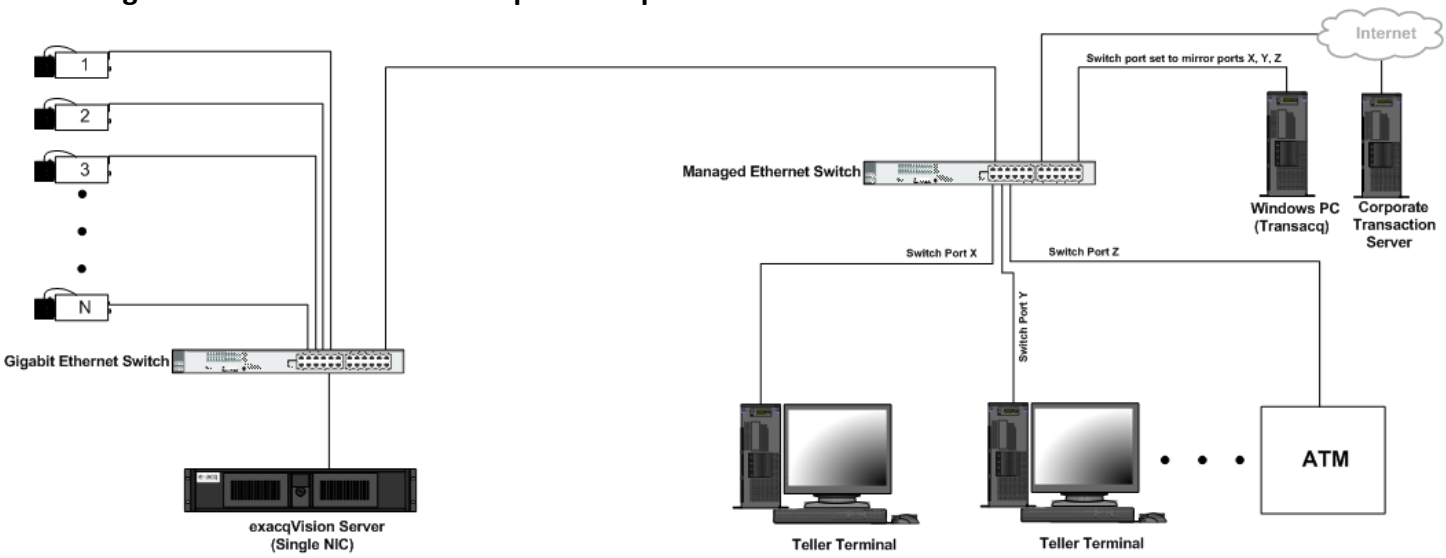
Introduction

Transacq allows an exacqVision server (version 4.5 or newer) to receive, store, and display IP network-based textual data from devices such as automated teller machines (ATM), bank terminals, point-of-sale devices, and any other devices that stream unencrypted data over a LAN or WAN.

Requirements

- The receiving exacqVision server must be licensed as Enterprise, Professional, or an unexpired Trial license.
- Winpcap must be installed on Windows systems, and libpcap must be installed on Linux systems.
- Transacq must be running as Administrator for Windows or as Root for Linux.
- The sending device must transmit unencrypted clear text on an IP-based network.
- The Transacq server must have dual network interface cards (NICs), with one port reserved exclusively for receiving mirrored, unfiltered text.
- The Transacq server must be connected to a network switch capable of mirroring the text traffic from the sending/receiving device. If the Transacq server is connected to a switch that can mirror multiple ports, a single Transacq server can receive text strings from multiple devices.
- An exacqVision server can be used to run Transacq.

