

MetaXpress® 6 Software Guide

Setting Up New Hardware Profiles for IXM-XLS



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- The purpose of this chapter is to guide the user through setting up new hardware profiles on the ImageXpress Micro XLS in Single or Multi-User Mode.
- Setting up new hardware profiles for the IXM-Confocal <u>will not</u> be covered in this chapter. Refer to corresponding chapters for details on these processes.





Before Creating A New Hardware Profile

1. Be sure to **quit MetaXpress and/or MDCStore Tools before beginning.** Otherwise you will see the following error message:



- 2. Back up the following existing settings for your current MetaXpress hardware profile(s):
 - a) Magnification Settings (C:/MX6/app/mmproc/DATA folder and/or any file ending in .MGS)
 - b) Illumination Settings (C:/MX6/app/mmproc/DATA folder and/or any file ending in .ILS)
 - c) Calibration Settings (C:/MX6/app/mmproc/DATA folder and/or any file ending in .CAL)
 - d) Contents of Hardware folder (C:/MX6/Hardware)





Launching Meta Imaging Series Administrator

- 1. Be sure to **quit MetaXpress** and/or MDCStore Tools (if open), then launch the Meta Imaging Series Administrator software.
 - Click the **Start** button in Windows.
 - Select the **All Programs** option from the pop-up menu.
 - Select the **MetaXpress 6** folder.
 - Right-click on the Meta Imaging Series Administrator program and select the Run as administrator option.
 - When the **User Account Control** dialog appears, click **Yes**.





Create New Hardware Setting from Existing

2a. Create a new hardware setting based on an existing profile in Meta Imaging Series Administrator (MMAdmin).

- Double-check and note the name of the current hardware profile/group that you are using. You will need this information for copying settings in this step.
- Click on the Configure Hardware button in the Meta Imaging Series Administrator: Single User Configuration dialog.
- Click on the Create New Setting button within the Configure Hardware dialog.

🐠 Meta Imaging Series Adn	ninistrator: Single User Configuration	×		
List of Groups Group Name	Hardware Setting File Association	Select a Group and Press a Button to Customize:		
MetaFluor MetaFluor Offline MetaMorph	Default Offline Default	Assign Hardware		
MetaMorph Offline MetaVue	Offline Default	Drop-ins/Toolbars		
MetaXpress	Default	Clear Settings		
•	•	Edit Defaults		
Pressing Set File Association will set the default group and the group to be launched when .stk and .tif images are double-clicked in Explorer (marked by *)				
Enter Multi-User Mode	Configure Hardware	Launch MDCStoreTools		
Set Administrator Password	Create Icons	ОК		

Hardware Settings:	
4X PA-10X PA-20X PA-40X PA_0	Configure Acquisition
Derault	Configure Devices
	Rename Setting
	Delete Setting
۰ III ا	Create New Setting
Install System Devices	ОК



Create New Hardware Setting from Existing

2b. Create a new hardware setting based on an existing profile in Meta Imaging Series Administrator (MMAdmin).

- Enter a name for your new hardware profile in the Setting Name field of the Create New Setting dialog. (TIP: Name your new hardware profile to reflect the objectives/filter cubes that you plan to include in the hardware configuration.)
- Click on the Copy Settings From dropdown and select an existing hardware profile. This step ensures that the new hardware profile will retain basic settings from the existing profile that you can easily modify later.
- Click OK. You will now see your new hardware profile appear in the Hardware Settings field of the Configure Hardware dialog.







Assigning Objectives & Filters

3a. Assign objectives and filters for your new hardware profile.

- Left-click once to highlight your new hardware profile in the Hardware Settings field of the Configure Hardware dialog.
- Click on the **Configure Devices** button within the **Configure Hardware** dialog. *NOTE: The ImageXpress Micro XLS hardware will initialize when you click on this button, so it may take a few seconds for the next dialog box to appear.*
- The **User Settings** dialog box for your selected hardware profile will appear.

