Learn how to evaluate and integrate the VNC SDK



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[Python API](https://www.realvnc.com/en/developer/docs/latest/api/python/index.html)

The VNC SDK provides Python bindings, enabling you to create a VNC Viewer or a VNC Server app from a Python script.

When using the Python bindings, the Python method calls used to invoke the SDK are implemented using calls into the lower-level C API. Therefore, to distribute your application which uses the Python bindings, you will need to include not only the bindings themselves, vncsdk.py, but also the SDK’s native bindings (the SDK shared library, or DLL).

The Python bindings support Python 2.6, 2.7, and 3.x, using a Python runtime with support for ctypes (such as CPython or PyPy). The bindings are provided as a single file, vncsdk.py, which has no external dependencies that are not part of the default Python runtime.

How to import the bindings

The VNC SDK is imported using the standard Python mechanism:

**import** **vncsdk**

In order for the Python runtime to locate the SDK, you may need to append the location of the bindings to the sys.path variable before importing the bindings. Alternatively, you can install the bindings in a global location such as /usr/lib/python2.7/site-packages/ or C:\Python27\lib\site-packages (depending on your system and Python version).

When the bindings are imported, the SDK shared library (DLL) must also be located. By default, the bindings look in the system paths (/usr/lib or C:\Windows\system32). In order to specify a search location, set the VNCSDK\_LIBRARY environment variable to point to the library, using either the exact name of the shared object, or the directory it is located in. If a directory is specified, the bindings search for the shared object using its default name (vncsdk.dll, libvncsdk.x.x.so, or libvncsdk.x.x.dylib depending on the platform), and also search in subdirectories matching the platform name.

*# Example: Search for the library in the app's "resources" directory:*

os.environ['VNCSDK\_LIBRARY'] = os.path.join(os.path.dirname(\_\_file\_\_), 'resources')

**import** **vncsdk**

print('SDK library found at: ' + vncsdk.VNCSDK\_LIBRARY)

Finally, if you are using the bindings to create a Server application, the capture agent must also be located (*vncagent.exe*). The Server’s constructor [vncsdk.Server.\_\_init\_\_()](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html#vncsdk.Server.__init__) has a parameter which allows the location to be specified; if this is passed as None then the bindings will search for the agent in the main module’s directory (the C API searches for the agent in the directory of the running binary if the path is not specified).

How to use the documentation

The primary source for documentation on the VNC SDK is provided by the [C API reference](https://www.realvnc.com/en/developer/docs/latest/api/c/index.html). Most methods provided through the Python bindings are documented with a brief summary only, since the full behaviour and description of each method and argument is contained in the C API reference. This documentation for the Python bindings fully describes only the behaviour which is unique to the Python bindings.

Methods and their types are mapped into Python as follows:

* Each structure in the C API is mapped to a corresponding Python class. For example, vnc\_DataBuffer corresponds to vncsdk.DataBuffer. Each function operating on a C type is mapped to a method on the Python class, such as DataBuffer.get\_data for vnc\_DataBuffer\_getData. The constructors of Python classes correspond to the “create” methods in the C API. Method names in the Python bindings are separated with underscores, rather than the camel-case used in the C API.
* Arguments are mapped to their native Python types. Pass in a Python string where the C API uses a const char\*, Python lists for C-style arrays, and Python integers for C integers. The SDK coerces any arguments you pass in to the expected type. See below for more information on how to use callback and enumeration objects.
* Many functions in the VNC SDK return return an error if an unexpected condition occurred or the arguments were invalid. In the C API, this is indicated by functions returning vnc\_failure or NULL, and the error condition can be found by calling vnc\_getLastError. In the Python bindings, this function is not available, as all errors are indicated by throwing exceptions. For all cases where C API returns an error, the Python bindings throw a vncsdk.VncException, whose errorCode member contains the strings described in the C API reference. Many methods can also throw standard Python errors such as TypeError if incorrect values are passed into the API.
* The vncsdk module contains global functions from the C API which are not associated with any particular class.

Memory management

Although Python is a garbage-collected language, every object created by the VNC SDK *must* be explicitly destroyed by the user with its destroy() method. This is because the Python garbage collector does not reliably reclaim objects; for most objects this is not a problem, but for some resources such as files or open network connections, proper cleanup is important. As the CPython’s [documentation says](https://docs.python.org/2/reference/datamodel.html#objects-values-and-types):

Do not depend on immediate finalization of objects when they become unreachable (ex: always close files).

Since most SDK objects hold references to shared long-running tasks such as network connections, it is not appropriate to expect the garbage collector to reclaim SDK objects: they must all be closed with their destroy() method, or network connections may not be cleanly closed.

As an alternative to calling destroy(), Python’s with statement may be used for cleaning up local objects:

**with** vncsdk.CloudConnector(address, password) **as** connector:

connector.connect(peer\_address, viewer.get\_connection\_handler())

How to use the SDK with threading

The VNC SDK can be used in a multi-threaded application. For most applications, this is unnecessary and it is simpler to run the SDK in the main thread, and the SDK is able to run in the same thread as third-party event loops such as Qt and wxWidgets. If you decide to use only one Python thread, see the documentation on [event loops](https://www.realvnc.com/en/developer/docs/latest/overview.html#eventloops-threading) for information on how to integrate the SDK’s event loop with your application’s.

However, for GUI applications the extra flexibility of running the SDK in a background thread can be useful, so you may choose to run the SDK’s event loop in its own thread.

In this case, the SDK’s threading rule is simple: the SDK can only be called from one thread. So, you must decide which thread in your application uses the SDK, then call all SDK methods from that thread.

The Python bindings provides a helper method to make it easier to interact with the SDK thread. If you run [vncsdk.EventLoop.run()](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoop.html" \l "vncsdk.EventLoop.run" \o "vncsdk.EventLoop.run) in a background thread, then in any other thread you can call [vncsdk.EventLoop.run\_on\_loop()](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoop.html" \l "vncsdk.EventLoop.run_on_loop" \o "vncsdk.EventLoop.run_on_loop) to pass a Python callable object to be invoked on the SDK thread. The other method which can be called from a non-SDK thread is [vncsdk.EventLoop.stop()](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoop.html" \l "vncsdk.EventLoop.stop" \o "vncsdk.EventLoop.stop), which causes the event loop in the SDK thread to stop.

How to use SDK callbacks

Each callback is represented by a class in the Python API. There are two ways of constructing a callback, using an instance of the callback object constructed with Python functions, or secondly deriving from the callback class and implementing the callback’s methods.

* When you construct an instance of the callback class directly, pass in your functions as named arguments to the constructor:
* *# Example 1: Using an instance of the callback object*
* **def** log\_fn(level, message):
* print('SDK message: ' + level + ', ' + message)
* vncsdk.Logger.create\_custom\_logger(vncsdk.Logger.Callback(
* log\_message = log\_fn
* ))
* vncsdk.Logger.create\_custom\_logger(vncsdk.Logger.Callback(
* log\_message = **lambda** \_, message: sys.stdout.write(message)
* ))
* When you derive from the callback class, override the methods you choose to implement:
* *# Example 2: Deriving from the callback object*
* **class** **MyCustomLogger**(vncsdk.Logger.Callback):
* **def** log\_message(self, level, message):
* print('SDK message: ' + level + ', ' + message)
* vncsdk.Logger.create\_custom\_logger(MyCustomLogger())

If your class implements \_\_init\_\_(), remember that you *must* call the base class’s \_\_init\_\_() method.

Finally, note that the Python bindings do not allow callback objects to be garbage-collected. Therefore, if you create a large number of callback objects, they will be leaked. This is not a problem if you set up callback objects once at the start of the application, rather than recreating them repeatedly while the application is running.

How to use SDK enumerations

Enumerations are represented in the Python API by an object with an attribute for each item. The items can be printed using str() or their name member. Functions accepting an enum argument must be passed an instance of the required enum. Functions accepting a bitmask of enums take a Python iterable of enum items. Callbacks returning an SDK enum always return the same item as the SDK exports, so you can test for equality using == or is.

viewer = vncsdk.Viewer()

*# Example: passing in an enum*

viewer.send\_scroll\_event(

5, vncsdk.Viewer.MouseWheel.MOUSE\_WHEEL\_VERTICAL)

*# Example: passing in a bitmask of enums, using a Python set*

buttons = {vncsdk.Viewer.MouseButton.MOUSE\_BUTTON\_LEFT}

viewer.send\_pointer\_event(100, 100, buttons, **False**)

*# Example: receiving an enum in a callback, printing items using*

*# 'name', and checking for specific enum values*

**class** **MyConnectionCallback**(vncsdk.Viewer.ConnectionCallback):

**def** disconnected(self, viewer, reason, flags):

**for** flag **in** flags:

**if** flag == vncsdk.Viewer.DisconnectFlags.CAN\_RECONNECT:

print("Viewer disconnected, reconnecting...")

**else**

print("Viewer disconnected, got flag " + flag.name)

**def** connected(self, viewer):

**pass**

**def** connecting(self, viewer):

**pass**

viewer.set\_connection\_callback(MyConnectionCallback())

# The vncsdk module

Nested Classes

* [vncsdk.EventLoopType](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoopType.html#vncsdk.EventLoopType)

Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [enable\_add\_on](https://www.realvnc.com/en/developer/docs/latest/api/python/vncsdk.html#vncsdk.enable_add_on)(add\_on\_code)  Enable an SDK add-on by passing in the content of the add-on code, obtained from RealVNC. |
| int | [get\_build\_number](https://www.realvnc.com/en/developer/docs/latest/api/python/vncsdk.html#vncsdk.get_build_number)()  Returns the runtime build number of the SDK. |
| int | [get\_major\_version](https://www.realvnc.com/en/developer/docs/latest/api/python/vncsdk.html#vncsdk.get_major_version)()  Returns the runtime major version number of the SDK. |
| int | [get\_minor\_version](https://www.realvnc.com/en/developer/docs/latest/api/python/vncsdk.html#vncsdk.get_minor_version)()  Returns the runtime minor version number of the SDK. |
| int | [get\_patch\_version](https://www.realvnc.com/en/developer/docs/latest/api/python/vncsdk.html#vncsdk.get_patch_version)()  Returns the runtime patch version number of the SDK. |
| int | [keysym\_to\_unicode](https://www.realvnc.com/en/developer/docs/latest/api/python/vncsdk.html#vncsdk.keysym_to_unicode)(keysym)  Converts a keysym to a unicode - suitable for converting a keysym received on the server in Server.InputEventsCallbackkeyEventCallback(). |
|  | [set\_cloud\_proxy\_settings](https://www.realvnc.com/en/developer/docs/latest/api/python/vncsdk.html#vncsdk.set_cloud_proxy_settings)(system\_proxy, proxy\_url)  Specifies proxy server settings for Cloud connections; note these settings are adopted for all subsequent outgoing Cloud connections. |
|  | [shutdown](https://www.realvnc.com/en/developer/docs/latest/api/python/vncsdk.html#vncsdk.shutdown)()  Shuts down the SDK, ensuring that any resources are cleared up. |
| int | [unicode\_to\_keysym](https://www.realvnc.com/en/developer/docs/latest/api/python/vncsdk.html#vncsdk.unicode_to_keysym)(unicode\_char)  Converts a unicode character to a keysym, suitable for passing to [Viewer.send\_key\_down()](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html" \l "Viewer.send_key_down" \o "Viewer.send_key_down). |

Static methods

**vncsdk.enable\_add\_on**(*add\_on\_code*)

Enable an SDK add-on by passing in the content of the add-on code, obtained from RealVNC.

For more information, see [vnc\_enableAddOn()](https://www.realvnc.com/en/developer/docs/latest/api/c/AddOn.h.html" \l "_CPPv215vnc_enableAddOnPKc" \o "vnc_enableAddOn).

|  |  |
| --- | --- |
| **Parameters:** | **add\_on\_code** (*str*) – |

**vncsdk.get\_build\_number**()

Returns the runtime build number of the SDK.

For more information, see [vnc\_getBuildNumber()](https://www.realvnc.com/en/developer/docs/latest/api/c/Version.h.html#_CPPv218vnc_getBuildNumberv).

|  |  |
| --- | --- |
| **Return type:** | int |

**vncsdk.get\_major\_version**()

Returns the runtime major version number of the SDK.

For more information, see [vnc\_getMajorVersion()](https://www.realvnc.com/en/developer/docs/latest/api/c/Version.h.html" \l "_CPPv219vnc_getMajorVersionv" \o "vnc_getMajorVersion).

|  |  |
| --- | --- |
| **Return type:** | int |

**vncsdk.get\_minor\_version**()

Returns the runtime minor version number of the SDK.

For more information, see [vnc\_getMinorVersion()](https://www.realvnc.com/en/developer/docs/latest/api/c/Version.h.html" \l "_CPPv219vnc_getMinorVersionv" \o "vnc_getMinorVersion).

|  |  |
| --- | --- |
| **Return type:** | int |

**vncsdk.get\_patch\_version**()

Returns the runtime patch version number of the SDK.

For more information, see [vnc\_getPatchVersion()](https://www.realvnc.com/en/developer/docs/latest/api/c/Version.h.html" \l "_CPPv219vnc_getPatchVersionv" \o "vnc_getPatchVersion).

|  |  |
| --- | --- |
| **Return type:** | int |

**vncsdk.keysym\_to\_unicode**(*keysym*)

Converts a keysym to a unicode - suitable for converting a keysym received on the server in Server.InputEventsCallbackkeyEventCallback().

For more information, see [vnc\_keysymToUnicode()](https://www.realvnc.com/en/developer/docs/latest/api/c/Keyboard.h.html" \l "_CPPv219vnc_keysymToUnicode12vnc_uint31_t" \o "vnc_keysymToUnicode).

|  |  |
| --- | --- |
| **Parameters:** | **keysym** (*int*) – |
| **Return type:** | int |

**vncsdk.set\_cloud\_proxy\_settings**(*system\_proxy*, *proxy\_url*)

Specifies proxy server settings for Cloud connections; note these settings are adopted for all subsequent outgoing Cloud connections.

For more information, see [vnc\_setCloudProxySettings()](https://www.realvnc.com/en/developer/docs/latest/api/c/Cloud.h.html" \l "_CPPv225vnc_setCloudProxySettings10vnc_bool_tPKc" \o "vnc_setCloudProxySettings).

|  |  |
| --- | --- |
| **Parameters:** | * **system\_proxy** (*bool*) – * **proxy\_url** (*str or None*) – |

**vncsdk.shutdown**()

Shuts down the SDK, ensuring that any resources are cleared up.

For more information, see [vnc\_shutdown()](https://www.realvnc.com/en/developer/docs/latest/api/c/Init.h.html" \l "_CPPv212vnc_shutdownv" \o "vnc_shutdown).

**vncsdk.unicode\_to\_keysym**(*unicode\_char*)

Converts a unicode character to a keysym, suitable for passing to [Viewer.send\_key\_down()](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html" \l "Viewer.send_key_down" \o "Viewer.send_key_down).

For more information, see [vnc\_unicodeToKeysym()](https://www.realvnc.com/en/developer/docs/latest/api/c/Keyboard.h.html" \l "_CPPv219vnc_unicodeToKeysym12vnc_uint31_t" \o "vnc_unicodeToKeysym).

|  |  |
| --- | --- |
| **Parameters:** | **unicode\_char** (*int*) – |
| **Return type:** | int |

AnnotationManager

*class***vncsdk.AnnotationManager**

Enables a Viewer or Server to annotate a Server device screen.

