields are placed on another page. EAM keeps adding additional pages as needed. The pages are accessed through the upper right corner of the add-on tab. When an add-on displays in Smart Client mode, all fields are listed in the same window and a scrolling option is available if there are too many fields for the size of the window.

55. Select the next page and complete the entry of sample data.
56. Save and exit the entity record.

NOTE: Since the 'mandatory' function does not apply to classic objects, no error or warning message displays and the entity record saves.

57. Exit the cabinet.
58. Click the **Desktops** button, select the **Planner** desktop and click **OK**. This desktop opens applicable records in smart client mode.
59. Launch the **Entity Details** cabinet.
60. Double click on the same entity that you launched earlier.
61. Scroll through the views and sub-views on the left side of the entity record until you locate the **Sample all** add-on.

NOTE: If the add-on didn't exist on this record, you can add it using the same approach that was followed on the classic version of the record.

You have now completed the requirements of this lab.

NOTE: If you want to delete a complete add-on, you must log in using the MCX login ID. You then remove the fields from the add-on and remove the link to the different objects. The fields should be deleted and the object links should be removed. Once this has been done, you can delete the add-on. A deletion action cannot be reversed. **When an add-on field or add-on is deleted all data stored in any deleted add-on fields in any object also permanently disappears**.

Module 7 – Other Tools, Functions and Features

Section 1 – Messages
Section 2 – Notifications
Section 3 – Custom Extensions
Section 4 – Processors and Utilities
Section 5 – MEVALUELK optimization
Section 6 – Accounting Options / Chart of Accounts
Section 7 – Exchange Rates
Section 8 – Cabinet Customization
Section 9 – Reports

Module Objectives

- Define the purpose and configuration options of the Message object function
- Define the purpose and general configuration of the Notification function
- Define the use and general set up of the Custom Extensions function
- Identify and explain the purpose of the main processors and services used to support EAM functionality
- Explain the ability to reduce the number of transactions in the MEVALUELK table
- Define the characteristics of the numbered segments approach to G/L accounts
- Define the characteristics of the named segments approach to G/L accounts
- Define the purpose and use of the Chart of Accounts object
- Identify the location of default general ledger account numbers
- Define the purpose and usage of the Exchange rate function
- Explain the ability to create custom cabinets and views
- Identify the different types of reports available through EAM
- Identify the basic usage and characteristics of each type of report

Section 1 – Messages

Section Objectives

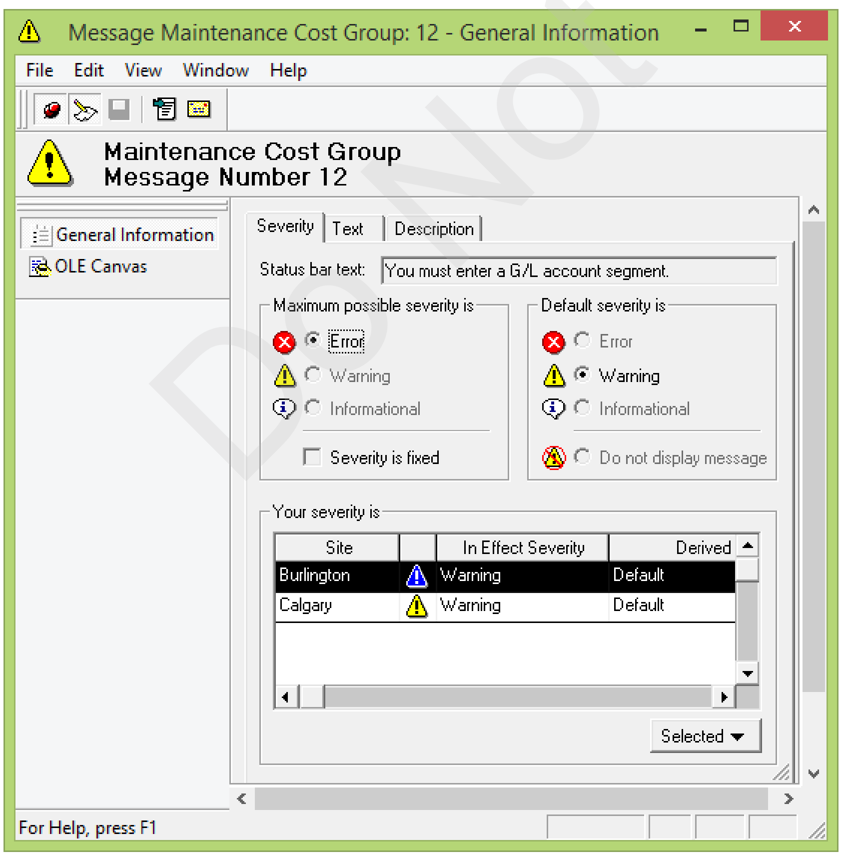
- Define the purpose and configuration options of the Message object function

Introduction

Messages inform users of existing or potential problems with the data. There are thousands of message objects in the EAM system. Each message object defines not only the severity of the message but also the specific text that is displayed by the system.

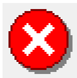
Messages are classified as database-scoped. Message severities are classified as site-scoped. If a message relates to a site-scoped object it is possible to set a different severity level and displayed text for each site in the database. If the message relates to a database-scoped object, its severity and displayed text can only be modified for the primary site.

If the severity of a message is not fixed by EAM, an authorized user can change the severity level to meet a specific need of the organization. This feature allows an organization to change the mandatory nature of a field that is not critical to the operation of the application.

