

Critchlow Geocoding

Software Installation, FAQ
and Problem Solving
Guide v2.0



CRITCHLOW



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Geocoding Overview



Geocoding is used to locate addresses by the process of finding the closest matching address in a database and assigning X & Y co-ordinates to it. Once the location of the address is matched, it is located and this precise location can be used to extract other information such as a meshblock number, deprivation value and district health board.

The geocoding engine uses Critchlow's own road network for a reference dataset as well as address points from Land Information New Zealand.

Your feedback is welcome. If you cannot find an address or experience discrepancies with what is being returned in your patient management system, please contact us at:

support@critchlow.co.nz

Or

0800 MAPPING (0800 627 746)

Your call will be logged by our help desk and a technician will contact you as soon as possible.

Standalone Installation



Pre-requisites to installation:

400 megabytes of free hard drive space.

CD-ROM drive.

Windows XP, Windows Server 2003

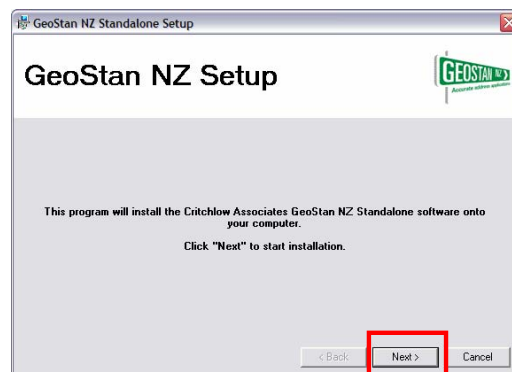
Installation notes for Patient Management System users:

Standalone should be installed on every computer where the geocoding functionality is required - this is where addresses are entered or changed. The only exception to this would be a Terminal Server environment (one server and a farm of dumb terminals), in which case Standalone should be installed on the server only.

To install:

Please exit the PMS before installing GeoStan.

To install Standalone, insert the CD into your CD-ROM drive. The installation program will start automatically with the following screen:

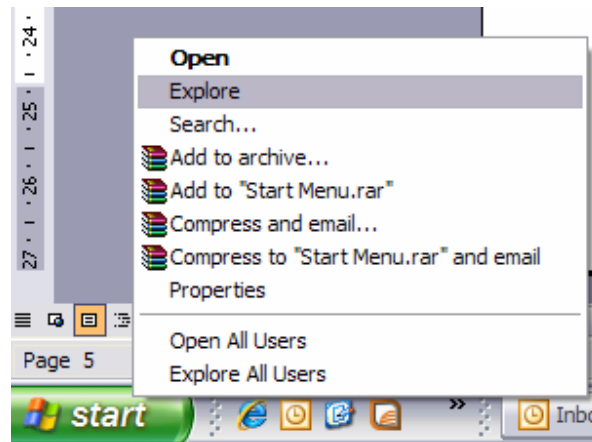


Click "Next" to start installation. The program will install itself to the default location, which is **C:\program files\GS2**. If you require the software to be installed in another location, please contact technical support for assistance.

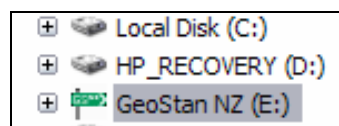
If installation does not start automatically:

Sometimes a computer is configured to not automatically run CDs. If this is the case and the window shown above does not appear, please follow the following steps:

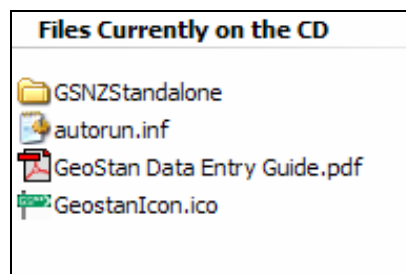
- a) Start Windows Explorer – the easiest way to do this is to right-click the mouse on the START button and select explore from the pop up menu:



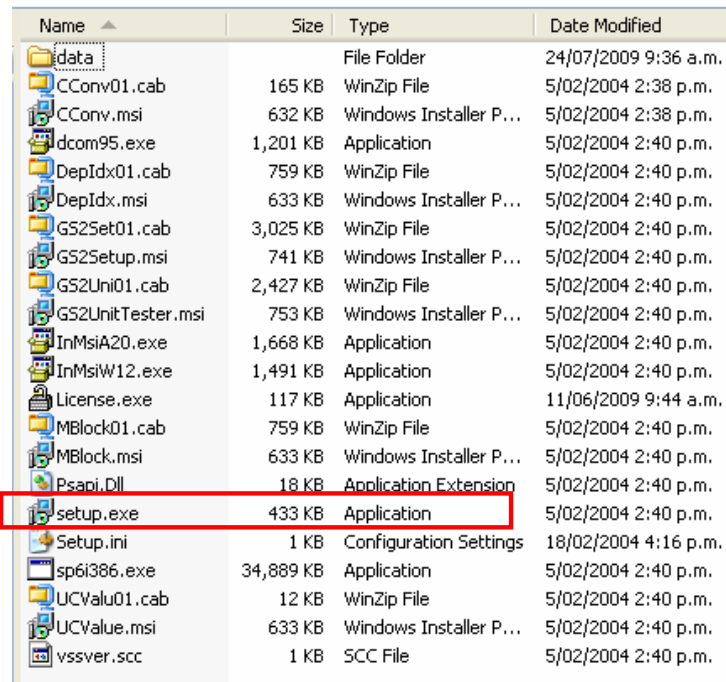
- b) Windows Explorer will display your CD-ROM drive on the left-hand panel similar to what is shown below:



- c) Click on the CD-ROM drive (E: as shown in the picture above) and the right-hand panel should show the contents of the CD as shown below:



- d) Double click on the yellow folder named "GSNZStandalone" and the contents should appear as shown below:



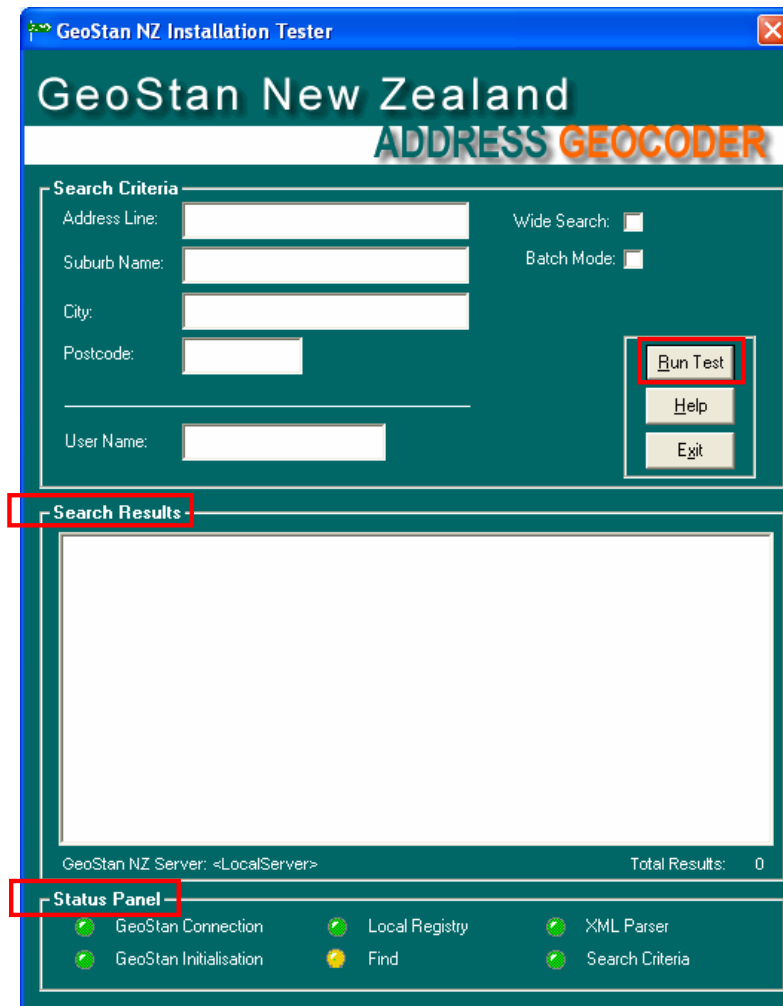
Name	Size	Type	Date Modified
data		File Folder	24/07/2009 9:36 a.m.
CConv01.cab	165 KB	WinZip File	5/02/2004 2:38 p.m.
CConv.msi	632 KB	Windows Installer P...	5/02/2004 2:38 p.m.
dcom95.exe	1,201 KB	Application	5/02/2004 2:40 p.m.
DepIdx01.cab	759 KB	WinZip File	5/02/2004 2:40 p.m.
DepIdx.msi	633 KB	Windows Installer P...	5/02/2004 2:40 p.m.
GS2Set01.cab	3,025 KB	WinZip File	5/02/2004 2:40 p.m.
GS2Setup.msi	741 KB	Windows Installer P...	5/02/2004 2:40 p.m.
GS2Uni01.cab	2,427 KB	WinZip File	5/02/2004 2:40 p.m.
GS2UnitTester.msi	753 KB	Windows Installer P...	5/02/2004 2:40 p.m.
InMsiA20.exe	1,668 KB	Application	5/02/2004 2:40 p.m.
InMsiW12.exe	1,491 KB	Application	5/02/2004 2:40 p.m.
License.exe	117 KB	Application	11/06/2009 9:44 a.m.
MBlock01.cab	759 KB	WinZip File	5/02/2004 2:40 p.m.
MBlock.msi	633 KB	Windows Installer P...	5/02/2004 2:40 p.m.
Psapi.Dll	18 KB	Application Extension	5/02/2004 2:40 p.m.
setup.exe	433 KB	Application	5/02/2004 2:40 p.m.
Setup.ini	1 KB	Configuration Settings	18/02/2004 4:16 p.m.
sp6i386.exe	34,889 KB	Application	5/02/2004 2:40 p.m.
UCValu01.cab	12 KB	WinZip File	5/02/2004 2:40 p.m.
UCValue.msi	633 KB	Windows Installer P...	5/02/2004 2:40 p.m.
vssver.scc	1 KB	SCC File	5/02/2004 2:40 p.m.

