

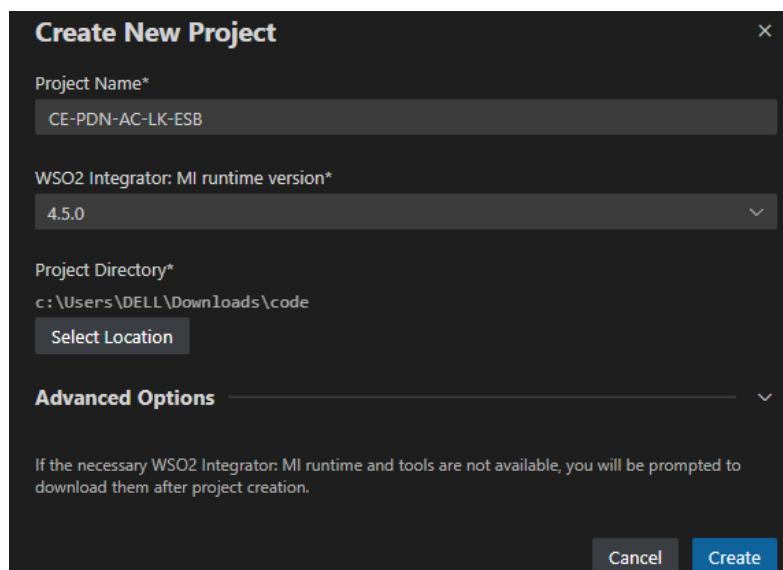
Building an ESB Proxy with WSO2 Micro Integrator & VS Code

Edirimanna Y.H.

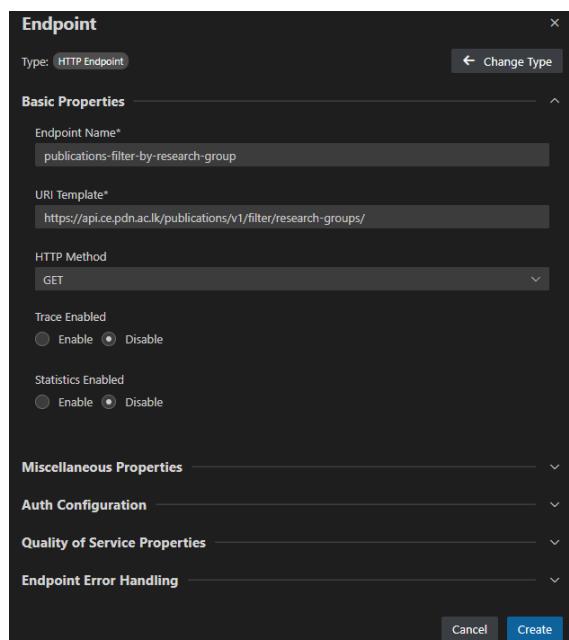
E/20/089

GitHub repository link- <https://github.com/YasiruHarinda/CO528-Labs/tree/main/CE-PDN-AC-LK-ESB>

