Convert to Web Services

You want to run TraCS as a web application so that your agency can skip the end-shifting process and so field units have in-car access to the master index and the full TraCS database.

Please note that the web services TraCS client does **NOT** run in a web browser. It is a full client installed in the mobile units, which uses web services over your VPN to process TraCS transactions.   Under web services, the TraCS client can continue to function even when a broadband connection is not available; forms created on the field unit will automatically sync with the TraCS office database the next time the connection is available.

This FAQ assumes you are already using WIPack151208 or better at your agency and are already using SQL Server for your TraCS databases. If your agency is not on the "19" baseline or is not using SQL server for the TraCS databases, you will need to perform those upgrades first. The instructions below will walk you through setting up TraCS as a web application on your IIS server and configuring your field units to run in web services mode.

If you are installing TraCS for the first time in your agency, disregard these instructions and follow the instructions in the installation guide.

Requirements:

- Skills and knowledge related to web applications, including configuring IIS, firewall and proxy servers and VPNs.

- Operating System: Windows Server 2008 R2 x64 with IIS 7 or above, Windows Server 2012 R2 x64 with IIS 7 or above

- .NET Framework: 2.0, 3.0, 3.5, and 4.0 (full installs)

- Processor: Quad Core, 2.0GHz or higher

- Memory: 8 GB RAM or more

- Hard Disk Drive Size: 100 GB or more with 50 GB free

- Databases: SQL Server 2008 R2 x64 or higher

- Servers set up as virtual machines are acceptable.

- Mobile units must have broadband access available most of the time

Note: These instructions create a TraCS server at your agency. If you are upgrading from a standard network installation to a web services installation, please be aware that your TraCS server will also become your master computer for the purposes of installing WI Pack updates. Other administrative tasks that you formerly performed on the master computer may be done at another office workstation. We recommend you use the same office workstation for all administrative tasks.

For best success, please read all instructions before beginning.

Please note that the Badger TraCS Help Desk does not provide specific advice on configuring IIS, firewall and proxy servers, or VPNs. Your agency must be responsible for maintaining the required skill set. The help desk's knowledge is limited to the information presented here.

Is the server where your TraCS network folder is located the same server that you will use as your web server? ____Yes, I'm keeping my existing server   ____No, I'm using a different server for IIS or I plan on changing the name of the network share.

1. Request an unlock key for TraCS Server from . Please provide your agency name and TraCS serial number.

2. Download the server edition of TraCS: https://trust.dot.state.wi.us/tracs/software/tracsserver.zip.

3. Extract the contents of the file to a folder of your choosing.

At your IIS server:

4. Install Windows Server 2008 R2 x64 Standard (or above.)

5. Install .NET Framework 3.5 SP1 and 4.0 (full versions.)

6. Stop IIS.

7. If you are moving to a new server, copy the current TraCS 10 network directory to the IIS server

   a. Write down the location of your old TraCS 10 network folder here:

   _____

   For example, \\myOldFileServer\tracs10

   b. On the IIS server, create a folder called c:\programdata\tracs.

   c. Copy the *contents* of your old TraCS network folder to c:\programdata\tracs. The folder should look something like this when you are done:

   d. Delete c:\programdata\tracs\Settings\Setting.ini   (If skipped, you will not be able to log into TraCS)
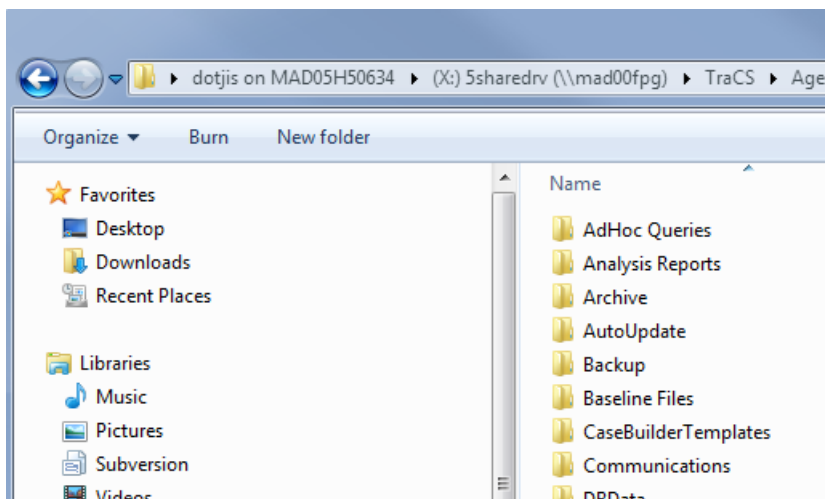
8. Run TraCS - Server Install 19.xx.xx.EXE.

