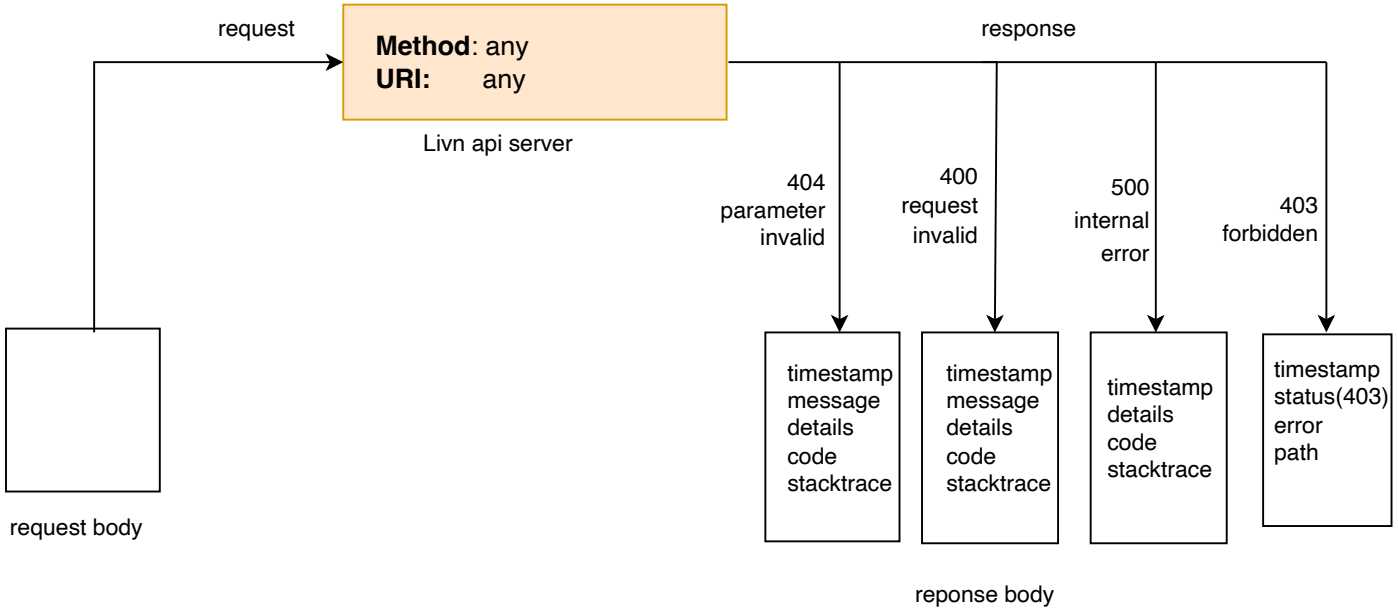
Diagrams for Flow Related Livn API Calls

Please keep this CONFIDENTAIL

1. Common Error Code For Livn Api Calls



Note

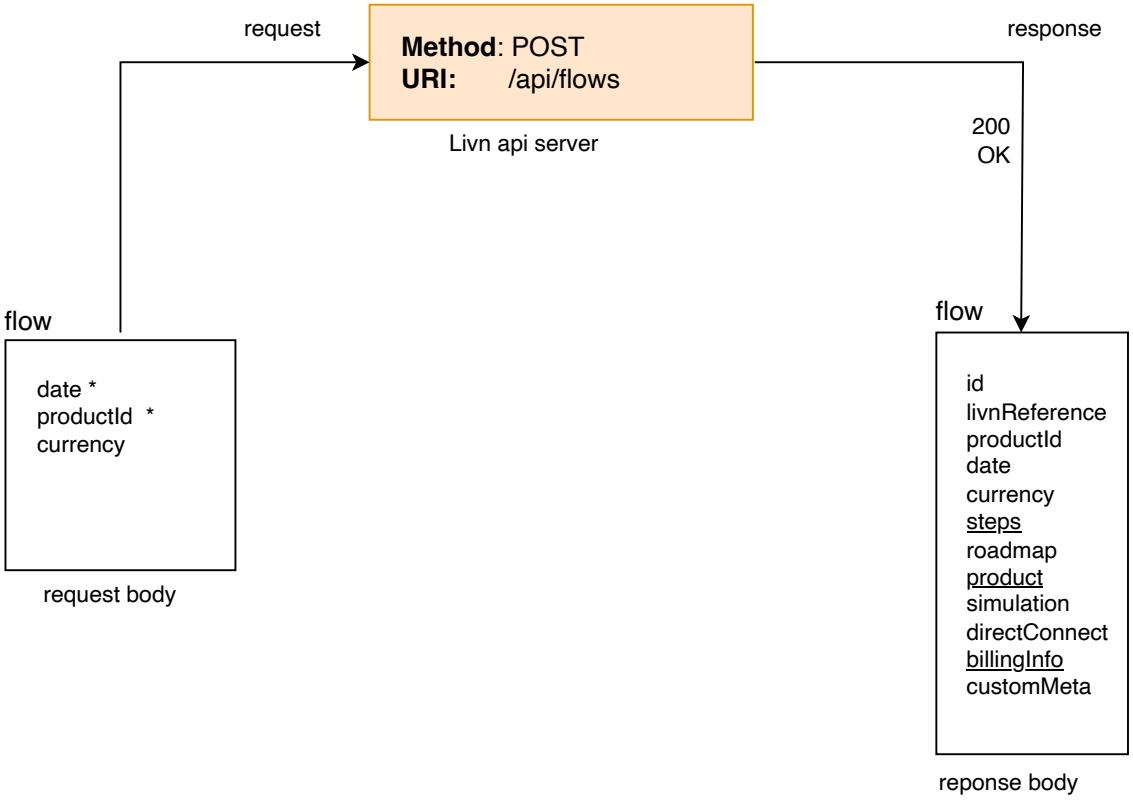
1. These errors are common and can happen to any Livn api call. They will not be listed in the following api call diagram again.

