An Overview of Brix Network's One Way Delay Performance Test

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March 2001

Brix Networks

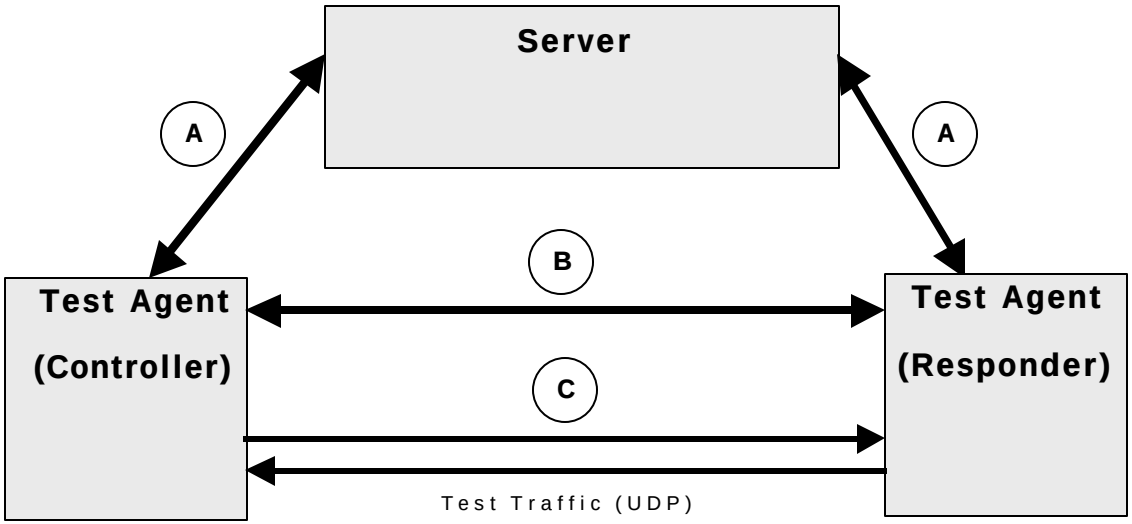
Outline

- Architecture
- Measuring One Way Delay
- Hardware Time-stamping
- Typical Deployment
- Summary
- Discussion

Architecture

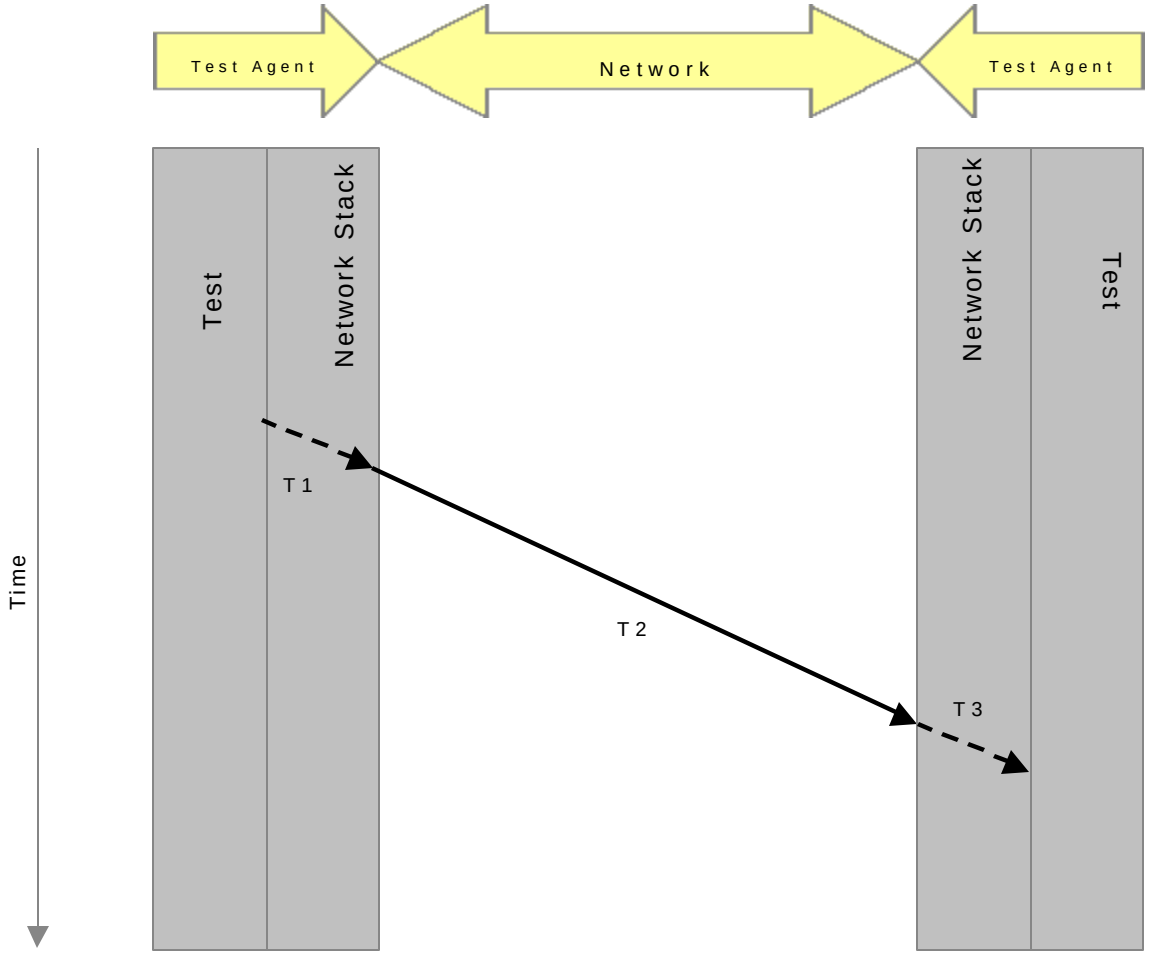
- **Test Agents**
  - Run test and calculate results
  - Controllers and Responders
- **Servers**
  - Configure Test Agents
  - Receive test results