Configure Hardware	×
Hardware Settings:	
4X PA-10X PA-20X PA-40X PA	Configure Acquisition
Default	Configure Devices
	Rename Setting
	Delete Setting
<	Create New Setting
Install System Devices	OK
Install System Devices	/D-40X SPF ELWD' hardware config
Install System Devices Iser Settings for '4X PA-10X PF-20X SPF ELW Available Devices	/D-40X SPF ELWD' hardware config
Install System Devices Iser Settings for '4X PA-10X PF-20X SPF ELW Available Devices	D-40X SPF ELWD' hardware config
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Install System Devices Iser Settings for '4X PA-10X PF-20X SPF ELW Available Devices	/D-40X SPF ELWD' hardware config Claimed Devices Claimed Devices ImageXpress Micro X ImageXpress Micro X ImageXpress Micro Z
Install System Devices User Settings for '4X PA-10X PF-20X SPF ELW Available Devices	/D-40X SPF ELWD' hardware config Claimed Devices Claimed Devices Cl
Install System Devices User Settings for '4X PA-10X PF-20X SPF ELW Available Devices	/D-40X SPF ELWD' hardware config Claimed Devices Claimed Devices Claimed Devices ImageXpress Micro X ImageXpress Micro Z ImageXpress Micro Dijective ImageXpress Micro Dijective ImageXpress Micro Dijective ImageXpress Micro Shutter ImageXpress Micro Shutter ImageXpress Micro Auto Focus Se D- Lumencor Light Engine
Install System Devices Jser Settings for '4X PA-10X PF-20X SPF ELW Available Devices	/D-40X SPF ELWD' hardware config Claimed Devices Claimed Devices Cl
Install System Devices Jser Settings for '4X PA-10X PF-20X SPF ELW Available Devices	/D-40X SPF ELWD' hardware config Claimed Devices Claimed Devices Claimed Devices Claimed Devices ImageXpress Micro X ImageXpress Micro Objective ImageXpress Micro Objective ImageXpress Micro Objective ImageXpress Micro Objective ImageXpress Micro Objective ImageXpress Micro Objective ImageXpress Micro Auto Focus Se Lumencor Light Engine Lumencor Red Shutter Lumencor Green Shutter Lumencor Green Shutter Lumencor Green Shutter ImageXpress Micro Auto Focus Se

Apply

0 devices available. 3 devices claimed.





Cancel

Remove All

ΟK

Assigning Objectives & Filters

3b. Assign objectives and filters for your new hardware profile.

- Double-click on ImageXpress Micro Objective in the Claimed Devices field of the User Settings dialog.
- The ImageXpress Micro Objective Settings
 dialog box appears.
- Enter the appropriate Objective Labels, Refraction Medium, Numerical Aperture, and Working Distance values for your selected objectives in this dialog. NOTE: These values can be obtained by consulting the labels printed on your objectives. For objectives that have a working distance range indicated, enter the largest value for that objective.







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Assigning Objectives & Filters

3b. Assign objectives and filters for your new hardware profile.

- Double-click on ImageXpress Micro Filter Cube in the Claimed Devices field of the User Settings dialog.
- The ImageXpress Micro Filter Cube Settings dialog box appears.
- Enter the appropriate **Filter Cube** names for your selected objectives in this dialog. *NOTE: You can click on the "Eject filter cubes" button in this dialog to safely eject the filter cube slider to confirm positions of your selected cubes.*
- Click OK.

	Llaimed Devices
	ImageXpress Micro ImageXpress Micro X ImageXpress Micro Y ImageXpress Micro Dijective ImageXpress Micro Filter Cube ImageXpress Micro Filter Cube ImageXpress Micro Auto Focus Se Lumencor Light Engine Lumencor Red Shutter Lumencor Green Shutter Lumencor Cyan Shutter
Add All Add >> Status O devices available, 3 devices claimed.	<< Remove Settings Remove All





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Returning to the Meta Imaging Series Administrator Dialog

4. Return to the main Meta Imaging Series Administrator dialog.

- You will be returned to the **User Settings** dialog for your selected hardware profile. Click **Apply**, then click **OK**.
- You will now be returned to the **Configure Hardware** dialog; click **OK**.

ser Settings for '4X PA-10X PF-20X SPF ELWE	D-40X SPF ELWD' hardware config 📃 🛛
Available Devices	Claimed Devices
	ImageXpress Micro ImageXpress Micro X ImageXpress Micro Z ImageXpress Micro Dbjective ImageXpress Micro Dbjective ImageXpress Micro Shutter ImageXpress Micro Shutter ImageXpress Micro Auto Focus Se Lumencor Light Engine Lumencor Green Shutter Lumencor Green Shutter ImageXpress Micro Plater
Add All Add >> Status 0 devices available. 3 devices claimed.	<< Remove Settings Remove All OK Cancel
Configure Hardware	×
Hardware Settings: 4X PA-10X PA-20X PA-40X PA 4X PA-10X PF-20X SPF ELWD Default	_I Configure Acquisition -4 Configure Devices
	Rename Setting
	Delete Setting
Install System Devices	
[L	



Creating A Group for New Hardware Profile

5a. Enter Multi-User Mode and create a new Group named for your new hardware profile.

