

ControlDesk

Reference

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About This Reference

This reference provides information on the menu commands, context menu commands, dialogs and windows of ControlDesk.

It is assumed that you know how to implement control models on dSPACE real-time hardware. Knowledge in handling the host PC and the Microsoft Windows operating system is also presupposed.

Where to go from here

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Using the ControlDesk software can have a direct effect on technical systems (electrical, hydraulic, mechanical) connected to it.	
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General Warning

Danger potential

Using dSPACE software can be dangerous. You must observe the following safety instructions and the relevant instructions in the user documentation.



WARNING

Improper or negligent use can result in serious personal injury and/or property damage.

Using the ControlDesk software can have a direct effect on technical systems (electrical, hydraulic, mechanical) connected to it.

The risk of property damage or personal injury also exists when ControlDesk is controlled via an automation interface. ControlDesk is then part of an overall system and may not be visible to the end user. It nevertheless produces a direct effect on the technical system via the controlling application that uses the automation interface.

- **Only persons who are qualified to use dSPACE software, and who have been informed of the above dangers and possible consequences, are permitted to use this software.**
- All applications where malfunctions or misoperation involve the danger of injury or death must be examined for potential hazards by the user, who must if necessary take additional measures for protection (for example, an emergency off switch).

Liability

dSPACE GmbH and its subsidiaries accept no liability for property damage or personal injury resulting from improper or noncontractual use of this product, or from incorrect operation by insufficiently qualified staff.

If you do not accept the above restrictions, you can return this product at the expense of dSPACE GmbH within one (1) month of receiving it. The purchase price will then be refunded to you immediately.

Data loss under Windows Vista	The modified shutdown procedure of Windows Vista causes some required processes to be aborted although they are still being used by dSPACE software. To avoid data loss, the dSPACE software must be terminated manually before a PC shutdown is performed. For further limitations, read the <i>Software Installation and Management Guide</i> .
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Document Symbols and Conventions

Symbols	The following symbols may be used in this document.
	 Indicates a general hazard that may cause personal injury of any kind if you do not avoid it by following the instructions given.
	 Indicates the danger of electric shock which may cause death or serious injury if you do not avoid it by following the instructions given.
	 Indicates a hazard that may cause material damage if you do not avoid it by following the instructions given.
	 Indicates important information that should be kept in mind, for example, to avoid malfunctions.
	 Indicates tips containing useful information to make your work easier.

Naming conventions	The following abbreviations and formats are used in this document:
	%name% Names enclosed in percent signs refer to environment variables for file and path names, for example, %dSPACE_ROOT% specifies the location of your dSPACE installation in the file system.
	<> Angle brackets contain wildcard characters or placeholders for variable file and path names, etc.
	 Precedes the document title in a link that refers to another document.
	 Indicates that a link refers to another document, which is available in dSPACE HelpDesk.

Accessing Online Help and PDF Files

Objective	After you install your dSPACE software, the documentation for the installed products is available as online help and Adobe® PDF files.
Online help	<p>You can access the online help – dSPACE HelpDesk – as follows:</p> <p>Windows Start menu Click Start – Programs – dSPACE Tools – dSPACE HelpDesk.</p> <p>Context-sensitive Press the F1 key or click the Help button in the dSPACE software.</p> <p>Local installation on your host PC Double-click the <code>dSPACEHelpDesk.chm</code> file in <code>%DSPACE_ROOT%\Doc\Online</code>.</p>
PDF Files	<p>You can access the PDF files as follows:</p> <p>dSPACE HelpDesk Click the PDF link at the beginning of a document:</p>  <p>The screenshot shows the dSPACE HelpDesk window. On the left is a navigation tree with items like 'dSPACE HelpDesk for ...', 'New Features and Migration', and several entries under '<Product><Documenttype>'. The main pane displays the text: '<Product><Documenttype>' followed by 'For a printable version of this document, refer to <DocumentName>.pdf'. A mouse cursor is hovering over the PDF link. Below this are sections for 'About This <Documenttype>' and 'Objective'.</p>
	<p>Local installation on your host PC Double-click the PDF file in <code>%DSPACE_ROOT%\Doc\Print</code>.</p>

Related Documents

The following provides a list of documents that you are recommended to read when working with ControlDesk.

Information in other documents

ControlDesk Standard

ControlDesk Experiment Guide

Introduces you to the experiment features provided by ControlDesk Standard.

ControlDesk Automation Guide

Shows you how to automate the features provided by ControlDesk Standard.

ControlDesk Instrument Reference

ControlDesk Automation Reference

AutomationDesk

AutomationDesk Guide

Introduces you to the automation features provided by AutomationDesk. It provides detailed information on the GUI components, basic concepts, and instructions using AutomationDesk and AutomationDesk Automation Server.

AutomationDesk Tutorial

Has several lessons that guide you through using AutomationDesk. It shows you concrete procedures by means of a demo project.

AutomationDesk Reference

Provides detailed information on the menus, context menus, and dialogs contained in AutomationDesk.

AutomationDesk Library Reference

Provides detailed information on the libraries supported by AutomationDesk.

Introduction

Overview of the ControlDesk Reference

ControlDesk, dSPACE's experiment software, provides all the functions to control, monitor and automate experiments and makes the development of controllers more effective.

This reference gives you detailed information on ControlDesk's commands and dialogs and the ControlDesk-specific file formats and libraries. The commands and dialogs of ControlDesk are categorized according to the tool with which they are associated:

Tool or File Type	Description	Refer to
ControlDesk Standard		
Basic interface elements	To access the ControlDesk Properties dialog and standard interface elements found in all ControlDesk versions.	<i>General Properties</i> on page 27, <i>Basic Interface</i> on page 41
Platform Manager	To register the boards in your system and handle applications like loading, starting and stopping the real-time applications and Simulink simulations.	<i>Platform Manager</i> on page 105
Experiment Manager	To handle all of the experiment data like reference data and information on the hardware, instrument panels and parameter sets.	<i>Experiment Manager</i> on page 147

Tool or File Type	Description	Refer to
Source Code Editor	To edit various file types in ControlDesk (CDX, CON, FLT, PAR, SDF, SYT, PY files, etc.) and read files such as TRC, MAP or OBJ files.	<i>Source Code Editor</i> on page 191
Instrumentation Manager	To build instrumentation panels for controlling and monitoring the variables of simulations.	<i>Instrumentation Manager</i> on page 203
Instruments	To build and modify instruments.	<i>Instruments</i> on page 253
CAN Navigator	To handle CAN messages.	<i>CAN Navigator</i> on page 325
Parameter Editor	To access the parameters of a model. You can read parameter values from the simulation, modify parameter values, and write modified parameter sets to the simulation.	<i>Parameter Editor, Variable Browser and Reference Data Manager</i> on page 363
Reference Data Manager	To capture reference data, which is useful to compare the current data curves of an experiment with data of older experiments, or with a curve calculated in MATLAB, for example.	<i>Parameter Editor, Variable Browser and Reference Data Manager</i> on page 363
Variable Browser	To display the variables in a tree hierarchy enabling you to browse through the model hierarchy and select variables for the simulation.	<i>Parameter Editor, Variable Browser and Reference Data Manager</i> on page 363
Event Handling	To define, enable or disable event handler functions that are linked to user interactions.	<i>Event Handling</i> on page 433
Fault Simulation	To define fault pattern and control fault simulation.	<i>Failure Simulation</i> on page 451
ControlDesk Automation		
Interpreter	To automate ControlDesk. You can enter Python commands interactively, execute Python scripts, import Python scripts or modules, and analyze any generated error output.	<i>Interpreter</i> on page 481

Tool or File Type	Description	Refer to
Macro Recorder	To record and replay series of action in a ControlDesk session.	<i>Macro Recorder</i> on page 491
ControlDesk Test Automation		
Stimulus Editor	To generate graphically complex signal sequences using the Stimulus Editor.	<i>Test Automation</i> on page 495
ControlDesk File Reference		
CSV files	To know the structure of the CSV files generated by the Reference Data Manager and the Platform Manager.	<i>Structure of CSV Files Generated by the Reference Data Manager and the Platform Manager</i> on page 542
MAT files	To know the structure of the MAT files generated by the Reference Data Manager and the Platform Manager.	<i>Structure of MAT Files Generated by the Reference Data Manager and the Platform Manager</i> on page 544
MDF files	To know the syntax of MDF files (module description files). The Function Wizard gets information about the supported Python modules from the MDF files.	<i>Syntax of the Module Description File</i> on page 547
TRC files	To know the syntax of TRC files (variable description files) or user variable description files.	<i>Syntax of the TRC File</i> on page 560

General Properties

Access

You can modify the general properties via:

Menu bar	View – General Properties
Context menu of	None
Shortcut key	None
Toolbar icon	None

Purpose

To view the general properties of ControlDesk and alter them, if desired.

Result

If you make any changes in any of the pages in the General Properties dialog, they are saved for this and all subsequent ControlDesk sessions.

Description

The pages in the General Properties dialog correspond to the various ControlDesk tools.



Depending on your installation, you might not see all the pages.

The properties grouped according to relationships are:

Purpose	Refer to	Avail. in OpMode
General properties related to the basic interface		
To specify basic properties for ControlDesk.	Framework Page on page 29	yes

Purpose	Refer to	Avail. in OpMode
General properties related to handling experiments		
To specify the settings for the view mode, consistency check and default settings for working root and author(s).	<i>Experiment Page</i> on page 31	yes
General properties related to handling platforms		
To alter the Platform Manager-related settings.	<i>Platform Manager Page</i> on page 36	yes
General properties related to handling variables		
To specify how ControlDesk handles parameters.	<i>Parameter Editor Page</i> on page 35	yes
To specify how ControlDesk generates MAT files (MATLAB binary file format).	<i>Reference Data Manager Page</i> on page 37	yes
General properties related to the editing source code		
To edit the syntax colors.	<i>Editor Syntax Colors Page</i> on page 30	yes
To specify settings for the Source Code Editor.	<i>Source Code Editor Page</i> on page 38	yes
General properties related to automating ControlDesk		
To enable or disable events.	<i>Event Handling Page</i> on page 30	no
To specify an additional search path for Python script files.	<i>Interpreter Page</i> on page 33	yes
To specify a custom macro header for each Python script, and to define a user-defined macro command to be inserted into the Python script via the Insert User Code button in the Macro Recorder toolbar.	<i>Macro Recorder Page</i> on page 34	no
General properties related to data capturing of plotter instruments		
To enable or disable mixed data capturing	<i>Animation Page</i> on page 28	yes

Animation Page

Purpose	To enable or disable mixed data capturing
Dialog settings	<p>Enable Mixed Data Captures Indicates whether the mixed data capturing is enabled or not. If mixed data captures is enabled, a plotter instrument can display data coming from different data groups (services) or real-time applications in one plot. This makes data monitoring and signal analysis easier, especially if the time stamps of the captured data have the same time origin (see <i>Synchronized Data Capturing</i> ( <i>ControlDesk Experiment Guide</i>)).</p> <p>The setting of this option is saved in the ControlDesk experiment. If no ControlDesk experiment is open, the setting is valid for the next new ControlDesk experiment. After a ControlDesk experiment with enabled mixed data captures is closed, this option is disabled. This option is disabled per default.</p>

Framework Page

Purpose	To view and alter the ControlDesk properties that apply to all ControlDesk components.
Dialog settings	<p>Working Directory Specifies the path of the working directory.</p> <p>Remember Working Directory Indicates whether the working directory is automatically stored until the next start.</p> <p>Activate Operator Mode Indicates whether the Operator mode is active. If you clear this checkbox, the Input Password dialog (see below) is opened to protect the Developer mode from being activated inadmissibly.</p> <p>Change Password Opens the Change Password dialog (see below), which lets you change a specified password. Use this dialog if you want to avoid switching between Developer and Operator mode unintentionally.</p> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;">  You cannot change the password if you have started ControlDesk in the Operator mode by using the command line argument -operator. </div>
Input Password dialog	<p>This dialog opens if you clear the <code>checkbox</code> (see above) on the ControlDesk page of the General Properties dialog (see above).</p> <p>Password Lets you enter your password.</p>
Change Password dialog	<p>This dialog opens if you click the Change Password button (see above) on the ControlDesk page of the General Properties dialog (see above).</p> <p>Old Password Lets you enter the previous password.</p> <p>New Password Lets you enter your new password.</p> <p>Confirm Password Lets you enter your new password again to confirm.</p>
Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Set ControlDesk Options</i> ( <i>ControlDesk Experiment Guide</i>) • <i>How to Start the Developer Version in Operator Mode</i> ( <i>ControlDesk Experiment Guide</i>) • <i>How to Switch Between Developer and Operator Mode</i> ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none"> • <i>General Properties</i> on page 27

Editor Syntax Colors Page

Purpose	To view and alter the ControlDesk properties that are related to the syntax coloring of the Source Code Editor.
Dialog settings	<p>Token Lets you choose the name of the language token whose colors you want to change.</p> <p>Foreground Color Lets you choose the text color of the selected token.</p> <p>Background Color Lets you choose the background color of the selected token.</p> <p>Font Style Lets you choose a font style for the selected token.</p> <p>Reset Resets all colors and font styles to the most recently applied state.</p> <p>Factory Settings Resets all colors and font settings to the original state with which ControlDesk was shipped.</p>
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• <i>How to Customize Syntax Coloring</i> ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• <i>General Properties</i> on page 27• <i>Source Code Editor</i> on page 191

Event Handling Page

Purpose	To enable or disable events.
Result	Switching off all events – that is, clearing the Enabled checkbox – will also disable all layout-specific event handlers. This setting is saved when you close ControlDesk. Thus, when you open it, your last selection is still active.
Dialog settings	<p>Global Event File Specifies the path of the current global event file. Use the Browse button to select the global event file.</p>

Default Event Setting\Enabled Enables events. As long as no experiment is opened, this setting applies to all events. When an experiment is opened, this setting is retrieved from the opened experiment. If the experiment has no setting, all events are disabled. If the experiment is then closed, this setting is set in the Event Handling page.

Related topics

Basics

- *Applying Events* (ControlDesk Automation Guide)

HowTos

- *How to Enable/Disable Event Handling* (ControlDesk Automation Guide)

References

- *General Properties* on page 27
- *Limitations of the Event Handling* (ControlDesk Automation Guide)

Experiment Page

Purpose	To specify the settings for the view mode and the consistency check, and default settings for working root and author(s).
Dialog settings	<p>Dependency Hierarchy Indicates whether the Experiment Navigator shows the experiment files in the dependency hierarchy mode. In this mode you can see the loading order of the experiment's files and how they depend on each other.</p> <p>Component Hierarchy Indicates whether the Experiment Navigator shows the experiment files in the component hierarchy mode. In this mode you can see which components are used for the different files, for example, Stimulus Editor or Instrumentation.</p> <p>Directory Hierarchy Indicates whether the Experiment Navigator shows the experiment files in the directory hierarchy mode. In this mode you can see which directories the different files are located in.</p> <p>Show Implicitly Dependent Files Indicates whether the Experiment Navigator also shows the implicitly dependent files in the dependency hierarchy mode. These are not administered by the experiment itself but required by files that belong to it.</p> <p>Consistency Check Indicates whether a consistency check on files and component entries is performed during experiment load.</p>

Message Box Indicates whether a warning resulting from the consistency check is displayed in a message box. This option is enabled only if the Consistency Check option is selected.

Use Version Control System Enables the version control commands in the Experiment menu and the context menus of the Experiment Navigator. This option is enabled only if there is a version control system installed that supports the Microsoft SCC interface, and if no experiment is currently loaded.



This option is not available in the Operator mode.

Default for Working Root Lets you specify the path of the Working Root. Use the Browse button to specify the default directory for the Working Root. ControlDesk uses this directory as preset in the New Experiment dialog's Working Root edit field.

Default for Author(s) Lets you specify the default author for the Author(s) edit field in the New Experiment dialog.

Related topics

Basics

- *Experiment Manager Basics* ([ControlDesk Experiment Guide](#))
- *Limitations of the Experiment Manager* ([ControlDesk Experiment Guide](#))
- *Using a Version Control System* ([ControlDesk Experiment Guide](#))

HowTos

- *How to Carry out Basic Experiment Manager Actions* ([ControlDesk Experiment Guide](#))
- *How to Create a New Experiment* ([ControlDesk Experiment Guide](#))
- *How to Make ControlDesk Use a Version Control System* ([ControlDesk Experiment Guide](#))
- *How to Modify Experiment Properties* ([ControlDesk Experiment Guide](#))
- *How to Save Experiments* ([ControlDesk Experiment Guide](#))

Examples

- *Example of Handling an Experiment* ([ControlDesk Experiment Guide](#))

References

- *General Properties* on page 27

Interpreter Page

Purpose	To specify an additional search path for Python script files.
Result	The specified path is appended to the list of directories where the Interpreter searches for Python script files.
Description	To display the current search path for Python script files enter the following script commands in the Interpreter page of the Tool Window: <pre>import sys sys.path</pre>
Dialog settings	<p>User-defined Python path Lists the user-defined Python directories in which the Interpreter searches for modules. The search order can be changed by moving directories up and down within the list by means of the Up/Down buttons.</p> <p>Add Button Opens a directory selection dialog. After a directory is selected it is added to the list of user-defined Python directories.</p>  <p>Remove Button Deletes a selected directory from the list.</p>  <p>Move Up Button Moves the selected directory up in the search order of the user-defined Python paths.</p>  <p>Move Down Button Moves the selected directory down in the search order of the user-defined Python path.</p>  <p>System Python Path Lists the permanent system Python directories.</p>

Related topics

HowTos

- [How to Change the Python Path](#) (ControlDesk Automation Guide)

References

- [General Properties](#) on page 27

Macro Recorder Page

Purpose	To specify a custom macro header for each Python script, and to define a user-defined macro command to be inserted into the Python script via the Insert User Code button in the Macro Recorder toolbar.
---------	--

Result	The user-defined macro header is inserted at the beginning of each recorded Python script. The user-defined macro command is inserted in recorded Python scripts whenever you click the Insert User Code button in the Macro Recorder toolbar.
--------	--

Dialog settings	User-defined macro header Lets you specify the text you want to insert as a header in each new macro (Python code) being recorded. User-defined macro command Lets you specify the text you want to insert as the user-defined macro command in a macro (Python code) being recorded. This command is inserted by clicking the Insert User Code button of the Macro Recorder toolbar.
-----------------	---

Related topics

Basics

- [Recording Macros](#) (ControlDesk Automation Guide)

References

- [Edit](#) on page 491
- [General Properties](#) on page 27
- [Pause](#) on page 493
- [Record](#) on page 493

Parameter Editor Page

Purpose	To specify how ControlDesk handles parameters.
Dialog settings	<p>Overwrite existing parameters Indicates whether ControlDesk uses the entire contents of the source parameter file when merging parameter files – regardless of whether identical parameters exist in the destination parameter file. If this is not selected, ControlDesk keeps the contents of the destination parameter file and just adds the additional parameters from the source parameter file.</p> <p>Number of Subtree levels Lets you specify how many subtree levels (meaning the parameters' parent subsystems' names) are displayed in the Showlist's Parameter column.</p> <p>Interpret DataStores as Parameter Indicates whether Data Stores are included in the parameter file.</p> <div style="border: 1px solid #ccc; padding: 10px; margin-top: 10px;">  Unlike variables, parameters do not depend on the simulation. If you select this option you should ensure that the Data Stores do not depend on the simulation. </div> <p>Allow browsing into masked and NoReadOrWrite subsystems Indicates whether all the dependent parameters of masked subsystems are displayed. These parameters are read-only and depend on the corresponding subsystems' mask parameters. This option has no effect if mask parameters are unavailable in the application (see <i>Real-Time Workshop Dialog (Model Configuration Parameters Dialog)</i> ( <i>RTI and RTI-MP Implementation Reference</i>) for RTI and <i>Variable Description File Options Page (CPU Options Dialog)</i> ( <i>RTI and RTI-MP Implementation Reference</i>) for RTI-MP).</p> <p>Save parameters on “Stop Animation” Indicates whether the parameter values from the open layouts are copied to the parameter file whenever you leave ControlDesk's Animation mode.</p>

Related topics

Basics

- *Handling Parameters* ([ControlDesk Experiment Guide](#))
- *Limitations of the Parameter Editor* ([ControlDesk Experiment Guide](#))

HowTos

- *How to Access the Parameter Editor* ([ControlDesk Experiment Guide](#))
- *How to Generate Parameter Files* ([ControlDesk Experiment Guide](#))
- *How to Modify Parameters* ([ControlDesk Experiment Guide](#))
- *How to Use Mask and Workspace Parameters* ([ControlDesk Experiment Guide](#))

Examples

- *Example of Using Mask and Workspace Parameters* ([ControlDesk Experiment Guide](#))

References

- *General Properties* on page 27
- *Parameter Editor, Variable Browser and Reference Data Manager* on page 363
- *Real-Time Workshop Dialog (Model Configuration Parameters Dialogs)* ([RTI and RTI-MP Implementation Reference](#))
- *Variable Description File Options Page (CPU Options Dialog)* ([RTI and RTI-MP Implementation Reference](#))

Platform Manager Page

Purpose

To alter the Platform Manager-related settings of ControlDesk.

Dialog settings

No connection Stops a platform connection from being carried out in the Platform Manager when ControlDesk is started.

Restore last connection Restores the most recent platform connection in the Platform Manager when ControlDesk is started.

Connect to Lets you choose one of the following platform connections:

- **Bus** for a bus connection
- **Net** for a net connection. You can enter the net address in the edit field

Delay after load Lets you specify the time by which the error check is delayed after an object file is downloaded. This ensures that the initialization can be completed before the error check is carried out.

Enable automatic firmware update Indicates whether automatic firmware updates are enabled. For this automatic update function, the board must not be in the Plug and Play mode. See *How to Update the Firmware* ( ControlDesk Experiment Guide) for details.



For a DS1006, an automatic firmware update is not possible.

Allow topological multiprocessor subset Enables ControlDesk to work with topological subsets of a DS1005-based MP system. For details, see *Working with Subsets of a Multiprocessor Topology* ( DS1005 Features).

Related topics

Basics

- *Handling Firmware* ( ControlDesk Experiment Guide)
- *Limitations of the Platform Manager* ( ControlDesk Experiment Guide)
- *Messages* ( ControlDesk Experiment Guide)
- *Platform Manager Basics* ( ControlDesk Experiment Guide)

HowTos

- *How to Change the Platform Connection* ( ControlDesk Experiment Guide)

References

- *General Properties* on page 27
- *Platform Manager* on page 105

Reference Data Manager Page

Purpose	To specify how ControlDesk generates MAT files (MATLAB binary file format).
----------------	---

Dialog settings	Create TRACE-compatible MATLAB format Makes the structure of MAT files generated by ControlDesk compatible with TRACE and ControlDesk version 1.2.1 or lower (old MAT file format).
------------------------	--



Do not select this checkbox if you work with a multiprocessor system, since the old MATLAB format does not support multiple x-axes.

For details on the two available MAT file formats, see *Data Files Generated by the Reference Data Manager* (*ControlDesk Experiment Guide*).

Related topics

Basics

- *Data Files Generated by the Reference Data Manager* (*ControlDesk Experiment Guide*)
- *Reference Data Manager Basics* (*ControlDesk Experiment Guide*)

References

- *General Properties* on page 27
- *Parameter Editor, Variable Browser and Reference Data Manager* on page 363
- *Structure of MAT Files Generated by the Reference Data Manager and the Platform Manager* on page 544

Source Code Editor Page

Purpose

To view and alter the ControlDesk properties that are related to the Source Code Editor.

Dialog settings

Tabulator width Lets you specify the number of spaces to be inserted for a tabulator if the Spaces for tabs checkbox is selected.

Spaces for tabs Indicates whether every tabulator key is converted to a space. The number of spaces is defined by the Tabulator width.

Auto-Indent Indicates whether the cursor is moved to the same indenting position as the last line after a new line is entered.

Print line numbers Indicates whether line numbers are added to the text on the left of the document.

No margin Indicates whether the plain text view is set. Line markers change the text colors to emphasize the line.

Fixed margin Indicates whether a fixed margin is placed on the left of the document window. The margin shows the line markers with different symbols. When the text is scrolled vertically, the margin stays in the same position.

Scrolling margin Indicates whether a fixed margin is placed on the left of the document window. The margin shows the line markers with different symbols. When the text is scrolled vertically, the margin scrolls with the text.

Related topics

Basics

- *Basic Editing Commands* ( *ControlDesk Experiment Guide*)

References

- *General Properties* on page 27
- *Source Code Editor* on page 191

Basic Interface

ControlDesk's Basic Interface provides various commands and dialogs, which are accessible via the menu bar and the context menus of the ControlDesk components.

In the table, the operations marked with a "*" are not available in the Operator mode for files that are assigned to an experiment. For other files, they are available.

The provided commands and dialogs are:

Purpose	Refer to	Avail. in OpMode
File menu		
To create a new file.	New on page 66	yes
To open a file.	Open on page 67	yes
To save the active window.	Save on page 93	no *
To save the active window under a new file name.	Save As on page 92	no *
To close the currently active file.	Close on page 49	yes
To print a file from the Source Code Editor.	Print on page 70	yes
To show a preview of the file you want to print.	Print Preview on page 71	yes
To change the settings of your printer.	Print Setup on page 71	yes
To load one of the eight most recent files that were open in ControlDesk.	Recent Files on page 89	yes
To exit the current ControlDesk session.	Exit on page 60	yes

Purpose	Refer to	Avail. in OpMode
Edit menu		
To undo the most recent commands or actions.	<i>Undo</i> on page 99	no *
To redo the most recent commands or actions that were undone via the Undo command.	<i>Redo</i> on page 90	no *
To cut the current selection to the clipboard.	<i>Cut</i> on page 59	no *
To copy the current selection to the clipboard.	<i>Copy</i> on page 52	no *
To paste the clipboard contents to the current window.	<i>Paste</i> on page 69	no *
To delete the current selection.	<i>Delete</i> on page 60	no
To mark all of the entries in the Log Viewer or Source Code Editor.	<i>Select All</i> on page 94	yes
View menu		
To show or hide ControlDesk's status bar.	<i>Status Bar</i> on page 95	yes
To enable or disable the Workbook mode for ControlDesk's working area.	<i>Workbook</i> on page 102	yes
To maximize all windows currently open.	<i>Fullscreen</i> on page 62	yes
To activate the current document.	<i>Activate Document Area</i> on page 44	yes
To show and activate ControlDesk's Navigator.	<i>Activate Navigator</i> on page 44	yes
To show and activate ControlDesk's Tool Window.	<i>Activate Tool Window</i> on page 45	yes
To show or hide ControlDesk's controlbars.	<i>Controlbar Section</i> on page 51	yes
To show or hide ControlDesk's toolbars.	<i>Toolbar Section</i> on page 98	yes
To open the LOG file in ControlDesk's working area.	<i>Log File</i> on page 65	yes
Tools menu		
To enable or disable toolbars, modify toolbar properties and create your own user-specific toolbar.	<i>Customize</i> on page 54	yes
To create, delete and assign shortcut keys to menu entries.	<i>Customize Keyboard</i> on page 53	yes
To add external functions to ControlDesk's Tools menu.	<i>Customize User Functions</i> on page 56	no
To carry out a user function.	<i>User Function 1 ... 9</i> on page 100	no
Window menu		
To close all windows currently open in ControlDesk	<i>Close All</i> on page 50	yes
To cascade the currently open MDI child windows.	<i>Cascade</i> on page 48	yes
To arrange the currently open MDI child windows horizontally.	<i>Tile Horizontally</i> on page 96	yes
To arrange the currently open MDI child windows vertically.	<i>Tile Vertically</i> on page 97	yes
To arrange the minimized MDI child windows in ControlDesk's working area.	<i>Arrange Icons</i> on page 47	yes
To activate an MDI child window.	<i>Window</i> on page 101	yes
To activate, save, or close the documents shown in the MDI child window.	<i>Windows</i> on page 102	yes
Help menu		
To open ControlDesk's online help.	<i>Help Topics</i> on page 62	yes
To view the ControlDesk version information.	<i>About ControlDesk</i> on page 43	yes
Context menu		
To allow a component to be docked.	<i>Allow Docking</i> on page 46	yes
To allow autoscrolling of the messages displayed in the Log Viewer.	<i>Autoscroll</i> on page 47	yes
To clear the entire contents of the Log Viewer.	<i>Clear All</i> on page 48	yes
To switch a component to the floating state.	<i>Float In Main</i> on page 61	yes
To set a component to the invisible state.	<i>Hide</i> on page 63	yes
To run a Python Script directly after it is loaded.	<i>Run on Experiment Load</i> on page 91	no

Purpose	Refer to	Avail. in OpMode
Other dialogs and windows To display all kinds of messages generated by ControlDesk.	<i>Log Viewer</i> on page 66	yes

About ControlDesk

Access	You can access this command via:
Menu bar	Help
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To display information on which ControlDesk tool versions and licenses are currently installed on your system.
Result	Here you can see the version numbers of all of ControlDesk's various tools.
Dialog settings	<p>Versions Displays version information. You can double-click any ControlDesk tool to see its most recent version.</p> <p>Licenses Used Displays the licenses used for the installation of ControlDesk.</p>
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • <i>Basic Elements of ControlDesk</i> (<i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none"> • <i>Basic Interface</i> (<i>AutomationDesk Reference</i>)

Activate Document Area

Access	You can access this command via:
Menu bar	View
Context menu of	None
Shortcut key	Alt+0
Toolbar icon	None
Purpose	To set the focus to the current MDI child window.
Description	This is enabled if an MDI child window exists. It allows you to navigate through the various components using the keyboard, for example, to switch from ControlDesk's Navigator to the current MDI child window.
 You can use Activate Navigator and Activate Tool Window to activate other components.	
Related topics	References • Activate Navigator on page 44 • Activate Tool Window on page 45

Activate Navigator

Access	You can access this command via:
Menu bar	View
Context menu of	None
Shortcut key	Alt+1
Toolbar icon	None
Purpose	To show and activate ControlDesk's Navigator.

Description	This allows you to navigate through the various components using the keyboard, for example, to switch from the Tool Window to the Navigator.
--------------------	--



You can use Activate Document Area and Activate Tool Window to activate other components.

Related topics	<p>Basics</p> <ul style="list-style-type: none"> • Navigator (ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none"> • Activate Document Area on page 44 • Activate Tool Window on page 45
-----------------------	--

Activate Tool Window

Access	You can access this command via:
Menu bar	View
Context menu of	None
Shortcut key	Alt+2
Toolbar icon	None
Purpose	To show and activate ControlDesk's Tool Window.
Description	This allows you to navigate through the various components using the keyboard, for example, to switch from ControlDesk's Navigator to the Tool Window.

You can use Activate Document Area and Activate Navigator to activate other components.

Related topics

References

- [Activate Document Area](#) on page 44
- [Activate Navigator](#) on page 44

Allow Docking

Access

You can access this command via:

Menu bar	None
Context menu of	<ul style="list-style-type: none">■ Navigator■ Instrument Selector■ Parameter Editor's Showlist■ All controlbars
Shortcut key	None
Toolbar icon	None

Purpose

To allow the component to be docked.

Result

When moved within ControlDesk's main window, the component is docked if ControlDesk finds a suitable place for it.

Description

When docked, the component has no window frame but a header bar for controlling its state, position, and size.

Related topics

HowTos

- [How to Control Window States](#) ( [ControlDesk Experiment Guide](#))

References

- [Float In Main Window](#) on page 61
- [Hide](#) on page 63

Arrange Icons

Access	You can access this command via:	
	Menu bar	Window
	Context menu of	None
	Shortcut key	None
	Toolbar icon	None
Purpose	To arrange all minimized windows in ControlDesk's working area.	
Result	All minimized windows are arranged horizontally at the bottom of ControlDesk's working area.	

Autoscroll

Access	You can access this command via:	
	Menu bar	None
	Context menu of	Log Viewer
	Shortcut key	None
	Toolbar icon	None
Purpose	To allow autoscrolling of the messages displayed in the Log Viewer.	
Result	The most recent messages generated by ControlDesk are either scrolled automatically or not.	
Description	Indicates whether the most recent messages are displayed in the Log Viewer. If there is no checkmark, the list is not scrolled automatically; however, the messages are appended.	
Related topics	HowTos • <i>How to View Messages with the Log Viewer</i> ( <i>ControlDesk Experiment Guide</i>)	

Cascade

Access

You can access this command via:

Menu bar	Window
Context menu of	None
Shortcut key	None
Toolbar icon	

Purpose

To cascade all currently open windows in ControlDesk's working area.

Result

The windows are cascaded.

Description

The windows are cascaded diagonally, one on top of the other. You can move them and pull them to any size you desire.

Related topics

Basics

- *Arranging Windows* ( [ControlDesk Experiment Guide](#))

Clear All

Access

You can access this command via:

Menu bar	None
Context menu of	Log Viewer
Shortcut key	None
Toolbar icon	None

Purpose

To clear the entire contents of the Log Viewer.

Result

All of the entries shown in the Log Viewer are deleted. However, they are not removed from the dSPACE.log file.

Related topics

HowTos

- [How to View Messages with the Log Viewer](#) ( [ControlDesk Experiment Guide](#))

References

- [Autoscroll](#) on page 47
- [Select All](#) on page 94

Close

Access

You can access this command via:

Menu bar	File
Context menu of	<ul style="list-style-type: none"> ■ System description files ■ Parameter files in the Parameter Tree ■ Variable files in the Tree Window ■ Reference groups in the Reference Data Manager ■ Files in the Experiment Navigator
Shortcut key	Ctrl+F4 (with focus on the experiment Navigator)
Toolbar icon	None



- For the files displayed in the Tool Window, the command access is restricted to the context menu.
- To close experiments, use the command *Close Experiment* on page 157.

Purpose

To close the currently active file or group.

Result

The currently active file or group is closed. If you have changed the file, ControlDesk prompts you to save the changes.

Description

This can be applied to layouts, parameter files, variable files, and reference groups.

- If you close a parameter file, ControlDesk does not prompt you to save any changes you might have made in it.

- If you close a system description file, it is closed together with all the associated parameter files. The tab of the variable file is removed and its memory is cleared.
 - If you close a reference group, only that group is closed. You can close reference groups only in the Edit mode.
-

Related topics

Basics

- *Instrumentation Navigator* ( [ControlDesk Experiment Guide](#))
- *Reference Data Manager Basics* ( [ControlDesk Experiment Guide](#))

HowTos

- *How to Open, Save and Close Files* ( [ControlDesk Experiment Guide](#))

References

- *Close Experiment* on page 157
- *Close MATLAB* on page 116
- *Close Model* on page 117
- *Exit* on page 60
- *Load Reference Group* on page 400
- *New* on page 66
- *Open* on page 67
- *Open Variable File* on page 404
- *Recent Files* on page 89
- *Save* on page 93
- *Save As* on page 92

Close All

Access

You can access this command via:

Menu bar	Window
Context menu of	Workbook tab in workbook mode
Shortcut key	None
Toolbar icon	None

Purpose

To close all windows currently open in ControlDesk.

Result

All unchanged windows are closed.

Description	If you made changes in any of your windows, you are prompted to save each window before it is closed. If you press Yes , the windows are saved and closed afterwards. If you press No , they are closed without being saved. If you press Cancel , only unchanged windows are closed.
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • Arranging Windows ( <i>ControlDesk Experiment Guide</i>)

Controlbar Section

Access	You can access this command via:								
	<table border="1"> <tr> <td>Menu bar</td><td>View</td></tr> <tr> <td>Context menu of</td><td>None</td></tr> <tr> <td>Shortcut key</td><td>None</td></tr> <tr> <td>Toolbar icon</td><td>None</td></tr> </table>	Menu bar	View	Context menu of	None	Shortcut key	None	Toolbar icon	None
Menu bar	View								
Context menu of	None								
Shortcut key	None								
Toolbar icon	None								
Purpose	To show or hide controlbars, for example, the Log Viewer.								
Result	The controlbars are either shown or hidden.								
Description	Opens a submenu showing all available controlbars. The controlbars that have a checkmark are shown in the main window. The controlbars without a checkmark are hidden.								
	 In the Operator mode, you can only show or hide the controlbars which are available in that mode.								
Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • How to Control Window States ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none"> • Hide on page 63 • Toolbar Section on page 98 								

Copy

Access

You can access this command via:

Menu bar	Edit
Context menu of	<ul style="list-style-type: none">■ Log Viewer■ Source Code Editor■ Interpreter■ Instrument in a layout■ Stimulus Editor
Shortcut key	Ctrl+C, Ctrl+Insert
Toolbar icon	

Purpose

To copy the current selection to the clipboard.

Description

This can be applied to text shown in the Log Viewer, Source Code Editor or Interpreter, to instruments of a layout, and to cells in the Stimulus Editor.



Copy is not available in the Operator mode if you are handling a file that is assigned to an experiment.

Related topics**Basics**

- [Basic Elements of ControlDesk](#) ( [ControlDesk Experiment Guide](#))
- [Using the Python Interpreter](#) ( [ControlDesk Automation Guide](#))

References

- [Copy Selected](#) on page 485
- [Cut](#) on page 59
- [Delete](#) on page 60
- [Keyboard Shortcuts of the Python Interpreter](#) ( [ControlDesk Automation Guide](#))
- [Paste](#) on page 69

Customize Keyboard

Access	You can access this command via:
Menu bar	Tools
Context menu of	None
Shortcut key	None
Toolbar icon	None
Purpose	To create, delete and assign Shortcut keys to menu entries.
Result	If you created any new Shortcut keys or altered any existing ones, the changes you made are saved for all subsequent ControlDesk sessions.
	You can reset all shortcuts to their defaults by clicking the Reset All button.
Shortcut Keys dialog	<p>Select a macro Lets you select the command you want to assign a shortcut to/remove a shortcut from.</p> <p>Create Shortcut Opens the Assign Shortcut dialog (see below) where you can assign a new keyboard shortcut for the command (see below).</p> <p>Description Displays a short description of the command you selected.</p> <p>Assigned Shortcuts Displays the shortcut that corresponds to the selected command. If there is no shortcut for the command yet, this field is blank.</p> <p>Remove Erases the selected Shortcut key for the chosen command.</p> <p>Reset All Resets all Shortcut keys to their default values.</p>
Assign Shortcut dialog	<p>To assign a new Shortcut key for a command. This dialog is called up via the Create Shortcut button (see above) of the Shortcut Keys dialog (see above).</p> <p>Press new shortcut key Lets you specify the shortcut key you want to use for the selected command.</p>

Related topics

Basics

- Basic Elements of ControlDesk (ControlDesk Experiment Guide)
- Customizing ControlDesk (ControlDesk Experiment Guide)

HowTos

- How to Customize the Keyboard (ControlDesk Experiment Guide)

References

- Customize User Functions on page 56

Customize Toolbars

Access

You can access this command via:

Menu bar	Tools
Context menu of	<ul style="list-style-type: none">■ All toolbars■ All splitter bars
Shortcut key	None
Toolbar icon	None

Purpose

To show or hide toolbars, add or remove commands to/from toolbars, modify toolbar properties and create your own user-specific toolbar.

Result

The toolbars are shown according to the specifications you make.



You can either restore the original set of toolbar icons or delete custom toolbars by clicking the Reset button.

Toolbars page

While the dialog is open, you can drag the buttons on the dialog and toolbars to change their positions, delete them, etc.

Toolbars Lets you choose the toolbars that you want to display beneath the menu commands.

Show Tooltips Indicates whether a brief description of the toolbar button is displayed whenever the cursor is on it.

Cool Look Indicates whether the frame surrounding each toolbar button is displayed. The Cool Look option also enables you to move each toolbar by positioning on its handle to drag & drop it to the desired location. Otherwise, you must move the toolbar by positioning on its border to drag & drop it to the desired location.

Large Buttons Indicates whether the toolbar buttons are larger than normal. Since this version of ControlDesk supports only one button size, this option is not needed.

New Opens the New Toolbar dialog (see below), which lets you create a new toolbar and enter a name for it (see below).

Reset/Delete This button changes its function and inscription depending on the selected toolbar entry. If you selected an original toolbar, you can use this button to restore its original set of icons. If you selected a custom toolbar, you can use this button to delete it.

Commands page

Categories Lets you select the category of the toolbar buttons to be shown in the Buttons frame (see below).

Buttons Displays the buttons that belong to the category you selected above. The buttons here can be added to any toolbar via drag & drop.

Description Displays a brief description of the selected button after you click one of the icons shown in the Buttons frame.

New Toolbar dialog

To create a new toolbar and enter a name for it. This dialog is opened via the New button (see above) of the Toolbars page (see above) of the Customize dialog (see above).

Toolbar name Lets you specify the name of the new toolbar. It is not limited to a specific number of characters.

Related topics

HowTos

- *How to Customize Toolbars* ( *ControlDesk Experiment Guide*)

References

- *Customize Keyboard* on page 53
- *Customize User Functions* on page 56

Customize User Functions

Access	You can access this command via:	
Menu bar	Tools	
Context menu of	None	
Shortcut key	None	
Toolbar icon	None	
Purpose	To add external functions such as a compiler or linker to ControlDesk's Tools menu commands.	
Result	The external user function is added at the bottom of the Tools menu and to the toolbar User-Defined Tools.	
Description	Adding external functions lets you have quick and easy access to any function you might need while working with ControlDesk.	
 Customize User Functions dialog	 This is not available in the Operator mode.	
Menu Contents	Lets you select which of the currently available user functions you want to edit. You can change the name of a selected tool in the Menu Text field.	
Menu Text	Displays the name of the external tool you selected in the Menu Contents field. If you click the Add button, you can enter a name for a new external tool.	
Command	Lets you select the command for the new external tool or alter the command for an existing external tool. The Select Program dialog (see below) opens, where you can choose a program (EXE file).	
Arguments	Lets you specify the argument that should be passed to the user function. Use the arrow button to get a list of descriptive texts for the arguments. If you select an entry in this list, the corresponding argument is automatically entered. The table below shows the various arguments:	
Argument	Descriptive Text	Description
	File	Inserts the selected file from the standard dialog

Argument	Descriptive Text	Description
%CDDIR%	Directory	Inserts the selected folder from the standard dialog
%TEMP%	ControlDesk Directory	ControlDesk's binary directory
%CFILE%	Temporary Directory	System's temporary directory
%CFILE%	Last C File	Most recent C document that has the focus in the Source Code Editor
%HFILE%	Last H File	Most recent H document that has the focus in the Source Code Editor
%PYFILE%	Last Python File	Most recent Python document that has the focus in the Source Code Editor
%TXTFILE%	Last Other File	Most recent Text document that has the focus in the Source Code Editor
%ALLCFILES%	All C Files	All C documents currently open in the Source Code Editor
%ALLHFILES%	All H Files	All H documents currently open in the Source Code Editor
%ALLPYFILES%	All Python Files	All Python documents currently open in the Source Code Editor
%ALLTXTFILES%	All Other Files	All Text documents currently open in the Source Code Editor
%EXPDIR%	Working Root Directory of Experiment	Working root of the currently open experiment.



In addition to these predefined variables, system wide environment variables can also be used, for example, %DSPACE_ROOT% or %TI_ROOT%.

Initial Directory Lets you specify the initial directory in which the program should be executed. You can use the Browse button to select one via the Select Initial Directory dialog (see below).

Add Adds the external user function to the Tools menu and the User-Defined Tools toolbar.

Remove Removes the selected external user function from the Tools menu and the User-Defined Tools toolbar.

Move Up Moves the menu entry of the user-defined function up one slot in the Tools menu.

Move Down Moves the menu entry of the user-defined function down one slot in the Tools menu.

Capture Output Indicates whether the print output of the program is shown in ControlDesk's Log Viewer.



CAUTION

**Since the standard input is also captured,
ControlDesk will be blocked if you attempt to run
interactive programs.**

Show window Indicates whether the window of the started process is displayed.

Select Program dialog

To select the command for the new external tool or alter the command for an existing external tool. This dialog is opened via the Command button (see above) of the Customize User Functions dialog (see above).

Look in Lets you select the path and directory from which the program file should be opened.

File name Displays the name of the selected program file.

Files of type Here you can only choose program files (EXE files).

Select Initial Directory dialog

To select the initial directory in which the program should be executed. This dialog is opened via the Initial Directory button (see above) of the Customize User Functions dialog (see above).

Folders Lets you select the desired folder.

Drives Lets you select the desired drive.

Network Lets you select a network drive via the standard Map Network Drive dialog.

Related topics

HowTos

- *How to Define User Functions* ([ControlDesk Experiment Guide](#))

References

- *Customize* on page 54
- *Customize Keyboard* on page 53
- *User Function 1 ... 9* on page 100

Cut

Access

You can access this command via:

Menu bar	Edit
Context menu of	<ul style="list-style-type: none"> ■ Source Code Editor ■ Log Viewer ■ Interpreter ■ Instrument in a layout ■ Stimulus Editor
Shortcut key	Ctrl+X, Shift+Delete
Toolbar icon	

Purpose

To cut the current selection to the clipboard.

Result

The current selection is removed and placed in the clipboard.

Description

This can be applied to text shown in the Log Viewer, Source Code Editor or the Interpreter, instruments of a layout, and cells in the Stimulus Editor.



Cutting is not available in the Operator mode if you are handling a file that is assigned to an experiment.

Related topics

Basics

- *Basic Elements of ControlDesk* ( [ControlDesk Experiment Guide](#))
- *Using the Python Interpreter* ( [ControlDesk Automation Guide](#))

References

- [Copy](#) on page 52
- [Copy Selected](#) on page 485
- [Delete](#) on page 60
- *Keyboard Shortcuts of the Python Interpreter* ( [ControlDesk Automation Guide](#))
- [Paste](#) on page 69

Delete

Access

You can access this command via:

Menu bar	Edit
Context menu of	<ul style="list-style-type: none">■ Instrument in a layout■ Stimulus Editor
Shortcut key	Delete
Toolbar icon	

Purpose

To delete the current selection.

Description

This can be applied to instruments of a layout, and cells in the Stimulus Editor. Unlike the Cut command (see above), the selection is not placed in the clipboard for further use.



This is not available in the Operator mode.

Related topics**References**

- [Copy](#) on page 52
- [Cut](#) on page 59
- [Paste](#) on page 69

Exit

Access

You can access this command via:

Menu bar	File
Context menu of	None
Shortcut key	Alt+F4
Toolbar icon	None

Purpose

To exit the current ControlDesk session.

Result	ControlDesk ends the current session.
Description	If you made any changes to any open files in ControlDesk, you are prompted to save them before exiting.
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • <i>Handling Simulink Simulations from Within ControlDesk</i> ( ControlDesk Experiment Guide) <p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Start and Shut Down ControlDesk</i> ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none"> • <i>Close</i> on page 49 • <i>Close Experiment</i> on page 157

Float In Main Window

Access	You can access this command via:
Menu bar	None
Context menu of	<ul style="list-style-type: none"> ■ Navigator ■ Instrument Selector ■ Parameter Editor's Showlist ■ All controlbars
Shortcut key	None
Toolbar icon	None
Purpose	To switch the component to the floating state within the main window.
Result	The component can be moved within the main window without being docked. It has a document window frame and a title bar.

Related topics

HowTos

- How to Control Window States ( ControlDesk Experiment Guide)

References

- Allow Docking on page 46

Fullscreen

Access

You can access this command via:

Menu bar	View
Context menu of	None
Shortcut key	F11
Toolbar icon	None

Purpose

To maximize all windows currently open and put the active window on top.

Result

All windows are enlarged to their maximum. The window currently active is put on top.

Description

You can return to the normal display mode by clicking the Fullscreen toolbar icon or pressing **F11** on the keyboard.

Help Topics

Access

You can access this command via:

Menu bar	Help
Context menu of	None
Shortcut key	F1
Toolbar icon	

Purpose

To open ControlDesk's online help.

Result	The online help for ControlDesk opens.
Description	You can search for information on all of ControlDesk's dialogs, menu commands, and context menu commands.
Related topics	<p>References</p> <ul style="list-style-type: none"> • About ControlDesk on page 43



To get context-sensitive help for a button, command, menu or window, use the keyboard shortcut on the item you are interested in or click the Help icon in the toolbar and then the item of interest.

Hide

Access	You can access this command via:
Menu bar	None
Context menu of	<ul style="list-style-type: none"> ▪ Navigator ▪ Instrument Selector ▪ Parameter Editor's Showlist ▪ All controlbars
Shortcut key	None
Toolbar icon	None
Purpose	To set the component to the invisible state.
Description	The component you selected is hidden.
Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • How to Control Window States (ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none"> • Allow Docking on page 46 • Controlbar Section on page 51 • Float In Main on page 61

Highlight Variables

Access

You can access this command via:

Menu bar	None
Context menu of	<ul style="list-style-type: none">■ Instruments■ Navigator■ Signal slot header
Shortcut key	None
Toolbar icon	None

Purpose

To toggle highlight variables mode on and off.

Result

If selected for a Stimulus Editor document, the variable currently selected in the Stimulus Editor document is highlighted in the Variable Browser.

If selected for an instrument, the variables connected to the instrument and the corresponding block name are marked by a red chain in the Variable Browser.

As long as the mode is active, the menu entry is marked.



In the Operator mode this is not available for Stimulus Editor documents.

Related topics**Basics**

- *Creating Data Connections* ([ControlDesk Experiment Guide](#))
- *Stimulus Editor Basics* ([ControlDesk Test Automation Guide](#))

HowTos

- *How to Mark Already Connected Variables* ([ControlDesk Experiment Guide](#))

Large Icons

Access	You can access this command via:	
Menu bar	None	
Context menu of		<ul style="list-style-type: none"> ■ Instrument Selector ■ Signal Selector
Shortcut key	None	
Toolbar icon	None	
Purpose	To display large icons in the Instrument Selector or Signal Selector.	
Result	The Instrument Selector or Signal Selector displays large instrument icons. See also <i>Small Icons</i> on page 95.	
		In the Operator mode this is not available for the Signal Selector.
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • <i>Instrument Selector</i> ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none"> • <i>Small Icons</i> on page 95 	

Log File

Access	You can access this command via:	
Menu bar	View	
Context menu of	None	
Shortcut key	None	
Toolbar icon		
Purpose	To open the LOG file in ControlDesk's working area.	

Result	The LOG file is shown in ControlDesk's working area.
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• How to View the dSPACE.log File (ControlDesk Experiment Guide)

Log Viewer

Access	The Log Viewer is located in ControlDesk's Tool Window, which can be shown or hidden by selecting or clearing the Tool Window entry in the View – Controlbars menu.
Purpose	To display all kinds of messages generated by ControlDesk.
Result	The messages generated by ControlDesk are shown so that you get information about errors and performed tasks.
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• How to View Messages with the Log Viewer (ControlDesk Experiment Guide)

New

Access	You can access this command via:
Menu bar	File
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To create a new file.
Result	This automatically displays a list showing all the supported file types.

Description	From the drop-down list, you can select the type of file that should be created. A window with an empty file of the type you selected is then opened in ControlDesk's working area. This command only allows you to create files of the types TXT, PY, C, H, SE, and LAY (there might be fewer file types available depending on the installation you have).
--------------------	--



In the Operator mode you can only select file types TXT, PY, C and H.

Related topics

HowTos

- *How to Create New Files* (*ControlDesk Experiment Guide*)

References

- *Close* on page 49
- *New Experiment* on page 168
- *Open* on page 67
- *Recent Files* on page 89
- *Save* on page 93
- *Save As* on page 92

Open

Access

You can access this command via:

Menu bar	File
Context menu of	Experiment Navigator
Shortcut key	Ctrl+O
Toolbar icon	

Purpose

To open a file.

Result

The result depends on where Open was invoked:

- From the Experiment Navigator's context menu: The file in the Experiment Navigator that you clicked is opened.

- From the File menu: Lets you select the path, directory, file type and name of the file to be opened. How it is opened depends on the component responsible for handling it.



The last eight files that were opened can be seen in the **File – Recent Files** submenu. This list is updated each time you save or open another file.

Dialog settings

- Look in** Lets you select the path and folder to open the file from.
File name Displays the name of the selected file.
Files of type Lets you select the type of file to open.



You can switch to the last eight folders via the Recent Folders button in the Open dialog.

Related topics

- Basics
- [New](#)
- HowTos
- [How to Open, Save and Close Files](#) ([ControlDesk Experiment Guide](#))
- References
- [Close](#) on page 49
 - [Load Reference Group](#) on page 400
 - [New](#) on page 66
 - [Open Experiment](#) on page 170
 - [Open Variable File](#) on page 404
 - [Recent Files](#) on page 89
 - [Save](#) on page 93
 - [Save As](#) on page 92

Paste

Access

You can access this command via:

Menu bar	Edit
Context menu of	<ul style="list-style-type: none">■ Source Code Editor■ Interpreter■ Instrument in a layout■ Stimulus Editor
Shortcut key	Ctrl+V, Shift+Insert
Toolbar icon	

Purpose

To paste the clipboard content into the current window.

Result

If the clipboard contents are valid for the current window, they are pasted.

Description

This can be used to paste text to the Source Code Editor or Interpreter, instruments to a layout, and cells to the Stimulus Editor, provided the clipboard contents are valid for the current window.



The Source Code Editor supports drag & drop operations. Texts can be dragged from the Source Code Editor document, the Variable Browser, and any external OLE-enabled application to the same or another Source Code Editor document. For more information, refer to *Operating Principles* ( *ControlDesk Experiment Guide*).



Paste is not available in the Operator mode if you are handling a file that is assigned to an experiment.

Related topics

Basics

- [Basic Elements of ControlDesk](#) ([ControlDesk Experiment Guide](#))
- [Using the Python Interpreter](#) ([ControlDesk Automation Guide](#))

References

- [Copy](#) on page 52
- [Copy Selected](#) on page 485
- [Cut](#) on page 59
- [Delete](#) on page 60
- [Keyboard Shortcuts of the Python Interpreter](#) ([ControlDesk Automation Guide](#))

Print

Access

You can access this command via:

Menu bar	File
Menu bar	None
Context menu of	None
Shortcut key	Ctrl+P
Toolbar icon	

Purpose

To print a file from the Source Code Editor.

Result

This invokes standard printing. The specified file is printed according to your specifications.

Related topics

References

- [Print Preview](#) on page 71
- [Print Setup](#) on page 71

Print Preview

Access	You can access this command via:
Menu bar	File
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To show a preview of the file you want to print.
Result	This invokes standard Print Preview. The file currently active in the Source Code Editor is shown in a preview.
Related topics	References <ul style="list-style-type: none">• Print on page 70• Print Setup on page 71

Print Setup

Access	You can access this command via:
Menu bar	File
Context menu of	None
Shortcut key	None
Toolbar icon	None
Purpose	To change the settings of your printer.
Result	This dialog invokes the standard Print Setup. The next time you use Print (see above), it will use the settings you made here.
Related topics	References <ul style="list-style-type: none">• Print on page 70• Print Preview on page 71

Properties

Access

Depending on the type of item for which you want to open the properties dialog you can use one of the following accesses:

Type of Item	Access	Refer to	Avail. in OpMode
Platform	<ul style="list-style-type: none"> ■ Platform menu ■ Context menu of the Platform Navigator ■ Double-click on a platform (also in OpMode) ■  	<i>Properties: Platform Properties</i> on page 75	No
Reference group	<ul style="list-style-type: none"> ■ Context menu of the Reference Data Manager with the mouse pointing to a reference group in the detailed Browser Window (refer to <i>Browser Window</i> on page 370) 	<i>Properties: Reference Data Properties</i> on page 83	Yes
Layout	<ul style="list-style-type: none"> ■ View menu with no instrument selected ■ Context menu of the layout ■ Alt+Enter with no instrument selected 	<i>Properties: Layout Properties</i> on page 73	No
Selected instrument(s)	<ul style="list-style-type: none"> ■ View menu with instrument(s) selected ■ Context menu of selected instrument(s) ■ Context menu of an item in the Instrumentation Navigator ■ Alt+Enter with instrument(s) selected 	<i>Overview of Instruments</i> ( <i>ControlDesk Instrument Reference</i>).	No
Not-selected instrument(s)	<ul style="list-style-type: none"> ■ Context menu of not-selected instrument ■ Context menu of an item in the Instrumentation Navigator 	With multiple instruments selected, only the common property pages are displayed.	No
Stimulus Editor File	<ul style="list-style-type: none"> ■ View menu with Stimulus Editor file selected ■ Alt+Enter with Stimulus Editor file selected ■ Double-click on the Board name in the Test Automation Navigator 	<i>Properties: Stimulus Editor File Properties</i> on page 87	yes

Purpose

To view and modify the properties of the currently selected component.

Result	The corresponding properties dialog opens. If you alter the properties, they are changed accordingly.
---------------	---

Related topics

Basics

- Reference Data Manager Basics ( ControlDesk Experiment Guide)

HowTos

- How to Create a New Layout Window ( ControlDesk Experiment Guide)
- How to Set Instrument Properties ( ControlDesk Experiment Guide)
- How to Set the Layout Properties ( ControlDesk Experiment Guide)
- How to View Platform Properties ( ControlDesk Experiment Guide)

References

- Parameter Editor, Variable Browser and Reference Data Manager on page 363
- Properties: Layout Properties on page 73
- Properties: Platform Properties on page 75
- Properties: Reference Data Properties on page 83

Properties: Layout Properties

Purpose

To set the color properties, resize the layout and adjust the update priorities for instruments.



This dialog is not available in the Operator mode.

Layout Property page

Here you can set the background and foreground colors for a layout. The size of the current layout and a grid can also be set. The grid is magnetic so you can easily align your instruments to the grid lines (points).

Background Lets you select the background color via the *Color Box* ( ControlDesk Instrument Reference).

Foreground Lets you select the foreground color via the *Color Box* ( ControlDesk Instrument Reference).

The foreground settings affect only controls for instruments such as captions or tics that will be added to the layout. Existing instruments are not affected.

Width Lets you specify the width of the current layout in pixel.

Height Lets you specify the height of the current layout in pixel.

Active Indicates whether a grid is displayed inside the layout.

Width Lets you specify the horizontal distance between two grid points in pixel.

Height Lets you specify the vertical distance between two grid points in pixel.

Data Kernel page

Here you can set the update priority for Virtual Instruments (single shot instruments such as a check button) and Data Acquisition Instruments (time trace instruments such as a plotter). Low means that the instruments will not be updated often, so the program surface has a shorter reaction time.



The data kernel settings are not limited to the current layout.

Normal instruments Sets the update priority for normal (Virtual) instruments. High means that normal (Virtual) instruments will be updated first.

Capture instruments Sets the update priority of capture (Data Acquisition) instruments.

Related topics

Basics

- *Creating an Instrument Panel* ([ControlDesk Experiment Guide](#))

HowTos

- *How to Set the Layout Properties* ([ControlDesk Experiment Guide](#))

Examples

- *Example of Creating a New Layout* ([ControlDesk Experiment Guide](#))

References

- *Properties* on page 72

Properties: Platform Properties

Purpose

To view the properties of the platform selected in the Platform Navigator and alter them if necessary.



Working in the Operator mode, you can access this dialog only by double-click the platform selected in the Platform Navigator.

Description

This dialog contains the following property pages:

Available for	Property Page
All controller and processor boards and DS1401	Board Details Properties page
DS1005	DS1005 Properties page
DS1006	DS1006 Properties page
DS1103	DS1103 Properties page
DS1104	DS1104 Properties page
DS1401	DS1401 Properties page
DS2301, DS2302	DS230x Properties page
All platforms and all I/O boards	General Properties page
DS1401	I/O Board (DS1401) Properties page
DS1401	I/O Module (DS1401) page
DS1005, DS1006	Modules (DS1005/DS1006) page
Some I/O boards	I/O Settings Properties page
DS1005	Memory (DS1005) Properties page
DS1103	Memory (DS1103) Properties page
DS1401	Memory (DS1401) Properties page
Simulink platform	Simulation Properties page
DS1103, DS2201	Slave DSP Properties page
Multiprocessor systems	Topology Properties page
DS1005, DS1103, DS1104, DS1401, DS5202, and Simulink platform	Versions page
Simulink platform	WorkSpace I/O Properties page

Board Details Properties page

To view and/or change the board's settings.

Port address (automatically filled) Displays the processor board base address as specified with the DIP switches or the rotary switches on the board.

Processor type (automatically filled) Displays the processor type, which is automatically detected by the Platform Manager.

Processor name Displays the processor name, which is relevant for assigning applications to processor boards (MP systems). The names of the processor boards can be changed here and in the board information table of the Register MP System dialog.

Loaded application (automatically filled) Displays the name and directory path of a downloaded object file.

Processor status (automatically filled) Displays the current processor status. Its values are:

- **RTP is reset**: The real-time processor has been stopped.
- **RTP is running**: The application on the real-time processor has been started.

Clock (automatically filled) Displays the clock frequency of the processor. It is automatically detected by the Platform Manager.

Apply Accepts any changes you made in the dialog.

DS1005 Properties page

To view and/or change the DS1005's settings. This page is available if a DS1005 is selected in the Platform Navigator.

Serial number Displays the serial number of your board.

Board version Displays the version of your board.

Processor temperature Displays the temperature of the processor at the time the dialog is opened.

Bus clock Displays the clock frequency of the internal bus.

DS1006 Properties page

To view and/or change the DS1006's settings. This page is available if a DS1006 is selected in the Platform Navigator.

Serial number Displays the serial number of your board.

Board version Displays the version of your board.

Processor temperature Displays the temperature of the processor at the time the dialog is opened.

Bus clock Displays the clock frequency of the internal bus.

DS1103 Properties page

To view the DS1103's settings. This page is available if a DS1103 is selected in the Platform Navigator.

Serial number Displays the serial number of your board.

Board version Displays the version of your board.

Processor temperature Displays the temperature of the processor at the time the dialog is opened.

Bus clock Displays the clock frequency of the internal bus.

DS1104 Properties page	To view the DS1104's settings. This page is available if a DS1104 is selected in the Platform Navigator.
Board name	Refer to <i>General Properties page</i> on page 78.
Type	Refer to <i>General Properties page</i> on page 78.
Processor type	Displays the type of your processor.
Loaded application	Displays the name of the application loaded.
Status	Displays the status of your processor.
Ram size	Displays the size of your ram in megabyte.
Flash size	Displays the size of your flash in megabyte.
Processor clock	Displays the clock frequency of the processor in MHz.
Serial number	Displays the serial number of your board.
Board version	Displays the version of your board.
Bus clock	Displays the clock frequency of the internal bus in MHz.
DS1401 Properties page	To view information on the DS1401. This page is available if a DS1401 is selected in the Platform Navigator.
Serial number	Displays the serial number of your board.
Board version	Displays the version of your board.
Processor temperature	Displays the temperature of the processor at the time the dialog is opened. The limits as set on the board are listed in brackets (n.b. means no border.)
Board temperature	Displays the temperature of the board at the time the dialog is opened. The limits as set on the board are listed in brackets (n.b. means no border.)
Battery voltage	Displays the voltage of the battery at the time the dialog is opened. The limits as set on the board are listed in brackets (n.b. means no border.)
Bus clock	Displays the clock frequency of the internal bus.
DS230x Properties page	To view information about the application running on the DS230x. This page is available if a DS2301 or DS2302 is selected in the Platform Navigator.
Loaded Application	Displays the name of the application loaded on this channel.
I/O Module	(only for DS2302) Displays the name of the corresponding I/O module of the board.

I/O Board (DS5202) Properties page	To view information on the I/O board. This page is available if a DS5202 is selected in the Platform Navigator. FPGA Firmware Version Displays the version of the FPGA firmware. Piggy-Back Module Displays the ID of the piggy-back module. Piggy-Back Info Displays information on the piggy-back module.
General Properties page	To view general information on the platform or the I/O board selected in the Platform Navigator. Name (automatically filled) Displays the name of the platform or I/O board selected in the Platform Navigator. The name was specified in the Register dialog (see <i>Register</i> on page 126) or Register MP dialog (see <i>Register MP</i> on page 128). Type (automatically filled) Displays the type of the platform or I/O board selected in the Platform Navigator. The type was specified in the Register dialog (see <i>Register</i> on page 126) or Register MP dialog (see <i>Register MP</i> on page 128). PHS bus address (available only for I/O boards) Displays the PHS bus address of the I/O board selected in the Platform Navigator as set on the board. Interrupt line (available only for I/O boards) Displays the interrupt line of the I/O board selected in the Platform Navigator as set on the board.
I/O Board (DS1401) Properties page	To view information on the I/O board. This page is available if a DS1401 is selected in the Platform Navigator. I/O board type (automatically filled) Displays the type of the I/O board of the MicroAutoBox. I/O board series number Displays the series number of the I/O board. I/O board revision Displays the revision of the I/O board.
I/O Module (DS1401) page	To view the properties of the I/O module of a DS1401 Module type (automatically filled) Displays the type of the I/O module of the DS1401. Module revision Displays the revision of the I/O module of the DS1401.

Module position Displays the position of the I/O module of the DS1401 to identify modules of the same type.

Module interrupt Displays the interrupts that are set for this I/O module.

Module speed Displays the speed of the I/O module of the DS1401.

Note Displays specific characteristics of the module.

Modules (DS1005/DS1006) page To get information on the Gigalink module mounted on a DS1005 or DS1006.

Module Displays the installed Gigalink module of the DS1005 or DS1006.

I/O Settings Properties page To view information about the I/O board's settings. This page is available if an I/O board is selected in the Platform Navigator.

I/O Settings table Displays information about the I/O features of the selected I/O board. The displayed information differs for each board.

Memory (DS1005) Properties page To view information about the DS1005's memory. This page is available if a DS1005 is selected in the Platform Navigator.

L2 Cache size (automatically filled) Displays the size of the processor board's L2 cache, which is detected by the Platform Manager.

Global RAM Size (automatically filled) Displays the size of the processor board's global RAM, which is detected by the Platform Manager.

Flash EPROM size (automatically filled) Displays the size of the processor board's flash memory, which is detected by the Platform Manager.

Memory (DS1103) Properties page To view information about the DS1103's memory. This page is available if a DS1103 is selected in the Platform Navigator.

Local RAM Size (automatically filled) Displays the size of the processor board's local RAM, which is detected by the Platform Manager.

Global RAM Size (automatically filled) Displays the size of the processor board's global RAM, which is detected by the Platform Manager.

Memory (DS1401) Properties page

To view information about the DS1401's memory. This page is available if a DS1401 is selected in the Platform Navigator.

Local RAM Size (automatically filled) Displays the size of the processor board's local RAM, which is detected by the Platform Manager.

Global RAM Size (automatically filled) Displays the size of the processor board's global RAM, which is detected by the Platform Manager.

Flash EPROM size (automatically filled) Displays the size of the flash memory, which is detected by the Platform Manager.

Simulation Properties page

To view and/or change the simulation settings. This page is available if the Simulink platform is selected in the Platform Navigator and a model is loaded.



The information shown is a subset of Simulink's simulation parameters, containing only dialogs relevant to ControlDesk.

See also *How to Specify Simulink Properties* (*ControlDesk Experiment Guide*).

Name (automatically filled) Displays the directory and name of the loaded model.

State (automatically filled) Displays the current state of the model. Its values are:

- currently running
- currently paused
- currently stopped

Info (automatically filled) Displays revision control information taken from a model info block if available in the model.

Start time Lets you specify the start time for the simulation.

Stop time Lets you specify the stop time for the simulation.

Type Lets you select the solver (variable-step or fixed-step) used to calculate the model.



For this version of ControlDesk, only "Fixed-step" solvers in single timer task mode ("SingleTasking") are supported.

Fixed-step solvers take the same step size during the simulation, provide no error control and do not locate zero crossings.

If your model contains continuous states you must choose one of the solvers from ode1 ... ode5. The higher a solver's order, the more execution time it needs. Currently, the following fixed-step solvers are supported:

Solver	Description
"ode1"	Euler's method, ControlDesk's default solver
"ode2"	Heun's method, also known as the improved Euler formula
"ode3"	The fixed-step version of ode23, the Bogacki-Shampine formula
"ode4"	RK4, the fourth-order Runge-Kutta formula
"ode5"	The fixed-step version of ode45, the Dormand-Prince formula

If your model does not have continuous states, you can use the fixed-step solver "discrete," which performs no integration of continuous states. This is the default solver for such models.

Fixed step size The given step size is used as the base sample time for the model. If your model includes continuous states, the fixed step size is also used for the integration method.

Mode The solver mode can only be selected for fixed-step solvers. The possible values are "SingleTasking", "MultiTasking" or "Auto", which define the execution mode that ControlDesk uses for timer-driven tasks. The default is "SingleTasking".

For detailed information on solvers, refer to *Solvers in Using Simulink* by The Mathworks.

Slave DSP Properties page

To view information on the slave DSP of a DS1103 or DS2201. This page is available if a DS1103 or DS2201 is selected in the Platform Navigator.

Processor type Displays the exact processor type of the slave DSP. The information is generated by the Platform Manager.

Assigned application Displays the name and directory path of an object file (OBJ file) if it was assigned to the slave DSP.

Processor status Displays the current slave DSP status. Its values are:

- **DSP is reset** The digital signal processor has been stopped.
- **DSP is running** The application loaded on the DSP has been started.

Topology Properties page

To view information on the topology of a DS1005 multiprocessor system. This page is available if a DS1005 multiprocessor system is selected in the Platform Navigator. See also *Register* on page 126 and *Register MP* on page 128.

Processor Displays the processors present in your network topology.

Gigalink0 ... 3 (DS1005 only) Displays the Gigalinks from (Gigalink0 ... 3) that are present in your DS1005 network topology.

Versions page

To view information on the selected hardware or platform. This page is available if a DS1005, DS1103, DS1104 or DS1401 or the Simulink platform is selected in the Platform Navigator. Further it is available for I/O boards and MicroAutoBox I/O modules.

■ **Processor boards**

Displays the module versions of the hardware and the software of processor boards, the application and the connected periphery boards (I/O modules in case of the MicroAutoBox).

■ **Periphery boards and I/O modules**

Displays the module versions of the selected board or I/O module.

Version tree Displays the software versions related to the platform.

Version table Displays the information on the version selected in the version tree: the name of the platform, its version number and initialization status.



When you invoke the Versions page of the Simulink platform, the version tree is not available. The version table shows information on: installed dSPACE and MATLAB/Simulink tools, their version and release numbers and initialization dates.

WorkSpace I/O Properties page	To direct simulation output to workspace variables and get input and initial states from the workspace. This page is available if the Simulink platform is selected in the Platform Navigator and a model is loaded.
--------------------------------------	--



The information shown is a subset of Simulink's simulation parameters, containing only dialogs relevant to ControlDesk. For a detailed description of the Workspace I/O page and its options, refer to *The Workspace I/O Page* in *Using Simulink* by The MathWorks.

Related topics

HowTos

- *How to View Platform Properties* ([ControlDesk Experiment Guide](#))

References

- *Properties* on page 72

Properties: Reference Data Properties

Purpose	To display information on a reference data file, and to provide further information, if desired.
----------------	--

Description	This dialog contains the following pages:
--------------------	---

Purpose	Page
To display information on the source BIN file	BIN-Conversion page
To display information on the reference data capture	Capture page
To display information on the data file	Data File page
To provide further information on the data file	Description page
To display information on the reference data capture with MicroAutoBox's flight recorder	Flight Recorder page
To display information on the source IDF file	IDF-Conversion page
To display information on the related real-time application	RT-Program page
To display the trigger conditions of the reference data capture	Trigger page

BIN-Conversion page	To display information on the source BIN file. This page is available only if a BIN file – generated by DS1005 or MicroAutoBox's flight recorder – was converted into the current data file. See also <i>Convert BIN File</i> on page 374. Source File (automatically filled) Displays the name and location of the source BIN file. Date/Time (automatically filled) Displays the date and time when the source BIN file was created. Size (automatically filled) Displays the size of the source BIN file in bytes.
Capture page	To display detailed information on the reference data capture. This page is not available if MicroAutoBox's flight recorder was used to acquire the current reference data group. See also <i>Capturing Data</i> (<i>ControlDesk Experiment Guide</i>) and <i>Capture Page</i> (<i>ControlDesk Instrument Reference</i>). Length (automatically filled) Displays the length of the reference data contained in the data file. Downsampling (automatically filled) Displays the downsampling factor of the reference data capture. Date/Time (automatically filled) Displays the date and time of the reference data capture. Task (automatically filled) Displays information on the task number of the real-time data service of the reference data capture. Samp. Period (automatically filled) Displays the sampling period of the real-time application.
Data File page	To display information on the data file. This page is not available if the current reference group was not saved as a data file. Data File (automatically filled) Displays the name and location of the file containing the reference data. Date/Time (automatically filled) Displays the date and time when the data file was created. Size (automatically filled) Displays the size of the data file in bytes.
Description page	To provide further information on the corresponding data file and its author, and to get information on the version of the data file format. Description Lets you specify a description for the data file.

Author(s) Lets you specify the name of the author of the data file.

Version (automatically filled) Displays version information of the data file format. For details on the available MAT file formats, see *Data Files Generated by the Reference Data Manager* (ControlDesk Experiment Guide).

Flight Recorder page	<p>To display information on the reference data capture with DS1005 or MicroAutoBox's flight recorder. This page is available only if DS1005 or MicroAutoBox's flight recorder was used to acquire the current reference data group. See also How to Use the Flight Recorder in the <i>DS1005 Features</i> document or <i>MicroAutoBox Features</i> document and Flight Recorder, FLIGHT_REC_BL1, and Flight Recorder in the Feature, RTI and RTLlib references of DS1005 or MicroAutoBox.</p> <p>Start (automatically filled) Displays the date and time when the data capture with the flight recorder started.</p> <p>End (automatically filled) Displays the date and time when the data capture with the flight recorder ended.</p> <p>Reader Version (automatically filled) Displays the version of the flight recorder reader.</p> <p>Flight Rec Version (automatically filled) Displays the version of RTLlib's flight recorder functions.</p> <p>Note (automatically filled) Displays additional information on the flight recorder data capture.</p>
IDF-Conversion page	<p>To display information on the source IDF file. This page is available only if an IDF file – generated when using the Stream-To-Disk feature – was converted into the current data file. See also <i>Convert IDF File</i> on page 375.</p> <p>Source File (automatically filled) Displays the name and location of the source IDF file.</p> <p>Date/Time (automatically filled) Displays the date and time when the source IDF file was created.</p> <p>Size (automatically filled) Displays the size of the source IDF file in bytes.</p> <p>Part (automatically filled) Displays the number of the current data file.</p> <p>The field is available only if the IDF file was split according to time intervals.</p>

of ... Part(s) (automatically filled) Displays the number of data files the related IDF file was converted into.

The field is available only if the IDF file was split according to time intervals.

Signal (automatically filled) Displays the signal contained in the corresponding data file.

The field is available only if the IDF file was split according to the contained signals.

of ... Signal(s) (automatically filled) Displays the number of signals contained by the related IDF file. This number is equal to the number of data files the related IDF file was converted into.

The field is available only if the IDF file was split according to the contained signals.

RT-Program page

To display information on the real-time application from which reference data was acquired. This page is not available if MicroAutoBox's flight recorder was used to acquire the current reference data group.

Board / MP System (automatically filled) Displays the platform the real-time application was running on.

Object File (automatically filled) Displays the name and location of the real-time application.

Date/Time (automatically filled) Displays when the real-time application was generated.

Trigger page

To display the trigger conditions of a reference data capture. This page is not available if MicroAutoBox's flight recorder was used to acquire the current reference data group. See also *Trigger Page*

( *ControlDesk Instrument Reference*).

State (automatically filled) Displays whether a trigger was used when the reference data was captured.

Signal (automatically filled) Displays the trigger signal specified for the reference data capture.

Delay (automatically filled) Displays the trigger delay specified for the reference data capture.

Level (automatically filled) Displays the trigger threshold specified for the reference data capture.

Edge (automatically filled) Displays the trigger edge specified for the reference data capture. **pos** corresponds to a rising edge, **neg** to a falling edge.

Related topics

Basics

- *Reference Data Manager Basics* ( ControlDesk Experiment Guide)

HowTos

- *How to View Platform Properties* ( ControlDesk Experiment Guide)

References

- *Parameter Editor, Variable Browser and Reference Data Manager* on page 363
- *Properties* on page 72

Properties: Stimulus Editor File Properties

Purpose

To view and change document-specific properties.



ControlDesk Test Automation is documented only for compatibility reasons (for scripts up to ControlDesk v2.3). For test automation tasks, you are recommended to use dSPACE AutomationDesk.

