Assignment 1 Specification

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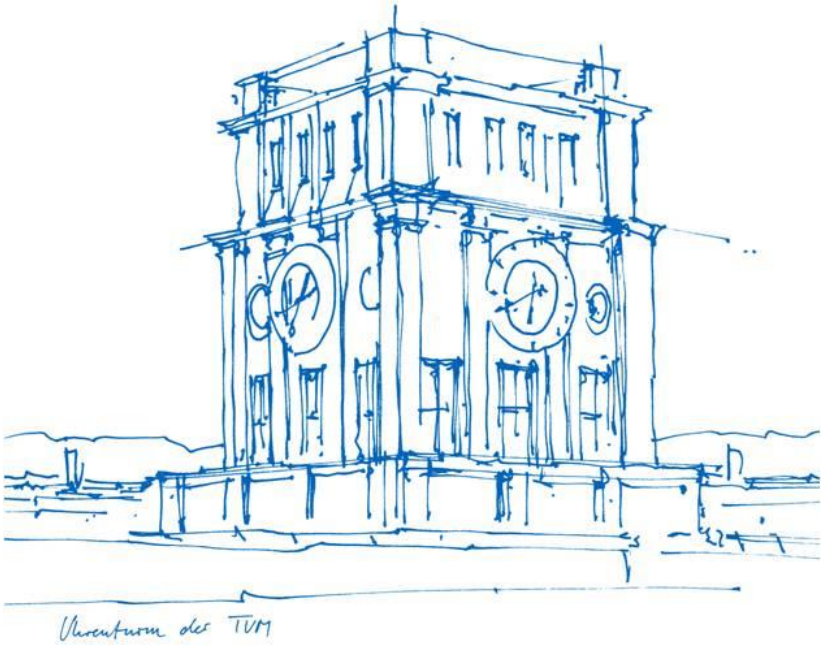
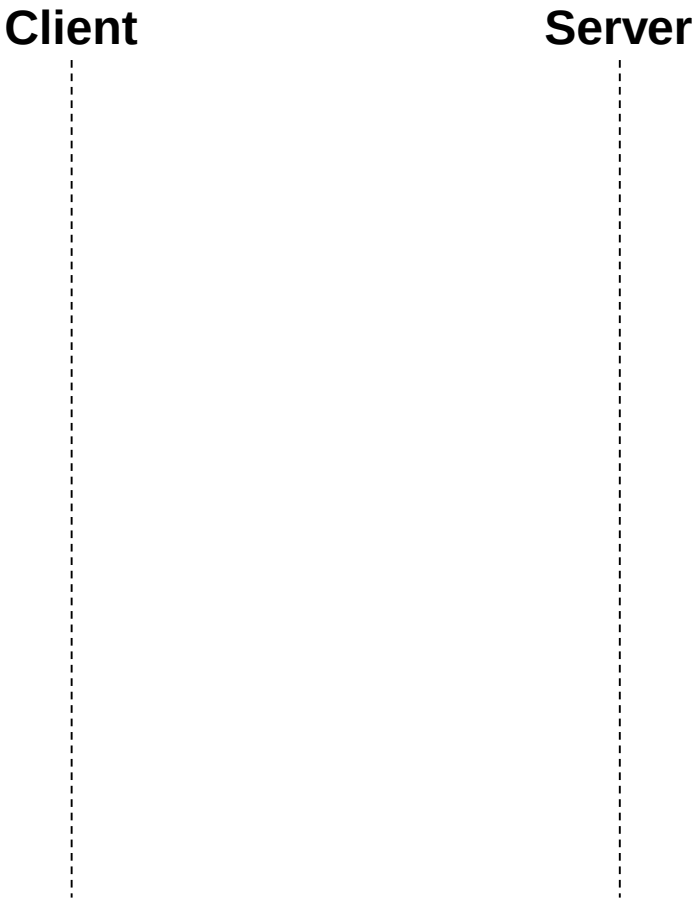


