



**DURABOLT™**

**DURACORE**

# DuraBolt & DuraCore Software Release Notes

**Rev #: 1.01**

**SW Version: R3.3.0**

**Date: 5 Sep 2025**

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Revision History

Doc. Version	SW Release	Date	Details	JIRA
V1.00	R3.3.0	7 Aug 2025	First Release (draft)	<a href="#">DOC-1351</a>
V1.01	R3.3.0	5 Sept 2025	Updates from R&D feedback	



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# 1 Introduction

DuraBolt® software version R3.3.0 is a major release. These release notes cover upgrading from R2.0.0 and the “new features” are new as compared to R3.2.0.

## 1.1 Typographic Conventions

Throughout this document, the following typographic conventions are used:

Code Character	<code>Courier</code> font is used to identify HTTP GET and POST commands with associated arguments, as well as references to source code, job states, registry settings, directory/file names, XCI commands, and XML settings.
<b>Bold</b>	Text that appears on-screen in the user interface is shown in <b>bold</b> font. This includes UI buttons, engine states, warning codes, and fault codes.
Yellow Highlighting	<b>Yellow highlighting</b> indicates sections that are new or updates in this version of the document, compared to the previous version.

## 1.2 Additional Documentation or Access

For additional product-related technical documents, go to your Memjet Partner Site.

If you need access, enter a case in Service Desk (<https://OEMsupport.memjet.com>), send an email to Memjet Customer Support ([customer.support@memjet.com](mailto:customer.support@memjet.com)), or contact your Technical Account Manager.



## 2 Release Summary

### 2.1 Migrating from R2.x systems:

When migrating from DuraBolt print engines that ran R2.x software, it is necessary to find out if those print engines have Rev2 hardware. One simple way to check this is to see if the wiper home sensor is a microswitch (instead of a Hall sensor). If so, then that module is using Rev2 hardware and the /mnt/durabolt\_config/system/printer-model.conf configuration file must be updated so that 'DELEGATION\_CONFIG\_SET=tandem-1wide.conf' is changed to 'DELEGATION\_CONFIG\_SET=tandem-1wide-SWC2.conf'.

A DMI 'System Reload Configuration' or 'Reboot' is then required.

#### 2.1.1 Instructions for Using with Xitron R2.2.x and R2.3.x Releases

To enable the use of Xitron R2.2.x or R2.3.x RIP software, the following customization must be added to enable the required backwards compatibility mode of operation. Login to the primary DuraBolt module and run the following at the Linux prompt:

```
cp /mnt/durabolt_config/kareela-data/release-customizations/80-  
xitron_compatibility_mode.json /mnt/durabolt_config/kareela-data/customization/
```

In order for the customization to be accepted, the following steps must be followed. Use the DMI Control screen for pm-1-1 and perform a **Reload Configuration**.

## 2.2 Release Information

<b>DPCA install image</b> <a href="#">Durabolt-DPCA-R3.3.0.img.zip</a>	<b>SHA1:</b> <a href="#">73AE6C393CC10867392AB68B8AA18A30B4C236C7</a>
---	--

### 2.2.1 External API Versions

System KPes API version	KPes_69-27 (also supports KPes_69-25 for backwards compatibility with Xitron RIP R2.2.x, R2.3.x)
-------------------------	---

### 2.2.2 OEM Components

<b>JSL Windows Library</b> <a href="#">7-129-3-2-01-JSL_Windows_Library-7-129-3-2-01-JSL_Windows_Library-JSL_R12.5.10_build33.zip</a>	<b>SHA1:</b> <a href="#">C503659E14359D2079FE4F2CA6DE8306984827FD</a>
<b>JSL Linux Library</b> <a href="#">7-129-3-2-04-JSL_Linux_Library-JSL_R12.5.10_build27.zip</a>	<b>SHA1:</b> <a href="#">EBDEA19D3BD6CE8B1A5D780B0B8B9A628F35E08C</a>
<b>PES Client and Configuration Files</b> <a href="#">7-264-3-2-1-durabolt_oem_dev_R3.3.0.zip</a>	<b>SHA1:</b> <a href="#">DAD36814AA45E9C97D97C00A9C6D266D01EF6070</a>

### 2.2.3 Internal Configuration File Versions

- hwparamstore.json file version: 78
- pesSettings.json compatibility ver: 1 (KPesSettings\_10-1)



