Distributed Programming II

A.Y. 2016/17

Assignment n. 3 –REST API Documentation

This document provides all the necessary information including design, resources, access URLs , allowed operation, examples of request & response on deigned Rest Api of the course distributed programming II.

Rest Service Design

Resources	Urls	XML Repr.	Meaning
Nffgs	nffgservice	nffgs	Set of all the nffgs
id	nffgservice/{id}	nffg	Single nffg

Resources	Urls	XML Repr.	Meaning
policies	policyservice	policies	Set of all the policies
{id}	policyservice/{id}	policy	Single policy
verification	policyservice/{id}/verification	policy	Verification of policy

Operations on Resources

In this table you can find a description of assumed resources, methods, request and response body and possible status code of each method. (Based on text description of assignment 3a).

Resource	Method	Req.Body	Status	Res.Body	Meaning
Nffgs	Post	Nffgs	200 OK 500 Internal Server error 403 conflict		Create a set of Nffg item and add it to the collection of Nffgs.
	GET		200 OK 404 Not Found 500 Internal Server error	Nffgs	Read the whole collection of Nffg items.
	DELETE		500 Internal Server error 204 No Content 404 Not Found		Delete a collection of Nffg items.
Nffg/{id}	Post	Nffg	200 OK 500 Internal Server error 403 conflict		Create a new item of Nffg and add it to the collection of Nffgs.
	GET		200 OK 404 Not Found 500 Internal Server error	Nffg	Read only Nffg item with this {id} in the collection of Nffgs.
	DELETE		204 No Content 403 Forbidden 404 Not Found		Delete Nffg item with this {id} in the collection of Nffgs.
Policies	Post	Policies	200 OK 403 Forbidden 500 Internal Server error		Create a set of Policy item and add it to the collection of Policies.
	GET		200 OK 404 Not Found 500 Internal Server error	Policies	Read the whole collection of Policy items.
	DELETE		500 Internal Server error 204 No Content 404 Not Found		Delete a collection of Policy items.
Policy/{id}	GET		200 OK 404 Not found 500 Internal Server error	Policy	Read only Policy item with this {id} in the collection of Policies.
	DELETE		500 Internal Server error 204 No Content 404 Not Found		Delete Policy item with this {id} in the collection of Policies.

Policy/{id}	Post	Policy	200 OK 403 Forbidden 500 Internal Server error		Create a new item of Policy and add it to the collection of Policies.
Policy/{id}	PUT	Policy	200 OK 403 Forbidden 500 Internal Server error		Update information of a Policy Item with {id} in the collection of policies.
Policy/{id}/verification	PUT	Policy	200 OK 403 Forbidden 404 Not found 500 Internal Server error		Update information of verification in the Policy Item with {id} in the collection of policies.

Mapping of the resources to URLs

Designed REST API includes the following resources that mapped by following URLs:

Resource	URL
localhost:8080/NffgService/rest/	base URL of the service
localhost:8080/Neo4JXML/rest/application.wadl	WADL description of the service
http://localhost:8080/NffgService/rest/nffgservice	A set of nffgs
http://localhost:8080/NffgService/rest/nffgservice/id	the nffg identified by id
http://localhost:8080/NffgService/rest/policyservice	a set of policies
http://localhost:8080/NffgService/rest/policyservice/id	the Policy identified by id
http://localhost:8080/NffgService/rest/policyservice/verification	The verification of policy by id

