JOHNS HOPKINS
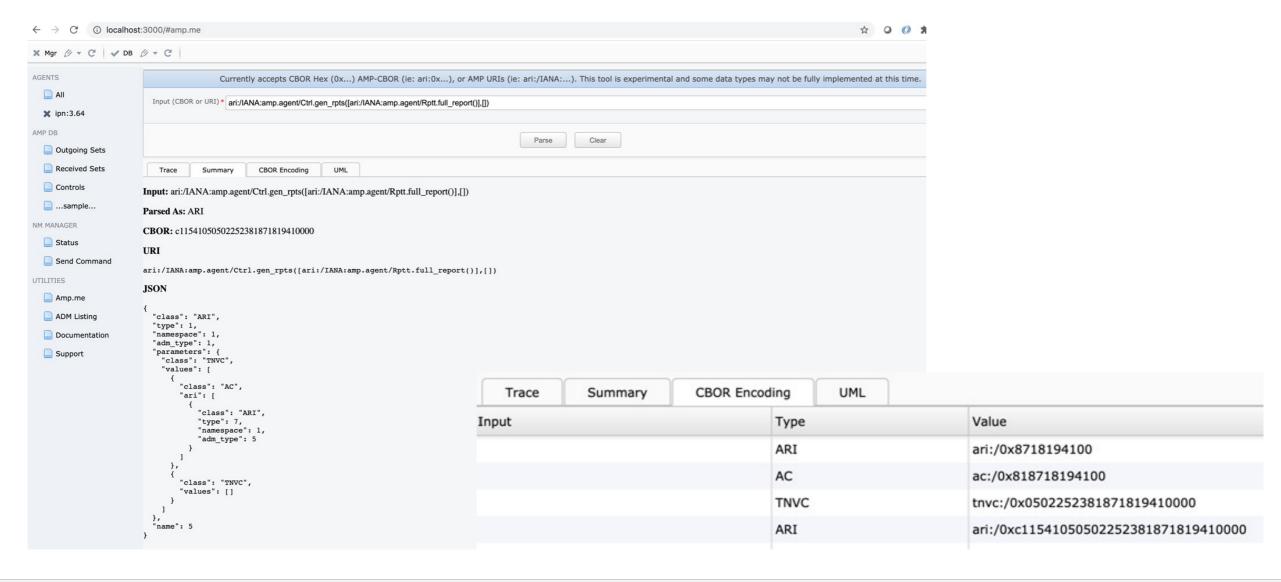APPLIED PHYSICS LABORATORY

AMP.me

A prototype NM tool

David Edell
JHU/APL

Overview

- This is a prototype tool, that will soon be released open source
  - Initially packaged with ION

- Written entirely in Javascript
  - Command-line (NodeJS) and Browser based interfaces

- Intended to serve as a debug tool to analyze AMP messages, and as a sample interface to the NM Manager via the MySQL and/or REST API interfaces.

- Current Features Include
  - Conversion of messages between URI, CBOR-Encoded HEX Strings, and a variety of intermediate formats and visual representations
  - Command line tool to insert controls (via URI) into the MySQL database (browser bindings todo)
  - Command line tool to view received reports
  - View list of registered agents

- Future Capabilities may include
  - Web form to build and send controls to one or more known agents
  - View manager status
  - View received reports and transmitted (or pending) controls and update status.
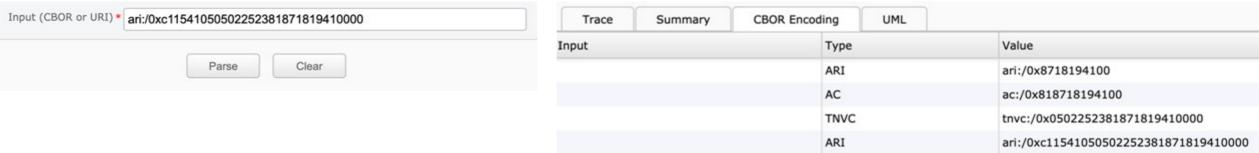 - ADM Definition Views
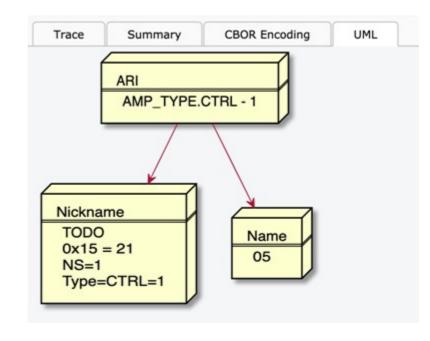
amp.me – URI Decoding

amp.me – CBOR Decoding & Re-encoding

Input (CBOR or URI) * `ari:/0xc115410505022252381871819410000`

[Parse]   [Clear]

Trace	Summary	CBOR Encoding	UML

Input	Type	Value
	ARI	ari:/0x8718194100
	AC	ac:/0x818718194100
	TNVC	tnvc:/0x05022252381871819410000
	ARI	ari:/0xc115410505022252381871819410000

Trace	Summary	CBOR Encoding	UML

Input	Type	Value
c1	AMP_TYPE.CTRL	NN=true,PARM=true,ISS=false,TAG=false
15	ARI.Nickname	NN=21,NS=1,TYPE=1
4105	ARI.name	[object DataView]
05	TNVC.flag	5
2	TNVC.length	2
25	TNVC.type	AMP_TYPE.AC
23	TNVC.type	AMP_TYPE.TNVC
81	AC.start	1
87	AMP_TYPE.RPTTPL	NN=true,PARM=false,ISS=false,TAG=false
1819	ARI.Nickname	NN=25,NS=1,TYPE=5
4100	ARI.name	[object DataView]
00	TNVC.flag	0
	ARI	ari:/0x8718194100
	AC	ac:/0x818718194100
	TNVC	tnvc:/0x05022252381871819410000
	ARI	ari:/0xc115410505022252381871819410000

