DMPR

Dynamic MultiPath Routing

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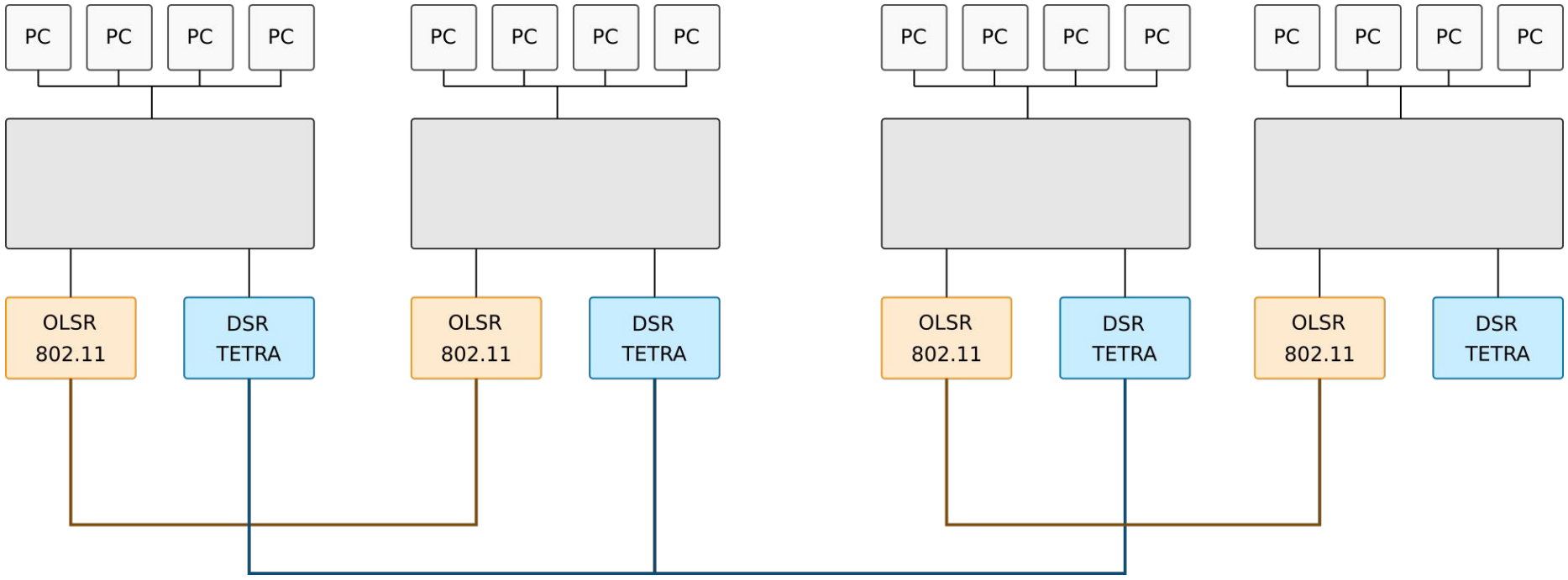
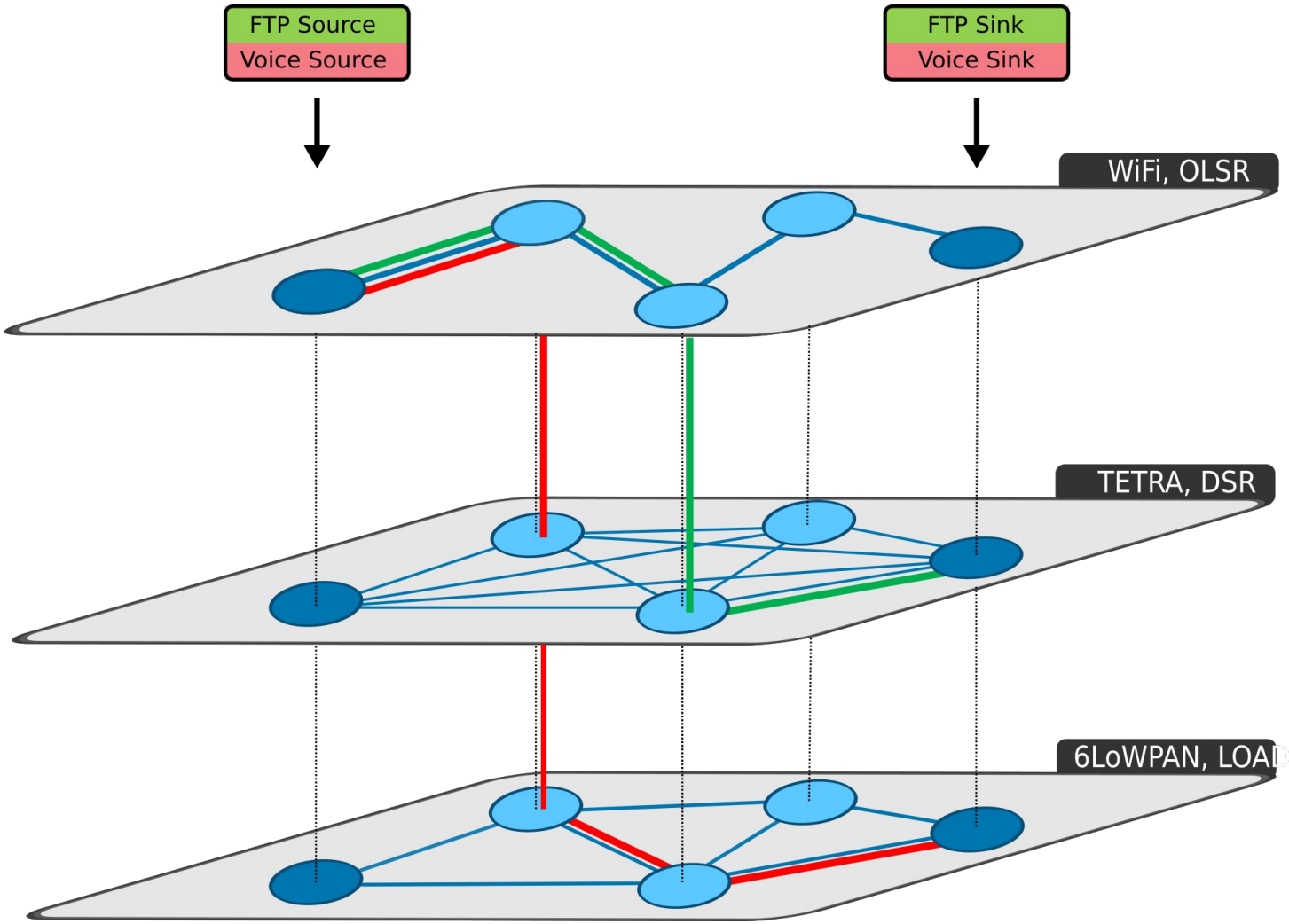
DMPR Introduction

