

# CoAP Protocol Negotiation

draft-silverajan-core-coap-protocol-negotiation

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# Summary of changes

- Until -03
  - Used .well-known/core to expose CoAP origin server's available alternative transports
- From -04
  - Using .well-known/core was discontinued owing to concerns about CoRE Link format violations
  - Usage of CoRE Resource Directory was proposed, with two new optional RD parameters
  - But WG also asked to explore non-RD scenarios

# In -06

- Several ways of achieving that were considered
- Introducing a new CoAP Option was the optimal choice to allow clients to discover alternative transports on origin servers

# Proposal in -06:

## CoAP Option “Alternative-Transports”

No.	C	U	N	R	Name	Format	Length	Default
66		x	-	x	Alternative-Transports	string	0-1034	(none)

**C=Critical, U=Unsafe, N=No-Cache-Key, R=Repeatable**

- Used bidirectionally between client and origin server
- Flexible means to discover multiple transports
- Functional equivalence to using an RD for transport discovery

# RD Registration and Lookups

- Registration Request from origin server to RD

```
POST coap:/rd.example.org/rd?ep=node1
    &at=coap+tcp://server.example.org/,coaps+tcp://
server.example.org/,coap+ws://server.example.org/
```

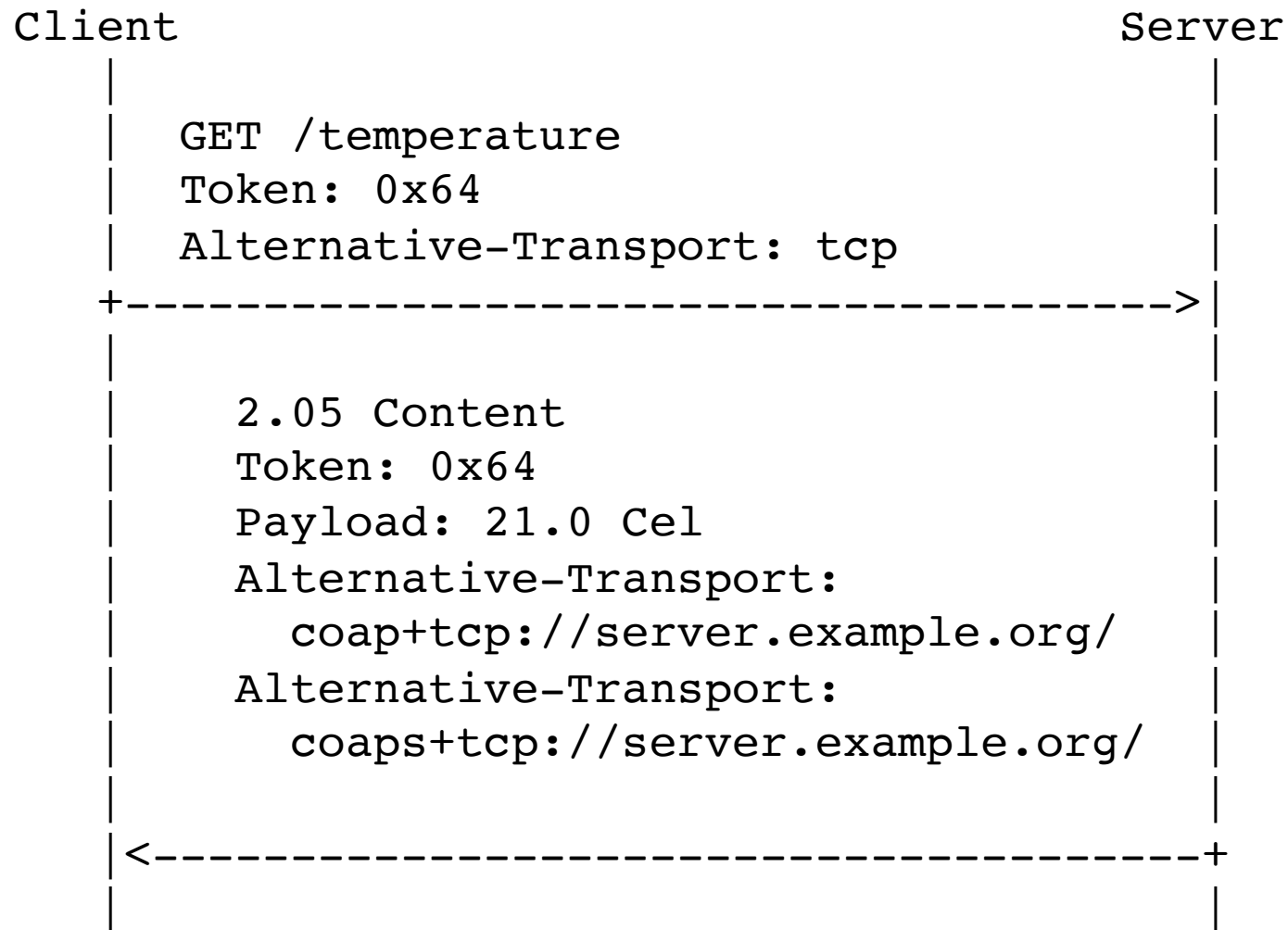
- Lookup Request from client to RD

```
GET /rd-lookup/ep?ep=node1&tt=tcp
```