- e) Double click on "setup.exe" application to start installation. If you cannot see file extensions (e.g. .exe, .ini) and you see two setup files, the one to double click will be the file with the computer icon next to it.

To test your installation:

Once installation is complete, you should ensure that Critchlow Geocoding has installed correctly by using the application "GeoStan NZ Installation Tester" which is installed with every version of Standalone. To access this application, either use the new "GeoStan NZ Installation Tester" icon that should be installed on your desktop, or use the start menu and go to: START >> PROGRAMS >> CRITCHLOW ASSOCIATES >> GEOSTAN NZ INSTALLATION TESTER

The following application will appear:



If an error message appears in the "Search Results" box or if any light is flashing or red in the "Status Panel", please contact Technical Support with those details.

If the Installation Tester appears as the screen above, please enter an address into the appropriate fields or right-click on the "Run Test" button to automatically populate the fields with an address.

Left-click on the "Run Test" button once address fields are entered in the Address Line, Suburb Name and City boxes.

If Standalone is working properly, the following results should appear:



You may scroll down to check the other geocoding information such as Longitude/Latitude co-ordinates and deprivation quintile value.

After installation:

Your patient management system should detect that Critchlow Geocoding is installed and it should geocode new patient addresses or where an address is changed (for example, if a patient moves house).

If your patient management system is not detecting Critchlow Geocoding and the Installation Tester is able to geocode correctly, please contact your PMS Vendor, advising them that Critchlow Geocoding (GeoStan NZ) has installed correctly and that the Installation Tester is working.

Server/Workstation Installation



Pre-requisites to installation:

SERVER:

400 megabytes of free hard drive space.

CD-ROM drive.

Windows 95, Windows 98 or Windows 2000

WORKSTATION

50 megabytes of free hard drive space

CD-ROM drive

Windows operating system

Server/Workstation is incompatible with Windows operating systems from 2003 onwards due to increased Microsoft security protocols. If you do have a Windows 2003 or XP Server (or higher), Server will not allow network connections from Workstation. If you have a Windows 2000 computer connected to your network, you may use this for the Server Installation (Workstation can be installed on XP machines).


If you find the quarterly data updates time consuming, Critchlow can provide a free application which copies the data files from one location onto each machine that has Critchlow Geocoding installed on your network. If you would like to know more, please contact Technical Support at support@critchlow.co.nz.

Installation notes for Patient Management System users:

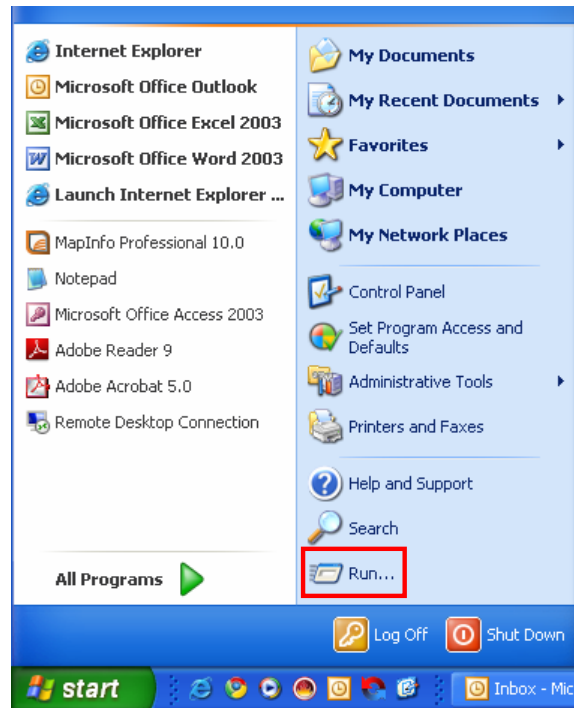
The computer with Server installed cannot be used for geocoding – only the subsequent installs of Workstation on other computers on your network. Because of the relationship between the PMS and GeoStan, the PMS requires GeoStan Workstation to "talk" to the GeoStan Server. Therefore, the Workstation component and the PMS need to be installed on the same computer, and the Server component need to be installed on a separate computer, not used for geocoding at all.

If your Server is the main computer you use at reception, it may be best to install the Server component of GeoStan on another computer that you would not use for geocoding.

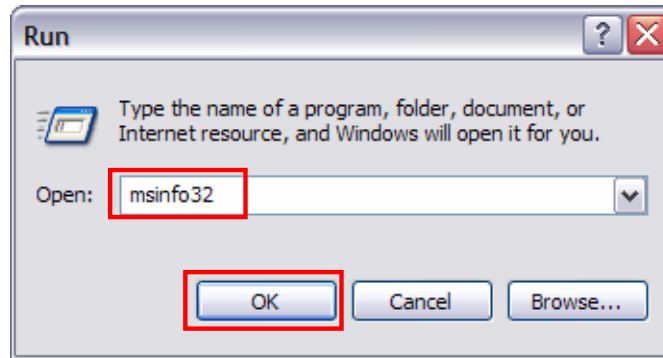
Workstation should not be installed on the same computer as Server as this causes an unstable configuration. This type of installation has been known to cause the program to freeze.

Please make a note of the name of the computer you have installed Server on, as the subsequent install of Workstation may require it. This name is the identity by which the computer is known on the network. The easiest way to find out the name of any computer is to single left click on the  icon at the bottom left of your screen.

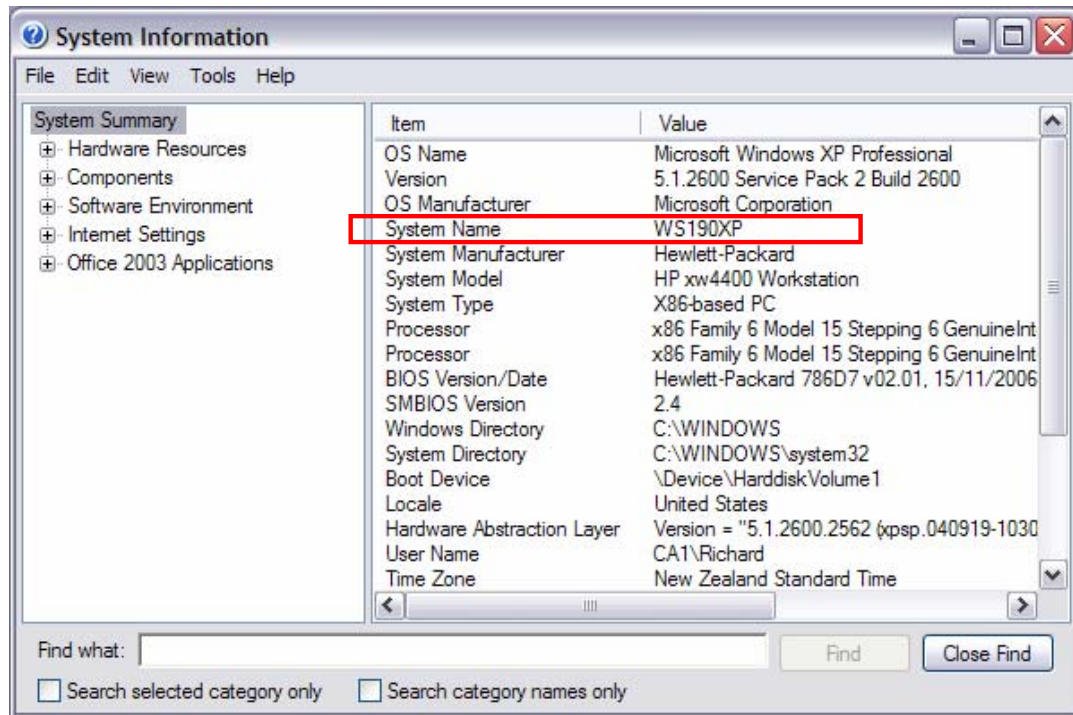
Choose the "Run" option by single left clicking it:



In the subsequent window, type "msinfo32" and single left click "OK":



The following window will appear (it may differ in appearance depending on what version of windows you are using :)

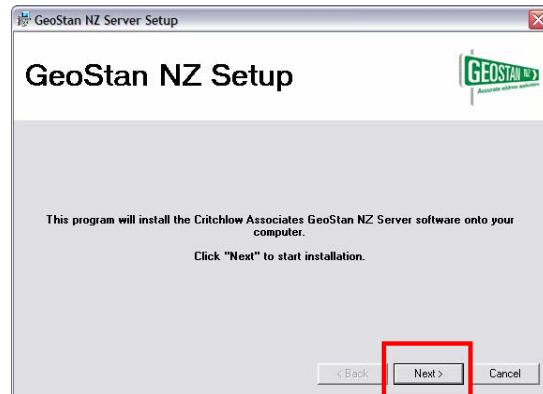


In the right-hand panel, is an item called "System Name". Next to this is the network identity name of your computer (in the example above, the name is "WS190XP".