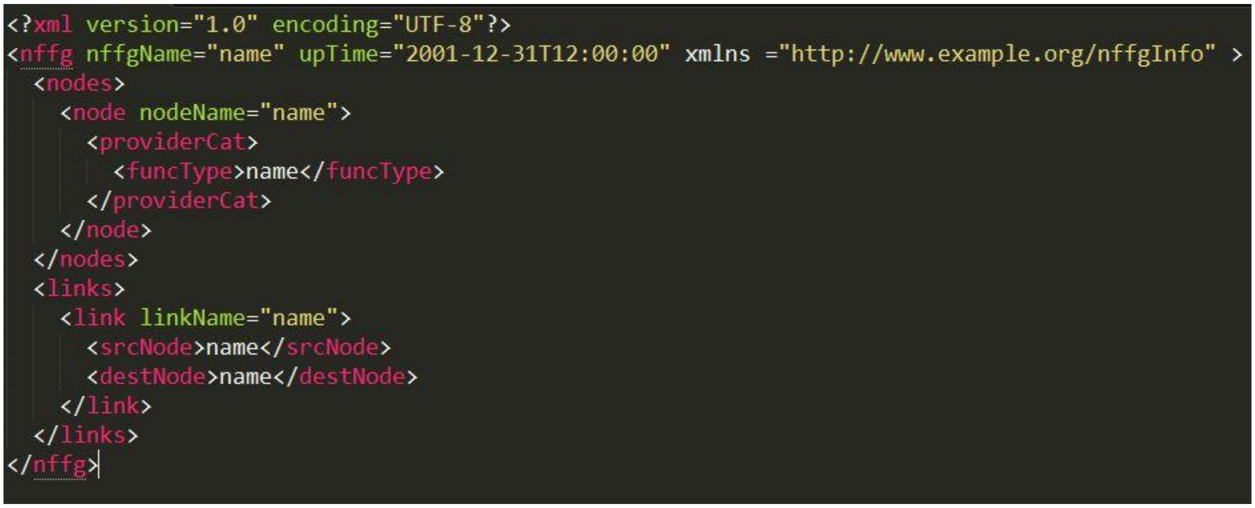
Implemented OPERATIONS

In this section you can find a description of all the implemented methods, some example of request and response of each method. (Based on text description of assignment 3b).

Create Nffg with properties

Example request

- **POST** http://localhost:8080/NffgService/rest/nffgservice
- **Content-Type:** application/xml
- **BODY:**



```
<?xml version="1.0" encoding="UTF-8"?>
<nffg nffgName="name" upTime="2001-12-31T12:00:00" xmlns ="http://www.example.org/nffgInfo" >
  <nodes>
    <node nodeName="name">
      <providerCat>
        <funcType>name</funcType>
      </providerCat>
    </node>
  </nodes>
  <links>
    <link linkName="name">
      <srcNode>name</srcNode>
      <destNode>name</destNode>
    </link>
  </links>
</nffg>
```

Example response:

- **200:** OK
- **Content-Type:** text/plain

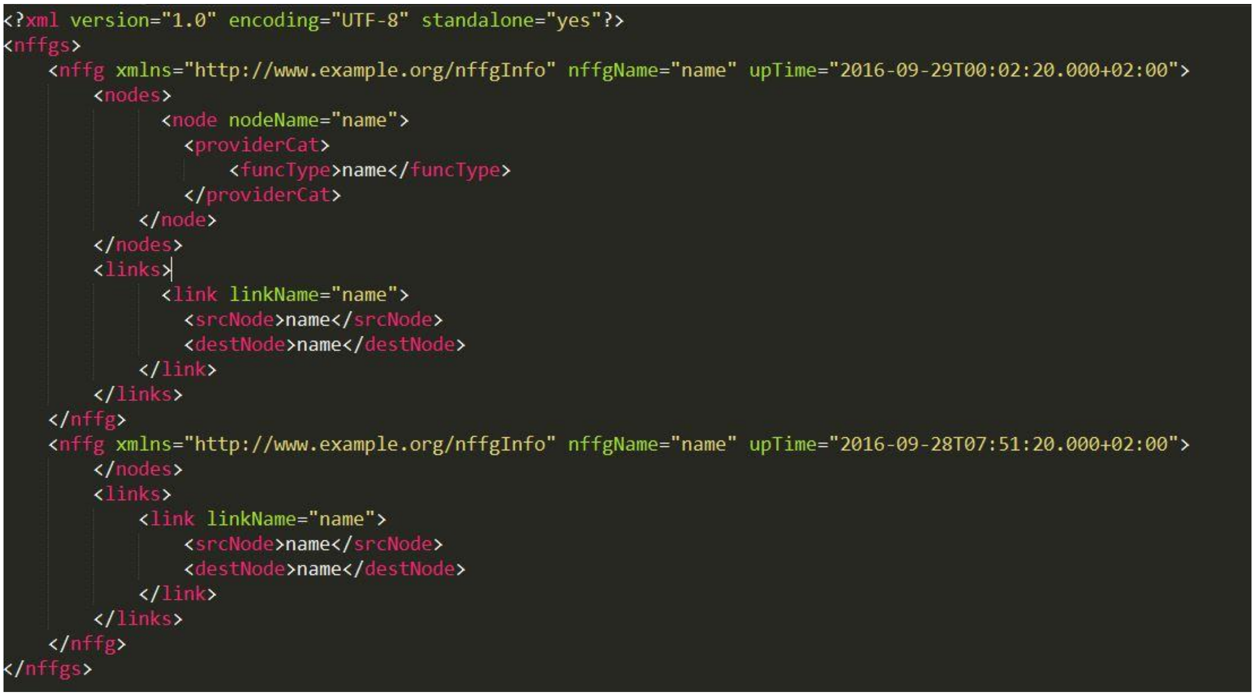
Get list of Nffgs

Example request

- **GET** http://localhost:8080/NffgService/rest/nffgservice
- **Content-Type:** application/xml