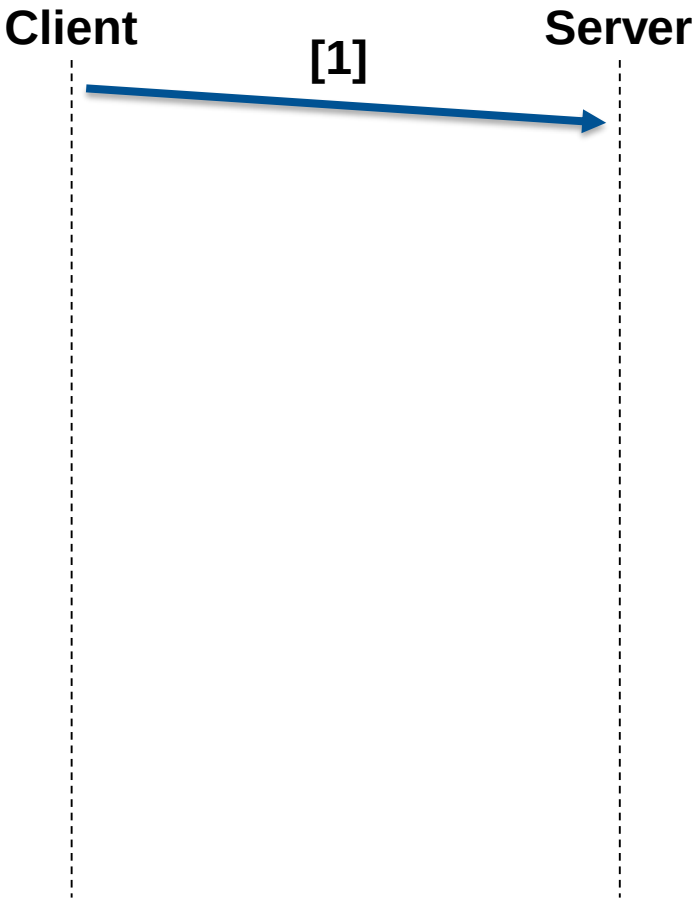
Handshake



Handshake

[1] Client-Hello-Handshake:

```
0      4      20          52       56
+------+------+-----------+--------+
| Type | Port | Checksum  | UNUSED |
+------+------+-----------+--------+
```



Handshake

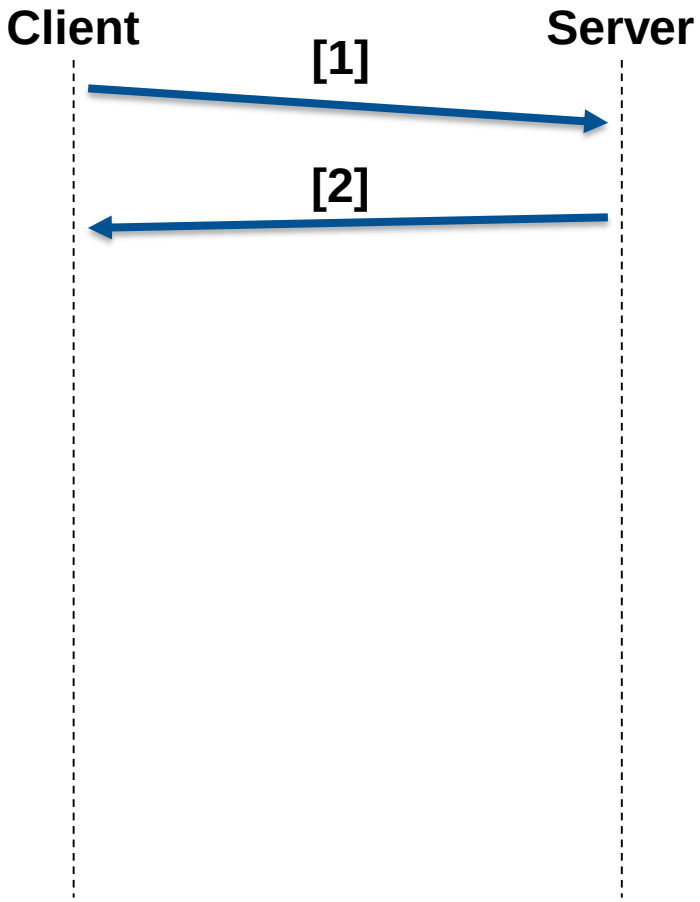
[1] Client-Hello-Handshake:

```
0      4      20          52       56
+------+------+-----------+--------+
| Type | Port | Checksum  | UNUSED |
+------+------+-----------+--------+
```

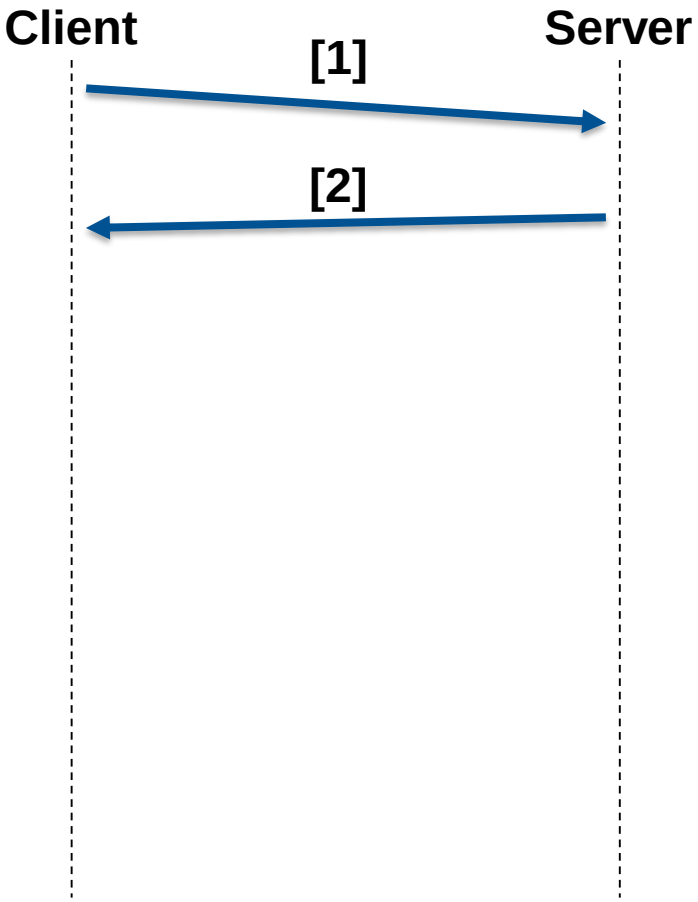
[2] Server-Hello-Handshake:

```
0      4       8           40             56          88
+------+-------+-----------+--------------+-----------+
| Type | Flags | Client ID | Upload-port  | Checksum  |
+------+-------+-----------+--------------+-----------+
```

```
0000
||||
|||+-> Client accepted
||+--> Too many clients - connection revoked
|+---> *UNUSED*
+----> *UNUSED*
```



