MONTANA
Department of Transportation

Project Development & Delivery - Digital Design and Modeling Services

Support Guide

Application/Tool(s): MDT Civil 3D State Kit
Version(s): N/A
Environment: N/A
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MDT CIVIL 3D STATE KIT CONFIGURATION ISSUES

The MDT Civil 3D 2024 State Kit (State Kit) uses a custom startup routine to enable specific MDT Civil 3D tools, settings, and functionality. The State Kit is designed to work with a standard out-of-the-box Civil 3D installation and is compatible with most custom Civil 3D configurations. However, some custom configuration settings may conflict with the State Kit startup routine. Below is a description of the State Kit startup routine and list of possible issues and resolutions.

References

About Auto-Loading and Running AutoLISP Routines

Minimize Changes to S::STARTUP

Follow Guidelines for Modifying Support Files

State Kit Startup Routine

The State Kit uses the following main components in the startup routine.

- “Civil 3D 2024 Montana” desktop shortcut
- "MDT Civil 3D 2024 State Kit Plug-in" AutoCAD Add-on
  - MDT_2024 profile (MDT_2024.arg)
  - State Kit AutoLISP startup routine (MDT2024-Startup.VLX)
  - MDT and 3rd party AutoLISP custom tools (MDT2024-Tools.VLX)
  - MDT and 3rd party .NET custom tools (MDTExtension.dll)
  - State Kit custom ribbon tabs (MDT-Ribbon.cuix)

Montana Civil 3D Desktop Shortcut

The State Kit tools, settings, and functionality are accessible by using the “Civil 3D 2024 Montana” desktop shortcut. The desktop shortcut uses the “/p” switch to start Civil 3D in the “MDT_2024” profile. If the “MDT_2024” profile does not exist in the local user account, the profile will be created at startup.

MDT State Kit AutoCAD Plug-in

The State Kit tools, settings, and functionality are loaded from an AutoCAD Plug-in. The Plug-in components are located in the "C:\ProgramData\Autodesk\ApplicationPlugins\MDTSK2024.bundle” directory. The plug-in uses the following main files to load the State Kit functionality.

- *MDT_2024 profile (MDT_2024.arg)*

  Upon initial launch of Civil 3D from the “Civil 3D 2024 Montana” desktop shortcut, the “MDT_2024” profile is imported from: "C:\ProgramData\Autodesk\ApplicationPlugins\MDTSK2024.bundle\Resource\MDT_2024.arg”. Subsequent launches of Civil 3D from this shortcut will start out in the “MDT_2024” profile. Starting Civil 3D with this shortcut is important because it determines if the State Kit startup routine will initialize when Civil 3D is launched.

- *State Kit AutoLISP startup routine (MDT2024-Startup.VLX)*

  The plug-in autoloads "C:\ProgramData\Autodesk\ApplicationPlugins\MDTSK2024.bundle\Content\MDT2024-Startup.VLX”). This is an AutoLISP file that contains State Kit settings, registry edits, system variable settings, drawing variable settings, and startup functions. The first function performed is to check to see if the “MDT_2024” profile is active. If true, the code continues to run and load State Kit settings and functionality. If false, the code exits, and Civil 3D is opened without any added State Kit functionality or settings.

MDT2024-Startup.VLX also contains a function that loads a second AutoLISP file (MDT2024-Tools.VLX), loads MDT custom tool palettes, and loads custom MDT ribbon tabs at startup. These functions are set to run last in the State Kit startup routine by being appended to S::STARTUP.

- *MDT and 3rd party AutoLISP custom tools (MDT2024-Tools.VLX)*

  "C:\ProgramData\Autodesk\ApplicationPlugins\MDTSK2024.bundle\Content\MDT 2024-Tools.VLX" contains MDT and 3rd party custom tools and is loaded from MDT2024-Startup.VLX.

- *MDT and 3rd party .NET custom tools (MDTExtension.dll)*

  "C:\ProgramData\Autodesk\ApplicationPlugins\MDTSK2024.bundle\Content\ MDTExtension.dll" contains MDT and 3rd party custom tools and is autoloaded by the plugin.

- *State Kit custom ribbon tabs (MDT-Ribbon.cuix)*

  "C:\ProgramData\Autodesk\ApplicationPlugins\MDTSK2024.bundle\Menu\MDT-Ribbon.cuix" contains the CUI for State Kit custom ribbon tabs and is loaded from MDT2024-Startup.VLX.

Troubleshooting General Issues

The most common reasons for State Kit startup or functionality issues are related to the “Civil 3D 2024 Montana” desktop shortcut, the “MDT_2024” profile, or State Kit installation errors. The first steps in troubleshooting any issue are to verify the MDT desktop shortcut is valid and being used, reload the “MDT_2024” profile, and/or refresh/reinstall the State Kit.

“Civil 3D 2024 Montana” Desktop Shortcut

Verify Civil 3D the “Civil 3D 2024 Montana” desktop shortcut is valid and is being used to open Civil 3D. The use of this shortcut is required to load State Kit functionality.

1. If the shortcut does not exist on the desktop, copy the “Civil 3D 2024 Montana” desktop shortcut source file from "C:\ProgramData\Autodesk\ApplicationPlugins\MDTSK2024.bundle\Resource\Civil 3D 2024 Montana.lnk" to the desktop.
2. If the shortcut does not exist in the source location, reinstall the State Kit from the “MDT State Kit Updater” application.

If the shortcut does not work at all (does not open Civil 3D). Civil 3D may be installed in a non-standard directory.