Description

This dialog contains the following pages:

Purpose	Page
To display and change the parameters specific to the board/system platform in use.	Board / System page
To display and change the names of the generated files.	Generated Files page
To display and edit general settings for the selected Stimulus Editor document.	Settings page
To display and edit general information about the file in use.	File Info page

Board / System page

To display and change the parameters specific to the board/system platform in use. This page is the one displayed by default when calling up the Stimulus Editor File Properties dialog.

Variable Description File Displays the name of the variable description file to be used. To select a different variable description file, press the **Open Now** button.

Multiprocessor Member If an SDF file for a multiprocessor system is selected, specify the multiprocessor member that will execute the real-time application.

Board / System Lets you select the board / system platform in use.

Generated Files page	To display and change the names of the generated files. Script filename Displays the name of the Python script to be generated. To assign a different script file name, press the Change button to the right. SEQ filename Displays the name of the generated sequence control table. To assign a different SEQ file name, press the Change button to the right. MAT filename Displays the name of the generated MAT file. To assign a different MAT file name, press the Change button to the right.
Settings page	To display and edit general settings for the selected Stimulus Editor document. Show script Indicates whether the Python script is displayed in the working area when building and running the script: see the <i>Build + Run Script Command</i> in the <i>Control Desk Basic Reference</i> . Clear the checkbox if you want to see the signal plot only. Use defaults Indicates whether the cell defaults are assigned to new signals automatically. On insertion of a new signal, the Parameter dialog is skipped if the following two conditions are fulfilled: <ul style="list-style-type: none">■ The Use defaults checkbox is selected.■ All values specifying the signal are defined in the Defaults Page of the Stimulus Editor document. Max. display time Lets you specify the maximum display time for the Stimulus plot. Cursor update time Lets you specify the time interval after which the cursor of the Stimulus plot is updated. Show grid Indicates whether a grid is displayed in the plot area. Show cursors Indicates whether the cursors are displayed in the plot area of the Stimulus Editor document.
File Info page	To display and edit general information about the file in use. This information will be added to the generated Python script as a comment. Author Lets you specify the name of the author. Version Lets you specify a version number. Description Lets you specify a file description.

Related topics**Basics**

- *Stimulus Editor Basics* ( [ControlDesk Test Automation Guide](#))

HowTos

- *How to Change System Description Files* ( [ControlDesk Test Automation Guide](#))
- *How to Create a Stimulus Editor Document* ( [ControlDesk Test Automation Guide](#))
- *How to Set Default Values* ( [ControlDesk Test Automation Guide](#))

References

- *Build + Run Script* on page 501
- *Properties* on page 72

Recent Files

Access

You can access this command via:

Menu bar	File
Context menu of	None
Shortcut key	None
Toolbar icon	None

Purpose

To load one of the eight most recent files that were open in ControlDesk.

Result

The recent file that you select from the list is opened in ControlDesk for further use.

Related topics**HowTos**

- *How to Open, Save and Close Files* ( [ControlDesk Experiment Guide](#))

References

- *Close* on page 49
- *New* on page 66
- *Open* on page 67
- *Recent Experiments* on page 174
- *Save* on page 93
- *Save As* on page 92

Redo

Access	You can access this command via:
Menu bar	Edit
Context menu of	None
Shortcut key	Ctrl+Y
Toolbar icon	
Purpose	To redo the most recent commands or actions.
Result	Any command or action that was undone via the Undo command is performed once again.
Description	The number of reversed commands or actions that are performed depends on how often you carry out the command in succession. If you carry it out once, one command or action is reversed; if you carry it out twice, two are reversed, and so on.
	In the Instrument Manager, you can click on the down arrow to get a list of the actions that can be redone. If you select one of the actions from the list, all actions up to that are redone. This function is not available for the Source Code Editor.
	This is not available in the Operator mode if you are handling a file that is assigned to an experiment.
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• <i>How to Undo an Action</i> ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none">• <i>Undo</i> on page 99

Run on Experiment Load

Access	You can access this command via:
Menu bar	None
Context menu of	Python file in the Experiment Navigator
Shortcut key	None
Toolbar icon	None
Purpose	To make ControlDesk run a script whenever the experiment is loaded.
Result	When you open an experiment, all the Python scripts are executed for which you selected this option.
Description	The order in which the Python scripts are executed depends on the order in which they were opened with this command.
	This is not available in the Operator mode.
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• How to Save Experiments ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• Auto Download on Experiment Load on page 153• Autorun Application on page 153• Open on Experiment Load on page 173• Use on Start Animation on page 189

Save As

Access

You can access this command via:

Menu bar	File
Context menu of	Experiment Navigator
Shortcut key	None
Toolbar icon	None

Purpose

To save the active window in ControlDesk's working area under a new file name.

Result

This allows you to insert the file name you desire. The window is saved under the file name and path you specified.



This is not available in the Operator mode if you are handling a file that is assigned to an experiment.

Dialog settings

Save in Lets you select the path and folder to save the file to.

File name Lets you specify the name of the file. You can also select a name from the files listed under the chosen path and folder.

Save as type Lets you select the type to save the file as.

If you select a file from those listed under the chosen path and folder, you are prompted to overwrite it.

Related topics**HowTos**

- [How to Open, Save and Close Files](#) ([ControlDesk Experiment Guide](#))

References

- [Close](#) on page 49
- [New](#) on page 66
- [Open](#) on page 67
- [Recent Files](#) on page 89
- [Save](#) on page 93
- [Save Experiment As](#) on page 180
- [Save Reference Group As](#) on page 418

Save

Access

You can access this command via:

Menu bar	File (not for reference groups)
Context menu of	Reference Data Manager (only for reference groups)
Shortcut key	Ctrl+S (not for reference groups)
Toolbar icon	

Purpose

To save the active window in ControlDesk's working area or to save the selected reference group as a CSV or MAT file.

Result

The currently active window or selected reference group is saved.



In the Operator mode, the following applies:

- Windows and files that are contained in an experiment cannot be saved.
- Reference groups are automatically saved via Save Reference Group As to avoid overwriting of an existing CSV or MAT file (see *Save Reference Group As* on page 418). The new reference group is automatically added to the experiment.

Description

If a window, file or reference group is saved for the first time, Save As is invoked automatically and prompts you to enter a path and file name.

If you opened the context menu in the free space of the Reference Data Manager's hierarchy view, the active group is saved.

Related topics

Basics

- [Reference Data Manager Basics](#) ( ControlDesk Experiment Guide)

HowTos

- [How to Generate and Save Reference Data](#) ( ControlDesk Experiment Guide)
- [How to Open, Save and Close Files](#) ( ControlDesk Experiment Guide)

References

- [Close](#) on page 49
- [New](#) on page 66
- [Open](#) on page 67
- [Recent Files](#) on page 89
- [Save As](#) on page 92
- [Save Experiment](#) on page 179
- [Save Reference Group](#) on page 417
- [Save Reference Group As](#) on page 418

Select All

Access

You can access this command via:

Menu bar	Edit
Context menu of	Log Viewer
Shortcut key	Ctrl+A
Toolbar icon	None

Purpose

To mark all of the entries in the Log Viewer or Source Code Editor.

Result

The entire text is marked.

Description

This lets you copy all of the entries in the Log Viewer or the entire text or Source Code Editor to the clipboard in a single step.

Related topics

HowTos

- [How to View Messages with the Log Viewer](#) ( ControlDesk Experiment Guide)

References

- [Autoscroll](#) on page 47
- [Clear All](#) on page 48

Small Icons

Access	You can access this command via:	
Menu bar	None	
Context menu of		■ Instrument Selector ■ Signal Selector
Shortcut key	None	
Toolbar icon	None	
Purpose	To display small icons in the Instrument Selector or Signal Selector.	
Result	The Instrument Selector or Signal Selector displays small instrument icons. See also <i>Large Icons</i> on page 65.	
		In the Operator mode this is not available for the Signal Selector.
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • <i>Instrument Selector</i> ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none"> • <i>Large Icons</i> on page 65 	

Status Bar

Access	You can access this command via:	
Menu bar	View	
Context menu of	None	
Shortcut key	None	
Toolbar icon	None	
Purpose	To show or hide ControlDesk's status bar at the bottom of ControlDesk's main window.	

Result

If there is a checkmark to the left, the status bar is shown at the bottom of the main window. If there is no checkmark, it is hidden.

Related topics

Basics

- *Basic Elements of ControlDesk* (*ControlDesk Experiment Guide*)

Tile Horizontally

Access

You can access this command via:

Menu bar	Window
Context menu of	None
Shortcut key	None
Toolbar icon	

Purpose

To arrange the currently open windows in ControlDesk horizontally.

Result

The windows are arranged horizontally.

Description

The windows are arranged so that each window has the same size, initially without overlaps. You can move the child windows, pull them to any size you desire, and overlap them.

Related topics

Basics

- *Arranging Windows* (*ControlDesk Experiment Guide*)

References

- *Workbook* on page 102

Tile Vertically

Access	You can access this command via:
Menu bar	Window
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To arrange the currently open windows in ControlDesk vertically.
Result	The windows are arranged vertically.
Description	The windows are arranged so that each window has the same size, initially without overlaps. You can move the child windows, pull them to any size you desire, and overlap them.
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • Arranging Windows ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none"> • Arrange Icons on page 47 • Cascade on page 48 • Tile Horizontally on page 96 • Workbook on page 102

Toggle Grid

Access	You can access this command via:
Menu bar	<ul style="list-style-type: none"> ■ Layout ■ PlotterArray
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To show/hide the grid of a Layout or PlotterArray instrument.

Result	The grid of the instruments (Plotter and XYPlot) inside the PlotterArray or inside the layout is switched on and off.
---------------	---

Related topics

Basics

- *Creating an Instrument Panel* (*ControlDesk Experiment Guide*)

HowTos

- *How to Set the Layout Properties* (*ControlDesk Experiment Guide*)

References

- *PlotterArray* (*ControlDesk Instrument Reference*)

Toolbar Section

Access

You can access this command via:

Menu bar	View
Context menu of	None
Shortcut key	None
Toolbar icon	None

Purpose

To show or hide ControlDesk's toolbars, for example, the Platform Manager.

Result

ControlDesk's toolbars are either shown or hidden.

Description

This opens a submenu showing all toolbars available in ControlDesk. The toolbars that have a checkmark are shown in ControlDesk's main window. The toolbars without checkmarks are hidden.



In the Operator mode, you can only show or hide the toolbars which are available in that mode.

Related topics**Basics**

- *Basic Elements of ControlDesk* ( [ControlDesk Experiment Guide](#))

References

- *Controlbar Section* on page 51

Undo

Access

You can access this command via:

Menu bar	Edit
Context menu of	Parameter Tree (while in consistency check mode)
Shortcut key	Ctrl+Z, Alt+Backspace
Toolbar icon	

Purpose

To undo the most recent edit commands or actions, or to undo all the changes that you made during the consistency check of a parameter file.

Result

The previously performed commands and actions are reversed.

If you invoke the undo command from the context menu of the Parameter Tree, the corresponding parameter file is restored.

Description

This lets you undo the most recent edit commands performed in the Source Code Editor or Stimulus Editor, or the most recent actions in the Instrument Manager. The number of commands or actions that are reversed depends on how often you carry out the command in succession. If you carry it out once, one command or action is reversed; if you carry it out twice, two are reversed, and so on.



In the Instrument Manager, you can click on the down arrow to get a list of the actions that can be undone. If you select one of the actions from the list, all actions up to that are undone. This function is not available for the Source Code Editor.



This is not available in the Operator mode in the following cases:

- A file is assigned to an experiment.
- Undo is not available to restore a parameter file.

Related topics

HowTos

- *How to Check Parameter Files for Consistency* (ControlDesk Experiment Guide)
- *How to Undo an Action* (ControlDesk Experiment Guide)

References

- *Redo* on page 90

User Function 1 ... 9

Access

You can access this command via:

Menu bar	Tools
Context menu of	None
Shortcut key	None
Toolbar icon	etc.

Purpose

To carry out any one of the user functions you added via Customize User Functions.

Result	The result of these depends on the settings of the user functions you created.
---------------	--

Description	The Tools menu allows up to nine user functions.
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This is not available in the Operator mode.

Related topics	HowTos <ul style="list-style-type: none"> • How to Define User Functions (ControlDesk Experiment Guide) References <ul style="list-style-type: none"> • Customize User Functions on page 56
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Window

Access	You can access this command via:
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Menu bar	Window
Context menu of	None
Shortcut key	None
Toolbar icon	None

Purpose	To activate an MDI child window.
----------------	----------------------------------

Result	This section acts as a placeholder for the first ten MDI child windows in ControlDesk's working area. Select an item from the list to activate the corresponding child window.
---------------	--

Related topics	Basics <ul style="list-style-type: none"> • Arranging Windows (ControlDesk Experiment Guide)
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Windows

Access	You can access this command via:
Menu bar	Window
Context menu of	None
Shortcut key	None
Toolbar icon	None
Purpose	To manage all currently open MDI child windows, meaning to activate, save, or close the documents shown in the MDI child windows.
Result	The MDI child windows in ControlDesk are shown according to the specifications you make.
Dialog settings	Activate Activates the windows you selected. Cancel Closes the Windows dialog. Save Saves the documents that are connected to the windows you selected. This does not affect the controlbars that are floating in the MDI main window. Close Window Closes the selected windows along with their corresponding documents. If a document has been modified, you are prompted to save it (Yes), ignore the modifications (No) or leave it open (Cancel).
Related topics	Basics <ul style="list-style-type: none">• Arranging Windows ( <i>ControlDesk Experiment Guide</i>)

Workbook

Access	You can access this command via:
Menu bar	View
Context menu of	None
Shortcut key	Ctrl+W
Toolbar icon	None

Purpose	To enable or disable the Workbook for ControlDesk's working area.
Result	If there is a checkmark to the left, the Workbook is enabled in ControlDesk's working area.
Description	In the Workbook mode, each separate window in the working area can be activated by a tab at the bottom of the working area. If there is no checkmark, the Workbook mode is deactivated.
Related topics	HowTos <ul style="list-style-type: none">• <i>How to Use the Workbook Mode</i> ( <i>ControlDesk Experiment Guide</i>)

Platform Manager

ControlDesk's Platform Manager provides various commands and dialogs, which are accessible via the menu bar and the context menus of the Platform Manager components.

Purpose	Refer to	Avail. in OpMode
View menu commands		
To open the dSPACE.ini file in ControlDesk.	<i>dSPACE.ini</i> on page 118	no
Tools menu commands		
To edit and save application-specific data in a system description file. To check all registered and currently used platform(s) to see if there are any errors that have not been shown yet. To create a file with support information.	<i>SDF File Editor</i> on page 133 <i>Check Platform(s) for Errors</i> on page 112 <i>Create Support Information File</i> on page 117	no no no

Purpose	Refer to	Avail. in OpMode
Platform menu commands		
To set the appropriate platform connection mode for a board.	<i>Change Connection</i> on page 110	no
To select the working board for the system.	<i>Set Working Board</i> on page 139	no
To view the properties of the system selected in the Platform Navigator and alter some of the properties.	<i>Properties: Platform Properties</i> on page 75	no
To change a directory for AutoBoot.	<i>Change AutoBoot Directory</i> on page 109	no
To register a single dSPACE processor or controller board that has just been installed.	<i>Register</i> on page 126	no
To register a multiprocessor system that has just been installed.	<i>Register MP</i> on page 128	no
To renew the directory structure shown in the File Selector.	<i>Refresh Platform Connection</i> on page 126	no
To clear the system you are currently working with.	<i>Clear System</i> on page 115	no
To open an application or model and load it to the system selected in the Navigator.	<i>Load Application or Model</i> on page 121	no
To reload the application or to start the simulation on the platform selected in the Platform Navigator.	<i>Reload Application or Start Simulink Simulation</i> on page 129	no
To stop the application or the simulation on the platform selected in the Platform Navigator.	<i>Stop Real-Time Processor or Simulink Simulation</i> on page 140	no
To choose an application and assign it to the selected slave DSP.	<i>Assign Slave Application</i> on page 108	no
To clear the slave application command.	<i>Clear Slave Application</i> on page 115	no
To load and start the application you assigned to a slave DSP.	<i>Load and Start Slave DSP</i> on page 120	no
To reset the slave DSP.	<i>Stop Slave DSP</i> on page 141	no
To change the directory for the AutoBoot or specify one if it has not already been set.	<ul style="list-style-type: none"> • <i>Insert Directory for AutoBoot Option dialog</i> on page 110 • <i>AutoBoot Directory dialog</i> on page 110 	no
Context menu commands of the File Selector		
To renew the directory structure shown in the File Selector.	<i>Refresh</i> on page 125	no
To change to the working directory.	<i>Change to Working Directory</i> on page 112	no
To add a folder to the list of favorite folders.	<i>Add to Favorites</i> on page 107	no
To remove a folder from the list of favorite folders.	<i>Remove from Favorites</i> on page 130	no
Context menu commands of the Platform Navigator.		
To make the platform selected in the Platform Navigator the working board.	<i>Make Working Board</i> on page 123	no
To save the current configuration via the Open dialog.	<i>Save Current Configuration</i> on page 131	no
To load an application to the flash memory.	<i>Load Application to Flash</i> on page 122	no
To clear the flash memory.	<i>Clear Flash</i> on page 114	no
To set the system time of the DS1401 board.	<i>Set DS1401 System Time</i> on page 138	no
To save the flight recorder data.	<i>Save Flight Recorder Content</i> on page 132	no
To update your firmware.	<i>Update Firmware</i> on page 142	no
To verify your boot firmware.	<i>Verify Boot Firmware</i> on page 144	no
To start a ControlDesk-controlled MATLAB instance or attach an active one.	<i>Open MATLAB</i> on page 124	no
To generate a new Simulink model from within ControlDesk.	<i>New Model</i> on page 123	no
To close a ControlDesk-controlled MATLAB instance.	<i>Close MATLAB</i> on page 116	no
To close a ControlDesk-controlled Simulink model.	<i>Close Model</i> on page 117	no
To save a ControlDesk-controlled Simulink model.	<i>Save Model</i> on page 133	no
To remove blocks from the model manually.	<i>Clean Model</i> on page 113	no
To create a variable description (TRC) file for a Simulink simulation.	<i>Build Variable Description File</i> on page 109	no

Purpose	Refer to	Avail. in OpMode
Other dialogs and windows of the Platform Manager		
To enable or disable real-time applications for optional CPUs in a multiprocessor system.	<i>Select Topology</i> on page 137	no
To select a file to be downloaded to a platform.	<i>File Selector</i> on page 119	no



If you start ControlDesk with the command line argument `-admin`, all Platform Manager commands are even available in the Operator mode.

Add to Favorites

Access	You can access this command via:
Menu bar	None
Context menu of	File Selector
Shortcut key	None
Toolbar icon	None
Purpose	To add the folder currently selected in the File Selector to the list of favorite folders.
Result	The folder added to the list of favorite folders is appended to the File Selector's context menu.
Description	To change to a favorite folder, select it from the context menu. You may specify up to 10 favorite folders.
	This is not available in the Operator mode.
Related topics	References • <i>File Selector</i> on page 119 • <i>Remove from Favorites</i> on page 130

Assign Slave Application

Access	You can access this command via:
Menu bar	Platform – Slave Application
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To choose an application and assign it to the selected slave DSP.
Result	The application you selected is assigned to the slave DSP. The slave application is loaded together with the main application.
	<div style="border: 1px solid #ccc; padding: 5px; display: inline-block;">  This is not available in the Operator mode. </div>
Description	To be able to carry out this command, you must select the corresponding slave processor icon in the Platform Navigator.
Load Application to Slave DSP dialog	<p>Look in Lets you select the path and directory the application is to be opened from.</p> <p>File name Displays the name of the selected application.</p> <p>Files of type Lets you select which type of file should be opened.</p>
Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • How to Handle Applications on a dSPACE Real-Time Board ( ControlDesk Experiment Guide) • How to Handle Applications on a Slave DSP ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none"> • Clear Slave Application on page 115 • Load and Start Slave DSP on page 120 • Stop Slave DSP on page 141

Build Variable Description File

Access	You can access this command via:
Menu bar	None
Context menu of	Platform Navigator (available for the Simulink platform)
Shortcut key	None
Toolbar icon	None
Purpose	To create a variable description (TRC) file for a Simulink simulation.
Result	The generated TRC file is named <model>_offline.trc.
Description	When the variable description (TRC) file is generated, the system description file <model>_offline.sdf is also created and loaded to the Variable Browser.
<div style="display: flex; align-items: center;"> ☰ This is not available in the Operator mode. </div>	
Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Create System Description and MAP Files</i> ( <i>ControlDesk Experiment Guide</i>)

Change AutoBoot Directory

Access	You can access this command via:
Menu bar	Platform
Context menu of	None
Shortcut key	None
Toolbar icon	None
Purpose	To change the directory for the AutoBoot option or to specify it if one has not already been set.

Result	ControlDesk checks whether the necessary files exist in the directory you selected. The directory is saved in the registry.
	<div style="border: 1px solid #ccc; padding: 10px; display: inline-block;"> This is not available in the Operator mode.</div>
Insert Directory for AutoBoot Option dialog	Select field Lets you enter the directory for the AutoBoot option or select it by clicking the Browse button to open the AutoBoot Directory dialog (see below).
AutoBoot Directory dialog	This lets you select the directory for the AutoBoot option and opens if you click the Browse button in the Insert Directory for AutoBoot Option dialog (see above). Folders Lets you select a folder from the ones shown here. They correspond to the drive you chose. Drives Lets you select the desired drive. Network Lets you specify the network via the Map Network Drive dialog.
Related topics	HowTos <ul style="list-style-type: none">• <i>How to Set the AutoBoot Directory</i> ( <i>ControlDesk Experiment Guide</i>)

Change Connection

Access	You can access this command via: Menu bar Platform Context menu of Platform Navigator Shortcut key None Toolbar icon None
Purpose	To set the appropriate platform connection mode for a board after it has been installed.
Result	The platform connection mode is set according to the specifications you made.

Description	The platform can be connected to the host PC via a bus interface and/or Ethernet. This is used to switch between these platform connections. The Platform Navigator only shows boards that are registered and connected via the selected connection.
	 This is not available in the Operator mode.
Dialog settings	<p>Bus connection Lets you specify to work with a selected platform in a bus connection. A bus connection can be one of the following:</p> <ul style="list-style-type: none"> ■ The platform is installed directly in the host PC. ■ The platform is installed in an expansion which is connected to the host PC via DS81x Link Board. ■ The platform is connected to the host PC via DS81x Link Board (MicroAutoBox only) <p>Network connection Lets you specify that the platform is installed in an expansion box connected to the host via Ethernet.</p> <p>Network client Lets you specify the Ethernet address or its alias, for example, PX10 or PX20. This edit field is enabled when you select Network connection as the platform connection.</p> <p>Remote connection Lets you specify the PC as client PC for Remote Control. Using Remote Control you have access from several PCs, called client PC, to a platform connected to a server PC. For more information on remote connection, refer to <i>Remote Control Features</i> ( <i>ControlDesk Experiment Guide</i>).</p> <p>Server name/address Lets you specify the Ethernet address of the server PC or its alias. This edit field is enabled when you select Remote connection as the platform connection.</p> <p>OK Activates the new platform connection.</p>
Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Change the Platform Connection</i> ( <i>ControlDesk Experiment Guide</i>)

Change to Working Directory

Access You can access this command via:

Menu bar	None
Context menu of	File Selector
Shortcut key	None
Toolbar icon	None

Purpose To change to the working directory.

Result ControlDesk's current working directory is opened.



This is not available in the Operator mode.

Related topics

References

- *File Selector* on page 119

Check Platform(s) for Errors

Access You can access this command via:

Menu bar	Tools
Context menu of	None
Shortcut key	None
Toolbar icon	None

Purpose To check all registered and currently used platform(s) to see if there are any errors that have not been shown yet.

Result	ControlDesk checks all registered and currently running platforms to see if there are any errors reported by the real-time applications. ControlDesk even shows errors that might not have been reported yet.
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- The Platform Manager checks for errors regularly. Errors are therefore also detected automatically.
- This is not available in the Operator mode.

Clean Model

Access	You can access this command via:
Menu bar	None
Context menu of	Platform Navigator (available for the Simulink platform)
Shortcut key	None
Toolbar icon	None
Purpose	To remove ControlDesk blocks from the model manually.
Result	The blocks inserted by ControlDesk in Animation mode are removed.
Description	If you save and close the model while the Animation mode is active, the red blocks temporarily inserted by ControlDesk are saved as well. Generally, these blocks are removed automatically, for example, when the model is loaded. If the red blocks are still present after you reload the model, remove them using this command.
	This is not available in the Operator mode.
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • <i>Animation Mode</i> (ControlDesk Experiment Guide)

Clear Flash

Access

You can access this command via:

Menu bar	None
Context menu of	Platform Navigator (available for DS1005, DS1006, DS1104 and DS1401 only)
Shortcut key	None
Toolbar icon	None

Purpose

To clear the flash memory and remove the application from it.

Result

The currently loaded application or data is removed from the flash.



- The application running on the platform has to be stopped before.
- This is not available in the Operator mode.

Clear Flash Memory dialog

- Clear complete flash memory** Clears the board's flash memory.
- Clear flash application memory** Clears only the currently loaded flash application.
- Application in Flash** Displays the path and file name of the currently loaded application.
- Clear flight recorder flash memory** (Only available for DS1005 and DS1401) Clears only the board's flight recorder.
- Clear non-volatile data flash memory** (Only available for DS1005 and DS1401) Clears only the non-volatile data of the flash application.
- Clear Memory button** Executes the selected option.

Related topics

HowTos

- *How to Download an Application to the Flash Memory and Start the RTP* (dSPACE System First Work Steps)

References

- *Clear Slave Application* on page 115
- *Load Application to Flash* on page 122
- *Save Flight Recorder Content* on page 132

Clear Slave Application

Access	You can access this command via:
Menu bar	Platform – Slave Application
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To clear the slave application that was selected via the Assign Slave Application (refer to <i>Assign Slave Application</i> on page 108).
Result	The slave application that was selected via the Assign Slave Application is cleared. The slave DSP is not reset.
	 This is not available in the Operator mode.
Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Handle Applications on a dSPACE Real-Time Board</i> ( <i>ControlDesk Experiment Guide</i>) • <i>How to Handle Applications on a Slave DSP</i> ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none"> • <i>Assign Slave Application</i> on page 108 • <i>Load and Start Slave DSP</i> on page 120 • <i>Stop Slave DSP</i> on page 141

Clear System

Access	You can access this command via:
Menu bar	Platform – Initialization
Context menu of	None
Shortcut key	None
Toolbar icon	None

Purpose	To clear the system you are currently working with.
Result	ControlDesk clears the system first by erasing the <code>dSPACE.ini</code> file. Then the Device Driver is reset, and the Platform Manager is re-initialized.
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• <i>How to Clear the System</i> ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• <code>dSPACE.ini</code> on page 118• <i>Refresh Platform Connection</i> on page 126

Close MATLAB

Access	You can access this command via:
Menu bar	None
Context menu of	Platform Navigator (available for the Simulink platform)
Shortcut key	None
Toolbar icon	None
Purpose	To close a ControlDesk-controlled MATLAB instance.
Result	The ControlDesk-controlled MATLAB instance is closed. If there is an open Simulink model it is closed beforehand.
Related topics	<p>Basics</p> <ul style="list-style-type: none">• <i>General Principles for Simulink Simulations</i> ( ControlDesk Experiment Guide)

Close Model

Access	You can access this command via:
Menu bar	None
Context menu of	Platform Navigator (available for the Simulink platform)
Shortcut key	None
Toolbar icon	None
Purpose	To close a ControlDesk-controlled Simulink model from within ControlDesk.
Result	The ControlDesk-controlled Simulink model is closed. If you made any changes and have not saved the model yet, ControlDesk prompts you to save it.
<div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 10px;">  This is not available in the Operator mode. </div>	
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • <i>General Principles for Simulink Simulations</i> ( <i>ControlDesk Experiment Guide</i>)

Create Support Information File

Access	You can access this command via:
Menu bar	Tools
Context menu of	None
Shortcut key	None
Toolbar icon	None
Purpose	To create a file with support information and generate a ZIP archive of support-relevant files.

Result

The ASCII file supportinfo.txt is generated and saved in the %DSPACE_ROOT%\Config folder. The ZIP archive supportinfo.zip is generated in the same folder and includes the files:

- dSPACE.ini
- dSPACE.log
- dSPACE.vs
- license.dsp
- old.log
- supportinfo.txt
- supportinfo.old



This is not available in the Operator mode.

dSPACE.ini

Access

You can access this command via:

Menu bar	View
Context menu of	None
Shortcut key	None
Toolbar icon	A small gray icon of a document with a magnifying glass over it.

Purpose

To open the dSPACE.ini file in ControlDesk.

Result

The dSPACE.ini file is opened in ControlDesk's working area so that you can check the boards that were registered in your system.



This is not available in the Operator mode.

Related topics

HowTos

- How to Clear the System ( ControlDesk Experiment Guide)
- How to Refresh the Platform Connection ( ControlDesk Experiment Guide)

References

- *Clear System* on page 115
- *Refresh Platform Connection* on page 126

File Selector

Access

The File Selector is located in ControlDesk's Tool Window, which can be shown or hidden by checking or unchecking the **Tool Window** entry in the View – Controlbars menu.

Purpose

To select a file and download it to your platform via drag & drop.

Result

An object file dropped onto a real-time platform icon is downloaded and started. An M- or MDL file dropped on the Simulink platform is started.

Description

- The File Selector shows files of the types APL, AXP, DDS, M, MDL, OBJ, PPC and SDF.
- The platforms available in your system are listed in the Platform Navigator.



This is not available in the Operator mode.

Dialog settings

Directory tree Lets you select the directory that holds the desired object file.

List of files Lets you drag the desired object file onto the board icon of the target controller, processor board or multiprocessor system.



You can add the currently selected directory to the list of favorite directories that is appended to the File Selector's context menu: see *Add to Favorites* on page 107.

Related topics

References

- [Copy](#) on page 52

Load and Start Slave DSP

Access

You can access this command via:

Menu bar Platform – Slave Application

Context menu of None

Shortcut key None

Toolbar icon 

Purpose

To load and start the application you assigned to a slave DSP.

Result

The application is loaded and started on the slave DSP.



- This is available for the slave DSP of the DS1103 only.
- This is not available in the Operator mode.

Related topics

HowTos

- [How to Handle Applications on a dSPACE Real-Time Board](#) ( [ControlDesk Experiment Guide](#))
- [How to Handle Applications on a Slave DSP](#) ( [ControlDesk Experiment Guide](#))

References

- [Assign Slave Application](#) on page 108
- [Clear Slave Application](#) on page 115
- [Stop Slave DSP](#) on page 141

Load Application or Model

Access	You can access this command via:
Menu bar	Platform – Application
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To open an application or model and load it to the system selected in the Platform Navigator.
Result	The application or model you have chosen is loaded to the platform you selected in the Platform Navigator. For real-time applications, the application is started automatically.
Description	<p>Before the application is loaded, ControlDesk checks whether the selected file is valid for the chosen platform and if an application or model is already running. If a real-time application is running, you are prompted to stop it and load the new application.</p> <p>After loading the application, ControlDesk compares the board firmware versions from the vcm module with the firmware versions the application requires. If the versions are not correct, an info dialog shows the error message and the Update Firmware dialog is opened automatically (available for DS1401 only).</p> <p>For Simulink simulations, ControlDesk checks whether the current model has been modified. If it has, you are prompted either to save the current model (Yes), to close it without saving any changes (No) or to leave it as it is (Cancel). If the model was not changed, the selected model is loaded.</p>
Load Application or Model dialog	<p>Look in Lets you select the path and directory the application is to be opened from.</p> <p>File name Displays the name of the selected application.</p> <p>Files of type Lets you select which type of file should be opened.</p>

Related topics

HowTos

- *How to Handle Applications on a dSPACE Real-Time Board* ( *ControlDesk Experiment Guide*)

Load Application to Flash

Access

You can access this command via:

Menu bar None

Context menu of Platform Navigator (available for DS1005,
DS1006, DS1104 and DS1401 only)

Shortcut key None

Toolbar icon None

Purpose

To load an application to the flash memory.

Result

This opens the standard Open dialog where the selected application is loaded to the flash memory and started.

Description

Before the application is loaded, ControlDesk checks whether an application is already running. If one is, you are prompted to stop it and load the new application.

The F next to the platform icon indicates that the application that is running is loaded to the flash memory. If the platform is rebooted, the application in the flash memory is automatically started.



This is not available in the Operator mode.

Related topics

HowTos

- *How to Download an Application to the Flash Memory and Start the RTP* ( *dSPACE System First Work Steps*)

References

- *Clear Flash* on page 114
- *Save Flight Recorder Content* on page 132

Make Working Board

Access	You can access this command via:
Menu bar	None
Context menu of	Platform Navigator
Shortcut key	None
Toolbar icon	None
Purpose	To set the platform that is currently selected in the Platform Navigator as the working board.
Result	The platform you selected in the Platform Navigator is now the working board. Also refer to <i>Set Working Board</i> on page 139.
<div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 10px;">  This is not available in the Operator mode. </div>	
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • <i>Setting the Working Board</i> ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none"> • <i>Set Working Board</i> on page 139

New Model

Access	You can access this command via:
Menu bar	None
Context menu of	Platform Navigator (available for the Simulink platform)
Shortcut key	None
Toolbar icon	None
Purpose	To generate a new Simulink model from within ControlDesk.

Result	The new model is saved as specified.
Description	This requests to enter the name and directory of the model to be created. Afterwards, MATLAB/Simulink is invoked, and displays a model containing some simple blocks. In addition, the Simulink Library Browser is opened.
	<div style="border: 1px solid #ccc; padding: 5px; display: inline-block;"> This command is not available in the Operator mode.</div>
Dialog settings	Look in Lets you select the path and directory the model is to be created in. File name Lets you specify the name of the model to be created. Files of type Lets you select which type of file should be created.
Related topics	Basics <ul style="list-style-type: none">• <i>General Principles for Simulink Simulations</i> ( <i>ControlDesk Experiment Guide</i>) HowTos <ul style="list-style-type: none">• <i>How to Create a Model from Scratch</i> ( <i>ControlDesk Experiment Guide</i>)

Open MATLAB

Access	You can access this command via:
Menu bar	None
Context menu of	Platform Navigator (available for the Simulink platform)
Shortcut key	None
Toolbar icon	None
Purpose	To start a ControlDesk-controlled MATLAB instance or attach an active one.
	<div style="border: 1px solid #ccc; padding: 5px; display: inline-block;"> Do not access MATLAB via AutomationDesk and via ControlDesk at the same time. This will cause errors.</div>

Result

Either a ControlDesk-controlled MATLAB instance is started or a ControlDesk-controlled MATLAB instance is attached.



This is not available in the Operator mode.

Related topics**Basics**

- *General Principles for Simulink Simulations* ( [ControlDesk Experiment Guide](#))

Refresh

Access

You can access this command via:

Menu bar	None
Context menu of	File Selector
Shortcut key	None
Toolbar icon	None

Purpose

To renew the directory structure shown in the File Selector.

Result

The directory structure and included files are re-read and the view of the structure is refreshed.



This is not available in the Operator mode.

Related topics**References**

- *File Selector* on page 119

Refresh Platform Connection

Access

You can access this command via:

Menu bar	Platform – Initialization
Context menu of	None
Shortcut key	None
Toolbar icon	None

Purpose

To refresh the platform connection from the host to the dSPACE system.

Result

ControlDesk refreshes the platform connection by resetting the Device Driver and reinitializing the Platform Manager. In addition, the Simulink platform is also initialized.



- Before ControlDesk initializes the Simulink platform, the MATLAB/Simulink instance that is currently open is closed.
- This is not available in the Operator mode.

Related topics

Basics

- *Experimenting on the Simulink Platform* (*ControlDesk Experiment Guide*)

HowTos

- *How to Refresh the Platform Connection* (*ControlDesk Experiment Guide*)

References

- *Clear System* on page 115

Register

Access

You can access this command via:

Menu bar	Platform – Initialization
Context menu of	Platform Navigator
Shortcut key	None
Toolbar icon	

Purpose	To register a single dSPACE processor or controller board that has just been installed.
----------------	---

Result	The system now recognizes the registered platform.
---------------	--



This is not available in the Operator mode.

Description	The Platform Manager stores the registration data and remembers the configuration when ControlDesk is restarted.
--------------------	--



You need not register boards which support the plug & play feature. The Platform Manager automatically registers them. This applies to:

- DS1104
- DS1401

Register Board dialog	This appears when the Platform Navigator finds a single processor or controller board is being registered.
------------------------------	--

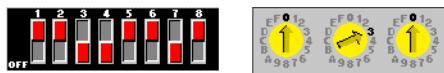
Type Lets you select the type of board being registered: DS1005, DS1006, DS1103, DS1401, DS2301 or DS2302. This contains platform-specific default settings, meaning that appropriate name and port addresses are preset according to the type of board that you choose.

Name (filled automatically) Displays the name of the platform. This name is preset by the Platform Manager when you select the board type. It is not possible to change this name.

Port address Lets you specify the port address of the platform. If an element loses its focus, the graphics of the DIP or rotary switches are updated. The port address has to meet the I/O base address of the board installed.

DIP or rotary switches Lets you specify the port address by clicking the switch graphics to match the settings on the actual platform. When you change the switch settings, the value in Port address (see above) is automatically altered as well.

The illustration below shows DIP switches on the left and rotary switches on the right:



Related topics

Basics

- *Registering Platforms* (ControlDesk Experiment Guide)

HowTos

- *How to Register a Single-Processor System* (ControlDesk Experiment Guide)
- *How to Register DS230x Boards* (ControlDesk Experiment Guide)

References

- *Register MP* on page 128

Register MP

Access

You can access this command via:

Menu bar Platform – Initialization

Context menu of Platform Navigator

Shortcut key None

Toolbar icon

Purpose

To register a multiprocessor system that has just been installed.

Result

The system now recognizes the registered multiprocessor system.



This is not available in the Operator mode.

Description

The Platform Manager stores the registration data and remembers the configuration when ControlDesk is restarted. In addition, the interprocessor connections are checked when the dialog is being closed.

You can register multiprocessor systems. Since the registration data is stored in the `dSPACE.ini` file, the Platform Manager remembers its configuration when the system is restarted. In addition, the platform connections are checked when the dialog is being closed.

Register MP System dialog	This dialog appears when the Platform Navigator finds a multiprocessor system is being registered. MP system name Lets you specify a name for the entire multiprocessor system. Topology check Indicates whether ControlDesk checks the topology of systems with several processor boards when the dialog is closed. Always select this option, except when two PCs are being used. Register Opens the Register Board dialog so that you can register each board in the multiprocessor system: see <i>Register Board dialog</i> on page 127. Board information table Displays all of the registered boards in the multiprocessor system, along with the following information: board name, board type, port address, and processor name. Since ControlDesk 2.2 (Release 3.4) you can edit the processor name in this table.
----------------------------------	--

Related topics	Basics <ul style="list-style-type: none"> • Registering Platforms ( ControlDesk Experiment Guide) References <ul style="list-style-type: none"> • Register on page 126
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Reload Application or Start Simulink Simulation

Access	You can access this command via:
Menu bar	Platform – Application
Context menu of	None
Shortcut key	None
Toolbar icon	

Purpose	To reload the application or start the Simulink simulation on the platform selected in the Platform Navigator.
Result	ControlDesk reloads the application or starts the Simulink simulation on the platform that was selected in the Platform Navigator.
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• How to Handle Applications on a dSPACE Real-Time Board (ControlDesk Experiment Guide)• How to Prepare the Model and Change the Simulation State (ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• Stop Real-Time Processor or Simulink Simulation on page 140

Remove from Favorites

Access	You can access this command via:
Menu bar	None
Context menu of	File Selector
Shortcut key	None
Toolbar icon	None
Purpose	To remove a folder from the list of favorite folders.
Result	The selected folder is removed from the list of favorite folders.
Description	This allows to remove one or more folders from the list of favorite folders.
	 This command is not available in the Operator mode.

Dialog settings	Remove Removes the highlighted folder from the list of favorite folders.
	Cancel Closes the dialog.
Related topics	<p>References</p> <ul style="list-style-type: none"> • Add to Favorites on page 107 • File Selector on page 119

Save Current Configuration

Access	You can access this command via:
Menu bar	None
Context menu of	Platform Navigator
Shortcut key	None
Toolbar icon	None
Purpose	To save the current configuration in a system description file.
Result	The current configuration of the selected platform as shown in the Platform Navigator is saved as a system description file.
Save As dialog	<div style="display: flex; align-items: center;"> --- <div style="border: 1px solid #ccc; padding: 5px; border-radius: 5px; font-size: 0.8em;">  This is not available in the Operator mode. </div> </div>
Save in	Lets you select the path and folder to save the file to.
File name	Lets you specify the name of the file. You can also select a name from the files listed under the chosen path and folder.
Save as type	Lets you select which type the file should be saved as.
	You should leave the setting at the default for a system description file.

Related topics

Basics

- *Creating System Description Files* ( *ControlDesk Experiment Guide*)

Save Flight Recorder Content

Access

You can access this command via:

Menu bar	None
Context menu of	Platform Navigator (available for DS1005 and DS1401 only)
Shortcut key	None
Toolbar icon	None

Purpose

To save the flight recorder data currently available in the flash memory.

Result

This calls up the standard **Save As** dialog, where the flight recorder data in the flash memory can be saved as a BIN file or in reference data format.



This is not available in the Operator mode.

Related topics

HowTos

- *How to Generate and Save Reference Data* ( *ControlDesk Experiment Guide*)

References

- *Convert BIN File* on page 374

Save Model

Access	You can access this command via:
Menu bar	None
Context menu of	Platform Navigator (available for the Simulink platform)
Shortcut key	None
Toolbar icon	None
Purpose	To save a ControlDesk-controlled Simulink model from within ControlDesk.
Result	The ControlDesk-controlled Simulink model is saved. Alternatively, you can use the File - Save option provided by Simulink.
	This is not available in the Operator mode.
Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • How to Save and Rename a Model ( ControlDesk Experiment Guide)

SDF File Editor

Access	You can access this command via:
Menu bar	Tools
Context menu of	None
Shortcut key	None
Toolbar icon	None
Purpose	To edit and save application-specific data in a system description file.

Result	The application-specific data is saved in a system description file with the specifications you made in the dialog.
	 This is not available in the Operator mode.
SDF File Editor dialog	<p>SDF file name (automatically filled) Displays the name of the system description file being saved. The name was set in the standard Open dialog.</p> <p>Select board type Lets you select the type of board you want to add to the system description file.</p> <p>Add Selected Adds the selected board to the list. The dialog that is opened depends on the board you selected in the Select board type drop-down list:</p> <ul style="list-style-type: none"> ■ <i>Single Board dialog</i> on page 135 (for DS1103, DS1104, DS1401 and Simulink platform) ■ <i>DS1005 dialog</i> on page 135 ■ <i>DS1006 dialog</i> on page 136 ■ <i>DS2301 dialog</i> on page 136 ■ <i>DS2302 dialog</i> on page 136 <p>Edit Opens the page for the selected board. As an alternative, you can double-click a board on the list to open the corresponding page.</p> <p>Delete Deletes the selected board.</p> <p>Edit (Required multiprocessor connections) Enabled if more than one processor board was selected for the system description file. Click this button to determine the required communication port connections via the Required Multiprocessor Connections dialog (see <i>Required Multiprocessor Connections dialog</i> on page 137).</p> <p>Open Opens a system description file via the standard Open dialog.</p> <p>Save & Exit Closes the dialog and creates or modifies a system description file. If you did not enter a file name, the Save As dialog is invoked.</p> <p>Save as Saves the system description file without closing the dialog. This opens the Save As dialog.</p> <p>Cancel Closes the dialog without saving any of the changes you might have made in the system description file.</p>

Single Board dialog This dialog is opened by the Add Selected button in the SDF File Editor dialog (see *Add Selected* on page 134) when a DS1103, DS1104, DS1401 or the Simulink platform is selected.

Board name Lets you specify a different name to the suggested default.

Application Lets you select an application via the Browse button. You are asked to choose an OBJ , PPC, MDL or M-file. Do not leave this field empty.

Variable Description File Lets you select the file name and path of the corresponding variable description (TRC) file. Do not leave this field empty if you specify an M-file in the **Application** field to generate a system description file for the Simulink platform. You can leave this field empty if the name and path of the application or model and the TRC file are identical.



TRC files generated for the Simulink platform are named <model>.offline.trc.

DS1005 dialog This dialog is opened by the Add Selected button in the SDF File Editor dialog (see *Add Selected* on page 134) when a DS1005 is selected.

Board name Lets you specify a different name to the suggested default. The board name should not appear twice in the system description file.

Processor name Lets you specify a different name to the suggested default. The processor name should not appear twice in the system description file.

Processor state (for advanced users only) Lets you enable or disable the downloading of real-time applications to the real-time processor. To disable the download assumes that you use topological multiprocessor subsets and that the MP application is accordingly prepared.

Application Lets you select an application via the Browse button. You are asked to choose a PPC file. Do not leave this field empty.

Service ID (for advanced users only) Lets you specify a different service ID to the default.

DS1006 dialog	<p>This dialog is opened by the Add Selected button in the SDF File Editor dialog (see <i>Add Selected</i> on page 134) when a DS1006 is selected.</p> <p>Board name Lets you specify a different name to the suggested default. The board name should not appear twice in the system description file.</p> <p>Processor name Lets you specify a different name to the suggested default. The processor name should not appear twice in the system description file.</p> <p>Processor state (for advanced users only) Lets you enable or disable the downloading of real-time applications to the real-time processor. To disable the download assumes that you use topological multiprocessor subsets and that the MP application is accordingly prepared.</p> <p>Application Lets you select an application via the Browse button. You are asked to choose a PPC file. Do not leave this field empty.</p> <p>Service ID (for advanced users only) Lets you specify a different service ID to the default.</p>
DS2301 dialog	<p>This dialog is called up by the Add Selected button in the SDF File Editor dialog (see <i>Add Selected</i> on page 134) when a DS2301 is selected.</p> <p>Board name Lets you specify a different name to the suggested default. The board name should not appear twice in the system description file.</p> <p>Applications Lets you select applications for the different channels via the Browse buttons. You are asked to choose OBJ files. You have to specify an application for at least one channel. Do not leave this field empty.</p> <p>Interrupt source Lets you select the desired interrupt source for the different channels. For details refer to the <i>DS2301 Hardware Reference</i>.</p> <p>Add channel to output Lets you select the channels you want to sum to a specific channel.</p>
DS2302 dialog	<p>This dialog is called up by the Add Selected button in the SDF File Editor dialog (see <i>Add Selected</i> on page 134) when a DS2302 is selected.</p> <p>Board name Lets you specify a different name to the suggested default. The board name should not appear twice in the system description file.</p>

Applications Lets you select applications for the different channels via the Browse buttons. You are asked to choose OBJ files. You have to specify an application for at least one channel. Do not leave this field empty.

Required I/O modules Lets you select the I/O module the board has to provide to start the corresponding application.

If the selected I/O module does not match the I/O module specified in the SDF file, ControlDesk generates a warning when loading the SDF file.

Interrupt source Lets you select the desired interrupt source for the different channels. For details refer to the *DS2302 Board Reference*.

Required Multiprocessor Connections dialog

This dialog is called up by the Edit (Required multiprocessor connections) button in the SDF File Editor dialog (see *Edit (Required multiprocessor connections)* on page 134).

From Lets you select the source port the connection starts from.

To Lets you select the destination port to which the connection is connected.

Add Connection Adds the connection. This connection is shown in the table in this dialog.

Delete Deletes the connection you selected in the list beforehand.

Delete All Deletes all connections from the list.

Related topics

Basics

- *Creating System Description Files* ( *ControlDesk Experiment Guide*)

Select Topology

Access

You can access this after you specify a User function.

Purpose

To enable or disable real-time CPUs for topological subsets of a multiprocessor system.

Result	The enabled real-time applications are downloaded to the topological subset of the current multiprocessor system.
---------------	---



This is not available in the Operator mode.

Dialog settings	<p>Required CPUs Displays the processors that cannot be disabled.</p> <p>Optional CPUs Select or clear the processors that you want to enable or disable, respectively.</p> <p>Activate Topology Modifies the board states in the system description file according to your settings, and save the system description file.</p> <p>Activate and Load Modifies the board states in the system description file according to your settings, save the system description file, and load it to the multiprocessor system.</p> <p>Refresh Refreshes the settings in the Optional CPUs list according to the board states stored in the current system description file.</p> <p>Show Info Displays the <code>rtimp_optional_info</code> file. It contains the mapping of CPU IDs and CPU names, and the mapping of the CPU names and the corresponding real-time applications.</p> <p>Close Closes the dialog.</p>
------------------------	--

Related topics	<p>References</p> <ul style="list-style-type: none"> • <i>Platform Manager</i> on page 105
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Set DS1401 System Time

Access	You can access this command via:
Menu bar	None
Context menu of	Platform Navigator (available for DS1401 only)
Shortcut key	None
Toolbar icon	None
Purpose	To set the system time of the DS1401.

Result	The system time of the DS1401 now corresponds to the system time of the host PC.
---------------	--



- This is only available for boards of the type DS1401.
- This is not available in the Operator mode.

Dialog settings	Board System Time field Displays the system time of the DS1401. PC System Time field Displays the system time of the host PC. Set Time on DS1401 Sets the system time of the DS1401 board to the system time of the host PC.
------------------------	---

Related topics	References • Platform Manager on page 105
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Set Working Board

Access	You select the working board via:
---------------	-----------------------------------

Menu bar	Platform
Context menu of	None
Shortcut key	None
Toolbar icon	None

Purpose	To select the working board for the system.
----------------	---

Result	The working board is used by the Variable Manager to automatically identify the board that the loaded application or system description file should be associated with if no other board is specified.
---------------	--

Description	By default, the Variable Manager associates a newly loaded Variable file with the working board. Otherwise you have to specify the board. If you do not, the board registered first is taken.
--------------------	---

For information on how the selected working board influences the download behavior of RTI and RTI-MP, refer to *Basics for the Build and Download* (*RTI and RTI-MP Implementation Guide*).



This is not available in the Operator mode.

Dialog settings

Select new working board Lets you select the board that will function as the new working board.



As an alternative, you can set the working board by using the context menu of the Platform Navigator. Select the new working board icon, open the context menu (click right mouse button), and click **Make Working Board**.

Related topics

Basics

- *Setting the Working Board* (*ControlDesk Experiment Guide*)

References

- *Make Working Board* on page 123
- *Platform Manager* on page 105

Stop Real-Time Processor or Simulink Simulation

Access

You can access this command via:

Menu bar Platform – Application

Context menu of None

Shortcut key None

Toolbar icon

Purpose

To stop the application or the simulation on the platform selected in the Platform Navigator.

Result

ControlDesk stops the application or simulation running on the platform that is currently selected in the Platform Navigator.



This is not available in the Operator mode.

Related topics**HowTos**

- *How to Handle Applications on a dSPACE Real-Time Board* (*ControlDesk Experiment Guide*)

References

- *Platform Manager* on page 105
- *Reload Application or Start Simulink Simulation* on page 129

Stop Slave DSP

Access

You can access this command via:

Menu bar Platform – Slave Application

Context menu of None

Shortcut key None

Toolbar icon

Purpose

To reset the slave DSP.

Result

The slave DSP is reset.



- This is available for the slave DSP of the DS1103 only.
- This is not available in the Operator mode.

Related topics

HowTos

- [How to Handle Applications on a dSPACE Real-Time Board \(ControlDesk Experiment Guide\)](#)
- [How to Handle Applications on a Slave DSP \(ControlDesk Experiment Guide\)](#)

References

- [Assign Slave Application](#) on page 108
- [Clear Slave Application](#) on page 115
- [Load and Start Slave DSP](#) on page 120
- [Platform Manager](#) on page 105

Update Firmware

Access

You can access this command via:

Menu bar	None
Context menu of	Platform Navigator (available for DS1005, DS1006, DS1103, DS1104, DS1401, DS2202, DS2210, DS2211 and DS4302)
Shortcut key	None
Toolbar icon	None

Purpose

To view information on the current application and on the required and available firmware versions, and to update the firmware of your board.

Result

The firmware is updated to the available version.



- If you download an application to your platform that requires a firmware version higher than the current version, you will get an error message. If your board contains user firmware, you will get an error message if the required firmware version is higher than the version displayed in the **Based on dSPACE version** field in the **Current Firmware** frame of the Firmware Management dialog.
- If the available version is also lower than the required version, you have to update RTLib first, since RTLib contains the required firmware.
- This is not available in the Operator mode.

Firmware Management dialog, General page	<p>Select Firmware Type Lets you select the firmware of the board.</p> <p>Close Closes the dialog after you update the firmware.</p> <p>Automatic firmware update ControlDesk's Platform Manager will automatically update the firmware provided by dSPACE. Refer to <i>Handling Firmware</i> ( <i>ControlDesk Experiment Guide</i>).</p>
Current Firmware frame	<p>Version Displays the firmware version that is currently active on the board.</p> <p>Based on dSPACE version (this field is visible only for user firmware, otherwise it is hidden) When user firmware is running on the board, this field displays the dSPACE firmware version that it is based on.</p>
Selected Firmware Application frame	<p>Version Displays the update (burn application) that is available on the host.</p> <p>Based on dSPACE version (this field is visible only for user firmware, otherwise it is hidden) If user firmware was selected in the File dialog, this field displays the dSPACE firmware version that it is based on.</p> <p>Object file Displays the firmware application that will be loaded. Click the Browse button if you want to select another firmware application.</p>
Update to available version frame	Update Firmware Updates the firmware to the version shown in the Selected Firmware Application frame.
Firmware Management dialog, Advanced page	<p>Application Displays the path of the currently loaded application.</p> <p>Required version Displays the firmware version required for the application.</p>
Related topics	<p>References</p> <ul style="list-style-type: none"> • Platform Manager on page 105 • Verify Boot Firmware on page 144

Verify Boot Firmware

Access	You can access this command via:
Menu bar	None
Context menu of	Platform Navigator (available for DS1005, DS1006, DS1104 and DS1401)
Shortcut key	None
Toolbar icon	None
Purpose	To perform a checksum test of the boot firmware.
Result	An info dialog shows optional three results: <ul style="list-style-type: none">■ OK■ Custom boot firmware■ Error message – The Update Firmware dialog is opened automatically.
Description	This feature is designed to check if the boot firmware is corrupted. The platform builds a CRC checksum over its boot firmware flash memory section. If the checksum is not correct the info dialog shows the error message and the Update Firmware dialog is opened automatically. <div style="border: 1px solid #ccc; padding: 10px; margin-top: 10px;"> This is not available in the Operator mode.</div>
Automatic firmware verification	In several cases the Verify Boot Firmware command is carried out automatically: <ul style="list-style-type: none">■ Platform initialization■ Platform registration■ Loading an application The automatic firmware verification is logged into the Log file.

Related topics**Basics**

- *Handling Firmware* ([ControlDesk Experiment Guide](#))
- *Managing Platforms and Handling Applications* ([ControlDesk Experiment Guide](#))

References

- *Load Application* on page 400
- *Platform Manager* on page 105
- *Update Firmware* on page 142

Experiment Manager

ControlDesk's Experiment Manager provides various commands and dialogs, which are accessible via the menu bar and the context menus of the Experiment Manager components:

Purpose	Refer to	Avail. in OpMode
File menu		
To create a new experiment.	<i>New Experiment</i> on page 168	no
To open an existing experiment file.	<i>Open Experiment</i> on page 170	yes
To save the current experiment.	<i>Save Experiment</i> on page 179	yes
To save the current experiment under a new name.	<i>Save Experiment As</i> on page 180	no
To close the current experiment.	<i>Close Experiment</i> on page 157	yes
To import any kind of file to the experiment.	<i>Import Files</i> on page 166	no
To add all files presently open to the current experiment.	<i>Add All Opened Files</i> on page 149	no
To open one of the recently opened experiments.	<i>Recent Experiments</i> on page 174	yes

Purpose	Refer to	Avail. in OpMode
Experiment menu		
To modify the settings of the current experiment.	<i>Configure Settings</i> on page 159	no
To zip the current experiment.	<i>Zip</i> on page 190	yes
To unzip a ZIP file.	<i>Unzip</i> on page 187	yes
To display the experiment's files according to their dependencies.	<i>Dependency Hierarchy</i> on page 160	yes
To display the experiment's files according to components.	<i>Component Hierarchy</i> on page 158	yes
To display the experiment's files by their directory hierarchy.	<i>Directory Hierarchy</i> on page 161	yes
To show the implicitly dependent files in the Dependency View.	<i>Show Implicitly Dependent Files</i> on page 185	yes
To refresh the list of implicitly dependent files.	<i>Refresh Implicitly Dependent Files</i> on page 176	yes
To enable the use of events with Python scripts.	<i>Use Events</i> on page 188	no
To add the selected file to the version control project.	<i>Add to Version Control/Add</i> on page 151	no
To remove a file from the version control project.	<i>Remove</i> on page 177	no
To check in the selected file to the version control project.	<i>Check In</i> on page 154	no
To check out the selected file from the version control project.	<i>Check Out</i> on page 156	no
To undo the checkout of a file in the version control project.	<i>Undo Check Out</i> on page 186	no
To get the latest version of a file in the version control project.	<i>Get Latest Version</i> on page 165	no
To show the history of a file in the version control project.	<i>Show History</i> on page 184	no
To compare a file to the latest version in the version control project.	<i>Show Differences</i> on page 183	no
To launch the version control system's GUI.	<i>Run Version Control System</i> on page 179	no
Context menu		
To automatically download and start an application.	<i>Autorun Application</i> on page 153	yes
To automatically download parameters when the experiment is loaded.	<i>Auto Download on Experiment Load</i> on page 153	yes
To not check a file for consistency on experiment load.	<i>Exclude from Consistency Check</i> on page 162	no
To get the latest version of all files of the current experiment.	<i>Get All</i> on page 163	no
To automatically open a file on experiment load.	<i>Open on Experiment Load</i> on page 173	no
To remove the active file from the current experiment.	<i>Remove from Experiment</i> on page 178	no
To send an experiment or file to a folder.	<i>Send to Any Folder</i> on page 181	yes
To send an experiment or file as a mail attachment.	<i>Send to Mail Recipient</i> on page 182	yes
To automatically download parameters when the animation is started.	<i>Use on Start Animation</i> on page 189	yes
Drag & drop context menu		
To rearrange files in the Navigator's dependency view.	<i>Move Here</i> on page 167	no
Related context menu of other components		
To add the active file or component to the experiment.	<i>Add to Experiment</i> on page 150	no

Add All Opened Files

Access

You can access this command via:

Menu bar	File
Context menu of	An experiment
Shortcut key	Shift+Ctrl+A
Toolbar icon	None

Purpose

To add all files presently open to the current experiment.

Result

All files that are open are added to the current experiment. If there is an open document that has not been saved, the corresponding Save As dialog opens. If you do not save the file here, it is not added.



This is not available in the Operator mode.

Related topics**HowTos**

- *How to Add Files* (*ControlDesk Experiment Guide*)
- *How to Carry out Basic Experiment Manager Actions* (*ControlDesk Experiment Guide*)

References

- *Experiment Manager* on page 147
- *Import Files* on page 166
- *Remove from Experiment* on page 178
- *Save As* on page 92

Add to Experiment

Access

You can access this command via:

Menu bar	CAN (only for CAN bus configuration)
Context menu of	<ul style="list-style-type: none">■ Layouts■ Parameter files in the Parameter Tree■ Reference groups in the Reference Data Manager's Browser■ Stimulus Editor documents in the Stimulus Editor■ All Source Code Editor files■ System Description files in the Tree Window
Shortcut key	None
Toolbar icon	 (only for CAN bus configuration)

Purpose

To add the active file (from which the context menu was opened) to the experiment.

For CAN bus configuration, the active file is the file of the open CAN bus configuration.

Result

The active file is added to the experiment. It is also displayed in the Experiment Navigator's hierarchy.



This is not available in the Operator mode.

Description

You can use this command for all Source Code Editor, Parameter, System Description, and CAN bus configuration files, and for Layouts, reference groups, and Stimulus Editor documents.

Related topics

HowTos

- [How to Add Files](#) ([ControlDesk Experiment Guide](#))

Examples

- [Example of Handling an Experiment](#) ([ControlDesk Experiment Guide](#))

References

- [Add All Opened Files](#) on page 149
- [Experiment Manager](#) on page 147
- [Import Files](#) on page 166
- [Remove from Experiment](#) on page 178

Add to Version Control/Add

Access

Provided that the Use Version Control System option is selected (see [Experiment Page](#) on page 31), you can add files to a version control system via:

Menu bar Experiment – Version Control

Context menu of ■ An experiment
 ■ A file in the Experiment Navigator (if the experiment itself is under version control)

Shortcut key None

Toolbar icon None

Purpose

To add the selected file to the current version control project.

Result

If the command is carried out for an experiment that does not yet belong to a version control project, a new version control project is created and the experiment file (CDX file) is added.

If the command is carried out for a file contained in the experiment, the file is added to the version control project. This is only possible if the corresponding experiment is already under version control.

When you add a file to a version control project it is checked out for editing immediately.



This is not available in the Operator mode.

Description

ControlDesk uses the following icons in the Experiment Navigator to display the checkout state:

Icon	Description
	File is checked out by another user and cannot be edited
	File is not checked out and cannot be edited
	File is checked out and can be edited



This command is only available for files located within the experiment's working root directory.

Select Files for Version Control dialog

This dialog is also used for other version control commands: *Check Out* on page 156, *Get Latest Version* on page 165, *Remove* on page 177, *Undo Check Out* on page 186.

List of files Lets you select the files to which you want to apply the version control command.



When the version control system supports advanced settings, ControlDesk displays an **Advanced** button in the version control dialog. If you click this button, the specific dialog of the version control system is opened.

Related topics

HowTos

- *How to Use Basic Version Control Commands* (*ControlDesk Experiment Guide*)

References

- *Check In* on page 154
- *Experiment Manager* on page 147
- *Remove* on page 177
- *Undo Check Out* on page 186

Auto Download on Experiment Load

Access	You can access this command via:	
Menu bar	None	
Context menu of	Parameter file in the Experiment Navigator	
Shortcut key	None	
Toolbar icon	None	
Purpose	To automatically download the values of a Parameter file.	
Result	Whenever you load the experiment, ControlDesk will automatically download the values of the selected Parameter file to the platform.	
Related topics	<p>References</p> <ul style="list-style-type: none">• Autorun Application on page 153• Experiment Manager on page 147• Open on Experiment Load on page 173• Run on Experiment Load on page 91• Use on Start Animation on page 189	

Autorun Application

Access	You automatically run an application via:	
Menu bar	None	
Context menu of	System Description file in the Experiment Navigator	
Shortcut key	None	
Toolbar icon	None	
Purpose	To automatically download and start the application.	
Result	Whenever you load the experiment, ControlDesk will automatically download the selected application to the platform and start the simulation.	

Related topics**References**

- *Auto Download on Experiment Load* on page 153
- *Experiment Manager* on page 147
- *Open on Experiment Load* on page 173
- *Run on Experiment Load* on page 91
- *Use on Start Animation* on page 189

Check In

Access

Provided that the Use Version Control System option is selected (see *Experiment Page* on page 31), you can check in files via:

Menu bar	Experiment – Version Control
Context menu of	<ul style="list-style-type: none">■ An experiment■ A file in the Experiment Navigator (if the experiment itself is under version control)
Shortcut key	None
Toolbar icon	None

Purpose

To check in the selected file to the current version control project.

Result

The local copy of the selected file is stored in the version control project. If carried out on an experiment, the Select Files for Version Control dialog (see below) lets you select multiple files to be checked in. In this case you can also specify a comment and keep the files checked out.



This is not available in the Operator mode.

Description

By default, ControlDesk keeps the files checked out so that you can continue editing them.

ControlDesk uses the following icons in the Experiment Navigator to display the checkout state:

Icon	Description
✗	File is checked out by another user and cannot be edited
✓	File is not checked out and cannot be edited
✓	File is checked out and can be edited

Select Files for Version Control dialog

For your convenience, ControlDesk automatically pre-selects only files that actually have changed.

List of files Lets you select the files to which you want to apply the version control command.

Keep Checked Out (not always available) Indicates whether the selected files are checked out straight after the check in.

Comment (not always available) Lets you specify a comment for the file checkin. This comment is stored in the version control system.



When the version control system supports advanced settings, ControlDesk displays an **Advanced** button in the version control dialog. If you click this button the specific dialog of the version control system is opened.

Related topics

HowTos

- [How to Use Basic Version Control Commands](#) ([ControlDesk Experiment Guide](#))

References

- [Check Out](#) on page 156
- [Experiment Manager](#) on page 147
- [Get All](#) on page 163
- [Get Latest Version](#) on page 165

Check Out

Access

Provided that the Use Version Control System option is selected (see *Experiment Page* on page 31), you can check out files via:

Menu bar	Experiment – Version Control
Context menu of	<ul style="list-style-type: none">■ An experiment■ A file in the Experiment Navigator (if the experiment itself is under version control)
Shortcut key	None
Toolbar icon	None

Purpose

To check out the selected file from the current version control project.

Result

The local copy of the selected file is replaced by the latest version contained in the version control project, which you can then edit. If carried out on an experiment, this invokes the Select Files for Version Control dialog (see below), which lets you select multiple files to be checked out.



This is not available in the Operator mode.

Description

ControlDesk uses the following icons in the Experiment Navigator to display the checkout state:

Icon	Description
✗	File is checked out by another user and cannot be edited
✓	File is not checked out and cannot be edited
✓	File is checked out and can be edited

Select Files for Version Control dialog

List of files Lets you select the files to which you want to apply the version control command.



When the version control system supports advanced settings, ControlDesk displays an **Advanced** button in the version control dialog. If you click this button the specific dialog of the version control system is opened.

Related topics

HowTos

- *How to Use Basic Version Control Commands* ([ControlDesk Experiment Guide](#))

References

- *Check In* on page 154
- *Experiment Manager* on page 147
- *Undo Check Out* on page 186

Close Experiment

Access

You can access this command via:

Menu bar	File
Context menu of	An experiment
Shortcut key	None
Toolbar icon	None

Purpose

To close the current experiment.

Result

The current experiment is closed including all files that are administered by it.

Description

If the current experiment was changed since the last save operation you are asked whether you want to save it. If there are open files that are not contained in the experiment you are asked whether you want to add them to the experiment.

Related topics

HowTos

- [How to Save Experiments](#) ([ControlDesk Experiment Guide](#))

Examples

- [Example of Handling an Experiment](#) ([ControlDesk Experiment Guide](#))

References

- [Experiment Manager](#) on page 147
- [New Experiment](#) on page 168
- [Open Experiment](#) on page 170

Component Hierarchy

Access

You can access this command via:

Menu bar Experiment

Context menu of None

Shortcut key **Shift+Ctrl+M**

Toolbar icon

Dialog Experiment page of the ControlDesk Properties dialog

Purpose

To use the component hierarchy for displaying the experiment's files in the Experiment Navigator.

Result

The experiment's files are sorted and displayed by ControlDesk's components (Events, Instrumentation, Variable Manager, etc.) so that you gain a quick access to all the files of a specific type.

Related topics

HowTos

- [How to Carry out Basic Experiment Manager Actions](#) ([ControlDesk Experiment Guide](#))

References

- [Dependency Hierarchy](#) on page 160
- [Directory Hierarchy](#) on page 161
- [Experiment Manager](#) on page 147

Configure Settings

Access	You can access this command via:
Menu bar	Experiment
Context menu of	Experiment Navigator
Shortcut key	Shift+Ctrl+G
Toolbar icon	None
Purpose	To modify the settings of the current experiment.
Result	The experiment that you are currently working with contains the configurations that you set in this dialog.
Description	You can organize the experiment files in subdirectories, specify the author's name, add a description text and graphic, etc.
Configure Experiment Settings dialog	This dialog and the New Experiment dialog (refer to <i>New Experiment</i> on page 168) are almost identical.
General page	<p>Experiment Name Displays the name of the experiment. The experiment name corresponds to the file name of the ControlDesk experiment file (CDX file).</p> <p>Working Root Displays the name of the working root directory. This is the directory where the ControlDesk experiment file (CDX) and the files associated to the experiment are saved.</p> <p>Create Subdirectories... Opens the standard Create Subdirectories dialog, which allows you to create subdirectories within the working root directory. These subdirectories can be used to organize the experiment files as you wish.</p> <p>Version Lets you specify the version of the experiment with any number you like. The version number is split into a major and minor part. When you use version control systems with ControlDesk this field is disabled and will be set by the version control system.</p> <p>Author(s) Lets you specify the author or authors responsible for the experiment.</p> <p>Description Text Lets you specify a description of the experiment.</p>

Experiment Graphic Lets you specify a graphic file to represent the experiment. Click the Browse button to select the desired graphic via the Select Experiment Graphic dialog.

OK Accepts any changes you made on the page. The button is enabled only when a valid experiment name and valid working root directory are given.

Cancel Discards the changes.

Related topics

HowTos

- *How to Modify Experiment Properties* (ControlDesk Experiment Guide)

References

- *Experiment Manager* on page 147
- *New Experiment* on page 168

Dependency Hierarchy

Access

You can access this command via:

Menu bar Experiment

Context menu of None

Shortcut key **Shift+Ctrl+E**

Toolbar icon



Dialog Experiment page of the ControlDesk Properties dialog

Purpose

To use the dependency hierarchy for displaying the experiment's files in the experiment navigator.

Result

The experiment's files are sorted and displayed by their dependencies and by their order of loading.

Description

The Dependency View does not only show the dependencies of the various files (meaning which files are required by other files) but also specifies the order of loading. A file located further to the top is loaded earlier than a file located further to the bottom. You can change the order of loading via drag and drop, which might be important for parameter files and Python scripts, for example.

In the Dependency View ControlDesk uses certain icons:

- The blank icon identifies all the independent files of the experiment.
- The arrow icon identifies files that you added to the experiment manually. These files need the file that is above them in the hierarchy; for example, a Parameter file needs the corresponding System Description file.
- The chain icon identifies files that you did not add to the experiment manually. They belong to the experiment because they are required by the files above them in the hierarchy. These files are called implicitly dependent. You can use the Show Implicitly Dependent Files command to show or hide them.



If you want to refresh the display of the implicitly dependent files, you can use the Refresh Implicitly Dependent Files command. This might be necessary if files are modified outside ControlDesk, for example, during compilation of the model.

Related topics

HowTos

- *How to Carry out Basic Experiment Manager Actions* ([ControlDesk Experiment Guide](#))

References

- [Component Hierarchy](#) on page 158
- [Directory Hierarchy](#) on page 161
- [Experiment Manager](#) on page 147
- [Refresh Implicitly Dependent Files](#) on page 176
- [Show Implicitly Dependent Files](#) on page 185

Directory Hierarchy

Access

You can access this command via:

Menu bar	Experiment
Context menu of	None
Shortcut key	Shift+Ctrl+D
Toolbar icon	None
Dialog	Experiment page of the ControlDesk Properties dialog

Purpose	To use the directory hierarchy for displaying the experiment's files in the experiment navigator.
Result	The experiment's files are sorted and displayed according to their locations in the directories.
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• How to Carry out Basic Experiment Manager Actions (ControlDesk Experiment Guide) <p>Examples</p> <ul style="list-style-type: none">• Example of Handling an Experiment (ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• Component Hierarchy on page 158• Dependency Hierarchy on page 160• Experiment Manager on page 147

Exclude from Consistency Check

Access	You can access this command via:
Menu bar	None
Context menu of	A file in the Experiment Navigator
Shortcut key	None
Toolbar icon	None
Purpose	To toggle whether the file will be checked for consistency with the experiment information when the experiment is loaded.
Result	If select, the consistency of the file will not be checked when the Experiment Manager performs the consistency check on experiment load.
	<div style="border: 1px solid #ccc; padding: 10px; display: inline-block;"> This is not available in the Operator mode.</div>

Description	<p>In the consistency check, ControlDesk verifies whether all files exist and if their content information is identical to the values specified in the experiment file. File content information is updated each time the experiment is saved.</p> <p>The consistency check indicates whether experiment files were changed outside ControlDesk. Normally all files are maintained within ControlDesk. If you intend to change a file via an external application, you might want to exclude this file from the consistency check to avoid consistency warnings when loading the experiment.</p>
Related topics	<p>HowTos<ul style="list-style-type: none">• How to Save Experiments ( ControlDesk Experiment Guide)References<ul style="list-style-type: none">• Experiment Manager on page 147• Experiment Page on page 31</p>

Get All

Access	Provided that the Use Version Control System option is selected (see Experiment Page on page 31), you can get the latest version of all files via:
Menu bar	None
Context menu of	An experiment
Shortcut key	None
Toolbar icon	None
Purpose	To get the latest version of all files of this experiment from the current version control project.

Result

All the files of this experiment that are under version control are replaced by the latest version contained in the version control project and the ControlDesk Experiment is reloaded. However, the files are not checked out so you cannot edit the files.



WARNING

If you get the latest version of a file that is currently checked out for editing, the local copy of the file is replaced and all the changes since the last checkout are lost.



This is not available in the Operator mode.

Description

ControlDesk uses the following icons in the Experiment Navigator to display the checkout state:

Icon	Description
✗	File is checked out by another user and cannot be edited
✓	File is not checked out and cannot be edited
✓	File is checked out and can be edited

Related topics

HowTos

- [How to Use the Version Control History](#) ([ControlDesk Experiment Guide](#))

References

- [Experiment Manager](#) on page 147
- [Get Latest Version](#) on page 165

Get Latest Version

Access Provided that the Use Version Control System option is selected (see *Experiment Page* on page 31), you can get the latest version of a file via:

Menu bar	Experiment – Version Control
Context menu of	<ul style="list-style-type: none"> ■ An experiment ■ A file in the Experiment Navigator (if the experiment itself is under version control)
Shortcut key	None
Toolbar icon	None

Purpose To get the latest version of the selected file from the current version control project.

Result The selected file is replaced by the latest version contained in the version control project. However, the file is not checked out for editing. If carried out on an experiment, this invokes the Select Files for Version Control dialog (see below), which lets you select multiple files for getting the latest version of.



WARNING

If you get the latest version of a file that is currently checked out for editing, the local copy of the file is replaced and all the changes since the last checkout are lost.



This is not available in the Operator mode.

Description ControlDesk uses the following icons in the Experiment Navigator to display the checkout state:

Icon	Description
✗	File is checked out by another user and cannot be edited
✓	File is not checked out and cannot be edited
✓	File is checked out and can be edited

Select Files for Version Control dialog

List of files Lets you select the files to which you want to apply the version control command.



When the version control system supports advanced settings, ControlDesk displays an **Advanced** button in the version control dialog. If you click this button the specific dialog of the version control system is opened.

Related topics

HowTos

- *How to Use the Version Control History* (*ControlDesk Experiment Guide*)

References

- *Experiment Manager* on page 147
- *Get All* on page 163
- *Show Differences* on page 183
- *Show History* on page 184

Import Files

Access

You can access this command via:

Menu bar File

Context menu of An experiment

Shortcut key ■ **Shift+Ctrl+I**
 ■ **Insert** (if Experiment Navigator is active)

Toolbar icon None

Purpose

To import any kind of file to the experiment: for example, a Microsoft Word or Excel file, but also ControlDesk files such as a Layout or a System Description files.

Result

The files you selected are added to the experiment in the desired destination directory, assigned to a ControlDesk component that can handle them and put under the administration of the Experiment Manager. Depending on the settings in the Destination field, the files might be copied before they are imported.



This is not available in the Operator mode.

Dialog settings

Look in Lets you select the path and directory from which the file to be imported should be taken.

File name Displays the name of the selected file(s). You can select multiple files to be imported.

Files of type Currently only the "All Files" setting is available.

Destination Lets you specify the name of the directory in which the file should be imported, or select one via the standard **Choose Destination Directory** dialog called up by the Browse button. If you do not choose a particular directory and if the file is located in or below the working root directory, it remains in its initial folder. However, if the file is located elsewhere, the default destination is automatically set to the experiment's working root directory. If a directory is specified in this edit field, the file is copied to this location and this copy is imported to the experiment.