   a. Click Next.

   b. Click Next.

   c. Enter registration information as per screenshot and click Next.
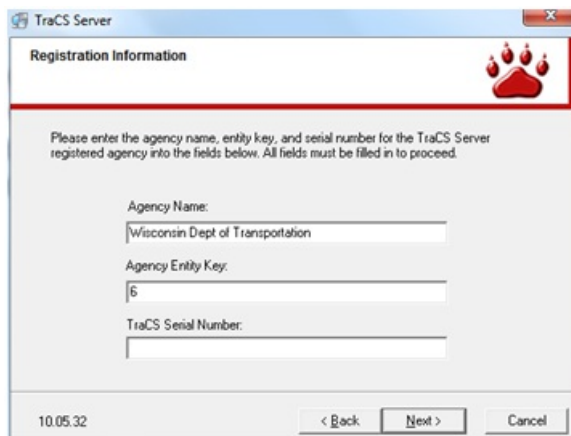
   - Wisconsin Dept of Transportation

   - 6

- Enter the serial number found on your welcome letter.

d. Choose Full Install and click Next.

e. Choose Server and click Next.

f. Enter a three-digit or four-digit, all numeric, TraCS Machine ID number from your installation worksheet. Remember, machine numbers must be unique throughout your agency.

g. Click Next.
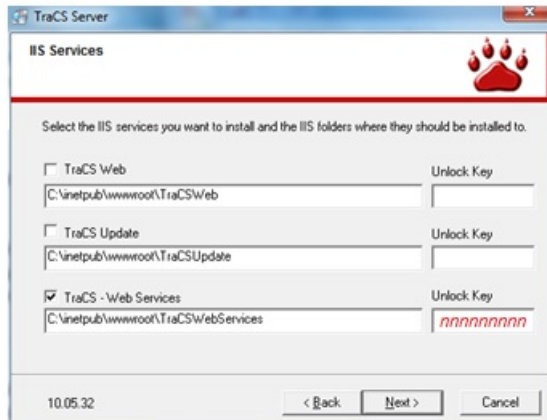
h. Check the **TraCS – Web Services** box
    - Enter the Unlock key provided to you by Badger TraCS.
    - Change the inetpub address if required by your agency.

i. Click Next.

j. Click the radio button for "Under the Windows Common Application Data Folder (Recommended)" and click Next on the Application Data Location screen.

k. Check the box for Advanced Install and click Next.

l. Install will run.

m. Click Next.

n. Configure URL for update service.
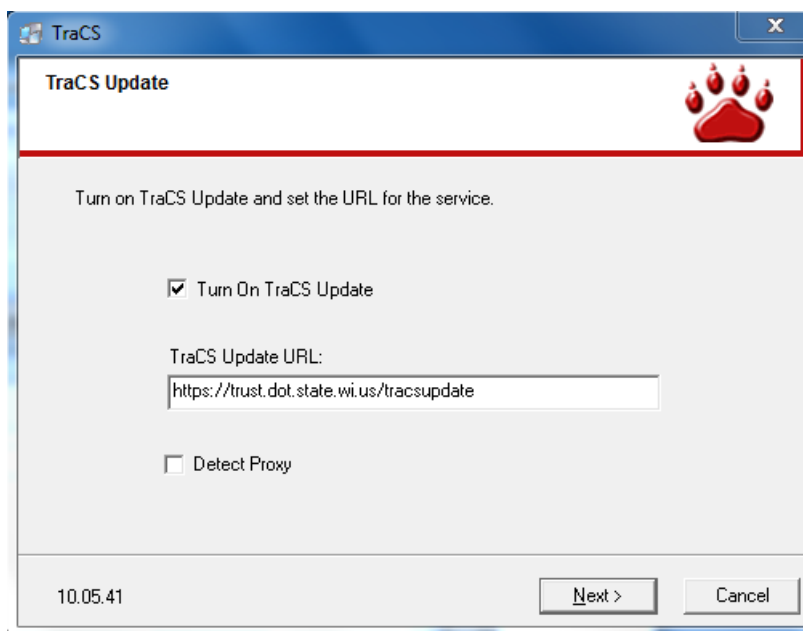
- Place a check mark next to **Turn On TraCS Update**.
- Enter the URL for the TraCS Update Service: https://trust.dot.state.wi.us/tracsupdate

o. Clic**k Next.**

p. Click Finish.