Problem Statement - I



DMPR Introduction

Problem Statement - II



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Requirements

- Routing protocol gap different interior routing protocol
- Designed for highly dynamic environments (plattform change)
- Suitable for low bandwidth environments (1kbyte/s) and scalable for gigabit links
- Policy based routing as a first class citizen
- Support for highly asymmetric links
- Support for unicast only transports (LTE, BGAN terminals)
- Minimal configuration effort & autonomous neighbor detection

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Offspring

Dynamic Multi Path Routing Protocol - *a loop free path vector routing protocol*

A new routing protocol based on BGP, OLSR and Babel concepts - enriched with glue logic and missing pieces

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Message Example

Routing instance A broadcast periodically messages at all interfaces

Receiving routing instances B stores received information and stores information about the received link (path characteristics)

Step 3: routing instance A broadcast a new routing message including own information and path vectors to neighbors based on the best path for enabled metrics at each interface including path characteristics

Encoding path information from C to A

```
lowest-loss:        { C → [1] → B →  [1] → A  }
highest-bandwidth: { C → [2] → A  }
```

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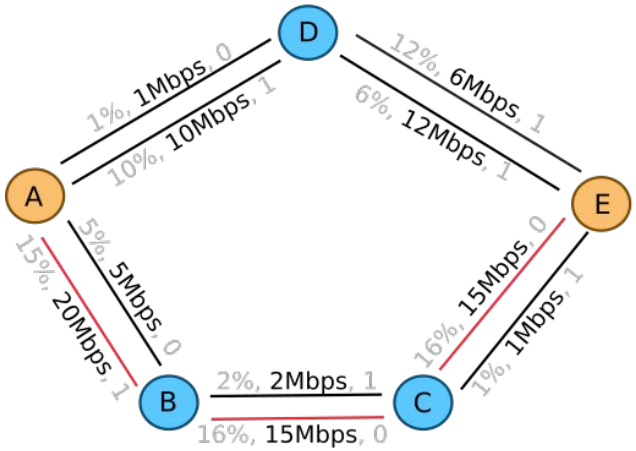
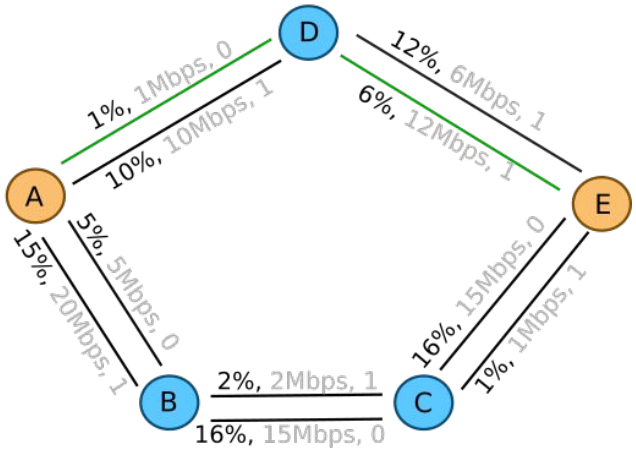
Path Selection Algorithm