Architecture



- **A: Protocol between the Test Agent and the Server**
  - Request/Response protocol tunneled in HTTP
  - Configure the Test Agents and pass test parameters
  - Retrieve test results (only from the Controller)
- **B: Protocol between Test Agents (OWDP-Control)**
  - Start/Stop the test
  - Pass timing information
- **C: Test Traffic between Test Agents (OWDP-Test)**
  - UDP packets
  - Transmission of packets from Responder to Controller is optional

Measuring One Way Delay



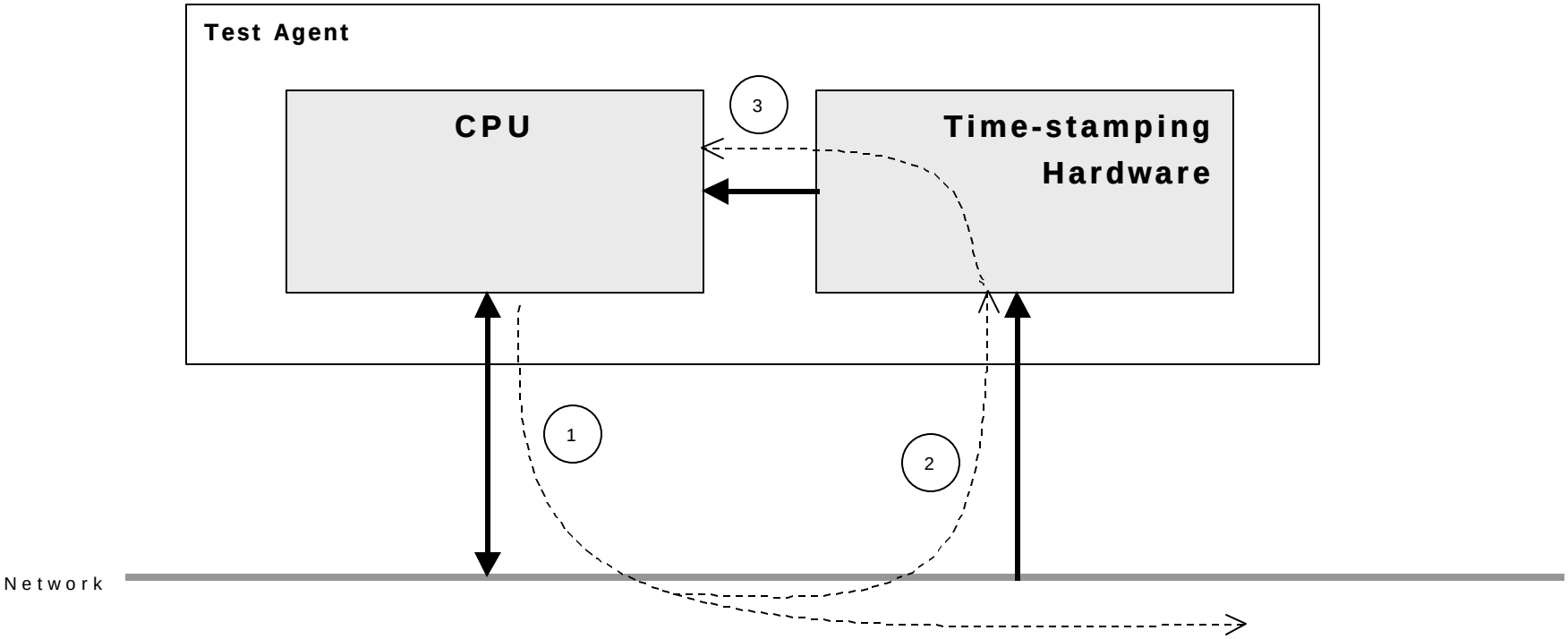
What is typically measured

OWD = T1 + T2 + T3

What Brix measures

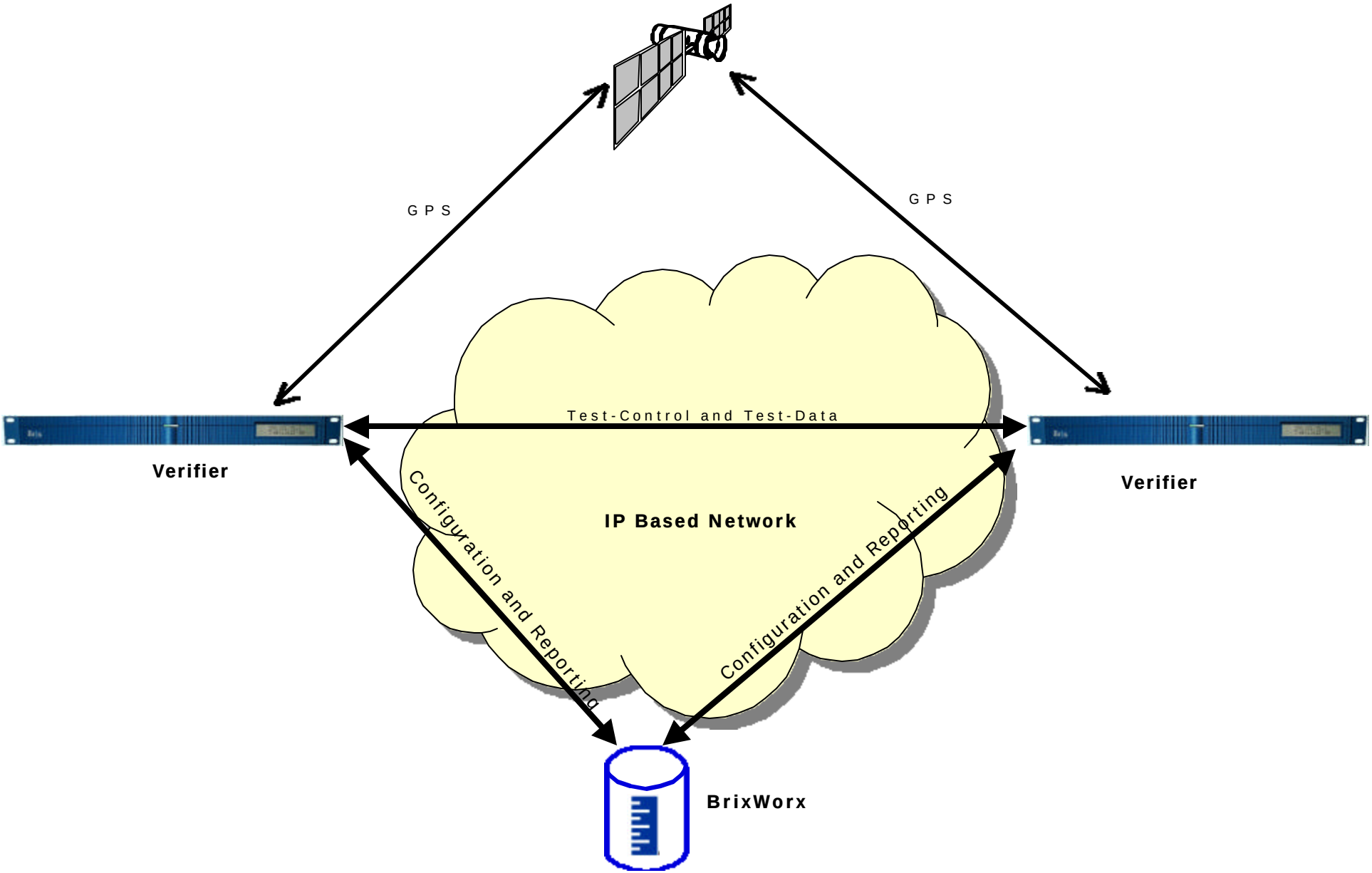
OWD = T2

Hardware Time-Stamping



- HW time-stamp is applied to packets transmitted and received
- Timing information cannot be embedded in packets

Typical Deployment



Summary

- Test-Control and Test-Data protocols
- Hardware time-stamps
- Keep-Alive messages in the Control protocol for transferring timestamp information
- Emulation of application traffic (VoIP, Streaming, etc.)
- One-Way delay can optionally be measured in both directions
- TLV format for Control Plane Packets

Discussion

- Support for emulation of application Traffic (VoIP, Streaming, etc.)
- Support for optional One-Way delay measurement in both directions
- Support for Session-Receiver to send unsolicited Control-Ack message with time-stamp information
- TLV format for messages