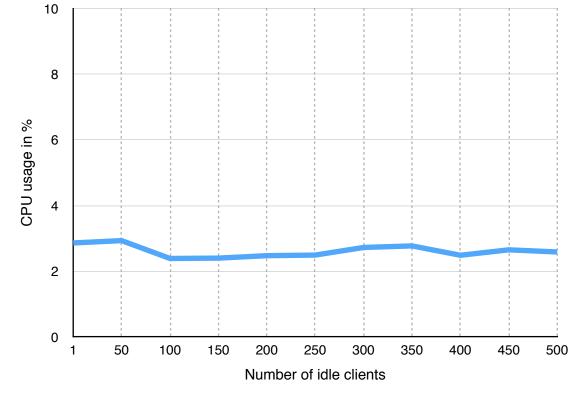
HTTP Long Polling

Idle clients

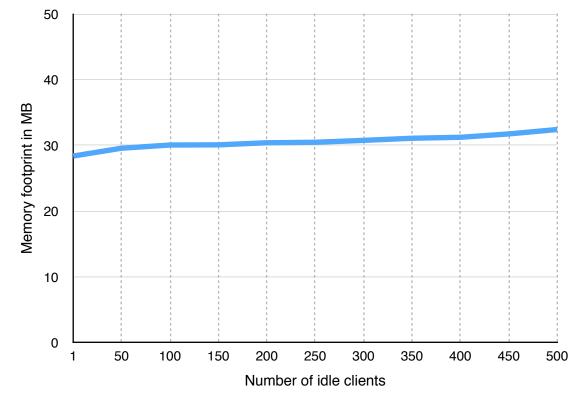
Idle CPU Load

| # clients | 1 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |
|-----------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|
| Run 1 | 3,00 | 2,42 | 2,29 | 2,30 | 2,54 | 2,44 | 2,70 | 2,78 | 2,36 | 2,67 | 2,54 |
| Run 2 | 2,77 | 3,00 | 2,38 | 2,35 | 2,32 | 2,31 | 2,76 | 2,73 | 2,73 | 2,57 | 2,57 |
| Run 3 | 2,81 | 2,97 | 2,41 | 2,42 | 2,41 | 2,38 | 2,64 | 2,93 | 2,43 | 2,62 | 2,77 |
| Run 4 | 2,75 | 3,00 | 2,44 | 2,36 | 2,65 | 2,48 | 2,66 | 2,82 | 2,49 | 2,66 | 2,44 |
| Run 5 | 2,80 | 3,18 | 2,38 | 2,43 | 2,34 | 2,48 | 2,81 | 2,73 | 2,45 | 2,55 | 2,75 |
| Run 6 | 2,96 | 2,86 | 2,34 | 2,33 | 2,50 | 2,56 | 2,68 | 2,79 | 2,54 | 2,71 | 2,58 |
| Run 7 | 3,05 | 3,00 | 2,44 | 2,30 | 2,55 | 2,57 | 2,60 | 2,50 | 2,54 | 3,00 | 2,49 |
| Run 8 | 3,02 | 2,86 | 2,32 | 2,55 | 2,58 | 2,52 | 2,88 | 2,55 | 2,59 | 2,67 | 2,57 |
| Run 9 | 2,47 | 3,14 | 2,47 | 2,33 | 2,40 | 2,65 | 2,84 | 3,02 | 2,41 | 2,47 | 2,66 |
| Run 10 | 2,98 | 2,89 | 2,42 | 2,63 | 2,45 | 2,53 | 2,67 | 2,86 | 2,33 | 2,60 | 2,50 |
| Average | 2,861 | 2,932 | 2,389 | 2,4 | 2,474 | 2,492 | 2,724 | 2,771 | 2,487 | 2,652 | 2,587 |



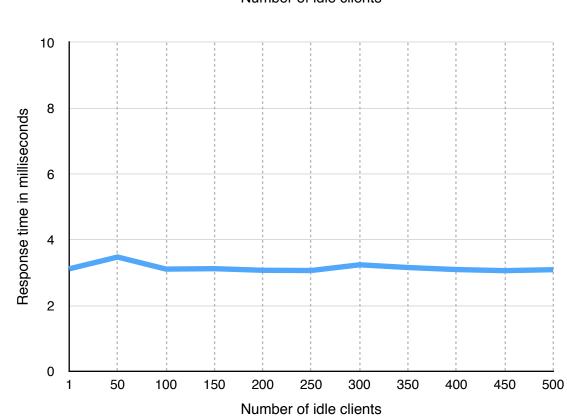
Idle Memory Footprint

| # clients | 1 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |
|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Run 1 | 28,47 | 29,63 | 30,15 | 30,38 | 30,47 | 30,71 | 30,74 | 31,19 | 31,41 | 31,43 | 33,30 |
| Run 2 | 28,83 | 29,47 | 30,00 | 30,28 | 30,57 | 30,66 | 30,90 | 31,04 | 31,16 | 31,78 | 32,47 |
| Run 3 | 28,62 | 29,46 | 30,07 | 30,21 | 30,43 | 29,88 | 30,81 | 31,04 | 31,16 | 31,53 | 32,08 |
| Run 4 | 29,07 | 29,40 | 30,14 | 30,25 | 29,83 | 30,70 | 30,72 | 31,07 | 31,24 | 31,49 | 32,49 |
| Run 5 | 28,81 | 29,44 | 30,04 | 30,16 | 30,58 | 30,67 | 30,87 | 31,13 | 31,27 | 31,48 | 32,52 |
| Run 6 | 27,90 | 29,86 | 30,00 | 30,32 | 30,39 | 30,46 | 30,72 | 31,10 | 31,25 | 31,34 | 32,16 |
| Run 7 | 28,73 | 29,80 | 29,93 | 30,18 | 30,50 | 30,77 | 30,99 | 31,19 | 31,23 | 32,26 | 32,38 |
| Run 8 | 28,23 | 29,80 | 30,19 | 29,46 | 30,55 | 30,66 | 30,39 | 30,99 | 31,13 | 31,54 | 32,14 |
| Run 9 | 27,10 | 29,49 | 30,13 | 30,35 | 30,45 | 30,41 | 30,87 | 31,13 | 31,36 | 32,54 | 32,40 |
| Run 10 | 28,16 | 29,51 | 30,04 | 29,37 | 30,35 | 29,95 | 30,75 | 31,11 | 31,25 | 32,18 | 32,34 |
| Average | 28,392 | 29,586 | 30,069 | 30,096 | 30,412 | 30,487 | 30,776 | 31,099 | 31,246 | 31,757 | 32,428 |