Example response

- **200: OK**
- **Content-Type:** application/xml
- **BODY:**



```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<nffgs>
    <nffg xmlns="http://www.example.org/nffgInfo" nffgName="name" upTime="2016-09-29T00:02:20.000+02:00">
        <nodes>
              <node nodeName="name">
                <providerCat>
                    <funcType>name</funcType>
                </providerCat>
            </node>
        </nodes>
        <links>
              <link linkName="name">
                <srcNode>name</srcNode>
                <destNode>name</destNode>
            </link>
        </links>
    </nffg>
    <nffg xmlns="http://www.example.org/nffgInfo" nffgName="name" upTime="2016-09-28T07:51:20.000+02:00">
        </nodes>
        <links>
            <link linkName="name">
                <srcNode>name</srcNode>
                <destNode>name</destNode>
            </link>
        </links>
    </nffg>
</nffgs>
```

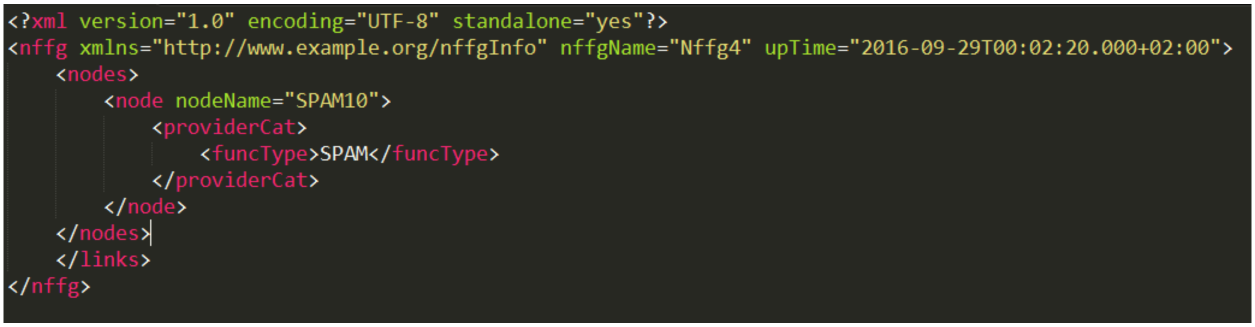
Get Nffg by ID

Example request

- **GET** http://localhost:8080/NffgService/rest/nffgservice/id
- **Content-Type:** application/xml

Example response

- **200:** OK
- **Content-Type:** application/xml
- **BODY:**

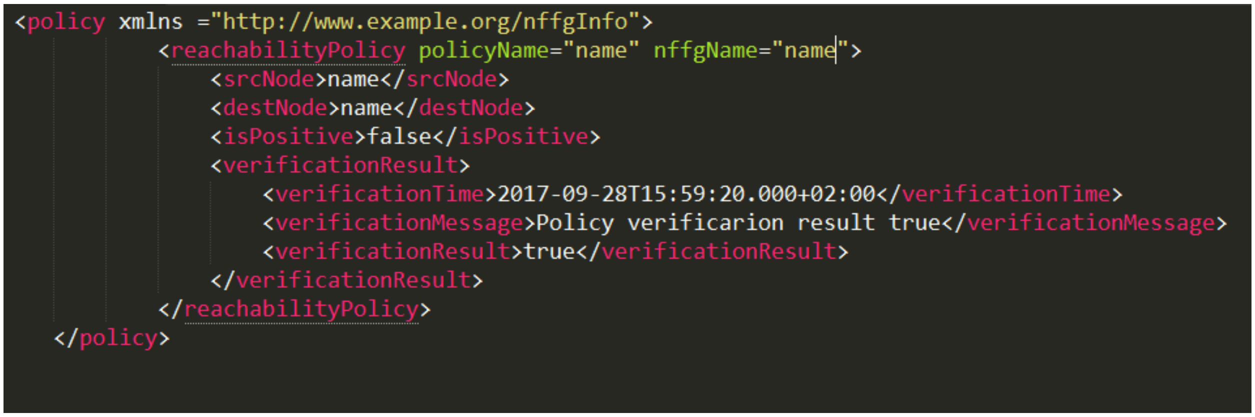


```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<nffg xmlns="http://www.example.org/nffgInfo" nffgName="Nffg4" upTime="2016-09-29T00:02:20.000+02:00">
    <nodes>
        <node nodeName="SPAM10">
            <providerCat>
                <funcType>SPAM</funcType>
            </providerCat>
        </node>
    </nodes>
    </links>
</nffg>
```