To install Server:

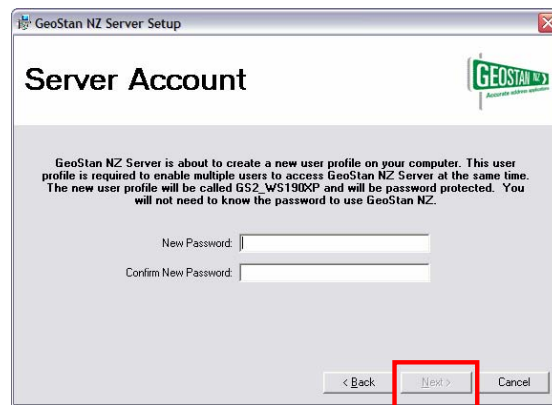
All users need to exit the PMS before installing GeoStan.

To install Server, insert the Server CD into the CD-ROM drive. The installation program will start automatically with the following screen:



Click "Next"

The next screen will ask for a password to be created. This ensures increased security for your Server as the creation and management of the user password for the user profile is under the control of the installer. Any user of Critchlow Geocoding will not need to know this password.

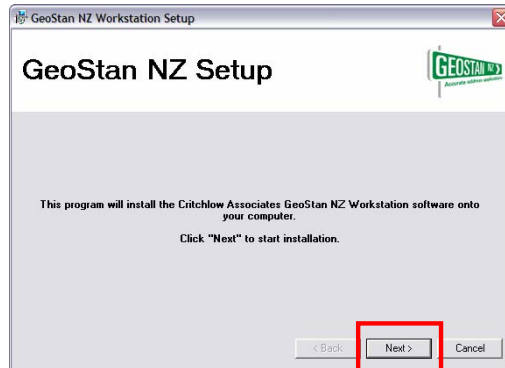


Enter in a password in both text fields to confirm, the click "Next" to start installation.

To install Workstation:

Please exit the PMS before installing GeoStan.

Please ensure that you have installed Server first. Insert the Workstation CD into a workstation and the following window should appear:



Click "Next" and the following screen will appear:

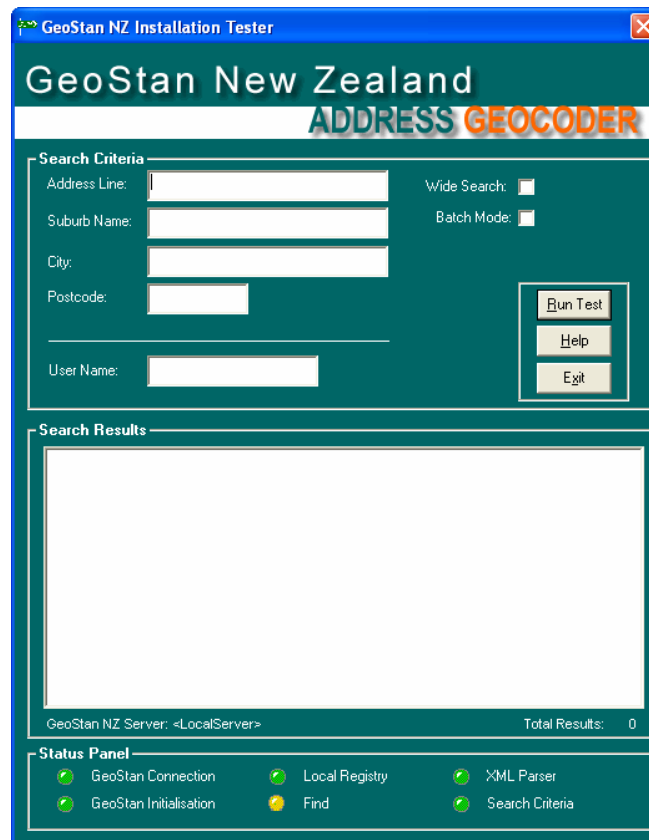


The Server name is the name of the computer where Server has been installed. A list of all computers connected to your network should appear when you click on the down arrow to the right of the entry box. If there is no list, you will have to type in the name of the Server computer. After you have entered or selected a name, click next to begin installation.

To test your installation:

Once installation of Workstation is complete, you should ensure that Critchlow Geocoding has installed correctly by using the application "GeoStan NZ Installation Tester" which is installed with every version of Workstation. To access this application, either use the new "GeoStan NZ Installation Tester" icon that should be installed on your desktop, or use the start menu and go to:

START >> PROGRAMS >> CRITCHLOW ASSOCIATES >> GEOSTAN NZ
INSTALLATION TESTER. The following application will appear:

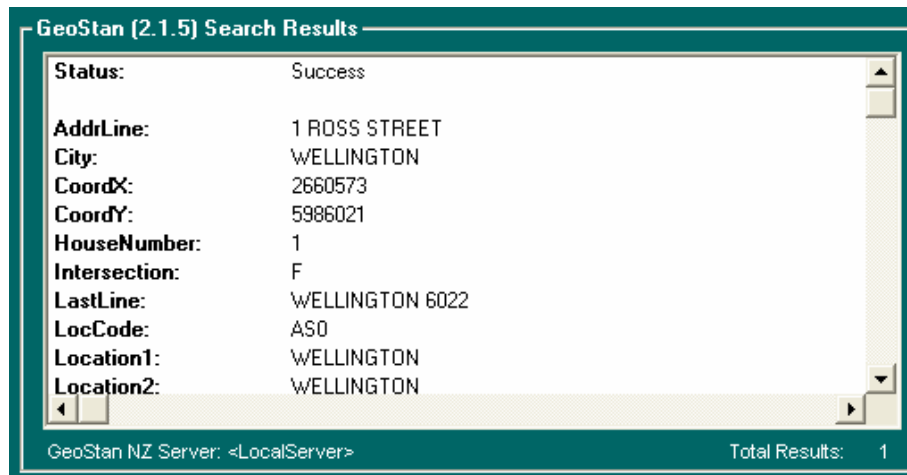


If an error message appears in the “Search Results” box or if any light is flashing or red in the “Status Panel”, please contact Technical Support with those details.

If the Installation Tester appears as the screen above, please enter an address into the appropriate fields or right-click on the run test button to automatically populate the fields with an address.

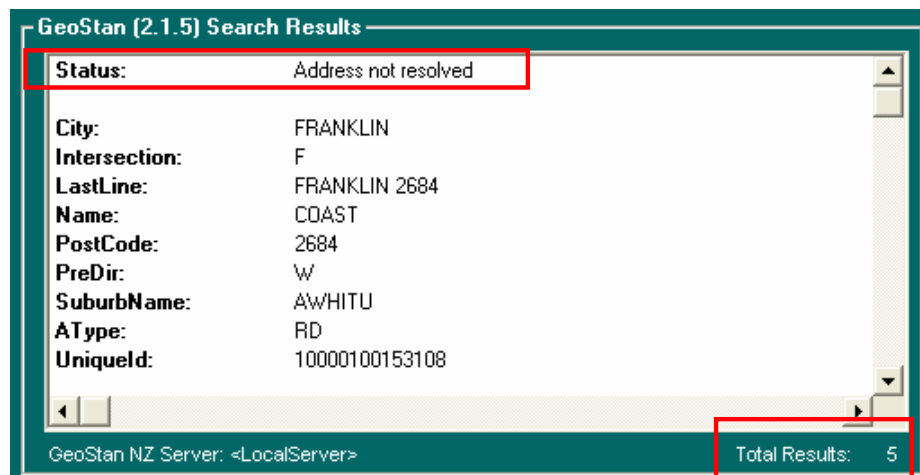
Left-click on the run test button once address fields are entered in the Address Line, Suburb Name and City boxes.

If Critchlow Geocoding is running successfully, the following results should appear like the following:



You may scroll down to check the geocoding information such as Longitude/Latitude co-ordinates and deprivation quintile value.

When the result returned has a status of "Address not resolved":



This is the result of multiple occurrences of the Address Line, and insufficient Suburb/City detail to enable GeoStan to geocode to the correct one. In this example, "1 West Coast Road" can't be located by the geocoder, so it reverts to road level geocoding. However, "West Coast Road" runs through five suburbs - as no Suburb details have been entered; GeoStan is unable to determine which of the five option to choose.

Search Criteria

Address Line: 1 West Coast Road

Suburb Name:

Wide Search:

Batch Mode:

If "Batch Mode" is ticked, GeoStan defaults to the first address line in the list the possible results. Please be aware that this may not necessarily be the correct suburb.

Troubleshooting the Workstation Install:

The most common error that occurs with an installation of Server & Workstation is the installer not selecting/entering in the correct Server name. If this is the case, the installation tester will notify you that the remote server cannot be found. You can see on the installation tester where Workstation is trying to connect to by looking beneath the Search Results window (or just above the Status Panel):

GeoStan NZ Server: <LocalServer> Total Results: 0

Status Panel

- GeoStan Connection
- GeoStan Initialisation
- Local Registry
- Find
- XML Parser
- Search Criteria

Next to "GeoStan NZ Server:" will be the name of the computer that Workstation is trying to connect to. If you wish to change the name of the Server, you will have to uninstall Workstation then reinstall it.

