Отчет по занятию «Развертывание и базовая конфигурация, интерфейсы и инструменты» Зубкова М.Ю.

1. Установить ClickHouse.

2. Подгрузить датасет для примера и сделать селект из таблицы

3. Для проверки отправить скрины работающего инстанса ClickHouse, созданной виртуальной машины и результата запроса select count() from trips where payment_type = 1.

4. Провести тестирование производительности и сохранить результаты;

root@envy:/etc/clickhouse-server/config.d# echo "SELECT * FROM uk_price_paid" | clickhouse-benchmark -i 10

Loaded 1 queries.

Queries executed: 0.
Queries executed: 0.
Queries executed: 0.
Queries executed: 0.
Queries executed: 0.
Queries executed: 1.

localhost:9000, queries: 1, QPS: 0.928, RPS: 27055228.114, MiB/s: 1151.426, result RPS: 27055228.114, result MiB/s: 1054.185.

0.000%	5.676 sec.
10.000%	5.676 sec.
20.000%	5.676 sec.
30.000%	5.676 sec.
40.000%	5.676 sec.
50.000%	5.676 sec.
60.000%	5.676 sec.
70.000%	5.676 sec.
80.000%	5.676 sec.
90.000%	5.676 sec.
95.000%	5.676 sec.
99.000%	5.676 sec.
99.900%	5.676 sec.
99.990%	5.676 sec.

Queries executed: 1.
Queries executed: 1.
Queries executed: 1.
Queries executed: 2.

localhost:9000, queries: 1, QPS: 0.958, RPS: 27935916.405, MiB/s: 1188.907, result RPS: 27935916.405, result MiB/s: 1088.500.

0.000%	3.643 sec.
10.000%	3.643 sec.
20.000%	3.643 sec.
30.000%	3.643 sec.
40.000%	3.643 sec.
50.000%	3.643 sec.
60.000%	3.643 sec.
70.000%	3.643 sec.
80.000%	3.643 sec.
90.000%	3.643 sec.
95.000%	3.643 sec.
99.000%	3.643 sec.
99.900%	3.643 sec.
99.990%	3.643 sec.

Queries executed: 2.
Queries executed: 2.
Queries executed: 3.

localhost:9000, queries: 1, QPS: 0.925, RPS: 26963215.383, MiB/s: 1147.510, result RPS: 26963215.383, result MiB/s: 1050.600.

0.000%	3.681 sec.
10.000%	3.681 sec.
20.000%	3.681 sec.
30.000%	3.681 sec.
40.000%	3.681 sec.
50.000%	3.681 sec.
60.000%	3.681 sec.
70.000%	3.681 sec.
80.000%	3.681 sec.
90.000%	3.681 sec.
95.000%	3.681 sec.
99.000%	3.681 sec.
99.900%	3.681 sec.
99.990%	3.681 sec.

Queries executed: 3.
Queries executed: 3.

Queries executed: 3.
Queries executed: 4.

localhost:9000, queries: 1, QPS: 0.977, RPS: 28479987.709, MiB/s: 1212.062, result RPS: 28479987.709, result MiB/s: 1109.700.

0.000%	3.623 sec.
10.000%	3.623 sec.
20.000%	3.623 sec.
30.000%	3.623 sec.
40.000%	3.623 sec.
50.000%	3.623 sec.
60.000%	3.623 sec.
70.000%	3.623 sec.
80.000%	3.623 sec.
90.000%	3.623 sec.
95.000%	3.623 sec.
99.000%	3.623 sec.
99.900%	3.623 sec.
99.990%	3.623 sec.

Queries executed: 4.
Queries executed: 4.
Queries executed: 5.

localhost:9000, queries: 1, QPS: 0.928, RPS: 27055259.231, MiB/s: 1151.428, result RPS: 27055259.231, result MiB/s: 1054.186.

0.000%	3.577 sec.
10.000%	3.577 sec.
20.000%	3.577 sec.
30.000%	3.577 sec.
40.000%	3.577 sec.
50.000%	3.577 sec.
60.000%	3.577 sec.
70.000%	3.577 sec.
80.000%	3.577 sec.
90.000%	3.577 sec.
95.000%	3.577 sec.
99.000%	3.577 sec.

99.900%	3.577 sec.
99.990%	3.577 sec.

Queries executed: 5.

