Project SuperGlue, the Next Generation

MYPATH, CCCAPPLY, GRAPHQL, AND ETHOS
What is project SuperGlue?

- Project SuperGlue was created in 2015 to provide an integration layer with college student information systems for use in the Online Education Initiative.
- Started with the College Adapter has since been expanded to a suite of enterprise services in support of new initiatives.
- Provides integrations for CCCApply, MyPath and MMPS placement services.
SuperGlue Features

- Secure SIS integration (Glue for Apply, Placements, Student APIs).
- Powerful service orchestration offering deep troubleshooting, auditing and “replay” functionality.
- Modern, container-based software powered by Docker and Amazon AWS.
- Standards based security based on OpenIDC and SAML 2.0
- GraphQL and RESTful based APIs available for application development.
SuperGlue Overview
CCC Apply Service Orchestration Example

- Workflow Execution Monitoring
- Full Text Search Enabled
- Deep Troubleshooting Features
- “Replay” Functionality
- Extensible Workflows allow for updated flows without service disruption
Workflow Configuration Example

- Workflow configuration allows for “low code” implementations of service workflows. Workflows defined in JSON can be managed with source control and configured without deployment.

- Workflows support parameterized inputs for sensitive information keeping keys/secrets out of the workflow definitions.

```json
{
  "updateTime": 161166852223,
  "name": "studentApplicationInboundWF",
  "description": "Gets Student Application (APPLY, CCPG, IA) and shares",
  "version": 6,
  "tasks": [
    {
      "name": "http-generic",
      "taskReferenceName": "auth",
      "inputParameters": {
        "http_request": {
          "accept": "application/json",
          "contentType": "application/json",
          "method": "POST",
          "readTimeOut": 15000,
          "uri": ":\{workflow.input.oauth-uri\}\""  
        
      
    },
    "type": "HTTP",
    "decisionCases": {},
    "defaultCase": [],
    "forkTasks": [],
    "startDelay": 0,
    "joinOn": [],
    "optional": false,
    "defaultExclusiveJoinTask": [],
    "asyncComplete": false,
    "loopOver": []
  },
  "name": "http-generic",
  "taskReferenceName": "get-student-application",
  "inputParameters": {
    "http_request": {
      "method": "GET",
      "accept": "application/json",
      "contentType": "application/json",
      "headers": {
        "Authorization": "Bearer \{auth.output.response.body.access_token\}\",
        "readTimeOut": 15000,
        "uri": "\{workflow.input.application-uri\}\""
      }
    }
  }
}
```
GraphQL is a query language for APIs and a runtime for fulfilling those queries with your existing data. GraphQL provides a complete and understandable description of the data in your API, gives clients the power to ask for exactly what they need and nothing more, makes it easier to evolve APIs over time, and enables powerful developer tools.

- graphql.com
SuperGlue and Apollo GraphQL – Why?

SuperGlue has a suite of RESTful APIs that provide many features. While RESTful APIs are a great way to expose data, there are many cases where GraphQL improves an API layer.

- One API endpoint for all request vs many endpoints with REST
- GraphQL is organized by types instead fields and endpoints. This ensures clients ask for only data that’s possible and provide relevant errors. Types reduce manual parsing code
- GraphQL supports role-based attribute control by default.
- APIs can progress without versioning
- Apollo GraphQL can wrap existing REST apis to avoid “rewrites”
- The Apollo Client provides a powerful interface to the GraphQL API allowing application developers to focus on the application instead of handling API calls with complex routes and error handling.
Demonstration
SuperGlue Recent Updates

- Integration with MyPath and Ethos have been prioritized.
- Apollo has enabled our developers with advanced capabilities to deliver the features needed without rewriting our API layers.
- Apollo client consolidates API access code.
- Ethos integration is in development. Ethos provides GraphQL services further improving developer harmony.
- Powerful development tools such as the "API playground" can now be leveraged across all GraphQL APIs enabling easier development and testing.
Benefits for SuperGlue API Users

- Improved stability and support capabilities.
- Deeper integration with Apply and MyPath.
- Modern security based on OpenID Connect provides industry standard API security and access control.
- Improved developer experience for SuperGlue API. Powerful development tools such as the “API playground” can now be leveraged across all GraphQL APIs enabling easier development and testing.
- Continued improvement of “SuperGlue for Apply” and the college adapter.
Questions?

Thank you for attending this session!

SuperGlue Public Documentation:
https://cccnext.jira.com/wiki/spaces/GLUEPD/overview

Introduction to Project SuperGlue:
  An+Introduction+to+Project+SuperGlue