

TMR Customisation Bundle

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Introduction

This document provides information about the configuration of the Transport and Main Roads (TMR) AutoCAD Customisation “Bundle”.

Concept

AutoCAD provides three locations for the storage of “Application Plugin Bundles”.

- %PROGRAMFILES%\Autodesk\ApplicationPlugins
- %PROGRAMDATA%\Autodesk\ApplicationPlugins (*this folder isn't documented, yet works*)
- %ALLUSERSPROFILE%\Autodesk\ApplicationPlugins
- %APPDATA%\Autodesk\ApplicationPlugins

The folders act to “ring fence” files that provide functions via LISP, VBA, .NET and standalone executables, enabling clearly defined “Trusted Locations” that can be managed.

For documentation refer to the following Autodesk resources:

- [About Installing and Uninstalling Plug-In Applications](#)
- [PackageContents.xml Format Reference](#)
- [Components Element Reference](#)
- [Example: Basic .bundle Folder Structure for a Plug-in](#)

Advantages

Customisation content is carried in easily identified and managed folder locations.

Configuration is mostly automated. See [Compatibility](#) below.

Disadvantages

AutoCAD appears slower to launch with bundles as each bundle must be processed each time. Unless users are constantly opening and closing AutoCAD to process individual drawings, this is not seen as critical. Most users will open AutoCAD, use it for an extended session, and only reopen it once or twice a day.

Some AutoCAD versions present different behaviours. See [Compatibility](#) below.

Transport and Main Roads Customisation

CADD Systems has configured a bundle for the delivery of the TMR customisation content.

There are two primary components to the bundle:

- **PackageContents.xml** file.
- **Contents** folder

PackageContents.xml file

This file provides information to AutoCAD about where to find content, how to load it and what the commands will be.

If this file cannot be found, AutoCAD will not load the content.

To disable a bundle, simply rename this file. The most transparent method is to add “-disable” after the “.xml” extension.

TMR’s file does the following in this order:

- Sets a registry path storing the path to the Contents folder.
 - A **TMR** key is added to “*HKEY_CURRENT_USER\Software\Autodesk\AutoCAD*” in a subfolder determined by the version of AutoCAD being run.

For example I run Map 3D 2018, so my key is:

HKEY_CURRENT_USER\Software\Autodesk\AutoCAD\R22.0\ACAD-1002:409\TMR

To find the current application when multiple are installed:

- Start with *HKEY_CURRENT_USER\Software\Autodesk\AutoCAD*
- Look for the “*CurVer*” value. In my case R22.0
- Go to that node below AutoCAD
- Again, look for the “*CurVer*” value and go to that node. In my case ACAD-1002:409.
- This is where the TMR folder will be created for that application.

This key, carries the customisation location in the value of **CustPath**

- This is important when attempting to set the various search paths for items such as plot config files, templates and log files mentioned later.
 - If your organisation chooses to depart from the default **C:\ProgramData\Autodesk\ApplicationPlugins** folder, this value in the XML file will need to be amended.
- Load the SetProps.lsp file

Additional details are available [here](#).

This LISP file establishes the TMRPROPS command.

During development of the bundle, it was discovered that a “first time” run of AutoCAD loading the bundle leaves several settings with undesirable values.

These values included:

- Grey model and layout background colours.
- Cursors set to 5% of the display.
- No template paths set.
- Toolpalette paths “added” to, not replaced.
- System variable not set as desired.
- Support paths not set for:
 - Printer configurations.
 - Printer styles.
 - QNEW template.
 - Template DWG path, etc.

TMRPROPS reads and uses the path set in the previous step.

It looks at the **PropSettings.ini** file to determine the values to be set.

The **PropSettings.ini** file is commented with instructions for its use.

TMRPROPS is set as a startup command.

