

Ballerina

Swan Lake

Housekeeping

- Please ensure your mic is muted during the presentation and demo
- Please use the chat box to ask any questions you may have during the session
- We will have a Q&A at the end of this sessions and will take any questions during this time
- This session will be recorded



Ballerina

Swan Lake

Beyond CLI Basics: Using Extended Ballerina CLI Tools for Powerful Integrations

Gayal Dassanayake

June 2024

In this talk,

Ballerina CLI	05
Extended CLI Tools	09
EDI Tool	14
Integrating Tools with the Package Build	23
QnA	30

Ballerina CLI

- A tool box for all things you do in Ballerina
 - Core Commands
 - Package Commands
 - Update Commands
 - Other Commands

Ballerina CLI : Core Commands

- Interact with Ballerina Programs
 - build
 - run
 - test
 - doc
 - pack

Ballerina CLI : Package Commands

- Create, manage, and share Packages
 - new
 - push
 - search
 - graph
 - deprecate
 - semver

Ballerina CLI : Update Commands

- Manage the Ballerina installation
 - dist
 - pull
 - update
 - list
 - use
 - remove
 - update

Ballerina CLI : Other Commands

- Develop integrations
 - openapi
 - graphql
 - asyncapi
 - grpc
 - persist
- Other commands
 - format
 - version
 - profile
 - tool

Extended CLI Tools : Why?

- Ballerina tool chain is ever growing
- Having all tools pre-installed doesn't make sense for all users. Some tools are domain specific

`bal tool` Command

- Manages the life cycle of tools

Ballerina
Central



Extended CLI Tools : Demonstration

[Code Sample](#)



Extended CLI Tools : Ecosystem

edi	tooling to work with EDI files in Ballerina
health	tooling required for developing healthcare integrations
copybook	transforms copybook definitions into Ballerina code
scan	Ballerina static code analyzer (Coming soon)

- The pool of tools will continue to grow

EDI tool : What is EDI?

- Electronic Data Interchange
- Automated exchange of business documents
 - Invoices
 - Purchase Orders
 - Quotation Requests

EDI tool : Why EDI?

