Web Map Publishing

using

GeoServer

Prakash. K, Scholar, Geography, BDU.

GeoServer...

- GeoServer is an open-source server written in Java
- Allows users to share, process and edit geospatial data
- Designed for interoperability
- Publishes data from any major spatial data source using open standards.
- GeoServer reads a variety of data formats, including:
  - Shapefiles, GeoTIFF, ECW, MrSID, JPEG2000
  - PostGIS, Oracle Spatial, ArcSDE, DB2, MySQL, MongoDB, Apache
- GeoServer implements industry standard OGC protocols such as
  - Web Feature Service (WFS) - Vector
  - Web Map Service (WMS) - Raster
  - Web Coverage Service (WCS)
  - Web Processing Service (WPS) (as extension)
  - Web Map Tile Service (WMTS) (as extension)

GeoServer...

1
Java Runtime Environment (JRE)
GeoServer
2
3
Web Map Publishing

GeoServer installation

- **Download Java & Geoserver (Latest Version)**
- **Create Directories**
  1. Create a folder in: C:\Program Files (x86)
  2. Rename the folder as: “GeoServer”
  3. Extract the download
  4. Copy Paste the extracted items in: C:\Program Files (x86)\GeoServer
- **Setup Environmental Variables**
  5. Select Advanced System Settings (My Computer / This PC >> Properties)
  6. Select Advanced Tab >> Environmental Variables
  7. Select “New” from System Variables group
  8. Enter the values **Name:** JAVA; **Value:** C:\Program Files (x86)\Java\jre1.8.0_241
  9. Select “New” from System Variables” group
  10. Enter the values **Name:** GEOSERVER_DATA_DIR; **Value:** C:\Program Files (x86)\GeoServer
- **Run GeoServer**
  11. Go to C:\Program Files (x86)\GeoServer\bin
  12. Run “Startup.bat” file
  13. Open browser and type: “http://localhost:8080/geoserver”

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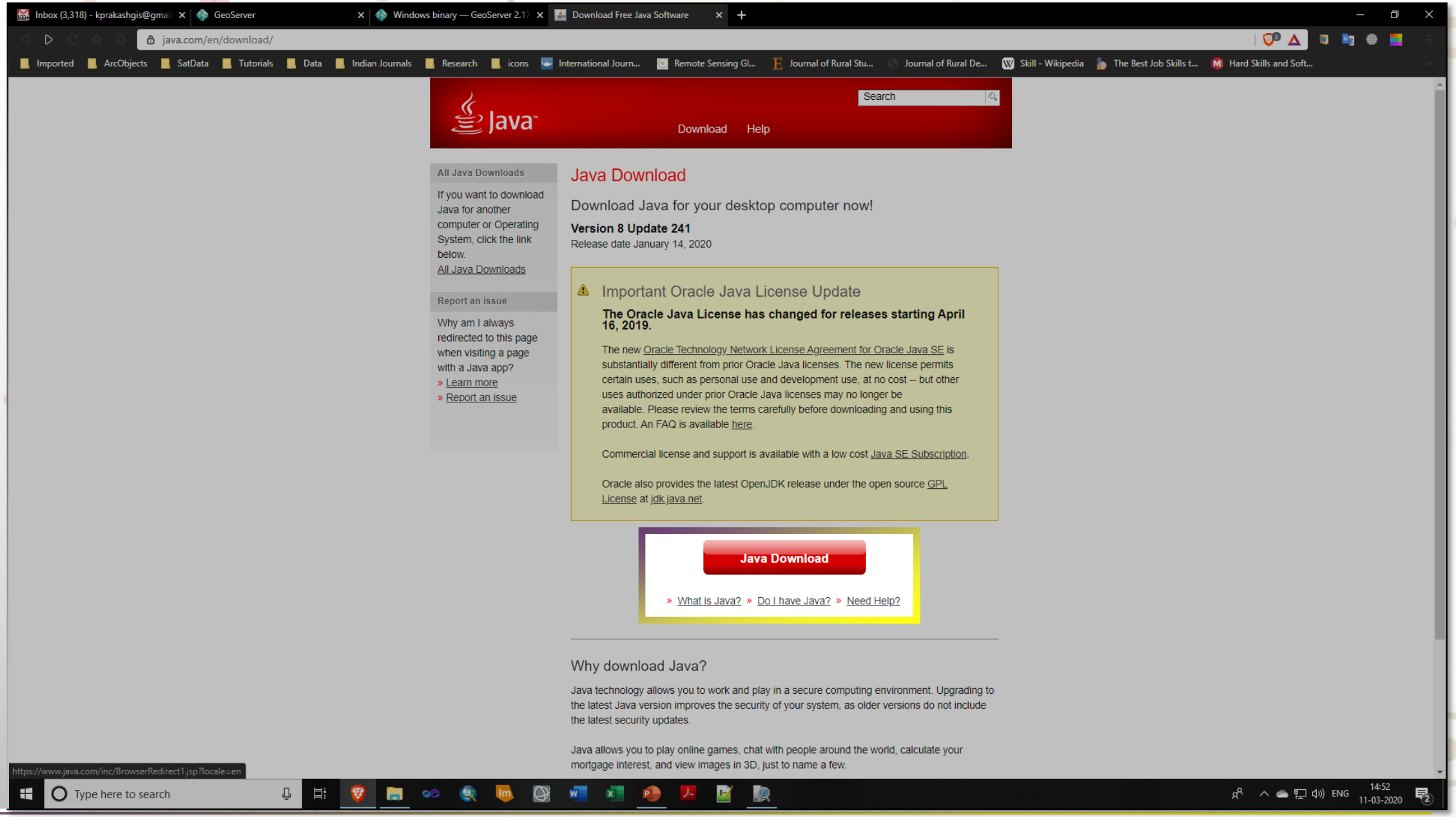
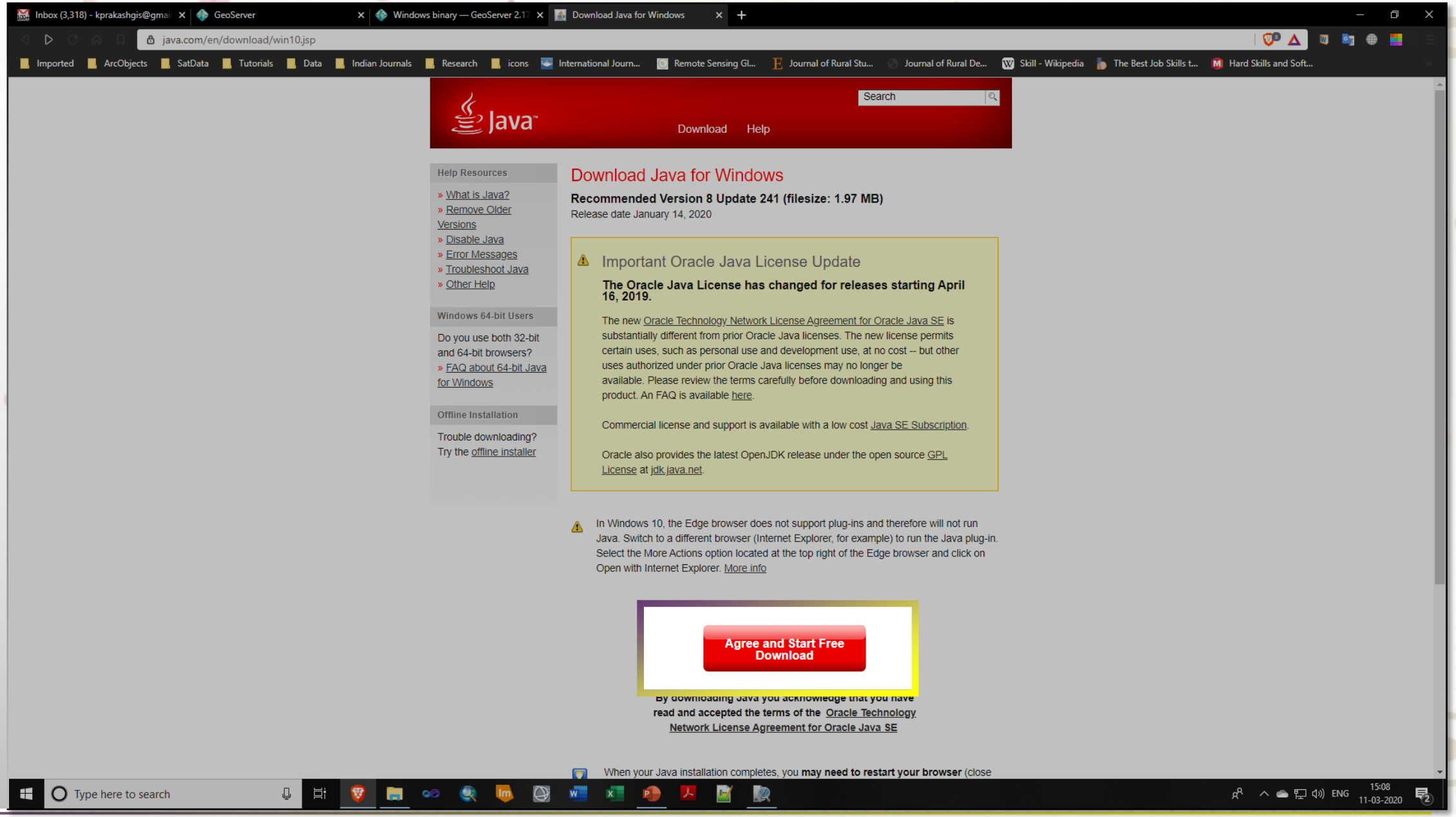
GeoServer...

