

# Deploying NVCL Data Custodian Systems

## Introduction

These instructions describe the AuScope recommended deployment configuration/procedure for NVCL components within data custodian's networks. You may choose to follow these instructions exactly or modify them to suit your systems, however, diverging from the instructions will make it more difficult for us to assist you with any problems that arise. When using these instructions please ensure that you have informed Peter Warren that you are doing so and feel free to contact Peter Warren with any queries or bug reports.

## Minimum Requirements

- 1 database server : physical or virtual machine
  - 500GB storage for the first year of operation
  - Single CPU@2GHz
  - Minimum 4G memory
  - Oracle or SQL Server
  - High bandwidth links to internal users
2. 1 web services machine (GeoServer, NVCL WS): physical or virtual machine
  - Read access to NVCL database, 'borehole header info' database and query interface exposed to the internet
  - Apache tomcat installed
  - Apache HTTP Server or IIS installed
  - Minimum 4Gb memory, 2Gb minimum allocated to Tomcat
  - 200GB Storage
  - Single CPU@2GHz (recommended dual core)
  - Windows OS or Wine installed for Linux
3. PCs for users to analyse and upload data
  - High performance desktop or laptops recommended
  - The Spectral Geologist Software installed and licensed
  - Database Drivers installed - Oracle instant client or MS SQL Server Native client

It is assumed a 'borehole header info' database will be available and accessible to the web services machine.

## Installation Instructions

### NVCL Database Server

#### Oracle

1. Install Oracle 11g or later.
2. Edit [CreateTSs.sql](#) and fill in the three data file's paths and file names (if you wish you may set a strong password for nvcl and grant connect so that the createnvcldb script can be run as nvcl)
3. Run CreateTSs.sql script as SYS or another account with DBA privileges
4. Run [createNVCLDB11g.sql](#) script as a DBA user or as nvcl
5. The database is now installed but before you can use it you will need to create some users. Descriptions of the users levels available and how to set them up in Oracle can be found here [OracleNVCLDBUsers](#).

#### SQL Server

1. Install Microsoft SQL Server 2008
2. Edit [createNVCLDB.sql](#) and fill in both data and log file's paths and file names
3. Run createNVCLDB.sql
4. Run [createNVCLDBObjects.sql](#) (if you receive errors simply run the script again)
5. The database is now installed but before you can use it you will need to create some users. Descriptions of the user levels available and how to set them up in SQL Server can be found here [SQLServerNVCLDBUsers](#).

## Web Services Machine

### NVCL Geoserver (WFS)

1. Using the template and info available on the [BoreholeHeaderQuickMappingGuide](#) page create a boreholeview database object.
2. Install the NVCL borehole geoserver instance following the [SISSGeoServerDeploymentGuide](#), Please return to this page when geoserver is installed and working.

### NVCL Data Services

#### Prerequisites

- Client drivers for your database
  - [Oracle Instant Client basiclite](#) for Oracle systems, or
  - [Microsoft SQL Server native client](#) for MS systems

- Linux systems will also need wine and xvfb installed via your operating systems package manager or from [www.winehq.org](http://www.winehq.org)

The NVCL DataServices can be installed as a standalone service or as a web application within a tomcat instance. We recommend using the standalone package as it provides greater isolation from other services and makes management easier. However, if you have tomcat running on your server then you can use it if its more convenient.

### If you have an existing NVCLDataServices package

1. Stop tomcat
2. Copy jdbc.properties and config.properties from NVCLDataServices/WEB-INF/classes/ folder into a backup location for reference later
3. Delete the NVCLDataServices folder and all its contents
4. (Optional) the new package has built in activemq. So, you can remove the old standalone activemq if you wish or continue to use it.

