REFERENCE POSTER

NI TestStand™ API

NI TestStand provides a comprehensive ActiveX API for building sophisticated test management systems and other sequencing applications. Use the TestStand API to read and write data from TestStand properties, including TestStand sequences and steps, or to create and control sequence executions. You can use the TestStand API from any software development environment that supports access to ActiveX automation servers.

This poster is a reference tool. You should familiarize yourself with the information presented in the *NI TestStand System and Architecture Overview Card* and in the *Using TestStand* manual to gain a better understanding of API concepts. Refer to the *NI TestStand Help* for a complete description of the classes, properties, methods, and events listed on this poster.

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NATIONAL INSTRUMENTS™

Engine Classes

Use the Engine class to create and access objects of other classes, control executions, display built-in dialog boxes, implement a Tools menu, find files and directories, and invoke various utilities. Use the StationOptions class to set preferences for your TestStand station. Use the UIMessage class to pass information to the client application about the state of the engine and the current executions. Use the WatchExpression class to monitor changes in variable and property values during an execution.

EditTimeMenuItems
EditTimeMenuItem

Properties
CommandArguments
CommandInitialDirectory
CommandPath
Editable
EditsSelectedFile
EnabledExpression
HiddenExpression
ItemTextExpression
SeparatorBefore
SequenceFilePath
SequenceName
SubMenuItems (Read Only)
Type

Note: This class has no methods.

Engine

Properties
ApplicationIsEditor
ApplicationLicense (Read Only)
AppMainHwnd
BinDirectory (Read Only)
ComputerName (Read Only)
ConfigDirectory (Read Only)
ConfigFile (Read Only)
CurrentUser
CurrentWorkspaceFile
DefaultAdapter
DefaultAdapterIndex
ExternalReportViewers (Read Only)
FileDialogDirHistoryList
Globals (Read Only)
GlobalsFile (Read Only)
Images (Read Only)
IsRemote
IsUIMessageQueueEmpty (Read Only)
LargeImageList (Read Only)
LastWorkspacePath
LicenseType (Read Only)
MajorVersion (Read Only)
MasterEngine
MinorVersion (Read Only)
NumAdapters (Read Only)
NumImages (Read Only)
OutputMessagesEnabled
PersistBreakpoints
PersistConfigFile
PersistWatchExpressions
RevisionVersion (Read Only)
SearchDirectories (Read Only)
SecondsSince1970UniversalCoordinatedTime (Read Only)
SecondsSinceStart (Read Only)
SmallImageList (Read Only)
StationOptions (Read Only)
TemporaryGlobals (Read Only)
TestStandDirectory (Read Only)
UIMessagePollingEnabled
UndoLimit
UniqueEngineId (Read Only)
UsersFile (Read Only)
VersionString (Read Only)
WatchExpressionsEnabled

Methods
AbortAll
AcquireLicense
AddImage
BreakAll
CallFrontEndCallbackEx
CanCreateStep
CheckExpression
CheckExprSyntax
CommitGlobalsToDisk
CopyPropertyObject
CreateNewUniqueStepIds
CreateTempFile
CurrentUserHasPrivilege
DelocalizeExpression
DisplayAdapterConfigDialog
DisplayBreakpointDialog
DisplayBrowseExprDialogEx
DisplayBrowsePropertyObjectDialog
DisplayConfigureTypePalettesDialog
DisplayEditBreakAndWatchDialog
DisplayEditNumericFormatDialogEx
DisplayEditPathsInFilesDialog
DisplayEditUserDialog
DisplayExpressionEditOptionsDialog
DisplayExternalViewerDialog
DisplayFileDialog
DisplayHelpFile
DisplayHelpTopic
DisplayLockUnlockDialog
DisplayLoginDialog
DisplayLoopOnStepsDialog
DisplayMessageBox
DisplayNewUserDialog
DisplayOptionsDialog
DisplayPreconditionBuilderDialog
DisplayPreconditionDialog
continued, next column

DisplayRunTimeErrorDialogEx
DisplaySearchDirDialog
DisplaySeqFilePropDialog
DisplaySequenceFileCallbacksDialog
DisplaySequencePropDialog
DisplayStepPropDialog
DisplayStepTypeMenuEditorEx
DisplayToolMenuDialog
DisplayWorkspaceBrowserDialog
FindFile
FindPath
GetAdapter
GetAdapterByKeyName
GetEditTimeToolMenuItems
GetErrorString
GetFileInformation
GetImageIndex
GetImageName
GetInsertStepMenuStructure
GetInsertVariableMenuStructure
GetInternalOption
GetLicenseDescription
GetLocalizedDecimalPoint
GetLocationForNextDialog
GetOutputMessages
GetProductRegistrationInfo
GetResourceString
GetResourceSymbols
GetRunTimeToolMenuItems
GetSequenceFileEx
GetStationModelSequenceFile
GetSyncManager
GetTemplatesFile
GetTypeDefinition
GetTypeNames
GetTypePaletteFileList
GetTypeUsageLocations
GetUIMessage
GetUser
GetUserGroup
GetWatchExpressions
GetWatchExpressionsChangeCount
IsCurrentSequenceFileVersion
LaunchExternalViewer
LoadTypePaletteFilesEx
LocalizeExpression
NewDataType
NewEditArgs
NewEditContext
NewEvaluationTypes
NewExecution
NewExpression
NewHierarchicalExecution
NewInteractiveArgs
NewLocations
NewOutputMessage
NewOutputMessages
NewPropertyObject
NewPropertyObjectFile
NewSequence
NewSequenceFile
NewStep
NewStepType
NewTypeUsageList
NewUndoItemCreator
NewUndoStack
NewUser
NewWorkspaceFile
NotifyEndOfModalDialog
NotifyStartOfModalDialogEx
OpenWorkspaceFile
ParseLookupString
PostUIMessage
RegisterModalWindow
RegisterUIMessage
RegisterUIMessageCallback
ReleaseLicense
ReleaseSequenceFileEx
ReloadGlobals
ReloadStringResourceFiles
ResetTypeInstances
SaveAllModifiedSeqFiles
SearchFiles
SerializeObjects
SetConfigDirectory
SetInternalOption
SetLocationForNextDialog
SetProductRegistrationInfo
SetTypePaletteFileList
ShouldAutoLaunchExternalReportViewer
ShutDown
TerminateAll
UnloadAllModules
UnloadTypePaletteFiles
UnregisterModalWindow
UnserializeObjects
UnserializeObjectsAndTypes
UserNameExists
WriteToolMenuToDisk

Event
UIMessageEvent

Evaluation Types

Properties
ArrayOfNamedTypes
NamedTypes
PropertyValueTypeFlags

Note: This class has no methods.