Nested Classes

* [vncsdk.AnnotationManager.Callback](https://www.realvnc.com/en/developer/docs/latest/api/python/AnnotationManager-Callback.html#vncsdk.AnnotationManager.Callback)

Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [clear](https://www.realvnc.com/en/developer/docs/latest/api/python/AnnotationManager.html#AnnotationManager.clear)(fade, connection)  Clears particular annotations. |
|  | [clear\_all](https://www.realvnc.com/en/developer/docs/latest/api/python/AnnotationManager.html#AnnotationManager.clear_all)(fade)  Clears all annotations. |
| int | [get\_fade\_duration](https://www.realvnc.com/en/developer/docs/latest/api/python/AnnotationManager.html#AnnotationManager.get_fade_duration)()  Gets how long annotations take to fade. |
| int | [get\_pen\_color](https://www.realvnc.com/en/developer/docs/latest/api/python/AnnotationManager.html#AnnotationManager.get_pen_color)()  Gets the current pen color. |
| int | [get\_pen\_size](https://www.realvnc.com/en/developer/docs/latest/api/python/AnnotationManager.html#AnnotationManager.get_pen_size)()  Gets the current pen size. |
| int | [get\_persist\_duration](https://www.realvnc.com/en/developer/docs/latest/api/python/AnnotationManager.html#AnnotationManager.get_persist_duration)()  Gets how long annotations persist as a solid color for. |
| bool | [is\_available](https://www.realvnc.com/en/developer/docs/latest/api/python/AnnotationManager.html#AnnotationManager.is_available)()  Queries whether it is possible to annotate. |
|  | [move\_pen\_to](https://www.realvnc.com/en/developer/docs/latest/api/python/AnnotationManager.html#AnnotationManager.move_pen_to)(x, y, pen\_down)  Draws a line on the Server screen from the current position to a new position. |
|  | [set\_callback](https://www.realvnc.com/en/developer/docs/latest/api/python/AnnotationManager.html#AnnotationManager.set_callback)(callback)  Sets annotation-related callbacks. |
|  | [set\_fade\_duration](https://www.realvnc.com/en/developer/docs/latest/api/python/AnnotationManager.html#AnnotationManager.set_fade_duration)(duration\_ms)  Sets how long annotations take to fade. |
|  | [set\_pen\_color](https://www.realvnc.com/en/developer/docs/latest/api/python/AnnotationManager.html#AnnotationManager.set_pen_color)(color)  Sets the pen color, determining the color of the annotation line. |
|  | [set\_pen\_size](https://www.realvnc.com/en/developer/docs/latest/api/python/AnnotationManager.html#AnnotationManager.set_pen_size)(size)  Sets the pen size, determining the width of the annotation line. |
|  | [set\_persist\_duration](https://www.realvnc.com/en/developer/docs/latest/api/python/AnnotationManager.html#AnnotationManager.set_persist_duration)(duration\_ms)  Sets how long annotations persist as a solid color for. |

Methods

**clear**(*fade*, *connection*)

Clears particular annotations.

For more information, see [vnc\_AnnotationManager\_clear()](https://www.realvnc.com/en/developer/docs/latest/api/c/Annotation.h.html" \l "_CPPv227vnc_AnnotationManager_clearP21vnc_AnnotationManager10vnc_bool_tP14vnc_Connection" \o "vnc_AnnotationManager_clear).

|  |  |
| --- | --- |
| **Parameters:** | * **fade** (*bool*) – * **connection** ([vncsdk.Connection](https://www.realvnc.com/en/developer/docs/latest/api/python/Connection.html" \l "vncsdk.Connection" \o "vncsdk.Connection)) – |

**clear\_all**(*fade*)

Clears all annotations.

For more information, see [vnc\_AnnotationManager\_clearAll()](https://www.realvnc.com/en/developer/docs/latest/api/c/Annotation.h.html" \l "_CPPv230vnc_AnnotationManager_clearAllP21vnc_AnnotationManager10vnc_bool_t" \o "vnc_AnnotationManager_clearAll).

|  |  |
| --- | --- |
| **Parameters:** | **fade** (*bool*) – |

**get\_fade\_duration**()

Gets how long annotations take to fade.

For more information, see [vnc\_AnnotationManager\_getFadeDuration()](https://www.realvnc.com/en/developer/docs/latest/api/c/Annotation.h.html" \l "_CPPv237vnc_AnnotationManager_getFadeDurationP21vnc_AnnotationManager" \o "vnc_AnnotationManager_getFadeDuration).

|  |  |
| --- | --- |
| **Return type:** | int |

**get\_pen\_color**()

Gets the current pen color.

For more information, see [vnc\_AnnotationManager\_getPenColor()](https://www.realvnc.com/en/developer/docs/latest/api/c/Annotation.h.html" \l "_CPPv233vnc_AnnotationManager_getPenColorP21vnc_AnnotationManager" \o "vnc_AnnotationManager_getPenColor).

|  |  |
| --- | --- |
| **Return type:** | int |

**get\_pen\_size**()

Gets the current pen size.

For more information, see [vnc\_AnnotationManager\_getPenSize()](https://www.realvnc.com/en/developer/docs/latest/api/c/Annotation.h.html" \l "_CPPv232vnc_AnnotationManager_getPenSizeP21vnc_AnnotationManager" \o "vnc_AnnotationManager_getPenSize).

|  |  |
| --- | --- |
| **Return type:** | int |

**get\_persist\_duration**()

Gets how long annotations persist as a solid color for.

For more information, see [vnc\_AnnotationManager\_getPersistDuration()](https://www.realvnc.com/en/developer/docs/latest/api/c/Annotation.h.html" \l "_CPPv240vnc_AnnotationManager_getPersistDurationP21vnc_AnnotationManager" \o "vnc_AnnotationManager_getPersistDuration).

|  |  |
| --- | --- |
| **Return type:** | int |

**is\_available**()

Queries whether it is possible to annotate.

For more information, see [vnc\_AnnotationManager\_isAvailable()](https://www.realvnc.com/en/developer/docs/latest/api/c/Annotation.h.html" \l "_CPPv233vnc_AnnotationManager_isAvailableP21vnc_AnnotationManager" \o "vnc_AnnotationManager_isAvailable).

|  |  |
| --- | --- |
| **Return type:** | bool |

**move\_pen\_to**(*x*, *y*, *pen\_down*)

Draws a line on the Server screen from the current position to a new position.

For more information, see [vnc\_AnnotationManager\_movePenTo()](https://www.realvnc.com/en/developer/docs/latest/api/c/Annotation.h.html" \l "_CPPv231vnc_AnnotationManager_movePenToP21vnc_AnnotationManagerii10vnc_bool_t" \o "vnc_AnnotationManager_movePenTo).

|  |  |
| --- | --- |
| **Parameters:** | * **x** (*int*) – * **y** (*int*) – * **pen\_down** (*bool*) – |

**set\_callback**(*callback*)

Sets annotation-related callbacks.

For more information, see [vnc\_AnnotationManager\_setCallback()](https://www.realvnc.com/en/developer/docs/latest/api/c/Annotation.h.html" \l "_CPPv233vnc_AnnotationManager_setCallbackP21vnc_AnnotationManagerPK30vnc_AnnotationManager_CallbackPv" \o "vnc_AnnotationManager_setCallback).

|  |  |
| --- | --- |
| **Parameters:** | **callback** ([vncsdk.AnnotationManager.Callback](https://www.realvnc.com/en/developer/docs/latest/api/python/AnnotationManager-Callback.html" \l "vncsdk.AnnotationManager.Callback" \o "vncsdk.AnnotationManager.Callback) or None) – |

**set\_fade\_duration**(*duration\_ms*)

Sets how long annotations take to fade.

For more information, see [vnc\_AnnotationManager\_setFadeDuration()](https://www.realvnc.com/en/developer/docs/latest/api/c/Annotation.h.html" \l "_CPPv237vnc_AnnotationManager_setFadeDurationP21vnc_AnnotationManageri" \o "vnc_AnnotationManager_setFadeDuration).

|  |  |
| --- | --- |
| **Parameters:** | **duration\_ms** (*int*) – |

**set\_pen\_color**(*color*)

Sets the pen color, determining the color of the annotation line.

For more information, see [vnc\_AnnotationManager\_setPenColor()](https://www.realvnc.com/en/developer/docs/latest/api/c/Annotation.h.html" \l "_CPPv233vnc_AnnotationManager_setPenColorP21vnc_AnnotationManager12vnc_uint32_t" \o "vnc_AnnotationManager_setPenColor).

|  |  |
| --- | --- |
| **Parameters:** | **color** (*int*) – |

**set\_pen\_size**(*size*)

Sets the pen size, determining the width of the annotation line.

For more information, see [vnc\_AnnotationManager\_setPenSize()](https://www.realvnc.com/en/developer/docs/latest/api/c/Annotation.h.html" \l "_CPPv232vnc_AnnotationManager_setPenSizeP21vnc_AnnotationManager12vnc_uint31_t" \o "vnc_AnnotationManager_setPenSize).

|  |  |
| --- | --- |
| **Parameters:** | **size** (*int*) – |

**set\_persist\_duration**(*duration\_ms*)

Sets how long annotations persist as a solid color for.

For more information, see [vnc\_AnnotationManager\_setPersistDuration()](https://www.realvnc.com/en/developer/docs/latest/api/c/Annotation.h.html" \l "_CPPv240vnc_AnnotationManager_setPersistDurationP21vnc_AnnotationManageri" \o "vnc_AnnotationManager_setPersistDuration).

|  |  |
| --- | --- |
| **Parameters:** | **duration\_ms** (*int*) – |

AnnotationManager.Callback

**vncsdk.AnnotationManager.Callback**

Callback receiving annotation-related notifications

**See also:** [AnnotationManager.set\_callback](https://www.realvnc.com/en/developer/docs/latest/api/python/AnnotationManager.html" \l "AnnotationManager.set_callback" \o "AnnotationManager.set_callback)

Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [availability\_changed](https://www.realvnc.com/en/developer/docs/latest/api/python/AnnotationManager-Callback.html#AnnotationManager.Callback.availability_changed)(annotation\_manager, is\_available)  Notification that annotation availability has changed. |

Methods

**availability\_changed**(*annotation\_manager*, *is\_available*)

Notification that annotation availability has changed.

For more information, see vnc\_AnnotationManager\_Callback::availabilityChanged.

|  |  |
| --- | --- |
| **Parameters:** | * **annotation\_manager** ([vncsdk.AnnotationManager](https://www.realvnc.com/en/developer/docs/latest/api/python/AnnotationManager.html" \l "vncsdk.AnnotationManager" \o "vncsdk.AnnotationManager)) – * **is\_available** (*bool*) – |
| **Returns:** | None |

CloudAddressMonitor

*class***vncsdk.CloudAddressMonitor**

Monitor used to query the availability of VNC Cloud addresses.

Nested Classes

* [vncsdk.CloudAddressMonitor.Callback](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudAddressMonitor-Callback.html#vncsdk.CloudAddressMonitor.Callback)
* [vncsdk.CloudAddressMonitor.Availability](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudAddressMonitor-Availability.html#vncsdk.CloudAddressMonitor.Availability)

Constructor Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [\_\_init\_\_](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudAddressMonitor.html#constructor)(connector, cloud\_addresses, callback)  Creates a monitor, which queries whether a list of cloud addresses is available. |

Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [destroy](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudAddressMonitor.html#CloudAddressMonitor.destroy)()  Destroys the Cloud monitor. |
|  | [pause](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudAddressMonitor.html#CloudAddressMonitor.pause)()  Pauses the Cloud monitor. |
|  | [resume](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudAddressMonitor.html#CloudAddressMonitor.resume)()  Resumes the Cloud monitor. |
|  | [set\_pause\_on\_connect](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudAddressMonitor.html#CloudAddressMonitor.set_pause_on_connect)(pause\_on\_connect)  Sets whether or not the Cloud monitor pauses automatically when a connection is established. |

Constructor

**vncsdk.CloudAddressMonitor.\_\_init\_\_**(*connector*, *cloud\_addresses*, *callback*)

Creates a monitor, which queries whether a list of cloud addresses is available.

For more information, see [vnc\_CloudAddressMonitor\_create()](https://www.realvnc.com/en/developer/docs/latest/api/c/Cloud.h.html" \l "_CPPv230vnc_CloudAddressMonitor_createP18vnc_CloudConnectorPPKciPK32vnc_CloudAddressMonitor_CallbackPv" \o "vnc_CloudAddressMonitor_create).

|  |  |
| --- | --- |
| **Parameters:** | * **connector** ([vncsdk.CloudConnector](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudConnector.html" \l "vncsdk.CloudConnector" \o "vncsdk.CloudConnector)) – * **cloud\_addresses** (*[str]*) – * **callback** ([vncsdk.CloudAddressMonitor.Callback](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudAddressMonitor-Callback.html" \l "vncsdk.CloudAddressMonitor.Callback" \o "vncsdk.CloudAddressMonitor.Callback)) – |

Methods

**destroy**()

Destroys the Cloud monitor.

For more information, see [vnc\_CloudAddressMonitor\_destroy()](https://www.realvnc.com/en/developer/docs/latest/api/c/Cloud.h.html" \l "_CPPv231vnc_CloudAddressMonitor_destroyP23vnc_CloudAddressMonitor" \o "vnc_CloudAddressMonitor_destroy).

**pause**()

Pauses the Cloud monitor.

For more information, see [vnc\_CloudAddressMonitor\_pause()](https://www.realvnc.com/en/developer/docs/latest/api/c/Cloud.h.html" \l "_CPPv229vnc_CloudAddressMonitor_pauseP23vnc_CloudAddressMonitor" \o "vnc_CloudAddressMonitor_pause).

**resume**()

Resumes the Cloud monitor.

For more information, see [vnc\_CloudAddressMonitor\_resume()](https://www.realvnc.com/en/developer/docs/latest/api/c/Cloud.h.html" \l "_CPPv230vnc_CloudAddressMonitor_resumeP23vnc_CloudAddressMonitor" \o "vnc_CloudAddressMonitor_resume).

**set\_pause\_on\_connect**(*pause\_on\_connect*)

Sets whether or not the Cloud monitor pauses automatically when a connection is established.

For more information, see [vnc\_CloudAddressMonitor\_setPauseOnConnect()](https://www.realvnc.com/en/developer/docs/latest/api/c/Cloud.h.html" \l "_CPPv241vnc_CloudAddressMonitor_setPauseOnConnectP23vnc_CloudAddressMonitor10vnc_bool_t" \o "vnc_CloudAddressMonitor_setPauseOnConnect).

|  |  |
| --- | --- |
| **Parameters:** | **pause\_on\_connect** (*bool*) – |

CloudAddressMonitor.Availability

*class***vncsdk.CloudAddressMonitor.Availability**

Enumeration of availabilities for a Cloud address.

Enumeration Attributes

**vncsdk.CloudAddressMonitor.Availability.AVAILABLE**

A peer is currently listening on the Cloud address.

**vncsdk.CloudAddressMonitor.Availability.UNAVAILABLE**

No peer is currently listening on the Cloud address.

**vncsdk.CloudAddressMonitor.Availability.UNKNOWN\_AVAILABILITY**

The Cloud address monitor is waiting for the Cloud services to return the availability for the peer address, or an error occurred.

# CloudAddressMonitor.Callback

**vncsdk.CloudAddressMonitor.Callback**

Callback for a [vncsdk.CloudAddressMonitor](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudAddressMonitor.html" \l "vncsdk.CloudAddressMonitor" \o "vncsdk.CloudAddressMonitor).

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [availability\_changed](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudAddressMonitor-Callback.html#CloudAddressMonitor.Callback.availability_changed)(monitor, cloud\_address, availability)  Notification that the availability information for a Cloud address has changed. |
|  | [monitor\_paused](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudAddressMonitor-Callback.html#CloudAddressMonitor.Callback.monitor_paused)(monitor)  Notification that monitoring has been paused by an outgoing connection starting. |

## Methods

**availability\_changed**(monitor, cloud\_address, availability)

Notification that the availability information for a Cloud address has changed.

For more information, see vnc\_CloudAddressMonitor\_Callback::availabilityChanged.

|  |  |
| --- | --- |
| **Parameters:** | * **monitor** ([vncsdk.CloudAddressMonitor](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudAddressMonitor.html" \l "vncsdk.CloudAddressMonitor" \o "vncsdk.CloudAddressMonitor)) – * **cloud\_address** (str or None) – * **availability** ([vncsdk.CloudAddressMonitor.Availability](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudAddressMonitor-Availability.html" \l "vncsdk.CloudAddressMonitor.Availability" \o "vncsdk.CloudAddressMonitor.Availability)) – |
| **Returns:** | None |

**monitor\_paused**(monitor)

Notification that monitoring has been paused by an outgoing connection starting.

For more information, see vnc\_CloudAddressMonitor\_Callback::monitorPaused.

|  |  |
| --- | --- |
| **Parameters:** | **monitor** ([vncsdk.CloudAddressMonitor](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudAddressMonitor.html" \l "vncsdk.CloudAddressMonitor" \o "vncsdk.CloudAddressMonitor)) – |
| **Returns:** | None |

# CloudConnector

class **vncsdk.CloudConnector**

Connector used to join VNC Cloud and establish an outgoing connection.

