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Technical Support Bulletin 2024-01	IFCB Linux Debian V12 Image & IFCBacquire V3.0 Update	March 25, 2024

Alert Level: IMPORTANT

Instruments: IFCB

Software Versions: N/A

Hardware Version: N/A

Subject: IFCB Linux Debian V12 Image and IFCBacquire V3.0 Update

Summary: An update to IFCBacquire has been released and is available via the Update function within the IFCBacquire user interface. The update to IFCBacquireV3.0 includes multiple improvements which are detailed below. Also available is an updated Linux OS image which updates to Debian V12 and will also include IFCBacquireV3.0. In order to update to the Debian V12 image you must reimage your drive, following the procedure detailed in document [500-5199, Restoring IFCB SSD Image].

Technical Details:

IFCBacquireV3.0 Changelog:
- Disabled Start/Stop Acquisition button when running routines;
- Set default max currents to 14 and 25 for valve and syringe motors;
- Disabled action buttons when running routines;
- Changed valve rotation direction (needle to intake) to CCW in Flush Intake routine;
- Reduced syringe speed to 0.75min/syr in Prime Intake routine;
- Added valve movement timeout check;
- Added overcurrent check to stop running routine;
- Added valve lack of movement check to stop running routine;
- Added valve position check at the end of every valve movement;
- Added syringe motor current setting;
- Added valve motor current setting;
- Added verbose output for skipped triggers;
- Updated all assemblies to .NET 8;

Utilities have been updated to 3.0 and are available on AWS under the following links:

IFCBacquireUI:
Windows: https://ifcb.s3.amazonaws.com/utilities/WebUI/windows/IFCBacquireUI_3.0.zip
Linux: https://ifcb.s3.amazonaws.com/utilities/WebUI/linux/IFCBacquireUI_3.0.tar.gz
Mac: https://ifcb.s3.amazonaws.com/utilities/WebUI/mac/IFCBacquireUI_3.0.zip

Standalone Server:
Windows: https://ifcb.s3.amazonaws.com/utilities/Server/Windows/Server_3.0.zip
Linux: https://ifcb.s3.amazonaws.com/utilities/Server/Linux/Server_3.0.tar.gz
Mac: https://ifcb.s3.amazonaws.com/utilities/Server/Mac/Server_3.0.zip

Restore images are available through these links (CPU Specific):
Versalogic M2: https://ifcb.s3.amazonaws.com/ISO/IFCB_VERSALOGIC_M2_D12_30.IMG
Versalogic SATA: https://ifcb.s3.amazonaws.com/ISO/IFCB_VERSALOGIC_SATA_D12_30.IMG
ADLINK: https://ifcb.s3.amazonaws.com/ISO/IFCB_ADLINK_D12_30.IMG

Tel: +1 508 495 4000   www.mclanelabs.com   Fax: +1 508 495 3333

ADLN2000: https://ifcb.s3.amazonaws.com/ISO/IFCB_ADL2000_D12_30.IMG

Debian V12 Update:
The latest IFCB image includes an update to Debian V12, which is the latest supported version of Debian. Previously, IFCB images have included Debian V10 which is being phased out due to Debian support ending. It is recommended that IFCB users update to this newer image, built upon Debian V12.

IFCBacquire V3.0 Update:
The latest IFCBacquire update includes a number of improvements & changes. Some of those details are discussed below, if further information is desired, please reach out to McLane Research Labs.

- Disable specific functions while running: A number of available push buttons on the IFCBacquire user interface have been disabled while the IFCB is running a sample. The disabling of these functions was required because if they were pressed during a sample run, the IFCB would experience serial communications conflicts and the serial port would lock up, leaving it unusable. With the disabling of these functions, the end user can no longer select them at times that would cause conflicts. Once the user selects the 'stop acquisition' button, the disabled functions will become available for use.

- Error checking integrated into valve and syringe control software. The error checking is being put in place in order to flag when the syringe drive is working harder than expected, indicating a clog or valve misalignment. Also, error checking is being implemented in order to closely track the valve movement and flag instances when the valve may be misaligned.
  o Syringe error checking:
    ▪ stop syringe action if the syringe drive motor reports overcurrent status. This will stop the syringe from driving if the syringe drive current exceeds 160mA indicating that the syringe motor is having to draw more current that expected. A typical syringe assembly should draw ~40-60 mA when operating under normal conditions.
  o Valve error checking:
    ▪ Valve movement timeout: if the amount of time it takes to make a valve movement exceeds the expectation (+ added buffer time), stop all operations and report valve movement timeout error.
    ▪ Valve lack of movement: if the valve is commanded to move but lacks movement (encoder progression) during a certain time period, stop all operations a report valve lack of movement error.
    ▪ Valve position check: if the valve is commanded to move to a certain port but after the movement reports an encoder position that does not align with the desired port, stop all operations and report valve misalignment error.

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