

PRODUCTS COVERED	ICS G2 4.XX.XX AND 5.XX.XX
TITLE	SPACELABS ICS G2 OPERATION DURING DAYLIGHT SAVINGS TIME
SUBTITLE	IMPACT OF DAYLIGHT SAVINGS TIME ON SPACELABS SOFTWARE
NUMBER	077-0228-00 Rev. F
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1 Purpose

This notice is a clarification regarding the ICS G2 system performance during Daylight Savings Time (DST). This bulletin defines our recommendation to minimize user impact and optimize data collection.

If our maintenance recommendations are followed, the ICS G2 system performs well during the Daylight Savings Time adjustments. For the “spring forward” adjustment, the system simply “skips” an hour. However, for the “fall back” adjustment, system issues may be evident as the 1 AM to 2 AM time period is repeated.

IMPORTANT

Please remember to turn on all devices (monitors in Biomed, overflow areas, wireless transport monitors etc.) during the time change so that the clocks can update automatically. Any that are not turned on during the time change must be manually updated OFF the network so they do not affect monitoring network time when they are connected to the network.

2 Background Information

2.1 System Summary

- If Daylight Savings Time setting is ON, then ICS Servers will change time automatically, See Appendix A, for configuring ICS Time.
- If an ICS Monitor Loader is the Time Master, then it will adjust all monitors on the monitoring network.
- ICS G2 data collection may be impacted and should be reset after the Fall DST adjustment.
- If the recommended procedures are not followed, then ICS G2 Trends may display gaps, and the information may not be displayed at the correct time after the Fall DST adjustment.
- HL7 Vital Signs Interface will continue to send HL7 data to EMR with the new time established by the Time Master.
- The HL7 interface message header will change at GMT and not the local time. This will only be an issue if your system uses the MSH time. Most integration engines and EMR's, however, only look at the actual time of the vital signs and no problems have been reported in these cases.

2.2 Spring

2.2.1 All ICS G2 software versions other than ICS 5.6

1. There will be a one hour time gap on all Spacelabs monitoring products while systems in the U.S. Spring ahead one hour. While hardware and software

products move ahead one hour, that one-hour period will be blank. There will be no data collected that hour on the Spacelabs monitor.

2. ICS G2 will continue collecting waveform data but one hour will simply be skipped as we Spring ahead. The waveforms collection will be continuous. However, you will see the clock skip from 1:59 AM to 3:00 AM. This may be more evident in the ICS G2 Waveform and Trends tab.

2.2.2 ICS 5.6

During the limited release of ICS 5.6, three issues were found with the way Clinical Access displayed patient information during the Spring Forward Time change.

Issue 1: No waveform data is displayed after the DST timings.

After the time change, for 10-12 hours the waveforms do not display in Clinical Access even though they are being collected in the ICS DB. As more time passes from the time change point, waveforms will slowly backload into Clinical Access and eventually catch up, Figure 1.

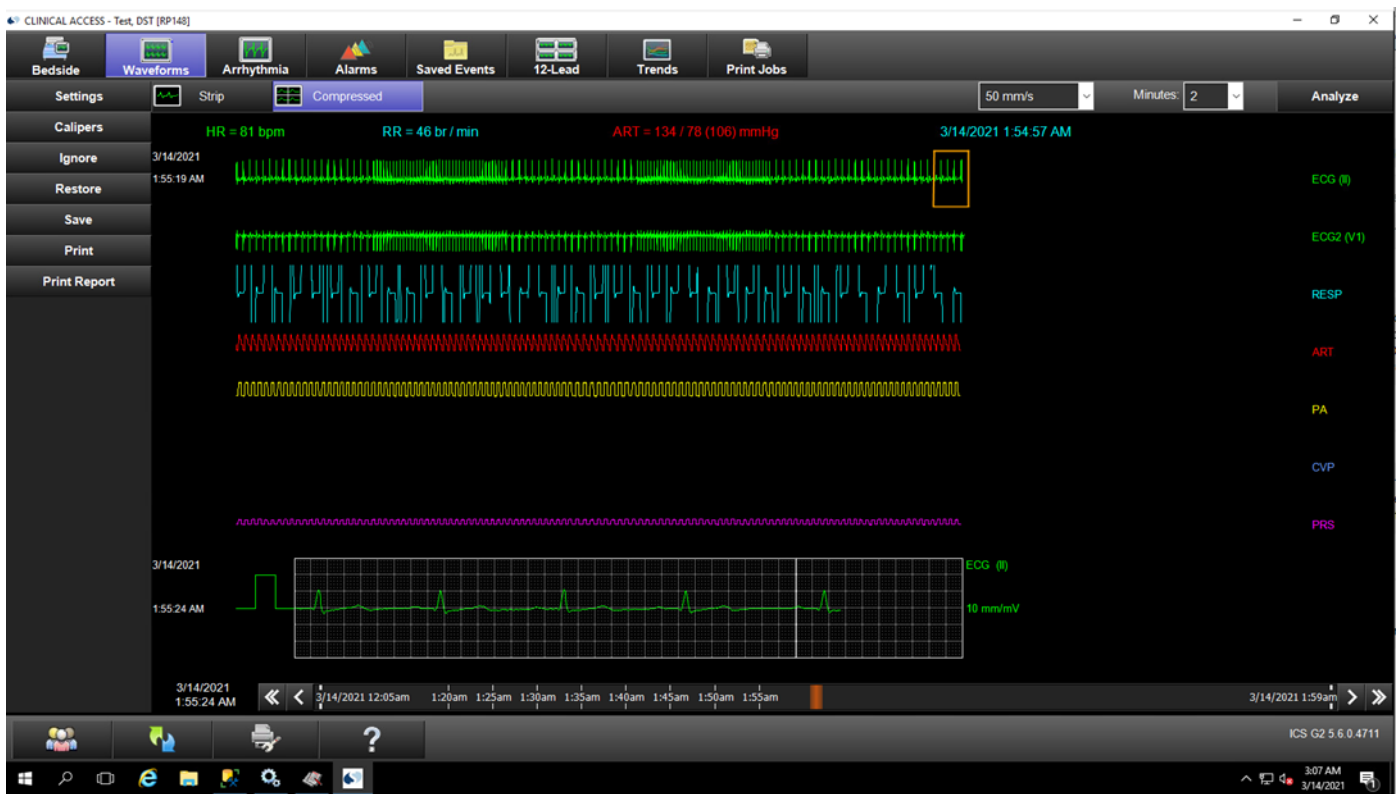


Figure 1: Spring Forward Missing Waveforms

Issue 2: Once waveforms are showing in Clinical Access, however, the Waveform tab is six minutes behind in displaying waveforms; instead of 2-3 minutes behind current data.

