IBM TRIRIGA
Version 12 Release 1.2

*CAD Integrator/Publisher
User Guide*

IBM

Contents

Chapter 1. IBM TRIRIGA CAD Integrator/Publisher overview

IBM® TRIRIGA® CAD Integrator/Publisher provides bidirectional tools that integrate your computer-aided design (CAD) application with the TRIRIGA environment and enhance the standard CAD functions. TRIRIGA CAD Integrator/Publisher provides a means of attaching and uploading data to the TRIRIGA environment. You can also view real-time information for that data in your CAD application in the form of reporting.

You use TRIRIGA CAD Integrator/Publisher to upload and link data, apply real-time reporting, and publish graphic representations for use in the Graphics section of TRIRIGA applications. TRIRIGA users such as space planners can view CAD drawings such as floor plans in Graphics sections of the TRIRIGA applications that they use.

For information about the new features in version 12 and how the features differ from version 10, see the CAD Integrator-Publisher page in the IBM TRIRIGA wiki.

In your AutoCAD or MicroStation application, you access the TRIRIGA CAD Integrator/Publisher tools from the **IBM TRIRIGA** menu and menu items. Alternatively, in your AutoCAD application, you can type the equivalent command in the CAD software command line. You can also use the commands to build scripts.

Only one TRIRIGA CAD Integrator/Publisher instance can run at a time. To use a different instance, you must close the instance that is running, and then open another instance.

In TRIRIGA CAD Integrator/Publisher, the changes that you make on an open CAD drawing update the TRIRIGA records as you edit the drawing. For example, each drawing and boundary or block that you attach updates the TRIRIGA records as you perform each attach action. Inserted objects make TRIRIGA record associations as you insert the objects into the drawing.

In TRIRIGA CAD Integrator/Publisher, new, modified, and deleted objects update the Graphics sections only after you publish the changes to the objects.

Any changes that are made to records in the TRIRIGA environment update the CAD drawing after you synchronize the records and the drawing from TRIRIGA CAD Integrator/Publisher.

Related tasks:

Chapter 10, "Synchronizing changes between CAD drawings and TRIRIGA records," on page 43
After you modify an attached drawing or TRIRIGA record, you must synchronize the changes between the drawing and the record that the drawing is attached to. The drawing then reflects the current record information. You can configure your drawing preferences to automatically and fully synchronize an attached CAD drawing with the record that it is attached to when you open the drawing in TRIRIGA CAD Integrator/Publisher. By default, TRIRIGA CAD Integrator/Publisher does not synchronize a drawing when you open the drawing.

Related reference:

In AutoCAD, you can select the TRIRIGA CAD Integrator/Publisher tools from the **IBM TRIRIGA** menu items, or you can enter the equivalent command in the AutoCAD command line. You can also use the commands to build scripts.

Related information:

➥ IBM TRIRIGA wiki

TRIRIGA CAD Integrator/Publisher requirements

TRIRIGA CAD Integrator/Publisher version 12.1.0 and later works only with TRIRIGA Application Platform version 3.4.0 and later.

TRIRIGA CAD Integrator/Publisher for AutoCAD supports multi-byte characters in drawings, windows, and records. TRIRIGA CAD Integrator/Publisher for MicroStation supports multi-byte characters in TRIRIGA CAD Integrator/Publisher windows and in TRIRIGA records.

A TRIRIGA administrator uses the Threads Manager of the TRIRIGA Administrator Console to control the number of threads that the TRIRIGA Application Platform allocates to TRIRIGA CAD Integrator/Publisher for attaching a drawing.

TRIRIGA CAD Integrator/Publisher security

The TRIRIGA Application Platform provides the security provisions that TRIRIGA CAD Integrator/Publisher uses for data access. For example, the TRIRIGA Application Platform prevents a user with read-only access to spaces from running a batch edit to edit spaces. To publish drawing information, a user must have at least edit access to the top-level form definition that is defined in the active application definition.

The TRIRIGA system administrator defines the user access permissions to TRIRIGA modules, business objects, and records.

Application definitions

A TRIRIGA CAD Integrator/Publisher application definition defines how CAD drawing information can be attached to records in the TRIRIGA environment.

Each application definition specifies how the information in a CAD drawing relates to TRIRIGA business objects. An application definition also specifies the TRIRIGA records that the drawing information can link to and interact with. Application definitions are defined within the TRIRIGA environment, and are shared by all TRIRIGA CAD Integrator/Publisher users who access the TRIRIGA environment.

TRIRIGA CAD Integrator/Publisher provides two application definitions:

Facilities Management - Primary
> Attaches drawings to floor records. The Facilities Management - Primary application definition is the default, and the provided information focuses on the hierarchy and mappings that are specified in the default definition.

Plan Management - Primary
> Attaches drawings to planned floor records. The Plan Management - Primary application definition is provided only with IBM TRIRIGA version 9.7, or later.

Each application definition contains a set of two types of records that connect a CAD drawing to a TRIRIGA record:

Hierarchy nodes

In the TRIRIGA environment, hierarchies are specified within a module and all the records in the module have a parent-child relationship. In TRIRIGA CAD Integrator/Publisher, the drawing is attached to a record, but children of that record can be related by any association. The association is defined by the nodes in the CAD hierarchy. The primary function of the application definition record is to set the starting point, or top-level element, for attachment within the CAD hierarchy.

Mappings

A TRIRIGA business object typically has many fields and actions, and TRIRIGA CAD Integrator/Publisher needs to interact with only a few of those fields and actions. The application definition mappings eliminate unnecessary data transfer between the TRIRIGA environment and TRIRIGA CAD Integrator/Publisher. The application definition mappings help to identify key aspects about TRIRIGA metadata that affect the interaction of TRIRIGA CAD Integrator/Publisher with the TRIRIGA environment.

The mappings also provide a way to add TRIRIGA CAD Integrator/Publisher data from the drawing to the specified fields without requiring changes to the original business object.

You can create a custom application definition that uses a custom hierarchy and custom mappings. Any application definition hierarchy nodes that you use must be children of the CAD hierarchy root node.

Related concepts:

"Scenario: Designing a custom application definition for a server room" on page 50
A TRIRIGA user with administrator authority can design custom application definitions to support specific business needs. For example, a custom application definition might specify the attachment of the CAD drawing information for a server room, server racks, and servers to TRIRIGA records.

Related tasks:

Chapter 11, "Customizing an application definition," on page 45
With TRIRIGA administrator authority, you can customize the default application definition components or create an application definition to support a business need. For example, you might create an application definition to support the attachment of CAD drawing information for a server room. The server room might contain server aisles, server racks, and servers.

CAD drawing requirements

TRIRIGA CAD Integrator/Publisher includes requirements for polylines, boundaries, regions, and objects in your drawings. Grouped objects are not supported.

Drawing standards

Your drawings must meet the minimum TRIRIGA CAD Integrator/Publisher drawing standards for attachment to TRIRIGA records. When you follow these standards for CAD drawings, layers or levels, and symbols, you can attach all of the drawing information at one time.

Your drawings must meet the following standards:

- One drawing for each record that is associated with a top-level CAD hierarchy node. The drawing contains all of the polylines and asset symbols to attach.
- Boundaries, blocks, or cells designate assignable objects.

Boundaries

You form drawing boundaries by using the standard commands in your CAD application. For integration with TRIRIGA CAD Integrator/Publisher, boundaries cannot have a width. TRIRIGA CAD Integrator/Publisher recognizes four boundary types: circle, ellipse, polyline, and region.

Boundaries enclose an amount of space within them. When you attach drawing information to TRIRIGA records, these boundaries are what you select in the CAD application. After you attach a boundary, TRIRIGA CAD Integrator/Publisher automatically calculates the area totals and saves them in the TRIRIGA records. Without boundaries, you cannot attach objects, or use the other features of TRIRIGA CAD Integrator/Publisher.

Your boundaries must meet the following requirements:
- All boundaries are closed, with no overlap.

  For AutoCAD, you can specify whether to allow unclosed boundaries for processing text entities as upload candidates. You specify your selection in the `ACCEPT_UNCLOSED_BOUNDARIES_WHEN_UPLOADING` property in the `ci.properties` file. To treat unclosed boundaries as invalid boundaries for uploading candidates, use the default value of N for the property. To treat unclosed boundaries as valid for uploading candidates, use the value of Y for the property. Setting the property to Y allows the processing of upload candidates that are surrounded by unclosed boundaries, but the areas might not be correct.
- All boundaries, and the text entities that identify them, have a height of zero (Z=0).

  For AutoCAD, you can specify whether to force all text entities to be treated as if they have a height of Z=0. You specify your selection in the `FLATTEN_Z_ON_TEXT_ENTITIES_WHEN_UPLOADING` property in the `ci.properties` file. The default value of Y in the property automatically treats all text entities as if they have a height of Z=0. A value of N in the property causes text entities that are floating to not be found during the uploading candidates process.
- One boundary for each attachable object.

For location-based boundaries that use the default Facilities Manager Primary application definition, the boundaries must meet the following requirements:
- One boundary around the exterior boundary for the gross area.
- One boundary around the interior face of the exterior boundary for the measured gross area.
- One boundary around all primary circulation corridors and fire exit corridors. Include only the boundary wall within the polyline area.
- One boundary around each individual hard-walled room. Unless the room bounds a primary circulation corridor or exterior wall, draw the lines at the wall centerline.
- One boundary around each assignable workspace or system furniture cube. You can draw the lines in the centerline or in a consistently designated side. For example, if you draw cube polylines along their exterior edge, apply that method consistently. Assign all cubes of the same type to the same size, regardless of position in the middle or end of the row.

- One boundary around the secondary circulation areas.
- The area that is contained within all polyline spaces must equal the area that is contained within the measured gross boundary polyline. If overlaps or gaps exist, the space areas do not equal the floor area.

Modified regions

When you modify regions in your CAD application, do not leave a region with a hole. You cannot select a region by clicking inside a hole.

In your CAD application, you can modify regions with the union, subtract, and intersect operations. When you use the subtract operation on overlapping regions, the operation subtracts the inner boundary area from the outer boundary area. In this case, the subtract operation leaves a region with a hole. To account for the area of this hole, you can draw a boundary, typically a polyline, around the hole. You can then assign a boundary to the polyline.

Chapter 2. Installing and upgrading TRIRIGA CAD Integrator/Publisher

The installation and upgrade processes load the current version of TRIRIGA CAD Integrator/Publisher to the workstation of an Autodesk AutoCAD or a Bentley MicroStation user.

Installing TRIRIGA CAD Integrator/Publisher

The installation process loads version 12 of TRIRIGA CAD Integrator/Publisher as a plug-in for CAD applications and adds the **IBM TRIRIGA** menu to the CAD application menu bar. The installation process also adds a desktop shortcut that you use to access your CAD application.

Before you begin

The following prerequisites must be met:

- A user who installs version 12 must have administrator rights.
- The installation workstation must have a supported version of CAD software installed.
- The installation workstation does not have a version of TRIRIGA CAD Integrator/Publisher already installed. If a previous version exists, do not uninstall the previous version or run the installation process; run the upgrade process.

About this task

An administrator runs the installation process on the workstation of each CAD application user. An administrator can install version 12 for administrator and non-administrator users.

The language list that is displyed in the installation process is based on the system locale. The language that you select sets the language for TRIRIGA CAD Integrator/Publisher. If a workstation has more than one type of CAD application, all the CAD application types use the same language.

Procedure

1. Open the installation folder and double-click the `install_ci_v12.1.0.0.exe` file.
2. Follow the prompts in the installation program, and select **Install** in the Choose Install Set window.
3. Verify the installation.
4. Optional: Uninstall the previous version.

Related tasks:

The upgrade process loads version 12 of TRIRIGA CAD Integrator/Publisher as a plug-in for a CAD application and removes the previous installations of TRIRIGA CAD Integrator/Publisher. If version 10 of TRIRIGA CAD Integrator/Publisher is installed, the upgrade process removes the version 10 **IBM TRIRIGA CAD Integrator** menu from the CAD application menu bar. The upgrade process from version 10 adds the version 12 **IBM TRIRIGA** menu to the CAD application menu bar. The upgrade process also adds a desktop shortcut that you use to access your CAD application.

As a part of the TRIRIGA CAD Integrator/Publisher installation or upgrade process, you need to verify that the process completed successfully. If the process did not complete successfully, you can complete the process manually.

An uninstallation is an optional process that you can run after you install or upgrade to version 12 of TRIRIGA CAD Integrator/Publisher. The uninstallation removes the IBM TRIRIGA CAD Integrator keys from the Microsoft Windows registry and removes the program files from a workstation.

Silent mode: Installing IBM TRIRIGA CAD Integrator/Publisher

The TRIRIGA CAD Integrator/Publisher can be installed silently as a plug-in for CAD applications. The silent installation integrates with the TRIRIGA CAD Integrator/Publisher installation program by using a command prompt and the `silentinstall.properties` file.

Before you begin

Download the `silentinstall.properties` file.

If there is an existing `silentinstall.properties` file, update the file.

If you are installing for all users, you need administrator privileges.

