

# IBPSA Project 2: BOPTEST

## Repository Refactor

November 14, 2023

### **David Blum**

Computational Research Scientist/Engineer  
Building Technology and Urban Systems Division  
Lawrence Berkeley National Laboratory (LBNL)  
Email: [dhblum@lbl.gov](mailto:dhblum@lbl.gov)

# Current Structure

## **BOPTTEST (ibpsa/project1-boptest)**

- Software (Framework Python modules, Dockerfile)
- Test Cases (FMUs, Modelica models, docs, resources)
- Documentation (User Guide, Design Guide)
- Flask API for local deployment
- BACnet Interface
- Website content (branch *gh-pages-custom*)
- DOPTTEST (fork branch **JavierArroyoBastida/project1-boptest *doptest***)
- Tutorials/workshops

## **Gym Interface (ibpsa/project1-boptest-gym)**

- Gym environment for BOPTTEST
- Gym environment for BOPTTEST-Service (branch *boptest-gym-service*)

## **BOPTTEST-Service (NREL/boptest-service)**

- Extend BOPTTEST into web-service
- Web API for web-service usage (needs “/select” and “testid”)
- Helm chart for Kubernetes deployment

# Current Structure

## BOPTTEST (ibpsa/project1-boptest)

- Software (Framework Python modules, Dockerfile)
- Test Cases (FMUs, Modelica models, docs, resources)
- Documentation (User Guide, Design Guide)
- Flask API for local deployment
- BACnet Interface
- Website content (branch *gh-pages-custom*)
- DOPTTEST (fork branch [JavierArroyoBastida/project1-boptest doptest](#))
- Tutorials/workshops

## Problems (other than “project1” naming)

1. BOPTTEST is overloaded
2. DOPTTEST is far-removed
3. Interfaces need to maintain two slightly APIs
4. Updates to BOPTTEST need to be tested and aligned in BOPTTEST-Service

## Gym Interface (ibpsa/project1-boptest-gym)

- Gym environment for BOPTTEST
- Gym environment for BOPTTEST-Service (branch *boptest-gym-service*)

## BOPTTEST-Service (NREL/boptest-service)

- Extend BOPTTEST into web-service
- Web API for web-service usage (needs “/select” and “testid”)
- Helm chart for Kubernetes deployment

# Current Structure

## **BOPTTEST (ibpsa/project1-boptest)**

- Software (Framework Python modules, Dockerfile)
- Test Cases (FMUs, Modelica models, docs, resources)
- Documentation (User Guide, Design Guide)
- Flask API for local deployment
- BACnet Interface
- Website content (branch *gh-pages-custom*)
- DOPTTEST (fork branch **JavierArroyoBastida/project1-boptest** *doptest*)
- Tutorials/workshops

## **Gym Interface (ibpsa/project1-boptest-gym)**

- Gym environment for BOPTTEST
- Gym environment for BOPTTEST-Service (branch *boptest-gym-service*)

## **BOPTTEST-Service (NREL/boptest-service)**

- Extend BOPTTEST into web-service
- Web API for web-service usage (needs “/select” and “testid”)
- Helm chart for Kubernetes deployment

## **Problems** (other than “project1” naming)

1. BOPTTEST is overloaded
2. DOPTTEST is far-removed
3. Interfaces need to maintain two slightly APIs
4. Updates to BOPTTEST need to be tested and aligned in BOPTTEST-Service

# Current Structure

## BOPTTEST (ibpsa/project1-boptest)

- Software (Framework Python modules, Dockerfile)
- Test Cases (FMUs, Modelica models, docs, resources)
- Documentation (User Guide, Design Guide)
- Flask API for local deployment
- BACnet Interface
- Website content (branch *gh-pages-custom*)
- DOPTTEST (fork branch *JavierArroyoBastida/project1-boptest doptest*)
- Tutorials/workshops

## Gym Interface (ibpsa/project1-boptest-gym)

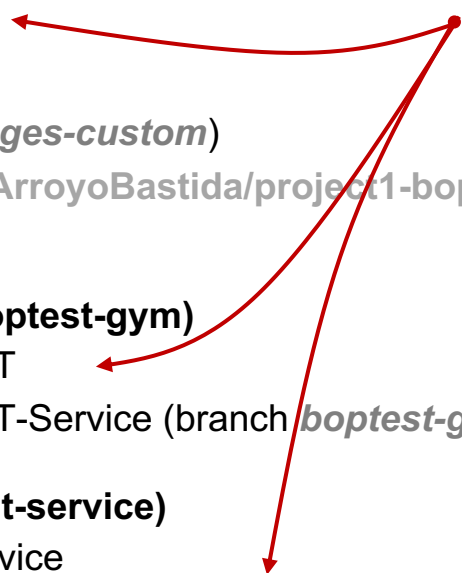
- Gym environment for BOPTTEST
- Gym environment for BOPTTEST-Service (branch *boptest-gym-service*)

## BOPTTEST-Service (NREL/boptest-service)

- Extend BOPTTEST into web-service
- Web API for web-service usage (needs “/select” and “testid”)
- Helm chart for Kubernetes deployment

## Problems (other than “project1” naming)

1. BOPTTEST is overloaded
2. DOPTTEST is far-removed
3. Interfaces need to maintain two slightly APIs
4. Updates to BOPTTEST need to be tested and aligned in BOPTTEST-Service



# Current Structure

## **BOPTTEST (ibpsa/project1-boptest)**

- Software (Framework Python modules, Dockerfile)
- Test Cases (FMUs, Modelica models, docs, resources)
- Documentation (User Guide, Design Guide)
- Flask API for local deployment
- BACnet Interface
- Website content (branch *gh-pages-custom*)
- DOPTTEST (fork branch *JavierArroyoBastida/project1-boptest doptest*)
- Tutorials/workshops

## **Gym Interface (ibpsa/project1-boptest-gym)**

- Gym environment for BOPTTEST
- Gym environment for BOPTTEST-Service (branch *boptest-gym-service*)

## **BOPTTEST-Service (NREL/boptest-service)**

- Extend BOPTTEST into web-service
- Web API for web-service usage (needs “/select” and “testid”)
- Helm chart for Kubernetes deployment

## **Problems** (other than “project1” naming)

1. BOPTTEST is overloaded
2. DOPTTEST is far-removed
3. Interfaces need to maintain two slightly APIs
4. Updates to BOPTTEST need to be tested and aligned in BOPTTEST-Service



# One Proposed Structure

## **BOPTTEST (ibpsa/boptest)**

- Software (Framework Python modules, Dockerfile)
- Documentation Source Code (User Guide, Design Guide)
- Deployment and API as web-service (can be local too)
- DOPTTEST functionality

## **Test Cases (ibpsa/boptest-testcases)**

- Test Cases (FMUs, Modelica models, docs, resources)

## **Gym Interface (ibpsa/boptest-gym)**

- Gym environment interface for BOPTTEST

## **BACnet Interface (ibpsa/boptest-bacnet)**

- BACnet interface for BOPTTEST

## **Website (ibpsa/boptest-website)**

- Website content
- Tutorials/workshops?
- Meeting presentations/minutes?

## The good:

- More organized
- Smaller repos
- Single deployment infrastructure for local and web-service

## The downsides:

- Distributed management
- Separated CI testing
- Will take some time and effort for transition