## 3 Software Installation and Upgrade

### 3.1 Create Installation USB Drive

Procedure to create an installation USB drive from the released system software file:

1. Download and install balenaEtcher via: <https://www.balena.io/etcher/>
2. Copy the [Durabolt-DPCA-R3.3.0.img.zip](#) release file to a local disk (this gives the most reliable flashing results).
3. Locate a 16GiB (16GByte) or larger USB drive.
4. Open the balenaEtcher application and use the **Flash from file** operation to write [Durabolt-DPCA-R3.3.0.img.zip](#) to the target USB drive. There is no need to unzip the file first.
5. If writing to the flash drive failed part-way through, then it may be necessary to use a new USB drive or 'clean' the USB drive [as described here](#) before reattempting the write.

---

**Note:** It is important not to use arbitrary Windows ISO image writing utilities (i.e. Rufus) as these utilities may not correctly reproduce the required LiveUSB drive structure.

---

### 3.2 Upgrading via the DMI

#### 3.2.1 Backup Previous System Configuration (Snapshot)

System configuration and recent log files (used for problem diagnosis) can be collected with the following procedure.

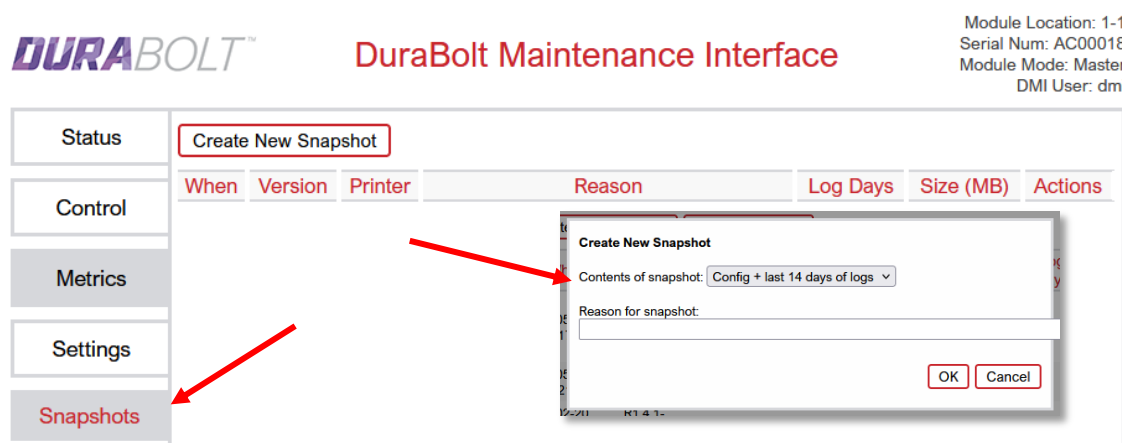
1. Connect to the DMI on the master print module.
2. Click the **Create New Snapshot** function ([Figure 1](#)).
3. In the pop-up dialog box, select the number of days of system logs to include in the snapshot. Enter zero (0) days of logs if you wish to back up the configuration only. Enter a reason string to help identify the snapshot in the future.

---

**Note:** The snapshot creation process can take some time when logs spanning several days are included.

---

**Figure 1 – Snapshot Creation and Date Range Window**



4. Once complete, use the Snapshots download function ([Figure 2](#)) to copy the snapshot zip file off the system.



Figure 2 – Downloading the Snapshot

DURABOLT™

DuraBolt Maintenance Interface

Module Location: 1-1  
Serial Num: B100008  
Module Mode: Master  
DMI User: durabolt

Status

Create New Snapshot

Upload Snapshot

Control

When

Version

Printer

Reason

Log Days

Size (MB)

Actions

Metrics

2024-05-14 11:15:28

R2.0.0

B100008

testPurposeOnly

0

2

⬇️ ⓧ ➡️

Settings

2024-05-08 17:57:12

R2.0.0

B100008

mediaReadyOffset

1

3

⬇️ ⓧ ➡️

Snapshots

Download button

5. The system snapshot zip file is also copied to the "durabolt\_scratch" NFS/Samba network share drive hosted by this print module. The snapshots are located in the `/snapshots/system` subdirectory.