- Sets the following “Support File Search Paths”
 - Scripts(scr)
 - HatchPatterns(pat)
 - LISP_DotNet\LISP
 - Linetypes(lin)
 - CompiledShapes(shx)

- Loads the following .NET plugin content
 - MRApps dll
 - Block palette dll
 - TMR_Centroid dll
 - Check Standard Layers dll
 - XRef Draw Order dll
 - Geotechnical Borehole dll
 - Don’t misinterpret this one. It’s simply a mechanism for reading a spreadsheet containing strictly formatted data and generating DWG content from it.
 - It could however be “misused” for other purposes as well.
 - Overrules dll
 - Providing line marking overrules
 - Annotation scales list dll
 - ACAD_Light dll
 - Providing MRLITE.

- Loads TMRLISP.lsp

Contents Folder

This folder literally contains all the content of the customisation.

Be aware that picking and choosing content may have undesired consequences for functionality.

For example, the Check Standard Layers command is reliant on the “LayerStates\Standard Layer Definitions.xml” file being in the correct relative location to the location of the “.\LISP_DotNet\DotNet\CheckLayerStandards\ACADCheckStandardLayers.dll” file.

We won’t tell you not to, however you must own that decision.

TMR has no requirement to enable this choice.

Compatibility

The Bundle is supported from AutoCAD 2015 onwards.

There are some behavioural quirks to each version, with testing results documented below. It is expected that other versions will display variations on these behaviours.

All events below begin with a “Reset Settings to Default” being run to clear any registry entries and pre-existing profiles.

Watch out for the “AutoCAD – DWG Association” dialogue if you are running a version you don’t normally run. Sometimes it appears behind AutoCAD making it look like something is broken. The order it appears in the process may differ between versions.

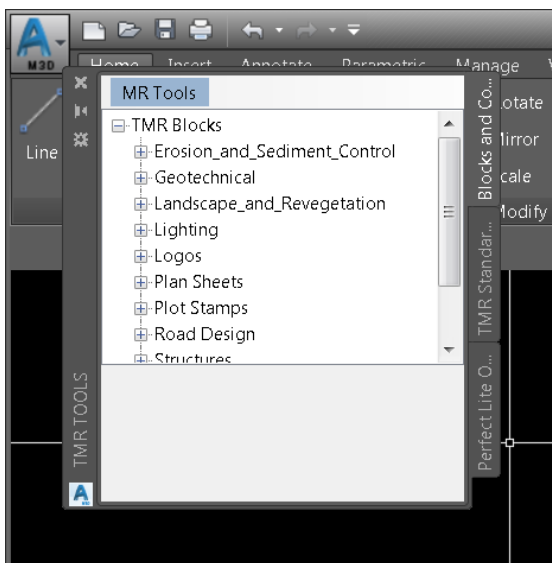
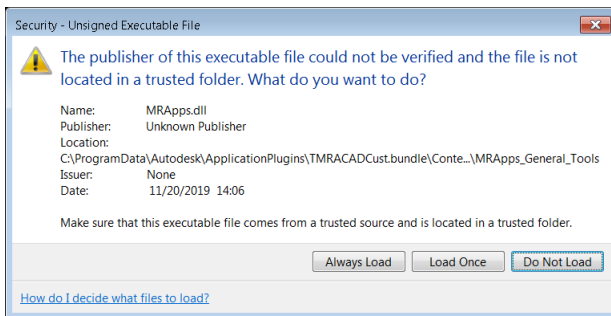
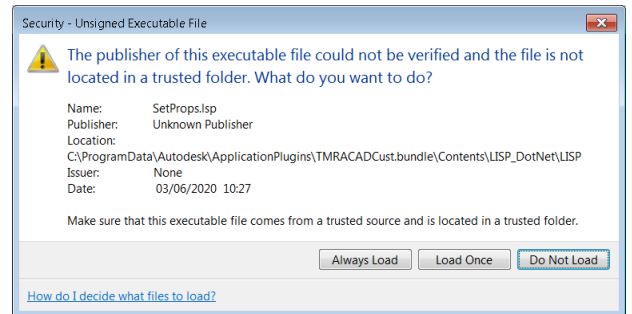
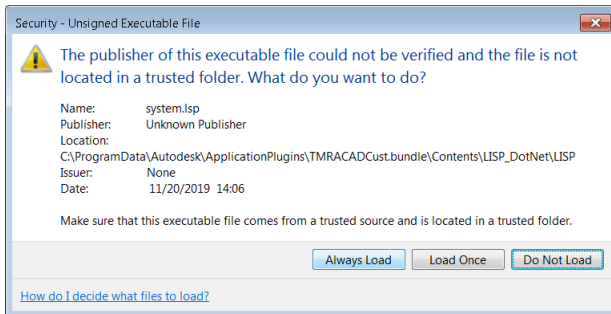
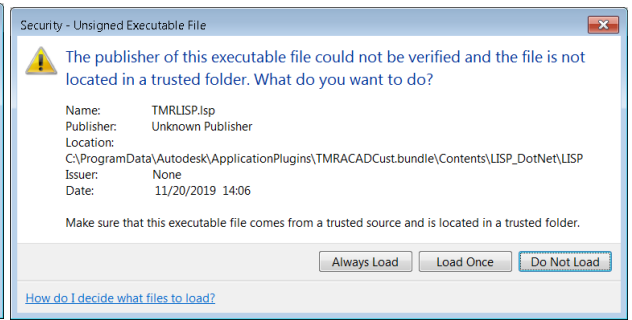
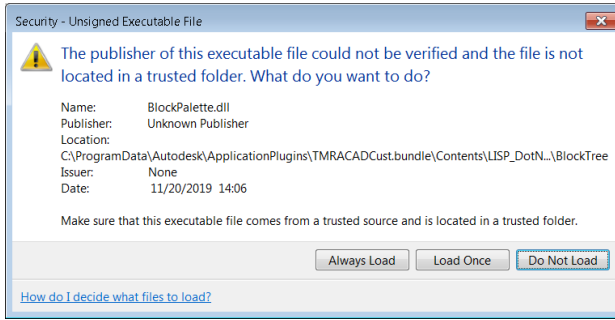
Timing of the registry entry creation can also be a bit hit and miss.