Related topics

HowTos

- *How to Add Files* ([ControlDesk Experiment Guide](#))

Examples

- *Example of Handling an Experiment* ([ControlDesk Experiment Guide](#))

References

- *Experiment Manager* on page 147
- *Remove from Experiment* on page 178

Move Here**Access**

You can access this command via:

Menu bar None

Drag & drop File → new position

Shortcut key	None
Toolbar icon	None
Dialog	None

Purpose To rearrange files in the Navigator's dependency view.

Result The files in the dependency view are shown in the desired order.



The order can only be changed between files of the same file type.



If you rearrange files with the right mouse button you get a context menu to confirm the action before the file is moved.

Related topics

HowTos

- *How to Carry out Basic Experiment Manager Actions* (*ControlDesk Experiment Guide*)

References

- *Dependency Hierarchy* on page 160
- *Experiment Manager* on page 147

New Experiment

Access

You can access this command via:

Menu bar	File
Context menu of	An experiment
Shortcut key	Shift+Ctrl+N
Toolbar icon	A small gray icon of a document with a green plus sign inside, indicating the keyboard shortcut.

Purpose

To create a new experiment.

Result	When the specification of the new experiment is complete, the working root directory is automatically generated if necessary and the experiment data is saved to this directory. The entry for the experiment is shown in the Experiment Navigator.
	 This is not available in the Operator mode.
Description	You can organize the experiment files in subdirectories, specify the author's name, add a description text and graphic, etc.
Create a New Experiment dialog	<p>This dialog and the Configure Experiment Settings dialog (refer to <i>Configure Settings</i> on page 159) are almost identical.</p> <p>Experiment Name Lets you specify the desired name of the experiment. The experiment name corresponds to the file name of the ControlDesk experiment file (CDX file). It must not contain any of the characters: * ? < > : / \ "</p> <p>Working Root Lets you specify the name of the working root directory. It must not contain any of the characters: * ? < > "</p> <p>This is the directory where the ControlDesk experiment file (CDX) and the files associated to the experiment are saved. You can click the Browse button to select the desired directory via the standard Browse for Folder dialog.</p> <p>Create Subdirectories... Opens the standard Create Subdirectories dialog, which allows you to create subdirectories within the working root directory. These subdirectories can be used to organize the experiment files as you wish.</p> <p>Version Lets you specify the version of the experiment with any number you like. The version number is split into a major and minor part. When you use version control systems with ControlDesk this field is disabled and will be set by the version control system.</p> <p>Author(s) Lets you specify the author or authors responsible for the experiment.</p> <p>Description Text Lets you specify a description of the experiment.</p> <p>Experiment Graphic Lets you specify a graphic file to represent the experiment. Click the Browse button to select the desired graphic via the Select Experiment Graphic dialog.</p>

OK Accepts any changes you might have made in the dialog settings. The button is enabled only when a valid experiment name and valid working root directory are given.

Cancel Discards the changes.

Related topics

HowTos

- *How to Create a New Experiment* (*ControlDesk Experiment Guide*)

Examples

- *Example of Handling an Experiment* (*ControlDesk Experiment Guide*)

References

- *Configure Settings* on page 159
- *Experiment Manager* on page 147
- *Save Experiment As* on page 180

Open Experiment

Access

You can access this command via:

Menu bar

File

Context menu of

An experiment

Shortcut key

Shift+Ctrl+O

Toolbar icon



Purpose

To open an existing experiment (CDX file).

Result

The file content information is updated each time the experiment is saved to allow ControlDesk to check its consistency.

If certain ControlDesk components cannot be found when an experiment is opened, the Missing Component dialog opens automatically to let you decide whether to remove the component's entry from the experiment (see *Missing Component dialog* on page 172).

Similarly, if a file belonging to an experiment cannot be found in the folder it was located in when the experiment was most recently saved, the Missing File dialog opens to let you search manually for the file (see page *Missing File dialog* on page 172).



Both dialogs appear only if the Message Box option (see *Message Box* on page 32) is selected in the Experiment Page of the ControlDesk Properties dialog (see *Experiment Page* on page 31). They are not available in the Operator mode.



You can also open a recent experiment by selecting a ControlDesk experiment file from the Recent Experiments list in the File menu (see *Recent Experiments* on page 174).

Dialog settings

Look in Lets you select the folder from which the experiment should be taken.

File Name Displays the name of the experiment file (CDX file) that is to be opened.

Files of type Only files of the type CDX can be selected here.

Open Experiment from Only if a version control system is installed and the Use Version Control System option is selected on the Experiment Page of the ControlDesk Properties Dialog. The button label is named after the version control system you are currently using. Click the button to the right to start the current version control system's GUI, which lets you select the project the experiment should be opened from.



This option is not available in the Operator mode.

Preview Expands the dialog to show the description, version, author and graphics of the selected experiment:

- **Description** displays the description of the selected experiment.
- **Version** displays the version number of the selected experiment.
- **Author** displays the author of the selected experiment.

- **Graphics** displays the graphics of the selected experiment.



The information on the description, version, author and graphics cannot be altered from this dialog. This information was set when the experiment was created or modified via the New Experiment/ Configure Experiment Settings dialog.

Missing Component dialog

If certain ControlDesk components cannot be found when an experiment is opened, this dialog opens automatically to let you decide whether to remove the component's entry from the experiment. It appears only if the Message Box option is selected in the Experiment Page of the General Properties dialog (see *Experiment Page* on page 31).



This is not available in the Operator mode.

OK The entries of the missing components are not deleted. This ensures that the experiment keeps its original scope and can be loaded with a ControlDesk containing the relevant components.

Remove Removes the entries of the missing components from the experiment. The entries will be deleted the next time you save the experiment.

Cancel Stops the experiment from being loaded.

Missing File dialog

When a file belonging to an experiment cannot be found in the folder it was located in when the experiment was most recently saved, this dialog opens to let you search for it manually.

It appears only if the Message Box option is selected in the Experiment Page of the General Properties dialog (see *Experiment Page* on page 31).



This is not available in the Operator mode.

Remove Removes the missing file from the experiment. You then have to save the experiment via the Save Experiment command or Save Experiment As command to make this removal permanent.

Remove All Removes this file and all other missing files from the experiment. You then have to save the experiment via the Save Experiment command or Save Experiment As command to make this removal permanent.

Browse Lets you browse for the missing file. This opens the standard Open File dialog, which helps you conduct the search.

Cancel Cancels the search. The experiment is not loaded.

Related topics

HowTos

- *How to Save Experiments* (ControlDesk Experiment Guide)

Examples

- *Example of Handling an Experiment* (ControlDesk Experiment Guide)

References

- *Close Experiment* on page 157
- *Experiment Manager* on page 147
- *Experiment Page* on page 31
- *Open on Experiment Load* on page 173
- *Recent Experiments* on page 174
- *Save Experiment* on page 179
- *Unzip* on page 187

Open on Experiment Load

Access

You can access this command via:

Menu bar None

Context menu of The following files in the Experiment Navigator:

- Comma-separated value file (CSV)
- Intermediate data file (IDF)
- MATLAB binary file (MAT)
- Parameter file (PAR)
- System description file (SDF)
- Variable description file (TRC)

Shortcut key None

Toolbar icon None

Purpose

To specify whether the file is opened automatically when the experiment is loaded.

Result	If cleared, the file is not opened automatically when the experiment is loaded. This saves execution time during the load.
---------------	--



This is not available in the Operator mode.

Related topics

HowTos

- [How to Save Experiments](#) (*ControlDesk Experiment Guide*)

References

- [Auto Download on Experiment Load](#) on page 153
- [Autorun Application](#) on page 153
- [Experiment Manager](#) on page 147
- [Run on Experiment Load](#) on page 91
- [Use on Start Animation](#) on page 189

Recent Experiments

Access	You can access this command via:
Menu bar	File
Context menu of	None
Shortcut key	None
Toolbar icon	None
Purpose	To open one of the recently opened experiments.
Result	The file content information is updated each time the experiment is saved to allow ControlDesk to check its consistency. If certain ControlDesk components cannot be found when an experiment is opened, the Missing Component dialog opens automatically to let you decide whether to remove the component's entry from the experiment (see below). Similarly, if a file belonging to an experiment cannot be found in the folder it was located in when the experiment was most recently saved, the Missing File dialog opens to let you search manually for the file (see below).

Missing Component dialog

If certain ControlDesk components cannot be found when an experiment is opened, this dialog opens automatically to let you decide whether to remove the component's entry from the experiment. It appears only if the Message Box option is selected in the Experiment Page of the General Properties dialog (see *Experiment Page* on page 31).



This is not available in the Operator mode.

OK The entries of the missing components are not deleted. This ensures that the experiment keeps its original scope and can be loaded with a ControlDesk containing the relevant components.

Remove Removes the entries of the missing components from the experiment. The entries will be deleted the next time you save the experiment.

Cancel Stops the experiment from being loaded.

Missing File dialog

When a file belonging to an experiment cannot be found in the folder it was located in when the experiment was most recently saved, this dialog opens to let you search for it manually.

It appears only if the Message Box option is selected in the Experiment Page of the General Properties dialog (see *Experiment Page* on page 31).



This is not available in the Operator mode.

Remove Removes the missing file from the experiment. You then have to save the experiment via the Save Experiment command or Save Experiment As command to make this removal permanent.

Remove All Removes this file and all other missing files from the experiment. You then have to save the experiment via the Save Experiment command or Save Experiment As command to make this removal permanent.

Browse Lets you browse for the missing file. This opens the standard Open File dialog, which helps you conduct the search.

Cancel Cancels the search. The experiment is not loaded.

Related topics

HowTos

- [How to Save Experiments](#) ([ControlDesk Experiment Guide](#))

References

- [Experiment Manager](#) on page 147
- [Experiment Page](#) on page 31
- [Open Experiment](#) on page 170

Refresh Implicitly Dependent Files

Access

You can access this command via:

Menu bar Experiment

Context menu of Experiment Navigator

Shortcut key None

Toolbar icon None

Purpose

To refresh the list of implicitly dependent files in the Dependency View.

Description

This command can be useful when files (and their implicitly dependent files) are modified outside ControlDesk, for example, during compilation of the model.

Related topics

HowTos

- [How to Carry out Basic Experiment Manager Actions](#) ([ControlDesk Experiment Guide](#))

References

- [Dependency Hierarchy](#) on page 160
- [Experiment Manager](#) on page 147

Remove

Access Provided that the Use Version Control System option is selected (see *Experiment Page* on page 31), you can remove files from a version control system via:

Menu bar	Experiment – Version Control
Context menu of	None
Shortcut key	None
Toolbar icon	None

Purpose To remove the selected file from the current version control project.

Result This invokes the Select Files for Version Control dialog (see below), which lets you select the files that you want to remove from the version control system.



WARNING

If you remove a file from the version control system, you might not be able to restore any old version of this file. This also depends on the installed version control system.



This is not available in the Operator mode.

Select Files for Version Control dialog

List of files Lets you select the files to which you want to apply the version control command.



When the version control system supports advanced settings, ControlDesk displays an **Advanced** button in the version control dialog. If you click this button the specific dialog of the version control system is opened.

Related topics

HowTos

- [How to Use Basic Version Control Commands](#) ( [ControlDesk Experiment Guide](#))

References

- [Add to Version Control/Add](#) on page 151
- [Experiment Manager](#) on page 147

Remove from Experiment

Access

You can access this command via:

Menu bar	CAN (only for CAN bus configuration)
Context menu of	Certain files in the Experiment Navigator
Shortcut key	None
Toolbar icon	 (only for CAN bus configuration)

Purpose

To remove the active file from the experiment.

Result

The active file is removed from the experiment you are currently working with. It is also removed from the hierarchy in the Experiment Navigator. However, the file is not closed and it is not removed from the disk.



This is not available in the Operator mode.

Related topics

HowTos

- [How to Remove Files](#) ( [ControlDesk Experiment Guide](#))

References

- [Add All Opened Files](#) on page 149
- [Experiment Manager](#) on page 147
- [Import Files](#) on page 166

Run Version Control System

Access	Provided that the Use Version Control System option is selected (see <i>Experiment Page</i> on page 31), you can run your version control system via:
Menu bar	Experiment – Version Control (named after the installed version control system)
Context menu of	None
Shortcut key	None
Toolbar icon	None
Purpose	To launch the version control system's GUI.
	 This is not available in the Operator mode.
Description	ControlDesk incorporates all the important version control system commands in the Experiment Manager environment. However, to carry out certain actions (for example, setting labels, restoring old versions, renaming files, etc.), you might want to use the version control system's GUI.
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • <i>Using a Version Control System</i> ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none"> • <i>Experiment Manager</i> on page 147

Save Experiment

Access	You can access this command via:
Menu bar	File
Context menu of	An experiment
Shortcut key	Shift+Ctrl+S
Toolbar icon	

Purpose	To save the current experiment.
Result	The current experiment is saved including all files that are administered by it.
Description	The file content information is updated each time the experiment is saved to allow ControlDesk to check its consistency.
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• How to Save Experiments ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• Close Experiment on page 157• Experiment Manager on page 147• Open Experiment on page 170• Save Experiment As on page 180• Zip on page 190

Save Experiment As

Access	You can access this command via:
Menu bar	File
Context menu of	An experiment
Shortcut key	None
Toolbar icon	None
Purpose	To save the current experiment under a new name.
Result	The current experiment is saved under the new name in the selected directory.
	<div style="border: 1px solid #ccc; padding: 5px; display: inline-block;"> This is not available in the Operator mode.</div>

Description	Several experiments can be saved in one directory. Certain files are named after the experiment: these are the CDD and CDC files and the experiment event file _<ExperimentName>.py. When you save an experiment under a new name, they are also saved under the corresponding new names. All other files are saved under their original names at their original locations. The file content information is updated each time the experiment is saved to allow ControlDesk to check its consistency.
Dialog settings	<p>Save in Lets you select the path and directory to which the experiment should be saved.</p> <p>File name Displays the name of the selected file.</p> <p>Save as type There is only one file type available (CDX, ControlDesk experiment file).</p>
Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Save Experiments</i> ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none"> • <i>Close Experiment</i> on page 157 • <i>Experiment Manager</i> on page 147 • <i>File Types</i> ( <i>ControlDesk Experiment Guide</i>) • <i>New Experiment</i> on page 168 • <i>Open Experiment</i> on page 170 • <i>Save Experiment</i> on page 179 • <i>Zip</i> on page 190

Send to Any Folder

Access	You can access this command via:
Menu bar	None
Context menu of	<ul style="list-style-type: none"> ■ An experiment ■ A file in the Experiment Navigator
Shortcut key	None
Toolbar icon	None
Purpose	To send the selected experiment or file to a folder of your choice.

Result	This opens the standard Browse for Folder dialog, where the tree hierarchy lets you choose the folder the experiment/file should be sent (copied) to. If a file already exists in the selected folder, you are prompted to overwrite it.
---------------	--

Description	This command should not be used to create a working copy of an experiment (it is not an alternative for the Save Experiment As command). It is rather intended for file backup or file transportation via floppy disks, etc.
--------------------	--



The experiment is not saved when you invoke this command. Therefore, if you want to send the latest version of a file, you should save it beforehand.

Related topics	HowTos <ul style="list-style-type: none">• How to Send a File to a Folder or Mail Recipient (ControlDesk Experiment Guide) References <ul style="list-style-type: none">• Experiment Manager on page 147• Save Experiment As on page 180• Send to Mail Recipient on page 182
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Send to Mail Recipient

Access	You can access this command via:
Menu bar	None
Context menu of	<ul style="list-style-type: none">■ An experiment■ A file in the Experiment Navigator
Shortcut key	None
Toolbar icon	None
Purpose	To send the selected experiment or file as a mail attachment.
Result	The local mailing system's editor is opened so that the experiment or file can be sent as a mail attachment.

Description	If you do not have a configured mailing system set up, the standard Choose Profile dialog might open where you can set up a mailing system.
--------------------	---



- You must have a properly configured mailing system to send a file or an experiment.
- The experiment is not saved when you invoke this command. Therefore, if you want to send the latest version of a file, you should save it beforehand.

Related topics**HowTos**

- *How to Send a File to a Folder or Mail Recipient* (ControlDesk Experiment Guide)

References

- *Experiment Manager* on page 147
- *Send to Any Folder* on page 181

Show Differences

Access	Provided that the Use Version Control System option is selected (see <i>Experiment Page</i> on page 31), you can show the file differences via:
---------------	---

Menu bar	Experiment – Version Control
Context menu of	None
Shortcut key	None
Toolbar icon	None

Purpose	To compare the local file to the latest version contained in the version control project.
----------------	---

Result	If the local file and the version in the version control project differ, the differences are shown. The files can be different if you use the Undo Check Out command for instance, or if someone else edited the file on a different PC.
---------------	--



This is not available in the Operator mode.

Related topics

HowTos

- [How to Use the Version Control History](#) ( [ControlDesk Experiment Guide](#))

References

- [Experiment Manager](#) on page 147
- [Show History](#) on page 184

Show History

Access

Provided that the Use Version Control System option is selected (see [Experiment Page](#) on page 31), you can show the history of a file via:

Menu bar	Experiment – Version Control
Context menu of	None
Shortcut key	None
Toolbar icon	None

Purpose

To show the selected file's version control history.

Result

A list of the previous file checkins is displayed. Via this history you can also restore a previous version of the file.



This is not available in the Operator mode.

Related topics

HowTos

- [How to Use the Version Control History](#) ( [ControlDesk Experiment Guide](#))

References

- [Experiment Manager](#) on page 147
- [Get Latest Version](#) on page 165
- [Show Differences](#) on page 183

Show Implicitly Dependent Files

Access	You can access this command via:
Menu bar	Experiment
Context menu of	Experiment Navigator
Shortcut key	None
Dialog	Experiment page of the ControlDesk Properties dialog
Purpose	To toggle the display of the implicitly dependent files in the Dependency View.
Result	When selected, the implicitly dependent files are shown in the Dependency View. When cleared, these files are hidden.
Description	Implicitly dependent files are automatically added and handled by the ControlDesk components. You normally do not need to be concerned with them. But for some commands it is useful to consider them, for example, when you place the experiment under version control.
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• <i>How to Carry out Basic Experiment Manager Actions</i> ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• <i>Dependency Hierarchy</i> on page 160• <i>Experiment Manager</i> on page 147

Undo Check Out

Access

Provided that the Use Version Control System option is selected (see *Experiment Page* on page 31), you can undo the checkout for a file via:

Menu bar	Experiment – Version Control
Context menu of	<ul style="list-style-type: none">■ An experiment■ A file in the Experiment Navigator (if the experiment itself is under version control)
Shortcut key	None
Toolbar icon	None

Purpose

To undo the checkout of the selected file in the current version control project.

Result

If you changed the selected file since the last checkout, the changes are not stored in the version control project. If you carry out this command on an experiment, this invokes the Select Files for Version Control dialog (see below), which lets you select multiple files to undo the checkout for.



This is not available in the Operator mode.

Description

ControlDesk uses the following icons in the Experiment Navigator to display the checkout state:

Icon	Description
✗	File is checked out by another user and cannot be edited
✓	File is not checked out and cannot be edited
✓	File is checked out and can be edited

Select Files for Version Control dialog

List of files Lets you select the files to which you want to apply the version control command.



When the version control system supports advanced settings, ControlDesk displays an **Advanced** button in the version control dialog. If you click this button the specific dialog of the version control system is opened.

Related topics

HowTos

- *How to Use Basic Version Control Commands* ( [ControlDesk Experiment Guide](#))

References

- *Check In* on page 154
- *Experiment Manager* on page 147

Unzip

Access

You can access this command via:

Menu bar	Experiment
Context menu of	None
Shortcut key	None
Toolbar icon	None

Purpose

To unzip a ZIP file.

Result

The unzipped files are placed either in the folder where the ZIP file is located or in the folder you designate via the **Extract to other folder** option.

Open Zip Archive Dialog

This dialog is an expanded standard File dialog. It has the following additional dialog settings:

Overwrite existing files Indicates whether the Experiment Manager overwrites the existing files in the selected folder when opening the ZIP archive. The overwrite is performed automatically: no message prompts are issued.

Extract to other folder Indicates whether a different folder for file extraction is selected. This enables the edit field (where you can enter the desired folder) and the Browse button, which lets you select a folder via the standard Browse for Folder dialog. The default is the folder where the ZIP file is located.

Related topics

HowTos

- [How to Archive an Experiment](#) ( [ControlDesk Experiment Guide](#))

References

- [Experiment Manager](#) on page 147
- [Open Experiment](#) on page 170
- [Zip](#) on page 190

Use Events

Access

You can access this command via:

Menu bar	Experiment
Context menu of	Experiment Navigator
Shortcut key	None
Toolbar icon	None

Purpose

To enable or disable events for the current experiment.

Result

If events are enabled, ControlDesk executes Python scripts whenever the corresponding events occurs.



This is not available in the Operator mode.

Description

There are several events in ControlDesk, for example, if you click a button in a Layout. To achieve user-specific functionality, you can assign Python scripts to these events.



This is valid only when events are defined for the current experiment.

For further information on event handling, refer to *How to Enable/Disable Event Handling* ( *ControlDesk Automation Guide*).

Related topics

References

- *Event Handling Page* on page 30
- *Experiment Manager* on page 147

Use on Start Animation

Access

You can access this command via:

Menu bar	None
Context menu of	Parameter file in the Experiment Navigator
Shortcut key	None
Toolbar icon	None

Purpose

To automatically download the values of a Parameter file.

Result

Whenever you start the Animation mode, ControlDesk will automatically download the values of the selected Parameter file to the platform.

Related topics

References

- *Auto Download on Experiment Load* on page 153
- *Autorun Application* on page 153
- *Experiment Manager* on page 147
- *Open on Experiment Load* on page 173
- *Run on Experiment Load* on page 91

Zip

Access

You can access this command via:

Menu bar	Experiment
Context menu of	None
Shortcut key	Shift+Ctrl+Z
Toolbar icon	None

Purpose

To zip the current experiment.

Result

All files that are administered by the current experiment are added to a ZIP file named after the experiment. Open files that do not belong to the experiment are not zipped. If the experiment is not saved, you are asked to save it before zipping.

Related topics**HowTos**

- *How to Archive an Experiment* ( *ControlDesk Experiment Guide*)

References

- *Experiment Manager* on page 147
- *Save Experiment As* on page 180
- *Unzip* on page 187

Source Code Editor

The context menus of the Source Code Editor and the menu bar provide access to ControlDesk's Source Code Editor commands:

Purpose	Refer to	Avail. in OpMode
Edit menu		
To open a find dialog for a text search in the current document.	<i>Find</i> on page 193	yes
To repeat the last find action.	<i>Find Next</i> on page 194	yes
To replace the found results in the find dialog.	<i>Replace</i> on page 198	no
To move the caret to a specific line.	on page 194	yes
To insert the comment characters in all selected lines.	<i>Comment Selection</i> on page 192	no
To remove the comment characters in all selected lines.	<i>Uncomment Selection</i> on page 201	no
To replace whitespace characters with tabs.	<i>Tabify Selection</i> on page 199	no
To replace tabs with whitespace characters.	<i>Untabify Selection</i> on page 202	no
To convert all characters in the selection to uppercase.	<i>Make Selection Uppercase</i> on page 196	no
To convert all characters in the selection to lowercase.	<i>Make Selection Lowercase</i> on page 195	no
To add or remove a bookmark in the current line.	<i>Toggle Bookmark</i> on page 200	yes
To jump to the next bookmark.	<i>Next Bookmark</i> on page 197	yes
To jump to the previous bookmark.	<i>Previous Bookmark</i> on page 198	yes
To clear all created bookmarks.	<i>Clear Bookmarks</i> on page 192	yes
Window menu		
To open a new window with the current document.	<i>New Window</i> on page 196	yes



The above list indicates which commands and dialogs are available for files belonging to an experiment – these are write-protected in Operator mode. All the commands are available for files loaded to the Source Code Editor, that do not belong to an experiment.

Clear Bookmarks

Access	You can access this command via:
Menu bar	Edit – Advanced
Context menu of	None
Shortcut key	Shift+Ctrl+F2
Toolbar icon	
Purpose	To remove all of the bookmarks in the source code file shown in the Source Code Editor.
Result	The Source Code Editor removes all of the bookmarks in the source code file that you toggled via Toggle Bookmark (see <i>Toggle Bookmark</i> on page 200).
Related topics	<p>Basics</p> <ul style="list-style-type: none">• <i>Basic Editing Commands</i> ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• <i>Source Code Editor</i> on page 191• <i>Toggle Bookmark</i> on page 200

Comment Selection

Access	You can access this command via:
Menu bar	Edit – Advanced
Context menu of	Source Code Editor
Shortcut key	None
Toolbar icon	
Purpose	To insert comment character(s) at the beginning of all of the lines you selected in the source code file shown in the Source Code Editor.
Result	The Source Code Editor places comment character(s) at the beginning of the lines you selected in the source code file.

Description

This feature is only available inside Python documents.



This is not available in the Operator mode for files which belong to the current experiment.

Related topics

HowTos

- *How to Use Comments and Bookmarks* (*ControlDesk Experiment Guide*)

References

- *Source Code Editor* on page 191
- *Uncomment Selection* on page 201

Find

Access

You can access this command via:

Menu bar Edit

Context menu of Source Code Editor

Shortcut key **Ctrl+F**

Toolbar icon

Purpose

To find a certain expression in the file shown in the Source Code Editor.

Result

Once ControlDesk finds the expression you are looking for, it marks the first instance of the expression in the file, depending on which position the search was started at.

Dialog settings

Find what Lets you specify the text you wish to find in the code.

Match whole word only Indicates whether the text entered above is found only when it is separated from the surrounding text by white space or tabs.

Match case Indicates whether only those expressions which have the same case as the text entered in **Find what are found**.

Direction Lets you select Up or Down as the search direction.

When the top or bottom of the file is reached, you must switch to the other search direction manually.

Find Next Starts or continues the search.

Related topics

Basics

- *Basic Editing Commands* ( ControlDesk Experiment Guide)

References

- *Find Next* on page 194
- *Source Code Editor* on page 191

Find Next

Access

You can access this command via:

Menu bar None

Context menu of Source Code Editor

Shortcut key **F3**

Toolbar icon 

Purpose

To repeat the last Find command.

Related topics

Basics

- *Basic Editing Commands* ( ControlDesk Experiment Guide)

References

- *Find* on page 193
- *Source Code Editor* on page 191

Goto Line

Access

You can access this command via:

Menu bar Edit – Advanced

Context menu of None

Shortcut key **Ctrl+G**

Toolbar icon None

Purpose	To move to any line in the source code file shown in the Source Code Editor.
Result	The cursor goes to the line number you selected in the dialog.
Dialog settings	<p>Current Line Displays the current line position of the cursor.</p> <p>Last Line Displays the number of lines in the file.</p> <p>Line Number Lets you specify the line number where the cursor should be moved to.</p>
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • Basic Editing Commands (ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none"> • Source Code Editor on page 191

Make Selection Lowercase

Access	You can access this command via:
Menu bar	Edit – Advanced
Context menu of	Source Code Editor
Shortcut key	None
Toolbar icon	
Purpose	To convert all the characters in the selection to lower case.
	<div style="border: 1px solid #ccc; padding: 5px; margin-left: 10px;">This is not available in the Operator mode for files which belong to the current experiment.</div>
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • Basic Editing Commands (ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none"> • Make Selection Uppercase on page 196 • Source Code Editor on page 191

Make Selection Uppercase

Access

You can access this command via:

Menu bar	Edit – Advanced
Context menu of	Source Code Editor
Shortcut key	None
Toolbar icon	

Purpose

To convert all the characters inside the selection to upper case.



This is not available in the Operator mode for files which belong to the current experiment.

Related topics**Basics**

- [Basic Editing Commands](#) ( [ControlDesk Experiment Guide](#))

References

- [Make Selection Lowercase](#) on page 195
- [Source Code Editor](#) on page 191

New Window

Access

You can access this command via:

Menu bar	Window
Context menu of	None
Shortcut key	None
Toolbar icon	None

Purpose

To open a new window of the current document.

Result

The currently active document is shown in an additional window.

Related topics**Basics**

- [Basic Editing Commands](#) ( [ControlDesk Experiment Guide](#))

References

- [Source Code Editor](#) on page 191

Next Bookmark

Access

You can access this command via:

Menu bar	Edit – Advanced
Context menu of	None
Shortcut key	F2
Toolbar icon	

Purpose

To move the cursor to the next bookmark in the source code file shown in the Source Code Editor.

Result

The Source Code Editor moves the cursor and scrolls the view to the next bookmark in the source code file. For information on how to toggle bookmarks, refer to *Toggle Bookmark* on page 200.

Related topics**HowTos**

- [How to Use Comments and Bookmarks](#) ( [ControlDesk Experiment Guide](#))

References

- [Source Code Editor](#) on page 191
- [Toggle Bookmark](#) on page 200

Previous Bookmark

Access	You can access this command via:
Menu bar	Edit – Advanced
Context menu of	None
Shortcut key	Shift+F2
Toolbar icon	
Purpose	To move the cursor to the previous bookmark in the source code file shown in the Source Code Editor.
Result	The Source Code Editor moves the cursor and scrolls the view to the previous bookmark in the source code file. This bookmark was toggled via Toggle Bookmark (see <i>Toggle Bookmark</i> on page 200).
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• <i>How to Use Comments and Bookmarks</i> ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none">• <i>Source Code Editor</i> on page 191• <i>Toggle Bookmark</i> on page 200

Replace

Access	You can access this command via:
Menu bar	Edit
Context menu of	Source Code Editor
Shortcut key	CTRL-H
Toolbar icon	None
Purpose	To quickly replace an expression in the file shown in the Source Code Editor.

Result

The expression is replaced with the text you specified.



This is not available in the Operator mode for files which belong to the current experiment.

Dialog settings

- Find what** Lets you specify the text you wish to find in the file shown in the Source Code Editor.
- Replace with** Lets you specify the expression which should replace the text you are searching.
- Match whole word only** Indicates whether the text entered above is found only when it is surrounded by white space or tabs.
- Match case** Indicates whether only those expressions which have the same case as the text entered in the **Find what** field are found.
- Find Next** Starts or continues the search.
- Replace** Replaces the found text and then searches for the next occurrence of the text.
- Replace All** Replaces all occurrences of the find string inside the document.

Related topics**Basics**

- *Basic Editing Commands* (ControlDesk Experiment Guide)

References

- *Source Code Editor* on page 191

Tabify Selection

Access

You can access this command via:

Menu bar	Edit – Advanced
Context menu of	None
Shortcut key	None
Toolbar icon	None

Purpose	To tabify the selected text in the source code file shown in the Source Code Editor with the tab width that was previously set on the Source Code Editor page of the ControlDesk Properties dialog.
Result	The Source Code Editor replaces the leading whitespaces in the selected text with a tabulator, but only if the length of the whitespaces corresponds to the tabulator width that was set on the Source Code Editor page of the ControlDesk Properties dialog.
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• How to Work with Selected Text ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• Source Code Editor on page 191• Source Code Editor Page on page 38• Untabify Selection on page 202

Toggle Bookmark

Access	You can access this command via:
	Menu bar Edit – Advanced
	Context menu of None
	Shortcut key Ctrl+F2
	Toolbar icon 
Purpose	To add or remove a bookmark to the line where the cursor is currently located.
Result	When you add a bookmark with this feature, it appears as a blue square in the left margin of the line where it was placed. If no margin is specified, the bookmark is indicated by a blue bar highlighting the whole line of text. When you move the cursor to a line which already contains a bookmark and activate the Toggle Bookmark command again, the bookmark is removed.

Related topics**HowTos**

- [How to Use Comments and Bookmarks](#) ( [ControlDesk Experiment Guide](#))

References

- [Next Bookmark](#) on page 197
- [Previous Bookmark](#) on page 198
- [Source Code Editor](#) on page 191

Uncomment Selection

Access

You can access this command via:

Menu bar Edit

Context menu of Source Code Editor

Shortcut key None

Toolbar icon 

Purpose

To delete the comment character(s) you placed at the beginning of selected lines in the source code file shown in the Source Code Editor.

Result

The comment character(s) that were inserted via the Comment Selection command (see [Comment Selection](#) on page 192) are removed from the source code file.



This is not available in the Operator mode for files which belong to the current experiment.

Related topics**HowTos**

- [How to Use Comments and Bookmarks](#) ( [ControlDesk Experiment Guide](#))

References

- [Comment Selection](#) on page 192
- [Source Code Editor](#) on page 191

Untabify Selection

Access

You can access this command via:

Menu bar	Edit – Advanced
Context menu of	None
Shortcut key	None
Toolbar icon	None

Purpose

To replace the tabulators in the selected source code with whitespaces.

Result

All leading tabulators in the selection are changed to a series of spaces. The number of spaces per tabulator depends on the tabulator width setting in the Source Code Editor page of the ControlDesk Properties dialog (see *General Properties* on page 27).

Related topics**HowTos**

- *How to Work with Selected Text* ( [ControlDesk Experiment Guide](#))

References

- *Source Code Editor* on page 191
- *Source Code Editor Page* on page 38
- *Tabify Selection* on page 199

Instrumentation Manager

The context menus of the different Instrumentation Manager components, the menu bar, and the toolbars provide access to ControlDesk's Instrumentation Manager commands:

Purpose	Refer to	Avail. in OpMode
Instrumentation menu		
To switch to Animation mode.	<i>Animation Mode</i> on page 212	yes
To edit data connections.	<i>Edit Data Connections</i> on page 230	yes
To switch to Edit mode.	<i>Edit Mode</i> on page 232	no
To export data connections.	<i>Export Data Connections</i> on page 233	no
To import a connection (CON) file.	<i>Import Data Connections</i> on page 236	no
To switch to Test mode.	<i>Test Mode</i> on page 247	yes
View menus		
To display/hide the Instrument Selector.	<i>Instrument Selector</i> on page 237	yes
To display the Properties dialog of a layout.	<i>Properties: Layout Properties</i> on page 73	no

Purpose	Refer to	Avail. in OpMode
Edit menus		
To align instruments to the bottom.	<i>Align Instruments – Bottom</i> on page 207	no
To align instruments to the horizontal center.	<i>Align Instruments – Horiz. Center</i> on page 208	no
To align instruments to the left.	<i>Align Instruments – Left</i> on page 209	no
To align instruments to the right.	<i>Align Instruments – Right</i> on page 210	no
To align instruments to the top.	<i>Align Instruments – Top</i> on page 211	no
To align instruments to the vertical center.	<i>Align Instruments – Vert. Center</i> on page 211	no
To place an instrument in front of all other instruments.	<i>Bring to Front</i> on page 213	no
To place an instrument at the vertical center of a layout.	<i>Center in View – Vertically</i> on page 216	no
To place an instrument at the horizontal center of a layout.	<i>Center in View – Horizontally</i> on page 215	no
To group instruments.	<i>Group</i> on page 235	no
To resize an instrument to the size of the instrument last selected.	<i>Make Same Size – Both</i> on page 238	no
To set the height of an instrument to that of the instrument last selected.	<i>Make Same Size – Height</i> on page 239	no
To set the width of an instrument to that of the instrument last selected.	<i>Make Same Size – Width</i> on page 240	no
To place an instrument behind all other instruments.	<i>Send to Back</i> on page 245	no
To equalize the horizontal distance between instruments.	<i>Space Evenly – Across</i> on page 246	no
To equalize the vertical distance between instruments.	<i>Space Evenly – Down</i> on page 247	no
To ungroup instruments.	<i>Ungroup</i> on page 248	no
Instrumentation toolbar only		
To redo the last performed event-based layout action.	<i>Go Forward</i> on page 235	yes
To undo the previous performed event-based layout action.	<i>Go Backward</i> on page 234	yes
Layout toolbar only		
To switch the grid in a layout on and off.	<i>Toggle Grid</i> on page 97	no
Layout context menu		
To add a layout to the current experiment.	<i>Add Layout to Experiment</i> on page 206	no
To edit data connections.	<i>Edit Data Connections</i> on page 230	yes
To edit the properties of the layout.	<i>Properties: Layout Properties</i> on page 73	no
To remove a layout from the current experiment.	<i>Remove Layout from Experiment</i> on page 244	no
Instrument Selector context menu		
To edit the libraries and groups of the Instrument Selector.	<i>Customize</i> on page 228	yes
To display the icons in the instrument selector large.	<i>Large Icons</i> on page 65	yes
To display the icons in the instrument selector small.	<i>Small Icons</i> on page 95	yes

Purpose	Refer to	Avail. in OpMode
Drag & drop context menu (right mouse button)		
To display a layout by an event.	<i>Activate Layout on Instrument Default Event</i> on page 205	no
To build a read/write connection.	<i>Build Read/Write Connection</i> on page 214	no
To close the current layout.	<i>Close Layout on Instrument Default Event</i> on page 217	no
To copy an instrument without data connections.	<i>Copy Instruments</i> on page 218	no
To copy an instrument with its data connections.	<i>Copy Instruments With Connections</i> on page 219	no
To build a customer-defined data connection.	<i>Custom Connection</i> on page 220	no
To move an instrument.	<i>Move Instrument</i> on page 241	no
To read values from a selected instrument.	<i>Read From Source Instrument</i> on page 242	no
To read a value from a variable.	<i>Read From Variable</i> on page 243	no
To write a value to the simulation platform.	<i>Write to Variable</i> on page 250	no
To write values to a selected instrument.	<i>Write to Source Instrument</i> on page 249	no

Activate Layout on Instrument Default Event

Access	You can access this command via:
Menu bar	None
Drag & drop context menu of	<ul style="list-style-type: none"> ■ layout → instrument ■ instrument → layout
Shortcut key	None
Toolbar icon	None
Purpose	To activate a layout via the default event of an instrument.
Result	The connected layout is displayed and the layout that contains the trigger instrument is hidden.
Description	<p>In the Animation Mode, you can change the displayed layouts via events. For example, you can create a button toolbar to control the display of several layouts. It will then be possible to activate a connected layout by clicking a PushButton. (The default event used to activate a connected layout is Write Data).</p>



This is not available in the Operator mode.

If you activated a layout in Animation Mode you can undo the action in Edit Mode or Test Mode as well. See *Go Backward* on page 234 and *Go Forward* on page 235.



Any instruments with a default event can be connected to a layout to perform the **Activate Layout** command. You can select a different event to activate a layout via a customized data connection. Refer to *Custom Connection* on page 220.

Related topics

Basics

- *How to Activate Event-Based Layouts* ([ControlDesk Experiment Guide](#))

Examples

- *Example of Using Event-Based Layout Activation* ([ControlDesk Experiment Guide](#))

References

- *Close Layout on Instrument Default Event* on page 217
- *Custom Connection* on page 220
- *Instrumentation Manager* on page 203

Add Layout to Experiment

Access

You can access this command via:

Menu bar	None
Context menu of	instrument
Shortcut key	None
Toolbar icon	None

Purpose

To add a new layout to the current experiment.

Result

The Save As dialog opens and lets you save the new layout (file type LAY). The layout containing the instrument you called up the context menu is added to the experiment. The file is displayed in the Experiment Navigator.



This is not available in the Operator mode.

Save As dialog

- Save in** Lets you select the path and folder to save the file to.
- File name** Lets you specify the name of the file. You can also select a name from the files listed under the chosen path and folder.
- Save as type** Lets you select which type the file should be saved as.
-

Related topics**Basics**

- *Instrument Panels* (*ControlDesk Experiment Guide*)

References

- *Instrumentation Manager* on page 203
- *Remove Layout from Experiment* on page 244

Align Instruments – Bottom

Access

You can access this command via:

Menu bar Edit – Instrument Layout

Context menu of None

Shortcut key **Ctrl+Shift+↓**

Toolbar icon



Purpose

To align all selected instruments in the layout with the bottom of the last selected item. This item is marked by a black frame.

Result

The instruments you selected in the layout are aligned with the bottom border of the last selected item.



This is not available in the Operator mode.

Related topics

Basics

- [Creating Instruments \(ControlDesk Experiment Guide\)](#)

HowTos

- [How to Arrange Instruments \(ControlDesk Experiment Guide\)](#)

- [How to Handle Multiple Selections of Instruments \(ControlDesk Experiment Guide\)](#)

References

- [Align Instruments – Top](#) on page 211

- [Instrumentation Manager](#) on page 203

Align Instruments – Horiz. Center

Access

You can access this command via:

Menu bar Edit – Instrument Layout

Context menu of None

Shortcut key None

Toolbar icon



Purpose

To arrange all selected instruments in a horizontal line.

Result

The instruments you selected in the layout are aligned with the horizontal center of the last selected item.



This is not available in the Operator mode.

Description

The last selected item is marked by a black frame.

Related topics

Basics

- [Creating Instruments \(ControlDesk Experiment Guide\)](#)

HowTos

- [How to Arrange Instruments \(ControlDesk Experiment Guide\)](#)

- [How to Handle Multiple Selections of Instruments \(ControlDesk Experiment Guide\)](#)

References

- [Align Instruments – Vert. Center](#) on page 211

- [Instrumentation Manager](#) on page 203

Align Instruments – Left

Access	You can access this command via:
Menu bar	Edit – Instrument Layout
Context menu of	None
Shortcut key	Ctrl+Shift+←
Toolbar icon	
Purpose	To align all selected instruments in the layout with the left border of the last selected item.
Result	The instruments you selected are aligned with the left of the last selection item.
	This is not available in the Operator mode.
Description	The last selected item is marked by a black frame.
Related topics	<p>Basics</p> <ul style="list-style-type: none">• <i>Creating Instruments</i> ( ControlDesk Experiment Guide) <p>HowTos</p> <ul style="list-style-type: none">• <i>How to Arrange Instruments</i> ( ControlDesk Experiment Guide)• <i>How to Handle Multiple Selections of Instruments</i> ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• <i>Align Instruments – Right</i> on page 210• <i>Instrumentation Manager</i> on page 203

Align Instruments – Right

Access

You can access this command via:

Menu bar Edit – Instrument Layout

Context menu of None

Shortcut key **Ctrl+Shift+→**

Toolbar icon



Purpose

To align all selected instruments in the layout with the right border of the last selected item.

Result

The instruments you selected in the layout are aligned with the right of the last selected item.



This is not available in the Operator mode.

Description

The last selected item is marked by a black frame.

Related topics**Basics**

- *Creating Instruments* ([ControlDesk Experiment Guide](#))

HowTos

- *How to Arrange Instruments* ([ControlDesk Experiment Guide](#))
- *How to Handle Multiple Selections of Instruments* ([ControlDesk Experiment Guide](#))

References

- *Align Instruments – Left* on page 209
- *Instrumentation Manager* on page 203

Align Instruments – Top

Access	You can access this command via:
Menu bar	Edit – Instrument Layout
Context menu of	None
Shortcut key	Ctrl+Shift+↑
Toolbar icon	
Purpose	To align all selected instruments in the layout with the top of the last selected item. This item is marked by a black frame.
Result	The instruments you selected in the layout are aligned with the top border of the last selected item.
<div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 10px;"> This is not available in the Operator mode. </div>	
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • <i>Creating Instruments</i> ( <i>ControlDesk Experiment Guide</i>) <p>Examples</p> <ul style="list-style-type: none"> • <i>Example of Setting a Model into Animation Mode</i> ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none"> • <i>Instrumentation Manager</i> on page 203 • <i>Make Same Size – Both</i> on page 238

Align Instruments – Vert. Center

Access	You can access this command via:
Menu bar	Edit – Instrument Layout
Context menu of	None
Shortcut key	None
Toolbar icon	

Purpose	To arrange all selected instruments in the layout in a vertical line according to the center of the last selected item. This item is marked by a black frame.
Result	The instruments you selected in the layout are aligned with the vertical center of the last selected item.
Related topics	<p>Basics</p> <ul style="list-style-type: none">• <i>Creating Instruments</i> (<i>ControlDesk Experiment Guide</i>) <p>Examples</p> <ul style="list-style-type: none">• <i>Example of Setting a Model into Animation Mode</i> (<i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none">• <i>Align Instruments – Horiz. Center</i> on page 208• <i>Instrumentation Manager</i> on page 203

Animation Mode

Access	You can access this command via:
Menu bar	Instrumentation
Context menu of	None
Shortcut key	F5
Toolbar icon	
Purpose	To start the animation mode.
Result	The animation mode is started. The application that has been downloaded to the real-time hardware/Simulink simulation is running.
Description	In Animation Mode you cannot edit the instruments or layouts of an experiment. This can only be done in the Edit Mode (see <i>Edit Mode</i> on page 232).

Related topics**Basics**

- *Animation Mode* ( [ControlDesk Experiment Guide](#))
- *Setting the Operation Mode* ( [ControlDesk Experiment Guide](#))

Examples

- *Example of Setting a Model into Animation Mode* ( [ControlDesk Experiment Guide](#))

References

- *Edit Mode* [on page 232](#)
- *Instrumentation Manager* [on page 203](#)
- *Test Mode* [on page 247](#)

Bring to Front

Access

You can access this command via:

Menu bar Edit – Instrument Layout

Context menu of None

Shortcut key **Ctrl+Shift+F**

Toolbar icon



Purpose

To bring the selected instruments in the layout to the front.

Result

The instruments you selected in the layout are brought to the foreground. They will cover the instruments in the background if their borders overlapped before this command was carried out.



This is not available in the Operator mode.

Description

Some instruments such as a plotter can be displayed as windows, most of the instruments not. If you have mixed the two types of instruments in a layout, the window instruments lie always in front of the others.

Related topics

Basics

- *Creating Instruments* (*ControlDesk Experiment Guide*)

HowTos

- *How to Arrange Instruments* (*ControlDesk Experiment Guide*)

- *How to Handle Multiple Selections of Instruments* (*ControlDesk Experiment Guide*)

References

- *Instrumentation Manager* on page 203

- *Send to Back* on page 245

Build Read/Write Connection

Access

You can access this command via:

Menu bar None

Drag & drop context menu of ■ variable → instrument
 ■ instrument → instrument

Shortcut key None

Toolbar icon None

Purpose

To build a read/write connection between an instrument and a variable or between two instruments.

Result

The read/write connection is built. The names of the variable/instrument is displayed in the source/target caption.



This is not available in the Operator mode.

Description

Via a read/write connection you can exchange data between the source and the target of the data connection. For example, an instrument reads data from a variable and sends back data to the variable.

By default, the read operation is triggered by system polling and the write event is triggered by the default event (Write Data). You can also select events that are related to instruments of all layouts of the experiment. See Custom Connection (Refer to *Custom Connection* on page 220) to select an event that is related to an instrument.



This is only available, if the drag & drop source is able to send and receive data.

Related topics

Basics

- *Creating Data Connections* (ControlDesk Experiment Guide)

HowTos

- *How to Build Data Connections Between Variables and Instruments* (ControlDesk Experiment Guide)
- *How to Create Data Connections Between Two Instruments* (ControlDesk Experiment Guide)

References

- *Copy Instruments With Connections* on page 219
- *Custom Connection* on page 220
- *Instrumentation Manager* on page 203
- *Read From Source Instrument* on page 242
- *Read From Variable* on page 243
- *Write to Source Instrument* on page 249
- *Write to Variable* on page 250

Center in View – Horizontally

Access

You can access this command via:

Menu bar	Edit – Instrument Layout
----------	--------------------------

Context menu of	None
-----------------	------

Shortcut key	None
--------------	------

Toolbar icon	
--------------	--

Purpose

To center the selected instruments horizontally in the layout.

Result	The selected instruments are centered in the layout horizontally. If several instruments lie in a horizontal line, they will overlap each other.
---------------	--



This is not available in the Operator mode.

Related topics

Basics

- *Creating Instruments* (*ControlDesk Experiment Guide*)

HowTos

- *How to Arrange Instruments* (*ControlDesk Experiment Guide*)
- *How to Handle Multiple Selections of Instruments* (*ControlDesk Experiment Guide*)

References

- *Center in View – Vertically* on page 216
- *Instrumentation Manager* on page 203

Center in View – Vertically

Access

You can access this command via:

Menu bar Edit – Instrument Layout

Context menu of None

Shortcut key None

Toolbar icon



Purpose

To center the selected instruments in the layout vertically.

Result

The selected instruments are centered vertically in the layout. If several instruments lie in a vertical line, they will overlap each other.



This is not available in the Operator mode.

Related topics

Basics

- *Creating Instruments* ( *ControlDesk Experiment Guide*)

HowTos

- *How to Arrange Instruments* ( *ControlDesk Experiment Guide*)
- *How to Handle Multiple Selections of Instruments* ( *ControlDesk Experiment Guide*)

References

- *Instrumentation Manager* on page 203
- *Make Same Size – Both* on page 238

Close Layout on Instrument Default Event

Access

You can access this command via:

Menu bar	None
Drag & drop context menu of	<ul style="list-style-type: none"> ■ layout → instrument ■ instrument → layout
Shortcut key	None
Toolbar icon	None

Purpose

To close a layout via the default event of an instrument.

Result

The connected layout is closed.



This is not available in the Operator mode.

Description

In the Animation mode, you can close displayed layouts via events. The events are fired if a user or system interaction occurs. For example, you can create a button toolbar to control the display of several layouts. It will then be possible to activate or close a connected layout by clicking a PushButton. (The default event used to activate a connected layout is **Write Data**).

If you closed a displayed layout in Animation Mode you can undo the action in Edit Mode or Test Mode as well. See *Go Backward* on page 234 and *Go Forward* on page 235.



Any instruments with a default event can be connected to a layout to perform **Close Layout**. You can select another event to close a layout via a custom data connection (see *Custom Connection* on page 220).

Related topics

Basics

- *How to Activate Event-Based Layouts* (*ControlDesk Experiment Guide*)

Examples

- *Example of Using Event-Based Layout Activation* (*ControlDesk Experiment Guide*)

References

- *Build Read/Write Connection* on page 214
- *Custom Connection* on page 220
- *Instrumentation Manager* on page 203

Copy Instruments

Access

You can access this command via:

Menu bar	None
Drag & drop context menu of	<ul style="list-style-type: none">■ layout → instrument■ instrument → instrument
Shortcut key	None
Toolbar icon	None

Purpose

To copy instruments without data connections.

Result

The selected instruments are copied to the specified position.



- Data connections are not copied.
- This is not available in the Operator mode.



- You can also copy instruments using the standard Windows shortcuts **Ctrl+C** and **Ctrl+V** instead of **Copy** and **Paste** from the context menu. Another possibility is to perform a drag & drop operation with the left mouse button while the **Ctrl** key is pressed.
- You can copy instruments within one layout and from one layout to another.

Related topics

HowTos

- *How to Copy Instruments Without Data Connections* (ControlDesk Experiment Guide)
- *How to Handle Multiple Selections of Instruments* (ControlDesk Experiment Guide)

References

- *Copy* on page 52
- *Copy Instruments With Connections* on page 219
- *Move Instrument* on page 241
- *Paste* on page 69

Copy Instruments With Connections

Access

You can access this command via:

Menu bar	None
Drag & drop context menu of	<ul style="list-style-type: none"> ■ layout → instrument ■ instrument → instrument
Shortcut key	None
Toolbar icon	None

Purpose

To copy instruments with their data connections.

Result	The selected instruments are copied to the specified position. All data connections are copied, too.
---------------	--



This is not available in the Operator mode.



You can copy instruments with their data connections in one layout and from one layout to another.

Related topics

HowTos

- [How to Copy Instruments With Data Connections](#) ([ControlDesk Experiment Guide](#))

References

- [Copy](#) on page 52
- [Copy Instruments](#) on page 218
- [Move Instrument](#) on page 241
- [Paste Instruments With Connections](#) on page 241
- [Workbook](#) on page 102

Custom Connection

Access

You can access this command via:

Menu bar None

Drag & drop context menu of ■ layout → instrument
 ■ instrument → instrument
 ■ variable → instrument

Shortcut key None

Toolbar icon None

Purpose

To build a customer defined data connection between the drag & drop source and the target.



This is not available in the Operator mode.

Description	Via Custom Connection you call up the Connection Wizard. The Connection Wizard provides a guided tour of building data connections between variables, layouts and instruments. Step by step you call up dialogs to define the events, the source and the destination properties of the data connection. Refer to <i>Using the Connection Wizard</i> ( <i>ControlDesk Experiment Guide</i>).
	<ul style="list-style-type: none">■ The Select Event dialog (see <i>Select Event dialog</i> on page 222) lets you select the event that triggers the action of an event-controlled connection. You can build data connections between layouts and instruments to trigger an action of the layout. The connected layouts can be activated or closed.■ The Select Action dialog (see <i>Select Action dialog</i> on page 224) lets you select the action that will be performed when the event is fired.■ The Select Read Event dialog (see <i>Select Read Event dialog</i> on page 223) lets you select the event source and the event that triggers the read operation from the variable to the instrument so that you can build data connections between variables and instruments. Event sources can be most of the instruments included in the current layout. Any instrument on any open layout can be used as event source.■ The Select Write Event dialog (see <i>Select Write Event dialog</i> on page 223) lets you select the event source and the event that triggers a write operation within a data connection. The data transfer is triggered when an event is fired. Event sources can be most of the instruments included in the current layout.■ The Select Property dialog (see <i>Select Property dialog</i> on page 225) lets you select the property to which you want to write the data (variable or instrument). All available properties are displayed.■ The Select Source Property dialog (see <i>Select Source Property dialog</i> on page 225) lets you select the property from which you want to read the data. All available sources are displayed.

- The Select Destination Property dialog (see *Select Destination Property dialog* on page 226) lets you select the destination property to which the data should be written. All available destinations are displayed.



For data sources that cannot generate events, ControlDesk provides system polling which is independent of the instruments. The real-time hardware may be such a data source. The system polling performs a cyclic request to all connected data channels. See *Creating Data Connections* (*ControlDesk Experiment Guide*).



The preselected **Event** depends on the instrument that is the target of the drag & drop action. If the target instrument possesses the **Write Data** event, this event is preselected; otherwise **System** is preselected and the events are **System:Poll** (Virtual Instruments) or **System:Poll2** (Data Acquisition Instruments).

Select Event dialog

For event-controlled connections, this dialog is called up first by the Connection Wizard.

Event Source Click an entry in the list to display the related events in the event list. If you select **System**, the system events are displayed in the event list. If you select a layout, no event is listed. You have then to expand the list by clicking on the layout entry and selecting one of the instruments the layout contains.

Event Select the event to trigger the action. The list displays all the instrument's related events. For **System**, the standard triggers **System:Poll** (Virtual Instruments) and **System:Poll2** (Data Acquisition Instruments) are displayed.

If the **Write Data** event is related to an instrument, it is preselected; otherwise **System:Poll** or **System:Poll2** is.



If you select **None**, no data connection will be built.

Back The **Back** button is dimmed, since this dialog is the first step of the Connection Wizard.

Next Click this button to call up the Select Action dialog (see *Select Action dialog* on page 224).

Finish Click this button to build the data connection with the standard action (events). The standard actions are **Activate Document** and **Close Current Document**.

Select Read Event dialog

For data connections between variables and instruments, this dialog is called up first by the Connection Wizard.

Event Source Click an entry on the list to display the related events on the **Event** list. If you select **System**, the standard system events are displayed in the **Event** list. If you select a layout, no event is listed. You have then to expand the list by clicking on the layout entry and selecting one of the instruments the layout contains.

Event Select the event that should trigger the data transfer. The list displays all the instrument's related events. For **System**, the standard triggers **System:Poll** (Virtual Instruments) and **System:Poll2** (Data Acquisition Instruments) are displayed.



If you select **None**, no read connection will be built.

Back The **Back** button is dimmed, since this dialog is the first step of the guided tour.

Next Click this button to call up the next dialog of the guided tour. This is the Select Write Event dialog (see *Select Write Event dialog* on page 223) for a read/write connection or the Select Property dialog (see *Select Property dialog* on page 225) for a read connection.

Finish Click this button to finish the data connection building. The data connection will be established with the selected event source and event. The standard property (Value) to which the data will be written is used. You can select other properties by clicking the Next button (see above) to perform the next step of the guided tour.

Select Write Event dialog

This dialog is called up for a read/write connection when you click **Next** (see above) in the Select Read Event dialog (see *Select Read Event dialog* on page 223).

Event Source Click an entry on the list to display the related events in the event list. If you select **System**, the standard system events are displayed in the event list. If you select a layout, no event is listed. You have then to expand the list by clicking on the layout entry and selecting one of the instruments the layout contains.

Event Select the event that should trigger the write operation. The list displays all the instrument's related events. For **System**, the standard triggers **System:Poll** (Virtual Instruments) and **System:Poll2** (Data Acquisition Instruments) are displayed.



If you select **None**, no write connection will be built.

Back Click this button to go back to the Select Read Event dialog (see above).

Next Click this button to call up the next dialog of the guided tour. For an instrument–instrument connection, this is the Select Source Property dialog (see *Select Source Property dialog* on page 225). For a variable–instrument connection, this is the Select Property dialog (see *Select Property dialog* on page 225).

Finish Click this button to finish the data connection building. The data connection will be established with the selected read and write events. The standard property (Value) to which the data will be written is used.

Select Action dialog

This dialog is called up when you click Next (see above) in the Select Event dialog (see *Select Event dialog* on page 222).

Activate Document Select this option if you want the connected layout to be displayed.

Close Current Document Select this checkbox if you want the currently active layout to be closed as well. If you have not selected **Activate Document**, this entry is disabled.

Close Document Select this option if you want the connected layout to be closed.

Back Click this button if you want to display the Select Event dialog (see above).

Finish Click this button if you want to build the data connection.

Select Property dialog	<p>This dialog is called up for a read connection when you click Next (see above) in the Select Read Event dialog (see <i>Select Read Event dialog</i> on page 223) and for a read/write connection when you click Next in the Select Write Event dialog (see <i>Select Write Event dialog</i> on page 223).</p> <p>List In the list you can see the properties (layout and instrument) to which the data should be written. As a default, Value (Virtual Instruments) is preselected. For Data Acquisition Instruments, the axis and signal on which you terminate your drag & drop operation will be preselected. You can change the preselection by selecting another property.</p> <p>Back Click this button to go back to the Select Read Event dialog (see above).</p> <p>Next Since this dialog is the last step of the guided tour, the button is disabled.</p> <p>Finish Click this button to establish the data connection.</p>
Select Source Property dialog	<p>This dialog is called up for an instrument-instrument connection when you click Next (see above) in the Select Write Event dialog (see <i>Select Write Event dialog</i> on page 223) of the Connection Wizard.</p> <p>List In the list you can see the source (layout and instrument) from which the data is read. All available properties that can be used as sources are displayed. As a default, Value is preselected.</p> <p>Back Click this button if you want to go back to the Select Write Event dialog (see above).</p> <p>Next Click this button to call up the next dialog of the guided tour. This is the Select Destination Property dialog (see <i>Select Destination Property dialog</i> on page 226).</p> <p>Finish Click this button to finish the data connection building. The data connection is established with the selected settings. For the write destination that can be selected in the next step of the guided tour, the standard destination is preselected.</p>

Select Destination Property dialog

This dialog is called up when you click Next (see above) in the Select Source Property dialog (see *Select Source Property dialog* on page 225) of the Connection Wizard.

List In the list you can see the destination (layout and instrument) to which the data should be written. All available destination properties are displayed. As a default, **Value** (Virtual Instruments) is preselected. For Data Acquisition Instruments, the axis and signal on which you terminate your drag & drop operation will be preselected. You can change the preselection by selecting another write destination property.



Normally, Data Acquisition Instruments are not involved in instrument-instrument connections, so they may not appear in this dialog.

Back Click this button to go back to the Select Source Property dialog (see above).

Next This button is disabled, since you have to finish building the data connection.

Finish Click this button to establish the data connection.

Related topics

Basics

- [How to Activate Event-Based Layouts](#) (*ControlDesk Experiment Guide*)
- [Using the Connection Wizard](#) (*ControlDesk Experiment Guide*)

HowTos

- [How to Use the Connection Wizard](#) (*ControlDesk Experiment Guide*)

Examples

- [Example of Using Event-Based Layout Activation](#) (*ControlDesk Experiment Guide*)

References

- [Build Read/Write Connection](#) on page 214
- [Close Layout on Instrument Default Event](#) on page 217
- [Customize](#) on page 228
- [Instrumentation Manager](#) on page 203
- [Read From Source Instrument](#) on page 242
- [Read From Variable](#) on page 243
- [Write to Source Instrument](#) on page 249
- [Write to Variable](#) on page 250

Custom Instrument Properties

Access	This dialog is called up if you drag & drop an instrument to the Instrument Selector .
Purpose	To select an icon and enter the instrument name to be displayed in the Instrument Selector .
	<div style="border: 1px solid #ccc; padding: 5px; display: inline-block;"> This dialog is not available in the Operator mode.</div>
Description	You can add customer instruments to the Customer library in the Instrument Selector . This allows you to save instruments with their current settings for later reuse. To identify your custom instrument, you can select an icon in the Image field and enter a name in the Button Text input field.
Dialog Settings	Images Select an icon from the list to represent the selected instrument in the Instrument Selector . Button Text Enter a name to identify the instrument in the Instrument Selector .
Related topics	<p>Basics</p> <ul style="list-style-type: none">• <i>Instrument Selector</i> ( ControlDesk Experiment Guide) <p>HowTos</p> <ul style="list-style-type: none">• <i>How to Add and Remove Instruments to or from Groups</i> ( ControlDesk Experiment Guide)• <i>How to Specify User-Defined Instruments and Groups</i> ( ControlDesk Experiment Guide) <p>Examples</p> <ul style="list-style-type: none">• <i>Example of Creating a New Instrument Group</i> ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• <i>Instrumentation Manager</i> on page 203

Customize

Access

You can access this command via:

Menu bar	None
Context menu of	Instrument Selector
Shortcut key	None
Toolbar icon	None

Purpose

To administrate and edit instrument libraries and groups in the **Instrument Selector**.



This is not available in the Operator mode.

Description

ControlDesk distinguishes between instrument groups and libraries. Libraries contain instrument definitions. First you can use the dSPACE standard instrumentation (Virtual and Data Acquisition Instruments) to create instruments in a layout. These instruments can be added as your own instrument definitions to the **Customer** library. For example, you can use the **Customer** library to save frequently used instruments with their settings.

Groups are collections of instruments which you can change according to your needs.

Groups in Instrument Selector page

This page is used to create, delete or rename instrument groups.

Groups The list displays the groups available in the **Instrument Selector**.

New Click this button to add a new customer-defined group to the **Instrument Selector**. Initially, the group is named New Group. Identical group names are given an index number.

Reset Click this button to reset the dSPACE groups to the default settings. Instruments that originally are not member of this groups are deleted from the groups. This button is only available if you have selected a dSPACE group.

Delete Click this button to delete the selected group from the **Instrument Selector**. This button is only available, if you have selected a user-defined group.



You cannot delete the default dSPACE groups.

Group Name Select an entry in the **Group** list to display the name in this input field. Enter a new name to rename the group. This field is only enabled for user-defined groups.

Instrument Libraries page

This page is used to add instruments to groups or delete unnecessary instruments

Libraries The list displays the available instrument libraries. Select a library from the list to display all its instruments in the instruments display.

Instruments This field displays instruments in a library. You can select an instrument and add it to a group by dragging & dropping it to the displayed group in the **Instrument Selector**.

Trash button Click this button to delete the selected instrument from the library. This button is dimmed if a dSPACE library is displayed in the list.



You cannot delete instruments from the dSPACE libraries
Virtual Instruments and Data Acquisition.

Related topics

Basics

- *Instrument Selector* ([ControlDesk Experiment Guide](#))

HowTos

- *How to Add and Remove Instruments to or from Groups* ([ControlDesk Experiment Guide](#))
- *How to Specify User-Defined Instruments and Groups* ([ControlDesk Experiment Guide](#))

Examples

- *Example of Creating a New Instrument Group* ([ControlDesk Experiment Guide](#))

References

- *Custom Instrument Properties* on page 227
- *Instrumentation Manager* on page 203

Edit Data Connections

Access	You can access this command via:
Menu bar	Instrumentation
Context menu of	<ul style="list-style-type: none">■ layout■ instrument
Shortcut key	None
Toolbar icon	
Purpose	To display, filter and delete data connections of instruments, layouts and whole experiments.
Result	The data connections according to the defined filter settings is displayed.
Description	<p>Edit Data Connections lists the data connections of the current experiment. If you call up the dialog via an instrument's context menu, all connections related to this instrument are displayed. If you call up the dialog via a layout's context menu, all connections of the layout are displayed.</p> <p>Using filters you can restrict the displayed connections. To restrict the displayed connections, you can filter the connections by selecting an event and/or an instrument. You can delete data connections you do not need any more.</p> <p>The contents depend on the way it is called up:</p> <ul style="list-style-type: none">■ If you have invoked the dialog via the main menu, all connections of the experiment are displayed.■ If you have called up the context menu by clicking on a layout, all connections of that layout are displayed.■ If you have called up the context menu by clicking on an instrument, the connections related to that instrument are displayed.
Edit Data Connections dialog	<p>Event Select the event to be used as a filter for the displayed connections. To display all connections, select None in the list.</p> <p>Click the Browse button if you want to select an event via the Select Event dialog (filter connections) (see below).</p>

Instrument Select the instrument or layout that should be used as a filter for the displayed connections. If you select **None**, no filter is active and all the connections of the experiment are listed.

Click the **Browse** button if you want to select an instrument via the Select Instrument dialog (filter connections) (see below).

Connections All connections that match the filter settings (event and instrument) are displayed in this list. The four columns **Event**, **Source**, **Target** and **Data Capture** show the event that triggers the data transfer, the source (variable or instrument), the target of the data transfer and the data group where the source belongs to. The **Connection ID** column is not visible per default. It is reserved for future use. In the mixed data captures mode, you can change the data group (see *Animation Page* on page 28). If a connection is invalid, it is highlighted in red.



You can sort the contents of the **Connections** list. Click on the header bar **Event**, **Source**, **Target** or **Data Capture** of the columns. A context menu is available too by clicking the header bar with the right mouse button. You can toggle the sort mechanism and customize the columns of the dialog (see *Data Connections Info dialog* on page 232, below). The changes are not saved and will be set to default for the next time the dialog is opened.

Trash Button To delete a connection from the **Connections** list, select the connection and click the **Trash** button. In addition, you can drag & drop the connections from the **Connections** list onto this button or you can press **Del**. Multiselection of connections is possible.

Select Event dialog (filter connections)

This dialog is called up via the Browse button for the Event (see above) and lets you select an event that is used to filter the connections in the Edit Data Connections dialog (see above).

List of available instruments Select the desired instrument for filtering the connections. Select None in the list to display all connections.

Select Instrument dialog (filter connections)

This dialog is called up via the Browse button for the Instrument (see above) and lets you select an instrument that is used to filter the connections in the Edit Data Connections dialog (see above).

Event Source Select the desired instrument for filtering the connections. Select None in the list to display all connections.

Event Select the desired event for filtering the connections.

Data Connections Info dialog

This dialog is called up via the context menu of the Connections (see above) list and lets you add or remove columns to/from the **Connections** list of the Edit Data Connections dialog (see above).

Columns The Columns list contains all the properties that can be displayed in the Connections list. You can add the properties to the list by dragging & dropping the appropriate button onto the header bar of the Connections list creating a new column. The insertion point is marked with a red triangle. To remove a property, click on the header of the relevant column and drag & drop the button back to the Columns list.

Related topics

Basics

- *Creating Data Connections* (*ControlDesk Experiment Guide*)

HowTos

- *How to Verify Data Connections* (*ControlDesk Experiment Guide*)

References

- *Instrumentation Manager* on page 203

Edit Mode

Access

You can access this command via:

Menu bar Instrumentation

Context menu of None

Shortcut key **SHIFT + F5**

Toolbar icon



Purpose

To activate the Edit mode for all loaded layouts.

Result

The layout(s) are switched to the Edit mode.

In the Edit mode you can add or remove instruments, pan or zoom instruments or edit the properties of selected instruments/layouts.



This is not available in the Operator mode.

Related topics**Basics**

- *Instrumentation Navigator* ( *ControlDesk Experiment Guide*)

References

- *Animation Mode* on page 212
- *Instrumentation Manager* on page 203

Export Data Connections

Access

You can access this command via:

Menu bar	Instrumentation
Context menu of	None
Shortcut key	None
Toolbar icon	None

Purpose

To export data connections that reference to:

- one or more selected instruments,
- an active layout,
- or all data connections of the current experiment.

Result

The data connections are saved as a Connection (CON) file in the selected directory.



This is not available in the Operator mode.

Dialog settings

Save in Select the path and directory to which the file should be saved. CON files already in this directory are displayed in the list below.

File name Enter the file name or rename a selected file.

Save as type This list provides the file type (only CON for Connection files).

Range Choose the data connections you want to export:

- All connections
- The connections of the active layout

- The connections of the current selection in all layouts (available only, if an instrument is selected)
- The connections of the current selection in the active layouts (available only, if an instrument in the active layout is selected)

Related topics

HowTos

- [How to Export/Import Data Connections](#) ( [ControlDesk Experiment Guide](#))

References

- [Save As](#) on page 92

Go Backward

Access

You can access this command via:

Menu bar	None
Context menu of	None
Shortcut key	None
Toolbar icon	

Purpose

To activate or close a layout.

Result

The most recent event-based layout activation or closing is performed again.

Description

If you closed or activated a layout by an event-based connection, you can redo the last action using Go Forward (see *Go Forward* on page 235). You then can undo the last action using Go Backward.

If you closed or activated a layout in Animation Mode you can undo the action in Edit Mode or Test Mode as well.

Related topics

HowTos

- [Activating Event-Based Layouts](#) ( [ControlDesk Experiment Guide](#))

References

- [Go Forward](#) on page 235
- [Instrumentation Manager](#) on page 203

Go Forward

Access	You can access this command via:
Menu bar	None
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To activate or close a layout.
Result	The most recent performed event-based layout activation or closing is performed again.
Description	<p>If you closed or activated a layout by an event-based connection, you can undo the last action using Go Backward (see <i>Go Backward</i> on page 234). You then can redo the previous action using Go Forward.</p> <p>If you closed or activated a layout in Animation Mode and made an undo you can redo the action in Edit Mode or Test Mode as well.</p>
Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • <i>Activating Event-Based Layouts</i> ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none"> • <i>Go Backward</i> on page 234 • <i>Instrumentation Manager</i> on page 203

Group

Access	You can access this command via:
Menu bar	Edit – Instrument Layout
Context menu of	None
Shortcut key	None
Toolbar icon	

Purpose	To group selected instruments.
Result	All selected instruments are combined to a group of instruments.  This is not available in the Operator mode.
Description	You can rename the group and add it to an instrument library (customer library) by dragging & dropping the group into the Instrument Selector. Grouped instruments have a common frame. You can change the properties of the instruments via the Property dialogs, but you cannot resize or shift instruments inside a group.
Related topics	<p>Basics</p> <ul style="list-style-type: none">• <i>Creating Instruments</i> ( ControlDesk Experiment Guide)• <i>Grouping Instruments</i> ( ControlDesk Experiment Guide) <p>HowTos</p> <ul style="list-style-type: none">• <i>How to Build Instrument Groups</i> ( ControlDesk Experiment Guide) <p>Examples</p> <ul style="list-style-type: none">• <i>Example of Using Grouped Instruments</i> ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• <i>Instrumentation Manager</i> on page 203

Import Data Connections

Access	You can access this command via:
Menu bar	Instrumentation
Context menu of	None
Shortcut key	None
Toolbar icon	None
Purpose	To import data connections via CON files.

Result	The data connections are imported from the Connection (CON) file you selected.
---------------	--



This is not available in the Operator mode.

Description	The data connections are imported from the Connection file you selected.
--------------------	--

Open dialog	<p>Look in Use the drop-down list to select the path and directory from which the file should be opened.</p> <p>File name Enter the name of the desired file.</p> <p>Files of type Select the desired data file type.</p>
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Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Export/Import Data Connections</i> (<i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none"> • <i>Instrumentation Manager</i> on page 203 • <i>Open</i> on page 67
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Instrument Selector

Access	You can access this command via:
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Menu bar	View – Controlbars
Context menu of	Toolbar
Shortcut key	None
Toolbar icon	None

Purpose	To show/hide the Instrument Selector.
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Result	The Instrument Selector is shown or hidden.
---------------	---

Description	You use the Instrument Selector to select instruments for creating layouts. By default, the Instrument Selector is located at the right of the ControlDesk Working Area. But you can shift it to any position inside the Working Area or the desktop or dock it at the border of the Working Area. The Instrument Selector can be customized via Customize (see <i>Customize</i> on page 228).
Related topics	<p>Basics</p> <ul style="list-style-type: none">• <i>Instrument Selector</i> ( <i>ControlDesk Experiment Guide</i>) <p>HowTos</p> <ul style="list-style-type: none">• <i>How to Add and Remove Instruments to or from Groups</i> ( <i>ControlDesk Experiment Guide</i>)• <i>How to Specify User-Defined Instruments and Groups</i> ( <i>ControlDesk Experiment Guide</i>) <p>Examples</p> <ul style="list-style-type: none">• <i>Example of Creating a New Instrument Group</i> ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none">• <i>Instrumentation Manager</i> on page 203

Make Same Size – Both

Access	You can access this command via:
Menu bar	Edit – Instrument Layout
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To resize the selected instruments in the layout to the width and height of the last selected item. This item is marked by a black frame.
Result	All selected instruments are resized. The last selected instrument will keep its size.
	 This command is not available in the Operator mode.

Related topics

Basics

- *Creating Instruments* ( ControlDesk Experiment Guide)

HowTos

- *How to Arrange Instruments* ( ControlDesk Experiment Guide)
- *How to Handle Multiple Selections of Instruments* ( ControlDesk Experiment Guide)

References

- *Instrumentation Manager* on page 203
- *Make Same Size – Height* on page 239
- *Make Same Size – Width* on page 240

Make Same Size – Height

Access

You can access this command via:

Menu bar Edit – Instrument Layout

Context menu of None

Shortcut key None

Toolbar icon 

Purpose

To resize the selected instruments in the layout to the height of the last selected item. This item is marked by a black frame.

Result

The instruments you selected in the layout have the same height as the last selected item.



This is not available in the Operator mode.

Related topics

Basics

- *Creating Instruments* ( ControlDesk Experiment Guide)

HowTos

- *How to Arrange Instruments* ( ControlDesk Experiment Guide)
- *How to Handle Multiple Selections of Instruments* ( ControlDesk Experiment Guide)

References

- *Instrumentation Manager* on page 203
- *Make Same Size – Both* on page 238
- *Make Same Size – Width* on page 240

Make Same Size – Width

Access

You can access this command via:

Menu bar Edit – Instrument Layout

Context menu of None

Shortcut key None

Toolbar icon



Purpose

To resize the selected instruments in the layout to the width of the last selected item. This item is marked by a black frame.

Result

The instruments you selected in the layout have the same width as the last selected item.



This is not available in the Operator mode.

Related topics**Basics**

- *Creating Instruments* (*ControlDesk Experiment Guide*)

HowTos

- *How to Arrange Instruments* (*ControlDesk Experiment Guide*)
- *How to Handle Multiple Selections of Instruments* (*ControlDesk Experiment Guide*)

References

- *Instrumentation Manager* on page 203
- *Make Same Size – Both* on page 238
- *Make Same Size – Height* on page 239

Move Instrument

Access	You can access this command via:
Menu bar	None
Drag & drop context menu of	<ul style="list-style-type: none"> ■ instrument → layout ■ instrument → instrument
Shortcut key	None
Toolbar icon	None
Purpose	To change the position of the selected instrument.
Result	The instrument is moved to the position where you release the mouse button. No connections are changed.
	<p>This is not available in the Operator mode.</p>
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • <i>Creating Instruments</i> (<i>ControlDesk Experiment Guide</i>) <p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Arrange Instruments</i> (<i>ControlDesk Experiment Guide</i>) • <i>How to Handle Multiple Selections of Instruments</i> (<i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none"> • <i>Copy Instruments</i> on page 218 • <i>Instrumentation Manager</i> on page 203

Paste Instruments With Connections

Access	You can access this command via:
Menu bar	None
Drag & drop context menu of	layout → instrument
Shortcut key	None
Toolbar icon	None

Purpose	To paste instruments with their data connections.
Result	The copied instruments are pasted to the layout. All data connections are pasted, too.
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• How to Copy Instruments With Data Connections ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• Copy Instruments With Connections on page 219• Move Instrument on page 241• Paste on page 69

Read From Source Instrument

Access	You can access this command via:
Menu bar	None
Drag & drop context menu of	instrument → instrument
Shortcut key	None
Toolbar icon	None
Purpose	To build a read connection between two instruments.
	 This is not available in the Operator mode.