If you are integrating with Autodesk AutoCAD, then you need a JRE installed in the `C:\\Program Files\\Java\\jre7` directory or you need to specify a valid 64-bit JVM or JRE in the IA_x64_JAVA_PATH.

If you are integrating with Bentley MicroStation, then you need a JRE installed in the `C:\\Program Files (x86)\\Java\\jre7` directory or you need to specify a valid 32-bit JVM or JRE in the IA_x86_JAVA_PATH.

Procedure

1. Close out of either MicroStation or AutoCAD
2. Complete one of the following steps:
   a. Place the `silentinstall.properties` file in the same directory as the CI installer, and run the silent installation by entering `install_ci_v12.1.2.0.exe -i silent -f silentinstall.properties` in the command line.
   b. Place the `silentinstall.properties` file in the `C:\some\abs\path\to\silentinstall.properties` directory, and run the silent installation by entering `install_ci_v12.1.2.0.exe -i silent -f C:\some\abs\path\to\silentinstall.properties` in the command line.

c. To use the default silent installation configuration, run the silent installation by entering `install_ci_v12.1.2.0.exe -i silent` in the command line.

3. Optional: If you are running a new installation, complete the following steps:
   a. Select a default language by setting one option to 1 and the rest to 0.
   b. Select the installation scope by setting one of the options to 1 and the other to 0.
   c. Choose an installation folder.

Upgrading TRIRIGA CAD Integrator/Publisher

The upgrade process loads version 12 of TRIRIGA CAD Integrator/Publisher as a plug-in for a CAD application and removes the previous installations of TRIRIGA CAD Integrator/Publisher. If version 10 of TRIRIGA CAD Integrator/Publisher is installed, the upgrade process removes the version 10 **IBM TRIRIGA CAD Integrator** menu from the CAD application menu bar. The upgrade process from version 10 adds the version 12 **IBM TRIRIGA** menu to the CAD application menu bar. The upgrade process also adds a desktop shortcut that you use to access your CAD application.

Before you begin

The following prerequisites must be met:
- The workstations to upgrade must have a supported version of CAD software installed.
- The workstations to upgrade must have version 10 or a previous installation of version 12 installed.
- All drawings that were attached with version 10 of TRIRIGA CAD Integrator/Publisher must be backed up.

About this task

Run the upgrade process on the workstation of every CAD application user where a previous installation of TRIRIGA CAD Integrator/Publisher exists. An administrator can run the upgrade process for administrator and non-administrator users.

The language list that is displayed in the upgrade process is based on the system locale. The language that you select sets the language for TRIRIGA CAD Integrator/Publisher. If a workstation has more than one type of CAD application, all the CAD application types use the same language.

Procedure

1. Open the installation folder and double-click the `install_ci_v12.1.0.0.exe` file.
2. Follow the prompts in the upgrade program, and select **Upgrade** in the Choose Install Set window.
3. Verify the upgrade.
4. Upgrade the CAD drawings that are attached to version 10 of TRIRIGA CAD Integrator/Publisher.

Results

After the upgrade process, you cannot publish CAD drawing information with version 10 of TRIRIGA CAD Integrator/Publisher, and the CAD drawings that are attached to version 10 cannot be used in version 12 until the drawings are upgraded.

Related tasks:

"Installing TRIRIGA CAD Integrator/Publisher" on page 7
The installation process loads version 12 of TRIRIGA CAD Integrator/Publisher as a plug-in for CAD applications and adds the **IBM TRIRIGA** menu to the CAD application menu bar. The installation process also adds a desktop shortcut that you use to access your CAD application.

"Verifying the installation or upgrade process" on page 11
As a part of the TRIRIGA CAD Integrator/Publisher installation or upgrade process, you need to verify that the process completed successfully. If the process did not complete successfully, you can complete the process manually.

"Uninstalling TRIRIGA CAD Integrator/Publisher" on page 12
An uninstallation is an optional process that you can run after you install or upgrade to version 12 of TRIRIGA CAD Integrator/Publisher. The uninstallation removes the IBM TRIRIGA CAD Integrator keys from the Microsoft Windows registry and removes the program files from a workstation.

"Upgrading CAD drawings from version 10"
After the upgrade process, the CAD drawings that are attached to version 10 of TRIRIGA CAD Integrator/Publisher must be upgraded to work with version 12. After you upgrade the drawings, they can be used only with TRIRIGA CAD Integrator/Publisher, version 12.

Upgrading CAD drawings from version 10

After the upgrade process, the CAD drawings that are attached to version 10 of TRIRIGA CAD Integrator/Publisher must be upgraded to work with version 12. After you upgrade the drawings, they can be used only with TRIRIGA CAD Integrator/Publisher, version 12.

Before you begin

Ensure that all drawings that were attached with version 10 of TRIRIGA CAD Integrator/Publisher are backed up before you upgrade the drawings from version 10 to version 12.

About this task

After the upgrade process, TRIRIGA CAD Integrator/Publisher automatically upgrades each CAD drawing individually when you open a drawing. For the upgrade to occur, you must wait for TRIRIGA CAD Integrator/Publisher to load completely in your CAD application before you open the drawing.

Related tasks:

"Upgrading TRIRIGA CAD Integrator/Publisher" on page 9
The upgrade process loads version 12 of TRIRIGA CAD Integrator/Publisher as a plug-in for a CAD application and removes the previous installations of TRIRIGA CAD Integrator/Publisher. If version 10 of TRIRIGA CAD Integrator/Publisher is installed, the upgrade process removes the version 10 **IBM TRIRIGA CAD Integrator** menu from the CAD application menu bar. The upgrade process from version 10 adds the version 12 **IBM TRIRIGA** menu to the CAD application menu bar. The upgrade process also adds a desktop shortcut that you use to access your

CAD application.

Verifying the installation or upgrade process

As a part of the TRIRIGA CAD Integrator/Publisher installation or upgrade process, you need to verify that the process completed successfully. If the process did not complete successfully, you can complete the process manually.

Related tasks:

"Installing TRIRIGA CAD Integrator/Publisher" on page 7
The installation process loads version 12 of TRIRIGA CAD Integrator/Publisher as a plug-in for CAD applications and adds the **IBM TRIRIGA** menu to the CAD application menu bar. The installation process also adds a desktop shortcut that you use to access your CAD application.

"Upgrading TRIRIGA CAD Integrator/Publisher" on page 9
The upgrade process loads version 12 of TRIRIGA CAD Integrator/Publisher as a plug-in for a CAD application and removes the previous installations of TRIRIGA CAD Integrator/Publisher. If version 10 of TRIRIGA CAD Integrator/Publisher is installed, the upgrade process removes the version 10 **IBM TRIRIGA CAD Integrator** menu from the CAD application menu bar. The upgrade process from version 10 adds the version 12 **IBM TRIRIGA** menu to the CAD application menu bar. The upgrade process also adds a desktop shortcut that you use to access your CAD application.

Verifying the installation or upgrade process for AutoCAD

To verify the installation or upgrade process, check that the **IBM TRIRIGA** menu appears in the AutoCAD menu bar and that the menu items function. For an upgrade from version 10 of TRIRIGA CAD Integrator/Publisher, you also verify that the process removed the previous **IBM TRIRIGA CAD Integrator** menu from the AutoCAD menu bar.

Procedure

1. Double-click the desktop **IBM TRIRIGA CAD Integrator - Publisher (AutoCAD)** shortcut and verify that the **IBM TRIRIGA** menu appears in the AutoCAD menu bar.
2. If the menu does not appear, use the `menubar` command, set it to 1, and press Enter.
3. If the menu still does not appear, add the menu:
   a. Enter the `CUILOAD` command.
   b. In the Load/Unload Customizations window, browse to the `.cuix` file for the language that you used, and click **Load**. The default path to the `.cuix` file is `C:\Program Files\IBM\TRIRIGA\CI-12\bin\AC`.
4. For an upgrade process from version 10 of TRIRIGA CAD Integrator/Publisher, if the previous **IBM TRIRIGA CAD Integrator** menu was not removed, remove the menu:
   a. Enter the `CUILOAD` command.
   b. Unload the TriACAD customization group.
   c. If the installation directory of the previously installed version is different from the installation directory of the current version, delete the previous installation directory.
5. Verify that the **IBM TRIRIGA** menu items are functional:

a. Select **IBM TRIRIGA** > **Login** and verify that the menu items are enabled. Wait to check the menu items until a message confirms that IBM TRIRIGA CAD Integrator loaded successfully.

b. If the menu items are not enabled, add the following line to the `AutoCAD lisp` file: `(command "netload" "C:/Program Files/IBM/TRIRIGA/CI-12/bin/AC/trgaci.dll")`

Verifying the installation or upgrade process for MicroStation

After you install or upgrade TRIRIGA CAD Integrator/Publisher, check that the **IBM TRIRIGA** menu appears in the MicroStation menu bar and that the menu items function. If you upgraded from version 10, you also verify that the process removed the previous **IBM TRIRIGA CAD Integrator** menu from the MicroStation menu bar.

Procedure

1. Double-click the **IBM TRIRIGA CAD Integrator - Publisher (Microstation)** desktop shortcut and verify that the **IBM TRIRIGA** menu appears in the MicroStation menu bar. After a message confirms that IBM TRIRIGA CAD Integrator loaded successfully, check that the menu items are functional.

2. If the shortcut does not work, ensure that the shortcut points to the `cimsStart.exe` file in the installation directory and double-click the shortcut again.

What to do next

If TRIRIGA CAD Integrator/Publisher still does not appear in your MicroStation application, troubleshoot the installation.

Related information:

"TRIRIGA CAD Integrator/Publisher fails to load to MicroStation: Troubleshooting" on page 14
If the installation or upgrade process for version 12 of TRIRIGA CAD Integrator/Publisher failed to load in the MicroStation application, modify the user configuration file (UCF).

Uninstalling TRIRIGA CAD Integrator/Publisher

An uninstallation is an optional process that you can run after you install or upgrade to version 12 of TRIRIGA CAD Integrator/Publisher. The uninstallation removes the IBM TRIRIGA CAD Integrator keys from the Microsoft Windows registry and removes the program files from a workstation.

About this task

The language list that appears in the uninstallation process determines the language that the uninstallation process uses.

Procedure

1. Select **Start** > **All Programs** > **IBM TRIRIGA CAD Integrator - Publisher** > **Uninstall IBM TRIRIGA CAD Integrator - Publisher**.

2. Follow the prompts in the uninstallation program, selecting **Uninstall** in the Choose Install Set window.

3. When the uninstallation completes, restart the workstation.

4. For AutoCAD, if the previous **IBM TRIRIGA CAD Integrator** menu still appears in the AutoCAD menu bar, remove the menu:
   a. Run the **CUILOAD** command.
   b. Unload the TRGAAcad customization group.
   c. Delete the previous installation directory.

Related tasks:

"Installing TRIRIGA CAD Integrator/Publisher" on page 7
The installation process loads version 12 of TRIRIGA CAD Integrator/Publisher as a plug-in for CAD applications and adds the **IBM TRIRIGA** menu to the CAD application menu bar. The installation process also adds a desktop shortcut that you use to access your CAD application.

"Upgrading TRIRIGA CAD Integrator/Publisher" on page 9
The upgrade process loads version 12 of TRIRIGA CAD Integrator/Publisher as a plug-in for a CAD application and removes the previous installations of TRIRIGA CAD Integrator/Publisher. If version 10 of TRIRIGA CAD Integrator/Publisher is installed, the upgrade process removes the version 10 **IBM TRIRIGA CAD Integrator** menu from the CAD application menu bar. The upgrade process from version 10 adds the version 12 **IBM TRIRIGA** menu to the CAD application menu bar. The upgrade process also adds a desktop shortcut that you use to access your CAD application.

Troubleshooting - TRIRIGA CAD Integrator/Publisher

If errors occur while you are installing or upgrading to TRIRIGA CAD Integrator/Publisher version 12, review the troubleshooting information for solutions to common problems.

Security warnings when loading to AutoCAD 2014: Troubleshooting

The installation or upgrade process for version 12 of TRIRIGA CAD Integrator/Publisher for the AutoCAD 2014 application might generate security warnings. You can resolve this issue by adding the TRIRIGA CAD Integrator/Publisher installation path to the AutoCAD *TRUSTEDPATHS* variable.

Symptoms
In a security concern window, you see a message that an executable file was found outside of the specified trusted locations.

The security window is displayed twice: once for the TRIRIGA CAD Integrator/Publisher program commands, and once for the IBM TRIRIGA menu items.

In both security windows, you click **Load**, and TRIRIGA CAD Integrator/Publisher starts. However, the next time you start TRIRIGA CAD Integrator/Publisher, the security windows are displayed again, and you must load the path names again.

Resolving the problem
To prevent the security windows from being displayed, add the TRIRIGA CAD Integrator/Publisher installation path to the AutoCAD *TRUSTEDPATHS* variable.

1. Open AutoCAD 2014.
2. In the command line, enter **TRUSTEDPATHS**.
3. Add the TRIRIGA CAD Integrator/Publisher installation path. The default location is `C:\Program Files\IBM\TRIRIGA\CI-12\bin\ac`.