Create Policy with properties

Example request

- **POST** http://localhost:8080/NffgService/rest/policyservice/
- **Content-Type:** application/xml
- **BODY:**



```
<policy xmlns ="http://www.example.org/nffgInfo">
           <reachabilityPolicy policyName="name" nffgName="name">
               <srcNode>name</srcNode>
               <destNode>name</destNode>
               <isPositive>false</isPositive>
               <verificationResult>
                   <verificationTime>2017-09-28T15:59:20.000+02:00</verificationTime>
                   <verificationMessage>Policy verificarion result true</verificationMessage>
                   <verificationResult>true</verificationResult>
               </verificationResult>
           </reachabilityPolicy>
   </policy>
```

Example response

- **200:** OK
- **Content-Type:** text/plain

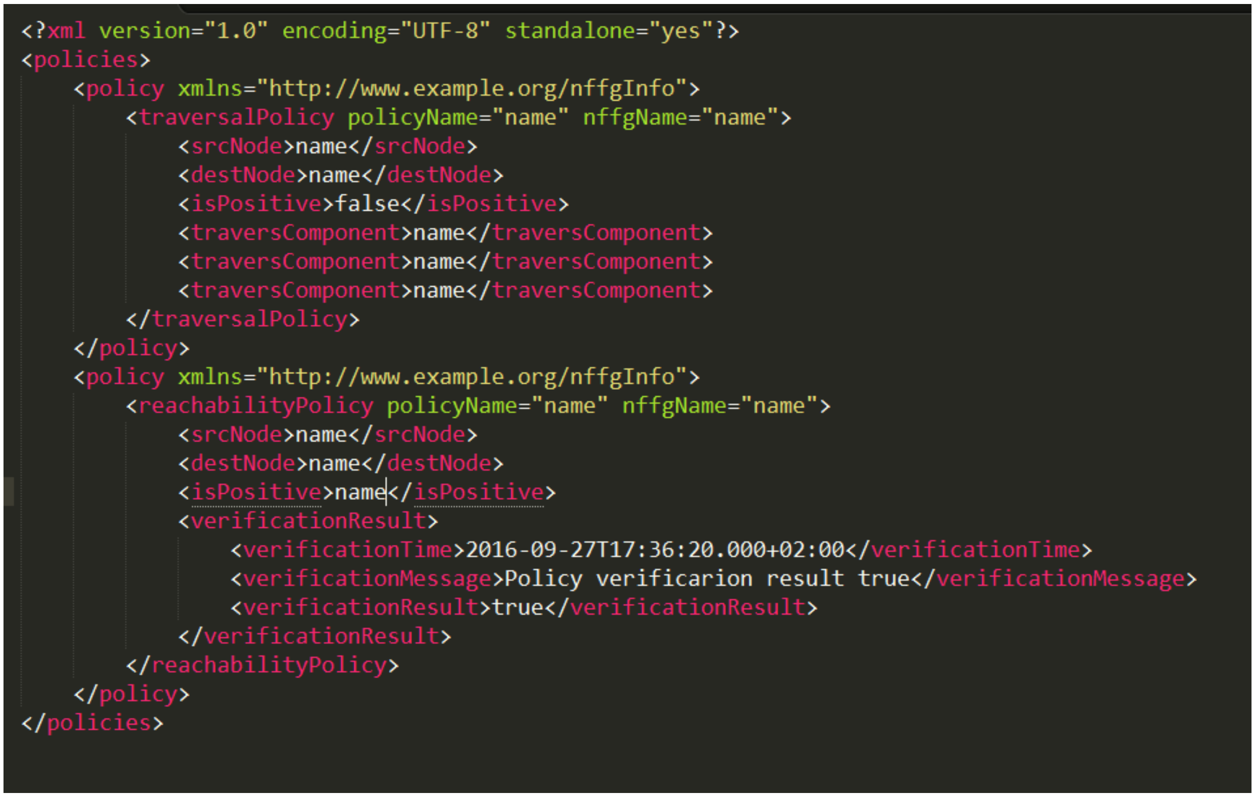
Get list of Policies

Example request

- **GET** http://localhost:8080/NffgService/rest/policyservice
- **Content-Type:** application/xml