## Constructor Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [\_\_init\_\_](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudConnector.html#constructor)(local\_cloud\_address, local\_cloud\_password)  Creates a connector, which is used used to create connections to Cloud addresses. |

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [connect](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudConnector.html#CloudConnector.connect)(peer\_cloud\_address, connection\_handler)  Begins an outgoing connection to the given Cloud address. |
|  | [destroy](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudConnector.html#CloudConnector.destroy)()  Destroys the Cloud connector. |
|  | [set\_relay\_bandwidth\_limit](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudConnector.html#CloudConnector.set_relay_bandwidth_limit)(relay\_bandwidth\_limit)  Set the bandwidth limit applied to relayed Cloud connections. |
|  | [set\_wait\_for\_peer](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudConnector.html#CloudConnector.set_wait_for_peer)(wait\_for\_peer)  Sets whether new connections created by the connector wait for the peer to start listening. |

## Constructor

**vncsdk.CloudConnector.\_\_init\_\_**(local\_cloud\_address, local\_cloud\_password)

Creates a connector, which is used used to create connections to Cloud addresses.

For more information, see [vnc\_CloudConnector\_create()](https://www.realvnc.com/en/developer/docs/latest/api/c/Cloud.h.html" \l "_CPPv225vnc_CloudConnector_createPKcPKc" \o "vnc_CloudConnector_create).

|  |  |
| --- | --- |
| **Parameters:** | * **local\_cloud\_address** (str) – * **local\_cloud\_password** (str) – |

## Methods

**connect**(peer\_cloud\_address, connection\_handler)

Begins an outgoing connection to the given Cloud address.

For more information, see [vnc\_CloudConnector\_connect()](https://www.realvnc.com/en/developer/docs/latest/api/c/Cloud.h.html" \l "_CPPv226vnc_CloudConnector_connectP18vnc_CloudConnectorPKcP21vnc_ConnectionHandler" \o "vnc_CloudConnector_connect).

|  |  |
| --- | --- |
| **Parameters:** | * **peer\_cloud\_address** (str) – * **connection\_handler** ([vncsdk.ConnectionHandler](https://www.realvnc.com/en/developer/docs/latest/api/python/ConnectionHandler.html" \l "vncsdk.ConnectionHandler" \o "vncsdk.ConnectionHandler)) – |

**destroy**()

Destroys the Cloud connector.

For more information, see [vnc\_CloudConnector\_destroy()](https://www.realvnc.com/en/developer/docs/latest/api/c/Cloud.h.html" \l "_CPPv226vnc_CloudConnector_destroyP18vnc_CloudConnector" \o "vnc_CloudConnector_destroy).

**set\_relay\_bandwidth\_limit**(relay\_bandwidth\_limit)

Set the bandwidth limit applied to relayed Cloud connections.

For more information, see [vnc\_CloudConnector\_setRelayBandwidthLimit()](https://www.realvnc.com/en/developer/docs/latest/api/c/Cloud.h.html" \l "_CPPv241vnc_CloudConnector_setRelayBandwidthLimitP18vnc_CloudConnectori" \o "vnc_CloudConnector_setRelayBandwidthLimit).

|  |  |
| --- | --- |
| **Parameters:** | **relay\_bandwidth\_limit** (int) – |

**set\_wait\_for\_peer**(wait\_for\_peer)

Sets whether new connections created by the connector wait for the peer to start listening.

For more information, see [vnc\_CloudConnector\_setWaitForPeer()](https://www.realvnc.com/en/developer/docs/latest/api/c/Cloud.h.html" \l "_CPPv233vnc_CloudConnector_setWaitForPeerP18vnc_CloudConnector10vnc_bool_t" \o "vnc_CloudConnector_setWaitForPeer).

|  |  |
| --- | --- |
| **Parameters:** | **wait\_for\_peer** (bool) – |

# CloudListener

class **vncsdk.CloudListener**

Listener used to join VNC Cloud and listen for a connection.

## Nested Classes

* [vncsdk.CloudListener.Callback](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudListener-Callback.html#vncsdk.CloudListener.Callback)
* [vncsdk.CloudListener.Status](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudListener-Status.html#vncsdk.CloudListener.Status)

## Constructor Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [\_\_init\_\_](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudListener.html#constructor)(local\_cloud\_address, local\_cloud\_password, connection\_handler, callback)  Begins listening for incoming connections on the given Cloud address. |

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [destroy](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudListener.html#CloudListener.destroy)()  Destroys the Cloud listener. |

## Constructor

**vncsdk.CloudListener.\_\_init\_\_**(local\_cloud\_address, local\_cloud\_password, connection\_handler, callback)

Begins listening for incoming connections on the given Cloud address.

For more information, see [vnc\_CloudListener\_create()](https://www.realvnc.com/en/developer/docs/latest/api/c/Cloud.h.html" \l "_CPPv224vnc_CloudListener_createPKcPKcP21vnc_ConnectionHandlerPK26vnc_CloudListener_CallbackPv" \o "vnc_CloudListener_create).

|  |  |
| --- | --- |
| **Parameters:** | * **local\_cloud\_address** (str) – * **local\_cloud\_password** (str) – * **connection\_handler** ([vncsdk.ConnectionHandler](https://www.realvnc.com/en/developer/docs/latest/api/python/ConnectionHandler.html" \l "vncsdk.ConnectionHandler" \o "vncsdk.ConnectionHandler)) – * **callback** ([vncsdk.CloudListener.Callback](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudListener-Callback.html" \l "vncsdk.CloudListener.Callback" \o "vncsdk.CloudListener.Callback)) – |

## Methods

**destroy**()

Destroys the Cloud listener.

For more information, see [vnc\_CloudListener\_destroy()](https://www.realvnc.com/en/developer/docs/latest/api/c/Cloud.h.html" \l "_CPPv225vnc_CloudListener_destroyP17vnc_CloudListener" \o "vnc_CloudListener_destroy).

# CloudListener.Callback

**vncsdk.CloudListener.Callback**

Callback for a [vncsdk.CloudListener](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudListener.html" \l "vncsdk.CloudListener" \o "vncsdk.CloudListener).

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
| bool | [filter\_connection](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudListener-Callback.html#CloudListener.Callback.filter_connection)(listener, peer\_cloud\_address)  Notification to provide address-based filtering of incoming connections. |
|  | [listening\_failed](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudListener-Callback.html#CloudListener.Callback.listening_failed)(listener, cloud\_error, retry\_time\_secs)  Notification that the Cloud listener has stopped listening and is unable to accept any more connections. |
|  | [listening\_status\_changed](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudListener-Callback.html#CloudListener.Callback.listening_status_changed)(listener, status)  Notification that the listener status has changed. |

## Methods

**filter\_connection**(listener, peer\_cloud\_address)

Notification to provide address-based filtering of incoming connections.

For more information, see vnc\_CloudListener\_Callback::filterConnection.

|  |  |
| --- | --- |
| **Parameters:** | * **listener** ([vncsdk.CloudListener](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudListener.html" \l "vncsdk.CloudListener" \o "vncsdk.CloudListener)) – * **peer\_cloud\_address** (str or None) – |
| **Return type:** | bool |

**listening\_failed**(listener, cloud\_error, retry\_time\_secs)

Notification that the Cloud listener has stopped listening and is unable to accept any more connections.

For more information, see vnc\_CloudListener\_Callback::listeningFailed.

|  |  |
| --- | --- |
| **Parameters:** | * **listener** ([vncsdk.CloudListener](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudListener.html" \l "vncsdk.CloudListener" \o "vncsdk.CloudListener)) – * **cloud\_error** (str or None) – * **retry\_time\_secs** (int) – |
| **Returns:** | None |

**listening\_status\_changed**(listener, status)

Notification that the listener status has changed.

For more information, see vnc\_CloudListener\_Callback::listeningStatusChanged.

|  |  |
| --- | --- |
| **Parameters:** | * **listener** ([vncsdk.CloudListener](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudListener.html" \l "vncsdk.CloudListener" \o "vncsdk.CloudListener)) – * **status** ([vncsdk.CloudListener.Status](https://www.realvnc.com/en/developer/docs/latest/api/python/CloudListener-Status.html" \l "vncsdk.CloudListener.Status" \o "vncsdk.CloudListener.Status)) – |
| **Returns:** | None |

CloudListener.Status

*class***vncsdk.CloudListener.Status**

Enumeration of listening statuses.

Enumeration Attributes

**vncsdk.CloudListener.Status.STATUS\_SEARCHING**

The listener is in the process of establishing an association with VNC Cloud. Incoming connections are not yet possible.

**vncsdk.CloudListener.Status.STATUS\_ONLINE**

The listener is available for incoming connections.

Connection

*class***vncsdk.Connection**

Opaque type for a connection, identifying a Viewer connected to a Server.

ConnectionHandler

*class***vncsdk.ConnectionHandler**

Opaque type for a connection handler, enabling a Viewer or Server to perform a connection operation.

DataBuffer

*class***vncsdk.DataBuffer**

Buffer containing data managed by the SDK.

Constructor Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [\_\_init\_\_](https://www.realvnc.com/en/developer/docs/latest/api/python/DataBuffer.html#constructor)(data)  Creates a data buffer containing a copy of the given data. |

Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [destroy](https://www.realvnc.com/en/developer/docs/latest/api/python/DataBuffer.html#DataBuffer.destroy)()  Destroys the data buffer. |
| bytes or None | [get\_data](https://www.realvnc.com/en/developer/docs/latest/api/python/DataBuffer.html#DataBuffer.get_data)()  Gets the data contained in the buffer. |

Constructor

**vncsdk.DataBuffer.\_\_init\_\_**(*data*)

Creates a data buffer containing a copy of the given data.

For more information, see [vnc\_DataBuffer\_create()](https://www.realvnc.com/en/developer/docs/latest/api/c/DataBuffer.h.html" \l "_CPPv221vnc_DataBuffer_createPKvi" \o "vnc_DataBuffer_create).

|  |  |
| --- | --- |
| **Parameters:** | **data** (*bytes*) – |

Methods

**destroy**()

Destroys the data buffer.

For more information, see [vnc\_DataBuffer\_destroy()](https://www.realvnc.com/en/developer/docs/latest/api/c/DataBuffer.h.html" \l "_CPPv222vnc_DataBuffer_destroyP14vnc_DataBuffer" \o "vnc_DataBuffer_destroy).

**get\_data**()

Gets the data contained in the buffer.

For more information, see [vnc\_DataBuffer\_getData()](https://www.realvnc.com/en/developer/docs/latest/api/c/DataBuffer.h.html" \l "_CPPv222vnc_DataBuffer_getDataPK14vnc_DataBufferPi" \o "vnc_DataBuffer_getData).

|  |  |
| --- | --- |
| **Return type:** | bytes or None |

# DataStore

## Nested Classes

* [vncsdk.DataStore.Callback](https://www.realvnc.com/en/developer/docs/latest/api/python/DataStore-Callback.html#vncsdk.DataStore.Callback)

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [create\_custom\_store](https://www.realvnc.com/en/developer/docs/latest/api/python/DataStore.html#vncsdk.DataStore.create_custom_store)(callback)  Creates a custom data store. |
|  | [create\_file\_store](https://www.realvnc.com/en/developer/docs/latest/api/python/DataStore.html#vncsdk.DataStore.create_file_store)(path)  Creates a file data store. |
|  | [create\_registry\_store](https://www.realvnc.com/en/developer/docs/latest/api/python/DataStore.html#vncsdk.DataStore.create_registry_store)(registry\_path)  Creates a registry data store. |
|  | [destroy\_store](https://www.realvnc.com/en/developer/docs/latest/api/python/DataStore.html#vncsdk.DataStore.destroy_store)()  Destroys the current data store. |

## Static methods

**vncsdk.DataStore.create\_custom\_store**(callback)

Creates a custom data store.

For more information, see [vnc\_DataStore\_createCustomStore()](https://www.realvnc.com/en/developer/docs/latest/api/c/DataStore.h.html" \l "_CPPv231vnc_DataStore_createCustomStorePK22vnc_DataStore_CallbackPv" \o "vnc_DataStore_createCustomStore).

|  |  |
| --- | --- |
| **Parameters:** | **callback** ([vncsdk.DataStore.Callback](https://www.realvnc.com/en/developer/docs/latest/api/python/DataStore-Callback.html" \l "vncsdk.DataStore.Callback" \o "vncsdk.DataStore.Callback)) – |

**vncsdk.DataStore.create\_file\_store**(path)

Creates a file data store.

For more information, see [vnc\_DataStore\_createFileStore()](https://www.realvnc.com/en/developer/docs/latest/api/c/DataStore.h.html" \l "_CPPv229vnc_DataStore_createFileStorePKc" \o "vnc_DataStore_createFileStore).

|  |  |
| --- | --- |
| **Parameters:** | **path** (str) – |

**vncsdk.DataStore.create\_registry\_store**(registry\_path)

Creates a registry data store.

For more information, see [vnc\_DataStore\_createRegistryStore()](https://www.realvnc.com/en/developer/docs/latest/api/c/DataStore.h.html" \l "_CPPv233vnc_DataStore_createRegistryStorePKc" \o "vnc_DataStore_createRegistryStore).

|  |  |
| --- | --- |
| **Parameters:** | **registry\_path** (str) – |

**vncsdk.DataStore.destroy\_store**()

Destroys the current data store.

For more information, see [vnc\_DataStore\_destroyStore()](https://www.realvnc.com/en/developer/docs/latest/api/c/DataStore.h.html" \l "_CPPv226vnc_DataStore_destroyStorev" \o "vnc_DataStore_destroyStore).

# DataStore.Callback

**vncsdk.DataStore.Callback**

Callback providing custom storage of data used by the SDK.

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
| [vncsdk.DataBuffer](https://www.realvnc.com/en/developer/docs/latest/api/python/DataBuffer.html#vncsdk.DataBuffer) or None | [get](https://www.realvnc.com/en/developer/docs/latest/api/python/DataStore-Callback.html#DataStore.Callback.get)(key)  Requests data stored in your custom data store. |
|  | [put](https://www.realvnc.com/en/developer/docs/latest/api/python/DataStore-Callback.html#DataStore.Callback.put)(key, value)  Requests storing data in your custom data store. |

## Methods

**get**(key)

Requests data stored in your custom data store.

For more information, see vnc\_DataStore\_Callback::get.

|  |  |
| --- | --- |
| **Parameters:** | **key** (str or None) – |
| **Return type:** | [vncsdk.DataBuffer](https://www.realvnc.com/en/developer/docs/latest/api/python/DataBuffer.html#vncsdk.DataBuffer) or None |

**put**(key, value)

Requests storing data in your custom data store.

For more information, see vnc\_DataStore\_Callback::put.

|  |  |
| --- | --- |
| **Parameters:** | * **key** (str or None) – * **value** ([vncsdk.DataBuffer](https://www.realvnc.com/en/developer/docs/latest/api/python/DataBuffer.html" \l "vncsdk.DataBuffer" \o "vncsdk.DataBuffer)) – |
| **Returns:** | None |

DirectTcp

*class***vncsdk.DirectTcp**

A class containing constants used in TCP connections.

For more information, see [DirectTcp.h](https://www.realvnc.com/en/developer/docs/latest/api/c/DirectTcp.h.html).

Members

**vncsdk.DirectTcp.DEFAULT\_PORT**

The default port for VNC direct TCP connections.

# DirectTcpConnector

class **vncsdk.DirectTcpConnector**

Connector used to make outgoing TCP connections

## Constructor Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [\_\_init\_\_](https://www.realvnc.com/en/developer/docs/latest/api/python/DirectTcpConnector.html#constructor)()  Creates a new TCP Connector which is used to make outgoing connections to TCP listeners. |

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [connect](https://www.realvnc.com/en/developer/docs/latest/api/python/DirectTcpConnector.html#DirectTcpConnector.connect)(host\_or\_ip\_address, port, connection\_handler)  Begins an outgoing TCP connection to the given hostname or IP address. |
|  | [destroy](https://www.realvnc.com/en/developer/docs/latest/api/python/DirectTcpConnector.html#DirectTcpConnector.destroy)()  Destroys the TCP Connector. |
|  | [set\_proxy\_settings](https://www.realvnc.com/en/developer/docs/latest/api/python/DirectTcpConnector.html#DirectTcpConnector.set_proxy_settings)(system\_proxy, proxy\_url)  Set proxy server settings for this TCP Connector. |

## Constructor

**vncsdk.DirectTcpConnector.\_\_init\_\_**()

Creates a new TCP Connector which is used to make outgoing connections to TCP listeners.

For more information, see [vnc\_DirectTcpConnector\_create()](https://www.realvnc.com/en/developer/docs/latest/api/c/DirectTcp.h.html" \l "_CPPv229vnc_DirectTcpConnector_createv" \o "vnc_DirectTcpConnector_create).

## Methods

**connect**(host\_or\_ip\_address, port, connection\_handler)

Begins an outgoing TCP connection to the given hostname or IP address.