Simple - Bandwith (minimum function)

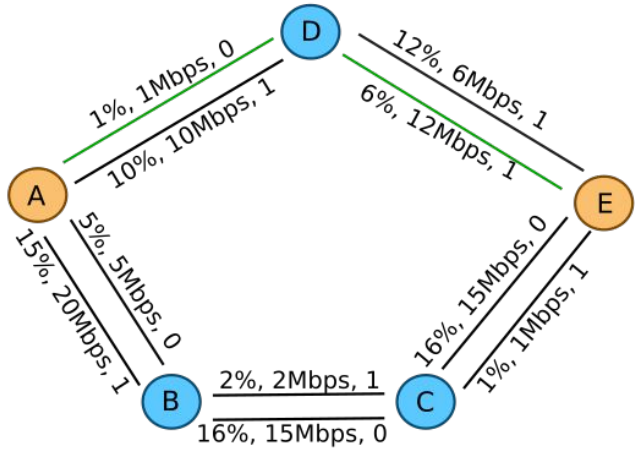


Simple - Loss (additive function)

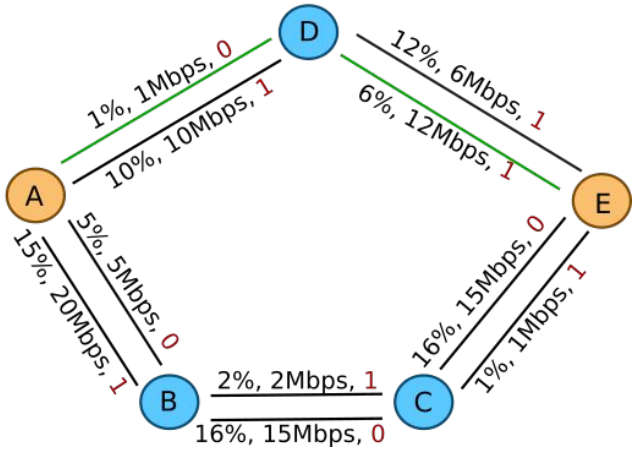


Compound - Bandwith and Loss

metric = ((K1*BW)+ (K2*LOSStotal))



Compound with Filter



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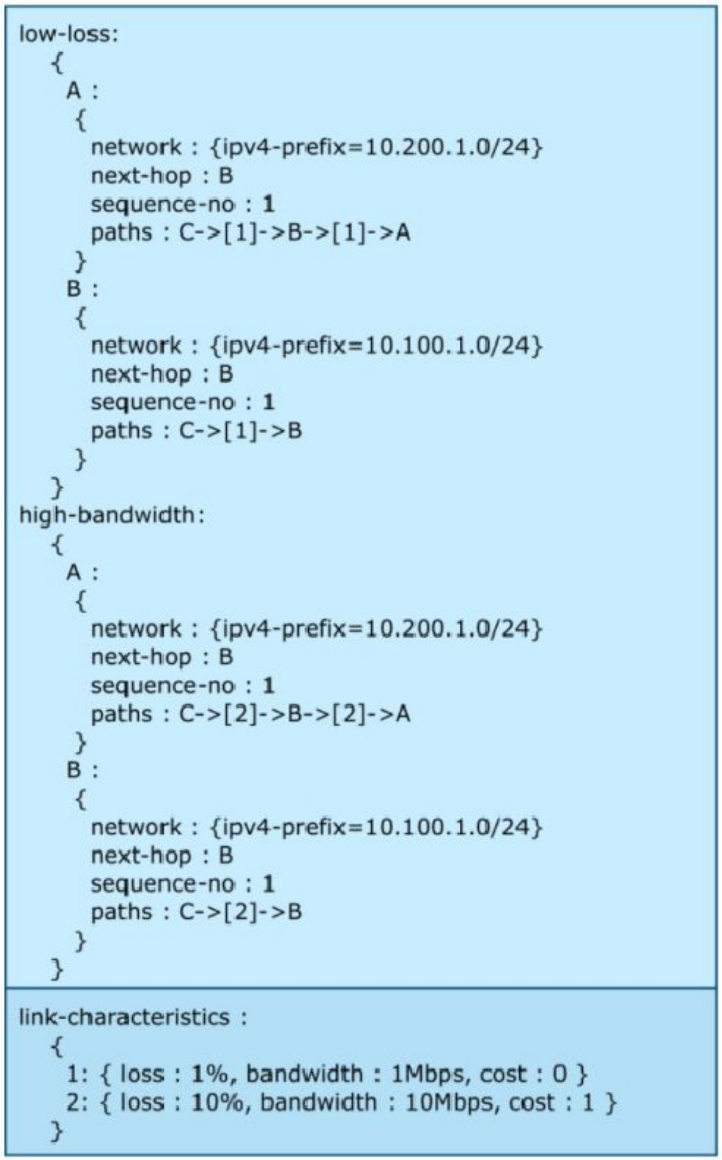
Message Format



Source code:
https://github.com/protocollabs/

Questions?