### Option 1. Install the NVCLDataServices as a standalone service

#### Windows Users

1. Download the [Windows installer](#)
2. Windows users run the windows installer, once it completes the configuration file should be displayed for editing. If not edit C:\Program Files\NVCLDataServices\application.properties
3. Copy the values for the properties from your saved jdbc and config.properties files or follow the instructions within the file
4. Start the NVCLDataServices from windows services

#### Linux Users

1. Download the [universal WAR](#)
2. Make a folder named NVCLDataServices and save the WAR file into it
3. Download the [template configuration file](#) and save it in the NVCLDataServices folder
4. Create a user to run the service e.g.

```
sudo useradd -r nvclsduser
```

5. Change ownership of the NVCLDataServices folder and its contents to the user created above e.g.

```
sudo chown -R nvclsduser:nvclsduser NVCLDataServices
```

6. If you system supports systemd create a file name NVCLDataServices.service in the /etc/systemd/system/ folder with the following content (NOTE: you will likely need to modify ExecStart path):

```
[Unit]
Description=NVCL Data Services package
After=syslog.target

[Service]
User=nvclsduser
ExecStart=/var/NVCLDataServices/NVCLDataServices-2.1.0.war
SuccessExitStatus=143

[Install]
WantedBy=multi-user.target
```

7. To make the NVCLDataServices start automatically run:

```
sudo systemctl enable NVCLDataServices.service
```

8. Edit NVCLDataServices\application.properties
9. Copy the values for the properties from your saved jdbc and config.properties files or follow the instructions within the file
10. NOTE: if you're running tomcat on port 8080 you will need to change the port the NVCLDataServices run on (something in the 808x range is recommended)
11. Create a script file called runtsq.sh to run tsq with the following content:

```
#!/bin/bash
xvfb-run -a wine tsgeol8.exe $1
exit
```

12. Start the NVCLDataServices with systemctl:

```
sudo systemctl start NVCLDataServices.service
```

## Option 2. Install the NVCLDataServices as a web application in tomcat

1. Download the [universal WAR](#)
2. Create a new folder named NVCLDataServices in your %TOMCAT\_HOME%/webapps folder
3. Extract NVCLDataServices-2.1.0.war into the new folder (rename it to NVCLDataServices.zip if your unzip app doesn't recognize it)
4. Edit NVCLDataServices\WEB-INF\classes\application.properties
5. Copy the values for the properties from your saved jdbc and config.properties files or follow the instructions within the file
6. For Linux create a script file called runtsq.sh to run tsg with the following content:

```
#!/bin/bash
xvfb-run -a wine tsgeol8.exe $1
exit
```

## After Install

1. If you are using Apache HTTP Server as a reverse proxy add the following in the proxy settings of your http Server configuration file:

```
ProxyPass /NVCLDataServices http://localhost:%TOMCAT_HTTP_PORT_NUMBER%/NVCLDataServices
ProxyPass /NVCLDownloadServices http://localhost:%TOMCAT_HTTP_PORT_NUMBER%/NVCLDataServices
ProxyPass /NVCLPreparedDownloads http://localhost:%TOMCAT_HTTP_PORT_NUMBER%/NVCLPreparedDownloads
```

2. Replace %download.rootpath% with the same directory you entered for download.rootpath in the config.properties file above and insert the following 'context' element inside the 'host' element of the file %TOMCAT\_HOME%/conf/server.xml:

```
<Context path="/NVCLPreparedDownloads" docBase="%download.rootpath%" crossContext="false" reloadable="false" />
```

3. Start Tomcat

## User's PCs

1. Install the client drivers for your database management system (users should contact their DBA for these)
  - [Oracle Instant Client basiclite](#) for Oracle systems, or
  - [Microsoft SQL Server native client](#) for MS systems
2. Install TSG
3. Start TSG
4. Enter you license details or request a new license
5. Go to file -> Settings -> Dbase
6. Enter the database connection sting eg. nvclserver.csiro.au/nvcldb.nvclserver.csiro.au
7. Select the DBMS from the drop down list
8. Enter your user name and password created in the "Database Server" section above
9. The "borehole WFS" field needs to contain the static part of your borehole URIs which will be `http://<web server hostname>/resource/feature/<Custodian>/borehole/`
10. click ok

For TSG software updates, bug reports or deployment assistance contact Peter Warren.