IRIS **Digital Video Systems**	*TECHNICAL BULLETIN*	**TB-1054**

Subject: Synchronizing the IRIS DVS with a Time Server

Hardware: TotalVision-TS

Software: IRIS DVS XPe (Including FX and non-FX Units)

Release Date: 12/19/08

SUMMARY

The IRIS DVS can be configured to automatically synchronize with an internet (or intranet) time server. This Technical Bulletin describes how to set-up the IRIS DVS for remote time server synchronization.

NETWORK CONSIDERATIONS

In order for the IRIS DVS to synchronize to a remote time server the network must be configured to allow UDP packets between the remote time server and the IRIS DVS. If network equipment (routers, switches, etc.) is configured to block UDP traffic, than it will not be possible for the IRIS DVS to communicate with the remote time server.

In addition, a valid DNS is required for the IRIS DVS to synchronize to a time server identified by its domain name. If no DNS is specified it will be necessary for the time server to be specified by its IP address.

IRIS DVS SET-UP

To set-up the IRIS DVS you will need to do the following:
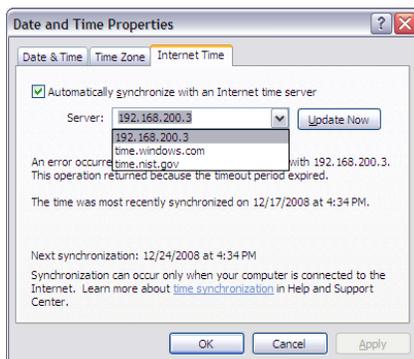

1. If you are on an embedded system, you will first need to click on the "Maintenance" button and put in the password to drop down from the IRIS control panel, to the Windows desktop. Now, go to Start>Control Panel. Double-click on the Date and Time ICON. This will open the Date and Time Properties dialog box (shown left.). Another option is to double-click the clock in the lower right corner of the desktop.

2. Click on the "Internet Time" tab.

3. Click on the check box that says "Automatically synchronize with an Internet time server".

4. On the line that says "Server:" type in the IP address of the server on the LAN. The server and the IRIS System must be on the same LAN segment. If the time server is not on the same LAN segment then you will need to have a valid TCP/IP gateway address as show in step 10.

5. If you would like the system to connect to an internet time source, you can put in a name or IP address such as time.nist.gov shown.

6. Hit the "Update Now" button. After a few seconds, a message will appear in the space below the update now button and show a successful time update. If it is unsuccessful the message will say that an error occurred and you should go to step 9.

7. Hit the "OK" button to close the "Date and Time Properties" window.

8. If you were successful in step 6, then you are done. The system will continue to synchronize the time periodically, and every time the IRIS System is started.

9. If you received an error updating the time, try hitting the "Update Now" button again. The Internet time synchronization uses UDP communication packets that are unreliable and may fail occasionally.

10. If you are using a server or website name, instead of the numerical IP address, you must have a DNS server listed in your network settings.

11. To access the network settings go to Start>Control Panel and double-click on the Network Connections ICON on the control panel. Highlight the Local Area Connection and then select File->Properties. On the General Tab, highlight the "Internet Protocol (TCP/IP)" item and select properties. The system should display the Internet Protocol (TCP/IP) Prosperities page as show above. Typically the IP address, Subnet mask, and Default gateway will be programmed into an IRIS system, but the Preferred and Alternate DNS server addresses are sometimes left blank (see image above). Contact the customer's IT department for the correct DNS server addresses and put them into the fields shown.