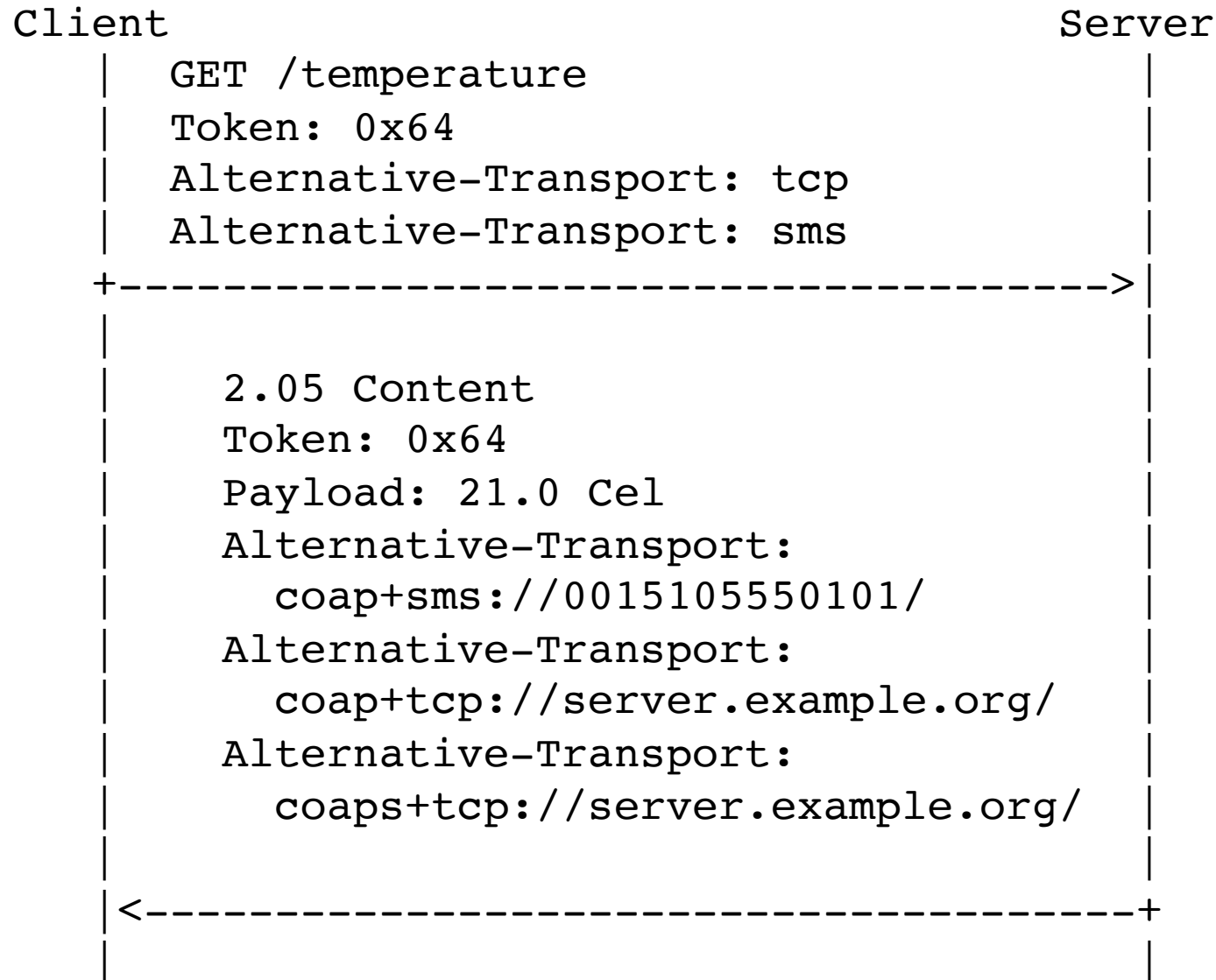
```
Res: 2.05 Content
```

```
<coap+tcp://server.example.org;ep="node1",
<coaps+tcp://server.example.org;ep="node1"
```