For more information, see [vnc\_DirectTcpConnector\_connect()](https://www.realvnc.com/en/developer/docs/latest/api/c/DirectTcp.h.html" \l "_CPPv230vnc_DirectTcpConnector_connectP22vnc_DirectTcpConnectorPKciP21vnc_ConnectionHandler" \o "vnc_DirectTcpConnector_connect).

|  |  |
| --- | --- |
| **Parameters:** | * **host\_or\_ip\_address** (str) – * **port** (int) – * **connection\_handler** ([vncsdk.ConnectionHandler](https://www.realvnc.com/en/developer/docs/latest/api/python/ConnectionHandler.html" \l "vncsdk.ConnectionHandler" \o "vncsdk.ConnectionHandler)) – |

**destroy**()

Destroys the TCP Connector.

For more information, see [vnc\_DirectTcpConnector\_destroy()](https://www.realvnc.com/en/developer/docs/latest/api/c/DirectTcp.h.html" \l "_CPPv230vnc_DirectTcpConnector_destroyP22vnc_DirectTcpConnector" \o "vnc_DirectTcpConnector_destroy).

**set\_proxy\_settings**(system\_proxy, proxy\_url)

Set proxy server settings for this TCP Connector.

For more information, see [vnc\_DirectTcpConnector\_setProxySettings()](https://www.realvnc.com/en/developer/docs/latest/api/c/DirectTcp.h.html" \l "_CPPv239vnc_DirectTcpConnector_setProxySettingsP22vnc_DirectTcpConnector10vnc_bool_tPKc" \o "vnc_DirectTcpConnector_setProxySettings).

|  |  |
| --- | --- |
| **Parameters:** | * **system\_proxy** (bool) – * **proxy\_url** (str or None) – |

# DirectTcpListener

class **vncsdk.DirectTcpListener**

Listener used to receive incoming TCP connections

## Nested Classes

* [vncsdk.DirectTcpListener.Callback](https://www.realvnc.com/en/developer/docs/latest/api/python/DirectTcpListener-Callback.html#vncsdk.DirectTcpListener.Callback)

## Constructor Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [\_\_init\_\_](https://www.realvnc.com/en/developer/docs/latest/api/python/DirectTcpListener.html#constructor)(port, address\_list, connection\_handler, callback)  Begin listening for incoming TCP connections on the given port (IPv4 and IPv6). |

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [destroy](https://www.realvnc.com/en/developer/docs/latest/api/python/DirectTcpListener.html#DirectTcpListener.destroy)()  Destroys the TCP listener. |

## Constructor

**vncsdk.DirectTcpListener.\_\_init\_\_**(port, address\_list, connection\_handler, callback)

Begin listening for incoming TCP connections on the given port (IPv4 and IPv6).

For more information, see [vnc\_DirectTcpListener\_create()](https://www.realvnc.com/en/developer/docs/latest/api/c/DirectTcp.h.html" \l "_CPPv228vnc_DirectTcpListener_createiPKcP21vnc_ConnectionHandlerPK30vnc_DirectTcpListener_CallbackPv" \o "vnc_DirectTcpListener_create).

|  |  |
| --- | --- |
| **Parameters:** | * **port** (int) – * **address\_list** (str or None) – * **connection\_handler** ([vncsdk.ConnectionHandler](https://www.realvnc.com/en/developer/docs/latest/api/python/ConnectionHandler.html" \l "vncsdk.ConnectionHandler" \o "vncsdk.ConnectionHandler)) – * **callback** ([vncsdk.DirectTcpListener.Callback](https://www.realvnc.com/en/developer/docs/latest/api/python/DirectTcpListener-Callback.html" \l "vncsdk.DirectTcpListener.Callback" \o "vncsdk.DirectTcpListener.Callback) or None) – |

## Methods

**destroy**()

Destroys the TCP listener.

For more information, see [vnc\_DirectTcpListener\_destroy()](https://www.realvnc.com/en/developer/docs/latest/api/c/DirectTcp.h.html" \l "_CPPv229vnc_DirectTcpListener_destroyP21vnc_DirectTcpListener" \o "vnc_DirectTcpListener_destroy).

# DirectTcpListener.Callback

**vncsdk.DirectTcpListener.Callback**

Callback for filtering incoming TCP connections.

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
| bool | [filter\_connection](https://www.realvnc.com/en/developer/docs/latest/api/python/DirectTcpListener-Callback.html#DirectTcpListener.Callback.filter_connection)(listener, ip\_address, port)  Notification to provide address-based filtering of incoming connections. |

## Methods

**filter\_connection**(listener, ip\_address, port)

Notification to provide address-based filtering of incoming connections.

For more information, see vnc\_DirectTcpListener\_Callback::filterConnection.

|  |  |
| --- | --- |
| **Parameters:** | * **listener** ([vncsdk.DirectTcpListener](https://www.realvnc.com/en/developer/docs/latest/api/python/DirectTcpListener.html" \l "vncsdk.DirectTcpListener" \o "vncsdk.DirectTcpListener)) – * **ip\_address** (str or None) – * **port** (int) – |
| **Return type:** | bool |

DirectUdp

*class***vncsdk.DirectUdp**

A class containing constants used in UDP connections.

For more information, see [DirectUdp.h](https://www.realvnc.com/en/developer/docs/latest/api/c/DirectUdp.h.html).

Members

**vncsdk.DirectUdp.DEFAULT\_PORT**

The default port for VNC direct UDP connections.

# DirectUdpConnector

class **vncsdk.DirectUdpConnector**

Connector used to make outgoing UDP connections

## Constructor Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [\_\_init\_\_](https://www.realvnc.com/en/developer/docs/latest/api/python/DirectUdpConnector.html#constructor)()  Creates a new UDP Connector which is used to make outgoing connections to UDP listeners. |

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [connect](https://www.realvnc.com/en/developer/docs/latest/api/python/DirectUdpConnector.html#DirectUdpConnector.connect)(host\_or\_ip\_address, port, connection\_handler)  Begins an outgoing UDP connection to the given hostname or IP address. |
|  | [destroy](https://www.realvnc.com/en/developer/docs/latest/api/python/DirectUdpConnector.html#DirectUdpConnector.destroy)()  Destroys the UDP Connector. |

## Constructor

**vncsdk.DirectUdpConnector.\_\_init\_\_**()

Creates a new UDP Connector which is used to make outgoing connections to UDP listeners.

For more information, see [vnc\_DirectUdpConnector\_create()](https://www.realvnc.com/en/developer/docs/latest/api/c/DirectUdp.h.html" \l "_CPPv229vnc_DirectUdpConnector_createv" \o "vnc_DirectUdpConnector_create).

## Methods

**connect**(host\_or\_ip\_address, port, connection\_handler)

Begins an outgoing UDP connection to the given hostname or IP address.

For more information, see [vnc\_DirectUdpConnector\_connect()](https://www.realvnc.com/en/developer/docs/latest/api/c/DirectUdp.h.html" \l "_CPPv230vnc_DirectUdpConnector_connectP22vnc_DirectUdpConnectorPKciP21vnc_ConnectionHandler" \o "vnc_DirectUdpConnector_connect).

|  |  |
| --- | --- |
| **Parameters:** | * **host\_or\_ip\_address** (str) – * **port** (int) – * **connection\_handler** ([vncsdk.ConnectionHandler](https://www.realvnc.com/en/developer/docs/latest/api/python/ConnectionHandler.html" \l "vncsdk.ConnectionHandler" \o "vncsdk.ConnectionHandler)) – |

**destroy**()

Destroys the UDP Connector.

For more information, see [vnc\_DirectUdpConnector\_destroy()](https://www.realvnc.com/en/developer/docs/latest/api/c/DirectUdp.h.html" \l "_CPPv230vnc_DirectUdpConnector_destroyP22vnc_DirectUdpConnector" \o "vnc_DirectUdpConnector_destroy).

# DirectUdpListener

class **vncsdk.DirectUdpListener**

Listener used to receive incoming UDP connections

## Nested Classes

* [vncsdk.DirectUdpListener.Callback](https://www.realvnc.com/en/developer/docs/latest/api/python/DirectUdpListener-Callback.html#vncsdk.DirectUdpListener.Callback)

## Constructor Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [\_\_init\_\_](https://www.realvnc.com/en/developer/docs/latest/api/python/DirectUdpListener.html#constructor)(port, address\_list, connection\_handler, callback)  Begin listening for incoming UDP connections on the given port (IPv4 and IPv6). |

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [destroy](https://www.realvnc.com/en/developer/docs/latest/api/python/DirectUdpListener.html#DirectUdpListener.destroy)()  Destroys the UDP listener. |

## Constructor

**vncsdk.DirectUdpListener.\_\_init\_\_**(port, address\_list, connection\_handler, callback)

Begin listening for incoming UDP connections on the given port (IPv4 and IPv6).

For more information, see [vnc\_DirectUdpListener\_create()](https://www.realvnc.com/en/developer/docs/latest/api/c/DirectUdp.h.html" \l "_CPPv228vnc_DirectUdpListener_createiPKcP21vnc_ConnectionHandlerPK30vnc_DirectUdpListener_CallbackPv" \o "vnc_DirectUdpListener_create).

|  |  |
| --- | --- |
| **Parameters:** | * **port** (int) – * **address\_list** (str or None) – * **connection\_handler** ([vncsdk.ConnectionHandler](https://www.realvnc.com/en/developer/docs/latest/api/python/ConnectionHandler.html" \l "vncsdk.ConnectionHandler" \o "vncsdk.ConnectionHandler)) – * **callback** ([vncsdk.DirectUdpListener.Callback](https://www.realvnc.com/en/developer/docs/latest/api/python/DirectUdpListener-Callback.html" \l "vncsdk.DirectUdpListener.Callback" \o "vncsdk.DirectUdpListener.Callback) or None) – |

## Methods

**destroy**()

Destroys the UDP listener.

For more information, see [vnc\_DirectUdpListener\_destroy()](https://www.realvnc.com/en/developer/docs/latest/api/c/DirectUdp.h.html" \l "_CPPv229vnc_DirectUdpListener_destroyP21vnc_DirectUdpListener" \o "vnc_DirectUdpListener_destroy).

# DirectUdpListener.Callback

**vncsdk.DirectUdpListener.Callback**

Callback for filtering incoming UDP connections.

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
| bool | [filter\_connection](https://www.realvnc.com/en/developer/docs/latest/api/python/DirectUdpListener-Callback.html#DirectUdpListener.Callback.filter_connection)(listener, ip\_address, port)  Notification to provide address-based filtering of incoming connections. |

## Methods

**filter\_connection**(listener, ip\_address, port)

Notification to provide address-based filtering of incoming connections.

For more information, see vnc\_DirectUdpListener\_Callback::filterConnection.

|  |  |
| --- | --- |
| **Parameters:** | * **listener** ([vncsdk.DirectUdpListener](https://www.realvnc.com/en/developer/docs/latest/api/python/DirectUdpListener.html" \l "vncsdk.DirectUdpListener" \o "vncsdk.DirectUdpListener)) – * **ip\_address** (str or None) – * **port** (int) – |
| **Return type:** | bool |

# DisplayManager

class **vncsdk.DisplayManager**

Manages the list of displays made available by a Server.

## Nested Classes

* [vncsdk.DisplayManager.Callback](https://www.realvnc.com/en/developer/docs/latest/api/python/DisplayManager-Callback.html#vncsdk.DisplayManager.Callback)

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [enable](https://www.realvnc.com/en/developer/docs/latest/api/python/DisplayManager.html#DisplayManager.enable)(enable)  Specifies whether screen sharing is enabled. |
| int | [get\_display\_count](https://www.realvnc.com/en/developer/docs/latest/api/python/DisplayManager.html#DisplayManager.get_display_count)()  Returns the number of displays. |
| int | [get\_display\_index](https://www.realvnc.com/en/developer/docs/latest/api/python/DisplayManager.html#DisplayManager.get_display_index)()  Gets the index of the currently selected display. |
| str | [get\_id](https://www.realvnc.com/en/developer/docs/latest/api/python/DisplayManager.html#DisplayManager.get_id)(index)  Gets the ID of the display (typically a short string). |
| str | [get\_name](https://www.realvnc.com/en/developer/docs/latest/api/python/DisplayManager.html#DisplayManager.get_name)(index)  Gets the name of the display (typically a human-readable string). |
| int | [get\_origin\_x](https://www.realvnc.com/en/developer/docs/latest/api/python/DisplayManager.html#DisplayManager.get_origin_x)(index)  Gets the horizontal origin of the display in pixels. |
| int | [get\_origin\_y](https://www.realvnc.com/en/developer/docs/latest/api/python/DisplayManager.html#DisplayManager.get_origin_y)(index)  Gets the vertical origin of the display in pixels. |
| int | [get\_resolution\_x](https://www.realvnc.com/en/developer/docs/latest/api/python/DisplayManager.html#DisplayManager.get_resolution_x)(index)  Gets the horizontal resolution of the display in pixels. |
| int | [get\_resolution\_y](https://www.realvnc.com/en/developer/docs/latest/api/python/DisplayManager.html#DisplayManager.get_resolution_y)(index)  Gets the vertical resolution of the display in pixels. |
| bool | [is\_enabled](https://www.realvnc.com/en/developer/docs/latest/api/python/DisplayManager.html#DisplayManager.is_enabled)()  Returns whether the server is sharing its screens, whether it is being called from a server or a viewer. |
| bool | [is\_primary](https://www.realvnc.com/en/developer/docs/latest/api/python/DisplayManager.html#DisplayManager.is_primary)(index)  Returns whether this is the primary (or main) display. |
| bool | [is\_select\_display\_allowed](https://www.realvnc.com/en/developer/docs/latest/api/python/DisplayManager.html#DisplayManager.is_select_display_allowed)()  Returns whether the selectDisplay() call is permitted. |
|  | [select\_display](https://www.realvnc.com/en/developer/docs/latest/api/python/DisplayManager.html#DisplayManager.select_display)(index)  Chooses a particular display to remote to connected Viewer app users. |
|  | [set\_callback](https://www.realvnc.com/en/developer/docs/latest/api/python/DisplayManager.html#DisplayManager.set_callback)(callback)  Registers a callback notifying when displays are added or removed, or the resolution of an existing display changes. |

## Methods

**enable**(enable)

Specifies whether screen sharing is enabled.

For more information, see [vnc\_DisplayManager\_enable()](https://www.realvnc.com/en/developer/docs/latest/api/c/Displays.h.html" \l "_CPPv225vnc_DisplayManager_enableP18vnc_DisplayManager10vnc_bool_t" \o "vnc_DisplayManager_enable).

|  |  |
| --- | --- |
| **Parameters:** | **enable** (bool) – |

**get\_display\_count**()

Returns the number of displays.

For more information, see [vnc\_DisplayManager\_getDisplayCount()](https://www.realvnc.com/en/developer/docs/latest/api/c/Displays.h.html" \l "_CPPv234vnc_DisplayManager_getDisplayCountP18vnc_DisplayManager" \o "vnc_DisplayManager_getDisplayCount).

|  |  |
| --- | --- |
| **Return type:** | int |

**get\_display\_index**()

Gets the index of the currently selected display.

For more information, see [vnc\_DisplayManager\_getDisplayIndex()](https://www.realvnc.com/en/developer/docs/latest/api/c/Displays.h.html" \l "_CPPv234vnc_DisplayManager_getDisplayIndexP18vnc_DisplayManager" \o "vnc_DisplayManager_getDisplayIndex).

|  |  |
| --- | --- |
| **Return type:** | int |

**get\_id**(index)

Gets the ID of the display (typically a short string).

For more information, see [vnc\_DisplayManager\_getId()](https://www.realvnc.com/en/developer/docs/latest/api/c/Displays.h.html" \l "_CPPv224vnc_DisplayManager_getIdP18vnc_DisplayManageri" \o "vnc_DisplayManager_getId).

|  |  |
| --- | --- |
| **Parameters:** | **index** (int) – |
| **Return type:** | str |

**get\_name**(index)

Gets the name of the display (typically a human-readable string).

For more information, see [vnc\_DisplayManager\_getName()](https://www.realvnc.com/en/developer/docs/latest/api/c/Displays.h.html" \l "_CPPv226vnc_DisplayManager_getNameP18vnc_DisplayManageri" \o "vnc_DisplayManager_getName).

|  |  |
| --- | --- |
| **Parameters:** | **index** (int) – |
| **Return type:** | str |

**get\_origin\_x**(index)

Gets the horizontal origin of the display in pixels.

For more information, see [vnc\_DisplayManager\_getOriginX()](https://www.realvnc.com/en/developer/docs/latest/api/c/Displays.h.html" \l "_CPPv229vnc_DisplayManager_getOriginXP18vnc_DisplayManageri" \o "vnc_DisplayManager_getOriginX).

|  |  |
| --- | --- |
| **Parameters:** | **index** (int) – |
| **Return type:** | int |

**get\_origin\_y**(index)

Gets the vertical origin of the display in pixels.

