

Simon Fraser University

BitTorrent Protocol: Priority Evaluation

Website:
<http://www.sfu.ca/~csp6/>

ENSC 427 - Network Communication,
Spring 2012

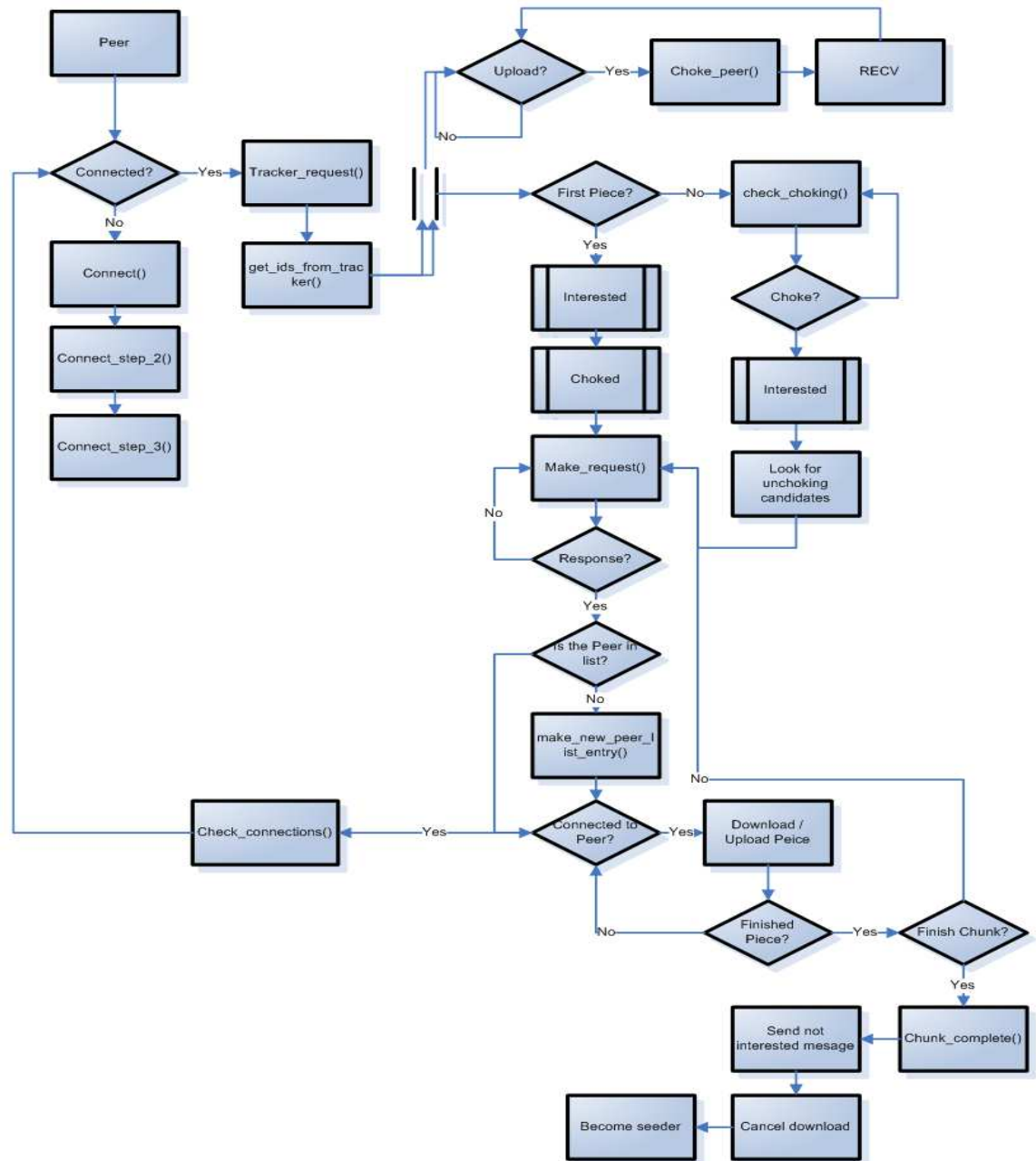
Team #7
Charanpreet Parmar
FeiFan Jiang
Izaak Lee

Overview/ Implementation Detail

- Interested in priority between seeders and peers.
- Implemented in ns-2.29 using Ubuntu through Vmware.
 - Used code provided by Kolja Eger
 - It is not the entire BitTorrent Protocol
- NAM – Add visualization of network activity
- MATLAB – Parsing data and generating meaningful plots



Design and code development



Design and code development

```
154 proc priority_tracker {} {
155     global no_of_peers no_of_seeds C_up start_time time_delay
156     #put the upload rate into an array
157     for {set i 0} {$i < $no_of_peers} {incr i} {
158         set peer_array($i) $C_up($i)
159     }
160     #sort the upload rate from lowest to highest
161     set j 1
162     while {$j == 1} {
163         set j 0
164         for {set k 0} {$k < [expr $no_of_peers-1]} {incr k} {
165             if {$peer_array([expr $k+1]) < $peer_array($k)} {
166                 set temp $peer_array($k)
167                 set peer_array($k) $peer_array([expr $k+1])
168                 set peer_array([expr $k+1]) $temp
169                 set j 1
170             }
171         }
172     }
173     #finds all the unique values of C_up
174     set index 0
175     for {set i 0} {$i < [expr $no_of_peers-1]} {incr i} {
176         if {$peer_array($i) != $peer_array([expr $i+1])} {
177             set unique_array($index) $peer_array($i)
178             incr index
179         }
180     }
```

Results

- Log statistics: 5 seeds, 5 peers. No priority

| ID | Start_time | first_chunk_time | download_finished | stop_time | download time - start time |
|----|------------|------------------|-------------------|-----------|----------------------------|
| 1 | 0 | 0 | -1 | 118.708 | -1 |
| 2 | 0 | 0 | -1 | 118.708 | -1 |
| 3 | 0 | 0 | -1 | 118.708 | -1 |
| 4 | 0 | 0 | -1 | 118.708 | -1 |
| 5 | 0 | 0 | -1 | 118.708 | -1 |
| 6 | 0 | 5.93705 | 114.619 | 118.708 | 114.619 |
| 7 | 0 | 15.6919 | 118.071 | 118.708 | 118.071 |
| 8 | 0 | 26.4805 | 115.687 | 118.708 | 115.687 |
| 9 | 0 | 23.8726 | 118.708 | 118.708 | 118.708 |
| 10 | 0 | 25.4215 | 116.26 | 118.708 | 116.26 |

Results

- Log statistics: 5 seeds, 5 peers. 5 second priority.

| ID | Start_time | first_chunk_time | download_finished | stop_time | download time - start time |
|----|------------|------------------|-------------------|-----------|----------------------------|
| 1 | 0 | 0 | -1 | 111.765 | -1 |
| 2 | 0 | 0 | -1 | 111.765 | -1 |
| 3 | 0 | 0 | -1 | 111.765 | -1 |
| 4 | 0 | 0 | -1 | 111.765 | -1 |
| 5 | 0 | 0 | -1 | 111.765 | -1 |
| 6 | 5 | 10.8781 | 108.697 | 111.765 | 103.697 |
| 7 | 5 | 21.4159 | 110.345 | 111.765 | 105.345 |
| 8 | 0 | 6.88248 | 105.088 | 111.765 | 105.088 |
| 9 | 5 | 24.8195 | 111.765 | 111.765 | 106.765 |
| 10 | 5 | 20.5582 | 109.527 | 111.765 | 104.527 |