INSTALLATION



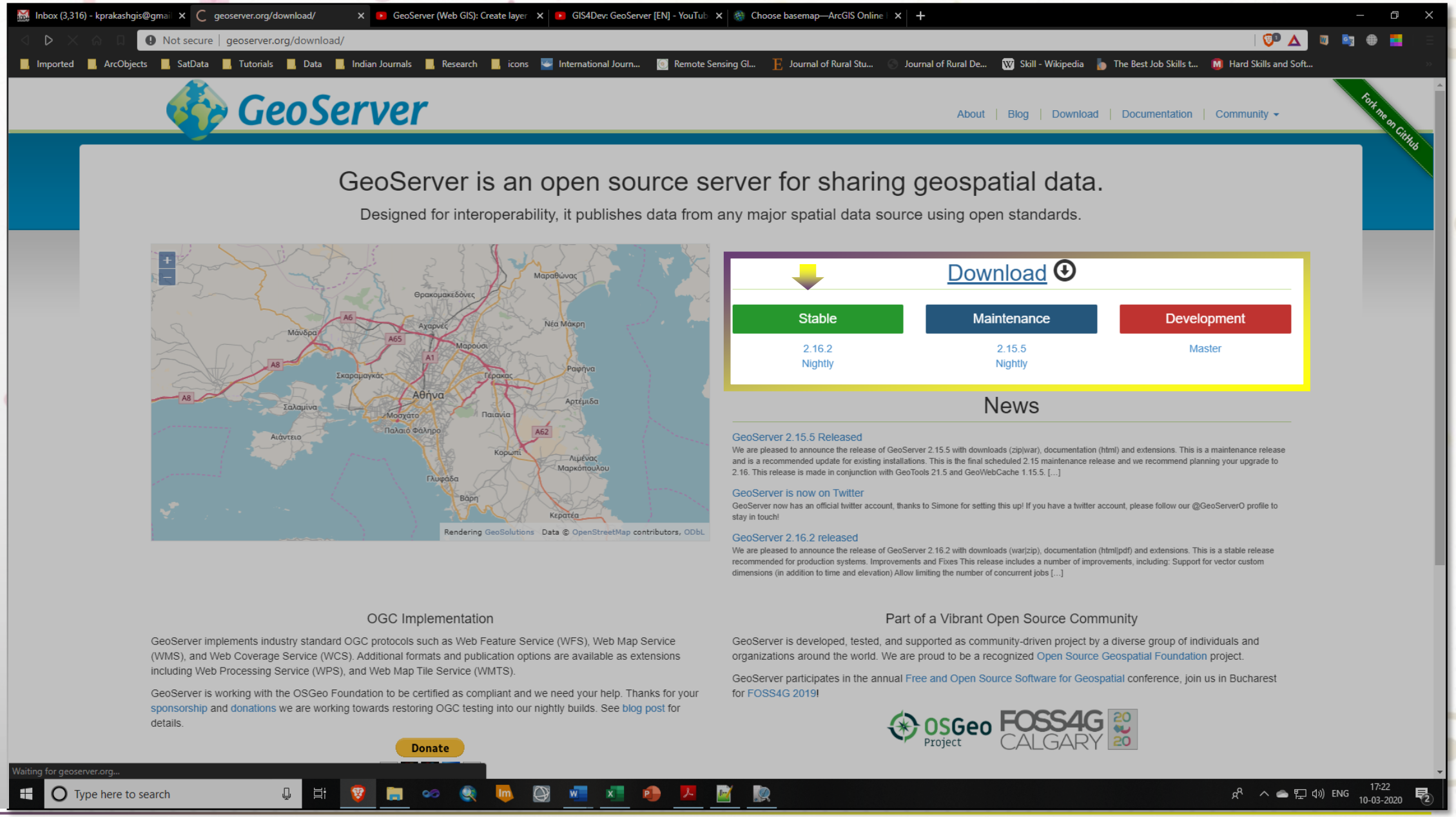
GeoServer...

