

# Experiment Report

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## Experiment Configuration

Dataset name is **2021-01-15\_14:35:38**

Advanced algorand with concurrency constant **5**

Number of nodes is **450**

Bandwidth limit per process using Trickle: **20 Mbps using tc and cgroups**

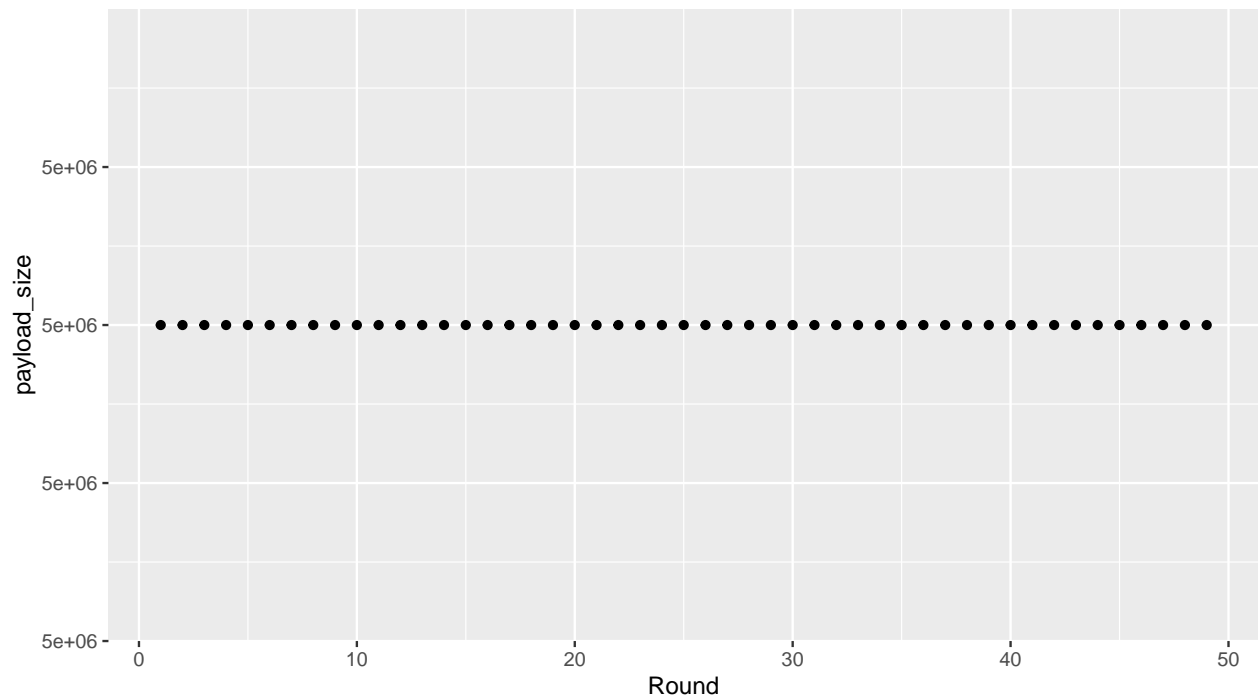
tc Delay on outgoing channel: **50 ms delay (RTT 100ms)**

## Node Configuration

```
## {
##   "NodeCount": 450,
##   "BAStar": {
##     "UserMoney": 10,
##     "ThresholdProposer": 26,
##     "TSmallStep": 180,
##     "TBigStep": 0.68,
##     "TBigFinal": 900,
##     "TSmallFinal": 0.74,
##     "LamdaPriority": 5,
##     "LamdaBlock": 60,
##     "LamdaStep": 20,
##     "LamdaStepVar": 5,
##     "ConcurrencyConstant": 5
##   },
##   "Blockchain": {
##     "BlockPayloadSize": 1000000,
##     "StopOnRound": 50
##   },
##   "Network": {
##     "GossipNodeMessageBufferSize": 100,
##     "PeerCount": 4
##   },
##   "Logger": {
##     "EnableAgreementLogging": true,
##     "EnableMemoryPoolLogging": true,
##     "EnableBlockchainLogging": true,
##     "EnableGossipNodeLogging": false
##   },
##   "Validation": {
##     "ValidateBlock": true,
##     "ValidateVote": true
##   }
## }
```

