

A1. Instructions for Isite for Windows

How to install and configure Isite software suite for the Windows operating system:

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A1.1 Install Isite software suite:

A1.1.1 Download Isite

- ▶ Go to <http://clearinghouse4.fgdc.gov/ftp> and download the Isite for Windows (W95/98/2000/NT/XP) zip file with the latest release date.

A1.1.2 Install Isite

- ▶ Unzip this file (it will unzip into directory C:\Isite2-Win by default).

- ▶ Rename the directory C:\Isite2-Win to C:\Isite2 (i.e., Click once on the filename, Press F2 and edit the filename).

Note: The Isite software suite for Windows is built with the Cygwin emulator. In order to be able to use Cygwin with DOS commands, you need to copy the following *.dll files from the C:\Isite2 directory into your Windows System32 folder:

- cygwin1.dll
- cygz.dll

A1.2 Build an index

A1.2.1 index

- ▶ Before you can index your metadata files, you must have metadata files in the C:\Isite2\data directory. There should be sample metadata files in the C:\Isite2\data directory already. However, if you want to index your metadata files, then replace the sample metadata files with your MP validated metadata files. You should have four different types of files: .txt, .html, .sgml, and .xml. *_faq.htm files are optional. For index to run, you must have at least one xml file.
- ▶ Open a command shell.

Note: These programs are built with the Cygwin emulator, so they require DOS-style paths like C:\Isite2 to be expressed as /cygdrive/c/Isite2.

For this example, we will assume that your database name will be in **bold** and the string you are searching for will be in ***bold italics***.

- ▶ index Command (See Fig A1.4)

While in the Isite2 directory, build an index using this command (all on one line):

```
C:\Isite2>Iindex2.exe -d /cygdrive/c/Isite2/db/NMDIS -t fgdc -o  
fieldtype=/cygdrive/c/Isite2/fgdc.fields  
/cygdrive/c/Isite2/data/*.xml
```

Syntax:

```
index -d [database] -t [document type] -o [document options] [metadata files]
```

What does the command do? The indexer goes into folder C:/Isite2/data/, takes all xml files, using the fgdc.fields document type creates an index database and index files and put them in folder C:/Isite2/db/.

```
C:\>cd Isite2
C:\Isite2>Iindex2.exe -d /cygdrive/c/Isite2/db/NMDIS -t fgdc -o fieldtype=/cygdrive/c/Isite2/fgdc.fields /cygdrive/c/Isite2/data/*.xml
Index v2.3.10-Win, Release 2006030902
Building document list ...
The system cannot find the path specified.
Command failed: del \cygdrive\c\Isite2\db\NMDIS.0* - No such file or directory
Creating new cache [/cygdrive/c/Isite2/db/NMDIS.db]
Building database /cygdrive/c/Isite2/db/NMDIS:

  Parsing files ...

  Parsing /cygdrive/c/Isite2/data/cgia-wswtemp.xml
  Parsing /cygdrive/c/Isite2/data/dds10.xml
  Parsing /cygdrive/c/Isite2/data/dust.xml
  Parsing /cygdrive/c/Isite2/data/glaciers.xml
  Parsing /cygdrive/c/Isite2/data/goes_9_conus.xml
  Indexing 21624 words ...
.....
Database files saved to disk.
C:\Isite2>
```

Figure A1.1. Building Index using Iindex command

In Fig. A1.1, “The system cannot find the path specified. Command failed: Del \cygdrive\c\Isite\db\NMDIS.0* - No such file or directory” lines are actually a warning, not an error. It means that it’s a new index – the previous one doesn’t actually exist. It’s an information message and can be ignored.

Note: You must run this Iindex command every time new metadata records are added to your node. In the future if your zserver is running and you want to index new metadata records, first stop your zserver, then run the Iindex command, and then restart your zserver.