- AutoCAD 2015 just does not create it. The TMR Tools palette is creating the **TMR** key to store its GUID.
- AutoCAD 2018 appears to get it correct, displaying no issues.
- AutoCAD 2020 displays behaviour implying the key isn’t present before TMRPROPS is run.

Version	Observed behaviour
2015	<ul style="list-style-type: none"> • File association request. If it appears. • Select Workspace prompt • Lisp and dll files are loaded silently. <ul style="list-style-type: none"> ○ The security options in 2015 are set lower by default. • TMRPROPS fails to run <ul style="list-style-type: none"> ○ The TMR key gets created, but the CustPath key does not. • TMR Tools palette loads automatically • Exit AutoCAD • Add the CustPath key to the TMR key manually <ul style="list-style-type: none"> ○ Set the value to “C:\ProgramData\Autodesk\ApplicationPlugins\TMRACADCust.bundle\Contents” • Restart AutoCAD
2018	<ul style="list-style-type: none"> • Select Workspace prompt • BlockPalette.dll load request • File association request. If it appears • Registry key created somewhere in here. • TMRLISP.lsp load request • System.lsp load request • SetProps.lsp load request • TMRPROPS is run • MRApps.dll load request • TMR Tools palette appears
2020	<ul style="list-style-type: none"> • Select Workspace prompt • BlockPalette.dll load request • File association request. If it appears. • Registry key created somewhere in here • TMRLISP.lsp load request • system.lsp load request • SetProps.lsp load request • Exit AutoCAD and restart • TMRPROPS is run • MRApps.dll load request • TMR Tools palette appears.

Launch prompts

The prompts mentioned above are captured here.