Idle Response Time

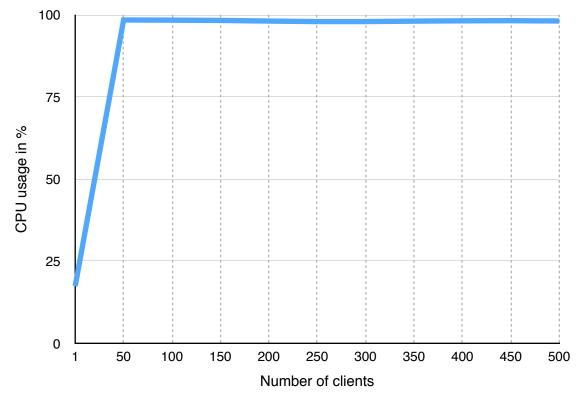
| # clients | 1 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |
|-----------|-------|-------|-------|------|-------|-------|-------|-------|-------|------|-------|
| Run 1 | 3,26 | 3,11 | 2,96 | 3,14 | 3,15 | 3,15 | 3,98 | 3,00 | 2,96 | 3,08 | 3,10 |
| Run 2 | 2,95 | 3,27 | 3,30 | 3,62 | 3,12 | 2,92 | 3,24 | 3,09 | 3,11 | 3,04 | 2,91 |
| Run 3 | 3,05 | 3,30 | 3,20 | 3,12 | 3,02 | 3,15 | 3,19 | 3,16 | 3,04 | 2,98 | 3,14 |
| Run 4 | 3,10 | 3,30 | 3,29 | 3,14 | 3,07 | 3,01 | 3,17 | 3,18 | 3,01 | 3,01 | 2,94 |
| Run 5 | 3,08 | 3,40 | 2,98 | 3,12 | 3,00 | 3,02 | 3,15 | 3,08 | 3,14 | 3,10 | 3,10 |
| Run 6 | 3,26 | 2,97 | 3,19 | 3,00 | 3,15 | 3,13 | 3,05 | 3,31 | 3,09 | 3,09 | 3,42 |
| Run 7 | 2,97 | 3,84 | 3,25 | 2,97 | 3,00 | 3,01 | 3,13 | 3,27 | 3,20 | 3,15 | 3,07 |
| Run 8 | 3,10 | 3,30 | 2,88 | 3,08 | 3,12 | 3,03 | 3,20 | 3,05 | 3,20 | 3,12 | 3,03 |
| Run 9 | 3,06 | 3,34 | 3,13 | 2,93 | 3,15 | 3,05 | 3,07 | 3,11 | 3,10 | 3,04 | 2,97 |
| Run 10 | 3,33 | 4,91 | 2,89 | 3,08 | 2,93 | 3,17 | 3,20 | 3,30 | 3,08 | 2,99 | 3,21 |
| Average | 3,116 | 3,474 | 3,107 | 3,12 | 3,071 | 3,064 | 3,238 | 3,155 | 3,093 | 3,06 | 3,089 |



During Broadcast

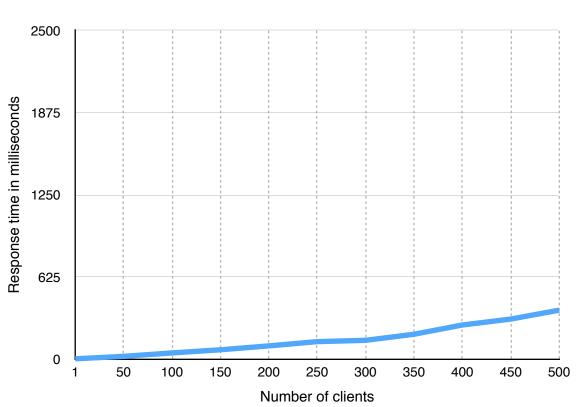
CPU Load During Broadcast

| # clients | 1 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |
|-----------|--------|-------|-------|--------|--------|--------|--------|--------|--------|--------|-------|
| Run 1 | 17,54 | 98,41 | 98,32 | 98,33 | 98,16 | 97,87 | 97,85 | 97,96 | 98,23 | 98,03 | 98,20 |
| Run 2 | 17,47 | 98,47 | 98,35 | 98,28 | 98,20 | 98,06 | 97,94 | 98,06 | 98,04 | 98,16 | 98,06 |
| Run 3 | 17,73 | 98,35 | 98,38 | 98,23 | 98,03 | 97,98 | 98,00 | 98,05 | 98,01 | 98,26 | 98,12 |
| Run 4 | 17,46 | 98,43 | 98,47 | 98,06 | 97,95 | 97,96 | 97,97 | 98,01 | 98,33 | 98,11 | 98,08 |
| Run 5 | 17,30 | 98,37 | 98,32 | 98,40 | 98,16 | 98,02 | 97,82 | 98,08 | 98,17 | 98,08 | 98,17 |
| Run 6 | 17,27 | 98,44 | 98,32 | 98,33 | 98,10 | 97,96 | 98,09 | 98,18 | 98,35 | 98,14 | 98,25 |
| Run 7 | 17,37 | 98,30 | 98,46 | 98,35 | 97,97 | 97,80 | 97,93 | 98,00 | 98,00 | 98,27 | 98,21 |
| Run 8 | 17,52 | 98,48 | 98,30 | 98,35 | 98,15 | 97,89 | 97,91 | 98,19 | 98,18 | 98,62 | 98,09 |
| Run 9 | 17,50 | 98,51 | 98,40 | 98,30 | 98,19 | 97,95 | 98,06 | 98,12 | 98,22 | 98,05 | 98,02 |
| Run 10 | 17,46 | 98,44 | 98,38 | 98,19 | 97,97 | 97,86 | 97,79 | 97,98 | 98,12 | 98,32 | 97,90 |
| Average | 17,462 | 98,42 | 98,37 | 98,282 | 98,088 | 97,935 | 97,936 | 98,063 | 98,165 | 98,204 | 98,11 |



Response Time During Broadcast

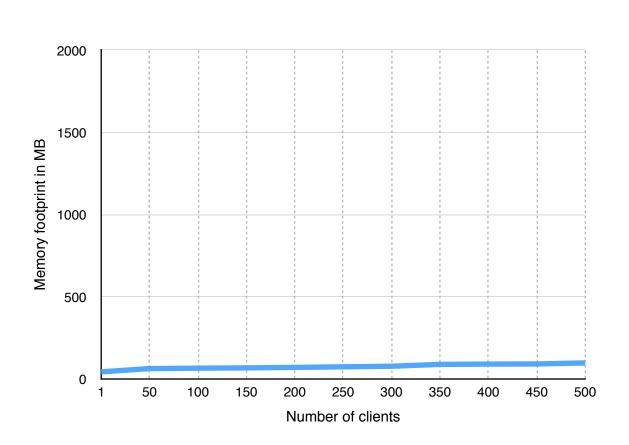
| # clients | 1 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |
|-----------|-------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|
| Run 1 | 2,20 | 21,47 | 47,47 | 71,52 | 104,67 | 133,89 | 141,52 | 187,51 | 259,57 | 300,78 | 357,26 |
| Run 2 | 2,16 | 21,10 | 46,68 | 71,47 | 101,19 | 131,05 | 135,93 | 189,05 | 259,32 | 303,22 | 390,97 |
| Run 3 | 2,15 | 20,49 | 46,37 | 71,15 | 101,32 | 132,81 | 142,82 | 190,11 | 248,32 | 309,05 | 402,08 |
| Run 4 | 2,19 | 20,16 | 46,89 | 70,01 | 99,85 | 136,70 | 146,21 | 194,01 | 266,06 | 300,87 | 365,01 |
| Run 5 | 2,15 | 21,66 | 47,43 | 72,13 | 99,09 | 134,57 | 148,66 | 199,33 | 252,19 | 303,07 | 383,06 |
| Run 6 | 2,19 | 21,65 | 47,35 | 70,28 | 100,15 | 127,86 | 140,74 | 187,31 | 283,20 | 306,13 | 352,76 |
| Run 7 | 2,16 | 20,34 | 46,70 | 70,35 | 101,30 | 137,20 | 143,83 | 180,54 | 262,29 | 326,04 | 351,64 |
| Run 8 | 2,21 | 19,97 | 46,54 | 70,49 | 98,98 | 139,12 | 141,29 | 196,23 | 257,18 | 297,92 | 381,64 |
| Run 9 | 2,16 | 21,37 | 46,85 | 68,08 | 100,37 | 123,32 | 140,82 | 188,45 | 261,47 | 299,39 | 378,53 |
| Run 10 | 2,17 | 21,11 | 46,78 | 73,10 | 99,06 | 131,20 | 147,39 | 177,88 | 244,94 | 299,01 | 359,56 |
| Average | 2,174 | 20,932 | 46,906 | 70,858 | 100,598 | 132,772 | 142,921 | 189,042 | 259,454 | 304,548 | 372,251 |



