

## Awk script for simulation experiments

### 1. To find the number of packets dropped

Filename: exp1.awk

```
BEGIN{
    count = 0;
}
{
    event = $1;
    if(event == "d") { count++; }
}
END{ printf("\nNumber of packets dropped is: %d\n", count);
}
```

In the command prompt, execute the following command:

```
$ exec awk -f exp1.awk out.tr
```

Output: No of packets dropped=0 or more than zero

### 2. To determine the number of packets sent by TCP / UDP.

**exp2.awk**

```
BEGIN {
    tcip = 0;
    cudp = 0;
}
{
    pkt = $5;
    if(pkt == "cbr") { cudp++; }
    if(pkt == "tcp") { tcip++; }
}
END {
    printf("\nNo of packets sent\nTcip : %d \n Udp : %d\n", tcip, cudp);
}
```

### 3. To find the throughput

**exp3.awk**

```
BEGIN {
    sSize = 0;
    startTime = 5.0;
    stopTime = 0.1;
    Tput = 0;
}
{
    event = $1;
    time = $2;
    size = $6;

    if(event == "+")
    {
        if(time < startTime)
        {
            startTime = time;
        }
    }
    if(event == "r")
    {

```

```

        if(time > stopTime)
        {
            stopTime = time;
        }
        sSize += size;
    }
    Tput = (sSize / (stopTime-startTime))*(8/1000);
    printf("%f\t%.2f\n", time, Tput);
}
END {
}

```

#### 4. To find the number of packets dropped

```

Filename: exp4.awk
BEGIN{
    count = 0;
}
{
    event = $1;
    if(event == "d") { count++; }
}
END{ printf("\nNumber of packets dropped is: %d\n", count);
}

```

#### 5. To find the throughput

```

exp5.awk
BEGIN {
    sSize = 0;
    startTime = 5.0;
    stopTime = 0.1;
    Tput = 0;
}
{
    event = $1;
    time = $2;
    size = $6;

    if(event == "+")
    {
        if(time < startTime)
        {
            startTime = time;
        }
    }
    if(event == "r")
    {
        if(time > stopTime)
        {
            stopTime = time;
        }
        sSize += size;
    }
}

```

```

Tput = (sSize / (stopTime-startTime))*(8/1000);
printf("%f\t%.2f\n", time, Tput);
}
END {
}

```

## 6. To find the number of packets dropped due to collision

**Filename: exp6.awk**

```

BEGIN{
    count = 0;
}
{
    event = $1;
    if(event == "d") { count++; }
}
END{ printf("\nNumber of packets dropped is: %d\n", count);
}

```

## 7. To find the size of congestion window

**exp7.awk**

```

BEGIN {
}
{
    if($6 == "cwnd_")
    {
        printf("%f\t%f\n", $1, $7);
    }
}
END {
}

```

## 8. Throughput

**exp8.awk**

```

BEGIN{
    PacketRcvd = 0;
    Throughput = 0.0;
}
{
    if(($1 == "r")&&($3 == "_3_")&&($4 == "AGT")&&($7 == "tcp")&&($8 > 1000))
    {
        PacketRcvd++;
    }
}
END {
    Throughput = ((PacketRcvd*1000*8) / (95.0*1000000));
    printf("\nThe throughput is:%f\n", Throughput);
}

```