Transfer

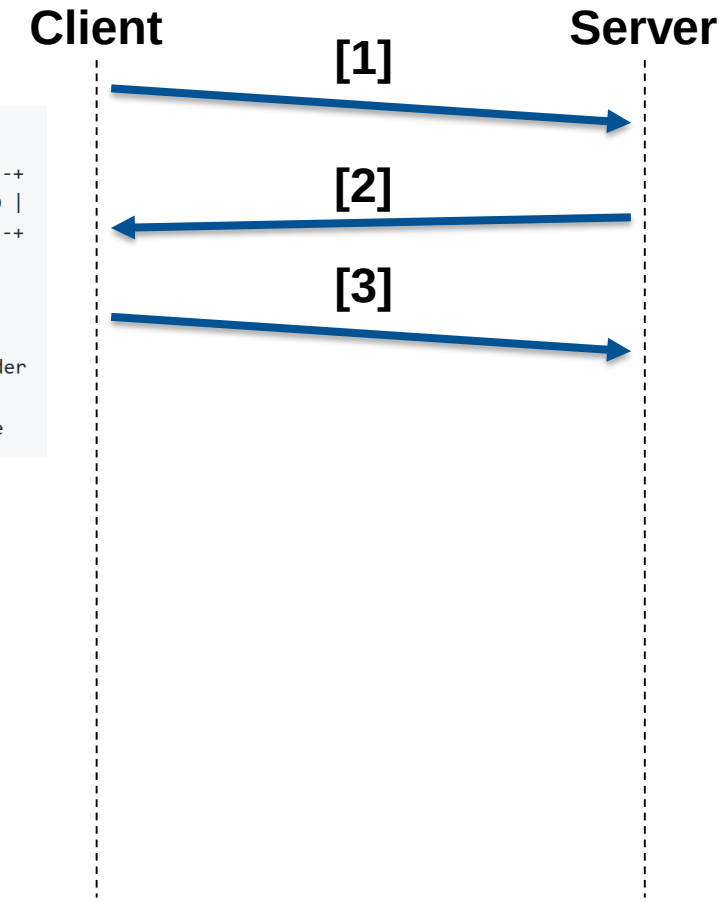


Transfer

[3] File-Creation:

```
0      4           36                68          72              328        360          424
+------+-----------+-----------------+-----------+---------------+----------+------------+-----+
| Type | Client ID | Sequence Number | File Type | File SHA3 256 | Checksum | FID Length | FID |
+------+-----------+-----------------+-----------+---------------+----------+------------+-----+
```

```
0000
||||
|||+-> Folder
||+--> Delete folder
|+---> File
+----> Delete file
```



Transfer

[3] File-Creation:

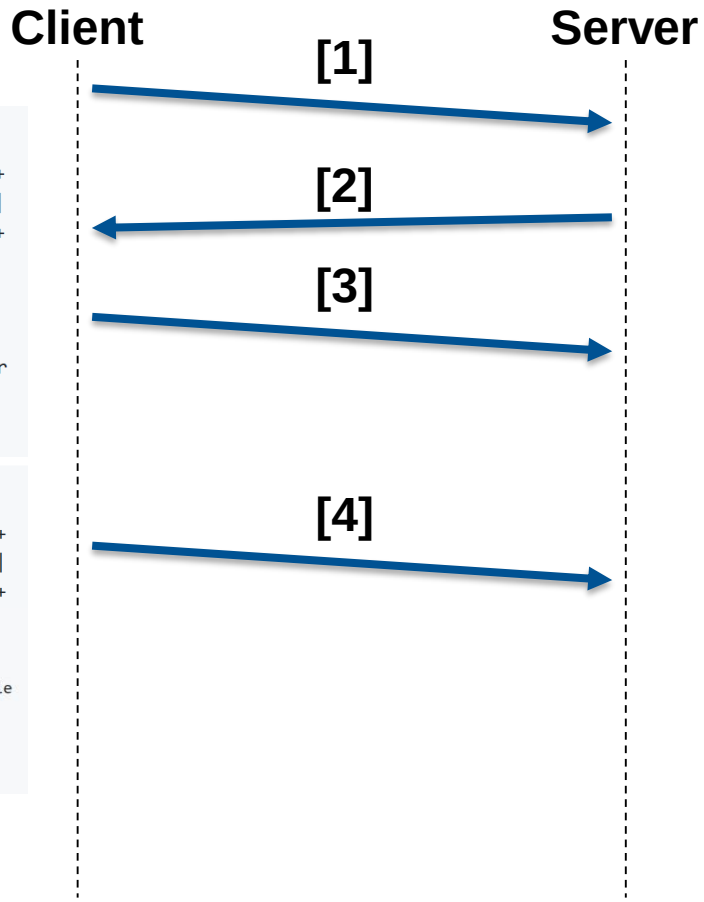
```
0      4           36                68          72              328        360          424
+------+-----------+-----------------+-----------+---------------+----------+------------+-----+
| Type | Client ID | Sequence Number | File Type | File SHA3 256 | Checksum | FID Length | FID |
+------+-----------+-----------------+-----------+---------------+----------+------------+-----+
```

```
0000
||||
|||+-> Folder
||+--> Delete folder
|+---> File
+----> Delete file
```