## Sanity Check

FileName	count	mean_bp	mean_ba_wo_final	mean_ba_w_final	distinct_hash	max_round
nuc10.maas.stat	1225	10.02285	13.29634	16.28025	49	49
nuc14.maas.stat	1225	10.00614	13.33067	16.27603	49	49
nuc15.maas.stat	1225	10.00460	13.49243	16.30249	49	49
nuc16.maas.stat	1225	10.02343	13.27408	16.28717	49	49
nuc19.maas.stat	1225	10.00378	13.41611	16.27653	49	49
nuc2.maas.stat	1225	10.02165	13.28259	16.28269	49	49
nuc20.maas.stat	1225	10.00684	13.31487	16.27885	49	49
nuc21.maas.stat	1225	10.01725	13.26091	16.27807	49	49
nuc22.maas.stat	1225	10.00899	13.40943	16.30217	49	49
nuc23.maas.stat	1225	10.01253	13.26552	16.27979	49	49
nuc24.maas.stat	1225	10.00882	13.38323	16.30675	49	49
nuc27.maas.stat	1225	10.00690	13.69043	16.30224	49	49
nuc3.maas.stat	1225	10.02029	13.60136	16.29868	49	49
nuc4.maas.stat	1225	10.00412	13.33206	16.29988	49	49
nuc5.maas.stat	1225	10.01037	13.26790	16.27688	49	49
nuc6.maas.stat	1225	10.03079	13.68809	16.30929	49	49
nuc7.maas.stat	1225	10.01613	13.32128	16.27472	49	49
nuc8.maas.stat	1225	10.01522	13.31181	16.28138	49	49