3.2.2 Upgrading the MASTER Print Module Software via USB Drive

To install the DuraBolt system software on the master module using the installation USB drive:

1. Ensure a snapshot of the system has been copied off the master print module, Section 3.2.1. The system snapshot can be copied to the PC (downloaded) using the download button in the DMI.
2. Shutdown the engine and power off the target print module.
3. Insert the installation USB drive into the module USB port. The USB port is located along the rear edge of the horizontally-mounted controller board (at the top of each module). Access to the USB port requires the removal of the rear cover unless a USB extension cable has been fitted.
4. Power on the print module and allow the print module to boot the LiveUSB image. The LiveUSB boot process can take slightly longer than normal to complete (around 2 minutes).
5. Once completed, connect to the DMI web server on the master module.

If the module HAS previously been configured with its module location, then open a web browser to either `http://durabolt-pm-<master stage>-<index>.local/` or to its location-based static network address `http://192.168.100.<x>/` where `<x>` is `(10×<master stage>)+<index>`.

If the module **has not** previously been configured with its module location (e.g. a spare module), then the DMI web server address will be: `http://192.168.100.99/`

Note:

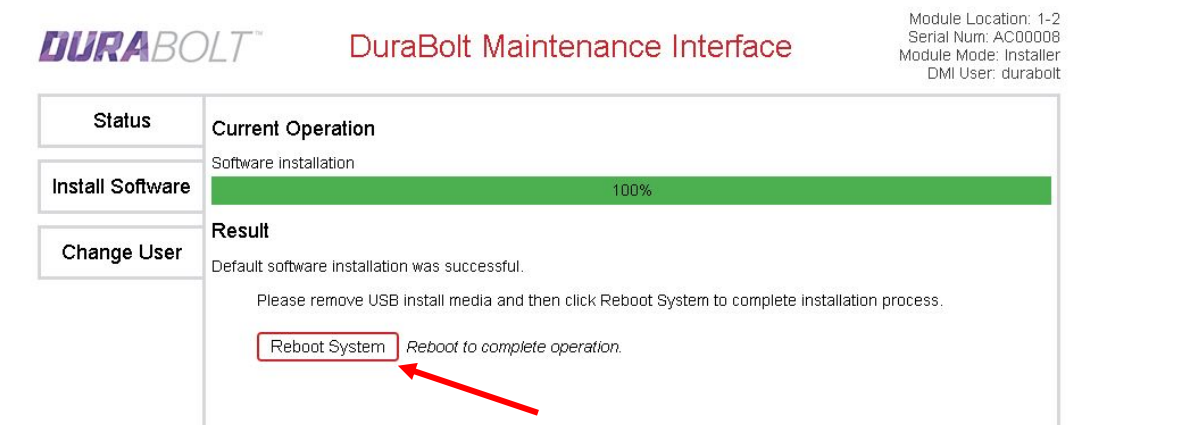
This method can only be used when a single unconfigured module is connected to the private network switch (otherwise an IP address collision will occur).  
Connect modules one at a time when you have multiple unconfigured modules.

6. Login using the 'durabolt' username and 'durabolt' password.
7. Click the **Install Software** function.
  - The installer can automatically restore the initial system configuration from a provided snapshot file.
  - Alternatively, if a matching snapshot file is found in the `/restore-snapshots` subdirectory of the `DBOLT_DATA` partition of the installer USB drive, then the configuration in this file will be automatically applied if no other snapshot file is specified in the web interface.



8. When installation is complete, first remove the installation USB device and then click **Reboot System** to reboot the module ([Figure 3](#)).

Figure 3 – Rebooting the System via DMI



9. The module should automatically reboot.
10. Proceed to [Section 3.2.3](#) to upgrade the software on each slave print module.

3.2.3 Upgrading SLAVE Print Module Software via USB Drive

The master module procedure can also be used for slave modules:

1. Insert the installation USB drive into the slave print module USB port.
2. Power-cycle the slave print module and allow the slave print module to boot the LiveUSB image.

Once booted, connect to the DMI web server on the slave module. To do so, open a web browser to either <http://durabolt-pm-<master stage>-<slave index>.local/> or to its location-based network address <http://192.168.100.<x>/> where <x> is (10\*<master stage>)+<slave index>.

3. Login using the 'durabolt' username and 'durabolt' password.
4. Open the **Install Software** tab in the DMI and click the **Install Software** function to initiate the installation process.

Note: If certain conditions are met, the software may automatically initiate the software upgrade process. This is expected behavior but can take longer than manually initiating the upgrade process. To monitor the status and completion of the installation, open the **Install Software** DMI tab on the slave module.