Description	Instruments can also read values from other instruments. The starting instrument of your drag movement is then used as source instrument. The values are transferred to the end instrument of your drag movement. The default trigger for data transfer is system polling (System:Poll) or the source instruments WriteData event if it supports one.
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This is not available for all instrument – instrument combinations.

Related topics	<p>Basics</p> <ul style="list-style-type: none"> • <i>Creating Data Connections</i> (ControlDesk Experiment Guide) <p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Create Data Connections Between Two Instruments</i> (ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none"> • <i>Build Read/Write Connection</i> on page 214 • <i>Copy Instruments With Connections</i> on page 219 • <i>Custom Connection</i> on page 220 • <i>Instrumentation Manager</i> on page 203 • <i>Read From Variable</i> on page 243 • <i>Write to Variable</i> on page 250
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Read From Variable

Access	You can access this command via:
Menu bar	None
Drag & drop context menu of variable → instrument	
Shortcut key	None
Toolbar icon	None

Purpose	To establish a read connection from a variable to an instrument.
	<p>This is not available in the Operator mode.</p>

Description	This is used to establish a standard read connection from the source variable to the target instrument. The standard System Polling (System:Poll) event is used to trigger the read operation.
Drag & drop context menu	To access a drag & drop context menu, do drag & drop with the right mouse key pressed. The context menu appears on drop. It provides several commands to specify the connection.
Plotter instrument	If mixed data captures is enabled (see <i>Animation Page</i> on page 28) and you drag & drop a variable to a plotter instrument with the right mouse button pressed, an extended context menu opens: The Read from Variable item has a sub menu. Each item of the sub menu builds a read connection from the variable to the plotter instrument using the standard System:Poll2 event. The Use default item builds the same connection as if the left mouse button was used for drag & drop. If you select one of the given data capture names, a connection to the corresponding data group (service) is built.

Related topics

Basics

- [Creating Data Connections \(ControlDesk Experiment Guide\)](#)

HowTos

- [How to Build Data Connections Between Variables and Instruments \(ControlDesk Experiment Guide\)](#)

References

- [Build Read/Write Connection](#) on page 214
- [Copy Instruments With Connections](#) on page 219
- [Custom Connection](#) on page 220
- [Instrumentation Manager](#) on page 203
- [Read From Source Instrument](#) on page 242
- [Write to Source Instrument](#) on page 249
- [Write to Variable](#) on page 250

Remove Layout from Experiment

Access

You can access this Instrumentation Manager command via:

Menu bar	None
Context menu of	instrument
Shortcut key	None
Toolbar icon	None

Purpose	To remove a layout from the current experiment.
Result	The current layout will removed from the experiment. The file is only deleted from the Experiment Navigator not on the hard disk.
	 This is not available in the Operator mode.

Send to Back

Access	You can access this Instrumentation Manager command via:
Menu bar	Edit – Instrument Layout
Context menu of	None
Shortcut key	Ctrl+Shift+B
Toolbar icon	
Purpose	To send the selected instruments in the layout to the back.
Result	The instruments you selected in the layout are sent to the background. They are covered by the instruments in the foreground if their borders overlapped before this command was carried out.
	 This is not available in the Operator mode.
Description	Some instruments such as a plotter can be displayed as windows, most of the instruments not. If you have mixed the two types of instruments in a layout, the window instruments lie always in front of the others.

Related topics

Basics

- [Creating Instruments](#) ([ControlDesk Experiment Guide](#))

HowTos

- [How to Arrange Instruments](#) ([ControlDesk Experiment Guide](#))

- [How to Handle Multiple Selections of Instruments](#) ([ControlDesk Experiment Guide](#))

References

- [Instrumentation Manager](#) on page 203

- [Make Same Size – Both](#) on page 238

Space Evenly – Across

Access

You can access this command via:

Menu bar Edit – Instrument Layout

Context menu of None

Shortcut key None

Toolbar icon



Purpose

To equalize the distance of selected instruments in the layout between the left-most and right-most instrument.

Result

The distances of all selected instruments between the left-most and the right-most selected instrument are set to an equal value.



This is not available in the Operator mode.

Related topics

Basics

- [Creating Instruments](#) ([ControlDesk Experiment Guide](#))

HowTos

- [How to Arrange Instruments](#) ([ControlDesk Experiment Guide](#))

- [How to Handle Multiple Selections of Instruments](#) ([ControlDesk Experiment Guide](#))

References

- [Instrumentation Manager](#) on page 203

- [Space Evenly – Down](#) on page 247

Space Evenly – Down

Access	You can access this command via:
Menu bar	Edit – Instrument Layout
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To equalize the distance of selected instruments in the layout between the upper-most and lower-most instruments.
Result	The distances of all selected instruments between the upper-most and the lower-most selected instrument are set to an equal value.
	<div style="border: 1px solid #ccc; padding: 5px; display: inline-block;">  This is not available in the Operator mode. </div>
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • <i>Creating Instruments</i> ( <i>ControlDesk Experiment Guide</i>) <p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Arrange Instruments</i> ( <i>ControlDesk Experiment Guide</i>) • <i>How to Handle Multiple Selections of Instruments</i> ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none"> • <i>Instrumentation Manager</i> on page 203 • <i>Space Evenly – Across</i> on page 246

Test Mode

Access	You can access this command via:
Menu bar	Instrumentation
Context menu of	None
Shortcut key	Alt+F5
Toolbar icon	

Purpose	To test the current layout without changing values on the simulation platform.
Result	The Test mode is started.
Description	In the Test mode you can test the current layout. You can click buttons or turn knobs without changing values on the simulation platform.
 It is not possible to edit the instruments in this mode. This can only be done in the Edit mode: see <i>Edit Mode</i> on page 232.	

Related topics

Basics

- *Setting the Operation Mode* ( [ControlDesk Experiment Guide](#))

References

- *Animation Mode* on page 212
- *Edit Mode* on page 232
- *Instrumentation Manager* on page 203

Ungroup

Access	You can access this command via:
Menu bar	Edit – Instrument Layout
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To ungroup an instrument group.
Result	The group is splitted into the single instruments. You can handle again the instruments separately.
 This is not available in the Operator mode.	

Related topics**Basics**

- *Grouping Instruments* ( *ControlDesk Experiment Guide*)

HowTos

- *How to Build Instrument Groups* ( *ControlDesk Experiment Guide*)

Examples

- *Example of Using Grouped Instruments* ( *ControlDesk Experiment Guide*)

References

- *Group* on page 235
- *Instrumentation Manager* on page 203

Write to Source Instrument

Access

You can access this command via:

Menu bar None

Drag & drop context instrument → instrument
menu of

Shortcut key None

Toolbar icon None

Purpose

To establish a write connection from the target instrument to the source instrument (drag & drop direction).



This is not available in the Operator mode.

Description

You can build a write connection between instruments. The standard event to trigger the write (**Write Data**) operation is used. Instruments that do not possess the Write Data event use the System Polling event (System:Poll) instead.



Several instruments are not able to transfer data to other instruments.

Related topics

Basics

- [Creating Data Connections](#) ([ControlDesk Experiment Guide](#))

HowTos

- [How to Create Data Connections Between Two Instruments](#) ([ControlDesk Experiment Guide](#))
- [How to Use the Connection Wizard](#) ([ControlDesk Experiment Guide](#))

References

- [Build Read/Write Connection](#) on page 214
- [Copy Instruments With Connections](#) on page 219
- [Custom Connection](#) on page 220
- [Instrumentation Manager](#) on page 203
- [Read From Source Instrument](#) on page 242
- [Read From Variable](#) on page 243
- [Write to Variable](#) on page 250

Write to Variable

Access

You can access this command via:

Menu bar None

Drag & drop context menu of variable → instrument

Shortcut key None

Toolbar icon None

Purpose

To establish a write connection from an instrument to a variable.



This is not available in the Operator mode.

Description

You can write values from an instrument to a variable of the application running on the simulation platform. The default event used to trigger the write operation is Write Data.



This data connection is only available for instruments that can send values and for variables that can receive values.

Related topics**Basics**

- *Creating Data Connections* ( *ControlDesk Experiment Guide*)

HowTos

- *How to Build Data Connections Between Variables and Instruments* ( *ControlDesk Experiment Guide*)
- *How to Use the Connection Wizard* ( *ControlDesk Experiment Guide*)

References

- *Build Read/Write Connection* on page 214
- *Copy Instruments With Connections* on page 219
- *Custom Connection* on page 220
- *Instrumentation Manager* on page 203
- *Read From Source Instrument* on page 242
- *Read From Variable* on page 243
- *Write to Source Instrument* on page 249

Instruments

ControlDesk's instruments provides various commands and dialogs, which are accessible via the menu bar and the context menus and toolbars of the instruments:

Purpose	Refer to	Avail. in OpMode
Instruments context menu		
To set the axis width for all axes.	All Axes Width on page 259	yes
To set the properties of all LogicAnalyzers in a PlotterArray instrument.	All LogicAnalyzer on page 259	yes
To set the properties of all Plotters in a PlotterArray instrument.	All Plotter Properties on page 260	yes
To set the properties of all XYPlots in a PlotterArray instrument.	All XYPlot Properties on page 260	yes
To specify the axis color.	Axis Color on page 262	yes
To set the axis scaling mode.	Axis Scaling Mode on page 263	yes
To set the tick format of an axis.	Axis Tic Format on page 264	yes
To set the axis width.	Axis Width on page 265	yes
To copy a bitmap of all the instruments of a PlotterArray into clipboard.	Copy All Instruments as Bitmap on page 267	yes
To copy a bitmap of the LogicAnalyzer instrument into clipboard.	Copy LogicAnalyzer as Bitmap on page 268	yes
To copy a bitmap of the Plotter instrument into clipboard.	Copy Plotter as Bitmap on page 269	yes
To copy a bitmap of the XYPlot instrument into clipboard.	Copy XYPlot as Bitmap on page 270	yes
To specify the curve color.	Curve Color on page 271	yes
To change the capture.	Capture Settings on page 265	yes
To set the width of all axes.	Delete Axis on page 274	yes
To delete curves.	Delete Curve on page 272	yes
To delete a variable connected to the x-axis.	Delete X-Variable on page 273	yes
To delete a signal.	Delete Signal on page 274	yes
To delete a variable connected to the y-axis.	Delete Y-Variable on page 273	yes
To call up the CaptureSettings Window.	Edit Capture Settings on page 278	yes
To reset the indicators in a Gauge or Knob instrument.	Indicators on page 279	yes
To select the line style of a curve/signal.	Line Style on page 280	yes
To set the properties of a LogicAnalyzer in a PlotterArray instrument.	LogicAnalyzer Properties on page 285	yes
To set the properties of a Plotter in a PlotterArray instrument.	Plotter Properties on page 286	yes
To print the signals of a Plotter instrument.	Print Plotter on page 290	yes
To print the signals of a XYPlot instrument.	Print XYPlot on page 292	yes
To print the signals of a LogicAnalyzer.	Print LogicAnalyzer on page 289	yes
To print all instruments of a PlotterArray instrument/Capture layout.	Print All Instruments on page 288	yes
To specify the scaling mode of the x-axis.	Scaling Mode X on page 302	yes
To specify the scaling mode of the y-axis.	Scaling Mode Y on page 303	yes
To set the color of a selected signal.	Signal Color on page 308	yes
To sort the text-value entries in the SelectionBox instrument's list by text.	Sort By Text on page 309	yes
To sort the text-value entries in the SelectionBox instrument's list by value.	Sort By Value on page 310	yes
To specify description formats.	Tic Format on page 313	yes
To use the format Converted for value display.	Value Conversion Mode – Converted on page 318	yes
To use the format Source for value display.	Value Conversion Mode – Source on page 319	yes
To set the properties of a XYPlot in a PlotterArray instrument.	XYPlot Properties on page 320	yes

Purpose	Refer to	Avail. in OpMode
TableEditor instrument menu		
To change the values of the selected TableEditor grid cells.	<i>Change Value</i> on page 266	yes
To download all values to the target platform.	<i>Download</i> on page 277	yes
To project the values to the xy-plane.	<i>Projection XZ</i> on page 293	yes
To project the values to the yz-plane.	<i>Projection YZ</i> on page 294	yes
To load reference data.	<i>Load Reference Data</i> on page 284	yes
To save reference data.	<i>Save Reference Data</i> on page 301	yes
To display the Section XZ dialog.	<i>Section XZ</i> on page 304	yes
To display the Section YZ dialog.	<i>Section YZ</i> on page 305	yes
To show the legend of the chart.	<i>Show Chart Legend</i> on page 306	yes
To remove the working point connections to a TableEditor.	<i>Remove WorkingPoint Connections</i> on page 296	yes
To remove all data connections to a TableEditor.	<i>Remove Connections</i> on page 296	yes
To reset the chart view to the default settings.	<i>Reset Chart</i> on page 298	yes
To reset the chart view to the user default settings.	<i>Restore User Default</i> on page 298	yes
To store the chart view settings as user default.	<i>Set as User Default</i> on page 307	yes
To show/hide the chart of the TableEditor.	<i>Toggle Chart View</i> on page 314	yes
To show/hide the edit point.	<i>Toggle Edit Point</i> on page 315	yes
To show/hide the working point.	<i>Toggle Working Point</i> on page 316	yes
To load values from the simulation platform.	<i>Upload</i> on page 317	yes
TableEditor instrument toolbar only		
To rotate the chart around the x-axis.	<i>Rotation X-Axis</i> on page 299	yes
To rotate the chart around the y-axis.	<i>Rotation Y-Axis</i> on page 300	yes
To rotate the chart around the z-axis.	<i>Rotation Z-Axis</i> on page 300	yes
TableEditor instrument context menu		
To change the values of the TableEditors grid.	<i>Change Value</i> on page 266	yes
To download a value to the hardware.	<i>Download</i> on page 277	yes
To load reference data.	<i>Load Reference Data</i> on page 284	yes
To project the values to the xz-plane.	<i>Projection XZ</i> on page 293	yes
To project the values to the yz-plane.	<i>Projection YZ</i> on page 294	yes
To edit a section in the xz-plane.	<i>Section XZ</i> on page 304	yes
To edit a section in the yz-plane.	<i>Section YZ</i> on page 305	yes
To remove all data connections to a TableEditor.	<i>Remove Connections</i> on page 296	yes
To remove the working point connections to a TableEditor.	<i>Remove WorkingPoint Connections</i> on page 296	yes
To reset the chart view to the default settings.	<i>Reset Chart</i> on page 298	yes
To reset the chart view to the user default settings.	<i>Restore User Default</i> on page 298	yes
To save reference data.	<i>Save Reference Data</i> on page 301	yes
To store the chart view settings as user default.	<i>Set as User Default</i> on page 307	yes
To show the legend of the chart.	<i>Show Chart Legend</i> on page 306	yes
To show/hide the chart of the TableEditor.	<i>Toggle Chart View</i> on page 314	yes
To show/hide the edit point.	<i>Toggle Edit Point</i> on page 315	yes
To show/hide the working point.	<i>Toggle Working Point</i> on page 316	yes
To load values from the hardware.	<i>Upload</i> on page 317	yes
To use the converted format for value display.	<i>Value Conversion Mode – Converted</i> on page 318	yes
To use the source format for value display.	<i>Value Conversion Mode – Source</i> on page 319	yes

Purpose	Refer to	Avail. in OpMode
PlotterArray instrument/Capture layout menu		
To add a Plotter to the PlotterArray instrument.	Add Plotter on page 257	yes
To add a LogicAnalyzer to the PlotterArray instrument.	Add LogicAnalyzer on page 257	yes
To add an XYPlot to the PlotterArray instrument.	Add XYPlot on page 258	yes
To switch the Auto Arrange mode on and off.	Auto Arrange on page 261	yes
To switch Auto Resize on and off.	Auto Resize on page 262	yes
To copy all the instrument of a PlotterArray instrument into clipboard.	Copy All Instruments as Bitmap on page 267	yes
To display a crosshair cursor.	Crosshair Cursor on page 271	yes
To display two vertical lines as cursors.	DeltaX Cursor on page 275	yes
To display two horizontal lines as cursors.	DeltaY Cursor on page 276	yes
To display two horizontal and two vertical lines as cursors.	DeltaXY Cursor on page 276	yes
To select the line style of a curve.	Line Style on page 280	yes
To display the signal as a dotted line.	Line Style Dotted on page 281	yes
To display each data point of a signal with a marker.	Line Style Marker on page 281	yes
To display signals as smooth lines.	Line Style Smooth on page 282	yes
To display signals as a backward staircase.	Line Style Staircase Backward on page 283	yes
To display signals as a forward staircase.	Line Style Staircase Forward on page 283	yes
To switch off the cursor display.	No Cursor on page 285	yes
To print the instruments of the PlotterArray instrument.	Print All Instruments on page 288	yes
To rescale the axes of all instruments of the PlotterArray instrument.	Rescale on page 297	yes
To edit the properties of the active instrument within the PlotterArray instrument.	Show Properties on page 306	yes
To switch to zoom mode.	Start Zoom on page 311	yes
To stick the cursor on the signal.	Stick on Curve on page 311	yes
To synchronize the cursors inside the PlotterArray instrument.	Synchronize on page 312	yes
To show or hide the standard window frames around the instrument inside the PlotterArray instrument.	Toggle Frameless View on page 316	yes
To transfer the settings to all PlotterArray instruments.	Toggle All Windows Mode on page 314	yes
To show/hide a grid in the PlotterArray instrument.	Toggle Grid on page 97	yes
To indicate the zoom mode and switch the zoom mode off.	Zoomed on page 322	yes
To zoom the space between two cursor lines.	Zoom Cursor Interval on page 320	yes
To restore the most recently canceled Zoom action.	Zoom Redo on page 321	yes
To cancel the most recent zoom action	Zoom Undo on page 322	yes

Add LogicAnalyzer

Access	You can access this command via:
Menu bar	PlotterArray
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To add a new LogicAnalyzer instrument to the PlotterArray instrument.
Result	The new instrument is added to the PlotterArray instrument in the specified Arranging Mode with the default settings.
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • <i>Using Capture Layouts</i> ( <i>ControlDesk Experiment Guide</i>) <p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Add Instruments to a Capture Layout</i> ( <i>ControlDesk Experiment Guide</i>) • <i>How to Handle a Capture Layout</i> ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none"> • <i>Add XYPlot</i> on page 258 • <i>Instruments</i> on page 253 • <i>PlotterArray</i> ( <i>ControlDesk Instrument Reference</i>)

Add Plotter

Access	You can access this command via:
Menu bar	PlotterArray
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To add a new Plotter instrument to the PlotterArray instrument.

Result	The new instrument is added to the PlotterArray instrument in the specified Arranging Mode with the default settings.
---------------	---

Related topics	<p>Basics</p> <ul style="list-style-type: none">• Using Capture Layouts (ControlDesk Experiment Guide) <p>HowTos</p> <ul style="list-style-type: none">• How to Add Instruments to a Capture Layout (ControlDesk Experiment Guide)• How to Handle a Capture Layout (ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• Add LogicAnalyzer on page 257• Add XYPlot on page 258• Instruments on page 253• PlotterArray (ControlDesk Instrument Reference)
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Add XYPlot

Access	You can access this command via:
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Menu bar PlotterArray

Context menu of None

Shortcut key None

Toolbar icon



Purpose	To add a new XYPlot instrument to the PlotterArray instrument.
----------------	--

Result	The new instrument is added to the PlotterArray instrument in the specified Arranging Mode with the default settings.
---------------	---

Related topics	<p>Basics</p> <ul style="list-style-type: none">• Using Capture Layouts (ControlDesk Experiment Guide) <p>HowTos</p> <ul style="list-style-type: none">• How to Add Instruments to a Capture Layout (ControlDesk Experiment Guide)• How to Handle a Capture Layout (ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• Add LogicAnalyzer on page 257• Instruments on page 253• PlotterArray (ControlDesk Instrument Reference)
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All Axes Width

Access	You can access this command via:	
Menu bar	None	
Context menu of	Plotter instrument	
Shortcut key	None	
Toolbar icon	None	
Purpose	To set the axis width for all axes.	
Result	The distance between the y-axes is equalized to the entered value.	
Description	The axis width defines the distance between the selected axis and the next left standing axis. You can set the distance for all axes to a standard value. You can select a value (in pixel) within the predefined value range.	
Related topics	References • Axis Width on page 265 • Instruments on page 253 • Plotter ( ControlDesk Instrument Reference)	

All LogicAnalyzer

Access	You can access this command via:	
Menu bar	None	
Context menu of	LogicAnalyzer in PlotterArray instrument	
Shortcut key	None	
Toolbar icon	None	
Purpose	To call up the All LogicAnalyzer Control Properties dialog.	
Result	The All LogicAnalyzer Control Properties dialog is displayed.	

Description	With this, you can set the properties of all the LogicAnalyzer instruments inside a PlotterArray instrument at once.
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Related topics	References • Instruments on page 253 • LogicAnalyzer (ControlDesk Instrument Reference) • LogicAnalyzer Properties on page 285
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All Plotter Properties

Access	You can access this command via:
Menu bar	None
Context menu of	Plotter in PlotterArray instrument
Shortcut key	None
Toolbar icon	None
Purpose	To call up All Plotter Control Properties.
Description	With this, you can set the properties of all Plotter instruments inside a PlotterArray instrument at once.
Related topics	References • Instruments on page 253 • Plotter (ControlDesk Instrument Reference) • Plotter Properties on page 286

All XYPlot Properties

Access	You can access this command via:
Menu bar	None
Context menu of	XYPlot in PlotterArray instrument
Shortcut key	None
Toolbar icon	None

Purpose	To call up All XYPlot Control Properties.
Description	With this, you can set the properties of all XYPlot instruments inside a PlotterArray instrument at once.
Related topics	<p>References</p> <ul style="list-style-type: none"> • <i>Instruments</i> on page 253 • <i>XYPlot</i> (<i>ControlDesk Instrument Reference</i>) • <i>XYPlot Properties</i> on page 320

Auto Arrange

Access	You can access this command via:
Menu bar	PlotterArray
Context menu of	None
Shortcut key	None
Toolbar icon	None
Purpose	To switch the Auto Arrange mode on and off.
Result	The instruments are arranged automatically according to the selected Arranging mode.
Description	The Arranging mode can be set on the General page of the PlotterArray instrument's Properties dialog. Refer to <i>General Page (PlotterArray Instrument)</i> (<i>ControlDesk Instrument Reference</i>).
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • <i>Using Capture Layouts</i> (<i>ControlDesk Experiment Guide</i>) <p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Add Instruments to a Capture Layout</i> (<i>ControlDesk Experiment Guide</i>) • <i>How to Handle a Capture Layout</i> (<i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none"> • <i>Auto Resize</i> on page 262 • <i>Instruments</i> on page 253 • <i>PlotterArray</i> (<i>ControlDesk Instrument Reference</i>)

Auto Resize

Access	You can access this command via:
Menu bar	PlotterArray
Context menu of	None
Shortcut key	None
Toolbar icon	None
Purpose	To switch Auto Resize on and off.
Result	The sizes of the internal instruments grow/shrink proportionally when the template is resized.
Description	The relative positions and sizes of the internal instruments do not change.
Related topics	<p>Basics</p> <ul style="list-style-type: none">• Using Capture Layouts ( ControlDesk Experiment Guide) <p>HowTos</p> <ul style="list-style-type: none">• How to Add Instruments to a Capture Layout ( ControlDesk Experiment Guide)• How to Handle a Capture Layout ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• Auto Arrange on page 261• Instruments on page 253

Axis Color

Access	You can access this command via:
Menu bar	None
Context menu of	XYPlot instrument (x- or y-axis)
Shortcut key	None
Toolbar icon	None
Purpose	To set the color of the clicked axis via the Color dialog.

Result The color of the axis changes according to your selection.

Related topics

References

- [Axis Scaling Mode](#) on page 263
- [Axis Width](#) on page 265
- [Instruments](#) on page 253
- [XYPlot](#) ( [ControlDesk Instrument Reference](#))

Axis Scaling Mode

Access You can access this command via:

Menu bar	None
Context menu of	<ul style="list-style-type: none"> ■ Plotter instrument ■ LogicAnalyzer instrument
Shortcut key	None
Toolbar icon	None

Purpose To set the scaling mode of the selected axis.

Description You can select the following axis scaling modes:

Scaling Mode	Description
Floating	To scale the selected axis dynamically. Every time data are received the signal is repainted.
Extended	To display the full range of the data. The selected axis is extended to the full range of the expected data whether or not the space is used by the signal.
Fixed	To set the value range of the selected axis to the entered Min and Max values. On the Axes Property pages, you can enter Min and Max values for the selected axes.

Related topics**References**

- [Axis Color](#) on page 262
- [Axis Tic Format](#) on page 264
- [Axis Width](#) on page 265
- [Instruments](#) on page 253
- [LogicAnalyzer](#) ( [ControlDesk Instrument Reference](#))
- [Plotter](#) ( [ControlDesk Instrument Reference](#))

Axis Tic Format

Access

You can access this command via:

Menu bar	None
Context menu of	<ul style="list-style-type: none">■ Plotter instrument■ LogicAnalyzer instrument
Shortcut key	None
Toolbar icon	None

Purpose

To set the units for the tics of the selected axis.

Description

The following settings are possible:

Tic Format	Description
Standard	The values on the axis are shown without using any exponent.
Exponential	The values on the axis are shown in exponential format.
Engineering	The values on the axis are shown in exponential format. The exponent is always an integer multiple of 3.

Related topics**References**

- [Axis Color](#) on page 262
- [Axis Scaling Mode](#) on page 263
- [Axis Width](#) on page 265
- [Instruments](#) on page 253
- [LogicAnalyzer](#) ( [ControlDesk Instrument Reference](#))
- [Plotter](#) ( [ControlDesk Instrument Reference](#))

Axis Width

Access	You can access this command via:
Menu bar	None
Context menu of	Plotter instrument
Shortcut key	None
Toolbar icon	None
Purpose	To set the distance of the selected (context menu source) axis to the border of the instrument or to the next left standing axis.
Result	The distance of the selected axis to the border of the instrument (most left axis) or to next left standing axis is reduced or enlarged.
Description	The axis width defines the distance between selected axis and the next left standing axis. If the selected axis is the most left y-axis the width describes the distance to the border of the instrument. You can select a value (in pixel) within the predefined value range.
Related topics	References <ul style="list-style-type: none"> • Axis Color on page 262 • Axis Scaling Mode on page 263 • Axis Tic Format on page 264 • Instruments on page 253 • Plotter ( ControlDesk Instrument Reference)

Capture Settings

Access	You can access this command via:
Menu bar	None
Context menu of	Data Acquisition instruments
Shortcut key	None
Toolbar icon	None
Purpose	To select a data group (service) for the current instrument.

Result	The selected data group is assigned to the current instrument.
Description	To specify the data exchange between the simulation platform and ControlDesk, several services can be implemented for each real-time application. Usually, a service corresponds to a task in the model. These services can be related to data groups that are used to capture data from the hardware. In ControlDesk, you can select the data group you want to use for data capturing and assign this Capture to the selected instrument. If the Mixed Data Captures option is enabled (see <i>Animation Page</i> on page 28), you can capture data of different data groups in one plotter instrument.
Related topics	<p>Basics</p> <ul style="list-style-type: none">• <i>Capturing Data</i> ( <i>ControlDesk Experiment Guide</i>)• <i>Working with Data Captures</i> ( <i>ControlDesk Experiment Guide</i>) <p>HowTos</p> <ul style="list-style-type: none">• <i>How to Select the Trigger Signal</i> ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none">• <i>Capture Settings</i> ( <i>ControlDesk Instrument Reference</i>)• <i>Edit Capture Settings</i> on page 278• <i>Instruments</i> on page 253

Change Value

Access	You can access this command via:
Menu bar	TableEditor
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To change the values of the TableEditor's selected grid cells.
Description	You can add/subtract a value to/from the current value or multiply/divide the current value by it.

Related topics

Basics

- Using the TableEditor Instrument (ControlDesk Experiment Guide)

HowTos

- How to Change the Values in the TableEditor (ControlDesk Experiment Guide)

References

- Change Value Dialog (ControlDesk Instrument Reference)
- Instruments on page 253

Copy All Instruments as Bitmap

Access

You can access this command via:

Menu bar	PlotterArray
Context menu of	PlotterArray
Shortcut key	None
Toolbar icon	None

Purpose

To copy all the instrument of a PlotterArray instrument into clipboard.

Result

A bitmap of all the instruments is copied into clipboard.

Description

The following options are available:

Menu Entry	Description
Show Legend	Displays the legend of the axes and signals.
Hide Legend	The legend is hidden.

You can paste the bitmap from the clipboard into another program such as Microsoft Word to use it for illustration.

Related topics

HowTos

- [How to Print Captured Data \(ControlDesk Experiment Guide\)](#)

References

- [Copy LogicAnalyzer as Bitmap](#) on page 268
- [Copy Plotter as Bitmap](#) on page 269
- [Copy XYPlot as Bitmap](#) on page 270
- [Instruments](#) on page 253

Copy LogicAnalyzer as Bitmap

Access

You can access this command via:

Menu bar	PlotterArray
Context menu of	LogicAnalyzer
Shortcut key	None
Toolbar icon	None

Purpose

To copy the LogicAnalyzer instrument into clipboard.

Result

A bitmap of the instrument is copied into clipboard.

Description

The following options are available:

Menu Entry	Description
Show Legend	Displays the legend of the axes and signals.
Hide Legend	The legend is hidden.

You can paste the bitmap from the clipboard into another program such as Microsoft Word to use it for illustration.

Related topics

HowTos

- [How to Print Captured Data \(ControlDesk Experiment Guide\)](#)

References

- [Copy All Instruments as Bitmap](#) on page 267
- [Instruments](#) on page 253

Copy Plotter as Bitmap

Access	You can access this command via:						
Menu bar	PlotterArray						
Context menu of	Plotter						
Shortcut key	None						
Toolbar icon	None						
Purpose	To copy the Plotter instrument into clipboard.						
Result	A bitmap of the instrument is copied into clipboard.						
Description	The following options are available:						
<table border="1"><thead><tr><th>Menu Entry</th><th>Description</th></tr></thead><tbody><tr><td>Show Legend</td><td>Displays the legend of the axes and signals.</td></tr><tr><td>Hide Legend</td><td>The legend is hidden.</td></tr></tbody></table>	Menu Entry	Description	Show Legend	Displays the legend of the axes and signals.	Hide Legend	The legend is hidden.	
Menu Entry	Description						
Show Legend	Displays the legend of the axes and signals.						
Hide Legend	The legend is hidden.						
You can paste the bitmap from the clipboard into another program such as Microsoft Word to use it for illustration.							
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• How to Print Captured Data ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• Copy All Instruments as Bitmap on page 267• Instruments on page 253						

Copy XYPlot as Bitmap

Access	You can access this command via:						
Menu bar	PlotterArray						
Context menu of	XYPlot						
Shortcut key	None						
Toolbar icon	None						
Purpose	To copy the XYPlot instrument into clipboard.						
Result	A bitmap of the instrument is copied into clipboard.						
Description	The following options are available:						
<table border="1"><thead><tr><th>Menu Entry</th><th>Description</th></tr></thead><tbody><tr><td>Show Legend</td><td>Displays the legend of the axes and signals.</td></tr><tr><td>Hide Legend</td><td>The legend is hidden.</td></tr></tbody></table>	Menu Entry	Description	Show Legend	Displays the legend of the axes and signals.	Hide Legend	The legend is hidden.	
Menu Entry	Description						
Show Legend	Displays the legend of the axes and signals.						
Hide Legend	The legend is hidden.						
You can paste the bitmap from the clipboard into another program such as Microsoft Word to use it for illustration.							
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• How to Print Captured Data ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• Copy All Instruments as Bitmap on page 267• Instruments on page 253						

Crosshair Cursor

Access	You can access this command via:
Menu bar	PlotterArray
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To display a crosshair cursor.
Result	In the selected instrument a crosshair is displayed.
Description	If you click into the instrument the crosshair jumps to the point you clicked. You can fix the crosshair clicking again. The coordinates are displayed in the title bar of the instrument.
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • <i>Using Cursors in Plotter and LogicAnalyzer Instruments</i> ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none"> • <i>DeltaX Cursor</i> on page 275 • <i>DeltaXY Cursor</i> on page 276 • <i>DeltaY Cursor</i> on page 276 • <i>Instruments</i> on page 253 • <i>No Cursor</i> on page 285 • <i>Plotter</i> ( ControlDesk Instrument Reference) • <i>PlotterArray</i> ( ControlDesk Instrument Reference) • <i>Toggle Frameless View</i> on page 316

Curve Color

Access	You can access this command via:
Menu bar	None
Context menu of	XYPlot instrument (Curve)
Shortcut key	None
Toolbar icon	None

Purpose	To set the color of the selected curve.
Result	The selected curve inside the XYPlot instrument changes the color according to your selection.
Related topics	<p>References</p> <ul style="list-style-type: none">• Instruments on page 253• Signal Color on page 308• XYPlot ( ControlDesk Instrument Reference)

Delete Curve

Access	You can access this command via:
Menu bar	None
Context menu of	XYPlot instrument (Curve)
Shortcut key	None
Toolbar icon	None
Purpose	To delete the selected curve in a XYPlot instrument.
Result	The selected curve inside the XYPlot instrument is deleted.
Related topics	<p>References</p> <ul style="list-style-type: none">• Curve Color on page 271• Delete X-Variable on page 273• Delete Y-Variable on page 273• Instruments on page 253• XYPlot ( ControlDesk Instrument Reference)

Delete X-Variable

Access	You can access this command via:	
Menu bar	PlotterArray	
Context menu of	XYPlot instrument (Curve)	
Shortcut key	None	
Toolbar icon	None	
Purpose	To delete the data connection of the variable to the x-axis of the XYPlot instrument.	
Result	The data connection is deleted and the caption of the axis is reset.	
Related topics	<p>References</p> <ul style="list-style-type: none">• Curve Color on page 271• Delete Curve on page 272• Delete Y-Variable on page 273• Instruments on page 253• XYPlot ( ControlDesk Instrument Reference)	

Delete Y-Variable

Access	You can access this command via:	
Menu bar	PlotterArray	
Context menu of	XYPlot instrument (Curve)	
Shortcut key	None	
Toolbar icon	None	
Purpose	To delete the data connection of the variable to the y-axis of the XYPlot instrument.	
Result	The data connection is deleted and the caption of the axis is reset.	

Related topics

References

- [Curve Color](#) on page 271
- [Delete Curve](#) on page 272
- [Delete X-Variable](#) on page 273
- [Instruments](#) on page 253
- [XYPlot](#) ( *ControlDesk Instrument Reference*)

Delete Signal

Access

You can access this command via:

Menu bar	None
Context menu of	Plotter instrument
Shortcut key	None
Toolbar icon	None

Purpose

To delete the selected signal.

Result

The selected signal is deleted from the instrument.

Related topics

References

- [Instruments](#) on page 253
- [Plotter](#) ( *ControlDesk Instrument Reference*)

Delete Axis

Access

You can access this command via:

Menu bar	None
Context menu of	■ Plotter instrument ■ LogicAnalyzer instrument
Shortcut key	None
Toolbar icon	None

Purpose

To delete the selected axis.

Result	The selected axis together with the data connection is deleted from the instrument.
---------------	---

Related topics

References

- [Instruments](#) on page 253
- [LogicAnalyzer](#) ([ControlDesk Instrument Reference](#))
- [Plotter](#) ([ControlDesk Instrument Reference](#))

DeltaX Cursor

Access	You can access this command via:
---------------	----------------------------------

Menu bar	PlotterArray
Context menu of	None
Shortcut key	None
Toolbar icon	

Purpose	To display two vertical lines as cursors.
----------------	---

Result	Two vertical lines are displayed in the selected instrument.
---------------	--

Description	You can move both lines independently. Clicking into the instrument's display the cursor line standing nearer to the click position jumps to the click position. The position of the left and right line as well as the distance between the two lines is displayed in the title bar.
--------------------	---

Related topics

References

- [Crosshair Cursor](#) on page 271
- [DeltaXY Cursor](#) on page 276
- [DeltaY Cursor](#) on page 276
- [Instruments](#) on page 253
- [LogicAnalyzer](#) ([ControlDesk Instrument Reference](#))
- [No Cursor](#) on page 285
- [Plotter](#) ([ControlDesk Instrument Reference](#))
- [PlotterArray](#) ([ControlDesk Instrument Reference](#))
- [Toggle Frameless View](#) on page 316

DeltaY Cursor

Access	You can access this command via:
Menu bar	PlotterArray
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To display two horizontal lines as cursors.
Result	Two horizontal lines are displayed in the selected instrument.
Description	You can move both lines independently. Clicking into the instrument's display the cursor line standing nearer to the click position jumps to the click position. The position of the upper and lower line as well as the distance between the two lines is displayed in the title bar.
Related topics	References <ul style="list-style-type: none">• Crosshair Cursor on page 271• DeltaX Cursor on page 275• DeltaXY Cursor on page 276• Instruments on page 253• LogicAnalyzer ( ControlDesk Instrument Reference)• No Cursor on page 285• Plotter ( ControlDesk Instrument Reference)• PlotterArray ( ControlDesk Instrument Reference)• Toggle Frameless View on page 316

DeltaXY Cursor

Access	You can access this command via:
Menu bar	PlotterArray
Context menu of	None
Shortcut key	None
Toolbar icon	

Purpose	To display two horizontal lines and two vertical lines as cursors.
Result	Two horizontal and two vertical lines are displayed in the selected instrument.
Description	In dependence on the position you click into the instrument you can move a line (vertical or horizontal line) or the intersection point of two lines. The distance between the vertical and horizontal lines is displayed in the title bar of the instrument. In addition, you can see the position of the upper and the left line.
Related topics	<p>References</p> <ul style="list-style-type: none"> • Crosshair Cursor on page 271 • DeltaX Cursor on page 275 • DeltaY Cursor on page 276 • Instruments on page 253 • LogicAnalyzer ( ControlDesk Instrument Reference) • No Cursor on page 285 • Plotter ( ControlDesk Instrument Reference) • PlotterArray ( ControlDesk Instrument Reference) • Toggle Frameless View on page 316

Download

Access	You can access this command via:	
Menu bar	TableEditor	
Context menu of	TableEditor instrument	
Shortcut key	None	
Toolbar icon		
Purpose	To load values of the TableEditor down to the target platform.	
Description	The currently shown values of the TableEditor instrument can be downloaded to the connected target platform.	

Related topics

Basics

- *Using the TableEditor Instrument* (*ControlDesk Experiment Guide*)

HowTos

- *How to Change the Values in the TableEditor* (*ControlDesk Experiment Guide*)

References

- *Instruments* on page 253
- *TableEditor* (*ControlDesk Instrument Reference*)
- *Upload* on page 317

Edit Capture Settings

Access

You can access this command via:

Menu bar None

Context menu of Data Acquisition instrument

Shortcut key None

Toolbar icon

Purpose

To activate the currently selected Capture Settings Window.

Result

The Capture Settings Window with the selected data group is activated.

Description

The Capture Settings Window is used to select and specify data capture. The preselected service is displayed first. Refer to *Capturing Data* (*ControlDesk Experiment Guide*).

Related topics

Basics

- *Capturing Data* (*ControlDesk Experiment Guide*)
- *Working with Data Captures* (*ControlDesk Experiment Guide*)

References

- *Capture Settings* (*ControlDesk Instrument Reference*)
- *Instruments* on page 253

Indicators

Access	You can access this command via:	
Menu bar	None	
Context menu of	<ul style="list-style-type: none">■ Bar instrument■ Knob instrument■ Gauge instrument■ Slider instrument	
Shortcut key	<ul style="list-style-type: none">■ Shift+r (Maximum indicator)■ r (Minimum indicator)	
Toolbar icon	None	
Purpose	To reset the minimum/maximum indicator for a Bar, Gauge, Knob or Slider instrument.	
Result	The minimum/maximum indicator is reset for the focused instrument to the current value.	
Description	<p>Indicators are used to display the absolute minimum or maximum of the value since the animation was started. To reset their values in the test mode and animation mode press the Shift+r or the r key.</p> <p>You can enable/disable or configure the indicators via the <i>Indicators Page</i> ( <i>ControlDesk Instrument Reference</i>).</p>	
Related topics	<p>References</p> <ul style="list-style-type: none">• <i>Bar</i> ( <i>ControlDesk Instrument Reference</i>)• <i>Gauge</i> ( <i>ControlDesk Instrument Reference</i>)• <i>Instruments</i> on page 253• <i>Knob</i> ( <i>ControlDesk Instrument Reference</i>)• <i>Slider</i> ( <i>ControlDesk Instrument Reference</i>)	

Line Style

Access

You can access this command via:

Menu bar	PlotterArray
Context menu of	<ul style="list-style-type: none"> ▪ Plotter instrument (Signal) ▪ XYPlot instrument (Curve)
Shortcut key	None
Toolbar icon	None

Purpose

To set the line style of the selected signal/curve.

Description

The following line styles can be selected:

Line Style	Description
Smooth	To display the signal as a smooth line.
Staircase forward	To display the signal as a staircase forward (Plotter only).
Staircase backward	To display the signal as a staircase backward (Plotter only).
Dotted	To display each data point as a small dot.
Marker	To display the signal with markers.

Related topics
Basics

- *Using Capture Layouts* ( *ControlDesk Experiment Guide*)

References

- *Instruments* on page 253
- *Line Style Marker* on page 281
- *Line Style Smooth* on page 282
- *Line Style Staircase Backward* on page 283
- *Line Style Staircase Forward* on page 283
- *Plotter* ( *ControlDesk Instrument Reference*)
- *PlotterArray* ( *ControlDesk Instrument Reference*)
- *XYPlot* ( *ControlDesk Instrument Reference*)

Line Style Dotted

Access	You can access this command via:
Menu bar	PlotterArray
Context menu of	Plotter and XYPlot
Shortcut key	None
Toolbar icon	
Purpose	To display the signal as a dotted line.
Result	The signals in XYPlot and Plotter instruments are displayed as dotted lines. Each data point is displayed as a small dot.
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • Using Capture Layouts ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none"> • Instruments on page 253 • Line Style on page 280 • Line Style Marker on page 281 • Line Style Smooth on page 282 • Line Style Staircase Backward on page 283 • Line Style Staircase Forward on page 283 • Plotter ( ControlDesk Instrument Reference) • PlotterArray ( ControlDesk Instrument Reference) • XYPlot ( ControlDesk Instrument Reference)

Line Style Marker

Access	You can access this command via:
Menu bar	PlotterArray
Context menu of	Plotter and XYPlot
Shortcut key	None
Toolbar icon	
Purpose	To display each data point of a signal with a marker.

Result	The signals in XYPlot and Plotter instruments are displayed as lines of markers.
---------------	--

Related topics

References

- [Instruments](#) on page 253
- [Line Style](#) on page 280
- [Line Style Dotted](#) on page 281
- [Line Style Smooth](#) on page 282
- [Line Style Staircase Backward](#) on page 283
- [Line Style Staircase Forward](#) on page 283
- [Plotter](#) () [ControlDesk Instrument Reference](#)
- [PlotterArray](#) () [ControlDesk Instrument Reference](#)
- [XYPlot](#) () [ControlDesk Instrument Reference](#)

Line Style Smooth

Access

You display signals as smooth lines via:

Menu bar	PlotterArray
Context menu of	Plotter and XYPlot
Shortcut key	None
Toolbar icon	

Purpose

To display signals as smooth lines.

Result

The signals in XYPlot and Plotter instruments are displayed as smooth lines.

Related topics

References

- [Instruments](#) on page 253
- [Line Style](#) on page 280
- [Line Style Dotted](#) on page 281
- [Line Style Marker](#) on page 281
- [Line Style Staircase Backward](#) on page 283
- [Line Style Staircase Forward](#) on page 283
- [Plotter](#) () [ControlDesk Instrument Reference](#)
- [PlotterArray](#) () [ControlDesk Instrument Reference](#)
- [XYPlot](#) () [ControlDesk Instrument Reference](#)

Line Style Staircase Backward

Access	You can access this command via:
Menu bar	PlotterArray
Context menu of	Plotter
Shortcut key	None
Toolbar icon	
Purpose	To display signals as a staircase backward.
Result	The signals of Plotter instruments are displayed as staircases backward.
Related topics	<p>References</p> <ul style="list-style-type: none"> • Instruments on page 253 • Line Style on page 280 • Line Style Dotted on page 281 • Line Style Marker on page 281 • Line Style Smooth on page 282 • Line Style Staircase Forward on page 283 • Plotter ( ControlDesk Instrument Reference) • PlotterArray ( ControlDesk Instrument Reference) • XYPlot ( ControlDesk Instrument Reference)

Line Style Staircase Forward

Access	You can access this command via:
Menu bar	PlotterArray
Context menu of	Plotter
Shortcut key	None
Toolbar icon	
Purpose	To display the signal as a staircase forward.
Result	The signals of Plotter instruments are displayed as staircases forward.

Related topics**References**

- *Instruments* on page 253
- *Line Style* on page 280
- *Line Style Dotted* on page 281
- *Line Style Marker* on page 281
- *Line Style Smooth* on page 282
- *Line Style Staircase Backward* on page 283
- *Plotter* () *ControlDesk Instrument Reference*)
- *PlotterArray* () *ControlDesk Instrument Reference*)
- *XYPlot* () *ControlDesk Instrument Reference*)

Load Reference Data

Access

You can access this command via:

Menu bar

TableEditor

Context menu of

TableEditor instrument

Shortcut key

None

Toolbar icon



Purpose

To load reference data from a MAT file.

Description

You can load reference data values from a MAT file and use them as current values. The reference data should be stored in a MAT file format.

Related topics**Basics**

- *Using the TableEditor Instrument* () *ControlDesk Experiment Guide*)

References

- *Instruments* on page 253
- *Save Reference Data* on page 301

LogicAnalyzer Properties

Access	You can access this command via:	
Menu bar	None	
Context menu of	LogicAnalyzer in PlotterArray instrument	
Shortcut key	None	
Toolbar icon	None	
Purpose	To call up LogicAnalyzer Control Properties.	
Result	LogicAnalyzer Control Properties are displayed.	
Description	With this, you can set the properties of the selected LogicAnalyzer instrument inside a PlotterArray instrument.	
Related topics	References • Instruments on page 253 • LogicAnalyzer ( ControlDesk Instrument Reference)	

No Cursor

Access	You can access this command via:	
Menu bar	PlotterArray	
Context menu of	None	
Shortcut key	None	
Toolbar icon		
Purpose	To switch off the cursor.	
Result	The currently used cursor is switched off.	

Related topics**References**

- *Crosshair Cursor* on page 271
- *DeltaX Cursor* on page 275
- *DeltaXY Cursor* on page 276
- *DeltaY Cursor* on page 276
- *Instruments* on page 253
- *LogicAnalyzer* ( ControlDesk Instrument Reference)
- *Plotter* ( ControlDesk Instrument Reference)
- *PlotterArray* ( ControlDesk Instrument Reference)
- *Toggle Frameless View* on page 316

Plotter Properties

Access

You can access this command via:

Menu bar	None
Context menu of	Plotter in PlotterArray instrument
Shortcut key	None
Toolbar icon	None

Purpose

To call up Plotter Control Properties.

Result

Plotter Control Properties are displayed.

Description

With this, you can set the properties of the selected Plotter instrument inside a PlotterArray instrument.

Related topics**References**

- *Instruments* on page 253
- *Plotter* ( ControlDesk Instrument Reference)

PlotterArray Toolbar

The toolbar of the PlotterArray instrument is displayed in Test or Animation mode when the instrument gets the input focus:

Purpose	Refer to
	<i>Add Plotter</i> on page 257
	<i>Add LogicAnalyzer</i> on page 257
	<i>Add XYPlot</i> on page 258
	<i>Crosshair Cursor</i> on page 271
	<i>DeltaX Cursor</i> on page 275
	<i>DeltaXY Cursor</i> on page 276
	<i>DeltaY Cursor</i> on page 276
	<i>Line Style Dotted</i> on page 281
	<i>Line Style Marker</i> on page 281
	<i>Line Style Smooth</i> on page 282
	<i>Line Style Staircase Backward</i> on page 283
	<i>Line Style Staircase Forward</i> on page 283
	<i>No Cursor</i> on page 285
	<i>Rescale</i> on page 297
	<i>Show Properties</i> on page 306
	<i>Start Zoom</i> on page 311
	<i>Stick on Curve</i> on page 311
	<i>Synchronize</i> on page 312
	<i>Toggle All Windows Mode</i> on page 314
	<i>Toggle Frameless View</i> on page 316
	<i>Toggle Grid</i> on page 97

Purpose	Refer to
	<i>Zoomed</i> on page 322
	<i>Zoom Cursor Interval</i> on page 320
	<i>Zoom Redo</i> on page 321
	<i>Zoom Undo</i> on page 322

Related topics

References

- *Instruments* on page 253

Print All Instruments

Access

You can access this command via:

Menu bar	PlotterArray
Context menu of	PlotterArray instrument
Shortcut key	None
Toolbar icon	None

Purpose

To print the signals of all instruments of a PlotterArray instrument or a Capture Layout.

Description

The PlotterArray instrument can contain several Data Acquisition instruments. You can select the following settings:

Menu Entry	Description
Proportional – Show Legend	To keep the aspect ratio of the displayed curves. The captions of the axes are displayed.
Proportional – Hide Legend	To keep the aspect ratio of the displayed curves. The captions of the axes are hidden.
Stretched – Show Legend	To fit the displayed curves to the page format used for printing. The captions of the axes are displayed.
Stretched – Hide Legend	To fit the displayed curves to the page format used for printing. The captions of the axes are hidden.



If Plotter or XYPlot instruments are part of a PlotterArray instrument, only the legend of four signals can be printed at once. If the Plotter/XYPlot displays more than four signals, you should print the Plotter/XYPlot separately.

Related topics

HowTos

- *How to Print Captured Data* (ControlDesk Experiment Guide)

References

- *Instruments* on page 253
- *Print LogicAnalyzer* on page 289
- *Print Plotter* on page 290
- *Print XYPlot* on page 292

Print LogicAnalyzer

Access

You can access this command via:

Menu bar	None
Context menu of	LogicAnalyzer instrument
Shortcut key	None
Toolbar icon	None

Purpose	To print the selected LogicAnalyzer instrument.
----------------	---

Description	You can select the following settings:
--------------------	--

Menu Entry	Description
Proportional – Show Legend	To keep the aspect ratio of the displayed curves. The captions of the axes are displayed.
Proportional – Hide Legend	To keep the aspect ratio of the displayed curves. The captions of the axes are hidden.
Stretched – Show Legend	To fit the displayed curves to the page format used for printing. The captions of the axes are displayed.
Stretched – Hide Legend	To fit the displayed curves to the page format used for printing. The captions of the axes are hidden.

Since the instrument is only connected to one variable the y-axis is labeled with the name of the signal.

Related topics

HowTos

- *How to Print Captured Data* ( *ControlDesk Experiment Guide*)

References

- *Instruments* on page 253
- *Print All Instruments* on page 288

Print Plotter

Access	You can access this command via:
---------------	----------------------------------

Menu bar	None
Context menu of	Plotter instrument
Shortcut key	None
Toolbar icon	None

Purpose	To print the selected Plotter instrument.
----------------	---

Description	A Plotter instrument can contain several signals that are related to several y-axes. You can select the following settings:
--------------------	---

Menu Entry	Description
Proportional – Show Legend	To keep the aspect ratio of the displayed curves. The captions of the axes are displayed.
Proportional – Hide Legend	To keep the aspect ratio of the displayed curves. The captions of the axes are hidden.
Stretched – Show Legend	To fit the displayed curves to the page format used for printing. The captions of the axes are displayed.
Stretched – Hide Legend	To fit the displayed curves to the page format used for printing. The captions of the axes are hidden.

To assign signals to the legend each signal and the related y-axis get a number, #1:2 for example. If enabled, a cursor together with the displayed values is also printed. The legend consists of an icon that shows the signal color, the signal number, name and path. The legend is printed below the instrument.



If a Plotter instrument is part of a PlotterArray instrument, only the legend of four signals can be printed at once. If the Plotter displays more than four signals you should print the Plotter separately.

Related topics

HowTos

- [How to Print Captured Data](#) ([ControlDesk Experiment Guide](#))

References

- [Instruments](#) on page 253
- [Print All Instruments](#) on page 288

Print XYPlot

Access

You can access this command via:

Menu bar	None
Context menu of	XYPlot instrument
Shortcut key	None
Toolbar icon	None

Purpose

To print the selected XYPlot instrument.

Description

In the XYPlot instrument one signal is related to the x-axis and the other to the y-axis. You can select the following settings:

Menu Entry	Description
Proportional – Show Legend	To keep the aspect ratio of the displayed curves. The captions of the axes are displayed.
Proportional – Hide Legend	To keep the aspect ratio of the displayed curves. The captions of the axes are hidden.
Stretched – Show Legend	To fit the displayed curves to the page format used for printing. The captions of the axes are displayed.
Stretched – Hide Legend	To fit the displayed curves to the page format used for printing. The captions of the axes are hidden.

To assign the signal to the legend each signal gets a number. In the legend, each signal is symbolized by:

- a colored icon and the number of the "signal_x-signal name" and the path of both signals.
- a colored icon and the number of the "signal_y-signal name" and the path of both signals.



If the XYPlot instrument is part of a PlotterArray instrument, only the legend of four signals can be printed at once. If the XYPlot displays more than four signals you should print the plotter separately.

Related topics

HowTos

- *How to Print Captured Data* (ControlDesk Experiment Guide)

References

- *Instruments* on page 253
- *Print All Instruments* on page 288

Projection XZ

Access

You can access this command via:

Menu bar TableEditor

Context menu of TableEditor instrument

Shortcut key None

Toolbar icon

Purpose

To project the values into the xz-plane of the coordinate system.

Description

The Projection XZ dialog is called up to display the data in a 2-dimensional coordinate system (xz-direction).

If you have enabled the Working Point/Edit Point it is also shown in the projection.

Related topics

Basics

- *Using the TableEditor Instrument* (ControlDesk Experiment Guide)

HowTos

- *How to Change the Values in the TableEditor* (ControlDesk Experiment Guide)

References

- *Instruments* on page 253
- *Projection YZ* on page 294

Projection YZ

Access	You can access this command via:
Menu bar	TableEditor
Context menu of	TableEditor instrument
Shortcut key	None
Toolbar icon	
Purpose	To project the values into the yz-plane of the coordinate system.
Description	<p>Projection YZ is called up to display the data in a 2-dimensional coordinate system (yz-direction).</p> <p>If you have enabled the Working Point/Edit Point it is also shown in the projection.</p>
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • <i>Using the TableEditor Instrument</i> ( ControlDesk Experiment Guide) <p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Change the Values in the TableEditor</i> ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none"> • <i>Instruments</i> on page 253 • <i>Projection XZ</i> on page 293

Properties (All Instruments)

Access	You can access this command via:
Menu bar	None
Context menu of	PlotterArray Instrument
Shortcut key	None
Toolbar icon	None
Purpose	To call up the instruments' properties dialog and specify the properties of all instruments of that kind within the PlotterArray instrument.

Description	Depending on the instrument that you have selected when calling the context menu, the following commands can be displayed:
--------------------	--

Instrument	Command
LogicAnalyzer	<i>All LogicAnalyzer</i> on page 259
Plotter	<i>All Plotter Properties</i> on page 260
XYPlot	<i>All XYPlot Properties</i> on page 260

Related topics

- References
 • *Instruments* on page 253

Properties (Single Instrument)

Access	You can access this command via:
---------------	----------------------------------

Menu bar	None
Context menu of	PlotterArray Instrument
Shortcut key	None
Toolbar icon	None

Purpose	To call up the instrument's properties dialog.
----------------	--

Description	Depending on the instrument that you have selected when calling the context menu, the following commands can be displayed:
--------------------	--

Instrument	Command
LogicAnalyzer	<i>LogicAnalyzer Properties</i> on page 285
Plotter	<i>Plotter Properties</i> on page 286
XYPlot	<i>XYPlot Properties</i> on page 320

Related topics

- References
 • *Instruments* on page 253

Remove Connections

Access

You can access this command via:

Menu bar	TableEditor
Context menu of	TableEditor instrument
Shortcut key	None
Toolbar icon	

Purpose

To remove all data connections to the TableEditor instrument.

Result

All data connections to the TableEditor instrument including the working point connections are removed.

Related topics

- Basics
- [Connecting the TableEditor Instrument](#) ( [ControlDesk Experiment Guide](#))
 - [Using the TableEditor Instrument](#) ( [ControlDesk Experiment Guide](#))
- HowTos
- [How to Connect Variables, Matrices and Vectors to the TableEditor Instrument](#) ( [ControlDesk Experiment Guide](#))
 - [How to Set the Working Point](#) ( [ControlDesk Experiment Guide](#))
- References
- [Instruments](#) on page 253
 - [Remove WorkingPoint Connections](#) on page 296

Remove WorkingPoint Connections

Access

You can access this command via:

Menu bar	TableEditor
Context menu of	TableEditor instrument
Shortcut key	None
Toolbar icon	

Purpose

To remove the working point connections.

Result	Only the working point connections (WorkingPointX and WorkingPointY) are removed.
---------------	---

Related topics

Basics

- *Connecting the TableEditor Instrument* (*ControlDesk Experiment Guide*)

HowTos

- *How to Connect Variables, Matrices and Vectors to the TableEditor Instrument* (*ControlDesk Experiment Guide*)
- *How to Set the Working Point* (*ControlDesk Experiment Guide*)

References

- *Instruments* on page 253
- *Remove Connections* on page 296

Rescale

Access	You can access this command via:
---------------	----------------------------------

Menu bar	PlotterArray
----------	--------------

Context menu of	None
-----------------	------

Shortcut key	None
--------------	------

Toolbar icon	
--------------	--

Purpose	To rescale the axes of all instruments of the PlotterArray instrument.
----------------	--

Related topics

Basics

- *Using Capture Layouts* (*ControlDesk Experiment Guide*)

References

- *Instruments* on page 253
- *PlotterArray* (*ControlDesk Instrument Reference*)

Reset Chart

Access	You can access this command via:
Menu bar	TableEditor
Context menu of	TableEditor Instrument – Chart View
Shortcut key	R
Toolbar icon	
Purpose	To reset the chart to the default settings.
Related topics	<p>Basics</p> <ul style="list-style-type: none">• Using the TableEditor Instrument ( ControlDesk Experiment Guide) <p>HowTos</p> <ul style="list-style-type: none">• How to Change the Chart View ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• Instruments on page 253• Restore User Default on page 298• Set as User Default on page 307

Restore User Default

Access	You can access this command via:
Menu bar	TableEditor
Context menu of	TableEditor Instrument – Chart View
Shortcut key	None
Toolbar icon	
Purpose	To set the chart view settings to the user default settings.
Description	You can set the user default settings with the Set as User Default, see Set as User Default on page 307.

Related topics**Basics**

- *Using the TableEditor Instrument* ([ControlDesk Experiment Guide](#))

HowTos

- *How to Change the Chart View* ([ControlDesk Experiment Guide](#))

References

- *Instruments* on page 253
- *Reset Chart* on page 298
- *Set as User Default* on page 307

Rotation X-Axis

Access

You can access this command via:

Menu bar	None
----------	------

Context menu of	None
-----------------	------

Shortcut key	None
--------------	------

Toolbar icon	
--------------	--

Purpose

To rotate the coordinate system of the chart view round the x-axis.



Free rotation of the coordinate system is possible by pressing **Ctrl+Alt** and moving the mouse.

Related topics**Basics**

- *Using the TableEditor Instrument* ([ControlDesk Experiment Guide](#))

HowTos

- *How to Change the Chart View* ([ControlDesk Experiment Guide](#))

References

- *Instruments* on page 253
- *Rotation Y-Axis* on page 300
- *Rotation Z-Axis* on page 300

Rotation Y-Axis

Access

You can access this command via:

Menu bar	None
Context menu of	None
Shortcut key	None
Toolbar icon	

Purpose

To rotate the coordinate system of the chart view round the y-axis.



Free rotation of the coordinate system is possible by pressing **ctrl+Alt** and moving the mouse.

Related topics**Basics**

- *Using the TableEditor Instrument* ( *ControlDesk Experiment Guide*)

HowTos

- *How to Change the Chart View* ( *ControlDesk Experiment Guide*)

References

- *Instruments* on page 253
- *Rotation X-Axis* on page 299
- *Rotation Z-Axis* on page 300

Rotation Z-Axis

Access

You can access this command via:

Menu bar	None
Context menu of	None
Shortcut key	None
Toolbar icon	

Purpose	To rotate the coordinate system of the chart view round the z-axis.
	 Free rotation of the coordinate system is possible by pressing Ctrl+Alt and moving the mouse.

Related topics

Basics

- *Using the TableEditor Instrument* ( ControlDesk Experiment Guide)

HowTos

- *How to Change the Chart View* ( ControlDesk Experiment Guide)

References

- *Instruments* on page 253
- *Rotation X-Axis* on page 299
- *Rotation Y-Axis* on page 300

Save Reference Data

Access	You can access this command via:
Menu bar	TableEditor
Context menu of	TableEditor instrument
Shortcut key	None
Toolbar icon	
Purpose	To save the current values of the TableEditor instrument as reference data.
Description	The currently shown values are saved in a MAT file. You can reuse this data as reference data (see <i>Load Reference Data</i> on page 284) or load it to MATLAB.

Related topics

Basics

- *Using the TableEditor Instrument* (*ControlDesk Experiment Guide*)

HowTos

- *How to Change the Values in the TableEditor* (*ControlDesk Experiment Guide*)

References

- *Instruments* on page 253
- *Load Reference Data* on page 284

Scaling Mode X

Access

You can access this command via:

Menu bar	None
Context menu of	XYPlot instrument (x-axis)
Shortcut key	None
Toolbar icon	None

Purpose

To set the scaling mode of the x-axis.

Result

The scaling mode changes according to your selection.

Description

The following scaling modes are available:

Mode	Description
Floating	The axis range always shows the current range of the available data.
Extended	The axis range always shows all the currently available curves.
Fixed	The axis dimensions are set to the values in the Min and Max edit fields. These limits are kept independently of data curves.

Related topics

References

- *Instruments* on page 253
- *Scaling Mode Y* on page 303
- *XYPlot* (*ControlDesk Instrument Reference*)

Scaling Mode Y

Access	You can access this command via:								
Menu bar	None								
Context menu of	XYPlot instrument (y-axis)								
Shortcut key	None								
Toolbar icon	None								
Purpose	To set the scaling mode of the y-axis.								
Result	The scaling mode changes according to your selection.								
Description	The following scaling modes are available:								
<table border="1"><thead><tr><th>Mode</th><th>Description</th></tr></thead><tbody><tr><td>Floating</td><td>The axis range always shows the current range of the available data.</td></tr><tr><td>Extended</td><td>The axis range always shows all the currently available curves.</td></tr><tr><td>Fixed</td><td>The axis dimensions are set to the values in the Min and Max edit fields. These limits are kept independently of data curves.</td></tr></tbody></table>	Mode	Description	Floating	The axis range always shows the current range of the available data.	Extended	The axis range always shows all the currently available curves.	Fixed	The axis dimensions are set to the values in the Min and Max edit fields. These limits are kept independently of data curves.	
Mode	Description								
Floating	The axis range always shows the current range of the available data.								
Extended	The axis range always shows all the currently available curves.								
Fixed	The axis dimensions are set to the values in the Min and Max edit fields. These limits are kept independently of data curves.								

Related topics	References
	<ul style="list-style-type: none">• Instruments on page 253• Scaling Mode X on page 302• XYPlot ( ControlDesk Instrument Reference)

Section XZ

Access	You can access this command via:										
Menu bar	TableEditor										
Context menu of	TableEditor instrument										
Shortcut key	None										
Toolbar icon											
Purpose	To display and edit the xz section values of the chart in Section XZ.										
Description	The section in xz-direction shows all values of the corresponding column of the grid in the Section XZ dialog. The working and edit point are marked. You can edit new values by dragging and dropping a selected point up and down. Using the following commands you can switch through the columns of the grid:										
<table border="1"><thead><tr><th>Command</th><th>Description</th></tr></thead><tbody><tr><td>First Pane</td><td>To display the values of the first column.</td></tr><tr><td>Previous Pane</td><td>To display the values of the previous column.</td></tr><tr><td>Next Pane</td><td>To display the values of the next column.</td></tr><tr><td>Last Pane</td><td>To display the values of the last column of the grid.</td></tr></tbody></table>	Command	Description	First Pane	To display the values of the first column.	Previous Pane	To display the values of the previous column.	Next Pane	To display the values of the next column.	Last Pane	To display the values of the last column of the grid.	
Command	Description										
First Pane	To display the values of the first column.										
Previous Pane	To display the values of the previous column.										
Next Pane	To display the values of the next column.										
Last Pane	To display the values of the last column of the grid.										
Related topics	<p>Basics</p> <ul style="list-style-type: none">• <i>Using the TableEditor Instrument</i> ( ControlDesk Experiment Guide) <p>HowTos</p> <ul style="list-style-type: none">• <i>How to Change the Values in the TableEditor</i> ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• <i>Instruments</i> on page 253• <i>Section YZ</i> on page 305										

Section YZ

Access	You can access this command via:									
Menu bar	TableEditor									
Context menu of	TableEditor instrument									
Shortcut key	None									
Toolbar icon										
Purpose	To display and edit the yz section values of the chart in the Section YZ dialog.									
Description	The section in yz direction shows all values of the corresponding row of the grid in Section YZ. The working and edit point are marked. You can edit new values by dragging and dropping a selected point up and down. Using the following commands you can switch through the rows of the grid:									
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #d9e1f2;"> <th style="padding: 5px;">Command</th> <th style="padding: 5px;">Description</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">First Pane</td> <td style="padding: 5px;">To display the values of the first row.</td> </tr> <tr> <td style="padding: 5px;">Previous Pane</td> <td style="padding: 5px;">To display the values of the previous row.</td> </tr> <tr> <td style="padding: 5px;">Next Pane</td> <td style="padding: 5px;">To display the values of the next row.</td> </tr> <tr> <td style="padding: 5px;">Last Pane</td> <td style="padding: 5px;">To display the values of the last row of the grid.</td> </tr> </tbody> </table>	Command	Description	First Pane	To display the values of the first row.	Previous Pane	To display the values of the previous row.	Next Pane	To display the values of the next row.	Last Pane	To display the values of the last row of the grid.
Command	Description									
First Pane	To display the values of the first row.									
Previous Pane	To display the values of the previous row.									
Next Pane	To display the values of the next row.									
Last Pane	To display the values of the last row of the grid.									
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • <i>Using the TableEditor Instrument</i> ( <i>ControlDesk Experiment Guide</i>) <p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Change the Values in the TableEditor</i> ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none"> • <i>Instruments</i> on page 253 • <i>Section XZ</i> on page 304 									

Show Chart Legend

Access	You can access this command via:
Menu bar	TableEditor
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To display the legend of the chart view of the TableEditor instrument.
Description	The colors of the chart view's surface are assigned to value ranges. If you enable the legend, the color settings of the corresponding value ranges are displayed.
Related topics	<p>Basics</p> <ul style="list-style-type: none">• <i>Using the TableEditor Instrument</i> ( ControlDesk Experiment Guide) <p>HowTos</p> <ul style="list-style-type: none">• <i>How to Change the Chart View</i> ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• <i>Instruments</i> on page 253• <i>Reset Chart</i> on page 298

Show Properties

Access	You can access this command via:
Menu bar	PlotterArray
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To show the property pages of the instruments inside the PlotterArray instrument.

Description	Depending on the All Windows property, your changes will have the following influence: <ul style="list-style-type: none">■ All Windows OFF: The property page displayed will influence the active instrument.■ All Windows ON: The property page displayed will influence all instruments inside the PlotterArray instrument of the same kind as the active instrument.
Related topics	<p>References</p> <ul style="list-style-type: none"> • All LogicAnalyzer on page 259 • All Plotter Properties on page 260 • All XYPlot Properties on page 260 • Instruments on page 253 • PlotterArray ( ControlDesk Instrument Reference)

Set as User Default

Access	You can access this command via:	
Menu bar	TableEditor	
Context menu of	TableEditor instrument – Chart View	
Shortcut key	None	
Toolbar icon		
Purpose	To save the current chart settings (Zoom, Shift and Rotation) as user default settings.	
Description	If you have zoomed, shifted or rotated the chart, you can save this settings as user default. You can apply the settings with the Restore User Default, see <i>Restore User Default</i> on page 298.	

Related topics

Basics

- *Using the TableEditor Instrument* (*ControlDesk Experiment Guide*)

HowTos

- *How to Change the Chart View* (*ControlDesk Experiment Guide*)

References

- *Instruments* on page 253

- *Reset Chart* on page 298

- *Restore User Default* on page 298

Signal Color

Access

You can access this command via:

Menu bar None

Context menu of Plotter instrument

Shortcut key None

Toolbar icon None

Purpose

To set the color of the selected signal in a Plotter instrument (only in Test or Animation mode).

Result

The Windows standard color dialog is called up. You can change the color setting of the signal.

Related topics

References

- *Instruments* on page 253

- *Plotter* (*ControlDesk Instrument Reference*)

Sort By Text

Access	You can access this command via:										
Menu bar	None										
Context menu of	SelectionBox instrument										
Shortcut key	None										
Toolbar icon	None										
Purpose	To sort the text-value entries in the drop-down list of the SelectionBox instrument by text in ascending or descending order.										
Description	The SelectionBox instrument provides a drop-down list, in which the text-value entries are shown. Each text-value entry contains a text and a value. You can sort the text-value entries by text in ascending or descending order.										
<table border="1"> <thead> <tr> <th>Menu Entry</th><th>Description</th></tr> </thead> <tbody> <tr> <td>Sort Ascending by Text</td><td>To sort the text-value entries by text in ascending order.</td></tr> <tr> <td>Sort Descending by Text</td><td>To sort the text-value entries by text in descending order.</td></tr> <tr> <td>Sort Ascending by Value</td><td>To sort the text-value entries by value in ascending order.</td></tr> <tr> <td>Sort Descending by Value</td><td>To sort the text-value entries by value in descending order.</td></tr> </tbody> </table>		Menu Entry	Description	Sort Ascending by Text	To sort the text-value entries by text in ascending order.	Sort Descending by Text	To sort the text-value entries by text in descending order.	Sort Ascending by Value	To sort the text-value entries by value in ascending order.	Sort Descending by Value	To sort the text-value entries by value in descending order.
Menu Entry	Description										
Sort Ascending by Text	To sort the text-value entries by text in ascending order.										
Sort Descending by Text	To sort the text-value entries by text in descending order.										
Sort Ascending by Value	To sort the text-value entries by value in ascending order.										
Sort Descending by Value	To sort the text-value entries by value in descending order.										
Related topics	<p>References</p> <ul style="list-style-type: none"> • Instruments on page 253 • SelectionBox ( ControlDesk Instrument Reference) 										

Sort By Value

Access	You can access this command via:										
Menu bar	None										
Context menu of	SelectionBox instrument										
Shortcut key	None										
Toolbar icon	None										
Purpose	To sort the text-value entries in the drop-down list of the SelectionBox instrument by value in ascending or descending order.										
Description	The SelectionBox instrument provides a drop-down list, in which the text-value entries are shown. Each text-value entry contains a text and a value. You can sort the text-value entries by value in ascending or descending order.										
<table border="1"><thead><tr><th>Menu Entry</th><th>Description</th></tr></thead><tbody><tr><td>Sort Ascending by Text</td><td>To sort the text-value entries by text in ascending order.</td></tr><tr><td>Sort Descending by Text</td><td>To sort the text-value entries by text in descending order.</td></tr><tr><td>Sort Ascending by Value</td><td>To sort the text-value entries by value in ascending order.</td></tr><tr><td>Sort Descending by Value</td><td>To sort the text-value entries by value in descending order.</td></tr></tbody></table>		Menu Entry	Description	Sort Ascending by Text	To sort the text-value entries by text in ascending order.	Sort Descending by Text	To sort the text-value entries by text in descending order.	Sort Ascending by Value	To sort the text-value entries by value in ascending order.	Sort Descending by Value	To sort the text-value entries by value in descending order.
Menu Entry	Description										
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Sort Descending by Text	To sort the text-value entries by text in descending order.										
Sort Ascending by Value	To sort the text-value entries by value in ascending order.										
Sort Descending by Value	To sort the text-value entries by value in descending order.										
Related topics	References <ul style="list-style-type: none">• Instruments on page 253• SelectionBox ( ControlDesk Instrument Reference)										

Start Zoom

Access	You can access this command via:
Menu bar	PlotterArray
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To enlarge a selected region of an instrument's display area.
Result	You can draw up a rectangle inside the instrument's display. The rectangle is enlarged to the instrument's display size.
	 The Zoomed button remains pressed to indicate that the display area is zoomed.

Related topics	References
	<ul style="list-style-type: none"> • Instruments on page 253 • PlotterArray ( ControlDesk Instrument Reference) • Toggle Frameless View on page 316 • Zoom Cursor Interval on page 320 • Zoom Undo on page 322

Stick on Curve

Access	You can access this command via:
Menu bar	PlotterArray
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To snap the cursor to the displayed signal.

Result	The intersection point of an XYCursor snaps to the displayed signal line.
---------------	---

Related topics

References

- [Crosshair Cursor](#) on page 271
- [DeltaX Cursor](#) on page 275
- [DeltaXY Cursor](#) on page 276
- [DeltaY Cursor](#) on page 276
- [Instruments](#) on page 253
- [No Cursor](#) on page 285
- [PlotterArray](#) ( [ControlDesk Instrument Reference](#))
- [Toggle Frameless View](#) on page 316

Synchronize

Access

You can access this command via:

Menu bar	PlotterArray
Context menu of	None
Shortcut key	None
Toolbar icon	

Purpose

To synchronize the cursors of the instruments inside the PlotterArray instrument

Result

The cursor movement is synchronized for all instruments of the PlotterArray.

Related topics

References

- [Crosshair Cursor](#) on page 271
- [DeltaX Cursor](#) on page 275
- [DeltaXY Cursor](#) on page 276
- [DeltaY Cursor](#) on page 276
- [Instruments](#) on page 253
- [No Cursor](#) on page 285
- [PlotterArray](#) ( [ControlDesk Instrument Reference](#))
- [Toggle Frameless View](#) on page 316

Tic Format

Access	You can access this command via:								
Menu bar	None								
Context menu of	XYPlot instrument (x- or y-axis)								
Shortcut key	None								
Toolbar icon	None								
Purpose	To set the tic format of the selected axis.								
Result	The tics of the axis changes according to your selection.								
Description	The following settings are available:								
<table border="1"><thead><tr><th>Format</th><th>Description</th></tr></thead><tbody><tr><td>Standard</td><td>The values on the axis are shown without using an exponent.</td></tr><tr><td>Exponential</td><td>The values on the axis are shown in exponential format.</td></tr><tr><td>Engineering</td><td>The values on the axis are shown in exponential format. The exponent is always an integer multiple of 3.</td></tr></tbody></table>	Format	Description	Standard	The values on the axis are shown without using an exponent.	Exponential	The values on the axis are shown in exponential format.	Engineering	The values on the axis are shown in exponential format. The exponent is always an integer multiple of 3.	
Format	Description								
Standard	The values on the axis are shown without using an exponent.								
Exponential	The values on the axis are shown in exponential format.								
Engineering	The values on the axis are shown in exponential format. The exponent is always an integer multiple of 3.								

Related topics	References
	<ul style="list-style-type: none">• Curve Color on page 271• Instruments on page 253• Signal Color on page 308• XYPlot ( ControlDesk Instrument Reference)

Toggle All Windows Mode

Access	You can access this command via:
Menu bar	PlotterArray
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To transfer the settings to all PlotterArray instruments.
Result	The settings you enter with toolbar tools are transferred to all instruments of the PlotterArray or the Capture Layout.
Description	Several tools effect only the instruments you edit.
Related topics	References <ul style="list-style-type: none">• Instruments on page 253• No Cursor on page 285• PlotterArray ( ControlDesk Instrument Reference)• Start Zoom on page 311• Toggle Frameless View on page 316• Zoom Cursor Interval on page 320• Zoom Undo on page 322• Zoomed on page 322

Toggle Chart View

Access	You can access this command via:
Menu bar	TableEditor
Context menu of	TableEditor instrument – Chart View
Shortcut key	None
Toolbar icon	
Purpose	To show/hide the chart of a TableEditor instrument.