For more information, see [vnc\_DisplayManager\_getOriginY()](https://www.realvnc.com/en/developer/docs/latest/api/c/Displays.h.html" \l "_CPPv229vnc_DisplayManager_getOriginYP18vnc_DisplayManageri" \o "vnc_DisplayManager_getOriginY).

|  |  |
| --- | --- |
| **Parameters:** | **index** (int) – |
| **Return type:** | int |

**get\_resolution\_x**(index)

Gets the horizontal resolution of the display in pixels.

For more information, see [vnc\_DisplayManager\_getResolutionX()](https://www.realvnc.com/en/developer/docs/latest/api/c/Displays.h.html" \l "_CPPv233vnc_DisplayManager_getResolutionXP18vnc_DisplayManageri" \o "vnc_DisplayManager_getResolutionX).

|  |  |
| --- | --- |
| **Parameters:** | **index** (int) – |
| **Return type:** | int |

**get\_resolution\_y**(index)

Gets the vertical resolution of the display in pixels.

For more information, see [vnc\_DisplayManager\_getResolutionY()](https://www.realvnc.com/en/developer/docs/latest/api/c/Displays.h.html" \l "_CPPv233vnc_DisplayManager_getResolutionYP18vnc_DisplayManageri" \o "vnc_DisplayManager_getResolutionY).

|  |  |
| --- | --- |
| **Parameters:** | **index** (int) – |
| **Return type:** | int |

**is\_enabled**()

Returns whether the server is sharing its screens, whether it is being called from a server or a viewer.

For more information, see [vnc\_DisplayManager\_isEnabled()](https://www.realvnc.com/en/developer/docs/latest/api/c/Displays.h.html" \l "_CPPv228vnc_DisplayManager_isEnabledP18vnc_DisplayManager" \o "vnc_DisplayManager_isEnabled).

|  |  |
| --- | --- |
| **Return type:** | bool |

**is\_primary**(index)

Returns whether this is the primary (or main) display.

For more information, see [vnc\_DisplayManager\_isPrimary()](https://www.realvnc.com/en/developer/docs/latest/api/c/Displays.h.html" \l "_CPPv228vnc_DisplayManager_isPrimaryP18vnc_DisplayManageri" \o "vnc_DisplayManager_isPrimary).

|  |  |
| --- | --- |
| **Parameters:** | **index** (int) – |
| **Return type:** | bool |

**is\_select\_display\_allowed**()

Returns whether the selectDisplay() call is permitted.

For more information, see [vnc\_DisplayManager\_isSelectDisplayAllowed()](https://www.realvnc.com/en/developer/docs/latest/api/c/Displays.h.html" \l "_CPPv241vnc_DisplayManager_isSelectDisplayAllowedP18vnc_DisplayManager" \o "vnc_DisplayManager_isSelectDisplayAllowed).

|  |  |
| --- | --- |
| **Return type:** | bool |

**select\_display**(index)

Chooses a particular display to remote to connected Viewer app users.

For more information, see [vnc\_DisplayManager\_selectDisplay()](https://www.realvnc.com/en/developer/docs/latest/api/c/Displays.h.html" \l "_CPPv232vnc_DisplayManager_selectDisplayP18vnc_DisplayManageri" \o "vnc_DisplayManager_selectDisplay).

|  |  |
| --- | --- |
| **Parameters:** | **index** (int) – |

**set\_callback**(callback)

Registers a callback notifying when displays are added or removed, or the resolution of an existing display changes.

For more information, see [vnc\_DisplayManager\_setCallback()](https://www.realvnc.com/en/developer/docs/latest/api/c/Displays.h.html" \l "_CPPv230vnc_DisplayManager_setCallbackP18vnc_DisplayManagerPK27vnc_DisplayManager_CallbackPv" \o "vnc_DisplayManager_setCallback).

|  |  |
| --- | --- |
| **Parameters:** | **callback** ([vncsdk.DisplayManager.Callback](https://www.realvnc.com/en/developer/docs/latest/api/python/DisplayManager-Callback.html" \l "vncsdk.DisplayManager.Callback" \o "vncsdk.DisplayManager.Callback) or None) – |

DisplayManager.Callback

**vncsdk.DisplayManager.Callback**

Callback receiving display changes.

Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [displays\_changed](https://www.realvnc.com/en/developer/docs/latest/api/python/DisplayManager-Callback.html#DisplayManager.Callback.displays_changed)(display\_manager)  Notification that a display has been added or removed, or the resolution of an existing display has changed. |

Methods

**displays\_changed**(*display\_manager*)

Notification that a display has been added or removed, or the resolution of an existing display has changed.

For more information, see vnc\_DisplayManager\_Callback::displaysChanged.

|  |  |
| --- | --- |
| **Parameters:** | **display\_manager** ([vncsdk.DisplayManager](https://www.realvnc.com/en/developer/docs/latest/api/python/DisplayManager.html" \l "vncsdk.DisplayManager" \o "vncsdk.DisplayManager)) – |
| **Returns:** | None |

# EventLoop

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [run\_on\_loop](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoop.html#vncsdk.EventLoop.run_on_loop)(runnable, args=(), kwargs={})  Schedules a task for immediate execution on the SDK’s thread. |
|  | [run](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoop.html#vncsdk.EventLoop.run)()  Runs the event loop until [vncsdk.EventLoop.stop()](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoop.html" \l "vncsdk.EventLoop.stop" \o "vncsdk.EventLoop.stop) is called. |
| bool | [should\_stop](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoop.html#vncsdk.EventLoop.should_stop)()  Returns a boolean flag indicating whether the event loop should stop, and immediately clears it. |
|  | [stop](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoop.html#vncsdk.EventLoop.stop)()  Stops the event loop previously started with [vncsdk.EventLoop.run()](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoop.html" \l "vncsdk.EventLoop.run" \o "vncsdk.EventLoop.run), causing [vncsdk.EventLoop.run()](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoop.html" \l "vncsdk.EventLoop.run" \o "vncsdk.EventLoop.run) to return promptly. |

## Static methods

static **vncsdk.EventLoop.run\_on\_loop**(runnable, args=(), kwargs={})

Schedules a task for immediate execution on the SDK’s thread. The task will then be run during the current or next invocation of [vncsdk.EventLoop.run()](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoop.html" \l "vncsdk.EventLoop.run" \o "vncsdk.EventLoop.run).

|  |  |
| --- | --- |
| **Parameters:** | * **runnable** (callable) – A function or callable object to invoke on the SDK’s loop * **args** (tuple) – An optional argument tuple to pass to the callable * **kwargs** (dict) – An optional dictionary of named keyword arguments to pass to the callable |

**vncsdk.EventLoop.run**()

Runs the event loop until [vncsdk.EventLoop.stop()](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoop.html" \l "vncsdk.EventLoop.stop" \o "vncsdk.EventLoop.stop) is called.

For more information, see [vnc\_EventLoop\_run()](https://www.realvnc.com/en/developer/docs/latest/api/c/EventLoop.h.html" \l "_CPPv217vnc_EventLoop_runv" \o "vnc_EventLoop_run).

**vncsdk.EventLoop.should\_stop**()

Returns a boolean flag indicating whether the event loop should stop, and immediately clears it.

For more information, see [vnc\_EventLoop\_shouldStop()](https://www.realvnc.com/en/developer/docs/latest/api/c/EventLoop.h.html" \l "_CPPv224vnc_EventLoop_shouldStopv" \o "vnc_EventLoop_shouldStop).

|  |  |
| --- | --- |
| **Return type:** | bool |

**vncsdk.EventLoop.stop**()

Stops the event loop previously started with [vncsdk.EventLoop.run()](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoop.html" \l "vncsdk.EventLoop.run" \o "vncsdk.EventLoop.run), causing [vncsdk.EventLoop.run()](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoop.html" \l "vncsdk.EventLoop.run" \o "vncsdk.EventLoop.run) to return promptly.

For more information, see [vnc\_EventLoop\_stop()](https://www.realvnc.com/en/developer/docs/latest/api/c/EventLoop.h.html" \l "_CPPv218vnc_EventLoop_stopv" \o "vnc_EventLoop_stop).

# EventLoopFd

## Nested Classes

* [vncsdk.EventLoopFd.Callback](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoopFd-Callback.html#vncsdk.EventLoopFd.Callback)
* [vncsdk.EventLoopFd.Event](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoopFd-Event.html#vncsdk.EventLoopFd.Event)

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
| int | [handle\_events](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoopFd.html#vncsdk.EventLoopFd.handle_events)()  Handles events on the file descriptors and process expired timers. |
|  | [mark\_events](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoopFd.html#vncsdk.EventLoopFd.mark_events)(fd, events)  Marks event(s) that occurred on the specified file descriptor. |
|  | [set\_callback](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoopFd.html#vncsdk.EventLoopFd.set_callback)(callback)  Sets the event loop callback. |

## Static methods

**vncsdk.EventLoopFd.handle\_events**()

Handles events on the file descriptors and process expired timers.

For more information, see [vnc\_EventLoopFd\_handleEvents()](https://www.realvnc.com/en/developer/docs/latest/api/c/EventLoopFd.h.html" \l "_CPPv228vnc_EventLoopFd_handleEventsv" \o "vnc_EventLoopFd_handleEvents).

|  |  |
| --- | --- |
| **Return type:** | int |

**vncsdk.EventLoopFd.mark\_events**(fd, events)

Marks event(s) that occurred on the specified file descriptor.

For more information, see [vnc\_EventLoopFd\_markEvents()](https://www.realvnc.com/en/developer/docs/latest/api/c/EventLoopFd.h.html" \l "_CPPv226vnc_EventLoopFd_markEventsii" \o "vnc_EventLoopFd_markEvents).

|  |  |
| --- | --- |
| **Parameters:** | * **fd** (int) – * **events** ({[vncsdk.EventLoopFd.Event](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoopFd-Event.html" \l "vncsdk.EventLoopFd.Event" \o "vncsdk.EventLoopFd.Event)}) – |

**vncsdk.EventLoopFd.set\_callback**(callback)

Sets the event loop callback.

For more information, see [vnc\_EventLoopFd\_setCallback()](https://www.realvnc.com/en/developer/docs/latest/api/c/EventLoopFd.h.html" \l "_CPPv227vnc_EventLoopFd_setCallbackPK24vnc_EventLoopFd_CallbackPv" \o "vnc_EventLoopFd_setCallback).

|  |  |
| --- | --- |
| **Parameters:** | **callback** ([vncsdk.EventLoopFd.Callback](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoopFd-Callback.html" \l "vncsdk.EventLoopFd.Callback" \o "vncsdk.EventLoopFd.Callback) or None) – |

# EventLoopFd.Callback

**vncsdk.EventLoopFd.Callback**

Callback receiving notifications for a file-descriptor-based event loop.

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [event\_updated](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoopFd-Callback.html#EventLoopFd.Callback.event_updated)(fd, event\_mask)  Notification that a file descriptor’s event mask has changed. |
|  | [timer\_updated](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoopFd-Callback.html#EventLoopFd.Callback.timer_updated)(expiry\_ms)  Notification that the timer expiry period has been updated. |

## Methods

**event\_updated**(fd, event\_mask)

Notification that a file descriptor’s event mask has changed.

For more information, see vnc\_EventLoopFd\_Callback::eventUpdated.

|  |  |
| --- | --- |
| **Parameters:** | * **fd** (int) – * **event\_mask** ({[vncsdk.EventLoopFd.Event](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoopFd-Event.html" \l "vncsdk.EventLoopFd.Event" \o "vncsdk.EventLoopFd.Event)}) – |
| **Returns:** | None |

**timer\_updated**(expiry\_ms)

Notification that the timer expiry period has been updated.

For more information, see vnc\_EventLoopFd\_Callback::timerUpdated.

|  |  |
| --- | --- |
| **Parameters:** | **expiry\_ms** (int) – |
| **Returns:** | None |

EventLoopFd.Event

*class***vncsdk.EventLoopFd.Event**

Enumeration of file descriptor events for event selection.

Enumeration Attributes

**vncsdk.EventLoopFd.Event.READ**

Monitor using readfds with select() (the second argument), or POLLIN with poll().

**vncsdk.EventLoopFd.Event.WRITE**

Monitor using writefds with select() (the third argument), or POLLOUT with poll().

**vncsdk.EventLoopFd.Event.EXCEPT**

Monitor using exceptfds with select() (the fourth argument), or POLLPRI with poll().

EventLoopType

*class***vncsdk.EventLoopType**

Enumeration of types of event loop used by the SDK.

Enumeration Attributes

**vncsdk.EventLoopType.DEFAULT**

The default event loop is a Windows event loop on Windows, a file-descriptor event loop on Linux, a Core Foundation event loop on OS X and iOS, and an Android event loop on Android. There is no event loop in HTML5.

**vncsdk.EventLoopType.WIN**

The Windows event loop is only available on Windows.

**vncsdk.EventLoopType.FD**

The file-descriptor event loop is available on Linux, OS X, iOS, and Android.

**vncsdk.EventLoopType.CF**

The Core Foundation event loop is available on OS X and iOS.

**vncsdk.EventLoopType.ANDROID**

The Android “Looper” event loop is only available on Android.

# EventLoopWin

## Nested Classes

* [vncsdk.EventLoopWin.Callback](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoopWin-Callback.html#vncsdk.EventLoopWin.Callback)

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
| {int} | [get\_events](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoopWin.html#vncsdk.EventLoopWin.get_events)()  Gets the array of events that the SDK currently wishes to be notified of. |
| int | [handle\_event](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoopWin.html#vncsdk.EventLoopWin.handle_event)(event)  Handles the given event (if any) and process expired timers. |
|  | [set\_callback](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoopWin.html#vncsdk.EventLoopWin.set_callback)(callback)  Sets the event loop callback. |

## Static methods

**vncsdk.EventLoopWin.get\_events**()

Gets the array of events that the SDK currently wishes to be notified of.

For more information, see [vnc\_EventLoopWin\_getEvents()](https://www.realvnc.com/en/developer/docs/latest/api/c/EventLoopWin.h.html" \l "_CPPv226vnc_EventLoopWin_getEventsP6HANDLE" \o "vnc_EventLoopWin_getEvents).

|  |  |
| --- | --- |
| **Return type:** | {int} |

**vncsdk.EventLoopWin.handle\_event**(event)

Handles the given event (if any) and process expired timers.

For more information, see [vnc\_EventLoopWin\_handleEvent()](https://www.realvnc.com/en/developer/docs/latest/api/c/EventLoopWin.h.html" \l "_CPPv228vnc_EventLoopWin_handleEvent6HANDLE" \o "vnc_EventLoopWin_handleEvent).

|  |  |
| --- | --- |
| **Parameters:** | **event** (int) – |
| **Return type:** | int |

**vncsdk.EventLoopWin.set\_callback**(callback)

Sets the event loop callback.

For more information, see [vnc\_EventLoopWin\_setCallback()](https://www.realvnc.com/en/developer/docs/latest/api/c/EventLoopWin.h.html" \l "_CPPv228vnc_EventLoopWin_setCallbackPK25vnc_EventLoopWin_CallbackPv" \o "vnc_EventLoopWin_setCallback).

|  |  |
| --- | --- |
| **Parameters:** | **callback** ([vncsdk.EventLoopWin.Callback](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoopWin-Callback.html" \l "vncsdk.EventLoopWin.Callback" \o "vncsdk.EventLoopWin.Callback) or None) – |

# EventLoopWin.Callback

**vncsdk.EventLoopWin.Callback**

Callback receiving notifications for a Windows HANDLE-based event loop.

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [event\_updated](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoopWin-Callback.html#EventLoopWin.Callback.event_updated)(event, add)  Notification that a Windows event is being added or removed. |
|  | [timer\_updated](https://www.realvnc.com/en/developer/docs/latest/api/python/EventLoopWin-Callback.html#EventLoopWin.Callback.timer_updated)(expiry\_ms)  Notification that the timer expiry period has been updated. |

## Methods

**event\_updated**(event, add)

Notification that a Windows event is being added or removed.

For more information, see vnc\_EventLoopWin\_Callback::eventUpdated.

|  |  |
| --- | --- |
| **Parameters:** | * **event** (int) – * **add** (bool) – |
| **Returns:** | None |

**timer\_updated**(expiry\_ms)

Notification that the timer expiry period has been updated.