Issue 3: The data shown is inconsistent in the Trends tab during the time of the Time change. It is expected to have a gap of data between 2 am and 3 am, however, the trends display is not consistent with gaps in data not just between the skipped hour,

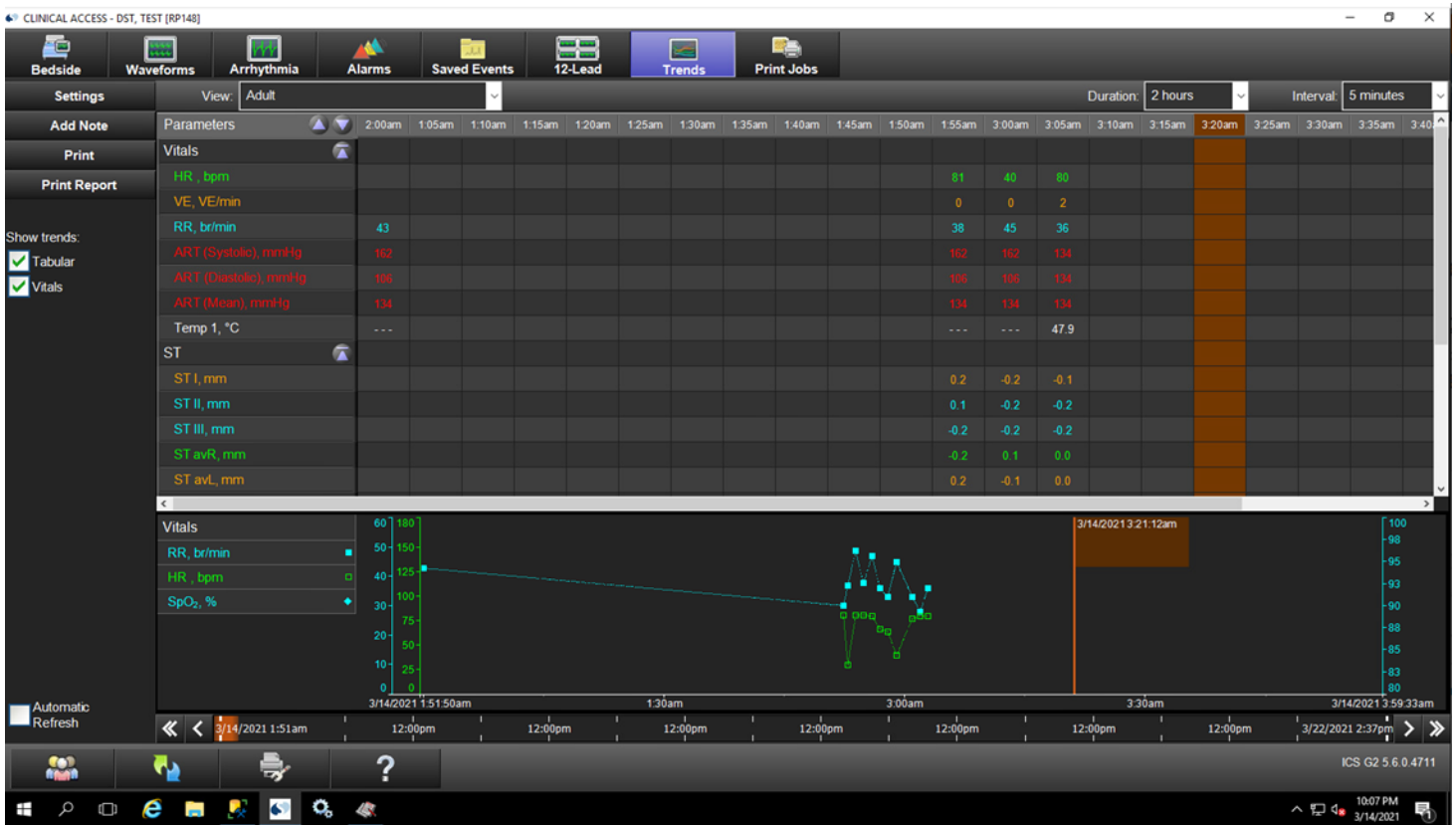


Figure 2: Spring Forward Inconsistent trends

Figure 2.

After the licensed time (72 or 24 hours) for Smart disclosure has passed and the data has been purged out, the system begins to function as expected. Patient records can also be orphaned to return functionality, however data from the orphaned record will not be transferred to the new record. See Section 3 Orphan Procedure.

2.3 Fall

ICS G2 version 4.01.03 or earlier (this includes 4.01.02, 4.01.01, 4.00.05 & 3.0)

Note: Due to the trend data display after the Fall DST change, the recommendation by Spacelabs is to turn off the ICS G2 data collection during the Fall DST change. See [Appendix B](#) for complete instructions on how to shut down the ICS G2 system for the DST change.

ICS G2 version 4.02.01 or later (this includes 4.02.02, 4.03.0x & 5.0x.xx)

No action is necessary. All data will collect properly in the ICS G2 system and be displayed as follows after the Fall DST change.