Related topics**Basics**

- *Using the TableEditor Instrument* ([ControlDesk Experiment Guide](#))

HowTos

- *How to Change the Chart View* ([ControlDesk Experiment Guide](#))

References

- *Instruments* on page 253
- *Reset Chart* on page 298
- *Restore User Default* on page 298

Toggle Edit Point

Access

You can access this command via:

Menu bar	TableEditor
Context menu of	TableEditor instrument
Shortcut key	None
Toolbar icon	

Purpose

To switch the display of the edit point in the chart, the projection and section dialogs on and off.

Result

The edit point is displayed as a red dot in the chart, the projection and the section dialogs. If you clear the menu item, the edit point is switched off.

Related topics**Basics**

- *Using the TableEditor Instrument* ([ControlDesk Experiment Guide](#))

HowTos

- *How to Change the Chart View* ([ControlDesk Experiment Guide](#))
- *How to Change the Values in the TableEditor* ([ControlDesk Experiment Guide](#))

References

- *Instruments* on page 253
- *Toggle Working Point* on page 316

Toggle Frameless View

Access	You can access this command via:
Menu bar	PlotterArray
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To show or hide the standard window frames around the instrument inside the PlotterArray instrument.
Result	The instruments are shown with or without the standard windows frames.
Description	In several modes, the title bar is used to display important informations.
Related topics	References <ul style="list-style-type: none">• <i>Instruments</i> on page 253• <i>PlotterArray</i> ( <i>ControlDesk Instrument Reference</i>)

Toggle Working Point

Access	You can access this command via:
Menu bar	TableEditor
Context menu of	TableEditor instrument
Shortcut key	None
Toolbar icon	
Purpose	To switch the working point on and off.

Description

The working point is displayed as a small green circle in the chart, the projection and section dialogs. In the grid, the cells that correspond to the working point are marked. The working point marks the current lookup table value that is specified by the current input value.



A two dimensional lookup table has two input values. If the current input value is located between two values of the vector, the working point is interpolated between them in linear form. If the input value of the working point is outside the input vector range, the working point will not be displayed in the chart. In this case, the grid's upper left cell (0/0) is colored red.

Related topics

Basics

- *Using the TableEditor Instrument* ([ControlDesk Experiment Guide](#))

HowTos

- *How to Change the Chart View* ([ControlDesk Experiment Guide](#))
- *How to Set the Working Point* ([ControlDesk Experiment Guide](#))

References

- *Instruments* on page 253
- *Toggle Edit Point* on page 315

Upload

Access

You can access this command via:

Menu bar	TableEditor
Context menu of	TableEditor instrument
Shortcut key	None
Toolbar icon	

Purpose

To upload values from the connected target platform to the TableEditor instrument.

Related topics

Basics

- [Using the TableEditor Instrument](#) ([ControlDesk Experiment Guide](#))

HowTos

- [How to Change the Values in the TableEditor](#) ([ControlDesk Experiment Guide](#))

References

- [Download](#) on page 277
- [Instruments](#) on page 253

Value Conversion Mode – Converted

Access

You can access this command via:

Menu bar None

Context menu of Display, NumericInput, Bar, Slider, Knob, Gauge, TableEditor, Plotter instrument

Shortcut key (not available for the Plotter instrument)

Toolbar icon None



The Plotter instrument provides value conversion for each signal. Each signal is symbolized by a squared icon, representing the signal color. To get the context menu right-click these symbols.

Purpose

To use the converted format for value display.

Result

The value is displayed with the converted mode settings.

Description

The value conversion mode is used to display a physical value in two different formats, source and converted.

Related topics

Basics

- [Value Conversion](#) ([ControlDesk Experiment Guide](#))

References

- [Instruments](#) on page 253
- [Signals Page](#) ([ControlDesk Instrument Reference](#))
- [Value Conversion Page](#) ([ControlDesk Instrument Reference](#))
- [Value Conversion Page \(Table Editor\)](#) ([ControlDesk Instrument Reference](#))

Value Conversion Mode – Source

Access	You can access this command via:
Menu bar	None
Context menu of	Display, NumericInput, Bar, Slider, Knob, Gauge, TableEditor, Plotter instrument
Shortcut key	h (not available for the Plotter instrument)
Toolbar icon	None
	The Plotter instrument provides value conversion for each signal. Each signal is symbolized by a squared icon, representing the signal color. To get the context menu right-click these symbols.
Purpose	To use the source format for value display.
Result	The value is displayed with the source mode settings.
Description	The value conversion mode is used to display a physical value in two different formats, source and converted.
Related topics	<p>Basics</p> <ul style="list-style-type: none">• <i>Value Conversion</i> (<i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none">• <i>Instruments</i> on page 253• <i>Signals Page</i> (<i>ControlDesk Instrument Reference</i>)• <i>Value Conversion Page</i> (<i>ControlDesk Instrument Reference</i>)• <i>Value Conversion Page (Table Editor)</i> (<i>ControlDesk Instrument Reference</i>)

XYPlot Properties

Access	You can access this command via:
Menu bar	None
Context menu of	XYPlot in PlotterArray instrument
Shortcut key	None
Toolbar icon	None
Purpose	To call up the XYPlot Control Properties.
Result	The XYPlot Control Properties are displayed.
Description	With this, you can set the properties of the selected XYPlot instrument inside a PlotterArray instrument.
Related topics	<p>References</p> <ul style="list-style-type: none">• All XYPlot Properties on page 260• Instruments on page 253• XYPlot ( ControlDesk Instrument Reference)

Zoom Cursor Interval

Access	You can access this command via:
Menu bar	PlotterArray
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To zoom the space between the cursors.
Result	The instrument's display shows the enlarged region.

Related topics**References**

- [Instruments](#) on page 253
- [PlotterArray](#) (*ControlDesk Instrument Reference*)
- [Start Zoom](#) on page 311
- [Toggle Frameless View](#) on page 316
- [Zoom Undo](#) on page 322
- [Zoomed](#) on page 322

Zoom Redo

Access

You can access this command via:

Menu bar PlotterArray

Context menu of None

Shortcut key None

Toolbar icon

Purpose

To restore the most recently canceled Zoom action.

Result

The Zoom action is repeated, so that the chosen region is enlarged again.

Related topics**References**

- [Instruments](#) on page 253
- [PlotterArray](#) (*ControlDesk Instrument Reference*)
- [Start Zoom](#) on page 311
- [Zoom Cursor Interval](#) on page 320
- [Zoom Undo](#) on page 322
- [Zoomed](#) on page 322

Zoom Undo

Access	You can access this command via:
Menu bar	PlotterArray
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To cancel the most recent Zoom action
Related topics	References <ul style="list-style-type: none">• <i>Instruments</i> on page 253• <i>PlotterArray</i> ( <i>ControlDesk Instrument Reference</i>)• <i>Start Zoom</i> on page 311• <i>Toggle Frameless View</i> on page 316• <i>Zoom Cursor Interval</i> on page 320• <i>Zoomed</i> on page 322

Zoomed

Access	You can access this command via:
Menu bar	PlotterArray
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To indicate whether the zoom view is active or not and to switch off the Zoom mode.
Description	<p>The button indicates whether the display of the active instrument is zoomed or not.</p> <p>Click the button to reduce the size of the displayed region to the original size.</p>

Related topics**References**

- [Instruments](#) on page 253
- [!\[\]\(ac14b46dbac20d03d50deaaed0218359_img.jpg\) ControlDesk Instrument Reference](#)
- [Start Zoom](#) on page 311
- [Toggle Frameless View](#) on page 316
- [Zoom Cursor Interval](#) on page 320
- [Zoom Undo](#) on page 322

CAN Navigator

ControlDesk's CAN Navigator provides various commands and dialogs, which are accessible via the menu bar and the context menus of the CAN Navigator components.

Purpose	Refer to
CAN menu	
To create a new CAN bus configuration To open an existing CAN bus configuration To save a CAN bus configuration To save a CAN bus configuration under a new name To close a CAN bus configuration To add a CAN bus configuration to an experiment To remove a CAN bus configuration from an experiment To start CAN monitoring To stop CAN monitoring To synchronize all CAN monitoring to the global time of ControlDesk To start CAN replaying To stop CAN replaying	<i>Create New CAN Configuration</i> on page 336 <i>Open CAN Configuration</i> on page 345 <i>Save CAN Configuration</i> on page 354 <i>Save CAN Configuration As</i> on page 355 <i>Close CAN Configuration</i> on page 329 <i>Add to Experiment</i> on page 150 <i>Remove from Experiment</i> on page 178 <i>Start CAN Monitoring</i> on page 357 <i>Stop CAN Monitoring</i> on page 359 <i>Synchronize to Global Time</i> on page 360 <i>Start CAN Replay</i> on page 358 <i>Stop CAN Replay</i> on page 360
Root node context menu	
To configure the global settings of CAN monitoring To configure the message layout names To view the properties of CAN monitoring	<i>Configure CAN Monitoring Settings</i> on page 331 <i>Configure Layout Names</i> on page 332 <i>Properties (CAN)</i> on page 353

Purpose	Refer to
CAN controller context menu	
To activate all the filters of a CAN controller	<i>Activate All Filters</i> on page 327
To deactivate all the filters of a CAN controller	<i>Deactivate All Filters</i> on page 337
To delete all the filters of a CAN controller	<i>Delete All Filters</i> on page 338
To monitor the CAN messages of a CAN controller unfiltered.	<i>Open Unfiltered CAN Monitor</i> on page 352
To specify the settings for CAN replaying.	<i>Open CAN Replay</i> on page 346
To create a filter for CAN monitoring	<i>Create CAN Monitor Filter</i> on page 333
To show all the messages of a CAN controller	<i>Show All Messages</i> on page 356
To show only TX messages	<i>Show Only TX Messages</i> on page 357
To show only RX messages	<i>Show Only RX Messages</i> on page 356
Database context menu	
To create a TX status layout for specifying the enable options of all the TX and TX/RX messages of a CAN controller's database	<i>TX Status Layout</i> on page 361
To activate a database	<i>Activate Database</i> on page 327
Message context menu	
To open the layout of an RX message	<i>Open RX Layout</i> on page 350
To close the layout of an RX message	<i>Close RX Layout</i> on page 330
To open the layout of a TX message	<i>Open TX Layout</i> on page 351
To close the layout of a TX message	<i>Close TX Layout</i> on page 330
To view the general properties of the selected message	<i>Properties (Message)</i> on page 353
Filter context menu	
To edit the selected filter	<i>Edit Filter</i> on page 338
To delete the selected filter	<i>Delete Filter</i> on page 338
To monitor CAN messages of a CAN controller filtered with a selected filter.	<i>Open Filtered CAN Monitor</i> on page 347
To activate the selected filter	<i>Activate Filter</i> on page 328
To deactivate the selected filter	<i>Deactivate Filter</i> on page 337
CAN monitoring context menu	
To view the latest instances of messages	<i>Static View</i> on page 358
To view all instances of the messages in the list sorted in order of appearance	<i>Normal Sorting</i> on page 343
To view all instances of the messages in the list sorted hierarchically by the message ID	<i>Hierarchical Sorting – By Message ID</i> on page 340
To view all instances of the messages in the list sorted hierarchically by time	<i>Hierarchical Sorting – By Time</i> on page 341
To open an existing CAN monitoring list	<i>Load</i> on page 342
To save the current CAN monitoring list	<i>Save</i> on page 354

Activate All Filters

Access	You can access this command via:	
Menu bar	None	
Context menu of	CAN controller nodes in the CAN Navigator tree	
Shortcut key	None	
Toolbar icon	None	
Purpose	To activate all filters of a CAN controller.	

Activate Database

Access	You can access this command via:	
Menu bar	None	
Context menu of	Database nodes in the CAN Navigator tree	
Shortcut key	None	
Toolbar icon	None	
Purpose	To activate a database of a CAN controller.	
Description	<p>A database is part of a controller and contains message configurations.</p> <p>A CAN controller can contain different databases but only one is active at a time. You can switch to another database by activating it.</p>	

Activate Filter

Access	You can access this command via:
Menu bar	None
Context menu of	<ul style="list-style-type: none">■ Filter nodes in the CAN Navigator tree■ CAN controller nodes in the CAN Navigator tree – Create CAN Monitor Filter
Shortcut key	None
Toolbar icon	None
Purpose	To activate the selected filter.
Related topics	HowTos <ul style="list-style-type: none">• <i>How to Specify a Filter for CAN Monitoring</i> ( ControlDesk Experiment Guide)

Close All RX Layouts

Access	You can access this command via:
Menu bar	None
Context menu of	A multiple selection of RX and TX/RX message nodes in the CAN Navigator tree
Shortcut key	None
Toolbar icon	None
Purpose	To close the layouts of several RX messages in one go.
Result	The message layouts of all the selected RX messages are closed.
Related topics	Basics <ul style="list-style-type: none">• <i>How to Create a Message Layout</i> ( ControlDesk Experiment Guide) References <ul style="list-style-type: none">• <i>Close RX Layout</i> on page 330• <i>Open All RX Layouts</i> on page 343

Close All TX Layouts

Access	You can access this command via:	
Menu bar	None	
Context menu of	A multiple selection of TX and TX/RX message nodes in the CAN Navigator tree	
Shortcut key	None	
Toolbar icon	None	
Purpose	To close the layouts of several TX messages in one go.	
Result	The message layouts of all the selected TX messages are closed.	
Related topics	Basics <ul style="list-style-type: none"> • How to Create a Message Layout ( ControlDesk Experiment Guide) References <ul style="list-style-type: none"> • Close TX Layout on page 330 	

Close CAN Configuration

Access	You can access this command via:	
Menu bar	CAN	
Context menu of	None	
Shortcut key	None	
Toolbar icon		
Purpose	To close the current CAN bus configuration.	
Result	The CAN bus configuration is closed including all the layouts of messages. The CAN Navigator tree is cleared.	
Description	If the CAN bus configuration was changed since the last Save operation, you are asked whether you want to save the changes.	

Close RX Layout

Access	You can access this command via:	
Menu bar	None	
Context menu of	RX and TX/RX message nodes in the CAN Navigator tree	
Shortcut key	None	
Toolbar icon	None	
Purpose	To close the layout of an RX message.	
Related topics	References <ul style="list-style-type: none">• Close All RX Layouts on page 328• Open RX Layout on page 350	

Close TX Layout

Access	You can access this command via:	
Menu bar	None	
Context menu of	TX and TX/RX message nodes in the CAN Navigator tree	
Shortcut key	None	
Toolbar icon	None	
Purpose	To close the layout of a TX message.	
Related topics	References <ul style="list-style-type: none">• Close All TX Layouts on page 329• Open TX Layout on page 351	

Configure CAN Monitoring Settings

Access	You can access this command via:
Menu bar	None
Context menu of	Root node in the CAN Navigator tree
Shortcut key	None
Toolbar icon	None
Purpose	To configure the global settings of CAN monitoring.
Result	The Global CAN Monitoring dialog opens for you to configure the global settings of CAN monitoring.
Global CAN Monitoring dialog	<p>Synchronize to global time Indicates whether all CAN monitoring is set to the global time of ControlDesk. If synchronization to global time is enabled, you can start or stop CAN monitoring only via the Animation mode of ControlDesk. Starting or stopping CAN monitoring via the CAN menu and the toolbar is disabled.</p> <p>Start CAN replay when monitoring starts Indicates whether the CAN replay starts automatically when CAN monitoring starts.</p> <p>Ring buffer type Lets you specify the ring buffer type:</p> <ul style="list-style-type: none">■ Time buffer: The buffer size is measured in time.■ Record size buffer: The buffer size is measured in message numbers. <p>Specify at least 200 messages.</p> <p>The ring buffer specifies the buffer size allocated on the real-time platform to buffer the captured messages until they are read by the host DAQ component.</p> <p>If the real-time application runs too fast and the host cannot read all the captured messages, a buffer overflow occurs and monitoring stops. You must then specify a larger buffer or change the sampling rate of the model.</p>

Buffer value Lets you specify the size of the ring buffer according to the buffer type.

Buffer Type	Buffer Value
Time buffer	Milliseconds
Record size buffer	Number of messages

Related topics

HowTos

- *How to Specify the Global Settings for CAN Monitoring* ( ControlDesk Experiment Guide)

Configure Layout Names

Access

You can access this command via:

Menu bar	None
Context menu of	Root node in the CAN Navigator tree
Shortcut key	None
Toolbar icon	None

Purpose

To configure the names of message layouts.

Result

The Configure Layout Names dialog opens for you to configure the names of RX and TX message layouts.

Configure Layout Names dialog

TX/RX Macro Indicates whether the predefined macros can be used to specify the TX/RX macro.

The edit field lets you specify the TX/RX macro for naming the TX/RX layouts to be generated. A TX/RX macro can contain typed text and/or predefined macros which can be selected from the **Select frame**. The name must contain at least the %MsgName or %MsgID macro to ensure the generated layout names are unique.

If TX/RX macro is disabled, you cannot use the predefined macros to specify the TX/RX macro name.



When saving the layout, ControlDesk limits the layout names to 31 characters. If the specified layout name is too long, ControlDesk cuts it to 31 characters. This can make it difficult to identify the generated layouts.

Reset Lets you reset the names in the edit fields to the default names generated by the CAN Navigator.

Select frame Lets you select one or more of the following macros to specify the layout names:

- %Controller
- %CAN
- %ECU
- %MsgName
- %MsgID

Related topics

HowTos

- *How to Configure Message Layout Names* (*ControlDesk Experiment Guide*)

Create CAN Monitor Filter

Access

You can access this command via:

Menu bar	None
Context menu of	CAN controller nodes in the CAN Navigator tree
Shortcut key	None
Toolbar icon	None

Purpose

To create a filter for CAN monitoring.

Result

The Create Monitor Filter dialog opens for you to specify the settings of a CAN monitoring filter.

Tabbed pages

The dialog contains the following pages.

Page	Purpose
Filter Settings page	To specify the settings of a filter.
CAN Logging page	To specify the CAN logging options of a filter.

Filter Settings page

Lets you specify the settings for a filter.

Filter name Lets you specify a name for the filter.

Name Displays the name of the message or node the filter is based on.

Identifier Displays the message ID if the filter item is based on a message. Blank otherwise.

Type Displays the filter item type as message, node, or range.

Direction Lets you specify the direction of the filter item. The possible directions are RX, TX, or RX/TX.

Filter type Lets you specify the filter type. The possible types are pass or block.

Delete Lets you delete the selected filter item from the list.

Up Lets you move the selected filter item up the list.

Down Lets you move the selected filter item down the list.

Activate filter Activates the filter.

Deactivate filter Deactivates the filter.

CAN Logging page

Lets you specify the settings for logging CAN messages.

Log file Lets you specify the log file to save incoming messages to. You can click the Browse button to select the file.

Duration Lets you specify how long messages are logged.

Continuous logging Indicates whether messages are logged continuously. If continuous logging is selected, Duration is disabled.

Activate logging Indicates whether logging is activated.

Overwrite Indicates whether the existing log file is replaced by a new one.

Append Indicates whether the logged messages are appended to the existing log file.

Related topics

HowTos

- How to Specify a Filter for CAN Monitoring ( ControlDesk Experiment Guide)

Create Monitor Filter Dialog

Access This dialog opens when you invoke one of the following commands:

- Create CAN Monitor Filter
- Edit Filter

Purpose To create or configure a filter for CAN monitoring.

Tabbed pages The dialog contains the following pages.

Page	Purpose
Filter Settings page	To specify the settings of a filter.
CAN Logging page	To specify the CAN logging options of a filter.

Filter Settings page Lets you specify the settings for a filter.

Filter name Lets you specify a name for the filter.

Name Displays the name of the message or node the filter is based on.

Identifier Displays the message ID if the filter item is based on a message. Blank otherwise.

Type Displays the filter item type as message, node, or range.

Direction Lets you specify the direction of the filter item. The possible directions are RX, TX, or RX/TX.

Filter type Lets you specify the filter type. The possible types are pass or block.

Delete Lets you delete the selected filter item from the list.

Up Lets you move the selected filter item up the list.

Down Lets you move the selected filter item down the list.

Activate filter Activates the filter.

Deactivate filter Deactivates the filter.

CAN Logging page	Lets you specify the settings for logging CAN messages.
Log file	Lets you specify the log file to save incoming messages to. You can click the Browse button to select the file.
Duration	Lets you specify how long messages are logged.
Continuous logging	Indicates whether messages are logged continuously. If continuous logging is selected, Duration is disabled.
Activate logging	Indicates whether logging is activated.
Overwrite	Indicates whether the existing log file is replaced by a new one.
Append	Indicates whether the logged messages are appended to the existing log file.

Related topics

HowTos

- *How to Specify a Filter for CAN Monitoring* ( ControlDesk Experiment Guide)

Create New CAN Configuration

Access	You can access this command via:
Menu bar	CAN
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To create a new CAN bus configuration.
Result	The new CAN bus configuration is loaded and contains all the CAN controllers, databases, and messages that belong to the real-time application the CAN bus configuration is based on. The CAN bus configuration is displayed in the CAN Navigator tree.
Create New CAN Configuration dialog	<p>Location of SDF File Lets you specify the path of the SDF file you want to use for the CAN bus configuration.</p> <p>You can click the Browse button to select the desired SDF file via the standard Open dialog.</p>

Platform Lets you specify the hardware platform you want to use.

You can click the Browse button to select the desired platform via the Select Platform dialog. Refer to *Select Platform Dialog* on page 355.

Related topics
Basics

- *How to Create a CAN Bus Configuration* ( *ControlDesk Experiment Guide*)

Deactivate All Filters

Access

You can access this command via:

Menu bar	None
Context menu of	CAN controller nodes in the CAN Navigator tree
Shortcut key	None
Toolbar icon	None

Purpose

To deactivate all the filters of a CAN controller.

Deactivate Filter

Access

You can access this command via:

Menu bar	None
Context menu of	<ul style="list-style-type: none"> ■ Filter nodes in the CAN Navigator tree ■ CAN controller nodes in the CAN Navigator tree – Create CAN Monitor Filter
Shortcut key	None
Toolbar icon	None

Purpose

To deactivate the selected filter.

Related topics
HowTos

- *How to Specify a Filter for CAN Monitoring* ( *ControlDesk Experiment Guide*)

Delete All Filters

Access	You can access this command via:	
Menu bar	None	
Context menu of	CAN controller nodes in the CAN Navigator tree	
Shortcut key	None	
Toolbar icon	None	
Purpose	To delete all the filters of a CAN controller.	

Delete Filter

Access	You can access this command via:	
Menu bar	None	
Context menu of	Filter nodes in the CAN Navigator tree	
Shortcut key	None	
Toolbar icon	None	
Purpose	To delete the selected filter.	

Edit Filter

Access	You can access this command via:	
Menu bar	None	
Context menu of	Filter nodes in the CAN Navigator tree	
Shortcut key	None	
Toolbar icon	None	
Purpose	To configure the selected filter.	

Result	The Create Monitor Filter dialog opens for you to configure the settings of a CAN monitoring filter.						
Tabbed pages	The dialog contains the following pages.						
	<table border="1"> <thead> <tr> <th>Page</th><th>Purpose</th></tr> </thead> <tbody> <tr> <td>Filter Settings page</td><td>To specify the settings of a filter.</td></tr> <tr> <td>CAN Logging page</td><td>To specify the CAN logging options of a filter.</td></tr> </tbody> </table>	Page	Purpose	Filter Settings page	To specify the settings of a filter.	CAN Logging page	To specify the CAN logging options of a filter.
Page	Purpose						
Filter Settings page	To specify the settings of a filter.						
CAN Logging page	To specify the CAN logging options of a filter.						
Filter Settings page	<p>Lets you specify the settings for a filter.</p> <p>Filter name Lets you specify a name for the filter.</p> <p>Name Displays the name of the message or node the filter is based on.</p> <p>Identifier Displays the message ID if the filter item is based on a message. Blank otherwise.</p> <p>Type Displays the filter item type as message, node, or range.</p> <p>Direction Lets you specify the direction of the filter item. The possible directions are RX, TX, or RX/TX.</p> <p>Filter type Lets you specify the filter type. The possible types are pass or block.</p> <p>Delete Lets you delete the selected filter item from the list.</p> <p>Up Lets you move the selected filter item up the list.</p> <p>Down Lets you move the selected filter item down the list.</p> <p>Activate filter Activates the filter.</p> <p>Deactivate filter Deactivates the filter.</p>						
CAN Logging page	<p>Lets you specify the settings for logging CAN messages.</p> <p>Log file Lets you specify the log file to save incoming messages to. You can click the Browse button to select the file.</p> <p>Duration Lets you specify how long messages are logged.</p> <p>Continuous logging Indicates whether messages are logged continuously. If continuous logging is selected, Duration is disabled.</p> <p>Activate logging Indicates whether logging is activated.</p> <p>Overwrite Indicates whether the existing log file is replaced by a new one.</p>						

Append Indicates whether the logged messages are appended to the existing log file.

Related topics

HowTos

- *How to Log Raw Data of CAN Messages* (*ControlDesk Experiment Guide*)
- *How to Specify a Filter for CAN Monitoring* (*ControlDesk Experiment Guide*)

Hierarchical Sorting – By Message ID

Access

You can access this command via:

Menu bar	None
Context menu of	CAN monitoring list – Floating View
Shortcut key	None
Toolbar icon	None

Purpose

To view all instances of the messages in the list sorted hierarchically by the message ID.

Description

Hierarchical sorting is available only in floating view mode. The CAN monitoring list is then displayed in a tree view. Every new instance of a message is added to the list in a new row. Hierarchical sorting by the message ID sorts the message instances according to their IDs.

Related topics

HowTos

- *How to Monitor Data of All CAN Messages* (*ControlDesk Experiment Guide*)
- *How to Monitor Data of Filtered CAN Messages* (*ControlDesk Experiment Guide*)

References

- *Hierarchical Sorting – By Time* on page 341
- *Normal Sorting* on page 343

Hierarchical Sorting – By Time

Access	You can access this command via:
Menu bar	None
Context menu of	CAN monitoring list – Floating View
Shortcut key	None
Toolbar icon	None
Purpose	To view all instances of the messages in the list sorted hierarchically by time.
Description	Hierarchical sorting is available only in floating view mode. The CAN monitoring list is then displayed in a tree view. Every new instance of a message is added to the list in a new row. Hierarchical sorting by time sorts the message instances according to the time when they were received.
Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Monitor Data of All CAN Messages</i> ( ControlDesk Experiment Guide) • <i>How to Monitor Data of Filtered CAN Messages</i> ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none"> • <i>Hierarchical Sorting – By Message ID</i> on page 340 • <i>Normal Sorting</i> on page 343

Kickout

Command	Kickout
Access	Located in the TX message layout if it is specified in the RTICANMM configuration of the real-time model.
Purpose	To transmit a TX message via kickout.

Description	<p>Kickout lets you transmit the message immediately. However, message transmission via kickout also depends on the priority of the message identifier: If there are other messages to be transmitted with a higher priority, they are transmitted before the kickout.</p> <p>If you trigger a kickout for a message, it is transmitted once. After each message kickout, the corresponding TRC file entry is automatically reset so that you can immediately trigger the next message kickout.</p>
Related topics	<p>Basics</p> <ul style="list-style-type: none">• <i>How to Kick Out a TX Message</i> ( <i>ControlDesk Experiment Guide</i>)

Load

Access	You can access this command via:
Menu bar	None
Context menu of	CAN monitoring list
Shortcut key	None
Toolbar icon	None
Purpose	To open an existing CAN logging file in a CAN monitoring list.
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• <i>How to Monitor Data of All CAN Messages</i> ( <i>ControlDesk Experiment Guide</i>)• <i>How to Monitor Data of Filtered CAN Messages</i> ( <i>ControlDesk Experiment Guide</i>)

Normal Sorting

Access	You can access this command via:
Menu bar	None
Context menu of	CAN monitoring list – Floating View
Shortcut key	None
Toolbar icon	None
Purpose	To view all instances of the messages in the list sorted by a list header.
Description	Normal sorting is available only in floating view mode. Every new instance of a message is added to the CAN monitoring list in a new row. You can sort the message instances by the list headers, for example, ID, time, or name.
Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • How to Monitor Data of All CAN Messages ( ControlDesk Experiment Guide) • How to Monitor Data of Filtered CAN Messages ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none"> • Hierarchical Sorting – By Message ID on page 340 • Hierarchical Sorting – By Time on page 341

Open All RX Layouts

Access	You can access this command via:
Menu bar	None
Context menu of	A multiple selection of RX and TX/RX message nodes in the CAN Navigator tree
Shortcut key	None
Toolbar icon	None
Purpose	To open the layouts of several RX messages in one go.
Result	One RX message layout for each RX message opens.

Description	The CAN Navigator creates the message layouts based on the ControlDesk standard layout. The layouts display information on the RX messages and their signals.
	 If no hardware platform is connected, you cannot switch into Animation mode.

Related topics	Basics <ul style="list-style-type: none"> • Animation Mode ( ControlDesk Experiment Guide) • How to Create a Message Layout ( ControlDesk Experiment Guide) References <ul style="list-style-type: none"> • Close All RX Layouts on page 328 • Open RX Layout on page 350
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Open All TX Layouts

Access	You can access this command via:
Menu bar	None
Context menu of	A multiple selection of TX and TX/RX message nodes in the CAN Navigator tree
Shortcut key	None
Toolbar icon	None
Purpose	To open the layouts of several TX messages in one go.
Result	One TX message layout for each TX message opens.
Description	<p>The CAN Navigator creates the message layouts based on the ControlDesk standard layout.</p> <p>The layouts display information on the messages and their signals and let you select options and specify values.</p> <p>The data source for the message layouts depends on the operation mode:</p> <ul style="list-style-type: none"> ■ In Edit mode, the CAN Navigator loads initial data from the SDF file.

- In Animation mode, the CAN Navigator loads data from the real-time application running on the hardware platform.
You can configure message data during run time.



If no hardware platform is connected, you cannot switch into Animation mode.

Related topics

Basics

- [Animation Mode](#) ([ControlDesk Experiment Guide](#))
- [How to Create a Message Layout](#) ([ControlDesk Experiment Guide](#))

References

- [Close All TX Layouts](#) on page 329
- [Open TX Layout](#) on page 351

Open CAN Configuration

Access

You can access this command via:

Menu bar CAN

Context menu of None

Shortcut key None

Toolbar icon 

Purpose

To open a CAN bus configuration.

Result

The CAN bus configuration is loaded and contains all the CAN controllers, databases, and messages that belong to the real-time application the CAN bus configuration is based on. The CAN bus configuration is displayed in the CAN Navigator tree.

Open CAN Configuration dialog

Location of CAN Configuration File Lets you specify the path of the CAN configuration file you want to open.

You can click the Browse button to select the desired CAN configuration file via the standard Open dialog.

Platform Lets you specify the hardware platform you want to use.

You can click the Browse button to select the desired platform via the Select Platform dialog. Refer to *Select Platform Dialog* on page 355.

Open CAN Replay

Access	You can access this command via:
Menu bar	None
Context menu of	Controller nodes in the CAN Navigator tree
Shortcut key	None
Toolbar icon	None
Purpose	To specify the settings for replaying a logged CAN bus communication.
CAN Replay Settings dialog	Log file Lets you select the log file you want to replay. Alternatively, you can type the path in the edit field. Interval Lets you specify how many seconds the log file is replayed for. AutoRepeat Lets you select whether the CAN replay is repeated continuously. Passes Lets you select whether the CAN replay is repeated in passes and specify how often the replay is passed. Stop event Lets you select whether the repeating of the CAN replay is controlled by a stop event and specify it. Level (Stop event) Lets you specify the threshold for the stop event. Activate Indicates whether CAN replaying is activated. Disable CAN communication Indicates whether CAN communication is disabled.
Related topics	HowTos <ul style="list-style-type: none">• How to Replay a Logged CAN Bus Communication ( ControlDesk Experiment Guide) References <ul style="list-style-type: none">• Start CAN Replay on page 358• Stop CAN Replay on page 360

Open Filtered CAN Monitor

Access	You can access this command via:
Menu bar	None
Context menu of	<ul style="list-style-type: none"> ■ Root node in the CAN Navigator tree ■ Filter nodes in the CAN Navigator tree
Shortcut key	None
Toolbar icon	None
Purpose	To monitor CAN messages of the root node or a CAN controller filtered with a selected filter.
Result	The CAN monitoring list opens and displays the message instances filtered with the selected filter.
CAN monitoring list	<p>ID Specifies the message ID.</p> <p>DeltaTime Specifies the difference between the reception time of the current message instance and the reception time of the previous message instance.</p> <p>Time Specifies the time when the message instance was received.</p> <p>Name Specifies the message name.</p> <p>Dir Specifies the message direction (TX or RX).</p> <p>DLC Specifies the data length of the message instance.</p> <p>Data Specifies the raw data of the message instance.</p> <p>Controller Specifies the controller for which the message instance was filtered.</p> <p>This column is only displayed in a CAN monitoring list if the filter is specified at the root node.</p>
Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Monitor Data of Filtered CAN Messages</i> ( ControlDesk Experiment Guide) • <i>How to Specify a Filter for CAN Monitoring</i> ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none"> • <i>Start CAN Monitoring</i> on page 357 • <i>Stop CAN Monitoring</i> on page 359

Open Gateway Layout

Access	You can access this command via:
Menu bar	None
Context menu of	Gateway nodes in the CAN Navigator tree
Shortcut key	None
Toolbar icon	None
Purpose	To open the layout of a gateway.
Result	The gateway layout opens.
Description	<p>The CAN Navigator creates a message layout based on the ControlDesk standard layout.</p> <p>The layout displays information on the gateway and the gatewayed messages.</p> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;">  If no hardware platform is connected, you cannot switch into Animation mode. </div>
Basic message filter layout	<p>Displays the message name and hit counter. The hit counter counts the number of message transmissions for which the message is excluded from gatewaying.</p> <p>Filter enable checkbox Indicates whether the filter is excluded from gatewaying via the RTICANMMM Gateway block.</p> <p>CAN ID textbox Displays the CAN ID of the message filter.</p> <p>ID mask textbox Displays the mask of the message filter.</p> <p>The tags in the CANCFG file corresponding to the message properties have short-name attributes with the following values:</p> <ul style="list-style-type: none"> ■ enable ■ id ■ mask ■ hits

J1939 message filter layout	Displays the message name and hit counter. The hit counter counts the number of message transmissions for which the message is excluded from gatewaying.
Filter enable checkbox	Indicates whether the filter is excluded from gatewaying via the RTICANMM Gateway block.
CAN ID textbox	Displays the CAN ID of the message filter.
ID mask textbox	Displays the mask of the message filter.
J1939 priority drop-down list	Specifies the priority of the J1939 message. You can specify priority values in the range from 0 to 7.
J1939 source drop-down list	Specifies the source node of the J1939 message.
J1939 destination drop-down list	Specifies the destination node of the J1939 message.
The tags in the CANCFG file corresponding to the message properties have short-name attributes with the following values:	
<ul style="list-style-type: none">■ enable■ id■ mask■ hits■ prio■ src	

Related topics

Basics

- *Animation Mode* ( [ControlDesk Experiment Guide](#))
- *How to Create a Gateway Layout* ( [ControlDesk Experiment Guide](#))

References

- *J1939 Filter Page (RTICANMM Gateway)* ( [RTI CAN MultiMessage Reference](#))

Open RX Layout

Access	You can access this command via:
Menu bar	None
Context menu of	RX and TX/RX message nodes in the CAN Navigator tree
Shortcut key	None
Toolbar icon	None
Purpose	To open the layout of an RX message.
Result	The RX message layout opens.
Description	<p>The CAN Navigator creates a message layout based on the ControlDesk standard layout.</p> <p>The layout displays information on the RX message and its signals.</p> <div style="border: 1px solid #ccc; padding: 10px; margin-top: 10px;"> If no hardware platform is connected, you cannot switch into Animation mode. Refer to <i>Animation Mode</i> ( <i>ControlDesk Experiment Guide</i>).</div> <div style="border: 1px solid #ccc; padding: 10px; margin-top: 10px;"> You can open several RX layouts in one go. Refer to <i>Open All RX Layouts</i> on page 343.</div>
Related topics	<p>Basics</p> <ul style="list-style-type: none">• <i>How to Create a Message Layout</i> ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none">• <i>Close RX Layout</i> on page 330• <i>Open All RX Layouts</i> on page 343

Open TX Layout

Access	You can access this command via:
Menu bar	None
Context menu of	TX and TX/RX message nodes in the CAN Navigator tree
Shortcut key	None
Toolbar icon	None
Purpose	To open the layout of a TX message.
Result	The TX message layout opens.
Description	<p>The CAN Navigator creates a message layout based on the ControlDesk standard layout.</p> <p>The layout displays information on the message and its signals and lets you select options and specify values.</p> <p>The data source for the message layout depends on the operation mode:</p> <ul style="list-style-type: none">■ In Edit mode, the CAN Navigator loads initial data from the SDF file.■ In Animation mode, the CAN Navigator loads data from the real-time application running on the hardware platform. <p>You can configure message data during run time.</p> <div style="border: 1px solid #ccc; padding: 10px; margin-top: 10px;"> If no hardware platform is connected, you cannot switch into Animation mode. Refer to <i>Animation Mode</i> ( <i>ControlDesk Experiment Guide</i>).</div> <div style="border: 1px solid #ccc; padding: 10px; margin-top: 10px;"> You can open several TX layouts in one go. Refer to <i>Open All TX Layouts</i> on page 344.</div>
Related topics	<p>Basics</p> <ul style="list-style-type: none">• <i>How to Configure a TX Message</i> ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none">• <i>Close TX Layout</i> on page 330

Open Unfiltered CAN Monitor

Access	You can access this command via:
Menu bar	None
Context menu of	CAN controller nodes in the CAN Navigator tree
Shortcut key	None
Toolbar icon	None
Purpose	To monitor CAN messages of a CAN controller unfiltered.
Result	The CAN monitoring list opens and displays all message instances unfiltered.
CAN monitoring list	ID Specifies the message ID. DeltaTime Specifies the difference between the reception time of the current message instance and the reception time of the previous message instance. Time Specifies the time when the message instance was received. Name Specifies the message name. Dir Specifies the message direction (TX or RX). DLC Specifies the data length of the message instance. Data Specifies the raw data of the message instance. Controller Specifies the controller for which the message instance was filtered. This column is only displayed in a CAN monitoring list if the filter is specified at the root node.
Related topics	HowTos <ul style="list-style-type: none">• How to Monitor Data of All CAN Messages ( ControlDesk Experiment Guide) References <ul style="list-style-type: none">• Start CAN Monitoring on page 357• Stop CAN Monitoring on page 359

Properties (CAN)

Access	You can access this dialog via:
Menu bar	None
Context menu of	Root node in the CAN Navigator tree
Shortcut key	None
Toolbar icon	None
Purpose	To specify the general properties of the CAN bus configuration.
CAN Properties dialog	<p>Author Lets you specify the author responsible for the CAN bus configuration.</p> <p>Description Lets you specify a description of the CAN bus configuration.</p>

Properties (Message)

Access	You can access this dialog via:
Menu bar	None
Context menu of	Messages nodes in the CAN Navigator tree
Shortcut key	None
Toolbar icon	None
Purpose	To view the general properties of the selected message.
Dialog settings	<p>CAN ID Displays the message's identification code.</p> <p>Configuration Displays the message's model-implemented type. Model-implemented messages are configured in a real-time model as RX, TX, or TX/RX messages. You cannot configure them with the CAN Navigator.</p> <p>Source DBC File Displays the name of the DBC file which defines the message layout. The DBC file is referenced in the RTICANMM Main Block.</p>

Read Only Indicates the read-only status of a message if checked.
Model-implemented messages are always read-only.

Save

Access	You can access this command via:
Menu bar	None
Context menu of	CAN monitoring list
Shortcut key	None
Toolbar icon	None
Purpose	To save the current CAN monitoring list to a CSV file which you can use for postprocessing.
Related topics	HowTos <ul style="list-style-type: none">• How to Monitor Data of All CAN Messages ( ControlDesk Experiment Guide)• How to Monitor Data of Filtered CAN Messages ( ControlDesk Experiment Guide)

Save CAN Configuration

Access	You can access this command via:
Menu bar	CAN
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To save the current CAN bus configuration.
Description	When a CAN bus configuration is saved for the first time, the Save dialog opens. You must enter a path and file name.

Save CAN Configuration As

Access	You can access this command via:
Menu bar	CAN
Context menu of	None
Shortcut key	None
Toolbar icon	None
Purpose	To save the current CAN bus configuration under a new file name.
Result	The Save CAN Configuration As dialog opens for you to save the current CAN bus configuration under the new name in the selected folder.
Dialog settings	<p>Save in Lets you select the path and folder to which the bus configuration should be saved.</p> <p>File name Displays the name of the selected file.</p> <p>Save as type CAN bus configurations can only be saved as XML files.</p>

Select Platform Dialog

Access	You can access this dialog via the following commands:
	<ul style="list-style-type: none"> ■ Create New CAN Configuration ■ Open CAN Configuration
Description	Lets you select the hardware platform you want to use.
	<p>Available Platforms Displays a list of available hardware platforms.</p>
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • <i>How to Create a CAN Bus Configuration</i> ( ControlDesk Experiment Guide)

Show All Messages

Access	You can access this command via:	
Menu bar	None	
Context menu of	CAN controller nodes in the CAN Navigator tree	
Shortcut key	None	
Toolbar icon	None	
Purpose	To deactivate all filters and show all the messages of a CAN controller in the CAN Navigator tree.	
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• How to Monitor Data of All CAN Messages ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• Show Only RX Messages on page 356• Show Only TX Messages on page 357	

Show Only RX Messages

Access	You can access this command via:	
Menu bar	None	
Context menu of	CAN controller nodes in the CAN Navigator tree	
Shortcut key	None	
Toolbar icon	None	
Purpose	To filter the CAN Navigator tree and show only the RX messages of a CAN controller.	
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• How to Monitor Data of Filtered CAN Messages ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• Show All Messages on page 356• Show Only TX Messages on page 357	

Show Only TX Messages

Access	You can access this command via:
Menu bar	None
Context menu of	Database nodes in the CAN Navigator tree
Shortcut key	None
Toolbar icon	None
Purpose	To filter the CAN Navigator tree and show only the TX messages of a CAN controller.
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• How to Monitor Data of Filtered CAN Messages ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• Show All Messages on page 356• Show Only RX Messages on page 356

Start CAN Monitoring

Access	You can access this command via:
Menu bar	CAN
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To start CAN monitoring.
Result	CAN monitoring starts according to the settings in the Global CAN Monitoring dialog dialog.

Related topics

HowTos

- How to Monitor Data of All CAN Messages ( ControlDesk Experiment Guide)
- How to Monitor Data of Filtered CAN Messages ( ControlDesk Experiment Guide)
- How to Specify the Global Settings for CAN Monitoring ( ControlDesk Experiment Guide)

Start CAN Replay

Access

You can access this command via:

Menu bar	CAN
Context menu of	None
Shortcut key	None
Toolbar icon	

Purpose

To start the replay of the raw data of selected CAN messages of a CAN controller logged during CAN monitoring.

Result

ControlDesk starts replaying the specified log file.

Related topics

HowTos

- How to Replay a Logged CAN Bus Communication ( ControlDesk Experiment Guide)

References

- Open CAN Replay on page 346
- Stop CAN Replay on page 360

Static View

Access

You can access this command via:

Menu bar	None
Context menu of	CAN monitoring list
Shortcut key	None
Toolbar icon	None

Purpose	To view only the latest instances of the messages in the list.
Description	In static view mode, the CAN monitoring list displays one row per message, and the row is updated with the latest received data.
Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Monitor Data of All CAN Messages</i> ( ControlDesk Experiment Guide) • <i>How to Monitor Data of Filtered CAN Messages</i> ( ControlDesk Experiment Guide)

Stop CAN Monitoring

Access	You can access this command via:
Menu bar	CAN
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To stop CAN monitoring.
Result	CAN monitoring stops on all CAN controllers.
Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Monitor Data of All CAN Messages</i> ( ControlDesk Experiment Guide) • <i>How to Monitor Data of Filtered CAN Messages</i> ( ControlDesk Experiment Guide) • <i>How to Specify the Global Settings for CAN Monitoring</i> ( ControlDesk Experiment Guide)

Stop CAN Replay

Access	You can access this command via:
Menu bar	CAN
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To stop the replay of the raw data of selected CAN messages of a CAN controller logged during CAN monitoring.
Result	ControlDesk stops replaying the specified log file.
Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • How to Replay a Logged CAN Bus Communication ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none"> • Open CAN Replay on page 346 • Start CAN Replay on page 358

Synchronize to Global Time

Access	You can access this command via:
Menu bar	CAN
Context menu of	Root node in the CAN Navigator tree – Configure CAN Monitoring Settings
Shortcut key	None
Toolbar icon	None
Purpose	To synchronize all CAN monitoring to the global time of ControlDesk.
Description	If synchronization to global time is enabled, you can start or stop CAN monitoring only via the Animation mode of ControlDesk. Start CAN monitoring and Stop CAN monitoring in the CAN menu and the toolbar are disabled.

TX Status Layout

Access	You can access this command via:	
Menu bar	None	
Context menu of	Database nodes in the CAN Navigator tree	
Shortcut key	None	
Toolbar icon	None	
Purpose	To create a TX status layout for specifying the enable options of all the TX and TX/RX messages of a CAN controller's database.	
Result	The TX status layout of the database opens.	
Description	The TX status layout of a CAN controller's database lets you select if transmission is enabled at all and which TX and TX/RX messages you want to enable for transmission.	
Related topics	<p>Basics</p> <ul style="list-style-type: none">• <i>How to Specify the Transmission Status</i> ( ControlDesk Experiment Guide)	

Parameter Editor, Variable Browser and Reference Data Manager

ControlDesk's menu bar and the context menus of the various Parameter Editor, Variable Browser and Reference Data Manager components provide access to the following Parameter Editor, Variable Browser and Reference Data Manager commands and dialogs:

Purpose	Refer to	Avail. in OpMode
File menu		
To open a system description file.	<i>Open Variable File</i> on page 404	no
To load a reference group (MAT, CSV, or IDF file).	<i>Load Reference Group</i> on page 400	no
To save the active reference group as a MAT or CSV file.	<i>Save Reference Group</i> on page 417	no
To save a newly created reference group as a MAT or CSV file, or to save a reference group under a new name.	<i>Save Reference Group As</i> on page 418	yes
View menu		
To switch the Variable Browser to the text/graphic view.	<i>Text</i> on page 424 <i>Graphic</i> on page 398	yes
To switch from the Parameter Editor to the Variable Browser.	<i>Show Variable Browser</i> on page 422	yes
To switch from the Variable Browser to the Parameter Editor.	<i>Show Parameter Editor</i> on page 421	yes
To show/hide the Reference Data Manager.	<i>Show Reference Data Manager</i> on page 421	yes
Tools menu		
To convert an IDF file to a MAT or CSV file.	<i>Convert IDF File</i> on page 375	no
To convert a BIN file to a MAT or CSV file.	<i>Convert BIN File</i> on page 374	no

Purpose	Refer to	Avail. in OpMode
Parameter Editor menu		
To generate a parameter file.	<i>Generate PAR File</i> on page 395	no
To generate a parameter file for a handcoded variable description file.	<i>Generate PAR File Handcoded</i> on page 396	no
To save the currently active parameter file.	<i>Save PAR File</i> on page 415	no
To save the currently active parameter file under a new name.	<i>Save PAR File As</i> on page 416	yes
To edit the header information of a parameter file.	<i>Edit Header Info</i> on page 383	yes
To remove selected parameters from the Showlist.	<i>Remove Parameters</i> on page 413	yes
To write the parameters to the platform straight after editing.	<i>Write Parameter</i> on page 429	yes
To write all parameters to the platform.	<i>Write All Parameters Now</i> on page 428	yes
To continuously read the Showlist parameters from the platform.	<i>Automatic Update Parameters</i> on page 369	yes
To read all parameters from the platform.	<i>Read All Parameters Now</i> on page 408	yes
To read the Showlist parameters from the platform.	<i>Read Showlist Parameters Now</i> on page 410	yes
To write the Showlist parameters to the platform.	<i>Write Showlist Parameters Now</i> on page 431	yes
To merge one parameter file into another.	<i>Merge PAR Files</i> on page 402	no
Manage Filter dialog context menu		
To insert a filter rule for filtering the variable name.	<i>Manage Filter dialog</i> on page 390	no
To insert a filter rule for filtering the blockname.	<i>Manage Filter dialog</i> on page 390	no
To insert a filter rule for filtering the blocktype.	<i>Manage Filter dialog</i> on page 390	no
To insert a filter rule for filtering the subsystem.	<i>Manage Filter dialog</i> on page 390	no
To insert a filter rule for filtering a subsystem recursively.	<i>Manage Filter dialog</i> on page 390	no
To delete a filter rule.	<i>Manage Filter dialog</i> on page 390	no
To delete all of the filter rules.	<i>Manage Filter dialog</i> on page 390	no
Variable Tree/Variable List context menu		
To remove the active file from the experiment.	<i>Remove from Experiment</i> on page 178	yes
To assign a system description file to a specific platform.	<i>Assign Platform</i> on page 368	no
To use a specific platform connection with a system description file.	<i>Connection</i> on page 373	no
To load an application to the assigned platform.	<i>Load Application</i> on page 400	yes
To reload the current system description file from disk.	<i>Reload</i> on page 411	yes
To replace the current system description file.	<i>Replace SDF File</i> on page 414	yes
To close the active system description file.	<i>Close</i> on page 49	yes
To search for a variable.	<i>Find Variable</i> on page 393	yes
To filter the variables/parameters.	<i>Filter Tree</i> on page 388	no
To disable/enable the filter rules of a system description file.	<i>Disable Filter</i> on page 382 <i>Enable Filter</i> on page 384	no
To switch the view from the Variable Browser to the Parameter Editor	<i>Show Parameter Editor</i> on page 421	yes
To switch the Variable Browser to the text/graphic view.	<i>Text</i> on page 424 <i>Graphic</i> on page 398	yes
To collapse the items in the selected node.	<i>Collapse</i> on page 372	yes
To expand the items in the selected node.	<i>Expand</i> on page 385	yes
To expand all the nodes of the Variable Tree.	<i>Expand All</i> on page 386	yes

Purpose	Refer to	Avail. in OpMode
Variable List header context menu		
To add columns to or remove columns from the Variable List.	<i>Customize (Variable List)</i> on page 380	yes
To sort the Variable List by the selected column.	<i>Sort Ascending</i> on page 423 <i>Sort Descending</i> on page 424	yes
To set the Variable List's column settings as the default.	<i>Set as Default</i> on page 420	yes
Parameter Tree context menu		
To save a subset of the currently active parameter file.	<i>Save Sub-PAR File As</i> on page 419	no
To export the current parameter file to the CSV format	<i>Export PAR File – CSV Format</i> on page 387	no
To search for a variable.	<i>Find Variable</i> on page 393	yes
To close the active parameter file.	<i>Close</i> on page 49	yes
To filter the variables/parameters.	<i>Filter Tree</i> on page 388	yes
To disable/enable the filter rules of a system description file.	<i>Disable Filter</i> on page 382 <i>Enable Filter</i> on page 384	yes
To declare a parameter file as the Status Set.	<i>Declare Status Set</i> on page 381	yes
To read the model root parameters from the MATLAB Workspace.	<i>Read From Workspace</i> on page 409	yes
To write the model root parameters to the MATLAB Workspace.	<i>Write to Workspace</i> on page 431	yes
To check if a parameter file matches the system description file.	<i>Check For</i> on page 371	no
To activate a specific parameter file from those that are open.	<i>More PAR Files</i> on page 403	yes
To insert a parameter into the Parameter Tree.	<i>Accept Parameter</i> on page 367	no
To remove a parameter from the Parameter Tree.	<i>Remove Parameter</i> on page 413	no
To insert a block into the Parameter Tree.	<i>Accept Block</i> on page 366	no
To remove a block from the Parameter Tree.	<i>Remove Block</i> on page 412	no
To display the next/previous inconsistency in the Parameter Tree.	<i>Goto Next Inconsistency</i> on page 397 <i>Goto Previous Inconsistency</i> on page 398	no
To end the consistency check.	<i>End Check</i> on page 384	no
To undo all the changes made during the consistency check.	<i>Undo</i> on page 99	no
To create a new application image (containing an SDF, TRC, MAP, and PPC file) with updated initial parameter values.	<i>Create Application Image</i> on page 379	no
Showlist context menu		
To remove selected parameters from the Showlist.	<i>Remove Parameters</i> on page 413	yes
To mark selected parameters in the Showlist.	<i>Mark Parameters</i> on page 401	yes
To unmark selected parameters in the Showlist.	<i>Unmark Parameters</i> on page 425	yes
To copy parameters from the Showlist to the Status Set.	<i>Copy to Status</i> on page 378	yes
To accept the new values for the Status Set.	<i>Accept Values</i> on page 367	yes
To reject the new values for the Status Set.	<i>Reject Values</i> on page 411	yes
To read selected parameters from the platform.	<i>Read Selected</i> on page 409	yes
To write selected parameters to the platform.	<i>Write Selected</i> on page 430	yes
To save a subset of the currently active parameter file.	<i>Save Sub-PAR File As</i> on page 419	no
To sort the Showlist by the selected column.	<i>Sort Ascending</i> on page 423 <i>Sort Descending</i> on page 424	yes
To select a column in the Showlist.	<i>Select Column</i> on page 420	yes

Purpose	Refer to	Avail. in OpMode
Reference Data Manager context menu		
To load a reference group (MAT, CSV, or IDF file).	<i>Load Reference Group</i> on page 400	no
To save the active reference group as a MAT or CSV file.	<i>Save Reference Group</i> on page 417	yes
To close the current reference group.	<i>Close</i> on page 49	yes
To expand the items in the selected node of a reference group.	<i>Expand</i> on page 385	yes
To collapse the items in the selected node of a reference group.	<i>Collapse</i> on page 372	yes
To expand an entire reference group.	<i>Expand All</i> on page 386	yes
Other		
To create a snapshot of the simulation's current parameters.	<i>Parameter Snapshot</i> on page 406	yes
To display the variables and matrices of a block.	<i>Variable List</i> on page 425	
To display the variables of the currently selected node.	<i>Variable List Window</i> on page 427	yes
To display the hierarchy of the variable in a system description file.	<i>Variable Tree</i> on page 427	

Accept Block

Access

You can access this command via:

Menu bar	None
Context menu of	Parameter Tree (while in consistency check mode)
Shortcut key	None
Toolbar icon	None

Purpose

To insert a block into the Parameter Tree, after ControlDesk found it in the Variable Tree but not in the Parameter Tree.



This is not available in the Operator mode.

Related topics

HowTos

- *How to Check Parameter Files for Consistency* ([ControlDesk Experiment Guide](#))

References

- *Check For* on page 371
- *Remove Block* on page 412

Accept Parameter

Access	You can access this command via:
Menu bar	None
Context menu of	Parameter Tree (while in consistency check mode)
Shortcut key	None
Toolbar icon	None
Purpose	To insert a parameter into the Parameter Tree, after ControlDesk found it in the Variable Tree but not in the Parameter Tree.
	<div style="border: 1px solid #ccc; padding: 5px; display: inline-block;">  This is not available in the Operator mode. </div>
Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • How to Check Parameter Files for Consistency ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none"> • Check For on page 371 • Remove Parameter on page 413

Accept Values

Access	You can access this command via:
Menu bar	None
Context menu of	Showlist
Shortcut key	None
Toolbar icon	None
Purpose	To accept the new values for the Status Set, which you added via Copy to Status.
Result	The new values, which are located in the New Value column in the Showlist, are now included in the Status Set. In addition, the values are moved to the Value column in the Showlist.

Description	If you want to remove the new values, carry out the Reject Values command (see <i>Reject Values</i> on page 411).
--------------------	---

Related topics	<p>HowTos</p> <ul style="list-style-type: none">• <i>How to Work with the Status Set</i> ( <i>ControlDesk Experiment Guide</i>) <p>Examples</p> <ul style="list-style-type: none">• <i>Example of Working with Parameter Sets</i> ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none">• <i>Copy to Status</i> on page 378• <i>Reject Values</i> on page 411
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Assign Platform

Access	You can access this command via:
---------------	----------------------------------

Menu bar	None
Context menu of	<ul style="list-style-type: none">▪ Variable Tree▪ Variable List
Shortcut key	None
Toolbar icon	None

Purpose	To assign a system description file to a specific platform.
----------------	---

Result	If the associated object file is in the same subdirectory, it is automatically loaded to the selected board. If you have selected Simulink, MATLAB is called up together with the related model.
---------------	--



This is not available in the Operator mode.

Description	The system description file is assigned to the selected platform and the associated object file is automatically loaded to that platform. To carry this out, the object file, the MAP file, and the system description file have to be located in the same directory.
--------------------	---

Choose Platform dialog

Listbox All installed boards are displayed in the listbox. You can also assign the system description file to Simulink or CANape. The working board of the Platform Management is listed in bold print and the currently assigned board is selected.



If you use a multiprocessor system, all connected multiprocessor systems assigned to the platform connection (bus/net) are displayed.

Related topics

HowTos

- *How to Assign an Experiment to Another Platform* (*ControlDesk Experiment Guide*)

Automatic Update Parameters

Access

You can access this command via:

Menu bar	Parameter Editor
Context menu of	None
Shortcut key	None
Toolbar icon	

Purpose

To continuously update the parameters in the Parameter Editor's Showlist from the platform.

Result

Whenever a parameter's value changes in the application, the Showlist is updated and shows the new value.

Description

Only the parameters that are in the Status Set can be read from the platform. If you select this, Write Parameter is selected automatically (see *Write Parameter* on page 429).

Related topics

HowTos

- *How to Download Parameters* (*ControlDesk Experiment Guide*)

Examples

- *Example of Modifying Parameter Values* (*ControlDesk Experiment Guide*)

References

- *Read All Parameters Now* on page 408
- *Write Parameter* on page 429

Browser Window

Access

This Reference Data Manager Window is part of ControlDesk's Tool window and is shown on the left. You can access it via:

Menu bar	View – Show Reference Data Manager
Context menu of	None
Shortcut key	None
Toolbar icon	None

Purpose

To display the variables in the form of a tree hierarchy.

Description

There are two windows: one showing the whole structure in an overview; the other showing the details of the structure. Moving the rectangle in the overview windows shifts the browsing window accordingly. Select a node in the details window to list the variables of that node in the *Variable List Window* on page 427.

Within the Browser window, several trees of reference groups can be displayed. The root of each tree is blue, the currently selected node is light gray, and all other nodes are dark gray. All commands of the toolbar and the menu bar refer to the active tree, the tree to which the currently selected node belongs. The commands of the context menu refer to the tree in which it is opened or to the active tree if opened in the free space.

Related topics

Basics

- [Reference Data Manager Basics](#) (ControlDesk Experiment Guide)
- [Using Reference Data](#) (ControlDesk Experiment Guide)

References

- [Show Reference Data Manager](#) on page 421
- [Variable List Window](#) on page 427

Check For

Access

You can access this command via:

Menu bar	None
Context menu of	Parameter Tree
Shortcut key	None
Toolbar icon	None

Purpose

To check whether the current parameter file matches the associated system description file.

Result

The current parameter file and the associated system description file are checked for inconsistencies, such as new blocks/parameters or removed blocks/parameters.



This is not available in the Operator mode.

Description

If you wish, you do not need to carry out a complete check, but check only for certain types of inconsistencies. The following commands are available:

Complete Check Checks the parameter file for added, removed and changed blocks and parameters.

Added Blocks and Parameters Checks the parameter file for added blocks and parameters.

Removed Blocks and Parameters Checks the parameter file for removed blocks and parameters.

Changed Parameter Attributes Checks the parameter file for parameters with changed attributes.

Related topics

HowTos

- *How to Check Parameter Files for Consistency* ( [ControlDesk Experiment Guide](#))

References

- *Accept Block* on page 366
- *Accept Parameter* on page 367
- *End Check* on page 384
- *Goto Next Inconsistency* on page 397
- *Goto Previous Inconsistency* on page 398
- *Remove Block* on page 412
- *Remove Parameter* on page 413

Collapse

Access

You can access this command via:

Menu bar	None
Context menu of	<ul style="list-style-type: none">■ Reference Data Manager■ Variable Tree■ Variable List
Shortcut key	None
Toolbar icon	None

Purpose

To collapse the items in the selected node of the reference group shown in the Reference Data Manager, or the items in the selected node shown in the Variable Browser.

Result

The child nodes of the reference group or the variable tree are hidden. To make the child nodes appear again, invoke Expand.



To collapse the items of the selected node of a reference group, you can also press the **Del** key.

Related topics

Basics

- [Reference Data Manager Basics](#) (ControlDesk Experiment Guide)
- [Using Reference Data](#) (ControlDesk Experiment Guide)

References

- [Expand](#) on page 385
- [Expand All](#) on page 386

Connection

Access

You can access this command via:

Menu bar	None
Context menu of	<ul style="list-style-type: none"> ■ Variable Tree ■ Variable List
Shortcut key	None
Toolbar icon	None

Purpose

To use a specific platform connection with the current system description file – including all the connections that it references.

Result

The current system description file uses the selected platform connection for communication with the platform.



This is not available in the Operator mode.

Description

Use the fixed settings only if you want to use layouts communicating with two different systems, one accessible by bus and one by network. In that case, specify “Connect to Net” for one system description file and “Connect to Bus” for the other. In all other cases you should use the “Current Connection” setting.

You can choose one of the following settings:

Current Connection This is the default. If it is selected, the DataKernel takes the current communication channel (bus or net) to access the platform associated with the system description file. The current connection is set by the Platform Manager.

Connect to Bus The DataKernel takes the bus communication channel to access the platform directly, independently of the current setting in the Platform Manager.

Connect to Net The DataKernel takes the network communication channel to access the platform directly, independently of the current setting in the Platform Manager.

Convert BIN File

Access

You can access this command via:

Menu bar	Tools
Context menu of	None
Shortcut key	None
Toolbar icon	None

Purpose

To convert a BIN file (binary file format) – generated by DS1005 or MicroAutoBox's flight recorder – to a MAT file (MATLAB binary file format) or to a CSV file (comma-separated values file format).



This is not available in the Operator mode.

Description

The BIN file you selected as the source file is converted to a MAT/CSV file according to the specifications made.

Source File frame

... Click the browse button to select the BIN file you want to convert.

Destination File frame

... Click the browse button to select the destination MAT or CSV file.

Convert Press this button to convert the BIN file into a MAT/CSV file. This button remains inactive until a valid BIN file and MAT/CSV file have been specified.

Cancel Press this button to exit the dialog without file conversion.

Related topics

Basics

- [Reference Data Manager Basics](#) (ControlDesk Experiment Guide)
- [Using Reference Data](#) (ControlDesk Experiment Guide)

HowTos

- [How to Generate and Save Reference Data](#) (ControlDesk Experiment Guide)

References

- [Convert IDF File](#) on page 375
- [Flash Memory Access](#) (MicroAutoBox RTI Reference)

Convert IDF File

Access

You can access this Reference Data Manager command via:

Menu bar	Tools
Context menu of	None
Shortcut key	None
Toolbar icon	None

Purpose

To convert an IDF file (intermediate data file) – generated when using the Stream-To-Disk feature – to a MAT file (MATLAB binary file format) or to a CSV file (comma-separated values file format).

Result

The IDF file you select is converted according to the specifications you make.

- If you split the file according to time intervals, the generated MAT or CSV files are numbered, starting at 001. The numbers are appended to the corresponding file names. The first generated file always has the extension 001.
- If you split the file according to the signals contained in it, the signal name will be appended to the file names of the generated MAT or CSV files.



- When data is streamed to disk for a long period of time, the IDF file will contain a large amount of data. To avoid dynamic memory being exhausted when the corresponding MAT file is loaded, you should split it into several parts.
- This is not available in the Operator mode.

Description	This allows you to specify an IDF source file and a MAT/CSV destination file. The IDF file you selected as the source file in the is converted to a MAT/CSV file according to the specifications made.
	<p>To convert an IDF file, you can also use the command line utility DS CONVERT in a DOS box. The utility has the following syntax:</p> <pre>dsconvert -i <input_file> -o <output_file> -p <number></pre> <ul style="list-style-type: none">■ The <input_file> must be an IDF file.■ The <output_file> must be either a MAT file or a CSV file.■ The <number> is the number of parts the IDF will be divided into according to time intervals. To divide the IDF file according to the contained signals, specify -p 0. <p>To get help on this utility, type dsconvert -?</p>

Source File frame	Browse	Click the browse button to select the IDF file you want to convert.
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- If you use the Stream-To-Disk feature for a DS1005-based multiprocessor system, ControlDesk automatically generates one auxiliary IDF file for each DS1005. If, for example, the two applications `appl1` and `appl2` run on your MP system, the files `MyStreamFile.idf`, `MyStreamFile_appl1.idf` and `MyStreamFile_appl2.idf` are generated. Nevertheless, specify only the file `MyStreamFile.idf` for conversion. The contents of the auxiliary IDF files will then be added automatically to the generated CSV or MAT file.
- If you use the Stream-To-Disk feature when you work with CANape, ControlDesk automatically generates one auxiliary IDF file for each acquisition mode applied to the variables to be captured. If, for example, you select the polling and cyclic mode for your variables, the files `MyStreamFile.idf`, `MyStreamFile-polling.idf` and `MyStreamFile-cyclic.idf` are generated. Nevertheless, specify only the file `MyStreamFile.idf` for conversion. The contents of the auxiliary IDF files will then be added automatically to the generated CSV or MAT file.

Destination File(s) frame	Split into	Select this radio button to divide the source IDF file into several destination MAT/CSV files. Each file contains the data of one specific time interval. Use the Part(s) spin button to specify the number of time intervals.
---------------------------	-------------------	---

Part(s) Use the spin buttons to specify the number of parts to be generated. This means that you specify the number of time intervals the subset of data should be divided into.

The spin button is disabled if the Split into Signals button is selected.



To convert an IDF file into a single MAT/CSV file, select the **Split into** radio button and specify **1** as the number of parts.

Split into Signals Select this button to divide the source IDF file into several destination MAT/CSV files. Each file contains the data of one of the captured signals.

Browse Click the **Browse** button to select the destination MAT or CSV file.

Convert Press this button to convert the IDF file into a MAT/CSV file. This button remains inactive until a valid IDF file and MAT/CSV file have been specified.

Cancel Press this button to exit the dialog without file conversion.

Status This progress indicator displays the current conversion status.

Related topics

Basics

- *Reference Data Manager Basics* (*ControlDesk Experiment Guide*)

HowTos

- *How to Generate and Save Reference Data* (*ControlDesk Experiment Guide*)

References

- *Convert BIN File* on page 374

Copy to Status

Access

You can access this command via:

Menu bar	None
Context menu of	Showlist
Shortcut key	None
Toolbar icon	None

Purpose

To copy selected and marked parameters from the Parameter Editor's Showlist to the Status Set. This is necessary if you want to copy parameters from other sets to the Status Set.

Result

The values of the marked parameters are copied to the column **New Value** in the Status Set (see *Mark Parameters* on page 401). If one of the copied parameters is also marked in the Status Set, it is highlighted, and ControlDesk issues a warning if you try to accept the new value.

Description	After you copy a parameter to the Status Set, you can use the Accept Values and Reject Values commands on the Status Set (see <i>Accept Values</i> on page 367 and <i>Reject Values</i> on page 411). If a conflict arises between the values in the Status Set and the copied values, the Conflict dialog is automatically invoked (see below) and lets you resolve the conflict.
Conflict dialog	The value conflict is resolved according to the method you chose below: All Press this button if you want to overwrite all of the values. No conflicts Press this button if you want to overwrite only the nonconflicting values.
Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Work with the Status Set</i> ( <i>ControlDesk Experiment Guide</i>) <p>Examples</p> <ul style="list-style-type: none"> • <i>Example of Working with Parameter Sets</i> ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none"> • <i>Accept Values</i> on page 367 • <i>Mark Parameters</i> on page 401 • <i>Reject Values</i> on page 411

Create Application Image

Access	This command is available only for MicroAutoBox and the DS1005 PPC Board (single-processor systems only). You can access this command via:
Menu bar	None
Context menu of	Parameter Tree
Shortcut key	None
Toolbar icon	None
Purpose	To create an application image with updated parameter values.
Result	The additional parameter values of the PPC file are updated.

Description	The PPC file of the application image is updated with the parameter values of the selected parameter set (in addition to the original parameter values). The original PPC file is saved as a backup within the application image.
	<div style="border: 1px solid #ccc; padding: 10px;"> The following preconditions must be met for creating an application image via ControlDesk:<ul style="list-style-type: none">■ The real-time application must be built using an RTI version from dSPACE Release 5.1 or later.■ When the real-time application is built, the Enable data set storage in application option in the Real-Time Workshop must be enabled. For details, refer to <i>RTI general build options page</i> ( <i>RTI and RTI-MP Implementation Reference</i>).</div>

Related topics

HowTos

- *How to Create an Application Image* ( *ControlDesk Experiment Guide*)

Customize (Variable List)

Access

You can access this command via:

Menu bar	None
Context menu of	Variable List (for column header)
Shortcut key	None
Toolbar icon	None

Purpose

To add or remove columns to/from the Variable List.

Result

The added columns appear in the Variable List, the removed columns are hidden.

Description

Whether or not the column contains helpful information depends on how the variable is described in the system description file.

Variable List dialog	Columns The Columns list contains all the variable's properties that can be displayed in the Variable List. These properties can be added to the Variable List by dragging & dropping the appropriate button onto the variable list. This creates a new column. The insertion point is marked with a red triangle. To remove a property, click on the header of the relevant column and drag & drop the button back to the Columns list.
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • <i>Browsing Through the Model Hierarchy</i> ( ControlDesk Experiment Guide) <p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Customize the Variable Browser</i> ( ControlDesk Experiment Guide) <p>Examples</p> <ul style="list-style-type: none"> • <i>Example of Customizing the Variable List</i> ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none"> • <i>Variable List</i> on page 425

Declare Status Set

Access	You can access this command via:
	Menu bar None
	Context menu of Parameter Tree
	Shortcut key None
	Toolbar icon None
Purpose	To declare one parameter file from those currently open in the Parameter Editor as the Status Set.
Result	The parameter file you selected is now the Status Set, which is the specific parameter file that represents the current parameter values used on the platform.
Description	Only the parameters that belong to the Status Set can be read from or written to the platform. When you load (a) parameter file(s) for a system description file, you always need to declare one parameter file as the Status Set.

Related topics

HowTos

- [How to Load Parameter Files](#) (ControlDesk Experiment Guide)
- [How to Work with the Status Set](#) (ControlDesk Experiment Guide)

Examples

- [Example of Modifying Parameter Values](#) (ControlDesk Experiment Guide)
- [Example of Working with Parameter Sets](#) (ControlDesk Experiment Guide)

References

- [Open Variable File](#) on page 404

Disable Filter

Access

You can access this command via:

Menu bar	None
Context menu of	<ul style="list-style-type: none">■ Variable Tree■ Variable List■ Parameter Tree
Shortcut key	None
Toolbar icon	None

Purpose

To disable the filter rules of the active system description file.

Result

The filter rules that were set in the Manage Filter dialog (see page [Manage Filter dialog](#) on page 390) are disabled for the system description file that is currently active in the Parameter Editor or Variable Browser.



In the Operator mode, this is only available in the Parameter Tree.

Related topics

References

- [Enable Filter](#) on page 384

Edit Header Info

Access	You can access this command via:
Menu bar	Parameter Editor
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To allow you to add header information to the parameter file.
Result	The header info (meaning additional information such as a description of the file, the version number, name of the author, etc.) that was entered in ParSet Properties is placed at the front of the parameter file and saved along with it.
ParSet Properties dialog	Description If desired, enter a description for the parameter file. Version If desired, enter the version of the parameter file. Author If desired, enter the name of the parameter file's author. Date/Time (automatically filled) This field displays the current date and time. The date is shown in the following format: date.month.year (for example, 29.10.1999). Model Displays the name of the Simulink model that was loaded for the current ControlDesk session.
Related topics	HowTos <ul style="list-style-type: none">• <i>How to Generate Parameter Files</i> ( <i>ControlDesk Experiment Guide</i>)

Enable Filter

Access	You can access this command via:
Menu bar	None
Context menu of	<ul style="list-style-type: none">■ Variable Tree■ Variable List■ Parameter Tree
Shortcut key	None
Toolbar icon	None
Purpose	To enable the current filter rules of the active system description file.
Result	The filter rules that were set in the Manage Filter dialog (see <i>Manage Filter dialog</i> on page 390) are applied to the system description file that is currently active in the Parameter Editor or Variable Browser.
 In the Operator mode, this is only available in the Parameter Tree.	
Related topics	References <ul style="list-style-type: none">• <i>Disable Filter</i> on page 382

End Check

Access	You can access this command via:
Menu bar	None
Context menu of	Parameter Tree (while in consistency check mode)
Shortcut key	None
Toolbar icon	None

Purpose	To end the consistency check and make the Parameter Editor return to normal operation.
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This is not available in the Operator mode.

Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Check Parameter Files for Consistency</i> (ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none"> • <i>Check For</i> on page 371
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Expand

Access	You can access this command via:
Menu bar	None
Context menu of	<ul style="list-style-type: none"> ▪ Reference Data Manager ▪ Variable Tree ▪ Variable List
Shortcut key	None
Toolbar icon	None
Purpose	To expand the items in the selected node of the reference group shown in the Reference Data Manager, or the items in the selected node shown in the Variable Browser.
Result	The child nodes in the reference group or the variable tree are now visible.
Description	If a node does not have any child nodes, the menu item is disabled. To make the child nodes disappear, invoke Collapse (see <i>Collapse</i> on page 372).
	 <p>To expand the items of the selected node of a reference group, you can also press the Ins key.</p>

Related topics

Basics

- [Reference Data Manager Basics \(ControlDesk Experiment Guide\)](#)

References

- [Collapse](#) on page 372
- [Expand All](#) on page 386

Expand All

Access

You can access this command via:

Menu bar	None
Context menu of	<ul style="list-style-type: none">■ Reference Data Manager■ Variable Tree■ Variable List
Shortcut key	None
Toolbar icon	None

Purpose

To expand the whole reference group shown in the Reference Data Manager, or to expand all nodes of the variable tree shown in the Variable Browser.

Result

Unlike Expand (see [Expand](#) on page 385), which expands just a selected portion of the reference group or variable tree, this expands the entire group or tree.



To expand the nodes of a reference group, you can also point to the right border of any node, hold the keys **ctrl** and **shift** on the keyboard, and then click the left mouse button.

Related topics

Basics

- [Reference Data Manager Basics \(ControlDesk Experiment Guide\)](#)

References

- [Collapse](#) on page 372
- [Expand](#) on page 385

Export PAR File – CSV Format

Access

You can access this command via:

Menu bar	None
Context menu of	Parameter Tree
Shortcut key	None
Toolbar icon	None

Purpose

To export the current parameter file to the CSV Format (MS Excel is able to read the CSV Format).

Result

The current parameter file is exported to the CSV Format.



This is not available in the Operator mode.

Filter Tree

Information in this topic

Access on page 388
Purpose on page 388
Result on page 388
Description on page 389
Manage Filter dialog on page 390
| Browse on page 390
| Context menu on page 391
| Delete on page 390
| Insert on page 390
| List box on page 390
| List of filter rules on page 390
| Reload on page 390
| Save on page 390
Select Filter dialog on page 391
| File name on page 391
| Files of type on page 391
| Look in on page 391
| Open as read-only on page 391
Insert Filter Rule dialog on page 392
| List of items on page 392
Select Subsystem dialog on page 392
| Tree of subsystems on page 392

Access

You can access this command via:

Menu bar	None
Context menu of	<ul style="list-style-type: none">■ Variable Tree■ Variable List■ Parameter Tree
Shortcut key	None
Toolbar icon	None

Purpose

To filter the variables or parameters displayed in the Variable Browser or the Parameter Tree.

Result

The Variable Browser or the Parameter Tree shows those variables or parameters that match the active filter criteria.



In the Operator mode, this is only available in the Parameter Tree.