For more information, see vnc\_EventLoopWin\_Callback::timerUpdated.

|  |  |
| --- | --- |
| **Parameters:** | **expiry\_ms** (int) – |
| **Returns:** | None |

Keyboard

*class***vncsdk.Keyboard**

For more information, see [Keyboard.h](https://www.realvnc.com/en/developer/docs/latest/api/c/Keyboard.h.html).

Members

**vncsdk.Keyboard.XK\_Alt\_L**

**vncsdk.Keyboard.XK\_Alt\_R**

**vncsdk.Keyboard.XK\_BackSpace**

**vncsdk.Keyboard.XK\_Break**

**vncsdk.Keyboard.XK\_Control\_L**

**vncsdk.Keyboard.XK\_Control\_R**

**vncsdk.Keyboard.XK\_Delete**

**vncsdk.Keyboard.XK\_Down**

**vncsdk.Keyboard.XK\_End**

**vncsdk.Keyboard.XK\_Escape**

**vncsdk.Keyboard.XK\_F1**

**vncsdk.Keyboard.XK\_F10**

**vncsdk.Keyboard.XK\_F11**

**vncsdk.Keyboard.XK\_F12**

**vncsdk.Keyboard.XK\_F2**

**vncsdk.Keyboard.XK\_F3**

**vncsdk.Keyboard.XK\_F4**

**vncsdk.Keyboard.XK\_F5**

**vncsdk.Keyboard.XK\_F6**

**vncsdk.Keyboard.XK\_F7**

**vncsdk.Keyboard.XK\_F8**

**vncsdk.Keyboard.XK\_F9**

**vncsdk.Keyboard.XK\_Home**

**vncsdk.Keyboard.XK\_ISO\_Level3\_Shift**

**vncsdk.Keyboard.XK\_Insert**

**vncsdk.Keyboard.XK\_KP\_0**

**vncsdk.Keyboard.XK\_KP\_1**

**vncsdk.Keyboard.XK\_KP\_2**

**vncsdk.Keyboard.XK\_KP\_3**

**vncsdk.Keyboard.XK\_KP\_4**

**vncsdk.Keyboard.XK\_KP\_5**

**vncsdk.Keyboard.XK\_KP\_6**

**vncsdk.Keyboard.XK\_KP\_7**

**vncsdk.Keyboard.XK\_KP\_8**

**vncsdk.Keyboard.XK\_KP\_9**

**vncsdk.Keyboard.XK\_KP\_Add**

**vncsdk.Keyboard.XK\_KP\_Decimal**

**vncsdk.Keyboard.XK\_KP\_Delete**

**vncsdk.Keyboard.XK\_KP\_Divide**

**vncsdk.Keyboard.XK\_KP\_Down**

**vncsdk.Keyboard.XK\_KP\_End**

**vncsdk.Keyboard.XK\_KP\_Enter**

**vncsdk.Keyboard.XK\_KP\_Home**

**vncsdk.Keyboard.XK\_KP\_Insert**

**vncsdk.Keyboard.XK\_KP\_Left**

**vncsdk.Keyboard.XK\_KP\_Multiply**

**vncsdk.Keyboard.XK\_KP\_Page\_Down**

**vncsdk.Keyboard.XK\_KP\_Page\_Up**

**vncsdk.Keyboard.XK\_KP\_Right**

**vncsdk.Keyboard.XK\_KP\_Separator**

**vncsdk.Keyboard.XK\_KP\_Subtract**

**vncsdk.Keyboard.XK\_KP\_Up**

**vncsdk.Keyboard.XK\_Left**

**vncsdk.Keyboard.XK\_Menu**

**vncsdk.Keyboard.XK\_Page\_Down**

**vncsdk.Keyboard.XK\_Page\_Up**

**vncsdk.Keyboard.XK\_Pause**

**vncsdk.Keyboard.XK\_Print**

**vncsdk.Keyboard.XK\_Return**

**vncsdk.Keyboard.XK\_Right**

**vncsdk.Keyboard.XK\_Scroll\_Lock**

**vncsdk.Keyboard.XK\_Shift\_L**

**vncsdk.Keyboard.XK\_Shift\_R**

**vncsdk.Keyboard.XK\_Super\_L**

**vncsdk.Keyboard.XK\_Super\_R**

**vncsdk.Keyboard.XK\_Sys\_Req**

**vncsdk.Keyboard.XK\_Tab**

**vncsdk.Keyboard.XK\_Up**

# Logger

## Nested Classes

* [vncsdk.Logger.Callback](https://www.realvnc.com/en/developer/docs/latest/api/python/Logger-Callback.html#vncsdk.Logger.Callback)
* [vncsdk.Logger.Level](https://www.realvnc.com/en/developer/docs/latest/api/python/Logger-Level.html#vncsdk.Logger.Level)

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [create\_stderr\_logger](https://www.realvnc.com/en/developer/docs/latest/api/python/Logger.html#vncsdk.Logger.create_stderr_logger)()  Creates a logger implementation that writes data to sys.stderr. |
|  | [create\_custom\_logger](https://www.realvnc.com/en/developer/docs/latest/api/python/Logger.html#vncsdk.Logger.create_custom_logger)(callback)  Creates a logger implementation that calls the given callback whenever a log message is written. |
|  | [create\_file\_logger](https://www.realvnc.com/en/developer/docs/latest/api/python/Logger.html#vncsdk.Logger.create_file_logger)(path)  Creates a logger that writes data to the specified log file. |
|  | [destroy\_logger](https://www.realvnc.com/en/developer/docs/latest/api/python/Logger.html#vncsdk.Logger.destroy_logger)()  Destroys any previously created logger. |
|  | [set\_level](https://www.realvnc.com/en/developer/docs/latest/api/python/Logger.html#vncsdk.Logger.set_level)(level)  Sets the current log level. |

## Static methods

static **vncsdk.Logger.create\_stderr\_logger**()

Creates a logger implementation that writes data to sys.stderr.

This destroys any previously-created logger.

**vncsdk.Logger.create\_custom\_logger**(callback)

Creates a logger implementation that calls the given callback whenever a log message is written.

For more information, see [vnc\_Logger\_createCustomLogger()](https://www.realvnc.com/en/developer/docs/latest/api/c/Logger.h.html" \l "_CPPv229vnc_Logger_createCustomLoggerPK19vnc_Logger_CallbackPv" \o "vnc_Logger_createCustomLogger).

|  |  |
| --- | --- |
| **Parameters:** | **callback** ([vncsdk.Logger.Callback](https://www.realvnc.com/en/developer/docs/latest/api/python/Logger-Callback.html" \l "vncsdk.Logger.Callback" \o "vncsdk.Logger.Callback)) – |

**vncsdk.Logger.create\_file\_logger**(path)

Creates a logger that writes data to the specified log file.

For more information, see [vnc\_Logger\_createFileLogger()](https://www.realvnc.com/en/developer/docs/latest/api/c/Logger.h.html" \l "_CPPv227vnc_Logger_createFileLoggerPKc" \o "vnc_Logger_createFileLogger).

|  |  |
| --- | --- |
| **Parameters:** | **path** (str) – |

**vncsdk.Logger.destroy\_logger**()

Destroys any previously created logger.

For more information, see [vnc\_Logger\_destroyLogger()](https://www.realvnc.com/en/developer/docs/latest/api/c/Logger.h.html" \l "_CPPv224vnc_Logger_destroyLoggerv" \o "vnc_Logger_destroyLogger).

**vncsdk.Logger.set\_level**(level)

Sets the current log level.

For more information, see [vnc\_Logger\_setLevel()](https://www.realvnc.com/en/developer/docs/latest/api/c/Logger.h.html" \l "_CPPv219vnc_Logger_setLevel16vnc_Logger_Level" \o "vnc_Logger_setLevel).

|  |  |
| --- | --- |
| **Parameters:** | **level** ([vncsdk.Logger.Level](https://www.realvnc.com/en/developer/docs/latest/api/python/Logger-Level.html" \l "vncsdk.Logger.Level" \o "vncsdk.Logger.Level)) – |

# Logger.Callback

**vncsdk.Logger.Callback**

Callback which handles log messages.

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [log\_message](https://www.realvnc.com/en/developer/docs/latest/api/python/Logger-Callback.html#Logger.Callback.log_message)(level, message)  Notification of log messages generated by the SDK. |

## Methods

**log\_message**(level, message)

Notification of log messages generated by the SDK.

For more information, see vnc\_Logger\_Callback::logMessage.

|  |  |
| --- | --- |
| **Parameters:** | * **level** ([vncsdk.Logger.Level](https://www.realvnc.com/en/developer/docs/latest/api/python/Logger-Level.html" \l "vncsdk.Logger.Level" \o "vncsdk.Logger.Level)) – * **message** (str or None) – |
| **Returns:** | None |

Logger.Level

*class***vncsdk.Logger.Level**

Enumeration of log levels.

Enumeration Attributes

**vncsdk.Logger.Level.ERROR**

Information that the program is likely to stop functioning correctly.

**vncsdk.Logger.Level.BASIC**

Useful information on the functioning of the system. This is the default log level.

**vncsdk.Logger.Level.FULL**

Comprehensive logging of all SDK operations (may degrade performance, and the log file will also contain secure information such as keystrokes)

**vncsdk.Logger.Level.DEBUG**

Logging of SDK operations, and for debug purposes, logging of internal information specific to RealVNC’s implementation.

# MessagingManager

class **vncsdk.MessagingManager**

Enables a Viewer or Server to send custom messages.

## Nested Classes

* [vncsdk.MessagingManager.Callback](https://www.realvnc.com/en/developer/docs/latest/api/python/MessagingManager-Callback.html#vncsdk.MessagingManager.Callback)

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [send\_message](https://www.realvnc.com/en/developer/docs/latest/api/python/MessagingManager.html#MessagingManager.send_message)(buffer, connection)  Sends a message. |
|  | [set\_callback](https://www.realvnc.com/en/developer/docs/latest/api/python/MessagingManager.html#MessagingManager.set_callback)(callback)  Registers a callback notifying when messages are received. |

## Methods

**send\_message**(buffer, connection)

Sends a message.

For more information, see [vnc\_MessagingManager\_sendMessage()](https://www.realvnc.com/en/developer/docs/latest/api/c/Messaging.h.html" \l "_CPPv232vnc_MessagingManager_sendMessageP20vnc_MessagingManagerPKviP14vnc_Connection" \o "vnc_MessagingManager_sendMessage).

|  |  |
| --- | --- |
| **Parameters:** | * **buffer** (bytes) – * **connection** ([vncsdk.Connection](https://www.realvnc.com/en/developer/docs/latest/api/python/Connection.html" \l "vncsdk.Connection" \o "vncsdk.Connection)) – |

**set\_callback**(callback)

Registers a callback notifying when messages are received.

For more information, see [vnc\_MessagingManager\_setCallback()](https://www.realvnc.com/en/developer/docs/latest/api/c/Messaging.h.html" \l "_CPPv232vnc_MessagingManager_setCallbackP20vnc_MessagingManagerPK29vnc_MessagingManager_CallbackPv" \o "vnc_MessagingManager_setCallback).

|  |  |
| --- | --- |
| **Parameters:** | **callback** ([vncsdk.MessagingManager.Callback](https://www.realvnc.com/en/developer/docs/latest/api/python/MessagingManager-Callback.html" \l "vncsdk.MessagingManager.Callback" \o "vncsdk.MessagingManager.Callback) or None) – |

# MessagingManager.Callback

**vncsdk.MessagingManager.Callback**

Callback notifying when messages are received.

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [message\_received](https://www.realvnc.com/en/developer/docs/latest/api/python/MessagingManager-Callback.html#MessagingManager.Callback.message_received)(messaging\_manager, sender, buffer)  Notification that a message has been received. |

## Methods

**message\_received**(messaging\_manager, sender, buffer)

Notification that a message has been received.

For more information, see vnc\_MessagingManager\_Callback::messageReceived.

|  |  |
| --- | --- |
| **Parameters:** | * **messaging\_manager** ([vncsdk.MessagingManager](https://www.realvnc.com/en/developer/docs/latest/api/python/MessagingManager.html" \l "vncsdk.MessagingManager" \o "vncsdk.MessagingManager)) – * **sender** ([vncsdk.Connection](https://www.realvnc.com/en/developer/docs/latest/api/python/Connection.html" \l "vncsdk.Connection" \o "vncsdk.Connection)) – * **buffer** ([vncsdk.DataBuffer](https://www.realvnc.com/en/developer/docs/latest/api/python/DataBuffer.html" \l "vncsdk.DataBuffer" \o "vncsdk.DataBuffer)) – |
| **Returns:** | None |

# PixelFormat

class **vncsdk.PixelFormat**

Description of how pixels are stored in a Viewer framebuffer.

## Constructor Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [\_\_init\_\_](https://www.realvnc.com/en/developer/docs/latest/api/python/PixelFormat.html#constructor)(bits\_per\_pixel, red\_max, green\_max, blue\_max, red\_shift, green\_shift, blue\_shift)  Creates a custom pixel format based on the given parameters. |

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
| [vncsdk.PixelFormat](https://www.realvnc.com/en/developer/docs/latest/api/python/PixelFormat.html#vncsdk.PixelFormat) | [bgr888](https://www.realvnc.com/en/developer/docs/latest/api/python/PixelFormat.html#vncsdk.PixelFormat.bgr888)()  32 bits per pixel stored as XXXXXXXXBBBBBBBBGGGGGGGGRRRRRRRR in most significant to least significant bit order For more information, see [vnc\_PixelFormat\_bgr888()](https://www.realvnc.com/en/developer/docs/latest/api/c/PixelFormat.h.html#_CPPv222vnc_PixelFormat_bgr888v). |
| [vncsdk.PixelFormat](https://www.realvnc.com/en/developer/docs/latest/api/python/PixelFormat.html#vncsdk.PixelFormat) | [rgb555](https://www.realvnc.com/en/developer/docs/latest/api/python/PixelFormat.html#vncsdk.PixelFormat.rgb555)()  16 bits per pixel stored as XRRRRRGGGGGBBBBB in most significant to least significant bit order For more information, see [vnc\_PixelFormat\_rgb555()](https://www.realvnc.com/en/developer/docs/latest/api/c/PixelFormat.h.html#_CPPv222vnc_PixelFormat_rgb555v). |
| [vncsdk.PixelFormat](https://www.realvnc.com/en/developer/docs/latest/api/python/PixelFormat.html#vncsdk.PixelFormat) | [rgb565](https://www.realvnc.com/en/developer/docs/latest/api/python/PixelFormat.html#vncsdk.PixelFormat.rgb565)()  16 bits per pixel stored as RRRRRGGGGGGBBBBB in most significant to least significant bit order For more information, see [vnc\_PixelFormat\_rgb565()](https://www.realvnc.com/en/developer/docs/latest/api/c/PixelFormat.h.html#_CPPv222vnc_PixelFormat_rgb565v). |
| [vncsdk.PixelFormat](https://www.realvnc.com/en/developer/docs/latest/api/python/PixelFormat.html#vncsdk.PixelFormat) | [rgb888](https://www.realvnc.com/en/developer/docs/latest/api/python/PixelFormat.html#vncsdk.PixelFormat.rgb888)()  32 bits per pixel stored as XXXXXXXXRRRRRRRRGGGGGGGGBBBBBBBB in most significant to least significant bit order For more information, see [vnc\_PixelFormat\_rgb888()](https://www.realvnc.com/en/developer/docs/latest/api/c/PixelFormat.h.html#_CPPv222vnc_PixelFormat_rgb888v). |
| int | [blue\_max](https://www.realvnc.com/en/developer/docs/latest/api/python/PixelFormat.html#PixelFormat.blue_max)()  Gets the maximum value for the blue pixel value. |
| int | [blue\_shift](https://www.realvnc.com/en/developer/docs/latest/api/python/PixelFormat.html#PixelFormat.blue_shift)()  Gets the number of bits the blue pixel value is shifted. |
| int | [bpp](https://www.realvnc.com/en/developer/docs/latest/api/python/PixelFormat.html#PixelFormat.bpp)()  Gets the total number of bits per pixel. |
| int | [depth](https://www.realvnc.com/en/developer/docs/latest/api/python/PixelFormat.html#PixelFormat.depth)()  Gets the number of significant bits that are used to store pixel data. |
|  | [destroy](https://www.realvnc.com/en/developer/docs/latest/api/python/PixelFormat.html#PixelFormat.destroy)()  Destroy a custom pixel format. |
| int | [green\_max](https://www.realvnc.com/en/developer/docs/latest/api/python/PixelFormat.html#PixelFormat.green_max)()  Gets the maximum value for the green pixel value. |
| int | [green\_shift](https://www.realvnc.com/en/developer/docs/latest/api/python/PixelFormat.html#PixelFormat.green_shift)()  Gets the number of bits the green pixel value is shifted. |
| int | [red\_max](https://www.realvnc.com/en/developer/docs/latest/api/python/PixelFormat.html#PixelFormat.red_max)()  Gets the maximum value for the red pixel value. |
| int | [red\_shift](https://www.realvnc.com/en/developer/docs/latest/api/python/PixelFormat.html#PixelFormat.red_shift)()  Gets the number of bits the red pixel value is shifted. |

## Constructor

**vncsdk.PixelFormat.\_\_init\_\_**(bits\_per\_pixel, red\_max, green\_max, blue\_max, red\_shift, green\_shift, blue\_shift)

Creates a custom pixel format based on the given parameters.

