Computer networking II. COMM.NET.400
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Assignment 4: Internet of Things

a) 6LoWPAN header compression

Field	Value
Dispatch Field	IPv6
6LoWPAN Header	Compressed IPv6
NHC	NH compressed
CID	Context Identifier
Payload	Compressed payload

Field	Packet from IoT device to Server	Packet from Server to IoT device
Dispatch Field	LoWPAN_HC1	LoWPAN_HC1
Compressed IPv6 Header	TF [1 bit] NH [1 bit] HLIM [2 bits] SAC [1 bit] SAM [1 bit] M [1 bit] DAC [1 bit] DAM [1 bit] MID [1 bit] (TF, NH, HLIM: Traffic Class, Next Header, Hop Limit; SAC, SAM, M, DAC, DAM: Source Address Compression, Source Address Mode, Multicast, Destination Address Compression, Destination Address Mode; MID: Mesh-Under Header)	TF [1 bit] NH [1 bit] HLIM [2 bits] SAC [1 bit] SAM [1 bit] M [1 bit] DAC [1 bit] DAM [1 bit] MID [1 bit] (TF, NH, HLIM: Traffic Class, Next Header, Hop Limit; SAC, SAM, M, DAC, DAM: Source Address Compression, Source Address Mode, Multicast, Destination Address Compression, Destination Address Mode; MID: Mesh-Under Header)
NHC	Optional	Optional
CID	CID table. 0001::0003	CID table. 0002::0004
Payload	Compressed payload	Compressed payload

b) CoAP

Request from the IoT device to Server:

- **Type**: CON
- **Method**: GET
- **URI**: server1.domain1.com/folder12/file123?parameter1.
- **Token**: optional
- **Options**: if-Match (141) | Accept (12) | Uri-Host (3) | Uri-Path (4) | Content-Format (5)
- **Payload:** optional

Response from Server to IoT Device:

- **Type:** ACK
- **Code:** 2.05 (Successful retrieval)

- **Options:** Max-Age (8) | Etag (44) | Content-format (5)
- Payload: Mandatory

Acknowledgement from IoT Device to Server:

- **Type:** ACK
- **Code:** 0.00
- **Options:** Note required
- **Payload:** Empty