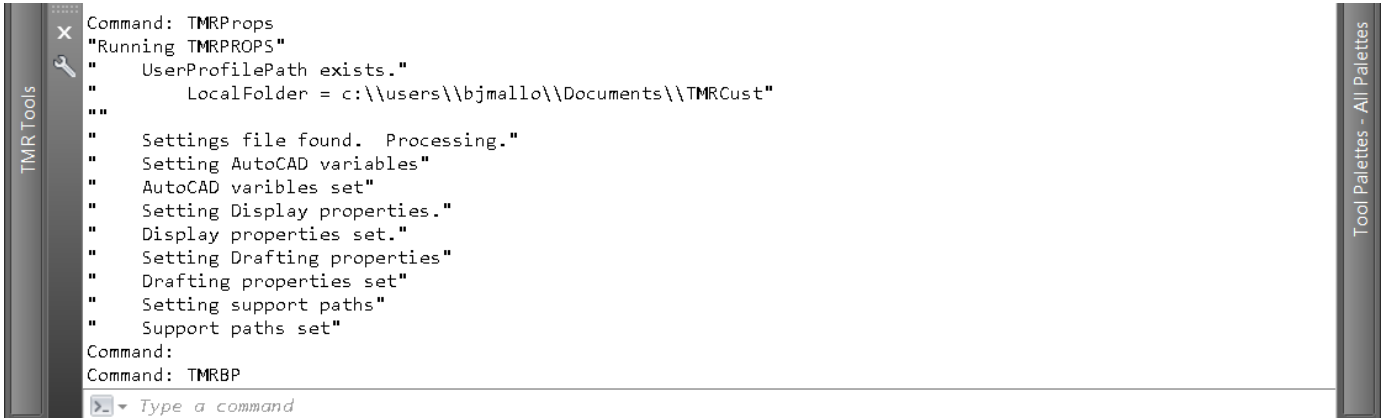


Each time any of these files is altered (e.g. through a content update), AutoCAD will prompt again.

TMRPROPS

TMRPROPS runs each time AutoCAD is loaded with the bundle present. It ensures that settings and variables are set to their correct values.

The output window will display the following:



```
Command: TMRProps
"Running TMRPROPS"
"  UserProfilePath exists."
"    LocalFolder = c:\\users\\bjmallo\\Documents\\TMRcust"
""
"  Settings file found. Processing."
"  Setting AutoCAD variables"
"  AutoCAD variables set"
"  Setting Display properties."
"  Display properties set."
"  Setting Drafting properties"
"  Drafting properties set"
"  Setting support paths"
"  Support paths set"
Command:
Command: TMRBP
Type a command
```

PropSettings.ini

TMRPROPS relies on the existence and correct structure of the PropSettings.ini file contained in the Content\LISP_dotNET\LISP folder.

Values can be altered here if desired, although it is recommended to stick to options such as colours.

The [SETVAR] section will be of most interest as it will ensure that any variables configured here are set on AutoCAD starting, or when the TMRPROPS command is run.

There is guidance within the file.

Debugging

TMRPROPS is set up with debugging output so that any errors can be investigated.

The commands are:

- TMRPROPSDEGUBON
- TMRPROPSDEBUGOFF

By default, debugging is off, leading to the more concise reporting above.

Further refinements may be required as we identify unusual points of failure.