For more information, see [vnc\_PixelFormat\_create()](https://www.realvnc.com/en/developer/docs/latest/api/c/PixelFormat.h.html" \l "_CPPv222vnc_PixelFormat_createiiiiiii" \o "vnc_PixelFormat_create).

|  |  |
| --- | --- |
| **Parameters:** | * **bits\_per\_pixel** (int) – * **red\_max** (int) – * **green\_max** (int) – * **blue\_max** (int) – * **red\_shift** (int) – * **green\_shift** (int) – * **blue\_shift** (int) – |

## Static methods

**vncsdk.PixelFormat.bgr888**()

32 bits per pixel stored as XXXXXXXXBBBBBBBBGGGGGGGGRRRRRRRR in most significant to least significant bit order

For more information, see [vnc\_PixelFormat\_bgr888()](https://www.realvnc.com/en/developer/docs/latest/api/c/PixelFormat.h.html#_CPPv222vnc_PixelFormat_bgr888v).

|  |  |
| --- | --- |
| **Return type:** | [vncsdk.PixelFormat](https://www.realvnc.com/en/developer/docs/latest/api/python/PixelFormat.html#vncsdk.PixelFormat) |

**vncsdk.PixelFormat.rgb555**()

16 bits per pixel stored as XRRRRRGGGGGBBBBB in most significant to least significant bit order

For more information, see [vnc\_PixelFormat\_rgb555()](https://www.realvnc.com/en/developer/docs/latest/api/c/PixelFormat.h.html#_CPPv222vnc_PixelFormat_rgb555v).

|  |  |
| --- | --- |
| **Return type:** | [vncsdk.PixelFormat](https://www.realvnc.com/en/developer/docs/latest/api/python/PixelFormat.html#vncsdk.PixelFormat) |

**vncsdk.PixelFormat.rgb565**()

16 bits per pixel stored as RRRRRGGGGGGBBBBB in most significant to least significant bit order

For more information, see [vnc\_PixelFormat\_rgb565()](https://www.realvnc.com/en/developer/docs/latest/api/c/PixelFormat.h.html#_CPPv222vnc_PixelFormat_rgb565v).

|  |  |
| --- | --- |
| **Return type:** | [vncsdk.PixelFormat](https://www.realvnc.com/en/developer/docs/latest/api/python/PixelFormat.html#vncsdk.PixelFormat) |

**vncsdk.PixelFormat.rgb888**()

32 bits per pixel stored as XXXXXXXXRRRRRRRRGGGGGGGGBBBBBBBB in most significant to least significant bit order

For more information, see [vnc\_PixelFormat\_rgb888()](https://www.realvnc.com/en/developer/docs/latest/api/c/PixelFormat.h.html#_CPPv222vnc_PixelFormat_rgb888v).

|  |  |
| --- | --- |
| **Return type:** | [vncsdk.PixelFormat](https://www.realvnc.com/en/developer/docs/latest/api/python/PixelFormat.html#vncsdk.PixelFormat) |

## Methods

**blue\_max**()

Gets the maximum value for the blue pixel value.

For more information, see [vnc\_PixelFormat\_blueMax()](https://www.realvnc.com/en/developer/docs/latest/api/c/PixelFormat.h.html" \l "_CPPv223vnc_PixelFormat_blueMaxPK15vnc_PixelFormat" \o "vnc_PixelFormat_blueMax).

|  |  |
| --- | --- |
| **Return type:** | int |

**blue\_shift**()

Gets the number of bits the blue pixel value is shifted.

For more information, see [vnc\_PixelFormat\_blueShift()](https://www.realvnc.com/en/developer/docs/latest/api/c/PixelFormat.h.html" \l "_CPPv225vnc_PixelFormat_blueShiftPK15vnc_PixelFormat" \o "vnc_PixelFormat_blueShift).

|  |  |
| --- | --- |
| **Return type:** | int |

**bpp**()

Gets the total number of bits per pixel.

For more information, see [vnc\_PixelFormat\_bpp()](https://www.realvnc.com/en/developer/docs/latest/api/c/PixelFormat.h.html" \l "_CPPv219vnc_PixelFormat_bppPK15vnc_PixelFormat" \o "vnc_PixelFormat_bpp).

|  |  |
| --- | --- |
| **Return type:** | int |

**depth**()

Gets the number of significant bits that are used to store pixel data.

For more information, see [vnc\_PixelFormat\_depth()](https://www.realvnc.com/en/developer/docs/latest/api/c/PixelFormat.h.html" \l "_CPPv221vnc_PixelFormat_depthPK15vnc_PixelFormat" \o "vnc_PixelFormat_depth).

|  |  |
| --- | --- |
| **Return type:** | int |

**destroy**()

Destroy a custom pixel format.

For more information, see [vnc\_PixelFormat\_destroy()](https://www.realvnc.com/en/developer/docs/latest/api/c/PixelFormat.h.html" \l "_CPPv223vnc_PixelFormat_destroyP15vnc_PixelFormat" \o "vnc_PixelFormat_destroy).

**green\_max**()

Gets the maximum value for the green pixel value.

For more information, see [vnc\_PixelFormat\_greenMax()](https://www.realvnc.com/en/developer/docs/latest/api/c/PixelFormat.h.html" \l "_CPPv224vnc_PixelFormat_greenMaxPK15vnc_PixelFormat" \o "vnc_PixelFormat_greenMax).

|  |  |
| --- | --- |
| **Return type:** | int |

**green\_shift**()

Gets the number of bits the green pixel value is shifted.

For more information, see [vnc\_PixelFormat\_greenShift()](https://www.realvnc.com/en/developer/docs/latest/api/c/PixelFormat.h.html" \l "_CPPv226vnc_PixelFormat_greenShiftPK15vnc_PixelFormat" \o "vnc_PixelFormat_greenShift).

|  |  |
| --- | --- |
| **Return type:** | int |

**red\_max**()

Gets the maximum value for the red pixel value.

For more information, see [vnc\_PixelFormat\_redMax()](https://www.realvnc.com/en/developer/docs/latest/api/c/PixelFormat.h.html" \l "_CPPv222vnc_PixelFormat_redMaxPK15vnc_PixelFormat" \o "vnc_PixelFormat_redMax).

|  |  |
| --- | --- |
| **Return type:** | int |

**red\_shift**()

Gets the number of bits the red pixel value is shifted.

For more information, see [vnc\_PixelFormat\_redShift()](https://www.realvnc.com/en/developer/docs/latest/api/c/PixelFormat.h.html" \l "_CPPv224vnc_PixelFormat_redShiftPK15vnc_PixelFormat" \o "vnc_PixelFormat_redShift).

|  |  |
| --- | --- |
| **Return type:** | int |

# RsaKey

## Nested Classes

* [vncsdk.RsaKey.Callback](https://www.realvnc.com/en/developer/docs/latest/api/python/RsaKey-Callback.html#vncsdk.RsaKey.Callback)

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [cancel\_details](https://www.realvnc.com/en/developer/docs/latest/api/python/RsaKey.html#vncsdk.RsaKey.cancel_details)(\_callback)  Cancels any outstanding notifications for the given callback. |
|  | [clear](https://www.realvnc.com/en/developer/docs/latest/api/python/RsaKey.html#vncsdk.RsaKey.clear)()  Removes any stored RSA key from the data store. |
|  | [get\_details](https://www.realvnc.com/en/developer/docs/latest/api/python/RsaKey.html#vncsdk.RsaKey.get_details)(callback, generate\_if\_missing)  Requests the details for the machine’s identifying RSA public key. |

## Static methods

**vncsdk.RsaKey.cancel\_details**(\_callback)

Cancels any outstanding notifications for the given callback.

For more information, see [vnc\_RsaKey\_cancelDetails()](https://www.realvnc.com/en/developer/docs/latest/api/c/RsaKey.h.html" \l "_CPPv224vnc_RsaKey_cancelDetailsPv" \o "vnc_RsaKey_cancelDetails).

|  |  |
| --- | --- |
| **Parameters:** | **\_callback** ([vncsdk.RsaKey.Callback](https://www.realvnc.com/en/developer/docs/latest/api/python/RsaKey-Callback.html" \l "vncsdk.RsaKey.Callback" \o "vncsdk.RsaKey.Callback)) – |

**vncsdk.RsaKey.clear**()

Removes any stored RSA key from the data store.

For more information, see [vnc\_RsaKey\_clear()](https://www.realvnc.com/en/developer/docs/latest/api/c/RsaKey.h.html" \l "_CPPv216vnc_RsaKey_clearv" \o "vnc_RsaKey_clear).

**vncsdk.RsaKey.get\_details**(callback, generate\_if\_missing)

Requests the details for the machine’s identifying RSA public key.

For more information, see [vnc\_RsaKey\_getDetails()](https://www.realvnc.com/en/developer/docs/latest/api/c/RsaKey.h.html" \l "_CPPv221vnc_RsaKey_getDetailsPK19vnc_RsaKey_CallbackPv10vnc_bool_t" \o "vnc_RsaKey_getDetails).

|  |  |
| --- | --- |
| **Parameters:** | * **callback** ([vncsdk.RsaKey.Callback](https://www.realvnc.com/en/developer/docs/latest/api/python/RsaKey-Callback.html" \l "vncsdk.RsaKey.Callback" \o "vncsdk.RsaKey.Callback) or None) – * **generate\_if\_missing** (bool) – |

# RsaKey.Callback

**vncsdk.RsaKey.Callback**

Callback which receives RSA key details.

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [details\_ready](https://www.realvnc.com/en/developer/docs/latest/api/python/RsaKey-Callback.html#RsaKey.Callback.details_ready)(rsa\_public, hex\_fingerprint, catchphrase\_fingerprint)  Notification that the SDK’s RSA key has been retrieved. |

## Methods

**details\_ready**(rsa\_public, hex\_fingerprint, catchphrase\_fingerprint)

Notification that the SDK’s RSA key has been retrieved.

For more information, see vnc\_RsaKey\_Callback::detailsReady.

|  |  |
| --- | --- |
| **Parameters:** | * **rsa\_public** ([vncsdk.DataBuffer](https://www.realvnc.com/en/developer/docs/latest/api/python/DataBuffer.html" \l "vncsdk.DataBuffer" \o "vncsdk.DataBuffer)) – * **hex\_fingerprint** (str or None) – * **catchphrase\_fingerprint** (str or None) – |
| **Returns:** | None |

# Server

class **vncsdk.Server**

A VNC-compatible Server enabling a computer to be remotely controlled.

## Nested Classes

* [vncsdk.Server.AgentCallback](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-AgentCallback.html#vncsdk.Server.AgentCallback)
* [vncsdk.Server.ConnectionCallback](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-ConnectionCallback.html#vncsdk.Server.ConnectionCallback)
* [vncsdk.Server.InputEventsCallback](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-InputEventsCallback.html#vncsdk.Server.InputEventsCallback)
* [vncsdk.Server.SecurityCallback](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-SecurityCallback.html#vncsdk.Server.SecurityCallback)
* [vncsdk.Server.CaptureMethod](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-CaptureMethod.html#vncsdk.Server.CaptureMethod)
* [vncsdk.Server.DisconnectFlags](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-DisconnectFlags.html#vncsdk.Server.DisconnectFlags)
* [vncsdk.Server.EncryptionLevel](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-EncryptionLevel.html#vncsdk.Server.EncryptionLevel)
* [vncsdk.Server.Permissions](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-Permissions.html#vncsdk.Server.Permissions)

## Constructor Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [\_\_init\_\_](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html#constructor)(agent\_path, is\_service=False)  Creates a Server, running as a service if is\_service is passed as True. |

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [destroy](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html#Server.destroy)()  Destroys the Server. |
|  | [disconnect](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html#Server.disconnect)(connection, message, flags)  Disconnects a particular Viewer, optionally specifying a message. |
|  | [disconnect\_all](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html#Server.disconnect_all)(message, flags)  Disconnects all Viewers, optionally specifying a message. |
|  | [enable\_audio](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html#Server.enable_audio)(enable)  Enables transmission of audio from the Server to the Viewer. |
| [vncsdk.AnnotationManager](https://www.realvnc.com/en/developer/docs/latest/api/python/AnnotationManager.html#vncsdk.AnnotationManager) | [get\_annotation\_manager](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html#Server.get_annotation_manager)()  Obtains the Server’s [vncsdk.AnnotationManager](https://www.realvnc.com/en/developer/docs/latest/api/python/AnnotationManager.html" \l "vncsdk.AnnotationManager" \o "vncsdk.AnnotationManager) for handling annotation operations. |
| int | [get\_connection\_count](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html#Server.get_connection_count)()  Returns the total number of Viewers currently connected to the Server. |
| [vncsdk.ConnectionHandler](https://www.realvnc.com/en/developer/docs/latest/api/python/ConnectionHandler.html#vncsdk.ConnectionHandler) | [get\_connection\_handler](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html#Server.get_connection_handler)()  Obtains the Server’s [vncsdk.ConnectionHandler](https://www.realvnc.com/en/developer/docs/latest/api/python/ConnectionHandler.html" \l "vncsdk.ConnectionHandler" \o "vncsdk.ConnectionHandler) for performing connection operations. |
| [vncsdk.DisplayManager](https://www.realvnc.com/en/developer/docs/latest/api/python/DisplayManager.html#vncsdk.DisplayManager) | [get\_display\_manager](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html#Server.get_display_manager)()  Obtains the Server’s [vncsdk.DisplayManager](https://www.realvnc.com/en/developer/docs/latest/api/python/DisplayManager.html" \l "vncsdk.DisplayManager" \o "vncsdk.DisplayManager), for managing the list of displays made available by the Server and for setting the Server’s capture method. |
| [vncsdk.Server.EncryptionLevel](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-EncryptionLevel.html#vncsdk.Server.EncryptionLevel) | [get\_encryption\_level](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html#Server.get_encryption_level)(connection)  Returns the encryption level being used with an incoming connection, or the Server’s current encryption level if the connection is None. |
| int | [get\_idle\_timeout](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html#Server.get_idle_timeout)()  Gets the current number of seconds to wait before disconnecting idle Viewers. |
| [vncsdk.MessagingManager](https://www.realvnc.com/en/developer/docs/latest/api/python/MessagingManager.html#vncsdk.MessagingManager) | [get\_messaging\_manager](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html#Server.get_messaging_manager)()  Obtains the Server’s [vncsdk.MessagingManager](https://www.realvnc.com/en/developer/docs/latest/api/python/MessagingManager.html" \l "vncsdk.MessagingManager" \o "vncsdk.MessagingManager) for handling messaging. |
| str | [get\_peer\_address](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html#Server.get_peer_address)(connection)  Returns the address of a particular connected Viewer. |
| {[vncsdk.Server.Permissions](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-Permissions.html" \l "vncsdk.Server.Permissions" \o "vncsdk.Server.Permissions)} | [get\_permissions](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html#Server.get_permissions)(connection)  Gets the set of current permissions for a Viewer. |
| bool | [is\_agent\_ready](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html#Server.is_agent_ready)()  Determines if the vncagent process is ready and available to capture the display and inject input events. |
|  | [set\_agent\_callback](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html#Server.set_agent_callback)(callback)  Sets agent-related callbacks for the Server. |
|  | [set\_blacklist](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html#Server.set_blacklist)(threshold, timeout)  Specifies a blacklist threshold and timeout for the Server. |
|  | [set\_capture\_method](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html#Server.set_capture_method)(capture\_method)  Specifies the screen capture method used by the Server. |
|  | [set\_connection\_callback](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html#Server.set_connection_callback)(callback)  Sets connection-related callbacks for the Server. |
|  | [set\_encryption\_level](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html#Server.set_encryption_level)(level)  Sets the desired encryption level of the session from the range of options enumerated by ENCRYPTION\_LEVEL. |
|  | [set\_friendly\_name](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html#Server.set_friendly_name)(name)  Specifies a friendly name for the Server, to send to connected Viewers. |
|  | [set\_idle\_timeout](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html#Server.set_idle_timeout)(idle\_timeout)  Sets the number of seconds to wait before disconnecting idle Viewers. |
|  | [set\_input\_events\_callback](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html#Server.set_input_events_callback)(callback)  Sets input control related callbacks for the Server. |
|  | [set\_permissions](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html#Server.set_permissions)(connection, perms)  Changes permissions for a Viewer mid-session. |
|  | [set\_security\_callback](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html#Server.set_security_callback)(callback)  Sets security-related callbacks for the Server. |

## Constructor

**vncsdk.Server.\_\_init\_\_**(agent\_path, is\_service=False)

Creates a Server, running as a service if is\_service is passed as True.

