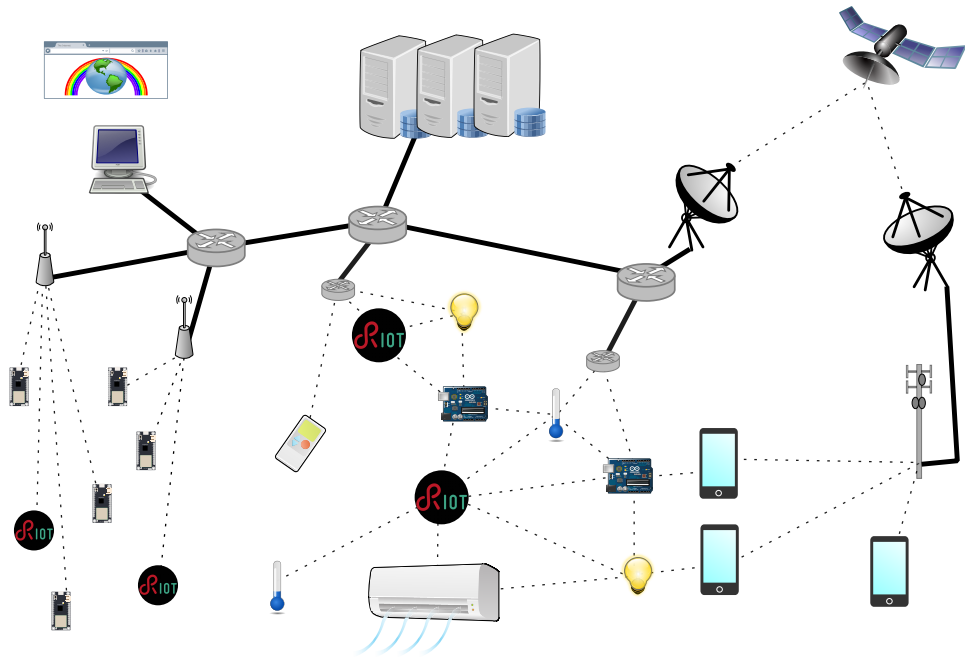


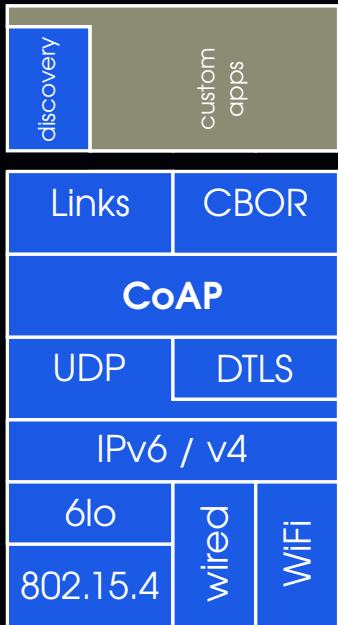
Resource discovery, Object Security and other news from CoAP