Expression

Properties
NumTokens (Read Only)
Text

Methods
Evaluate
GetConstantValue
GetToken
Tokenize
Validate
ValidateEvaluationType

ExternalReportViewers
ExternalReportViewer

Properties
Arguments
AutoLaunch
Format
Path

Note: This class has no methods.

FileInformation

Properties
FileExists (Read Only)
FileWritingFormat (Read Only)
IsCustomFile (Read Only)
IsPropertyObjectFile (Read Only)
IsSequenceFile (Read Only)

Methods
GetFileFormatVersion
GetFileVersion

OutputMessages
OutputMessage

PropertyObject > OutputMessage

Properties
Category
ExecutionLocations
FileLocations
IconName
Message
Severity
TextColor
TimeStamp

Method
Post

RunTimeMenuItems
RunTimeMenuItem

Properties
EditsSelectedFile (Read Only)
ItemEnabled (Read Only)
SeparatorBefore (Read Only)
SubMenuItems (Read Only)
Text (Read Only)

Method
InvokeItem

SearchDirectories
SearchDirectory

Properties
Disabled
ExcludeFileExtension
FileExtensionRestrictions
Path
SearchSubdirectories
Type (Read Only)

Note: This class has no methods.

SelectedBreakpointItem

Properties
SequenceFile (Read Only)
SequenceName (Read Only)
StepGroup (Read Only)
StepId (Read Only)

Method
IsEndSelected

StationOptions

Properties
AllowAllUsersAccessFromRemoteMachine
AllowOtherModels
AllowSequenceCallsFromRemoteMachine
AlwaysGotoCleanupOnFailure
AutoLoginSystemUser
continued, next column

BreakOnSequenceFailure
BreakOnStepFailure
BreakpointsEnabled
CheckOutFilesWhenEdited
CheckOutOnlySelectedFiles
DebugOptions
DefaultFileWritingFormat
DisableResults
EnableUserPrivilegeChecking
ExecutionMask
InteractiveBranchMode
InteractiveExePropagateStatus
Language
PromptToFindFiles
PromptWhenAddingFilesToSC
RecognizeMBChars
ReloadDocsWhenOpeningWorkspace
ReloadWorkspaceAtStartup
RequireUserLogin
RTEOption
SeqFileVersionAutoIncrementOpt
ShowEngineTrayIconOnRemoteStations
ShowHiddenProperties
SpecifyStepsByUniqueIdInExpressions
StationID
StationModelSequenceFilePath
SystemDefaultSourceCodeControlProvider
TracingEnabled
TypeVersionAutoIncrementOpt
TypeVersionAutoIncrementPromptOpt
UIMessageDelay
UIMessageMinDelay
UseDialogForCheckOut
UseLocalizedDecimalPoint
UserFilePath
UseStationModel

Methods
GetLanguages
GetTimeLimit
GetTimeLimitAction
GetTimeLimitEnabled
SetTimeLimit
SetTimeLimitAction
SetTimeLimitEnabled

TypeUsageList

Properties
ChangeCount (Read Only)
NumTypes (Read Only)

Methods
AddUsedTypes
GetIsTypeAttachedToFile
GetTypeDefinition
GetTypeIndex
InsertType
MoveType
RemoveType
SetIsTypeAttachedToFile
Union
ValidateNewTypeName

UIMessage

PropertyObject > UIMessage

Properties
ActiveXData (Read Only)
Event (Read Only)
Execution (Read Only)
IsSynchronous (Read Only)
NumericData (Read Only)
StringData (Read Only)
Thread (Read Only)

Methods
Acknowledge
AsPropertyObject

WatchExpressions
WatchExpression

Properties
BreakpointType
ClientSequenceFile
ExecutionScope
Expression
NumericFormat
SequenceFileScope
SequenceScope
UniqueWatchId (Read Only)
UseScopingContext

Methods
BreakpointTriggered
DisplayConfigurationDialog
Evaluate
GetScopingContext

Legend

Object	A programmable software component representing an instance of a class. You interact with the object using the methods, properties, and events that the class defines.
Property	A container of information, which stores and maintains a setting or attribute of an object. A property can contain a single value, an array of values of the same type, or no value at all.
(Read Only)	Properties that can be read but not changed.
Method	Performs an operation or function on an object.
Event	Method that an object invokes to inform a client application of a status or state change.
Collection	An object that contains zero or more objects of the same class.
Collection Class **Class**	Denotes a class that has a corresponding collection class. The top (lighter) text represents the collection. The lower (darker) text represents the type of object the collection contains. Collection class properties and methods are not listed on this poster.
PropertyObject > InteractiveContext	Denotes inheritance or the classes that the class can inherit from.
- - - - - - - - - - - -	Indicates a grouping of classes that are commonly used together.

NOTE: Some properties and methods from previous versions of TestStand are obsolete and are not listed on this poster.

Execution Classes

Use the Execution classes to control and get information about executions. The Execution class contains all the information the TestStand Engine needs to run a sequence, its steps, and any other TestStand sequences it calls. The Report class contains report text for an execution, the report format, and location information.