The number of rows in data set is **22050**

Maximum round number is **49**

Appended payload size is is **245** MB

## Overall Results

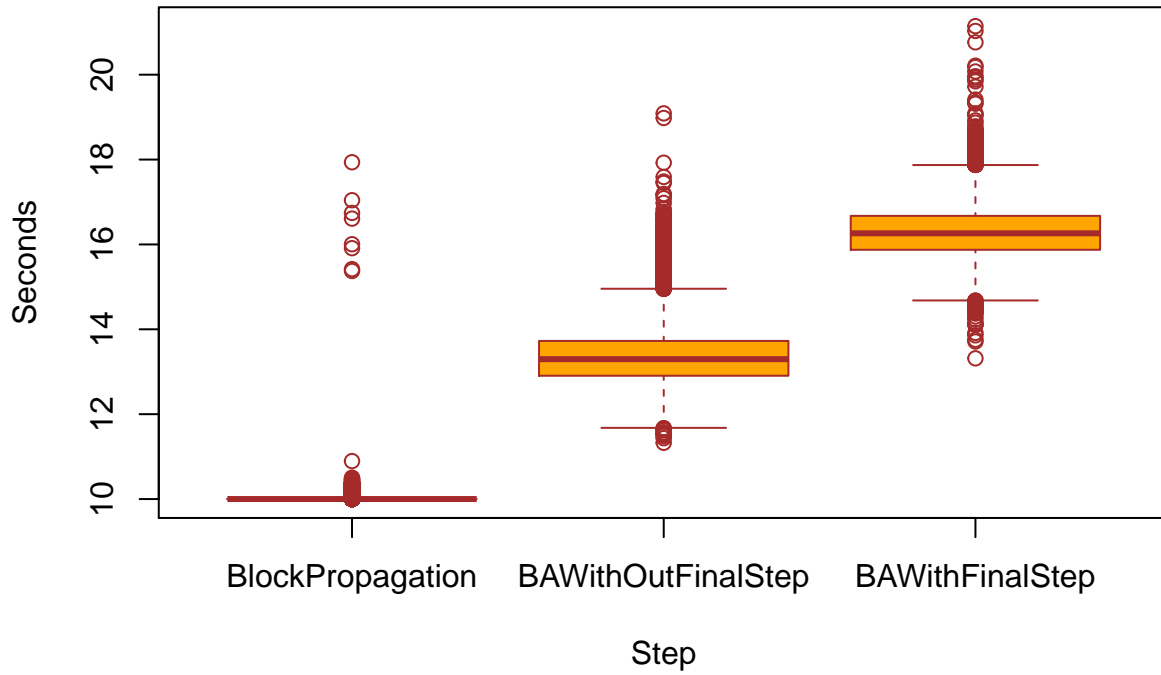
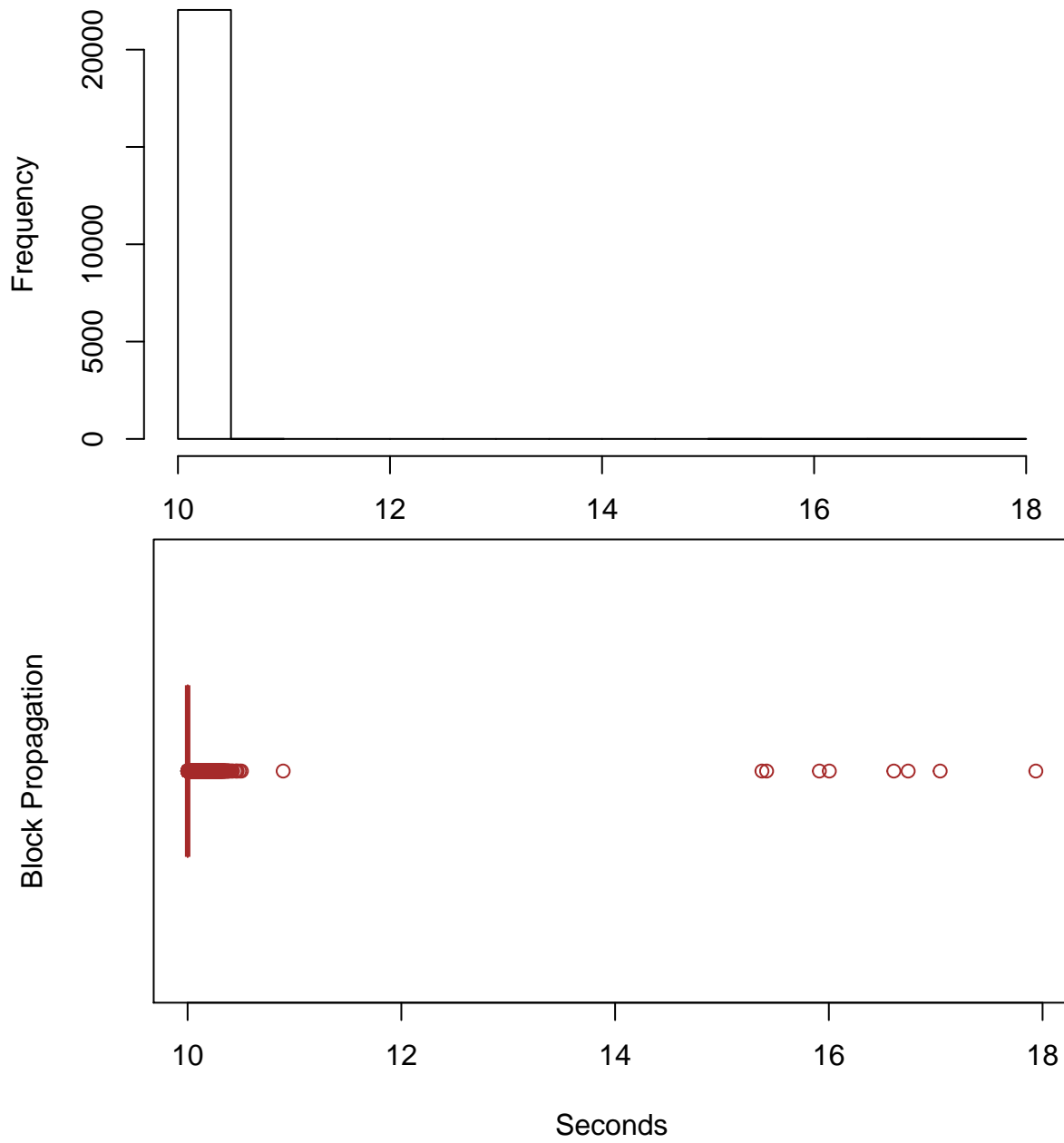