INSTALLATION



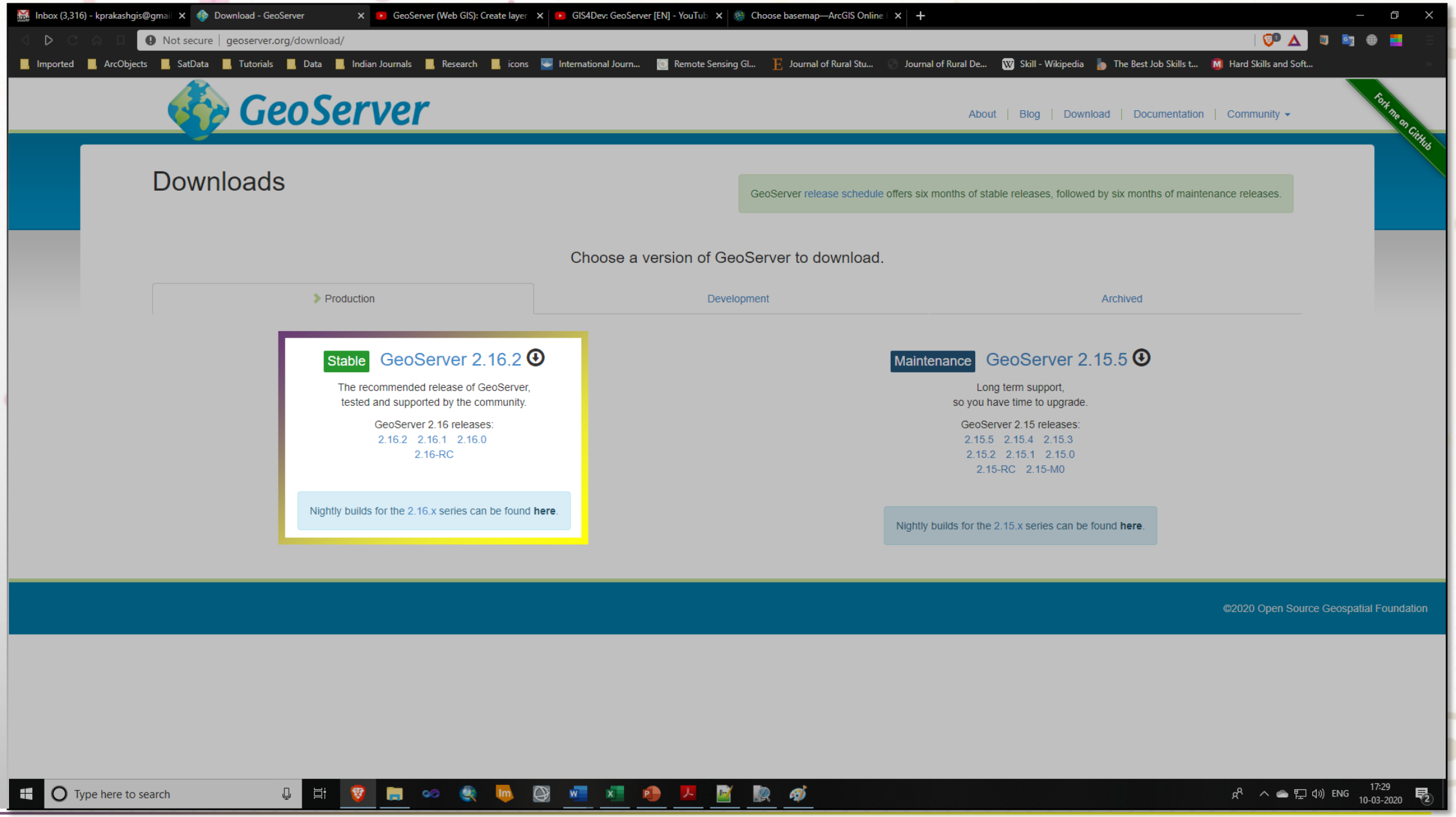
GeoServer...