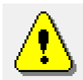


Message severity levels

There are three message severity levels and one display option that applies to warning or informational messages:



Error An error message displays if a mandatory field has not been populated with valid data. When this situation occurs, the user is unable to save the object until the error is correct. A red frame highlights the field that contains the error.



Warning A warning message displays as a reminder that a value has not been entered in a field. The user is not prevented from saving objects that contain warning messages. A warning message is often used when a field is very important but not mandatory and you want to ensure that its completion is considered by the user. A yellow frame highlights a field that contains a warning.

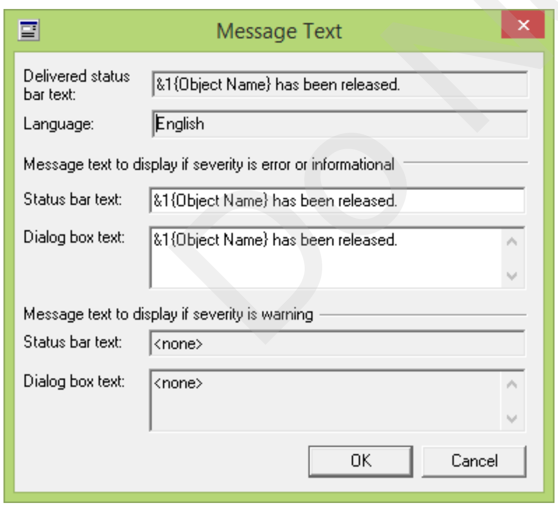
Informational An informational message displays to inform a user of an event that has occurred. For example it might confirm that a receipt transaction has been posted.

Do Not Display This option is not a message severity as such but if the severity level is not error, this option can be selected if you do not need to have a message displayed. The severity is still considered to be either 'Warning' or 'Informational'.

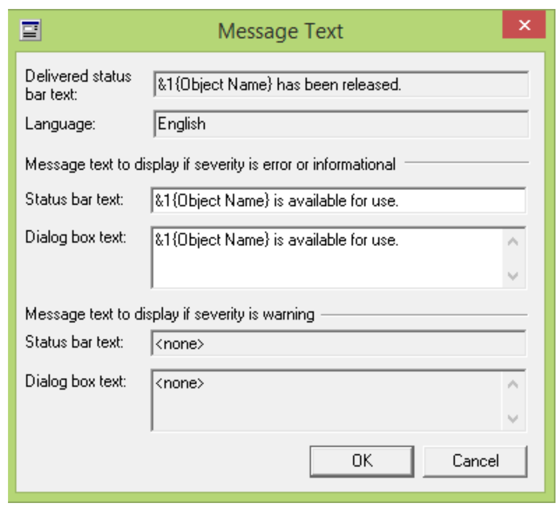
Message content

The displayed content of a message can be changed to reflect an organization's terminology. Care must be taken to ensure that the new content correctly reflects the purpose of the message and the way it is applied.

Default message text



Customized message text (example)



Section 2 – Notifications

Section Objectives

- Define the purpose and general configuration of the Notification function

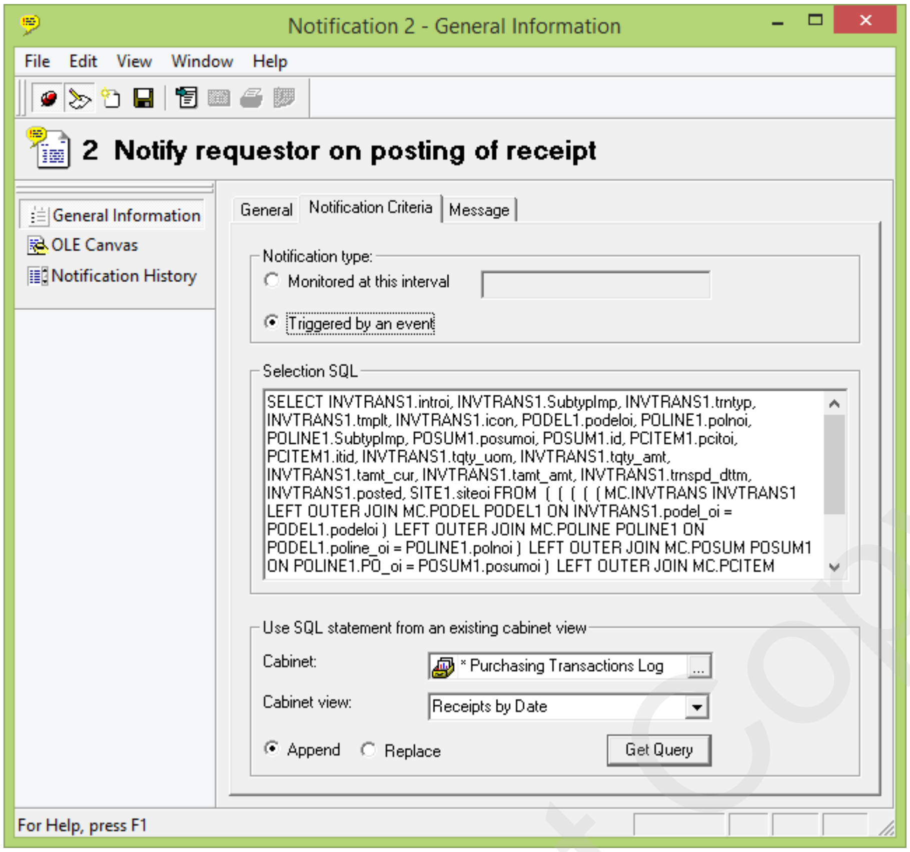
Introduction

The notification function provides a means of setting up EAM to automatically notify users when specified criteria are met. Some examples of situations that could involve the sending of a notification are:

- A notification is sent to the individual who requisitioned some material on the posting of the receipt
- A notification is sent to an equipment supervisor when a work order is initiated against a critical piece of equipment
- A notification is sent to the managing buyer when a contract is close to the expiry date
- A notification is sent to the assigned buyer when a purchase order is placed on hold or cancelled
- A notification is sent to the material coordinator when the on-hand balance of a critical item drops below a specified value
- A notification is sent to both the maintenance manager and the area supervisor when an emergency work order is created
- A notification is sent to all buyers when a payment dispute is recorded that prevents further ordering

EAM does not provide any default notifications.

