

Application Level Multicasting

Using SplitStream

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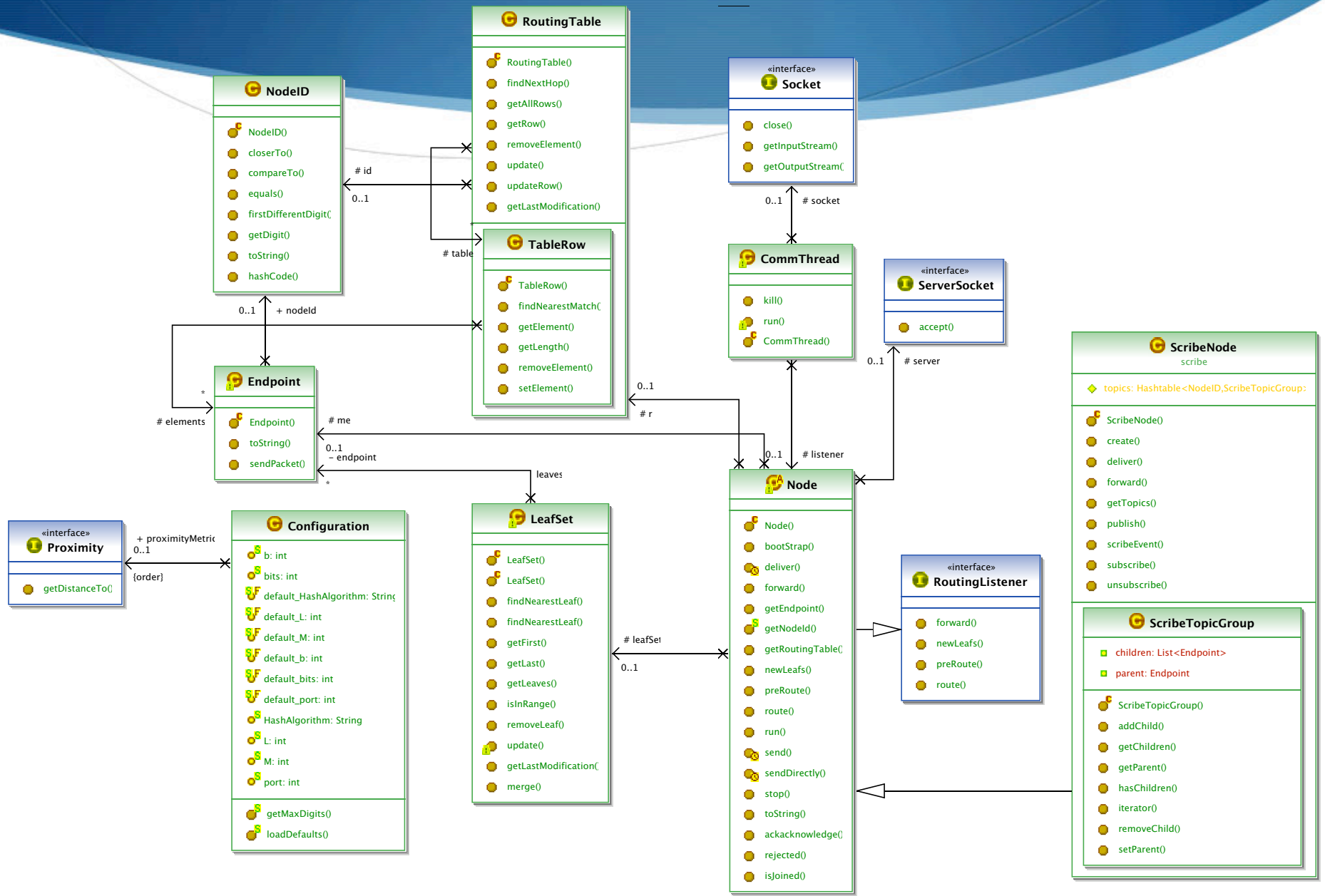