The Thread class maintains a call stack. The SequenceContext class contains information about the execution at a particular call stack level. Use the EditArgs and InteractiveArgs classes to pass information about the current state of the client application to a new execution. The InteractiveContext class contains information about a nested interactive execution.

EditArgs

PropertyObject > EditArgs

Note: This class has no properties.

Methods
AddSelectedPropertyObject
AddSelectedSequence
AddSelectedStep
AsPropertyObject
ClearSelectedPropertyObjects
ClearSelectedSequences
ClearSelectedSteps
SetSelectedExecution
SetSelectedPropertyObjectFile
SetSelectedSequenceFile
SetSelectedStepGroup

Execution

PropertyObject > Execution

Properties
BreakOnEntry (Read Only)
ClientFile
DisableResults
DisplayName (Read Only)
ErrorObject (Read Only)
ForegroundThread
ForegroundThreadIndex
Id (Read Only)
InInteractiveMode (Read Only)
ModelSequenceFilePath (Read Only)
NumThreads (Read Only)
Report (Read Only)
ResultObject (Read Only)
ResultStatus
RTEOptionForThisExecution
RunTimeVariables (Read Only)
SecondsAtStart (Read Only)
SecondsExecuting (Read Only)
SecondsSuspended (Read Only)
SequenceFilePath (Read Only)
StandardResultsEnabled
StartCount (Read Only)
TimeResultsEnabled
TracingDisabled
TypeMask

Methods
Abort
AddExtraResult
AddPostStepCustomUIMessage
AsPropertyObject
Break
CancelTermination
ClearExtraResultList
ClearSequenceDefaultValues
ClearTemporaryBreakpoints
DeleteExtraResult
EnableCallback
GetFileGlobals
GetModelSequenceFile
GetSequenceDefaultValues
GetSequenceFile
GetStates
GetTerminationMonitorStatus
GetThread
InitTerminationMonitor
IsCallbackEnabled
NewSequenceDefaultValues
NewThread
RemovePostStepCustomUIMessage
RestartEx
Resume
SetSequenceDefaultValues
StepInto
StepOut
StepOver
Terminate
TerminateInteractiveExecution
WaitForEndEx

InteractiveArgs

PropertyObject > InteractiveArgs

Properties
LoopCount
NumSteps (Read Only)
Sequence
StepGroup
StopExpression

Methods
AddStepIndex
AsPropertyObject
ClearStepList
ContainsStep
GetStepIndex

InteractiveContext

PropertyObject > InteractiveContext

Properties
InteractiveArgs (Read Only)
IsRootExecution (Read Only)
SavedNextStepIndex (Read Only)
SavedPreviousStepIndex (Read Only)
SavedStepIndex (Read Only)

Method
AsPropertyObject

Report

PropertyObject > Report

Properties
All (Read Only)
Format
Id (Read Only)
IsEmpty (Read Only)
LatestAppendIndex (Read Only)
Location
ResetCount (Read Only)
StyleSheetPath
TempFileDirectory

Methods
Append
AsPropertyObject
GetSection
GetTempFile
LaunchViewer
Load
Reset
Save

SequenceContext

PropertyObject > SequenceContext

Properties
ApplicationIsEditor (Read Only)
Caller (Read Only)
CallerDiscardsResults (Read Only)
CallingStep (Read Only)
CallStackDepth (Read Only)
CallStackName (Read Only)
Engine (Read Only)
ErrorReported
Execution (Read Only)
FileGlobals (Read Only)
GotoCleanup
Id (Read Only)
InInteractiveMode (Read Only)
InteractiveContext (Read Only)
IsProcessModel (Read Only)
Locals (Read Only)
LoopIndex
LoopNumFailed
LoopNumIterations
LoopNumPassed
Main (Read Only)
NextStep (Read Only)
NextStepIndex
NumStepsExecuted
Parameters (Read Only)
PreviousStep (Read Only)
PreviousStepIndex
ProcessModelClient
Report (Read Only)
Root (Read Only)
SelectedExecution (Read Only)
SelectedFile (Read Only)
SelectedPropertyObjectFile (Read Only)
SelectedPropertyObjects (Read Only)
SelectedSequences (Read Only)
SelectedStepGroup
SelectedSteps (Read Only)
Sequence (Read Only)
SequenceErrorCode
SequenceErrorMessage
SequenceErrorOccurred
SequenceFailed
SequenceFile (Read Only)
SequenceIndex (Read Only)
StationGlobals (Read Only)
Step (Read Only)
StepGroup
StepGroupStartedInteractiveExe (Read Only)
StepIndex
Thread (Read Only)
Tracing

Methods
AsPropertyObject
GetMultipleValues
GetRunTimeErrorMessageEx
GetRunTimeErrorWinHelpInfo
IsInteractiveStep
IsStepExcludedFromExecution
NewExecution
SetMultipleValues

Thread

PropertyObject > Thread

Properties
Batch (Read Only)
CallStackSize (Read Only)
DisplayName (Read Only)
Execution (Read Only)
ExternallySuspended
Id (Read Only)
RunTimeVariables (Read Only)
UniqueThreadId (Read Only)

Methods
AddToBatch
AsPropertyObject
ClearCurrentRTE
ClearTemporaryBreakpoint
DoInteractiveExecution
GetSequenceContext
PostUIMessageEx
Resume
SetBatchRTEOption
SetStepInto
SetStepOut
SetStepOver
WaitForEnd

Search Classes

Use the Search classes to search files and property objects in TestStand. A Search operation returns a SearchResults object, which contains a list of SearchMatch objects. Use the SearchMatch class to identify the type and location of a match and to perform Replace operations.

