

Reliable Data Transfer

★ TCP Protocol ★

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Transport Layer

Control Header

- ★ Reliable
- ★ Connection Oriented
- ★ Data Integrity
- ★ orderly Delivery of Data
- ★ Slower than UDP

just for comments
↓
FC793

Transmission Control Protocol Header Format

★ Example ↓ Banking Application

TCP Header Format

```

0           1           2           3
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-----+-----+-----+
|       Source Port 16 Bits |       Destination Port 16 Bits |
+-----+-----+-----+
|       Sequence Number 32 Bits |
+-----+-----+-----+
|       Acknowledgment Number 32 Bits |
+-----+-----+-----+
| Data | 6 Bits | U|A|P|R|S|F |
| Offset| Reserved | R|C|S|S|Y|I | Window 16 Bits
| 4 Bits | 6 Bits | G|K|H|T|N|N |
+-----+-----+-----+
| Checksum 16 Bits | Urgent Pointer 16 Bits |
+-----+-----+-----+
| Options Variable [Multiple of 8] | Variable [Only 2003] Padding |
+-----+-----+-----+
| data |
+-----+-----+-----+

```

Note that one tick mark represents one bit position.