2. These errors are developer-level error, no need to display to user. If UI and front-end code works well, these error would not normally happen. If they do happen it means bugs in the front-end code or server code. In this case, display a message saying "System error, please try again later." or something like this. There will be log record this call in the server program which can be analyzed later.

3. For errors that caused by user input (user-level error), they will be covered later in this document.

4. Some example reason for causing these errors.
    404 e.g. initiate a flow without product id or with invalid date.
    400 e.g. make a request with json data that can not be parsed.
    403 e.g. make api call without authorization data.

2. Initiate a Flow



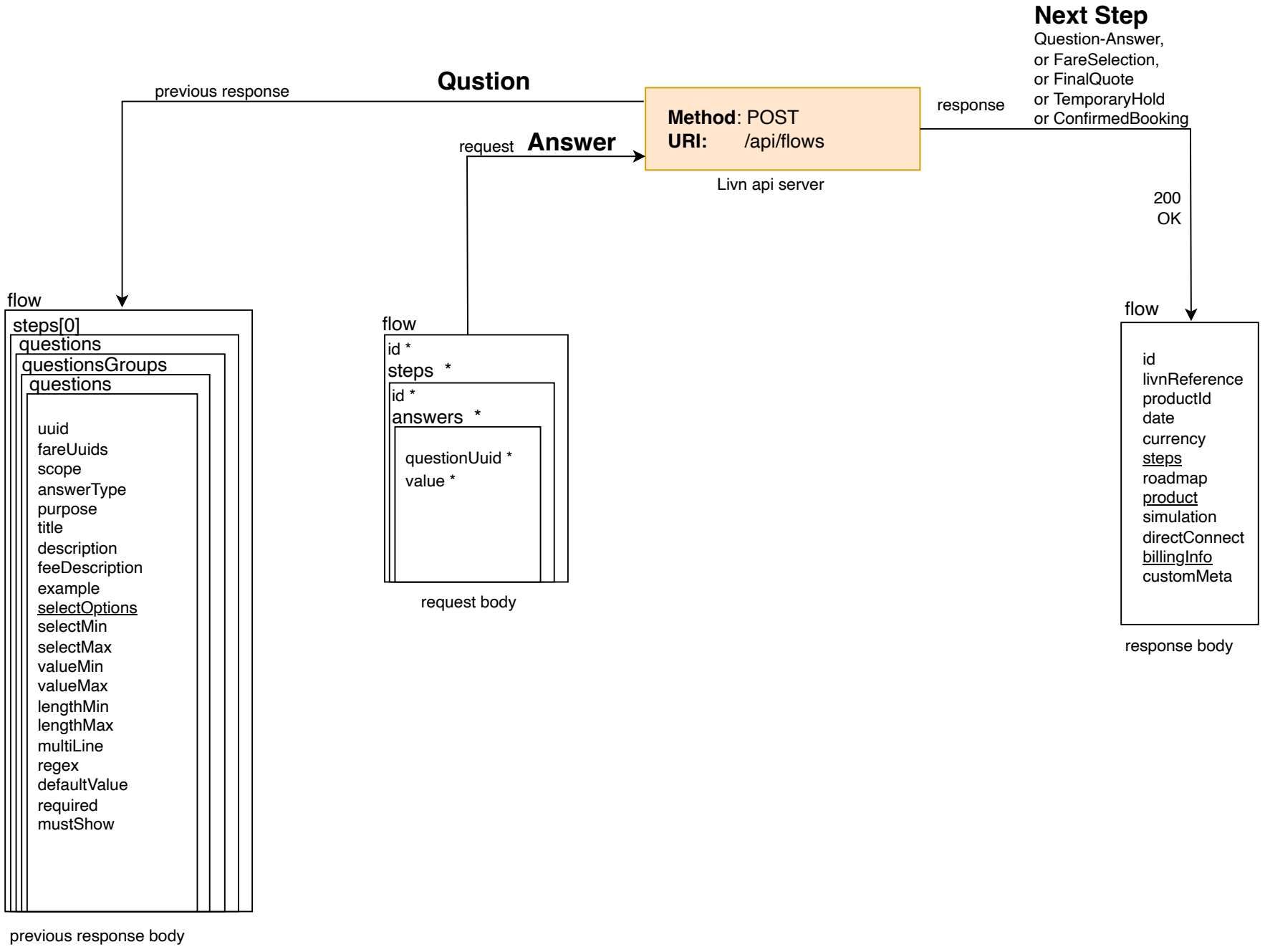
Note

1. This is the 1st step to book a product

2. After initiate a flow successfully, check the following response data

```
if (flow.steps[0].stepName == "FareSelection") {
        //go on with the FareSelection step
}else{
        //go on with the Question-Answer step
}
```