1. ICS G2 Clinical Access (CA) Trends View:

- Before DST ends, the column times are displayed as expected, in the interval selected, (i.e. 1:45am, 1:50am, 1:55am).
- After DST ends, the next column time falls back one hour. In this example, the next time displayed is 1:05am. **Reference Figure 3**

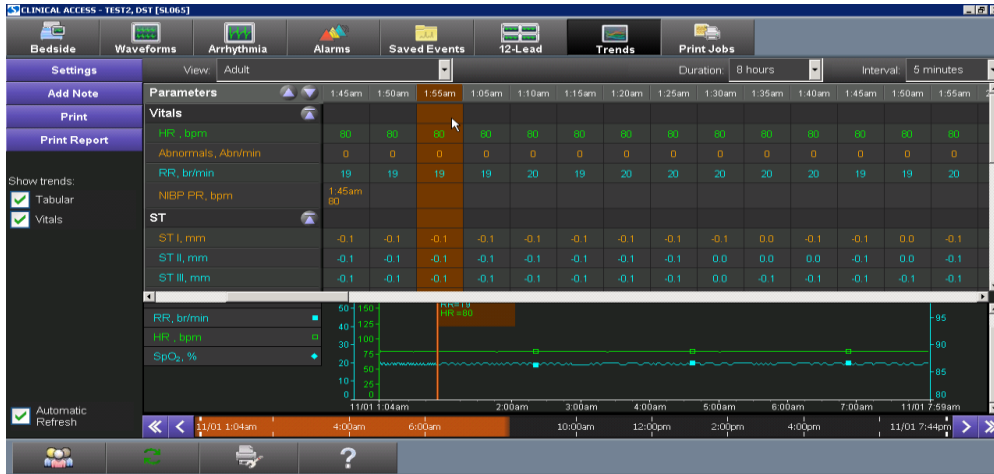


Figure 3: Fall Back Expected Trends View

2. ICS G2 CA Waveforms View:

- Before DST ends, the displayed time is as expected (i.e. 1:59:52 AM).
- After DST ends, the displayed time falls back one hour. In this example, the next time displayed is 1:05:02 AM. **See Reference Figure 4**

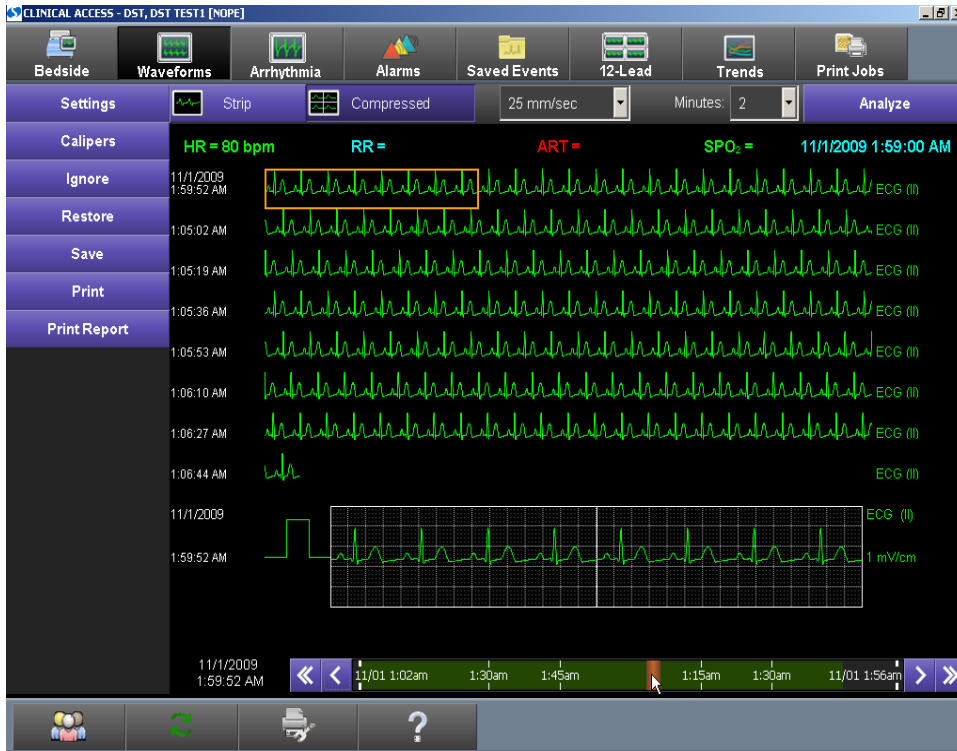


Figure 4: Fall Back Expected Waveform View

3. ICS G2 CA Analyze button:
 - a. After DST ends, and Analyze is pressed, the Start Time will go back to 1:xx:xx. **Reference Figure 5**

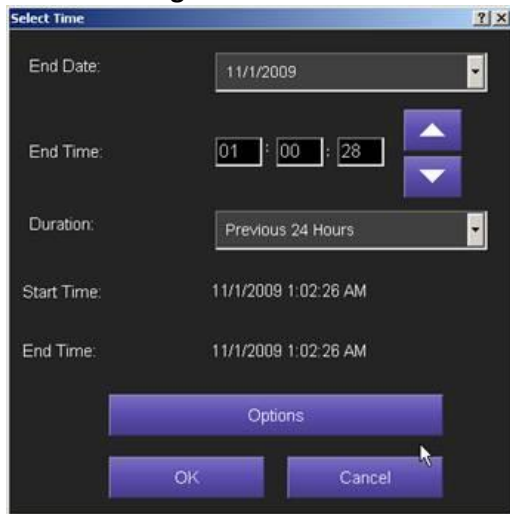


Figure 5: ICS Clinical Access Analyze button

4. ICS G2 CA Alarms View:
 - a. Before DST alarms will display as expected. The Alarm at 11/01 1:06:09am – ECG (HI Limit = 95) (17 sec) was an alarm BEFORE DST.