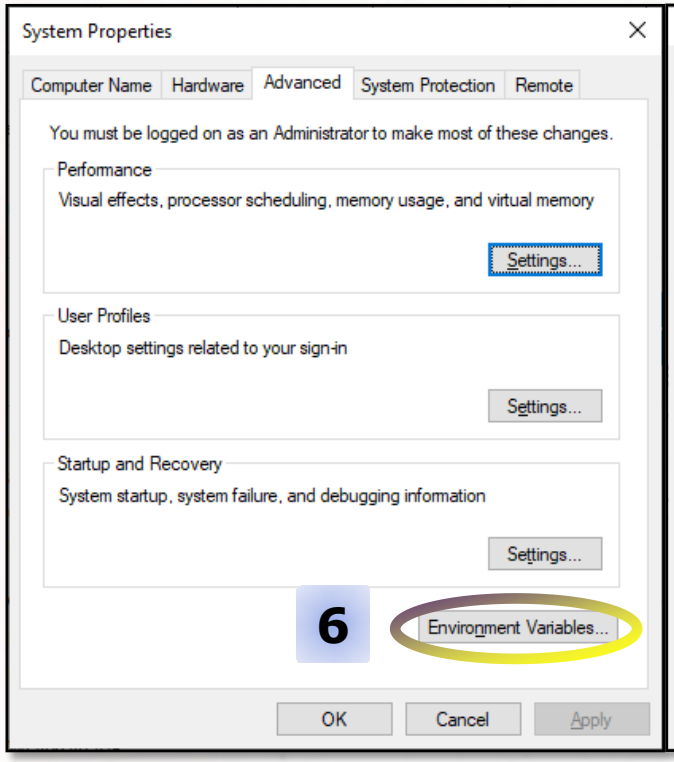
INSTALLATION

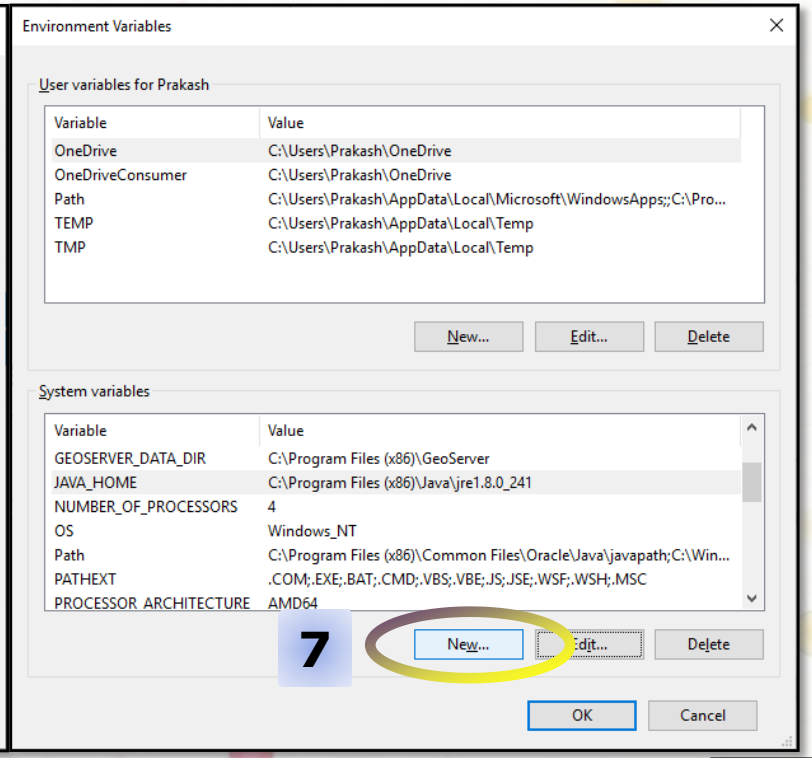


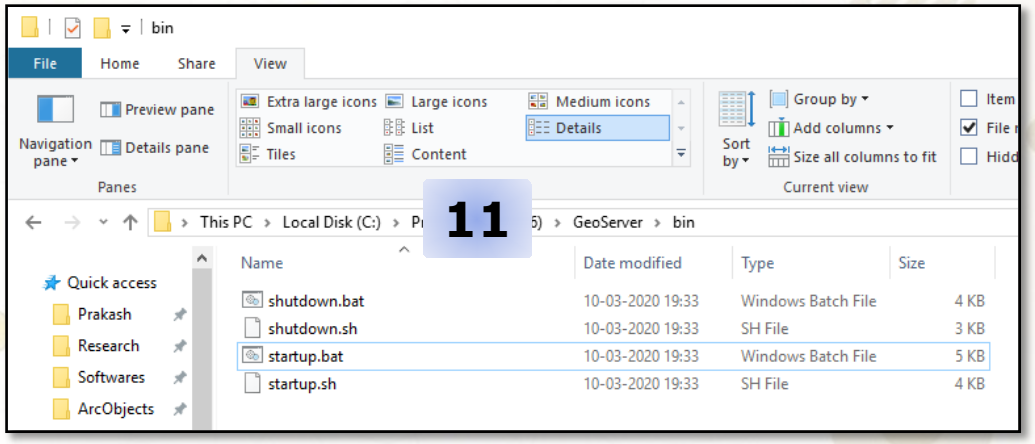
GeoServer...