Example response

- **200:** OK
- **Content-Type:** application/xml
- **BODY:**



```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<policies>
    <policy xmlns="http://www.example.org/nffgInfo">
        <traversalPolicy policyName="name" nffgName="name">
            <srcNode>name</srcNode>
            <destNode>name</destNode>
            <isPositive>false</isPositive>
            <traversComponent>name</traversComponent>
            <traversComponent>name</traversComponent>
            <traversComponent>name</traversComponent>
        </traversalPolicy>
    </policy>
    <policy xmlns="http://www.example.org/nffgInfo">
        <reachabilityPolicy policyName="name" nffgName="name">
            <srcNode>name</srcNode>
            <destNode>name</destNode>
            <isPositive>name</isPositive>
            <verificationResult>
                <verificationTime>2016-09-27T17:36:20.000+02:00</verificationTime>
                <verificationMessage>Policy verificarion result true</verificationMessage>
                <verificationResult>true</verificationResult>
            </verificationResult>
        </reachabilityPolicy>
    </policy>
</policies>
```

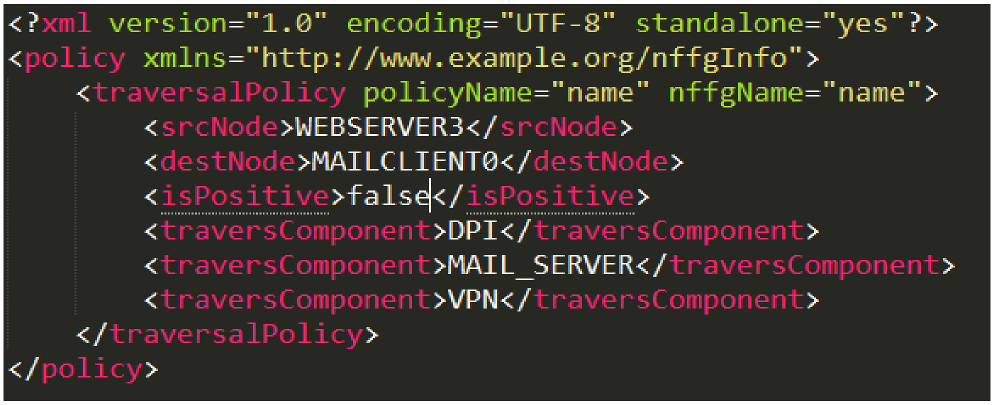
Get Policy by ID

Example request

- **GET** http://localhost:8080/NffgService/rest/policyservice/id
- **Content-Type:** application/xml

Example response

- **200:** OK
- **Content-Type:** application/xml
- **BODY:**



```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<policy xmlns="http://www.example.org/nffgInfo">
    <traversalPolicy policyName="name" nffgName="name">
        <srcNode>WEBSERVER3</srcNode>
        <destNode>MAILCLIENT0</destNode>
        <isPositive>false</isPositive>
        <traversComponent>DPI</traversComponent>
        <traversComponent>MAIL_SERVER</traversComponent>
        <traversComponent>VPN</traversComponent>
    </traversalPolicy>
</policy>
```

Delete all Policies

Example request

- **DELETE** http://localhost:8080/NffgService/rest/policyservice/
- **Content-Type:** application/xml

Example response

- **204:** NO CONTENT
- **Content-Type:** text/plain

Delete Policy by ID

Example request

- **DELETE** http://localhost:8080/NffgService/rest/policyservice/id
- **Content-Type:** application/xml