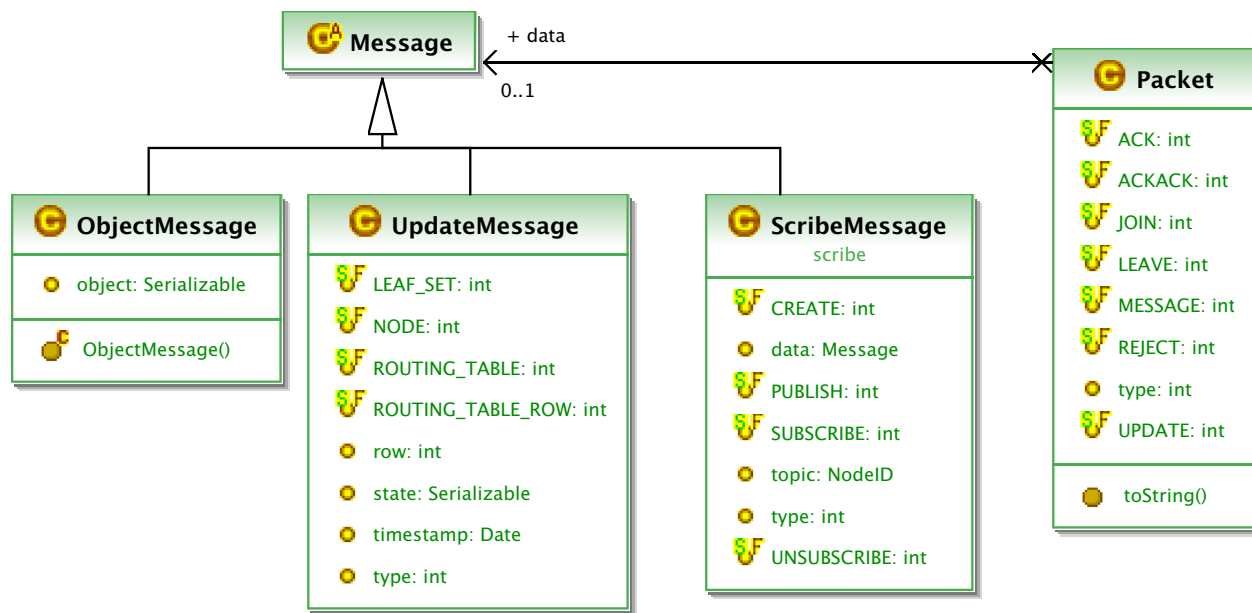
Outline

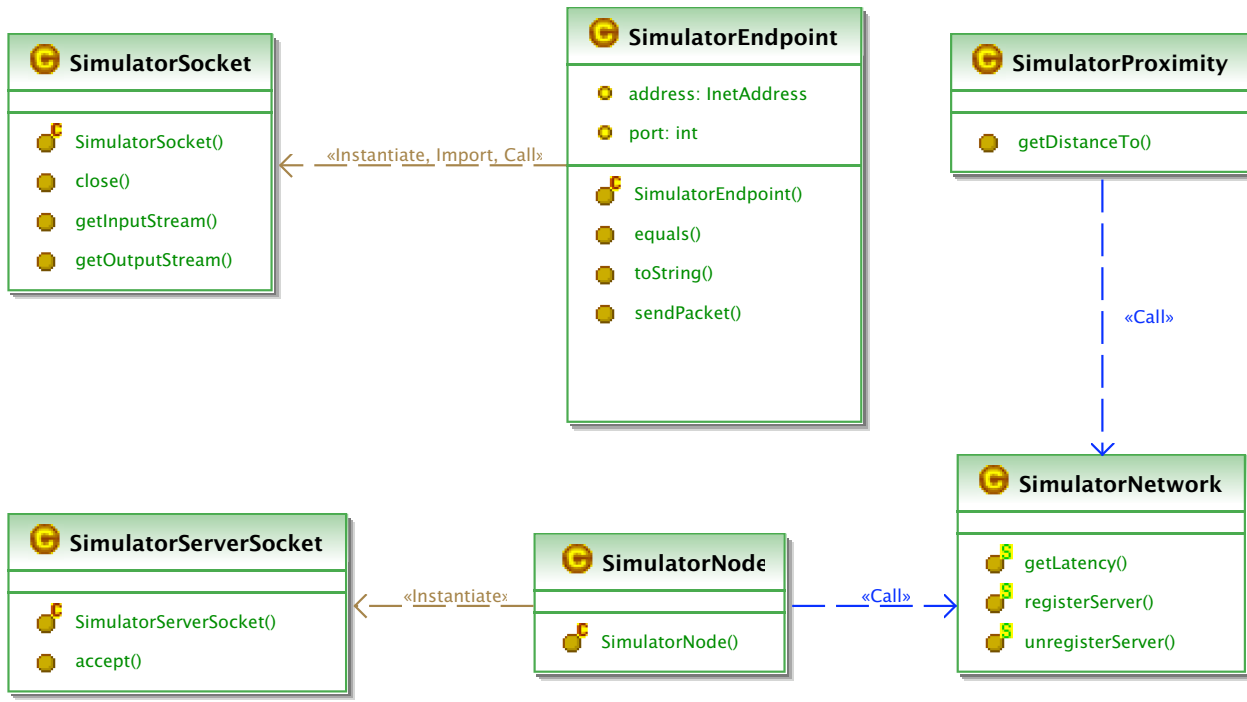
- ◆ Refresher
- ◆ Design & Implementation
- ◆ Erasure Codes