A1.2.2 Test Index (See Fig. A1.2)

- ▶ Once it finishes indexing, you can test that the index was built correctly by confirming that the following full text search on your **NMDIS** database for the string **water** returns 4 records:

```
C:\Isite2>Isearch2.exe -d /cygdrive/c/Isite2/db/ NMDIS water
```

- ▶ The following full text search should only return 1 record:

```
C:\Isite2>Isearch2.exe -d /cygdrive/c/Isite2/db/ NMDIS title/water
```

```
C:\Isite2>Isearch2.exe -d /cygdrive/c/Isite2/db/NMDIS water
Isearch v2.3.10-Win, Release 2006030902
Searching database /cygdrive/c/Isite2/db/NMDIS:
Query String = water

4 document(s) matched your query, 4 document(s) displayed.

   Score   File
 1.   100   /cygdrive/c/Isite2/data/cgia-wswtemp.xml
Water Supply Watersheds
 2.    12   /cygdrive/c/Isite2/data/dust.xml
Dust Deposition in Southern Nevada and California, 1984- 1989: Relations to cli
mate, source area, and lithology
 3.     6   /cygdrive/c/Isite2/data/goes_9_conus.xml
GOES_9
 4.     1   /cygdrive/c/Isite2/data/dds10.xml
Modern Average Global Sea-Surface Temperature

Select file #:

C:\Isite2>Isearch2.exe -d /cygdrive/c/Isite2/db/NMDIS title/water
Isearch v2.3.10-Win, Release 2006030902
Searching database /cygdrive/c/Isite2/db/NMDIS:
Query String = title/water

1 document(s) matched your query, 1 document(s) displayed.

   Score   File
 1.   100   /cygdrive/c/Isite2/data/cgia-wswtemp.xml
Water Supply Watersheds

Select file #:

C:\Isite2>
```

Figure A1.2. Test that index was built correctly

A1.3 Configuring the Z39.50 server

A1.3.1 sapi.ini and zserver.ini files

- ▶ Once you have verified that the indexes were built correctly, you will need to modify files zserver.ini and sapi.ini located in folder C:\Isite2 with a text editor. Notepad will do the job, as will MS Word, providing you remember to save the file as plain text.

A1.3.2 zserver.ini

- ▶ The zserver.ini file contains configuration information for the server process. Open and edit the file zserver.ini. Confirm the following parameters are set as they are below:

```
ServerType=STANDALONE
Port=210
SAPI=/cygdrive/c/Isite2/sapi.ini
AccessLog=/cygdrive/c/Isite2/zserver_access.log
DBList= NMDIS
```

Note: Port 210 is the registered port for the Z39.50 communications protocol, and we use 210 in this example. However, your port may be different. This port must

be open in order for you to be able to test that the zserver program is running and for the new node to communicate with the Clearinghouse node.

If you would like to add additional databases, you can create a comma delimited list in your zserver.ini. For example, if you were adding a database named **SOA** the DBList line would read for example:

```
DBList=NMDIS, SOA
```

A1.3.3 sapi.ini

- ▶ Search API configuration file, sapi.ini, is located in folder C:\Isite2. The sapi.ini file contains essential information for the server to connect to a specific search engine.
- ▶ Open and edit sapi.ini. You need to include an entry for each database you want to make available through zserver. Use the following for the **NMDIS** database, in the [Default] section of sapi.ini:

```
[NMDIS]
```

```
Type=ISEARCH
```

```
Location=/cygdrive/c/Isite2/db
```

```
FieldMaps=/cygdrive/c/Isite2/bib1_fgdc.map, /cygdrive/c/Isite2/gils_fgdc.map,  
/cygdrive/c/Isite2/geo_fgdc.map
```

Note: The FieldMaps line should all be on one line. Also, you may use relative paths instead of absolute paths in the FieldMaps parameter, assuming these files are located in the same directory as the zserver program. For example:

```
[NMDIS]
```

```
Type=ISEARCH
```

```
Location=/cygdrive/c/Isite2/db
```

```
FieldMaps=bib1_fgdc.map,gils_fgdc.map,geo_fgdc.map
```

Note: FieldMaps define the mapping between Use Attribute numbers and the corresponding element names in your metadata documents. FieldMaps are handled by the search script. In order for Z39.50 clients to search your Isearch database in a standardized manner, you must provide a mapping from Z39.50 database information to Isearch style information. This currently involves mapping Z39.50 Use attributes (combination Attribute Set Id and integer Use value representing a field name) to your field names as indexed by lindex. There are three mapping files that must be referenced here that allow your server to be seen as an FGDC server, a bibliographic server, and a GILS server. All three files are included in folder C:\Isite2.