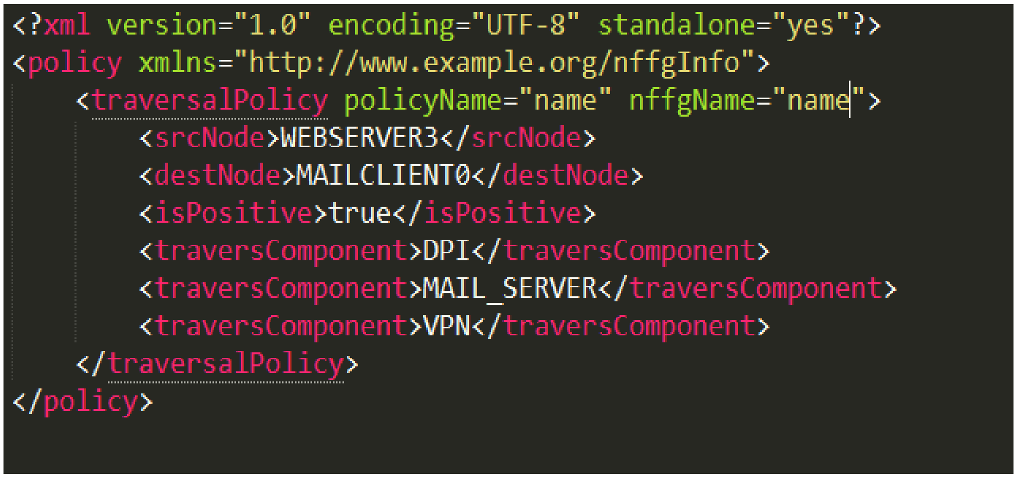
Example response

- **204:** NO CONTENT
- **Content-Type:** text/plain

UPDATE a Policy by ID

Example request

- **PUT** http://localhost:8080/NffgService/rest/policyservice/id
- **Content-Type:** application/xml
- **BODY:**



```xml
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<policy xmlns="http://www.example.org/nffgInfo">
    <traversalPolicy policyName="name" nffgName="name">
        <srcNode>WEBSERVER3</srcNode>
        <destNode>MAILCLIENT0</destNode>
        <isPositive>true</isPositive>
        <traversComponent>DPI</traversComponent>
        <traversComponent>MAIL_SERVER</traversComponent>
        <traversComponent>VPN</traversComponent>
    </traversalPolicy>
</policy>
```

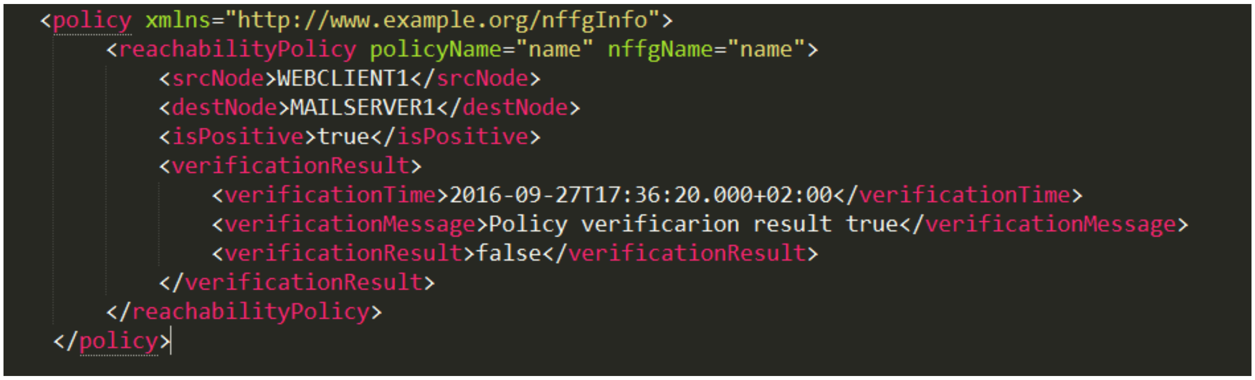
Example response

- **200:** OK
- **Content-Type:** text/plain

UPDATE Verification Result of a Policy by ID

Example request

- **PUT** http://localhost:8080/NffgService/rest/policyservice/verification/
- **Content-Type:** application/xml
- **BODY:**



```
<policy xmlns="http://www.example.org/nffgInfo">
     <reachabilityPolicy policyName="name" nffgName="name">
         <srcNode>WEBCLIENT1</srcNode>
         <destNode>MAILSERVER1</destNode>
         <isPositive>true</isPositive>
         <verificationResult>
             <verificationTime>2016-09-27T17:36:20.000+02:00</verificationTime>
             <verificationMessage>Policy verificarion result true</verificationMessage>
             <verificationResult>false</verificationResult>
         </verificationResult>
     </reachabilityPolicy>
 </policy>
```

Example response

- **200:** OK
- **Content-Type:** text/plain