The subject of a notification is determined by a standard SQL query. Therefore, any data in the EAM database can essentially be used as a basis for generating a notification. A notification can be set up to be sent to a specific individual or the individual in the specified role on the object that meets the selection criteria.



A notification is a database-scoped object. The only persons who require security access to the notification function are users who will set up or modify the notification event. Individuals receiving a notification only require an email address in their EAM employee record.

There are two basic options for initiating a notification:

Triggering notification – The initiation of the notification is based on the triggering of an event such as the posting of a receipt

Monitoring of specific values – The initiation of the notification is based on the monitoring for the existence of specific values by a poller that runs on a scheduled frequency

Triggered notifications

Notifications can be set up to be triggered by a change of state or status of a specific EAM objects. Examples of typical changes of state are:

- Posting of a time card
- Posting of a statistic reading
- Posting of an activity record
- Posting an inventory transaction
- Posting of a receipt
- Posting of an invoice

Examples of a change in status are:

- Added to backlog
- Closed
- Cancelled
- Held
- Approved
- Executed
- Sent to vendor

When changes to an EAM object are saved, EAM checks all 'triggered' notifications defined for the object class. If the saved object meets the criteria of a notification, the notification message is sent to the recipients.

Monitored notifications

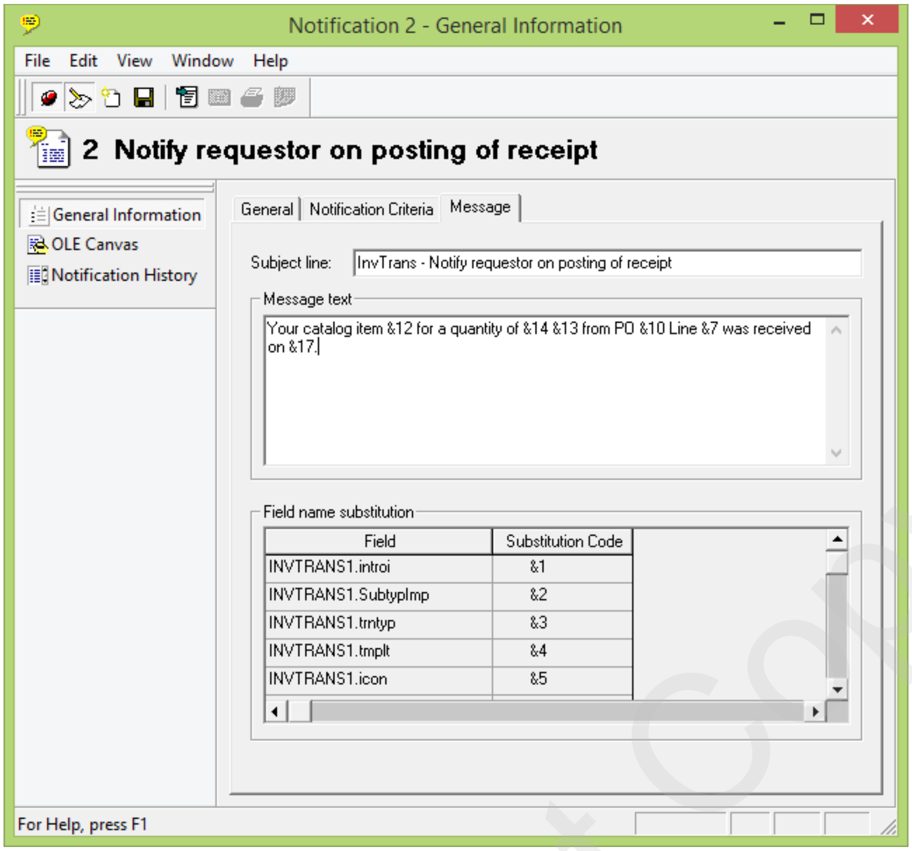
Notifications can be set up to monitor for specific values in your data. Typically monitored notifications are set up to track values that meet or exceed a specified value, such as accumulated purchases reaching a contract ceiling.

Monitored notifications are picked up by the notifications poller at intervals specified on each notification. At the specified interval, the notification poller submits the notification query and if any objects meet the criteria a notification message is sent to the recipient(s).

For example, you can set up a notification to find all contracts that will expire in 10 days or less. The notification can be set up to send a message for each contract that meets the selection criteria, to each contract's buyer (identified by role) and to the department head (identified by name).

Notification message

Setup of the notification includes the definition of the message that will be communicated to the recipient(s). Through the use of a series of substitution codes in a generic message, the recipient can be provided with specific information that helps them understand the situation and the reason for the notification.



The available substitution codes are based on the object on which the notification is based.