- Click on the Enter Multi-User Mode button in the Meta Imaging Series Administrator dialog.
- The Meta Imaging Series Administrator: Multiple User Configuration dialog will appear.
- Click on the **Create Group** button.

Meta Imaging Series Admi	nistrator: Single U	ser Configura	tion	 X	
e meta iniging series Admi	nistration onlyic o	ser conngura	cion		
List of Groups Group Name MetaFluor MetaFluor Offline MetaMorph MetaMorph Offline MetaVue MetaXpress I III Pressing Set File Association w be launched when .stk and .tif (marked by *)	Hardware Setting Default Offline Default Offline Default Default	File Associat	ion S a µpto er	elect a Group and Pres Button to Customize: Assign Hardware Drop-ins/Toolbars Clear Settings Edit Defaults Set File Association	ss
Enter Multi-User Mode	Configure H	Hardware	L	aunch MDCStoreTools	
Set Administrator Password	Create	lcons		UK]
Set Administrator Password Meta Imaging Series Administrator Groups	Create	ation	Users-		
Set Administrator Password Meta Imaging Series Administrator Groups Groups	Create	ation << Add User Remove User >>	Users Admin Screen	UK X	
Set Administrator Password Meta Imaging Series Administrator Groups Groups Groupt MetaMorph Default MetaMorph Offline MetaMorph Offline MetaVue Default MetaXpress MetaXpress Default MetaXpress MetaXpress MetaXpress MetaXpress Default MetaXpress	Create	ation ation << Add User	Users Admin Screen Crea	te Delete Modify r User User	



Creating A Group for New Hardware Profile

5b. Enter Multi-User Mode and create a new Group named for your new hardware profile.

- Within the **Create Group** dialog:
 - Enter the name for your new hardware profile in the **Group Name** field.
 - Select **MetaXpress** from the **Application** dropdown.
 - Select your new hardware configuration from the Hardware Configuration dropdown.
 - Select MetaXpress from the Copy Settings From dropdown.
 - Click on the **Create** button.

(Create Group	X
	Group Name:	0X Plan Fluor-20X SPF ELWD-40X SPF ELWD
	Application:	MetaXpress 💌
	Hardware Configuration:	4X PA-10X PF-20X SPF ELWD-40X SPF EL
	Copy Settings From:	MetaXpress
	Create	Cancel





Creating A Group for New Hardware Profile

- 5c. Create an icon for your new MetaXpress Hardware Configuration.
 - You will be returned to the Meta Imaging Series Administrator: Multiple User Configuration dialog.
 - You will see your new hardware profile group appear in the **Groups** field. Click on the group name to highlight it.
 - Next, shift-click to highlight any users in the **Users** field and then click **Add User** to add them to the new hardware profile.
 - If you began the workflow in Single User Mode, click on the Enter Single-User Mode button. If you typically work in Multi User Mode, then proceed to the next step.

Groups Groups HANDA-10X Plan Fluor-20X SPF 4X PA-10X PF-20X SPF	Multiple User Configu ELWD-40X SP	ration	Users Administri Screening	ator
Administrator Screening MetaFluor Aefault MetaFluor Offline	•	<< Add User		
Create Delete Rename Group * - Set Default Group And File	Edit Group Edit User Associations		Create User	Delete User User
Enter Single-User Mode	Configure Hardware	Usage Statistic	\$	Launch MDCStoreTools
Set Administrator Password	Create Icons	Erase Statistic	5	OK





Create an Icon for New Hardware Profile

5d. Create an icon for your new MetaXpress Hardware Configuration.

- You will be returned to the Meta Imaging Series Administrator: Single User Configuration OR Multi-User Configuration dialog.
- You will see your new hardware setting appear in the **List of Groups** field.
- Click on the **Create Icons** button. *NOTE: Meta Imaging Series Administrator will need to be run "As Administrator" in order to create icons as noted in slide #1 of this training module.*
- Click OK to exit the Meta Imaging Series
 Administrator software.
- Navigate to the MetaXpress 6 folder shortcut on your Windows desktop; doubleclick and view the contents to confirm creation of your new hardware profile icon.