SearchMatch

Properties
FileDisplayName (Read Only)
FileId (Read Only)
FilePath (Read Only)
MatchedText (Read Only)
MatchIsValid (Read Only)
PropertyValueAsString (Read Only)
PropertyValueType (Read Only)
TypeCategoryOfMatch (Read Only)
UserData

Methods
GetLocation
GetPropertyPath
UpdateForReplace
UpdateForReplaceValue

SearchResults

Properties
NumMatches (Read Only)
NumWarnings (Read Only)
StatusMessage (Read Only)

Methods
Cancel
GetMatch
GetWarning
IsComplete

PropertyObject Class

Use the PropertyObject class to manipulate and access the values of variables and properties of other classes. Use the AsPropertyObject method on a class that derives from the PropertyObject class to obtain the PropertyObject interface for that class. Typically, you use the PropertyObject class to get or set the values of custom step properties, sequence local variables, sequence file global variables, and station global variables.

Properties
ArrayElementPrototype
CanAddSubProperty (Read Only)
Comment
IsRootTypeDefinition (Read Only)
IsTypeDefinition (Read Only)
Name
NumericFormat
Parent (Read Only)
TypeCategory (Read Only)
TypeLastModified (Read Only)
TypeMinimumTestStandVersion
TypeVersion

Methods
Clone
ContainsTypeInstance
DeleteElements
DeleteNthSubProperty
DeleteSubProperty
DisplayArrayBoundsDialog
DisplayFlagsDialog
DisplayPropertiesDialog
EvaluateEx
Exists
GetArrayIndex
GetArrayOffset
GetDimensions
GetDisplayNames
GetFlags
GetFormattedValue
GetInstanceDefaultFlags
GetInstanceOverrideFlags
continued, next column

GetLocation
GetNthSubProperty
GetNthSubPropertyName
GetNumElements
GetNumSubProperties
GetPropertyObject
GetPropertyObjectByOffset
GetStructureChangeCount
GetSubPropertyIndex
GetType
GetTypeDefinition
GetTypeDisplayString
GetTypeFlags
GetValBinary
GetValBoolean
GetValBooleanByOffset
GetValIDispatch
GetValIDispatchByOffset
GetValInterface
GetValInterfaceByOffset
GetValNumber
GetValNumberByOffset
GetValString
GetValStringByOffset
GetValVariant
GetValVariantByOffset
GetXML
InsertSubProperty
IsAliasObject
IsEqualTo
NewSubProperty
ReadEx
Search
continued, next column

Serialize
SetDimensions
SetFlags
SetInstanceDefaultFlags
SetInstanceOverrideFlags
SetNthSubPropertyName
SetNumElements
SetPropertyObject
SetPropertyObjectByOffset
SetSubPropertyIndex
SetTypeFlags
SetValBinary
SetValBoolean
SetValBooleanByOffset
SetValIDispatch
SetValIDispatchByOffset
SetValInterface
SetValInterfaceByOffset
SetValNumber
SetValNumberByOffset
SetValString
SetValStringByOffset
SetValVariant
SetValVariantByOffset
SetXML
UnserializeEx
ValidateNewElementName
ValidateNewName
ValidateNewSubPropertyName
Write

File Classes

Use the PropertyObjectFile class to read and write files to disk. All TestStand files—including sequence files, type palette files, workspace files, configuration files, the users file, and the globals file—are stored as PropertyObjectFiles.

The SequenceFile class represents a sequence file that contains sequences, and the Sequence class represents a sequence that can contain steps. The WorkspaceFile and WorkspaceObject classes represent workspace files that contain a list of project files and source code control provider information. Project files contain lists of sequence files, code modules, and other files. The UsersFile and User classes represent the files containing a list of TestStand users and user profiles.

The CodeTemplate class represents information about a code template. Code templates are associated with adapters and represent the default code that modules use when creating code for a step type. Objects of the InputStream class represent an abstract stream of data. In a Sequence File Translator, this stream can be used to read the contents of a user file. The InputStream class allows the translators to read, seek, and query the size of a file.

CodeTemplates
CodeTemplate

Properties
Description (Read Only)
Name (Read Only)
Type (Read Only)

Note: This class has no methods.

InputStream

Properties
IsEndofStream (Read Only)
Length (Read Only)
Offset

Method
ReadBytes

PropertyObjectFile

PropertyObject > PropertyObjectFile

Properties
ChangeCount
Comment
ContentType
Data
DisplayName
EditPrivilege
FileSection
FileType (Read Only)
FileTypeDescription
FileWritingFormat
Id (Read Only)
IsDiskFileModified (ReadOnly)
IsDiskFileReadOnly (Read Only)
IsModified (Read Only)
IsModifiedByUser (Read Only)
Locked (Read Only)
OpenStatus
Path
Protection
Requirements (Read Only)
TypeUsageList (Read Only)
Version

Methods
AsPropertyObject
CheckForModifiedTypes
HandleTypeConflicts
IncChangeCount
Lock
ReadFile
SaveFileIfModified
Unlock
WriteFile

Sequence

PropertyObject > Sequence

Properties
AllowInteractiveExecutionOfEntryPoint
CopyStepsOnOverride
DisableResults
EntryPointCheckToSaveTitledSeqFiles
EntryPointEnabledExpression
EntryPointIgnoreClient
EntryPointInitiallyHidden
EntryPointMenuHint
EntryPointNameExpression
GotoCleanupOnFailure
HasMismatchedBlocks (Read Only)
Id (ReadOnly)
Locals (Read Only)
Name
OptimizeNonReentrantCalls
Parameters (Read Only)
Requirements (Read Only)
SequenceFile (Read Only)
continued, next column

SequenceIndex (Read Only)
ShowEntryPointForAllWindows
ShowEntryPointForEditorOnly
ShowEntryPointForExeWindow
ShowEntryPointForFileWindow
Type

Methods
AsPropertyObject
CreateNewUniqueStepIds
DeleteStep
EvalEntryPointEnabledExpressionEx
EvalEntryPointNameExpressionEx
GetBreakOnEndSettings
GetEffectiveType
GetEntryPointMenuFromHint
GetNumSteps
GetStep
GetStepByName
GetStepByUniqueId
GetStepIndex
InsertStep
LoadModules
RemoveStep
SetBreakOnEndSettings
StepNameExists
UnloadModules