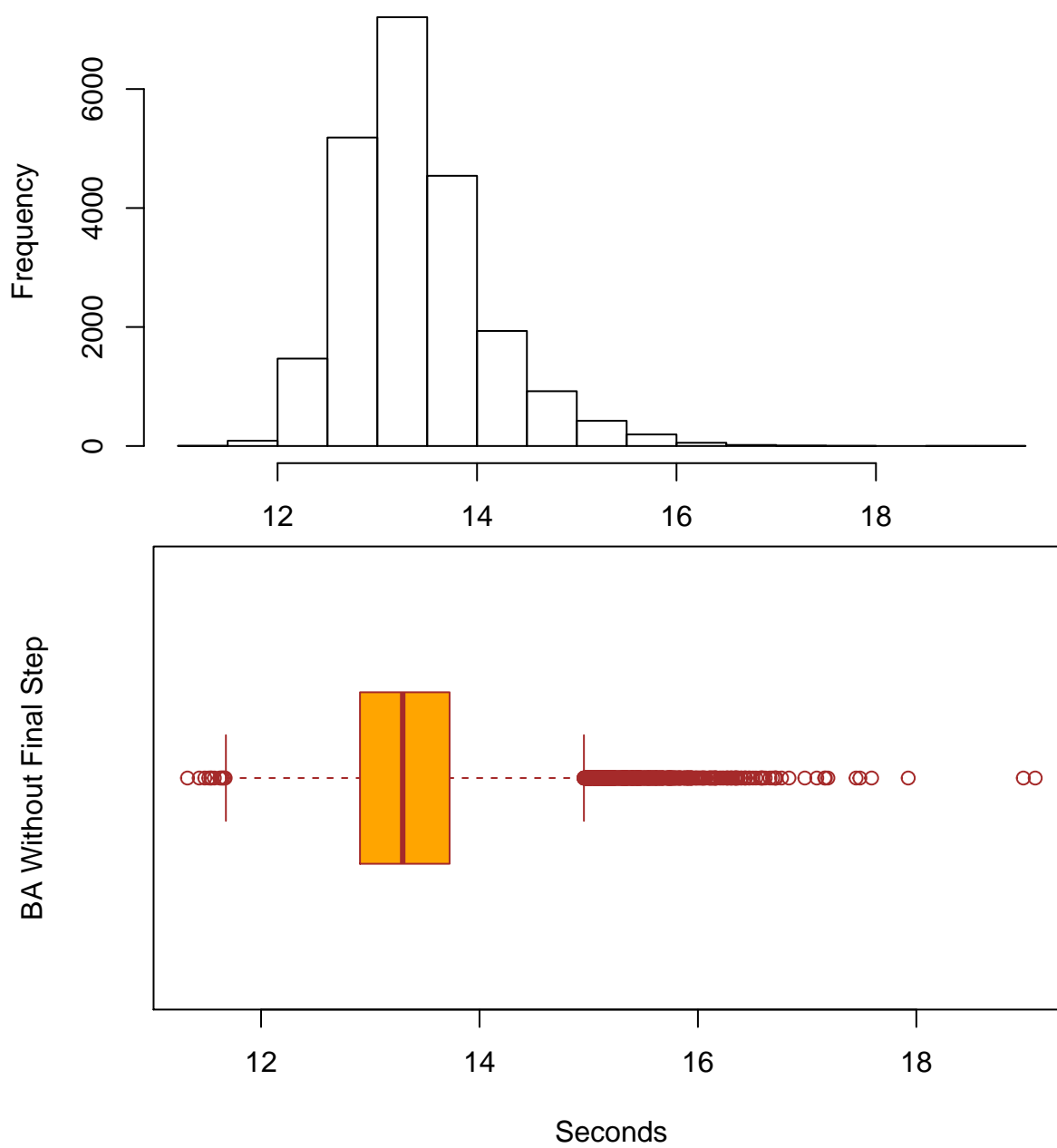
Table 2: Summaries

BlockPropagation	BAWithOutFinalStep	BAWithFinalStep
Min. :10.00	Min. :11.33	Min. :13.32
1st Qu.:10.00	1st Qu.:12.91	1st Qu.:15.87
Median :10.00	Median :13.30	Median :16.26
Mean :10.01	Mean :13.39	Mean :16.29
3rd Qu.:10.00	3rd Qu.:13.73	3rd Qu.:16.67
Max. :17.94	Max. :19.09	Max. :21.14