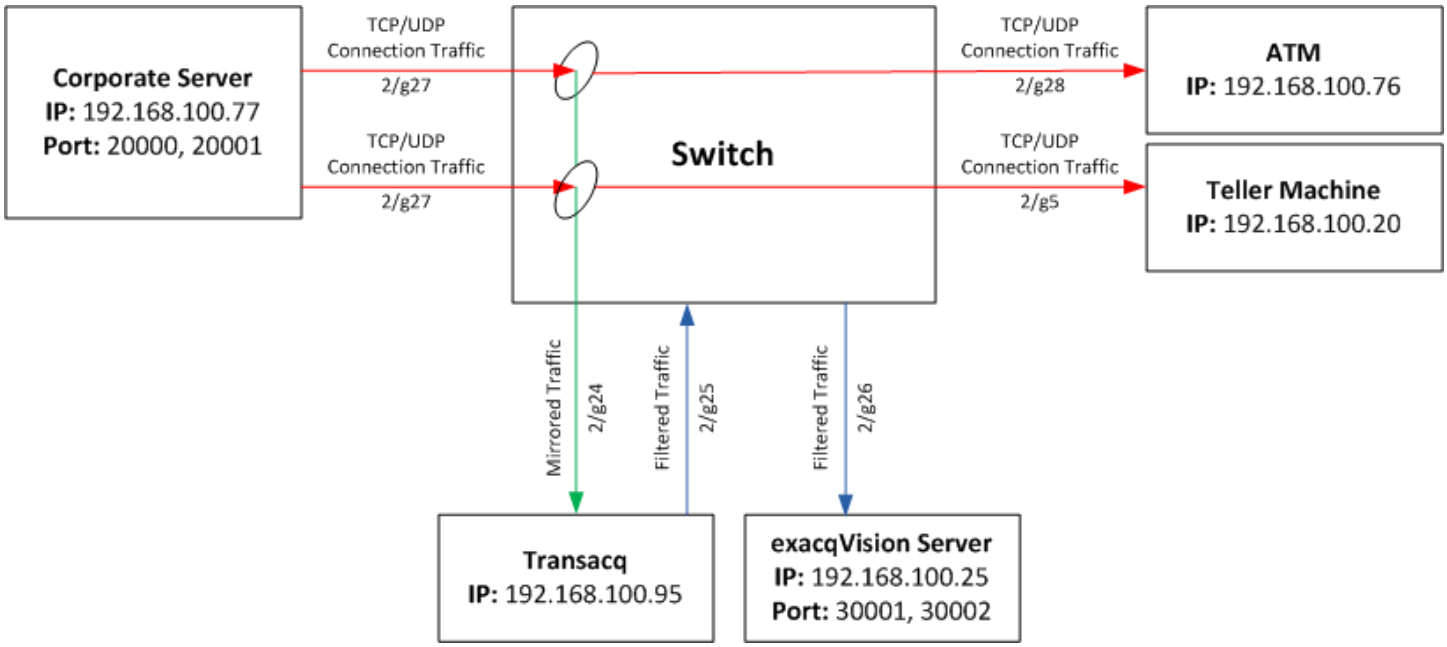
Block Diagram for Centralized Transacq Data Acquisition