1. Verify acad.exe is installed in the default location ("C:\Program Files\Autodesk\AutoCAD 2024\acad.exe").
2. Contact MDT for guidance or assistance if Civil 3D is not installed in the default location.

MDT_2024 Profile

Verify the “MDT_2024” profile exists. (OPTIONS command > Options dialog box > Profiles tab).

1. If the profile exists:
    a. Delete it.
    b. Restart Civil 3D with the “Civil 3D 2024 Montana” desktop shortcut. This will reload the “MDT_2024” profile from the source .arg file.
2. If the profile does not exist:
    a. Restart Civil 3D with the “Civil 3D 2024 Montana” desktop shortcut. This should reload the “MDT_2024” profile from the source .arg file.
    b. If the profile does not exist after restarting, reinstall the State Kit from the “MDT State Kit Updater” application.

State Kit Installation Errors

The State Kit installation may have been interrupted or files are corrupt.

1. “Refresh” the State Kit from the “MDT State Kit Updater” application.
2. If “refresh” does not fix the issue, reinstall the State Kit.

Troubleshooting Specific Issues

If startup issues remain after shortcut repair, a profile reset, and/or refresh/reinstallation, there may be specific configuration settings on the machine that conflict with State Kit settings.

Issue: No State Kit functionality after startup

Symptoms:

- The desktop shortcut does launch Civil 3D.
- The "MDT Civil 3D 2024 State Kit Startup Settings Loaded." message does not appear at the command line during startup
- No State Kit functionality is present after Civil 3D opens.

Note: Press <F2> after Civil 3D loads to open the AutoCAD text window to search for State Kit startup messages.

Possible Causes and Troubleshooting:

1. "PackageContents.xml" is missing, altered, or corrupt.
    a. Verify "C:\ProgramData\Autodesk\ApplicationPlugins\MDTSK2024.bundle\PackageContents.xml" exists.
    b. Compare with file located at "C:\MDOH\StateKit\Downloads\MDTStateKit_2024\Source\App\MDTSK2024.bundle\PackageContents.xml"
    c. Reinstall the State Kit if different or not found.

2. The local machine and/or local user account may not have access to the “C:\ProgramData\Autodesk\ApplicationPlugins” directory.
    a. Verify permissions to access "ApplicationPlugins” directory.
    b. Provide permissions to “ApplicationPlugins” directory.
    c. If directory access is not possible contact MDT for guidance or assistance.

3. The State Kit assumes the APPAUTOLOAD system variable will be set to a value that allows plug-ins to load at startup. (The default value on a standard installation is 14, which allows loading of plug-ins at startup.) APPAUTOLOAD may be set to a value that does not allow Add-ons to load at startup.
    a. The State Kit will reset APPAUTOLOAD to 14 every time it is launched, but other custom startup configuration settings may override this.

   b. Set the APPAUTOLOAD system variable to a value that allows Add-ons to load at startup.

   c. If setting APPAUTOLOAD to allow Add-ons at startup is not possible contact MDT for guidance or assistance.

4. Trusted paths settings may be restricting access to the MDT add-on and the “MDTSK2024.bundle” directory.

   a. The State Kit sets trusted paths in the profile, but it is possible for other startup configurations to override this.

   b. Verify that application security system variables (SECURELOAD, TRUSTEDPATHS, etc.) on the machine are not blocking the MDT add-on from loading.

   c. Verify "C:\ProgramData\Autodesk\ApplicationPlugins\MDTSK2024.bundle” directory is allowed as a “trusted location”.

   d. Identify and resolve conflicting custom configuration settings.

   e. If custom configuration settings cannot be aligned with the State Kit requirements, contact MDT for guidance and assistance.

Issue: State Kit startup routine loads, but not all functionality is present

Symptoms:

- The desktop shortcut does launch Civil 3D.
- The "MDT Civil 3D 2024 State Kit Startup Settings Loaded." message does appear at the command line during startup.
- The "MDT Civil 3D 2024 State Kit Utilities Loaded." message does not appear at the command line during startup.
- Some, but not all State Kit functionality is missing after Civil 3D opens. (Examples of missing functionality include: “MDT” custom Ribbon Tabs are not present, “MDT” custom Tool Palettes are not loaded or accessible, and/or some MDT command line tools do not work.)
- The State Kit startup routine is not completing.

Possible Causes and Troubleshooting:

1. The State Kit appends the S::STARTUP function with functions to load the MDT Ribbon tabs, MDT Tool Palettes, and MDT AutoLISP tools. Because the S::STARTUP function can be defined in many places

(an *acad.lsp* or *acaddoc.lsp* or MNL file or any other AutoLISP file loaded from any of these), **it's possible to overwrite a defined S::STARTUP function.** Verify S::STARTUP is not being overwritten by other custom configuration settings.

2. It is best practice to append functions to S::STARTUP, rather than directly define S::STARTUP as it's own function.

   Note: To be appended, the S::STARTUP function must be defined with the `defun-q` function rather than `defun`.

   The example below shows one method of ensuring that a startup function works with other functions. The code uses "append" to add MYSTARTUPFUNCTION to that of an existing S::STARTUP function and then redefines the S::STARTUP function to include the new code. This works properly regardless of the prior existence of an S::STARTUP function.

```
(defun-q MYSTARTUPFUNCTION ()
... your startup function ...
)
(setq S::STARTUP (append S::STARTUP MYSTARTUPFUNCTION))
```