9. If you are moving to a new server, register your master computer with Badger TraCS.
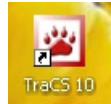
a. Start TraCS

b. TraCS will attempt to connect to the update server, but the update server does not yet know that your master computer should be authorized. When you get to the login screen, click **Cancel**.
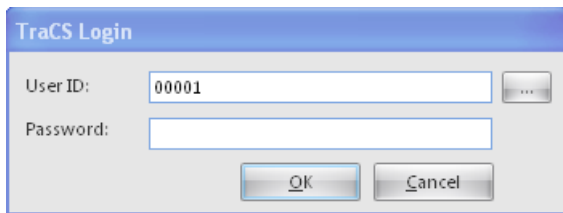

c. Send an e-mail to badgertracs@dot.wi.gov requesting that your master computer be authorized. Please include the Windows machine name for your master computer and the name of your agency and mention that you are switching master computers because you are using web services.
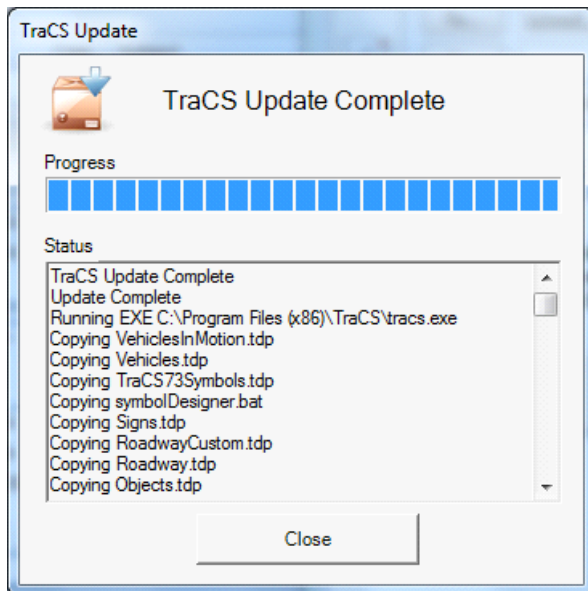
10. Start TraCS

a. You will receive notifications in your Windows task bar that files are downloading.
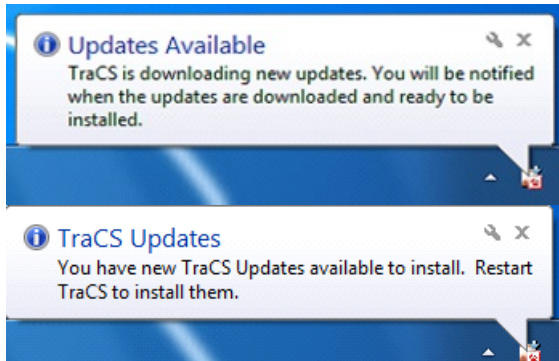
b. When you receive the notification that the download is complete, exit TraCS by clicking the **Cancel** button on the log in screen. Then restart TraCS.

c. Click **Yes** to download the update.
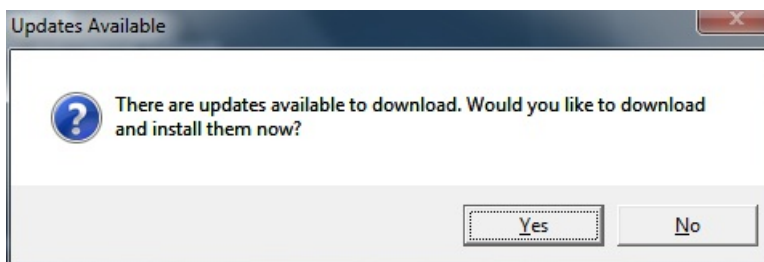
d. Click **Close** once the TraCS update has completed.

   e. Close TraCS.

11. Configure IIS

   a. Disable Windows firewall or make exceptions for the web server ports (80 or 443)

   b. Ensure the Web Server (IIS) role is activated on the server. IIS 7.0 is required.

   c. Ensure that ASP.NET and WCF are enabled.