A1.3.4 zserver.exe

- ▶ Once you have configured zserver.ini and sapi.ini appropriately, you can issue the DOS command (see Fig. A1.6):

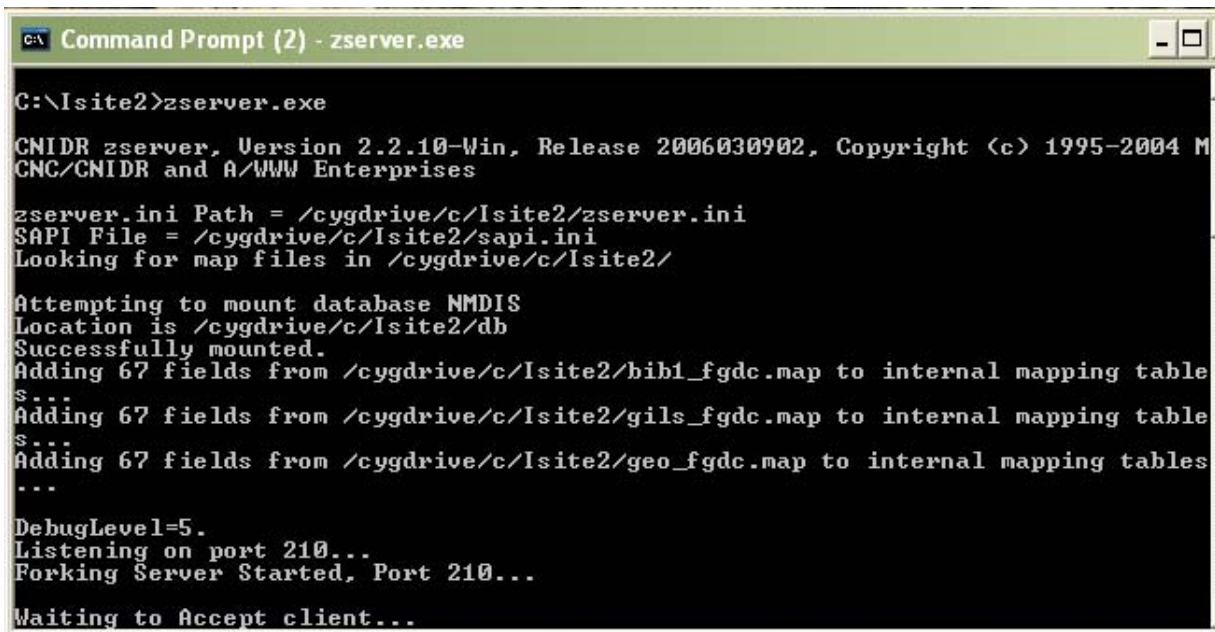
```
C:\Isite2>zserver.exe
```

to start the server, then minimize the window and let the server run unattended.

Note: Do not close this DOS Command prompt window. Closing the DOS command prompt window will terminate the zserver process and the Z39.50 session. As you can see on the Command Prompt in Fig. A1.3, the last line should return “Waiting to Accept client...”.

- ▶ If you want to start zserver in a directory other than the one where zserver.ini and sapi.ini are located, the command would be (for example):

```
C:\Isite2>zserver.exe -i/cygdrive/c/Isite2/zserver.ini
```



```
C:\Isite2>zserver.exe
CNIDR zserver, Version 2.2.10-Win, Release 2006030902, Copyright (c) 1995-2004 M
CNC/CNIDR and A/WWW Enterprises

zserver.ini Path = /cygdrive/c/Isite2/zserver.ini
SAPI File = /cygdrive/c/Isite2/sapi.ini
Looking for map files in /cygdrive/c/Isite2/

Attempting to mount database NMDIS
Location is /cygdrive/c/Isite2/db
Successfully mounted.
Adding 67 fields from /cygdrive/c/Isite2/bib1_fgdc.map to internal mapping table
s...
Adding 67 fields from /cygdrive/c/Isite2/gils_fgdc.map to internal mapping table
s...
Adding 67 fields from /cygdrive/c/Isite2/geo_fgdc.map to internal mapping tables
...

DebugLevel=5.
Listening on port 210...
Forking Server Started, Port 210...

Waiting to Accept client...
```

Figure A1.3. Start zserver

Leave the Command Prompt window open and open a second Command Prompt window. Arrange the two Command Prompt windows next to each other. As you test the zserver as instructed below, you should see how the zserver responds to your searches in the first Command Prompt window.