[4] File-Transfer:

```
0      4           36                68      72              328        360
+------+-----------+-----------------+-------+---------------+----------+----------------+---------+
| Type | Client ID | Sequence Number | Flags | FID SHA3 256 | Checksum | Content Length | Content |
+------+-----------+-----------------+-------+---------------+----------+----------------+---------+
```

```
0000
||||
|||+-> First package for the given file
||+--> File content
|+---> *UNUSED*
+----> Last package for the file
```



Transfer

[3] File-Creation:

```
0      4           36                68          72              328        360          424
+------+-----------+-----------------+-----------+---------------+----------+------------+-----+
| Type | Client ID | Sequence Number | File Type | File SHA3 256 | Checksum | FID Length | FID |
+------+-----------+-----------------+-----------+---------------+----------+------------+-----+
```

```
0000
||||
|||+-> Folder
||+--> Delete folder
|+---> File
+----> Delete file
```

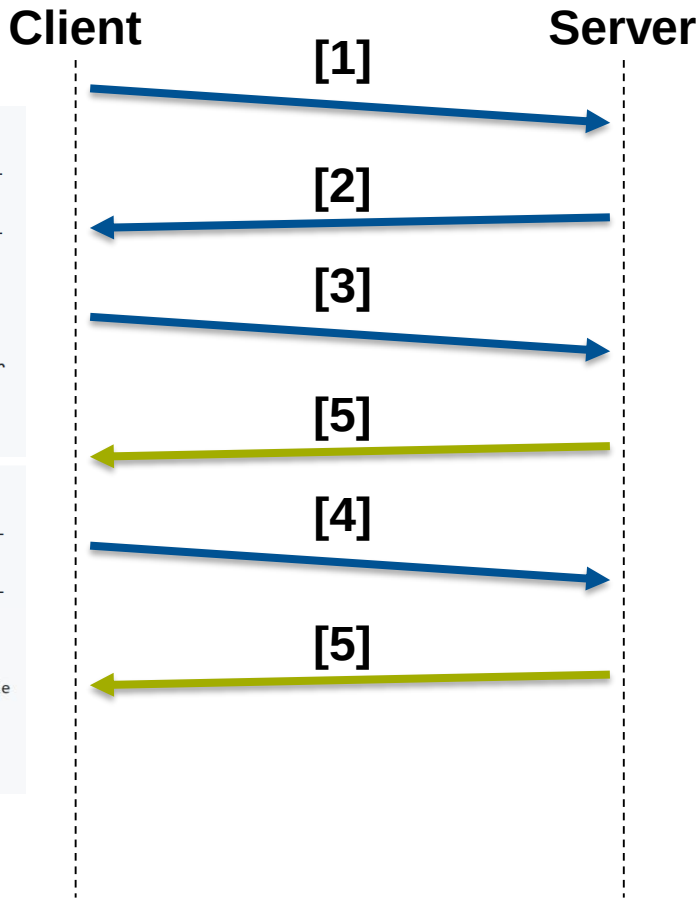
[4] File-Transfer:

```
0      4           36                68      72              328        360
+------+-----------+-----------------+-------+---------------+----------+----------------+---------+
| Type | Client ID | Sequence Number | Flags | FID SHA3 256 | Checksum | Content Length | Content |
+------+-----------+-----------------+-------+---------------+----------+----------------+---------+
```

```
0000
||||
|||+-> First package for the given file
||+--> File content
|+---> *UNUSED*
+----> Last package for the file
```

[5] ACK:

```
0      4           36                      68          100       104
+------+-----------+-----------------------+-----------+---------+
| Type | Client ID | ACK Sequence Number | Checksum | UNUSED |
+------+-----------+-----------------------+-----------+---------+
```