   - Run **aspnet_regiis.exe –I** to install ASP.NET. (Located in

     C:\Windows\Microsoft.NET\Framework\v4.0.xxxxx) Run as admin

   - Run **servicemodelreg.exe –Ia** to register WCF with IIS and ASP.NET. (Located in

     C:\Windows\Microsoft.NET\Framework\v4.0.xxxxx) run as admin

12. Configure TraCS Web Services.

   a. Add a new Application Pool in IIS Manager named: TraCSWebServices.
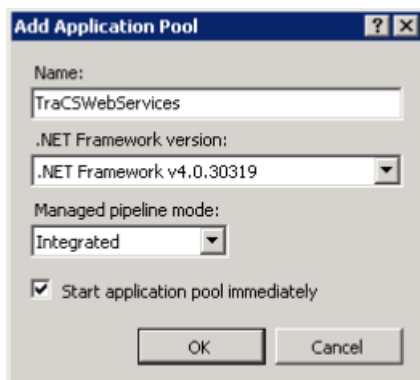
   b. In Advanced Settings for the TraCSWebServices application:
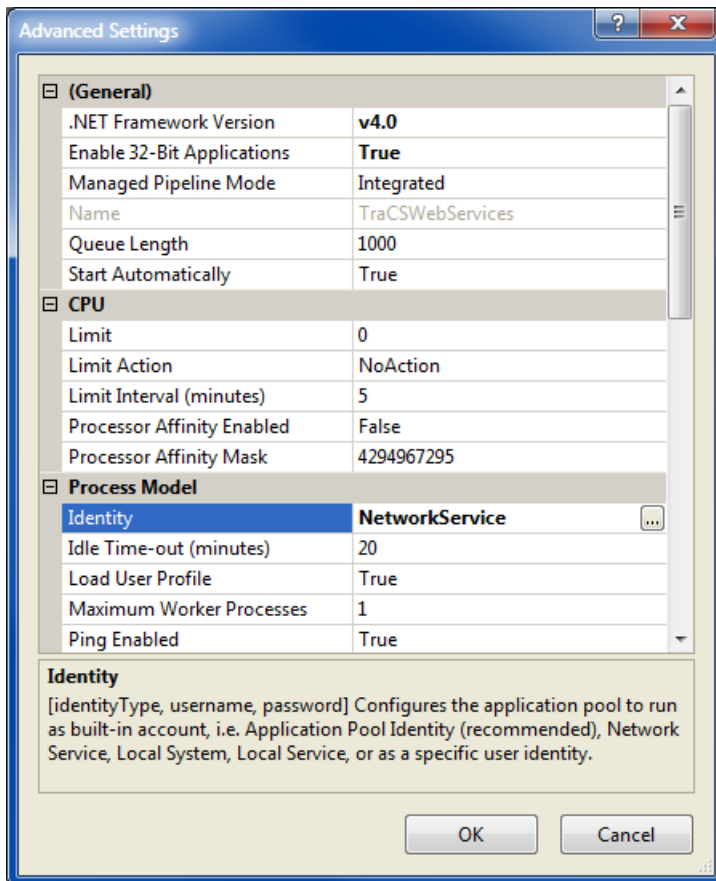
- Confirm the .Net Framework Version is v4.0.
- Enable 32 bit applications.
- Enable Load User Profile.
- Set the identity.

     i. Use one of the Built-in accounts or use a Custom account. If using a custom account, make sure to use the domain name in front of the user name if necessary. Example: \username

Hey, wake up, B and C are super important!

     ii. Identity account must have access to the TraCS directories installed in task 1-2(c).

     iii. Identity account must have access to the network share for the SQL Server databases.

c. Under Sites, convert TraCSWebServices to an application, choosing the TraCSWebServices Application Pool.

d. Follow best practices to secure your web server. For example, only allow access to your VPN.

e. If using SSL:
- Install a certificate for SSL in IIS.
- Edit the bindings for the default web site in IIS to include https:// and specify that the certificate you installed in the previous step be used for this binding.

f. Start the **TraCSWebServices** application pool.

STOP!

