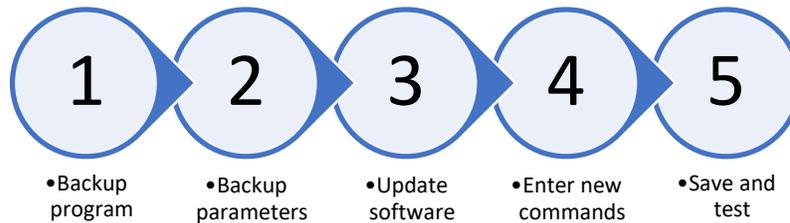


Five easy steps for migrating to v5.3.x

Original instructions (EN)
Version: 1.0



This document is ONLY relevant if you have all the below and need to update to v5.3.x:

- ✓ A Universal Robot, CB3 or e-Series
- ✓ Software 5.2 or earlier on URCap and/or Compute Box / Eye Box
- ✓ Existing Universal Robot program with **HEX-E/H** program nodes

The new v5.3.x URCap comes with many improvements on the HEX sensor functionality. But since it is a major improvement, the **commands are renamed** and therefore the **UR program needs to be migrated**.

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Instructions

1. Make sure that there is a **backup** of the UR programs (old) before you proceed. Please refer to the UR's instructions on this is performed.
2. **Before** the new URcap is installed (and the Compute Box/ Eye Box is updated), open all the UR programs that contains any of the commands (old) and note the command parameters. These parameters are used in the commands (new) during the migration.
3. Update the Compute Box/Eyes Box software and uninstall the old URcap and **then** install the new one.
4. Open the UR program to be migrated and do the migration accordingly:

Commands (old) before v5.3.1	Commands (new) after v5.3.1	Migration steps needed (short version)	Same functionality after migration
F/T Insert Part → F/T Search → F/T Control → F/T Move →	HEX-Insert Part HEX-Search HEX-Force Control Trajectory	<ol style="list-style-type: none"> 1. Insert the new command next to the old command. 2. Copy the command parameters from the old to the new (do not forget to check the advanced parameters if there is any). 3. Remove the old command 	Yes (improved)
F/T Waypoint →	OnWaypoint	Same as above for the Fixed waypoints. The Relative points needs to be re-taught.	Yes (except the variable type option)
F/T Path →	Path from Hand Guide	The old Paths (.ofp) needs to be converted to new Paths (.orp) in the WebClient > Path menu.	Yes (improved)
F/T Zero →	HEX-Zero	Replace the old command with the new one.	Yes (same)
F/T Guard →	Functionality removed	Use the UR's built-in If command with e.g.: F3D > Limit, and enable the "Check expression continuously" option	No (but alternative solution is provided)

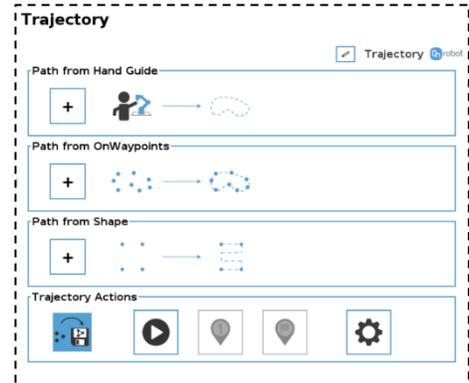
5. Test the new commands, save the program.

Migration is now completed.

Additional information for the migration

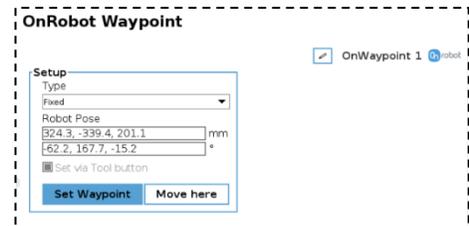
F/T Move -> Trajectory

Please use the Trajectory instead of F/T Move. The type of the Trajectory (Absolute or Relative) can be found in the Trajectory option, instead of the F/T Waypoint or F/T Path settings. There are three ways to define a Trajectory: Path from Hand Guide, Path from OnWaypoints and Path from Shape. These nodes should be placed inside the Trajectory tree. Trajectory is more practical compared to F/T Move in terms of flexibility: the user can combine the three path types unlimited times in the same Trajectory. Moreover, reverse move and nominal speed options are introduced in the latest OnRobot URcap.



F/T Waypoint -> OnWaypoint

In the new system, the OnWaypoint should be part of the Path from OnWaypoints node. Fix waypoints can be set similarly as previously. To get a relative Trajectory, at least two OnWaypoints need to be set in the same Path from OnWaypoints node. Variable waypoint type is no longer available, please use fix type instead. A new Linear move is introduced in the Path from OnWaypoints: the path OnWaypoints are connected with linear lines with curved corners.