Company A

Generates a
Purchase Order



mail/ fax/ email



Company B

Records the
Purchase Order



Records the
Invoice



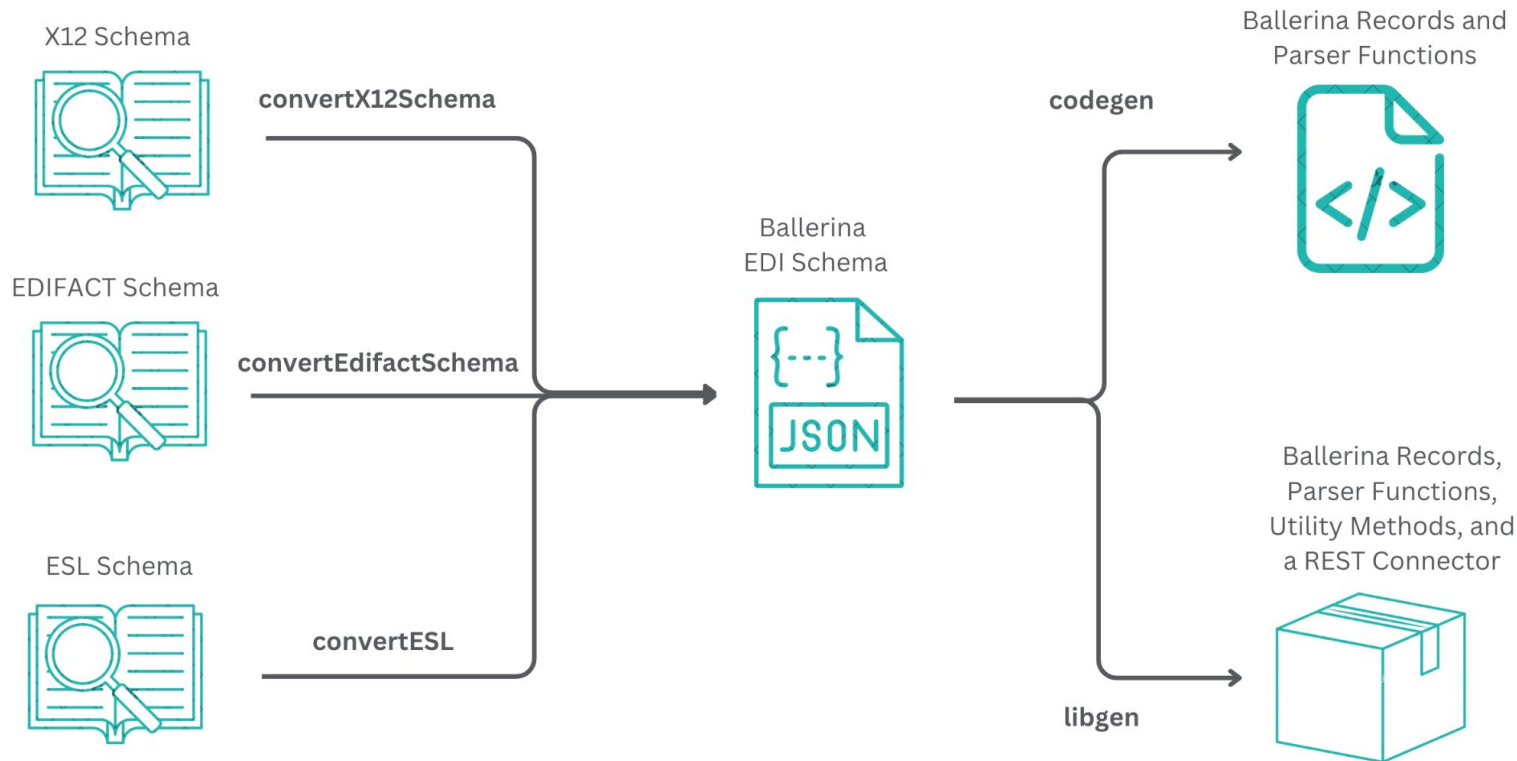
mail/ fax/ email



Generates an
Invoice



EDI tool : Ballerina with EDI



EDI tool : Ballerina EDI Schema

```
{
  "name": "PurchaseOrder",
  "delimiters" : {"segment" : "~", "field" : "*", "component": ":", "repetition": "^"},
  "segments" : [
    {
      "code": "HDR",
      "tag" : "header",
      "minOccurrences": 1,
      "fields" : [{"tag": "code"}, {"tag" : "orderNumber"}, {"tag" : "date"}]
    },
    {
      "code": "SUP",
      "tag" : "supplier",
      "minOccurrences": 1,
      "fields" : [{"tag": "code"}, {"tag" : "name"}, {"tag" : "email"}]
    },
    {
      "code": "ITM",
      "tag" : "items",
      "maxOccurrences" : -1,
      "fields" : [{"tag": "code"}, {"tag" : "item"}, {"tag" : "quantity", "dataType" : "int"}]
    }
  ]
}
```

EDI tool : EDI Document

HDR*ORDER_1201*2024-06-25~

SUP*XYZ_ELECTRONICS*johndoe@xyz.com~

ITM*A-250*12~

ITM*A-45*100~

ITM*D-10*58~

ITM*K-80*250~

ITM*T-46*28~

EDI tool : EDI Document

HDR*ORDER_1201*2024-06-25~

← HEADER (code, orderNumber, date)

SUP*XYZ_ELECTRONICS*johndoe@xyz.com~

ITM*A-250*12~

ITM*A-45*100~

ITM*D-10*58~

ITM*K-80*250~

ITM*T-46*28~

EDI tool : EDI Document

HDR*ORDER_1201*2024-06-25~

SUP*XYZ_ELECTRONICS*johndoe@xyz.com~

← SUPPLIER (code, name, email)

ITM*A-250*12~

ITM*A-45*100~

ITM*D-10*58~

ITM*K-80*250~

ITM*T-46*28~

EDI tool : EDI Document

HDR*ORDER_1201*2024-06-25~

SUP*XYZ_ELECTRONICS*johndoe@xyz.com~

ITM*A-250*12~

ITM*A-45*100~

ITM*D-10*58~

ITM*K-80*250~

ITM*T-46*28~



ITEM (code, item, quantity)

