ngEO Task 4

Web Client

Installation, Operation and Maintenance Manual

document status sheet

| Version | Date | Pages | Changes |
| --- | --- | --- | --- |
| 0.1 | 11/10/2012 | 15 | First published version |
| 0.2 | 19/11/2012 | 15 | Add installation of test server |
| 0.3 | 18/01/2013 | 15 | First CDR delivery  Add note on how to modify the WebClient using the development version. |
| 1.0 | 16/04/2013 | 15 | FAT : Fix typo in Start |
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# Introduction

## Purpose

This document defines the Installation and Operation manual for the ngEO Web Client sub-system.

This document provides the installation of the web client as a stand-alone application using a test server.

This document will be updated during the ngEO project.

## Scope

This document does not include the User Manual.

# Applicable and Reference Documents

## Applicable Documents

The following documents, of the exact issue shown, form part of this document to the extent specified herein. Applicable documents are those referenced in the Contract or approved by the Approval Authority. They are referenced in this document in the form [AD.X]:

Table 2‑1 Applicable Documents

| Ref. | Title | Code | Version | Date |
| --- | --- | --- | --- | --- |
|  | Space Engineering - Software | ECSS-E-ST-40 | C | 6 March 2009 |
|  | SUBSYSTEM REQUIREMENT DOCUMENT FOR NGEO WEB USER CLIENT | ngEO-14-SRD-ELC-005 | 1.2 | 23 March 2012 |
|  | Installation Operation and Maintenance Manual | ngEO-WEBC-IOM | 0.1 | 15 October 2012 |
|  | INTERNAL INTERFACE CONTROL DOCUMENT WEB CLIENT - WEB SERVER | ngEO-14-ICD-ELC-075 | 1.2 | 29 March 2012 |

## Reference Documents

The following documents, although not part of this document, amplify or clarify its contents. Reference documents are those not applicable and referenced within this document. They are referenced in this document in the form [RD.X]:

Table 2‑2 Reference Documents

| Ref. | Title | Code | Version | Date |
| --- | --- | --- | --- | --- |
|  | ngEO-WEBS-IOM\_v1 0.docx |  |  |  |

# Terms, Definitions and Abbreviated Terms

## Definitions

Concepts and terms used in this document and needing a definition are included in the following table:

Table 3‑1 Definitions

| Concept / Term | Definition |
| --- | --- |
|  |  |

## Acronyms

Acronyms used in this document and needing a definition are included in the following table:

Table 3‑2 Acronyms

| Acronym | Definition |
| --- | --- |
| RPM | RPM Package Manager |
| OS | Operating System |
| OSS | Open Source Software |
| COTS | Commercial Off The Shelf |

# Installation Manual

## Overall Description and Flow Diagram

Web Client installation is very simple. The installation must be done on the same computer used for the Web Server. The Web Client is installed through rpm after web server one.

## Prerequisites

The Web Client needs a standard RedHat system (or any compatible system as CentOS) to be installed. The Web Client is collocated with the Web Server, see Web Server prerequisites.

There are no specific prerequisites on the hardware.

## OS Installation

Same as Web Server, see Web Server OS installation in [RD.1].

At least, httpd must be installed.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***NGEO INSTALLATION PROCEDURE*** | | | | | |
| **Identifier** | | *NGEO-CTRL-INST-0010* | **Title** | | *OS Installation* |
| **Procedure Objective** | | | | | |
| Install and configure Operating System | | | | | |
| **Files needed** | | | | | |
|  | | | | | |
| **Step** | **Action** | | | **Expected output** | |
| *Step-10* | yum install httpd | | |  | |
| *Step-20* |  | | |  | |
| *Step-30* |  | | |  | |

## OSS/COTS Installation

Node.js is needed for the Web Client Test Server. The test server is not strictly needed for the production, but during integration phase.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***NGEO INSTALLATION PROCEDURE*** | | | | | |
| **Identifier** | | *NGEO-CTRL-INST-0020* | **Title** | | *OSS/COTS Installation* |
| **Procedure Objective** | | | | | |
| Install and configure Open Source Software / Common Of-The-Self Software  Note: this applies to software rpms not installed already in OS installation procedure. | | | | | |
| **Files needed** | | | | | |
| nodejs-0.8.11-1.x86\_64.rpm | | | | | |
| **Step** | **Action** | | | **Expected output** | |
| *Step-10* | rpm –Uvh nodejs-0.8.11-1.x86\_64.rpm | | |  | |
| *Step-20* | node –-version | | | v0.8.11 | |

## Component Installation

The component is installed through two rpms:

* esa-webclient-ngeo-XX-YY.noarch.rpm;
* esa-webclient-testserver-ngeo-XX-YY.noarch.rpm