A1.3.5 Test the zserver Installation (See Fig. A1.4)

- ▶ Ping your localhost on port 210.

Once you have zserver running (on port 210 and with a database named "**NMDIS**"), you can test it by confirming that it is running by executing the following command in your second DOS Command Prompt window (see Fig. A1.7):

```
C:\Isite2>zping.exe localhost 210
```

It should return, "Z39.50 server at localhost on port 210 is alive."

- ▶ The following title search for the string "**water**" should only return a single record (see Fig. A1.7):

```
C:\Isite2>zclient.exe localhost 210 " NMDIS" " water [1,4]"
```

- ▶ Confirm that a full text search for the string **water** returns 4 records (see Fig. A1.7):

```
C:\Isite2>zclient.exe localhost 210 " NMDI " "water[1,1016]"
```

- ▶ Finally a global spatial search should return 5 records (all the records) (see Fig. A1.7):

```
C:\Isite2>zclient.exe localhost 210 " NMDIS" "90 -180 -90 180[1,2060]"
```

A1.4 Install zserver as a Windows Service

A1.4.1 Requirements

- ▶ Windows NT Server 4.0, Windows 2000, or Windows XP Professional
- ▶ Isite for Windows (W95/98/2000/NT/XP)
- ▶ Srvany program - lets you serve any program as a service
- ▶ Download srvany.exe file into the C:Isite2 directory
- ▶ INSTSRV (or, for Windows 2003 Server, SC) - Installs and removes system services from NT
- ▶ Download instsrv.exe file into the C:Isite2 directory

Note: It is very important that you back up your computer registry before attempting to work with the Windows Service. Contact your system administrator for assistance.

```
Command Prompt (2)
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

F:\>C:

C:\>cd ISite2

C:\Isite2>zping.exe localhost 210
zping, Version 2.2.10-Win, Release 2006030902
Copyright (c) 1995-2004 MCNC/CNIDR and A/WWW Enterprises
Z39.50 server at localhost on port 210 is alive.

C:\Isite2>zclient.exe localhost 210 "NMDIS" "water[1,4]"
zclient, Version 2.2.10-Win, Release 2006030902
Copyright (c) 1995-2004 MCNC/CNIDR and A/WWW Enterprises
zclient, Version 2.2.10-Win, Release 2006030902
Copyright (c) 1995-2004 MCNC/CNIDR and A/WWW Enterprises

1 total records matched your query
1) Water Supply Watersheds
Enter # of record to view (return to quit):

C:\Isite2>zclient.exe localhost 210 "NMDIS" "water[1,1016]"
zclient, Version 2.2.10-Win, Release 2006030902
Copyright (c) 1995-2004 MCNC/CNIDR and A/WWW Enterprises
zclient, Version 2.2.10-Win, Release 2006030902
Copyright (c) 1995-2004 MCNC/CNIDR and A/WWW Enterprises

4 total records matched your query
1) Water Supply Watersheds
2) Dust Deposition in Southern Nevada and California, 1984- 1989: Relations to
climate, source area, and lithology
3) GOES_9
4) Modern Average Global Sea-Surface Temperature
Enter # of record to view (return to quit):

C:\Isite2>zclient.exe localhost 210 "NMDIS" "90 -180 -90 180[1,2060]"
zclient, Version 2.2.10-Win, Release 2006030902
Copyright (c) 1995-2004 MCNC/CNIDR and A/WWW Enterprises
zclient, Version 2.2.10-Win, Release 2006030902
Copyright (c) 1995-2004 MCNC/CNIDR and A/WWW Enterprises

5 total records matched your query
1) Modern Average Global Sea-Surface Temperature
2) GOES_9
3) Velocities of outlet glaciers, ice streams, and ice shelves, Antarctica, fro
m satellite images
4) Dust Deposition in Southern Nevada and California, 1984- 1989: Relations to
climate, source area, and lithology
5) Water Supply Watersheds
Enter # of record to view (return to quit):

C:\Isite2>
```