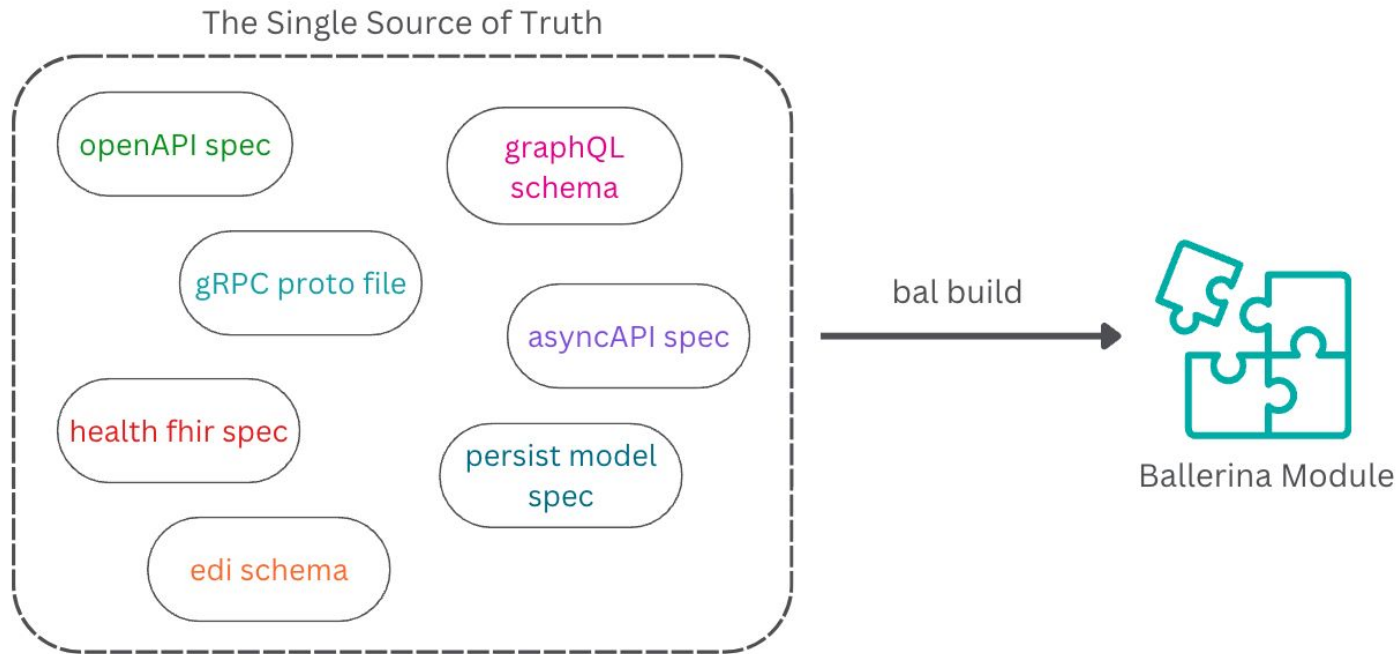
EDI tool : Demonstration

Code Sample



Integrating tools with the Build: Why?

- To have a single source of truth to generate code during package build



Integrating tools with the Build: How?

```
// Ballerina.toml
```

```
[package]  
org = "gayaldassanayake"  
name = "inventory_service"  
version = "1.1.0"  
distribution = "2201.9.2"
```


Integrating tools with the Build: How?

```
[package]
```

```
org = "gayaldassanayake"
```

```
name = "inventory_service"
```

```
version = "1.1.0"
```

```
distribution = "2201.9.2"
```

```
[[tool.openapi]]
```

```
id = "delivery_service"
```

```
filePath="delivery-oas.yaml"
```

```
targetModule="delivery"
```

```
options.mode = "client"
```

```
options.license = "../license.txt"
```

Integrating tools with the Build: How?

```
[package]  
org = "gayaldassanayake"  
name = "inventory_service"  
version = "1.1.0"  
distribution = "2201.9.2"  
  
[[tool.openapi]]  
id = "delivery_service"  
filePath="delivery-oas.yaml"  
targetModule="delivery"  
options.mode = "client"  
options.license = "./license.txt"
```

Integrating tools with the Build: How?

```
[package]
```

```
org = "gayaldassanayake"
```

```
name = "inventory_service"
```

```
version = "1.1.0"
```

```
distribution = "2201.9.2"
```

```
[[tool.openapi]]
```

```
id = "delivery_service"
```

```
filePath="delivery-oas.yaml"
```

```
targetModule="delivery"
```

```
options.mode = "client"
```

```
options.license = "../license.txt"
```

Integrating tools with the Build: How?

```
[package]  
org = "gayaldassanayake"  
name = "inventory_service"  
version = "1.1.0"  
distribution = "2201.9.2"  
  
[[tool.openapi]]  
id = "delivery_service"  
filePath="delivery-oas.yaml"  
targetModule="delivery"  
options.mode = "client"  
options.license = "../license.txt"
```

Integrating tools with the Build: How?