Test Time:

At this point test one of the mobile. Don't proceed to step 13 until the mobile uses Web Services correctly.
On the mobile do the following:

    i. Change this file: C:\ProgramData\TraCS\Settings\Settings.ini

          o Under [IO] section Type=3

```
[IO]
;Type 0 is file, Type 1 is database, Type 2 is MACH, Type 3 is Web Service
Type=3
FormVersionCheck=False
;Removes the "Codes _ " in front of table names
```

          o Under [TraCSWebService] section URL= (this will be your IIS URL)

```
[TraCSWebService]
URL=(this is your IIS URL)
SearchReturnLimit=None
```

Note: You can test connectivity to the web application by pasting the web services URL in a web browser, for example,
***http://mytracserver.com/TraCSWebServices**. You should see a response that "the web service is running."*

13. If you are moving to a new server, create a network share for c:\programdata\tracs.

    New Network share for TraCS: _____

                   Example: \\MyNewServer\sharename

    a. Any users using the Office version of TraCS will need Read, Write, Create and Delete access to this network share.

    b. Web services clients need read access to the distribution folder of this network share.

14. If you are moving to a new server, open the configuration manager for TraCS on the TraCS server and start the communications editor.

    a. Disable end-shift/start-shift communications instructions by removing the active checkmark. ☐ Active

        • Transmission:ToNetworkEndShift (ExportToNetwork)

        • Transmission:ToNetworkStartShift (ExportToNetwork)

        • Transmission:FromNetworkStartShift (ImportToNetwork)

        • Transmission:FromNetworkEndShift (ImportToNetwork)

```
⌄ Communication Instructions
  ⌄ Transmission:ToNetworkEndShift
      ExportToNetwork
```
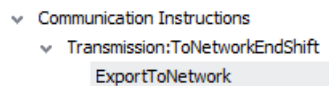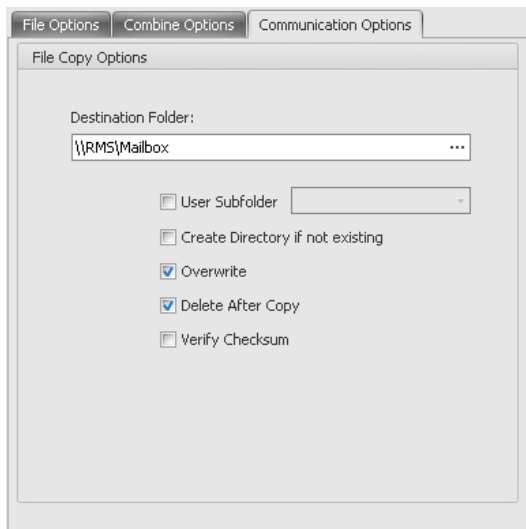
15. If you are moving to a new server and your agency transmits data to your RMS, check your RMS transmission settings and if any use the file copy method and specify the TraCS network folder, change them to reflect the new network folder. If you change the file destination, be sure that your RMS is configured to retrieve the data from the new location.

    a. Expand the **TransComm** item. ⊕ TransComm

    b. Select the "ToRMS" setting (for example: **elciToRMS**) for each form to be transmitted to your RMS.

```
crashToRMS
deercrashToRMS
dnrToRMS
driverconditionToRMS
elciToRMS
```
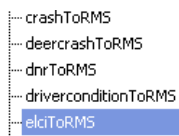
    c. Enter the location required by your RMS for the data files in the**Destination Folder** if needed.

   d. Repeat this for remaining forms that you want to transmit to your RMS.

16. If you are moving to a new server, click **OK** [OK] to close the communications editor and save your changes.

17. Perform task 3-1 from the installation guide to update settings on your tracs server. Web services settings are covered in step 8w.

18. Perform task 4-1(c) from the installation guide to create a new distribution file. Be sure to change your **Mobile Distribution Folder** and **Office Distribution Folder** locations if the share name for the TraCS network folder has changed.


Mobile Distribution Folder	Office Distribution Folder
\\myserver\tracs10\distribution\mobile\	\\myserver\tracs10\distribution\office\

19. Configure workstations to point to the new network location.
    At each TraCS office workstation:
    a. Run InstallTraCS.bat, which can be found in the TraCS network folder inside the**Distribution** folder.
    b. Click **Next**.
    c. Click **Next.**
    d. Enter the requested registration information.
        ○ Enter your agency name spelled and capitalized as found on your welcome letter. (If you change the spelling of your agency, you will not be able to download software updates from Badger TraCS.
        ○ Enter **6** in the entity key field.
        ○ Enter the TraCS serial number found on your welcome letter.
        ○ Click **Next**.
    e. Choose the **Client** radio button on the **Install Type** screen.
    f. Click **Next**.
    g. Enter the three-digit, all numeric, TraCS Machine ID number from your installation worksheet. Remember, machine numbers must be unique throughout your agency.
    h. Click **Next**.
    i. Click **Next.**

j. Click **Next**.

k. Click **Next**. The installation will start.