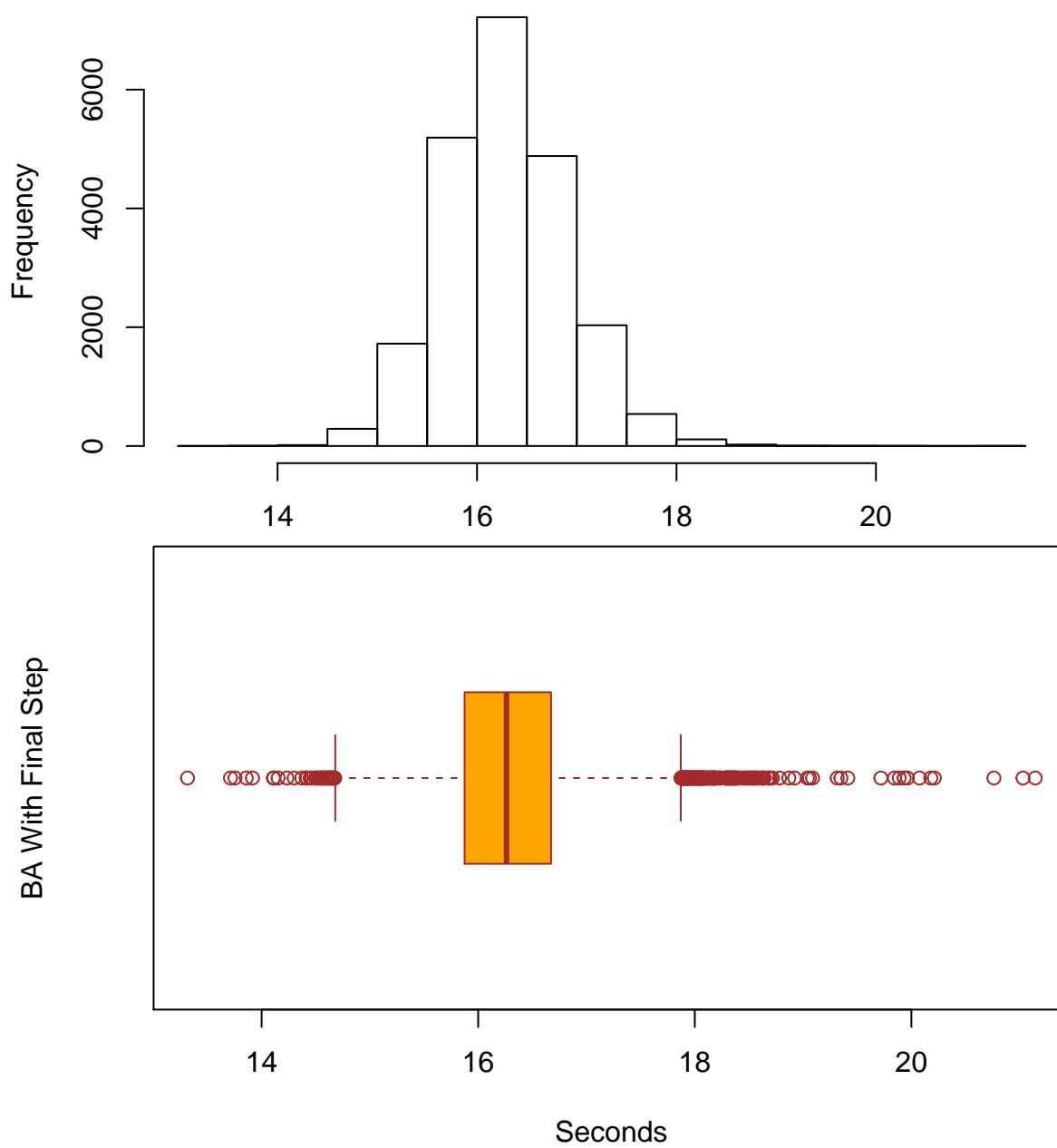
## Block Propagation Statistics