Queries executed: 5.

Queries executed: 5.

Queries executed: 6.

localhost:9000, queries: 1, QPS: 0.969, RPS: 28236532.801, MiB/s: 1201.701, result RPS: 28236532.801, result MiB/s: 1100.214.

0.000%	3.532 sec.
10.000%	3.532 sec.
20.000%	3.532 sec.
30.000%	3.532 sec.
40.000%	3.532 sec.
50.000%	3.532 sec.
60.000%	3.532 sec.
70.000%	3.532 sec.
80.000%	3.532 sec.
90.000%	3.532 sec.
95.000%	3.532 sec.
99.000%	3.532 sec.
99.900%	3.532 sec.
99.990%	3.532 sec.

Queries executed: 6.

Queries executed: 6.

Queries executed: 7.

localhost:9000, queries: 1, QPS: 0.915, RPS: 26655266.005, MiB/s: 1134.405, result RPS: 26655266.005, result MiB/s: 1038.601.

0.000%	3.593 sec.
10.000%	3.593 sec.
20.000%	3.593 sec.
30.000%	3.593 sec.
40.000%	3.593 sec.
50.000%	3.593 sec.
60.000%	3.593 sec.
70.000%	3.593 sec.
80.000%	3.593 sec.
90.000%	3.593 sec.
95.000%	3.593 sec.
99.000%	3.593 sec.
99.900%	3.593 sec.
99.990%	3.593 sec.

Queries executed: 7.

Queries executed: 7.

Queries executed: 7.

Queries executed: 10.

localhost:9000, queries: 10, QPS: 0.261, RPS: 7614104.857, MiB/s: 324.044, result RPS: 7614104.857, result MiB/s: 296.677.

0.000%	3.532 sec.
10.000%	3.561 sec.
20.000%	3.577 sec.
30.000%	3.593 sec.
40.000%	3.598 sec.
50.000%	3.623 sec.
60.000%	3.623 sec.
70.000%	3.643 sec.
80.000%	3.664 sec.

90.000%	3.681 sec.
95.000%	5.676 sec.
99.000%	5.676 sec.
99.900%	5.676 sec.
99.990%	5.676 sec.

5. Изучить конфигурационные файлы БД;
6. Произвести наиболее оптимальную настройку системы на основании характеристик вашей ОС и провести повторное тестирование;

7. Подготовить отчет касательно прироста/изменения производительности системы на основе проведенных настроек. Результатом выполнения работы является подготовленный отчет в формате pdf, в котором указано описание всех выполненных пунктов. Поощряется работа в отдельных гит-репозиториях

```
root@envy:/etc/clickhouse-server/config.d# echo "SELECT * FROM uk_price_paid" | clickhouse-benchmark -i 10
Loaded 1 queries.
```

Queries executed: 0.

Queries executed: 0.

Queries executed: 0.

Queries executed: 1.

localhost:9000, queries: 1, QPS: 0.984, RPS: 28667487.615, MiB/s: 1220.041, result RPS: 28667487.615, result MiB/s: 1117.005.

0.000%	3.715 sec.
10.000%	3.715 sec.
20.000%	3.715 sec.
30.000%	3.715 sec.
40.000%	3.715 sec.
50.000%	3.715 sec.
60.000%	3.715 sec.
70.000%	3.715 sec.
80.000%	3.715 sec.
90.000%	3.715 sec.
95.000%	3.715 sec.
99.000%	3.715 sec.
99.900%	3.715 sec.
99.990%	3.715 sec.

Queries executed: 1.

Queries executed: 1.

Queries executed: 1.

Queries executed: 2.

localhost:9000, queries: 1, QPS: 0.957, RPS: 27884849.678, MiB/s: 1186.734, result RPS: 27884849.678, result MiB/s: 1086.511.

0.000%	3.545 sec.
10.000%	3.545 sec.
20.000%	3.545 sec.
30.000%	3.545 sec.
40.000%	3.545 sec.
50.000%	3.545 sec.

60.000%	3.545 sec.
70.000%	3.545 sec.
80.000%	3.545 sec.
90.000%	3.545 sec.
95.000%	3.545 sec.
99.000%	3.545 sec.
99.900%	3.545 sec.
99.990%	3.545 sec.

Queries executed: 2.

Queries executed: 2.