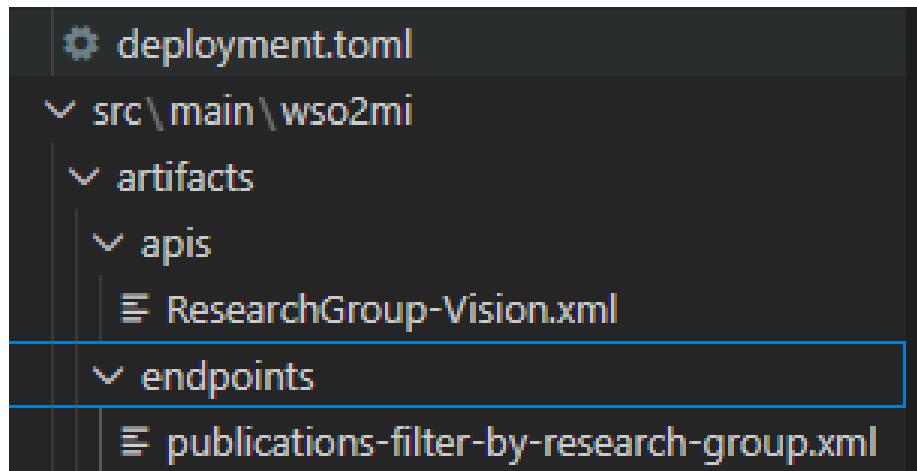
Create a New Integration Project



Create HTTP Endpoints for the Backend APIs



This will create an endpoint XML



Add Resource

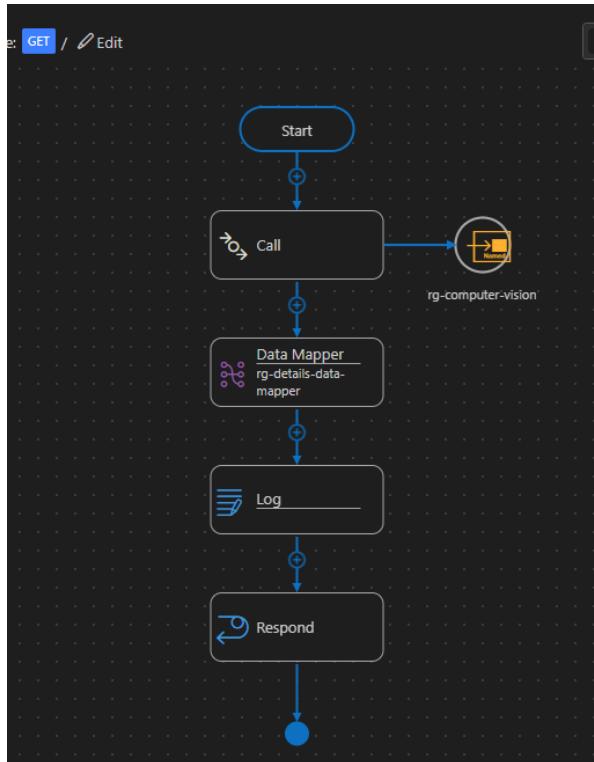
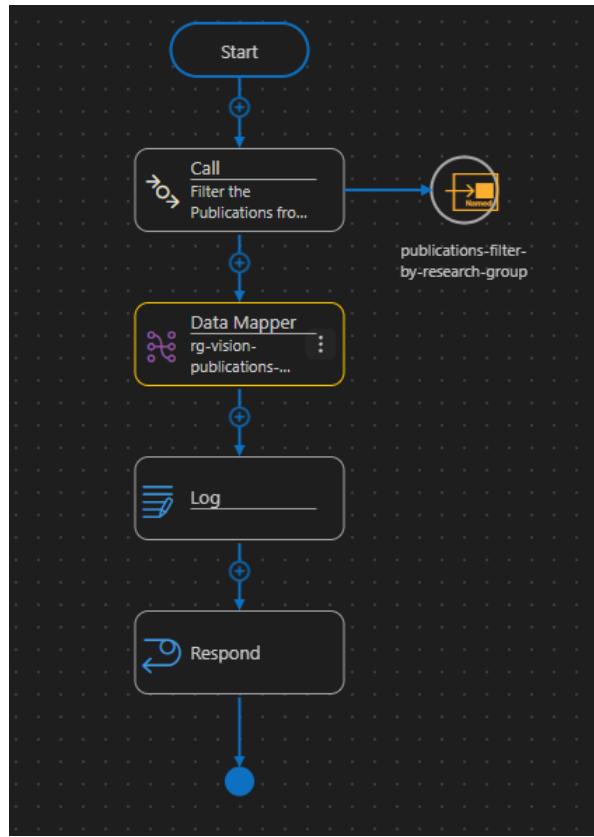
The screenshot shows the Service Designer interface with the following details:

Service Designer / Edit

Available resources

Method	Path
GET	/
GET	/publications

Wire the API to the Endpoints



outputs

GET http://localhost:8290/research-groups/v1/vision/publications

GET http://localhost:8290/research-groups/v1/vision/publications

Params Authorization Headers (6) Body Pre-request Script Tests Settings Cookies

Body Cookies Headers (24) Test Results

Pretty Raw Preview Visualize JSON

```
1 "data": [
2   {
3     "title": "A Retinex based GAN Pipeline to Utilize Paired and Unpaired Datasets for Enhancing Low Light Images",
4     "venue": "NERcon",
5     "year": "2028",
6     "abstract": "Low light image enhancement is an important challenge for the development of robust computer vision algorithms. The machine learning approaches to this have been either unsupervised, supervised based on paired dataset or supervised based on unpaired dataset. This paper presents a novel deep learning pipeline that can learn from both paired and unpaired datasets. Convolution Neural Networks (CNNs) that are optimized to minimize standard loss, and Generative Adversarial Networks (GANs) that are optimized to minimize the adversarial loss are used to achieve different steps of the low light image enhancement process. Cycle consistency loss and a patched discriminator are utilized to further improve the performance. The paper also analyses the functionality and the performance of different components, hidden layers, and the entire pipeline.",
7     "authors": [
8       "Harshana Weligampola",
9       "Gihan Jayatilaka",
10      "Suren Sridharan",
11      "Roshan Goldaiyadda",
12      "Parakrama Ekanayake",
13      "Roshan Ragel",
14      "Vijith Herath"
15    ],
16    "author_info": [
17      {
18        "name": "Harshana Weligampola",
19        "profile": "#",
20        "type": "OUTSIDER",
21        "id": "#",
22        "email": "#",
23        "profile_image": "#",
24        "profile_url": "#"
25      }
26    ]
27  }
28]
```

GET http://localhost:8290/research-groups/v1/vision/

GET http://localhost:8290/research-groups/v1/vision/

Params Authorization Headers (6) Body Pre-request Script Tests Settings Cookies

Body Cookies Headers (11) Test Results

Pretty Raw Preview Visualize JSON

```
1 "status": "success",
2 "data": [
3   {
4     "code": "vision",
5     "name": "Computer Vision",
6     "description": "We are a research group consisting of faculty, students and external collaborators trying to push the boundaries of computer vision theory and applications.",
7     "primary_contact_person": "roshan@eng.pdn.ac.lk",
8     "maintainer": "roshan@eng.pdn.ac.lk",
9     "page": "https://portal.ce.pdn.ac.lk/download/taxonomy-page/computer-vision",
10    "website": "https://vision.ce.pdn.ac.lk/"
11  }
12]
```

MI console logs

```
[2025-12-29 22:43:42,014] INFO {LogMediator} - {api:ResearchGroup-Vision GET /research-groups/v1/vision/publications} MessageID: urn:uuid:f1b1dc6c-6cac-4fe5-8a4a-ce0a712af96d, correlation_id: b513e68c-94c2-47b2-a88b-6519ef630672,
```

how the ESB based Research Group API simplifies department API management

- The ESB helps ensure consistency in the structure of the data fed into the client applications despite changes in the structure of the services within an organization.
 - It mainly routes the request to the proper back-end services without having the clients need to route the request.

- By acting as an intermediary, the ESB can decrease the dependencies between clients and backend systems.
- The ESB enables centralized monitoring, which enhances visibility when dealing with APIs.
- Overall, ESB improves both stability and controllability in interactions involving department APIs.