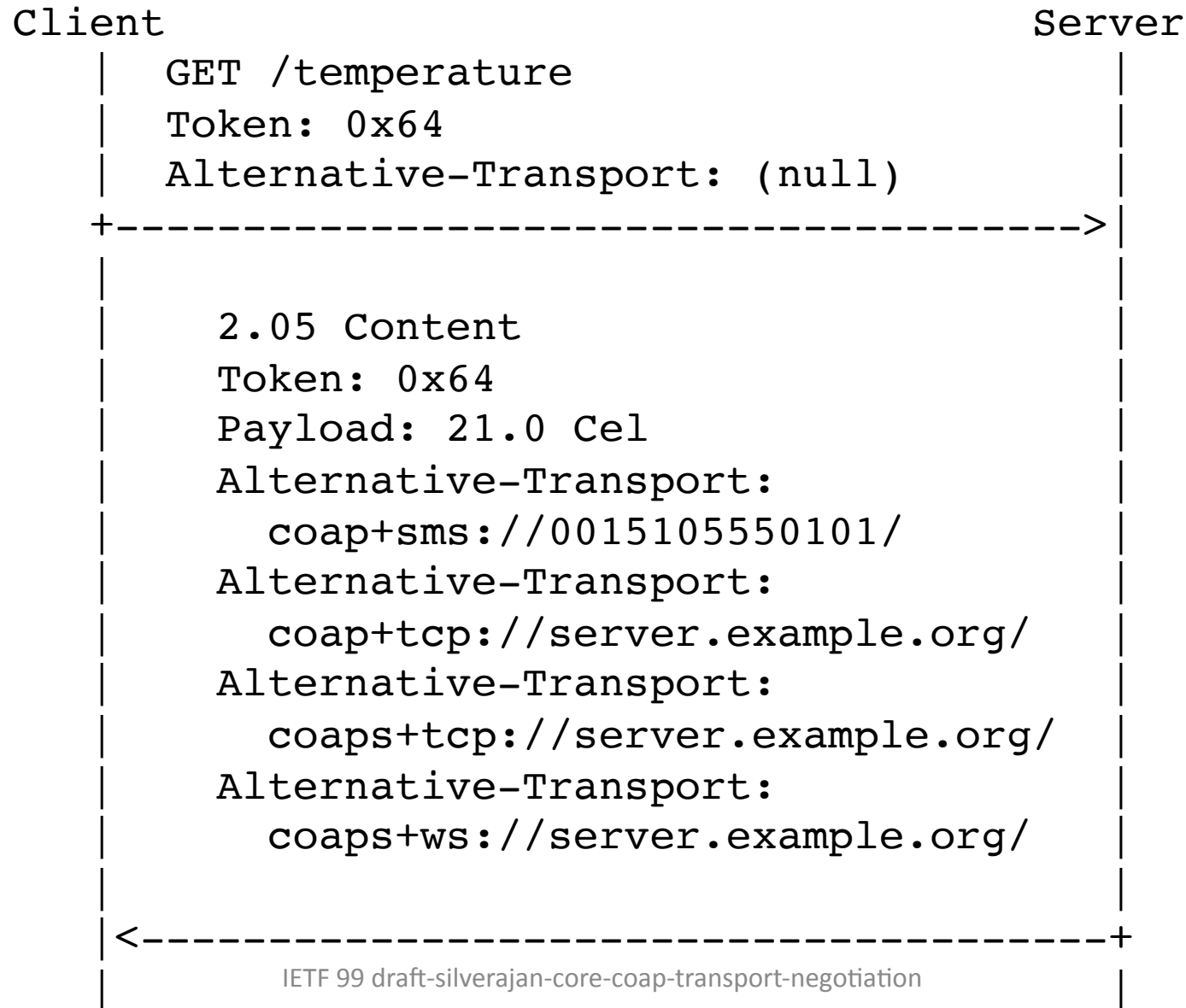
# Alternative-Transport CoAP Option



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# Forthcoming work

- Clients and servers to potentially exchange and agree upon an alternative transport
- Keep in mind (related) effort in
  - SWORN (for securely enabling transports for T1 nodes),
  - CoAP Signalling messages (to exchange capabilities)
  - RFC 7301, RFC 7838
  - Others?