- b. After DST, the alarm will display according to the new time change. The Alarm at 11/01 1:06:01am – ECG (HI Limit = 70) (68 sec) was an alarm AFTER DST. **See Figure 6**

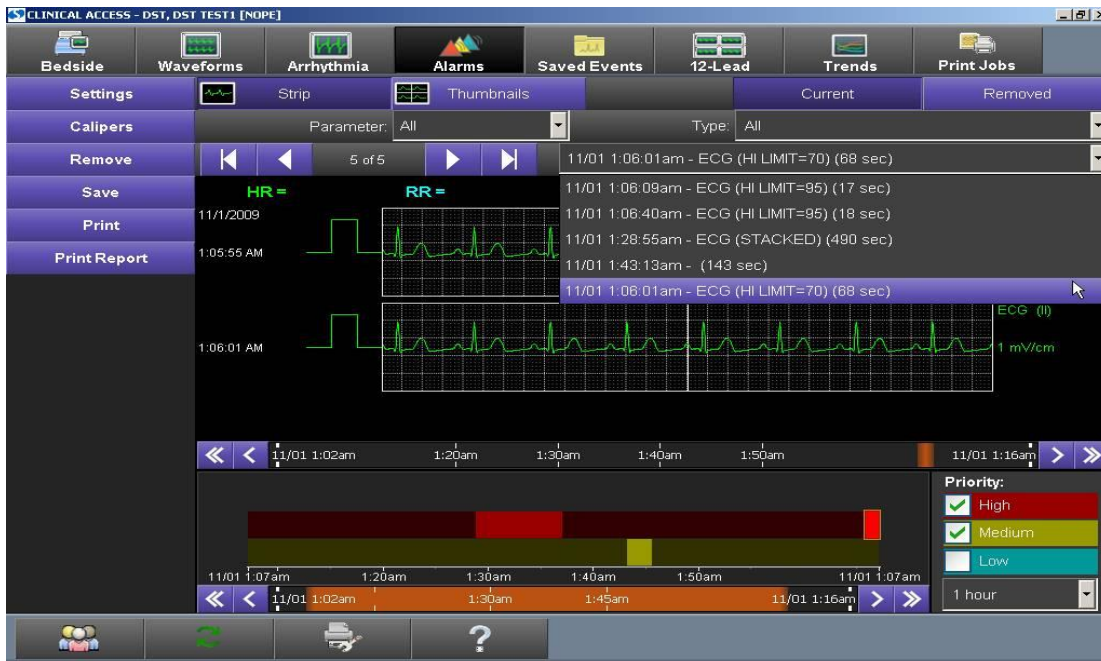


Figure 6: ICS Expected Clinical Access Alarm View

3 Procedure – Orphaning a Patient Record

- 3.1 At the admit menu of the bedside or central, select Edit.
- 3.2 In the ID1 field, append an X to the ID1.
- 3.3 Select Save.
- 3.4 Discharge the Patient.
- 3.5 Re-admit the patient using the original ID1 without the X.
- 3.6 Note: the Name, DOB, ID2, will not populate as those are associated with the ID1X number.
There are two options that can be done to repopulate the data:
 - 3.6.1 Have Biomed or IT send a new ADT A08 update message for the patient.
 - 3.6.2 Manually update the name, ID2, and DOB during the re-admit.

Appendix A: General Setup for the ICS Time

This applies to All ICS G2 systems. On an ICS G2 system, the Server Operating System **Date and Time Properties**, should have checked '*Automatically adjust clock for daylight saving changes*' so that all Spacelabs servers will have synchronized time and will update automatically during daylight savings.

To confirm this setup on the ICS G2 Server(s), in the **Control Panel** select '**Date and Time Properties**' OR **Date and Time>Change time zone...>'Time Zone Settings'** .

See Figures below for examples in various Windows versions.