Figure A1.4. Test that the zserver is running correctly

A1.4.2 Installation of srvany.exe after Isite:

- ▶ Using a DOS Command Prompt Shell install SRVANY.EXE as a Windows NT service with the following command (all in one line):

```
C:\Isite2>INSTSRV Z39.50Server c:\Isite2\srvany.exe
```

This command line tells INSTSRV to install srvany.exe. and to create a service named "Z39.50Server". You should receive the following message if the command was successful.

"The service was successfully added!"

A1.4.3 Windows Services

- ▶ Go into the Control Panel and use the Services applet to change the Account Name and Password that this newly installed service will use for its Security Context.
- ▶ Use the "Services" control panel to configure the "Startup type" to "Automatic". (See Fig. A1.5)
- ▶ Bring up the "Services" control panel using the following DOS command:

```
C:\Isite2>start %SystemRoot%\system32\services.msc /s
```

- ▶ Scroll down to the item "Z39.50Server."
- ▶ Right click on it and choose "Properties" to bring up the "Z39.50Server Properties" dialog box.
- ▶ Change "Startup type:" to "Automatic".
- ▶ Choose the "Log On" tab.
- ▶ Set "Log On As:" to "Local System account".
- ▶ Press "OK" to save your changes.

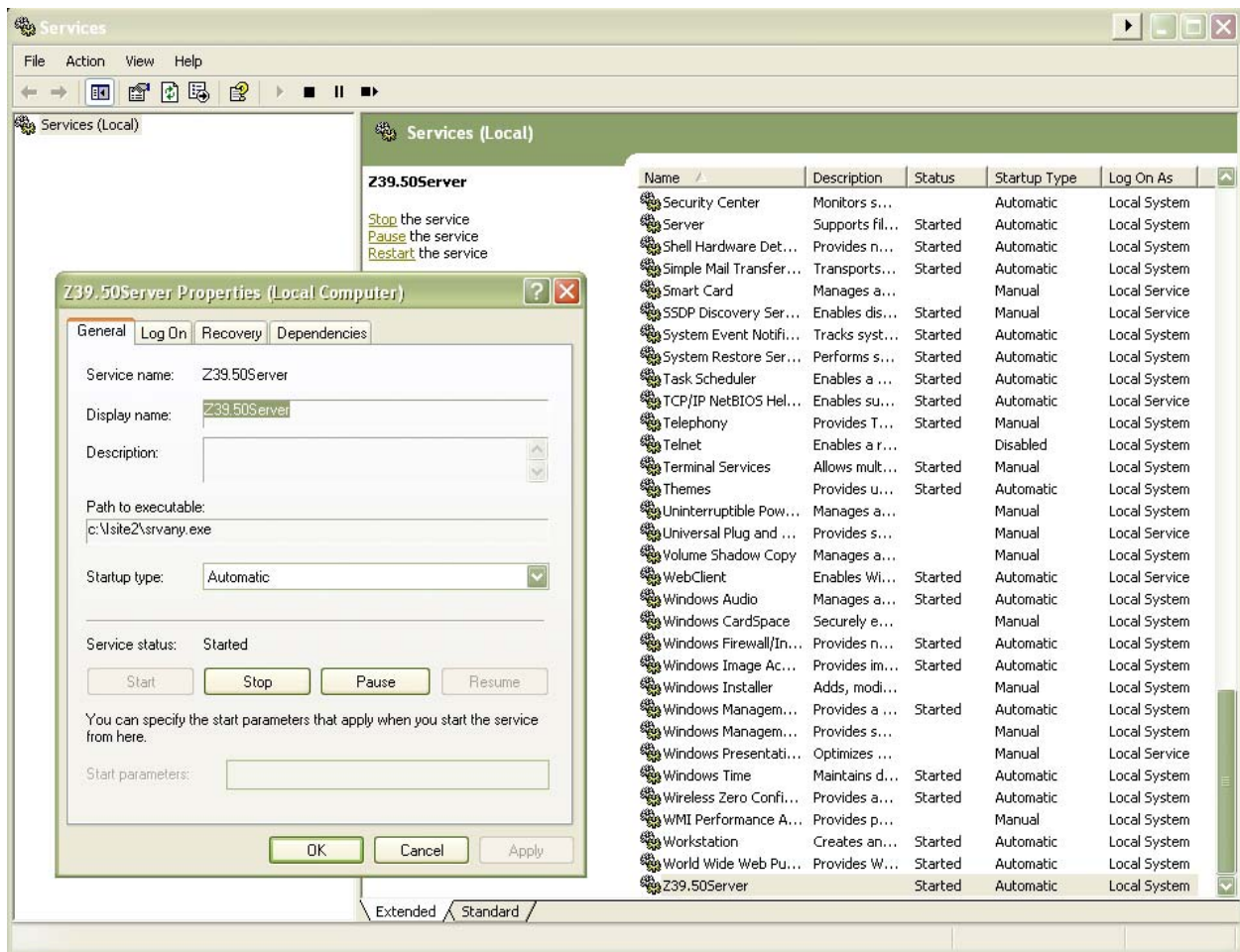


Figure A1.5. Windows Services with Z39.50Server

A1.4.4 Specifying the application to start and its parameters (See Fig. A1.6-10)

- ▶ Run the Registry Editor from the Command Prompt Shell:

```