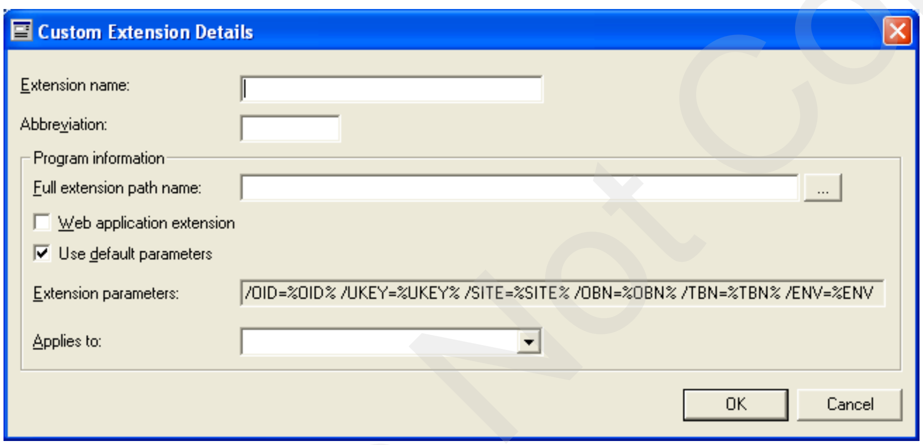
Section 3 – Custom Extensions

Section Objectives

- Define the use and general set up of the Custom Extensions function

Introduction

Custom extensions are a means within EAM to call customer-written applications or files or to perform some type of action that is essential to business operations but that is not a part of the normal EAM functionality. Custom extensions are defined in EAM via the Custom extension value list, located on the Regular Value Lists tab of the EAM System Administrator desktop. Custom extensions may be associated with most EAM objects.



One can either use the custom extension toolbar button or the custom extension menu option in order to call the custom extension. Using either approach, the result is a dialog window from which the user selects the custom extension desired.

The Custom Extension menu option and the icon are always available, no matter if the object is in edit mode or not, with or without custom extensions available for the object.

How applications are used depends completely upon the custom application. In addition to running executable programs, custom extensions can also be used to access documents relating to the object from which the extension is being called, or just a general document file.

Custom extension value list entry fields

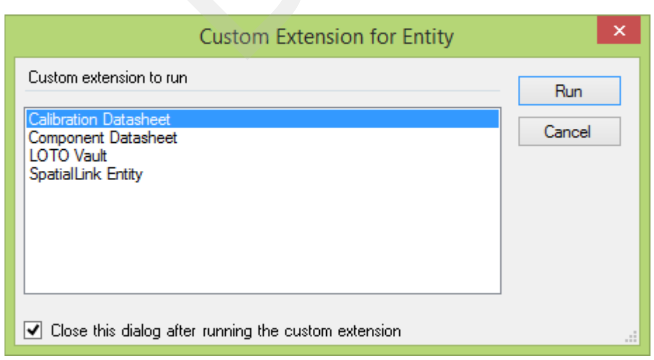
The following table explains the purpose of each field in the Custom Extensions value list.

Field	Purpose
Extension name	This field contains the name of the custom extension to be launched by EAM, and can handle a length of up to 30 characters.
Abbreviation	This field identifies the short form name of the custom extension to be launched by EAM. The abbreviated name displays in drop-down lists or on reports when the full name of the custom extension is too large for the display space.
Full extension path name	This field identifies the custom application to be launched. If all users are to be allowed to access the custom application from the same network location, the value entered should use either the company's standard drive mappings or the Universal Naming Conventions (UNC) format. This field may be left blank if the custom extension is located in a system search
Web application extension	This flag indicates if the custom extension to be launched is a web application.
Use default parameters	This flag indicates if the default custom extension parameters are to be used.
Extension parameters	In this field, the valid EAM tokens and default parameter flags used to launch the external application are identified. If the 'use default parameters' is selected, this field is display only.
Applies to	This drop-down, lists the EAM objects from which the custom extension is available.

Launching a custom extension

Custom extensions are accessed through the Custom Extension icon in the toolbar of the applicable object type.

The function is then launched by selecting the applicable function and clicking the **Run** button.



Section 4 – Processors and Services

Section Objectives

- Identify and explain the purpose of the main processors and services used to support EAM functionality

Introduction

There are several processors or services that support the EAM functionality. The main processors/ services are:

- Maintenance Transaction Processor
- Invoice Processor
- Pick List Processor
- Notification Poller Service and Notification Sender Service

There are a couple of other processors that may be in use:

- Financial Integration Processor
- Procurement Integration Processor

Maintenance Transaction Processor (MTP)

The Maintenance Transaction Processor processes transactions entered in EAM and transfers selected information between the Maintenance, Inventory and Procurement modules. The MTP processes:

- Labor transactions
- Entity statistic readings
- Inventory issues, adjustments, receipts and counts
- Purchase invoices
- G/L journal entries

When transactions are processed, the associated costs are applied to the work order header, work order task and entity. They are also rolled up the entity hierarchy as permitted by the entity type values and reflected in the totals on the Cost Summary view.

When statistical transactions are processed, the current and life-to-date values are updated on the Statistic Summary view the readings are added to the Statistic Transactions view. Statistic-driven PM triggers are also updated.

The MTP also performs the following actions:

- Updates entities and work orders/tasks with the costs from inventory, direct purchases (from a receipt or invoice) and labor transactions
- Updates statistics on entities and updates PM triggering for statistic-driven triggering links
- Generates balanced G/L transactions
- Processes catalog requests and updates allocations and reservations
- Process deferred actions (usually caused by a locked object)

Invoice Processor

The Invoice Processor creates and posts invoices for:

- Consignment items based on issue transactions
- Non-consignment items set up as an Evaluated Receipt Settlement (ERS) item based on posting of receipt
- Invoice-not-received items based on purchase order being 'Sent to vendor"

The rules used by the invoice processor are defined on the **Invoicing Rules** tab of the vendor record. The processor does not create any invoices for vendors lacking the setup on the Invoicing rules tab.

