

## 1 Plotting all figures

### 1.1

Listing 1. Cluster and Node Placement Times

```
Cluster and Node Placement Times (s)
replications cluster-placement-time node-placement-time
replica-1 0,00 0,60
replicas-5 0,20 3,20
replicas-10 0,00 6,20
replicas-20 0,80 12,70
replicas-30 1,00 20,10
```

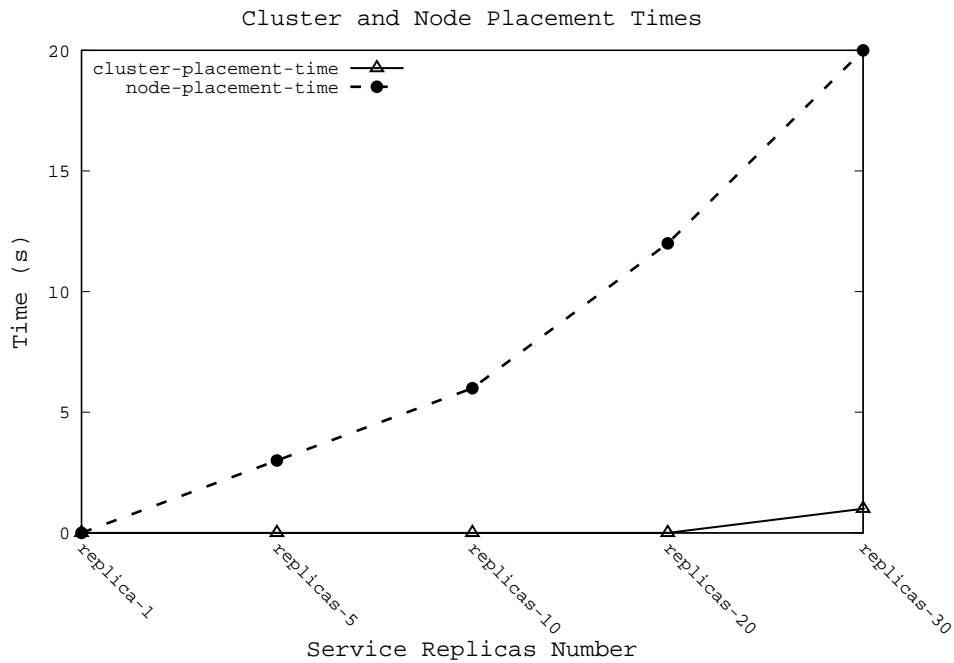


Fig. 1. Cluster and Node Placement Times

### 1.2

Listing 2. Cluster CPU Utilization

```
Cluster CPU Utilization (%)
replications cluster-1 cluster-2 cluster-3
replica-1 7,00 0,00 0,00
replicas-5 39,00 0,00 0,00
replicas-10 78,00 0,00 0,00
```

```

replicas-20 99,20 0,00 56,40
replicas-30 99,60 34,60 99,30