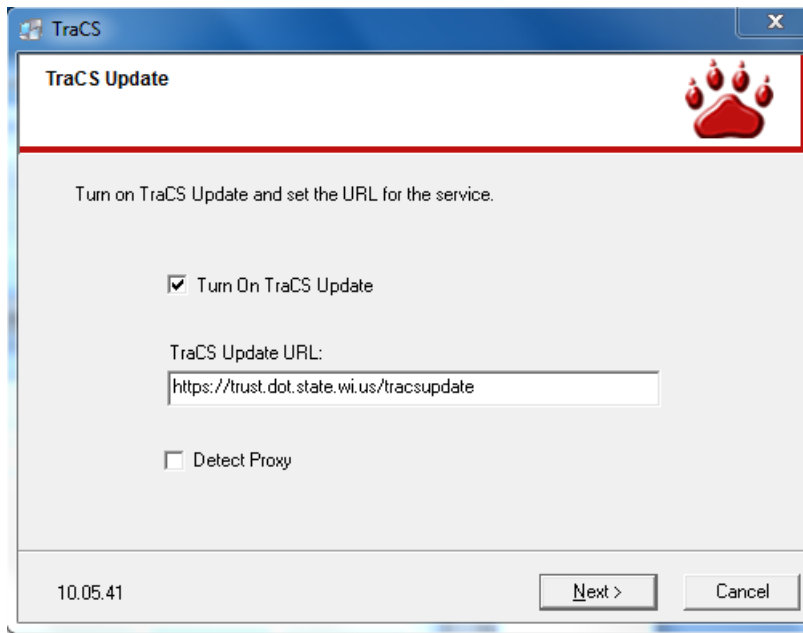l. On the **Network File Location** dialog, click **Browse**.
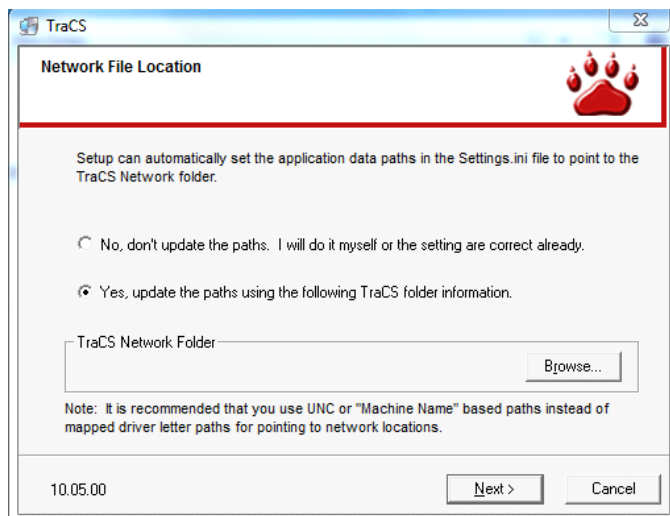
i. Enter the UNC file path from Task 1-2, step 6b.
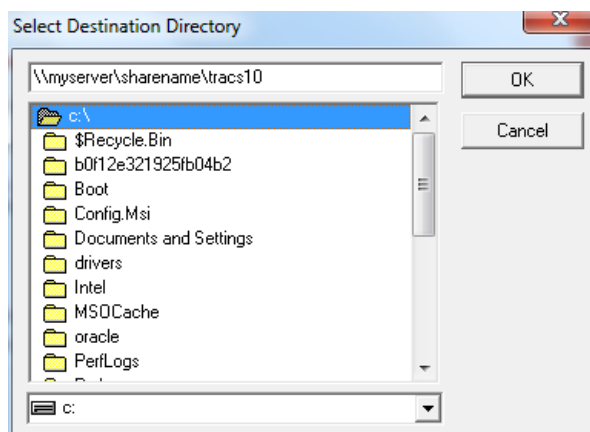
TraCS 10 Network Folder: _____

m. Enable the update server.

- Place a checkmark next to **Turn On TraCS Update**.
- Enter https://trust.dot.state.wi.us/tracsupdate in the **TraCS Update URL** field.

n. Click **Next.**

o. Click **Finish** on the final screen.