Pick List Processor

This processor processes open pick lists by automatically:

- Suggesting that the items be picked
- Suggested that the items be picked and printing the pick list
- Suggesting that the items be picked, printing the suggesting, printing and issuing

The action taken is determined by the business policy:

Pick list lines will automatically be…

There are two other business policies that need to be configured.

Days in advance to print pick lists…

Processing interval for the Pick List Processor is…

A setting in the Storeroom value list is used to identify the default storeroom printer for printing the pick lists.

Notification Poller Service and Notification Sender Service

There are two services that work in conjunction with the notification functionality.

Notification Poller Service – This service runs on a designated frequency and checks the related SQL statement for changes that require the sending of a notification. The Poller service relates to monitored notifications only – not to notifications that are triggered by an event.

Notification Sender Service – This service runs on a designated frequency to forward messages to the designated individual(s).

The following business policies apply to the use of the notification function:

Enable notification processing? (Y/N)

Notification Administrator email address

Start processing notification at this time of day

Section 5 – MEVALUELK Optimization

Section Objectives

- Explain the ability to minimize the number of transactions in the MEVALUELK table

Introduction

MEVALUELK table is the largest table in the database and grows substantially because of indirect transactions. The speed at which the table grows going forward can be reduced through the MEVALUELK optimization option.

The number of records created in the MEVALUELK table for a single transaction is impacted by:

- Number of time period levels
- Number of cost group levels
- Number of ancestor entities where costs are tracked
- Number of cost-tracking hierarchies in use

There are three options for the tracking of indirect costs:

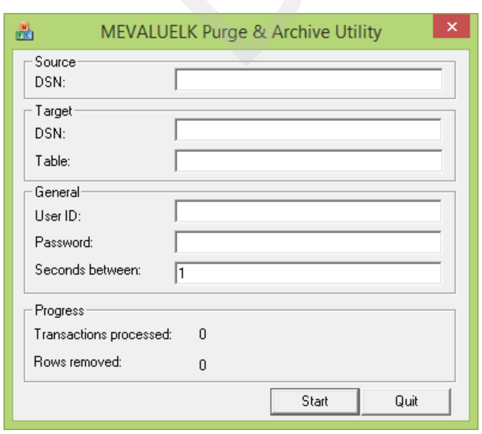
- Continue to track indirect transactions
- Change the tracking method going forward without purging past values
- Change the tracking method going forward and purge past transaction values

Changing the tracking method

This option requires removing the **Keep indirect costs by transactions** flag in each value in the **Entity Type** value list where costs can be applied. The default setting is to keep the transactions. When the flag is deselected, the rollup of costs to a higher level entity is blocked regardless of the flag setting on ancestor entities.

Purging past transaction values

This option is performed through the running of the MEVALUELK Purge and Archive Utility.



Impact of restricting creation of indirect transactions

When EAM is configured to restrict the creation of indirect transactions, the following impacts are encountered:

- The MEVALUELK table does not grow as fast
- Performance may be improved since there are less transactions created
- The indirect transactions are still available for display through the ancestor entities but the cost details are built on request
    - There may be a short delay as the cost details are built

Section 6 – Accounting Options / Chart of Accounts

Section Objectives

- Define the characteristics of the numbered segments approach to G/L accounts
- Define the characteristics of the named segments approach to G/L accounts
- Define the purpose and use of the Chart of Accounts object
- Identify the location of default general ledger account numbers

Introduction

There are two basic options in EAM for generating and tracking G/L transactions:

- Using Numbered segments
- Using Named segments

Numbered segments

This is a simple approach for generating a tracking G/L account numbers. While a G/L segment can be alphanumeric, there is no name that explains the purpose of the segment.

The numbered segment approach allows for up to three segments – each reflecting a different purpose:

- **Who pays** – Originating an entity record typically at a high level in the entity hierarchy
- **What type of work was performed** – originating from the work type
- **What type of expense** – This is the cost group segment and it originates from the posting of a time card, issue transaction, receipt transaction or invoice

Collectively the first two segments are referred to as the maintenance segment. A business policy defines the order in which these are placed.

A second business policy defines the order in which the maintenance segment and the cost group segment are placed.

