CRPSP

# About

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# Terminology

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# Usage

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# Process

## Data Acquisition

The first step in this protocol is acquiring purely random data. This is done using HotBits: A non-lucrative organisation which gives random data generated by a Cesium reactor. To do so, a micro-computer (Raspberry Pi) downloads 2048 bit packages of data up to a total of approximately 2 Gigabytes. The packages are stored in an index folder which has a “.crpsp” file extension. The 2048 bit packages are stored in a “.xml” file.

### Index Structure

The index contains four main entities: **root**, **hierarchy**, **xml**, and **breadcrumbs**.  
**Root:** This entity is a folder which holds breadcrumbs, the hierarchy, as well as the log file. The folder itself must end with “.crpsp” for easier recognition. The purpose and structure of the log file will be further discussed later.  
**Hierarchy:** This section is the one in which all the xml packages are organised. It consists of a set of 100 folders (labelled from 00-99) each containing 100 folders (labelled in the same fashion) which each contain 100 xml random data packages: the XML entity.  
**XML:** This entity holds random data acquired from HotBits. As it may very well be deduced, it consists of an xml file for which the structure is the following.

**Breadcrumbs:** This section is the one which reutilises the remains of previously used xml packages. It serves as a middleground in which packages with a length smaller than 2048 bits can be stored until they are recombined into a new unique xml package which will be stored in the index.

### XML file Structure

[xml\_file\_structure]

Xml File Structure

|  |  |  |  |
| --- | --- | --- | --- |
|  | Description |  |  |
| hotbits |  |  | Root tag |
|  | status |  |  |
|  | request-information | <++> |  |
|  |  | server-version | <++> |
|  |  | generation-time | <++> |
|  |  | bytes-requested | <++> |
|  |  | bytes-returned | <++> |
|  |  | quota-request-remaining | <++> |
|  |  | quota-bytes-remaining | <++> |
|  |  | generator-type | <++> |
|  | random-data |  | <++> |

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