```

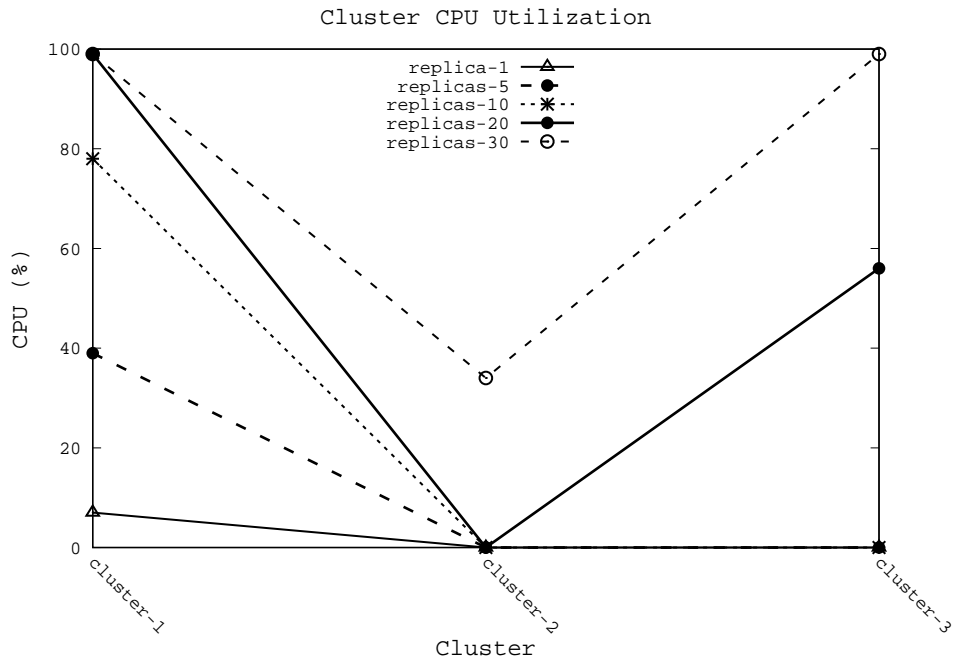


Fig. 2. Cluster CPU Utilization

1.3

Listing 3. Cluster Memory Utilization

```

Cluster Memory Utilization (%)
replications cluster-1 cluster-2 cluster-3
replica-1 3,00 0,00 0,00
replicas-5 19,00 0,00 0,00
replicas-10 39,00 0,00 0,00
replicas-20 49,40 0,00 28,00
replicas-30 50,00 17,00 49,40

```

1.4

Listing 4. Cluster Node Utilization

```

Cluster Node Utilization (%)
replications cluster-1 cluster-2 cluster-3
replica-1 100,00 0,00 0,00
replicas-5 100,00 0,00 0,00

```

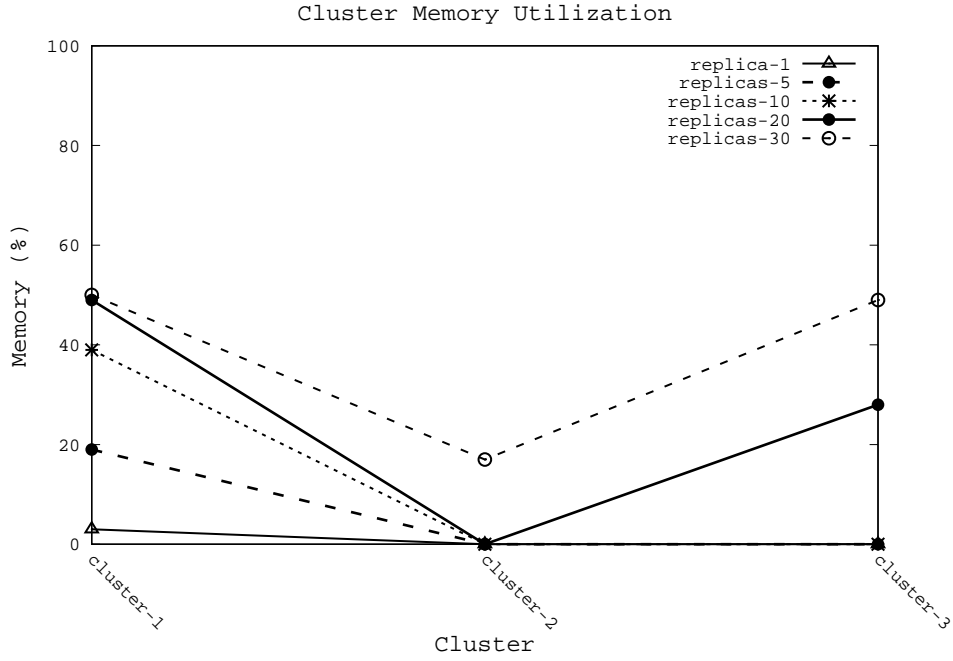


Fig. 3. Cluster Memory Utilization

```

replicas -10 100,00 0,00 0,00
replicas -20 100,00 0,00 100,00
replicas -30 100,00 100,00 100,00