3. Question-Answer



Note

1. The previous response include all the questions need to be answered. The UI will be displayed by this.

2. For each question with `required==true`, must be answered with valid values by sending a request to the server.

3. Before sending the answers, all values need to be validated using the validating properties if provided.

4. After the request has been sent, if get response, the response should be carefully checked.
check the value of status in step[0].

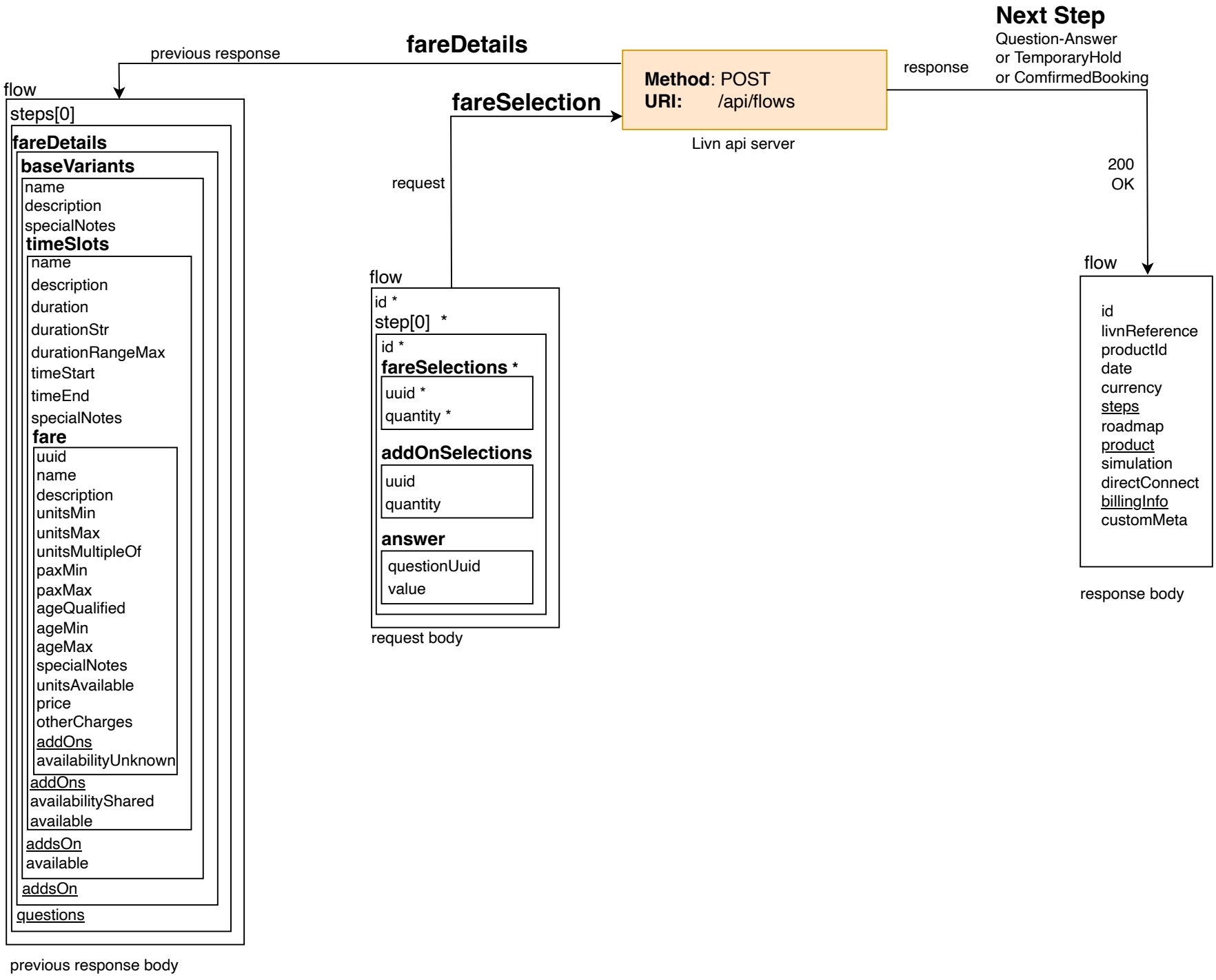
```
if(steps[0].status == "FAILED"){
  //questions are not properly answered/user input is invalid
  if(!steps[0].error.terminateTransaction && !goBackToRetry){
    //ask user to re-answer the questions
  }else if(!step[0].error.terminateTransaction && goBackToRetry){
    //go back and retry
  }else{
    //abandon this flow
  }
}else if(steps[0].status == "ACTIVE"){
  //a new step is entered, check step[0].stepName to see whether we are entering to Q-A, FareSelection, FinalQuote or TEMPORARY_HOLD or
  //ConfirmedBooking step
}else if(steps[0].status == "DONE"){
  //current booking is finished.
}
```

5. The FinalQuote milestone can be seen as a normal Question-Answer step with finalQuote data. Both the questions and and finalQuote should be displayed to the user.

