XINS Protocol

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Introduction

This document describe the requirements to write a XINS compliant API.

Input requirements

XINS is a framework for invoking functions remotely using HTTP.

- `HTTP GET` must be supported

- `HTTP POST` must be supported

- The query must have a `_function` parameter which is not empty and which contains the name of the function invoked. If this parameter is missing, or has an invalid value, or the value is not a name of a defined function, a `HTTP 404` code must be returned.

- If a parameter is sent without value, it should be considered as missing.

- The framework should fail if the query has a `function` parameter with a different value than the one for the `_function` parameter.

Output requirements

XINS returns an XML document as output.

- The root element of the returned XML must be `result`.

- If a result code is returned, the result element must have a `errorcode` attribute.

- If the result element doesn't have any attributes, the result is considered as successful.

- Returned parameters should be returned with sub-elements `<param name="name1">value1</param>`.

- The returned XML may contain a `data` element with sub-elements.

- If some parameters are missing or the value of a parameter does not match the type, an `_InvalidRequest` error code should be returned.

- If a generic error is generated in the implementation of the function an `_InternalError` error code should be returned.

Default error code

XINS includes standard error codes for common errors.

- _InternalError

  This error code is returned when the implementation of the function has thrown an error.

- _InvalidRequest

  This error code is returned when the given parameters do not comply with the specification of the input. The cases where this could happen is when a required parameter is missing, the value of a parameter does not match the type or the combination of a `param-combo` set in the specification.

- _InvalidResponse

  This error code is returned when the returned parameters do not comply with the specification of the output.

- _DisabledFunction

  This error code is returned when a function has been disabled. You can only have this error code if the framework has implemented the `_DisableFunction` (and `_EnableFunction`) meta function.

For more information about what the elements should contain when a standard error code is returned, look at the examples.

Conventions

Result codes, function names and parameters starting with an underscore are reserved for XINS.

- Result codes are written with the hungarian convention and starting with an uppercase (e.g. DisabledAccount).

- Function names uses the hungarian convention and starting with an uppercase (e.g. CheckMIP15, GetSessionDetails).

- Parameters for the request are in lowercase (e.g. zipcode).

- Returned elements and attributes are in lowercase. e.g.

```
<?xml version="1.0" encoding="UTF-8"?>
<result>
  <param name="csr">anne8</param>
  <param name="loggedIn">false</param>
  <data>
    <property name="upgrade" value="true" />
  </data>
</result>
```

- Returned parameter names use the hungarian convention starting with a lowercase (e.g. loggedIn, mainAccount, accountID).

- The values of the parameters or of the attribute values for the data elements can be anything you want.

Examples

Successful result

```
<?xml version="1.0" encoding="UTF-8"?>
<result/>

<?xml version="1.0" encoding="UTF-8"?>
<result>
  <param name="java.version">1.4.1_02</param>
  <param name="xins.version">1.0.0</param>
  <param name="xmlenc.version">0.43</param>
</result>

<?xml version="1.0" encoding="UTF-8"?>
<result>
  <param name="startup">2004.11.30 07:08:13.296</param>
  <param name="availableProcessors">1</param>
  <param name="now">2004.12.07 14:31:51.559</param>
  <data>
    <heap total="531628032" used="80881976" free="450746056" max="603979776"/>
  </data>
</result>
```

Unsuccessful result

If the error code starts with an underscore, the error code is a standard error code.

```
<?xml version="1.0" encoding="UTF-8"?>
<result errorcode="_InvalidRequest">
  <data>
    <missing-param param="zipcode"/>
  </data>
</result>

<?xml version="1.0" encoding="UTF-8"?>
<result errorcode="UnknownSessionID"/>

<?xml version="1.0" encoding="UTF-8"?>
<result errorcode="BackendFailure">
  <param name="number">11</param>
</result>
```