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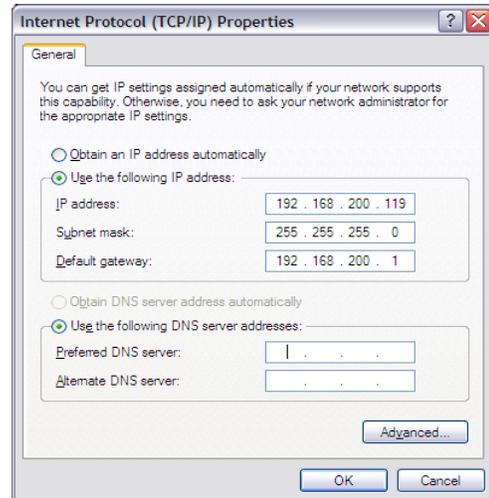
12. Select the "Advanced" button at the bottom of the page. Then select the "Options" tab. Highlight "TCP/IP filtering" and click the "Properties" button. This will display the TCP/IP Filtering dialog box. The TCP/IP port filtering settings are set from the factory as shown below. This blocks network TCP traffic from getting in, except on ports 5001 and 5002 which is used by Inquiry IRIS. If the customer has blocked any UDP ports, in the center column, then an exception for several UDP ports must be added. To do this click on the "Permit Only" at the top of the center column above the words "UDP Ports". Then click on the "Add" button at the bottom of the center column (it will no longer be grayed out), and in the pop up box type "123" without the quotes. Hit OK. Repeat the process to also permit UDP ports 13, 37, 52, 318, 524, 525 and 554. Select OK after all ports have been added. Close all of the windows. When prompted to reboot, but hit "No" to the reboot request. Close all of the windows and go back to the desktop. Double-click on the "Shutdown" icon and hit "Yes" in answer to the restart question. After it comes up, retest the "Update Now" button. If it still does not work, proceed to step 12.
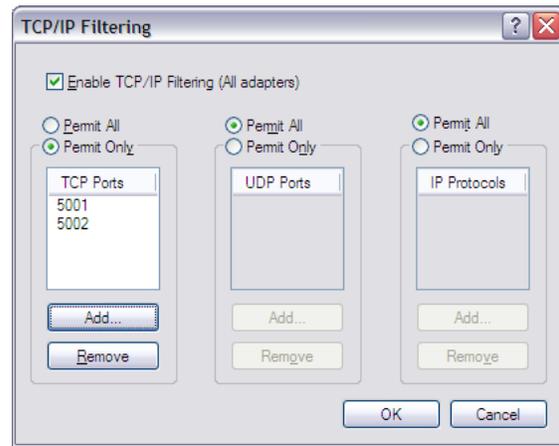
13. If you are still unable to connect to the time source, click on Start>Run and type "CMD" without the quotes. This will open up a command line window. Type "ping IP-address" where the IP-address is the time source IP address by number. This should look like "ping 192.168.200.3" without the quotes. You should also try "ping time-server" without the quotes, where time-server is the name of the time source if the customer wants to use a name rather than the IP address. The system should respond with 3 successful attempts to reach the time source. If you get a "timed out" message, then try to ping the IP Default Gateway that the IRIS system uses. If the network traffic is being blocked, then the customer's IT department will have to reprogram the managed router. If you can ping but you still cannot update the time, ask the IT department to check and make sure that UDP packets are not being blocked on the network. UDP packets for the ports listed in step 12 must be allowed to enable time synchronizations.

14. IRIS systems are shipped with Windows Firewall turned off. If the customer has enabled the Windows Firewall and wants to leave it on, then an exception should be added for UDP port 123. Go to Start>Control Panel>Windows Firewall>Exceptions Tab and click the "Add Port" button and enter an exception a name (i.e. Time Sync), port is "123" with no quotes, and UDP should be selected. Repeat the process for all the UDP ports listed in step 12. (Note: Each UDP port is for various time server formats. Adding all the specified UDP ports ensure that you can synchronize with most available time servers) hit OK, and then restart the system.

The IRIS systems should not be added to the domain. Trying to add an embedded system to a domain will irreparably corrupt the C: drive and it would have to be restored by IRIS repair. However, the time server must allow all time synchronization requests. Ask the customer's IT department to double-check this. Because each customer's LAN configuration is different, specific server and router programming guidance is beyond the scope of this document.

PUBLIC TIME SERVERS

If a local time server is not available and the network configuration allows access to the public internet you may be able to synchronize to an external public time server. A list of public time servers is available at http://support.microsoft.com/kb/262680 and http://tf.nist.gov/service/time-servers.html.