F/T Path -> Path from Hand Guide

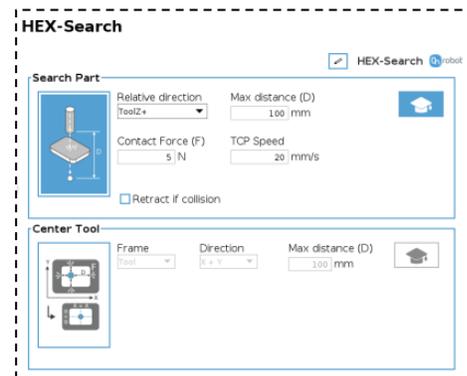
Please use the Path from Hand Guide instead of F/T Path. The new solution not only supports all previous features but contains numerous new functionalities as well. The previously recorded (version 1, .ofp) paths are compatible with the new system, but they must be converted to the new (version 2, .orp) format on the WebClient/PATHS page with the path converter button (⇔).

PATH NAME	FILE NAME	VERSION	SIZE (IN BYTES)	POINTS	
path_as_rec_3	1001	2	47,713	1703	[edit] [delete]
part1	1003	2	64,897	2317	[edit] [delete]
2667	2667	1	2,440	66	[edit] [delete]

F/T Search -> HEX-Search

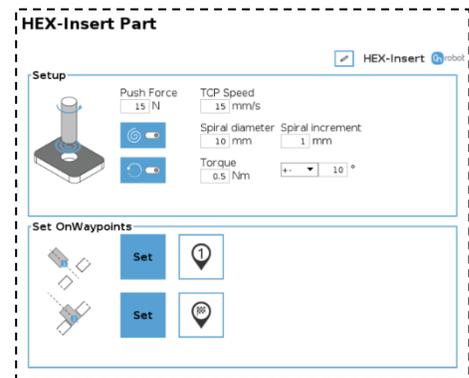
The previous F/T Search node was based F/T waypoints or an F/T path. The new HEX-Search node supports a similar solution if Trajectory is selected for Relative direction. In this case, the Trajectory should be set as a regular Trajectory (as you can see in the Trajectory node section of this document).

However, the new HEX-Search node can work much simpler in one direction than previously by selecting the desired Relative direction. The Contact Force (F) and TCP Speed can be set in advance mode. The latest URcap contains the Center Tool, which is a multiple direction, advanced search function for example finding the center of a box.



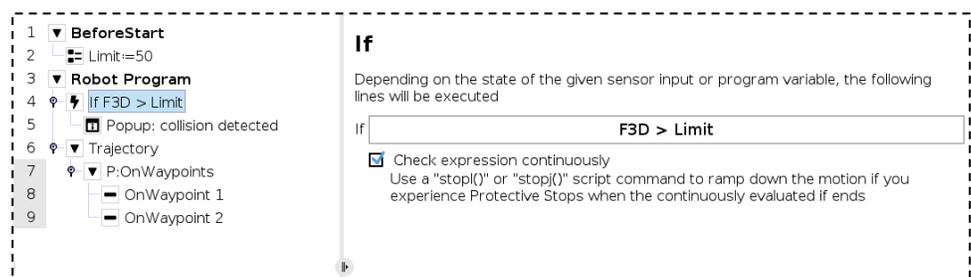
F/T Insert Part -> HEX-Insert Part

The new HEX-Insert part node is based on two OnWaypoints (start and end positions) which need to be set for each insertion. Thus, less parameters are enough for a successful insertion: Push Force and TCP Speed. The previously used insertion gains are calculated automatically in the latest solution based on TCP settings. During the insertion, all six axes are compliance. The HEX-Insert Part node contains two new features: spiral search and rotational search for complex tasks where the position or the orientation can vary.



F/T Guard

Guard is no longer available, please use instead an If (check expression continuously) UR node with an expression like $F3D > Limit$ as it can be seen in the picture below.



Troubleshooting

- ! Program cannot be loaded
 - It can be that the URcap or the Compute Box software needs updating. Please see steps in the Instructions section in this document. It
 - It could be that the Compute Box software has been updated to 5.3.1 or newer. Then update the URcap as well or downgrade the Compute box software to 5.2

- ! In the OnRobot Setup tab, and error showing “Required Compute Box versions: [5.2]”
 - It can be that the URcap or the Compute Box software needs updating. Please see steps in the Instructions section in this document. It
 - It could be that the Compute Box software has been updated to 5.3.1 or newer. Then update the URcap as well or downgrade the Compute box software to 5.2

- ! URcaps “Unhandled exception in URcap” is showing
 - Update the URcap to 5.3.1 or higher

- ! A “Missing URcap” error will be shown.
 - If the commands parameters are missing, then temporarily switch back to the old URcap and repeat the steps from the Instructions section.