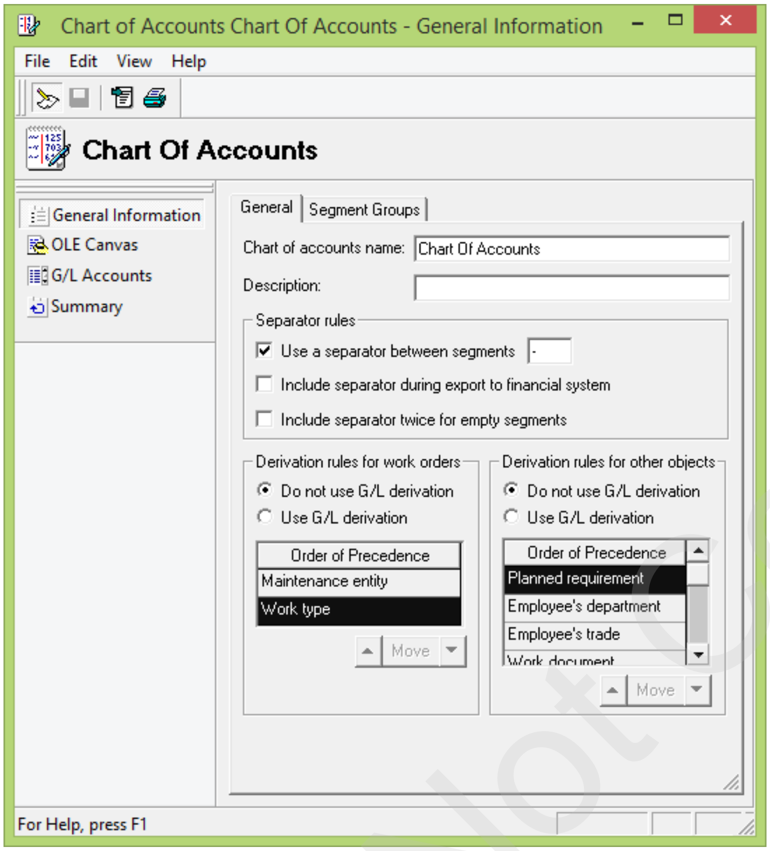
Named segments

This approach allows for a more complex G/L account number structure. Up to ten different segments can be defined with multiple segments coming from the same source and not necessarily arranged consecutively. Rules are used to define the length of each segment, its source and the documents /transactions on which a segment is available for selection.

EAM can derive G/L account numbers up to a maximum of 125 alphanumeric characters in length. If the derived G/L account number exceeds 125 characters, only the first 125 characters display.

Chart of Accounts

The Chart of Accounts function is used in conjunction with the Named Segments approach for managing G/L account segments.



The Chart of Accounts object:

- Defines the separators that are used between segments when displayed in EAM and when exported to the financial system
- Defines the derivation rules for work orders and for other objects
- The segment groups including:
    - Segment name
    - Segment uniqueness (Y/N)
    - Segment length
    - Objects where the segment is used and if it is required

The Chart of Accounts also lists the full G/L accounts and G/L segments that have been loaded into EAM tables for account validation purposes.

Default G/L account numbers

The following table identifies the location of default G/L account numbers that are required as the offsetting entry for various transactions when the MTP generates balanced G/L transactions. When there is a Storeroom value list value, it takes precedence over the value defined on the Site object.

Site object	Storeroom value list	Department value list
Received-Not-Invoiced account	Inventory account	Payroll offset account
Accounts Payable Liability account	Count Expense account	G/L account segment
Count Expense account	Price Variance Expense account	
Transfer account	Transfer account	
Miscellaneous Charge account		

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Section 7 – Exchange Rates

Section Objectives

- Define the purpose and usage of the Exchange rate function

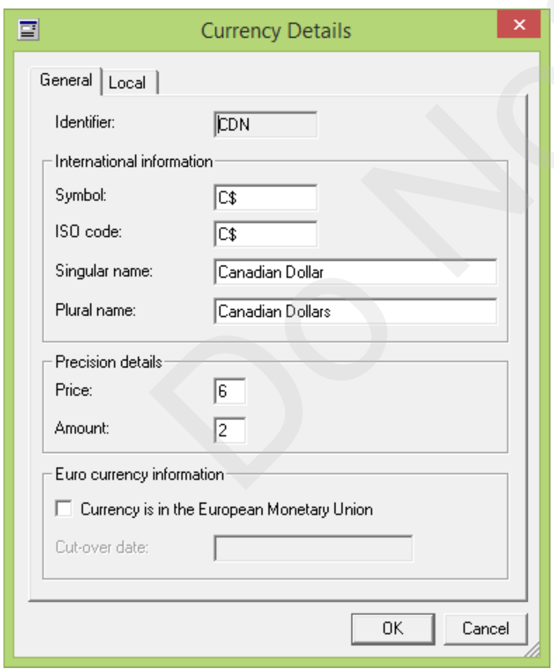
Introduction

Enterprise Asset Management allows for the tracking of transactions in different currencies. However, since a given site is in a given currency, transactions in an alternate currency must be converted to the site currency for compilation of the totals. The conversion rates used in conversions are taken from the Exchange rate function.

Currency definitions

Any currencies used in EAM are defined in the **Currency** value list. Setup includes defining:

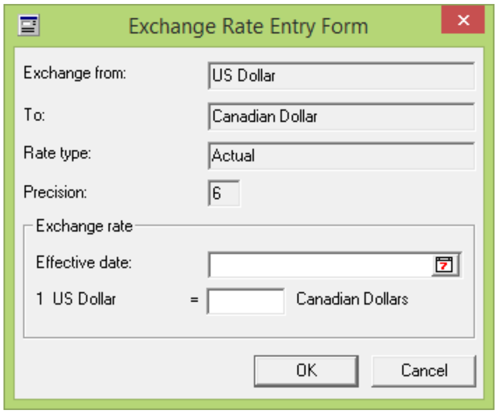
- Currency symbol
- Number of decimal places for prices
- Number of decimal places for extended amounts



NOTE: The same currency symbol cannot be used for different currencies. A prefix or suffix is required to make the symbol unique.

Exchange rate settings

Exchange rates are defined in the **Exchange Rate** function in the Templates/Functions folder of the EAM Administrator's desktop. It can be added to other desktops if appropriate.



Exchange rates can be maintained manually or through a custom interface with some external exchange rate source.