TRIRIGA CAD Integrator/Publisher fails to load to MicroStation: Troubleshooting

If the installation or upgrade process for version 12 of TRIRIGA CAD Integrator/Publisher failed to load in the MicroStation application, modify the user configuration file (UCF).

Symptoms

The **IBM TRIRIGA** menu does not appear in the MicroStation menu bar.

Diagnosing the problem

The TRIRIGA CAD Integrator/Publisher installation process attempts to locate a MicroStation installation and populate the TRIRIGA CAD Integrator/Publisher registry keys with the MicroStation version and the path to TRIRIGA CAD Integrator/Publisher. The installation process also creates a template MicroStation UCF named `CiMs.ucf` in the `bin\ms` subdirectory of the TRIRIGA CAD Integrator/Publisher installation directory.

The shortcut that the installation process installs to the desktop and the **Start** menu points to the CiMsStart application. The CiMsStart application creates a MicroStation UCF that automatically loads TRIRIGA CAD Integrator/Publisher and uses the command to load the UCF to start MicroStation.

To create the UCF, the CiMsStart application reads the data in the registry keys that the installation process sets.

For a 64-bit Microsoft Windows system, the following registry keys are set:

`HKEY_CURRENT_USER\Software\Wow6432Node\TRIRIGA\TRIRIGA CAD Integrator\MS Support Dir`

`HKEY_CURRENT_USER\Software\Wow6432Node\TRIRIGA\TRIRIGA CAD Integrator\MS Version Found`

For a 32-bit Microsoft Windows system, the following registry keys are set:

`HKEY_CURRENT_USER\Software\TRIRIGA\TRIRIGA CAD Integrator\MS Support Dir`

`HKEY_CURRENT_USER\Software\TRIRIGA\TRIRIGA CAD Integrator\MS Version Found`

If TRIRIGA CAD Integrator/Publisher is installed for all users, the registry keys are in the `HKEY_LOCAL_MACHINE` hive.

For a default TRIRIGA CAD Integrator/Publisher installation process, the `MS Support Dir` registry contains the value `C:\Program Files\IBM\TRIRIGA\CI-12\bin\ MS`. In a TRIRIGA CAD Integrator/Publisher installation for MicroStation V8i (SELECTseries 3), the `MS Version Found` registry key contains the value `08.11.09`. In a TRIRIGA CAD Integrator/Publisher installation for MicroStation V8i (SELECTseries 2), the `MS Version Found` registry key contains the value `08.11.07`. The `08.11.09` and `08.11.07` values are the only values that the CiMsStart application supports.

The CiMsStart application uses the `CiMs.ucf` file that the TRIRIGA CAD Integrator/Publisher installation process provides and the `MS Support Dir` registry value to create a customized `CiMs.ucf` file for the current installation. The

CiMsStart application uses the value in the `MS Version Found` registry key to look up the MicroStation workspace path and places the customized `CiMs.ucf` file in the workstation subdirectory.

Resolving the problem

Use one of the following options to automatically load TRIRIGA CAD Integrator/Publisher to MicroStation:

- If the CiMsStart application does not load TRIRIGA CAD Integrator/Publisher, verify that the data in the registry keys is correct for your installation. Use the information that is described in the problem diagnosis to verify the data.
- If you use a customized `CiMs.ucf` file, add a command to your UCF to load TRIRIGA CAD Integrator/Publisher.
  1. Add the following line to the custom UCF:

     `MS_DGNAPPS > `*`CIInstallationDir`*`\bin\MS\CIMS`

     where *CIInstallationDir* is the TRIRIGA CAD Integrator/Publisher installation directory.
  2. For the default **Current User** installation of TRIRIGA CAD Integrator/Publisher, use the following line:

     `MS_DGNAPPS > C:\Program Files\IBM\TRIRIGA\CI-12\bin\MS\CIMS`
- If the CiMsStart application still does not load MicroStation, configure MicroStation to automatically load TRIRIGA CAD Integrator/Publisher. You need to customize the `CiMs.ucf` file, copy the `CiMs.ucf` file to the MicroStation workspace, and create a shortcut that loads the `CiMs.ucf` file.
  1. Customize the `CiMs.ucf` file:

     Replace the line:

     `MS_DGNAPPS > CIMS`

     with the line:

     `MS_DGNAPPS > `*`CIInstallationDir`*`\bin\MS\CIMS`

     where *CIInstallationDir* is the TRIRIGA CAD Integrator/Publisher installation directory.

     For the default installation directory, use the following line:

     `MS_DGNAPPS > C:\Program Files\IBM\TRIRIGA\CI-12\bin\MS\CIMS`
  2. Copy the customized `CiMs.ucf` file to the MicroStation workspace for your installation:

     The default workspace for MicroStation V8i (SELECTseries 2) and MicroStation V8i (SELECTseries 3) on Microsoft Windows 7 or Microsoft Windows 8 is `C:\ProgramData\Bentley\MicroStation V8i (SELECTseries)\WorkSpace\Users`.

     The default workspace for MicroStation V8i (SELECTseries 2) on Microsoft Windows XP is `C:\Documents and Settings\All Users\Application Data\Bentley\MicroStation V8i (SELECTseries)\WorkSpace\Users`.

     If the workspace is customized to a different directory, use the customized directory.
  3. Create a shortcut to automatically load the `CiMs.ucf` workspace:
     a. Create a shortcut to the `ustation.exe` file, or use the IBM TRIRIGA CAD Integrator - Publisher (Microstation) desktop shortcut from the TRIRIGA CAD Integrator/Publisher installation.
     b. Add the command parameter **-wucims** to the target location. For MicroStation V8i (SELECTseries 2) and MicroStation V8i (SELECTseries 3) on a 64-bit Microsoft Windows system, the target location is "`C:\Program Files (x86)\Bentley\MicroStation V8i (SELECTseries)\MicroStation\`

ustation.exe" -wucims. For a 32-bit Microsoft Windows system, the target location is "C:\Program Files\Bentley\MicroStation V8i (SELECTseries)\MicroStation\ustation.exe" -wucims.

  c. Double-click the shortcut. The shortcut starts MicroStation and attempts to load the CiMs.ucf file from the workspace. If the CiMs.ucf file is not found, an error message appears, and MicroStation fails to initialize. Contact IBM Software Support.

Related tasks

"Verifying the installation or upgrade process for MicroStation" on page 12
After you install or upgrade TRIRIGA CAD Integrator/Publisher, check that the **IBM TRIRIGA** menu appears in the MicroStation menu bar and that the menu items function. If you upgraded from version 10, you also verify that the process removed the previous **IBM TRIRIGA CAD Integrator** menu from the MicroStation menu bar.

Chapter 3. Configuring user preferences

You use the preferences features to configure the user settings at the TRIRIGA CAD Integrator/Publisher product level. You can configure user preferences for attach, connection, drawing, environment, legend, publish, and report settings.

Configuring attach preferences

In the attach preferences, you can specify the display of records in the attach windows and the insert windows. For Smart Attach uploads of child records, you can specify whether to overwrite the values that are in TRIRIGA records. You can use default values or values from a mappable drawing layer to overwrite the records. You can also enable the show prefix and show suffix functions in the Upload area of the Smart Attach window. When enabled, you can specify a prefix or suffix value to add to the uploaded drawing item values.

About this task

When the **Show Initial Hierarchy for Attachment** field is selected, the initial list of records displays for you to select a record to attach to. When cleared, no initial list of records displays, and you must search for a record. If your location hierarchy is large, or you want to reduce the initial display load time, you can clear the **Show Initial Hierarchy for Attachment** field.

For the Upload preferences, you can specify whether the Smart Attach upload process overwrites existing TRIRIGA record values with the values that you specify. If you do not enable the update of existing records, only the area value is overwritten. If you enable the update of existing records, you can specify the data to use for the upload:

Use drawing data
> Overwrites existing records only if a data value is found on the selected mappable layer.

Use drawing data or default data
> Always overwrites existing records. Use the data value that is found on the selected mappable layer. If no value is found, use the default value that you specify in the Upload area.

The attach preferences that you set apply across TRIRIGA CAD Integrator/Publisher for the current user.

Procedure

1. Select **IBM TRIRIGA** > **Preferences** > **Attach**.
2. Select or clear the preferences.
3. Click **Apply**, and click **OK**.

Related tasks:

"Modifying child records from a CAD drawing" on page 24
The layers or levels in a CAD drawing can be used to create or modify TRIRIGA child records. The application definition and mapping that you select specify which layers or levels and field values are required to attach the child records. If the child records exist in TRIRIGA, the records are updated with the values that

you specify. If the child records do not exist in TRIRIGA, they are created.

Configuring connection preferences

You specify the parameters that apply to the connection between TRIRIGA CAD Integrator/Publisher and the TRIRIGA environment. You specify the timeout value for the maximum time that TRIRIGA CAD Integrator/Publisher waits for a server response to a request. You also specify the maximum number of items that are returned from a query at one time.

About this task

The connection preferences that you set apply across TRIRIGA CAD Integrator/Publisher for the current user.

Procedure

1. Select **IBM TRIRIGA** > **Preferences** > **Connection**.
2. Specify the values.
3. Click **Apply**, and click **OK**.

Configuring drawing preferences

You set drawing preferences at the TRIRIGA CAD Integrator/Publisher product level. You can specify to automatically and fully synchronize a drawing when the drawing opens, and to automatically publish a drawing when the drawing closes. The drawing preferences serve as the default drawing properties, and are used to populate the drawing properties on any drawings that you attach.

About this task

The drawing preferences that you set apply to all drawings across TRIRIGA CAD Integrator/Publisher for the current user. You can override some drawing preferences with specific drawing property settings.

Procedure

1. Select **IBM TRIRIGA** > **Preferences** > **Drawing**.
2. Select the drawing preferences.
3. Click **Apply**, and click **OK**.

Related tasks:

Chapter 10, "Synchronizing changes between CAD drawings and TRIRIGA records," on page 43
After you modify an attached drawing or TRIRIGA record, you must synchronize the changes between the drawing and the record that the drawing is attached to. The drawing then reflects the current record information. You can configure your drawing preferences to automatically and fully synchronize an attached CAD drawing with the record that it is attached to when you open the drawing in TRIRIGA CAD Integrator/Publisher. By default, TRIRIGA CAD Integrator/Publisher does not synchronize a drawing when you open the drawing.

Configuring environment preferences

The environment specifies the TRIRIGA environment that you connect to when you log in to TRIRIGA CAD Integrator/Publisher. You specify the URL, the default user name, and the authentication type. You can also specify a proxy user name and password.

Before you begin

Obtain the URL, user name, and password from your administrator.

About this task

You can create, edit, remove, and copy environment configurations. The environment preferences that you set apply across TRIRIGA CAD Integrator/Publisher for the current user. You can override the default user name when you log in. You must always specify the password.

The authentication type can be basic, preemptive basic, or NTLMv2. If your administrator configures the CA SiteMinder access management solution to support non-browser clients, you can use SiteMinder single sign-on with basic or preemptive basic authentication.

Procedure

1. Select **IBM TRIRIGA** > **Preferences** > **Server Environments**.
2. To create an environment, click **New**, click **Edit**, and specify the information.
3. To edit an environment, select the environment, click **Edit**, and specify the information.
4. To delete an environment, select the environment and click **Remove**.
5. To copy an environment, select the environment and click **Copy**.
6. Click **Apply**, and click **OK**.

Configuring legend preferences

The preferences for legends that are applied with CAD reports are specified in themes in the TRIRIGA environment. You can override the TRIRIGA legend preferences in the current theme with your custom configurations in TRIRIGA CAD Integrator/Publisher.

About this task

The legend preferences that you set apply across TRIRIGA CAD Integrator/Publisher for the current user.

Procedure

1. Select **IBM TRIRIGA** > **Preferences** > **Legend**.
2. Specify the settings to use.
3. Click **Apply**, and click **OK**.

Configuring publish preferences

You set publish preferences at the TRIRIGA CAD Integrator/Publisher product level. You specify the publish directory and whether to publish references.

About this task

The publish preferences that you set apply to all publish actions across TRIRIGA CAD Integrator/Publisher for the current user. You can override the publish preferences with a different selection in the publish properties for a specific drawing.

Procedure

1. Select **IBM TRIRIGA** > **Preferences** > **Publish**.
2. Select the publish preferences.
3. Click **Apply**, and click **OK**.

Related tasks:

Chapter 7, "Publishing the drawing information," on page 35
Publishing a drawing uploads a `.dxf` file representation of the CAD drawing to the TRIRIGA environment where the `.dxf` file is processed for display as a web graphic. After the drawing is published, TRIRIGA users can view and report on the drawing in the Graphics section in the TRIRIGA environment.

Configuring report preferences

You configure default hatch and multi-fill values for display in CAD reports. TRIRIGA CAD Integrator/Publisher uses the default values when no hatch or multi-fill values are specified for the related business object record type in the TRIRIGA environment.