Online Web Service



For practices who use My Practice or Profile for Mac PMS systems, GeoStan is available as an Online Web Service. The HTML page's address is:

<http://www.geostan.co.nz> .

Clients are assigned a unique Username and Password, and are then able to login to GeoStan and use it to geocode either using the interactive interface as shown below, or to batch geocode using SOAP.



Sign-out

Street Address:	<input type="text" value="1 ROSS STREET"/>
Suburb:	<input type="text" value="WELINGTON"/>
City:	<input type="text"/>
	<input type="button" value="Validate"/>

GeoStan result	
Address Line:	1 Ross Street
Suburb Name:	Kilbirnie
Last Line:	Wellington 6022
House Number:	1
Street Name:	Ross
Street Type:	STREET
City:	Wellington
Post Code:	6022
Street side:	L
Coordinates - X	2660576
Coordinates - Y	5986014
Meshblock Number	MB 2177200
Match Code	T60
UC:	4
Deprivation Index:	5
District Health Board:	CAP
Latitude:	41.3187065114938
Longitude:	174.798793923998

Installation FAQ



Can I install GeoStan on a computer running Windows 7?

GeoStan Standalone install successfully on Windows 7, 32 Bit as well as on 64Bit. However, there are some complaints that the PMS software does not communicate with GeoStan. This may be due to compatibility issues, as well as a new set of extensive security features incorporated in Windows 7.

To test that GeoStan is working, use the Installation Tester that is installed automatically when installing GeoStan Standalone. You may access the Installation Tester through the green flag icon on your desktop (placed there when GeoStan Workstation or Standalone is installed) or go to: Start >> Programs >> Critchlow >> Geostan NZ Installation Tester.

Once the Installation Tester appears on the screen, type in an address and click on "Run Test". If the Installation Tester reports a SUCCESS when geocoding a record, but your PMS software still does not communicate with GeoStan, please contact your PMS vendor's help desk for a solution.

Auto installing GeoStan software and the Data update on a computer running Windows 7 doesn't work. What do I do?

You will have to run the installation program manually. To do so:



- 1. Click on the Windows Explorer icon
- 2. View the folders on the CD-ROM drive (this may have a green flag icon).
- 3. Double click on one of the following directory:
 - GSNZStandalone
- 4. Double click on the setup.exe file to begin the install. If you cannot see the .exe extension, the file to double click is the one with the computer icon

Can I install more than one configuration of GeoStan NZ on the same computer?

It is not advisable. Always uninstall GeoStan NZ before installing another version.

Can I install GeoStan while my Patient Management System (PMS) is open?

No. Please exit the PMS before installing GeoStan. The data updates also need to be done when the PMS is not open.

How do I uninstall GeoStan NZ?

You should always remove programs from your computer using the Add/Remove Programs function in your control panel.

Click on the start menu, then settings, then control panel.

Double click on the Add/Remove Programs and remove all components of GeoStan (Data Install, Deprivation Index Lookups etc)

I want to install GeoStan Server/Client on my network but my workstations don't have CD-ROM drives!

GeoStan Workstation is too large to be shipped on floppy disc.

Insert the Workstation CD into any PC with a CD-ROM drive, then share that drive so it can be seen over the network. GeoStan NZ Workstation can then be installed over the network.

I get a General Exception Error when trying to geocode on my server. What is wrong?

This issue has arisen where GeoStan Server is installed on the same computer as your Patient Management System (PMS). Because of the relationship between the PMS and GeoStan, the PMS requires GeoStan Workstation to "talk" to the GeoStan Server. Therefore, the Workstation component and the PMS need to be installed on the same computer, and the Server component need to be installed on a separate computer, not used for geocoding at all.

I've installed GeoStan NZ. How do I know if it's working?

To test that GeoStan is working, use the Installation Tester that is installed automatically when installing GeoStan Workstation or GeoStan Standalone. Please note that there is no way to test that GeoStan is working on a Geostan

Server PC until Workstation is subsequently installed and tested.

You may access the Installation Tester through the green flag icon on your desktop (placed there when GeoStan Workstation or Standalone is installed) or go to: Start >> Programs >> Critchlow >> Geostan NZ Installation Tester.

Once the Installation Tester appears on the screen, type in an address and click on "Run Test". If the Installation Tester reports a SUCCESS when geocoding a record, but you are encountering errors geocoding through your PMS software, please contact your PMS vendor's help desk.

I have a Terminal Server setup, what version of GeoStan do I need?

Since there is only one server and a farm of dumb terminals, you only require GeoStan Standalone. Your PMS software may not work if you try to install GeoStan Server on your Terminal Server.

Configurations

What configuration of GeoStan NZ do I need?

If the operation system on your network is Windows XP, Windows 2003 Server, Windows Vista or Windows 7, you will need to use GeoStan Standalone, due to these operating systems' security settings.

GeoStan Server/Client can be used if you use the following operating systems: Windows 95, Windows 98, or Windows 2000.

If you are a Macintosh user, GeoStan is currently not compatible with these systems; however there is an Online Web Service that your PMS system may use to access geocoding functionality. If you require access to the Online Web Service, we can supply you with a username and password to allow access.


Why can't GeoStan NZ Server/Client work on a Windows XP or Windows 2003 server operating system?

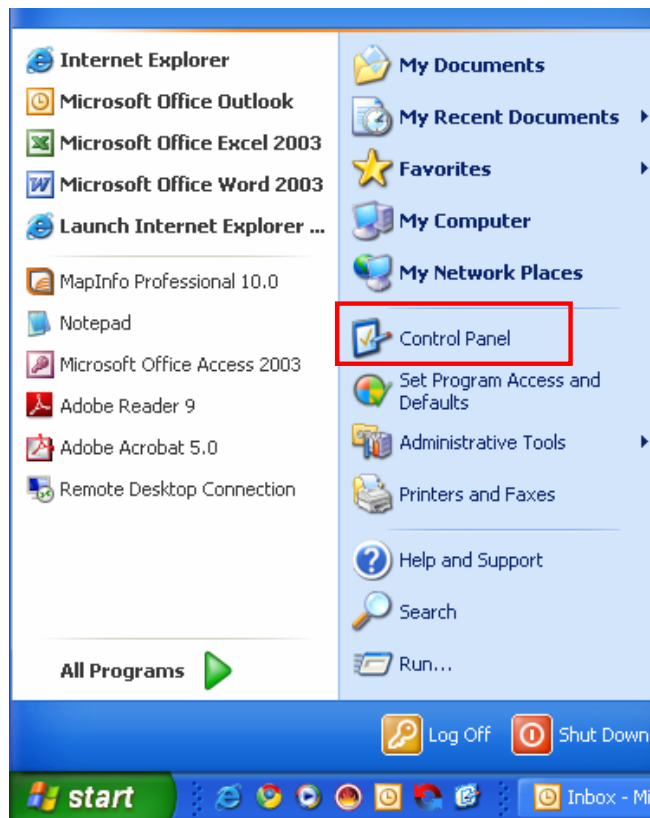
This is due to the additional security settings installed by Microsoft for these operating systems. GeoStan Standalone is the geocoding engine release that is fully compatible with Windows XP, Windows 2003 Server, Windows Vista or Windows 7.

Uninstalling Critchlow Geocoding

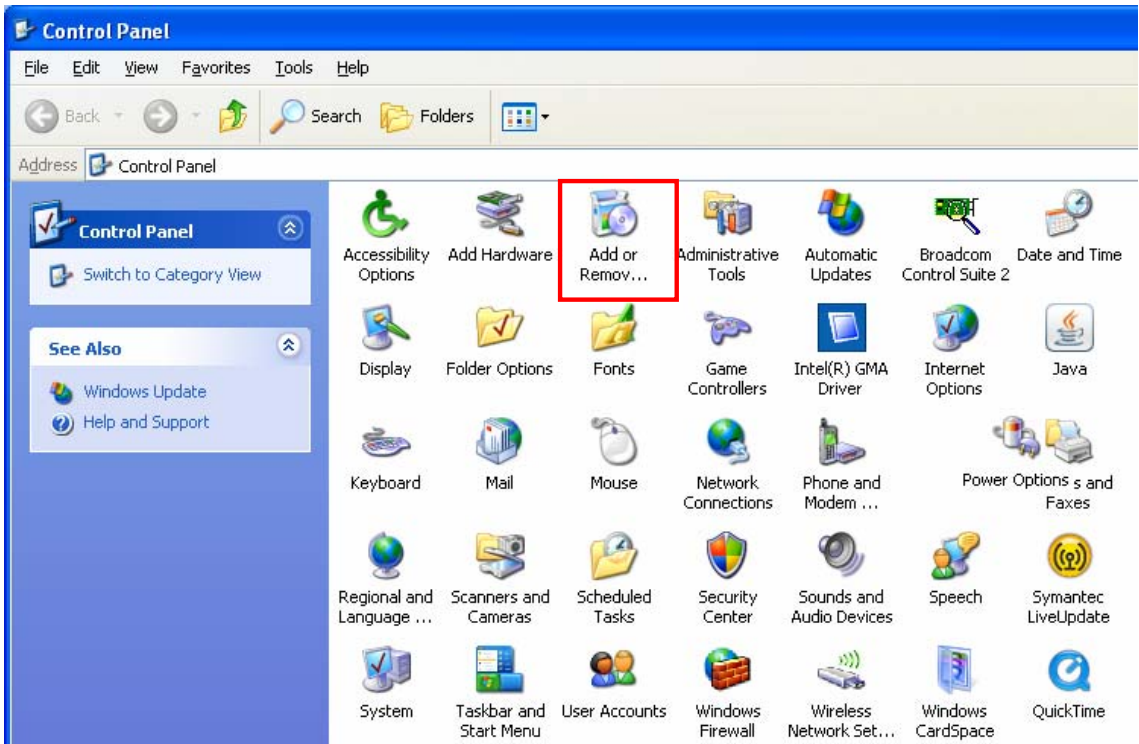


Never remove any program installed on your computer by deleting its directory. To safely remove Critchlow Geocoding, please use the "Add/Remove Programs" tool in your operating system's control panel.

