5 - Installing the NBIA Application 7.1 GA

To newly install the NBIA 7.1 GA application and services, follow these steps.

⚠ **Before you begin!**

- You must install NBIA into a pre-installed Tomcat application server. The installation of NBIA will configure the Tomcat for running NBIA Portal and optional NBIA REST Service.
- You must install NBIA into a pre-existing MySQL database using a connection username/password.
- To upgrade from NBIA 6.0 to NBIA 7.1 GA, you must perform a fresh deployment of NBIA 7.1 GA, described on this page, and perform an upgrade on the database using the command line installer. For more information, see Upgrading NBIA to 7.1 GA.

Downloading NBIA Code

The NBIA download package is a ZIP package that includes the NBIA application, supporting libraries, the RSNA MIRC application (with NBIA modifications), documentation, and a sample NBIA database. The system utilizes a Java server that provides REST services to independent applications such as the Angular-based graphical user interfaces. It also includes a Solr server that indexes all tags in the DICOM headers and allows rapid retrieval based on any of the information in the tags. The applications are loosely coupled, enabling independent upgrades, speeding the delivery of features to users.

Install NBIA from the latest code at https://github.com/CBIIT/NBIA-TCIA.

Building and Installing NBIA

1. Install the required software.
    - Java 1.8.x
    - Ant 1.8.x
2. Use git to download the project.
3. Navigate to /software/build.
4. Type `ant dist`.
   This creates the install package in /target/dist.

Integrating with Eclipse

1. Select **File** > **Import**.
2. Select **Existing Projects into Workspace**.
3. Select the software directory within the working copy and click **Finish**.
4. Define a classpath variable, NBIA_BASE, to point to the /software directory.

ⓘ **Server Components in NBIA**

CTP is installed and configured as part of the NBIA installation. You do not need to do anything further to download or install the CTP server.

You can also pick and choose the components to install by commenting out or un-commenting the property in the `install.properties` file. `exclude.<component name>` For example, if there is no need to install the CTP server, just remove the "#" in front of the default setting "`#exclude.ctp=true`".

Installing NBIA

Command-Line Method of Installation

About Properties

An important component of NBIA command-line installation is configuring properties.

When you perform a command-line installation of NBIA for the first time, you work with the `install.properties` file that is included in `NBIA_install_ 7.1 GA.zip`. Refer to the sample `install.properties` file as well as more explanation of each property in the [NBIA 7.1 Configuration Properties](#). To upgrade from NBIA 6.0 to NBIA 7.1 GA, a fresh deployment of NBIA 7.1 GA is required with a database upgrade using the command-line installer. For more information, see [Upgrading NBIA to 7.1 GA](#).

In several instances in this section, property values must be modified. Note the following points about changing or entering variables.

> ⊘ **Tips for working with property files**
>
> - The paths in the `.properties` files should use *forward* slashes. For example, you would use `application.base.path. window=C:/apps/NBIA`, **not** `application.base.path.window=C:\apps\NBIA`. If you use backslashes, you will experience undesirable results.
> - You should not put any spaces in the property values of `*.properties` files (for example, `install.properties`). In Windows, note that the `C:\Documents and Settings{ }<username>` path contains spaces and the installation will likely fail. If you are using Windows, use a path such as `C:/apps/NBIA`.
> - In the `install.properties` file, any property value marked with <u>uppercase</u> `REPLACE_*` must be manually updated with the appropriate value.
> - In each `.properties` file, any property value marked with lowercase `replace_*` be optionally updated with the appropriate value.
> - In many of the steps below, there is a reference to a `database.system.user` for your MySQL server. To determine which users have full privileges to create and manage other databases, type ***show grants*** from a MySQL prompt to determine the correct level of privileges.
> - After installing NBIA 7.1 GA, a second properties file, `nbia.properties`, is created in the `lib` directory of Tomcat. To edit those properties, shut down Tomcat, edit the file, and then restart Tomcat.

> ⓘ **NBIA port values**
>
> Verify that default port values defined in the `install.properties` file are not in use on your system by running `netstat --a` from the command line. If the ports are in use prior to installation, you will likely experience problems with your installation.

Installing NBIA Using the Command-line Method

To install a new instance of NBIA 7.1 GA using the command-line, follow these steps:

1. From the directory where you [downloaded](#) `NBIA_install_7_1.zip`, unzip the files into a fresh directory. In this documentation, this location is referred to as the `<installer_directory>`.
   Example: `<installer directory> = C:\NBIA_7_1_installer`.

   > ⓘ **Property values are important!**
   >
   > Setting the property values is an important step in the installation process. Before you complete steps 2 and 3, review [About Properties](#). **Follow steps 2 and 3 carefully.**

2. Open `<installer_directory>/install.properties`, modify the values for your environment, and save the file.
   For detailed information on all of the properties, refer to [NBIA 7.1 GA properties documentation](#).
   At a minimum, you will likely need to modify the values for the following properties:

   System user and password and database name, user, and password should be the same for UPT and NBIA `install.properties`. For more information, see [4 - Installing and Configuring Software](#).

```
database.type
database.system.userdatabase.system.password
 database.server
 database.port
 database.name
 database.user
 database.password
 authentication.type
 mail.smtp.server
 ctp.server.admin.password
 ctp.client.admin.password
 tomcat.server.port
 gov.nih.nci.ncia.tomcat.home
 gov.nih.nci.NBIA.jboss.public.url
 gov.nih.nci.NBIA.admin.email
 gov.nih.nci.NBIA.grid.local.node.name
 gov.nih.nci.NBIA.imaging.server.url
 jar-signing.keystore.location=${user.home}/testdownload
 jar-signing.keystore.password=testdownload
 jar-signing.keystore.alias=testdownload
 jar-signing.execution.time=install
 jar-signing.generate-selfsigned=true
```

> ✓ **Default values**
>
> You should not need to modify the other default values as the application uses unique ports to reduce the risk of other applications using the same values. However, be sure to verify that the ports in this file are not being used by other applications.

3. From the command line, navigate to `<installer_directory>` (Example: `cd C:/NBIA_7_1_installer`), and type **_ant_**. This initiates the installation process. The anticipated duration is anywhere from 5-20 minutes, depending on your system's speed, power, and memory. The installer installs the NBIA schema in the specified pre-existing database in your database server. It configures and starts the Tomcat server for the web application and it installs and starts the CTP server.
4. To verify NBIA installation, do the following:

    a. Open your web browser to `http://<tomcat.server.hostname>:8080/ncia`
    b. Refer to the `installer_directory;/install.properties` file for the correct values.
    c. Log in with **_ncidevtest_** as the user and **_changeme_** as the password.
5. After successfully installing NBIA, make a backup of the `<installer_directory>/install.properties` file in a different directory for future reference.
6. Start NBIA.