5. When complete, remove the USB drive and power-cycle the slave print module. No system configuration restoration is needed for slave print modules. All configuration comes from the master print module.
6. You can check that the slave print module is running with the new/desired software version by opening the DMI on the slave module and checking the **Status** tab.

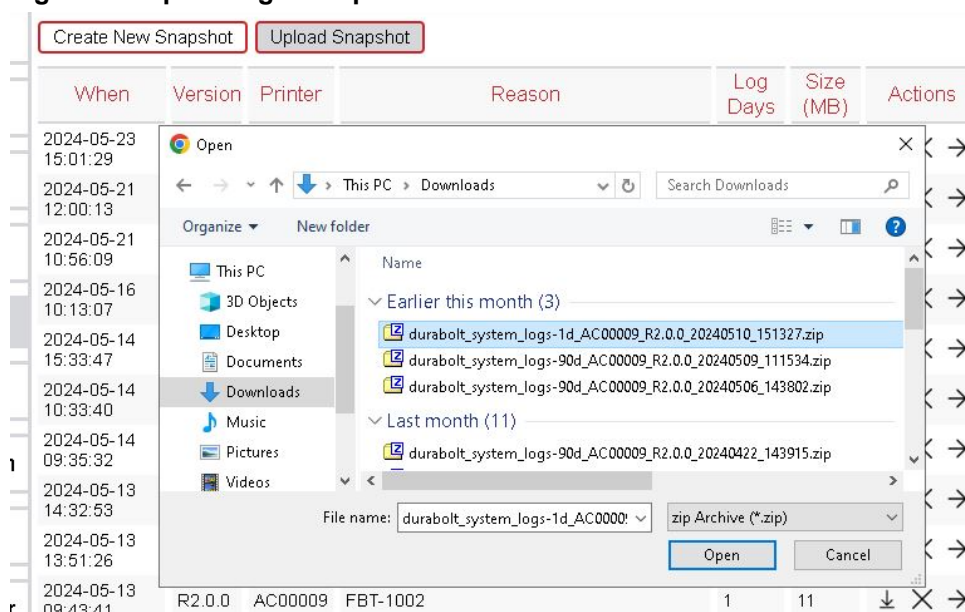
Note: The software version displayed when the module has been booted from the LiveUSB image is the software version of the **installer**, and not the software version currently installed on the print module.

3.3 System Configuration Restoration After Upgrade

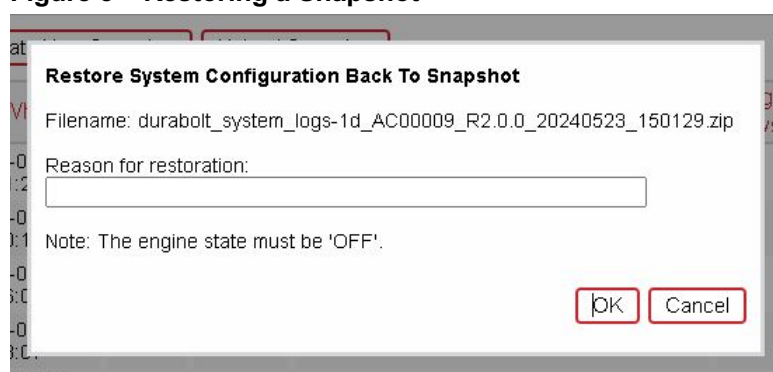
This process describes how to restore system software configuration after a system software upgrade (or at other times) from a previously generated system snapshot.



1. Connect to the DMI on the master module.
2. Use the Snapshots **Upload Snapshot** function to upload the desired snapshot file ([Figure 4](#)).

**Figure 4 – Uploading a Snapshot**

3. Use the Snapshots restore function to start the restoration, the '-'> icon next to the desired snapshot entry.

**Figure 5 – Restoring a Snapshot**

4. Once complete, click the **Reboot System** button to reboot all modules. Only the following files and directories are restored from the snapshot:

```

/mnt/durabolt_config/kareela-data/state/pesSettings.json
/mnt/durabolt_config/kareela-data/customization
/mnt/durabolt_config/delegation-data/customization
/mnt/durabolt_config/gymea-data/customization
/mnt/durabolt_config/gymea-data/certificates
/mnt/durabolt_config/system
host SSH keys (if the snapshot's module serial number matches the target)

```



## 3.4 Customizing System Configuration

The `/mnt/durabolt_config` location is exported by each master module using a read-only NFS and Samba file share (so that all slave print modules have access to this configuration location). All customized files should be strictly limited to files in this directory on the master module.