After Broadcast

Memory Footprint After Broadcast

| # clients | 1 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |
|-----------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|-------|
| Run 1 | 43,41 | 63,36 | 65,68 | 67,92 | 70,83 | 73,17 | 78,64 | 89,17 | 89,23 | 88,75 | 96,98 |
| Run 2 | 43,05 | 63,66 | 65,37 | 67,36 | 70,72 | 73,78 | 78,08 | 88,44 | 89,21 | 97,54 | 98,05 |
| Run 3 | 43,34 | 62,57 | 66,03 | 67,51 | 70,50 | 74,37 | 77,78 | 89,17 | 89,48 | 88,27 | 98,95 |
| Run 4 | 43,53 | 62,70 | 66,00 | 68,20 | 69,93 | 74,93 | 78,45 | 89,58 | 89,26 | 96,72 | 97,40 |
| Run 5 | 43,82 | 64,52 | 65,70 | 67,73 | 71,15 | 73,61 | 76,10 | 89,07 | 98,31 | 88,02 | 97,24 |
| Run 6 | 43,12 | 64,03 | 65,87 | 67,64 | 71,08 | 75,77 | 77,45 | 89,22 | 88,85 | 89,02 | 96,96 |
| Run 7 | 43,43 | 62,81 | 65,92 | 67,73 | 70,07 | 73,21 | 78,34 | 87,95 | 88,23 | 90,10 | 98,44 |
| Run 8 | 43,68 | 63,19 | 66,08 | 67,49 | 70,44 | 74,71 | 77,60 | 89,24 | 89,28 | 89,62 | 98,38 |
| Run 9 | 43,80 | 63,86 | 66,37 | 67,07 | 71,15 | 73,91 | 77,18 | 88,62 | 96,76 | 98,04 | 98,40 |
| Run 10 | 43,41 | 63,34 | 65,59 | 68,66 | 70,22 | 73,73 | 76,79 | 88,74 | 88,15 | 89,35 | 97,90 |
| Average | 43,459 | 63,404 | 65,861 | 67,731 | 70,609 | 74,119 | 77,641 | 88,92 | 90,676 | 91,543 | 97,87 |

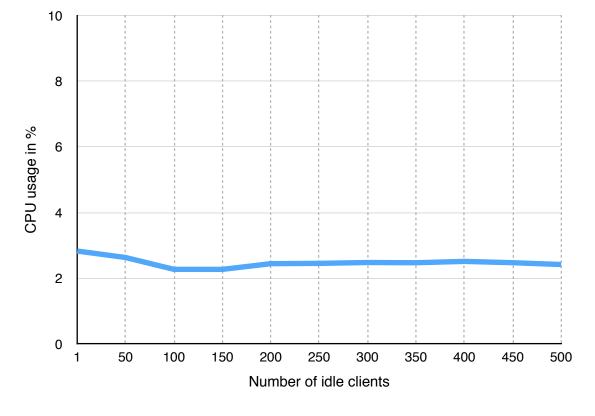


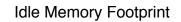
Server Sent Events

Idle clients

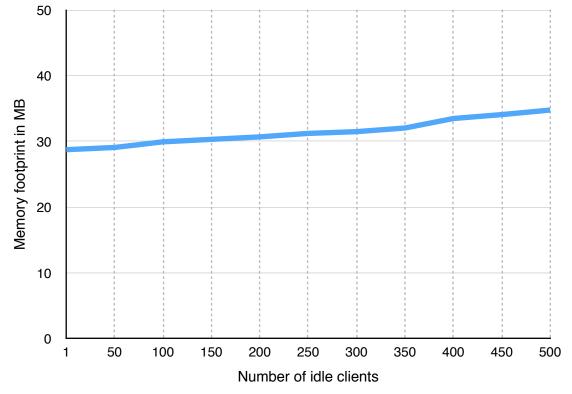
Idle CPU Load

| # clients | 1 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |
|-----------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|
| Run 1 | 2,71 | 2,88 | 2,37 | 2,39 | 2,35 | 2,40 | 2,32 | 2,52 | 2,79 | 2,52 | 2,44 |
| Run 2 | 2,44 | 2,67 | 2,29 | 2,41 | 2,70 | 2,47 | 2,31 | 2,40 | 2,29 | 2,31 | 2,49 |
| Run 3 | 2,94 | 2,65 | 2,21 | 2,19 | 2,58 | 2,78 | 2,47 | 2,55 | 2,29 | 2,45 | 2,33 |
| Run 4 | 2,83 | 2,63 | 2,27 | 2,21 | 2,32 | 2,49 | 2,64 | 2,45 | 2,40 | 2,21 | 2,54 |
| Run 5 | 2,93 | 2,49 | 2,26 | 2,26 | 2,56 | 2,44 | 2,53 | 2,53 | 2,72 | 2,42 | 2,32 |
| Run 6 | 2,86 | 2,51 | 2,23 | 2,25 | 2,61 | 2,37 | 2,71 | 2,45 | 2,37 | 2,63 | 2,32 |
| Run 7 | 3,07 | 2,64 | 2,22 | 2,28 | 2,37 | 2,23 | 2,47 | 2,33 | 2,59 | 2,79 | 2,42 |
| Run 8 | 2,77 | 2,50 | 2,24 | 2,29 | 2,29 | 2,36 | 2,53 | 2,67 | 2,47 | 2,46 | 2,54 |
| Run 9 | 2,80 | 2,66 | 2,25 | 2,24 | 2,25 | 2,49 | 2,62 | 2,40 | 2,74 | 2,54 | 2,34 |
| Run 10 | 2,93 | 2,68 | 2,37 | 2,18 | 2,41 | 2,50 | 2,19 | 2,42 | 2,47 | 2,40 | 2,44 |
| Average | 2,828 | 2,631 | 2,271 | 2,27 | 2,444 | 2,453 | 2,479 | 2,472 | 2,513 | 2,473 | 2,418 |