```

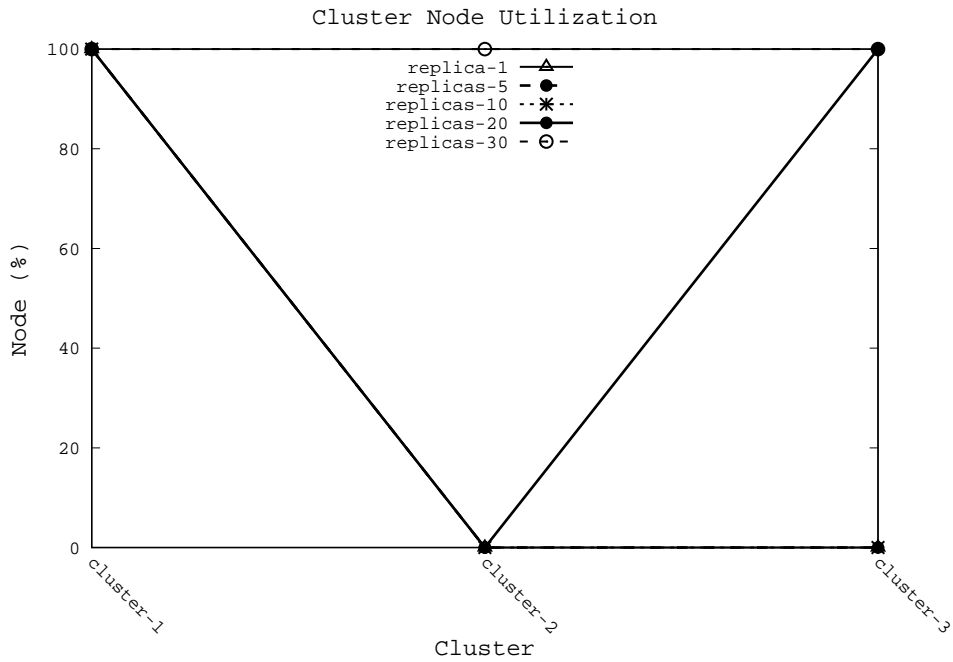


Fig. 4. Cluster Node Utilization

## 1.5

Listing 5. Node CPU Utilization

Node CPU Utilization (%)

| nodes       | cluster-1-node1 | cluster-1-node2 | cluster-2-node1 | cluster-2-node2 | cluster-3-node1 | cluster-3-node2 |
|-------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| replica-1   | 7,00            | 7,00            | 0,00            | 0,00            | 0,00            | 0,00            |
| replicas-5  | 39,00           | 39,00           | 0,00            | 0,00            | 0,00            | 0,00            |
| replicas-10 | 78,00           | 78,00           | 0,00            | 0,00            | 0,00            | 0,00            |
| replicas-20 | 99,30           | 98,60           | 0,00            | 0,00            | 99,40           | 12,80           |
| replicas-30 | 99,40           | 99,60           | 69,20           | 0,00            | 98,70           | 99,50           |