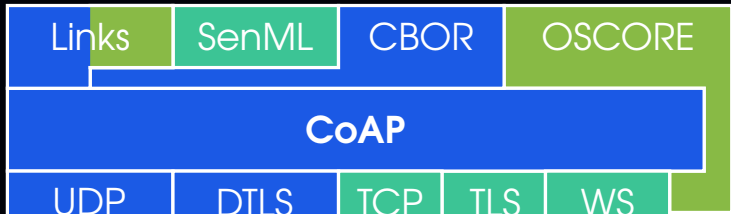
Christian Amsüss <chrysn@fsfe.org>

2018-09-13

Constrained RESTful environments



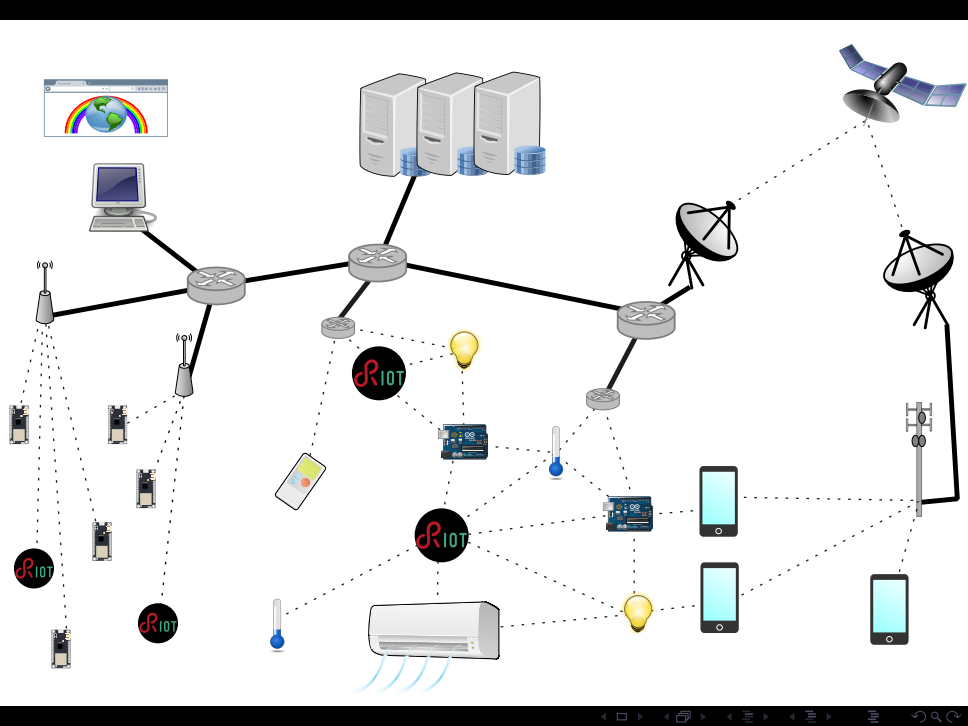




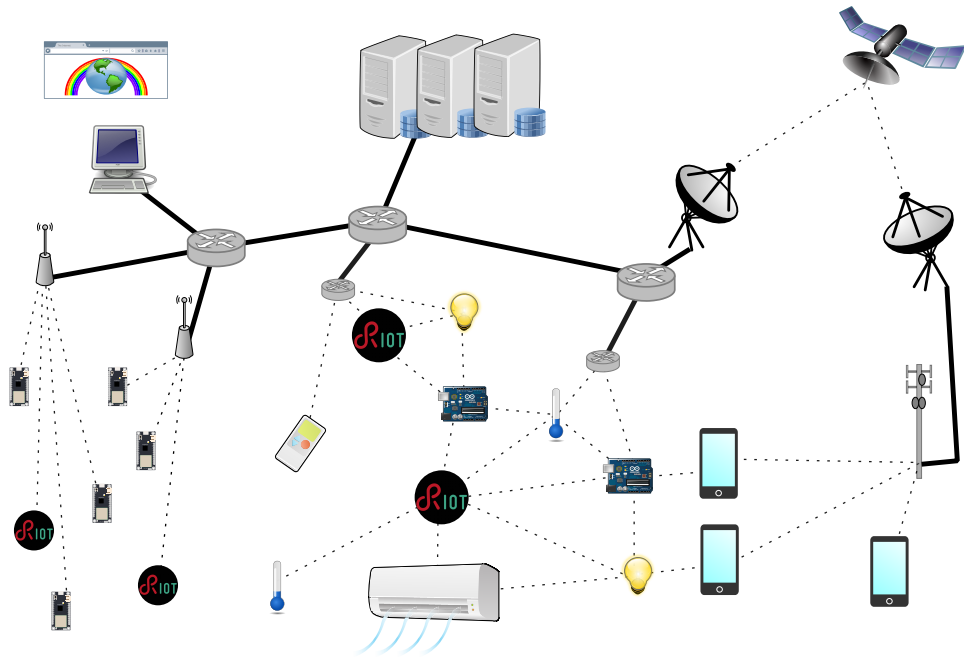
CoAP

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CoRE Resource Directory



Regular resource discovery

```
GET coap://[fd02::fd]/.well-known/core
    ?rt=temperature
```

```
Response: 2.05 Content
from [2001:db8:f0::1]
```

```
Payload:
```

```
</temp>;rt=temperature;ct=0
```

Registration at Resource Directory

```
POST coap://[2001:db8:f01::ff]/rd
      ?ep=node42&lt=300
```

```
from [2001:db8:f0::1]
```

```
Payload:
```

```
</temp>;rt=temperature;ct=0
```

```
Response: 2.04 Changed
```

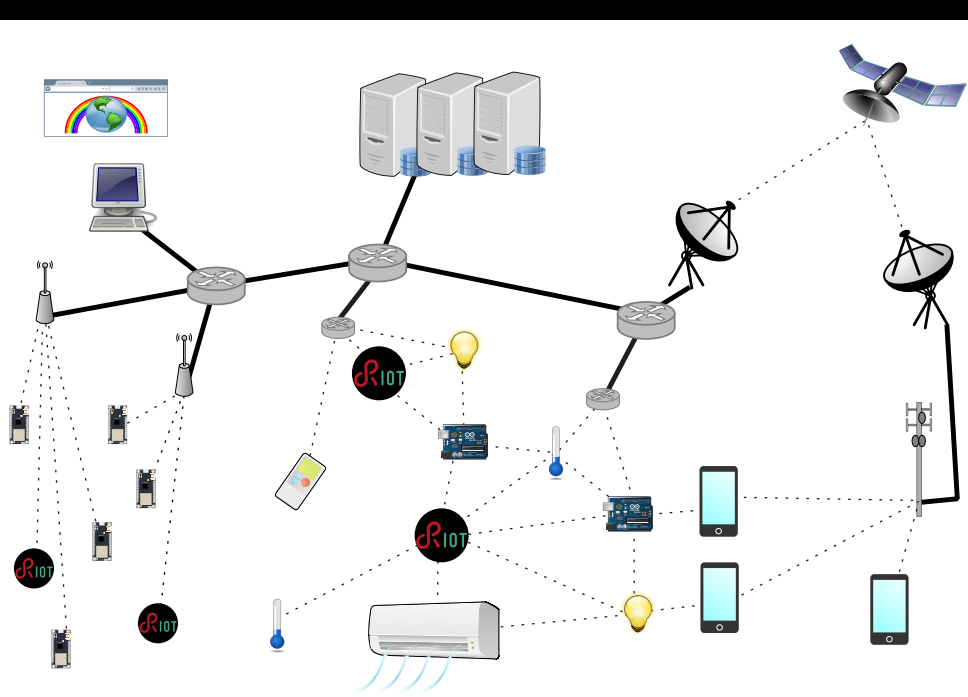
Discovery via Resource Directory

```
GET coap://[2001:db8:f01::ff]/rd-lookup/res  
?rt=temperature
```

