

DGIT CTRL TEAM

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MAINTAINING OPENACS-BASED WEB APPLICATIONS OVER DECADES & MANAGING TECHNICAL DEBT

Khy Huang

BACKGROUND



- Started with ACS 3.x back in 2000
- Began with a few developers, PI, project manager, graphic designer, and interns
- 80+ projects – administrative, clinical, research data collection / management
- Oldest currently in operation OpenACS 5.2.2 on Oracle DB



CHALLENGES



- System administration software and hardware
- Managing features / code
- OpenACS upgrades
- Project operation / support
- Technical debt

OLD DEVELOPMENT PRACTICES



- Used CVS / SVN – concurrent version software
- Installed modules from central repository
- Customized central project packages for each project
- Created inhouse modules and further customization

NEW CHALLENGES



- Compliance
- Security
- Changes in administrative / business rules
- Integration with SAAS systems – ServiceNow, RobinPowered, etc...
- Covid (shift in work environment & team dynamics)
- Cloud operations and optimization

CURRENT DEVELOPMENT PRACTICES



- Github
- AWS Cloud
- CI/CD pipeline (automation)
- Upgrading OpenACS / Naviserver frequently
- Standardization of internal practices
- Project management (SCRUM)
- Part of larger organization (access resources / shared administration)

DEV PRACTICES – TECHNICAL DEBT

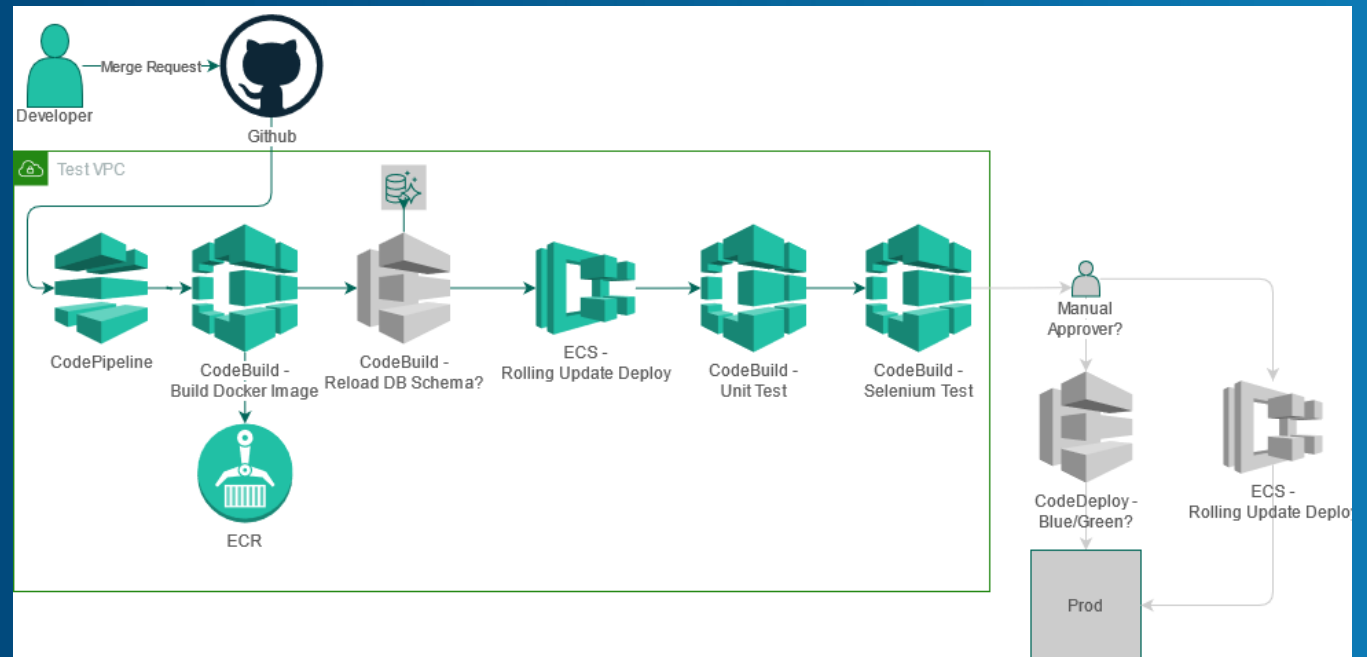


- AWS CodePipeline
- Github Submodules
- Central Project Package
- Package files are stored in folder separate form (pkg-content)
- Package extension