C:\>REGEDIT.EXE
```

- ▶ Click on the plus sign (⊕) next to "My Computer" (🖥️). The plus sign will turn into a minus sign (⊖) and a tree of folders (📁) will appear.
- ▶ Click on the plus sign next to the folder labeled "HKEY_LOCAL_MACHINE", and another tree structure will expand beneath it.
- ▶ Following the above pattern, click on the plus signs (⊕) next to the folders (📁) "SYSTEM", "CurrentControlSet", "Services", and "Z39.50Server", in that order.
- ▶ When you have navigated that far correctly you should see the following in your status bar:

My Computer\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Z39.50Server

Figure A1.6. Registry Editor status bar

- ▶ Create a new key named "Parameters" by right clicking on the "Z39.50Server" and choosing "New → Key" as shown below in Fig. A1.7:

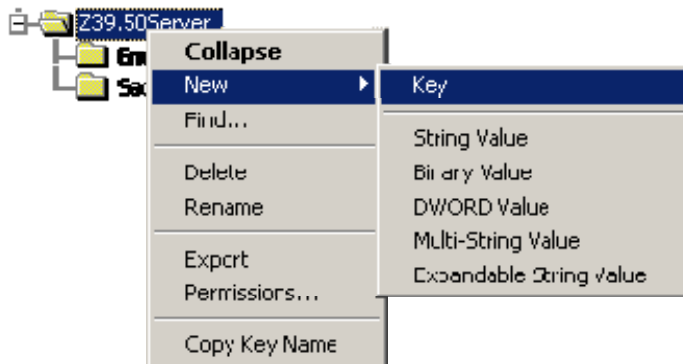


Figure A1.7. Registry Editor: Z39.50Server: Add new key

- ▶ Under the "Parameters" key, create a new string value named "Application" by right clicking on the "Parameters" folder and choosing "New → String Value" as shown below in Fig. A1.8:

Name	Type	Data
(Default)	REG_SZ	(value not set)
Application	REG_SZ	

Figure A1.8. Registry Editor: Z39.50Server: Name the new key

- ▶ Double click on the "Application" string value you have just created and in the "Edit String" window that pops up specify there the full path to the zserver.exe executable (including the extension - C:\Isite2\zserver.exe), as shown in Fig. A1.9:

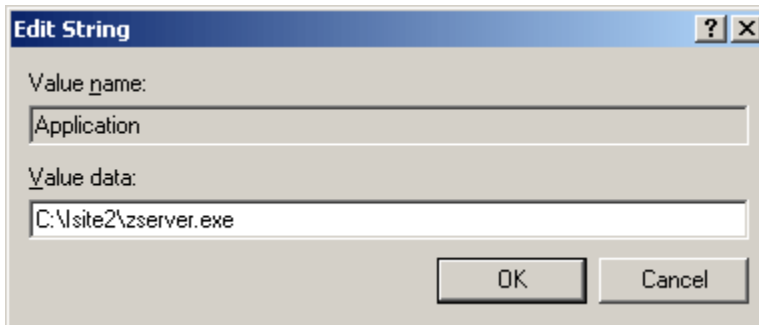


Figure A1.9. Registry Editor: Z39.50Server: Add Value data

Instructions for Isite for Windows O.S.

- ▶ Following the pattern of steps above, create a new string value named under the "Parameters" key named "AppDirectory" and specify there the full path the application executable resides in (see Fig. A1.10):

C:\Isite2

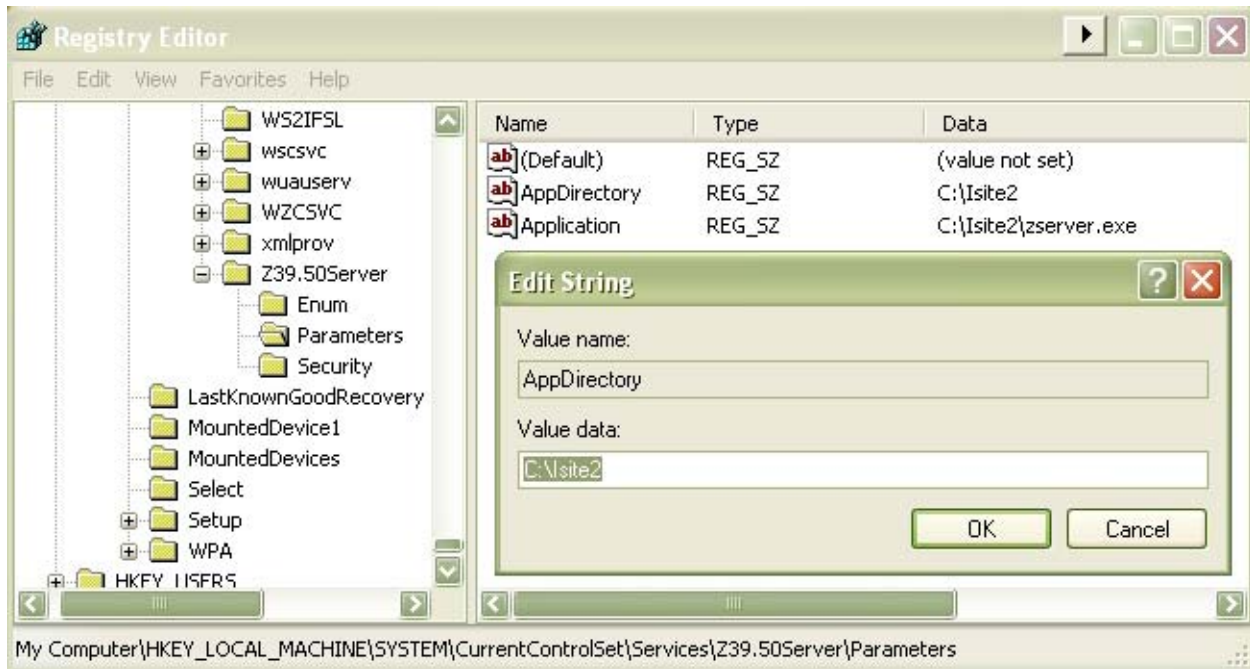


Figure A1.10. Registry Editor: Z39.50Server: Add new key and value data

NOTE: You can check if everything is working okay by going into "Z39.50Server Properties" using the steps outlined above. Go to the "Log On" tab and check the box next to "Allow Service to Interact with Desktop". Set the "DebugLevel" in zserver.ini to 5 so you will get some feedback. This should be the default setting in the zserver.ini file.