Specifically, the following master-print-module filesystem locations are provided for DuraBolt system configuration customization by an OEM:

`/mnt/durabolt_config/system/printer-model.conf`

This file selects the active software configuration sets used for each of the Kareela, Delegation and Gymea modules.

This file should only need modification during system commissioning.

`/mnt/durabolt_config/system/timezone`

If this file exists, then the timezone in this file is applied to all modules (e.g., An example of a valid Linux timezone value is 'US/Pacific')

The system will use UTC as its timezone if the file does not exist. The value can also be changed in the DuraBolt Maintenance Interface.

`/mnt/durabolt_config/system/network-hosts.conf`

This file is used to generate mDNS hostnames and DHCP address bindings for auxiliary network equipment.

`/mnt/durabolt_config/system/syslog-forwarding.conf`

The settings in this file (if present) allow log system messages to be forwarded to a separate log capture system.

`/mnt/durabolt_config/kareela-data/customization`

Kareela is the software component which implements the KPes Thrift API and co-ordinates all hardware components at the top-level.

These files should only need customization during commissioning and only at the instruction of an authorized system technician. Thereafter they simply need to be restored across upgrades:

`/mnt/durabolt_config/gymea-data/certificates`

Files in this directory are copied into the run-time Gymea certificates directory.

At minimum this directory will need to contain the PrinterKeyStore file corresponding to the assigned Memjet brand partner:

`/mnt/durabolt_config/gymea-data/customization`

Gymea is the software component which handles the low-level print data handling functions. This directory contains XML files which augment the released Gymea configuration based on a module's location and orientation.

These configuration files should only need to be customized at the instruction of an authorized system technician.

`/mnt/durabolt_config/delegation-data/customization`

Delegation service (also known as PDL service) is the software component which implements specific algorithms within the printer. These configuration files should only need to be customized at the instruction of an authorized system technician.

---

**Note:** All files in the above `durabolt_config` directory are included verbatim in a system snapshot archive.

---

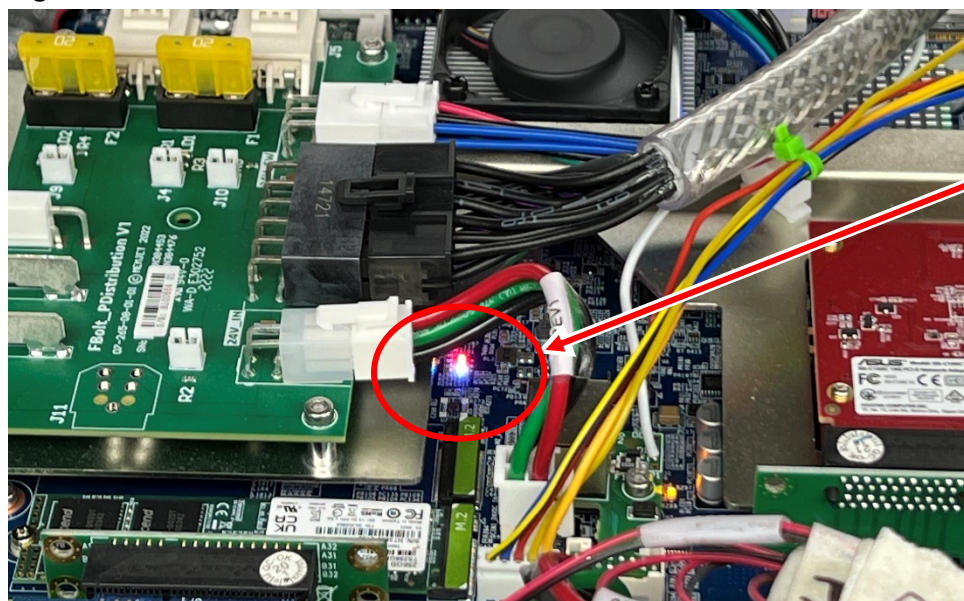


### 3.5 Ross Board Status LEDs Definitions

The Blue LED flashes when the DuraBolt Maintenance Interface webserver is running. As the DMI should always be running, the Blue LED acts as a Linux platform heartbeat.

**Note:** The Ross board uses blue, orange, and red status LEDs to indicate the state of the print module. The location of these LEDs ([Figure 6](#)) means they are not visible when the print module enclosure is closed, and their use is limited to a technician or while the module cover is open.