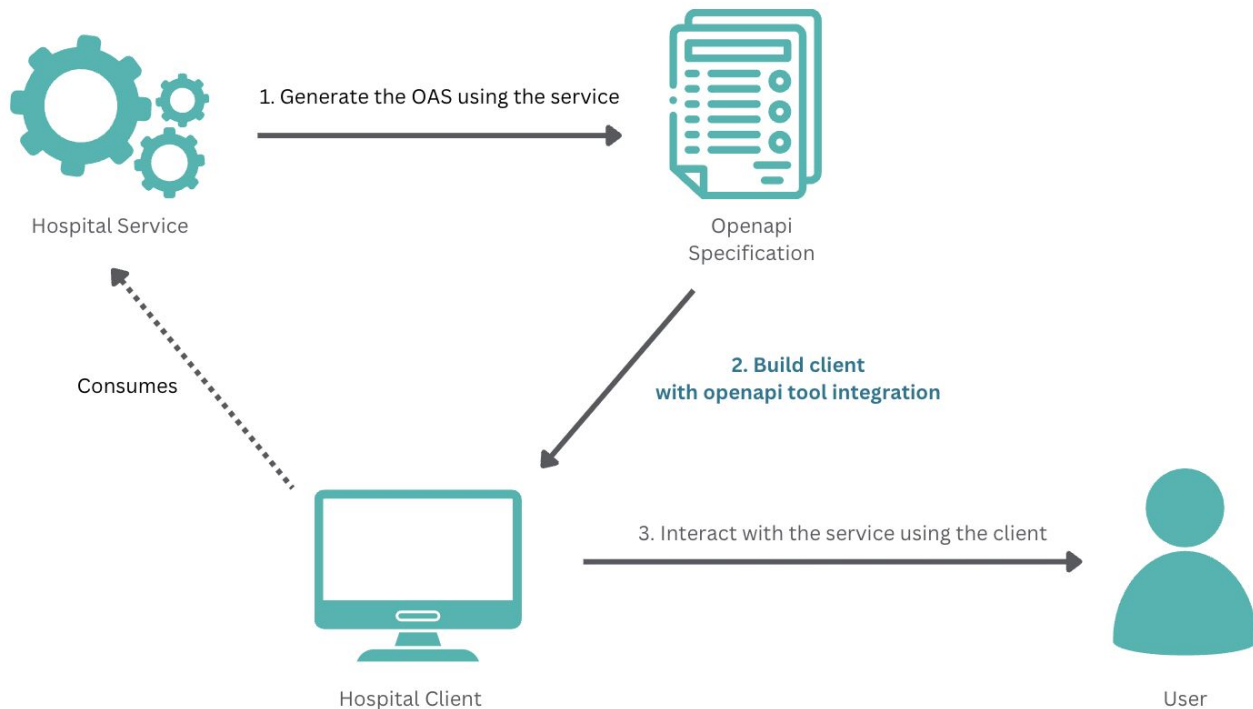
```
[package]  
org = "gayaldassanayake"  
name = "inventory_service"  
version = "1.1.0"  
distribution = "2201.9.0"  
  
[[tool.openapi]]  
id = "delivery_service"  
filePath="delivery-oas.yaml"  
targetModule="delivery"  
options.mode = "client"  
options.license = "../license.txt"
```

Integrating tools with the Build: How?