Using TMRPROPSDEBUGON, leads to a much more revealing and verbose report:

```
Command: TMRPROPS
"Running TMRPROPS"
"  CustPath = c:\\programdata\\autodesk\\applicationplugins\\tmracadcust.bundle\\contents"
"  ACADLocation = C:\\Program Files\\Autodesk\\AutoCAD 2018"
"  AppDataPath = c:\\users\\bjmallo\\appdata\\roaming"
"  UserProfilePath = c:\\users\\bjmallo"
"  ProgramDataPath = c:\\programdata"
"  UserDocumentsFolder = c:\\users\\bjmallo\\Documents"
""
"  UserProfilePath exists."
"    LocalFolder = c:\\users\\bjmallo\\Documents\\TMRcust"
""
"  Settings file found. Processing."
```

```

" PropSettings.ini =
c:\programdata\autodesk\applicationplugins\tmracadcust.bundle\contents\LISP_DotNet\LISP\PropSettings.ini"
" Setting AutoCAD variables"
" Setting 'Integer' variable 'ATTDIA' to value '1'"
" Setting 'Integer' variable 'FILEDIA' to value '1'"
" Setting 'Integer' variable 'PICKFIRST' to value '1'"
" Setting 'Integer' variable 'SAVEFIDELITY' to value '0'"
" Setting 'Integer' variable 'SHORTCUTMENU' to value '27'"
" Setting 'Integer' variable 'SHORTCUTMENUDURATION' to value '250'"
" Setting 'Integer' variable 'VISRETAIN' to value '1'"
" Setting 'Integer' variable 'XFADECTL' to value '30'"
" Setting 'Integer' variable 'PDFSHX' to value '0'"
" AutoCAD variables set"
" Setting Display properties."
" AutoTrackingVecColor = 255,191,0"
" CursorSize = 100"
" CursorSize = true"
" CursorSize = False"
" DisplayScrollBars = False"
" DockedVisibleLines = 3"
" GraphicsWinLayoutBackgrndColor = 0,0,0"
" GraphicsWinModelBackgrndColor = 0,0,0"
" HistoryLines = 400"
" ImageFrameHighlight = False"
" LayoutCreateViewport = False"
" GraphicsWinModelBackgrndColor = 255,255,255"
" LayoutDisplayMargins = True"
" LayoutDisplayPaper = True"
" LayoutDisplayPaperShadow = True"
" LayoutShowPlotSetup = False"
" MaxAutoCADWindow = False"
" ShowRasterImage = False"
" TextFont = Consolas"
" TextFontSize = 10"
" TextFontStyle = 0"
" TextWinBackgrndColor = 255,255,255"
" TextWinTextColor = 0,0,0"
" TrueColorImages = True"
" XRefFadeIntensity = 30"
" Display properties set."
" Setting Drafting properties"
" AutoSnapAperture = False"
" AutoSnapApertureSize = 10"
" AutoSnapMagnet = True"
" AutoSnapMarker = True"
" AutoSnapMarkerSize = 5"
" AutoSnapTooltip = True"
" AutoTrackTooltip = True"
" FullScreenTrackingVector = True"
" PolarTrackingVector = True"
" Drafting properties set"
" Setting support paths"
" PrinterConfigPath =
c:\programdata\autodesk\applicationplugins\tmracadcust.bundle\contents\Plot Support\Printer Configs"
" PrinterDescPath = c:\programdata\autodesk\applicationplugins\tmracadcust.bundle\contents\Plot
Support\Printer Descriptions"
" PrintSpoolerPath = c:\programdata\autodesk\applicationplugins\tmracadcust.bundle\contents\Plot
Support\Spooler"
" PrinterStyleSheetPath =
c:\programdata\autodesk\applicationplugins\tmracadcust.bundle\contents\Plot Support\Styles"
" AutosavePath =
c:\programdata\autodesk\applicationplugins\tmracadcust.bundle\contents\Autosave"

```

" *Template Drawing Path =*
c:\programdata\autodesk\applicationplugins\tmracadcust.bundle\contents\templates"
" *QNew Template Path =*
c:\programdata\autodesk\applicationplugins\tmracadcust.bundle\contents\templates\Main Roads
Standard_stb.dwt"
" *Additional Toolpalette Path =*
c:\programdata\autodesk\applicationplugins\tmracadcust.bundle\contents\Toolpalettes"
" *Log File Path = c:\users\bjmallo\Documents\TMRCust\logfiles*"
" *Plot Log File Path = c:\users\bjmallo\Documents\TMRCust\Plot Support\Plot Log Files*"
" *Temporary File Path = c:\users\bjmallo\Documents\TMRCust\TempDwgLocation*"
" *Temporary XRef Path = c:\users\bjmallo\Documents\TMRCust\TempXREFFileLocation*"
" *Support paths set*"