NS Package Specification

V0.1

Catalog

1. Scope

The scope of the present document is to describe the NS CSAR model specification for ONAP R1.

2. Terms, Definitions and Abbreviations

For the purposes of the present document, the following abbreviations apply:

Abbreviation	Definition
CSAR	Cloud Service Archive
NS	Network Service
NSD	Network Service Descriptor
TOSCA	Topology and Orchestration Specification for Cloud Applications

Table 2-1 abbreviations

3. NS CSAR Model Definition

In ONAP, TOSCA language is adopted to describe the NS Package. This document refers to "TOSCA Simple Profile YAML v1.1" specification. Base on those specifications, these clauses below focus on extension and satisfy the open NS package requirements.

3.1 OASIS CSAR Introduction

A CSAR is a zip file containing at least two directories, the *TOSCA-Metadata* directory and the *Definitions* directory. Beyond that, other directories MAY be contained in a CSAR, i.e. the creator of a CSAR has all freedom to define the content of a CSAR and the structuring of this content as appropriate for the cloud application.

The TOSCA-Metadata directory contains metadata describing the other content of the CSAR. This metadata is referred to as TOSCA meta file. This file is named TOSCA and has the file extension .meta.

The Definitions directory contains one or more TOSCA Definitions documents (file extension .tosca). These Definitions files typically contain definitions related to the cloud application of the CSAR. In addition, CSARs can contain just the definition of elements for re-use in other contexts. For example, a CSAR might be used to package a set of Node Types and Relationship Types with their respective implementations that can then be used by Service Templates provided in other CSARs. In cases where a complete cloud application is packaged in a CSAR, one of the Definitions documents in the Definitions directory MUST contain a Service Template definition that defines the structure and behavior of the cloud application.

3.2 NS CSAR Model Structure

Dirctory/Files	Qualifier	Description
/TOSCA-Metadata/TOSCA.meta	M	Describing the other content of the CSAR. The detail of "TOSCA.meta" format refers to clause 3.4.
/Definitions	M	Including simple TOSCA Type Definition and NSD definition files The detail of NSD format refers to <NSD Specification>.
/Plans	O	LCM Workflow Plans Deploy, Termination, etc.

3.3 TOSCA Meta File Definition

The TOSCA meta file includes metadata that allows interpreting the various artifacts within the CSAR properly. The `TOSCA.meta` file is contained in the `TOSCA-Metadata` directory of the CSAR.

A TOSCA meta file consists of name/value pairs. The name-part of a name/value pair is followed by a colon, followed by a blank, followed by the value-part of the name/value pair. The name MUST NOT contain a colon. Values that represent binary data MUST be base64 encoded. Values that extend beyond one line can be spread over multiple lines if each subsequent line starts with at least one space. Such spaces are then collapsed when the value string is read.

```
<name>: <value>
```

Each name/value pair is in a separate line. A list of related name/value pairs, i.e. a list of consecutive name/value pairs describing a particular file in a CSAR, is called a *block*. Blocks are separated by an empty line. The first block, called *block_0*, is metadata about the CSAR itself. All other blocks represent metadata of files in the CSAR.

The structure of block_0 in the TOSCA meta file is as follows:

```
TOSCA-Meta-File-Version: digit.digit
CSAR-Version: digit.digit
Created-By: string
Entry-Definitions: string ?
```

The name/value pairs are as follows:

- `TOSCA-Meta-File-Version`: This is the version number of the TOSCA meta file format. The value MUST be "1.0" in the current version of the TOSCA specification.
- `CSAR-Version`: This is the version number of the CSAR specification. The value MUST be "1.0" in the current version of the TOSCA specification.
- `Created-By`: The person or vendor, respectively, who created the CSAR.
- `Entry-Definitions`: This OPTIONAL name/value pair references a TOSCA Definitions file from the Definitions directory of the CSAR that SHOULD be used as entry point for processing the contents of the CSAR.
  Note, that a CSAR may contain multiple Definitions files. One reason for this is completeness, e.g. a Service Template defined in one of the Definitions files could refer to Node Types defined in another Definitions file that might be included in the Definitions directory to avoid importing it from external locations. The `Entry-Definitions` name/value pair is a hint to allow optimized processing of the set of files in the Definitions directory.

For an example:

csar_vfw.zip

```
TOSCA-Meta-File-Version: 1.0
CSAR-Version: 1.0
Created-By: zte
Entry-Definitions: Definitions/tosca_vfw.yaml
```