About this task

The report preferences that you set apply across TRIRIGA CAD Integrator/Publisher for the current user. If default hatch and multi-fill values are specified in the TRIRIGA environment, they override the local settings.

Procedure

1. Select **IBM TRIRIGA** > **Preferences** > **Report Preferences**.
2. Specify the default values.
3. Click **Apply**, and click **OK**.

Fill Values: Troubleshooting

For Bentley MicroStation users of TRIRIGA CAD Integrator/Publisher, the `areapat.cel` file is required in order for fills to work properly. If the TRIRIGA CAD Integrator/Publisher cannot find this file, an error occurs.

Symptoms
For MicroStation users, theTRIRIGA CAD Integrator/Publisher expects the `areapat.cel` file to be in the `C:\ProgramData\Bentley\MicroStation V8i (SELECTseries)\WorkSpace\System\Cell` folder. If you do not have a `C:\ProgramData\Bentley\MicroStationV8i (SELECTseries)\WorkSpace\System\Cell` folder that is installed, an error occurs.

Resolving the problem
If you do not have a `C:\ProgramData\Bentley\MicroStationV8i(SELECTseries)\ WorkSpace\System\Cell` folder that is installed, you can resolve the problem by taking the following steps:

1. Create the `C:\ProgramData\Bentley\MicroStationV8i(SELECTseries)\WorkSpace\System\Cell` folder.
2. Copy the `areapat.cel` file in the `C:\ProgramData\Bentley\MicroStation V8i\WorkSpace\System\Cell` folder to the `C:\ProgramData\Bentley\MicroStationV8i(SELECTseries)\WorkSpace\System\Cell` folder.

Configuring a full path display of the Space Class field values

Displaying the full path of space class field values shows users where the space class is in their location hierarchy. You configure the display of the full path so that users can select or clear the display of the full path when they select a space class. Users can also search for a space class value.

About this task

The full path for space class field values display in the Smart Attach, Batch Process, and Batch Edit forms. Only the smart section text field type is supported to display the full path value.

Procedure

1. Select **Tools** > **Administration** > **CAD Integrator** > **CAD Mapping**.
2. Open the Space Mapping record.
3. In the Special Fields section, select the **Current Use Space Class** item.
4. Click the **Associated Mapping** lookup icon (magnifying glass), select the Space Class Mapping record, and click **OK**.
5. Click **Save & Close**.
6. Close the Space Mapping record.
7. Open the Space Class Mapping record.
8. In the Special Fields section, click the **Add** action.
9. In the CAD Special Field form, in the General section, set the **Special Field Type** to **Path**.
10. In the Field section, select a section and field to display as the hierarchy path. Any field in the Space Class Current form can be selected. For example, select the **General** section and the **Hierarchy Path (triPathTX)** field.
11. To create the CAD Special Field record, click **Create**.
12. Save and close the Space Class Mapping record.

Results

In a **Smart Attach** or **Batch Process** form, users can select a **Current Use Space Class** value from a list of full path values by clicking the lookup icon. They can turn off the full path display by clearing **Show By Path** at the end of the list. Users can view the full path by hovering over the **Current Use Space Class** value.

In a **Batch Edit** form, users can select **Show By Path** to view the full path values in the **Current Field Value** column.

Related tasks:

To edit an IBM TRIRIGA field value for attached objects, you select the objects in the drawing and specify the new value for a selected field. For example, you might select all the office spaces in a floor drawing, and change the value of the description field to private office.

The layers or levels in a CAD drawing can be used to create or modify TRIRIGA child records. The application definition and mapping that you select specify which layers or levels and field values are required to attach the child records. If the child records exist in TRIRIGA, the records are updated with the values that you specify. If the child records do not exist in TRIRIGA, they are created.

To upload CAD drawing file information to TRIRIGA child records, you can use CAD drawing layers or levels and layer or level values. If the child records exist in TRIRIGA, the child records are updated with the values that you specify. If the child records do not exist, the child records are created. You might use batch processing to upload office spaces, room names, and values such as room descriptions and assets.

Chapter 4. Attaching drawings, drawing objects, and boundaries to TRIRIGA records

In TRIRIGA CAD Integrator/Publisher, you can attach drawings and multiple boundaries, create or update records, and publish drawings and drawing objects individually, or all at one time. The attachment method that you use depends on your use of polyline standards and the number of drawings to process at one time. Typically, you attach CAD drawing information to TRIRIGA records with the Smart Attach feature, where you can perform multiple functions at one time.

Attaching a drawing, and multiple drawing and boundary objects at one time

If you have a number of drawings that use the same polyline standards, you can streamline the attachment process by using the Smart Attach feature. You can attach, upload, and publish drawings and drawing objects all at one time from one window.

Before you begin

Your CAD drawings must use the same polyline standards and layer or level names across all your drawings. You must set your layers or levels to delineate objects by type. For example, you might use a layer name of gross area for the gross area polyline layer in all your CAD drawings. You might use a boundary layer to designate rooms.

About this task

You can perform any or all of the actions that are supported in the Smart Attach window.

Related tasks:

Chapter 7, "Publishing the drawing information," on page 35
Publishing a drawing uploads a `.dxf` file representation of the CAD drawing to the TRIRIGA environment where the `.dxf` file is processed for display as a web graphic. After the drawing is published, TRIRIGA users can view and report on the drawing in the Graphics section in the TRIRIGA environment.

Attaching drawing files and required layers or levels to records

Each CAD drawing must be attached to a TRIRIGA record. The top-level mapping that is specified in the selected application definition determines the type of record that you can attach the drawing to. The application definition also specifies the layers or levels that are required to be attached to the drawing record.

About this task

If you need to create the record to attach to, you can create the record in the TRIRIGA environment from TRIRIGA CAD Integrator/Publisher.

Procedure

1. Open the CAD drawing to attach, and select **IBM TRIRIGA** > **Attach** > **Smart Attach**.
2. Select the application definition, drawing units, and capital project to use for the attachment.
3. Optional: Create a child or parent record.
4. Select the record to attach the drawing information to.
5. To attach the required drawing layers or levels, expand the **Attach Drawing Layers** or the **Attach Design File Levels** area and select the layer or level names.
6. If you are not attaching any other information, click **OK**.

Related tasks:

Chapter 6, "Modifying the records to attach drawing information to," on page 33 When you attach drawing information to a record, you select the record from a TRIRIGA CAD Integrator/Publisher record tree. If the record is not in the tree, you can right-click a record and add a record to the tree. You can also edit a record that is in a tree. To view a new or edited record, you refresh the tree.

Modifying child records from a CAD drawing

The layers or levels in a CAD drawing can be used to create or modify TRIRIGA child records. The application definition and mapping that you select specify which layers or levels and field values are required to attach the child records. If the child records exist in TRIRIGA, the records are updated with the values that you specify. If the child records do not exist in TRIRIGA, they are created.

About this task

For the default application definition mapping, the child records are spaces or area overlays. You might use the default configuration to upload office spaces, room names, and values such as room descriptions and assets.

If you enabled the display of the **Suffix** and **Prefix** fields in your attach preferences, you can specify a suffix or prefix value to add to the values of the upload items. For example, the text in the drawing boundaries for a required field is 101, 102, and 103, and you type Office as the prefix value. The uploaded values are Office 101, Office 102, and Office 103.

The attach preferences for updating existing records determine whether the existing TRIRIGA record values are overwritten with the specified values during the upload process. If you did not enable the update of existing records, only the area value is overwritten. If you enabled the update of existing records, you also selected the type of values to use.

Procedure

1. Open the CAD drawing to attach, and select **IBM TRIRIGA** > **Attach** > **Smart Attach**.
2. In the Actions area, select **Upload**.
3. In the Upload area, select the mapping to use for the layers or levels and the required fields to upload.
4. Optional: Specify the prefix or suffix to add to the values of the items to upload.

5. Select the drawing layer or level from which to get the values for the required fields.

6. Specify a default value to use for the required fields.

7. Optional: To display the full paths of the default current use space classes, click the selection icon (magnifying glass) and, at the end of the list, select **Show Full Path**. The full path display is visible only if your TRIRIGA administrator configured the full path to display.

8. Select the layers or levels to upload, and click **OK**.

9. In the Candidates for Upload window, select the candidates to upload and click **Upload**.

Related tasks:

"Configuring attach preferences" on page 17
In the attach preferences, you can specify the display of records in the attach windows and the insert windows. For Smart Attach uploads of child records, you can specify whether to overwrite the values that are in TRIRIGA records. You can use default values or values from a mappable drawing layer to overwrite the records. You can also enable the show prefix and show suffix functions in the Upload area of the Smart Attach window. When enabled, you can specify a prefix or suffix value to add to the uploaded drawing item values.

"Configuring a full path display of the Space Class field values" on page 21
Displaying the full path of space class field values shows users where the space class is in their location hierarchy. You configure the display of the full path so that users can select or clear the display of the full path when they select a space class. Users can also search for a space class value.

Attaching individual drawings, drawing objects, and boundary objects

When your CAD drawings do not use the same polyline standards, you can attach the CAD drawing and the boundary information one object at a time. You might also use the individual attachment method to update specific attached drawing information.

Related concepts:

"Special fields" on page 47
The special fields in a CAD mapping identify the TRIRIGA business object fields that TRIRIGA CAD Integrator/Publisher uses for the CAD mappings. The special field type controls how TRIRIGA CAD Integrator/Publisher interacts with the selected field.

Attaching a drawing to a record

You attach each CAD drawing to a TRIRIGA record. The top-level mapping that is specified in the selected application definition determines the type of record that you can attach the drawing to.

About this task

For an application definition with a top-level record type of floor, a TRIRIGA floor record must exist. For other application definitions, you attach the drawing to a record of the type that is specified as the top-level mapping in the selected application definition.

Procedure

1. In the CAD application, open the drawing to attach.

2. Select **IBM TRIRIGA** > **Attach** > **Drawing**.

3. Select the application definition, drawing units, and capital project to use for the attachment.

4. Optional: Create a child or parent record.

5. Select the record to attach the drawing to.

6. Click **OK**.

Related tasks:

Chapter 6, "Modifying the records to attach drawing information to," on page 33 When you attach drawing information to a record, you select the record from a TRIRIGA CAD Integrator/Publisher record tree. If the record is not in the tree, you can right-click a record and add a record to the tree. You can also edit a record that is in a tree. To view a new or edited record, you refresh the tree.

Attaching required areas for a top-level record

The gross area in a drawing is a required attachment. The measured gross area is a required attachment when it is specified as a requirement in the application definition. The application definition that you use might specify more required areas.

About this task

In the default Facilities Management - Primary application definition, the top-level record type is floor, and the gross area and measured gross area are required attachments.

A custom application definition might specify a top-level record type of space, with the gross area as a required attachment. The measured gross area might not be required, and there might be more required area attachments.

Procedure

1. To attach the gross area, select **IBM TRIRIGA** > **Attach** > **Gross Area**.

2. To attach the measured gross area, select **IBM TRIRIGA** > **Attach** > **Measured Gross Area**.

3. If your application definition specifies more required areas, attach the required areas.

Related tasks:

Chapter 7, "Publishing the drawing information," on page 35 Publishing a drawing uploads a `.dxf` file representation of the CAD drawing to the TRIRIGA environment where the `.dxf` file is processed for display as a web graphic. After the drawing is published, TRIRIGA users can view and report on the drawing in the Graphics section in the TRIRIGA environment.

Attaching drawing objects to records

In an attached CAD drawing, you can attach objects to TRIRIGA records such as spaces and assets. For example, you might attach a block or cell to a desk or a person record. After the objects are attached, users can view and report on the objects in TRIRIGA CAD Integrator/Publisher and in the Graphics section in the TRIRIGA environment.

Before you begin

Before you can attach objects in a drawing, the objects must exist as records in TRIRIGA. The objects that you can attach are boundaries and AutoCAD blocks or

MicroStation cells. You can create the records before you begin the following procedure, or you can create the records from TRIRIGA CAD Integrator/Publisher when you attach the objects.

Procedure

1. Select **IBM TRIRIGA** > **Attach** > **Attach Object**.
2. Optional: Right-click in the tree to create or edit a TRIRIGA record and to refresh the tree objects.
3. Select the object mapping and the object record to attach to, and click **OK**.
4. Select the boundary, block, or cell of the object to attach.
5. Optional: To attach additional objects, repeat steps 2 - 4.

Related tasks:

Chapter 6, "Modifying the records to attach drawing information to," on page 33
When you attach drawing information to a record, you select the record from a TRIRIGA CAD Integrator/Publisher record tree. If the record is not in the tree, you can right-click a record and add a record to the tree. You can also edit a record that is in a tree. To view a new or edited record, you refresh the tree.

Inserting TRIRIGA objects into a drawing

In an attached CAD drawing, you can insert TRIRIGA objects that are attached to TRIRIGA records such as assets or people. For example, you can insert objects that represent desks, chairs, phones, and people into an office space. After the objects are inserted, users can view and report on the objects in TRIRIGA CAD Integrator/Publisher and in a Graphics section in the TRIRIGA environment.