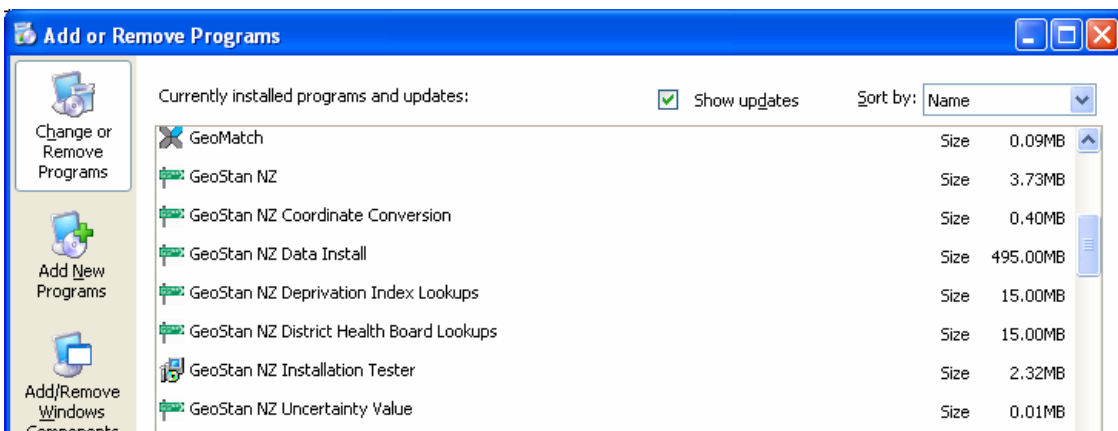
Access the Control panel by selecting  >> SETTINGS >> CONTROL PANEL.



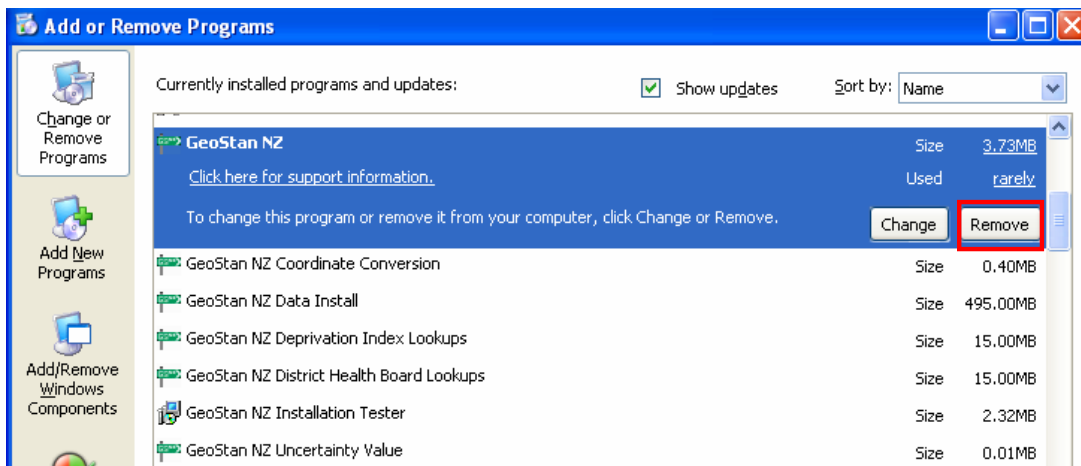
Double click on the "Add/Remove Programs" icon.



Double click on the "Add/Remove Programs" icon and a window will appear with a list of all installed programs on your computer. These should be listed in alphabetical order. Critchlow Geocoding components will be marked with a green flag and prefixed with "GeoStan NZ" (the screenshot below may differ depending on the version you have installed, that is, Server, Workstation or Standalone):



To remove Critchlow Geocoding, you will need to select each component and select the "Remove" button:



Keep on selecting and removing each component until you reach the end of the green flags.

To guarantee a clean install if you intend to re-installing Critchlow Geocoding after un-installing it, please ensure that the C:\program files\GS2\ directory has been removed. If it is still there after you have removed each component as described above, please delete it.

Data Updates – Why are they important?



Address data is created quarterly out of Critchlow's road network and Land Information New Zealand's address points. Each quarter (end of March, June, September and December), a data update CD will be delivered to all registered users.

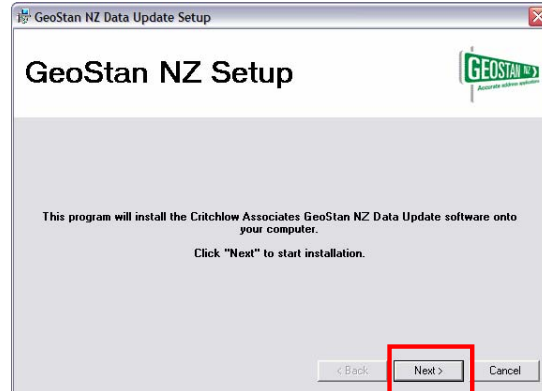
Standalone: A data update needs to be installed on every computer with Standalone software installed.

Server/Workstation: A data update needs to be installed on the Server. You do not need to update data on Workstation installs.

Installing data updates:

Please exit the PMS before installing GeoStan data updates.

When the CD arrives, insert it into your CD-ROM drive and it will auto run and display the following screen:



Click "Next" to begin installation.

The data update installation program requires at least 700 megabytes of free hard drive space to run as it creates a back up of your current data files before copying over the new ones.

If you find that Critchlow geocoding is not finding a particular street in your area, it may not be included in the data. Please contact Technical Support at support@critchlow.co.nz with the details and we will endeavour to include the new information in the next monthly release.

Data Updates – FAQ



How often do I get data updates for GeoStan?

GeoStan data updates occur quarterly (end of March, June, September and December) for the health sector. Please let us know if you are not receiving quarterly updates and we will add you to the list.

On what PC do I need to install the data updates on?

GeoStan data updates only need to be done on PCs with GeoStan Standalone installed, or GeoStan Server. You do not need to update data on Workstation installs.

When I try to install my data, I get a message saying I have no space left on my hard drive, what's happening?

The data update program for GeoStan makes a backup of the previous data just in case something goes wrong with the install. Therefore, while the data is approx. 470 mb of data, you will need double that space for the install to continue.

If you have more than 1 gigabyte free of space, yet the installation program still comes up with the message, try to copy the entire contents of the CD onto your PC and then run the setup.exe file from there.

Can the updates be centralised online rather than a CD being sent to me?

Critchlow currently supply updates on CD as per our current contract with the Ministry of Health. The Ministry is investigating the feasibility of Critchlow providing an alternative online service.

How can I update my postcodes and is GeoStan using the latest postcodes from NZ Post?

GeoStan incorporates the quarterly release of postcodes from NZ Post. GeoStan returns updated postcodes with every address geocoded; however whether this is implemented in your PMS is up to your vendor. If your postcode is not updated when an address is geocoded, please contact your PMS vendor for support.

What are quintiles and how is it determined?

Quintiles are based on deprivation decile scores calculated by Peter Crampton at the University of Otago's School of Medicine and Health Sciences. These, in turn, are based on a number of criteria from the New Zealand Census. As such, quintiles are currently based on 2006 Census data and are due to be updated with 2011 Census data when the data is available.

Data entry and Geocoding FAQ



What is geocoding?

Geocoding is the process of assigning a geographical location (X and Y co-ordinates) to records in a table based on location (e.g. address) information in a mappable database. This is achieved by matching each record against a referential database.

Critchlow are able to take an address and assign X and Y co-ordinates. We are then able to map the address and acquire statistical information from that location.

Why do I need geocoding?

Once a record is geocoded, statistical information can be acquired. The Ministry of Health's CBF project uses geocoding to acquire a 1-5 Quintile (a deprivation decile 1-10 value that is halved and rounded to the nearest whole number) to determine the area of deprivation for a particular patient. This assists MOH Sector Services in funding a PHO (though this does not determine overall funding).

What is the correct format for an address?

An address should have a street address, a suburb and/or a city. These three elements should be placed in separate fields. Any other information should be placed in another field by itself.

A street address should have a street number (example format: 1 Smith Street) in order for Critchlow to achieve an exact match.

It is important to distinguish between a postal address and a physical address. A postal address is unable to be geocoded by Critchlow as it does not accurately reflect where a patient lives. For example, PO BOX 123, Auckland, does not allow us to pinpoint where a patient lives nor can it lead to information about a patient's deprivation value.

In order to accurately assign a patient's deprivation value, the physical address (where the patient lives) is required. Critchlow is currently working with the Ministry of Health if this information is unable to be acquired from the patient.

A patient address has the correct format but it was returned to me for correction by my PHO. What is wrong with it?