20. Configure field units to run in web services mode.

a. If your agency auto-updates settings at log on for field units, update the configuration wizard form for each field unit to use web services. If you don't have a configuration wizard form for a field unit, follow step 20b instead.

At a TraCS office workstation:

i. In the forms manager, select the configuration wizard form for the field unit you want to convert to web services and open it for edit.

CONFIGURATION WIZARD

F01BAE0A4D864315D73D	TraCS Pack 10.06.06	TraCS Patch TEST	Create Date 02/25/2015

Settings

Auto-update ☑ Settings at Log On	TraCS Machine # 555		Unique Machine ID F01BAE0A4D864315D73D
Windows Computer Name		Asset ID	

☐ Prompt New Folder	☑ Allow Multiple Instances Of TraCS	☑ Use RMS	☑ Enable WIBRS on NTC Form

☑ Auto-Install ELCI Citation Numbers	Auto Install Quantity 200	TraCS Agency Number for Document Numbering 012

☑ Use Initial for Officer First Name On Citations & Warnings

External Search Message Cache Location c:\MessageCache	☑ Manual Message Cache Management	Message Cache Retention Period 1

☐ Use Proxy Server For Open Street Maps	Mapping Zone 16

WISLR Map Location
%ProgramData%\CTRE\Incident Location Tool\GISData

Linked Attachment Location
//myyserver/tracs10/attachments

Client Update URL
https://trust.dot.state.wi.us/tracsupdate

Client Update Location
\TraCSClientUpdate\

Resend Retention Period 30	Login Type TraCS

Default Palette List for Diagram Tool
Accident.tdg

☑ Web Services Client	Web Services URL http://mytracsserver.com/TraCSWebServices	Web Transaction Time Out 30

ii. Change the **Web Services Client** field to **Yes**.

iii. Change the **Web Services URL** field to the URL for the TraCSWebServices URL. For example: .

iv. Enter the number of seconds to wait before canceling a transaction and going into offline mode in the **Web Transaction Time Out** field. If unsure what to enter in this field, enter 30 seconds.

v. If using Active Directory change the Login Type to Active Directory Prompt. Note: ActiveDirectoryPrompt is required for web services clients that use Active Directory for TraCS credentials. The prompt is needed for credentials on web services clients because turning it off creates a security flaw.

vi. Click the validate button to validate and save the form.

vii. The next time the officer logs into the field unit, the settings will be updated on the local drive. However, they won't go into effect until the officer closes and restarts TraCS. A successfully connected web services field unit will display an online indicator in the upper right corner:

viii.

ix. Repeat step 20a for remaining field units.

x. If the location of the distribution files has changed because you are using a new network share name for the TraCS network folder, copy the distribution files from the new distribution folder (specified in step 20) to the old distribution folder. This will allow officers to run the distribution themselves using the **Run Distribution** button or at log off time even though their computers have not yet been updated to point to the new distribution folder. If the old TraCS server is no longer available, you will have to use the "bat file" method to run the new distribution on each field unit.

xi. The web services conversion is complete. Skip step 20b.

b. If your agency does not auto-update settings at log on for field units, you must manually configure web services at the field unit. Updating these settings through a distribution is not recommended since it would also convert your office workstations to web services clients.

At each field unit:
- Open **c:\programdata\tracs\settings\Settings.ini** on Windows 7 (or **C:\Documents and Settings\All Users\Application Data\TraCS\ settings\Settings.ini** on Windows XP) in notepad.
- Change the IO type to 3.

  [IO]
  Type=3
- If using Active Directory change the Login Type to Active Directory Prompt. **Note**: ActiveDirectoryPrompt is required for web services clients that use Active Directory for TraCS credentials. The prompt is needed for credentials on web services clients because turning it off creates a security flaw.

  [User]
  LoginType= ActiveDirectoryPrompt
- Change the web services URL to the URL for the TraCSWebServices URL.

  [TraCSWebService]
  URL=
- Save and close settings.ini.
- Run the \distribution\mobile\MobileDistribution.bat file from the TraCS network folder to install the remaining configuration files.
- A successfully connected web services field unit will display an online indicator in the upper right corner:
- Repeat step 20b for the remaining field units.
- The web services conversion is complete.

—Jenny 12/10/2015
 John 09/01/2016
 Geri 02/28/2017
 Dennis 4/24/2017
 Dennis 9/10/2020