Figure 7: Windows Date And Time Properties, Windows 2003

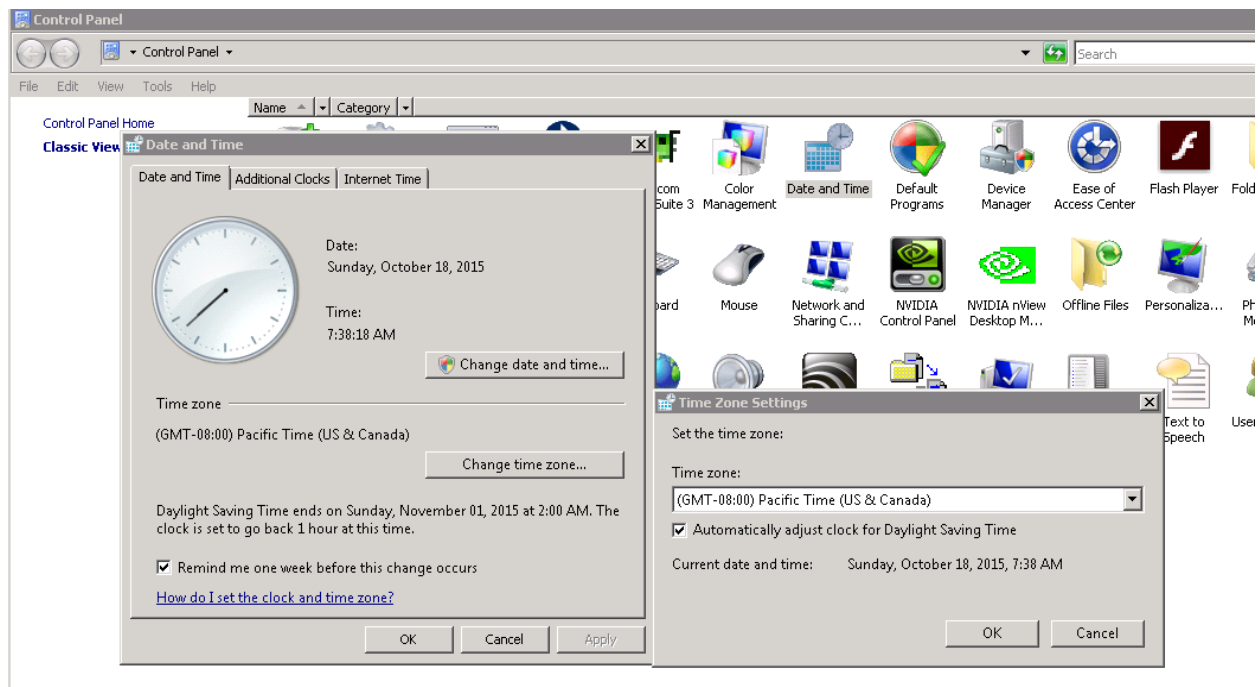


Figure 8: Windows Date and Time Properties, Windows 2008

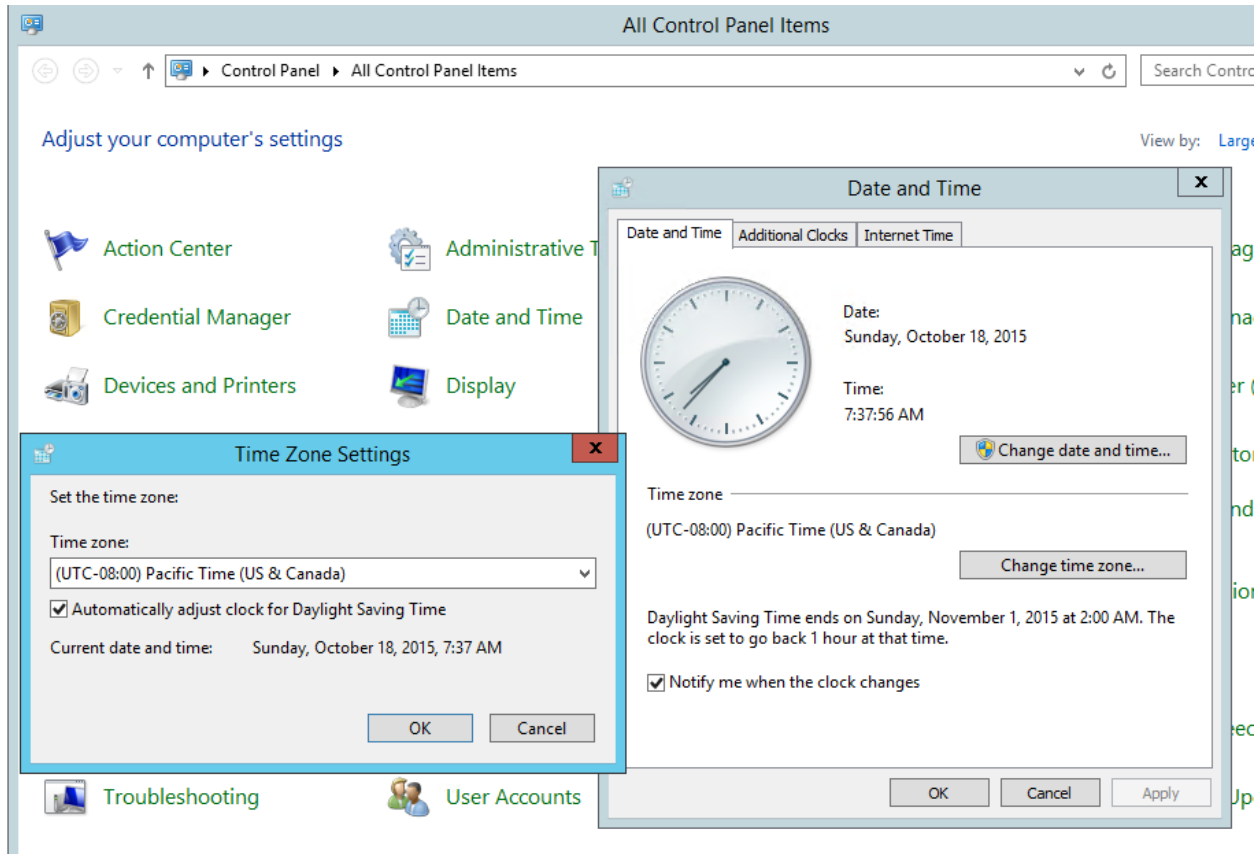


Figure 9: Windows Date and Time Properties, Windows 2012

In addition, one Monitor Loader Service must have been configured as the 'Time Master' in order to synchronize the Monitoring network time with the server network time.

1. Verify which **Monitor Loader** is the **Time Master**.
2. On a server where ICS Administration is installed, click on **ICS Administration>Monitor Loader>Gateway Settings>Gateway Details | Loader Tasks>**.
3. If **Make time-master** is checked for a specific Monitor Loader, that Monitor Loader is a Time Master. **See Figure 6.**
4. Do not create more than 1 time master per VLAN.

Gateway Details

Gateway ID: 53c2fa0d-e0f7-46c7-997e-52fb98f83ea3

Loader / HL7 Settings (Require restart)

Network ID	UVN_1	USID for all results	GTWYUSID
Decnet Node #	48	Organization	HOSP
Node Name	N0048	Associated Unit	ICU
Polling Interval (secs)	5	HL7 Send Sys	GTWY
		HL7 Recv App	RECV_APP

Loader Tasks (Do not require restart)

<input checked="" type="checkbox"/> Make time-master	<input checked="" type="checkbox"/> Auto assign patient ID (format)	UV_%RAND
<input checked="" type="checkbox"/> Record live vitals (VSV, HL7, CEI)	<input checked="" type="checkbox"/> Collect VSV waveforms (size)	4000
<input checked="" type="checkbox"/> Process print requests	<input checked="" type="checkbox"/> Collect SD waveforms (size)	60000
<input checked="" type="checkbox"/> Process 12-Lead (SD, 12L, Printing)	Included Nodes	
<input checked="" type="checkbox"/> Auto record alarms (SD, CEI)	Excluded nodes	
<input type="checkbox"/> Print alarms		

Buttons: Verify Setup, OK, Cancel

Figure 10: Monitor Loader Time Master

Appendix B: Shutdown Monitor Loader service

Note: Appendix B applies to the following systems:

- ICS v4.01.03 or earlier.
- ICS v3.0x.xx AND you are using HL7.