These are some of the reasons why a correctly formatted address cannot be geocoded:

Street name: The road name may not exist in the suburb and/or city provided. The following explains why this may be the case:

- It is a new road not currently in the Critchlow reference database. Please contact us to rectify this situation.
- The spelling is so wrong it is difficult to determine the correct road.
- The road name may be similar to another road name within the same suburb. For example, Gray Avenue and Greys Avenue in Auckland are often confused.
- Time roads are known by their common names, rather than their legal names. For example, "Main Road" may be the local name for the road running through the middle of town, yet legally it may be known as State Highway 1.

Location: Please try and be as specific as possible when entering in either a suburb, town and/or city name. The more information relating to the location of the address, the better. Remember that rural delivery numbers (e.g. RD 1) and post office box type addresses cannot be used in geocoding.

Do I have to include a suburb?

A suburb is preferable if you live in an urban area. In rural areas, all that is required is your town name.

If no suburb is supplied, there may be duplicate streets found within a city boundary (e.g. there is more than one Queen Street within the Auckland City region) and it may not be possible to determine the correct street if this is the case.

Do I have to include a city?

A city is required and only optional if a suburb has been supplied. Because of duplicate suburb names throughout New Zealand, a valid city helps ensure the correct address is obtained. For example, Avondale is a suburb in Auckland and also a suburb in Christchurch.

Also, if you are in a rural area and have supplied a town name, you do not need to include a city. In some areas of the country (Rodney/Kaipara districts so far) we have altered the formatting so you may enter your town name in the city field and leave the suburb field of your PMS blank.

How do I include unit/flat numbers in an address?

Units and flats may be entered in the following way:

1/3 Smith Street

1-3 Smith Street

1\3 Smith Street

The following address:

1-3 Cuba Street, Wellington Central, Wellington

will be geocoded to:

3 Cuba Street, Wellington Central, Wellington with a unit number of 1.

Separators between a unit number and street number allowed by GeoStan NZ are: - (dash), \ (forward slash), / (back slash). Please ensure that there are no spaces between the separator and the flat and house numbers.

The only other way of specifying a unit/flat/apartment number is to prefix it with the word "Flat", "Unit" or "Apartment":

Flat 1 3 Cuba Street

Unit 1 3 Cuba Street

Apartment 1 3 Cuba Street

What abbreviations is an address allowed to have?

We are able to recognise common street type abbreviations such as Ave, Rd, St, Pl, and Cres. SH may be used for State Highway. A complete list is included in the Data entry guide that is included with every copy of Critchlow's geocoding engine.

Unfortunately, some locally known abbreviations are currently not recognized by our geocoding engine (e.g. UMO for Upper Moutere, NEV for North East Valley in Dunedin).

What can I do to ensure a particular address is geocoded?

Ensure that it has a street number, a street name that is spelled correctly, a suburb and/or a city.

Ensure, if possible, that the road name is the legal name.

If an address has all these elements, there is nothing more than can be done to ensure that address is "correct".

Remember that while an address may be correct and mail is delivered to this address, this is no guarantee that it may be geocoded.

What are "valid" suburb and city names to use? I can find the suburb in Wisers and Google, but when I type this into GeoStan, it doesn't geocode.

There is currently no national definition of suburbs in New Zealand. The government maintains a register of official place names, however this does not define the extent of the place or a relationship to other places e.g. suburbs to cities.

When a city council produces a definitive dataset of suburb boundaries (such as Wellington), Critchlow ensure that these changes are reflected in the datasets used for geocoding.

Why is the suburb returned not the same one that I use on a postal envelope?

Please refer to the answer above.

Can I use rural delivery numbers?

No. Rural delivery numbers (e.g. RD 1, RD 2) are only useful in ensuring mail is delivered correctly. Because there is currently no geographic information relating to these numbers, they are ignored by the geocoding process.

Can I use rapid addressing?

For rural addressing, Critchlow use LandOnline address points. These are supplied to us by Land Information New Zealand (LINZ), and it is a nationwide dataset containing individual points for addresses in New Zealand.

LINZ is only able to include address points where a District Council has notified them of an existing address. Therefore there is no guarantee that a specific rapid number exists in the current data that is used for geocoding.

Critchlow receive monthly updates of LandOnline address points, therefore data is continually being updated.

An address is rural and doesn't have a city, what do I put in the city field?

You may enter into the city column the region name, e.g. Southland. However, many towns in New Zealand do not require an entry in the city field to geocode correctly, e.g. Carterton.

Why doesn't GeoStan recognise a street number, when there are clearly houses on that street?

The address number may not exist in the data, even if it exists in reality.

Critchlow use Land Information New Zealand's (LINZ's) LandOnline address points for rural addressing. In turn, LINZ acquires their data from district councils. For every rural address in New Zealand, there should be a corresponding address point, however this is not always the case and there may be some missing. With the implementation of Rapid Addressing, a lot more rural addresses are able to be geocoded. Please let us know if there are particular addresses that you cannot geocode and we will assist you as much as possible to resolve these.

What if I have something like 1a or 2c as the street number?

Flat information such as a, b c should be joined to the house number, with no spaces between the number and the letter, e.g. 1b Smith Street, not 1 b Smith Street.

I have been returned a large number of addresses to correct from my PHO, yet many of them look correct. Why have they been returned?

Check for spelling errors. GeoStan scores the changes it makes to an address and assigns an uncertainty code accordingly. The more changes it makes to achieve a match, the higher the uncertainty becomes.

In other cases, we may not have the data to geocode a particular address.

Uncertainty Codes



The geocoding engine records each change it makes to an address in order to achieve a match. A perfect match is achieved if GeoStan does not need to make any change to the address entered in order to geocode it successfully. As more changes are made to an address (e.g. an alteration of the street name, suburb and/or city), the likelihood of it being a correct match lessens.

In order to easily measure and identify the changes, Critchlow have devised the Uncertainty Code. This indicates the level of confidence for each geocode. Using a scale of 0 to 10, a 0 uncertainty code indicates a perfect match, whereas a 10 indicates no geocode was possible. Moving up the scale, the uncertainty increases.

There is an uncertainty code threshold of 4 for patient addresses geocoded, that is, the changes made within this uncertainty code and lower are acceptable, whereas anything greater than an uncertainty code of 4 is deemed incorrect.

Matching strategies:

Factors that increase an uncertainty code include:

- Misspelled street name, suburb and/or city,
- The addition of a street type, suburb and/or city,
- No corresponding street number for the street name entered.

If you receive a high uncertainty code for the address entered, look at the changes made to the address to determine how it can be corrected.

A high Uncertainty code (greater than four) is usually a sign that there is a spelling mistake in the street name.

Remember that any alteration to an address will increase the Uncertainty Code.

Where information is missing from an address (egg a blank suburb field), the geocoding engine will output a standard address with the suburb included. This will count as an alteration to an address and increase the Uncertainty Code.

There will be instances where the address entered falls into a neighboring suburb. The geocoding engine will change the name of the suburb to the boundary where the address falls within. This will also count as a change and increase the Uncertainty Code.

Remember that a postal address may be different than a physical location. A postal address may not contain enough (or the correct) information to determine the location of an address (e.g. P.O. Box, Private Bag).

Troubleshooting



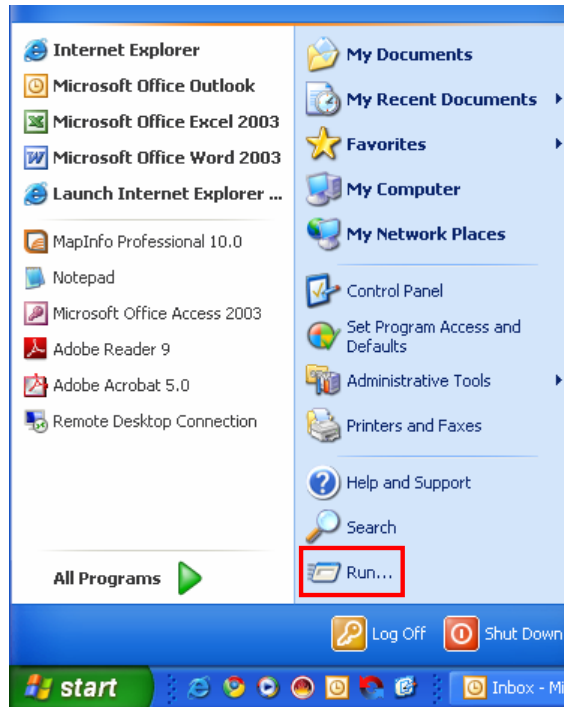
My GeoStan software tells me that my data licence has expired and I can no longer geocode.

- If you encounter an error message informing you that your GeoStan data licence has expired, then the latest update has not been applied to your system. If running Standalone, a licence update will need to be applied to every machine GeoStan is installed on. If you are running a Server/Workstation setup, you will only have to apply the licence to the server.
- To obtain a new licence file, please contact Critchlow using the details on the last page of this booklet.

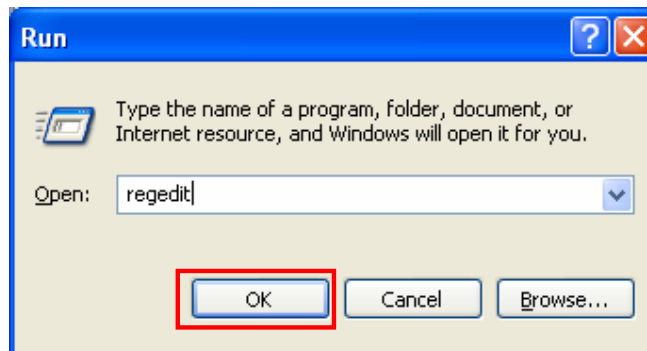
My Patient Management System (PMS) freezes when I enter an address for geocoding. This only just started happening, what do I do?