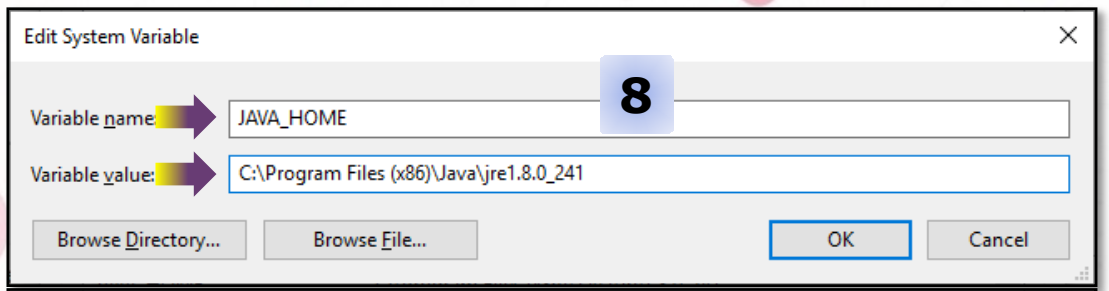
INSTALLATION

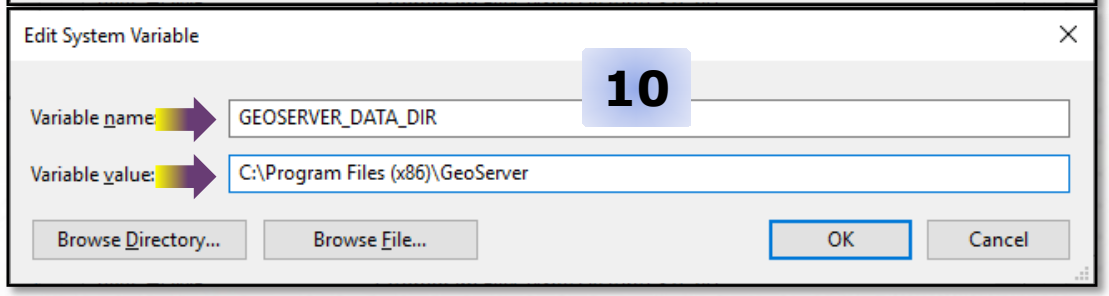


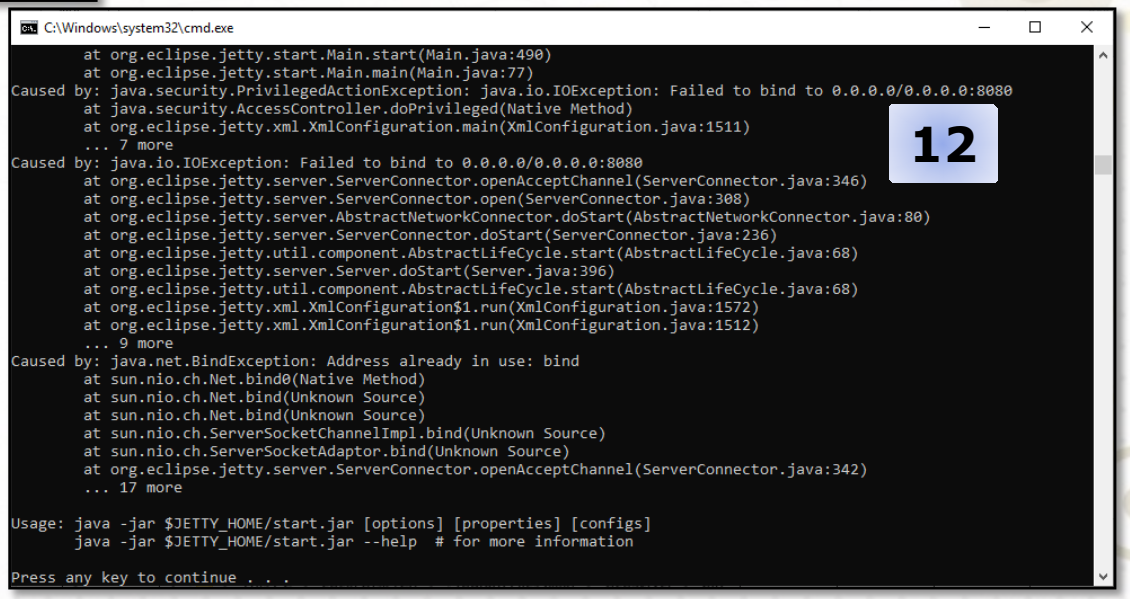

System Properties
Computer Name
Hardware
Advanced
System Protection
Remote
You must be logged on as an Administrator to make most of these changes.
Performance
Visual effects, processor scheduling, memory usage, and virtual memory
Settings...
User Profiles
Desktop settings related to your sign-in
Settings...
Startup and Recovery
System startup, system failure, and debugging information
Settings...
6
Environment Variables...
OK
Cancel
Apply


Environment Variables
User variables for Prakash
Variable
Value
OneDrive
C:\Users\Prakash\OneDrive
OneDriveConsumer
C:\Users\Prakash\OneDrive
Path
C:\Users\Prakash\AppData\Local\Microsoft\WindowsApps;;C:\Pro...
TEMP
C:\Users\Prakash\AppData\Local\Temp
TMP
C:\Users\Prakash\AppData\Local\Temp
New...
Edit...
Delete
System variables
Variable
Value
GEOSERVER_DATA_DIR
C:\Program Files (x86)\GeoServer
JAVA_HOME
C:\Program Files (x86)\Java\jre1.8.0_241
NUMBER_OF_PROCESSORS
4
OS
Windows_NT
Path
C:\Program Files (x86)\Common Files\Oracle\Java\javapath;C:\Win...
PATHEXT
.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH;.MSC
PROCESSOR_ARCHITECTURE
AMD64
7
New...
Edit...
Delete
OK
Cancel


bin
File
Home
Share
View
Preview pane
Details pane
Navigation pane
Panes
Extra large icons
Large icons
Medium icons
Small icons
List
Details
Tiles
Content
Sort by
Group by
Add columns
Size all columns to fit
Current view
11
This PC
Local Disk (C:)
GeoServer
bin
Quick access
Prakash
Research
Softwares
ArcObjects
Name
Date modified
Type
Size
shutdown.bat
10-03-2020 19:33
Windows Batch File
4 KB
shutdown.sh
10-03-2020 19:33
SH File
3 KB
startup.bat
10-03-2020 19:33
Windows Batch File
5 KB
startup.sh
10-03-2020 19:33
SH File
4 KB


Edit System Variable
8
Variable name:
JAVA_HOME
Variable value:
C:\Program Files (x86)\Java\jre1.8.0_241
Browse Directory...
Browse File...
OK
Cancel


Edit System Variable
10
Variable name:
GEOSERVER_DATA_DIR
Variable value:
C:\Program Files (x86)\GeoServer
Browse Directory...
Browse File...
OK
Cancel


C:\Windows\system32\cmd.exe
at org.eclipse.jetty.start.Main.start(Main.java:490)
at org.eclipse.jetty.start.Main.main(Main.java:77)
Caused by: java.security.PrivilegedActionException: java.io.IOException: Failed to bind to 0.0.0.0/0.0.0.0:8080
at java.security.AccessController.doPrivileged(Native Method)
at org.eclipse.jetty.xml.XmlConfiguration.main(XmlConfiguration.java:1511)
... 7 more
Caused by: java.io.IOException: Failed to bind to 0.0.0.0/0.0.0.0:8080
at org.eclipse.jetty.server.ServerConnector.openAcceptChannel(ServerConnector.java:346)
at org.eclipse.jetty.server.ServerConnector.open(ServerConnector.java:308)
at org.eclipse.jetty.server.AbstractNetworkConnector.doStart(AbstractNetworkConnector.java:80)
at org.eclipse.jetty.server.ServerConnector.doStart(ServerConnector.java:236)
at org.eclipse.jetty.util.component.AbstractLifeCycle.start(AbstractLifeCycle.java:68)
at org.eclipse.jetty.server.Server.doStart(Server.java:396)
at org.eclipse.jetty.util.component.AbstractLifeCycle.start(AbstractLifeCycle.java:68)
at org.eclipse.jetty.xml.XmlConfiguration$1.run(XmlConfiguration.java:1572)
at org.eclipse.jetty.xml.XmlConfiguration$1.run(XmlConfiguration.java:1512)
... 9 more
Caused by: java.net.BindException: Address already in use: bind
at sun.nio.ch.Net.bind0(Native Method)
at sun.nio.ch.Net.bind(Unknown Source)
at sun.nio.ch.Net.bind(Unknown Source)
at sun.nio.ch.ServerSocketChannelImpl.bind(Unknown Source)
at sun.nio.ch.ServerSocketAdaptor.bind(Unknown Source)
at org.eclipse.jetty.server.ServerConnector.openAcceptChannel(ServerConnector.java:342)
... 17 more
Usage: java -jar $JETTY_HOME/start.jar [options] [properties] [configs]
java -jar $JETTY_HOME/start.jar --help # for more information
Press any key to continue . . .
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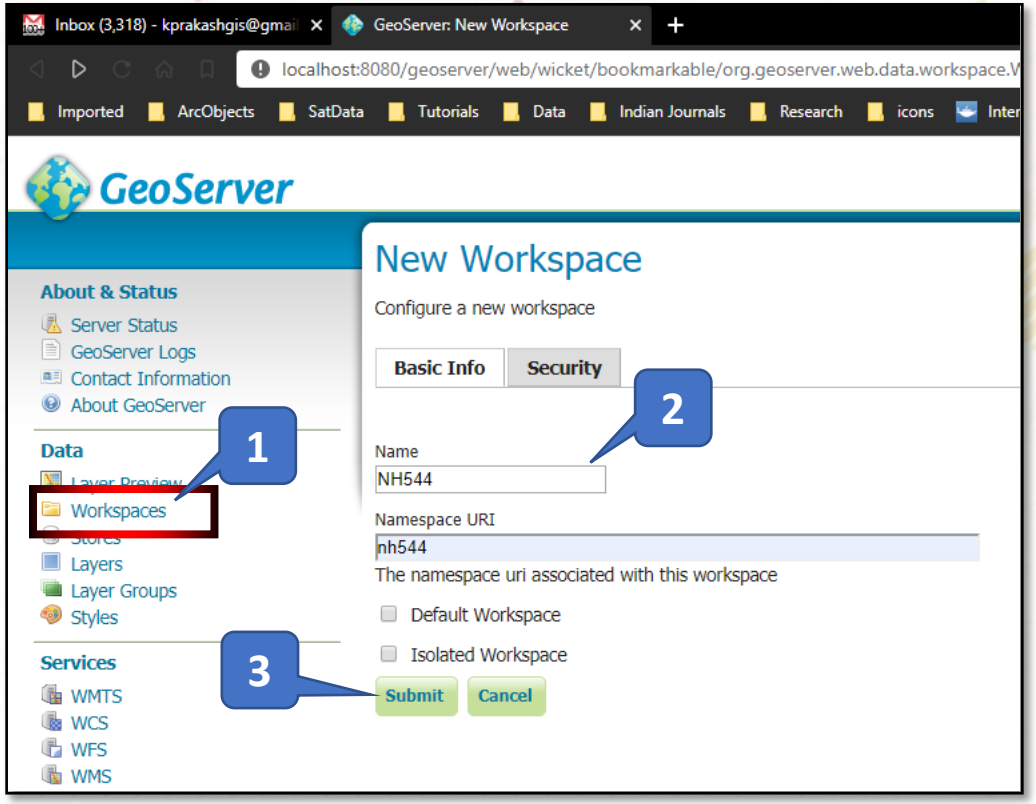
GeoServer Publishing