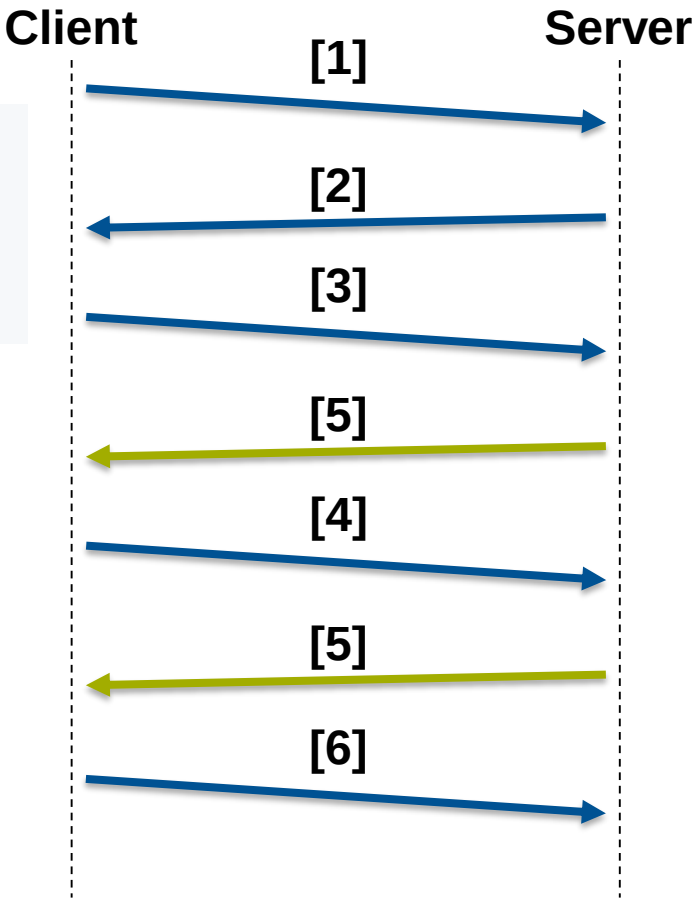


Utilities

[6] Transfer-Ended:

```
0      4       8           40          72
+------+-------+-----------+-----------+
| Type | Flags | Client ID | Checksum |
+------+-------+-----------+-----------+
```

```
0000
||||
|||+-> Transfer finished
||+--> Cancelled by user
|+---> Error
+----> *UNUSED*
```



Utilities

[6] Transfer-Ended:

```
0       4       8            40           72
+-------+-------+------------+-----------+
| Type  | Flags | Client ID  | Checksum  |
+-------+-------+------------+-----------+
```

```
0000
||||
|||+-> Transfer finished
||+--> Cancelled by user
|+---> Error
+----> *UNUSED*
```

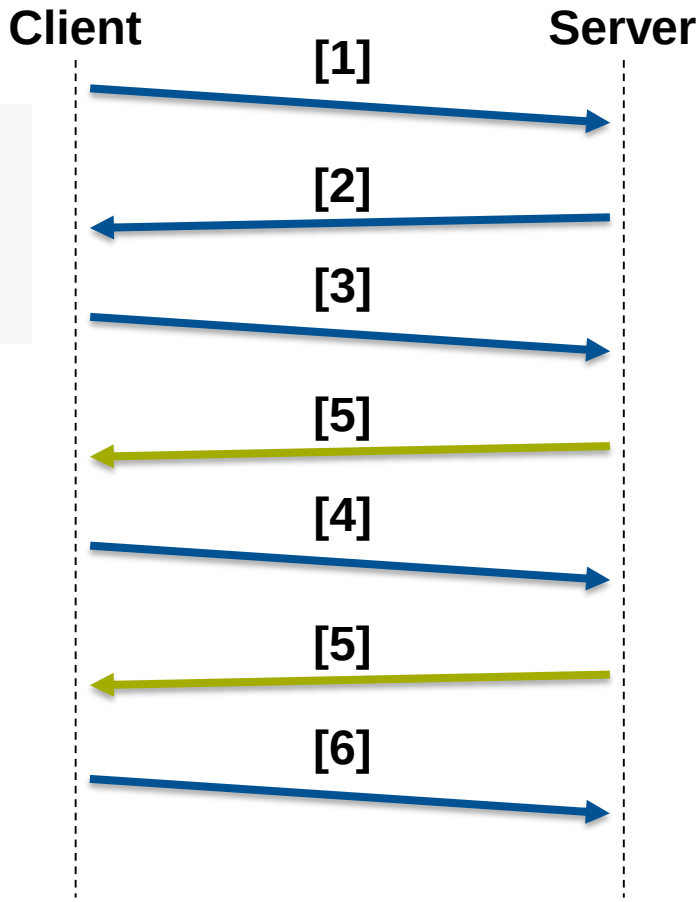
[7] File-Status:

```
0       4       8                        40          72           134
+-------+-------+------------------------+-----------+------------+------+
| Type  |  Flags | Last Sequence Number  | Checksum  |FID Length  | FID  |
+-------+-------+------------------------+-----------+------------+------+
```

```
0000
||||
|||+-> Request status of FID
||+--> FID status response
|+---> *UNUSED*
+----> *UNUSED*
```