- GeoStan is built on technology which uses a specific program language. Certain updates to Windows security, firewall settings and updates to PMS vendor software can cause this program language to be blocked when passing a request to the geocoder, Should this occur, please follow the instruction below very carefully.
 - **IMPORTANT:** Please ensure that you have the original GeoStan software disc; the latest data update disc and the license disc at hand. Please contact Critchlow to verify that you have the latest licence available.
1. If you are stuck in your program, please use the CTRL+ALT+Delete command to call up the Task Manager window and confirm that you wish to end task for both the PMS application and GeoStan/Critchlow Geocoding
 2. When both of these applications have closed, please close the Task Manager windows, if you have not done so already.
 3. Follow the steps described in "Un-installing Critchlow Geocoding" on p. 23 – 25 of this guide.

- When GeoStan have bee un-installed, single left click on the icon at the bottom left of your screen.
- Choose the "Run" option by single left clicking it.



- In the subsequent window, type "regedit" and single left click "OK".

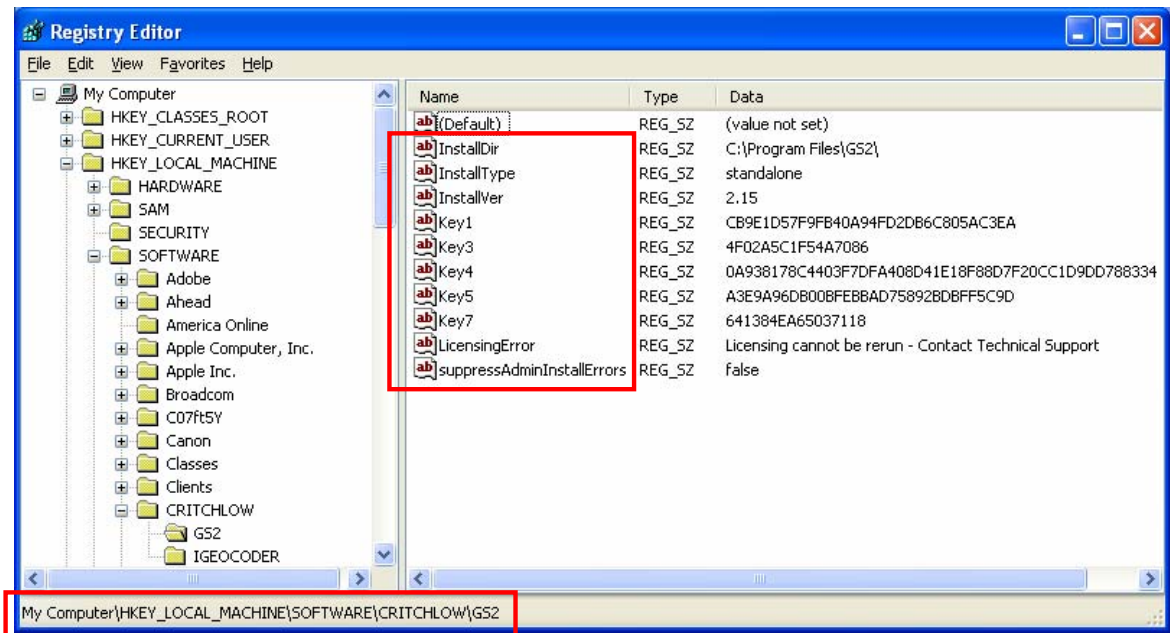


STEPS 7 TO 10 ARE CRITICAL. PLEASE FOLLOW THIS VERY CAREFULLY

7. In the resulting window, ensure that you choose the following folder tree from the "My Computer" icon. Do not do anything other than below, Critchlow holds no responsibility for any actions outside the procedure described.

My Computer > HKEY_LOCAL_MACHINE>SOFTWARE>CRITCHLOW>GS2

Highlight the GS2 directory by single clicking; a series of files will appear in the right hand window.

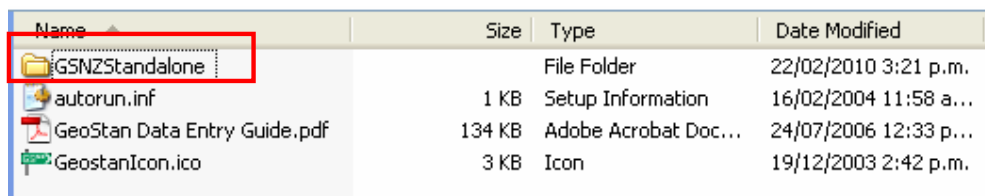


8. In the right hand window, select all the files **except for the one labelled "default"**. (The contents of this window may differ from the one shown above, based on the version of GeoStan you have installed).
9. With all items (except the one labelled "default") highlighted, press the "Delete" key on the keyboard, and confirm that you wish to delete these files by clicking "OK/Yes".
10. Once this has been done, close the "Registry Editor" window.
11. Please proceed to reinstall your GeoStan software disc as described earlier in this guide. You will also need to reinstall your latest data update, as well as the licence update.
12. Once all the relevant disks have been installed, restart your computer.

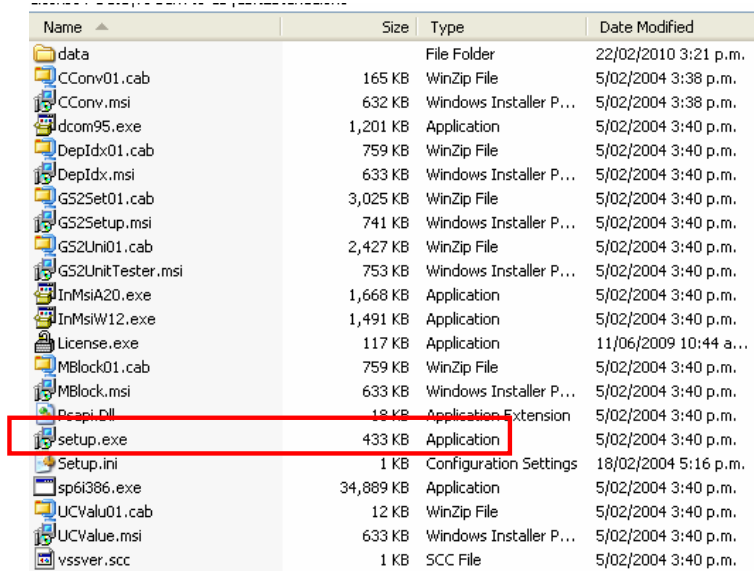
- Should you still be experiencing this issue after trying the steps described above, please check with your IT support team to ensure no other modifications or updates have been made to your firewall settings, or window security systems.
- Alternatively, please check if an update to your PMS system has recently been supplied. If geocoding was working before your PMS was updated, and it hasn't worked since; and the steps described above don't solve the problem, please raise a help desk call with your PMS vendor.

When I install the GeoStan Software, the GeoStan Auto Installer freezes on "Copying Files". What do I do?

1. Insert the CD into your CD-ROM drive, and view it with Windows Explorer:



2. Create a Temp folder on C-drive, and copy all the files on the CD to this folder.
3. Double left click the GSNZStandalone folder to open it up:
4. Double click on "setup.exe" application to install GeoStan manually. If you cannot see file extensions (e.g. .exe, .ini) and you see two setup files, the one to double click will be the file with the computer icon next to it.



5. Once installation is complete, you should ensure that Critchlow Geocoding has installed correctly by using the application "GeoStan NZ Installation Tester" which is installed with every version of Standalone. To access this application, either use the new "GeoStan NZ Installation Tester" icon that should be installed on your desktop, or use the start menu and go to:
START >> PROGRAMS >> CRITCHLOW ASSOCIATES >> GEOSTAN NZ
INSTALLATION TESTER
6. Delete the Temp folder when the installation was successful.

MedTech FAQ



I've entered the mailing address for a patient, but the Geocoder overrides the Postal Address entered in the Patient Register. What do I do?

GeoStan requires a physical address to geocode to. This should be entered in the "Name" tab:

The screenshot shows the 'Patient Register' window for 'MOUSE Minnie (130344)'. The 'Name' tab is selected and highlighted with a red box. The form contains the following fields:

- Name And Address:** Surname: MOUSE, First Names: MINNIE, Title: (empty), Preferred Name: (empty), Street: 1 Ross Street, Suburb: Wellington, Post Code: (empty), City: Wellington, Day/Ah Ph: (empty), Res/Building: (empty), WINZ No: (empty), Res Status: New Zealand.
- Details:** Patient: , A/c Holder: , Date of Birth: (empty), NHI: (empty), GMS: Adult (A), Gender: Unknown (U), Registered: Registered (R), Provider: Sam Eaves (SFE), Post Code Group: Registered Patient (RP), Chart No: 130344, Extn: 1, Ethnicity: (empty).
- Cards:** CS Card: Non Csc Ho (3), HU Card: Not High U (N), Start and Exp dates for both are empty.

Buttons at the bottom include Inactive, Add, OK, Cancel, Close, Swipe CSC..., and Help.