XX is for the version

YY is for the release following <type><date> with type=SNAPSHOPT|BETA|FINAL and date is the date of the release.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***NGEO INSTALLATION PROCEDURE*** | | | | | |
| **Identifier** | | *NGEO-CTRL-INST-0030* | **Title** | | *Component Installation* |
| **Procedure Objective** | | | | | |
| Install and configure the NGEO component.  Notes:   * Step-40 and Step-50 are optional, they install the test server and it is not needed for a full ngEO sytem. | | | | | |
| **Files needed** | | | | | |
| esa-webclient-ngeo-XX-YY.noarch.rpm ngeo-install.sh | | | | | |
| **Step** | **Action** | | | **Expected output** | |
| *Step-10* | ngeo-install.sh install | | | *-* | |
| *Step-20* | ngeo-install.sh status | | | esa-webclient-ngeo : installed | |
| *Step-30* | ls /usr/local/ngeo/webclient/index.html | | | /usr/local/ngeo/webclient/index.html | |
| *Step-40* | *rpm –Uvh esa-webclient-testserver-ngeo-XX-YY.noarch.rpm* | | | *-* | |
| *Step-50* | *ls /usr/local/ngeo/webclient-testserver/app.js* | | | */usr/local/ngeo/webclient-testserver/app.js* | |

## Uninstallation

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***NGEO UNINSTALL PROCEDURE*** | | | | | |
| **Identifier** | | *NGEO-CTRL-INST-0040* | **Title** | | *Component unnstall* |
| **Procedure Objective** | | | | | |
| Uninstall the NGEO component.  Notes:   * Step-40 and Step-50 are only needed if the test server has been installed. | | | | | |
| **Files needed** | | | | | |
| ngeo-install.sh | | | | | |
| **Step** | **Action** | | | **Expected output** | |
| *Step-10* | ngeo-install.sh uninstall | | | None | |
| *Step-20* | ngeo-install.sh status | | | esa-webclient-ngeo : missing | |
| *Step-30* | ls /usr/local/ngeo/webclient/index.html | | | ls : cannot access /usr/local/ngeo/webclient/index.html: no such file or directory. | |
| *Step-40* | rpm –e esa-webclient-testserver-ngeo | | | None | |
| *Step-50* | rpm –qi esa-webclient-testserver-ngeo | | | Package esa-webclient-testserver-ngeo is not installed | |

# Operation Manual

WebClient is started/stopped with the WebServer, see [RD.1].

The following operations are to use the Web Client with its Test Server.

## Start

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***NGEO OPERATION PROCEDURE*** | | | | | |
| **Identifier** | | *NGEO-CTRL-OPE-0010* | **Title** | | *Component start* |
| **Procedure Objective** | | | | | |
| Start the test server. | | | | | |
| **Step** | **Action** | | | **Expected output** | |
| *Step-10* | Open a new terminal as root | | |  | |
| *Step-20* | node /usr/local/ngeo/webclient-testserver/app.js | | | Express server listening on port 3000. | |

## Stop

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***NGEO OPERATION PROCEDURE*** | | | | | |
| **Identifier** | | *NGEO-CTRL-OPE-0020* | **Title** | | *Component stop* |
| **Procedure Objective** | | | | | |
| Stop the test server. | | | | | |
| **Step** | **Action** | | | **Expected output** | |
| *Step-10* | Ctrl^C in the node terminal | | | None | |

## Configuration

The WebClient is defined in a file : configuration.json. This file is merged with the one given by WebServer. Both file must contains the following parameters. Other parameters are not used.

### Main configuration parameters

|  |  |  |  |
| --- | --- | --- | --- |
| Root parameter | Sub-parameter | Type | Description |
| tableView |  | Object | Contains the configuration of the table |
|  | maxVisibleColumns | Number | The maximum number of allowed visible columns |
|  | columnsDef | Array | The column to display for the EarthObservation GeoJSON format. See… |
|  | directDownloadColumn | Number | The column number where a link is presented for direct download (-1 is none) |
| search |  | Object | Contains the configuration for the search panel |
|  | geometryPrecision | Number | The number of decimals to put in the OpenSearch URL when doing the request to Web Server |
|  | advancedCriteriaLabels | Object | A dictionary to map advanced criteria name as received by WebServer to a suitable label. |
| searchResults |  | Object | Configuration for the search results component |
|  | countPerPage | Number | The number of results per page |
| keyDates |  | Array | A list of key dates display when choosing a date (for search or standing order) |
| downloadManager |  | Object | Parameter for download manager component |
|  | downloadManagerInstallationLink | Object | A dictionary with a link for ear platform (Windows, Linux, MacOS) |
| simpleDataAccessRequest |  | Object | Parameter for simple data access request |
|  | warningMaximumSize | Number | The maximum size for a data acces request, if above a warning message is displayed. |
| gazetteer |  | Object | Configuration for map. |
|  | maxResults | Number | The maximum number of results to display |
|  | timeout | Number | Timeout in milliseconds when requesting results |
|  | outputPolygon | Boolean | If true the output is a used as a polygon, otherwise the bounding box is used. Warning : a polygon returned by gazetteer is generaly very complex. |

