ICDA MVP Test Report

0. Overview

ICDA stores each blob in 2 canister contracts, with each canister being stored across 13 replica nodes.

1. Objectives

- **Testing Objectives**:
  - Evaluate if ICDA can maintain a write rate of 10 MB/s.
  - Determine how long it takes to store 6000 MB.
  - Determine how long it takes to confirm 3000 blobs (2 MB per blob).
- **Testing Environment**:
  - Ubuntu 22.04
  - 2 Intel-core CPUs
  - 16 GB RAM
  - 100 Mbps bandwidth
- **Testing Tools**:
  - ICDA Client

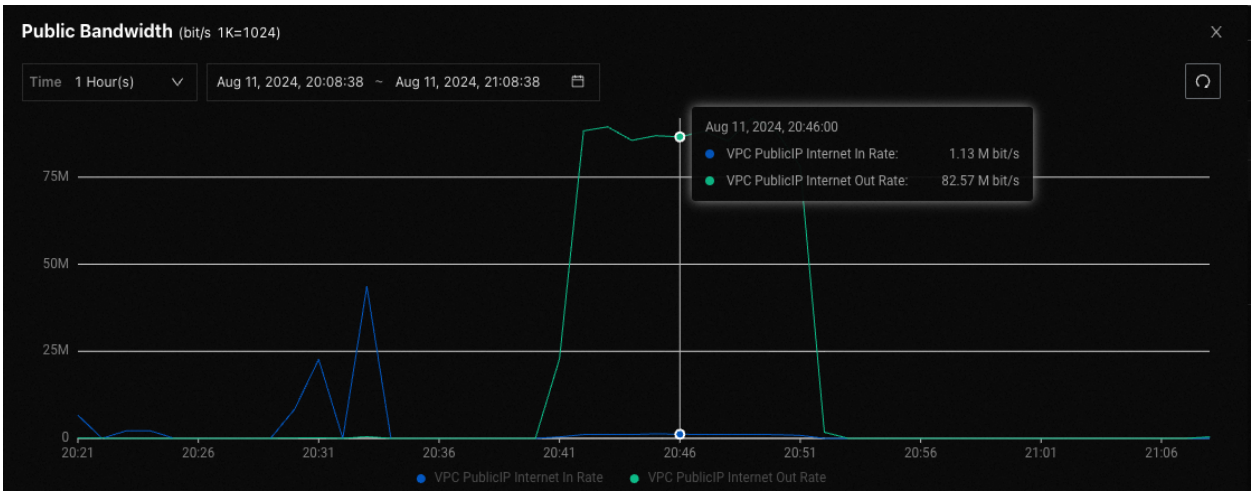
2. Testing Plan

- **Test Scenarios**:
  - Test whether ICDA can continuously write at a rate of 10 MB per second.
  - Test how long it takes for ICDA to confirm 6000 MB: 10 minutes, writing at 10 MB per second, confirming 6000 MB with 2 MB per blob, and confirming blobs.

- **Test Scope**:
  - Test ICDA's save / get blob functionality.
  - Test ICDA's ECDSA signature and confirmation generation.
- **Test Data**:
  - The test blobs are generated with random data.

3. Test Results

- **Key Metrics**:
  - **Throughput**:
    - 10 MB write per second
  - **Response Time**:
    - Average time to complete final storage is 5 seconds per MB (stored in Canister contract)
  - **Resource Utilization**:
    - Tested at 10 MB/s write speed; actual bandwidth maintained around 10 MB
  - **Error Rate**:
    - No warnings or errors
    - No retransmissions
- **Actual system bandwidth is as shown in the graph:**
  - 6000 MB write, storage, and confirmation generation completed in approximately 10 minutes and 40 seconds; a total of 3000 blobs.



6. Conclusion

- **Summary**:
  - ICDA successfully handled a write rate of 10 MB per second and confirmed blobs efficiently.
- **Performance Achievement**:
  - The system met the expected requirements.
