***Enterprise Architecture Services***

***API Specification***

**PROJECT: Weather Information Project**

**REVISION: DRAFT**

**LAST UPDATED: <<TBF>>**

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***Service Specification***

# Introduction

## Purpose of the Service Specification

The purpose of this type of document is to lay down the API specification (contract) by which both the Service provider and the consumer must agree to adhere to. It also describes several of the characteristics of the Service such as the message structure, interface details, interaction methods, protocols, security, Service Level Agreements (SLA) and NFRs.

The Interface specification is working document that lay down the contract between the provider and consumer.

## Audience

This document is intended for the following project roles:

| **Role** | **Action** |
| --- | --- |
| Application & Integration Architect | Review to ensure that services are fully and correctly described, allowing them to be reused in the future |
| Functional Lead | Validate that the contract is in line with service delivered by the project |
| Functional Designer | Consider the service for reuse, with or without modification |
|  |  |

# API Specification

## API Details

|  |  |
| --- | --- |
| **Property** | **Value** |
| Service Name (business) | Weather API |
| Service ID (Based on catalogue) | TBD |
| Aliases | Weather Lookup |
| Description | This is the API weather lookup service. This Service is used to retrieve weather information for city based on the country specified |
| Version | 1.0 |
| Service Type | Microservices |
| Business Domain | Demographics |
| Business Owner |  |
| Business Process | Weather Application |
| Business Entity | Weather |
| Service Domain | BDM |
| Portfolio | Department of Weather Forecast |
| Data Classification | Contract |
| Specified dependencies on other services (Message Dependencies) | <<Specify all the dependencies>> |
| Service Implementation Pattern | Atomic |
| Service Invocation Type | Request & Response (REST) |
| Operations / Resources | - Inquiry |
| API Gateway | Proxy |
| Consumers | Weather App |

# API Definition

## Resource / Methods / Use cases

### Retrieve Cities for Country

|  |  |
| --- | --- |
| Pattern | Synchronous |
| Style / Method | GET |
| Transit Protocol & Version | HTTP – REST |
| Pre-conditions | Cities by country data is needed for further processing to retrieve the weather details pertaining to a specific city |
| Main Scenario | To retrieve all the Cities data via API gateway |
| Error Scenarios | Explain all the error scenario which needs to be handled  - Retry for 2 times for the interval of 2 sec. <<Sample needs validation>>  - Send the Service not available exception back to the consumer  <<Message Validation – If Applicable>>  Send appropriate Error code and message as response back to the consumer |
|  |  |

#### Header properties / parameters

Query Parameters: country

Supported values: Australia, New Zealand

#### Request Structure

<<JSON Schema or JSON sample file as per Data Model>>

#### Response Structure



### Weather Lookup

|  |  |
| --- | --- |
| Pattern | Synchronous |
| Style / Method | GET |
| Transit Protocol & Version | HTTP – REST |
| Pre-conditions | Retrieve the weather details for a city.  Note: Use the API in section 3.1.1 (Retrieve Cities for Country API) for retrieving the city information to invoke weather APIs |
| Main Scenario | To retrieve all the Weather data via API gateway |
| Error Scenarios | Explain all the error scenario which needs to be handled  <<Target System – not available>>  - Retry for 2 times for the interval of 2 sec. <<Sample needs validation>>  - Send the Service not available exception back to the consumer  <<Message Validation – If Applicable>>  Send appropriate Error code and message as response back to the consumer |
|  |  |

### Header properties / parameters

Query Parameter: country

Supported values: Australia, New Zealand

Query Parameter: city

Supported values: To be fetched from the outcome of Cities for Country API in section 3.1.1

### Request Structure

<<JSON Schema or JSON sample file as per Data Model>>

### Response Structure



## Response Handling

Either Success or errors will be send back to caller using HTTP status codes.