Instructions to Shutdown ICS G2 Data Collection during the Fall DST Change.

Note: This procedure will shut down the Monitor Loader service, which will remove the ability to print from a monitor with the Print Manager option. Steps should be taken to ensure other printing options are available to clinical staff.

Note: The only services that need to be stopped and started are the Spacelabs HealthCare UV Monitor Loader Service and Spacelabs Healthcare HL7 Service. The servers **do not** need to be shut down.

Important! DO NOT POWER OFF ANY MONITORS.

All monitors should be kept online so they do get the new DST Time change.

Step 1 – Stop Services at 1:00 AM and change the service Startup type to Manual.

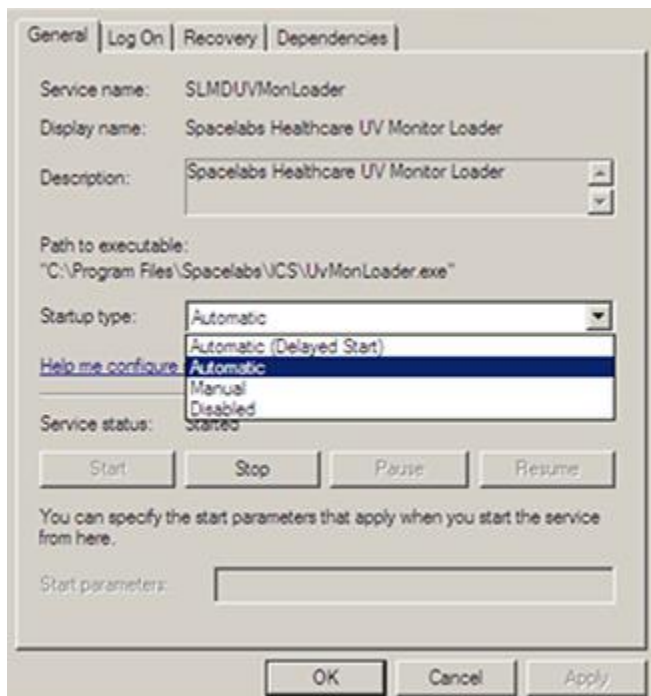


Figure 11: Monitor Loader Service Properties Page

Step 2 – At 2AM DST happens and the new time will then change to 1:00 AM, verify that time at one of the Spacelabs monitors did change to 1 AM. If it did not change at the monitor or the server manually, change it to the correct NEW 1am time.

Note: This step is necessary since there is no longer a Monitor Loader acting as the Time Master. The time change at one monitor will push the new time out to all networked monitors.

Step 3 – At 2:05AM, restart the Spacelabs Healthcare UV Monitor Loader Service on all Monitor Loader servers. Monitor time may shift by 1-2 minutes due to the Time Master function of the Monitor Loader. This is the reason for waiting 5 extra minutes after 2 AM. If Spacelabs Healthcare HL7 services are used then restart the Spacelabs Healthcare HL7 Service once all Monitor Loader Services are running.

Note: When restarting services, check the Startup Type; it may say Manual. Change this setting to **Automatic**.

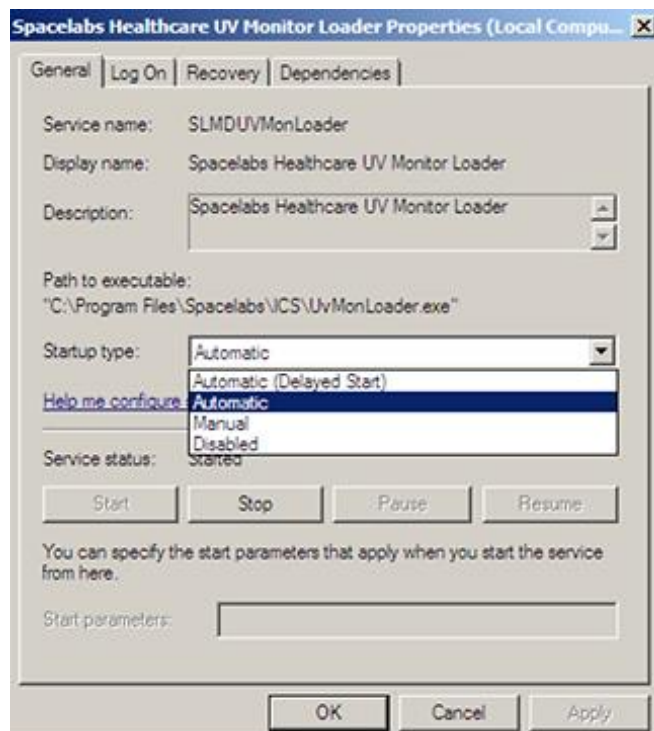


Figure 12: Set the Startup type back to Automatic

Do this for both the Spacelabs HealthCare UV Monitor Loader Service and if HL7 is installed, the Spacelabs Healthcare HL7 Service and Symphonia Mapper Service, if applicable.

Stopping and Starting the Monitor Loader Service can also be done automatically via the Windows Task Scheduler Tool.