Description

In large systems, you can restrict the displayed variables/parameters in the tree by using filters. You can use the Insert Filter Rule dialog (see *Insert Filter Rule dialog* on page 392) to add items. You can define filter rules for the items and save them in separate files (FLT). You can then reuse the saved filter rules. The filter rules can be linked by using logical commands such as the logic AND. Selecting NOT in the Negation list negates the expression in the Logic list. The following table lists the possible filter rule types:

Type	Arguments
Variable Name	Mask for the variable name (wildcards or regular expressions are allowed depending on the selection in the Input column)
Block Name	Name of the tree node the variable is in (wildcards or regular expressions are allowed depending on the selection in the Input column)
Block Type	Attribute of a tree node as defined in the system description file (no wildcards or regular expressions are allowed)
Variables of Subsystem	All variables contained in the subsystem given by its pathname. Click the Browse button in the Input column to open the Select Subsystem dialog.
Variables of Subsystem (Recursive)	All variables contained in the subsystem given by its pathname including all subnodes of the selected node.

If a group in the tree does not contain any variables that match the active filter, the group will also be hidden.



- The Manage Filter dialog (see below) also provides a context menu for quick access to the most important functions.
- You can enable/disable a current filter via the Enable Filter command (see *Enable Filter* on page 384).



The Parameter Tree might contain empty groups to represent the Variable Tree's structure. However, if you apply a filter to the Parameter Tree, all empty groups will be hidden because they do not contain any matching variables.

Manage Filter dialog	<p>List box Displays the currently selected Filter (FLT) file. You can also select a previous Filter file from the drop-down list. To save the current filter in a new Filter file, you have to enter the path and file name here before clicking the Save button.</p> <p>Browse Click this button to open the Select Filter dialog (see below), where you can select a previously saved Filter file (see <i>Select Filter dialog</i> on page 391).</p> <p>List of filter rules This list displays all the filter rules included in the current Filter file. Specify the desired settings for each filter rule according to the following table:</p>
Column	Purpose
Validity	To enable or disable the filter rule.
Logic, Negation	To select how the current rule is related to the other rules.
Apply Filter Rule To	To display the item that the filter rule is related to.
Argument of Filter Rule	To enter the filter argument. If the filter rule is applied to a variable name or block name and the Input field shows "?*", you can use wildcards here.
Input (filter rule for a variable name or block name)	To specify whether the argument of the filter rule is supposed to contain wildcards (**) or regular expressions (regex).
Input (filter rule for Variables of Subsystem or Variables of Subsystem (Recursive))	To select the subsystem via the Select Subsystem dialog . The pathname of the selected subsystem will be copied to the input field in the Argument of filter rule column. As a result, the filter rule will be applied to the subsystem you selected in this dialog.
<p>You can rearrange the filter rules via drag & drop using the column as a handle. The row(s) to be moved have to be selected before performing the drag & drop operation. The filter rules are evaluated according to their sequence.</p> <p>Insert Click this button to add an item to the list of filter rules. This automatically opens the Insert Filter Rule dialog (see <i>Insert Filter Rule dialog</i> on page 392).</p> <p>Delete Click this button to delete the currently selected filter rule.</p> <p>Save Click this button to save the Filter file. The path and file name of the selected entry in the top drop-down list will be used.</p> <p>Reload Click this button to discard all changes you made since you last saved the Filter file.</p>	

Context menu Open the context menu to access additional commands.

These commands are not available in the Operator mode.

■ **Insert Rule for Variable Name**

Select this command to insert a filter rule for filtering the variable name by using wildcards or regular expressions.

■ **Insert Rule for Block Name**

Select this command to insert a filter rule for filtering the blockname using wildcards or regular expressions.

■ **Insert Rule for Block Type**

Select this command to insert a filter rule for filtering the blocktype.

■ **Insert Rule for Variables of Subsystem**

Select this command to insert a filter rule for filtering the subsystem.

■ **Insert Rule for Variables of Subsystem (recursive)**

Select this command to insert a filter rule for filtering a subsystem as well as all of its subsystems.

■ **Delete Current Filter Rule**

Select this command to delete the filter rule in the line that currently has the focus.

■ **Delete All Filter Rules**

Select this command to delete all of the filter rules.

Select Filter dialog

The FLT file you select here will be opened in the Manage Filter dialog (see above). This dialog is called up if you click the Browse button in the Manage Filter dialog (see *Browse* on page 390).

Look in Use the drop-down list to select the path and directory from which the FLT file should be opened.

File name Shows the name of the selected FLT file.

Files of type This list provides the file type (only FLT for Filter files).

Open as read-only Specifies that you will only be able to read the file but not allowed to make any changes.

Insert Filter Rule dialog	This dialog lets you add an item to the list of filter rules. It is called up if you click the Insert button in the Manage Filter dialog (see <i>Insert</i> on page 390). List of items Select the item for which you want to specify filter rules: <ul style="list-style-type: none">■ Variable Name■ Block Name■ Block Type■ Variables of Subsystem■ Variables of Subsystem (Recursive)
Select Subsystem dialog	If one of the filter items “Variables from Subsystem” or “Variables from Subsystem (Recursive)” is selected, this dialog lets you select a specific subsystem to which the filter rule should be applied. It is called up if you click the browse button for the List of filter rules in the Manage Filter dialog (see <i>List of filter rules</i> on page 390). Tree of subsystems Select the subsystem to which the filter rule should be applied.

Related topics

- Basics
 - *Handling Variables* ( [ControlDesk Experiment Guide](#))
- HowTos
 - *How to Find Variables* ( [ControlDesk Experiment Guide](#))
- Examples
 - *Example of Using the Variable Search* ( [ControlDesk Experiment Guide](#))
- References
 - *Disable Filter* on page 382
 - *Enable Filter* on page 384
 - *Variable Tree* on page 427

Find Variable

Access	You can access this command via:
Menu bar	None
Context menu of	<ul style="list-style-type: none"> ■ Variable Tree ■ Variable List ■ Parameter Tree
Shortcut key	None
Toolbar icon	None
Purpose	To search for a variable.
Result	All matching variables of the system description file or parameter file are shown in the Variable list.
Description	All matching variables in the Variable/parameter file(s) are shown in the Variable list. If you double-click on any entry in this Variable list, the corresponding variable is highlighted in the Variable Tree/Parameter Tree and, if available, in the Variable List>Showlist.
 <p>The Find Variable function does not specifically search the Parameter Tree if called from the Parameter Editor, but also the associated Variable Tree. Thus, the Find Variable function might display both parameter and signal names that match the search string.</p>	
Dialog settings	<p>Drop-down field Enter your search string here. Use wildcards ("?", "*") if the Use wildcards checkbox is selected. Otherwise, use regular expressions.</p> <p>Start Search Click this button to start the search.</p> <p>Use wildcards Select this checkbox to enable the use of wildcards. If you have not selected the checkbox when you enter a wildcard, the string is read as an expression.</p> <p>Start search at root Select this checkbox to start the search at the root of the SDF/parameter file.</p> <p>Search all trees Select this checkbox to search all Variable Trees. If you are using several Variable Trees, each tree describes a separate real-time application.</p>

Match case Select this checkbox to search case-sensitive.

Find blocks (nodes) Select this checkbox to search for blocks, too.

If you point with the mouse to an item in the Variable list, a tooltip displays whether the selected item is a connectable variable or a non-connectable block.

Go Back Click this button to return to the item in the tree that was selected when you called up the dialog.

Variable This box shows the matching variables that were found during the search.

In tree (read only) This field shows the path and directory where the selected variable is located.

Shortcut keys

Use the following shortcut keys to operate the features of the Find Variable dialog:

Shortcut Key	Purpose
Ctrl+C	To copy text.
Ctrl+X	To cut text.
Ctrl+V	To paste text.
Alt+S	To start the search.
Alt+W	To enable the use of wildcards.
Alt+R	To select the option to start the search at the root node.
Alt+A	To select the option to search all trees.
Alt+M	To select the option to search case-sensitive.
Alt+B	To select the option to find blocks (nodes).
Alt+G	To go back to the item in the tree that was selected when you called up the dialog.
Alt+C	To close the dialog.
Alt+H	To open the help.

Generate PAR File

Access	You can access this command via:
Menu bar	Parameter Editor
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To generate and save a new parameter file based on a non-handcoded TRC file.
Result	The specified parameter file is generated from the currently active system description file and saved in the selected directory under the new name. The values of the parameters are inserted according to their values on the platform. The file is opened in the Parameter Editor.
	 This is not available in the Operator mode.
Description	To be able to generate and save a parameter file, you need to have a system description file loaded and assigned to the platform. In addition, the application has to be running on the platform.
	If you want to save a parameter file that is based on a handcoded TRC file, use Generate PAR File Handcoded (see <i>Generate PAR File Handcoded</i> on page 396).
Save As dialog	Save in Lets you select the path and folder to save the file to. File name Lets you specify the name of the file. You can also select a name from the files listed under the chosen path and folder. Save as type Lets you select which type the file should be saved as.

Related topics

HowTos

- [How to Generate Parameter Files](#) ( [ControlDesk Experiment Guide](#))

Examples

- [Example of Working with Parameter Sets](#) ( [ControlDesk Experiment Guide](#))

References

- [Generate PAR File Handcoded](#) on page 396

Generate PAR File Handcoded

Access

You can access this command via:

Menu bar	Parameter Editor
Context menu of	None
Shortcut key	None
Toolbar icon	None

Purpose

To generate and save a new parameter file that is based on a handcoded TRC file.

Result

The specified parameter file is generated from the currently active system description file and saved in the selected directory under the new name. The values of the parameters are inserted according to their values on the platform. The file is opened in the Parameter Editor.



This is not available in the Operator mode.

Description

To be able to generate and save a parameter file, you need to have a system description file loaded and assigned to the platform. In addition, the application has to be running on the platform.

If you want to save a parameter file that is based on a non-handcoded TRC file, use [Generate PAR File](#) (see [Generate PAR File](#) on page 395).

Save As dialog

Save in Lets you select the path and folder to save the file to.

File name Lets you specify the name of the file. You can also select a name from the files listed under the chosen path and folder.

Save as type Lets you select which type the file should be saved as.

Related topics

HowTos

- [How to Generate Parameter Files](#) ([ControlDesk Experiment Guide](#))

References

- [Generate PAR File](#) on page 395

Goto Next Inconsistency

Access

You can access this command via:

Menu bar	None
Context menu of	Parameter Tree (while in consistency check mode)
Shortcut key	None
Toolbar icon	None

Purpose

To make ControlDesk display the next inconsistency found in the Parameter Tree.

Result

The next inconsistency is highlighted in the Parameter Tree.



This is not available in the Operator mode.

Related topics

HowTos

- [How to Check Parameter Files for Consistency](#) ([ControlDesk Experiment Guide](#))

References

- [End Check](#) on page 384
- [Goto Previous Inconsistency](#) on page 398

Goto Previous Inconsistency

Access	You can access this command via:
Menu bar	None
Context menu of	Parameter Tree (while in consistency check mode)
Shortcut key	None
Toolbar icon	None
Purpose	To make ControlDesk display the previous inconsistency found in the Parameter Tree.
Result	The previous inconsistency is highlighted in the Parameter Tree.
<div style="border: 1px solid #ccc; padding: 10px; margin-top: 10px;"> This is not available in the Operator mode.</div>	
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• How to Check Parameter Files for Consistency ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• End Check on page 384• Goto Next Inconsistency on page 397

Graphic

Access	You can access this command via:
Menu bar	View – Variable Browser
Context menu of	<ul style="list-style-type: none">■ Variable Tree■ Variable List
Shortcut key	None
Toolbar icon	
Purpose	To switch the Variable Browser from the text view to the graphic view.

Description	The graphic view includes an overview and a browser (in the Variable Tree) and the Variable List. The Variable Tree's browser shows a selected portion of the overview in more detail. See also <i>Text</i> on page 424.
Related topics	<p>References</p> <ul style="list-style-type: none"> • <i>Text</i> on page 424 • <i>Variable List</i> on page 425 • <i>Variable Tree</i> on page 427

Look-Up Table

Access	This dialog opens when you double-click the bitmap in the Value cell of a parameter shown in the Parameter Editor's Showlist.
Purpose	To modify the vectors and/or matrices of the selected parameter, depending on whether you clicked a vector or matrix.
Result	The vector or matrix is modified according to the changes you made in this dialog. The dialog has the same name as the parameter.
Description	<p>Enter the desired value(s) for the vector or matrix elements in the table.</p> <p>If the Read-Only checkbox is selected in the Showlist, you will not be able to alter any of the parameters in the dialog.</p>
Dialog settings	<p>List of parameters View or modify the parameters according to your needs.</p>
Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Modify Parameters</i> ( ControlDesk Experiment Guide)

Load Application

Access	You can access this command via:
Menu bar	None
Context menu of	<ul style="list-style-type: none">■ Variable Tree■ Variable List
Shortcut key	None
Toolbar icon	None
Purpose	To load the current application to the assigned platform.
Result	The associated object file is loaded onto the platform assigned to the system description file. The object file, the MAP file, and the system description file have to be located in the same directory.
Related topics	HowTos <ul style="list-style-type: none">• <i>How to Load Parameter Files</i> ( <i>ControlDesk Experiment Guide</i>)

Load Reference Group

Access	You can access this Reference Data Manager command via:
Menu bar	File
Context menu of	Reference Data Manager
Shortcut key	None
Toolbar icon	
Purpose	To load the data file of a reference group – either a CSV file, a MAT file or an IDF file.

Result

The selected file will be loaded in ControlDesk's Reference Data Manager.



This is not available in the Operator mode.

Dialog settings

- Look in** Use the drop-down list to select the path and directory from which the file should be opened.
- File name** Enter the name of the desired file.
- Files of type** Select the desired data file type.

Related topics

- Basics
- *Reference Data Manager Basics* ([ControlDesk Experiment Guide](#))
- HowTos
- *How to Display Reference Data* ([ControlDesk Experiment Guide](#))
- References
- *Close* on page 49
 - *Load Reference Group* on page 400
 - *Open* on page 67
 - *Open Experiment* on page 170

Mark Parameters

Access

You can access this command via:

Menu bar	None
Context menu of	Showlist
Shortcut key	None
Toolbar icon	None

Purpose

To mark selected parameters in the Parameter Editor's Showlist.

Result

A marker is placed on the parameters you selected in the Showlist.

Description	You can use Copy to Status to copy the marked parameters to the Status Set (see <i>Copy to Status</i> on page 378). Via Unmark Parameters you can remove these markers (see <i>Unmark Parameters</i> on page 425).
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• <i>How to Modify Parameters</i> ( <i>ControlDesk Experiment Guide</i>) <p>Examples</p> <ul style="list-style-type: none">• <i>Example of Modifying Parameter Values</i> ( <i>ControlDesk Experiment Guide</i>)• <i>Example of Working with Parameter Sets</i> ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none">• <i>Copy to Status</i> on page 378• <i>Unmark Parameters</i> on page 425

Merge PAR Files

Access	You can access this command via:
Menu bar	Parameter Editor
Context menu of	None
Shortcut key	None
Toolbar icon	None
Purpose	To merge one parameter file into another.
Result	The Merge Files dialog lets you select a source and a destination parameter file from the currently loaded parameter files (the source and the destination cannot be identical). The contents of the source file are merged into the destination file.
	<div style="border: 1px solid #ccc; padding: 5px; display: inline-block;"> This is not available in the Operator mode.</div>
Description	Together with Save Sub-PAR File As you can create a Sub-PAR file that contains only the required parameters (see <i>Save Sub-PAR File As</i> on page 419).

Merge Files dialog

Source File Contains a list of all the open parameter files. The current source file is marked with a . Select the desired source file. It is not possible to select the current destination file, which is marked with a .

Destination File Contains a list of all the open parameter files. The current destination file is marked with a . Select the desired destination file. It is not possible to select the current source file, which is marked with a .

Related topics**HowTos**

- *How to Generate Parameter Files* (*ControlDesk Experiment Guide*)

References

- *Save Sub-PAR File As* on page 419

More PAR Files

Access

You can access this command via:

Menu bar	None
Context menu of	Parameter Tree (if more than nine parameter files open)
Shortcut key	None
Toolbar icon	None

Purpose

To activate a specific parameter file from those that are open.

Result

The selected parameter file becomes active and is displayed in the Tool Window.

Description

Up to nine parameter files are listed in the context menu of the Parameter Tree for quick access.

Choose PAR File dialog

List of Parameter Files Select the parameter file you want to have activated.

Open Variable File

Access

You can access this command via:

Menu bar File

- Context menu of
- Variable Tree
 - Parameter Tree
 - Variable List

Shortcut key **Ctrl+T**

Toolbar icon 

Purpose

To open a system description file for the current ControlDesk session.

Result

The system description file you selected is opened and a tab with its is added to the tool window (Variable Browser/ Parameter Editor). The hierarchy and the variables are shown in the Tree Window and the **Variable List** of the Variable Browser.

Description

The system description file you selected is opened and a tab with its name is added to the Tool Window. Its hierarchy and variables are shown on the system description file page in the Variable Browser. If you opened a parameter file in the Parameter Editor, that file is also loaded and its tree hierarchy built. The tree contains blocks as well as parameters.



- If you want to load a parameter file, it must fit the current system description file.
- ControlDesk allows you to add more than one parameter file for each system description file, and to switch from one parameter file to another. However, only one of these parameter files (called the Status Set), see *Declare Status Set* on page 381 can be used at a time to write parameters to or to read parameters from the platform.
- If the data connections of a layout refer to a missing system description file, the Replace Missing Trees dialog automatically appears (see below). In this dialog you can redirect the data connections.
- This is not available in the Operator mode.

Dialog Settings	<p>Look in Use the drop-down list to select the path and directory from which the file should be opened.</p> <p>File name Enter the name of the desired file.</p> <p>Files of type Select the desired data file type.</p> <p>Open as read-only Specifies that you will only be able to read the file but not allowed to make any changes.</p>
Replace Missing Trees dialog	<p>This dialog lets you redirect the data connections from one system description file to another, for example, if you close the system description file that one or more instrument data connections refer to. As a result, you can reuse a model or part of another model without changing the structure of the partial model. The new model usually has another name. You delete the old system description file and load the new one with a different name. Then the system opens the Replace Missing Trees dialog and asks which of the original system description files should be replaced by the new one.</p> <p>Message text This text shows the new tree (path and system description file) to which you can redirect the data connections of the missing trees.</p> <p>List of paths This list shows all of the old trees (paths and system description files) that are currently unavailable for data connections. Select the old trees the data connections are referenced to.</p>
<hr/>	
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• <i>How to Load Parameter Files</i> ( <i>ControlDesk Experiment Guide</i>)• <i>How to Load System Description Files</i> ( <i>ControlDesk Experiment Guide</i>) <p>Examples</p> <ul style="list-style-type: none">• <i>Example of Working with Parameter Sets</i> ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none">• <i>Close</i> on page 49• <i>Declare Status Set</i> on page 381• <i>Load Reference Group</i> on page 400• <i>Open Experiment</i> on page 170• <i>Replace SDF File</i> on page 414

Parameter Snapshot

Access	You can access this command via:
Menu bar	None
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To create a snapshot of the parameters connected to the open layouts.
Result	Parameter Snapshot lets you specify a file name for the generated parameter file, whether it should be added to the experiment and whether the simulation should use the parameters it contains as initial values.
Description	If at least one layout containing data connections to a system description file is open, you can make ControlDesk create a snapshot of all the parameters connected to instruments in it. ControlDesk generates a parameter file for each system description file used in the open layouts. Parameter Snapshot lets you specify a name extension for the generated parameter files, whether the files should be added to the experiment and whether the simulation should use the parameters they contain as initial values.
Dialog settings	Insert file name for parameter snapshot(s) Specify a name for the new parameter file containing the parameter snapshot. If the associated system description file has the name <model>.sdf, the new parameter file is named <model>_<snapshot-name>.par. Add parameter snapshot(s) to experiment Select this option if you want the generated parameter file to appear in the ControlDesk Experiment. Use parameter snapshot(s) as initial values Select this option to make ControlDesk automatically mark the Use On Start Animation option for the generated parameter file.
Related topics	HowTos <ul style="list-style-type: none">• How to Generate Parameter Files (ControlDesk Experiment Guide)

Parameter Tree

Access This Parameter Editor window is part of ControlDesk's Tool window and is shown on the left. You can access it via:

Menu bar	View – <i>Show Parameter Editor</i> on page 421
Context menu of	None
Shortcut key	None
Toolbar icon	

Purpose To display the hierarchy of the parameter file.

Description The Parameter Tree shows all of the parameter file's contents: both the hierarchy and the parameter's names are visible. The icons of the different parameters indicate their dimensions (scalar, vector, or matrix).



If you want to view or modify the value of a parameter, you can do this via the Showlist (see *Showlist* on page 423).

You can filter the Parameter Tree by means of the Filter Manager (see *Filter Tree* on page 388). This is especially helpful for rather large parameter files.

Related topics

Basics

- *Using Parameter Sets* ( *ControlDesk Experiment Guide*)

References

- *Filter Tree* on page 388
- *Show Parameter Editor* on page 421
- *Showlist* on page 423

Read All Parameters Now

Access	You can access this command via:
Menu bar	Parameter Editor
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To read the values of all the parameters in the Status Set from the platform.
Result	The parameters contained in the Status Set are refreshed from the platform.
Description	<p>Only the parameters that are in the Status Set can be read from the platform.</p> <p>Via <i>Automatic Update Parameters</i> on page 369, you can also make ControlDesk continuously read the parameters from the platform (see <i>Automatic Update Parameters</i> on page 369).</p>
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• <i>How to Download Parameters</i> ( <i>ControlDesk Experiment Guide</i>) <p>Examples</p> <ul style="list-style-type: none">• <i>Example of Modifying Parameter Values</i> ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none">• <i>Automatic Update Parameters</i> on page 369• <i>Read Selected</i> on page 409• <i>Read Showlist Parameters Now</i> on page 410• <i>Write All Parameters Now</i> on page 428

Read From Workspace

Access	You can access this command via:
Menu bar	None
Context menu of	Parameter Tree (Model Root Parameters or below)
Shortcut key	None
Toolbar icon	None
Purpose	To read the model root parameters from the MATLAB Workspace.
Result	ControlDesk updates the model root parameters from the MATLAB Workspace.
Description	All the model root parameters are contained in the system description file's Model Root Parameters group. To download any changed model root parameter to the platform, you have to carry out the corresponding <code>Write</code> command (see <i>Write All Parameters Now</i> on page 428, <i>Write Showlist Parameters Now</i> on page 431 or <i>Write Selected</i> on page 430).
Related topics	References <ul style="list-style-type: none">• Write to Workspace on page 431

Read Selected

Access	You can access this command via:
Menu bar	None
Context menu of	Showlist
Shortcut key	None
Toolbar icon	None
Purpose	To read selected parameters from the platform.

Result	The values of the selected parameters are read from the platform and the display in the Showlist is updated.
Description	Only parameters in the Status Set can be read from the platform.
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• How to Download Parameters ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• Read All Parameters Now on page 408• Read Showlist Parameters Now on page 410• Write Selected on page 430

Read Showlist Parameters Now

Access	You can access this command via:
Menu bar	Parameter Editor
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To read the values of parameters contained in the Showlist from the platform.
Result	The values of the Showlist's parameters are read from the platform and the display in the Showlist is updated.
Description	Only parameters in the Status Set can be read from the platform.
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• How to Download Parameters ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• Read All Parameters Now on page 408• Read Selected on page 409• Write Showlist Parameters Now on page 431

Reject Values

Access	You can access this command via:
Menu bar	None
Context menu of	Showlist
Shortcut key	None
Toolbar icon	None
Purpose	To reject the new values for the Status Set, which you added via the Copy to Status command.
Result	The new values, which are located in the New Value column in the Showlist, are erased and not included in the Status Set.
Description	If you want to accept the new values, carry out the Accept Values (see Accept Values on page 367).
Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • How to Work with the Status Set ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none"> • Accept Values on page 367 • Copy to Status on page 378

Reload

Access	You can access this command via:
Menu bar	None
Context menu of	<ul style="list-style-type: none"> ■ Variable Tree ■ Variable List
Shortcut key	None
Toolbar icon	None
Purpose	To reload the current system description file if you have rebuilt it, for example, using RTI.

Result	The current system description file is reloaded from disk.
Description	You can use this function if the system description file has been modified by external tools such as RTI or external editors. You do not need to use this function if you simply want to restart the animation. In that case, the system description file is loaded automatically if it was changed. Use this function if you want to explicitly update the window contents.

Remove Block

Access	You can access this command via:	
Menu bar	None	
Context menu of	Parameter Tree (while in consistency check mode)	
Shortcut key	None	
Toolbar icon	None	

Purpose	To remove a block from the Parameter Tree, after ControlDesk found it in the Parameter Tree but not in the Variable Tree.
----------------	---



This is not available in the Operator mode.

Related topics	HowTos
	<ul style="list-style-type: none">• <i>How to Check Parameter Files for Consistency</i> (<i>ControlDesk Experiment Guide</i>)
	References
	<ul style="list-style-type: none">• <i>Accept Block</i> on page 366• <i>Check For</i> on page 371

Remove Parameter

Access	You can access this command via:	
Menu bar	None	
Context menu of	Parameter Tree (while in consistency check mode)	
Shortcut key	None	
Toolbar icon	None	
Purpose	To remove a parameter from the Parameter Tree, after ControlDesk found it in the Parameter Tree but not in the Variable Tree.	
Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • How to Check Parameter Files for Consistency ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none"> • Accept Parameter on page 367 • Check For on page 371 	

Remove Parameters

Access	You can access this command via:	
Menu bar	Parameter Editor	
Context menu of	Showlist	
Shortcut key	Delete	
Toolbar icon		
Purpose	To remove selected parameters from the Parameter Editor's Showlist.	
Result	The parameters you selected are removed from the Showlist.	
		This is not available in the Operator mode.

Related topics

HowTos

- How to Modify Parameters ( ControlDesk Experiment Guide)

Examples

- Example of Working with Parameter Sets ( ControlDesk Experiment Guide)

Replace SDF File

Access

You can access this command via:

Menu bar	None
Context menu of	<ul style="list-style-type: none">■ Variable Tree■ Variable List
Shortcut key	None
Toolbar icon	None

Purpose

To replace the current system description file with a different system description file.

Result

The currently used system description file is replaced by the system description file you select in the dialog. If the data connections of a layout refer to a missing system description file, the Replace Missing Trees dialog automatically appears (see *Replace Missing Trees dialog* on page 415).



If a parameter file (PAR) is selected for replacement, it is (re)loaded to the Parameter Editor.



This is not available in the Operator mode.

Open dialog

Look in Use the drop-down list to select the path and directory from which the file should be opened.

File name Enter the name of the desired file.

Files of type Select the desired data file type.

Replace Missing Trees dialog

This dialog lets you redirect the data connections from one system description file to another, for example, if you close the system description file that one or more instrument data connections refer to. As a result, you can reuse a model or part of another model without changing the structure of the partial model. The new model usually has another name. You delete the old system description file and load the new one with a different name. Then the system opens the **Replace Missing Trees** dialog and asks which of the original system description files should be replaced by the new one.

Message text This text shows the new tree (path and system description file) to which you can redirect the data connections of the missing trees.

List of paths This list shows all of the old trees (paths and system description files) that are currently unavailable for data connections. Select the old trees the data connections are referenced to.

Related topics

Basics

- *Handling Variables* (*ControlDesk Experiment Guide*)

HowTos

- *How to Assign an Experiment to Another Platform* (*ControlDesk Experiment Guide*)
- *How to Update a Model* (*ControlDesk Experiment Guide*)

References

- *Variable Tree* on page 427

Save PAR File

Access

You can access this command via:

Menu bar	Parameter Editor
----------	------------------

Context menu of	Parameter Tree
-----------------	----------------

Shortcut key	None
--------------	------

Toolbar icon	
--------------	--

Purpose

To save the currently active parameter file.

Result	The parameter file that is currently active is saved to disk.
	 This is not available in the Operator mode.

Related topics	References
	<ul style="list-style-type: none">• Save PAR File As on page 416• Save Sub-PAR File As on page 419

Save PAR File As

Access	You can access this command via:
Menu bar	Parameter Editor
Context menu of	Parameter Tree
Shortcut key	None
Toolbar icon	None
Purpose	To save the currently active parameter file under a new name.
Result	The specified parameter file is saved in the selected directory under the new name.
Save As dialog	Save in Lets you select the path and folder to save the file to. File name Lets you specify the name of the file. You can also select a name from the files listed under the chosen path and folder. Save as type Lets you select which type the file should be saved as.

Related topics

HowTos

- [How to Generate Parameter Files](#) ([ControlDesk Experiment Guide](#))

Examples

- [Example of Working with Parameter Sets](#) ([ControlDesk Experiment Guide](#))

References

- [Save PAR File](#) on page 415
- [Save Sub-PAR File As](#) on page 419

Save Reference Group

Access

You can access this command via:

Menu bar	File
Context menu of	None
Shortcut key	None
Toolbar icon	

Purpose

To save the active reference group as a CSV or MAT file. This is the group that has the active node in the hierarchy view of the Reference Data Manager.

Result

The active reference group will be saved as a data file.



In the Operator mode this is not available via the File menu. Using the toolbar icon this command opens the Save As dialog to avoid overwriting of an existing CSV or MAT file and adds the new reference group to the experiment automatically.

Description

If the active reference group is being saved for the first time, Save Reference Group As is invoked automatically (see [Save Reference Group As](#) on page 418).

Related topics

Basics

- *Reference Data Manager Basics* (*ControlDesk Experiment Guide*)

HowTos

- *How to Generate and Save Reference Data* (*ControlDesk Experiment Guide*)

References

- *Load Reference Group* on page 400
- *Save Experiment* on page 179

Save Reference Group As

Access

You can access this command via:

Menu bar	File
Context menu of	None
Shortcut key	None
Toolbar icon	

Purpose

To save a newly created reference group as a CSV or MAT file, or to save a reference group under a new name.

Result

The newly created reference file is saved under the name you specified in the Save As dialog.



In the Operator mode the saved reference group is added automatically to the experiment.

Save As dialog

Save in Lets you select the path and folder to save the file to.

File name Lets you specify the name of the file. You can also select a name from the files listed under the chosen path and folder.

Save as type Lets you select which type the file should be saved as.

Related topics

Basics

- [Reference Data Manager Basics](#) ([ControlDesk Experiment Guide](#))
- [Using Reference Data](#) ([ControlDesk Experiment Guide](#))

HowTos

- [How to Generate and Save Reference Data](#) ([ControlDesk Experiment Guide](#))

References

- [Load Reference Group](#) on page 400
- [Save As](#) on page 92
- [Save Experiment As](#) on page 180
- [Save Reference Group](#) on page 417

Save Sub-PAR File As

Access

You can save a sub-parameter file under a new name via:

Menu bar None

Context menu of ■ Parameter Tree
 ■ Showlist

Shortcut key None

Toolbar icon None

Purpose

To save a subset of the currently active parameter file under a new name.

Result

The specified subset of the parameter file is saved in the selected directory under the new name.



This is not available in the Operator mode.

Save As dialog

Save in Lets you select the path and folder to save the file to.

File name Lets you specify the name of the file. You can also select a name from the files listed under the chosen path and folder.

Save as type Lets you select which type the file should be saved as.

Related topics

HowTos

- How to Generate Parameter Files ( ControlDesk Experiment Guide)

References

- Save PAR File on page 415

Select Column

Access

You can access this command via:

Menu bar	None
Context menu of	Showlist (for column header)
Shortcut key	None
Toolbar icon	None

Purpose

To select a column from the Showlist.

Set as Default

Access

You can access this command via:

Menu bar	None
Context menu of	Variable List (for column header)
Shortcut key	None
Toolbar icon	None

Purpose

To set the Variable List's column settings as the defaults for opening system description files.

Result

The next time you open a system description file, the Variable List will contain these default columns.

Show Parameter Editor

Access	You can access this command via:	
Menu bar	View	
Context menu of		<ul style="list-style-type: none"> ▪ Variable Tree ▪ Variable List
Shortcut key	None	
Toolbar icon		
Purpose	To switch the view from the Variable Browser to the Parameter Editor. (see <i>Parameter Tree</i> on page 407 and <i>Showlist</i> on page 423)	
Result	The Parameter Editor is now shown in ControlDesk's tool window instead of the Variable Browser. To switch back to the Variable Browser, carry out Show Variable Browser.	
Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Access the Parameter Editor</i> ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none"> • <i>Parameter Tree</i> on page 407 • <i>Show Variable Browser</i> on page 422 • <i>Showlist</i> on page 423 	

Show Reference Data Manager

Access	You can access this command via:	
Menu bar	View	
Context menu of	None	
Shortcut key	None	
Toolbar icon		
Purpose	To show/hide the Reference Data Manager (see <i>Browser Window</i> on page 370 and <i>Variable List Window</i> on page 427).	

Result	The Reference Data Manager is shown/hidden.
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Related topics	References • <i>Browser Window</i> on page 370
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Show Variable Browser

Access	You can access this command via:
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Menu bar	View
Context menu of	Parameter Tree
Shortcut key	None
Toolbar icon	

Purpose	To switch the view from the Parameter Editor to the Variable Browser (see <i>Variable Tree</i> on page 427 and <i>Variable List</i> on page 425).
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Result	The Variable Browser is now shown in ControlDesk's tool window instead of the Parameter Editor. To switch back to the Parameter Editor, carry out Show Parameter Editor.
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Related topics	References • <i>Show Parameter Editor</i> on page 421 • <i>Variable List</i> on page 425 • <i>Variable Tree</i> on page 427
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Showlist

Access	This Parameter Editor window is part of ControlDesk's Tool window and is shown on the right. You can access it via:
Menu bar	View – Show Parameter Editor
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To display certain parameters of the Parameter Tree (see <i>Parameter Tree</i> on page 407).
Description	The only parameters that are displayed in the Showlist are the ones you added via drag and drop or a double-click from the Parameter Tree. The actual editing of parameters can only be done in the Showlist. The selection of parameters in the Showlist is saved together with the parameter file.
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • <i>Using Parameter Sets</i> ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none"> • <i>Parameter Tree</i> on page 407 • <i>Show Parameter Editor</i> on page 421

Sort Ascending

Access	You can access this command via:
Menu bar	None
Context menu of	<ul style="list-style-type: none"> ■ Variable List (for column header) ■ Showlist (for column header)
Shortcut key	None
Toolbar icon	None
Purpose	To sort the Variable List/Showlist alphabetically in ascending order by the selected column.

Related topics

HowTos

- *How to Access the Parameter Editor* ([ControlDesk Experiment Guide](#))

References

- *Sort Descending* on page 424

Sort Descending

Access

You can access this command via:

Menu bar	None
Context menu of	<ul style="list-style-type: none">■ Variable List (for column header)■ Showlist (for column header)
Shortcut key	None
Toolbar icon	None

Purpose

To sort the Variable List/Showlist alphabetically in descending order by the selected column.

Related topics

HowTos

- *How to Access the Parameter Editor* ([ControlDesk Experiment Guide](#))

References

- *Sort Ascending* on page 423

Text

Access

You can access this command via:

Menu bar	View – Variable Browser
Context menu of	<ul style="list-style-type: none">■ Variable Tree■ Variable List
Shortcut key	None
Toolbar icon	

Purpose	To switch the Variable Browser from the graphic view to the text view.
Description	The text view includes the Variable Tree and the Variable List. See also <i>Graphic</i> on page 398.
Related topics	<p>References</p> <ul style="list-style-type: none"> • <i>Graphic</i> on page 398 • <i>Variable List</i> on page 425 • <i>Variable Tree</i> on page 427

Unmark Parameters

Access	You can access this command via:
Menu bar	None
Context menu of	Showlist
Shortcut key	None
Toolbar icon	None
Purpose	To unmark selected parameters in the Parameter Editor's Showlist.
Result	The marker highlighting selected parameters in the Showlist is removed.
Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Modify Parameters</i> ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none"> • <i>Mark Parameters</i> on page 401

Variable List

Access	This Variable Browser window is part of ControlDesk's Tool window and is shown on the right. You can access it via:
Menu bar	View – Show Variable Browser

Context menu of	Parameter Tree
Shortcut key	None
Toolbar icon	
Other	Click the tab of a system description file in the Tool Window

Purpose	To display the variables and matrices of a block that is currently selected in the Variable Tree (see <i>Variable Tree</i> on page 427).
Description	<p>The Variable List shows all variables and matrices of a selected block. The properties of the variables are displayed in columns.</p> <p>You can edit the properties to be displayed by using the Variable List dialog.</p> <p>You can build data connections from the displayed variables to the instruments of the current layout. Either use drag & drop with the left mouse button to create a standard data connection or use drag & drop with the right mouse button to call up the context menu. With the commands provided by this menu, you can build customer defined data connections.</p> <p>The contents of the columns can be sorted in ascending or descending order. The sorting commands are available in the context menu, which is called up clicking the left mouse button on the header bar of the Variable List.</p>
Related topics	<p>Basics</p> <ul style="list-style-type: none">• Handling Variables ( <i>ControlDesk Experiment Guide</i>)• Variable Browser Basics ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none">• Customize (Variable List) on page 380• Show Variable Browser on page 422• Variable Tree on page 427

Variable List Window

Access	This Reference Data Manager Window is part of ControlDesk's Tool window and is shown on the right. You can access it via:
Menu bar	View – Show Reference Data Manager
Context menu of	None
Shortcut key	None
Toolbar icon	None
Purpose	To display the variables of the currently selected node of the Browser window in the form of a list.
Remarks	Variables can be connected to data acquisition instruments by drag & drop.
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • Reference Data Manager Basics ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none"> • Browser Window on page 370 • Show Reference Data Manager on page 421

Variable Tree

Access	This Variable Browser window is part of ControlDesk's Tool window and is shown on the left. You can access it via:
Menu bar	View – Show Variable Browser
Context menu of	Parameter Tree
Shortcut key	None
Toolbar icon	
Other	Click the tab of a system description file in the Tool Window
Purpose	To display the hierarchy of the variable in a system description file.

Description	<p>The system description file is displayed as a tree. The tree can be displayed in two modes:</p> <ul style="list-style-type: none">■ text mode: see <i>Text</i> on page 424.■ graphic mode: see <i>Graphic</i> on page 398. <p>In the text mode, there is only one window showing the variable hierarchy. In the graphic mode, there are two windows: one showing the whole structure in an overview; the other showing the details of the whole structure. Moving the rectangle in the overview windows shifts the browsing window accordingly.</p> <div style="border: 1px solid #ccc; padding: 10px; margin-top: 10px;"><ul style="list-style-type: none">■ If you use a multiprocessor system, each tree of any processor is displayed separately.■ Refer to the Expand, Collapse, and Expand All for a quick way to expand or collapse the tree in the graphic mode via the mouse.</div>
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Related topics	<p>Basics</p> <ul style="list-style-type: none">• <i>Handling Variables</i> ( <i>ControlDesk Experiment Guide</i>)• <i>Variable Browser Basics</i> ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none">• <i>Collapse</i> on page 372• <i>Expand</i> on page 385• <i>Expand All</i> on page 386• <i>Graphic</i> on page 398• <i>Show Variable Browser</i> on page 422• <i>Text</i> on page 424• <i>Variable List</i> on page 425
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Write All Parameters Now

Access	You can access this command via:
Menu bar	Parameter Editor
Context menu of	None
Shortcut key	None
Toolbar icon	

Purpose	To write the values of all the parameters in the Status Set to the platform.
Result	The parameters contained in the Status Set are downloaded to the platform.
Description	<p>Only the parameters that are in the Status Set can be written to the platform.</p> <p>Via Write Parameter, you can also make ControlDesk write the parameters to the platform automatically whenever you modify a parameter value.</p>
Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Download Parameters</i> ( <i>ControlDesk Experiment Guide</i>) <p>Examples</p> <ul style="list-style-type: none"> • <i>Example of Modifying Parameter Values</i> ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none"> • <i>Read All Parameters Now</i> on page 408 • <i>Write Parameter</i> on page 429 • <i>Write Selected</i> on page 430 • <i>Write Showlist Parameters Now</i> on page 431

Write Parameter

Access	You can access this command via:	
Menu bar	Parameter Editor	
Context menu of	None	
Shortcut key	None	
Toolbar icon		
Purpose	To enable/disable the Write Parameter mode, which writes the value of a parameter in the Status Set to the platform immediately after editing.	

Result	If this mode is selected and you enter a value for a parameter, the value is automatically transferred to the platform when you leave the Value field. Carry out Write Parameter again to switch the mode off.
Description	Only parameters in the Status Set can be written to the platform. The value of a certain parameter is written to the platform only if it was edited before. You can also make ControlDesk update the Status Set with the parameters from the platform continuously using Automatic Update Parameters(see <i>Automatic Update Parameters</i> on page 369).
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• <i>How to Download Parameters</i> ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none">• <i>Automatic Update Parameters</i> on page 369• <i>Write All Parameters Now</i> on page 428

Write Selected

Access	You can access this command via:
Menu bar	None
Context menu of	Showlist
Shortcut key	None
Toolbar icon	None
Purpose	To write selected parameters to the platform.
Result	The values of the selected parameters are written to the platform.
Description	Only parameters in the Status Set can be written to the platform.
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• <i>How to Download Parameters</i> ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none">• <i>Read Selected</i> on page 409• <i>Write All Parameters Now</i> on page 428• <i>Write Showlist Parameters Now</i> on page 431

Write Showlist Parameters Now

Access	You can access this command via:
Menu bar	Parameter Editor
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To write the values of parameters contained in the Showlist to the platform.
Result	The values of the Showlist's parameters are written to the platform.
Description	Only parameters in the Status Set can be written to the platform.
Related topics	References <ul style="list-style-type: none">• Read Showlist Parameters Now on page 410• Write All Parameters Now on page 428• Write Selected on page 430

Write to Workspace

Access	You can access this command via:
Menu bar	None
Context menu of	Parameter Tree (Model Root Parameters or below)
Shortcut key	None
Toolbar icon	None
Purpose	To write the model root parameters to the MATLAB Workspace.
Result	ControlDesk updates the MATLAB Workspace with the model root parameters.

Description	All the model root parameters are contained in the system description file's Model Root Parameters group.
Related topics	<p>References</p> <ul style="list-style-type: none">• <i>Read From Workspace</i> on page 409

Event Handling

ControlDesk's menu bar and the Event Handling toolbars provide access to ControlDesk's Event Handling:

Purpose	Refer to	Avail. in OpMode
Tools menu		
To define, enable or disable events using the Events configuration dialog.	<i>Events</i> on page 434	no
To open the backup file for deleted event handlers.	<i>Open Backup File</i> on page 449	no
To reload event scripts already defined in the Events configuration dialog.	<i>Reload Events</i> on page 450	yes

Events

Access

You can access this command via:

Menu bar	Tools
Context menu of	None
Shortcut key	None
Toolbar icon	

Purpose

To define events, that is to link particular events to event handlers.

To enable or disable event handlers already created.

Result

The event handlers are defined, enabled or disabled according to the settings you specify.



This is not available in the Operator mode.

Events configuration dialog

Generate Click to insert the selected event handler function in the related event script.

Edit This button appears instead of **Generate** if the event handler already exists. Click it to edit the defined event handler within the event script.

Disable/Enable Click to disable the event currently selected in the tree of events. If an event is already disabled, this button changes to Enable. Repeat the same procedure to enable the event.

Delete Click to delete the selected event handler. See also *Delete event confirmation dialog* on page 435.



After an event has been deleted, the function call and the inserted code are removed from the event script.

Edit File Click to open the event file specified in the **Document** text field of the Events configuration dialog in the Source Code Editor.

Event Type Choose the type of event you want to display in the tree of events between global events (**Global** radio button), events specific to the current experiment (**Experiment** radio button) or specific to all opened layouts (**Layout** radio button).

Tree of events The tree of events lists the available events for the different event types:

- Global and experiment-specific events:

Identifier	Purpose	Refer to
Application	To define, enable or disable application-related events.	<i>Application Events Reference</i> on page 436
ExperimentManager	To define, enable or disable experiment-related events.	<i>Experiment Manager Events Reference</i> on page 437
Instrumentation	To define, enable or disable instrumentation-related events.	<i>Instrumentation Events Reference</i> on page 438
Interpreter	To define, enable or disable Interpreter-related events.	<i>Interpreter Events Reference</i> on page 439
ParameterEditor	To define, enable or disable Parameter Editor-related events.	<i>Parameter Editor Events Reference</i> on page 442
PlatformManager	To define, enable or disable Platform Manager-related events.	<i>Platform Manager Events Reference</i> on page 443
ReferenceManager	To define, enable or disable Reference Manager-related events.	<i>Reference Manager Events Reference</i> on page 444
CodeEditor	To define, enable or disable Code Editor-related events.	<i>Source Code Editor Events Reference</i> on page 445
StimulusEditor	To define, enable or disable Stimulus Editor-related events.	<i>Stimulus Editor Events Reference</i> on page 446
VariableBrowser	To define, enable or disable Variable Browser-related events.	<i>Variable Browser Events Reference</i> on page 448

- Layout-specific events

The list of available events covers the events for all instruments that are currently included in the selected layout. Refer to *Layout Events Reference* on page 440.

Delete event confirmation dialog

Use backup file Select the checkbox to save the source code of the deleted event handler in a backup file. See *Open Backup File* on page 449.

Application Events Reference

Access	The list of application-related events appears in the tree of events of the Events configuration dialog only if the Global or the Experiment radio button in the Event Type frame is selected. The list of application-related events is then called up: <ul style="list-style-type: none">■ By clicking on the + sign facing the Application entry in the tree of events of the Events configuration dialog.■ By double-clicking on the Application entry in the tree of events.
Purpose	To define, enable or disable application-related events.
Dialog settings	The list of application-related events is as follows:

Identifier	Triggered when
ActivateLogWindow	The Log Viewer tab inside the Tool Window is activated.
BeforeQuit	The application is about to exit.
Deactivate LogWindow	The Log Viewer tab inside the Tool Window is deactivated.
NavigatorTabChanged	The order of the tabs inside the Navigator has changed.
Started	The start process is finished.
ToolWindowTabChanged	The order of the tabs inside the Tool Window has changed.
WindowActivate	The ControlDesk window is activated.
WindowDeactivate	The ControlDesk window is deactivated.
WindowOrderingChanged	The order of the windows in the ControlDesk workspace has changed.
WindowStateChanged	The ControlDesk window state is changed.
WorkBookModeChanged	The workbook mode is switched.

Related topics

- Basics
 - [Applying Events \(ControlDesk Automation Guide\)](#)
- References
 - [Events](#) on page 434

Experiment Manager Events Reference

Access	<p>The list of Experiment Manager-related events appears in the tree of events of the Events configuration dialog only if the Global or the Experiment radio button in the Event Type frame is selected.</p> <p>The list of Experiment Manager-related events is then called up:</p> <ul style="list-style-type: none"> ■ By clicking on the + sign facing the ExperimentManager entry in the tree of events of the Events configuration dialog. ■ By double-clicking on the ExperimentManager entry in the tree of events. <p>The ExperimentManager entry appears in the list of events when you click on the Global or Experiment radio button in the Event Type frame.</p>
Purpose	To define, enable or disable Experiment Manager-related events.
Dialog settings	The list of Experiment Manager-related events is as follows:

Identifier	Triggered
ActivateNavigatorTab	When the Experiment tab of the Navigator is activated.
CloseExperiment	Before an experiment is closed.
DeactivateNavigatorTab	When the Experiment tab of the Navigator is deactivated.
ExperimentClosed	After an experiment is closed.
ExperimentOpened	After an experiment is opened.
ExperimentSaved	After an experiment is saved.
ExperimentUnzipped	After an experiment has been retrieved from a ZIP archive.
ExperimentZipped	After an experiment has been saved to a ZIP archive.
FileAddedToExperiment	When a file is added to the experiment.
FileRemovedFromExperiment	When a file is removed from the experiment.
NewExperiment	When a new experiment is created.
OpenExperiment	Before an experiment is opened.
SaveAsExperiment	When an experiment is saved with a new filename.
SaveExperiment	Before an experiment is saved.
UnzipExperiment	Before an experiment is retrieved from a ZIP archive.
ZipExperiment	Before an experiment is saved to a ZIP archive.

Related topics

Basics

- Applying Events ( ControlDesk Automation Guide)
- Experiment Manager Basics ( ControlDesk Experiment Guide)

References

- Events on page 434

Instrumentation Events Reference

Access

The list of instrumentation-related events appears in the tree of events of the Events configuration dialog only if the **Global** or the **Experiment** radio button in the **Event Type** frame is selected.

The list of instrumentation-related events is then called up:

- By clicking on the + sign facing the **Instrumentation** entry in the tree of events of the Events configuration dialog.
- By double-clicking on the **Instrumentation** entry in the tree of events.

The **Instrumentation** entry appears in the list of events when clicking on the **Global** or **Experiment** radio button in the **Event Type** frame.

Purpose

To define, enable or disable instrumentation-related events.

Dialog settings

The list of instrumentation-related events is as follows:

Identifier	Triggered when
ActivateDocument	A document is activated.
ActivateNavigatorTab	The Instrumentation tab of the Navigator is activated.
AddConnection	A data connection is created.
CloseDocument	A document is closed.
DeactivateDocument	A document is deactivated.
DeactivateNavigatorTab	The Instrumentation tab of the Navigator is deactivated.
DeleteConnection	A data connection is deleted.
EnterEditMode	The Edit mode is activated.
ExportDataConnections	Data connections are exported to a connection file.
ImportDataConnections	Data connections are imported from a connection file.
InstrumentSelectorStateChanged	The state of the Instrument Selector has changed.

Identifier	Triggered when
LeaveEditMode	The Edit mode has been deactivated.
NewDocument	A new document is created.
OpenDocument	A document is opened.
SaveAsDocument	A document is saved with a different name.
SaveDocument	A document is saved.
StartAnimation	The animation is started.
StopAnimation	The animation is stopped.

Related topics**Basics**

- [Applying Events](#) ( *ControlDesk Automation Guide*)
- [Instrumentation Tools](#) ( *ControlDesk Experiment Guide*)

References

- [Events](#) on page 434

Interpreter Events Reference

Access

The list of Interpreter-related events appears in the tree of events of the Events configuration dialog only if the **Global** or the **Experiment** radio button in the **Event Type** frame is selected.

The list of Interpreter-related events is then called up:

- By clicking on the + sign facing the **Interpreter** entry in the tree of events of the Events configuration dialog.
- By double-clicking on the **Interpreter** entry in the tree of events.

The **Interpreter** entry appears in the list of events when you click on the **Global** or **Experiment** radio button in the **Event Type** frame.

Purpose

To define, enable or disable Interpreter-related events.

Dialog settings

The list of Interpreter-related events is as follows:

Identifier	Triggered when
ActivateToolWindowTab	The Interpreter tab in the Tool Window is activated.
DeactivateToolWindowTab	The Interpreter tab in the Tool Window is deactivated.

Related topics

Basics

- [Applying Events](#) (ControlDesk Automation Guide)
- [Using the Python Interpreter](#) (ControlDesk Automation Guide)

References

- [Events](#) on page 434

Layout Events Reference

Access

The list of instrument-related events is called up by clicking on the **Layout** radio button in the **Event Type** frame of the Events configuration dialog. You can access the list of events related to each instrument contained in the current layout:

- By clicking on the + sign facing the instrument name in the tree of events of the Events configuration dialog.
- By double-clicking on the instrument name entry in the tree of events.

Purpose

To define, enable or disable instrument-related events.

Dialog settings

The available instruments are: Bar, CheckButton, Display, Frame, Gauge, Knob, LogicAnalyzer, Message, MultistateLED, NumericInput, OnOffButton, Plotter, PlotterArray, PushButton, RadioButton, Slider, StaticText, TableEditor, and XYPlot. The list of instrument-related events is as follows:

Instrument	Identifier	Triggered
All	Click	When you click on the instrument with the left mouse key.
All	DblClick	When you click twice on the instrument with the left mouse key.
All	KeyDown	When a key is pressed. The type of key and its status are determined by the Identifier's parameters.
All	KeyPressed	When a key is pressed and released. The type of key and its status are determined by the Identifier's parameters.

Instrument	Identifier	Triggered
All	KeyUp	When a key is released. The type of key and its status are determined by the Identifier's parameters.
All	KillFocus	When an instrument has lost the focus.
All	MouseDown	When one of the mouse keys is pressed. The type of key is determined by the Identifier's parameters.
All	MouseUp	When one of the mouse keys is released. The type of key is determined by the Identifier's parameters.
All	OutOfRange	When the value is out of the range of values that the instrument may show.
All	SetFocus	When an instrument gets the focus.
Bar, Gauge, Display, Knob, NumericInput, Slider	OutOfScale	When the value is outside the set scale.
Knob, Slider	BeginChange	When the current value is beginning to change
Knob, Slider	Changing	As long as the value is changing.
Knob, Slider	EndChange	After the current value has changed.
Message, MultistateLED, CheckButton, Radiobutton.	StateChanged	When the instrument state has been changed.
Plot, LogicAnalyzer	CursorGrabChanged	When the cursor status has changed.
Plot, LogicAnalyzer	CursorPosChanged	When the cursor position has changed.
Plot, LogicAnalyzer	CursorTextChanged	When the legend changes with the cursor data.
Plot, LogicAnalyzer	SignalChanged	When the active signal has changed.
Plot, LogicAnalyzer	SignalRemoved	When a signal is deleted.
Plot, LogicAnalyzer	ZoomDefStateChanged	When the zoom status has changed.
PushButton, OnOffButton	ButtonDown	When a button inside the instrument is pressed.
PushButton, OnOffButton, RadioButton	ButtonFocused	When the focus inside the instrument has changed.
PushButton, OnOffButton	ButtonUp	When a button inside the instrument is released.

Related topics

Basics

- [Applying Events](#) (ControlDesk Automation Guide)

References

- [Events](#) on page 434
- [Virtual Instruments](#) (ControlDesk Instrument Reference)

Parameter Editor Events Reference

Access

The list of Parameter Editor-related events appears in the tree of events of the Events configuration dialog only if the **Global** or the **Experiment** radio button in the **Event Type** frame is selected.

The list of Parameter Editor-related events is called up:

- By clicking on the + sign facing the **ParameterEditor** entry in the tree of events of the Events configuration dialog.
- By double-clicking on the **ParameterEditor** entry in the tree of events.

The **ParameterEditor** entry appears in the list of events when you click on the **Global** or **Experiment** radio button in the **Event Type** frame.

Purpose

To define, enable or disable Parameter Editor-related events.

Dialog settings

The list of Parameter Editor-related events is as follows:

Identifier	Triggered when
ActivateParameterFile	The parameter file is activated.
ActivateToolWindowTab	One of the tabs in the Tool Window corresponding to the current parameter file is activated.
CloseParameterFile	A parameter file is closed.
DeactivateParameterFile	The parameter file is deactivated.
DeactivateToolWindowTab	One of the tabs in the Tool Window corresponding to the current parameter file is deactivated.
DeclareStatusSet	The status set is declared.
GenerateParameterFile	A parameter file is generated.
MarkParameters	Parameters are marked.
OpenParameterFile	A parameter file is opened.

Identifier	Triggered when
ReadAllParameters	All parameters are read from the hardware.
ReadParameters	The parameters selected in the Showlist are read.
ReadShowlistParameters	Showlist parameters are read.
RemoveSelectedParameters	Parameters are removed from the Showlist.
SaveAsParameterFile	A parameter file is saved with a new name.
SaveParameterFile	A parameter file is saved.
ShowVariableBrowser	The view is switched to the Variable Browser.
UnmarkParameters	Parameters are unmarked.
WriteAllParameters	All parameters are written to the hardware.
WriteParameter	A parameter is written to the hardware.
WriteParameters	The parameters selected in the Showlist are written.
WriteShowlistParameters	Showlist parameters are written.

Related topics**Basics**

- *Applying Events* (*ControlDesk Automation Guide*)

HowTos

- *How to Access the Parameter Editor* (*ControlDesk Experiment Guide*)

References

- *Events* on page 434

Platform Manager Events Reference

Access

The list of Platform Manager-related events appears in the tree of events of the Events configuration dialog only if the **Global** or the **Experiment** radio button in the **Event Type** frame is selected.

The list of Platform Manager-related events is then called up:

- By clicking on the + sign facing the **PlatformManager** entry in the tree of events of the Events configuration dialog.
- By double-clicking on the **PlatformManager** entry in the tree of events.

The **PlatformManager** entry appears in the list of events when you click on the **Global** or **Experiment** radio button in the **Event Type** frame.

Purpose To define, enable or disable Platform Manager-related events.

Dialog settings The list of Platform Manager-related events is as follows:

Identifier	Triggered when
ChangeConnection	The platform connection is changed.
ClearSystem	The dSPACE.ini file has been deleted and the device driver reset.
LoadApplication	An application is loaded to the platform.
LoadMPApplication	An application is loaded to a multiprocessor system.
RefreshPlatformConnection	The platform connection is refreshed.
RegisterBoard	The board has been registered.
ReloadApplication	The currently loaded application is reloaded.
SetWorkingBoard	A working board has been set.
StopRtp	The real-time platform or the simulation is stopped.

Related topics

Basics

- *Applying Events* (*ControlDesk Automation Guide*)
- *Managing Platforms and Handling Applications* (*ControlDesk Experiment Guide*)

References

- *Events* on page 434

Reference Manager Events Reference

Access

The list of Reference Manager-related events appears in the tree of events of the Events configuration dialog only if the **Global** or the **Experiment** radio button in the **Event Type** frame is selected.

The list of Reference Manager-related events is then called up:

- By clicking on the + sign facing the **ReferenceManager** entry in the tree of events of the Events configuration dialog.
- By double-clicking on the **ReferenceManager** entry in the tree of events.

The **ReferenceManager** entry appears in the list of events when you click on the **Global** or **Experiment** radio button in the **Event Type** frame.

Purpose	To define, enable or disable Reference Manager-related events.
----------------	--

Dialog settings	The list of Reference Manager-related events is as follows:
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Identifier	Triggered when
ActivateToolWindowTab	The Reference Data Manager tab of the Tool Window is activated.
CaptureTaken	A new capture has been performed.
CloseReferenceFile	A reference data file is closed.
DeactivateToolWindowTab	The Reference Data Manager tab of the Tool Window is deactivated.
OpenReferenceFile	A reference data file is opened.
SaveAsReferenceFile	A reference data file is saved with another name.
SaveReferenceFile	A reference data file is saved.

Related topics	<p>Basics</p> <ul style="list-style-type: none"> • Applying Events ( <i>ControlDesk Automation Guide</i>) • Reference Data Manager Basics ( <i>ControlDesk Experiment Guide</i>) <p>References</p> <ul style="list-style-type: none"> • Events on page 434
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Source Code Editor Events Reference

Access	<p>The list of Source Code Editor-related events appears in the tree of events of the Events configuration dialog only if the Global or the Experiment radio button in the Event Type frame is selected.</p> <p>The list of Source Code Editor-related events is then called up:</p> <ul style="list-style-type: none"> ■ By clicking on the + sign facing the CodeEditor entry in the tree of events of the Events configuration dialog. ■ By double-clicking on the CodeEditor entry in the tree of events. <p>The CodeEditor entry appears in the list of events when you click on the Global or Experiment radio button in the Event Type frame.</p>
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Purpose	To define, enable or disable Source Code Editor-related events.
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Dialog settings

The list of Source Code Editor-related events is as follows:

Identifier	Triggered when
ActivateDocument	A document is activated.
ActivateToolWindowTab	The Function Selector tab in the Tool Window is activated.
CloseDocument	A document is closed.
DeactivateDocument	A document is deactivated.
DeactivateToolWindowTab	The Function Selector tab in the Tool Window is activated.
NewDocument	A new document is created.
OpenDocument	A document is opened.
SaveAsDocument	A document is saved with another filename.
SaveDocument	A document is saved.

Related topics

Basics

- [Applying Events](#) ([ControlDesk Automation Guide](#))
- [Using the Source Code Editor](#) ([ControlDesk Experiment Guide](#))

References

- [Events](#) on page 434

Stimulus Editor Events Reference

Access

The list of Stimulus Editor-related events appears in the tree of events of the Events configuration dialog only if the **Global** or the **Experiment** radio button in the **Event Type** frame is selected.

The list of Stimulus Editor-related events is then called up:

- By clicking on the + sign facing the **StimulusEditor** entry in the tree of events of the Events configuration dialog.
- By double-clicking on the **StimulusEditor** entry in the tree of events.

The **StimulusEditor** entry appears in the list of events when you click on the **Global** or **Experiment** radio button in the **Event Type** frame.

Purpose

To define, enable or disable Stimulus Editor-related events.



ControlDesk Test Automation is documented only for compatibility reasons (for scripts up to ControlDesk v2.3). For test automation tasks, you are recommended to use dSPACE AutomationDesk.

Dialog settings

The list of Stimulus Editor-related events is as follows:

Identifier	Triggered when
ActivateDocument	A Stimulus Editor document is activated.
ActivateNavigatorTab	The Test Automation tab of the Navigator is activated.
BuildAndRunScript	A Python script is built and started.
CloseDocument	A Stimulus Editor document is closed.
DeactivateDocument	A Stimulus Editor document is deactivated.
DeactivateNavigatorTab	The Test Automation tab of the Navigator is deactivated.
DownloadSEQFile	The control table for the signal generation on the RTP board is downloaded.
NewDocument	A new Stimulus Editor document is created.
OpenDocument	A Stimulus Editor document is opened.
SaveAsDocument	A Stimulus Editor document is saved with a new filename.
SaveDocument	A Stimulus Editor document is saved.
StimulusStateChanged	The Stimulus state has been changed by the user or automatically.

Related topics

Basics

- [Applying Events \(ControlDesk Automation Guide\)](#)
- [Stimulus Editor Basics \(ControlDesk Test Automation Guide\)](#)

References

- [Events](#) on page 434

Variable Browser Events Reference

Access

The list of Variable Browser-related events appears in the tree of events of the Events configuration dialog only if the **Global** or the **Experiment** radio button in the **Event Type** frame is selected.

The list of Variable Browser-related events is then called up:

- By clicking on the + sign facing the **VariableBrowser** entry in the tree of events of the Events configuration dialog.
- By double-clicking on the **VariableBrowser** entry in the tree of events.

The **VariableBrowser** entry appears in the list of events when you click on the **Global** or **Experiment** radio button in the **Event Type** frame.

Purpose

To define, enable or disable Variable Browser-related events.

Dialog settings

The list of Variable Browser-related events is as follows:

Identifier	Triggered when
AssignPlatform	A platform has been assigned.
ChangeConnectionType	The platform connection type has changed.
CloseVariableFile	A system description file is closed.
OpenVariableFile	A system description file is opened.
ReloadVariableFile	The system description file is reloaded.
ReplaceVariableFile	A system description file is replaced.
ShowParameterEditor	The Parameter Editor is shown.

Related topics**Basics**

- *Applying Events* ( [ControlDesk Automation Guide](#))
- *Variable Browser Basics* ( [ControlDesk Experiment Guide](#))

References

- *Events* on page 434

Handling Events

Where to go from here

Information in this section

Open Backup File	449
Reload Events	450

Open Backup File

Access

You can access this command via:

Menu bar	Tools
Context menu of	None
Shortcut key	None
Toolbar icon	

Purpose

To oShortcut keypen the backup file for deleted event handlers.

The backup file is located in
`%DSPACE_ROOT%\ControlDesk\Users\%USERNAME%_CDEvents.bak`

Result

All event handlers deleted via the Events configuration dialog are stored in this file if you select the **Use backup file** checkbox in the Delete event confirmation dialog (see *Delete event confirmation dialog* on page 435).



This is not available in the Operator mode.

Related topics

Basics

- *Applying Events* (*ControlDesk Automation Guide*)

References

- *Event Handling* on page 433
- *Events* on page 434
- *Reload Events* on page 450

Reload Events

Access	You can access this command via:	
Menu bar	Tools	
Context menu of	None	
Shortcut key	None	
Toolbar icon		
Purpose	To reload event scripts already defined in the Events configuration dialog.	
Result	The event handler functions already defined in the Events configuration dialog are known to the Event's namespace, and thus can be called by ControlDesk.	
Description	The events are defined in the Events configuration dialog (see <i>Events configuration dialog</i> on page 434).	
Related topics	<p>Basics</p> <ul style="list-style-type: none">• Applying Events ( <i>ControlDesk Automation Guide</i>) <p>References</p> <ul style="list-style-type: none">• Events on page 434• Handling Events on page 449• Open Backup File on page 449	

Failure Simulation

If your ControlDesk contains the Failure Simulation component, it provides additional menu commands and dialogs.

Where to go from here

Information in this section

Failure Simulation Commands	452
Providing information on the commands and dialogs of the Failure Simulation component.	
Pin Failures	475
A pin failure describes a failure, which can be simulated at a pin. Every pin failure is assigned to an identifier (pin failure ID). For every FIU card special pin failures are defined.	

Failure Simulation Commands

The Failure Simulation component provides various commands and dialogs, which are accessible via context menus.

Purpose	Refer to	Avail. in OpMode
File menu		
To create a new failure simulation system	<i>Failure Simulation for Mid-Size or Full-Size</i> on page 462 <i>Failure Simulation for Full-Size (Variant 2)</i> on page 461	yes yes
Failure simulation system context menu		
To save the failure simulation system under the given name	<i>Save System</i> on page 472	yes
To save the failure simulation system under another name	<i>Save System As</i> on page 472	yes
To update the failure simulation system	<i>Update System</i> on page 474	yes
To close the failure simulation system	<i>Close System</i> on page 454	yes
To add the failure simulation system to the experiment	<i>Add to Experiment (Failure Simulation)</i> on page 453	yes
To remove the failure simulation system from the experiment	<i>Remove From Experiment (Failure Simulation)</i> on page 470	yes
To connect the failure simulation system to the hardware	<i>Connect</i> on page 454	yes
To disconnect the failure simulation system from the hardware	<i>Disconnect</i> on page 459	yes
To reset the failure simulation hardware	<i>Reset Failure Simulation Hardware</i> on page 471	yes
To modify the properties of the failure simulation system	<i>Properties (Failure Simulation System)</i> on page 465	yes
To create or edit a timing sequence for a DS793	<i>Create/Edit Timing Sequence</i> on page 455	yes
To download a timing sequence to a DS793	<i>Download Timing Sequence</i> on page 460	yes
Failure pattern context menu		
To reset a failure pattern	<i>Reset (Failure Pattern)</i> on page 470	yes
To create a new failure pattern	<i>New Failure Pattern</i> on page 464	yes
ECU context menu		
To disable an electronic controll unit for failure simulation	<i>Disable</i> on page 458	yes
To enable an electronic controll unit for failure simulation	<i>Enable</i> on page 460	yes
Pin context menu		
To set the properties (pin failure) for a pin	<i>Properties (Pin Item)</i> on page 467	yes
To activate a pin failure	<i>Activate Selected Pin Failure</i> on page 453	yes
To deactivate a pin failure	<i>Deactivate Selected Pin Failures</i> on page 457	yes
To select a pin failure for a pin	<i>Set Pin Failure</i> on page 473	yes
To highlight a pin in the Failure Simulation Navigator	<i>Highlight Pin</i> on page 463	yes
To reset a pin to the initial state	<i>Reset (Pin)</i> on page 471	yes
To remove a pin from a failure pattern	<i>Remove</i> on page 469	yes

Activate Selected Pin Failure

Access	You can access this command via:
Menu bar	None
Context menu of	Pin table in the Failure Pattern window
Shortcut key	None
Toolbar icon	None
Purpose	To activate the failure for the selected pins.
Result	The failure simulation for the selected pins are activated on the hardware.
Description	Only deactivated pins could be activated. You can select and activate one or more pins.
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• How to Activate Pin Failures ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none">• Deactivate Selected Pin Failures on page 457

Add to Experiment (Failure Simulation)

Access	You can access this command via:
Menu bar	None
Context menu of	Failure simulation system in the Failure Simulation Navigator
Shortcut key	None
Toolbar icon	None
Purpose	To add the current failure simulation system to the experiment.
Result	The failure simulation system and its settings are added to the experiment.

Description When a failure simulation system is added to an experiment, it is displayed in the Experiment Navigator's hierarchy.

Related topics References
• *Remove From Experiment (Failure Simulation)* on page 470

Close System

Access You can access this command via:

Menu bar	None
Context menu of	Failure simulation system in the Failure Simulation Navigator
Shortcut key	None
Toolbar icon	None

Purpose To close the current failure simulation system.

Result The failure simulation system is closed.

Description The settings get lost if you do not save the failure simulation system.

Related topics References
• *Update System* on page 474

Connect

Access You can access this command via:

Menu bar	None
Context menu of	Failure simulation system in the Failure Simulation Navigator
Shortcut key	None
Toolbar icon	None

Purpose	To establish a connection between the failure simulation system and the failure insertion units.
Result	The failure simulation system is connected to the failure insertion units.
Description	Before you can work with the failure insertion units you have to establish a connection to them. Depending on the type of the failure insertion unit, it is connected via a CAN or RS232 interface. When the connection is set up, the failure insertion unit is reset to the initial state.
Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • How to Specify the Connection of ControlDesk to Failure Insertion Units ( ControlDesk Experiment Guide) <p>References</p> <ul style="list-style-type: none"> • Disconnect on page 459

Create/Edit Timing Sequence

Access	This command is enabled only for failure simulation systems having a DS793. You can access this command via:
Menu bar	None
Context menu of	Failure simulation system in the Failure Simulation Navigator
Shortcut key	None
Toolbar icon	None
Purpose	To create or edit a timing sequence an ECU for failure simulation.
Description	A DS793 switches the pins to the failure potential using semiconductor switches. This allows to simulate a loose contact or switch bouncing. The DS793 switches alternatively between the failure potential and the normal state in specified time periods, the timings sequence. For more information, refer to <i>Simulating Loose Contacts or Switch Bouncing Using a DS793</i> ( ControlDesk Experiment Guide).

Result	The timing sequence is specified and activated. It can be downloaded to the DS793.
Edit Timing Sequence dialog	<p>The dialog allows you to specify and manage timing sequences for a DS793.</p> <p>Location of Timing Sequence File Lets you select the directory from which the timing sequence file should be opened. The directory can be changed afterwards.</p> <p>Timing Sequences Lists all timing sequences contained in the selected timing sequence file. Click in the second or third column to select a timing sequence for editing. Click on the option box to select a timing sequence for downloading.</p> <p>New Lets you specify a new timing sequence.</p> <p>Delete Lets you delete a timing sequence.</p> <p>Import Lets you import a timing sequence file. All imported timing sequences of the file are appended to the Timing Sequences list.</p> <p>A timing sequence file is a CSV (comma separated value) file. You can create a timing sequence yourself, refer to <i>Timing Sequence File Format</i> ( <i>ControlDesk Experiment Guide</i>).</p> <p>Repeats Lets you specify how often the timing sequence is repeated. The possible value range is 1 ... 63.</p> <p>Short Name Lets you specify a name for the timing sequence (max. 10 characters).</p> <p>Final State Displays the final state when the switching of the timing sequence is done. This value is updated, when you enter the values for the timing sequence.</p> <p>Sequence in ms Lets you edit the selected timing sequence. The values specify how long a state is hold. The first value is the time duration of the failure state, the 2nd value of the normal state and so on. If the number of values is odd, the final state is the failure state (the last time value is ignored). A maximum of 100 values are allowed, separated by a semicolon. All values must be given in ms within the range of 0.02 ... 81.9 ms.</p> <p>For an example of a timing sequence, refer to <i>Simulating Loose Contacts or Switch Bouncing Using a DS793</i> ( <i>ControlDesk Experiment Guide</i>).</p> <p>Apply Changes Lets you apply the changes of the selected timing sequence properties. When you click this button, all values are stored in the Timing Sequence list.</p>

If you do not want to apply your changes, select another timing sequence in the list without clicking the **Apply Changes** button.

Save and Close Lets you save all timing sequences in the specified file.

Related topics	Basics <ul style="list-style-type: none"> • <i>Simulating Loose Contacts or Switch Bouncing Using a DS793 (ControlDesk Experiment Guide)</i> HowTos <ul style="list-style-type: none"> • <i>How to Specify Timing Sequences for DS793 Modules (ControlDesk Experiment Guide)</i> References <ul style="list-style-type: none"> • <i>Download Timing Sequence</i> on page 460
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Deactivate Selected Pin Failures

Access	You can access this command via:
Menu bar	None
Context menu of	Pin table in the Failure Pattern window
Shortcut key	None
Toolbar icon	None
Purpose	To deactivate the selected pins.
Result	The pin failures at the selected pins are inactive on the hardware.
Description	Only activated pins could be deactivated. You can select and deactivate one or more pins.
Related topics	HowTos <ul style="list-style-type: none"> • <i>How to Activate Pin Failures (ControlDesk Experiment Guide)</i> References <ul style="list-style-type: none"> • <i>Activate Selected Pin Failure</i> on page 453

Delete (Failure Simulation)

Access	You can access this command via:
Menu bar	None
Context menu of	Failure pattern in the Failure Simulation Navigator
Shortcut key	None
Toolbar icon	None
Purpose	To delete the selected failure pattern.
Result	The failure pattern is completely removed.
Description	You could delete the failure pattern anytime if all included pin failures are deactivate. Note that, when done, all the failure pattern settings get lost.
Related topics	References <ul style="list-style-type: none">• New Failure Pattern on page 464

Disable

Access	You can access this command via:
Menu bar	None
Context menu of	ECU in the Failure Simulation Navigator
Shortcut key	None
Toolbar icon	None
Purpose	To exclude the selected ECU for failure activation.
Result	The ECU is disabled.
Description	You can only disable an ECU if no pin failure is active for its pins. If you have disabled an ECU, its pins will not be failure-simulated during the next activation.

Related topics

- References
• [Enable](#) on page 460

Disconnect

Access	You can access this command via:
Menu bar	None
Context menu of	Failure simulation system in the Failure Simulation Navigator
Shortcut key	None
Toolbar icon	None
Purpose	To disconnect the failure simulation system and the failure insertion unit.
Result	The failure simulation system and the failure insertion unit are disconnected.
Description	You can only disconnect the failure simulation system and the failure insertion units if all failure patterns are deactivated. After the disconnection a failure simulation is not possible furthermore.
Related topics	<p>HowTos • How to Specify the Connection of ControlDesk to Failure Insertion Units ( ControlDesk Experiment Guide)</p> <p>References • Connect on page 454</p>

Download Timing Sequence

Access	This command is enabled only for failure simulation systems having a DS793. You can access this command via:
Menu bar	None
Context menu of	Failure simulation system in the Failure Simulation Navigator
Shortcut key	None
Toolbar icon	None
Purpose	To download the activated timing sequence to the connected DS793.
Description	For a description, refer to <i>Create/Edit Timing Sequence</i> on page 455.
Result	The timing sequence is downloaded to all connected DS793 modules of the failure simulation system. You can activate or deactivate the use of the timing sequence in the Failure Pattern window (see <i>Failure Pattern Window</i> on page 462).
Related topics	References <ul style="list-style-type: none">• <i>Create/Edit Timing Sequence</i> on page 455• <i>Failure Pattern Window</i> on page 462

Enable

Access	You can access this command via:
Menu bar	None
Context menu of	ECU in the Failure Simulation Navigator
Shortcut key	None
Toolbar icon	None
Purpose	To enable an ECU for failure simulation.

Result	You can only enable an ECU if no pin failure is active for its pins. The ECU pins of the enabled ECU are failure-simulated at the next activation.
Related topics	<p>References</p> <ul style="list-style-type: none">• Disable on page 458

Failure Simulation for Full-Size (Variant 2)

Access	You can access this command via:
Menu bar	File – New
Context menu of	None
Shortcut key	None
Toolbar icon	None
Purpose	To create a new failure simulation system.
Result	A new failure simulation system is created.
Description	A new failure simulation system is created for a simulator containing a DS293 failure insertion unit. A dialog for describing the system is opened, refer to <i>Properties (Failure Simulation System)</i> on page 465.
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• How to Create a New Failure Simulation System ( ControlDesk Experiment Guide)

Failure Simulation for Mid-Size or Full-Size

Access	You can access this command via:
Menu bar	File – New
Context menu of	None
Shortcut key	None
Toolbar icon	None
Purpose	To create a new failure simulation system.
Result	A new failure simulation system is created.
Description	A new failure simulation system is created for a simulator containing a DS291, DS749, DS789, DS791, or DS793 failure insertion unit. A dialog for describing the system is opened, refer to <i>Properties (Failure Simulation System)</i> on page 465.
Related topics	HowTos <ul style="list-style-type: none">• <i>How to Create a New Failure Simulation System</i> ( <i>ControlDesk Experiment Guide</i>)

Failure Pattern Window

Access	You can access this window via double-clicking on a failure pattern icon in the Failure Simulation Navigator
Purpose	To define a failure pattern.
Description	The Failure Pattern window displays the failure pattern for a failure simulation system. The failure pattern is described by a table containing all pins which should be failure-simulated at the same time. To add a pin to the table, drag it from the Failure Simulation Navigator to the table. To add all pins of an ECU to the table, drag the ECU item from the Failure Simulation Navigator to the table.