SequenceFile

PropertyObject > SequenceFile

Properties
BatchSyncOption
CanUnload (Read Only)
ChangeCount (Read Only)
FileGlobalsDefaultValues (Read Only)
HasModel (Read Only)
Id (Read Only)
IsExecuting (Read Only)
ModelOption
ModelPath
ModuleLoadOption
ModuleUnloadOption
NumSequences (Read Only)
Path
SequenceFileType
UnloadCallbackEnabled

Methods
AddLoadReference
AsPropertyObject
AsPropertyObjectFile
CreateCallbackOverrideSequence
DeleteSequence
GetModelAbsolutePath
GetModelCallbackNames
GetModelSequenceFile
GetReservedCallbackNames
GetSequence
GetSequenceByName
GetSequenceIndex
InsertSequenceEx
LoadModules
NewEditContext
RemoveSequence
Save
SequenceNameExists
UnloadModules

User

PropertyObject > User

Properties
FullName
LoginName
Members (Read Only)
Password
Privileges (Read Only)

Methods
AsPropertyObject
HasPrivilege
ValidatePassword

UsersFile

PropertyObject > UsersFile

Properties
UserGroupList
UserList

Methods
AsPropertyObjectFile
ReloadFromDisk

WorkspaceFile

PropertyObject > WorkspaceFile

Properties
IsConnectedToSCProvider (Read Only)
OptionsFile (Read Only)
ProviderName
RootWorkspaceObject (Read Only)

Methods
AsPropertyObjectFile
DisplayAddFileToWorkspaceDialog
FindWorkspaceObject
RunSourceControlProvider
SaveWorkspaceAndProjectFiles

WorkspaceObject

PropertyObject > WorkspaceObject

Properties
CodeModuleSeqFilePath
DisplayName
FileExists (Read Only)
IsCodeModule (Read Only)
LastSourceControlMessages (Read Only)
NumContainedObjects (Read Only)
ObjectType (Read Only)
Path
ProjectFile (Read Only)
SourceControlStatus (Read Only)

Methods
AsPropertyObject
CanDoSourceControlCommand
DoSourceControlCommand
GetAbsolutePath
GetContainedObject
GetParentContainer
InsertCodeModules
InsertObject
NewFile
NewFolder
RemoveObject
UpdateStatus

Editing Classes

Use the Editing classes to implement an undo/redo and a goto location feature in a user interface. The UndoStack class manages both a stack of undo items and a stack of redo items. The UndoItemCreator class manages the changes that you make to an single object or multiple objects. The UndoItems and UndoItem classes manage low-level changes that you make to objects. The Locations and Location classes specify how to find a piece of data within a user interface.

Locations
Location

Properties
ContextID
Element
ExecutionDisplayName
ExecutionId
FileDisplayName
FileId
FilePath
Kind
PropertyPath
PropertyPathWithNames
SelLength
SelStart
SequenceName
StepGroup
StepId
StepIndex
StepName
ThreadId
TypeCategory
TypeName

Note: This class has no methods.

UndoItemCreator

Property
Have EditsBeenMade (Read Only)

Methods
BeginBatchEdit
BeginEdit
CreateAndPostUndoItem
EndBatchEdit
EndEdit

UndoItems
UndoItem

Properties
CanRedo (Read Only)
CanUndo (Read Only)
EditedFile (Read Only)
EditedObjects (Read Only)
PostEditChangeCount (Read Only)
PostEditLocations (Read Only)
PreEditChangeCount (Read Only)
PreEditLocations (Read Only)
RedoDescription (Read Only)
RedoEditKind (Read Only)
RefreshEnabled
UndoDescription (Read Only)
UndoEditKind (Read Only)
UndoStack

Methods
Redo
Undo

UndoStack

Properties
CanRedo (Read Only)
CanUndo (Read Only)
RedoItems (Read Only)
UndoItems (Read Only)

Methods
AggregateTopUndoItems
Clear
GetRedoDescription
GetUndoDescription
Push
Redo
Undo

Step Classes

The StepType class represents step types, while the Step class represents steps in sequences. Every step is an instance of a step type. A StepType object defines default properties and values as well as standard behaviors for each step of that type. A Step object defines the code module to call, required preconditions, looping and switching requirements, and failure and error handling instructions.

Step

PropertyObject > Step

Properties
AdapterKeyName (Read Only)
BatchSyncOption
BlockEndIndex
BlockFlags
BlockLevel
BlockLevelsUnmatched
BlockNextIndex
BlockParentIndex
BlockPreviousIndex
BlockStartIndex
CancelCurrentExecution
CancelStepCallback
CanCreateCode (Read Only)
CanEditCode (Read Only)
CanSpecifyModule (Read Only)
CausedSequenceFailure
CurrentLoopResult
CustomActionExpression
CustomFalseAction
CustomFalseActionTargetByExpr
CustomTrueAction
CustomTrueActionTargetByExpr
EditAsReadOnly
EvalPrecondForInteractiveExecution
FailAction
FailActionTargetByExpr
IconName
IgnoreRTE
IsSequenceCall (Read Only)
LargeIcon (Read Only)
LargeIconIndex (Read Only)
LastStepResult
LoopIncExpression
LoopInitExpression
LoopStatusExpression
LoopType
LoopWhileExpression
Module (Read Only)
ModuleLoadOption
ModuleUnloadOption
MutexNameOrRefExpr
Name
PassAction
PassActionTargetByExpr
PostExpression
Precondition
PreExpression
RecordLoopIterationResults
RecordResult
Requirements (Read Only)
ResultStatus
Sequence (Read Only)
SmallIcon (Read Only)
SmallIconIndex (Read Only)
StatusExpression
StepFailCausesSequenceFail
StepGroup (Read Only)
StepIndex (Read Only)
StepType (Read Only)
SwitchExecConnectionLifetime
SwitchExecEnabled
SwitchExecMulticonnectMode
SwitchExecOperation
SwitchExecOperationOrder
SwitchExecRoutesToConnect
SwitchExecRoutesToDisconnect
SwitchExecVirtualDevice
SwitchExecWaitForDebounce
UniqueStepId (Read Only)
UseMutex
WindowActivation