🔟 Meta Imaging Series Adı	ministrator: Single User	Configuration	×
List of Groups	Hardware Setting		Select a Group and Press
4X PA-10X Plan Fluor-20X MetaFluor MetaFluor Offline	S 4X PA-10X PF-20X S Derault Offline	PF ELWD-40X	Assign Hardware
MetaMorph MetaMorph Offline MetaVue	Default Offline Default		Drop-ins/Toolbars
MetaXpress	Default		Clear Settings
•		Þ	Edit Defaults
Pressing Set File Association be launched when .stk and . (marked by *)	will set the default group a tif images are double-click	and the group to ed in Explorer	Set File Association
Enter Multi-User Mode	Configure Hard	lware	Launch MDCStoreTools
Set Administrator Password	Create Icor	15	ОК



Name	Date modified	Туре	Size
3 4X PA-10X Plan Fluor-20X SPF ELWD-40X SPF ELWD	4/18/2016 1:22 PM	Shortcut	2 KB
Documentation Files on Installation Disk	11/18/2015 5:56 PM	Shortcut	1 KB
🗊 Meta Imaging Series Administrator	1/4/2016 10:20 AM	Shortcut	1 KB
🔝 Meta Imaging Series Updater	1/4/2016 10:20 AM	Shortcut	1 KB
MetaFluor Offline	4/18/2016 1:22 PM	Shortcut	2 KB
MetaFluor	4/18/2016 1:22 PM	Shortcut	2 KB
🕅 MetaMorph Offline	4/18/2016 1:22 PM	Shortcut	2 KB
🕅 MetaMorph	4/18/2016 1:22 PM	Shortcut	2 KB
MetaVue	4/18/2016 1:22 PM	Shortcut	2 KB
😥 MetaXpress	4/18/2016 1:22 PM	Shortcut	2 KB





Updating Magnification Settings in MetaXpress

6a. Check, modify, and back up Magnification Settings for your new hardware profile.

- Double-click on the icon for your new hardware profile and log into MetaXpress as usual.
- From the **Control** menu, select **Devices**, then **Configure Magnification**.
- The **Configure Magnification** dialog box appears.
 - In the **Defined Settings** field, click to highlight any settings that do not match your new configuration.
 - For each objective that you would like to remove, click the **Remove** button.







Updating Magnification Settings in MetaXpress

6b. Check, modify, and back up the **Configure Magnification** settings for your new hardware profile.

- Enter the name for each new objective in the Name field.
- Ensure that the ImageXpress Micro
 Objective box is selected in the Setting field.
- Choose the appropriate objective position from the dropdown, then click the Add/Replace button to add the new objective to the Defined Settings field.
- Click the **Backup** button when you are done to open a browser that will allow you to save these settings to a desired location.
- Click Close to exit the Configure
 Magnification dialog.



NOTE: You will need to run the Parfocality/XY Offsets workflow before using this new hardware profile. Please consult the dedicated training module for guidance on how to do this.





Updating Calibration Settings in MetaXpress

7. Check, modify, and back up the **Calibrate Distances** settings for your new hardware profile.

- From the **Measure** menu, select **Distances**, then **Calibrate Distances**.
- The Calibrate Distances dialog box appears.
- Within this dialog, click on the magnification dropdown next to each calibration name that keys to your selected objective(s) for this profile and select your desire objective(s).
 - Make sure that EACH of your selected objectives is assigned to ONLY ONE calibration value.
 - Check to ensure that X and Y values match each other and that the selected Units is set to "um"for each calibration value.
- Make sure that each objective in your hardware profile is assigned a calibration!
- Click the **Save to File** button to open a browser that will allow you to save your settings.



0	🔉 Calibrate Dista	inces					
Ir	nage:	[No Applicab	le Images]				
Ir	nage Calibration: Calibration	[None] [None]					
	Last loaded/save	ed calibration fi	ile: C:\MX6\a	pp\mmproc\DA	TA\IXM-C Emulati	ion Calibration Se	ttings
	Name	X	Y	Units	Magnification	Camera	^ +
	[None]	1 0000	1.0000	Pivels 👻	[None] 🔍 👻	[Any] 🗸 🔻	[An
	10× Calibration	0.6520	0.6520	um 💌	10X Plan Ap	[Any] 🛛 💌	[An = 📉
	40× Calibration	0.1625	0.1625	um 💌	40X Plan Ap 🕙	[Any] 🛛 💌	[An 🔺
	4× Calibration	1.6250	1.6250	um 💌	4X Plan Apo 🔄	[Any] 🛛 💌	[An
	20X Calibration	0.3350	0.3350	um 🔻	20X Plan Ap 🔻	[Any] 🛛 💌	[An 🔸
	60X Calibration	0.1083	0.1083	um 💌	[None] 🗸 💌	[Any] 🔹	[An _
	•				I I	·	
				Calibra	te by Region	Load from File	Save to File
				Ap	oply Apply	To All Open Imag	ges Close

NOTE: You may need to run the Pixel Calibration workflow before using this new hardware profile. Please consult the dedicated training module for guidance on how to do this.