Only for DS293 The Failure Pattern window displays the failure pattern for a failure simulation system. A failure pattern consists of circuit diagrams for each failure-simulated pin. The open connectors in the circuit diagram (drawn in dark-gray boxes) symbolize connectors for additional hardware components of the DS293. Click on the dark-gray boxes to switch to RSIM, MEAS, or SOURCE. Select **Properties** from the context menu of the additional hardware component to change its settings, refer to *Properties (Resistor)* on page 467 or *Properties (Measurement)* on page 468.

Settings

- Activate Pattern** Activates the failure pattern for all pins, which are enabled for activation.
- Deactivate Pattern** Deactivates the failure pattern for all pins, which are active on the hardware.
- Potentials** Selects a potential from the module or fail plane (only valid for DS293, DS789, DS791, DS793).
- Switches** Indicates which switch is switched when activating the failure pattern.
- ECU Name** Displays the name of the ECU where the pin is located.
- Pin Name** Displays the name of the pin.
- Configured Pin Failure** Displays the pin failure which is selected for the pin.

Related topics

HowTos

- *How to Create a Failure Pattern* ( *ControlDesk Experiment Guide*)

References

- *New Failure Pattern* on page 464

Highlight Pin

Access

You can access this command via:

Menu bar	None
Context menu of	Pin table in the Failure Pattern Window
Shortcut key	None
Toolbar icon	None

Purpose	To highlight the selected pin.
Result	The selected pin is marked in the Failure Simulation Navigator.
Related topics	References • <i>Failure Pattern Window</i> on page 462

New Failure Pattern

Access	You can access this command via:
Menu bar	None
Context menu of	Failure pattern in the Failure Simulation Navigator
Shortcut key	None
Toolbar icon	None
Purpose	To create a new failure pattern.
Result	A new failure pattern is created.
Description	A new failure pattern could be created anytime. When a failure pattern is created, it is added under a new node in the Failure Simulation Navigator. You can define the failure pattern in the Failure Pattern Window, refer to <i>Failure Pattern Window</i> on page 462.
Related topics	References • <i>Delete (Failure Simulation)</i> on page 458 • <i>Reset (Failure Pattern)</i> on page 470

Properties (Failure Simulation System)

Access	You can access this command via:
Menu bar	None
Context menu of	Failure simulation system in the Failure Simulation Navigator
Shortcut key	None
Toolbar icon	None
Purpose	To set the properties of a failure simulation system.
Result	The failure simulation system properties are defined.
	<p>The name of the failure simulation system must be unique.</p>
Failure Simulation System Properties dialog	<p>The dialog shows the settings of the failure simulation system and lets you set the properties when you create a new failure simulation system or change it later.</p> <p>Location of signal file Lets you select the directory from which the signal file should be opened. The directory can be changed afterwards.</p> <p>Author Lets you specify the name of the author.</p> <p>ECU number Lets you specify the ECU number.</p> <p>Description Lets you specify a description.</p> <p>CAN option Opens the CAN Properties dialog for a DS293, see <i>CAN Properties dialog</i> on page 466.</p> <p>Port option Opens the Communications Port Properties dialog for a DS291, DS749, DS789, DS791, or DS793, see <i>Communications Port Properties dialog</i> on page 466.</p> <p>Pin Properties Opens the Visible Pin Properties dialog, see <i>Visible Pin Properties dialog</i> on page 466.</p>

CAN Properties dialog	In this dialog the properties of the CAN interface could be chosen (only valid for DS293). Device type Lets you select the type of device. Vector CANCardX, Vector CANcardXL, dSPACE CAN Interface, or Calibration Hub (dSPACE) could be chosen. Device index Lets you select the index (0, 1, ...) of the device. Several devices of the same type could be available in the system. If the devices are available in the system, their indices are listed in the Device index drop-down list. Otherwise the list is empty. Channel number Lets you select the channel number. If the devices are available in the system, their indices are listed in the Channel number drop-down list. Otherwise the list is empty. Serial Number Displays the serial number of the selected hardware. If no hardware of this type is located in the system, the serial number is 0. Baudrate Displays the baudrate (The baudrate is fixed to 125000). Bus Timing Registers Shows the characteristics of the CAN bus. The characteristics of the CAN bus transmission is set via the register BTR 0 and BTR 1. The BTR 0 register defines the value of the baudrate prescaler. The BTR 1 register defines the bit time, the position of the sampling time within a bit as well as the number of scanning spots. The default parameters are BTR 0 = 0x47 and BTR 1 = 0x14. Check this values whether they are suitable for the application. More information could be found in books about CAN.
Communications Port Properties dialog	In this dialog the COM port can be chosen and the properties of the serial interface are shown (only valid for DS291, DS749, DS789, DS791, and DS793). Port Lets you choose the COM port. The available COM ports are listed in the drop-down list. Bit per second Displays the baudrate in bit per second. Data bits Displays the number of data bits. Parity Displays whether the parity bit is set. Stop bits Displays the number of stop bits.
Visible Pin Properties dialog	Lets you select the attributes of the pins which are shown in the Pin Information dialog (see <i>Properties (Pin Item)</i> on page 467). These conventions are defined for all pins and can be changed at any time. Select All Selects all entries

Deselect All Deselects all entries**Related topics**

HowTos

- How to Specify the Connection of ControlDesk to Failure Insertion Units ( ControlDesk Experiment Guide)

Properties (Pin Item)

Access

You can access this command via:

Menu bar	None
Context menu of	<ul style="list-style-type: none"> ■ Pin in the Failure Simulation Navigator or ■ Pin table in the Failure Pattern window
Shortcut key	None
Toolbar icon	None

Purpose

To view the properties of the pin item.

Result

The pin attributes are shown.

Dialog settings

This dialog shows pin attributes, which are more detailed than the information in the Failure Pattern Window. The pin attributes are predefined for each pin in the signal file.

Related topics

HowTos

- How to Get Information on Pins ( ControlDesk Experiment Guide)

Properties (Resistor)

Access

You can access this command via:

Menu bar	None
Context menu of	Resistor icon in the Failure Pattern Window
Shortcut key	None
Toolbar icon	None

Purpose	To set the resistor value.
Result	The resistor value is set for all pin failures.
Description	It is only allowed to change the resistor value on each RSIM module if all pin failures of the selected failure pattern are deactivated. To each failure simulation system belongs one RSIM module. It is not possible to connect two or more RSIM modules to one failure simulation system.
Dialog settings	<p>The resistor properties dialog lets you enter the resistor value.</p> <p>resistor value Lets you enter the resistor value. The resistance is valid for all pin failures. Valid range is 0 ... 131071 Ω in steps of 1 Ω.</p>
Related topics	<p>Basics</p> <ul style="list-style-type: none">• <i>How to Specify Additional Hardware Components Connected to a DS293 (ControlDesk Experiment Guide)</i> <p>References</p> <ul style="list-style-type: none">• <i>Failure Pattern Window</i> on page 462

Properties (Measurement)

Access	You can access this command via:
	Menu bar None
	Context menu of Measurement icon in the Failure Pattern Window
	Shortcut key None
	Toolbar icon None
Purpose	To set the properties of the dual measurement relay.
Result	The properties of the dual measurement relays are set.
Description	Measurement relays can only be used in simulators containing a DS293.

Dialog settings	The measurement properties dialog lets you select between different measurement states. measurement state select a measurement state in the checkbox or clear highlighted checkboxes.
Related topics	<p>Basics</p> <ul style="list-style-type: none">• <i>How to Specify Additional Hardware Components Connected to a DS293 (</i>  <i>ControlDesk Experiment Guide)</i> <p>References</p> <ul style="list-style-type: none">• <i>Failure Pattern Window</i> on page 462

Remove

Access	You can access this command via: Menu bar None Context menu of Pin table in the Failure Pattern Window Shortcut key None Toolbar icon None
Purpose	To remove the selected pins from the failure pattern.
Result	The selected pins are removed from the failure pattern if their pin failure are deactivated.
Description	Only pins which are deactivated can be removed. The pin failure settings of the removed pins get lost.

Remove From Experiment (Failure Simulation)

Access	You can access this command via:
Menu bar	None
Context menu of	Failure simulation system in the Failure Simulation Navigator
Shortcut key	None
Toolbar icon	None
Purpose	To remove the failure simulation system from the experiment.
Result	The failure simulation system is removed from the experiment.
Description	The failure simulation system could always be removed from the experiment.
Related topics	References <ul style="list-style-type: none">• Add to Experiment (Failure Simulation) on page 453

Reset (Failure Pattern)

Access	You can access this command via:
Menu bar	None
Context menu of	Failure pattern in the Failure Simulation Navigator
Shortcut key	None
Toolbar icon	None
Purpose	To reset the selected failure pattern to the initial state.
Result	The failure pattern is set to an initial condition.
Description	You can only reset the failure pattern if it is deactivated. All changes of the settings you have carried out are deleted and the former settings are restored.

Related topics**References**

- [New Failure Pattern](#) on page 464

Reset (Pin)

Access

You can access this command via:

Menu bar	None
Context menu of	Pin table in the Failure Pattern window
Shortcut key	None
Toolbar icon	None

Purpose

To set the checkboxes for the selected pin to the initial state.

Result

The checkboxes of the pin are set to the initial condition.

Description

You can only reset a pin if its pin failure is deactivated. When you reset the checkboxes of the selected pins, their settings are deleted and the former settings will be restored.

Reset Failure Simulation Hardware

Access

You can access this command via:

Menu bar	None
Context menu of	Failure simulation system in the Failure Simulation Navigator
Shortcut key	None
Toolbar icon	None

Purpose

To set the failure simulation hardware to the initial state.

Result

The failure simulation hardware is set into an initial condition.

Description	The failure simulation system must be connected to the hardware. When resetting the failure simulation hardware, the respective EEPROM memory of the module is set into the initial state.
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Save System

Access	You can access this command via:
Menu bar	File
Context menu of	Failure simulation system in the Failure Simulation Navigator
Shortcut key	None
Toolbar icon	None
Purpose	To save the current failure simulation system.
Result	The settings of the failure simulation system are saved.
Description	If a failure simulation system is saved for the first time, the Save System As command is invoked automatically.
Related topics	References • Save System As on page 472

Save System As

Access	You can access this command via:
Menu bar	File
Context menu of	Failure simulation system in the Failure Simulation Navigator
Shortcut key	None
Toolbar icon	None

Purpose	To save the current failure simulation system under a new name.
Result	The window is saved under the file name and path you specified.
Description	Save As prompts you to enter a path and file name. If the file name exists in the selected directory, you are prompted to overwrite it.
Dialog settings	<p>Save in Lets you select the path and directory in which the file should be saved.</p> <p>File name Lets you specify the name of the file. You can also select a name from the files listed under the chosen path and directory.</p> <p>Save as type Lets you select which type the file should be saved as.</p>
Related topics	<p>References</p> <ul style="list-style-type: none"> • Save System on page 472

Set Pin Failure

Access	You can access this command via:
Menu bar	None
Context menu of	Pin table in the Failure Pattern window
Shortcut key	None
Toolbar icon	None
Purpose	To select a preconfigured failure for a pin.
Result	The failure of the pin is preconfigured with the chosen settings.
Description	If you set the failure, you define a specific failure, for example, cable break or short circuit. A failure always relates to a specific ECU pin. You could only set one failure for one ECU pin at a time. Setting the failure defines the selection of the relays and sequence of activation.

Update System

Access	You can access this command via:
Menu bar	None
Context menu of	Failure simulation system in the Failure Simulation Navigator
Shortcut key	None
Toolbar icon	None
Purpose	To update the current failure simulation system.
Result	The signal file and the pin failure file will be reloaded and evaluated.
Description	<p>The failure simulation system will be closed and reopened. When it is opened a consistency check is started, doing the following:</p> <ul style="list-style-type: none">■ Pins, which are not used in a failure pattern and deleted or renamed in the signal file, are removed from the Failure Simulation Navigator.■ Pins, which are used in a failure pattern and deleted in the signal file, are only removed from the Failure Simulation Navigator. The pins keep in the failure pattern but are marked accordingly.■ New pins in the signal file are displayed in the Failure Simulation Navigator.■ The pins, which parameters are changed in the signal file, are updated with the new values.
Related topics	<p>References</p> <ul style="list-style-type: none">• <i>Close System</i> on page 454

Pin Failures

Objective A pin failure describes a failure, which can be simulated at a pin. Every pin failure is assigned to an identifier (pin failure ID). For every FIU card special pin failures are defined.

Where to go from here Information in this section

<i>Pin Failures for DS291</i>	475
<i>Pin Failures for DS293</i>	476
<i>Pin Failures for DS749</i>	478
<i>Pin Failures for DS789</i>	478
<i>Pin Failures for DS791 and DS793</i>	479

Pin Failures for DS291

The following table lists the pin failure IDs and their description which can be set if your simulator contains a DS291.

Pin Failure ID	Description
1	Cable break
2	Short circuit to GND (KL31) with load
3	Short circuit to GND (KL31) without load
4	Short circuit to +Ubat (KL30) with load
5	Short circuit to +Ubat (KL30) without load
6	Short circuit to COM (other ECU pin) with load
7	Short circuit to COM (other ECU pin) without load

Pin Failures for DS293

The following table lists the pin failure IDs and their description which can be set if your simulator contains a DS293.

Pin Failure ID	Description
100	Direct short circuit to POTENTIAL 0
101	Short circuited to POTENTIAL 0 via RSIM (transition impedance)
102	Short circuited to POTENTIAL 0 via MEAS
103	Short circuited to POTENTIAL 0 via SOURCE
110	Direct short circuit to POTENTIAL 1
111	Short circuited to POTENTIAL 1 via RSIM (transition impedance)
112	Short circuited to POTENTIAL 1 via MEAS
113	Short circuited to POTENTIAL 1 via SOURCE
120	Direct short circuit to POTENTIAL 2
121	Short circuited to POTENTIAL 2 via RSIM (transition impedance)
122	Short circuited to POTENTIAL 2 via MEAS
123	Short circuited to POTENTIAL 2 via SOURCE
130	Direct short circuit to POTENTIAL 3
131	Short circuited to POTENTIAL 3 via RSIM (transition impedance)
132	Short circuited to POTENTIAL 3 via MEAS
133	Short circuited to POTENTIAL 3 via SOURCE
140	Direct short circuit to POTENTIAL 4
141	Short circuited to POTENTIAL 4 via RSIM (transition impedance)
142	Short circuited to POTENTIAL 4 via MEAS
143	Short circuited to POTENTIAL 4 via SOURCE
200	Direct short circuit of ECU signals
201	Short circuit of ECU signals via RSIM (transition impedance)
202	Short circuit of ECU signals via MEAS

Pin Failure ID	Description
203	Short circuit of ECU signals via SOURCE
300	Cable break of ECU signal
301	Additional RSIM in current path of ECU signal
302	Additional MEAS in current path of ECU signal
303	Additional SOURCE in current path of ECU signal

Rules for Pin Failure IDs

The pin failure ID consists of three digits

<failure group><failure subgroup><additional hardware component>

It is built with the following rules:

Failure group Identifying the failure group:

Failure Group	Description
1	Connection of an ECU signal to POTENTIAL 0 ... 4 from the FIU modul
2	Connection of two or more ECU signals
3	Failure in the current path of an ECU signal

Failure subgroup Identifying the failure subgroup:

Failure Subgroup	Description
0	Failure with POTENTIAL 0
1	Failure with POTENTIAL 1
2	Failure with POTENTIAL 2
3	Failure with POTENTIAL 3
4	Failure with POTENTIAL 4

Additional hardware component Identifying the additional hardware component:

Additional Hardware Component	Description
0	None
1	RSIM module DS289MK

Additional Hardware Component	Description
2	External component connected to MEAS0+/- ... MEAS4+/- pins
3	External component connected to SOURCE+/- pins

Pin Failures for DS749

The following table lists the pin failure IDs and their description which can be set if your simulator contains a DS749.

Pin Failure ID	Description
1	Cable break
2	Short circuit to +Ubat (KL30)
3	Short circuit to GND (KL31)

Pin Failures for DS789

The following table lists the pin failure IDs and their description which can be set if your simulator contains a DS789.

Failure Group	Pin Failure ID	Description	Possibilities
1	100	Short circuit to potential 0 (POT0)	1
1	110	Short circuit to potential 1 (POT1)	1
1	120	Short circuit to potential 2 (POT2)	1
1	130	Short circuit to potential 3 (POT0)	1
1	140	Short circuit to potential 4 (POT1)	1
1	150	Short circuit to potential 5 (POT2)	1
1	160	Short circuit to ground (GND)	1
2	200	Short circuit to another ECU pin	1
3	300	Cable break	1

Pin Failures for DS791 and DS793

The following table lists the pin failure IDs and their description which can be set if your simulator contains a DS791 or DS793.

Failure Group	Pin Failure ID	Description	Possibilities
1	100	Short circuit to potential 0 (POT0)	2
1	110	Short circuit to potential 1 (POT1)	2
1	120	Short circuit to potential 2 (POT2)	2
2	200	Short circuit to another ECU pin	2
3	300	Cable break	1

Interpreter

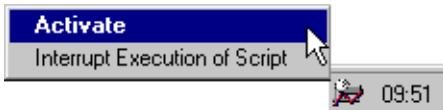
ControlDesk's Interpreter provides various commands and dialogs, which are accessible via the menu bar and the context menus of the Python Interpreter and the system tray menu:

Purpose	Refer to	Avail. in OpMode
Tools – Interpreter menu		
To clear the global variable namespace currently defined in the Interpreter.	<i>Clear Namespace</i> on page 484	yes
To clear the current contents in the Interpreter window.	<i>Clear Window</i> on page 485	yes
To insert variable definitions and functions of Python scripts or modules into the Interpreter's namespace via the Import Script dialog.	<i>Import Script</i> on page 486	no
To run a Python Script inside the Interpreter's namespace.	<i>Run Script</i> on page 488	yes
Available while you type inside the Interpreter window		
To assist you when you enter the attributes or methods of Python objects.	<i>Auto-Completion for Objects</i> on page 482	yes
To assist you when you enter Python variables.	<i>Auto-Completion for Variables</i> on page 483	yes
Context menu of the Interpreter		
To clear the global variable namespace currently defined in the Interpreter.	<i>Clear Namespace</i> on page 484	yes
To clear the current contents in the Interpreter window.	<i>Clear Window</i> on page 485	yes
To copy the entire selected text in the Interpreter window to the clipboard.	<i>Copy Selected</i> on page 485	yes
To insert variable definitions and functions of Python scripts or modules into the Interpreter's namespace via the Import Script dialog.	<i>Import Script</i> on page 486	no
To run a Python Script inside the Interpreter's namespace.	<i>Run Script</i> on page 488	yes
System tray menu of the Interpreter		
To activate the ControlDesk window.	<i>Activate</i> on page 482	yes
To interrupt all scripts and macros that are being executed in ControlDesk.	<i>Interrupt Execution of Script</i> on page 487	yes

Activate

Access

This is located in the system tray menu:



Purpose

To activate the ControlDesk window.

Result

The ControlDesk window is activated. If the window was minimized or hidden, this command restores it to its original size.



This is especially helpful if you used `Application.Hide()` in a Python script but forgot to use `Application.Show()` afterwards (see *Show* (*ControlDesk Automation Reference*) and *Hide* (*ControlDesk Automation Reference*)).

Related topics**References**

- *Application Handling* (*ControlDesk Automation Reference*)

Auto-Completion for Objects

Access

The auto-completion utility for objects is activated when you enter a dot " ." or a left parenthesis "(" after you have created an object.

Purpose

To assist you when you enter the attributes or methods of Python objects.

Result

- Once you have created a Python object, use the dot operator to access the object's elements. When you enter the dot, a selection list of the available object attributes and methods appears. You can select an entry from the list.

- Parentheses are required to create a Python object or to define the parameters of methods or functions. When you enter the left parenthesis, the auto-completion utility for objects gives quick information and shows the required parameters.



- The object must already exist.
- The auto-completion utility for objects does not offer any further help for the current command line after you have entered parentheses () .

Related topics

Basics

- *Using Auto-Completion for Objects* ([ControlDesk Automation Guide](#))

Examples

- *Example of Auto-Completion for Objects* ([ControlDesk Automation Guide](#))

References

- *Auto-Completion for Variables* on page 483

Auto-Completion for Variables

Access

You can access this command via:

Menu bar	None
Context menu of	None
Shortcut key	Ctrl+Space
Toolbar icon	

Purpose

To assist you when you enter Python variables.

Result

The command line editor automatically completes the matching Python variable name.

If the match is ambiguous, a selection list appears with the Python variables that are currently known to the Interpreter's namespace. Select the entry, and press **Return**, or double-click the entry.



The Python variable must be known to the Interpreter's namespace (refer to *Importing Scripts* ([ControlDesk Automation Guide](#))).

Related topics

Basics

- *Importing Scripts* ([ControlDesk Automation Guide](#))

HowTos

- *How to Use Auto-Completion for Variables* ([ControlDesk Automation Guide](#))

Examples

- *Example of Auto-Completion for Variables* ([ControlDesk Automation Guide](#))

References

- *Auto-Completion for Objects* on page 482

Clear Namespace

Access

You can access this command via:

Menu bar Tools – Interpreter

Context menu of Interpreter

Shortcut key None

Toolbar icon

**Purpose**

To clear the global variable namespace currently defined in the Interpreter.



This is useful if a script error occurred due to previously defined variables or already imported modules.

Result

All variables that are defined in the Interpreter are deleted and all of the included Python script modules are unloaded (except the PYD modules, that is the modules programmed in C/C++). The namespace is reset to its initial state.

Related topics

Basics

- *Using the Python Interpreter* ([ControlDesk Automation Guide](#))

Clear Window

Access	You can access this command via:
Menu bar	Tools – Interpreter
Context menu of	Interpreter
Shortcut key	None
Toolbar icon	
Purpose	To clear the current contents in the Interpreter window.
Result	The contents of the Interpreter window are erased.
Related topics	<p>Basics</p> <ul style="list-style-type: none">• Using the Python Interpreter ( ControlDesk Automation Guide) <p>References</p> <ul style="list-style-type: none">• Copy on page 52• Copy Selected on page 485• Cut on page 59• Paste on page 69

Copy Selected

You can access this command via:	
Menu bar	None
Context menu of	Interpreter
Shortcut key	None
Toolbar icon	None
Purpose	To copy the entire selected text – including the command prompt area – in the Interpreter window to the clipboard.
Result	The entire text is copied to the clipboard, where it can be pasted later on.

Related topics

Basics

- [Using the Python Interpreter](#) ( ControlDesk Automation Guide)

References

- [Clear Window](#) on page 485
- [Copy](#) on page 52
- [Copy Selected](#) on page 485
- [Cut](#) on page 59
- [Paste](#) on page 69

Import Script

Access

You can access this command via:

Menu bar

Tools – Interpreter

Context menu of

Interpreter

Shortcut key

Ctrl+i

Toolbar icon



Purpose

To insert variable and function definitions of Python scripts or modules to the Interpreter's namespace.

Result

The script you specified is imported to the namespace of the Interpreter. The variables and functions are known to the Interpreter.

In case the script is not a PYD module (a module programmed in C/C++), the script variables are reloaded to the Interpreter namespace.



This is not available in the Operator mode.

Dialog settings

Filename

Enter the file name of the Python script you want to import.



As an alternative, click the **Browse** button to select a Python script file via the standard Windows Open dialog or use the drop-down list to select script files that were imported before.

Related topics

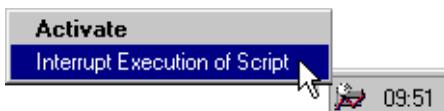
Basics

- *Importing Scripts* (ControlDesk Automation Guide)
- HowTos
- *How to Import a Python Script* (ControlDesk Automation Guide)
- References
- *Keyboard Shortcuts of the Python Interpreter* (ControlDesk Automation Guide)

Interrupt Execution of Script

Access

This is located in the system tray menu:



Purpose

To interrupt all scripts and macros that are being executed in ControlDesk.

Result

All scripts and macros that are currently being executed in ControlDesk are interrupted.

Description

Use this only if all other ways of stopping the running scripts have been unsuccessful.

Related topics

Basics

- *Using the Python Interpreter* (ControlDesk Automation Guide)
- HowTos
- *How to Interrupt Scripts* (ControlDesk Automation Guide)

Run Script

Access

You can access this command via:

Menu bar

Tools – Interpreter

Context menu of

Interpreter

Shortcut key

Ctrl+r

Toolbar icon



Purpose

To run a Python script and, if desired, open it in the Source Code Editor.

Result

The selected Python Script is executed inside the namespace of the Interpreter. Standard outputs and error outputs are redirected to the Interpreter window. If the checkbox **Open File in Editor** is selected in Run Script, the script is also opened in the Source Code Editor.

Dialog settings

Filename Enter the file name of the Python script you want to run.



As an alternative, click the **Browse** button to select a Python script file via the standard Windows Open dialog or use the drop-down list to select script files that were executed before.

Arguments If the Python script needs any command line arguments, you have to enter them here. The list of arguments to be entered depends on the selected script. Do not put the arguments in quotes.



As an alternative, you can use the drop-down list to select arguments that were entered in former runs.

Working Directory Enter the working directory from which you want to run or open the Python script.

Related topics

Basics

- *Using the Python Interpreter* ( [ControlDesk Automation Guide](#))

HowTos

- *How to Run Scripts* ( [ControlDesk Automation Guide](#))

References

- *Keyboard Shortcuts of the Python Interpreter* ( [ControlDesk Automation Guide](#))

Macro Recorder

ControlDesk's menu bar and the Macro Recorder toolbar provide access to the Macro Recorder:

Purpose	Refer to	Avail. in OpMode
Tools – Macro menu		
To edit the most recent macro recording.	<i>Edit</i> on page 491	no
To insert a user code string into the current macro recording.	<i>Insert User Code</i> on page 492	no
To pause the current macro recording.	<i>Pause</i> on page 493	no
To start and stop the current macro recording.	<i>Record</i> on page 493	no

Edit

Access

You can access this command via:

Menu bar	Tools – Macro
Context menu of	None
Shortcut key	None
Toolbar icon	

Purpose

To edit the most recent macro recording result.

This opens the last recorded macro file in the Source Code Editor, where it can be edited.



This is not available in the Operator mode.

Related topics

Basics

- *Recording Macros* (ControlDesk Automation Guide)

Insert User Code

Access

You can access this command via:

Menu bar Tools – Macro

Context menu of None

Shortcut key None

Toolbar icon



Purpose

To insert a user code string into the current macro recording.

Result

The Macro Recorder inserts the user code string (defined on the Macro Recorder page (refer to *Macro Recorder Page* on page 34) of the General Properties dialog) into the macro code.



This is not available in the Operator mode.

Related topics

Basics

- *Recording Macros* (ControlDesk Automation Guide)

HowTos

- *How to Record Macros* (ControlDesk Automation Guide)

References

- *Edit* on page 491
- *Macro Recorder Page* on page 34

Pause

Access	You can access this command via:
Menu bar	Tools – Macro
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To pause the current macro recording.
Result	The current macro recording is paused. To restart the recording at the point where it was paused, simply invoke this command again.
<div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 10px;"> This is not available in the Operator mode. </div>	

Related topics	Basics <ul style="list-style-type: none"> • Recording Macros ( ControlDesk Automation Guide)
HowTos	<ul style="list-style-type: none"> • How to Record Macros ( ControlDesk Automation Guide)
References	<ul style="list-style-type: none"> • Record on page 493

Record

Access	You can access this command via:
Menu bar	Tools – Macro
Context menu of	None
Shortcut key	None
Toolbar icon	
Purpose	To save the macro (Python script) you have been recording.

Result	The recorded macro is saved as a Python Script file using the path and file name you specify.
---------------	---



This is not available in the Operator mode.

Save Macro dialog	Save in Lets you select the path and folder to save the file to. File name Lets you specify the name of the file. You can also select a name from the files listed under the chosen path and folder. Save as type Lets you select which type the file should be saved as.
--------------------------	--

Related topics	<p>Basics</p> <ul style="list-style-type: none">• <i>Recording Macros</i> (ControlDesk Automation Guide) <p>HowTos</p> <ul style="list-style-type: none">• <i>How to Record Macros</i> (ControlDesk Automation Guide) <p>References</p> <ul style="list-style-type: none">• <i>Pause</i> on page 493
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Test Automation



ControlDesk Test Automation is documented only for compatibility reasons (for scripts up to ControlDesk v2.3). For test automation tasks, you are recommended to use dSPACE AutomationDesk.

ControlDesk's context menus, the Stimulus Editor toolbar, the Symbol Editor, and the Signal Selector provide access to ControlDesk's Test Automation:

Purpose	Refer to	Avail. in OpMode
Context menu of control slot cells		
To delete a selected loop on the Stimulus Editor document.	<i>Delete LOOP</i> on page 506	no
To insert a loop in the Stimulus Editor document after you selected the range of cells in the control slot where the loop should be located.	<i>Insert LOOP</i> on page 514	no

Purpose	Refer to	Avail. in OpMode
Context menu of matrix cells		
To insert an ADD signal in a selected cell in the Stimulus Editor document.	<i>ADD</i> on page 498	no
To insert a CONST signal in a selected cell in the Stimulus Editor document.	<i>CONST</i> on page 503	no
To insert an EXP signal in a selected cell in the Stimulus Editor document.	<i>EXP</i> on page 510	no
To temporarily stop the signal generation and to allow modification from the outside.	<i>IDLE</i> on page 511	no
To insert a MULT signal in a selected cell in the Stimulus Editor document.	<i>MULT</i> on page 517	no
To add a new symbol to the symbol table in the Symbol Editor.	<i>NOISE</i> on page 519	no
To insert a PULSE signal in a selected cell in the Stimulus Editor document.	<i>PULSE</i> on page 522	no
To insert a RAMP signal in a selected cell in the Stimulus Editor document.	<i>RAMP</i> on page 523	no
To insert a SAW signal in a selected cell in the Stimulus Editor document.	<i>SAW</i> on page 525	no
To insert a SIN signal in a selected cell in the Stimulus Editor document.	<i>SIN</i> on page 527	no
To insert a SQR signal in a selected cell in the Stimulus Editor document.	<i>SQR</i> on page 528	no
To insert a TABLE_HOST signal in a selected cell in the Stimulus Editor document.	<i>TABLE_HOST</i> on page 533	no
To insert a TRI signal in a selected cell in the Stimulus Editor document.	<i>TRI</i> on page 534	no
Context menu of the Signal Selector		
To have the Signal Selector display large icons.	<i>Large Icons</i> on page 65	no
To have the Signal Selector displaying small or large icons.	<i>Small Icons</i> on page 95	no
Context menu of the signal slot header		
To add a control slot to the Stimulus Editor document.	<i>Append Control Slot</i> on page 499	no
To add a signal slot to the Stimulus Editor document.	<i>Append Signal Slot</i> on page 499	no
To delete the selected signal slot from the Stimulus Editor document.	<i>Delete Slot</i> on page 506	no
To duplicate the selected signal slot in the Stimulus Editor document.	<i>Duplicate Signal Slot</i> on page 509	no
To toggle highlight variables mode on and off.	<i>Highlight Variables</i> on page 64	no
To remove a select variable assignment from the Stimulus Editor document.	<i>Remove Variable</i> on page 524	no
Context menu of the Symbol Editor		
To delete a symbol from the symbol table in the Symbol Editor.	<i>Delete Symbol</i> on page 507	no
To add a new symbol to the symbol table in the Symbol Editor.	<i>New Symbol</i> on page 518	no
To open a symbol table file (SYT).	<i>Open Symbol Table</i> on page 520	no
To save the symbol table in a separate symbol table file (SYT).	<i>Save Symbol Table</i> on page 525	no
Context menu of the time tag header		
To add a time tag column to the Stimulus Editor document.	<i>Append Time Tag</i> on page 500	no
To delete the current time tag in the Stimulus Editor document.	<i>Delete Time Tag</i> on page 508	no
To insert a GOTO icon in the Stimulus Editor document.	<i>Insert GOTO</i> on page 512	no
To insert an IF construct in a certain cell in the Stimulus Editor document.	<i>Insert IF</i> on page 513	no
To insert a LABEL item in the Stimulus Editor document.	<i>Insert LABEL</i> on page 514	no
To insert a STOP in the Stimulus Editor document.	<i>Insert STOP</i> on page 515	no
To insert a time tag column in the Stimulus Editor document.	<i>Insert Time Tag</i> on page 516	no

Purpose	Refer to	Avail. in OpMode
Edit – Insert in Cell menu		
To insert an ADD signal in a selected cell in the Stimulus Editor document.	<i>ADD</i> on page 498	no
To insert a CONST signal in a selected cell in the Stimulus Editor document.	<i>CONST</i> on page 503	no
To insert an EXP signal in a selected cell in the Stimulus Editor document.	<i>EXP</i> on page 510	no
To temporarily stop the signal generation and to allow modification from the outside.	<i>IDLE</i> on page 511	no
To insert a GOTO icon in the Stimulus Editor document.	<i>Insert GOTO</i> on page 512	no
To insert an IF construct in a certain cell in the Stimulus Editor document.	<i>Insert IF</i> on page 513	no
To insert a LABEL item in the Stimulus Editor document.	<i>Insert LABEL</i> on page 514	no
To insert a loop in the Stimulus Editor document after you selected the range of cells in the control slot where the loop should be located.	<i>Insert LOOP</i> on page 514	no
To insert a STOP in the Stimulus Editor document.	<i>Insert STOP</i> on page 515	no
To insert a MULT signal in a selected cell in the Stimulus Editor document.	<i>MULT</i> on page 517	no
To add a new symbol to the symbol table in the Symbol Editor.	<i>NOISE</i> on page 519	no
To insert a PULSE signal in a selected cell in the Stimulus Editor document.	<i>PULSE</i> on page 522	no
To insert a PULSE signal in a selected cell in the Stimulus Editor document.	<i>RAMP</i> on page 523	no
To insert a SAW signal in a selected cell in the Stimulus Editor document.	<i>SAW</i> on page 525	no
To insert a SIN signal in a selected cell in the Stimulus Editor document.	<i>SIN</i> on page 527	no
To insert a SQR signal in a selected cell in the Stimulus Editor document.	<i>SQR</i> on page 528	no
To insert a TABLE_HOST signal in a selected cell in the Stimulus Editor document.	<i>TABLE_HOST</i> on page 533	no
To insert a TRI signal in a selected cell in the Stimulus Editor document.	<i>TRI</i> on page 534	no
Edit – Modify Structure menu		
To add a control slot to the Stimulus Editor document.	<i>Append Control Slot</i> on page 499	no
To add a signal slot to the Stimulus Editor document.	<i>Append Signal Slot</i> on page 499	no
To add a time tag column to the Stimulus Editor document.	<i>Append Time Tag</i> on page 500	no
To delete a selected loop on the Stimulus Editor document.	<i>Delete LOOP</i> on page 506	no
To delete the selected signal slot from the Stimulus Editor document.	<i>Delete Slot</i> on page 506	no
To delete the current time tag in the Stimulus Editor document.	<i>Delete Time Tag</i> on page 508	no
To duplicate the selected signal slot in the Stimulus Editor document.	<i>Duplicate Signal Slot</i> on page 509	no
To insert a time tag column in the Stimulus Editor document.	<i>Insert Time Tag</i> on page 516	no
To remove a select variable assignment from the Stimulus Editor document.	<i>Remove Variable</i> on page 524	no
Stimulus Editor menu		
To build and run the Python Script for the Stimulus Editor document.	<i>Build + Run Script</i> on page 501	no
To download the sequence control table file.	<i>Download Sequence Control Table File</i> on page 508	no
To pause the stimulus generation currently running on the simulator.	<i>Pause Stimulus Generation</i> on page 521	no
To start the stimulus generation on the simulator.	<i>Start Stimulus Generation</i> on page 529	no
To stop the stimulus generation currently running on the simulator.	<i>Stop Stimulus Generation</i> on page 532	no

Information in other sections:

- *Generating Stimulus Signals* ( *ControlDesk Test Automation Guide*)

ADD

Access

You can access this command via:

Menu bar	Edit – Insert in Cell
Context menu of	Matrix cell
Drag & drop from	Signal Selector
Shortcut key	None
Toolbar icon	

Purpose

To insert an ADD signal in a selected cell in the Stimulus Editor document.

Result

An ADD signal is inserted in the cell you selected in the Stimulus Editor document.

Description

The function ADD adds a constant value to a signal. For more information, refer to *ADD (Variant 1)* ( *ControlDesk Test Automation Reference*).



This is not available in the Operator mode.

Related topics

Basics

- *Defining Signals* ( *ControlDesk Test Automation Guide*)

HowTos

- *How to Define Signal Shapes* ( *ControlDesk Test Automation Guide*)

Append Control Slot

Access	You can access this command via:
Menu bar	Edit – Modify Structure
Context menu of	Signal slot header, empty area of the Stimulus Editor document
Drag & drop from	None
Shortcut key	None
Toolbar icon	
Purpose	To add a control slot to the Stimulus Editor document.
Result	The control slot is added to the Stimulus Editor document, which enables you to implement a loop sequence in the file.
Description	Control slots are necessary if you want to insert a LOOP sequence in the Stimulus Editor document. Refer to <i>Insert LOOP</i> on page 514.
	 This is not available in the Operator mode.
Related topics	Basics <ul style="list-style-type: none"> • <i>Adding Loops</i> ( ControlDesk Test Automation Guide) • <i>Stimulus Editor Basics</i> ( ControlDesk Test Automation Guide)

Append Signal Slot

Access	You can access this command via:
Menu bar	Edit – Modify Structure
Context menu of	Signal slot header, empty area of the Stimulus Editor document
Drag & drop from	None
Shortcut key	None

Toolbar icon



Purpose

To add a signal slot to the Stimulus Editor document.

Result

The signal slot is added to the Stimulus Editor document. Since this slot is empty, you have to insert your desired signal descriptions in the slot.

Description

Signal slots are made up of a signal name and a signal form description.



This is not available in the Operator mode.

Related topics**Basics**

- *Defining Signals* ([ControlDesk Test Automation Guide](#))

HowTos

- *How to Define Time Tags* ([ControlDesk Test Automation Guide](#))

References

- [Append Control Slot](#) on page 499
- [Delete Slot](#) on page 506
- [Duplicate Signal Slot](#) on page 509

Append Time Tag

Access

You can access this command via:

Menu bar

Edit – Modify Structure

Context menu of

Time tag header, empty area of the Stimulus Editor document

Drag & drop from

None

Shortcut key

None

Toolbar icon



Purpose

To add a time tag column to the Stimulus Editor document.

Result	The new time tag is added to the Stimulus Editor document at the right edge of the grid shown.
Description	Time tags are divisions of the signal form description that allow you to compose variable sequences of signal shapes and to synchronize multiple signal slots.
	 This is not available in the Operator mode.

Related topics	Basics <ul style="list-style-type: none"> • Defining Signals ( ControlDesk Test Automation Guide) HowTos <ul style="list-style-type: none"> • How to Define Time Tags ( ControlDesk Test Automation Guide) References <ul style="list-style-type: none"> • Delete Time Tag on page 508 • Insert Time Tag on page 516
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Build + Run Script

Access	You can access this command via:
Menu bar	Stimulus Editor
Context menu of	None
Drag & drop from	None
Shortcut key	F7
Toolbar icon	
Purpose	To build and run the Python Script for the Stimulus Editor document, meaning that the sequence control table file and the preview of the plot are generated.

Result

The Python script is generated and carried out, and the signal plots are displayed in the plot area. This means that the sequence control table file is generated. The name of the Python script can be changed in the Generated Files page of the Stimulus Editor File Properties dialog (see *Generated Files page* on page 88).

If the Show script option (see *Show script* on page 88) is selected in the Settings page of the Stimulus Editor File Properties dialog, the Python script is shown in the working area (see *Settings page* on page 88).



This is not available in the Operator mode.

Related topics

HowTos

- *How to Generate Scripts and Signal Plots* (*ControlDesk Test Automation Guide*)

References

- *Properties: Stimulus Editor File Properties* on page 87

Cell Property

Access

You can access this command via:

Command	None
Shortcut key	None
Toolbar icon	None
Drag & drop	A signal shape from the Signal Selector on a cell of the Stimulus Editor document.
Mouse	<ul style="list-style-type: none">■ Double-click on a signal cell in the Stimulus Editor.■ Set up a loop in the Stimulus Editor document.

Purpose

To change the property of a signal cell.

Result

The signal cell adopts the specified properties.

Description	With a TABLE_HOST cell, the Data Replay Properties dialog (see <i>Data Replay Properties</i> on page 504) appears instead of the Cell Property dialog.
Cell Property dialog	<p>Each signal shape has a certain set of parameters that you have to specify here. For example, the parameters for PULSE are as follows:</p> <p>If you right-click on a text field that supports symbols, the Choose Symbol dialog opens (see below) to let you import a symbol.</p> <p>LowValue Enter the low value of the PULSE.</p> <p>HighValue Enter the high value of the PULSE.</p> <p>Frequency Enter the frequency of the PULSE.</p> <p>Comment Enter a comment.</p>
Choose Symbol dialog	<p>This dialog opens if you right-click on a text field in the Cell Property dialog (see above) that supports symbols and let you import a symbol.</p> <p>Symbol Select the symbol of interest: the program displays the corresponding description and type in the dedicated columns.</p>
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • <i>Adding Loops</i> (<i>ControlDesk Test Automation Guide</i>) • <i>Defining Signals</i> (<i>ControlDesk Test Automation Guide</i>) <p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Define Signal Shapes</i> (<i>ControlDesk Test Automation Guide</i>) • <i>How to Define Symbols</i> (<i>ControlDesk Test Automation Guide</i>) <p>References</p> <ul style="list-style-type: none"> • <i>Delete Symbol</i> on page 507 • <i>Generating Stimulus Signals (sdmlib)</i> (<i>ControlDesk Test Automation Reference</i>) • <i>New Symbol</i> on page 518 • <i>Parameters IF Construct</i> on page 520

CONST

Access	You can access this command via:
Menu bar	Edit – Insert in Cell
Context menu of	Matrix cell
Drag & drop from	Signal Selector

	Shortcut key	None
	Toolbar icon	
Purpose	To insert a CONST signal in a selected cell in the Stimulus Editor document.	
Result	A CONST signal is inserted in the cell you selected in the Stimulus Editor document.	
Description	<p>A CONST generates a constant value for a signal (see <i>CONST</i> ( <i>ControlDesk Test Automation Reference</i>)). CONST is an abbreviation for a RAMP with a slope of zero. Float and integer variables are supported.</p>	
		This is not available in the Operator mode.
Related topics	<p>Basics<ul style="list-style-type: none">• <i>Defining Signals</i> ( <i>ControlDesk Test Automation Guide</i>)</p> <p>HowTos<ul style="list-style-type: none">• <i>How to Define Signal Shapes</i> ( <i>ControlDesk Test Automation Guide</i>)</p> <p>References<ul style="list-style-type: none">• <i>RAMP</i> on page 523</p>	

Data Replay Properties

Access	You can access this Stimulus Editor dialog via:
Command	None
Shortcut key	None
Toolbar icon	None
Drag & drop	TABLE_HOST from the Signal Editor on a cell of the Stimulus Editor document.
Mouse	Double-click on a TABLE_HOST signal cell in the Stimulus Editor document.

Purpose	To configure a cell of type TABLE_HOST.
Result	The signal cell adopts the specified TABLE_HOST properties.
Data Replay Properties dialog	<p>MAT file Type in the name of the MAT file to be included or select it via the Browse button.</p> <p>Times From the drop-down list, select the variable that you want to use for the Time axis.</p> <p>Values From the drop-down list, select the variable that you want to use for the Value axis.</p> <p>Preview This opens the Preview dialog (see below) to let you preview the selected MAT file with the selected axes.</p> <p>Comment Type in a comment for the generated script.</p>
Preview dialog	<p>This dialog opens if you click the Preview button in the Data Replay Properties dialog (see above). The selected function is displayed using the Times and Values axes defined in the <i>Data Replay Properties dialog</i> on page 505.</p> <p>Zoom into the range between the cursors Enables you to zoom in a rectangle whose limits are defined by two cursors on screen. You can define the position of the cursors using the mouse.</p> <p>Undo zooming Undoes the last zoom operation.</p> <p>Redo zooming Redoes the last zoom operation.</p> <p>Disable zooming - Show full plot Displays the full plot.</p> <p>Show or hide grid Displays/hides a grid.</p> <p>Exit preview dialog Exits the Preview dialog.</p>
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • <i>Importing and Replaying Measured Data</i> ( <i>ControlDesk Test Automation Guide</i>) <p>Examples</p> <ul style="list-style-type: none"> • <i>Example of a Script for Data Replay</i> ( <i>ControlDesk Test Automation Guide</i>) <p>References</p> <ul style="list-style-type: none"> • <i>Data Replay Properties</i> on page 504 • <i>TABLE_HOST</i> ( <i>ControlDesk Test Automation Reference</i>)

Delete LOOP

Access	You can access this command via:
Menu bar	Edit – Modify Structure
Context menu of	Control slot
Drag & drop from	None
Shortcut key	None
Toolbar icon	None
Purpose	To delete a selected loop from the Stimulus Editor document.
Result	The loop is removed from the Stimulus Editor document.
Description	Loops allow you to implement cycle signal forms in the Stimulus Editor document.
	<div style="border: 1px solid #ccc; padding: 10px; display: inline-block;"> This is not available in the Operator mode.</div>
Related topics	<p>Basics<ul style="list-style-type: none">• <i>Stimulus Editor Basics</i> ( <i>ControlDesk Test Automation Guide</i>)</p> <p>References<ul style="list-style-type: none">• <i>Insert LOOP</i> on page 514</p>

Delete Slot

Access	You can access this command via:
Menu bar	Edit – Modify Structure
Context menu of	Signal slot header
Shortcut key	None
Toolbar icon	None
Purpose	To delete the selected signal slot from the Stimulus Editor document.

Result

The signal slot is deleted from the Stimulus Editor document.



This is not available in the Operator mode.

Related topics

Basics

- *Stimulus Editor Basics* ([ControlDesk Test Automation Guide](#))

References

- *Append Control Slot* on page 499
- *Append Signal Slot* on page 499
- *Duplicate Signal Slot* on page 509

Delete Symbol

Access

You can access this command via:

Menu bar	None
Context menu of	Symbol Editor
Drag & drop from	None
Shortcut key	None
Toolbar icon	None

Purpose

To delete a symbol from the symbol table in the Symbol Editor.

Result

The symbol you selected is deleted from the symbol table.



This is not available in the Operator mode.

Related topics

HowTos

- *How to Define Symbols* ([ControlDesk Test Automation Guide](#))

References

- *New Symbol* on page 518
- *Open Symbol Table* on page 520
- *Save Symbol Table* on page 525

Delete Time Tag

Access	You can access this command via:
Menu bar	Edit – Modify Structure
Context menu of	Time tag header
Shortcut key	None
Toolbar icon	None
Purpose	To delete the current time tag in the Stimulus Editor document.
Result	The time tag is removed from the Stimulus Editor document.
Description	Time tags are divisions of the signal form description that allow you to compose variable sequences of signal shapes and to synchronize multiple signal slots. You can undo the last Delete Time Tag operation via the Edit – Undo.
 This is not available in the Operator mode.	
Related topics	<p>Basics</p> <ul style="list-style-type: none">• <i>Stimulus Editor Basics</i> ( ControlDesk Test Automation Guide) <p>References</p> <ul style="list-style-type: none">• Append Time Tag on page 500• Insert Time Tag on page 516

Download Sequence Control Table File

Access	You can access this command via:
Menu bar	Stimulus Editor
Context menu of	None
Drag & drop from	None
Shortcut key	None

Toolbar icon



Purpose	To download the sequence control table file, which contains the sequence control table.
----------------	---

Result	The sequence control table is downloaded to the simulator. The stimulus signal generation is now ready to start (see <i>Start Stimulus Generation</i> on page 529).
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This is not available in the Operator mode.

Related topics	Basics <ul style="list-style-type: none"> • Supplying Stimulus Signals to the Application (ControlDesk Test Automation Guide) References <ul style="list-style-type: none"> • Start Stimulus Generation on page 529
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Duplicate Signal Slot

Access	You can access this command via:
---------------	----------------------------------

Menu bar	Edit – Modify Structure
Context menu of	Signal slot header
Drag & drop from	None
Shortcut key	None
Toolbar icon	None

Purpose	To duplicate the selected signal slot in the Stimulus Editor document. Signal slots are made up of a signal name and a signal form description.
----------------	---

Result

The signal form description is copied and immediately placed as a duplicate under the selected slot in the Stimulus Editor document so that you can make the alterations you desire. You have to assign a new simulator variable.



This is not available in the Operator mode.

Related topics

Basics

- [Defining Signals](#) ([ControlDesk Test Automation Guide](#))
- [Stimulus Editor Basics](#) ([ControlDesk Test Automation Guide](#))

References

- [Append Control Slot](#) on page 499
- [Append Signal Slot](#) on page 499
- [Delete Slot](#) on page 506

EXP

Access

You can access this command via:

Menu bar	Edit – Insert in Cell
Context menu of	Matrix cell
Drag & drop from	Signal Selector
Shortcut key	None
Toolbar icon	None

Purpose

To insert an EXP signal in a selected cell in the Stimulus Editor document.

Result

An EXP signal is inserted in the cell you selected in the Stimulus Editor document. Refer to *EXP* ([ControlDesk Test Automation Reference](#)).

Description	An EXP generates an exponential signal according to the equation: $f(t) = \text{offset} + (\text{limit} - \text{offset}) \cdot (1 - e^{-t/\tau})$.
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This is not available in the Operator mode.

Related topics

Basics

- *Defining Signals* (ControlDesk Test Automation Guide)

HowTos

- *How to Define Signal Shapes* (ControlDesk Test Automation Guide)

IDLE

Access	You temporarily stop the signal generation via:
---------------	---

Menu bar	Edit – Insert in Cell
Context menu of	Matrix cell
Drag & drop from	Signal Selector
Shortcut key	None
Toolbar icon	None

Purpose	To temporarily stop the signal generation and to allow modifications from the outside.
----------------	--

Result	An IDLE signal is inserted in the cell you selected in the Stimulus Editor document.
---------------	--

Description	During the idle phase user interaction is possible, for example, with a slider or by model calculation. Refer to <i>IDLE</i> (ControlDesk Test Automation Reference).
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This is not available in the Operator mode.

Related topics

Basics

- *Defining Signals* ([ControlDesk Test Automation Guide](#))

HowTos

- *How to Define Signal Shapes* ([ControlDesk Test Automation Guide](#))

Insert GOTO

Access

You can access this command via:

Menu bar	Edit – Insert in Cell
Context menu of	Time tag header
Drag & drop from	None
Shortcut key	None
Toolbar icon	None

Purpose

To insert a GOTO icon in the Stimulus Editor document.

Result

A GOTO icon is inserted in the Stimulus Editor document. This GOTO points to a LABEL position where the signal description continues (see *Insert LABEL* on page 514).

Description

When using GOTO in a branch that points to a LABEL following an IF construct, make sure that the sub-sequence is preceded by a STOP icon (see *Insert STOP* on page 515). This prevents the signal generation from executing the sub-sequence after the main sequence – including the IF construct – has finished. Refer to *GOTO ... LABEL* ([ControlDesk Test Automation Reference](#)).



This is not available in the Operator mode.

Related topics

Basics

- *Adding Conditional Branches* ([ControlDesk Test Automation Guide](#))
- *Defining Signals* ([ControlDesk Test Automation Guide](#))

Insert IF

Access	You can access this command via:
Menu bar	Edit – Insert in Cell
Context menu of	Time tag header
Drag & drop from	None
Shortcut key	None
Toolbar icon	
Purpose	To insert an IF construct in a certain cell in the Stimulus Editor document.
Result	When you insert an IF construct in the Stimulus Editor document, the complete control structure IF – ELSE – ENDIF is automatically set up: the IF column is for the true branch, the ELSE column for the false branch, and the ENDIF column to show the end of the complete IF construct. By default, one time tag column is inserted in each branch.
Description	An IF construct is handled mostly like a time tag. To insert further time tags in the branches, refer to <i>Insert Time Tag</i> on page 516. Refer to <i>IF</i> ( <i>ControlDesk Test Automation Reference</i>), <i>ELSE</i> ( <i>ControlDesk Test Automation Reference</i>), and <i>ENDIF</i> ( <i>ControlDesk Test Automation Reference</i>).
 This is not available in the Operator mode.	

Related topics	Basics <ul style="list-style-type: none"> • <i>Adding Conditional Branches</i> ( <i>ControlDesk Test Automation Guide</i>) • <i>Defining Signals</i> ( <i>ControlDesk Test Automation Guide</i>) References <ul style="list-style-type: none"> • <i>Insert Time Tag</i> on page 516 • <i>Parameters IF Construct</i> on page 520
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Insert LABEL

Access	You can access this command via:
Menu bar	Edit – Insert in Cell
Context menu of	Time tag header
Drag & drop from	None
Shortcut key	None
Toolbar icon	None
Purpose	To insert a LABEL item in the Stimulus Editor document.
Result	A LABEL is inserted in the Stimulus Editor document as a marker to determine where the GOTO jumps to.
Description	When using GOTO in a branch that points to a LABEL following an IF construct, make sure that the sub-sequence is preceded by a STOP icon (see <i>Insert STOP</i> on page 515). This prevents the signal generation from executing the sub-sequence after the main sequence – including the IF construct – has finished. Refer to <i>GOTO ... LABEL</i> ( <i>ControlDesk Test Automation Reference</i>).
	<div style="border: 1px solid #ccc; padding: 10px; display: inline-block;"> This is not available in the Operator mode.</div>
Related topics	<p>Basics</p> <ul style="list-style-type: none">• <i>Adding Conditional Branches</i> ( <i>ControlDesk Test Automation Guide</i>)• <i>Defining Signals</i> ( <i>ControlDesk Test Automation Guide</i>) <p>References</p> <ul style="list-style-type: none">• <i>Insert GOTO</i> on page 512

Insert LOOP

Access	You can access this command via:
Menu bar	Edit – Insert in Cell

Context menu of Control slot

Drag & drop from None

Shortcut key None

Toolbar icon



Purpose To insert a loop in the Stimulus Editor document after you have selected the range of cells in the control slot where the loop should be located.

Result The loop is inserted in the Stimulus Editor document. You just have to make sure that only cells from one control slot are included in it.

Description Loops allow you to implement cyclic signal forms in the Stimulus Editor document. There are some restrictions for loops: for example, crossed loops are not allowed. Refer to *LOOP ... ENDLOOP* (*ControlDesk Test Automation Reference*). This is related to *Append Signal Slot* on page 499.



This is not available in the Operator mode.

Related topics

Basics

- *Adding Loops* (*ControlDesk Test Automation Guide*)
- *Defining Signals* (*ControlDesk Test Automation Guide*)

References

- *Append Signal Slot* on page 499
- *Delete LOOP* on page 506

Insert STOP

Access You can access this command via:

Menu bar Edit – Insert in Cell

Context menu of Time tag header

Drag & drop from None

Shortcut key None

Toolbar icon	None
Purpose	To insert a STOP in the Stimulus Editor document.
Result	A STOP is inserted in the Stimulus Editor document.
Description	<p>It is important to insert a STOP before the start of any subprogram (marked by a LABEL) in order to prevent the signal generation from executing it after the main execution has been completed: see <i>Insert LABEL</i> on page 514. Refer to <i>STOP</i> ( <i>ControlDesk Test Automation Reference</i>).</p>
	<div style="border: 1px solid #ccc; padding: 10px; display: inline-block;"> This is not available in the Operator mode.</div>
Related topics	<p>Basics</p> <ul style="list-style-type: none">• <i>Defining Signals</i> ( <i>ControlDesk Test Automation Guide</i>) <p>References</p> <ul style="list-style-type: none">• <i>ELSE</i> ( <i>ControlDesk Test Automation Reference</i>)• <i>ENDIF</i> ( <i>ControlDesk Test Automation Reference</i>)• <i>IF</i> ( <i>ControlDesk Test Automation Reference</i>)

Insert Time Tag

Access	You can access this command via:
Menu bar	Edit – Modify Structure
Context menu of	Time tag header
Drag & drop from	None
Shortcut key	None
Toolbar icon	
Purpose	To insert a time tag column in the Stimulus Editor document.

Result	A time tag column is inserted in the Stimulus Editor document on the left.
---------------	--

Description	Time tags are divisions of the signal form description that allow you to compose variable sequences of signal shapes and synchronize multiple signal slots. The inserted time tags have a default value that can be changed via the default editor: see <i>Defaults page</i> on page 532.
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This is not available in the Operator mode.

Related topics	<p>Basics</p> <ul style="list-style-type: none"> • <i>Defining Signals</i> (<i>ControlDesk Test Automation Guide</i>) <p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Define Signal Shapes</i> (<i>ControlDesk Test Automation Guide</i>) • <i>How to Set Default Values</i> (<i>ControlDesk Test Automation Guide</i>) <p>References</p> <ul style="list-style-type: none"> • <i>Append Time Tag</i> on page 500 • <i>Stimulus Window</i> on page 530
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MULT

Access	You can access this command via:
Menu bar	Edit – Insert in Cell
Context menu of	Matrix cell
Drag & drop from	Signal Selector
Shortcut key	None
Toolbar icon	
Purpose	To insert a MULT signal in a selected cell in the Stimulus Editor document.
Result	A MULT signal is inserted in the cell you selected in the Stimulus Editor document.

Description	The function MULT multiplies a signal with a constant value or another signal. Refer to <i>MULT (Variant 1)</i> ( <i>ControlDesk Test Automation Reference</i>).
	 This is not available in the Operator mode.

Related topics

Basics

- *Defining Signals* ( *ControlDesk Test Automation Guide*)

HowTos

- *How to Define Signal Shapes* ( *ControlDesk Test Automation Guide*)

New Symbol

Access	You can access this command via:
Menu bar	None
Context menu of	Symbol Editor
Drag & drop from	None
Shortcut key	None
Toolbar icon	None
Purpose	To add a new symbol to the symbol table in the Symbol Editor.
Result	A new symbol is added to the symbol table.
Description	This symbol has to be defined with a symbol name (in the Symbol column), an expression (in the Expression column) and, if desired, a description (in the Description column).
	 This is not available in the Operator mode.

Related topics**HowTos**

- [How to Define Symbols](#) (ControlDesk Test Automation Guide)

References

- [Delete Symbol](#) on page 507
- [Open Symbol Table](#) on page 520
- [Save Symbol Table](#) on page 525

NOISE

Access

You can access this command via:

Menu bar	Edit – Insert in Cell
Context menu of	Matrix cell
Drag & drop from	Signal Selector
Shortcut key	None
Toolbar icon	None

Purpose

To insert a NOISE signal in a selected cell in the Stimulus Editor document.

Result

A NOISE signal is inserted in the cell you selected in the Stimulus Editor document.

Description

The function NOISE generates a signal with a Gaussian-like probability density function. In many cases a band-limited noise signal is required. Refer to [NOISE_GAUSS](#) (ControlDesk Test Automation Reference).



This is not available in the Operator mode.

Related topics**Basics**

- [Defining Signals](#) (ControlDesk Test Automation Guide)

HowTos

- [How to Define Signal Shapes](#) (ControlDesk Test Automation Guide)

Open Symbol Table

Access	You can access this command via:
Menu bar	None
Context menu of	Symbol Editor
Drag & drop from	None
Shortcut key	None
Toolbar icon	None
Purpose	To open a symbol table file (SYT).
Result	The symbol table file is opened. You can now import the symbol table file, if desired.
Related topics	<p>HowTos</p> <ul style="list-style-type: none">• <i>How to Define Symbols</i> ( <i>ControlDesk Test Automation Guide</i>) <p>References</p> <ul style="list-style-type: none">• <i>Delete Symbol</i> on page 507• <i>New Symbol</i> on page 518• <i>Save Symbol Table</i> on page 525



This is not available in the Operator mode.

Parameters IF Construct

Access	This dialog is called up via a double-click on an IF column header in the Stimulus Editor.
Purpose	To define a conditional stimulus for a signal.
Result	The corresponding signal will show different behavior depending on the conditions of the IF construct.

Description	<p>You can add an IF construct via Insert IF in the Stimulus Editor's Edit menu (see <i>Insert IF</i> on page 513).</p> <p>When setting a condition, you can set the threshold value to a symbol value. To do so, right-click the Threshold Value text field, and choose a symbol in the Choose Symbol dialog.</p>
Dialog settings	<p>Conditions Enter the desired condition here: for example, <code>My_Script_Variable < 20</code>. You can use multiple conditions, which have to be entered in the 2nd, 3rd, or 4th edit field. If there are multiple conditions, the corresponding drop-down lists are enabled and let you select which logical operator will be used.</p> <p>Timeout Specify the time interval in which the test should be performed.</p> <p>Use Evaluation If you want to test the IF or the ELSE branch, select the Use Evaluation checkbox, and then click the IF or the ELSE radio button.</p>
Choose Symbol dialog	<p>This dialog opens if you right-click the Threshold Value text field in the Parameters IF Construct and lets you set the threshold value to a symbol value.</p> <p>Symbol Select the symbol of interest: the program displays the corresponding description and type in the dedicated columns.</p>
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • Adding Conditional Branches ( <i>ControlDesk Test Automation Guide</i>) <p>HowTos</p> <ul style="list-style-type: none"> • How to Define Symbols ( <i>ControlDesk Test Automation Guide</i>) <p>Examples</p> <ul style="list-style-type: none"> • Example of Defining a Conditional Branch ( <i>ControlDesk Test Automation Guide</i>) <p>References</p> <ul style="list-style-type: none"> • Delete Symbol on page 507 • New Symbol on page 518

Pause Stimulus Generation

Access	You can access this command via:
	Menu bar Stimulus Editor

Context menu of	Navigator
Drag & drop from	None
Shortcut key	None
Toolbar icon	

Purpose To pause the stimulus generation currently running on the simulator.

Result The stimulus generation that was running on the simulator is paused.

Description This is available only after the sequence control table file has been downloaded.

To continue the signal generation at the same point of time, invoke this again. If you invoke the Start Stimulus Generation (see *Start Stimulus Generation* on page 529), the signal generation starts at the beginning of the signal description.



This is not available in the Operator mode.

Related topics

Basics

- *Supplying Stimulus Signals to the Application* ( [ControlDesk Test Automation Guide](#))

References

- *Start Stimulus Generation* on page 529
- *Stop Stimulus Generation* on page 532

PULSE

Access You can access this command via:

Menu bar	Edit – Insert in Cell
Context menu of	Matrix cell
Drag & drop from	Signal Selector
Shortcut key	None
Toolbar icon	None

Purpose	To insert a PULSE signal in a selected cell in the Stimulus Editor document.
Result	A PULSE signal is inserted in the cell you selected in the Stimulus Editor document.
Description	PULSE generates a square wave pulse train with a 50% duty cycle. For positive amplitudes, it starts with a positive block pulse. Float and integer values are supported. Refer to <i>PULSE</i> ( <i>ControlDesk Test Automation Reference</i>).
	 This is not available in the Operator mode.

RAMP

Access	You can access this command via:
Menu bar	Edit – Insert in Cell
Context menu of	Matrix cell
Drag & drop from	Signal Selector
Shortcut key	None
Toolbar icon	None
Purpose	To insert a RAMP signal in a selected cell in the Stimulus Editor document.
Result	A RAMP signal is inserted in the cell you selected in the Stimulus Editor document.

Description	RAMP generates a ramp signal according to the equation: $f(t) = \text{offset} + \text{slope} \cdot t$. Refer to <i>RAMP</i> (<i>ControlDesk Test Automation Reference</i>).
	This is not available in the Operator mode.

Related topics	Basics <ul style="list-style-type: none">• <i>Defining Signals</i> (<i>ControlDesk Test Automation Guide</i>) HowTos <ul style="list-style-type: none">• <i>How to Define Signal Shapes</i> (<i>ControlDesk Test Automation Guide</i>)
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Remove Variable

Access	You can access this command via:
Menu bar	None
Context menu of	Signal slot header
Drag & drop from	None
Shortcut key	None
Toolbar icon	None
Purpose	To remove a variable assignment from the Stimulus Editor document.
Result	The variable assignment you selected is removed from the signal slot.
	This is not available in the Operator mode.

Related topics	Basics <ul style="list-style-type: none">• <i>Stimulus Editor Basics</i> (<i>ControlDesk Test Automation Guide</i>)
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Save Symbol Table

Access	You can access this command via:
Menu bar	None
Context menu of	Symbol Editor
Drag & drop from	None
Shortcut key	None
Toolbar icon	None
Purpose	To save the symbol table in a separate symbol table file (SYT).
Result	The symbol table is saved in a separate symbol table file. You can now export symbol definitions of one Stimulus Editor document to other files, if desired.
Description	Because the variable assignments are document-specific, the symbol table file does not include the script variable name definitions.
Related topics	<p>HowTos</p> <ul style="list-style-type: none"> • How to Define Symbols ( ControlDesk Test Automation Guide) <p>References</p> <ul style="list-style-type: none"> • Delete Symbol on page 507 • New Symbol on page 518 • Open Symbol Table on page 520

SAW

Access	You can access this command via:
Menu bar	Edit – Insert in Cell
Context menu of	Matrix cell
Drag & drop from	Signal Selector

	Shortcut key	None
	Toolbar icon	None
Purpose	To insert a SAW signal in a selected cell in the Stimulus Editor document.	
Result	A SAW signal is inserted in the cell you selected in the Stimulus Editor document.	
Description	SAW generates a sawtooth waveform. For positive amplitudes, the triangular waveform starts with a positive block ramp. Refer to <i>SAW</i> ( <i>ControlDesk Test Automation Reference</i>).	
		This is not available in the Operator mode.
Related topics	<p>Basics</p> <ul style="list-style-type: none">• <i>Defining Signals</i> ( <i>ControlDesk Test Automation Guide</i>) <p>HowTos</p> <ul style="list-style-type: none">• <i>How to Define Signal Shapes</i> ( <i>ControlDesk Test Automation Guide</i>)	

Signal Name

Access	You can access this Stimulus Editor dialog via:
Command	None
Shortcut key	None
Toolbar icon	None
Mouse	<ul style="list-style-type: none">■ Double-click on a signal name in the Stimulus Editor.■ When you assign a new variable from the Variable List to a signal slot in the Stimulus Editor
Purpose	To accept or alter the Variable List's script variable name that will be shown in the signal slot in the Python script.

To specify whether the signal curve should be plotted or not. If yes, to specify whether it should be plotted in its own graph or together with another curve.

Result	The specified signal in the Python script has the script name that was defined in this dialog. The signal name from the Variable file is displayed in the header cell of the signal slot.
Description	The list of signals displayed in the Plot with list is the one defined in the Stimulus Editor.
Signal Name dialog	<p>Signal name Displays the name of the variable as defined in the Variable List specific to the Variable file.</p> <p>Script variable Edit the script variable name you want to use in the Python script, or accept the name that is suggested.</p> <p>Plot with... Select the checkbox corresponding to the signal that the selected signal is to be plotted with. If all checkboxes are cleared, the signal is not plotted.</p>
Related topics	<p>Basics</p> <ul style="list-style-type: none"> • <i>Defining Signals</i> ( <i>ControlDesk Test Automation Guide</i>) <p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Assign Simulator Variables</i> ( <i>ControlDesk Test Automation Guide</i>)

SIN

Access	You can access this command via:
Menu bar	Edit – Insert in Cell
Context menu of	Matrix cell
Drag & drop from	Signal Selector
Shortcut key	None
Toolbar icon	None
Purpose	To insert a SIN signal in a selected cell in the Stimulus Editor document.

Result	A SIN signal is inserted in the cell you selected in the Stimulus Editor document.
Description	SIN generates a sine wave signal according to the equation: $f(t) = \text{offset} + \text{amplitude} \cdot \sin(2 \pi \cdot \text{frequency} \cdot t)$. Refer to SIN ( <i>ControlDesk Test Automation Reference</i>).
	<div style="border: 1px solid #ccc; padding: 10px; display: inline-block;"> This is not available in the Operator mode.</div>

SQR

Access	You can access this command via:
Menu bar	Edit – Insert in Cell
Context menu of	Matrix cell
Drag & drop from	Signal Selector
Shortcut key	None
Toolbar icon	None
Purpose	To insert a SQR signal in a selected cell in the Stimulus Editor document.
Result	A SQR signal is inserted in the cell you selected in the Stimulus Editor document.

Description	SQR generates a quadratic polynomial signal according to the equation: $f(t) = \text{offset} + \text{gain} \cdot t^2$. Refer to <i>SQR</i> (<i>ControlDesk Test Automation Reference</i>).
--------------------	---



This is not available in the Operator mode.

Related topics	<p>Basics</p> <ul style="list-style-type: none"> • <i>Defining Signals</i> (<i>ControlDesk Test Automation Guide</i>) <p>HowTos</p> <ul style="list-style-type: none"> • <i>How to Define Signal Shapes</i> (<i>ControlDesk Test Automation Guide</i>)
-----------------------	--

Start Stimulus Generation

Access	You can access this command via:
Menu bar	Stimulus Editor
Context menu of	Navigator
Drag & drop from	None
Shortcut key	None
Toolbar icon	
Purpose	To start the stimulus generation on the simulator.
Result	The stimulus generation runs on the simulator. If you selected the Show Cursors option in the Settings page of the Stimulus Editor File Properties dialog, you can watch the current state of the generated signals in the plot area of the Stimulus Window.
Description	This is available only after the sequence control table file has been downloaded.
	<p></p> <p>This is not available in the Operator mode.</p>

Related topics

Basics

- *Supplying Stimulus Signals to the Application* ( ControlDesk Test Automation Guide)

References

- *Pause Stimulus Generation* on page 521
- *Properties: Stimulus Editor File Properties* on page 87
- *Stop Stimulus Generation* on page 532

Stimulus Window

Access	This window is displayed when you activate or create a Stimulus Editor document.
---------------	--

Purpose	To design signal sequences, display evaluated data, list signal variables, and let you specify constants and default values for parameters.
----------------	---

Window elements	The Stimulus Window consists of: Stimulus Editor document area The upper frame contains a matrix, which is used to design the signal sequences (see <i>Stimulus Editor document area</i> on page 530). Preview Click this tab to display the Preview page (see <i>Preview page</i> on page 531), which lets you view the resulting signal curves. Symbols Click this tab to display the Symbols page (see <i>Symbols page</i> on page 531), which lists all used signal variables and to define additional constants. Defaults Click this tab to display the Defaults page (see <i>Defaults page</i> on page 532), which lets you specify default values for all parameters of the available signal curves.
------------------------	---

Stimulus Editor document area	This is the upper frame of the Stimulus Window and lets you design the signal sequences. Each signal is assigned to a model variable. The signal form is described using different signal shapes and control structures. The timing behavior is determined by time tags that define the point of time when a signal shape changes relative to the previous time tag.
--------------------------------------	--

The Stimulus Editor document consists of a time table. Each column of the table represents a time tag. Each row of the matrix represents a signal slot or a control slot:

- Each Signal slots displays the name of the assigned signal and a signal form description. The signal name is taken from the model variable it is assigned to with the Variable Browser. The signal form description is divided by time tags that allow you to compose variable sequences of signal shapes and synchronize multiple signal slots. The available signal shapes include constant, ramp, exponential, sine, square, triangular, pulse, saw-tooth, and noise. An additional signal, TABLE_HOST, is also available for replaying measured data stored in a MAT file.
- Each Control slots is used to insert loops. This allows you to implement cyclic signal forms.

For information on Stimulus signal generation, refer to *Signal Generation Basics* ( *ControlDesk Test Automation Guide*).

Preview page

This page is called up by clicking on the Preview tab of the Stimulus Window (see *Preview* on page 530) and lets you view the evaluated data for the selected variables.

When executing a Build + Run Script, a chart containing the evaluated data is displayed in the plot area (see *Build + Run Script* on page 501).

Symbols page

This page is called up by clicking on the Symbols tab of the Stimulus Window (see *Symbols* on page 530). It lists all signal variables used in the active Stimulus Editor document and lets you define additional constants.

The script variable names of the model variables already assigned are listed at the top of the symbols table. These entries are grey-shaded and cannot be modified here.

The symbols defined in the Symbols page are part of the Stimulus Editor document. To save changes, you have to save the Stimulus Editor document. The symbols can be displayed and modified when the corresponding Stimulus Editor document is open.

Symbol names, numerical constants, and mathematical expressions are used for script generation and therefore have to be Python-compliant. All mathematical functions of the Python module "math" can be used.

For further information on naming conventions, refer to *Identifiers and Keywords* and *Numerical Literals* in the *Python Language Reference* and *Built-in Module math* in the *Python Library Reference*.

Defaults page

This page is called up by clicking on the Defaults tab of the Stimulus Window (see *Defaults* on page 530) and lets you specify default values for all parameters of the signal curves available in the active Stimulus Editor document.

To specify or change a value, click the table cell and enter the value. Use the cursor keys to navigate within the table.

The default values defined in the Defaults page are part of the related Stimulus Editor document. Therefore, to save changes made in this page, you have to save the Stimulus Editor document.

On insertion of a new signal, the Parameter dialog box is skipped if the following two conditions are fulfilled:

- All values specifying the signal are defined in the Defaults page of the Stimulus Editor.
- The **Use defaults** checkbox in the Settings page of the Properties: Stimulus Editor File Properties is selected (see *Properties: Stimulus Editor File Properties* on page 87).

Related topics

Basics

- *Signal Generation Basics* ( *ControlDesk Test Automation Guide*)
- *Stimulus Editor Basics* ( *ControlDesk Test Automation Guide*)

HowTos

- *How to Change System Description Files* ( *ControlDesk Test Automation Guide*)
- *How to Create a Stimulus Editor Document* ( *ControlDesk Test Automation Guide*)
- *How to Define Symbols* ( *ControlDesk Test Automation Guide*)
- *How to Generate Scripts and Signal Plots* ( *ControlDesk Test Automation Guide*)
- *How to Handle Stimulus Editor Documents* ( *ControlDesk Test Automation Guide*)
- *How to Set Default Values* ( *ControlDesk Test Automation Guide*)

Stop Stimulus Generation

Access

You can access this command via:

Menu bar	Stimulus Editor
Context menu of	Navigator
Drag & drop from	None
Shortcut key	None
Toolbar icon	

Purpose	To stop the stimulus generation currently running on the simulator.
Result	The stimulus generation that was running on the simulator is stopped.
Description	This is available only after the sequence control table file has been downloaded and stimulus generation has been started.
	 This is not available in the Operator mode.

TABLE_HOST

Access	You can access this command via:
Menu bar	Edit – Insert in Cell
Context menu of	Matrix cell
Drag & drop from	Signal Selector
Shortcut key	None
Toolbar icon	None
Purpose	To insert a TABLE_HOST signal in a selected cell in the Stimulus Editor document.
Result	A TABLE_HOST signal is inserted in the cell you selected in the Stimulus Editor document.

Description	TABLE_HOST replays measured data in real time. The TABLE_HOST properties are specified via <i>Data Replay Properties</i> on page 504. Refer to <i>TABLE_HOST</i> ( ControlDesk Test Automation Reference).
--------------------	--



This is not available in the Operator mode.

Related topics

Basics

- *Importing and Replaying Measured Data* ( ControlDesk Test Automation Guide)

Examples

- *Example of a Script for Data Replay* ( ControlDesk Test Automation Guide)

References

- *Data Replay Properties* on page 504

TRI

Access

You can access this command via:

Menu bar	Edit – Insert in Cell
Context menu of	Matrix cell
Drag & drop from	Signal Selector
Shortcut key	Matrix cell
Toolbar icon	None

Purpose

To insert a TRI signal in a selected cell in the Stimulus Editor document.

Result

A TRI signal is inserted in the cell you selected in the Stimulus Editor document.

Description

TRI generates a triangular waveform. For positive amplitudes, the triangular waveform starts with a positive peak. Refer to *TRI* ( ControlDesk Test Automation Reference).



This is not available in the Operator mode.