- Copy your shapefiles in "C:\Program Files (x86)\GeoServer\data_dir\data"
- Create Workspace
  - Login with credentials
  - Username: admin Password: geoserver
- Create Store
- Create Layers
- Preview Layers
  - Publish

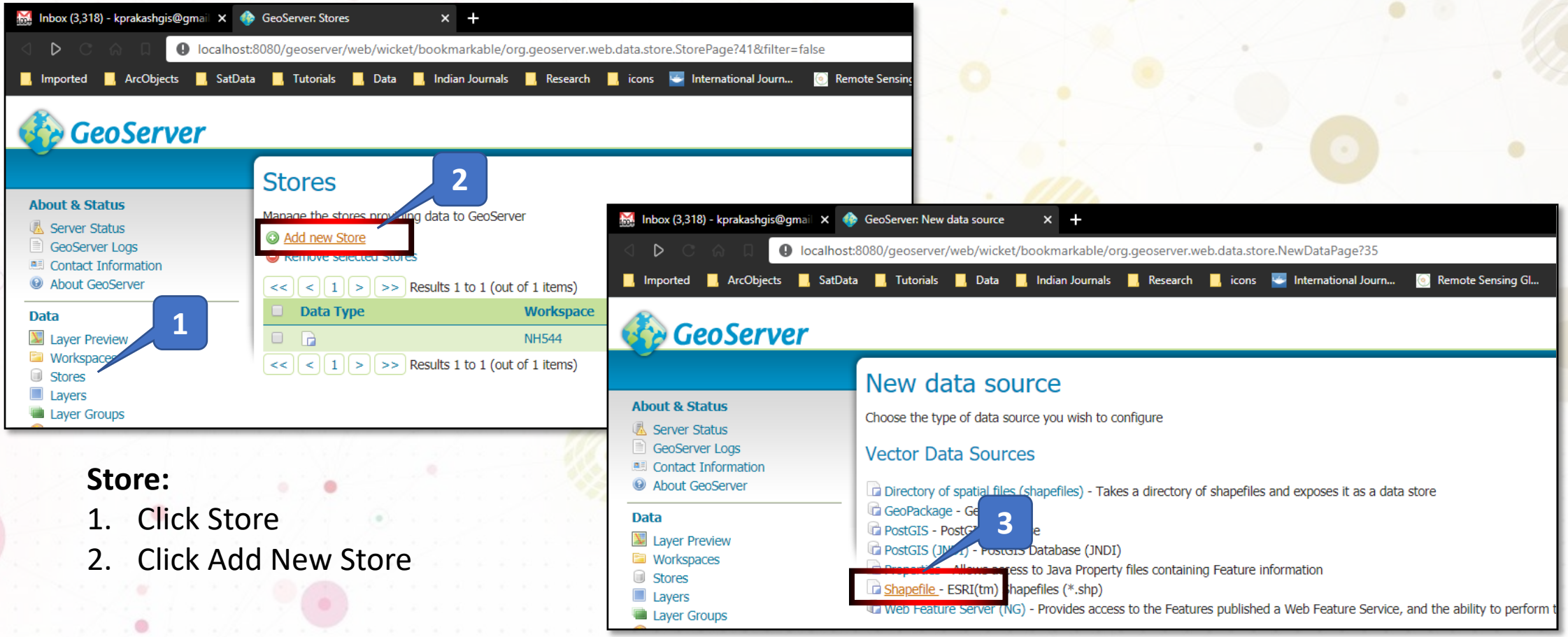
GeoServer Publishing



Workspace:

1. Click Workspace
2. Fill name and Namespace URI
3. Submit

GeoServer Publishing



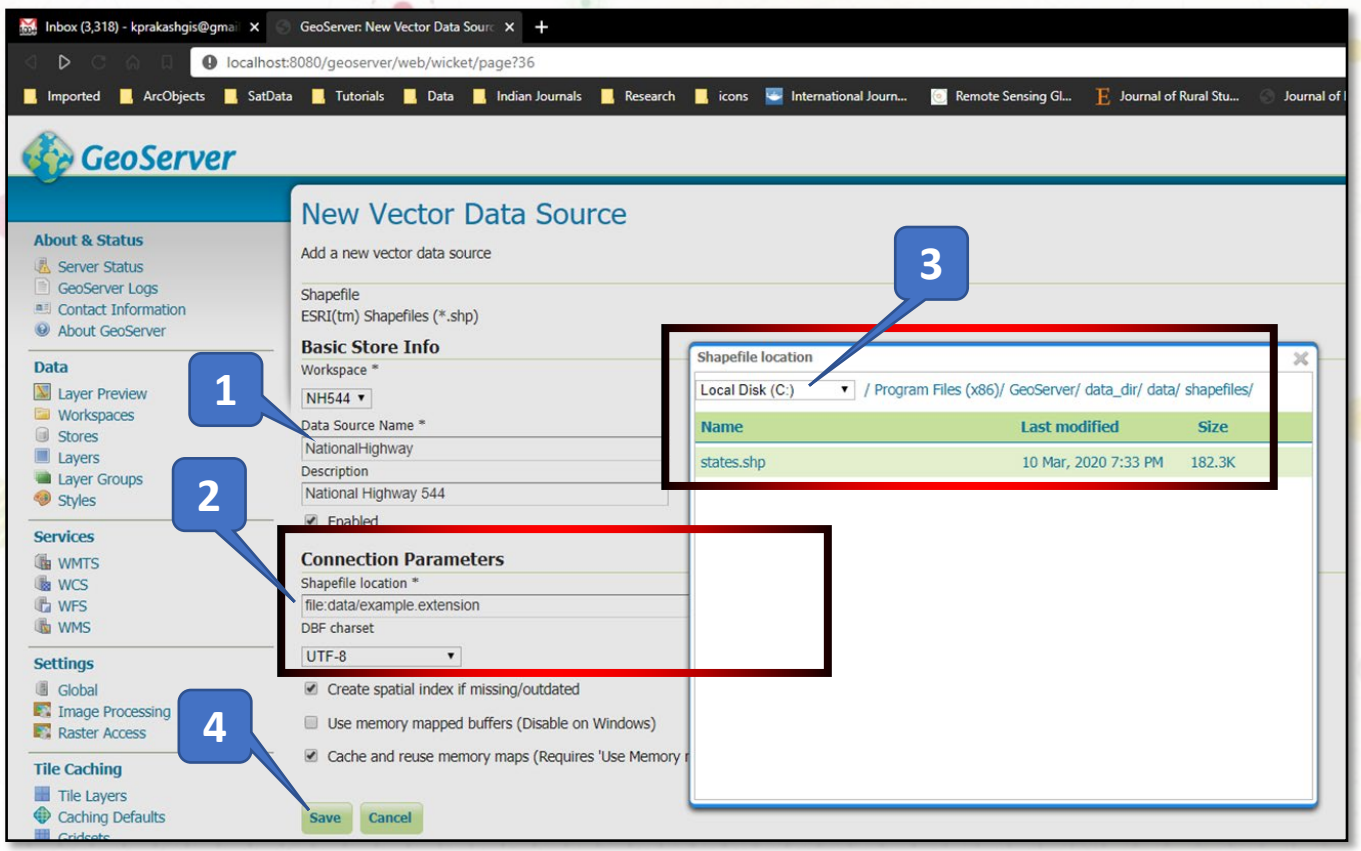
Store:

1. Click Store
2. Click Add New Store

New Data Source:

- Click Shapefile

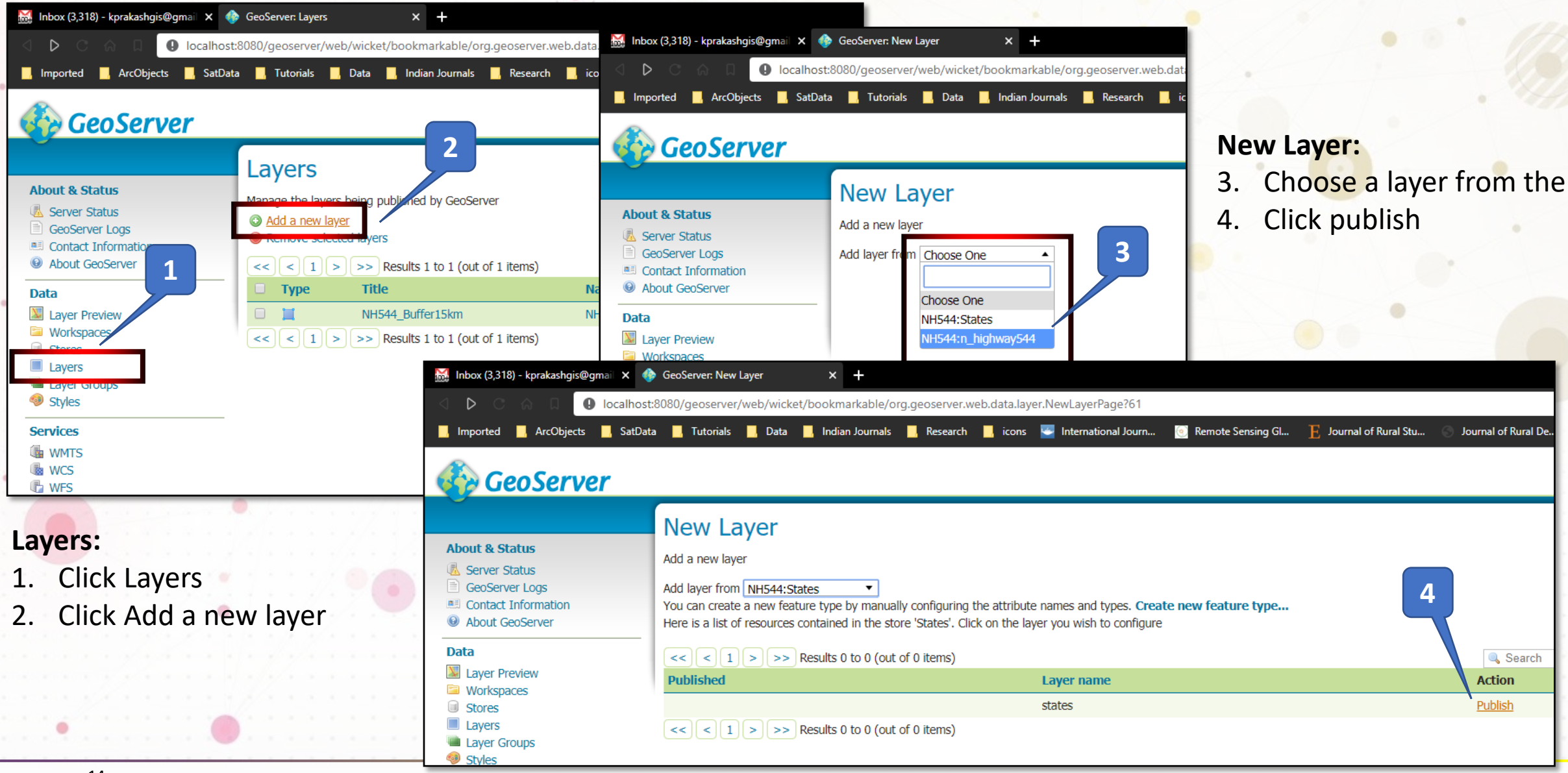
GeoServer Publishing



New Vectore Data Source:

1. Provide Data source name
2. Click Browse
3. Select the shapefile in the **"C:\Program Files (x86)\GeoServer\data_dir\data"** (Previously copied shapefile) and set DBF Charset to UTF-8
4. Save

GeoServer Publishing



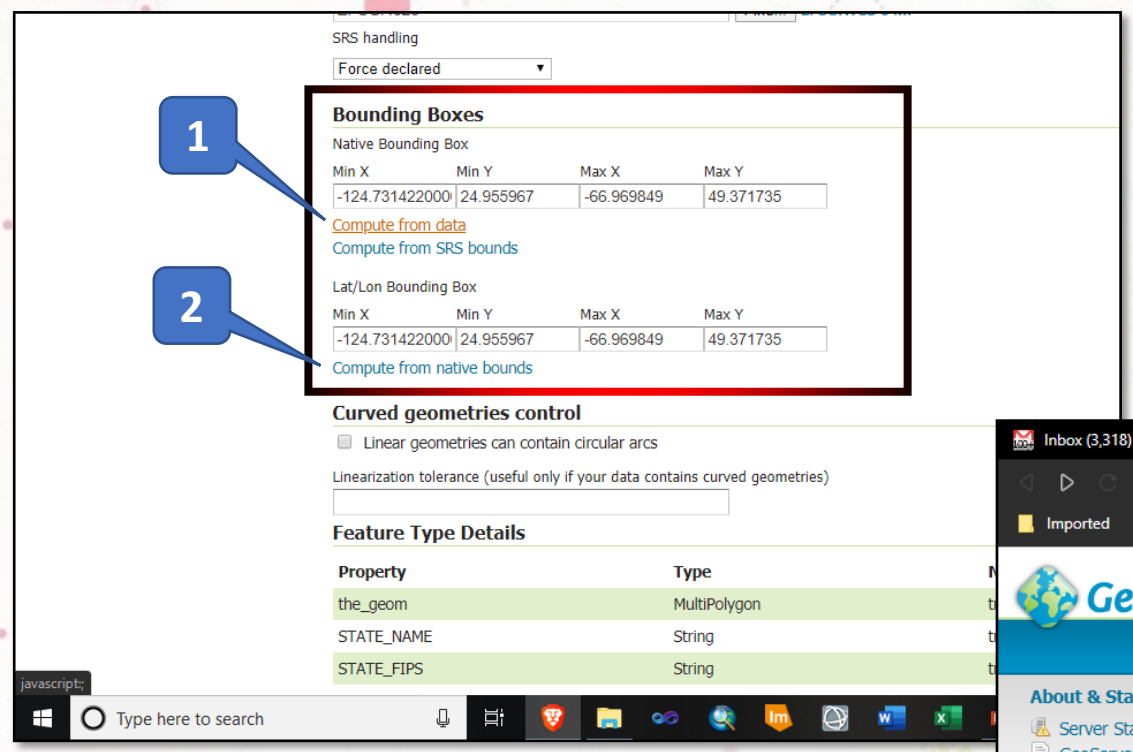
Layers:

1. Click Layers
2. Click Add a new layer

New Layer:

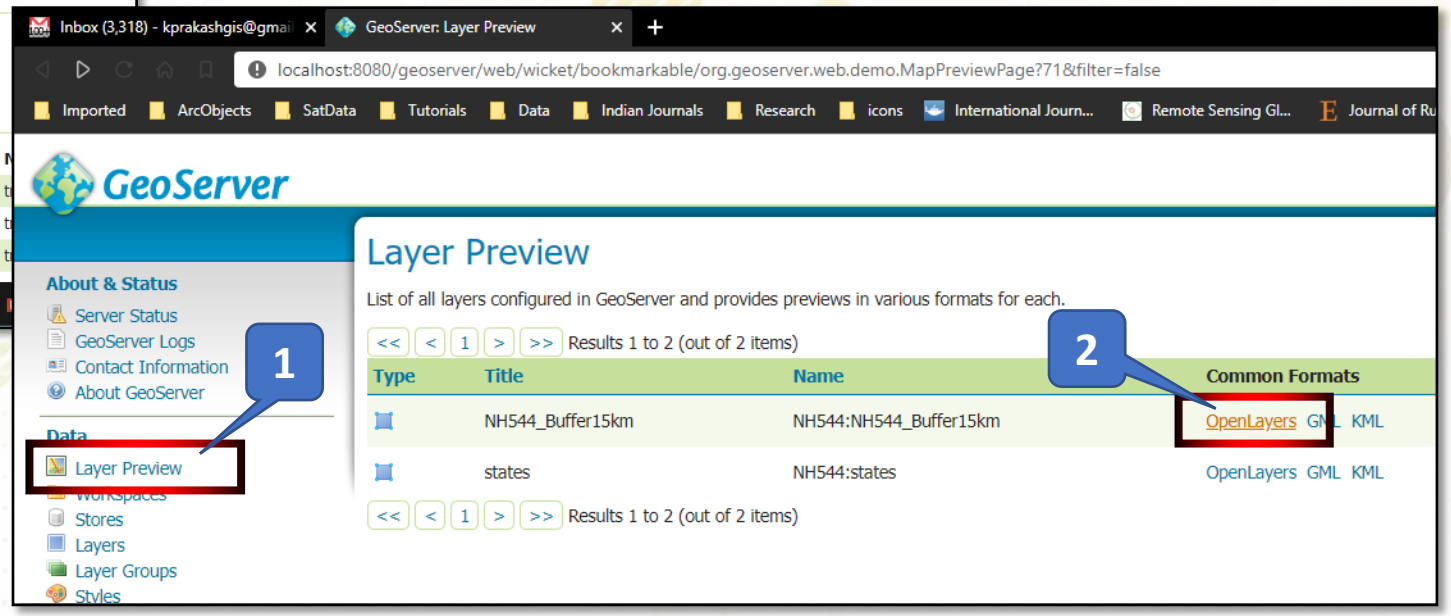
3. Choose a layer from the list
4. Click publish

GeoServer Publishing



Layers:

1. Click Compute from data
2. Click compute from native bounds
3. Scroll down and Click Save



Layers:

1. Click Layer Preview
2. Click OpenLayers for any layer to view in browser