Updating Illumination Settings in MetaXpress

8a. Check, modify, and back up the **Configure Illumination** settings for your new hardware profile.

- From the Control menu, select Devices, then Configure Illumination.
- The **Configure Illumination** dialog box appears.
 - In the **Defined Settings** field, click to highlight any settings that do not match your new filter configuration.
 - For each filter that you would like to remove, click the **Remove** button.
- Click the **Save to File** button to open a browser that will allow you to save your settings.





NOTE: The screenshots shown here pertain to the standard Sola II light source. If your system has a custom light source, your settings may differ from what is shown here.





Updating Illumination Settings in MetaXpress

8b. Check, modify, and back up the **Configure Illumination** settings for your new hardware profile.

- Enter the name for each new filter in the **Name** field.
- Enter the emission wavelength for the filter cube in the **Wavelength** field.
- Ensure that the **ImageXpress Micro Filter Cube** check box is selected in the **Device Positions** field.
- Choose the appropriate **filter position** from the dropdown.
- Ensure that the **Lumencor Intensity** value is set to **100**, that the **Lumencor Shutter** check box is enabled and that the **Active** radio button is selected.
- Click the Add/Replace button to add the new filter to the Defined Settings field.
- Click the **Backup** button when you are done to open a browser that will allow you to save these settings to a desired location.
- Click Close to exit the Configure Illumination dialog.

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NOTE: The screenshots shown here pertain to the standard Sola II light source. If your system has a custom light source, your settings may differ from what is shown here.



Checking/Updating Shading Correction Settings

9. Create new **Shading Correction** images (only if you are using the **Legacy Shading Correction** during image acquisition).

- You can check this by:
 - Opening an existing image acquisition protocol from the **Plate Acquisition** dialog.
 - Then clicking on the **Configure** tab.
 - Then clicking on an individual **Wavelength** tab (such as **W1**).
 - Noting if Legacy Correction has been selected from the Shading Correction dropdown.
- Please consult the dedicated training module on Generating Shading Correction Images for details on how to generate new shading reference images.

Contigure Run	Unap order and room room
Dijective and Camera- 10X Plar Plate- 96 Wells (8x12)	Illumination: TRITC
Sites to Visit- single site Acquisition	Exposure (ms): 750 🚖 Auto Expose Target max intensity: 30000 🛓
Autofocus Wavelengths W1 TRITC W2 FITC	Post-laser offset (um) Laser with z-offset
lisplay	Calculate Offset Image Step (um) Calculate Offset Image Step (um)
	Acquisition Options
	Digital Confocal (info)
	Shading Correction: Legacy Correction shading_10X Plan Apo_widefield_TRITC.TIF





Exiting MetaXpress Software to Save Settings

10. Exit MetaXpress software to save your new hardware profile settings.

- Select the **File** menu, then select **Exit**.
- Alternatively, hold down the **Shift** key, then select the **File** menu, then select **Exit**.

MetaXpress						
File	Edit	Control	Measure	Screening	Window	Help
	New					Ctrl+N
	Open.					Ctrl+O
	Open in 4D Viewer					
	Close.					Ctrl+W
	Close All Images					
	Save					Ctrl+S
	Save A	\s			Ctrl	+Shift+S
	Save P	artial As				
	Revert	to Saved.				
	Setup Sequential File Names					
	Save Using Sequential File Name					Ctrl+U
	Find Images					Ctrl+F
	Print					Ctrl+P
	Print S	Stack				
	Run Program					
	Exit					Ν





Support Resources

- F1 / HELP within MetaXpress® Software
- Support and Knowledge Base: <u>http://mdc.custhelp.com/</u>
- User Forum: http://metamorph.moleculardevices.com/forum/
- Request Support: <u>http://mdc.custhelp.com/app/ask</u>
- Technical Support can also be reached by telephone:
 - 1 (800) 635-5577
 - Select options for Tech Support → Cellular Imaging Products → ImageXpress Instruments





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