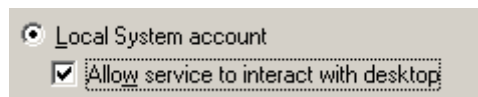
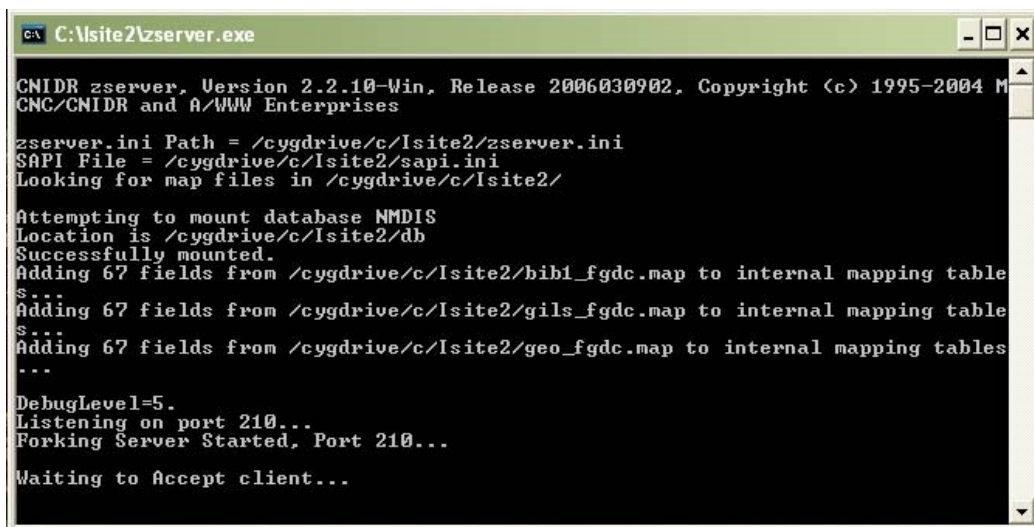


Figure A1.11. Windows Services: Z39.50Server Properties

Then reboot and log in. You will get a command prompt box with the zserver debug text displayed.

If everything is okay, then you should see the Command Prompt Shell pop up with the screen in Fig. A1.12.



```
C:\Isite2\zserver.exe
CNIDR zserver, Version 2.2.10-Win, Release 2006030902, Copyright (c) 1995-2004 M
CNC/CNIDR and A/WWW Enterprises
zserver.ini Path = /cygdrive/c/Isite2/zserver.ini
SAPI File = /cygdrive/c/Isite2/sapi.ini
Looking for map files in /cygdrive/c/Isite2/

Attempting to mount database NMDIS
Location is /cygdrive/c/Isite2/db
Successfully mounted.
Adding 67 fields from /cygdrive/c/Isite2/bib1_fgdc.map to internal mapping table
S...
Adding 67 fields from /cygdrive/c/Isite2/gils_fgdc.map to internal mapping table
S...
Adding 67 fields from /cygdrive/c/Isite2/geo_fgdc.map to internal mapping tables
...
DebugLevel=5.
Listening on port 210...
Forking Server Started, Port 210...
Waiting to accept client...
```

Figure A1.12. Message received after reboot

Note: After the reboot **DO NOT** leave the "Allow Service to Interact with Desktop" checked, because a Command Prompt Shell will appear for every user and if a user exits the shell, the zserver process will terminate.

- ▶ Go to Windows Services > "Z39.50Server Properties" > "Log On" tab and uncheck the box next to "Allow Service to Interact with Desktop". Leave the Windows Services open. You'll have to get back to it.

When the zserver process is stable and registered, you should configure the zserver service to be started whenever the system reboots to ensure minimum down-time and administrator interaction. After you register your node with the Clearinghouse, go to Windows Services. In the Services, for Z39.50Server, stop the service and then start it once more. This will ensure that next time you reboot your zserver will start up automatically.

That's it! You're done with the Isite installation. Next, on to register your newly created node.

A1.5 Register your node

- ▶ Until you register your server with the FGDC, it will not be included in the search forms. To register, fill in the server-level metadata at <http://registry.fgdc.gov/>.
- ▶ Refer to PICES Tech Memo for instructions to register your node (see section 8.6) or see the FGDC tutorial at <http://registry.fgdc.gov/TutorialAdd.asp>.