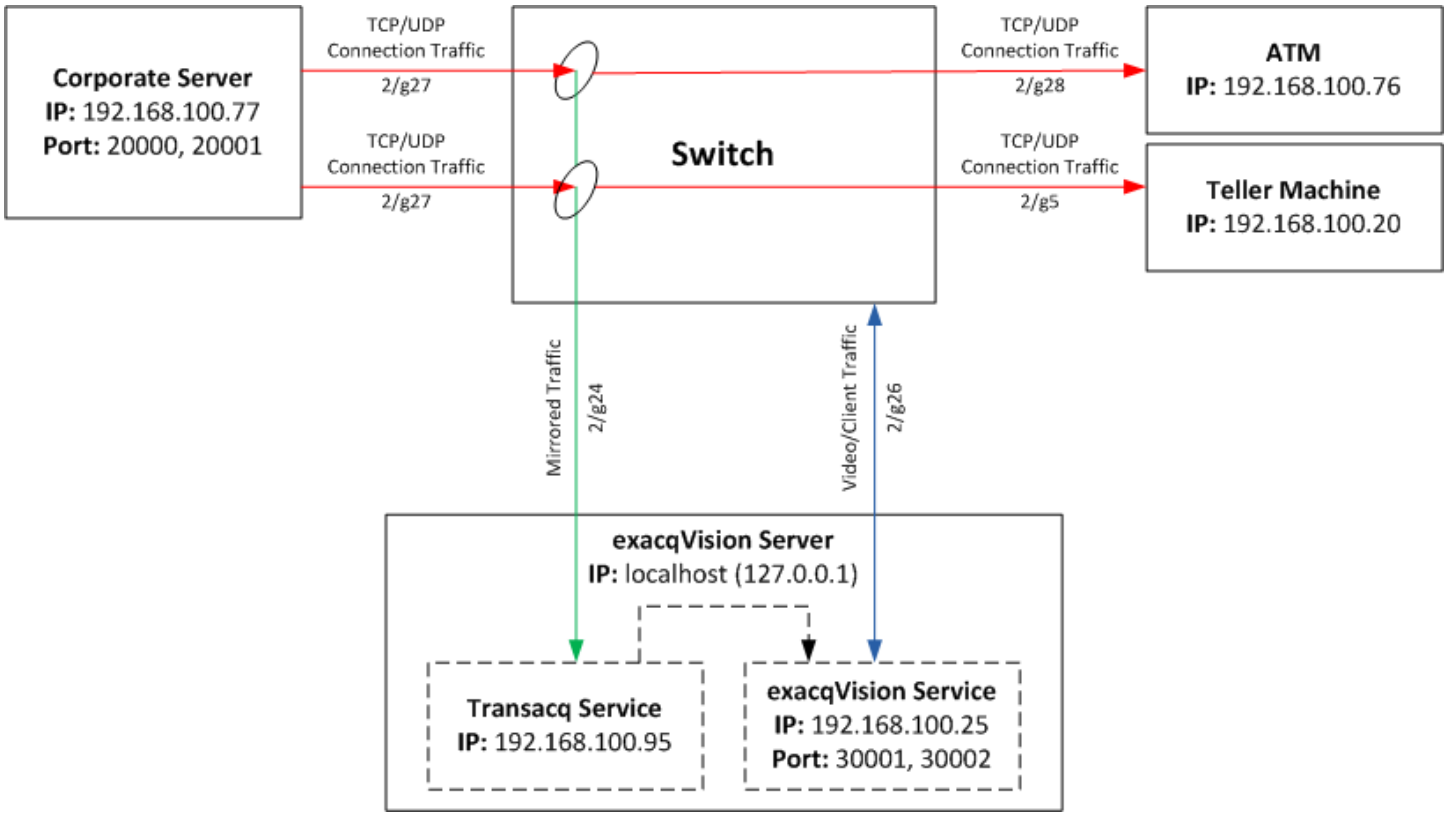
Note the following best practices from the configuration above:

- IP camera traffic is separated from IP serial data traffic, easing the processing burden on the Transacq server.
- A dedicated Transacq server enables the use of a single-NIC exacqVision server.
- If Transacq is loaded on a server with multiple NICs, the NICs must be teamed, or else they must be configured in different subnets.
- The processing burden on the Transacq server is proportional to the amount of network traffic received. Thus, it is best to locate the server in a network location that receives a minimum amount of extraneous network traffic.

Functional Data Flow Diagram – Transacq on Separate Server



Functional Data Flow Diagram – Transacq on exacqVision Server



Description of Operation

1. Unencrypted text flows from the corporate server through a network switch to the ATM and teller machines.
2. The network switch is configured to mirror all traffic on the associated receive ports (2/g28 & 2/g5) to the Transacq server through the monitoring NIC.
3. The Winpcap driver places the monitoring port into promiscious mode, which enables it to receive traffic not addressed to the Transacq server. The libpcap driver is required on a Linux-based Transacq server.
4. The Transacq service receives all incoming traffic on this NIC, filters it based on the Transacq.xml configuration file, and retransmits the resulting traffic to the exacqVision server on the filtered-traffic NIC.
5. The exacqVision server receives serial text as configured on the serial port screen. A serial profile must be created to filter out undesired incoming text.

Installation

Windows

1. Download and install Wireshark from www.wireshark.org. Wireshark includes the Winpcap packet-monitoring driver and provides a data viewing/capture interface that can be used during debugging.
2. Install Winpcap and the data interface on the Transacq server.
3. Install the Transacq application.