Methods
AsPropertyObject
CanChangeAdapter
CanChangeStepType
CanExecuteSubstep
ChangeAdapter
ChangeStepType
CreateCode
CreateNewUniqueStepId
EditCode
ExecuteSubstep
GetBreakSettings
GetDescriptionEx
GetEditSubstepMenuStructure
GetResultStatusDisplayString
GetRunModeEx
GetStepSettingsString
LoadModule
SetBreakSettings
SetRunModeEx
SpecifyModule
UnloadModule

StepType

PropertyObject > StepType

Properties
AppliesToBlockStructure
BatchSyncOption
BlockEndTypes
BlockStartTypes
CanSpecifyModule (Read Only)
CodeTemplates (Read Only)
CustomActionExpression
CustomFalseAction
CustomFalseActionTargetByExpr
CustomTrueAction
CustomTrueActionTargetByExpr
DefaultNameExpr
DescriptionExpr
DesignatedAdapter (Read Only)
DimmablePropertyKeyNames (Read Only)
EvalPrecondForInteractiveExecution
FailAction
FailActionTargetByExpr
IconName
IgnoreRTE
LoopIncExpression
LoopInitExpression
LoopStatusExpression
LoopType
LoopWhileExpression
MenuGroupName
MenuIcon (Read Only)
MenuIconIndex (Read Only)
MenuItemNameExpr
Module (Read Only)
ModuleLoadOption
ModuleUnloadOption
MutexNameOrRefExpr
Name
NumSubsteps (Read Only)
PassAction
PassActionTargetByExpr
PostExpression
Precondition
PreExpression
RecordLoopIterationResults
RecordResult
RunMode
StatusExpression
StepFailCausesSequenceFail
SwitchExecConnectionLifetime
SwitchExecEnabled
SwitchExecMulticonnectMode
SwitchExecOperation
SwitchExecOperationOrder
SwitchExecRoutesToConnect
SwitchExecRoutesToDisconnect
SwitchExecVirtualDevice
SwitchExecWaitForDebounce
UseMutex
WindowActivation

Methods
AddSubstep
AsPropertyObject
ChangeDesignatedAdapter
CreateCombinedStepType
DimProperty
GetDefaultName
GetDimmablePropertyDisplayName
GetSubstep
IsPropertyDimmed
RemoveSubstep
SpecifyModule
SwapSubsteps

Adapter Classes

The adapter-specific and module-specific classes derive from the Adapter and Module base classes. Use the Adapter base class to set basic configuration information and to obtain display names and icons associated with an adapter. Use the Module base class to perform adapter-specific operations associated with a step, such as specifying, creating, editing, and loading or unloading code modules. Use objects from the UnmappedArgumentValue class to obtain specific information for an item in the UnmappedArgumentValues class, which you can use to obtain a list of the current arguments not used as inputs and outputs of the corresponding module.

Adapter

PropertyObject > Adapter

Properties
DisplayName (Read Only)
Hidden
IconName (Read Only)
IsConfigurable (Read Only)
KeyName (Read Only)
LargeIcon (Read Only)
LargeIconIndex (Read Only)
ShowArgsInStepDescription
SmallIcon (Read Only)
SmallIconIndex (Read Only)

Methods
AsPropertyObject
Configure

Module

PropertyObject > Module

Properties
Adapter (Read Only)
CanCreateCode (Read Only)
CanEditCode (Read Only)
CanSpecify (Read Only)
IsPrototypeIncompatible (Read Only)
Step (Read Only
UnmappedArgumentValues (Read Only)

Methods
AsPropertyObject
ClearUnmappedArgumentValues
CreateCode
EditCode
GetDescription
Load
LoadPrototype
Specify
Unload

UnmappedArgumentValues
UnmappedArgumentValue

PropertyObject > UnmappedArgumentValue

Properties
Name (Read Only)
TypeName (Read Only)
UnmappedArgumentValues (Read Only
ValueExpr (Read Only)

Method
AsPropertyObject

Common C Adapter Classes

The module and parameter classes for the LabWindows™/CVI™ and C/C++ DLL Adapters derive from the Common C Adapter classes. Use these classes to set and get information about the C-style adapters, code modules, and parameters.

CommonCAdapter

PropertyObject > Adapter > CommonCAdapter

Properties
DefaultStructPacking

Methods
AsAdapter
GetAllowStructPassing
GetDllFunctions
GetExcludeFromStruct
GetStructMemberArrayStorage
GetStructMemberStorage
GetStructMemberStringBufferSize
GetStructMemberType
GetStructNames
GetStructPacking
SetAllowStructPassing
SetExcludeFromStruct
SetStructMemberArrayStorage
SetStructMemberStorage
SetStructMemberStringBufferSize
SetStructMemberType
SetStructPacking

CommonCModule

PropertyObject > Module > CommonCModule

Properties
CodeTemplateName
FunctionCall (Read Only)
FunctionName
ModulePath
ProjectFilePath
SourceFilePath
WorkspaceFilePath

Methods
AcceptFunctionCall
AsModule
LoadPrototypeFromCodeTemplate
UpdatePrototypeFromSource
VerifyPrototype
VerifyPrototypeFromSource

CommonCParameter

PropertyObject > CommonCParameter

Properties
ArrayDimensions
DisplayValueExpr (Read Only)
EnumTypeName (Read Only)
Flags
ParameterName
Pass
PassArrayElementBy
ResultAction
StringBufferSizeExpr
StructType
UnknownInfo
UserData (Read Only)
ValidEvaluationTypes (Read Only)
ValueExpr