6. Check the following link for question display
   Display Questions

7. Check the following link for answer validation.
   Validate Answers

4. FareSelection



Note

1. The previous response include all fareDetails, optional addOns and questions need to be selected or answered. The UI will be displayed by this.

2. Only available baseVariants, timeSlots, fares, addOns need to be displayed. (`available == true` or `unitsAvailable > 0`)

3. Before sending the fareSelection, addOnSelection, answers, all values need to be validated using the validating properties if provided.

4. After the request has been sent, if get response, the response should be carefully checked.
check the value of status in step[0].

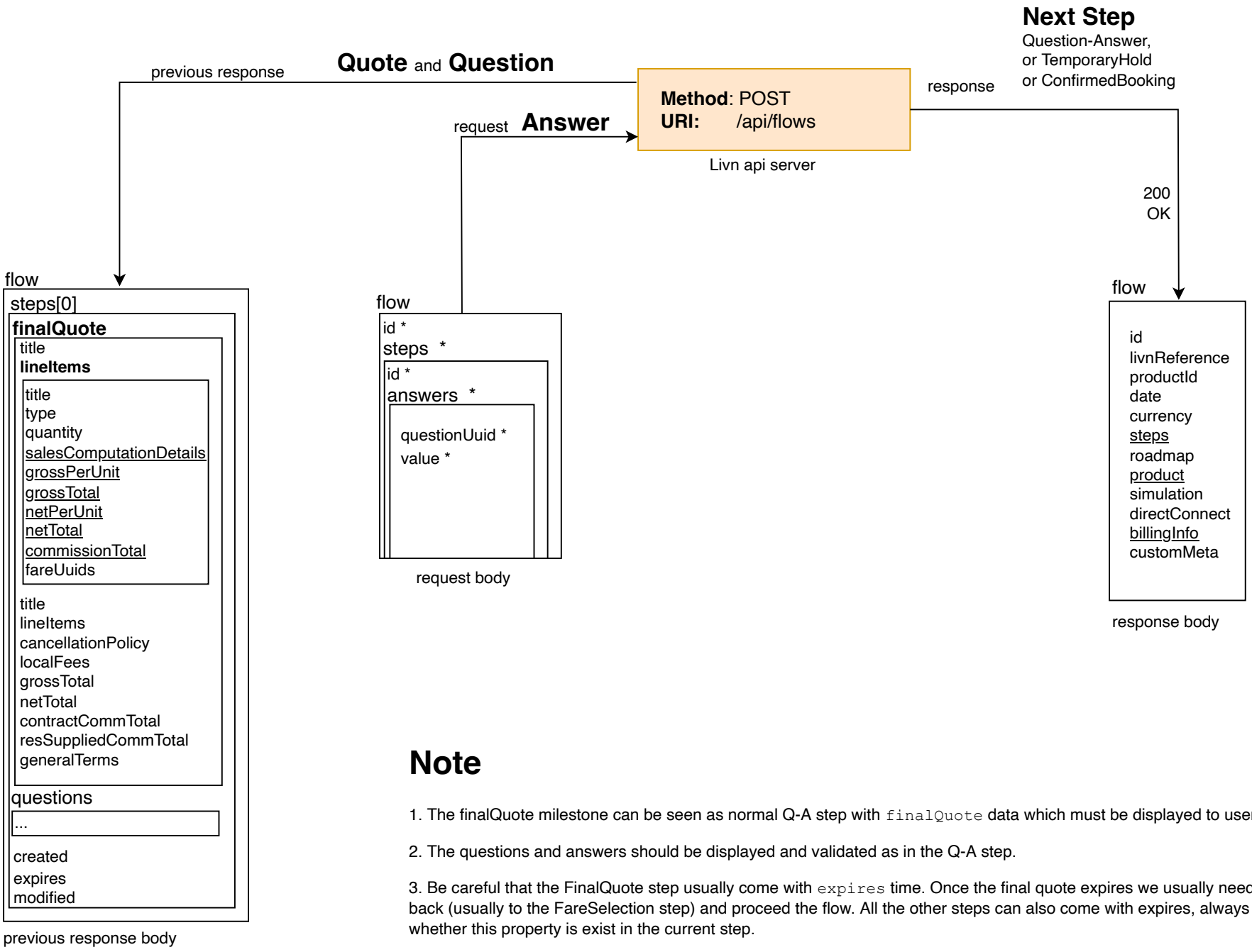
```
if(steps[0].status == "FAILED"){
  //fareSelections/addOnSelections/answers are not properly provided/user input is invalid
  if(!steps[0].error.terminateTransaction && !goBackToRetry){
    //ask user to redo the fareSelection
  }else if(!step[0].error.terminateTransaction && goBackToRetry){
    //go back and retry
  }else{
    //abandon this flow
  }
}else if(steps[0].status == "ACTIVE"){
  //a new step is entered, check step[0].stepName to see whether we are entering to Q-A, FinalQuote or TEMPORARY_HOLD or
 //ConfirmedBooking step
}else if(steps[0].status == "DONE"){
  //current booking is finished.
}
```