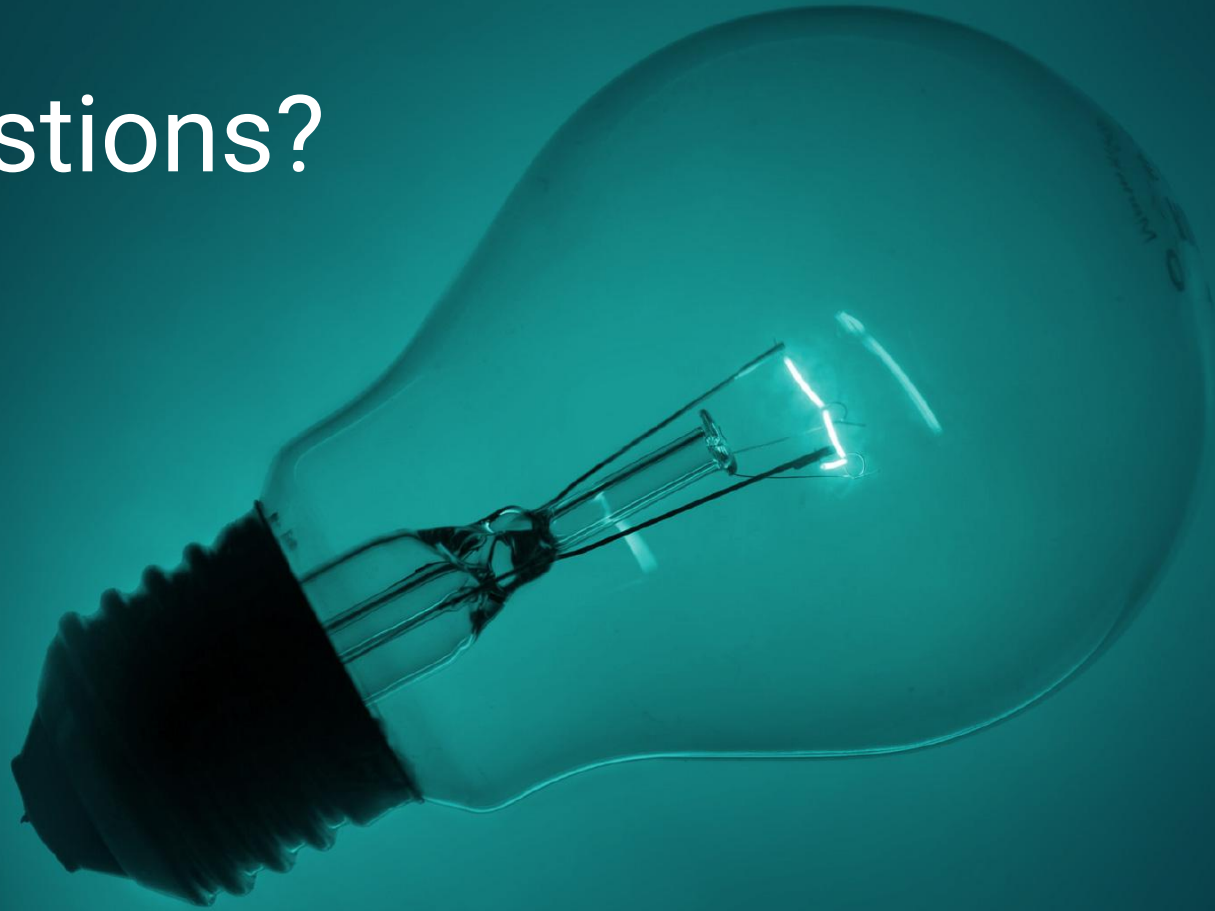
```
[[tool.openapi]]  
id = "delivery_service"  
filePath="delivery-oas.yaml"  
targetModule="delivery"  
options.mode = "client"  
options.license = "../license.txt"
```

```
[[tool.openapi]]  
id = "pricing_service"  
filePath="pricing-oas.yaml"  
targetModule="pricing"
```

Integrating tools with the Build: Demo



Questions?



Find out more...

- Ballerina documentation
 - Ballerina CLI Documentation
 - <https://ballerina.io/learn/supported-network-protocols/>
 - Ballerina EDI Tool Documentation
 - <https://ballerina.io/learn/edi-tool>
 - Ballerina Health Tool Documentation
 - <https://ballerina.io/learn/health-tool>
 - Ballerina OpenAPI Tool Documentation
 - <https://ballerina.io/learn/openapi-tool>
- Join the Ballerina community



[ballerinalang](#)



[@ballerinalang](#)



[ballerina-lang](#)

Thank you!

If you have any further questions, please email contact@ballerina.io or raise them in the **Ballerina Discord server**.