1. Copy the following text and save as a ps1 file. Keep track of the directory where the file is saved.

```
$service = 'SLMDUVMonLoader'

$checkservice = Get-Service -Name $service

Stop-Service -name $service

Start-Sleep -s 180

if($checkservice.Status -ne "Stopped") {

Stop-Service -name $service -Force

}

start-service -name $service

if($checkservice.Status -ne "Running") {

    Stop-Service -name $service -Force

    Start-Sleep -s 10

    Start-Service $service

}
```

2. Open Task Scheduler and select the Create Task button.

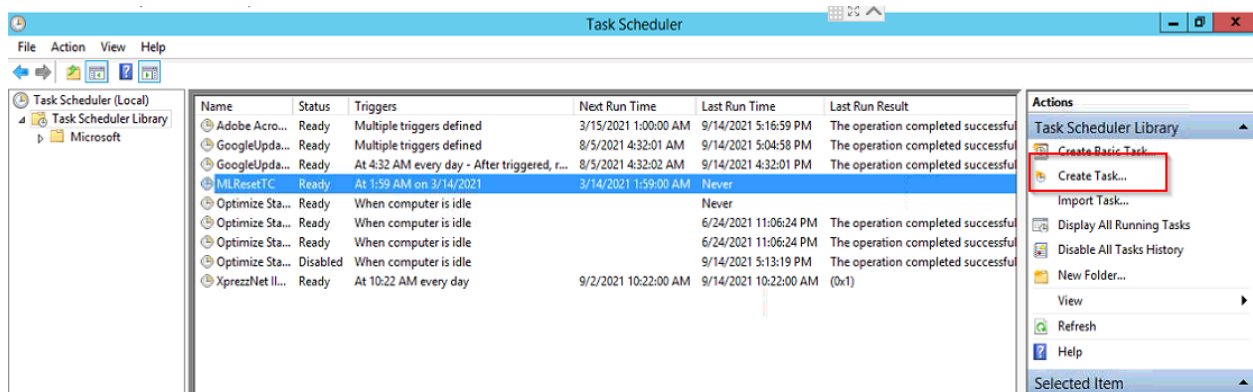


Figure 13: Task Scheduler Create Task button

3. Name the task MLResetTC and configure the task to run with highest privileges

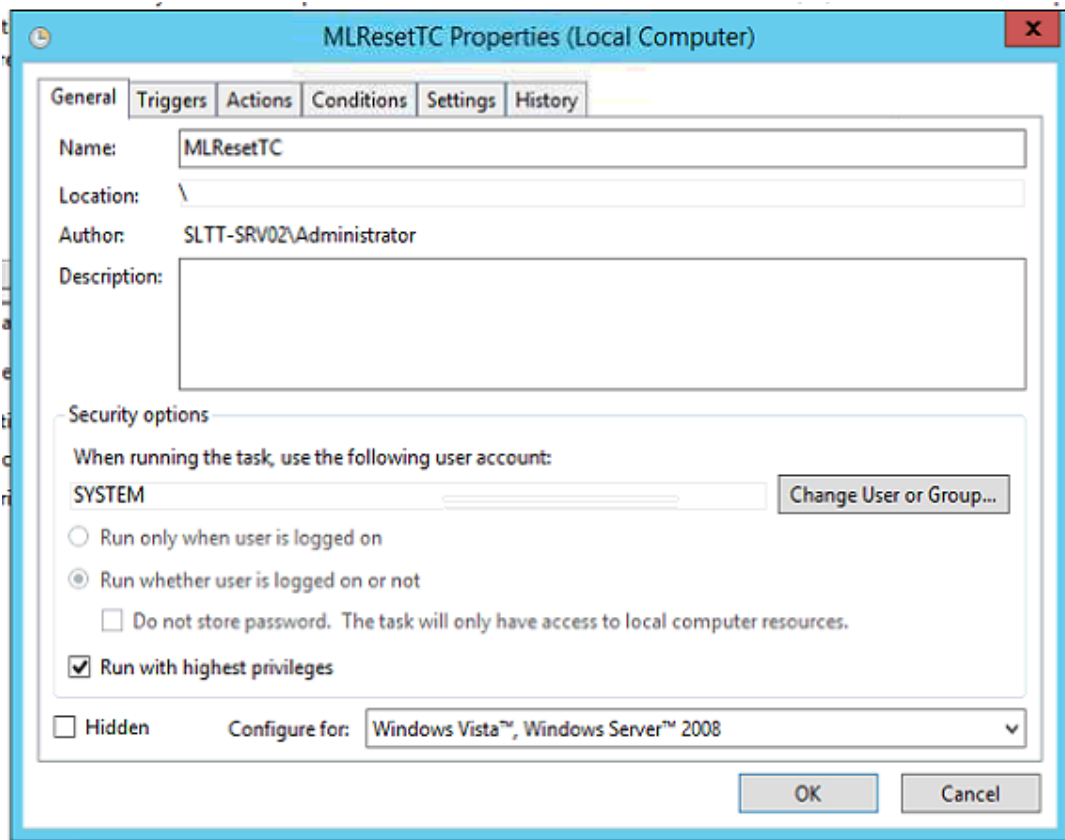


Figure 14: Naming the Task and configuring privileges.

4. In the triggers tab, select the new button and schedule the task to run at 1:59 am on the day of the time change. Ensure that the trigger is enabled.

Edit Trigger

Begin the task: On a schedule

Settings

☒ One time Start: 3/14/2021 1:59:00 AM ☐ Synchronize across time zones
☐ Daily
☐ Weekly
☐ Monthly

Advanced settings

☐ Delay task for up to (random delay): 1 hour
☐ Repeat task every: 1 hour for a duration of: 1 day
☐ Stop all running tasks at end of repetition duration
☐ Stop task if it runs longer than: 3 days
☐ Expire: 11/28/2022 5:46:58 PM ☐ Synchronize across time zones

☒ Enabled

OK Cancel

Figure 15: Schedule time for the task at 1:59am on the day of the time change

5. Under the actions tab, select the new button.
 - Under Program/Script, type Powershell.exe.
 - In Add arguments (optional): input the complete file path of the ps1 file in step 1.
 - In Start in (optional): input the same path as above minus the ps1 file name.