### Success Conditions

|  |  |  |  |
| --- | --- | --- | --- |
| **Scenario** | **HTTP Code** | **Response Code** | **Response Message** |
| Successful completion of transaction processing | HTTP Code - 200 | SUCCESS | <<Response Received from the Microservices>> |

### Business Error Conditions

|  |  |  |  |
| --- | --- | --- | --- |
| **Scenario** | **HTTP Code** | **Response Code** | **Response Message** |
| Request Message validation failure – Mandatory data missing | HTTP Code - 400 | <<TBF>> | <<Error Message>> |

### Technical Error Conditions

|  |  |  |  |
| --- | --- | --- | --- |
| **Scenario** | **HTTP Code** | **Response Code** | **Response Message** |
| Resource not found | HTTP Code - 404 | 404 | Resource not found |
| Method not allowed | HTTP Code-405 | 405 | Method not allowed |
| Not acceptable | HTTP Code-406 | 406 | Not acceptable |
| Unsupported media type | HTTP Code-415 | 415 | Unsupported media type |

### System Error Conditions

|  |  |  |  |
| --- | --- | --- | --- |
| **Scenario** | **HTTP Code** | **Response Code** | **Response Message** |
| Request Timeout The server timed out waiting for the request. | HTTP Code-408 | 408 | Request Timeout |

### Retry Conditions

| **System** | **Retry** |
| --- | --- |
| API Gateway | * Retry in case of Micro services is not available. |

# API Gateway Details

### API Gateway

|  | **Description** | **Value** |
| --- | --- | --- |
| Implementation Type | What is the best suited implementation type for this service | *Proxy with data transformation* |
| Routing & Transformation | List down the scenarios needed for routing and transformation – If needed | *DWL transformation applicable* |
| Security | Authentication  The authentication Mechanism(s) required accessing the service. | *NA* |
| Authorization  Authorization requirements for Business Attributes | *NA* |
| Message Integrity  Message Integrity Required (Yes/No), Is any kind of message validation, digital signature mechanisms required | *NA* |
| Transport Security  Transport level confidentiality (SSL) required (Yes/No). | *NA* |
| Message confidentiality  Is message level confidentiality Required – Encryption (Yes/No)? | *NA* |
| SLA | Service level agreement (SLA Tiers) | *NA* |
| Custom Policies | List down the requirements for any custom policies | *NA* |
| Throttling And Rate Limiting | Throttling and rate limiting policies | *NA* |
| <<Any Additional Policies>> |  |  |

# Nonfunctional Requirements

## Efficiency: Transaction Volumes and Required Response Times

| **NFRs** | **Description** | **Value** |
| --- | --- | --- |
| Response Time | Average Response Times under normal conditions (in milliseconds) |  |
| Message Size | Average message Size (in KB) for the service operation. |  |
| Maximum message Size (in KB) for the service operation. |  |
| Transaction Volumes | Average number of transactions per hour |  |
| Peak number of Transactions per hour |  |
| Availability | Availability Profile  \* See below Availability profile definition Table | High |
| Service Availability Time in hours/week or hours/month or hours/year |  |
| Downtime | Downtime  Expected maximum Value (hours/week or month or year) under normal conditions |  |
| Planned outages/Scheduled Downtime |  |
| Message Delivery Mechanism | Guaranteed Delivery Required (Y/N). |  |

**Availability Profile Definition**

| **Availability Profile** | **Description** |
| --- | --- |
| *High* | *Always available except for planned outages (business critical)* |
| *Medium* | *Always available during engineer working hours, except for planned outages* |
| *Low* | *Exceptional outages are acceptable (not business critical)* |

# Constraints, Assumptions, Risks, Decencies, Issues

## Assumptions

## Constraints

## Risks

## Dependencies

## Issues

# Additional Information

Table 1 – Definitions, Acronyms, and Abbreviations

| **Acronym** | **Term** | **Description** |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

# Revisions & Reviews

Table 3 - Template Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Version** | **Description** | **Author** |
| 04/10/2019 |  | Initial Draft | Harishankar Kaimal |
|  |  |  |  |
|  |  |  |  |

Table 4 - Doc Revision History

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Version** | **Description** | **Author** |
|  |  |  |  |

Table 5 - Doc Review History

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Review Description** | **Audience** | **Approval** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

# Appendix

## Sample Request Response

Please attach Sample request & response structure