

# XNAT Developer Documentation

## What's New for Developers in XNAT 1.7?

XNAT 1.7 is very much a codebase in transition, as we are actively stepping toward an "XNAT 2.0" destination on the development roadmap. As such, there is a combination of old and new under the hood. For example, there are still Velocity templates for common report pages, but the new Admin UI is built in JSP using a YAML spec and a new-fangled widget spawner.

As such, expect to find a lot of new content and controls in this section.

## Building a Dev Instance

XNAT build instructions for developers is much the same as the [Vagrant Quick-install](#) instructions for users, but with more customization options available.

- [Setting Up An XNAT Development Instance](#)

## XNAT Under The Hood

- [XNAT Code Structure](#)
- [Using the XNAT Javascript API \(JLAPI\)](#)
- [Using the Form Element Spawner](#)
- [Multi-Node XNAT Considerations \(The Node/Task Framework\)](#)
- [Restricting Permissions on XAPI Calls with "restrictTo" Annotations](#)

## External XNAT Development

External developers can contribute to XNAT in a number of ways: adding functions, services and data types via plugins; adding processing capabilities via pipelines; or adding connectors between their own applications and XNAT data.

With the advent of a mature [XNAT API](#), it is easier for external developers to create a free-standing UI using whatever technology they choose, and connect all functions of that front end to XNAT services using the API. It is even possible, using CORS, to connect that front end to a remote XNAT.

## Plugin Development Guide

- [Data Persistence with the NRG Entity Service Framework](#)
- [Creating an XNAT Plugin Project](#)
- [Customizing User Interfaces in XNAT Plugins](#)
- [XNAT Plugin Configurations](#)
- [Working with Configurations and Preferences](#)
- [Developing XNAT Plugins](#)
- [XNAT Data Type Development](#)

[Uploading Plugins and Tools to the XNAT Marketplace](#)

## Pipeline Development Guide

- [XNAT Pipeline Development Schema](#)

## Migration Guide for XNAT 1.6 Customizations

- [Changes in XNAT that affect Customizations](#)
- [Converting XNAT 1.6 Modules to XNAT 1.7+ Plugins](#)

## Best Practices for Development

- [Version Control](#)
- [XNAT Developer Tools](#)