

JSON Content Rules (JCR)

A Data Definition Language for JSON
draft-newton-json-content-rules-09

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The Problem

- Complex JSON data structures can be difficult to describe with prose.
- Lengthy prose are tedious to read, challenging if English is not your native language.
- Without formal definitions, protocol test suites are difficult to construct.
- Examples are necessary but not sufficient
 - RDAP and jCard are case studies on why examples only get you so far

We need something that...

- will help specification authors concisely and clearly describe complex JSON
- aid software developers to verify their implementations are specification conformant
- enable the construction of test suites
- and is yet legible to the "casual" reader
(persons knowledgeable with JSON, experienced with DDLs and schema languages but perhaps not up-to-speed on JCR)

History of JCR

- Original syntax was "JSON-like"
(one of the inspirations for CDDL)
- Tried a more wordy, verbose syntax. Nobody liked it.
- Syntax is now a super-set of JSON
 - Makes it easy to start writing rules from examples
 - Other cues from ABNF, regex, etc...
 - Many discussions on syntax, and even some usability testing
- Authors are very keen on getting it to work in software first
 - Real-world testing – NicInfo now uses it to verify RDAP

An Example: Decomposing CIDR

```
[  
  {  
    "prefix" : "192.0.20.0",  
    "length" : 24  
  },  
  ..  
]
```



```
[  
  {  
    "prefix" : ipaddr,  
    "length" : integer  
  } +  
]
```



```
$v4cidr = {  
  "v4prefix" : ipv4,  
  "length"   : 0..32  
}
```

```
$v6cidr = {  
  "v6prefix" : ipv6,  
  "length"   : 0..128  
}
```

```
$cidrs = [  
  $v4cidr + | $v6cidr +  
]
```

Moving Forward

- Lots of work done
 - Discussion on JSON list (wg is now closed)
 - Also in the GitHub trackers
 - Private email
- Two open issues left
 1. Better way to OR members of objects and their values
 2. A more formal means of extending rules
- Seeking AD sponsorship via DISPATCH