The Constrained RESTful Application Language (CoRAL)

draft-ietf-core-coral-05

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2022-07-26, IETF 114

CoRAL

A data model and language for talking about resources and interactions with them, suitable for constrained devices

CoRAL: Properties relevant for today

- Information model is similar to RDF
- CBOR based representation of URIs and structure

"My temperature resource supports the Series Transfer Pattern."
`</temp> core:if <tag:example.com,2020,t2trg-stp>.`

...plus some features not covered today, such as navigation through forms, localization, and convertability with suitable Link Format documents or RDF.

Recent model simplification: Literals

Literals are terminal nodes in the graph.
Any properties literals might have are expressed through CBOR tags.

`problem-details` did the hard work here.

Ongoing work: Compact format based on cbor-packed

```
core:rt pubsub:topic,
pubsub:has-published-item true,
pubsub:created dt'2019-07-08T15:35:00+0200',
pubsub:last-modified dt'2019-07-08T15:35:00+0200',
pubsub:topic-data [ = </ps/data/1234>,
    core:title "My Office Room Temperature",
    core:rt oic:r.temperature,
    our:building 18,
    our:floor 1,
    core:unit unit:Cel,
]
```

Ongoing work: Compact format based on `cbor-packed`

- Some table entries initialized through media type.
  `core:title` used compressed as `[2, 6(14), "My Office "…]`
- Registered ranges can be loaded without referencing dictionaries by any long identifiers
  `pubsub:*` pushed into tables through `TBD(6(16), [10, 0], …)`
- Custom terms are loaded by referencing URIs
  `our:building` pushed into tables through
  `TBD(cri"https://our.example.com/tab", [3, 3], …)`
- CRI CURIEs? `unit:Cel`

Also join CBOR on Thursday for discussion of `cbor-packed`!

Ongoing work: Security model

Use existing security models, but tell how to apply them.
The CoRAL document should provide...

- to application authors:
  Guidance on expressing their security requirements.
- to CoRAL agents:
  Rules for evaluating these security requirements against the authorizations conveyed in CoRAL documents.

Open areas and next steps

- Binary serialization – needs more real-world examples, especially of forms.
- Mapping to `problem-details` – now that that is done.
- Queries, patches, provenance – likely not in initial version.

Thanks

Comments?

Questions?