Refresher

- ◆ Streaming Multimedia System
- ◆ Scalable Application-Level Multicast
- ◆ Pastry, Scribe, SplitStream
- ◆ Erasure Codes







Demo

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Forward Error Correction

- ◆ Used for reliable packet delivery in a multicast environment
- ◆ Retransmission can be inefficient when different groups lose different sequences of packets
- ◆ FEC techniques send redundant information, so clients can reconstruct corrupt or lost packets

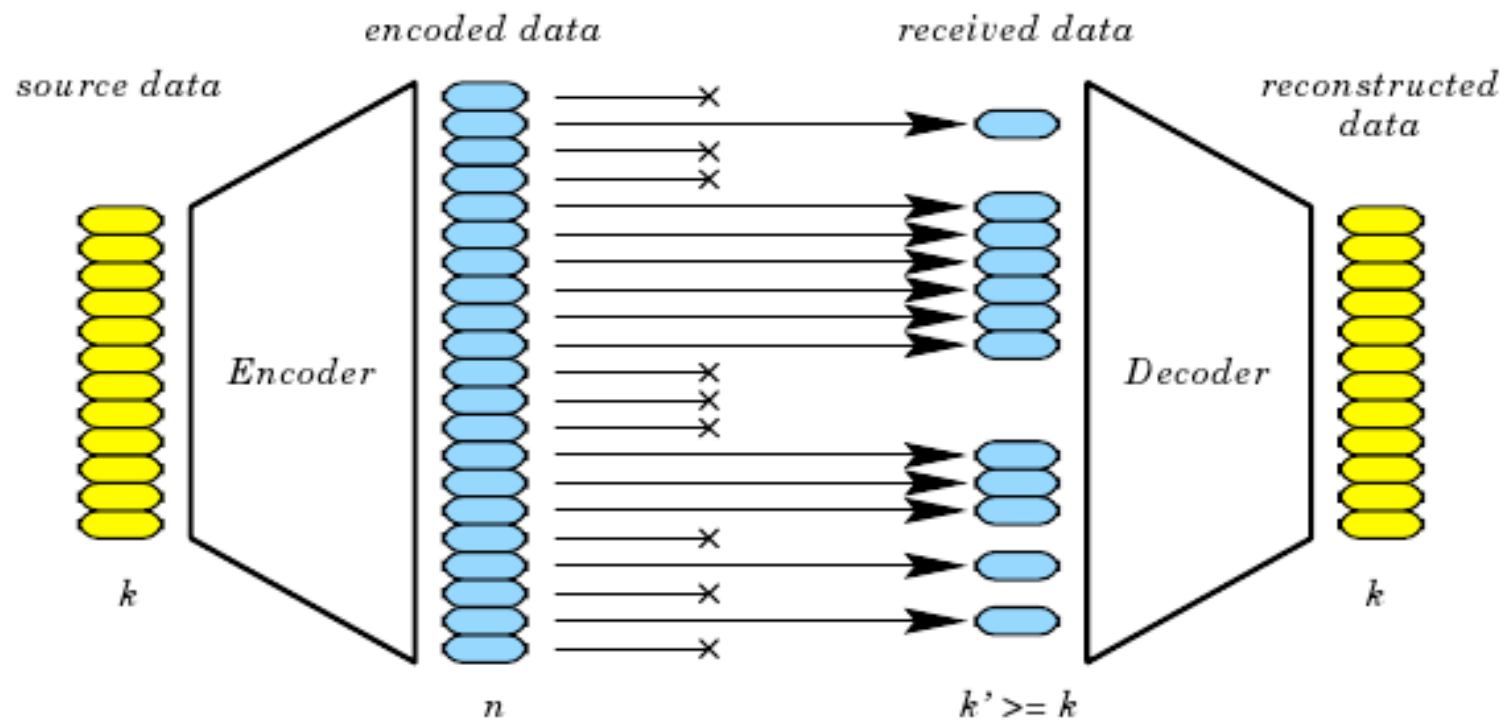
Forward Error Correction

- ◆ Simplifies both server and client
- ◆ Reduces time needed to recover lost packets
- ◆ Sender can vary the amount of redundancy
- ◆ Higher computational cost and network overhead

Erasure Codes

- ◆ Main idea is to encode k blocks of data to produce n blocks
- ◆ Denoted an (n, k) code
- ◆ Receiver can recover from $n - k$ lost packets
- ◆ Can be represented using a matrix and the encoder/decoder can be implemented using linear algebra or finite fields

Erasure Codes



Questions?