Linux

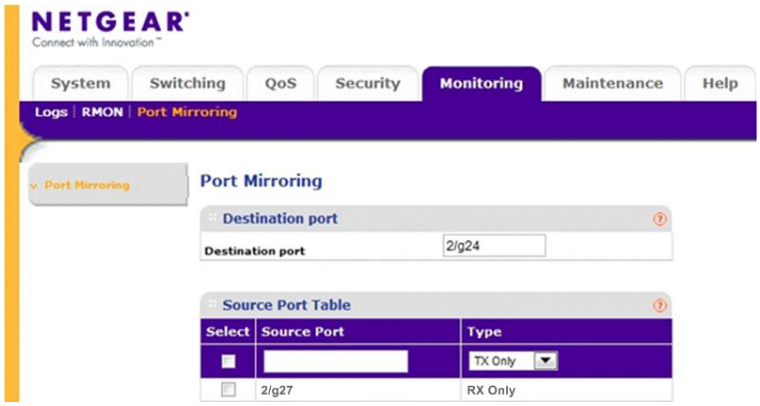
1. Log in to Linux using the admin account.
2. Start a Terminal window.
3. Enter **sudo apt-get update**.
4. Enter **sudo apt-get install libpcap-dev**.
5. Insert a DVD or memory stick containing the Transacq .deb file.
6. Use the **cd** command to open the directory with the .deb file.
7. Enter **sudo dpkg –I Transacq_xxxxxxxxxx.deb**, where xxxxxxxxxx is the version number.
8. Enter the admin password when prompted to install the files in the Exacq directory.

NOTE: For Linux, you may also install Wireshark for debugging, if necessary. Wireshark must be run as **root** to work correctly.

Configuration

1. Configure the network switch to mirror the necessary traffic to the Transacq server:

    - The source-destination traffic must pass through the switch.
    - Setup instructions vary by manufacturer (the following figure shows the configuration of a Netgear GS748TS switch). Mirroring configuration stops all normal traffic to the destination port. Note that physical switch port addressing is required.



2. Create a list of IP addresses and port numbers for every text generation device (such as an ATM) and the centralized server receiving the text. Both the IP address and port numbers must be fixed for proper operation. A distinctive port and/or IP address is required for every text-generating device.

3. Modify the Transacq.xml file to include the IP addresses and port numbers. The location of this file varies by operating system (OS) as follows:

    1. **Windows:** Use Notepad or a similar text editor to open **C:\Program Files\exacqVision\Transacq\Transacq.xml**.
    2. **Linux:** Use Text Editor or similar text editor to open **/usr/local/exacq/Transacq/Transacq.xml**.

    Following is an example of how the Transacq.xml file might appear after the modification.

```
<eDVR>
 <Network SniffAdapterAddress="192.168.100.95">
 <NVR Address="192.168.100.25" Port="22609" User="user" Password="password"/>
 <Terminal SrcAddress="192.168.100.77" DstAddress="" SrcPort="20000" DstPort="" NvrPort="30001"/>
 <Terminal SrcAddress="192.168.100.77" DstAddress="" SrcPort="20001" DstPort="" NvrPort="30002"/>
 </Network>
</eDVR>
```

    The following list explains the different parts of the Transacq.xml file:

    - **SniffAdapterAddress:** The IP address on which the Transacq server will receive text data.
    - **NVR Address:** The IP address of the NVR to which filtered text data will be sent. Use 127.0.0.1 if Transacq is running on the NVR server.
    - **Port:** The port used by the NVR. The default is 22609.
    - **User:** Qualified user on the NVR system.
    - **Password:** Qualified password for the user that is defined.
    - **SrcAddress:** The IP address of the device sending the text (the ATM, teller, or centralized server).
    - **DstAddress:** The IP address of the device receiving the text (the ATM, teller, or centralized server).
    - **SrcPort:** The source device's port number (used only when text is intercepted from the source device).
    - **DstPort:** The destination device's port number (used only when text is intercepted at the destination device).
    - **NVRPort:** The port number of the NVR that will receive the text. If you are not sure what port to use, ask your system administrator.

    NOTE: SrcPort, DstPort, and DstAddress are optional fields that reduce unwanted network traffic. Normally, only one of the two ports is configured depending on whether the text is intercepted at the source or destination. The port number used must be active on the specified SrcAddress.

4. Restart the Transacq service to execute the changed configuration file using the procedure appropriate for your OS:

    Windows:

    a. Start Task Manager.
    b. On the Services tab, right-click Transacq.
    c. Select Stop Service.
    d. Select Start Service.