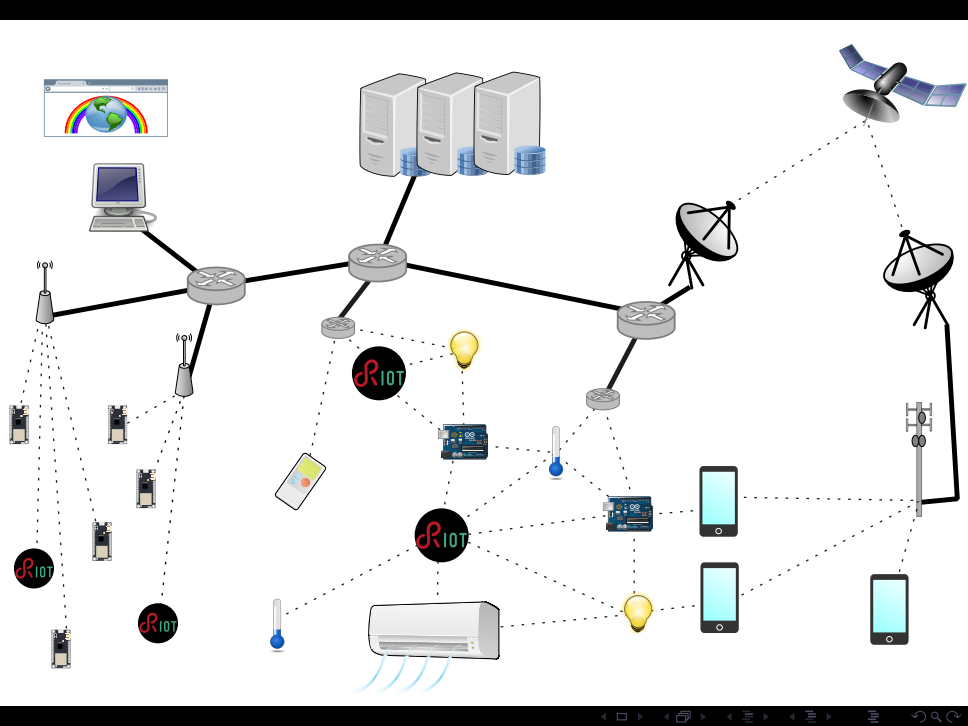
Response: 2.05 Content

Payload:

```
<coap://[2001:db8:f0::1]/temp>;  
rt=temperature;ct=0;  
anchor="coap://[2001:db8:f0::1]"
```



Object Security for CoRE



OSCORE request protection

```
GET coap://node42.example.com/ambient/  
Token: "0123"  
Observe: yes
```

```
POST coap://node42.example.com/  
Token: "0123"  
Observe: yes  
Object-Security: key ID, nonce  
Encrypted payload:  
    GET /ambient/  
    the AEAD tag
```

OSCORE response protection

2.05 Content

Token: "0123"

Observation update: 15

Payload:

air is still hot but not as dry any more

2.04 Changed

Token: "0123"

Observation update: 15

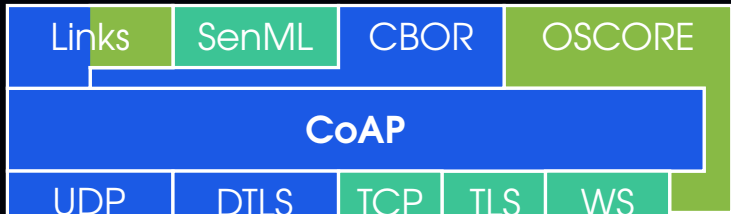
Object-Security: empty

Encrypted payload:

2.05 Content, Payload:

air is still hot but not as dry any more

AEAD tag



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Recap

- ▶ Resource Directory: discovery where multicast won't do
- ▶ OSCORE: compact end to end protected exchanges across proxies
- ▶ SenML, Links-CBOR: compact versatile media types
- ▶ CoREConf, PubSub, CoRE interfaces: application building blocks

Thanks for having me here

Slides and more links on <http://christian.amsuess.com/presentations/2018/summit-coap/>