Once the user made the FareSelection, the price can be previewed anytime by calling the previewPrice API

5. Check the following link for fareDetails and addOns display
   Display FareDetails and AddOn

6. Check the following link for answer validation.
   validate answers

5. FinalQuote



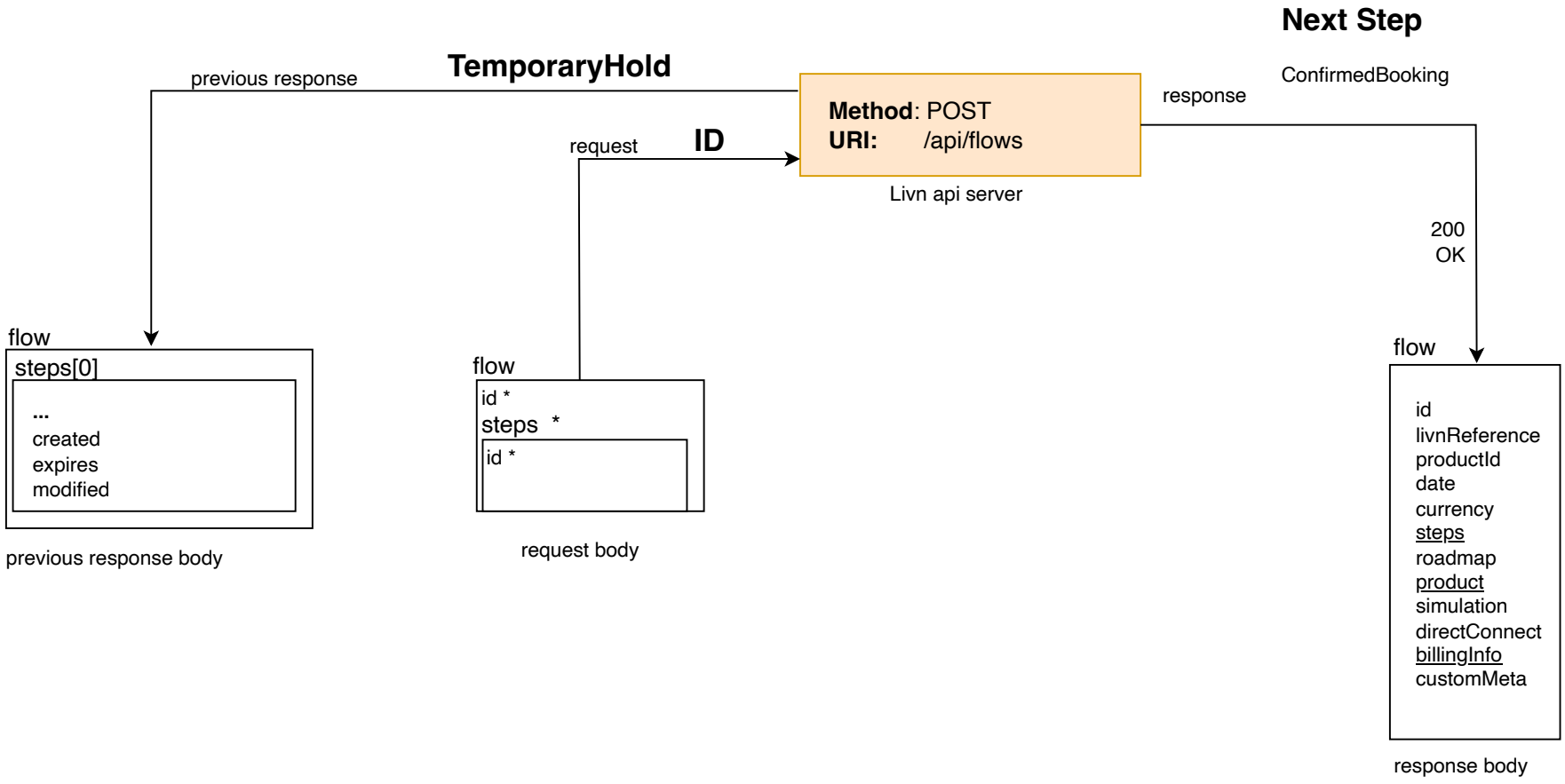
Note

1. The finalQuote milestone can be seen as normal Q-A step with `finalQuote` data which must be displayed to user.

2. The questions and answers should be displayed and validated as in the Q-A step.

3. Be careful that the FinalQuote step usually come with `expires` time. Once the final quote expires we usually need to go back (usually to the FareSelection step) and proceed the flow. All the other steps can also come with expires, always check whether this property is exist in the current step.