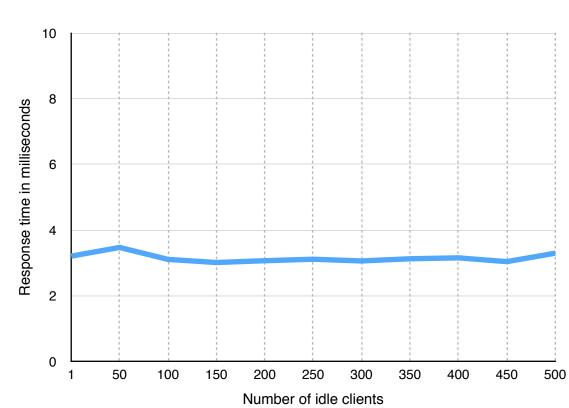


| # clients | 1 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |
|-----------|-------|-------|--------|--------|-------|--------|--------|--------|--------|-------|-------|
| Run 1 | 29,08 | 28,58 | 29,10 | 29,69 | 31,03 | 31,90 | 32,13 | 31,96 | 33,09 | 34,11 | 34,93 |
| Run 2 | 27,51 | 28,73 | 30,47 | 30,80 | 30,95 | 31,10 | 31,33 | 31,77 | 33,11 | 34,03 | 33,77 |
| Run 3 | 28,60 | 28,37 | 30,12 | 30,78 | 30,43 | 30,71 | 31,33 | 32,36 | 33,15 | 34,58 | 34,99 |
| Run 4 | 29,12 | 28,34 | 30,19 | 29,26 | 30,99 | 31,29 | 31,40 | 31,92 | 32,97 | 34,01 | 34,98 |
| Run 5 | 28,78 | 30,00 | 30,68 | 30,72 | 29,99 | 31,30 | 31,71 | 31,93 | 33,45 | 33,55 | 34,71 |
| Run 6 | 28,71 | 30,10 | 28,98 | 30,83 | 29,91 | 31,02 | 31,55 | 31,89 | 32,99 | 33,67 | 34,87 |
| Run 7 | 28,88 | 30,01 | 30,24 | 30,65 | 30,96 | 31,20 | 31,45 | 32,08 | 32,75 | 34,55 | 34,87 |
| Run 8 | 29,16 | 28,49 | 30,48 | 30,72 | 30,82 | 31,29 | 31,42 | 31,79 | 33,26 | 33,70 | 35,02 |
| Run 9 | 28,94 | 28,44 | 30,49 | 29,20 | 30,95 | 31,16 | 31,27 | 31,98 | 37,23 | 34,48 | 34,53 |
| Run 10 | 28,72 | 29,84 | 28,71 | 30,58 | 30,97 | 31,30 | 31,36 | 32,83 | 32,94 | 34,22 | 35,13 |
| Average | 28,75 | 29,09 | 29,946 | 30,323 | 30,7 | 31,227 | 31,495 | 32,051 | 33,494 | 34,09 | 34,78 |



Idle Response Time

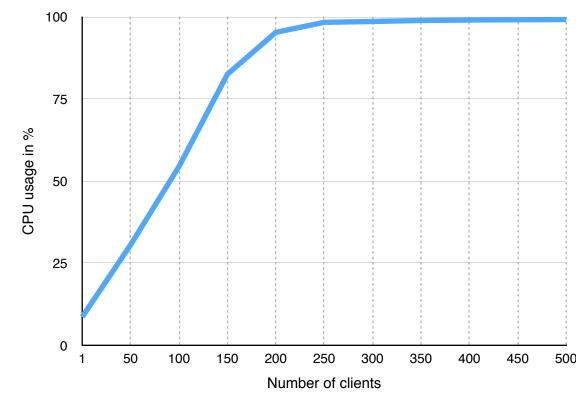
| # clients | 1 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |
|-----------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Run 1 | 3,20 | 3,36 | 3,18 | 2,91 | 2,92 | 3,39 | 2,85 | 3,21 | 4,05 | 2,95 | 3,07 |
| Run 2 | 3,10 | 3,07 | 3,01 | 3,12 | 3,10 | 2,96 | 3,14 | 3,14 | 3,09 | 2,98 | 3,08 |
| Run 3 | 3,17 | 3,32 | 3,10 | 2,95 | 3,13 | 3,15 | 2,90 | 3,16 | 3,07 | 2,88 | 3,21 |
| Run 4 | 3,30 | 4,01 | 3,11 | 3,02 | 3,07 | 3,04 | 3,22 | 3,04 | 2,89 | 3,18 | 3,41 |
| Run 5 | 3,32 | 3,02 | 3,15 | 2,98 | 3,11 | 3,06 | 3,18 | 3,10 | 3,04 | 3,01 | 3,56 |
| Run 6 | 3,17 | 4,03 | 3,01 | 2,95 | 3,03 | 2,99 | 3,03 | 3,14 | 3,15 | 3,07 | 3,03 |
| Run 7 | 3,17 | 3,19 | 3,19 | 3,04 | 3,00 | 3,06 | 3,02 | 3,05 | 3,08 | 3,18 | 3,14 |
| Run 8 | 3,09 | 3,11 | 3,04 | 3,04 | 3,16 | 3,10 | 2,99 | 3,24 | 3,02 | 3,09 | 4,22 |
| Run 9 | 3,27 | 4,35 | 3,13 | 3,07 | 2,99 | 3,17 | 3,11 | 3,07 | 3,03 | 2,98 | 3,07 |
| Run 10 | 3,26 | 3,24 | 3,14 | 3,03 | 3,15 | 3,19 | 3,15 | 3,10 | 3,11 | 3,06 | 3,16 |
| Average | 3,205 | 3,47 | 3,106 | 3,011 | 3,066 | 3,111 | 3,059 | 3,125 | 3,153 | 3,038 | 3,295 |



During Broadcast

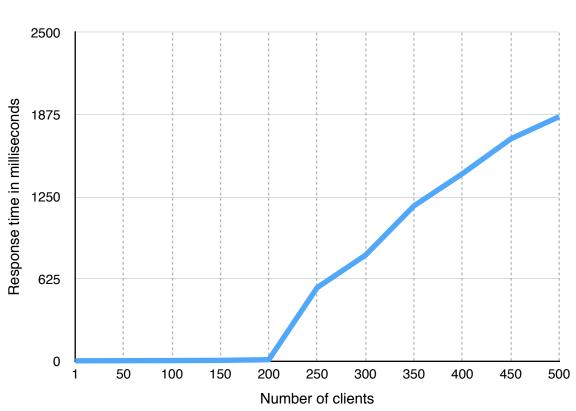
CPU Load During Broadcast

| # clients | 1 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |
|-----------|-------|--------|--------|--------|--------|--------|--------|-------|--------|--------|--------|
| Run 1 | 8,55 | 32,12 | 57,71 | 79,50 | 93,97 | 97,97 | 97,59 | 98,84 | 99,03 | 99,05 | 99,16 |
| Run 2 | 8,74 | 30,61 | 54,94 | 80,53 | 94,86 | 98,35 | 98,59 | 98,88 | 98,97 | 99,11 | 99,16 |
| Run 3 | 8,64 | 29,56 | 55,55 | 82,08 | 94,12 | 98,55 | 98,74 | 98,94 | 98,97 | 99,12 | 99,13 |
| Run 4 | 8,72 | 30,58 | 53,88 | 83,04 | 95,40 | 98,38 | 98,84 | 98,84 | 98,95 | 99,10 | 99,17 |
| Run 5 | 8,71 | 30,69 | 55,99 | 86,23 | 95,97 | 98,41 | 98,67 | 98,83 | 99,01 | 99,12 | 99,13 |
| Run 6 | 8,80 | 30,88 | 57,46 | 83,97 | 97,60 | 98,38 | 98,51 | 98,86 | 99,03 | 99,10 | 99,11 |
| Run 7 | 8,56 | 30,48 | 49,36 | 85,25 | 95,61 | 98,25 | 98,69 | 98,91 | 99,06 | 99,13 | 99,16 |
| Run 8 | 8,64 | 30,98 | 52,86 | 79,19 | 94,76 | 98,23 | 98,66 | 98,95 | 99,00 | 99,08 | 99,16 |
| Run 9 | 8,71 | 29,90 | 57,88 | 81,10 | 95,20 | 98,31 | 98,76 | 98,78 | 99,04 | 98,99 | 99,22 |
| Run 10 | 8,80 | 30,43 | 49,01 | 84,35 | 95,18 | 98,34 | 98,60 | 98,97 | 99,00 | 99,13 | 99,16 |
| Average | 8,687 | 30,623 | 54,464 | 82,524 | 95,267 | 98,317 | 98,565 | 98,88 | 99,006 | 99,093 | 99,156 |