[8] Ping:

```
0      4                      36               64
+------+----------------------+----------------+---------+
| Type | Ping Sequence Number | Payload Length | Payload |
+------+----------------------+----------------+---------+
```



Utilities

[6] Transfer-Ended:

```
0      4       8           40          72
+------+-------+-----------+-----------+
| Type | Flags | Client ID | Checksum |
+------+-------+-----------+-----------+
```

```
0000
||||
|||+-> Transfer finished
||+--> Cancelled by user
|+---> Error
+----> *UNUSED*
```

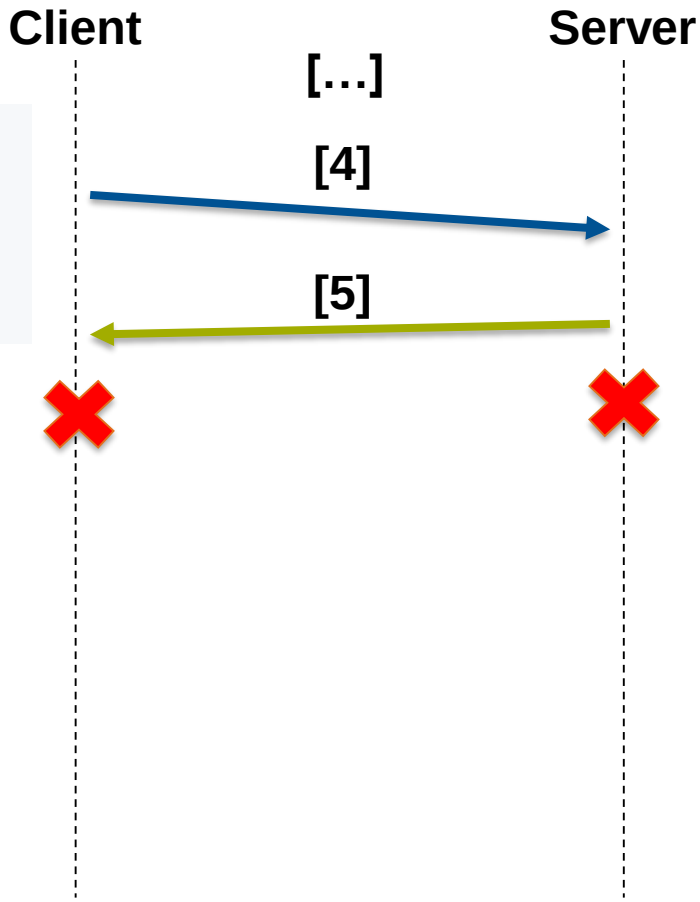
[7] File-Status:

```
0      4       8                      40         72          134
+------+-------+----------------------+----------+-----------+-----+
| Type |  Flags | Last Sequence Number | Checksum |FID Length | FID |
+------+-------+----------------------+----------+-----------+-----+
```

```
0000
||||
|||+-> Request status of FID
||+--> FID status response
|+---> *UNUSED*
+----> *UNUSED*
```

[8] Ping:

```
0      4                     36              64
+------+---------------------+---------------+---------+
| Type | Ping Sequence Number | Payload Length | Payload |
+------+---------------------+---------------+---------+
```



Utilities

[6] Transfer-Ended:

```
0       4       8            40           72
+-------+-------+------------+-----------+
| Type  | Flags | Client ID  | Checksum  |
+-------+-------+------------+-----------+
```

```
0000
||||
|||+-> Transfer finished
||+--> Cancelled by user
|+---> Error
+----> *UNUSED*
```

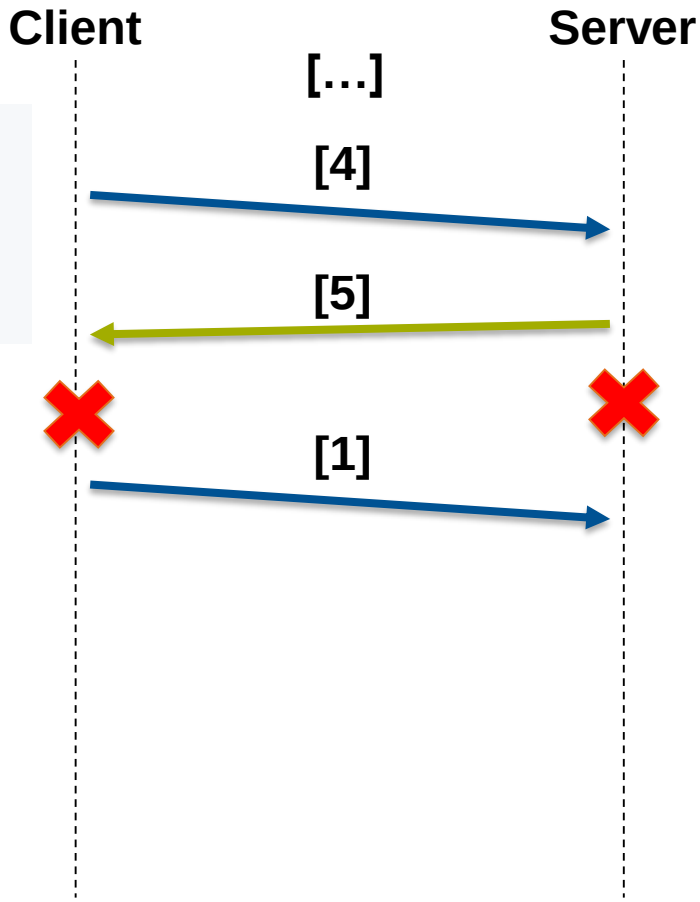
[7] File-Status:

```
0       4       8                        40          72           134
+-------+-------+------------------------+-----------+------------+------+
| Type  |  Flags | Last Sequence Number  | Checksum  |FID Length  | FID  |
+-------+-------+------------------------+-----------+------------+------+
```

```
0000
||||
|||+-> Request status of FID
||+--> FID status response
|+---> *UNUSED*
+----> *UNUSED*
```

