

Chapter 17

Configuring Fragmentation by Forwarding Class

For Adaptive Services (AS) Physical Interface Card (PIC) link services IQ (LSQ) and virtual LSQ redundancy (rlsq) interfaces, you can specify fragmentation properties for specific forwarding classes. Traffic on each forwarding class can be either multilink fragmented or interleaved. By default, traffic in all forwarding classes is fragmented.

If you do not configure fragmentation properties for particular forwarding classes in multilink Point-to-Point Protocol (MLPPP) interfaces, the fragmentation threshold you set at the [edit interfaces *interface-name* unit *logical-unit-number* fragment-threshold] hierarchy level is used for all forwarding classes within the MLPPP interface. For multilink Frame Relay (MLFR) FRF.16 interfaces, the fragmentation threshold you set at the [edit interfaces *interface-name* mlfr-uni-nni-bundle-options fragment-threshold] hierarchy level is used for all forwarding classes within the MLFR FRF.16 interface. If you do not set a maximum fragment size anywhere in the configuration, packets are still fragmented if they exceed the smallest maximum transmission unit (MTU) of all the links in the bundle.

To configure fragmentation by forwarding class, you can include the following statements at the [edit class-of-service] hierarchy level of the configuration:

```
class-of-service {
  fragmentation-maps {
    map-name {
      forwarding-class class-name {
        fragment-threshold bytes;
        multilink-class number;
        no-fragmentation;
      }
    }
  }
  interfaces {
    interface-name {
      unit logical-unit-number {
        fragmentation-map map-name;
      }
    }
  }
}
```

This chapter discusses the following topics:

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- Example: Configuring Fragmentation by Forwarding Class on page 225

Configuring Fragmentation by Forwarding Class

For AS PIC link services IQ interfaces (Isq) only, you can configure fragmentation properties on a particular forwarding class. To do this, include the `fragmentation-maps` statement at the `[edit class-of-service]` hierarchy level:

```
[edit class-of-service]
fragmentation-maps {
  map-name {
    forwarding-class class-name {
      fragment-threshold bytes;
      multilink-class number;
      no-fragmentation;
    }
  }
}
```

To set a per-forwarding class fragmentation threshold, include the `fragment-threshold` statement in the fragmentation map. This statement sets the maximum size of each multilink fragment.

To set traffic on a particular forwarding class to be interleaved rather than fragmented, include the `no-fragmentation` statement in the fragmentation map. This statement specifies that an extra fragmentation header is not prepended to the packets received on this queue and that static link load balancing is used to ensure in-order packet delivery.

For a given forwarding class, you can include either the `fragment-threshold` or `no-fragmentation` statement; they are mutually exclusive.

Associating a Fragmentation Map with an MLPPP Interface or MLFR FRF.16 DLCI

To associate a fragmentation map with an MLPPP interface or MLFR FRF.16 DLCI, include the `fragmentation-map` statement at the `[edit class-of-service interfaces interface-name unit logical-unit-number]` hierarchy level:

```
[edit class-of-service interfaces]
lsq-fpc/pic/port {
  unit logical-unit-number { # Multilink PPP
    fragmentation-map map-name;
  }
}
lsq-fpc/pic/port:channel { # MLFR FRF.16
  unit logical-unit-number {
    fragmentation-map map-name;
  }
}
```

For configuration examples, see the *JUNOS Services Interfaces Configuration Guide*.

Example: Configuring Fragmentation by Forwarding Class

Configure two logical units on an LSQ interface. The logical units use two different fragmentation maps.

```
class-of-service
  interfaces lsq-1/0/0 {
    unit 1 {
      fragmentation-map frag-map-A;
    }
    unit 2 {
      fragmentation-map frag-map-B;
    }
  }
  fragmentation-maps {
    frag-map-A {
      forwarding-class {
        AF {
          no-fragmentation;
        }
        EF {
          no-fragmentation;
        }
        BE {
          fragment-threshold 100;
        }
      }
    }
  }
```

```
frag-map-B {  
  forwarding-class {  
    EF {  
      fragment-threshold 200;  
    }  
    BE {  
      fragment-threshold 200;  
    }  
    AF {  
      fragment-threshold 200;  
    }  
  }  
}
```