6. Temporary Hold

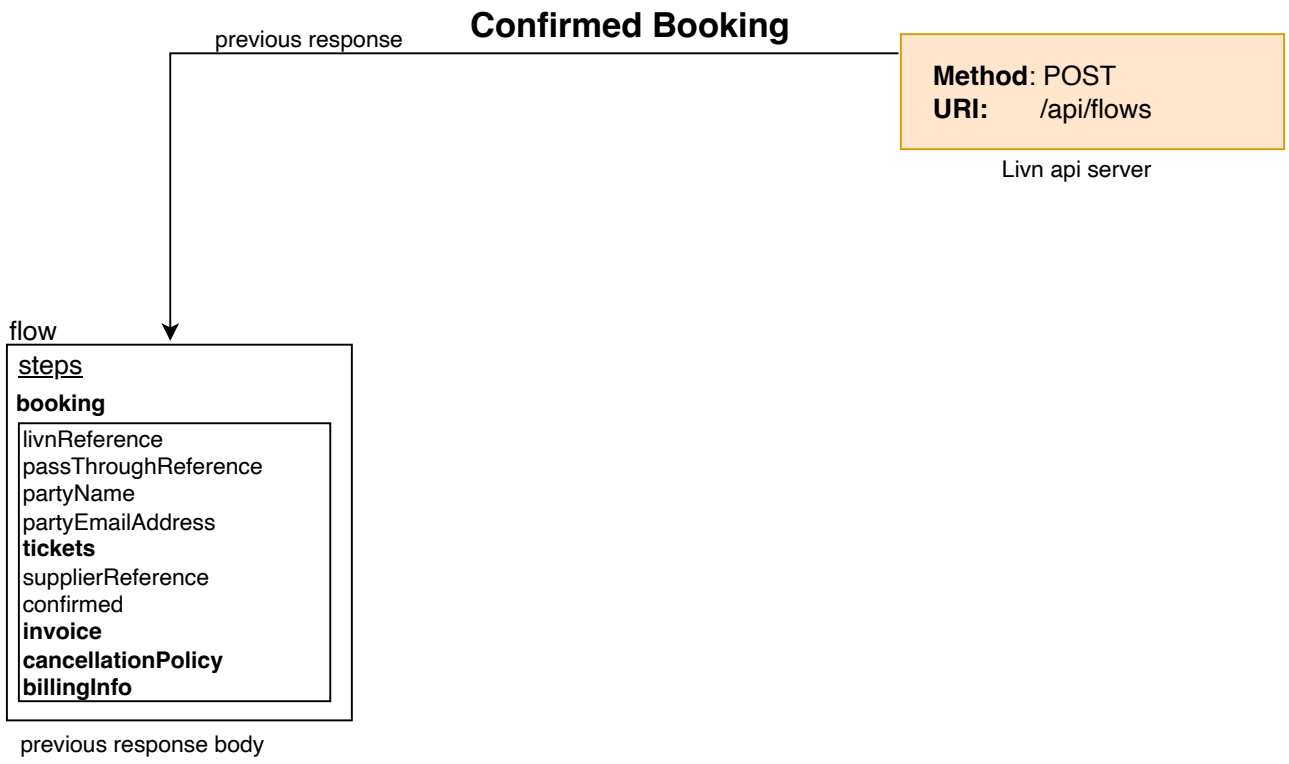


Note

1. The optional `TemporaryHold` milestone come with no `fareDetails` or `Questions`, so only flow id and step id (no `fareSelections` or `answers`) need to be sent back.

3. Be careful that the temporaryHold step usually also come with `expires` time. Once this step expires we need to go back to proceed the flow.