Queries executed: 3.

localhost:9000, queries: 1, QPS: 0.965, RPS: 28111557.720, MiB/s: 1196.382, result RPS: 28111557.720, result MiB/s: 1095.344.

0.000%	3.637 sec.
10.000%	3.637 sec.
20.000%	3.637 sec.
30.000%	3.637 sec.
40.000%	3.637 sec.
50.000%	3.637 sec.
60.000%	3.637 sec.
70.000%	3.637 sec.
80.000%	3.637 sec.
90.000%	3.637 sec.
95.000%	3.637 sec.
99.000%	3.637 sec.
99.900%	3.637 sec.
99.990%	3.637 sec.

Queries executed: 3.

Queries executed: 3.

Queries executed: 3.

Queries executed: 4.

localhost:9000, queries: 1, QPS: 0.995, RPS: 28990717.715, MiB/s: 1233.798, result RPS: 28990717.715, result MiB/s: 1129.600.

0.000%	3.705 sec.
10.000%	3.705 sec.
20.000%	3.705 sec.
30.000%	3.705 sec.
40.000%	3.705 sec.
50.000%	3.705 sec.
60.000%	3.705 sec.
70.000%	3.705 sec.
80.000%	3.705 sec.
90.000%	3.705 sec.
95.000%	3.705 sec.
99.000%	3.705 sec.
99.900%	3.705 sec.
99.990%	3.705 sec.

Queries executed: 4.

Queries executed: 4.

Queries executed: 4.

Queries executed: 5.

localhost:9000, queries: 1, QPS: 0.956, RPS: 27860207.159, MiB/s: 1185.685, result RPS: 27860207.159, result MiB/s: 1085.550.

0.000%	3.646 sec.
10.000%	3.646 sec.
20.000%	3.646 sec.
30.000%	3.646 sec.
40.000%	3.646 sec.
50.000%	3.646 sec.
60.000%	3.646 sec.
70.000%	3.646 sec.
80.000%	3.646 sec.
90.000%	3.646 sec.
95.000%	3.646 sec.
99.000%	3.646 sec.
99.900%	3.646 sec.
99.990%	3.646 sec.

Queries executed: 5.

Queries executed: 5.

Queries executed: 6.

localhost:9000, queries: 1, QPS: 0.970, RPS: 28281948.463, MiB/s: 1203.633, result RPS: 28281948.463, result MiB/s: 1101.983.

0.000%	3.731 sec.
10.000%	3.731 sec.
20.000%	3.731 sec.
30.000%	3.731 sec.
40.000%	3.731 sec.
50.000%	3.731 sec.
60.000%	3.731 sec.
70.000%	3.731 sec.
80.000%	3.731 sec.
90.000%	3.731 sec.
95.000%	3.731 sec.
99.000%	3.731 sec.
99.900%	3.731 sec.
99.990%	3.731 sec.

Queries executed: 6.

Queries executed: 6.

Queries executed: 6.

Queries executed: 7.

localhost:9000, queries: 1, QPS: 0.998, RPS: 29090924.585, MiB/s: 1238.062, result RPS: 29090924.585, result MiB/s: 1133.504.

0.000%	3.601 sec.
10.000%	3.601 sec.
20.000%	3.601 sec.
30.000%	3.601 sec.
40.000%	3.601 sec.
50.000%	3.601 sec.
60.000%	3.601 sec.
70.000%	3.601 sec.
80.000%	3.601 sec.
90.000%	3.601 sec.
95.000%	3.601 sec.
99.000%	3.601 sec.
99.900%	3.601 sec.

99.990%   3.601 sec.

Queries executed: 7.

Queries executed: 7.

Queries executed: 7.

Queries executed: 10.

localhost:9000, queries: 10, QPS: 0.273, RPS: 7961275.082, MiB/s: 338.819, result RPS: 7961275.082, result MiB/s: 310.205.

0.000%   3.545 sec.
10.000%   3.601 sec.
20.000%   3.602 sec.
30.000%   3.623 sec.
40.000%   3.637 sec.
50.000%   3.646 sec.
60.000%   3.646 sec.
70.000%   3.675 sec.
80.000%   3.705 sec.
90.000%   3.715 sec.
95.000%   3.731 sec.
99.000%   3.731 sec.
99.900%   3.731 sec.
99.990%   3.731 sec.