Response Time During Broadcast

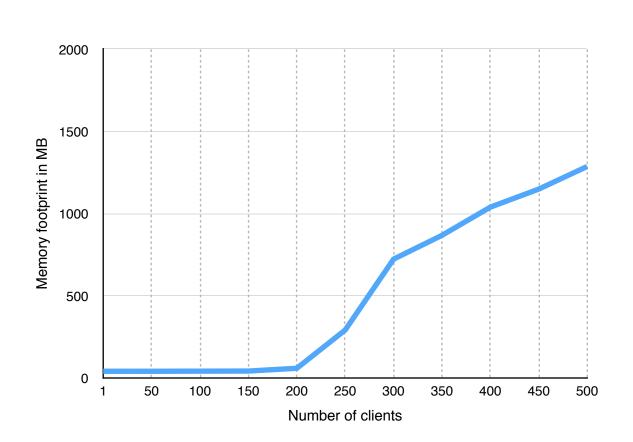
| # clients | 1 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |
|-----------|-------|-------|-------|------|--------|---------|---------|----------|----------|----------|----------|
| Run 1 | 2,33 | 3,19 | 4,18 | 5,45 | 9,30 | 392,48 | 394,46 | 1127,86 | 1003,25 | 2421,00 | 989,00 |
| Run 2 | 2,37 | 3,30 | 4,17 | 5,70 | 10,09 | 587,77 | 492,25 | 1022,80 | 1878,40 | 1174,67 | 2020,00 |
| Run 3 | 2,30 | 3,31 | 4,20 | 5,69 | 9,32 | 400,00 | 1419,14 | 1513,80 | 1564,00 | 1386,50 | 2540,50 |
| Run 4 | 2,29 | 3,26 | 4,05 | 5,50 | 10,42 | 649,25 | 1099,40 | 936,75 | 1646,40 | 2201,25 | 2260,67 |
| Run 5 | 2,31 | 3,31 | 4,04 | 6,00 | 11,77 | 564,42 | 1177,67 | 995,75 | 1006,67 | 1388,25 | 1723,25 |
| Run 6 | 2,34 | 3,26 | 4,28 | 5,63 | 16,44 | 596,57 | 561,93 | 907,67 | 1269,75 | 1397,67 | 2582,00 |
| Run 7 | 2,32 | 3,33 | 4,01 | 5,90 | 10,25 | 525,98 | 756,63 | 1936,00 | 1034,67 | 2920,67 | 1408,50 |
| Run 8 | 2,33 | 3,26 | 3,71 | 5,31 | 9,46 | 460,51 | 732,90 | 1148,50 | 861,75 | 1225,67 | 2991,67 |
| Run 9 | 2,38 | 3,20 | 4,09 | 5,26 | 10,03 | 784,52 | 830,00 | 720,25 | 2183,50 | 1154,25 | 985,50 |
| Run 10 | 2,32 | 3,29 | 4,03 | 5,66 | 9,90 | 629,94 | 599,55 | 1501,00 | 1804,00 | 1634,00 | 1092,50 |
| Average | 2,329 | 3,271 | 4,076 | 5,61 | 10,698 | 559,144 | 806,393 | 1181,038 | 1425,239 | 1690,393 | 1859,359 |



After Broadcast

Memory Footprint After Broadcast

| # clients | 1 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |
|-----------|--------|--------|--------|--------|-------|---------|--------|---------|----------|----------|----------|
| Run 1 | 41,02 | 40,75 | 41,56 | 42,45 | 59,08 | 361,25 | 697,65 | 893,30 | 1056,93 | 1094,48 | 1272,93 |
| Run 2 | 40,54 | 41,18 | 41,54 | 42,43 | 59,09 | 357,21 | 753,91 | 871,86 | 988,80 | 1187,88 | 1331,42 |
| Run 3 | 40,69 | 40,90 | 41,51 | 42,12 | 59,10 | 555,30 | 742,80 | 906,60 | 1074,58 | 1241,28 | 1208,90 |
| Run 4 | 41,23 | 40,69 | 41,99 | 42,06 | 58,85 | 229,34 | 751,12 | 930,91 | 967,50 | 1179,23 | 1266,82 |
| Run 5 | 41,54 | 41,01 | 41,83 | 42,44 | 59,20 | 162,64 | 707,84 | 868,05 | 1062,02 | 1150,16 | 1310,55 |
| Run 6 | 40,77 | 41,27 | 41,58 | 42,11 | 59,36 | 312,22 | 690,46 | 863,07 | 1113,82 | 1180,38 | 1282,28 |
| Run 7 | 40,42 | 41,07 | 41,65 | 42,21 | 58,99 | 259,49 | 759,35 | 811,11 | 1022,30 | 1106,56 | 1313,60 |
| Run 8 | 41,16 | 40,79 | 41,67 | 42,35 | 58,75 | 98,32 | 738,63 | 857,99 | 1087,98 | 1129,83 | 1296,55 |
| Run 9 | 41,23 | 40,84 | 41,50 | 41,98 | 59,30 | 297,66 | 679,59 | 822,48 | 975,38 | 1084,34 | 1296,39 |
| Run 10 | 41,74 | 40,99 | 41,42 | 42,00 | 59,08 | 286,76 | 711,05 | 857,06 | 1048,90 | 1141,94 | 1291,83 |
| Average | 41,034 | 40,949 | 41,625 | 42,215 | 59,08 | 292,019 | 723,24 | 868,243 | 1039,821 | 1149,608 | 1287,127 |