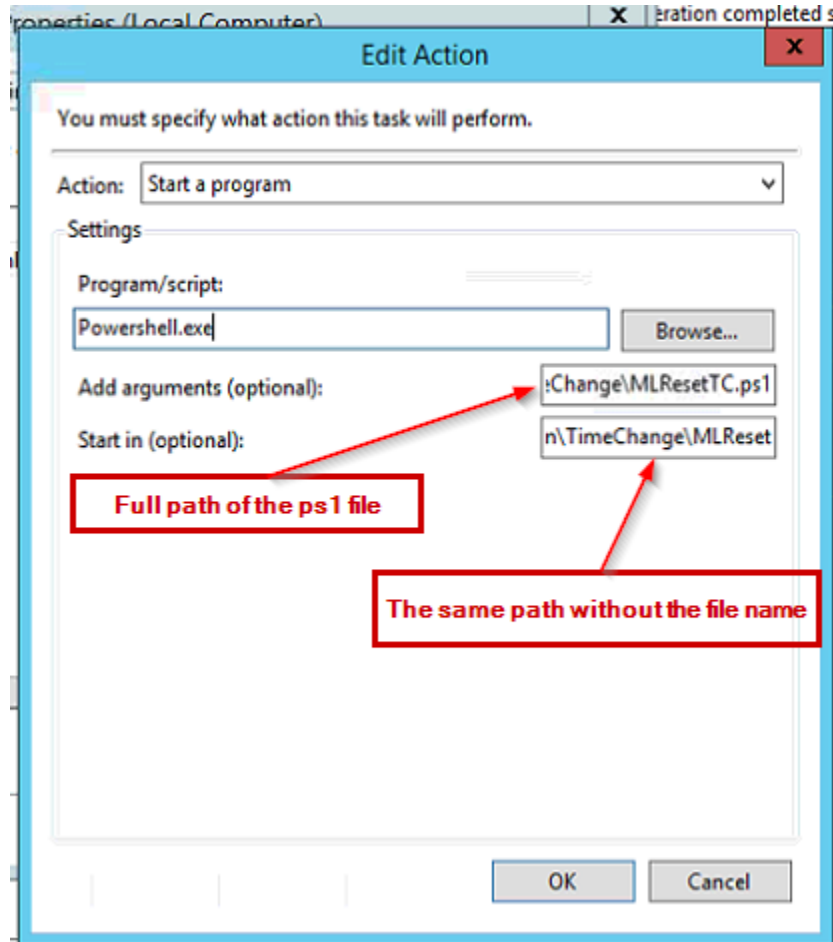


Figure 16: Configuration for running the powershell script

6. Select OK to complete the task creation.

Appendix C: Daylight Saving Time (DST) for the 91330 Ultraview DM3 Monitor

This notice is to clarify the DM3 monitor operation with Daylight Savings Time (DST). The DM3 Monitor does not support an automatic time change for Daylight Savings Time, so in countries that observe the DST change, it will be necessary to manually adjust the time at each monitor. If the monitor network includes an ICS G2 system with DM3 data collection, then the time for all DM3 units will be updated automatically. See the ICS DM3 Monitor Loader Time Synchronization section below for more information about the automatic time change. When the DM3 clock time is manually adjusted, the following will occur with existing data.

1. Patient trend data and saved spot-check records will continue to be displayed based on the original measurement time.
2. Any completed measurements displayed in a parameter zone will be cleared.
3. In Spot mode, any measurement, which has not been saved, will be lost.

IF ICS IS NOT USED with DM3 Monitors -manually adjust the DM3 time by following these steps:

1. Press the **Monitor Setup** key.
2. Press the **Clinical** key.
3. Enter the password code **986**, and then press the **OK** button.
4. Press the **System** key.
5. Press the **Set Date and Time** key and adjust to the correct time.

This procedure will need to be performed at the beginning and end of the DST period each year.

Warning: Failure to properly adjust the DM3 system time for DST will cause all time-stamped patient data to be displayed with the incorrect time.

IF ICS IS Used with DM3 Monitors: The Time Will Synchronize with the Spacelabs Healthcare DM3 Loader server time.

The DM3 monitor is capable of network communication with a Spacelabs ICS G2 system. The ICS G2 connection provides a method of querying the Patient ID for Positive Patient Identification (PPI) and can transmit patient vital signs data to a hospital EMR via an HL7 interface. In this environment, the DM3 monitor communicates with an ICS DM3 Monitor Loader, which will also synchronize time with the ICS server equipment. Note: it is necessary for the DM3 monitor to be connected to the network for the time to synchronize correctly.

This capability requires the following **minimum** software versions:

- DM3: v1.5 or higher
- ICS G2: v4.02.xx or higher

To verify the Software version follow these steps:

1. Press Monitor Setup
2. Clinical
3. Enter the 986 password
4. Configuration
5. Check the field labeled “Main”
6. Verify it does say 1.5 or higher

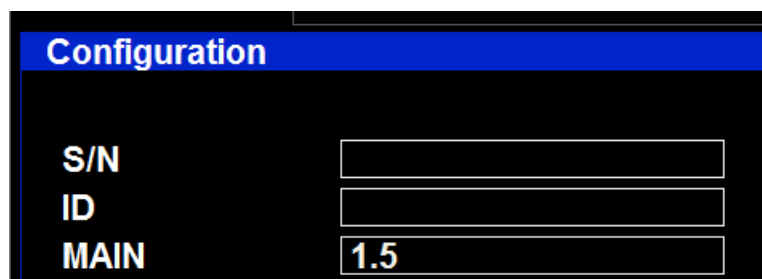


Figure 17: Verify the DM3 version