### Map configuration parameter

|  |  |  |  |
| --- | --- | --- | --- |
| projection |  | String | The projection used by the map, can be EPSG:4326 or EPSG: 3857 (Google Mercator). Only EPSG:4325 is supported to handle browse. |
| openLayers |  | Object | Specific parameters for OpenLayers configuration (2D map) |
|  | restrictedExtent | Array | The extent to use to display the map |
|  | transitionEffect | String | Set a transisition effect when zooming. See OpenLayers documentation |
| globWeb |  | Object | Specific parameters for GlobWeb configuration (3D map) |
|  | tileErrorTreshold | Number | The value to use when refining, 2 is high quality, 4 or above is lower quality |
|  | displayStats | Boolean | Display statistics (frame-rate) |
|  | continuousRendering | Boolean | If true the display is done continuously, provides smoother animation and navigation but more costly. Default is false |
|  | zoomDuration | Integer | The duration in milliseconds to be used when zooming |
|  | elevationLayer | Object | A WCS layer for elevation. See layer parameter configuration. |
|  | backgroundLayers | Array | An array of background layers.Only one background layer can be active. See layer parameter configuration. |
|  | layers | Array | An array of additionnal layers. See layer parameter configuration. |
|  | styles | Array | The style used by layer (footprints, shopcarts, etc..). Based on OpenLayer styling parameters. |
|  | browseDisplay | Object | Parameters for browse display : opacity or crossOrgin is possible. |

### Layer configuration parameter

|  |  |  |
| --- | --- | --- |
| id | String | The identifier used internally |
| name | String | The name displayed to user |
| type | String | The layer type.  For background supported type is WMS, OSM and Bing.  For elevation supported type is WCS.  For layer GeoRSS, WFS, KML, GeoJSON, WMS, WMTS are supported. |
| crossOrigin | String | The crossOrigin value used when requesting the image on a server. Can be set to any valid values (use-credentials, anonymous). See <https://developer.mozilla.org/en-US/docs/Web/HTML/Element/img#attr-crossorigin> |
| baseUrl | String | Only supported for WMS, WFS, OSM and WMTS.  The base URL to use to acces the service. |
| location | String | Only supported for GeoRSS and KML.  The location to the resource containing the data to display. |
| visible | Boolean | If the true the layer is visible by default |
| style | String | A identitifer to the style to use to display the layer, as defined in map.styles. |
| params | Object | Only supported for WMS, WMTS, WCS.  The parameters to sent in the “GetMap/GetTile/GetCoverage” request. See OCG specs for more details. The parameters MUST be lowercase. |
| featureType | String | Only supported for WFS.  The feature type to use (see WFS spec) |
| featureNS | String | Only supported for WFS.  The feature namespace to use (see WFS spec) |

### Style Configuration parameter

The style parameter is an object where each parameter is an identifier to a given style used in Web Client.

Reserved values for style identifier are:

* results-footprint : the style used to display the search results footprints
* shopcart-footprint: the style used to display the shopcart items footprints
* search-area : the style used to display the search area selected by user

Each style can defined for the different states in Web Client :

* default: the default style to be used
* highlight : style used when the feature is highlighted
* select : style used when the feature is selected
* highlight-select : style used when the feature is both selected and highlighted

If style is directly defined, without the different states, then the same style is applied for all states.

Style is based on OpenLayers styling, see <http://docs.openlayers.org/library/feature_styling.html#style-properties>. GlobWeb do not supported filled polygons, and external graphics.

# Reference Manual

## Log Events

|  |  |  |
| --- | --- | --- |
| ***LOG EVENTS*** | | |
| **ID** | **Description and cause** | **How to proceed / recovery** |
|  |  |  |
|  |  |  |
|  |  |  |

# Maintenance Manual

## Periodic maintenance

Not applicable.

## Non-Periodic maintenance

Not applicable.

## Modifications

As stated in [AD.2], an administrator with HTML skills should be able to modify the GUI instances. The RPM delivered for WebClient contains a minified and optimized version that cannot be modified easily.

A RPM esa-webclient-dev-ngeo-XX-YY.noarch.rpm is also delivered to provide the clean sources and a way to modify the Web Client. The installation steps are the same as described in 4.5.

The development version can be tested using the ngeo test server (see how to start it in 5.1) and accessing the URL <http://localhost:3000/client-dev>.

Once modified, an optimized version can be produced by executing the script build.sh in the directory /usr/local/ngeo/webclient-dev/build.

cd /usr/local/ngeo/webclient-dev/build

./build.sh

The optimized version is put in /usr/local/ngeo/webclient-dev/build/output. It can be tested using URL <http://localhost:3000/client-opt>.

All contents of /usr/local/ngeo/webclient-dev/build/output must be copied to WebClient installation in order to update the production version.

cp –r /usr/local/ngeo/webclient-dev/build/output/\* /usr/local/ngeo/webclient

# Summary of steps

Not applicable.

# Summary of problems and their correction

Not applicable.

END OF DOCUMENT