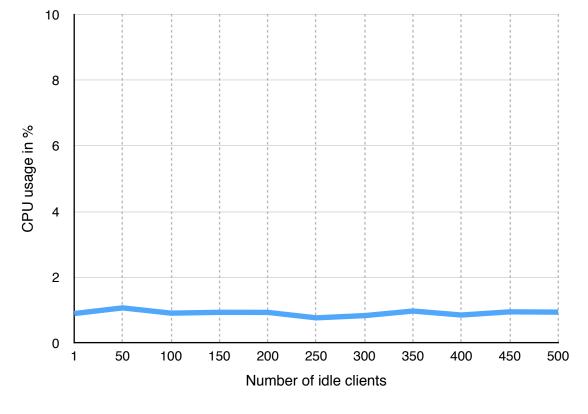


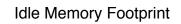
WebSocket

Idle clients

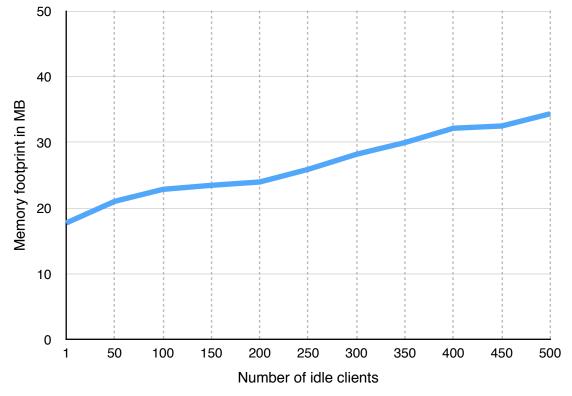
Idle CPU Load

| # clients | 1 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Run 1 | 0,98 | 0,65 | 0,48 | 1,04 | 0,91 | 0,83 | 1,02 | 0,97 | 0,89 | 0,72 | 0,93 |
| Run 2 | 1,09 | 1,07 | 1,02 | 0,70 | 1,00 | 0,79 | 0,61 | 1,05 | 0,64 | 1,17 | 0,61 |
| Run 3 | 1,05 | 1,21 | 0,93 | 0,86 | 1,06 | 0,90 | 1,02 | 0,54 | 1,05 | 1,11 | 1,05 |
| Run 4 | 0,59 | 1,05 | 0,67 | 0,71 | 1,03 | 0,53 | 1,02 | 0,61 | 0,89 | 0,98 | 1,32 |
| Run 5 | 0,62 | 1,02 | 1,09 | 1,15 | 0,93 | 0,88 | 0,51 | 1,05 | 0,81 | 1,07 | 0,73 |
| Run 6 | 1,12 | 1,26 | 0,97 | 1,16 | 0,97 | 0,89 | 0,96 | 1,19 | 0,59 | 1,20 | 1,23 |
| Run 7 | 1,18 | 1,14 | 1,09 | 1,02 | 0,60 | 0,62 | 1,11 | 1,05 | 0,89 | 0,77 | 0,84 |
| Run 8 | 0,78 | 1,21 | 0,83 | 0,67 | 0,89 | 0,83 | 0,59 | 0,95 | 0,95 | 0,66 | 1,05 |
| Run 9 | 0,59 | 0,95 | 0,88 | 0,49 | 0,98 | 0,83 | 0,82 | 1,09 | 0,82 | 0,95 | 1,16 |
| Run 10 | 0,96 | 1,12 | 1,12 | 1,53 | 0,94 | 0,55 | 0,67 | 1,22 | 0,98 | 0,85 | 0,47 |
| Average | 0,896 | 1,068 | 0,908 | 0,933 | 0,931 | 0,765 | 0,833 | 0,972 | 0,851 | 0,948 | 0,939 |



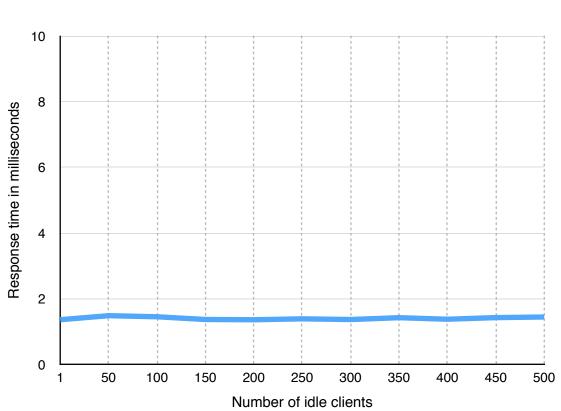


| # clients | 1 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |
|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Run 1 | 17,76 | 21,15 | 22,89 | 23,50 | 24,05 | 27,08 | 28,70 | 29,89 | 32,25 | 32,37 | 34,24 |
| Run 2 | 17,51 | 20,89 | 22,99 | 23,31 | 24,02 | 25,76 | 28,05 | 30,00 | 32,13 | 32,56 | 34,77 |
| Run 3 | 17,59 | 20,93 | 22,41 | 23,53 | 23,84 | 25,80 | 28,09 | 29,91 | 32,15 | 32,49 | 34,10 |
| Run 4 | 17,68 | 21,13 | 23,00 | 23,42 | 24,46 | 25,67 | 28,26 | 29,94 | 32,32 | 32,59 | 34,53 |
| Run 5 | 17,82 | 21,23 | 23,08 | 23,51 | 24,04 | 25,86 | 28,31 | 29,93 | 32,06 | 32,52 | 34,46 |
| Run 6 | 17,60 | 21,14 | 23,18 | 23,51 | 23,82 | 25,97 | 28,05 | 30,42 | 32,25 | 32,53 | 34,08 |
| Run 7 | 17,98 | 20,92 | 22,80 | 23,56 | 24,05 | 25,67 | 28,16 | 29,92 | 32,14 | 32,56 | 34,47 |
| Run 8 | 17,86 | 20,89 | 22,91 | 23,54 | 23,89 | 25,71 | 28,16 | 29,80 | 31,96 | 32,45 | 34,40 |
| Run 9 | 17,86 | 21,22 | 22,72 | 23,50 | 23,89 | 25,73 | 28,11 | 30,05 | 32,31 | 32,46 | 34,25 |
| Run 10 | 17,85 | 20,93 | 22,73 | 23,46 | 23,85 | 25,89 | 28,24 | 30,05 | 32,11 | 32,53 | 34,36 |
| Average | 17,751 | 21,043 | 22,871 | 23,484 | 23,991 | 25,914 | 28,213 | 29,991 | 32,168 | 32,506 | 34,366 |



Idle Response Time

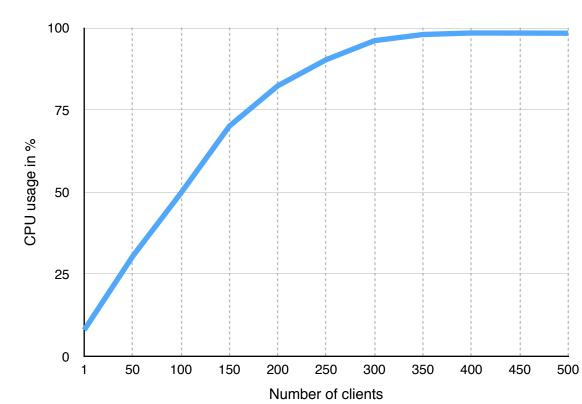
| # clients | 1 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Run 1 | 1,32 | 1,40 | 1,44 | 1,35 | 1,38 | 1,49 | 1,48 | 1,41 | 1,42 | 1,48 | 1,41 |
| Run 2 | 1,46 | 1,52 | 1,40 | 1,32 | 1,47 | 1,32 | 1,34 | 1,41 | 1,39 | 1,45 | 1,42 |
| Run 3 | 1,27 | 1,50 | 1,39 | 1,46 | 1,38 | 1,34 | 1,39 | 1,40 | 1,31 | 1,46 | 1,41 |
| Run 4 | 1,31 | 1,41 | 1,53 | 1,35 | 1,15 | 1,44 | 1,39 | 1,38 | 1,45 | 1,33 | 1,45 |
| Run 5 | 1,40 | 1,35 | 1,35 | 1,37 | 1,18 | 1,45 | 1,33 | 1,37 | 1,28 | 1,37 | 1,47 |
| Run 6 | 1,37 | 1,46 | 1,45 | 1,40 | 1,40 | 1,37 | 1,28 | 1,46 | 1,38 | 1,48 | 1,55 |
| Run 7 | 1,46 | 1,49 | 1,44 | 1,30 | 1,40 | 1,38 | 1,38 | 1,43 | 1,38 | 1,42 | 1,32 |
| Run 8 | 1,29 | 1,55 | 1,41 | 1,47 | 1,38 | 1,38 | 1,36 | 1,48 | 1,43 | 1,40 | 1,49 |
| Run 9 | 1,41 | 1,59 | 1,54 | 1,27 | 1,52 | 1,35 | 1,33 | 1,39 | 1,33 | 1,45 | 1,58 |
| Run 10 | 1,33 | 1,58 | 1,57 | 1,40 | 1,35 | 1,37 | 1,40 | 1,51 | 1,40 | 1,42 | 1,35 |
| Average | 1,362 | 1,485 | 1,452 | 1,369 | 1,361 | 1,389 | 1,368 | 1,424 | 1,377 | 1,426 | 1,445 |