Related topics**Basics**

- *Defining Signals* ( *ControlDesk Test Automation Guide*)

HowTos

- *How to Define Signal Shapes* ( *ControlDesk Test Automation Guide*)

ControlDesk File Reference

ControlDesk works with several File types to manage information and applications:

- *Overview of File Types and Structures* on page 538

Certain files are essential for working with ControlDesk, and you might need to create them by hand, so you should familiarize yourself with their function and syntax:

- *Structure of CSV Files Generated by the Reference Data Manager and the Platform Manager* on page 542
- *Structure of MAT Files Generated by the Reference Data Manager and the Platform Manager* on page 544
- *Syntax of the Module Description File* on page 547
- *Syntax of the TRC File* on page 560

Overview of File Types and Structures

Where to go from here

Information in this section

File Types	538
Structure of CSV Files Generated by the Reference Data Manager and the Platform Manager	542
Structure of MAT Files Generated by the Reference Data Manager and the Platform Manager	544

File Types



WARNING

Do not change file extensions. This may lead to conflicts later on because ControlDesk uses fixed file extensions for file types.

File types used by ControlDesk to manage information and applications:

Extension	Description
A2L	ASAM MCD 2MC files – formerly known as ASAP2 files – list the variables and parameters of an electronic control unit (ECU).
BIN	Binary data files contain DS1005 or MicroAutoBox flight recorder data. The Platform Manager can read out the flight recorder and upload the data into a BIN file (refer to <i>How to Use the Flight Recorder</i> in the Features document of your dSPACE hardware). ControlDesk can also convert this file format into the Reference Data file formats MAT and CSV (refer to <i>How to Generate and Save Reference Data</i> (<i>ControlDesk Experiment Guide</i>)).
CANCFG	RTICANMM generates CAN configuration files when you build a real-time application for a model. The CAN configuration files contain all data necessary for the CAN bus configuration in ControlDesk. In a multiprocessor system, there is a CAN configuration file for each processor. Refer to <i>Handling CAN Messages</i> (<i>ControlDesk Experiment Guide</i>).
CDX	ControlDesk Experiment files contain links to all files related to an experiment (refer to <i>Managing Experiments</i> (<i>ControlDesk Experiment Guide</i>)).
CON	Connection files describe data connections between instruments and variables (refer to <i>How to Export/Import Data Connections</i> (<i>ControlDesk Experiment Guide</i>)).

Extension	Description
CSV	Comma-separated value files are used for saving reference data captures or table editor data (refer to <i>Using Reference Data</i> ( <i>ControlDesk Experiment Guide</i>)). Flight Recorder data of a DS1005 or MicroAutoBox can also be saved as a CSV file (refer to <i>How to Use the Flight Recorder</i> in the <i>Features</i> document of your dSPACE hardware). You can also export parameters from a parameter file (PAR file) to a CSV file.
FLT	Filter Manager files contain the rules for filtering variables and parameters (see <i>Variable Browser Basics</i> ( <i>ControlDesk Experiment Guide</i>) or <i>How to Access the Parameter Editor</i> ( <i>ControlDesk Experiment Guide</i>)).
IDF	Intermediate data files contain captured data using the stream-to-disk mode (refer to <i>Capturing Data</i> ( <i>ControlDesk Experiment Guide</i>)).
LAY	Layout files contain information (instruments, size, position, attributes, etc.) on instrument panels, but usually not the data connections between variables and instruments (see <i>Creating an Instrument Panel</i> ( <i>ControlDesk Experiment Guide</i>)).
MAT	MATLAB binary files are used for saving reference data captures or table editor data (refer to <i>Using Reference Data</i> ( <i>ControlDesk Experiment Guide</i>)). Flight Recorder data of a DS1005 or MicroAutoBox can also be saved as a MAT file (refer to <i>How to Use the Flight Recorder</i> in the <i>Features</i> document of your dSPACE hardware).
MDF	Module description files are used to access the classes and methods of a predefined Python module. For information on the syntax of MDF files, refer to <i>Syntax of the Module Description File</i> on page 547 in the ControlDesk Reference.
MDL	These are structured ASCII files that contain keywords and parameter-value pairs describing a Simulink model. They are for non real-time simulation performed on the Simulink platform (see <i>Experimenting on the Simulink Platform</i> ( <i>ControlDesk Experiment Guide</i>)).
OBJ	Object files are the executable files for the slave DSP processors on the DS1103, DS2201, DS2210, DS2211, DS2301, and DS2302 boards (see <i>Handling Real-Time Applications on an RTP</i> ( <i>ControlDesk Experiment Guide</i>))).
PAR	Parameter files contain the descriptions, types, and values of parameter sets (see <i>How to Access the Parameter Editor</i> ( <i>ControlDesk Experiment Guide</i>))).
PPC	PPC files are the executable files for the processor boards with PowerPC processors: DS1005, DS1103, DS1104, and DS1401.
PY	Python scripts written using the Python scripting language generated by the Source Code Editor or the Macro Recorder (see <i>Using the Python Interpreter</i> ( <i>ControlDesk Automation Guide</i>))).

Extension	Description
SDF	<p>System description files describe the files to be loaded to the individual components of a simulation platform. They are generated automatically when you build the TRC file with RTI or, for Simulink simulations, from within ControlDesk. As an alternative, you can use the System Description File Editor to generate (and edit) system description files (refer to <i>Creating System Description Files</i> ( <i>ControlDesk Experiment Guide</i>)).</p> <p>You can load system description files to the Variable Browser to draw data connections between variables of an application and ControlDesk's instruments.</p>
SE	Stimulus Editor files are generated by the Stimulus Editor, which is provided by ControlDesk Test Automation.
SEQ	Sequence files are generated by the Stimulus Editor, which is provided by ControlDesk Test Automation. They contain the sequence control table to be downloaded to a simulation platform.
SHL	Showlist files contain all the information required to restore the Showlist selection within the Parameter Editor. Each file has the same name as the Parameter file the Showlist was derived from.
TRC	<p>TRC files provide information on the available variables and how they are grouped. RTI and RTI-MP generate all the Simulink variables in the <[sub]model>.trc. file whereas for Simulink simulations, all variables are available in the <[sub]model>_offline.trc file.</p> <p>For both single-processor and multiprocessor systems, you should always use the application's system description file to access its variables during real-time simulation via ControlDesk.</p> <p>For information on the syntax of TRC files, refer to <i>Syntax of the TRC File</i> on page 560</p>
X86	The object file is the executable file for AMD Opteron™ real-time processors. X86 files are used for the DS1006.

Some file types are used by ControlDesk, but are not accessible to the user:

Extension	Description
CDC	ControlDesk connection files contain information on the data connections between instruments and the real-time hardware. They are generated and loaded automatically by using instrument panels under experiment control.
CDD	ControlDesk description files contain the experiment description.
MAP	Map files are generated by the linker and map symbolic names to physical addresses. The MAP file must be located in the same directory as the TRC file. If this is not the case, opening the TRC file generates an error message in the LOG file.
P (<model>_pmap.p)	The <model>_pmap.p file contains the mapping and calculation rules for mask and workspace parameters and is, therefore, part of the real-time application. Whenever you use ControlDesk to modify a mask or workspace parameter, ControlDesk evaluates the model's P code within a MATLAB session to derive the dependent parameters.
PYC	Compiled Python scripts. dSPACE Python modules are distributed as PYC files (refer to the ControlDesk Automation Guide).
PYD	Python DLL files. System files of the Python interpreter (refer to the ControlDesk Automation Guide).



WARNING

Do not modify any of these files manually.

Information about the configuration and errors are stored by ControlDesk in the following files:

Extension	Description
dSPACE.ini	The dSPACE.ini file describes the configuration of the real-time hardware already registered (see <i>How to View Your dSPACE Configuration</i> (<i>ControlDesk Experiment Guide</i>)).
dSPACE.log	The dSPACE.log file is ControlDesk's default LOG file (see <i>How to View the dSPACE.log File</i> (<i>ControlDesk Experiment Guide</i>)).

Related topics

Basics

- *Handling Files* (*ControlDesk Experiment Guide*)

Structure of CSV Files Generated by the Reference Data Manager and the Platform Manager

The general form of a CSV file generated by the Reference Data Manager looks like this:

Column 1	Column 2	Column 3
Description block		
trace_date	Date & Time of Capture:	Link to information on the data capture conditions
trace_headlines	DSP Program Name:	Link to information on the data capture conditions
	Date & Time of DSP Program:	Link to information on the data capture conditions
	Interval:	Link to information on the data capture conditions
	Delay:	Link to information on the data capture conditions
	Downsampling:	Link to information on the data capture conditions
	Time Base:	Link to information on the data capture conditions
	Trigger Signal:	Link to information on the data capture conditions
	Trigger Edge:	Link to information on the data capture conditions
	Trigger Level:	Link to information on the data capture conditions
ControlDesk_Description	Description	Further information on the data file
	Author	Data file's author
	GeneratorVersion	Version information of the data file format
ControlDesk_RTProgram (available only if the CSV file was generated by Reference Data Manager)	BoardName	Name of the real-time platform
ControlDesk_Capture (available only if the CSV file was generated by Reference Data Manager)	DateTime	Date and time of the data capture
	ObjectFile	Name of the real-time application
	Length	Length of the reference data contained in the CSV file
	Downsampling	Downsampling factor
	DateTime	Date and time of the data capture
	Task	Task number of the real-time data service of the data capture
	SamplingPeriod	Sampling period of the real-time application
	TriggerState	Shows if a trigger was used for the data capture.
	TriggerSignal	Trigger signal
	TriggerDelay	Trigger delay
	TriggerLevel	Trigger level
	TriggerEdge	The value 'pos' corresponds to a rising trigger edge; 'neg' to a falling trigger edge.
ControlDesk_IDFConversion (available only if the CSV file was generated by IDF file conversion and split into parts according to time intervals)	SourceFile	Name of the source IDF file
	DateTime	Date and time of the source IDF file
	Size	Size of the source IDF file
	Part	Number of the current data file
	Parts	Shows how many data files were created during conversion.

Column 1	Column 2	Column 3
ControlDesk_IDFSignalConversion (available only if the CSV file was generated by IDF file conversion and split into parts according to signals)	SourceFile DateTime Size Signal Signals	Name of the source IDF file Date and time of the source IDF file Size of the source IDF file Name of the signal Shows how many signals are contained by the related IDF file.
ControlDesk_FlightRec (available only if MicroAutoBox's or DS1005's flight recorder was used for data capture)	StartTime EndDateTime ReaderVersion FlightRecVersion Note	Date and time when the data capture with the flight recorder started Date and time when the data capture with the flight recorder ended Version of the flight recorder reader Version of RTLib's flight recorder functions Additional information on the flight recorder data capture
ControlDesk_BINConversion (available only if MicroAutoBox's or DS1005's flight recorder was used for data capture)	SourceFile DateTime Size	Name of the source BIN file Date and time of the source BIN file Size of the source BIN file
Data block		
trace_size trace_types	Number of data rows Type of the signal x (used internally)	Type of the signal (used internally) (if more than one signal is captured, further columns are used)
trace_names	Name of the signal x	Name of the signal y (if more than one signal is captured, further columns are used)
trace_units	Unit of x signal	Unit of the signal y (if more than one signal is captured, further columns are used)
trace_values	Data of the signal x	Data of the signal y (if more than one signal is captured, further columns are used)



Since each DS1005 provides its a separate x-axis, a CSV file generated for a DS1005-based multiprocessor application contains one data block for each processor board.

Related topics

Basics

- *Data Files Generated by the Reference Data Manager* ([ControlDesk Experiment Guide](#))

References

- [Parameter Editor, Variable Browser and Reference Data Manager](#) on page 363
- [Structure of MAT Files Generated by the Reference Data Manager and the Platform Manager](#) on page 544

Structure of MAT Files Generated by the Reference Data Manager and the Platform Manager

Objective With the current version of ControlDesk, you can switch between the old and the new MAT file format.

New MAT file format Files of this format contain only one struct array, which has the same name as the file. This struct consists of further struct arrays, which contain the data and all conditions of the corresponding real-time data capture. For instructions on how to use MAT files of this format, see *How to Work with Reference Data Under MATLAB* (*ControlDesk Experiment Guide*).

The MAT file contains the following structs and substructs:

Struct	Substruct	Dimension	Datatype	Contents
X	Name	1 x N	struct array	Name of the signal
	Type	1 x N	char array	Type of the signal (used internally)
	Data	1 x 1	int32 array	Data of the signal
	Unit	Depends on the Type.		Unit of the signal
		1 x N	char array	
Y	Name	1 x N	struct array	Name of the signal
	Type	1 x N	char array	Type of the signal (used internally)
	Data	1 x 1	int32 array	Data of the signal
	Unit	Depends on the Type.		Unit of the signal
	XIndex	1 x N	char array	Number of x axes (An index is only necessary for MAT files generated from flight recorder data. Normal data has only one x axis.)
		1 x 1	int32 array	
Description	Description	1 x 1	struct array	Further information on the data file
	Author	1 x N	char array	Data file's author
	GeneratorVersion	1 x N	char array	Version information of the data file format
RTProgram (available only if the MAT file was generated by Reference Data Manager)	BoardName	1 x 1	struct array	Name of the real-time platform
	DateTime	1 x N	char array	Date and time of the data capture
	ObjectFile	1 x N	char array	Name of the real-time application

Struct	Substruct	Dimension	Datatype	Contents
Capture (available only if the MAT file was generated by Reference Data Manager)	Length Downsampling DateTime Task SamplingPeriod TriggerState TriggerSignal TriggerDelay TriggerLevel TriggerEdge	1 x 1 1 x 1 1 x 1 1 x N 1 x 1 1 x 1 1 x N 1 x N 1 x 1 1 x 1 1 x N	struct array double array int32 array char array int32 array double array char array char array double array double array char array	Length of the reference data contained in the MAT file Downsampling factor Date and time of the data capture Task number of the real-time data service of the data capture Sampling period of the real-time application Shows if a trigger was used for the data capture. Trigger signal Trigger delay Trigger level The value 'pos' corresponds to a rising trigger edge; 'neg' to a falling trigger edge.
IDFConversion (available only if the MAT file was generated by IDF file conversion and split into parts according to time intervals)	SourceFile DateTime Size Part Parts	1 x 1 1 x N 1 x N 1 x 1 1 x 1	struct array char array char array int32 array int32 array	Name of the source IDF file Date and time of the source IDF file Size of the source IDF file Number of the current data file Shows how many data files were created during conversion.
IDFSignalConversion (available only if the MAT file was generated by IDF file conversion and split into parts according to signals)	SourceFile DateTime Size Signal Signals	1 x 1 1 x N 1 x N 1 x 1 1 x 1	struct array char array char array int32 array char array	Name of the source IDF file Date and time of the source IDF file Size of the source IDF file Name of the signal Shows how many signals are contained by the related IDF file.
FlightRec (available only if MicroAutoBox's or DS1005's flight recorder was used for data capture)	StartTime EndDateTime ReaderVersion FlightRecVersion Note	1 x 1 1 x N 1 x N 1 x N 1 x N	struct array char array char array char array char array	Date and time when the data capture with the flight recorder started Date and time when the data capture with the flight recorder ended Version of the flight recorder reader Version of RTLlib's flight recorder functions Additional information on the flight recorder data capture
BINConversion (available only if MicroAutoBox's or DS1005's flight recorder was used for data capture)	SourceFile DateTime Size	1 x 1 1 x N 1 x N 1 x 1	struct array char array char array int32 array	Name of the source BIN file Date and time of the source BIN file Size of the source BIN file

Old MAT file format

A MAT file generated by ControlDesk according to the old file format contains the following matrices:

Matrix	Dimension	Datatype	Contents
trace_X	1 x N	double array	X-data for all signals

Matrix	Dimension	Datatype	Contents
trace_y	N x M	double array	Each of the M rows contains the y-data for one single signal.
trace_x_n	1 x N	char array	Name of the x axis
trace_y_n	N x M	char array	Each of the M rows contains the name of the curve in the respective row of the y matrix.
trace_x_u	1 x N	char array	Unit of the x axis
trace_y_u	N x M	char array	Each of the M rows contains the unit of the signal in the respective row of the y matrix.
trace_headlines	N x M	char array	Link to information on the data capture conditions
trace_date	1 x N	char array	Link to the date and time of the data capture
ControlDesk_Description	1 x 1	struct array	Information on the author of the reference data and on the version of the file format
ControlDesk_RTProgram	1 x 1	struct array	Information on the corresponding real-time application
ControlDesk_Capture	1 x 1	struct array	Information on the data capture including the corresponding trigger conditions
ControlDesk_IDFConversion (available only if the MAT file was generated by IDF file conversion and split into parts according to time intervals)	1 x 1	struct array	Information on the source IDF file
ControlDesk_IDFSignalConversion (available only if the MAT file was generated by IDF file conversion and split into parts according to signals)	1 x 1	struct array	Information on the source IDF file

Related topics

Basics

- *Data Files Generated by the Reference Data Manager* ([ControlDesk Experiment Guide](#))

HowTos

- *How to Work with Reference Data Under MATLAB* ([ControlDesk Experiment Guide](#))

References

- *Parameter Editor, Variable Browser and Reference Data Manager* on page 363
- *Structure of CSV Files Generated by the Reference Data Manager and the Platform Manager* on page 542

Syntax of the Module Description File



ControlDesk Test Automation is documented only for compatibility reasons (for scripts up to ControlDesk v2.3). For test automation tasks, you are recommended to use dSPACE AutomationDesk.

The Function Wizard gets its information about the supported Python modules from the module description files (MDF files). The Function Wizard needs these as interfaces to the Python modules containing the "executable" functions. A module description file can refer to functions of different Python modules.

Because the name definitions of Python modules and module description files differ, the following table shows how the terms correspond:

Module Description File	Python Module
module	module, library
group	class, substructure
function	method, function

The module description file specifies the module name, the group name and the function call in a specific format that can be interpreted by the Function Wizard. There are predefined module description files for the Python modules which belong to ControlDesk. For user-defined modules, you can write your own module description files.

The structure of a module description file follows a set of rules ensuring that the Function Wizard can get all the information it needs.

- See *Basic Information* on page 548 to provide the description of the entire module description file to the Function Wizard.
- See *Module Definition* on page 548 to provide information to the Function Wizard about the association of functions and modules.
- See *Group Definition* on page 549 to provide the structure of the module description file to the Function Wizard.
- See *Function Definition* on page 550 to provide information about the Python method to the Function Wizard.
- See *Special Keywords* on page 552 to optimize the input methods of the Function Configurator dialog of the Function Wizard.

- See *EBNF of the MDF Syntax* on page 557 for a description of the extended Backus-Naur form.

Basic Information

Syntax	<code>DESCRIPTION <description></code> <code>HELPFILE <helpfile></code>
Purpose	To provide information about the module description file to the Function Wizard.
Description	The description appears in the Function Wizard page of the ControlDesk Properties dialog and in the Function Configurator dialog to identify the loaded module description file. The argument for the helpfile can be used optionally. If there is a CHM file associated with the specified module description file, the Show Function Help command of the Function Wizard opens it, activates the index tab, and scrolls the index list to the function to be searched for. If there is no definition for the helpfile, the Show Function Help command opens the ControlDesk help.  If you want to write a comment in the module description file, you must begin the line with a #.

Related topics**References**

- *EBNF of the MDF Syntax* on page 557
- *Function Definition* on page 550
- *Group Definition* on page 549
- *Module Definition* on page 548
- *Special Keywords* on page 552
- *Syntax of the Module Description File* on page 547

Module Definition

Syntax	<code>MODULENAME <module name></code>
--------	---

Purpose	To specify the Python module that is associated with the following groups and functions in the module description file.
Description	The module definition can be placed at any position in a module description file. You can associate a Python module with a single function, a group of functions or the entire module description file. The module definition is in effect until another module definition is specified. The name of the Python module is used when you generate an import call or when you use the point notation.
Related topics	<p>References</p> <ul style="list-style-type: none"> • Basic Information on page 548 • EBNF of the MDF Syntax on page 557 • Function Definition on page 550 • Group Definition on page 549 • Special Keywords on page 552 • Syntax of the Module Description File on page 547

Group Definition

Syntax	<pre>GROUP <group name> ... END_GROUP</pre>
Purpose	To structure the integrated functions of the used Python modules and to provide this information to the Function Wizard.
Description	The group name is shown in the Module tree of the Function Selector. The <code>END_GROUP</code> statement denotes the end of the group definition.
Remarks	<p>A nested group definition can be created by specifying subgroups.</p> <pre>GROUP Maingroup ... GROUP Subgroup1 ... END_GROUP GROUP Subgroup2 ... END_GROUP END_GROUP</pre>

Related topics**References**

- [Basic Information](#) on page 548
- [EBNF of the MDF Syntax](#) on page 557
- [Function Definition](#) on page 550
- [Module Definition](#) on page 548
- [Special Keywords](#) on page 552
- [Syntax of the Module Description File](#) on page 547

Function Definition

Syntax

```
FUNCTION <function name>
    DESCRIPTION <description>
    <function call>
END_FUNCTION
```

Purpose

To provide information about a function to the Function Wizard, including a description and the entire function call.

Description

The function name and the description are shown in the Function list of the Function Selector. The function call itself can contain a single function (see below) or a block function (see below) and special keywords that affect the parameter input fields in the Function Configurator dialog of the Function Wizard.

Single and block functions are shown in the Function Selector with a different icon.

Single function	
Block function	

Related topics**References**

- [Basic Information](#) on page 548
- [EBNF of the MDF Syntax](#) on page 557
- [Group Definition](#) on page 549
- [Module Definition](#) on page 548
- [Special Keywords](#) on page 552
- [Syntax of the Module Description File](#) on page 547

Single Function

Syntax	CALL <function> or FCT_CALL <function>
Purpose	To provide information about a function call that consists of one method only.
Description	The function description in the module description file is analyzed by the Function Wizard so that the Function Configurator dialog can prepare the input fields for the input and return parameters.
Example	<p>The following example shows one module function and one class function:</p> <pre>Module function (rs232lib, Open) hComRS232=Open(pcPort) Class function (excellib, OpenWorkbook) WorkBook = OBJ.OpenWorkbook(Filename)</pre>
Related topics	<p>References</p> <ul style="list-style-type: none"> • Block Function on page 551 • EBNF of the MDF Syntax on page 557 • Function Definition on page 550

Block Function

Syntax	FCT_CALL <function> and TXT_CALL <text>
Purpose	To provide information about a function call that consists of various methods to the Function Wizard.
Description	A block function can contain several function calls and several lines of text. Parameters that belong to several functions only need to be specified in the Function Configurator dialog once. The text calls can contain replacement characters for the specified parameters.

Example

This example shows a block function generated with several functions of the module rs232lib.

```
FUNCTION Open, Write and Close
    DESCRIPTION Open connection, write port string and close connection
    FCT_CALL hComRS232 = Open(pcPort)
    TXT_CALL <c> = 0
    TXT_CALL while <c> != 'q':
        FCT_CALL c = Read(hComRS232)
        TXT_CALL print <c>
    FCT_CALL Close(hComRS232)
    ENUM#1 'COM1', 'COM2', 'COM3', 'COM4'
END_FUNCTION
```

Related topics**References**

- *EBNF of the MDF Syntax* on page 557
- *Function Definition* on page 550
- *Single Function* on page 551

Special Keywords

The special keywords affect the text fields for the input parameters of a function shown in the Function Configurator dialog of the Function Wizard. Normally, the input fields are generated as blank text fields. If you define a value with one of the special keywords, the type of the associated input field changes.

To define default values

- Use DEFAULT_VALUE for a single input value. Refer to *DEFAULT_VALUE* on page 553.
- Use ENUM for an input array. Refer to *ENUM* on page 554.

To define Selection dialogs for file handling input parameters

- Use FILE for opening a standard File Selection dialog. Refer to *FILE* on page 555.
- Use DIR for opening a standard Browse for Folder dialog. Refer to *DIR* on page 556.



The numbering of the input fields includes the object parameter. For example, in the function call `CALL CaptureOBJ.DefineTrigger(variable, level, edge, initial='off')` the parameter `initial` is located in the fifth position.

Related topics

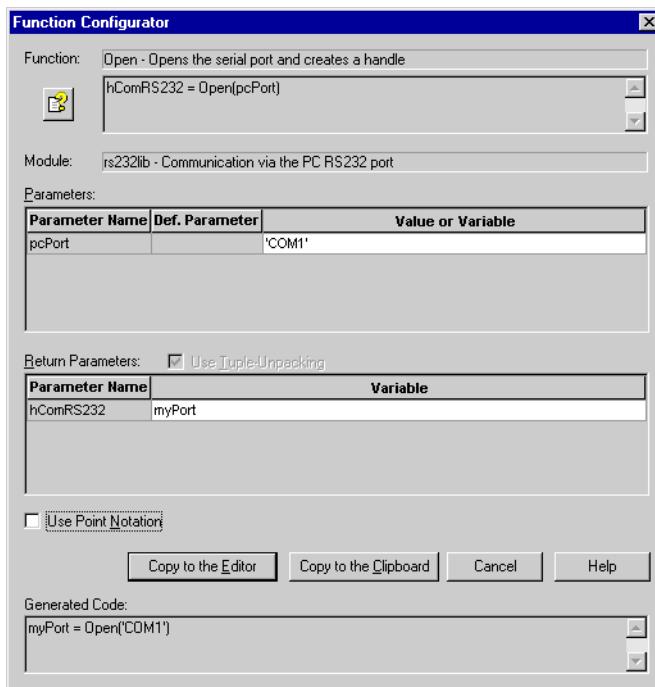
References

- [Basic Information](#) on page 548
- [EBNF of the MDF Syntax](#) on page 557
- [Function Definition](#) on page 550
- [Group Definition](#) on page 549
- [Module Definition](#) on page 548
- [Syntax of the Module Description File](#) on page 547

DEFAULT_VALUE

Syntax	DEFAULT_VALUE#<x> <value>
Purpose	To specify a default value for the x-th input parameter.
Result	The specified value of the x-th parameter is written automatically to the parameter's input field in the Function Configurator dialog of the Function Wizard.
Remarks	If the method of a Python module contains a default value, you can provide the value to the Function Wizard by writing it directly into the function call in the module description file (that is <code>CALL str = Read(hComRS232, BytesToRead=1)</code> to predefined the number of bytes to read). If you have defined a parameter in this way, it is effected by the option Generate Code for Default Argument Values, which you can select in the Function Wizard page of the ControlDesk Properties dialog.
Example	This example shows you how to specify a default value for the first input parameter of a function.

```
CALL hComRS232 = Open(pcPort)
DEFAULT_VALUE#1 'COM1'
```



Related topics

References

- [EBNF of the MDF Syntax](#) on page 557
- [ENUM](#) on page 554
- [Special Keywords](#) on page 552

ENUM

Syntax

ENUM#<x> <value 1>, <value 2>, ..., <value n>

Purpose

To specify an array of default values for the x-th input parameter.

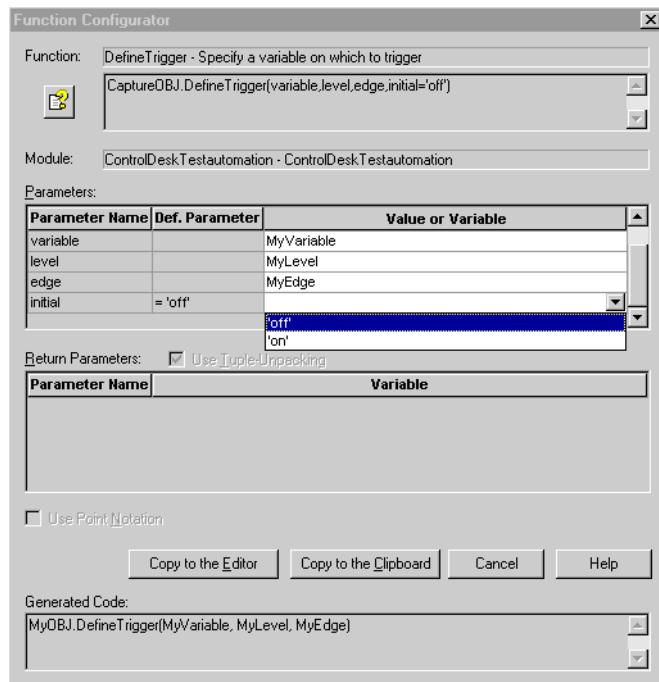
Result

The specified array of input values will be accessible via a selection list for the x-th parameter in the Function Configurator dialog of the Function Wizard.

Example

This example shows how you can specify an array of default values for the fifth input parameter.

```
CALL CaptureOBJ.DefineTrigger(variable, level, edge, initial='off')
ENUM#5 'off', 'on'
```

**Related topics****References**

- [DEFAULT_VALUE](#) on page 553
- [EBNF of the MDF Syntax](#) on page 557
- [Special Keywords](#) on page 552

FILE**Syntax**

```
FILE#<x> <dialog title>, <file filter>, <default extension>
```

Purpose

To specify a standard File Selection dialog for the x-th input parameter of a function.

Description

If the x-th input parameter is a filename, you can generate an input field for opening a standard File Selector dialog in the Function Configurator dialog. As this is a basic dialog, you can specify the title of the dialog, the file filter and the default extension for file selection.



The parameters of the file filter must not be separated by blanks!

Example

This example shows how you can specify a File Selector dialog for the second input parameter by filtering IDF files.

```
CALL CaptureOBJ.StartStreamToDisk(IdfFileName)
FILE#2 'Name of the intermediate datafile',
'IDF (*.idf)|*.idf||', 'idf'
```



Related topics**References**

- *DIR* on page 556
- *EBNF of the MDF Syntax* on page 557
- *Special Keywords* on page 552

DIR

Syntax

DIR#<x> <dialog title>

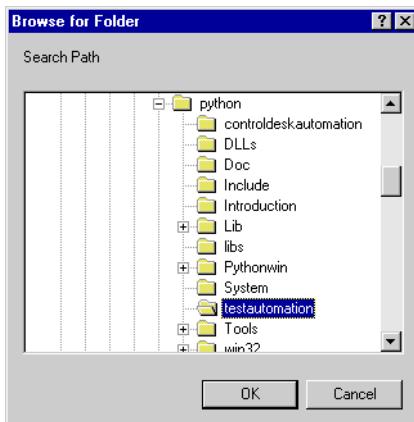
Purpose

To specify a standard Browse for Folder dialog for the x-th input parameter of a function.

Description If the x-th input parameter is a directory name, you can generate an input field for opening a standard Browse for Folder dialog in the Function Configurator dialog. Only the dialog title can be specified with this keyword.

Example This example shows how you can specify a Browse for Folder dialog for the first input parameter.

```
CALL SetSearchPath(path)
DIR#1 "Search Path"
```



Related topics

References

- [EBNF of the MDF Syntax](#) on page 557
- [FILE](#) on page 555
- [Special Keywords](#) on page 552

EBNF of the MDF Syntax

The MDF syntax in Extended Backus-Naur form is described below.

```
start    ::=  ["DESCRIPTION " string]
            ["HELPFILE " helpfile]
            [py_modulename]
            groups
```

```

groups ::= "GROUP " string
          [py_modulename]
          {groups | function}*
          "END_GROUP "
function ::= "FUNCTION " string
           [py_modulename]
           ["DESCRIPTION" string]
           "FCT_CALL " fct_call
           {"FCT_CALL " fct_call | "TXT_CALL " txt_call}
           {config_param_x}*      # max. one for each
                                   object or input parameter
           "END_FUNCTION "

```



x is assigned to the object or input parameter concerned.
Object parameters do not support the definition of config_param_x.

```

config_param_x ::= [default_value]
                  [enum_type | file_type | dir_type]
py_modulename ::= "MODULENAME " string
default_value ::= "DEFAULT_VALUE#x " string
enum_type ::= "ENUM#x " string {"," string}*
dir_type ::= "DIR#x " dlg_title
file_type ::= "FILE#x " dlg_title "," filter ","
              default_ext
filter ::= """(string "|" *. file_ext "|")+ "|" """
fct_call ::= [out_params] fct_name("[in_params]")
txt_call ::= string
              # <param> will be replaced
in_params ::= in_param {", " in_param}*
out_params ::= identifier "=" |
              "(" identifier {", " identifier}* ") =""
in_param ::= identifier ["=" string]
identifier ::= {letter|"_" (letter|digit|"_")}*
              # see python definition
default_extension ::= """file_ext"""
file_ext ::= (letter|digit)
              [(letter|digit)[(letter|digit)]]
helpfile ::= string  # path conform
dlg_title ::= """string"""
string ::= (any_character)+
letter ::= "a"..."z" | "A"..."Z"
digit ::= "0"..."9"

```

Related topics**References**

- *Basic Information* on page 548
- *DEFAULT_VALUE* on page 553
- *DIR* on page 556
- *ENUM* on page 554
- *FILE* on page 555
- *Function Definition* on page 550
- *Group Definition* on page 549
- *Module Definition* on page 548
- *Special Keywords* on page 552
- *Syntax of the Module Description File* on page 547

Syntax of the TRC File

Objective

The TRC file provides information on the variables of a real-time application or a Simulink model that is required to connect variables to instruments in a ControlDesk layout, for example. It is an ASCII file that can either be generated automatically by RTI or ControlDesk, or written manually.



- If you write a TRC file manually, you must adhere to the syntax of the TRC file.
- When you experiment with a Simulink model, you have to use ControlDesk to generate the corresponding TRC file. TRC files generated by RTI and TRC files generated by ControlDesk are compatible, so that you can easily switch from a simulation on the Simulink platform to an application running on a dSPACE real-time board. For details, see *Experimenting on the Simulink Platform* (*ControlDesk Experiment Guide*).

TRC file syntax

To structure the appearance of variables in ControlDesk's Variable Browser, you can divide all model variables into hierarchical levels of subgroups. This feature is called grouping:

- See *Grouping* on page 561.

Refer to the following sections for information on the syntax elements of a TRC file:

- *Keywords* on page 566
- *Variable Names* on page 563
- *Variable and Group Properties* on page 575
- *Comments* on page 563

Example

For examples of TRC files, refer to

- *Example of Accessing Custom Variables in ControlDesk* on page 587
- *Example of a TRC File Generated by RTI* on page 591

Error file

If you write your own TRC file incorrectly, an Error file is generated when you download the corresponding application: see *Error File* on page 564. Use this file to correct your own TRC file.

Principles of the TRC File

Where to go from here

Information in this section

Grouping	561
Variable Names	563
Comments	563
Error File	564

Grouping

Defining of groups

For large real-time applications with numerous variables, it is useful to arrange these variables into several groups. To define a group, enclose the corresponding variables in the keywords group and endgroup. Nesting group – endgroup statements allows you to create multilevel tree structures. An endgroup statement always belongs to the most recent group statement. Variables that are declared between these statements belong to this group and will be listed in the Variable List of the corresponding browser node.

Naming of groups

The keyword group must be followed by a name enclosed in quotation marks ("..."). If quotation marks are used in the string, they must appear twice. The name must be of the same format as described in *alias* on page 578. If two successive slashes occur in a name (//), they are transformed into a single one.

Example

```
group "Model"
group "Group-Name ""A"""
```



- In a TRC file, a group statement must always have a matching endgroup statement.
- Always insert an empty line between the closing brace and the endgroup statement.

Example

The following extract is taken from the `smd_xxxx_hc.trc` file found in the directory `%DSPACE_ROOT%\Demos\dsxxxx\GettingStarted\HandCode`.

```

group "Model"
    x_disp    flt
    f    flt
    x    flt
    v    flt
    a    flt
group "Model Parameters"
    d    flt
    c    flt
    m    flt
endgroup
endgroup

```

In ControlDesk's Variable Browser, these variables will look like this:

	Variable	Type
└─ Model	x_disp	FloatDSP32
└─ Model Parameters	f	FloatDSP32
└─ Model Parameters	x	FloatDSP32
└─ Model Parameters	v	FloatDSP32
└─ Model Parameters	a	FloatDSP32



At the end of the TRC file an empty line has to be inserted to avoid an error message caused by the TRC file parser.

Code example:

```

group "testgroup"
{
flags: COLLAPSED
}
endgroup

```

Appearance of groups in ControlDesk

In ControlDesk's Variable Browser, a group will appear as a node (unless the node has the flag `HIDDEN`, see [flags](#) on page 580).

Related topics

Basics

- [Keywords](#) on page 566
- [Variable and Group Properties](#) on page 575
- [Variable Names](#) on page 563

Examples

- [Example of a TRC File Generated by RTI](#) on page 591
- [Example of Accessing Custom Variables in ControlDesk](#) on page 587

References

- [Comments](#) on page 563
- [Syntax of the TRC File](#) on page 560

Variable Names

The name of the variable can be a scalar or an array and is limited to a maximum of 128 characters. The name (or its alias) will appear in ControlDesk's Variable Browser. The name of the variable must be identical to the name of the corresponding global variable of the real-time program. Variables declared as static cannot be accessed by ControlDesk unless their address is explicitly given in the TRC file because such variables do not appear in the MAP file. If a variable is not defined in <model>.c, the line in the TRC file is accepted only if the absolute address is given.



You must assign a datatype to each variable.

Example

```
X[0]
{
    type: flt
}
```

Related topics

Basics

- [Grouping](#) on page 561
- [Keywords](#) on page 566
- [Variable and Group Properties](#) on page 575

Examples

- [Example of a TRC File Generated by RTI](#) on page 591
- [Example of Accessing Custom Variables in ControlDesk](#) on page 587

References

- [alias](#) on page 578

Comments

TRC files may contain comments. Initial double minus characters (--) declare a line in the TRC file as a comment.

Example

```
-- this is a comment
```



The length of a comment is limited to 1024 characters.

Related topics**Basics**

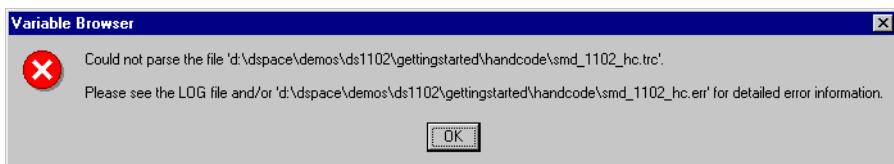
- [Grouping](#) on page 561
- [Keywords](#) on page 566
- [Variable and Group Properties](#) on page 575
- [Variable Names](#) on page 563

Examples

- [Example of a TRC File Generated by RTI](#) on page 591
- [Example of Accessing Custom Variables in ControlDesk](#) on page 587

Error File

ControlDesk parses the TRC file together with the Linker MAP file. If you write your own TRC file incorrectly, an error message similar to the following one will be displayed, for example, when you download the corresponding application with ControlDesk:



Error messages are listed in the <model>.err or in the <model>_user.err file. Possible error messages are:

Error	Description
Syntax error	
identifier expected	A line must begin with a name or a keyword; a group instruction must be followed by a name.
type, [or expected	An identifier can only be followed by the given symbols.
type expected	Array declarations must be followed by a type.
number expected	A type can only be followed by an address or a comment.
illegal numeric format	Illegal syntax used for a numeric value (decimal or hex with a leading 0x or a trailing h).
float number expected	A floating-point number is expected, either in absolute or exponential format.
extra characters	Superfluous characters given; maybe a comment without --.

Error	Description
] string exceeds end of line (" expected)	A right bracket is expected. The terminating quotes of a string could not be found; multi-line strings are not allowed.
endgroup missing	Each group statement requires a matching endgroup statement.
illegal endgroup	There is no matching group statement for the endgroup statement.
groupname must not be empty	The matching group statement must be followed by a group name in " ", or the description block must contain an alias statement.
filename is empty	The keyword _application must be followed by a string constant that contains a file name.
keyword _application must not occur multiple	The keyword _application may occur only once in the TRC file.
illegal data size	The data size can only be 32-bit or 64-bit (TI floating-point data format can only be 32-bit).
illegal data format	The data format can only be TI or IEEE.
illegal index or array declaration	An array must be defined in one of the following formats: 1. [2] 2. [4..6]
unexpected symbol	A symbol does not fit the TRC file structure.
illegal use of keyword	A keyword was not expected to be on its position.
string constant expected	The keyword _application must be followed by a string constant.
Semantic error	
invalid index range	The first index of an array declaration is higher than the last one.
group already defined	A group name must not occur multiple times in the same subgroup.

Switching between short and verbose error file formats

Error files are by default short. They contain only the ordinal numbers of the erroneous lines which are followed by the error messages. Error files can also be verbose. A verbose error file contains the complete context of the TRC file. The error messages are inserted behind the erroneous TRC file lines.

For verbose error files, run

%DSPACE_ROOT%\ControlDesk\bin\TrcErrReport_Verbose.reg. To switch back to short error files, run

%DSPACE_ROOT%\ControlDesk\bin\TrcErrReport_Short.reg.

Keywords

Each keyword is optional and is followed by a string containing the corresponding value. If a keyword definition appears more than once in a TRC file, the latest definition will be applied.



The keyword `_application` may occur only once in an application. All of the keywords are reserved words. Except for `group` and `endgroup`, all keywords are case sensitive.

Example

The following extract (from the file `%DSPACE_ROOT%\DEMOS\DS1104\GettingStarted\Simulink\smd_1104_sl.trc` generated by RTI) shows how keywords can be used to provide additional information:

```
_genname      "RTI"
_genversion   "4.1"
_gendate     "05/15/2001 14:21:47"
_description  ""
_author       "RTI1104 4.1 (08-May-2001)"
_model        "smd_1104_sl.mdl"
```

Available keywords

The following keywords are available:

Keyword	Purpose
<code>_application</code>	To specify the path and name of the Linker MAP file of the executable program. Refer to <code>_application</code> on page 567.
<code>_author</code>	To indicate the name of the author creating the model. Refer to <code>_author</code> on page 568.
<code>_description</code>	To give additional information on the model. Refer to <code>_description</code> on page 568.
<code>_floating_point_type()</code>	To set a new default size for floating-point variables (flt, float). Refer to <code>_floating_point_type()</code> on page 568.
<code>_gendate</code>	To indicate the date and time when the TRC file was created. Refer to <code>_gendate</code> on page 569.
<code>_genname</code>	To indicate the name of the tool generating the TRC file. Refer to <code>_genname</code> on page 569.
<code>_genversion</code>	To indicate the version of the tool generating the TRC file. Refer to <code>_genversion</code> on page 570.
<code>_integer_type()</code>	To set a new default size for integer variables (int) and unsigned integer variables (uint). Refer to <code>_integer_type()</code> on page 570.
<code>_model</code>	To indicate the name of the model. Refer to <code>_model</code> on page 571.
<code>_modelid</code>	To indicate mask parameters of masked Simulink subsystems. Refer to <code>_modelid</code> on page 571.

Keyword	Purpose
endgroup	To indicate the end of a group. Refer to <i>endgroup</i> on page 571.
group	To define a group. Refer to <i>group</i> on page 572.
sampling_period[host_service_index]	To specify a separate sampling period for each task in a real-time application. Refer to <i>sampling_period[host_service_index]</i> on page 572.
typedef	To define a new customized data type. Refer to <i>typedef</i> on page 574.

-
- Information in other sections**
- *Grouping* on page 561
 - *Variable Names* on page 563
 - *Variable and Group Properties* on page 575
 - *Comments* on page 563
 - *Example of Accessing Custom Variables in ControlDesk* on page 587
 - *Example of a TRC File Generated by RTI* on page 591

_application

Syntax `_application <your_working_directory>\<model>.map`

Purpose To specify the path and name of the Linker MAP file of the executable program.

Description ControlDesk needs to know the path and name of the MAP file in order to parse the TRC file. If the keyword is missing, ControlDesk assumes that the name and the directory of the executable program (OBJ or PPC), the corresponding MAP file and the TRC file are identical. The keyword is case sensitive. The entire path must be enclosed in quotation marks ("..."). `_application` can be placed anywhere in the TRC file.

The keyword `_application` is necessary if different TRC files, defining different smaller subsets of model variables, are used.



The keyword `_application` may occur only once in an application.

Example `_application "smd_1104_sl.map"`

_author

Syntax	<code>_author "name"</code>
Purpose	To indicate the name of the author creating the model.
Description	This keyword is used to indicate the name of the model's author. The keyword is case sensitive. The entire name must be enclosed in quotation marks ("...").
Example	<code>_author "RTI1104 4.1 (8-May-2001)"</code>

_description

Syntax	<code>_description "model description"</code>
Purpose	To give additional information on the model.
Description	This keyword can be used to describe the model more precisely or to add further information. The keyword is case sensitive. The entire value must be enclosed in quotation marks ("...").
Example	<code>_description "Add a clear description if possible"</code>

_floating_point_type()

Syntax	<code>_floating_point_type(size, format)</code>
Purpose	To set a new default size for floating-point variables (flt, float).
Description	By default all types are evaluated as 32-bit variables, and floating-point values are supposed to be defined in the Texas Instruments format.

The default size of floating-point variables (`flt` or `float`, `flt*` or `float*`) can be changed using the keyword `_floating_point_type`. This keyword expects two parameters, the size (32-bit or 64-bit) and the internal format of the floating-point value, TI or IEEE.

The scope of `_floating_point_type` ranges from its current position within the TRC file until the end of file or until another `_floating_point_type` occurs.

The keyword is case sensitive.

Example

```
_floating_point_type(64, IEEE)
```



The combination of 64-bit with the TI format for floating-point values is not supported and leads to an error. Variables using data types that are not allowed are removed while the MAP file is parsed.

_gendate

Syntax

```
_gendate "date and time"
```

Purpose

To indicate the date and time when the TRC file was created.

Description

This keyword is used to indicate the date and time when the TRC file was created. The keyword is case sensitive. The entire value must be enclosed in quotation marks ("...").

Example

```
_gendate "05/04/1999 10:49:39"
```

_genname

Syntax

```
_genname "name"
```

Purpose

To indicate the name of the tool generating the TRC file.

Description	This information is useful when the format of any of the blocks used in the real-time application has to be ascertained. The keyword is case sensitive. The entire value must be enclosed in quotation marks ("...").
Example	<code>_genname "RTI"</code>

_genversion

Syntax	<code>_genversion "number"</code>
Purpose	To indicate the version of the tool generating the TRC file.
Description	If the TRC file is generated automatically, this keyword indicates the version number of the generating RTI. The keyword is case sensitive. The entire value must be enclosed in quotation marks ("...").
Example	<code>_genversion "3.4"</code>

_integer_type()

Syntax	<code>_integer_type(size)</code>
Purpose	To set a new default size for integer variables (int) and unsigned integer variables (uint).
Description	<p>The keyword <code>_integer_type</code> changes the default size (32-bit) of all variables defined as int, int* or uint, uint*. The size can be set to 8-bit, 16-bit, 32-bit or 64-bit. This value follows the keyword enclosed in parentheses.</p> <p>The scope of <code>_integer_type</code> ranges from its current position within the TRC file until the end of file or until another <code>_integer_type</code> occurs.</p> <p>The keyword is case sensitive.</p>
Example	<code>_integer_type(64)</code>

_model

Syntax	<code>_model "name"</code>
Purpose	To indicate the name of the model.
Description	This keyword is used to indicate the name of the model and is case sensitive. The entire value must be enclosed in quotation marks ("...").
Example	<code>_model "smd_1104_sl.mdl"</code>

_modelid

Syntax	<code>_modelid "id"</code>
Purpose	To indicate mask parameters of masked Simulink subsystems.
Description	<ul style="list-style-type: none"> ■ RTI provides the <code>_modelid</code> keyword whenever the corresponding model contains mask parameters of masked Simulink subsystems. ■ The keyword contains a number that unambiguously specifies the corresponding Simulink model. ■ The keyword is case sensitive.
Example	<div style="border: 1px solid #ccc; padding: 10px; display: inline-block;">  Do not specify this keyword if you write a TRC file manually. </div>

endgroup

Syntax	<code>endgroup</code>
Purpose	To indicate the end of a subgroup.

Description The keyword endgroup is used to close a group. Refer to *Grouping* on page 561.

This keyword is not case sensitive.

Example

```
...  
endgroup
```

Related topics

References

- *group* on page 572

group

Syntax

```
group "name"
```

Purpose To define a group.

Description The keyword group is used as an initialization command of a group in a TRC file. In ControlDesk this group will appear as a node in the Variable Browser. For further information please refer to *Grouping* on page 561.

This keyword is not case sensitive.

Example

```
group "group_name"  
{  
    desc: ...
```

Related topics

References

- *endgroup* on page 571

sampling_period[host_service_index]

Syntax

```
sampling_period[host_service_index]
```

```
{
  value:
  alias:
}
```

Purpose	To specify a host service for data capturing.
Description	<p>A real-time application can have up to 31 host services for data capturing (host service 1...31). For each host service one <code>sampling_period[host_service_index]</code> entry must be located in the TRC file. The <code>host_service_index</code> entry represents the host service number minus 1. The alias specifies the name of the Data Capture that is displayed in ControlDesk. The value can be:</p> <ul style="list-style-type: none"> ■ The sample time of the host service (the host service is located in a timer-driven task) ■ 0.0 (the host service is located in an event-driven task) <p>The value must be given as a floating-point number. In RTI data captures are specified by the Data Capture block. The <code>host_service_index</code> corresponds to the host service number of the block minus 1. The "service name" of the data capture block properties is written to the <code>alias</code> field, the sample time to the <code>value</code> field.</p> <p>If you have implemented the <code>host_service(3,0)</code> the following entry for the sampling rate must be specified: <code>sampling_period[2]</code>.</p> <div style="border: 1px solid #ccc; padding: 10px; margin-top: 10px;">  <ul style="list-style-type: none"> ■ The keyword <code>sampling_period[host_service_index]</code> is case sensitive. ■ Each index is assigned to a separate host service. The corresponding host service number is always one integer greater than the index of the <code>sampling_period</code>. Indices used twice are not permitted and will cause an error! </div>
Multiprocessor systems	<p>In DS1005 multiprocessor systems the alias of a host service has a more complex meaning:</p> <p>In multiprocessor systems, host services with equal names on different processors belong together and are displayed as one multiprocessor host service in ControlDesk.</p>

For host services in timer-driven tasks it is sufficient that the services exist on more than one processor to be offered as multiprocessor host service. When the service is missing on one processor and the user nevertheless wants to capture data with it, the host service in the fastest timer task is used instead.

Host services in event-driven tasks that are not common to all processors are not offered as multiprocessor host service.

Example

In a TRC file generated by RTI, the entry for the sampling period for a host service defined via RTI's Data Capture block may look like this:

```
sampling_period[0]
{
    value:      0.0001
    alias:      "HostService"
}
```



The keywords `increment` and `unit` that may also appear in TRC files generated by RTI are not used. They are provided for future use.

typedef

Syntax

```
typedef typename type[size]
```

Purpose

To define a new customized datatype.

Description

The keyword is followed by the new datatype name, the datatype being used and, enclosed in brackets, the number of elements being created. The keyword is case sensitive. The following example creates a 5 x 5 matrix.

Example

```
typedef Seq1D flt [5] [5]
```



Variables using datatypes that are not allowed are removed while the MAP file is parsed. For example, on DSP base hardware, the data types Int8 and Int16 are not supported and therefore not allowed.

Defining C code structures by means of this keyword is not possible.

Variable and Group Properties

This chapter contains a full description of the properties and attributes that can be assigned to variables or groups of variables. For information on the naming of variables and groups, refer to *Variable Names* on page 563.



- You must assign a datatype to each variable. See *type (Datatype, Data Format and Type Definition)* on page 584.
- Except for the datatype, all other properties are optional.
- Enclose the properties belonging to a variable or a group of variables in braces ({...}).

In a TRC file each variable is declared in a separate line that is followed by a block containing all properties such as the type, the (physical) unit or the alias of the block.

Example

```
x[0]
{
    type:    flt(32, IEEE)
    alias:   "rpm"
    addr:   0x805000
    unit:   "s"
    flags:  READONLY
}
```

For each signal, several property blocks can be defined. Make sure that the alias names used for these blocks are unambiguous.

Defining several property blocks is useful whenever a signal should be observed with different datatypes. The following example shows how the signal `myUnion` can be made accessible both as an integer value and as a float value for ControlDesk.

Example

```
myUnion
{
    alias: "Output as int"
    type:  int
    ...
}
myUnion
```

```
{
  alias: "Output as float"
  type:  float
  ...
}
```

Where to go from here

Information in this section

The following properties can be assigned to variables or groups of variables:

Property	Purpose
addr on page 577	To specify the memory address of a variable that is not accessible for ControlDesk via the MAP file
alias on page 578	To define a more intuitive name for a variable
bitmask on page 579	To mask bits of the signal value
block on page 579	To describe the blocktype of a Simulink block
default on page 580	To specify the default value for a signal
desc on page 580	To describe a signal or a group
flags on page 580	To describe special properties of a signal
increment on page 581	To specify the unit increment for a task
init on page 582	To set the init command for masked subsystems
origin on page 582	To specify the entire path of signals, parameters and blocks
range on page 583	To define the valid range for the signal value variation
scale on page 583	To convert the signal value
scaleback on page 584	To reverse the scale function
type (<i>Datatype, Data Format and Type Definition</i>) on page 584	To specify the type, format and size of a variable and to define look-up tables
unit on page 586	To set the physical unit for a signal value
value on page 587	To specify the current value for a signal

Information in other sections

- [Grouping](#) on page 561
- [Keywords](#) on page 566
- [Variable Names](#) on page 563
- [Comments](#) on page 563
- [Example of Accessing Custom Variables in ControlDesk](#) on page 587
- [Example of a TRC File Generated by RTI](#) on page 591

addr

Syntax	addr: address												
Purpose	To specify the memory address of a variable that is not accessible for ControlDesk via the MAP file.												
Description	<p>If a variable is allocated to an absolute address outside the scope of the linker (for example, in dual-port memory) this variable does not appear in the MAP file. However, it can be made accessible for ControlDesk if the base address of this variable is known. Therefore, this address in the real-time processor's memory has to be entered.</p> <p>Addresses may be declared as:</p> <ul style="list-style-type: none"> ■ absolute addresses in hexadecimal notation starting with 0x ■ absolute addresses in hexadecimal notation with at least one leading digit and a trailing h character ■ absolute addresses in decimal notation <p>For example, the address can be written as follows:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #d9e1f2;"> <th style="text-align: left; padding: 5px;">Variable Name</th> <th style="text-align: left; padding: 5px;">Datatype</th> <th style="text-align: left; padding: 5px;">Address Notation</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">X[0]</td> <td style="padding: 5px;">flt</td> <td style="padding: 5px;">0x805000</td> </tr> <tr> <td style="padding: 5px;">X[0]</td> <td style="padding: 5px;">flt</td> <td style="padding: 5px;">805000h</td> </tr> <tr> <td style="padding: 5px;">X[0]</td> <td style="padding: 5px;">flt</td> <td style="padding: 5px;">8409088</td> </tr> </tbody> </table>	Variable Name	Datatype	Address Notation	X[0]	flt	0x805000	X[0]	flt	805000h	X[0]	flt	8409088
Variable Name	Datatype	Address Notation											
X[0]	flt	0x805000											
X[0]	flt	805000h											
X[0]	flt	8409088											



Although the given variable is declared with an address it is not a pointer variable. Its type remains float. This is in contrast to the float * type, which means that a pointer to a float is located at the address.

Arbitrary array subranges can be referenced in TRC files as shown below. Each array element is treated by ControlDesk as a separate variable. Array indices in TRC files as well as in C programs always start at zero. The ControlDesk variable rtB[3] is equal to the fourth element of that array.

Although only the base address has to be given, the offset of the variable's address will be calculated automatically. For example:

```
rtB[3]
{
    type: flt
    alias: "Element with index 3"
    addr: 0x00000010
}
```

The following type of declaration must be used to access arrays that were allocated during run time by function calls to `malloc()` or `calloc()`. For example:

```
x_dot[0..3]
{
    type: float *
    alias: "Array access"
}
```



It is not possible to declare an array of pointers in the TRC file. An array with a pointer datatype (`float *`, `int *` or `uint *`) means that there is a pointer variable in the C program pointing to an array of `float`, `int` or `uint` values. The subsequent array indices in the TRC file are used to access the respective array elements.

alias

Syntax	<code>alias: "customized variable name"</code>
Purpose	To define a more intuitive name for a variable.
Description	This property can be used to set the alias name of a variable (array element or scalar variable) that has already been defined in order to provide the variable with a more intuitive name. Alias names can have two formats: either a standard C variable name or a string. The name of a variable is formed by an underline or a letter ('_', 'a-z' or 'A-Z') as the first character, followed by a sequence of alphanumeric characters ('_', 'a-z', 'A-Z', or '0-9'). A string begins and ends with quotation marks (""). Between the quotation marks any sequence of characters is allowed.

Example

```
x[0]
{
    alias: "rpm"
    addr: 0x805000
    ...
}
```

If two successive slashes occur in a name (//), they are transformed into a single one. If quotation marks are used in the string, they must appear twice.

Example

"This is block ""a"".



- The alias name must be defined within the braces of the corresponding variable. The variable cannot be renamed in another property block.
- Alias names are limited to a maximum of 128 characters.

bitmask

Syntax

- bitmask: hexnumber
- bitmask: startbit : endbit

Purpose

To mask bits of the signal value.

Description

This property provides bit access to the signal value. The least significant bit is defined as bit number 0.

Example

- bitmask: 0xF012
- bitmask: 8:11

block

Syntax

block: "blocktype"

Purpose

To describe the blocktype of a Simulink block.

Description	This property can only be assigned to nodes. For example, it stores the type of a Simulink block that is represented by this node.
--------------------	--

Example	block: "Gain"
----------------	---------------

default

Syntax	default: value
---------------	----------------

Purpose	To specify the default value for a signal.
----------------	--

Description	This property specifies the default value for a signal, which can automatically be displayed in a ControlDesk instrument. The permissible values depend on the type of the signal.
--------------------	--

Example	default: 75.2
----------------	---------------

desc

Syntax	desc: "text"
---------------	--------------

Purpose	To describe a signal or a group.
----------------	----------------------------------

Description	This field contains text describing a signal or a group.
--------------------	--

Example	desc: "Current_Speed"
----------------	-----------------------

flags

Syntax	flags: flag [flag]
---------------	------------------------

Purpose	To describe special properties of a signal.
----------------	---

Description This field contains flags describing special properties of the signal. Flags can be combined and also be set to variables or blocks.

Example flags: HIDDEN | PARAM

The following table lists all available flags alphabetically:

Flag	Purpose
BLOCK	To mark a group as a normal block
COLLAPSED	To hide additional subgroup levels in the Variable Browser
DERIV	To mark a variable as a derivative
DSM	To mark a variable as a Simulink DataStoreMemory variable
HIDDEN	To mark a node that is invisible in the GUI / Browser
LABEL	To mark a variable as a Simulink label
MARKED	To emphasize a variable with regard to other user-defined variables
MASKED	To mark a group as a masked subsystem
OUTPUT	To mark RTI block outputs
PARAM	To mark a variable as a parameter
READONLY	To make a variable read-only. The variable cannot be written
RESERVED	To mark a user-defined variable as application-dependent
SINK	To mark a variable as a signal sink
SYSTEM	To describe system variables, such as <code>simState</code> , <code>currentTime</code> , of a typical RTI application
WS	To mark workspace parameters
XCONT	To mark a variable as a continuous state
XDISC	To mark a variable as a discrete state

increment

Syntax increment: time_in_seconds

Purpose	To specify the unit increment for a task.
Description	RTI uses this property to provide details on the sampling period of a task in a Simulink model: If the Simulink model contains no Data Capture blocks, the <code>increment</code> value corresponds to the sampling period of the model.
Example	<code>increment: 0.01</code>

init

Syntax	<code>init: "initcommand"</code>
Purpose	To set the init command for masked subsystems in Simulink.
Description	This property can only be assigned to nodes. For example, it contains the initcommand for masked subsystems in Simulink.
Example	<code>init: "c = a * b"</code>

origin

Syntax	<code>origin: "model/subsystem/.../block/signal"</code>
Purpose	To specify the entire path of signals, parameters and blocks.

Description	In TRC files generated by RTI, this property is used in the following cases:
--------------------	--

Property origin Used for...	Purpose
Signal labels	To indicate the path of the corresponding signal in the Simulink model
Mask parameters	To indicate the variable name of a mask parameter specified in the Mask Editor
Data Store Memory blocks	To indicate the path of a Data Store Memory block in the Simulink model

Example	origin: "smd_1005_s1/Integrator 1/Out1" flags: LABEL READONLY
----------------	--

range

Syntax	range: <min; max>
---------------	-------------------

Purpose	To define the valid range for the signal value variation.
----------------	---

Description	Integer, floating point and exponential numbers are possible for min and max. Use the keyword <code>inf</code> to define an infinite limiting value.
--------------------	--

Example	<ul style="list-style-type: none"> ■ <code>range: <-5; 5></code> ■ <code>range: <-5; inf></code>
----------------	--

scale

Syntax	scale: [numerator polynomial] / [denominator polynomial]
---------------	--

Purpose	To convert the signal value.
----------------	------------------------------

Description	When you read the signal from a data source, the signal value is converted by using the scale function. The value conversion is an option and not performed automatically. The denominator polynomial is optional. Possible coefficients are integer, floating point and exponential numbers.
Example	<ul style="list-style-type: none">■ scale: [2 0 3] / [2 4]■ scale: [2, 0, 3] / [2, 4]■ scale: [2, 1.345, 2^-11]

scaleback

Syntax	scaleback: [numerator polynomial] / [denominator polynomial]
Purpose	To reverse the scale function.
Description	When you write the value to a data source, the value is converted to the signal value by using the scaleback function. The value conversion is an option and not performed automatically. The denominator polynomial is optional. Possible coefficients are integer, floating point and exponential numbers.
Example	<ul style="list-style-type: none">■ scaleback: [2 4] / [2 0 3]■ scaleback: [2, 4] / [2, 0, 3]■ scaleback: [2, 1.345, 2^-11]

type (Datatype, Data Format and Type Definition)

Syntax	type: type (size,format)
Purpose	To specify the type, format and size of a variable and to define look-up tables.

Description

- The size has to be set according to the real-time hardware. The following table displays the permissible datatypes and sizes:

Datatype	Description
int (8)	8-bit integer value
int (8) *	pointer to an 8-bit integer value
int (16)	16-bit integer value
int (16) *	pointer to a 16-bit integer value
int (32)	32-bit integer value
int (32) *	pointer to a 32-bit integer value
int (64)	64-bit integer value
int (64) *	pointer to a 64-bit integer value
uint (8)	8-bit unsigned integer value
uint (8) *	pointer to an 8-bit unsigned integer value
uint (16)	16-bit unsigned integer value
uint (16) *	pointer to a 16-bit unsigned integer value
uint (32)	32-bit unsigned integer value
uint (32) *	pointer to a 32-bit unsigned integer value
uint (64)	64-bit unsigned integer value
uint (64) *	pointer to a 64-bit unsigned integer value
flt (32, IEEE)	32-bit floating-point value
flt (32, IEEE) *	pointer to a 32-bit floating-point value
flt (64, IEEE)	64-bit floating-point value
flt (64, IEEE) *	pointer to a 64-bit floating-point value

- The format for floating-point values can only be IEEE standard. If you specify a variable of integer type, you do not need to define the format.

Arrays

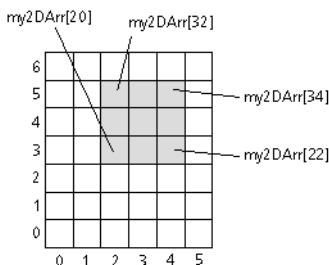
- If you defined a 6x7 matrix, you can refer to specific elements of this two-dimensional array, for example:

```
my2DArr[2..4] [3..5] float (32,IEEE)
```

This line refers to the following nine elements of my2DArr:

my2DArr[20] ... my2DArr[22], my2DArr[26] ... my2DArr[28] and
my2DArr[32] ... my2DArr[34]

The following illustration shows the 6x7 matrix `my2DArr`. The selected matrix elements `my2DArr[2..4] [3..5]` are highlighted.



The alias name(s) are also added with index information in order to be unambiguous. Always start with zero when you count the elements of an array.

- You can also create an n-dimensional look-up table. Insert `lookup` between the `typename` and the `type` within a `typedef` statement.

Syntax `typedef typename lookup type`

Example `typedef Lookup2D lookup flt[6][4]`
 `MyLookupTable Lookup2D`

Refer to `typedef` on page 574 for information on how to define new datatypes.

unit

Syntax `unit: "physical_unit"`

Purpose To set the physical unit for a signal value.

Description This property gives information about the physical unit of the signal value. This text can automatically be displayed in the caption of an instrument.

Example `unit: "mph"`

value

Syntax	value: value
Purpose	To specify the current value for a signal.
Description	Specifies the current value for a signal that can automatically be displayed by a ControlDesk instrument. The permissible values depend on the type of the signal. String values must be enclosed in quotation marks (""). This property is mainly used for ControlDesk's Parameter Editor.
Example	value: 75.2

Examples

Where to go from here	Information in this section
	<i>Example of Accessing Custom Variables in ControlDesk</i> 587
	<i>Example of a TRC File Generated by RTI</i> 591

Example of Accessing Custom Variables in ControlDesk

Objective	To make different variables of user-written code, User-Code or an S-function accessible for ControlDesk, you have to prepare the C code and provide a user-specific TRC file.
Preparing the C code	In the following code segment of an S-function, the variables a ... f are defined as volatile to make them accessible for ControlDesk. The variables b and e are pointers, the variable c is a one-dimensional array, and the variable f is a two-dimensional array. /* global variables */

```

volatile real_T a = 1.23;
volatile real_T* b = &a;
volatile real_T c[3] = {4.4, 5.5, 6.6};
volatile int_T d = 1;
volatile int_T* e = &d;
volatile int_T f[2][3] = {{1, 2, 3}, {4, 5, 6}};

```

The variables to be accessed have to be specified in the user-specific TRC file.

Specifying custom variables

The variables a ... f are specified in the user-specific TRC file. The variables c[0], c[1] and c[2] is defined to access each element of c individually. The variable f[1..1][1..2] is defined to access the elements named f[3] and f[5] of f.

```

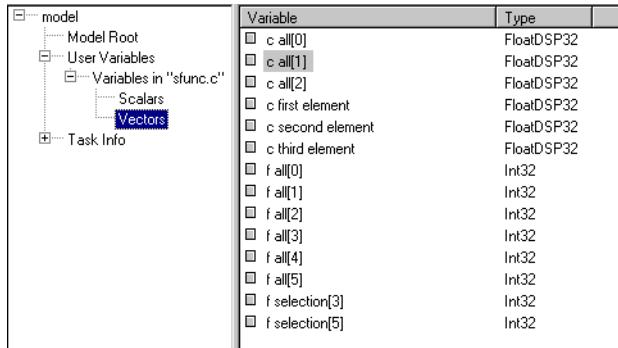
group "Variables in ""sfunc.c"""
{
flags: COLLAPSED
}
group "Scalars"
a
{
    type: flt(64,IEEE)
    alias: "a real"
    flags: READONLY
}
b
{
    type: flt(64,IEEE)*
    alias: "b pointer to a"
    flags: READONLY
}
d
{
    type: int(32)
    alias: "d integer"
    flags: PARAM
}
e
{
    type: int(32)*
    alias: "e pointer to d"
    flags: PARAM
}
endgroup
group "Vectors"

```

```
c[0..2]
{
    type:  flt(64,IEEE)
    alias: "c all"
    flags: READONLY
}
c[0]
{
    type:  flt(64,IEEE)
    alias: "c first element"
    flags: READONLY
}
c[1]
{
    type:  flt(64,IEEE)
    alias: "c second element"
    flags: READONLY
}
c[2]
{
    type:  flt(64,IEEE)
    alias: "c third element"
    flags: READONLY
}
f[0..1] [0..2]
{
    type:  int(32)
    alias: "f all"
    flags: RESERVED
}
f[1..1] [1..2]
{
    type:  int(32)
    alias: "f selection"
    flags: RESERVED
}
endgroup
endgroup
```

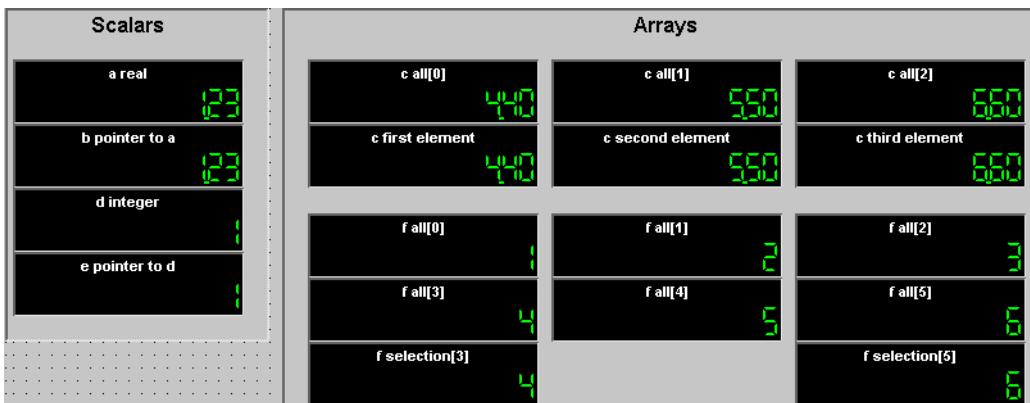
User variables in the Variable Browser

In ControlDesk's Variable Browser, the Tree Window will look like this after you open the nodes **User Variables** and **Variables in "sfunc.c"**:



ControlDesk layout

A ControlDesk layout that contains all the variables appearing in the user-specific TRC file could look like this:



Related topics

Basics

- [Inserting Custom C Code](#) ([RTI and RTI-MP Implementation Guide](#))

HowTos

- [How to Access Custom Variables via ControlDesk](#) ([RTI and RTI-MP Implementation Guide](#))

Examples

- [Example of a TRC File Generated by RTI](#) on page 591

References

- [Syntax of the TRC File](#) on page 560
- [type \(Datatype, Data Format and Type Definition\)](#) on page 584

Example of a TRC File Generated by RTI

The following example is an extract from the TRC file

smd_1005_sl.trc (in
 %DSPACE_ROOT%\DEMOS\DS1005\GettingStarted\Simulink\ generated
 by RTI. It can be used directly by ControlDesk. You can also use this
 extract as a template for writing your own user-specific file.

```
-- ****
-- Trace file: smd_1005_sl.trc
-- RTI1005 4.4b6 (09-Jan-2003)
-- Tue Jan 14 16:36:53 2003
-- Used options:
--   TRCGenerateVirtualBlocks      = 1
--   TRCGenerateLabels            = 1
--   TRCMaskParameters           = 0
--   TRCGenerateStates            = 0
--   TRCGenerateDerivatives       = 0
--   TRCGenerateApplicationKeyword = 0
--   EnableRTWCodeReuse          = 0
-- Trace file format: 2
-- Copyright (c) 1997-2002 dSPACE GmbH, GERMANY
-- ****
-- ***** Keywords***** _application "smd_1005_sl.map"
_genname      "RTI"
_genversion   "4.4b6"
_gendate     "01/14/2003 16:36:59"
_description  ""
_author       "RTI1005 4.4b6 (09-Jan-2003)"
_model        "smd_1005_sl.mdl"
-- Default data type formats
_floating_point_type(64,IEEE)
_integer_type(32)
-- No Data Capture blocks within model: use base sample time as sampling period
sampling_period[0]
{
  value:      0.0001
  alias:      "HostService"
  increment:  0.0001
  unit:       "s"
}
-- ***** Simulation control variables*****
finalTime
{
  type:      flt(64,IEEE)*
  alias:     "finaltime"
  desc:      "Simulation stop time. When reached, simState switches to STOP."
  flags:    SYSTEM|READONLY
  unit:     "s"
}
currentTime
{
  type:      flt(64,IEEE)*
  alias:     "currentTime"
  desc:      "Current simulation time. Increments with execution of Timer Task 1."
  flags:    SYSTEM|READONLY
  unit:     "s"
}
modelStepSize
{
  type:      flt(64,IEEE)
```

```
alias: "modelStepSize"
desc: "Fixed step size of the model, sample time of Timer Task 1."
flags: SYSTEM|READONLY
unit: "s"
...
-- ***** Model variables *****
group "Model Root"
{
    flags: COLLAPSED
}
p_rtB_real_T_0[7]
{
    type: flt(64,IEEE)*
    alias: "a"
    origin: "smd_1005_s1/Equation Block/a"
    flags: LABEL|READONLY
}
p_rtB_real_T_0[4]
{
    type: flt(64,IEEE)*
    alias: "v"
    origin: "smd_1005_s1/Integrator 1/Out1"
    flags: LABEL|READONLY
}
p_rtB_real_T_0[0]
{
    type: flt(64,IEEE)*
    alias: "x"
    origin: "smd_1005_s1/Integrator 2/Out1"
    flags: LABEL|READONLY
}
p_rtB_real_T_0[1]
{
    type: flt(64,IEEE)*
    alias: "x disp"
    origin: "smd_1005_s1/x disp/Out1"
    flags: LABEL|READONLY
}
group "Integrator 2" -- block-group
{
    block: "Integrator"
    flags: BLOCK|COLLAPSED
}
    p_rtB_real_T_0[0]
    {
        type: flt(64,IEEE)*
        alias: "Out1"
        flags: OUTPUT|READONLY
    }
    p_rtP_real_T_0[0]
    {
        type: flt(64,IEEE)*
        alias: "InitialCondition"
        flags: PARAM
    }
endgroup -- block-group "Integrator 2"
...
***** Model Root Parameters from model_mrp.trc**
-- Model Root Parameters file is only generated if option TRCMaskParameters is enabled
-- ***** Tunable Parameters*****
-- InlineParameters is off: no separate group for Tunable Parameters
-- ***** State Machine Data *****
-- No Stateflow chart within the model.
-- ***** Data Store Memories*****
```

```
-- No Data Store Memories within the model.
-- ***** Labels*****
group "Labels"
{
  flags: COLLAPSED
}
p_rtB_real_T_0[7]
{
  type:   flt(64,IEEE)*
  alias:  "a"
  origin: "smd_1005_sl/Equation Block/a"
  flags:  LABEL|READONLY
}
p_rtB_real_T_0[4]
{
  type:   flt(64,IEEE)*
  alias:  "y"
  origin: "smd_1005_sl/Integrator 1/Out1"
  flags:  LABEL|READONLY
}
p_rtB_real_T_0[0]
{
  type:   flt(64,IEEE)*
  alias:  "x"
  origin: "smd_1005_sl/Integrator 2/Out1"
  flags:  LABEL|READONLY
}
p_rtB_real_T_0[1]
{
  type:   flt(64,IEEE)*
  alias:  "x disp"
  origin: "smd_1005_sl/x disp/Out1"    flags:  LABEL|READONLY
}
endgroup
-- ***** User variables from model_usr.trc**
-- RTI_USR_TRC_BEGIN
-- No user file smd_1005_sl_usr.trc found.
-- RTI_USR_TRC_END
-- ***** Task Information variables*****
group "Task Info"
{
  flags: COLLAPSED
}
group "Timer Task 1"
{
  flags: COLLAPSED
}
pRti_TIMERA_STime
{
  type:   flt(64,IEEE)*
  alias:  "sampleTime"
  flags:  SYSTEM|READONLY
}
pRti_TIMERA_TTime
{
  type:   flt(64,IEEE)*
  alias:  "turnaroundTime"
  flags:  SYSTEM|READONLY
}
pRti_TIMERA_TState
{
  type:   int(32)*
  alias:  "state"
  flags:  SYSTEM|READONLY
}
```

```
}

Rti_TIMERA_OType
{
    type: int(32)*
    alias: "overrunCheckType"
    flags: SYSTEM|READONLY
}
pRti_TIMERA_OMax
{
    type: int(32)*
    alias: "overrunQueueMax"
    flags: SYSTEM|READONLY
}
Rti_TIMERA_ORpt
{
    type: int(32)*
    alias: "overrunQueueCount"
    flags: SYSTEM|READONLY
}
pRti_TIMERA_OCnt
{
    type: int(32)*
    alias: "overrunCount"
    flags: SYSTEM|READONLY
}
pRti_TIMERA_TCnt
{
    type: flt(64,IEEE)*
    alias: "taskCallCount"
    flags: SYSTEM|READONLY
}   Rti_TIMERA_Prio
{
    type: int(32)*
    alias: "priority"
    flags: SYSTEM|READONLY
}
endgroup
endgroup
-- ***** [EOF]*****
```

Related topics

Examples

- [Example of Accessing Custom Variables in ControlDesk](#) on page 587

References

- [Syntax of the TRC File](#) on page 560

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