CPSC 441 – Assignment 3

Pathfinder Results – Kaumil Patel

Traceroute results from Home

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Category** | **Destination** | **Domain**  **Name** | **IP Address** | **Location** | **When**  **Home** | **Num**  **Hops** | **BaseRTT**  **ms** |
| AB1 | Calgary | ucalgary.ca | 136.159.96.125 | Calgary | Nov 15/5:17 | 15 | 97.78 |
| CAN1 | Toronto, Ontario | utoronto.ca | 128.100.166.120 | Toronto, Ontario | Nov 15/5:17 | 20 | 235.80 |
| CAN2 | Montreal, Quebec | mcgill.ca | 132.216.177.160 | Montreal, Quebec | Nov 15/5:17 | 18 | 220.36 |
| CAN3 | Vancouver, British Columbia | ubc.ca | 206.87.224.15 | Vancouver, British Columbia | Nov 15/5:18 | 16 | 29.21 |
| US1 | New York | nyu.edu | 216.165.47.10 | New York | Nov 15/5:18 | 20 | 155.39 |
| US2 | Stanford, California | stanford.edu | 171.67.215.200 | Stanford, California | Nov 15/5:18 | 16 | 234.68 |
| INTL1 | Westminster, United Kingdom, Europe | london.ac.uk | 128.86.130.42 | Westminster, United Kingdom, Europe | Nov 15/5:19 | 21 | 170.08 |
| INTL2 | Paris, France, Europe | u-paris.fr | 195.220.128.193 | Paris, France, Europe | Nov 15/5:19 | 27 | 235.52 |

Traceroute results from UCalagry

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| **Category** | **Destination** | **Domain**  **Name** | **IP Address** | **Location** | **When**  **UCalgary** | **Num**  **Hops** | **BaseRTT**  **ms** |
| AB1 | Calgary | ucalgary.ca | 136.159.96.125 | Calgary | Nov 15/11:30 | 11 | 2.95 |
| CAN1 | Toronto, Ontario | utoronto.ca | 128.100.166.120 | Toronto, Ontario | Nov 15/11:30 | 21 | 86.12 |
| CAN2 | Montreal, Quebec | mcgill.ca | 132.216.177.160 | Montreal, Quebec | Nov 15/11:31 | 22 | 115.04 |
| CAN3 | Vancouver, British Columbia | ubc.ca | 206.87.224.15 | Vancouver, British Columbia | Nov 15/11:31 | 17 | 15.46 |
| US1 | New York | nyu.edu | 216.165.47.10 | New York | Nov 15/11:32 | 20 | 100.34 |
| US2 | Stanford, California | stanford.edu | 171.67.215.200 | Stanford, California | Nov 15/11:32 | 17 | 99.37 |
| INTL1 | Westminster, United Kingdom, Europe | london.ac.uk | 128.86.130.42 | Westminster, United Kingdom, Europe | Nov 15/11:32 | 22 | 204.81 |
| INTL2 | Paris, France, Europe | u-paris.fr | 195.220.128.193 | Paris, France, Europe | Nov 15/11:33 | 22 | 204.89 |

Program results

|  |  |  |  |
| --- | --- | --- | --- |
| **Destination** | **Cost** | **Hops** | **Shortest Path** |
| YYC to YYZ | 2097 | 3 | YYC -> YQR -> YWG -> YYZ |
| YYC to YUL | 2308 | 4 | YYC -> YQR -> YWG -> YOW -> YUL |
| YYC to YVR | 720 | 1 | YYC -> YVR |

Observations:

The route taken to utoronto.ca goes through the USA and 4 different autonomous systems. Compared to the pathfinder program results the internet takes a much longer route through British Colombia which goes in the complete opposite direction. The results demonstrates internet routing doesn’t necessary take the shortest path this may be due to network load, internet service provider agreements and peering policies.

The traceroutes from my home and UCalgary also take very different routes. Routes from UCalgary originate in the UCalgary autonomous system and go through the Canarie network. UCalgary traceroutes are typically also faster since they route through inside Canada while Shaw connect to the destination through the USA which is a longer distance. The origin autonomous systems for both traceroutes are different and they are connected to different networks which is why the results vary in time and the path taken.