

Example: Configuring Dynamic Scheduling and Queuing for Subscriber Access

In this example, subscribers are provided with a data and voice service defined in an access profile when they initially log in. The service activation is performed at login.

After the initial login, the subscriber adds an assured forwarding service that is not defined in the original access profile. A service profile is used to configure the schedulers and a RADIUS CoA activates the service. The queues defined for the schedulers in the initial scheduler map and the new scheduler map are merged.

In addition, the values for the initial data and voice service are upgraded by the RADIUS administrator through a separate RADIUS CoA message.

To configure the initial service and enable the activation through a RADIUS CoA:

1. Configure the access profile for the service activation.
 - a. Configure the RADIUS attribute variables in the initial dynamic profile.

```
[edit]
dynamic-profiles access-profile {
  variables {
    smap {
      radius {
        vendor-id 4874 {
          attribute 108;
          tag 4;
        }
      }
    }
    srate {
      radius {
        vendor-id 4874 {
          attribute 108;
          tag 1;
        }
      }
    }
    grate {
      radius {
        vendor-id 4874 {
          attribute 108;
          tag 2;
        }
      }
    }
    dbrate {
      radius {
        vendor-id 4874 {
          attribute 108;
          tag 3;
        }
      }
    }
  }
}
```

}

Table 1 on page 2 lists the initial values defined by the RADIUS administrator for the tags used in this example.

Table 1: Initial CoS Values for Subscriber Login

Variable	RADIUS Tag	Value
Shaping rate	T01	6m
Guaranteed rate	T02	4m
Delay buffer rate	T03	1m
Scheduler map	T04	data_voice_smap

- b. Configure the class of service parameters in the access profile.

Include the configurations for the interfaces, schedulers, and the scheduler maps.

```
[edit]
dynamic-profiles access-profile {
  class-of-service {
    traffic-control-profiles {
      tcp1 {
        scheduler-map "$smap";
        shaping-rate "$srate";
        guaranteed-rate "$grate";
        delay-buffer-rate "$dbrate";
      }
    }
    interfaces {
      "$junos-interface-ifd-name" {
        unit "$junos-underlying-interface-unit" {
          output-traffic-control-profile tcp1;
        }
      }
    }
    scheduler-maps {
      data_voice_smap {
        forwarding-class be scheduler be_sch;
        forwarding-class ef scheduler ef_sch;
      }
    }
    schedulers {
      be_sch {
        transmit-rate percent 40;
        buffer-size remainder;
        priority low;
        drop-profile-map loss-priority any protocol any drop-profile d3;
      }
      ef_sch {
```

```

        transmit-rate percent 20;
        buffer-size remainder;
        priority low;
        drop-profile-map loss-priority any protocol any drop-profile d2;
    }
}
}
}

```

2. Configure the interfaces for the access profile.

```

[edit]
dynamic-profiles access-profile {
  interfaces {
    "$junos-interface-ifd-name" {
      unit "$junos-underlying-interface-unit" {
        family inet;
      }
    }
  }
}

```

3. Configure the forwarding classes in the static [edit class-of-service] hierarchy.

```

[edit]
class-of-service {
  drop-profiles {
    d0 {
      fill-level 25 drop-probability 100;
      fill-level 0 drop-probability 0;
    }
    d1 {
      fill-level 50 drop-probability 100;
      fill-level 0 drop-probability 0;
    }
    d2 {
      fill-level 75 drop-probability 100;
      fill-level 0 drop-probability 0;
    }
    d3 {
      fill-level 0 drop-probability 0;
      fill-level 100 drop-probability 100;
    }
  }
  forwarding-classes {
    queue 0 be;
    queue 1 ef;
    queue 2 af;
    queue 3 nc;
  }
  interfaces {
    ge-1/2/9 {
      shaping-rate 100m;
    }
  }
}

```

```
}
```

4. Configure the service profile to enable RADIUS to activate the assured forwarding service after login.

```
[edit]
dynamic-profiles service-af {
  class-of-service {
    scheduler-maps {
      service-af-smap {
        forwarding-class af scheduler af_sched;
      }
    }
    schedulers {
      af_sched {
        transmit-rate percent 30;
        buffer-size remainder;
        priority low;
        drop-profile-map loss-priority any protocol any drop-profile d1;
      }
    }
  }
}
```

Subscribers receive upgraded values for the initial data and voice service when RADIUS sends a change of authorization (CoA). In this case, the CoS parameters are replaced, because multiple subscribers were not enabled on the logical interface.

Table 2 on page 4 lists the upgraded values defined by the RADIUS administrator.

Table 2: Upgraded CoS Values for the Video Service

Variable	RADIUS Tag	Value
Shaping rate	T01	14m
Guaranteed rate	T02	13m
Delay buffer rate	T03	12m
Scheduler map	T04	data_voice_smap

- Related Topics**
- Changing CoS Services Overview
 - Configuring User-Defined CoS Variables in a Dynamic Service Profile