REST API Development Standard

IM/IT Architecture & Standards Manual **STANDARD**	**Effective Date:** 2015-04-01 **Scheduled Review:** Annual **Last Updated:** 2015-04-13 **Last Reviewed:** 2015-04-13
Office of the Chief Information Officer Province of British Columbia	**Type: Technical**
12.3.5 Information Technology Management	
2.2 REST API Development Standard	
Keywords: API, Development, REST, RESTful, Interoperability	

Description of Standard

All new development of <u>public APIs</u> in the BCGov <u>MUST</u> be designed and developed according to RESTful architecture principles as described by Roy Thomas Fielding's dissertation "[Architectural Styles and the Design of Network-based Software Architectures](#)" (2000) adapted to <u>mandated minimums</u> for the BCGov and design choices in support of Web Interoperability.

The intent is not to prescribe a re-architecture of existing APIs or limit development to the prescribed minimums but to ensure, going forward, that BCGov APIs behave consistently and to balance a truly RESTful API interface with a positive developer experience (DX).

Internal APIs in the BCGov <u>SHOULD</u> be designed and developed according to RESTful architecture principles.

The [OCIO REST API Development Guide](#) contains context and examples of the Mandated Minimum Attributes as well as sections for Optional Features and Best Practices.

Mandated Minimum Attributes:

1. BC Government public facing API's <u>Must</u> expose/provide RESTful interfaces.

2. BC Government internal APIs <u>Should</u> expose/provide RESTful interfaces.

3. HTTP verbs, or methods, <u>Must</u> be used in compliance with their definitions under the [HTTP/1.1](#) standard. Only (GET, POST, PUT, PATCH, DELETE, TRACE, OPTIONS) are permitted to operate on the collections and elements.

4. A URL <u>Must</u> only identify a single resource

5. BCGov APIs <u>Should</u> allow multiple output formats.

   5.1. Recommended minimum to include JSON and/or XML outputs

6. Metadata <u>Must</u> be described in a variable in the response.

   6.1. Minimum fields are required in the metadata variable.

6.1.1. The creation date-time of the response in ISO 8601 date-time format with timezone.[1]

6.1.2. The licenses(s) relevant to the dataset payload.

7. BCGov APIs Must provide relevant error messaging

8. BCGov APIs Must be released with a version number

Where to Apply This Standard

This standard applies when an information system, API or service is being developed by, or on behalf of, the Province of British Columbia.

Authority and Exemptions

If there are compelling business reasons why an organization is unable to comply with this architecture or standard, the organization's CIO may authorize a submission for exemption through the Architecture, Standards and Planning Branch.

Metrics and Enforcement

This Standard is in effect from January 2015, subject to the approval of the CIO for the Province of British Columbia.

Terms and Definitions

MUST: The term "MUST" is defined as an absolute requirement of the specification.

API: An **API**, in context of this standard, is the application programming interface (**API**) for both the **web** server and **web** browser.

REST: (REpresentational State Transfer) is a simple stateless architecture that generally runs over HTTP.

References
Designing HTTP Interfaces and RESTful Web Services
API Facade Pattern, by Brian Mulloy, Apigee
Web API Design, by Brian Mulloy, Apigee
Fielding's Dissertation on REST

Additional Information

OCIO REST API Development Guide:
https://github.com/bcgov/REST-API-Development-Guide

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[1] This is also in compliance with the BC Government's date and time standard located here.