**Figure 6 – Master Module LED Location on Master Module**



Location of  
Red/Blue and  
Orange LEDs on  
Master Module

#### 3.5.1 Master Module

The Orange LED indicates when the DuraBolt engine state is not 'OFF' and the Red LED indicates either an engine fault or DuraBolt service error as indicated below:

**Table 1 – Master Module LED Indications**

Orange LED	Red LED	Meaning
Flashing	Off	Engine is currently in an active state.
On	Off	Engine in an IDLE state, no DuraBolt service errors.
On	On	Engine in a FAULT state, no DuraBolt service errors.
Off	Off	Engine in an OFF state, no DuraBolt service errors.
X	Flashing	DuraBolt service errors exist.

#### 3.5.2 Slave Modules

The Orange LED indicates the master module can be contacted and the Red LED indicates a module error as indicated below:

**Table 2 – Slave Module LED Indications**

Orange LED	Red LED	Meaning
On	Off	Master module reachable, no DuraBolt service errors (normal).
On	Flashing	Master module reachable, DuraBolt service errors exist.
Off	Flashing	Master module NOT reachable.



---

Note: Master module reachability is determined by testing access to the master module NFS exports. DuraBolt service errors are indicated if the primary DuraBolt applications are not running.

---

When running the LiveUSB installer image (regardless of module type), the status LEDs indicate software installation progress.

**Table 3 – Software Installation Progress LEDs**

Blue LED	Orange LED	Red LED	Meaning
Fast Flash	Off	Off	LiveUSB image running; no installation attempted.
Off	Alternating Orange/Red Flashing		Software installation in progress.
Off	Flashing	Off	Software installation completed successfully.
Off	Off	Flashing	Software installation DID NOT complete successfully.



## 4 New Features and Improvements since R3.2.0

This section describes enhancements made to the software in this release.

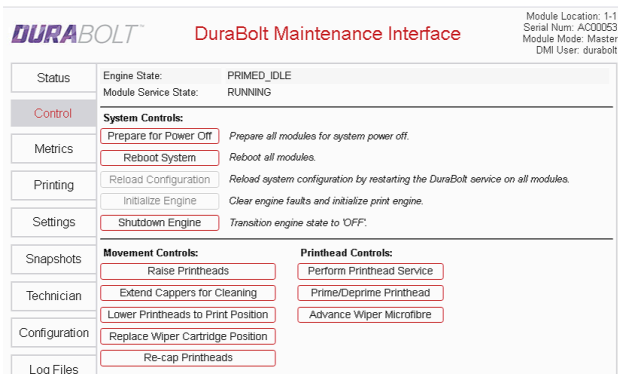
### 4.1 System

- 1. Support new alignment service via the DMI. This is detailed in the latest installation guide (Version 2.0).
- 2. Support for new model of degasser in LCIDS modules (there is no configuration required. SW will work with either degasser type and MUST be used for the new degasser)
- 3. Documented how to create a reference snapshot for easier installs. Refer to the [ReleaseNotes.txt](#) file in the section named “Creating a reference snapshot for customer installs.”
- 4. Documented how to set up access to the durabolt\_config network share from Windows. Refer to the [ReleaseNotes.txt](#) file in the section named “Accessing the durabolt\_config network share from Microsoft Windows.”

### 4.2 DuraBolt Maintenance Interface (DMI)

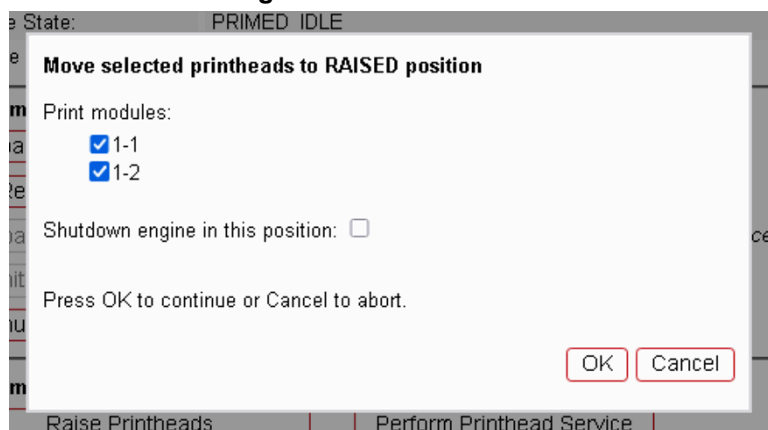
- 1. Redesigned the Control tab to provide easier access to common operator operations:

Figure 7 – Common Operator Operations



- 2. Supports the ability to shut down the print engine with the printhead in positions other than CAPPED. This is done in the dialog box that pops up when moving the printheads to a specific position, as shown here (note that these controls are in the Control tab now, as noted above):



**Figure 8 – Shutdown Engine in this Position**

3. Improved the format of the job id strings used on Send Test Print File tab

### 4.3 Print Engine Supervisor (Kareela)

4. Added configuration to control printhead stitch overlap size





## 5 Bug Fixes

The section includes corrections implemented in this release.

1. Fixed issue where the color-specific ink formulation pulsewidth multiplier was being applied to incorrect PH channel. This allows the inkFormulationOverride PES setting to be used.
2. Stopped the system from regulating the LCIDS IR tank around FULL level after Prime algorithm is run as was the intended functionality.
3. Changed PAUSE\_DELAY\_PAGES setting to be the maximum of pepQueueMaxPages/2 or 2 instead of always setting to 2 pages. Also changed to set this in prepareToPrint() instead of pauseAsap().
4. Fixed pesClientExample so that it properly sets the targetPage when pausing printing.
5. Fixed the print speed comparison logic in the DMI when printing from the DMI to avoid incorrect failures.
6. Changed algorithm to use a slower initial/final lifter movement when uncapping/capping on all systems to reduce the tendency for the low pressure in the cap to hold it to the printhead as it is lifted.
7. Fixed logic to ensure the Ink formulation pulse width multiplier is applied in Tandem systems.
8. Fixed installer to automatically install slip-streamed reference snapshots with the naming durabolt-pm-1-1\_config\_reference\_<id>.zip.
9. Fixed the DMI to Properly accept and display reference snapshot files.
10. Enable Kirrawee DEBUG logging by default.
11. Add durabolt-net-monitor logs to system snapshot.
12. Change DMI Shutdown Engine logic to only restart the Kareela process when needed.
13. Include media encoder prescaling customization files to reduce jitter (supporting a divide by 4 and 8)
14. Update the IDS service algorithm to leave the pinch valves in the 'safe' position when used with the PrimeldsUsingSetupPrinthead and RestoreIds functions.
15. Fixed the DMI logic Printing tab to ensure no duplicate job ID is used after a SW upgrade
16. When using the DMI to print from the Printing tab UI, there is now a "resume printing" feature that is displayed after mid-job service if 'Use Automatic Start Printing' option is enabled.
17. Avoid wide double-strength KWS band at overlap in N-wide systems
18. Fixed printing from the DMI to work properly when using the Test Print File 'Start Page' property.
19. Changed the behavior of pressing 'Clear Job Queue' during PreJob in the DMI so that it reports "currently printing" instead of finishing printing and leaving the job in the job queue.





## 6 Known Issues

The section details known issues with this or past releases.

1. GyMEA can potentially assert when print job is cancelled (race condition). This is not a new issue and is rare. Will be fixed in an upcoming release.
2. Pumps will be left running with PH uncapped if GyMEA asserts during printing. This is not a new issue and is rare. Will be fixed in an upcoming release.
3. Job completion log CSV format is not accepted by MS Excel.
4. Kareela: Memory usage continually grows over time when controlling LCIDS. This is not a new issue and is rare. Restarting the machine every 2-3 weeks avoids the issue. Will be fixed in an upcoming release.
5. The display in the DMI of the currentMediaSpeed is incorrect if MID prescale != 1. This does not affect operation, just speed display.
6. KWS margins are not disabled for an alignment chart print on N-wide system and can cause double KWS in the stitch zone.
7. Cancel job timeout on one GyMEA caused job to be repeatedly added back into aggregated queue.
8. No immediate engine fault if GyMEA service is stopped while system idle.
9. DMI: media\_present\_current\_state value always shows as deasserted if TOF input used instead of MP input.
10. Kareela should only allow printOnMedia=true when tofSyncMode=ALL\_PAGES and JIT is disabled.
11. Lifter/wiper/capper obstruction not detected during system initialize.
12. Wiper cartridge index count is not maintained across upgrades.
13. Inserting an ink dongle can "knock-out" the adjacent one (workaround is to remove and reinsert).