    Linux:

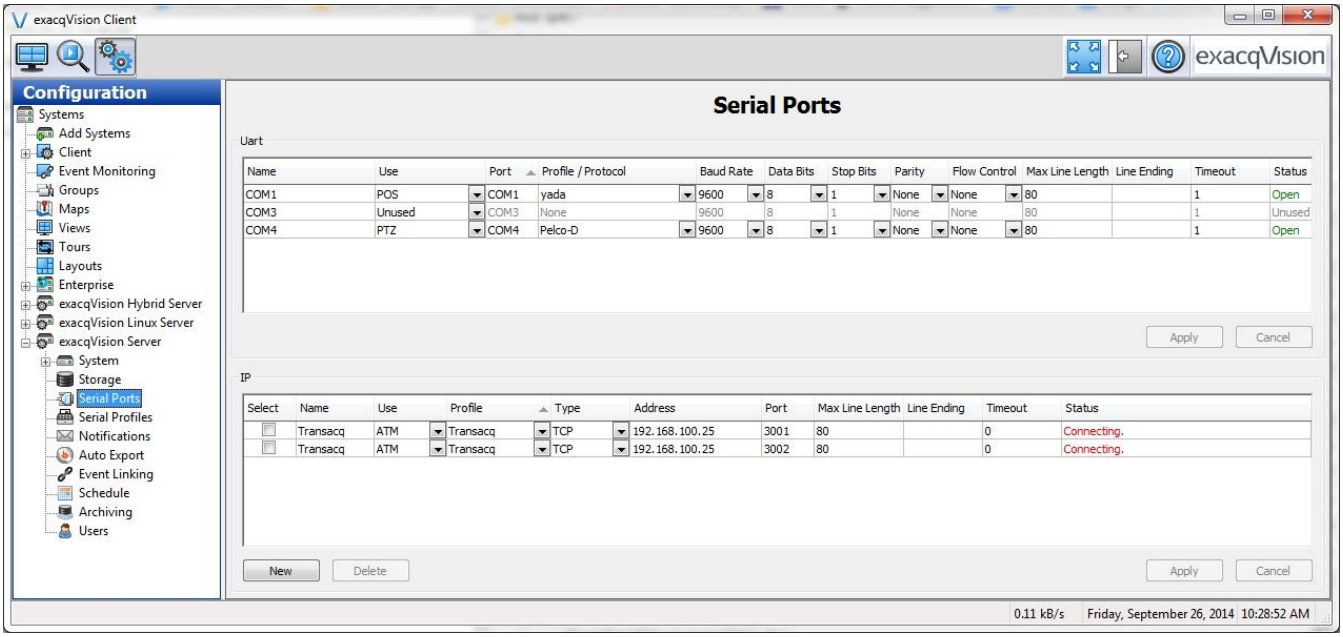
    a. Open a command prompt.
    b. Enter **sudo service transacq restart**.

5. Configure the serial profiles on the exacqVision server to filter unneeded text from the serial strings (see the exacqVision user manual for details). This requires the correct start of transaction(SOT) and end of transaction (EOT) markers, which mark the start and end of relevent data to be displayed and stored in the exacqVision software.

    NOTE: Unreadable ASCII fields can be masked by adding to the live display and record masks. Use wireshark to find the hex codes of the unprintable characters (usually less than 0x20). Enter the codes in the String box with a "**\x**" appended to the start of each code.

6. Configure one serial port per text device on the exacqVision server, as shown in the following figure. Set the Profile field to the name of the profile you created, the Type field to TCP, the Address field to the filtered (not mirrored) port of the Transacq server, and the Port numbers to match the NvrPorts configured in the Transacq.xml file. When the exacqVision server is connected to Transacq, the status is Connected.

   NOTE: If Transacq is running on the exacqVision server, the IP address of all entries is localhost (127.0.0.1), as entered in the Transacq.xml file.



7. In the exacqVision Client Live view, expand the server tree until the serial ports are displayed. Drag the serial ports into monitor windows to see live data. Stored serial data can be retrieved from the Search page (see the exacqVision user manual for details).

Troubleshooting

If data is not received, troubleshoot as follows:

1. On the Serial Port configuration page, ensure the status is connected. If it is not, confirm that the Transacq service is running. In Windows, select the Services tab in Task Manager; in Linux, type **ps –auxw | grep Transacq**.
2. Start the service, if necessary. Then reinitiate the connection on the Serial Port page by re-typing the port number to the same value and click Apply.
3. Review the Transacq.log file for messages.
4. On the Transacq server, review the incoming unfiltered data. Start Wireshark on the incoming data NIC and confirm traffic is being received from and sent to the source/destination port. To view the data being sent, stop the capture, click on a packet (row) with the correct source/destination address, and view the text in the bottom window.
5. If the proper raw text was not received, confirm the network switch mirroring is properly configured.
6. If the network switch monitoring is configured correctly, confirm the IP addresses and port numbers with the system administrator or manufacturer.