During Broadcast

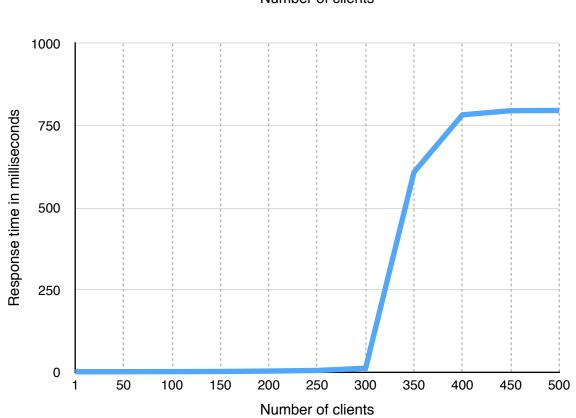
CPU Load During Broadcast

| # clients | 1 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |
|-----------|-------|-------|--------|--------|--------|--------|--------|--------|--------|-------|--------|
| Run 1 | 8,01 | 30,09 | 46,03 | 70,83 | 80,90 | 89,69 | 95,84 | 98,37 | 98,57 | 98,02 | 98,81 |
| Run 2 | 8,10 | 30,23 | 50,12 | 72,44 | 83,33 | 89,49 | 95,26 | 97,30 | 97,85 | 98,41 | 96,97 |
| Run 3 | 7,94 | 29,94 | 45,85 | 70,89 | 80,68 | 90,00 | 95,12 | 97,47 | 98,92 | 97,33 | 98,45 |
| Run 4 | 8,12 | 29,92 | 48,24 | 72,56 | 83,11 | 89,16 | 96,67 | 98,11 | 98,08 | 98,33 | 97,81 |
| Run 5 | 8,03 | 30,73 | 47,99 | 70,24 | 80,99 | 91,40 | 96,16 | 98,18 | 97,49 | 98,69 | 97,72 |
| Run 6 | 8,07 | 33,27 | 51,03 | 71,39 | 83,10 | 90,51 | 97,16 | 97,64 | 98,74 | 98,22 | 98,57 |
| Run 7 | 8,04 | 30,03 | 53,82 | 70,26 | 81,13 | 89,46 | 96,22 | 97,57 | 98,79 | 98,75 | 98,90 |
| Run 8 | 8,10 | 30,31 | 53,83 | 64,49 | 85,31 | 91,03 | 96,15 | 98,59 | 98,44 | 98,54 | 98,76 |
| Run 9 | 8,07 | 30,17 | 50,66 | 66,99 | 81,36 | 89,76 | 95,75 | 97,85 | 98,74 | 98,68 | 98,62 |
| Run 10 | 8,04 | 29,81 | 49,99 | 70,80 | 83,63 | 92,55 | 96,60 | 98,44 | 98,59 | 98,93 | 98,85 |
| Average | 8,052 | 30,45 | 49,756 | 70,089 | 82,354 | 90,305 | 96,093 | 97,952 | 98,421 | 98,39 | 98,346 |



Response Time During Broadcast

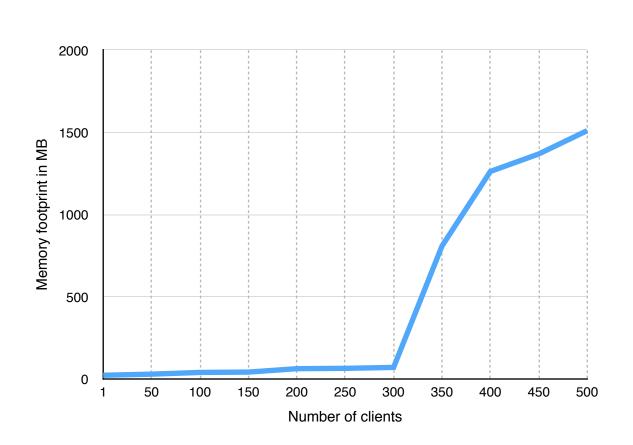
| # clients | 1 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |
|-----------|-------|-------|-------|-------|-------|------|--------|--------|---------|---------|---------|
| Run 1 | 1,04 | 1,24 | 1,68 | 1,97 | 2,89 | 4,65 | 8,88 | 568,62 | 770,55 | 725,04 | 900,09 |
| Run 2 | 1,04 | 1,24 | 1,50 | 1,90 | 3,27 | 5,06 | 11,64 | 686,52 | 715,13 | 891,17 | 767,34 |
| Run 3 | 1,06 | 1,22 | 1,66 | 2,03 | 2,87 | 4,77 | 8,12 | 411,51 | 828,46 | 719,97 | 707,70 |
| Run 4 | 1,02 | 1,16 | 1,52 | 1,94 | 2,98 | 4,71 | 15,90 | 507,47 | 824,01 | 405,13 | 826,00 |
| Run 5 | 1,10 | 1,31 | 1,51 | 1,75 | 3,10 | 5,59 | 10,97 | 668,46 | 540,48 | 1111,92 | 862,21 |
| Run 6 | 1,09 | 1,34 | 1,35 | 2,06 | 3,38 | 4,80 | 21,53 | 701,75 | 936,25 | 730,13 | 632,85 |
| Run 7 | 1,06 | 1,40 | 1,42 | 1,94 | 2,93 | 4,55 | 9,71 | 378,00 | 1021,14 | 1087,83 | 886,50 |
| Run 8 | 1,03 | 1,14 | 1,56 | 1,65 | 3,70 | 5,45 | 9,21 | 795,69 | 670,44 | 639,58 | 848,10 |
| Run 9 | 1,06 | 1,24 | 1,42 | 1,69 | 2,92 | 4,55 | 9,26 | 646,17 | 857,54 | 791,46 | 740,71 |
| Run 10 | 1,08 | 1,27 | 1,41 | 1,83 | 3,27 | 5,57 | 12,21 | 718,51 | 663,99 | 851,22 | 790,07 |
| Average | 1,058 | 1,256 | 1,503 | 1,876 | 3,131 | 4,97 | 11,743 | 608,27 | 782,799 | 795,345 | 796,157 |