Methods
AsPropertyObject
GetArrayDimensionSizeExpr
GetDescription
GetEnumValues
SetArrayDimensionSizeExpr

CVIAdapter

PropertyObject > Adapter > CommonCAdapter > CVIAdapter

Properties
CodeTemplatePolicy
ExecuteStepsInExternalInstance
ExecutionServerProjectPathName

Methods
AsAdapter
AsCommonCAdapter

CVIModule

PropertyObject > Module > CommonCModule > CVIModule

Properties
AlwaysRunInProcess
ModuleType
Parameters (ReadOnly)

Methods
AsCommonCModule

CVIParameters
CVIParameter

PropertyObject > CommonCParameter > CVIParameter

Properties
Category
Type

Method
AsCommonCParameter

DllAdapter

PropertyObject > Adapter > CommonCAdapter > DllAdapter

Note: This class has no properties.

Methods
AsAdapter
AsCommonCAdapter

DllFunctions
DllFunction

Properties
DisplayName (Read Only)
HasParameterInformation (Read Only)
HelpContext (Read Only)
HelpFilePath (Read Only)
ParameterTypeWarnings (Read Only)
SymbolName (Read Only)
UniqueDisplayName (Read Only)

Note: This class has no methods.

DllModule

PropertyObject > Module > CommonCModule > DllModule

Properties
CodeCreationTarget
Parameters (Read Only)

Method
AsCommonCModule

DllParameters
DllParameter

PropertyObject > CommonCParameter > DllParameter

Properties
Category
ImaginaryPartValueExpr
TSObjectParameterType
Type

Method
AsCommonCParameter

Adapter-Specific Classes

The adapter-specific classes include classes that represent module adapters, code modules that adapters call, and parameters that code modules require. Use the adapter-specific classes to configure and obtain information about each specific adapter. Use the module-specific classes to specify which code module to call and to obtain the list of parameters. Use the parameter-specific classes to specify the type, direction, and expression value of a parameter.

ActiveXCoClasses
ActiveXCoClass

Properties
Documentation (Read Only)
HelpContext (Read Only)
HelpFilePath (Read Only)
Id (Read Only)
Interfaces (Read Only)
Name (Read Only)
TypeFlags (Read Only)

Method
GetInterfaceImplementationTypeFlags

ActiveXAdapter

PropertyObject > Adapter > ActiveXAdapter

Properties
Servers (Read Only)
ShowActiveXControlsWhenSpecifyingModule
UnloadUnusedActiveXServersAfterExec
UseLateBinding

Methods
AsAdapter
UpdateAutomationIDs

ActiveXInterfaces
ActiveXInterface

Properties
DispatchMembers (Read Only)
Documentation (Read Only)
ForTypedefOnly (Read Only)
HelpContext (Read Only)
HelpFilePath (Read Only)
Id (Read Only)
Name (Read Only)
TypeFlags (Read Only)
VTableMembers (Read Only)

Note: This class has no methods.

ActiveXMembers
ActiveXMember

Properties
DispatchId (Read Only)
Documentation (Read Only)
FunctionFlags (Read Only)
HelpContext (Read Only)
HelpFilePath (Read Only)
MemberType (Read Only)
Name (Read Only)
ParameterTypeWarnings (Read Only)
VTableOffset (Read Only)

Note: This class has no methods.

ActiveXModule

PropertyObject > Module > ActiveXModule

Properties
ActiveXReferenceExpr
CoClassName
CreateOption
FilePath
InterfaceName
MemberName
MemberType
Parameters (Read Only)
RemoteHost
ServerId
SpecifyHostByExpression
UseStepLoadOptions

Methods
AsModule
ReloadServer

ActiveXParameters
ActiveXParameter

PropertyObject > ActiveXParameter

Properties
DefaultValue (Read Only)
Direction (Read Only)
DisplayType (Read Only)
EnumTypeName (Read Only)
IsOptional (Read Only)
ParameterName (Read Only)
Type (Read Only)
UseDefault
UserData (Read Only)
ValidEvaluationTypes (Read Only)
ValueExpr

Methods
AsPropertyObject
GetEnumValues

ActiveXServers
ActiveXServer

Properties
CoClasses (Read Only)
DisplayName (Read Only)
HelpContext (Read Only)
HelpFilePath (Read Only)
Id (Read Only)
Interfaces (Read Only)
LibraryFlags (Read Only)
LocaleId (Read Only)
MajorVersion (Read Only)
MinorVersion (Read Only)
Name (Read Only)
Path (Read Only)
VersionString (Read Only)

Method
LoadTypeLibrary

DotNetAdapter

PropertyObject > Adapter > DotNetAdapter

Note: This class has no properties.

Methods
AsAdapter
GetExcludeFromStructure
GetStructureMemberLabel
GetStructurePassingEnabled
SetExcludeFromStructure
SetStructureMemberLabel
SetStructurePassingEnabled

DotNetModule

PropertyObject > Module > DotNetModule

Properties
ClassHelpString (Read Only)
ClassName
ClassReference
ConstructorParameters (Read Only)
ConstructorPrototype (Read Only)
CreateMethodName
CreateObject
DisposeObject
IsConstructorPrototypeIncompatible (Read Only)
IsStruct
MemberFlags
MemberHelpString (Read Only)
MemberName
MemberType
NameOfMethodToCreate
Parameters (Read Only)
ProjectFilePath
RemoteHost
SolutionFilePath
SourceFilePath
SpecifyHostByExpression
UnmappedConstructorArgumentValues
UseStepLoadOptions

Methods
AsModule
ClearUnmappedConstructorArgumentValues
DisplayCreateCustomDataTypeDialog
GetAssembly
GetConstructorMetadataToken
GetMetadataToken
LoadConstructorPrototypeFromMetadataToken
LoadPrototypeFromMetadataToken
SetAssembly

DotNetParameters
DotNetParameter

(Read Only)

