Importing XINU into Atlas

Payas Awadhutkar

February 5, 2020

XINU (XINU Is Not Unix) [2] is a small operating system created by Douglas Comer and his colleagues for a course at the Purdue University. XINU continues to be used, not only for educational purposes, but also finds industrial use in small embedded devices such as microcontrollers. We will be using XINU to learn how to analyze software using Atlas [1]. This document will help you to import XINU code into Atlas and *index* it to be analyzed.

1 Import XINU

Atlas already has XINU bundled in it. All that is left is creating a new Eclipse Project to help you access it.

- Open Eclipse on your computer. Go to `File` → `New` → `Other`. This will pop-up a New Project Wizard.

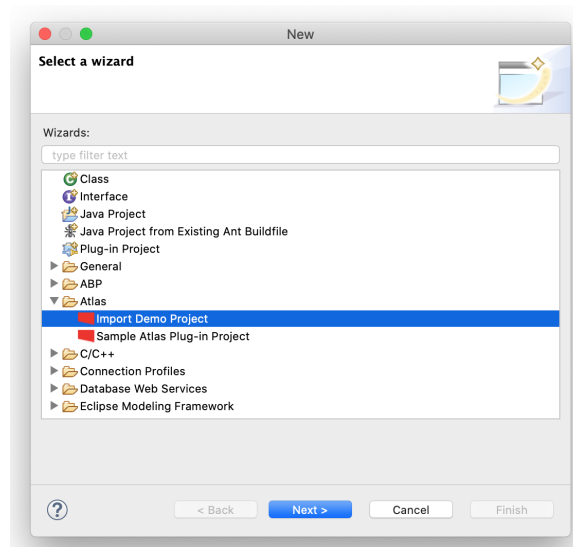- Refer to Figure 1 Under the category Atlas, select `Import Demo Project`. Click Next.

Figure 1: Atlas Project Wizard

- Refer to Figure 2. You should see a window like that. Currently, there is only one demo project available - XINU. Make sure it is selected and click Finish.
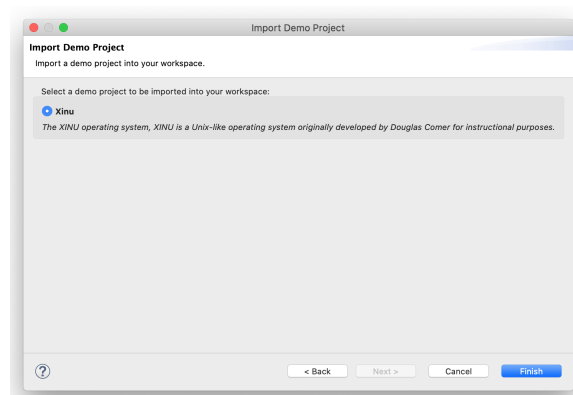

Figure 2: XINU Demo Project

- You should now have XINU code as an eclipse project in your workspace. Refer to Figure 3 and confirm that your workspace also has the XINU project.
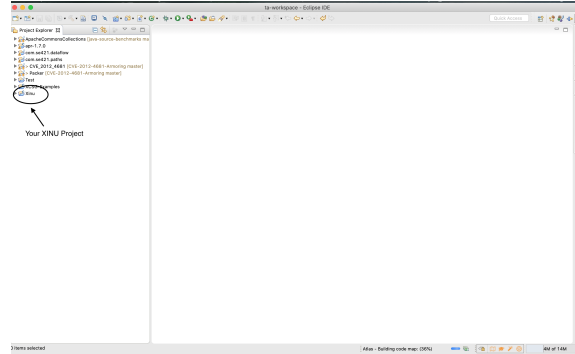
Figure 3: XINU Import Successful

2 Indexing XINU

In order to analyze XINU, for that matter any code, using Atlas, first it has to be *indexed/mapped* into Atlas. The process of transforming code into graphs compatible with the Atlas Query language is called Indexing. Sometimes, it is also called as mapping as the code is mapped to graphs. We will be using these terms interchangeably. Atlas currently supports indexing of C and Java code. The only restriction is that the code should be stored as an Eclipse Project.

- To index the XINU project into Atlas, first go to `Atlas` → `Manage Project Settings`.

- Refer to Figure 4. You should be seeing a window like that. This is the main control panel for Atlas. You can see a list of Projects which can be indexed on the left. Atlas automatically detects C and Java projects in your workspace and lists them here. Now you get to choose which should be indexed into the Atlas. As we want to analyze XINU, select XINU and then click `Add`. This will move XINU from the list on left to the list on right. Now click `Save & Re-map` and Atlas will start indexing XINU.

- Typically XINU takes a few seconds to index. You can see a progress bar on your bottom right. On a reasonably modern laptop this process is blink and miss. Now you're ready to analyze XINU.
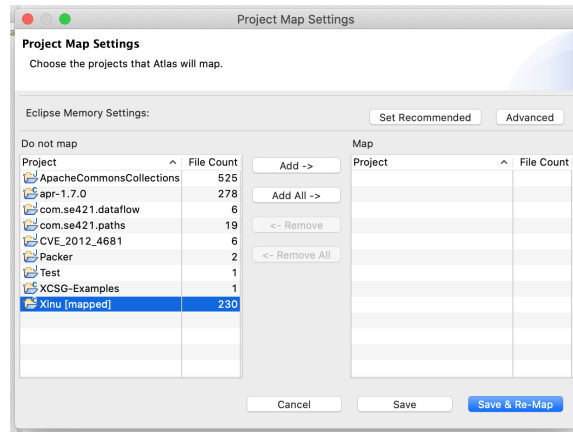
Figure 4: Atlas Project Settings

References

[1] EnSoft Corp. Atlas. https://www.ensoftcorp.com/atlas/.

[2] Purdue University Department of Computer Science. The xinu page. https://xinu.cs.purdue.edu/.