[8] Ping:

```
0      4                      36               64
+------+----------------------+----------------+---------+
| Type | Ping Sequence Number | Payload Length | Payload |
+------+----------------------+----------------+---------+
```



Utilities

[6] Transfer-Ended:

```
0      4       8           40          72
+------+-------+-----------+-----------+
| Type | Flags | Client ID | Checksum |
+------+-------+-----------+-----------+
```

```
0000
||||
|||+-> Transfer finished
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|+---> Error
+----> *UNUSED*
```

[7] File-Status:

```
0      4       8                      40         72          134
+------+-------+----------------------+----------+-----------+-----+
| Type |  Flags | Last Sequence Number | Checksum |FID Length | FID |
+------+-------+----------------------+----------+-----------+-----+
```

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0000
||||
|||+-> Request status of FID
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|+---> *UNUSED*
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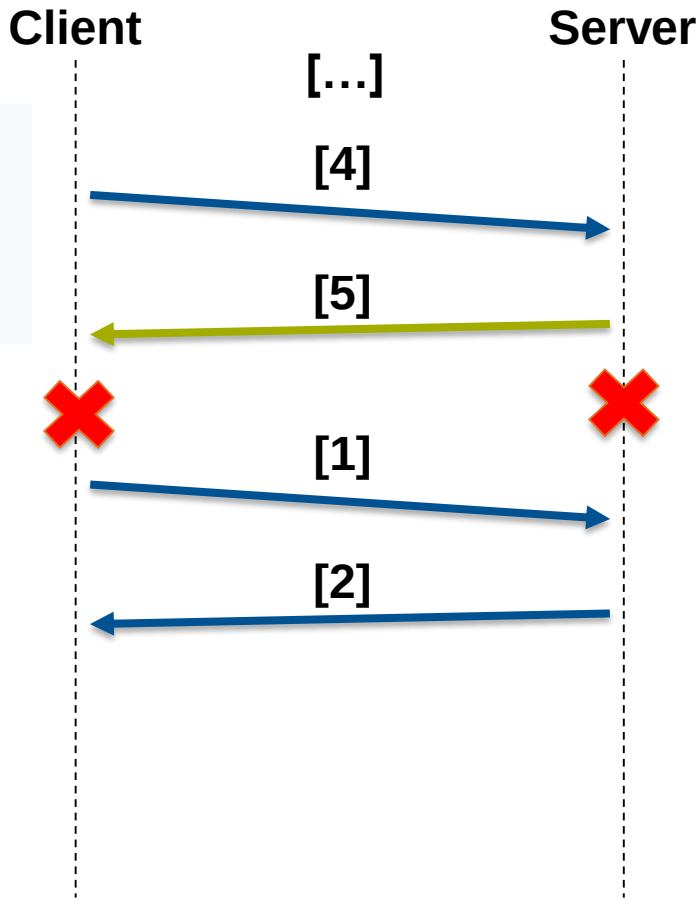
[8] Ping:

```
0      4                     36              64
+------+---------------------+---------------+---------+
| Type | Ping Sequence Number | Payload Length | Payload |
+------+---------------------+---------------+---------+
```



Utilities

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```
0      4       8           40          72
+------+-------+-----------+-----------+
| Type | Flags | Client ID | Checksum |
+------+-------+-----------+-----------+
```

```
0000
||||
|||+-> Transfer finished
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+----> *UNUSED*
```

[7] File-Status:

```
0      4       8                       40         72          134
+------+-------+-----------------------+----------+-----------+-----+
| Type |  Flags | Last Sequence Number | Checksum |FID Length | FID |
+------+-------+-----------------------+----------+-----------+-----+
```

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0000
||||
|||+-> Request status of FID
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```

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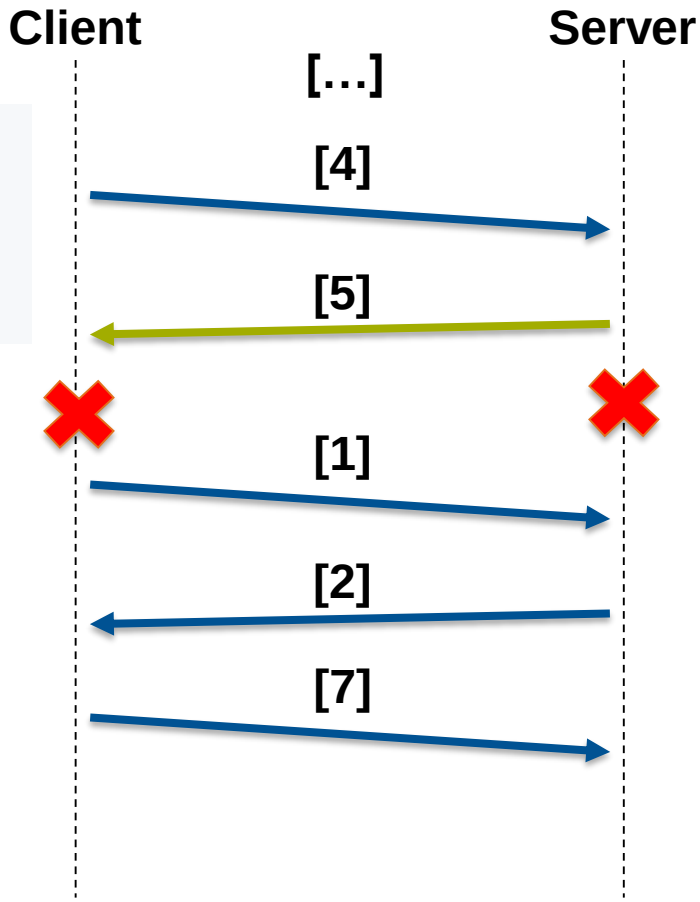
```
0      4                     36              64
+------+---------------------+---------------+---------+
| Type | Ping Sequence Number | Payload Length | Payload |
+------+---------------------+---------------+---------+
```



Utilities

[6] Transfer-Ended:

```
0       4       8            40           72
+-------+-------+------------+-----------+
| Type  | Flags | Client ID  | Checksum  |
+-------+-------+------------+-----------+
```

```
0000
||||
|||+-> Transfer finished
||+--> Cancelled by user
|+---> Error
+----> *UNUSED*
```

[7] File-Status:

```
0       4       8                        40          72           134
+-------+-------+------------------------+-----------+------------+------+
| Type  |  Flags | Last Sequence Number  | Checksum  |FID Length  | FID  |
+-------+-------+------------------------+-----------+------------+------+
```

```
0000
||||
|||+-> Request status of FID
||+--> FID status response
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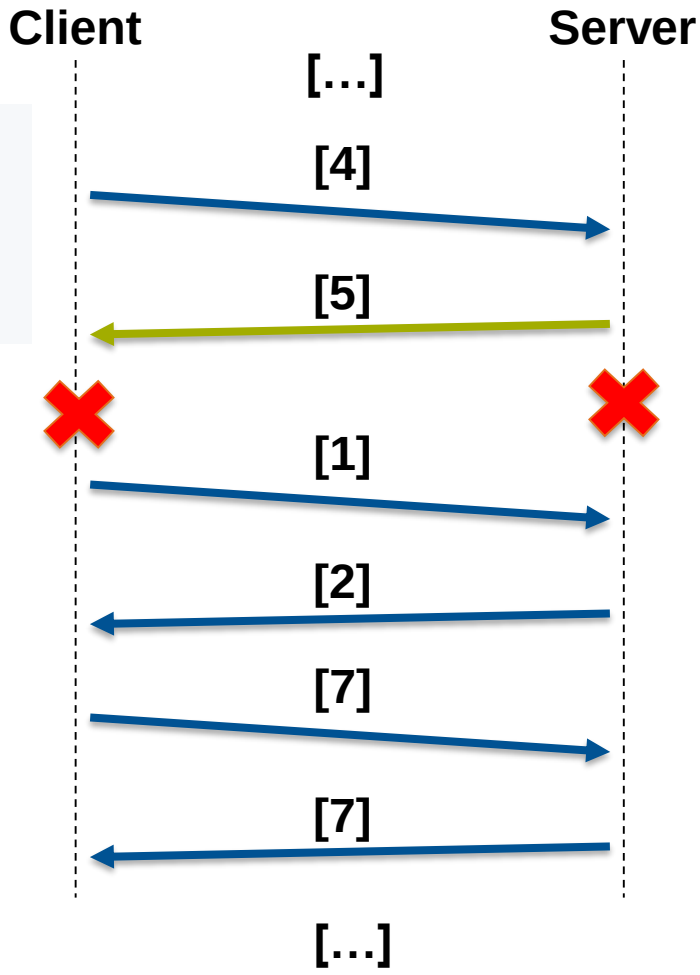
```

[8] Ping:

```
0      4                      36               64
+------+----------------------+----------------+---------+
| Type | Ping Sequence Number | Payload Length | Payload |
+------+----------------------+----------------+---------+
```