Section 8 – Cabinet Customization

Section Objectives

- Explain the ability to create custom cabinets and views

Introduction

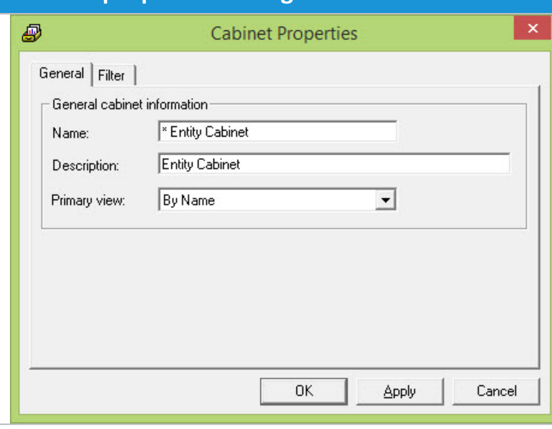
Enterprise Asset Management comes with many predefined cabinets and cabinet views. These cabinets / views provide a starting point for users to use Avantis.PRO EAM within an object or function but often need to be modified to meet specific searching / monitoring needs of an organization. New cabinets can also be created and built from scratch.

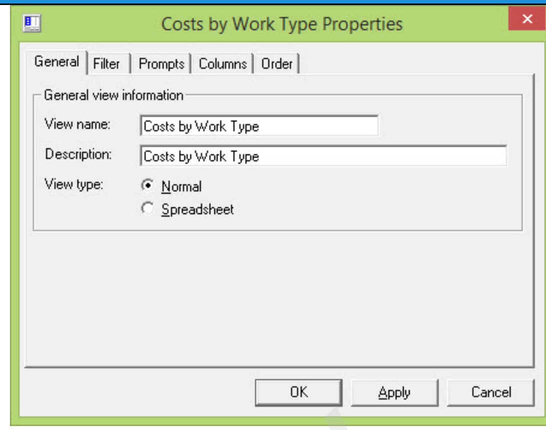
EAM-delivered cabinets with an asterisk (*) can be modified directly whereas EAM-delivered cabinets without the asterisk cannot be modified although they can be copied and the copy then modified. Any view within a modifiable cabinet can be modified as well and even deleted if necessary. New views can also be created.

The ability to create / edit cabinets is a securable function that is typically delegated to key power users in each functional area.

Editing options

The following tables identify the types of changes that can be made at the cabinet level and at the cabinet view level.

Level	Tab	Editing options	Cabinet properties dialog box
Cabinet	General	Cabinet name Cabinet description Primary view	
	Filter	Filters to be applied to the cabinet as a whole	

Level	Tab	Editing options	View properties dialog box
View	General	View name View description View type	
	Filter	Filters to be applied to the view	
	Prompts	Instance-specific filtering options available to end-users	
	Columns	Displayed columns Column heading name Column type (Normal, Group by, Count, Calculated sum, Average, Sum) Alignment (Left, Center, Right) Width Default display order	
	Order	Default ordering of displayed data	

Specific training on the customization of cabinets is provided in the *Enterprise Asset Management Cabinet Customization* course.

Section 9 – Reports

Section Objectives

- Identify the basic types of reports available through EAM
- Identify the basic usage and characteristics of each type of report

Introduction

There four basic types of reports used in EAM:

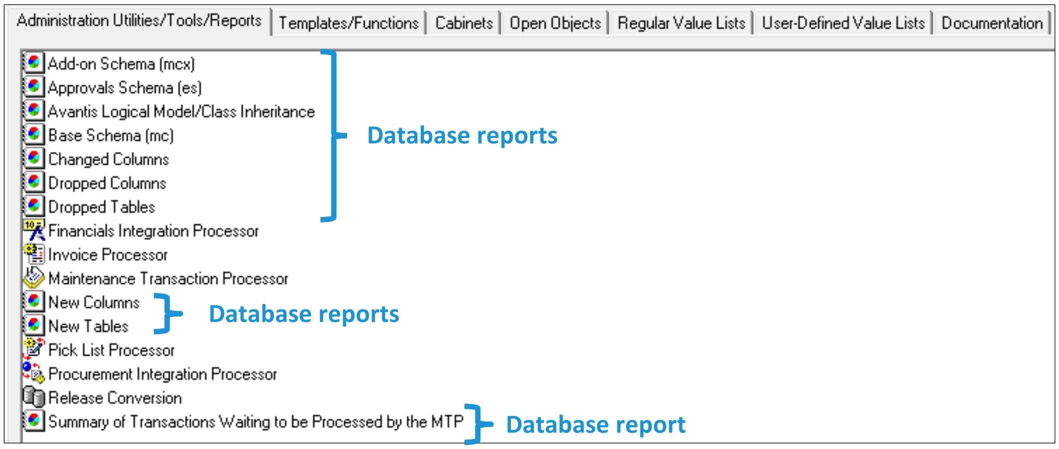
- Database reports
- Object reports
- Business Analysis reports
- Cabinet reports

Reports are designed using the SAP Crystal Reports™ application software.