About this task

The mapping for inserted objects must be an Item type of mapping. The objects that you can insert into a CAD drawing are AutoCAD blocks or MicroStation cells. Objects can be inserted only into attached boundaries.

To insert objects into a drawing, the objects must exist as records in TRIRIGA. You can create the records before you begin the following procedure, or you can create the records from TRIRIGA CAD Integrator/Publisher as you perform the following procedure.

Procedure

1. Select **IBM TRIRIGA** > **Attach** > **Insert Object**.
2. Select the information about the object.
3. Optional: Right-click in the tree to create a TRIRIGA record, edit an attached object, detach an object, and refresh the tree objects.
4. Select the object and click **OK**.
5. Select the location in the drawing to insert the object.
6. Optional: To insert additional objects into the drawing, repeat steps 2 - 5.

Related tasks:

Chapter 6, "Modifying the records to attach drawing information to," on page 33
When you attach drawing information to a record, you select the record from a TRIRIGA CAD Integrator/Publisher record tree. If the record is not in the tree, you can right-click a record and add a record to the tree. You can also edit a record that is in a tree. To view a new or edited record, you refresh the tree.

Processing drawings in batch mode

To process many drawings at the same time, you use batch processing. Batch processing actions include attaching drawing files, uploading and creating child records, and publishing the drawing information. After you start the batch process, the process runs with no further action from you. You might run the batch processing overnight to upload many drawings with new space records or to upload a drawing with thousands of spaces.

Related tasks:

Chapter 7, "Publishing the drawing information," on page 35
Publishing a drawing uploads a `.dxf` file representation of the CAD drawing to the TRIRIGA environment where the `.dxf` file is processed for display as a web graphic. After the drawing is published, TRIRIGA users can view and report on the drawing in the Graphics section in the TRIRIGA environment.

Attaching drawing files and required layers or levels in batch mode

When you have many CAD drawings to attach to TRIRIGA records, you can use batch processing. You can attach all the CAD drawing files and the required layers or levels at one time.

About this task

Each CAD drawing must be attached to a TRIRIGA record. The top-level mapping that is specified in the selected application definition determines the type of record that you can attach the drawings to. The application definition also specifies the layers or levels that must be attached to the drawing file record.

Procedure

1. Select **IBM TRIRIGA** > **Attach** > **Batch Process**.
2. In the Actions area, select **Attach**.
3. In the Attachment Information area, specify the application definition, drawing file units, and capital project to use.
4. In the Attach Drawing Layers or Attach Design File Levels area, specify the layer or level name to use for each required layer or level. Alternatively, specify a comma-delimited list of layer or level names to use for each required layer or level.
5. Select the drawing files and the records to attach the files to.
6. If you are not uploading objects, select the drawing files and records to attach to, and click **OK**.

Related tasks:

"Selecting the drawing files and records to process in batch mode" on page 30
For batch processing, you create a list of drawing files on which to perform the actions that you select in the Actions area. If you select the Attach action, you must specify the drawing files and the records to attach the drawing files to.

"Uploading child records from CAD drawings in batch mode" on page 29
To upload CAD drawing file information to TRIRIGA child records, you can use CAD drawing layers or levels and layer or level values. If the child records exist in TRIRIGA, the child records are updated with the values that you specify. If the child records do not exist, the child records are created. You might use batch processing to upload office spaces, room names, and values such as room descriptions and assets.

Uploading child records from CAD drawings in batch mode

To upload CAD drawing file information to TRIRIGA child records, you can use CAD drawing layers or levels and layer or level values. If the child records exist in TRIRIGA, the child records are updated with the values that you specify. If the child records do not exist, the child records are created. You might use batch processing to upload office spaces, room names, and values such as room descriptions and assets.

About this task

Child records can be created or updated only for attached drawings. The application definition and mapping that you select specify which layers or levels and field values are required attachments for the child records. For the default application definition mapping, the child records are spaces or area overlays.

If you enabled the display of the **Suffix** and **Prefix** fields in your Attachment preferences, you can specify a prefix or suffix value to add to the values of the upload items. For example, the text in the drawing boundaries for a required field is 101, 102, and 103, and you type Office as the prefix value. The uploaded values are Office 101, Office 102, and Office 103.

Procedure

1. Select **IBM TRIRIGA** > **Attach** > **Batch Process**.
2. In the Actions area, select **Upload**.
3. In the Upload area, select the mapping to use for the layers or levels and the required fields.
4. Optional: Specify the prefix or suffix to add to the values of the items to upload.
5. Specify the drawing layer or level from which to get the values for the required fields. If your drawings use different names for the same polyline layers or levels, you can specify a comma-delimited list of layer or level names.
6. Specify a default value to use for the required fields.
7. Optional: To display the full paths of the default current use space classes, click the selection icon (magnifying glass) and, at the end of the list, select **Show Full Path**. The full path display is visible only if your TRIRIGA administrator configured the full path to display.
8. Specify the layers or levels to upload.
9. Select the drawing files and records to process.

Related tasks:

"Selecting the drawing files and records to process in batch mode" on page 30
For batch processing, you create a list of drawing files on which to perform the actions that you select in the Actions area. If you select the Attach action, you must specify the drawing files and the records to attach the drawing files to.

"Attaching drawing files and required layers or levels in batch mode" on page 28
When you have many CAD drawings to attach to TRIRIGA records, you can use batch processing. You can attach all the CAD drawing files and the required layers or levels at one time.

"Configuring a full path display of the Space Class field values" on page 21
Displaying the full path of space class field values shows users where the space class is in their location hierarchy. You configure the display of the full path so that users can select or clear the display of the full path when they select a space class. Users can also search for a space class value.

Selecting the drawing files and records to process in batch mode

For batch processing, you create a list of drawing files on which to perform the actions that you select in the Actions area. If you select the Attach action, you must specify the drawing files and the records to attach the drawing files to.

About this task

For batch processing, you always create a list of drawing files to process. If you are attaching the drawing files during the batch processing, you must also specify the record to attach each drawing file to.

Procedure

1. Select the files:
   a. In the Batch Process window, click **Add File**.
   b. In the Open window, select the drawing file to add.
   c. Optional: To remove a drawing file from the list, select the file and click **Remove File**.
2. Select the records:
   a. Click **Select Records**.
   b. In the Select Records window, select the record to attach a drawing file to.
   c. Select the drawing file name to attach to the selected record.
   d. To set the record to the file, click the arrow.
   e. Optional: To remove a record, select the record and click **Clear Record**.
   f. When you finish setting the records to the files, click **OK**. The selected files and records appear in the Batch Process window.
3. Optional: To remove all records in the list, click **Clear Records**.
4. To run the batch process, click **OK**. The results of the batch process are saved in the `batchProcess.log` file in your local `AppData` folder.

Related tasks:

"Attaching drawing files and required layers or levels in batch mode" on page 28
When you have many CAD drawings to attach to TRIRIGA records, you can use batch processing. You can attach all the CAD drawing files and the required layers or levels at one time.

"Uploading child records from CAD drawings in batch mode" on page 29
To upload CAD drawing file information to TRIRIGA child records, you can use CAD drawing layers or levels and layer or level values. If the child records exist in TRIRIGA, the child records are updated with the values that you specify. If the child records do not exist, the child records are created. You might use batch processing to upload office spaces, room names, and values such as room descriptions and assets.

Chapter 5. Detaching drawings and drawing objects with detach actions

Detach actions can be configured to run when drawings or drawing objects are detached in TRIRIGA CAD Integrator/Publisher from IBM TRIRIGA records. For example, a detach action might trigger a state transition to a Retire state or set an area to zero.

About this task

The following information applies to detach actions:

- The specified state transition must be valid for the record state.
- The detach action applies to detach drawing, detach all, detach object, and detach pop-up menu drawing or object actions.
- Use asynchronous detach actions. Synchronous detach actions might cause the detach process, especially a detach all with a space detach action, to run slowly.
- When a space is detached, the detach action applies to the space and any attached items in the space.
- A detach all action applies the detach action to the drawing and to all of the attached entities in the drawing.

Procedure

1. Select **Tools** > **Administration**.
2. In the **CAD Integrator** menu, select **CAD Mapping**.
3. Select the mapping to configure a detach action for. For example, select **Space Mapping**.
4. In the Form Actions section, in the **Detach** field, specify the name of the form action that triggers the state transition workflow to run when detach actions are made in TRIRIGA CAD Integrator/Publisher.

Chapter 6. Modifying the records to attach drawing information to

When you attach drawing information to a record, you select the record from a TRIRIGA CAD Integrator/Publisher record tree. If the record is not in the tree, you can right-click a record and add a record to the tree. You can also edit a record that is in a tree. To view a new or edited record, you refresh the tree.

Related tasks:

"Attaching drawing objects to records" on page 26
In an attached CAD drawing, you can attach objects to TRIRIGA records such as spaces and assets. For example, you might attach a block or cell to a desk or a person record. After the objects are attached, users can view and report on the objects in TRIRIGA CAD Integrator/Publisher and in the Graphics section in the TRIRIGA environment.

"Attaching drawing files and required layers or levels to records" on page 23
Each CAD drawing must be attached to a TRIRIGA record. The top-level mapping that is specified in the selected application definition determines the type of record that you can attach the drawing to. The application definition also specifies the layers or levels that are required to be attached to the drawing record.

"Attaching a drawing to a record" on page 25
You attach each CAD drawing to a TRIRIGA record. The top-level mapping that is specified in the selected application definition determines the type of record that you can attach the drawing to.

"Inserting TRIRIGA objects into a drawing" on page 27
In an attached CAD drawing, you can insert TRIRIGA objects that are attached to TRIRIGA records such as assets or people. For example, you can insert objects that represent desks, chairs, phones, and people into an office space. After the objects are inserted, users can view and report on the objects in TRIRIGA CAD Integrator/Publisher and in a Graphics section in the TRIRIGA environment.

Chapter 7. Publishing the drawing information

Publishing a drawing uploads a `.dxf` file representation of the CAD drawing to the TRIRIGA environment where the `.dxf` file is processed for display as a web graphic. After the drawing is published, TRIRIGA users can view and report on the drawing in the Graphics section in the TRIRIGA environment.

About this task

After you attach a drawing and before you publish the drawing, you can specify drawing properties for the drawing. The drawing properties that you specify for the open drawing override the drawing preferences that specify the default settings for all drawings in the preferences.

To publish several drawings at the same time, you can use the bulk publish feature of the batch process. Alternatively, you can use the Smart Attach feature to run only the publish action.

Procedure
1. In IBM TRIRIGA CAD Integrator/Publisher, open the CAD drawing to publish.
2. Select **IBM TRIRIGA** > **Publish**.

Related tasks:

"Configuring publish preferences" on page 19
You set publish preferences at the TRIRIGA CAD Integrator/Publisher product level. You specify the publish directory and whether to publish references.

"Processing drawings in batch mode" on page 28
To process many drawings at the same time, you use batch processing. Batch processing actions include attaching drawing files, uploading and creating child records, and publishing the drawing information. After you start the batch process, the process runs with no further action from you. You might run the batch processing overnight to upload many drawings with new space records or to upload a drawing with thousands of spaces.

"Attaching required areas for a top-level record" on page 26
The gross area in a drawing is a required attachment. The measured gross area is a required attachment when it is specified as a requirement in the application definition. The application definition that you use might specify more required areas.

"Attaching a drawing, and multiple drawing and boundary objects at one time" on page 23
If you have a number of drawings that use the same polyline standards, you can streamline the attachment process by using the Smart Attach feature. You can attach, upload, and publish drawings and drawing objects all at one time from one window.

Chapter 9, "Creating planning drawings," on page 41
A planning drawing is a modified copy of an attached drawing. Typically, you create a planning drawing based on a request for changes to a current floor plan, building plan, or set of spaces. For example, you might receive a request to modify a drawing so that a large space is divided into smaller spaces. After you publish the planning drawing, an authorized user can view and report on the current drawing and the planning drawing in the TRIRIGA environment.

Chapter 8. Editing TRIRIGA records from CAD drawing objects

There are three methods to edit TRIRIGA records from TRIRIGA CAD Integrator/Publisher. From an open CAD drawing, you can select an attached drawing object and edit the record in the TRIRIGA environment. To update multiple records with a different field value, you can apply the new value to the records at one time in batch edit mode. You can also create associations between attached drawing objects and TRIRIGA records in batch associate mode.

Editing a record from a drawing object

From an attached CAD drawing, you can select a drawing object and edit the record that the object is attached to in the TRIRIGA environment.

Procedure

1. In TRIRIGA CAD Integrator/Publisher, open an attached CAD drawing.
2. Select **IBM TRIRIGA** > **Edit** > **Record**.
3. Select the attached object in the drawing.
4. Edit the TRIRIGA record.
5. Optional: To edit additional records, repeat steps 3 - 4.
6. To synchronize the updated records with the open CAD drawing, in TRIRIGA CAD Integrator/Publisher, select **IBM TRIRIGA** > **Sync Areas** or **IBM TRIRIGA** > **Sync Full**. For example, if you updated a field that appears in a label style, you might run an area synchronization. If you added a person, you might run a full synchronization.