7. Confirmed Booking



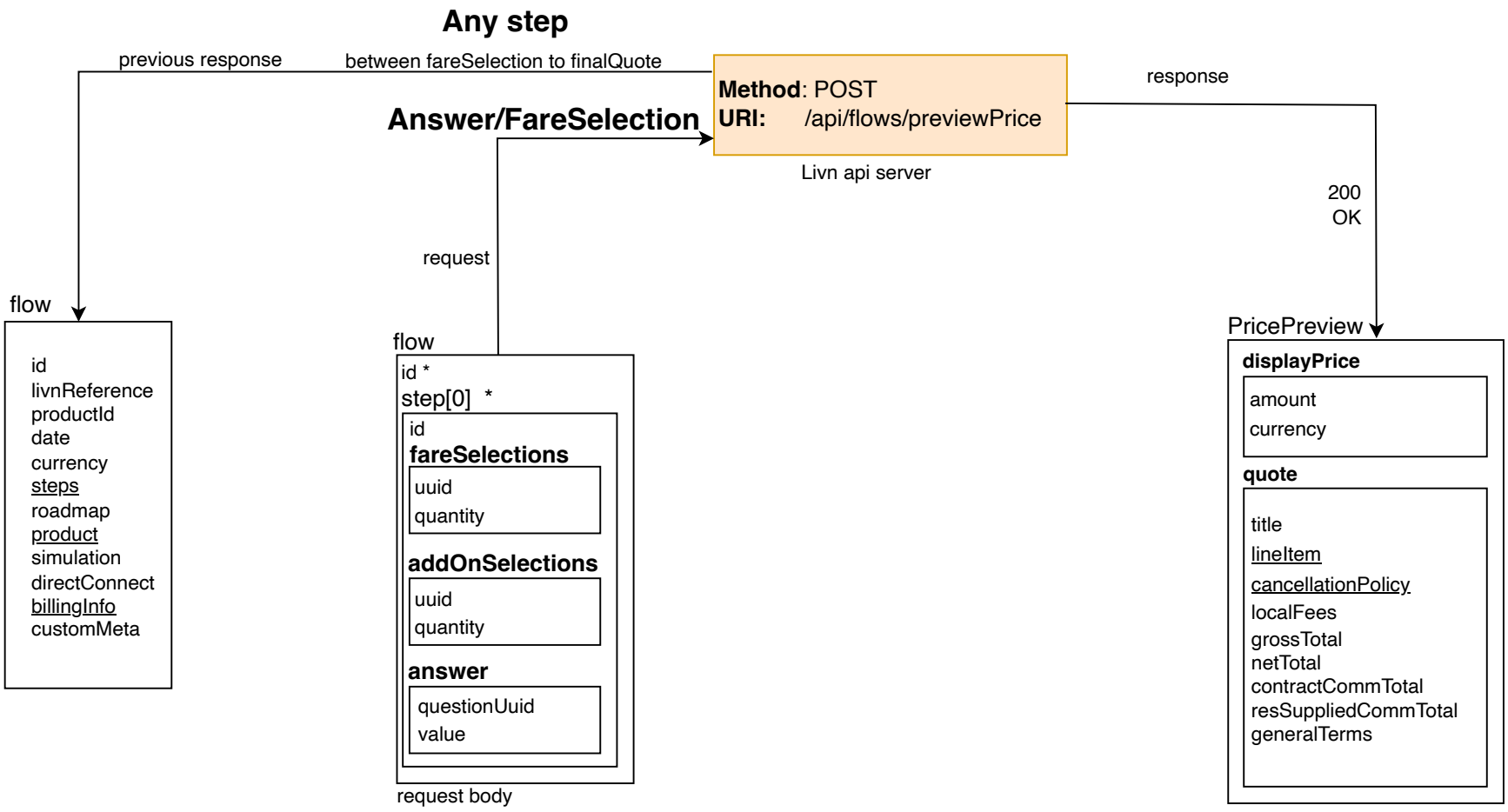
Note

1. When a previous step is finished with a request send back to LivnApi server, it is possible to enter this Confirmed Booking step.
When this step is reached, it means that the whole flow has come to an end successfully.

2. This step can be entered from a FareSelection, Question-Answer, or TemporaryHold step.

3. When this step is reached, there will be `booking` data included in the response. The booking id can be then used in the booking related APIs.