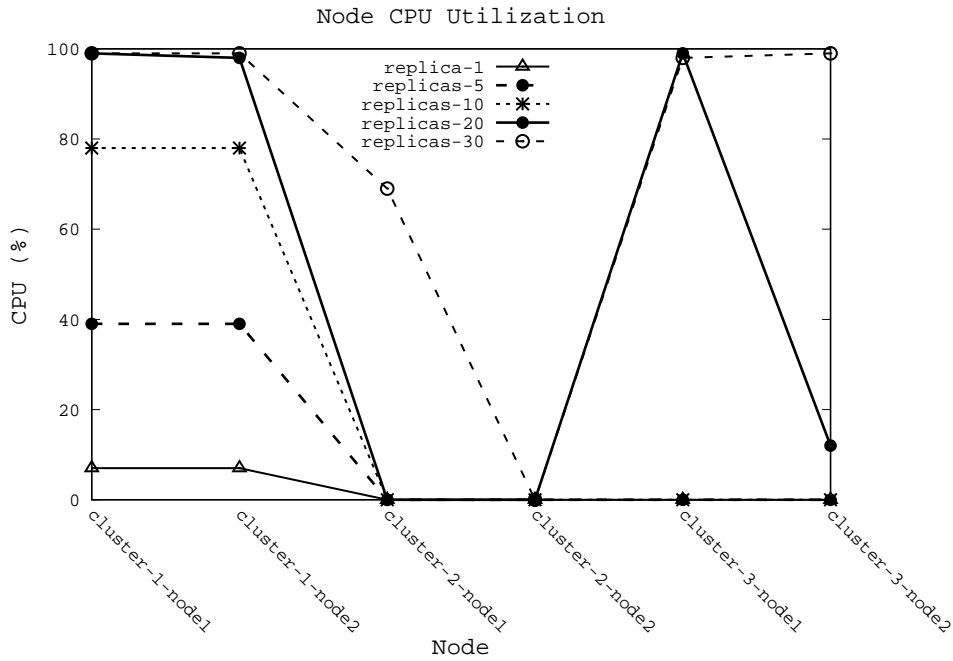


Fig. 5. Node CPU Utilization

## 1.6

Listing 6. Node Memory Utilization

Node Memory Utilization (%)

| nodes       | cluster-1-node1 | cluster-1-node2 | cluster-2-node1 | cluster-2-node2 | cluster-3-node1 | cluster-3-node2 |
|-------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| replica-1   | 3,00            | 3,00            | 0,00            | 0,00            | 0,00            | 0,00            |
| replicas-5  | 19,00           | 19,00           | 0,00            | 0,00            | 0,00            | 0,00            |
| replicas-10 | 39,00           | 39,00           | 0,00            | 0,00            | 0,00            | 0,00            |
| replicas-20 | 50,00           | 49,40           | 0,00            | 0,00            | 50,00           | 6,40            |

replicas -30 50,00 50,00 34,60 0,00 49,40 50,00

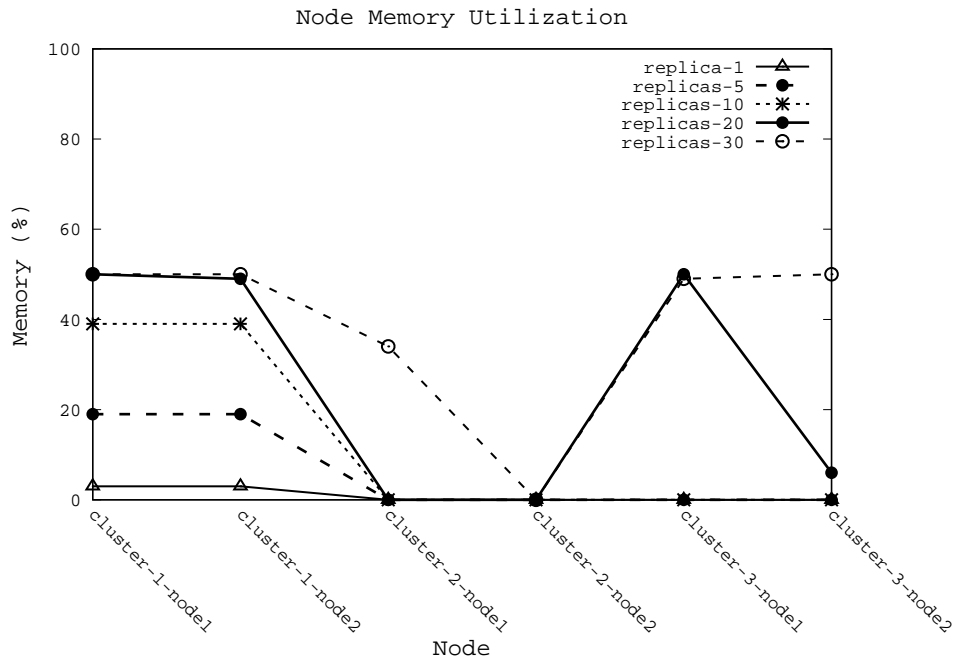


Fig. 6. Node Memory Utilization