Database reports

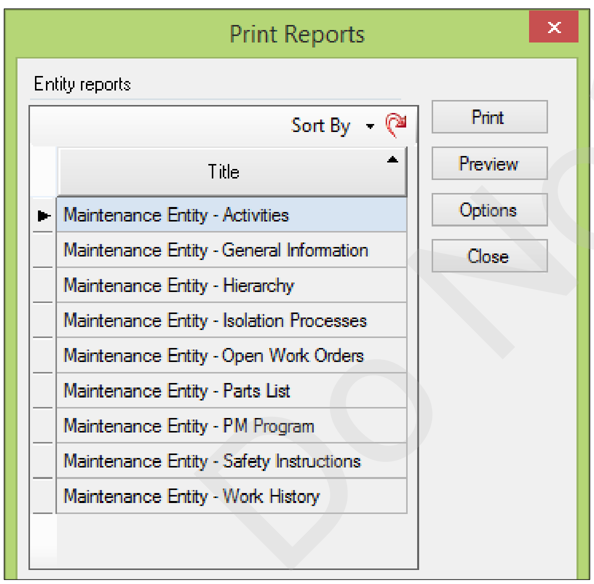
The database reports are EAM-delivered reports that provide IT / EAM System Administrator with information about the database schema and identify the changes that have been made to it. These reports can be found through the Reports cabinet or on the Administration Utilities/Tools/Reports tab of the EAM Administrator's desktop. The delivered database reports are:

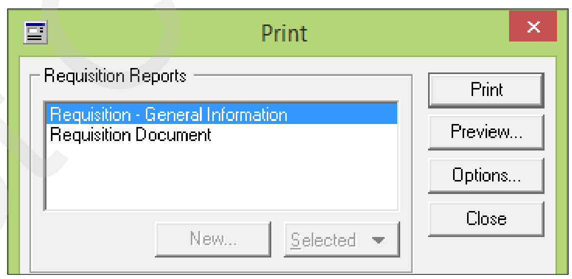
- Add-on Schema (mcx)
- Approvals Schema (es)
- EAM Logical Model/Class Inheritance
- Base Schema (mc)
- Changed Columns
- Dropped Columns
- Dropped Tables
- New Columns
- New Tables
- Summary of Transactions Waiting to be Processed by the MTP

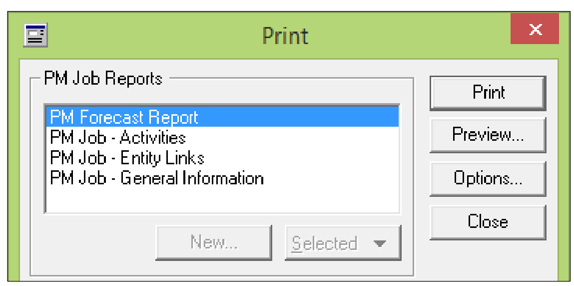


Object reports

Many objects in EAM contain at least one predefined report. These reports are intended to list the field level data for the selected object or for the objects listed in the cabinet view. Object reports can only be previewed or printed from within the object or a cabinet view based on that object. The following screen shots show examples of the types of reports available through the Print function of three different types of objects.







Business analysis reports

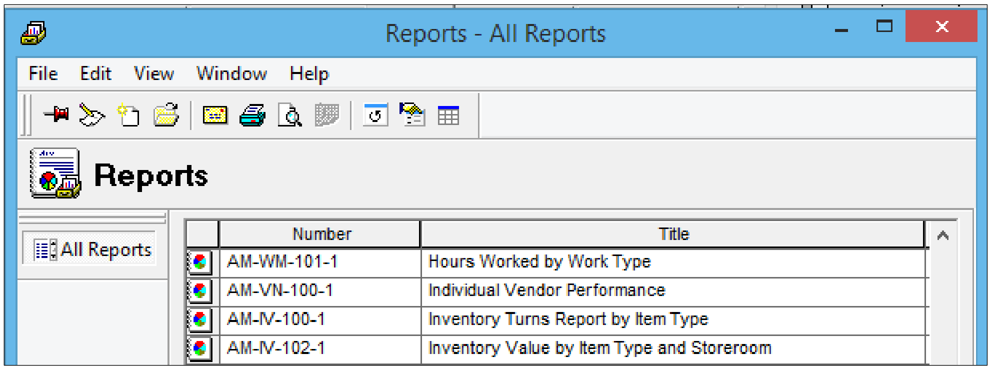
EAM provides several predefined business analysis reports that allow you to review and analyze information that spans the entire organization. Business analysis reports can include comparisons, calculations and/or summarizations.

Analysis reports can also be generated from a cabinet view.

All business analysis reports can be previewed and printed from the standard Report cabinet. Business analysis reports – whether EAM delivered or created by the client – can have a link added to a custom desktop for ease of access.

The following table lists the EAM-delivered business analysis reports by related module.

Module	Enterprise Asset Management-delivered Business Analysis Report
Maintenance	Contractor/In-house Employee Labor Hours Comparison
	Contractor/In-house Employee Time Card
	Entity Cost Analysis by Entity Classification and Entity Type
	Entity Cost Analysis Top-N Entities by Cost
	Equipment Failure Analysis by Time Period, Root Cause and Reason for Failure
	Entity Cost Analysis Top-N Entities by Cost
	Hours Worked by Work Type
	Number of New Work Requests by Work Type
	Number of New Work Tasks by Work Type
	Overtime by Trade
	Planned versus Actual Hours Summary by Planner and Trade
	Repair Delay Analysis
	Scheduled versus Unscheduled Hours
	Time to Repair Analysis by Time Period and Reason for Downtime
	Work Tasks Closed Summary by Work type and Priority
Inventory	Inventory Turns Report by Item Type
	Item value and Usage by Type and Storeroom
	Top 20 Inventory Items
Procurement	Over Invoiced Line Price by Vendor
	Top 20 Vendors by Orders
	Vendor Performance


Reports - All Reports
File Edit View Window Help
Reports
All Reports
Number
Title
AM-WM-101-1
Hours Worked by Work Type
AM-VN-100-1
Individual Vendor Performance
AM-IV-100-1
Inventory Turns Report by Item Type
AM-IV-102-1
Inventory Value by Item Type and Storeroom