Trace	Summary	CBOR Encoding	UML

SQL Insertion

```
C02YD01EJG5J-ML:nm_ui edelldj1$ ./sql_msgs_insert.js --msg "ari:/IANA:amp.agent/Ctrl.gen_rpts([ari:/IANA:amp.agent/Rptt.full_rep
ort()],[])" --agent "ipn:3.64"
undefined
[Object: null prototype] {
  ns: 'IANA:amp.agent',
  namespace: 'IANA',
  nsname: 'amp.agent',
  cmd_type: 'Ctrl',
  cmd_name: 'gen_rpts',
  args: '[ari:/IANA:amp.agent/Rptt.full_report()],[]'
}
tnvc fromuri part= [ari:/IANA:amp.agent/Rptt.full_report()]  from uri= [ '[ari:/IANA:amp.agent/Rptt.full_report()]', '[]' ]  typ
e= AC
[Object: null prototype] {
  ns: 'IANA:amp.agent',
  namespace: 'IANA',
  nsname: 'amp.agent',
  cmd_type: 'Rptt',
  cmd_name: 'full_report',
  args: ''
}
tnvc fromuri part= []  from uri= [ '[ari:/IANA:amp.agent/Rptt.full_report()]', '[]' ]  type= TNVC
insertCtrl( 112, null, ari:/IANA:amp.agent/Rptt.full_report()
insertCtrl( 118, 24, ari:/IANA:amp.agent/Ctrl.gen_rpts([ari:/IANA:amp.agent/Rptt.full_report()],[])
Created message group with id of  1
Done
```

SQL Message Set Debug View

User-friendly views of controls & reports will be added soon.

```
C02YD01EJG5J-ML:nm_ui edelldj1$ ./sql_show.js --type msgs --id 1
undefined
Loaded
JSON:  {
  "class": "MessageGroup",
  "timestamp": null,
  "messages": [
    {
      "class": "MessagePerfCtrl",
      "tv": null,
      "ac": {
        "class": "AC",
        "ari": [
          {
            "class": "ARI",
            "type": 1,
            "namespace": 1,
            "adm_type": 1,
            "parameters": {
              "class": "TNVC",
              "values": [
                {
                  "class": "AC",
                  "ari": [
                    {
                      "class": "ARI",
                      "type": 7,
                      "namespace": 1,
                      "adm_type": 5,
                      "parameters": {

                "values": [
                  {
                    "class": "AC",
                    "ari": [
                      {
                        "class": "ARI",
                        "type": 7,
                        "namespace": 1,
                        "adm_type": 5,
                        "parameters": {
                          "class": "TNVC",
                          "values": []
                        },
                        "issuer": "JHUAPL"
                      }
                    ]
                  },
                  {
                    "class": "TNVC",
                    "values": []
                  }
                ]
              },
              "issuer": "JHUAPL",
              "name": 5
            }
          ]
        }
      }
    }
  ]
}
CBOR: 0x 8200052020081c11541050502252238187181941000
URI:  msgs:/(ts=null)[PerfCtrl(null,[ari:/IANA:amp.agent/Ctrl.gen_rpts([ari:/IANA:amp.agent/Rptt.full_report()],[])])]
```

ADMs Listing

- This listing is generated by parsing the ADM JSON files
- Future enhancements would allow viewing details per ADM from the JSON files and/or provide an equivalent view from the MySQL database.

	Name	Index	IETF Source	Issuer	Controls	Edds	Mdats	Rptts	Tblts	Vars	Consts	Operators
AGENTS												
All	amp.agent	1	https://tools.ietf.org/html/draft-birrane-dtn-adm-agent-05	IANA	16	14	4	1	6	1	1	53
ipn:3.64	bp.agent	2	https://tools.ietf.org/html/draft-birrane-dtn-adm-bp-03	IANA	1	29	4	2	0	0	0	0
	ltp.agent	3	https://tools.ietf.org/html/draft-birrane-dtn-adm-ltp-01	IANA	1	42	4	1	1	0	0	0
AMP DB	bpsec	4	https://tools.ietf.org/html/draft-birrane-dtn-adm-bpsec-01	IANA	10	55	4	2	4	1	0	0
Outgoing Sets	bpadmin	5	https://tools.ietf.org/html/draft-birrane-dtn-adm-ion-bpadmin-01	IANA	26	1	4	0	6	0	0	0
	ipnadmin	6	https://tools.ietf.org/html/draft-birrane-dtn-adm-ion-ipnadmin-00	IANA	6	1	4	0	2	0	0	0
Received Sets	ion.admin	7	https://tools.ietf.org/html/draft-birrane-dtn-adm-ionadmin-01	IANA	15	14	4	0	2	0	0	0
Controls	ionsec	8	https://tools.ietf.org/html/draft-birrane-dtn-adm-ionsec-01	IANA	12	0	4	0	2	0	0	0
...sample...	ltp.admin	9	https://tools.ietf.org/html/draft-birrane-dtn-adm-ion-ltpadmin-01	IANA	9	1	4	0	1	0	0	0
	Summary	*			96	157	36	6	24	2	1	53
NM MANAGER												
Status												
Send Command												
UTILITIES												
Amp.me												
ADM Listing												
9												