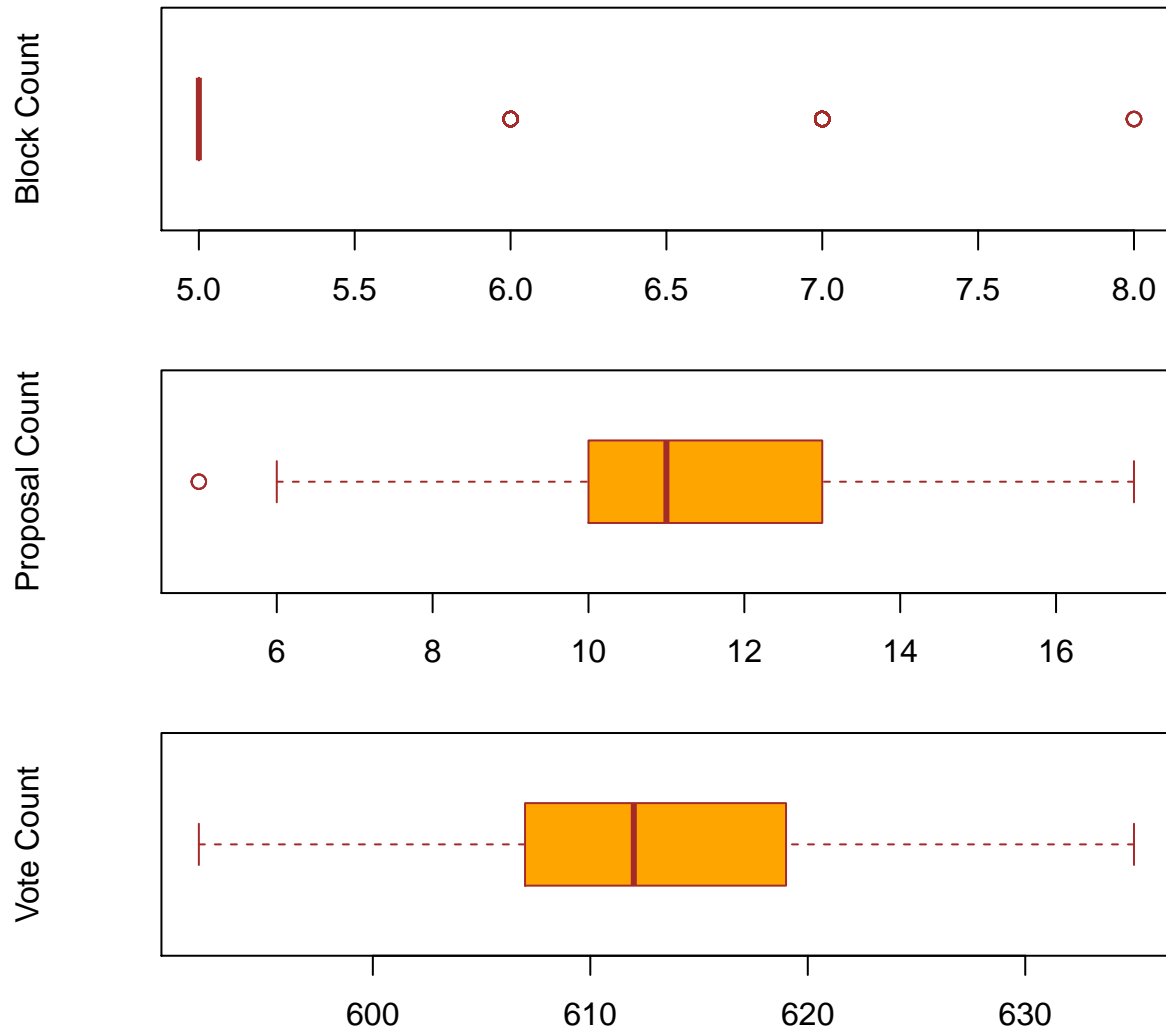
## BA Elapsed Time Without Final Step Statistics