This will then return the following geocoded info in the "Enrolment-Funding" tab:

The screenshot shows the 'Patient Register' window for 'MOUSE Minnie (130345)'. The 'Enrolment-Funding' tab is selected and highlighted with a red box. The form contains the following fields:

- Patient Enrolment:** Enrolment Status: (empty), Date confirmed/declined: (empty), Method of Enrolment: (empty).
- Funding Details:** Funding Status: (empty), Reason for Rejection: (empty), Funding From: (empty), Funding To: (empty).
- Geo Coded Information (highlighted with a red box):** Latitude: -41.31864404, Longitude: 174.79875637, Mesh Block: 2177200, Quintile: 5, Uncertainty code: 2, DHB Code: CAP.

Buttons at the bottom include Inactive, Add, OK, Cancel, Close, Swipe CSC..., and Help.

However, if you need to record a separate mailing address for a patient, you need to enter this in the "More" tab, with "Separate Postal Address" ticked:

Patient Register

MOUSE Minnie (130343)

Name 1 | Enrolment-Funding 2 | Account 3 | **More 4** | Next of Kin/Employer 5 | Care Plus 6 | Notes 7 | Audit 8

Postal Address: **Separate Postal Address**

Street: PO Box 123

Suburb: Te Aro Post Code:

City: Wellington

Building:

Email:

Fax:

Mobile: No Contact

Registration Date: 26 May 2010

Date Deceased:

Area:

Domicile Code: ...

Various

Marital: [Dropdown]

War Pension No: [Text]

Country of Birth: [Text]

Country of Origin: [Text]

Religion: [Dropdown]

Sport played: [Dropdown]

IWI: [Dropdown]

IPA Affiliation: [Dropdown]

2nd Ethnicity: [Dropdown]

3rd Ethnicity: [Dropdown]

Iwi: [Dropdown]

NIR: [Dropdown]

Inactive Add OK Cancel Close Swipe CSC... Help

List of Error Codes, and possible solutions



The following table describe common error messages that may occur in the Installation Tester window:

Error Number/ Message	Description	Solution
Warning: GSNZ Data will expire in "n" days	The Licence for the use of the GeoStan data will expire shortly.	Please contact Critchlow for an updated Licence file.
GSNZ Data has expired – Please contact technical support	The Licence for the use of the GeoStan data has expired.	Please contact Critchlow for an updated Licence file.
Automation Error. The server process could not be started because the configuration identity is incorrect	The GS2_<MachineName> user account has been disabled.	Re-enable the GS2_<MachineName> user account on the computer hosting the GeoStan NZ Server
	The GS2_<MachineName> user account has been removed.	Un-install and re-install GeoStan on the Server computer.
Low Level Error	Corrupt hard disk sector	Install GeoStan software on a new/different computer. Defragging the computer will not solve the problem.
OLE Exception with the "GeoStan Address Geocoder GS2" <i>Server/Workstation configuration</i>	The PMS software is installed on the same computer as the Server software	Ensure that the PMS software is installed on the Workstation computer, NOT on the Server computer

OLE Exception with the "GeoStan Address Geocoder GS2" <i>Standalone configuration</i>	GeoStan was installed while the PMS system was open.	Un-install and re-install GeoStan Software. Install the valid Licence file, as well as the latest Data update. Ensure that the PMS system is closed down.
Error 70: Permission Denied <i>Error only occurs on one workstation</i>	DCOM permissions may have been modified on the Workstation computer	Un-install and re-install GeoStan on the Workstation computer.
Error 70: Permission Denied <i>Error occurs on all workstations</i>	DCOM permissions may have been modified on the Server computer	Un-install and re-install GeoStan on the Server computer.
Error 75: Path/File access error	File system permissions on the Server host computer may have been modified	Run Repair for the GeoStan NZ Server component
Error 462: The remote server machine does not exist or is unavailable	The GeoStan NZ Server computer is down.	Check to ensure that the GeoStan NZ Server host computer is running. Restart the host computer if required.
	The name of the computer hosting the GeoStan NZ Server has been entered incorrectly NOTE: The GeoStan NZ Server name is displayed on the Installation Tester – see p. 16 of this document	Use the DCOMCNFG utility to change the server name on the Location tab. OR Un-install and re-install GeoStan on the workstation computer, specifying the correct GeoStan NZ Server computer name.
	Network connection problem	Check the physical network connections to and from the workstation and server computers.

Error 1606	Occurs when you try to install a Data Update on a computer that doesn't have GeoStan installed	Install the GeoStan Software. Install the valid Licence file, as well as the latest Data update.
-2147220890 CODEBASE_ERROR	An error has occurred in the Codebase database engine accessing the Meshblock database	Un-install and re-install GeoStan Software. Install the valid Licence file, as well as the latest Data update.
-2147220891 MISSING_MESHBLOCK_DATABASE	The Meshblock Lookup database cannot be located in the folder specified in the GS2.INI file.	Un-install and re-install GeoStan Software. Install the valid Licence file, as well as the latest Data update.
-2147220967 INVALID_CRITERIA	The search criteria object is invalid	Change the search criteria to a valid object.
	Missing City/Suburb information in Find criteria	Enter the City/Suburb in PMS system.
-2147220968 MISSING_GSNZ_DATA	The GeoStan data cannot be located in the folder specified in the GS2.INI file.	Un-install and re-install GeoStan Software. Install the valid Licence file, as well as the latest Data update.
-2147220969 CORRUPT_INSTALLATION	Missing or corrupt GeoStan installation	Un-install and re-install GeoStan Software. Install the valid Licence file, as well as the latest Data update.
-2147220973 REGISTRY_READ_FAILURE	Unable to read the system registry	Please contact Critchlow for an updated Licence file.

-2147220974 DATA_EXPIRYDATE_ EXCEEDED	The Licence for the use of the GeoStan data has expired.	Please contact Critchlow for an updated Licence file.
-2147220975 PREPAY_CREDITS_ EXHAUSTED	Prepaid credits have been exhausted. This applies only if the Limited licence model is in use.	Please contact Critchlow for an updated Licence file.
-2147220978 GSNZ_INIT_FAILURE	GSNZ failed to initialize. Missing/corrupt Registry key.	Follow steps set out for "My PMS system freezes..." on p.34 – 38 in this guide.
-2147220985 LICENCE_LOAD_ FAILURE	GSNZ was unable to load the licence file	The client should access GeoStan via the Online Web Service. Please contact Critchlow for a Username & Password.
-2147220986 AUTHORISATION_ FAILURE	The specified user is not authorised to use the system	Please contact Critchlow for an Username & Password to access the Online Web Service
-2147220987 GS2_DISABLED	GS2 has been disabled due to a) a detected log tamper; b) missing transaction log file; c) GSNZ Data has expired; d) Pre-paid credits have been exhausted.	Please contact Critchlow for an updated Licence file. Un-install and re-install GeoStan Software. Install the updated Licence file, as well as the latest Data update.

<p>-2147220989 CORRUPT_ INSTALLATION</p>	<p>Missing or corrupt GeoStan installation</p>	<p>Please contact Critchlow for an updated Licence file.</p>
	<p>Unable to locate GSNZ Licence file.</p>	<p>Un-install and re-install GeoStan Software. Install the valid Licence file, as well as the latest Data update.</p>
<p>-2147220990 MISSING_DATUM2000_ FILE</p>	<p>Missing Datum2000 Conversion Data</p>	<p>Un-install and re-install GeoStan Software. Install the valid Licence file, as well as the latest Data update.</p>
<p>-2147220991 MISSING_INI_FILE</p>	<p>Unable to locate GS2.INI in the application folder.</p>	<p>Un-install and re-install GeoStan Software. Install the valid Licence file, as well as the latest Data update.</p>

Appendices



Flat/Unit/Apartment abbreviations:

The following table lists valid abbreviations for flats, units and apartments.

Full name	Acceptable abbreviation	Invalid abbreviation
Flat	Flt,	Any other variation
Apartment	Apt, Aprt, Aprmt, Apart	Apart and any other variation
Unit	Unit	Unt and any other abbreviation

Street type/suffix abbreviations:

The following table lists valid abbreviations for common street types and suffixes.

Full name	Acceptable abbreviation	Invalid abbreviation
Avenue	Ave	Any other variation
Road	Rd	Any other variation
Street	St	Any other variation
Place	Pl	Any other variation
Crescent	Cres	Any other variation
Drive	Dr, Drv	Any other variation

Address notation:

Incorrect address	Correct address	Comments
Rapid 456 Smith Street	456 Smith Street	No "rapid" prefix required
House 456 Smith Street	456 Smith Street	Invalid word "House"
F/1 456 Smith Street	F1/456 Smith Street	Invalid flat notification (F/1)
F/1 456 Smith Street	F1-456 Smith Street	Invalid flat notification (F/1)
456 Unit 1 Smith Street	Unit 1 456 Smith Street	Invalid syntax for unit notification
PO Box 3043	N/A	Invalid address
C/- Bell Hodges Store	N/A	Invalid address

456/1 Smith Street	1/456 Smith Street	Unit number should be entered first. 1 will be interpreted as the street number.
RD 1, State Highway	N/A	Cannot be located by the Geocoding Engine. Rapid address information is required.

Villas

Currently, the geocoding engine is unable to recognise Villa as a flat or unit type (e.g. Villa 1 4 Smith Street). The table below describes the best way to enter this type of information:

Incorrect address	Correct address	Comments
Villa 1, 4 Smith Street	4 Smith Street, Villa 1	The geocoding engine will ignore anything after the comma in the address line.
V 1, 4 Smith Street	1/4 Smith Street	



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