PropertyObject > DotNetParameter

Properties
ArrayDimensions (Read Only)
DefaultValue (Read Only)
Direction (Read Only)
DisplayType (Read Only)
DisposeObject
Elements (Read Only)
Flags (Read Only)
HelpString (Read Only)
ParameterName (Read Only)
Type (Read Only)
UseDefaultValue
UserData (Read Only)
ValidEvaluationTypes (Read Only)
ValueExpr

Methods
AsPropertyObject
DeleteArrayElement
DisplayCreateCustomDataTypeDialog
GetEnumValues
InsertArrayElement

HTBasicAdapter

PropertyObject > Adapter > HTBasicAdapter

Properties
DefaultWorkingDirectory
DevelopmentServerPath
RunTimeServerPath
SpecWorkingDirectoryPath
UseDevelopmentServer

Method
AsAdapter

HTBasicModule

PropertyObject > Module > HTBasicModule

Properties
ShowHTBasicApp
SubroutineFilePath
SubroutineName
WorkingDirectory
WorkingDirectorySpecifiedPath

Method
AsModule

LabVIEWAdapter

PropertyObject > Adapter > LabVIEWAdapter

Properties
CodeTemplatePolicy
CurrentLabVIEWServerVersion (Read Only)
IsCurrentLabVIEWServerAnEditor (Read Only)
ReserveLoadedVIsForExec
UUTIterationNumberExpression
UUTSerialNumberExpression

Methods
AsAdapter
CheckRemoteSystemStatus
DeployProjectLibrary
FileExistsInLLB
GetClusterMemberLabel
GetClusterPassingEnabled
GetExcludeFromCluster
GetExpressVIMenuStructure
GetServerInfo
GetVIVersion
Initialize
IsExpressVI
SetClusterMemberLabel
SetClusterPassingEnabled
SetExcludeFromCluster
SetServerInfo

LabVIEWModule

PropertyObject > Module > LabVIEWModule

Properties
ExpressVIName (Read Only)
HelpContext (Read Only)
HelpFilePath (Read Only)
HelpPicture (Read Only)
HelpPictureRects (Read Only)
Parameters (Read Only)
RemoteConnectionTimeout
RemoteHost
RemotePortNumber
RemoteVIPath
SpecifyHostByExpression
VIAttached (Read Only)
VICallOptions
VIDescription (Read Only)
VIPath
VIType

Methods
AsModule
ConvertExpressVIToStandardVI
ExportVI
ImportVI
LoadVIInfo

LabVIEWParameters
LabVIEWParameter

PropertyObject > LabVIEWParameter

Properties
ArrayDimensions (Read Only)
ArrayElementPrototype (Read Only)
Category (Read Only)
ComplexImaginaryPartElement (Read Only)
ComplexRealPartElement (Read Only)
DefaultValue (Read Only)
Direction (Read Only)
DisplayType (Read Only)
Elements (Read Only)
ParameterCaption (Read Only)
ParameterName (Read Only)
PartiallySpecified (Read Only)
PassAsBinaryString
Type (Read Only)
TypeDisplayString (Read Only)
UseDefaultValue
UserData (Read Only)
ValidEvaluationTypes (Read Only)
ValueExpr
WireRequirement (Read Only)

Methods
AsPropertyObject
CreateDefaultArrayElements
DeleteArrayElement
DeleteArrayElements
DisplayCreateCustomDataTypeDialog
ExprClusterTypeMismatch
GetArrayIndex
GetDefaultArrayDimensionSize
GetEnumValues
InsertArrayElement
UpdateClusterMapping

LabVIEWParameterElements
LabVIEWParameterElement

PropertyObject > LabVIEWParameterElement

Properties
ArrayDimensions (Read Only)
ArrayElementPrototype (Read Only)
Category (Read Only)
ComplexImaginaryPartElement (Read Only)
ComplexRealPartElement (Read Only)
DefaultValue (Read Only)
Direction (Read Only)
DisplayType (Read Only)
ElementCaption (Read Only)
ElementName (Read Only)
Elements (Read Only)
IndexString (Read Only)
PartiallySpecified (Read Only)
PassAsBinaryString
Type (Read Only)
TypeDisplayString (Read Only)
UseDefaultValue
UserData (Read Only)
ValidEvaluationTypes (Read Only)
ValueExpr
WireRequirement (Read Only)

Methods
AsPropertyObject
CreateDefaultArrayElements
DeleteArrayElement
DeleteArrayElements
DisplayCreateCustomDataTypeDialog
ExprClusterTypeMismatch
GetArrayIndex
GetDefaultArrayDimensionSize
GetEnumValues
InsertArrayElement
UpdateClusterMapping

SequenceAdapter

PropertyObject > Adapter > SequenceAdapter

Note: This class has no properties.

Methods
AsAdapter
GetSequenceFile

SequenceCallModule

PropertyObject > Module > SequenceCallModule

Properties
IgnoreTermination
InitiallySuspended
MultithreadingAndRemoteExecOption
NewExecutionBreakOnEntryExpr
NewExecutionModelOption
NewExecutionModelPath
NewExecutionTypeMask
NewExecutionTypeMaskExpr
NewExecutionWaitForCompletion
NewThreadOptions
ParameterPrototype (Read Only)
Parameters (Read Only)
RemoteHost
SequenceFilePath
SequenceName
SpecifyByExpression
SpecifyHostByExpression
StoreActiveXReferenceExpr
TraceSetting
UseCurrentFile
UseSequenceParameterPrototype

Methods
AsModule
LoadPrototypeFromSequence

SequenceCallParameters
SequenceCallParameter

PropertyObject > SequenceCallParameter

Properties
Name (Read Only)
PassByReference (Read Only)
Type (Read Only)
TypeDisplayString (Read Only)
UseDefaultValue
UserData (Read Only)
ValidEvaluationTypes (Read Only)
ValueExpr

Note: This class has no methods.