Related tasks:

Chapter 10, "Synchronizing changes between CAD drawings and TRIRIGA records," on page 43
After you modify an attached drawing or TRIRIGA record, you must synchronize the changes between the drawing and the record that the drawing is attached to. The drawing then reflects the current record information. You can configure your drawing preferences to automatically and fully synchronize an attached CAD drawing with the record that it is attached to when you open the drawing in TRIRIGA CAD Integrator/Publisher. By default, TRIRIGA CAD Integrator/Publisher does not synchronize a drawing when you open the drawing.

Editing record values in batch mode

To edit an IBM TRIRIGA field value for attached objects, you select the objects in the drawing and specify the new value for a selected field. For example, you might select all the office spaces in a floor drawing, and change the value of the description field to private office.

Procedure

1. Open the attached drawing to edit.
2. Select **IBM TRIRIGA** > **Edit** > **Batch Edit**.
3. In the drawing, select the objects to edit and press **Enter**.

4. In the Batch Edit window, select the mapping for the type of records to edit.

5. Optional: Select the field to edit and specify the new value for the field.

6. To display the full paths in the Current Field Value column, select **Show Full Path** and hover the cursor over the current field value. The full path display is visible only if your IBM TRIRIGA administrator configured the full path to display.

7. Select one record, several records, or all the records to update with the new value.

8. Click **Apply**.

Related tasks:

"Configuring a full path display of the Space Class field values" on page 21
Displaying the full path of space class field values shows users where the space class is in their location hierarchy. You configure the display of the full path so that users can select or clear the display of the full path when they select a space class. Users can also search for a space class value.

Editing child records from a drawing

After the child records in a drawing are attached, you can modify the records from the attached drawing. You can change the status of the child records to Active. For unattached child records, you can change the status of the records to Retired and set the area value of child records to zero. You can also detach orphan objects in the drawing. After you update the child records, you can synchronize the changes to view the changes in the drawing.

Procedure

1. Select **IBM TRIRIGA** > **Drawing** > **Child Records**.

2. Select the mapping to use to select the child records.

3. Select a record or records to act on.

4. Select the actions to take.

5. Optional: To run a full synchronization, click **Sync**.

Related tasks:

Chapter 10, "Synchronizing changes between CAD drawings and TRIRIGA records," on page 43
After you modify an attached drawing or TRIRIGA record, you must synchronize the changes between the drawing and the record that the drawing is attached to. The drawing then reflects the current record information. You can configure your drawing preferences to automatically and fully synchronize an attached CAD drawing with the record that it is attached to when you open the drawing in TRIRIGA CAD Integrator/Publisher. By default, TRIRIGA CAD Integrator/Publisher does not synchronize a drawing when you open the drawing.

Creating associations for drawing objects

After you attach drawing objects to TRIRIGA records, you can associate the drawing objects with other TRIRIGA records. For example, in the default application definition, you attach boundary objects that represent rooms in a floor to space records. You might associate the attached space records with a Business Development organization record.

About this task

You can select one or more objects in a drawing file and create associations with TRIRIGA records.

Procedure

1. Select **IBM TRIRIGA** > **Edit** > **Batch Associate**.
2. In the drawing, select the objects to associate and press Enter. The drawing objects that you select must belong to the same TRIRIGA business object.
3. Select the mappings and the records to associate:
   a. In the **From Mapping** field, select the mapping for the type of records that are the source of the association.
   b. Select the source records to associate.
   c. In the **To Mapping** field, select the mapping for the type of records that are the target of the association. The application definition that you use specifies the mappings that are available in the **To Mapping** list.
   d. Select the target record or records to associate to.
   e. In the **Association** field, select the association from the selected source records to the selected target records.
   f. Click **Associate**.

Removing associations for drawing objects

In TRIRIGA CAD Integrator/Publisher, you can remove the associations of drawing objects with TRIRIGA records. For example, you can remove the association of space records with a Business Development organization record.

About this task

You can select one or more objects in a drawing file and remove the associations with TRIRIGA records.

Procedure

1. Select **IBM TRIRIGA** > **Edit** > **Batch Associate**.
2. In the drawing, select the objects to deassociate.
3. In the Batch Associate window, select the **Deassociate** tab.
4. In the **From Mapping** field, select the mapping for the source records to deassociate.
5. In the **Association** field, select the association of the selected source records.
6. Click **Find by Association**.
7. In the **To Mapping** field, select the mapping for the target records to deassociate from.
8. Select the target records to deassociate from.
9. Click **Deassociate**.

Chapter 9. Creating planning drawings

A planning drawing is a modified copy of an attached drawing. Typically, you create a planning drawing based on a request for changes to a current floor plan, building plan, or set of spaces. For example, you might receive a request to modify a drawing so that a large space is divided into smaller spaces. After you publish the planning drawing, an authorized user can view and report on the current drawing and the planning drawing in the TRIRIGA environment.

About this task

A planned drawing request is typically initiated by a move planner in the TRIRIGA environment. You save a copy of the original drawing as the planning drawing. You attach the planning drawing to the planning record and make the requested changes to the planning drawing.

Procedure

1. Open the original attached drawing.
2. Select **IBM TRIRIGA** > **Drawing** > **Create Planning Drawing**.
3. Create the planning drawing:
    a. Select the planning application definition and capital project to use for the planning drawing.
    b. Specify the path and the file name for the copy of the original drawing. The copy is the planning drawing.
    c. From the tree, select the planning record to attach the planning drawing to, and click **Create**.
    d. For AutoCAD, close the original drawing.
4. Update the planning drawing objects.
5. Detach any removed planning objects, and attach any added planning objects to the planning records.
6. Publish the planning drawing.

Related tasks:

Publishing a drawing uploads a `.dxf` file representation of the CAD drawing to the TRIRIGA environment where the `.dxf` file is processed for display as a web graphic. After the drawing is published, TRIRIGA users can view and report on the drawing in the Graphics section in the TRIRIGA environment.

Chapter 10. Synchronizing changes between CAD drawings and TRIRIGA records

After you modify an attached drawing or TRIRIGA record, you must synchronize the changes between the drawing and the record that the drawing is attached to. The drawing then reflects the current record information. You can configure your drawing preferences to automatically and fully synchronize an attached CAD drawing with the record that it is attached to when you open the drawing in TRIRIGA CAD Integrator/Publisher. By default, TRIRIGA CAD Integrator/Publisher does not synchronize a drawing when you open the drawing.

About this task

TRIRIGA CAD Integrator/Publisher provides two methods of synchronization. Both methods synchronize the currently applied reporting.

Area synchronization
> Synchronizes the modified boundary area values in a CAD drawing with the TRIRIGA records that the boundaries are attached to. Use this synchronization method after you modify boundaries in the drawing or when you need to refresh the CAD reporting.

Full synchronization
> Synchronizes the modified boundary area values in a CAD drawing with the TRIRIGA records that the boundaries are attached to. Checks the associations for linked records, and updates how the blocks or cells are displayed in the CAD drawing. Updates the attachment data for TRIRIGA records. Use this synchronization type in the following situations:
>
> * Associations for linked records are modified in the TRIRIGA environment. For example, you moved an asset to a different location by using TRIRIGA records instead of by using TRIRIGA CAD Integrator/Publisher.
> * Attached information in the drawing appears to be out of synchronization with the TRIRIGA environment. For example, a space is attached in your drawing, but the space is displayed as detached in the TRIRIGA environment.

In AutoCAD, you can use the **TRGA** commands at the command line to modify an attached CAD drawing. These commands update the records immediately; you do not need to run the **Sync Areas** command or the **Sync Full** command.

The changes that you make in CAD drawings to attached objects update the records only after you synchronize the objects and the records. The changes that you make to records are displayed in the attached CAD drawing objects only after you synchronize the objects and the records. Area values from drawing objects override area values from the records.

TRIRIGA CAD Integrator/Publisher uses the standard TRIRIGA state transitions to update records. If the state transition includes a process that leaves a record in a read-only status such as "review in progress", the record update process fails. In this case, you can wait until the record is in an active status before you synchronize the changes.

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To perform an area synchronization, select **IBM TRIRIGA** > **Sync Areas**. Optionally, in AutoCAD you can run the `TRGA_SYNC` command from the command line. To perform a full synchronization, select **IBM TRIRIGA** > **Sync Full**. Optionally, in AutoCAD you can run the `TRGA_SYNCFULL` command from the command line. The full synchronization takes longer to run than the area synchronization.

Related concepts:

Chapter 1, "IBM TRIRIGA CAD Integrator/Publisher overview," on page 1
IBM TRIRIGA CAD Integrator/Publisher provides bidirectional tools that integrate your computer-aided design (CAD) application with the TRIRIGA environment and enhance the standard CAD functions. TRIRIGA CAD Integrator/Publisher provides a means of attaching and uploading data to the TRIRIGA environment. You can also view real-time information for that data in your CAD application in the form of reporting.

Related tasks:

"Editing a record from a drawing object" on page 37
From an attached CAD drawing, you can select a drawing object and edit the record that the object is attached to in the TRIRIGA environment.

"Configuring drawing preferences" on page 18
You set drawing preferences at the TRIRIGA CAD Integrator/Publisher product level. You can specify to automatically and fully synchronize a drawing when the drawing opens, and to automatically publish a drawing when the drawing closes. The drawing preferences serve as the default drawing properties, and are used to populate the drawing properties on any drawings that you attach.

"Editing child records from a drawing" on page 38
After the child records in a drawing are attached, you can modify the records from the attached drawing. You can change the status of the child records to Active. For unattached child records, you can change the status of the records to Retired and set the area value of child records to zero. You can also detach orphan objects in the drawing. After you update the child records, you can synchronize the changes to view the changes in the drawing.

Chapter 11. Customizing an application definition

With TRIRIGA administrator authority, you can customize the default application definition components or create an application definition to support a business need. For example, you might create an application definition to support the attachment of CAD drawing information for a server room. The server room might contain server aisles, server racks, and servers.

Related concepts:

"Application definitions" on page 2
A TRIRIGA CAD Integrator/Publisher application definition defines how CAD drawing information can be attached to records in the TRIRIGA environment.

"Scenario: Designing a custom application definition for a server room" on page 50
A TRIRIGA user with administrator authority can design custom application definitions to support specific business needs. For example, a custom application definition might specify the attachment of the CAD drawing information for a server room, server racks, and servers to TRIRIGA records.

Application definition components

The default Facilities Management – Primary application definition is a good reference for understanding application definitions, the application definition components, and how the components are used. The application definition components that you might need to customize or create include CAD mappings, CAD hierarchy nodes, and the CAD application definition record. The configured application definitions and components are available to all TRIRIGA CAD Integrator/Publisher users.

An application definition defines the relationships between the objects in a CAD drawing and the TRIRIGA records that the objects can interact with. The default application definition supports the attachment of CAD drawing information for floors, spaces, and the objects in the spaces. Spaces might be offices, and the objects in the spaces might be assets and people. You might be able to use some of the default components in a custom application definition.

All of the application definition components are in the **CAD Integrator** menu of the TRIRIGA Administration Tools. You create or customize application definitions and components in the TRIRIGA environment.

CAD Mappings

A CAD mapping record outlines the metadata in the TRIRIGA environment that TRIRIGA CAD Integrator/Publisher needs to upload, attach to, and interact with.

The CAD mappings provide the data that is required for TRIRIGA CAD Integrator/Publisher functions. Business objects that do not have CAD mappings can be used in reporting but cannot be operated on by TRIRIGA CAD Integrator/Publisher.

TRIRIGA records have no direct relationship to the application definition. In the TRIRIGA environment, the records are instances of a business object type. The business object type is associated with the application definition by its related mapping records.

For example, in a Location hierarchy in the TRIRIGA environment, a Dallas location > Atlas building > Floor 2 record is a Floor business object type. The Floor business object type is associated with the Facilities Management - Primary application definition in the Floor Mapping map. The Floor business object type can be associated to a different mapping in a separate application definition.

Only one mapping of a business object type can be used in a single application definition. The exception is the batch associate process, where multiple mappings of the same business object type can be used when a different association string is selected.

The CAD mappings define how TRIRIGA CAD Integrator/Publisher interacts with the TRIRIGA environment:

- CAD mappings translate the TRIRIGA business object and form information for TRIRIGA CAD Integrator/Publisher.
- Each attachable object in TRIRIGA CAD Integrator/Publisher has an associated CAD mapping.
- Each CAD mapping specifies a TRIRIGA business object and form to use for the CAD drawing information. In the default mappings, the **Form** field is a read-only field because the special fields information is based on the **Form** field. If you need to change the form, create a new mapping.
- Each CAD mapping specifies the TRIRIGA form actions that are used for specific processes within TRIRIGA CAD Integrator/Publisher. The TRIRIGA CAD Integrator/Publisher actions include create, revise, activate, save, and retire. You might define specific actions for TRIRIGA CAD Integrator/Publisher that involve less workflow logic than the standard form actions.
- Each CAD mapping defines special fields that define which TRIRIGA fields that TRIRIGA CAD Integrator/Publisher can populate with information from CAD drawings.
- All of the fields on the TRIRIGA business object and form can be used for reporting in TRIRIGA CAD Integrator/Publisher. Only the fields that are specified in CAD mappings can be populated from TRIRIGA CAD Integrator/Publisher.