AWS CODEPIPELINE



- Pull request on feature push
- Trigger of unit test cases
- Trigger of EOE test cases



GITHUB SUBMODULES



Maintains package-specific versions with a copy in the repository

- Package versions are part of the project
- Project upgrade with updated package versions

GITHUB SUBMODULE:



```
[submodule "packages/ctrl-audit-log"]
  path = packages/ctrl-audit-log
  url = https://github.com/uclahs-ctrl/oacs-pkg_ctrl-audit-log.git
[submodule "packages/ctrl-db-util"]
  path = packages/ctrl-db-util
  url = https://github.com/uclahs-ctrl/oacs-pkg_ctrl-db-util.git
[submodule "packages/ctrl-procs"]
  path = packages/ctrl-procs
  url = https://github.com/uclahs-ctrl/oacs-pkg_ctrl-procs.git
[submodule "packages/ctrl-login"]
  path = packages/ctrl-login
  url = https://github.com/uclahs-ctrl/oacs-pkg_ctrl-login.git
```

PACKAGE EXTENSION



- Creates new package with the same parameters as extension packages
- Customization of individual page (previously we would create a directory under `www/${site_map}`).
- Multiple instances of customized pages
- Customization is portable to other projects
- Upgrades to underlying packages

CENTRAL PROJECT PACKAGE



- Create a central package for the project
- Container for resources
- Container for configurations – package parameters
- Container for project functionality – pages, tcl , db
- Project versioning that matches the GitHub versioning

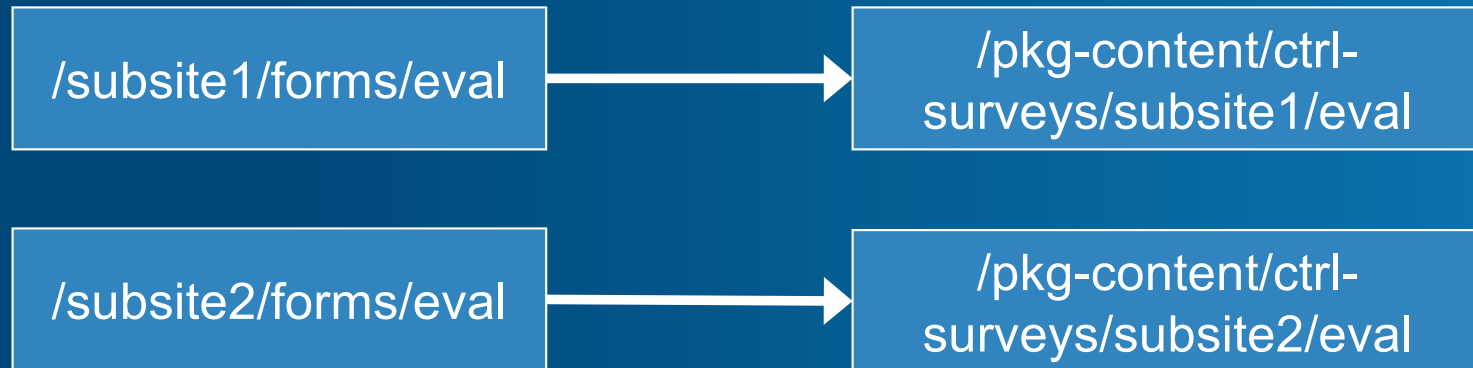
PACKAGE CONTENT FOLDER



`${project}/pkg-content/${package_name}/....`

- Upgrade without worrying about the loss of content
- Package content versioned by Git
- Moving files from dev to staging to prod