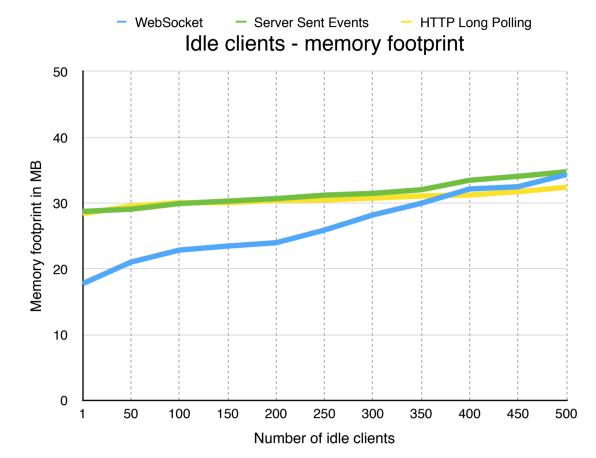
After Broadcast

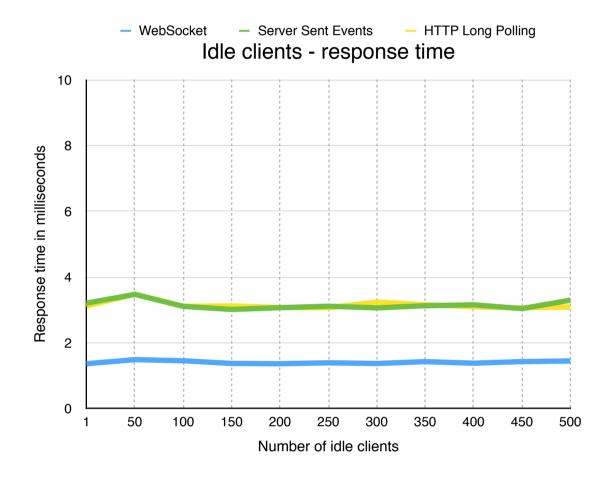
Memory Footprint After Broadcast

| # clients | 1 | 50 | 100 | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 |
|-----------|--------|--------|--------|--------|--------|--------|--------|---------|---------|----------|----------|
| Run 1 | 22,68 | 29,52 | 39,78 | 42,04 | 63,59 | 65,08 | 70,19 | 1029,58 | 1316,49 | 1248,57 | 1397,89 |
| Run 2 | 22,59 | 29,59 | 40,02 | 41,81 | 62,50 | 64,99 | 69,01 | 940,06 | 1260,37 | 1616,52 | 976,69 |
| Run 3 | 22,76 | 29,50 | 40,11 | 41,62 | 62,22 | 64,90 | 68,10 | 696,34 | 1246,16 | 1230,47 | 1665,54 |
| Run 4 | 22,78 | 29,50 | 39,89 | 42,05 | 62,31 | 64,82 | 74,66 | 726,87 | 1129,14 | 1167,72 | 1400,90 |
| Run 5 | 22,64 | 29,57 | 40,13 | 41,46 | 62,58 | 65,02 | 69,92 | 948,68 | 1075,36 | 1473,15 | 978,56 |
| Run 6 | 22,68 | 29,40 | 39,90 | 41,47 | 62,66 | 65,10 | 72,35 | 799,30 | 1283,27 | 1387,47 | 1598,40 |
| Run 7 | 22,71 | 29,34 | 39,99 | 41,42 | 62,59 | 64,49 | 71,05 | 222,08 | 1307,06 | 1451,38 | 1801,90 |
| Run 8 | 22,83 | 29,34 | 39,94 | 43,26 | 63,36 | 64,32 | 70,05 | 976,62 | 1339,91 | 1337,47 | 1820,96 |
| Run 9 | 22,84 | 29,58 | 39,87 | 42,90 | 63,27 | 65,13 | 68,47 | 819,69 | 1317,93 | 1193,72 | 1717,20 |
| Run 10 | 22,84 | 29,52 | 39,85 | 41,61 | 63,05 | 64,94 | 69,94 | 931,28 | 1354,81 | 1587,94 | 1754,12 |
| Average | 22,735 | 29,486 | 39,948 | 41,964 | 62,813 | 64,879 | 70,374 | 809,05 | 1263,05 | 1369,441 | 1511,216 |

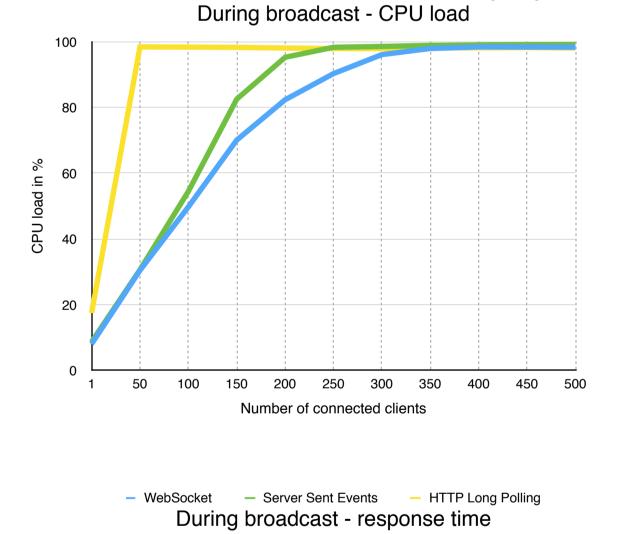




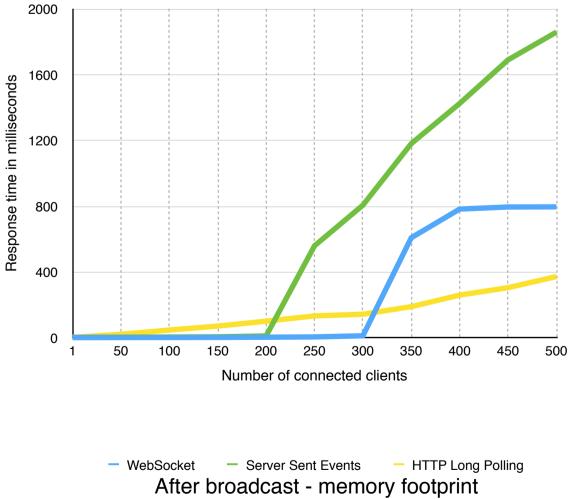


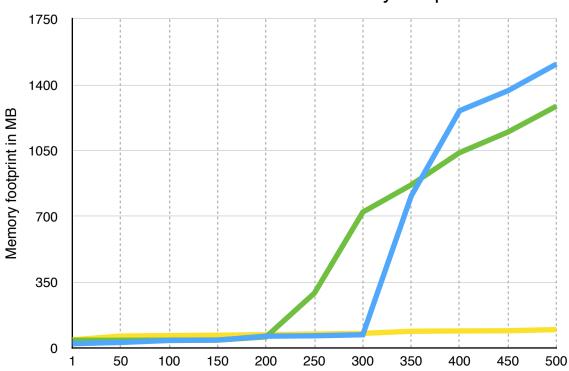


Server Sent EventsHTTP Long Polling



WebSocket





Number of connected clients