There are four types of CAD mappings:

Undefined mappings
> Used as CAD Integrator hierarchy context or to define an association for the batch associate process.

Boundary mappings
> Used to define TRIRIGA metadata that can be attached to CAD drawing boundaries that contain area. The boundaries can be reported on by using fills and labels.

Item mappings
> Used to define TRIRIGA metadata that can be attached to CAD drawing blocks or cells and can be associated to attached boundaries. The item mapping metadata can be reported on by using labels. The items are displayed in the Graphics section of TRIRIGA applications after publication.

Hidden item mappings
> Used to define the TRIRIGA metadata that can be attached to CAD drawing blocks or cells and can be associated to attached boundaries. The

item mapping metadata can be reported on by using labels. The items are not displayed in the Graphics section of TRIRIGA applications after publication.

Related concepts:

"Scenario: Designing a custom application definition for a server room" on page 50
A TRIRIGA user with administrator authority can design custom application definitions to support specific business needs. For example, a custom application definition might specify the attachment of the CAD drawing information for a server room, server racks, and servers to TRIRIGA records.

Special fields

The special fields in a CAD mapping identify the TRIRIGA business object fields that TRIRIGA CAD Integrator/Publisher uses for the CAD mappings. The special field type controls how TRIRIGA CAD Integrator/Publisher interacts with the selected field.

Name   The TRIRIGA field that is populated from the text on the Name layer or level. The user specifies the layer or level in the Upload area of the Smart Attach window.

Gross area
The TRIRIGA gross area field that is populated from the gross area boundary layer or level. The user specifies the layer or level in the Attach area of the Smart Attach window. The TRIRIGA gross area field can also be populated by using the individual attachment method.

Measured gross area
The TRIRIGA measured gross area field that is populated from the measured gross area boundary layer or level. The user specifies the layer or level in the Attach area of the Smart Attach window. The TRIRIGA measured gross area field can also be populated by using the individual attachment method.

Area 1   The TRIRIGA area field that is populated from the boundaries on the Boundary layer or level. The user specifies the layers or levels to upload in the Upload area of the Smart Attach window. The Area 1 field is used for the boundary mappings that are directly under the top-level CAD hierarchy node, such as spaces.

Area 2   The TRIRIGA area field that is populated from the boundaries on the Boundary layer or level. The user specifies the layers or levels to upload in the Upload area of the Smart Attach window. The Area 2 field is used for spaces that are children of Area 1 spaces. The Area 2 special field type provides an alternate area field where the area can be uploaded for the second level. Area 2 spaces are typically used to prevent duplicate area values in a multi-level mapping because duplication can impact area roll-ups.

Mappable
A generic field that can be populated from CAD drawing text in individual drawing layers or levels. You can have multiple mappable fields such as Current Use Space Class, Primary Fax, and Description. Required fields are displayed in the Upload area of the Smart Attach window whether they are mappable or not mappable. When the fields are mappable, users can specify a default upload layer or level.

Item   A field that is used when an Item mapping is attached to or inserted into a boundary. The Item field is populated with the path of the record that is attached to the boundary.

You can specify a default name layer or level. If the name is used in the drawing, the name appears as the layer or level name value. The value appears in the Upload area of the Smart Attach window.

Note: Any Area fields that are referenced in the application definition must refer to a default unit of measurement that TRIRIGA uses.

Related concepts:

"Scenario: Designing a custom application definition for a server room" on page 50
A TRIRIGA user with administrator authority can design custom application definitions to support specific business needs. For example, a custom application definition might specify the attachment of the CAD drawing information for a server room, server racks, and servers to TRIRIGA records.

Related tasks:

"Attaching individual drawings, drawing objects, and boundary objects" on page 25
When your CAD drawings do not use the same polyline standards, you can attach the CAD drawing and the boundary information one object at a time. You might also use the individual attachment method to update specific attached drawing information.

Associated objects

The mappings that are in the Attachable Associated Objects section of a CAD mapping record are Item mappings. The Item mappings can be used to attach or insert a block or cell into an attached CAD drawing boundary. The block or cell is linked to a TRIRIGA record that is associated to the selected record by using an association string.

You can define only one attachable mapping for each TRIRIGA business object. Only one attached instance of a TRIRIGA record, such as an employee or a piece of equipment, is allowed per drawing. The provided CAD mappings for associated objects include employees and assets.

The mappings that are in the Other Associated Objects section define TRIRIGA business objects that are not attached to any object in the CAD drawing. The defined business objects can be used in the TRIRIGA CAD Integrator/Publisher batch associate process. The batch association process allows associations to only the mappings that are specified in the application definition.

Related concepts:

"Scenario: Designing a custom application definition for a server room" on page 50
A TRIRIGA user with administrator authority can design custom application definitions to support specific business needs. For example, a custom application definition might specify the attachment of the CAD drawing information for a server room, server racks, and servers to TRIRIGA records.

CAD hierarchy

The nodes in the CAD hierarchy define the relationship between the mappings that are used when TRIRIGA CAD Integrator/Publisher interacts with the TRIRIGA environment. The nodes are also used for navigation in TRIRIGA CAD Integrator/Publisher.

Each CAD hierarchy structure has a top-level node that is the starting point in an application definition. The defined mapping specifies the type of TRIRIGA record that a CAD drawing can be attached to. The parent nodes of the top-level node provide a contextual, hierarchical view that appears in the Attach Drawing or the Smart Attach window. TRIRIGA CAD Integrator/Publisher users navigate through the contextual nodes to locate the node to use to attach the CAD drawing file.

For example, a drawing file of floor 1 of the Atlas building in Dallas attaches to the floor 1 record in the TRIRIGA environment. The Dallas property, Atlas building, and floor 1 records must exist in the TRIRIGA environment. In the Attach Drawing window, users navigate to Dallas location > Atlas building > floor 1 and attach the drawing file.

The child nodes of the top-level node are items that users can attach drawing objects to. For example, in the floor 1 drawing, users can attach spaces or area overlays in the drawing to records. Users can create the space and area overlay records by uploading the child objects from TRIRIGA CAD Integrator/Publisher.

If your TRIRIGA environment does not support subspaces, remove the subspace node from the application definition that you use.

Related concepts:

"Scenario: Designing a custom application definition for a server room" on page 50
A TRIRIGA user with administrator authority can design custom application definitions to support specific business needs. For example, a custom application definition might specify the attachment of the CAD drawing information for a server room, server racks, and servers to TRIRIGA records.

Application definition record

A CAD Application Definition record defines the top-level node in the CAD hierarchy that is the root level for the CAD drawing attachment process. In the Facilities Management – Primary application definition, the top-level node is Floor.

Related concepts:

"Scenario: Designing a custom application definition for a server room" on page 50
A TRIRIGA user with administrator authority can design custom application definitions to support specific business needs. For example, a custom application definition might specify the attachment of the CAD drawing information for a server room, server racks, and servers to TRIRIGA records.

Creating a custom application definition

In some cases, you might want to create an application definition that handles a scenario that is different from the provided application definition. For example, a custom application definition might support the scenario where a sectional elevation drawing of a server room aisle contains server rack and server information.

Before you begin

The TRIRIGA module, business objects, and forms must be created or configured to support the CAD drawing information to attach or upload to the TRIRIGA environment.

About this task

If you modify the TRIRIGA business objects or forms that are associated with the custom application definition, make the corresponding updates to the application definition.

Procedure

1. Add CAD mappings for the server aisle, server rack, and server objects:
    a. Add an Aisle mapping. This mapping is the top-level hierarchy node for the custom application definition.
    b. Add a Server Rack mapping. This mapping is the child node of the top-level definition mapping.
    c. Add a Server mapping. This mapping is the child node of the server rack mapping.
2. Add mappings for the contextual nodes, such as Inventory Location and Primary Location. You might be able to reuse the Building and Floor mappings.
3. Add a hierarchy to the CAD hierarchy by adding a node structure to support the server scenario:
    a. Add an Inventory Location contextual node at the same level as the Locations node.
    b. Add a Primary Location contextual node as a child of the Inventory Location node.
    c. Add a Server Aisle node as a child of the Primary Location node. This node is the top-level node that the CAD drawings attach to.
    d. Under the Server Aisle node, add a Server rack child node.
    e. Under the Server rack child node, add a Server child node.
4. Map the new hierarchy nodes to the corresponding mappings.
5. Add an Inventory Location application definition record that specifies the name of the Server Aisle node as the top-level definition.

Related concepts:

"Scenario: Designing a custom application definition for a server room"
A TRIRIGA user with administrator authority can design custom application definitions to support specific business needs. For example, a custom application definition might specify the attachment of the CAD drawing information for a server room, server racks, and servers to TRIRIGA records.

Scenario: Designing a custom application definition for a server room

A TRIRIGA user with administrator authority can design custom application definitions to support specific business needs. For example, a custom application definition might specify the attachment of the CAD drawing information for a server room, server racks, and servers to TRIRIGA records.

In this scenario, a CAD drawing contains a sectional elevation of a server aisle in a server room, with details of the server racks. TRIRIGA CAD Integrator/Publisher users attach the drawing information for the server aisles and server racks to TRIRIGA server room records. The TRIRIGA CAD Integrator/Publisher users can then upload the server objects to the TRIRIGA server rack records.

An IT manager can use the information in the TRIRIGA graphic reports to help manage floor space and rack capacity. TRIRIGA CAD Integrator/Publisher users can run CAD reports on the information. TRIRIGA users can view the location of

server racks or servers from the Graphics section of TRIRIGA applications. TRIRIGA users can also view information about the server racks and servers.

Preparatory work

A user with TRIRIGA administrator authority prepares for designing a custom application definition in the following ways:
- Understand the drawing standards that the TRIRIGA CAD Integrator/Publisher users are using for the CAD drawings.
- Work with the IT manager to understand how the manager plans to use the drawing information.
- Use the Facilities Management – Primary application definition and CAD components as a reference for setting up the custom application definition components.
- Ensure that the server room, server aisle, and server rack records for the CAD drawing information to attach exist in the TRIRIGA environment.
- Create the server object records in the TRIRIGA environment. Alternatively, configure the application definition so that the TRIRIGA CAD Integrator/Publisher users can create the object records as a part of the upload process.
- Create any TRIRIGA business objects, forms, and form actions that are needed to support the server room CAD drawing information.
- Locate the application definition components in the TRIRIGA administration tools.

Process

To create the custom application definition, use the following process:
- Create CAD mappings for each drawing object to attach to a TRIRIGA record.
- Add a server location hierarchy structure to the CAD hierarchy, and map the new hierarchy nodes to the CAD mappings.
- Create an application definition record that points to the server aisle node as the top-level node for attaching a CAD drawing.
- Clear the Object MetaData Cache.

The new server location hierarchy points to the new hierarchy nodes that point to the new mappings.

Step 1: Add the CAD mappings

The new CAD mappings define the relationships between the server room, the server aisle, the server rack, and the server information in a CAD drawing. The mappings also define the relationships between the drawing information and the TRIRIGA records that the drawing information can be attached to. You can add mappings that are used for contextual attachment information, such as the building where the server room is located.
- Special fields

  For a basic mapping configuration of the server room scenario, use the special field types of Name, Gross Area, and Measured Gross Area.
- Contextual mappings

  Add a mapping named Server Room that is a Boundary mapping type and includes a special field of the type Name.

The TRIRIGA CAD Integrator/Publisher user uses the contextual mapping to navigate to the TRIRIGA server room record to attach the CAD drawing information to.

- Drawing information mappings

  Add the following mappings for the CAD drawing information:

  Server Aisle mapping
  > Configure the Server Aisle mapping as a Boundary mapping type, and add three special fields: one field of the Name type, one field of the Gross Area type, and optionally, one field of the Measured Gross Area type.

  Server Area Overlay mapping
  > Configure the Server Area Overlay mapping as a Boundary mapping type. In the Other Associated Objects section, add two of the provided CAD mappings: Allocation Mapping, and Organization Mapping.

  Server Rack mapping
  > Configure the Server Rack mapping as a Boundary mapping type, and add a special field of the type Name.

  Server mapping
  > Configure the Server mapping as an Item mapping type, and add a special field of the type Name. Add a special field of the type Item that specifies the attached layer or level name that the item is placed on when it is attached.

Step 2: Add the CAD hierarchy nodes

The CAD hierarchy nodes define the mappings to use to attach the objects in a CAD drawing. You add nodes to the provided CAD hierarchy for the drawing objects to attach to TRIRIGA records.

1. At the bottom of the provided CAD hierarchy, add a Server Locations node at the same level as the Locations node and the Planned locations node. Under the Server Locations node, add a Server Room node. Under the Server Room node, add a Server Aisle node. Under the Server Aisle node, add two child nodes that are at the same level: Server Rack node and Sub Server Rack node.
2. Map each Server Locations node to the respective CAD mapping. For example, map the Server Aisle node to the Server Aisle mapping. Map the Server Rack node and the Sub Server Rack node to the Server Rack mapping.