PACKAGE CONTENT AND SUBSITES



PACKAGE: TRACKER LITE



Tracker Lite - entity attributes tracking and engagement

The screenshot shows the 'Data Informed Futures' web application interface. The top navigation bar includes 'Dashboard', 'Sites', 'Users', 'Reports', and 'Site-Wide'. A user greeting 'Welcome, acs ctrl' is visible on the right. The left sidebar lists navigation options: 'Participants', 'Programs', 'Surveys' (highlighted), 'Reports', 'Notes/Call Logs', 'Users', and 'Administration'. The main content area is titled 'Surveys' and features a search bar with the text 'test' and a result 'Test1Test'. An 'Add Survey +' button is present. Below the search bar is a table with columns: 'Client ID', 'Code', 'Name', 'Enabled?', 'Shared?', and 'Actions'. The table is currently empty, displaying the message 'No data available in table'. At the bottom of the table area, it says 'Showing 0 to 0 of 0 entries' and includes 'Previous' and 'Next' navigation buttons. A search input field is also visible on the right side of the table area.

PROJECT SHOWCASE : DIF



Data Informed Futures – questionnaire management and dissemination for students / participants

The screenshot displays the Data Informed Futures web application. The top navigation bar includes 'Dashboard', 'Sites', 'Users', 'Reports', and 'Site-Wide'. The user is logged in as 'Welcome, acs ctrl'. The breadcrumb trail shows 'Sites / California / Year 2022-2023 / Classroom: Classroom - 16243'. On the left, a tree view shows the hierarchy: Year: 2022-2023 > District - 13 > Panem > Classroom - 16243. The main content area is titled 'CLASSROOM DETAILS' and contains the following information:

- School:** Panem
- Calendar Year:** 2022-2023
- Classroom Name:** Classroom - 16243
- Description:**
- Tags:**
- Creation Date:** 07/15/2023 07:03 am
- Created By:** Adrian Ferenc
- Teacher:** Effie Trinket
- Tool:** Early Development Instrument (EDI)
- Survey Open Date:** 07/01/2022
- Survey Close Date:** 06/30/2023
- Class Time:** All Day

Below the details are three tabs: 'STUDENTS/PARENTS 10', 'UPLOADED ROSTERS', and 'NOTES/CALL LOGS'. There is an 'Add User +' button. A legend shows 'Not Started', 'In Progress', and 'Completed' checkboxes. A table below shows a list of students with columns for ID, Name, Email, Initials, Sex, DOB, Status, Role, % Completed, and Actions. The first row shows a student with ID 83794, Name Student 33710, Email student-83794@school.dif.com, Initials S.3., Sex F, DOB 01/01/1999, Status Not Started, Role Student, and % Completed 0%.

ID	Name	Email	Initials	Sex	DOB	Status	Role	% Completed	Actions
83794	Student 33710	student-83794@school.dif.com	S.3.	F	01/01/1999	Not Started	Student	0%	Edit, Password, Note, Delete

PROJECT SHOWCASE: OUTREACH (CRM)



UCLA Outreach & Pathway Website

[Home](#) [Outreach/Table Events](#) [Students/Applicants](#) [Communications](#) [Notes/Call Logs](#) [Data Export](#) [Site Wide](#) Logout

Recent Activity

Last:

Entries with Stated Interest	11
New Prep Applicants	476
New Registrants	505
Percentage of Participants in California	22.56
Potential Duplicate Entries	8
Re-Engaged Applicants	65

Showing 1 to 6 of 6 entries

Events

Last:

Show entries Search:

Name	Type	# of Participants	Date
No data available in table			

Showing 0 to 0 of 0 entries Previous Next

Recent Notes

Last:

Show entries Search:

#	Note Date	Note Type	Note	Author	Effort	Location	Custom Keywords	Actions
No data available in table								

Showing 0 to 0 of 0 entries Previous Next

THANK YOU



- FEEDBACK
- QUESTIONS