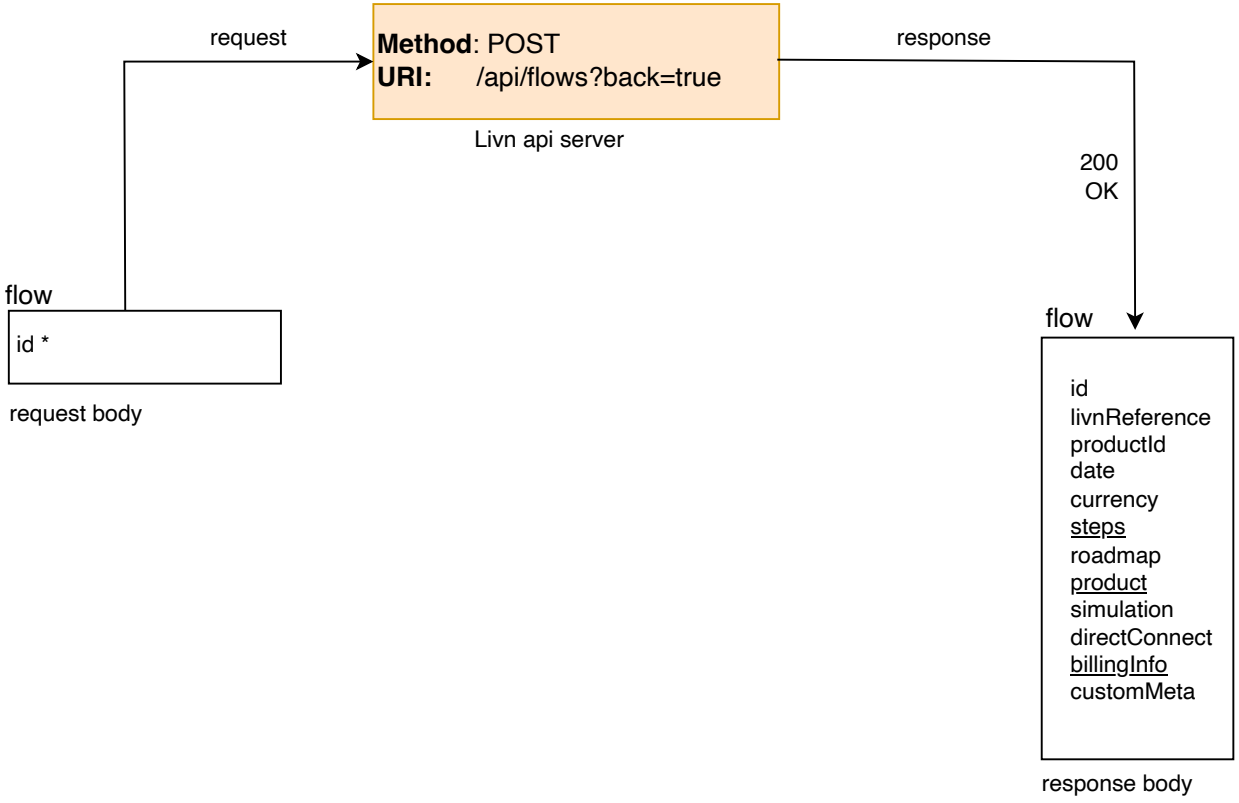
8. Price Preview



Note

1. This API can be called between fareSelection to finalQuote steps.
2. The request body is the same you would use for current step to POST to /api/flows.

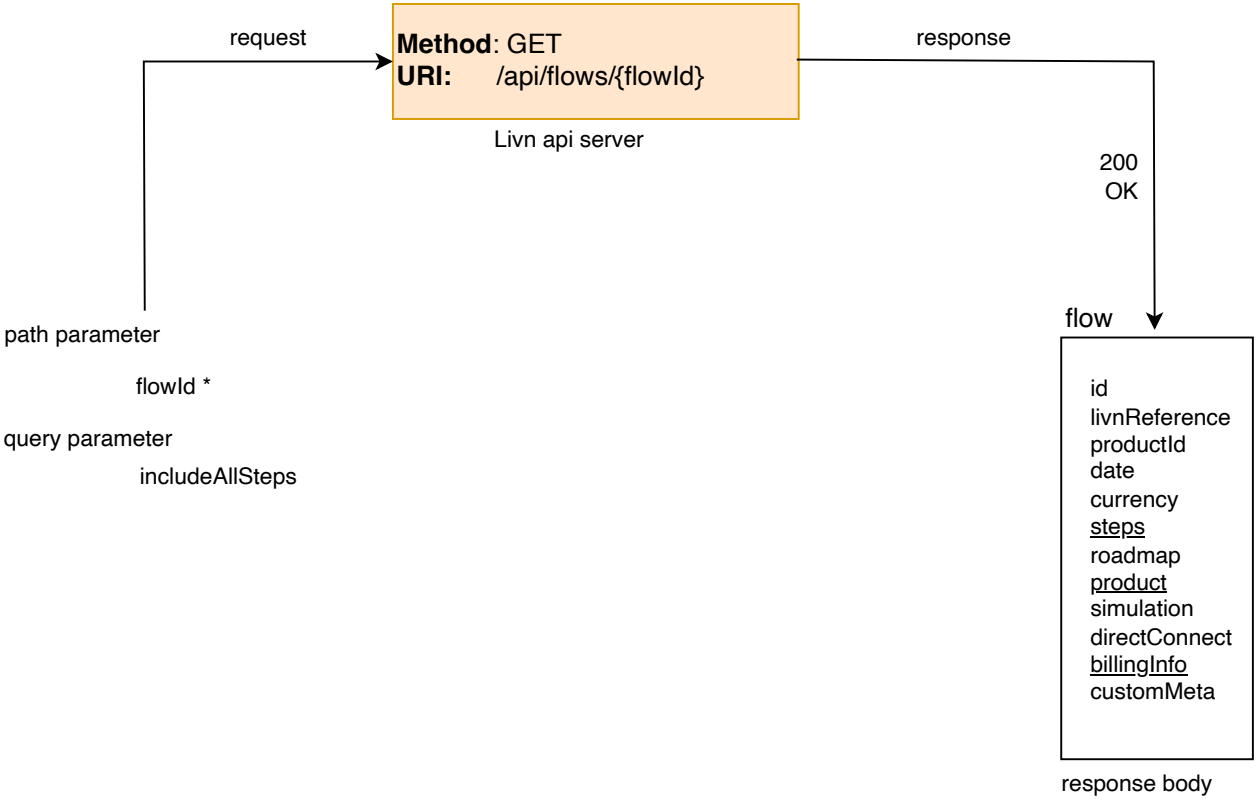
9. Go Back



Note

1. Possible reasons for call this API could be user's attention/expired step/error handling with value of goBackToRetry is set as true.
2. Only steps with `allowBackHere == true` can be moved backwards to, the steps between will be skipped.
3. When a flow is just initiated or a flow has been confirmed, it is not possible to move back to a previous step.

10. Retrieve Flow



Note

1. Once the flow is initiated, it remain in existence even if the booking is confirmed or the confirmed booking is cancelled.