Step 3: Add the application definition record

The new application definition record points to the Server Aisle hierarchy node as the top-level node that the CAD drawing records attach to.

Step 4: Clear the Object MetaData Cache

After you change any application definition, you must clear the Object MetaData Cache.

Related concepts:

"Application definitions" on page 2
A TRIRIGA CAD Integrator/Publisher application definition defines how CAD drawing information can be attached to records in the TRIRIGA environment.

"CAD Mappings" on page 45
A CAD mapping record outlines the metadata in the TRIRIGA environment that

TRIRIGA CAD Integrator/Publisher needs to upload, attach to, and interact with.

"Special fields" on page 47
The special fields in a CAD mapping identify the TRIRIGA business object fields that TRIRIGA CAD Integrator/Publisher uses for the CAD mappings. The special field type controls how TRIRIGA CAD Integrator/Publisher interacts with the selected field.

"Associated objects" on page 48
The mappings that are in the Attachable Associated Objects section of a CAD mapping record are Item mappings. The Item mappings can be used to attach or insert a block or cell into an attached CAD drawing boundary. The block or cell is linked to a TRIRIGA record that is associated to the selected record by using an association string.

"CAD hierarchy" on page 48
The nodes in the CAD hierarchy define the relationship between the mappings that are used when TRIRIGA CAD Integrator/Publisher interacts with the TRIRIGA environment. The nodes are also used for navigation in TRIRIGA CAD Integrator/Publisher.

"Application definition record" on page 49
A CAD Application Definition record defines the top-level node in the CAD hierarchy that is the root level for the CAD drawing attachment process. In the Facilities Management – Primary application definition, the top-level node is Floor.

Related tasks:

"Creating a custom application definition" on page 49
In some cases, you might want to create an application definition that handles a scenario that is different from the provided application definition. For example, a custom application definition might support the scenario where a sectional elevation drawing of a server room aisle contains server rack and server information.

Chapter 11, "Customizing an application definition," on page 45
With TRIRIGA administrator authority, you can customize the default application definition components or create an application definition to support a business need. For example, you might create an application definition to support the attachment of CAD drawing information for a server room. The server room might contain server aisles, server racks, and servers.

Chapter 12. Reports

The CAD drawing data that you upload to the TRIRIGA environment can be used to generate reports in the TRIRIGA environment and in TRIRIGA CAD Integrator/Publisher.

In the TRIRIGA environment, users can view and report on a web graphic representation of CAD drawing data in the Graphics section. In TRIRIGA CAD Integrator/Publisher, users apply TRIRIGA reports to CAD drawings.

In the TRIRIGA environment, an administrator configures the types of reports that are available to TRIRIGA users and to TRIRIGA CAD Integrator/Publisher users. TRIRIGA report types include graphic reports, Label Styles, Label Filters, and Themes. The TRIRIGA report types are listed under the **Graphics** menu in the TRIRIGA administration tools.

The **CAD Integrator** menu in the TRIRIGA administration tools lists the report types that apply only to the CAD reports that TRIRIGA CAD Integrator/Publisher users can view. The CAD Integrator report types include CAD Label Style, CAD Label Filter, CAD Theme, and CAD Hatch Pattern. TRIRIGA CAD Integrator/Publisher users and TRIRIGA administrators can customize the provided CAD reports and add CAD reports.

TRIRIGA CAD Integrator/Publisher users can apply the CAD Integrator reports and the reports that are configured for the TRIRIGA Graphics section to a CAD drawing. TRIRIGA CAD Integrator/Publisher users typically create reports and print the reports to plotters or other high-resolution printers.

Labels

Labels pull field data dynamically from the records or associated records that are linked to objects in CAD drawings. In TRIRIGA CAD Integrator/Publisher, you can apply labels to CAD drawings by label style or by label filter. The selection list contains labels from the TRIRIGA labels in the **Graphics** menu and the CAD labels in the **CAD Integrator** menu in the TRIRIGA administration tools.

Label styles

Label styles are created with a single primary TRIRIGA business object, and label lines can pull data from associated business objects. Label styles can specify the font size, prefix, suffix, height, and color to use for one or more fields in a single TRIRIGA business object.

Labels example

You can create a label style with the Space business object, and apply a different height and color to different Space fields in a report. The Space fields might be Name, Current Use Space Class, and Area.

Label filters

Label filters can apply multiple label styles. Label filters apply label style to the results that are returned by the query that is set as the first criteria in the Label

Style record. If there is a second set of criteria, the label style applies labels to the query results of the second query. The label style does not apply the label style that is set in the second criteria to any results that the first query returned. If a default label style is specified, the default is applied to the attached objects that are not returned by the queries in the criteria list.

Label filters example

A label filter might use one label style for a Floor boundary and a different label style for a Space boundary. The label filter might apply one label style to the space boundary that is associated to the Sales organization. The label filter might apply a different label style to the space boundary that is associated to the Accounting organization.

Graphic reports

In TRIRIGA CAD Integrator/Publisher, you can apply TRIRIGA graphic reports to a CAD drawing. The reports in the selection list are the reports of the Graphic display type that are defined as system reports in the TRIRIGA environment. The selection list displays graphic reports with the **Show in Web Graphics** property that is either selected or cleared. A TRIRIGA administrator configures the system reports.

Hatches

In TRIRIGA CAD Integrator/Publisher, the results that are returned by a graphic report include hatch patterns within a boundary, and a legend that identifies the results. Hatches and their associated legends visually group the real-time values of the TRIRIGA business object fields that are linked to attached drawing boundaries. The configured hatch patterns and graphic reports are available to all TRIRIGA CAD Integrator/Publisher users.

TRIRIGA CAD Integrator/Publisher provides default hatch patterns that you can access in the TRIRIGA environment. In a custom hatch pattern, you can specify the pattern, scale, and rotation information. When no custom hatch patterns exist, or no hatch pattern fields are found on the graphic report results, the CAD report uses a default hatch pattern. The default hatch pattern is defined in the TRIRIGA CAD Integrator/Publisher report preferences. In TRIRIGA CAD Integrator/Publisher, hatch patterns appear after you apply a graphic report that includes a graphic report field that is set as a Hatch display type.

To use the hatch feature in TRIRIGA CAD Integrator/Publisher, you need to configure the CAD hatch patterns. And, an administrator must configure the TRIRIGA graphic reports and business object records to use the CAD hatch patterns. All of the configurations are made in the TRIRIGA environment.

Configure hatch patterns

TRIRIGA CAD Integrator/Publisher users and TRIRIGA administrators can create, edit, and delete hatch pattern records in the TRIRIGA environment. You configure hatch patterns with the CAD Hatch Pattern report that is listed under the **CAD Integrator** menu in the TRIRIGA administration tools.

Configure hatch patterns to appear in CAD reports

A TRIRIGA administrator configures how and where hatch patterns appear when graphic reports are applied in TRIRIGA CAD Integrator/Publisher. For hatch patterns to appear in graphic reports, an administrator must configure TRIRIGA business object types with a locator field. The locator field points to the hatch pattern to use. An administrator must also set up the hatch configuration in TRIRIGA graphic reports. TRIRIGA CAD Integrator/Publisher uses the same graphic reports that TRIRIGA Graphics sections use.

The configuration of hatch patterns in a TRIRIGA graphic report is similar to the configuration of the **Color Field** legend column. To configure a graphic report to use a hatch pattern, add a **Hatch** field to the display columns in the **Legend** column of the **Columns** tab. Also, to upload images to display in the graphic report, you configure the **Hatch Pattern** field and the **Image and Dimension** field. Web Graphics hatch patterns support the PNG and GIF file formats.

Hatch pattern configuration example

For a classification graphic report, you can add a **Hatch** display column. The **Hatch** field points to a locator field where the hatch pattern is defined for the business object. You can set the **Vacant** classification record to a red color, and the hatch pattern to ANSI31. In TRIRIGA CAD Integrator/Publisher, the graphic report shows a vacant space as red with an ANSI31 hatch pattern.

Configuring hatch patterns in the TRIRIGA environment

A TRIRIGA administrator configures TRIRIGA graphic reports and TRIRIGA business objects to use the hatch patterns that a TRIRIGA CAD Integrator/Publisher user can apply to a CAD drawing.

Procedure

1. Add a hatch locator field to the business object that is the result of the graphic report and publish the business object.
2. In the hatch locator field, select a hatch pattern record for each business object instance record that is a possible result of the graphic report.
3. Set up a graphic report with a **Hatch** column and specify the hatch locator field that you added to the business object. The graphic report results use the hatch pattern that you specified in the business object locator field.

Themes

A theme controls the appearance of an attached TRIRIGA CAD Integrator/Publisher drawing by applying a label style or label filter, and a graphic report. For example, an Occupancy theme might use personnel label style and run an occupancy status graphic report. The label style might display the names of the people who occupy the spaces of a floor. The graphic report might apply colors and hatches to the spaces based on the occupancy status.

When an unattached drawing is attached to a TRIRIGA record, the default theme that is set in the TRIRIGA environment is applied. An attached drawing always has a theme applied. You can apply a custom theme by selecting a non-default theme from the **Theme** list in TRIRIGA CAD Integrator/Publisher.

Chapter 13. Commands for menu items in AutoCAD

In AutoCAD, you can select the TRIRIGA CAD Integrator/Publisher tools from the **IBM TRIRIGA** menu items, or you can enter the equivalent command in the AutoCAD command line. You can also use the commands to build scripts.

Table 1. AutoCAD commands and equivalent IBM TRIRIGA menu items

IBM TRIRIGA menu item	Command	Purpose
Login	`TRGA_Login`	Log in to the IBM TRIRIGA environment from TRIRIGA CAD Integrator/Publisher.
Logout	`TRGA_Logout`	Log out of the IBM TRIRIGA environment from TRIRIGA CAD Integrator/Publisher.
Attach > Smart Attach	`TRGA_SmartAttach`	Attach and publish drawings and drawing objects at one time from one window.
Attach > Drawing	`TRGA_AttachDwg`	Attach a drawing to a TRIRIGA record.
Attach > Gross Area	`TRGA_AttachGross`	Attach the gross area boundary to a TRIRIGA record.
Attach > Measured Gross Area	`TRGA_AttachMGross`	Attach the measured gross area boundary to a TRIRIGA record.
Attach > Attach Object	`TRGA_AttachObject`	Attach drawing objects to TRIRIGA records.
Attach > Insert Object	`TRGA_InsertObject`	Insert an object that is attached to a TRIRIGA record into a drawing.
Detach > Detach Object	`TRGA_DetachObject`	Detach a drawing object.
Detach > Detach Drawing	`TRGA_DetachDwg`	Detach a drawing.
Drawing > Find Object	`TRGA_Find`	Find an object in a drawing.
Drawing > Open Drawing from Record	`TRGA_OpenDrawingFromRecord`	Open an attached drawing from a TRIRIGA record.
Drawing > Child Records	`TRGA_ChildRecords`	Edit child records from a drawing.
Drawing > Create Planning Drawing	`TRGA_CreatePlanDrawing`	Create a planning drawing.
Drawing > Properties	`TRGA_DrawingProperties`	View the drawing properties.
Edit > Batch Associate	`TRGA_BatchAssociate`	Make or remove associations from TRIRIGA records to other TRIRIGA records for attached drawing objects.
Edit > Batch Edit	`TRGA_EditRecord`	Edit TRIRIGA field values for one or more attached records.

Table 1. AutoCAD commands and equivalent IBM TRIRIGA menu items (continued)

IBM TRIRIGA menu item	Command	Purpose
Reporting > **Theme**	`TRGA_ApplyTheme`	Apply a theme to a CAD drawing.
Reporting > **Label**	`TRGA_ApplyLabel`	Apply a label to CAD drawing by label style or label filter.
Reporting > **Report**	`TRGA_ApplyReport`	Apply a TRIRIGA graphic report to a CAD drawing.
Publish	`TRGA_Publish`	Publish a drawing to the TRIRIGA environment.
Sync Areas	`TRGA_Sync`	Synchronize CAD drawing areas and CAD reporting with TRIRIGA records.
Sync Full	`TRGA_SyncFull`	Synchronize CAD drawing areas and CAD reporting with TRIRIGA records. Synchronize drawing objects with TRIRIGA records and update associated items.
Preferences	`TRGA_Preferences`	Set user-level preferences.
Launch Portal	`TRGA_Portal`	Open the TRIRIGA environment.
About	`TRGA_About`	View information about TRIRIGA CAD Integrator/Publisher.

Related concepts:

Chapter 1, "IBM TRIRIGA CAD Integrator/Publisher overview," on page 1
IBM TRIRIGA CAD Integrator/Publisher provides bidirectional tools that integrate your computer-aided design (CAD) application with the TRIRIGA environment and enhance the standard CAD functions. TRIRIGA CAD Integrator/Publisher provides a means of attaching and uploading data to the TRIRIGA environment. You can also view real-time information for that data in your CAD application in the form of reporting.

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