## BA Elapsed Time With Final Step Statistics

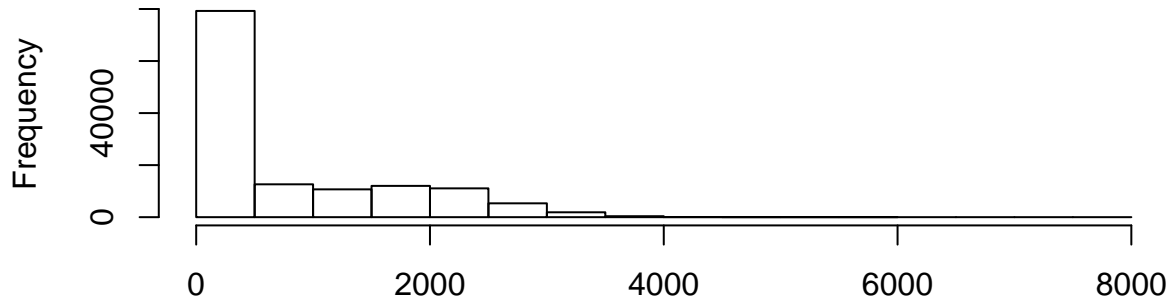


## Forwarded Message Counts Per Round

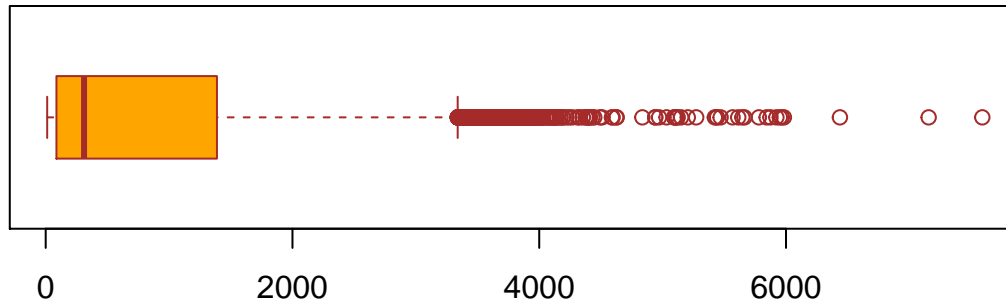




## Block Upload Stats



```
##      Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##      12.0   87.0   311.0   773.8 1388.0 7591.0
```



FileName	Count	Min	Mean	Max
nuc10.maas.stat	6087	12	788.4897	3982
nuc14.maas.stat	8550	13	804.2136	5423
nuc15.maas.stat	9079	12	682.4080	5922
nuc16.maas.stat	10883	13	710.4519	5966
nuc19.maas.stat	7894	12	723.3534	5843
nuc2.maas.stat	5071	12	768.5689	7156
nuc20.maas.stat	8698	13	777.4180	4029
nuc21.maas.stat	9203	13	873.9828	5272
nuc22.maas.stat	5468	12	734.0717	7591
nuc23.maas.stat	9116	13	742.3652	5983
nuc24.maas.stat	8478	13	800.6168	5436
nuc27.maas.stat	8361	13	739.3385	6437
nuc3.maas.stat	5975	12	772.0229	4310
nuc4.maas.stat	5741	12	895.8042	4406
nuc5.maas.stat	6395	13	792.1972	5874
nuc6.maas.stat	7107	13	836.5697	5032
nuc7.maas.stat	4746	13	823.0567	5780
nuc8.maas.stat	6447	12	730.8326	4392

```
## [1] 133299
```