If agent\_path is passed in as None, the agent binary is searched for in the main module’s directory.

|  |  |
| --- | --- |
| **Parameters:** | * **agent\_path** (str or None) – * **is\_service** (bool) – |

## Methods

**destroy**()

Destroys the Server.

For more information, see [vnc\_Server\_destroy()](https://www.realvnc.com/en/developer/docs/latest/api/c/Server.h.html" \l "_CPPv218vnc_Server_destroyP10vnc_Server" \o "vnc_Server_destroy).

**disconnect**(connection, message, flags)

Disconnects a particular Viewer, optionally specifying a message.

For more information, see [vnc\_Server\_disconnect()](https://www.realvnc.com/en/developer/docs/latest/api/c/Server.h.html" \l "_CPPv221vnc_Server_disconnectP10vnc_ServerP14vnc_ConnectionPKci" \o "vnc_Server_disconnect).

|  |  |
| --- | --- |
| **Parameters:** | * **connection** ([vncsdk.Connection](https://www.realvnc.com/en/developer/docs/latest/api/python/Connection.html" \l "vncsdk.Connection" \o "vncsdk.Connection)) – * **message** (str) – * **flags** ({[vncsdk.Server.DisconnectFlags](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-DisconnectFlags.html" \l "vncsdk.Server.DisconnectFlags" \o "vncsdk.Server.DisconnectFlags)}) – |

**disconnect\_all**(message, flags)

Disconnects all Viewers, optionally specifying a message.

For more information, see [vnc\_Server\_disconnectAll()](https://www.realvnc.com/en/developer/docs/latest/api/c/Server.h.html" \l "_CPPv224vnc_Server_disconnectAllP10vnc_ServerPKci" \o "vnc_Server_disconnectAll).

|  |  |
| --- | --- |
| **Parameters:** | * **message** (str) – * **flags** ({[vncsdk.Server.DisconnectFlags](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-DisconnectFlags.html" \l "vncsdk.Server.DisconnectFlags" \o "vncsdk.Server.DisconnectFlags)}) – |

**enable\_audio**(enable)

Enables transmission of audio from the Server to the Viewer.

For more information, see [vnc\_Server\_enableAudio()](https://www.realvnc.com/en/developer/docs/latest/api/c/Server.h.html" \l "_CPPv222vnc_Server_enableAudioP10vnc_Server10vnc_bool_t" \o "vnc_Server_enableAudio).

|  |  |
| --- | --- |
| **Parameters:** | **enable** (bool) – |

**get\_annotation\_manager**()

Obtains the Server’s [vncsdk.AnnotationManager](https://www.realvnc.com/en/developer/docs/latest/api/python/AnnotationManager.html" \l "vncsdk.AnnotationManager" \o "vncsdk.AnnotationManager) for handling annotation operations.

For more information, see [vnc\_Server\_getAnnotationManager()](https://www.realvnc.com/en/developer/docs/latest/api/c/Server.h.html" \l "_CPPv231vnc_Server_getAnnotationManagerP10vnc_Server" \o "vnc_Server_getAnnotationManager).

|  |  |
| --- | --- |
| **Return type:** | [vncsdk.AnnotationManager](https://www.realvnc.com/en/developer/docs/latest/api/python/AnnotationManager.html#vncsdk.AnnotationManager) |

**get\_connection\_count**()

Returns the total number of Viewers currently connected to the Server.

For more information, see [vnc\_Server\_getConnectionCount()](https://www.realvnc.com/en/developer/docs/latest/api/c/Server.h.html" \l "_CPPv229vnc_Server_getConnectionCountP10vnc_Server" \o "vnc_Server_getConnectionCount).

|  |  |
| --- | --- |
| **Return type:** | int |

**get\_connection\_handler**()

Obtains the Server’s [vncsdk.ConnectionHandler](https://www.realvnc.com/en/developer/docs/latest/api/python/ConnectionHandler.html" \l "vncsdk.ConnectionHandler" \o "vncsdk.ConnectionHandler) for performing connection operations.

For more information, see [vnc\_Server\_getConnectionHandler()](https://www.realvnc.com/en/developer/docs/latest/api/c/Server.h.html" \l "_CPPv231vnc_Server_getConnectionHandlerP10vnc_Server" \o "vnc_Server_getConnectionHandler).

|  |  |
| --- | --- |
| **Return type:** | [vncsdk.ConnectionHandler](https://www.realvnc.com/en/developer/docs/latest/api/python/ConnectionHandler.html#vncsdk.ConnectionHandler) |

**get\_display\_manager**()

Obtains the Server’s [vncsdk.DisplayManager](https://www.realvnc.com/en/developer/docs/latest/api/python/DisplayManager.html" \l "vncsdk.DisplayManager" \o "vncsdk.DisplayManager), for managing the list of displays made available by the Server and for setting the Server’s capture method.

For more information, see [vnc\_Server\_getDisplayManager()](https://www.realvnc.com/en/developer/docs/latest/api/c/Server.h.html" \l "_CPPv228vnc_Server_getDisplayManagerP10vnc_Server" \o "vnc_Server_getDisplayManager).

|  |  |
| --- | --- |
| **Return type:** | [vncsdk.DisplayManager](https://www.realvnc.com/en/developer/docs/latest/api/python/DisplayManager.html#vncsdk.DisplayManager) |

**get\_encryption\_level**(connection)

Returns the encryption level being used with an incoming connection, or the Server’s current encryption level if the connection is None.

For more information, see [vnc\_Server\_getEncryptionLevel()](https://www.realvnc.com/en/developer/docs/latest/api/c/Server.h.html" \l "_CPPv229vnc_Server_getEncryptionLevelP10vnc_ServerP14vnc_Connection" \o "vnc_Server_getEncryptionLevel).

|  |  |
| --- | --- |
| **Parameters:** | **connection** ([vncsdk.Connection](https://www.realvnc.com/en/developer/docs/latest/api/python/Connection.html" \l "vncsdk.Connection" \o "vncsdk.Connection)) – |
| **Return type:** | [vncsdk.Server.EncryptionLevel](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-EncryptionLevel.html#vncsdk.Server.EncryptionLevel) |

**get\_idle\_timeout**()

Gets the current number of seconds to wait before disconnecting idle Viewers.

For more information, see [vnc\_Server\_getIdleTimeout()](https://www.realvnc.com/en/developer/docs/latest/api/c/Server.h.html" \l "_CPPv225vnc_Server_getIdleTimeoutP10vnc_Server" \o "vnc_Server_getIdleTimeout).

|  |  |
| --- | --- |
| **Return type:** | int |

**get\_messaging\_manager**()

Obtains the Server’s [vncsdk.MessagingManager](https://www.realvnc.com/en/developer/docs/latest/api/python/MessagingManager.html" \l "vncsdk.MessagingManager" \o "vncsdk.MessagingManager) for handling messaging.

For more information, see [vnc\_Server\_getMessagingManager()](https://www.realvnc.com/en/developer/docs/latest/api/c/Server.h.html" \l "_CPPv230vnc_Server_getMessagingManagerP10vnc_Server" \o "vnc_Server_getMessagingManager).

|  |  |
| --- | --- |
| **Return type:** | [vncsdk.MessagingManager](https://www.realvnc.com/en/developer/docs/latest/api/python/MessagingManager.html#vncsdk.MessagingManager) |

**get\_peer\_address**(connection)

Returns the address of a particular connected Viewer.

For more information, see [vnc\_Server\_getPeerAddress()](https://www.realvnc.com/en/developer/docs/latest/api/c/Server.h.html" \l "_CPPv225vnc_Server_getPeerAddressP10vnc_ServerP14vnc_Connection" \o "vnc_Server_getPeerAddress).

|  |  |
| --- | --- |
| **Parameters:** | **connection** ([vncsdk.Connection](https://www.realvnc.com/en/developer/docs/latest/api/python/Connection.html" \l "vncsdk.Connection" \o "vncsdk.Connection)) – |
| **Return type:** | str |

**get\_permissions**(connection)

Gets the set of current permissions for a Viewer.

For more information, see [vnc\_Server\_getPermissions()](https://www.realvnc.com/en/developer/docs/latest/api/c/Server.h.html" \l "_CPPv225vnc_Server_getPermissionsP10vnc_ServerP14vnc_Connection" \o "vnc_Server_getPermissions).

|  |  |
| --- | --- |
| **Parameters:** | **connection** ([vncsdk.Connection](https://www.realvnc.com/en/developer/docs/latest/api/python/Connection.html" \l "vncsdk.Connection" \o "vncsdk.Connection)) – |
| **Return type:** | {[vncsdk.Server.Permissions](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-Permissions.html" \l "vncsdk.Server.Permissions" \o "vncsdk.Server.Permissions)} |

**is\_agent\_ready**()

Determines if the vncagent process is ready and available to capture the display and inject input events.

For more information, see [vnc\_Server\_isAgentReady()](https://www.realvnc.com/en/developer/docs/latest/api/c/Server.h.html" \l "_CPPv223vnc_Server_isAgentReadyP10vnc_Server" \o "vnc_Server_isAgentReady).

|  |  |
| --- | --- |
| **Return type:** | bool |

**set\_agent\_callback**(callback)

Sets agent-related callbacks for the Server.

For more information, see [vnc\_Server\_setAgentCallback()](https://www.realvnc.com/en/developer/docs/latest/api/c/Server.h.html" \l "_CPPv227vnc_Server_setAgentCallbackP10vnc_ServerPK24vnc_Server_AgentCallbackPv" \o "vnc_Server_setAgentCallback).

|  |  |
| --- | --- |
| **Parameters:** | **callback** ([vncsdk.Server.AgentCallback](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-AgentCallback.html" \l "vncsdk.Server.AgentCallback" \o "vncsdk.Server.AgentCallback) or None) – |

**set\_blacklist**(threshold, timeout)

Specifies a blacklist threshold and timeout for the Server.

For more information, see [vnc\_Server\_setBlacklist()](https://www.realvnc.com/en/developer/docs/latest/api/c/Server.h.html" \l "_CPPv223vnc_Server_setBlacklistP10vnc_Serverii" \o "vnc_Server_setBlacklist).

|  |  |
| --- | --- |
| **Parameters:** | * **threshold** (int) – * **timeout** (int) – |

**set\_capture\_method**(capture\_method)

Specifies the screen capture method used by the Server.

For more information, see [vnc\_Server\_setCaptureMethod()](https://www.realvnc.com/en/developer/docs/latest/api/c/Server.h.html" \l "_CPPv227vnc_Server_setCaptureMethodP10vnc_Server24vnc_Server_CaptureMethod" \o "vnc_Server_setCaptureMethod).

|  |  |
| --- | --- |
| **Parameters:** | **capture\_method** ([vncsdk.Server.CaptureMethod](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-CaptureMethod.html" \l "vncsdk.Server.CaptureMethod" \o "vncsdk.Server.CaptureMethod)) – |

**set\_connection\_callback**(callback)

Sets connection-related callbacks for the Server.

For more information, see [vnc\_Server\_setConnectionCallback()](https://www.realvnc.com/en/developer/docs/latest/api/c/Server.h.html" \l "_CPPv232vnc_Server_setConnectionCallbackP10vnc_ServerPK29vnc_Server_ConnectionCallbackPv" \o "vnc_Server_setConnectionCallback).

|  |  |
| --- | --- |
| **Parameters:** | **callback** ([vncsdk.Server.ConnectionCallback](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-ConnectionCallback.html" \l "vncsdk.Server.ConnectionCallback" \o "vncsdk.Server.ConnectionCallback) or None) – |

**set\_encryption\_level**(level)

Sets the desired encryption level of the session from the range of options enumerated by ENCRYPTION\_LEVEL.

For more information, see [vnc\_Server\_setEncryptionLevel()](https://www.realvnc.com/en/developer/docs/latest/api/c/Server.h.html" \l "_CPPv229vnc_Server_setEncryptionLevelP10vnc_Server26vnc_Server_EncryptionLevel" \o "vnc_Server_setEncryptionLevel).

|  |  |
| --- | --- |
| **Parameters:** | **level** ([vncsdk.Server.EncryptionLevel](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-EncryptionLevel.html" \l "vncsdk.Server.EncryptionLevel" \o "vncsdk.Server.EncryptionLevel)) – |

**set\_friendly\_name**(name)

Specifies a friendly name for the Server, to send to connected Viewers.

For more information, see [vnc\_Server\_setFriendlyName()](https://www.realvnc.com/en/developer/docs/latest/api/c/Server.h.html" \l "_CPPv226vnc_Server_setFriendlyNameP10vnc_ServerPKc" \o "vnc_Server_setFriendlyName).

|  |  |
| --- | --- |
| **Parameters:** | **name** (str) – |

**set\_idle\_timeout**(idle\_timeout)

Sets the number of seconds to wait before disconnecting idle Viewers.

For more information, see [vnc\_Server\_setIdleTimeout()](https://www.realvnc.com/en/developer/docs/latest/api/c/Server.h.html" \l "_CPPv225vnc_Server_setIdleTimeoutP10vnc_Serveri" \o "vnc_Server_setIdleTimeout).

|  |  |
| --- | --- |
| **Parameters:** | **idle\_timeout** (int) – |

**set\_input\_events\_callback**(callback)

Sets input control related callbacks for the Server.

For more information, see [vnc\_Server\_setInputEventsCallback()](https://www.realvnc.com/en/developer/docs/latest/api/c/Server.h.html" \l "_CPPv233vnc_Server_setInputEventsCallbackP10vnc_ServerPK30vnc_Server_InputEventsCallbackPv" \o "vnc_Server_setInputEventsCallback).

|  |  |
| --- | --- |
| **Parameters:** | **callback** ([vncsdk.Server.InputEventsCallback](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-InputEventsCallback.html" \l "vncsdk.Server.InputEventsCallback" \o "vncsdk.Server.InputEventsCallback) or None) – |

**set\_permissions**(connection, perms)

Changes permissions for a Viewer mid-session.

For more information, see [vnc\_Server\_setPermissions()](https://www.realvnc.com/en/developer/docs/latest/api/c/Server.h.html" \l "_CPPv225vnc_Server_setPermissionsP10vnc_ServerP14vnc_Connectioni" \o "vnc_Server_setPermissions).

|  |  |
| --- | --- |
| **Parameters:** | * **connection** ([vncsdk.Connection](https://www.realvnc.com/en/developer/docs/latest/api/python/Connection.html" \l "vncsdk.Connection" \o "vncsdk.Connection)) – * **perms** ({[vncsdk.Server.Permissions](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-Permissions.html" \l "vncsdk.Server.Permissions" \o "vncsdk.Server.Permissions)}) – |

**set\_security\_callback**(callback)

Sets security-related callbacks for the Server.

For more information, see [vnc\_Server\_setSecurityCallback()](https://www.realvnc.com/en/developer/docs/latest/api/c/Server.h.html" \l "_CPPv230vnc_Server_setSecurityCallbackP10vnc_ServerPK27vnc_Server_SecurityCallbackPv" \o "vnc_Server_setSecurityCallback).

|  |  |
| --- | --- |
| **Parameters:** | **callback** ([vncsdk.Server.SecurityCallback](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-SecurityCallback.html" \l "vncsdk.Server.SecurityCallback" \o "vncsdk.Server.SecurityCallback) or None) – |

Server.AgentCallback

**vncsdk.Server.AgentCallback**

Callback receiving agent-related notifications for a Server.

Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [agent\_started](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-AgentCallback.html#Server.AgentCallback.agent_started)(server)  Notification that the agent has started. |
|  | [agent\_stopped](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-AgentCallback.html#Server.AgentCallback.agent_stopped)(server)  Notification that the agent has stopped. |

Methods

**agent\_started**(*server*)

Notification that the agent has started.

For more information, see vnc\_Server\_AgentCallback::agentStarted.

|  |  |
| --- | --- |
| **Parameters:** | **server** ([vncsdk.Server](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html" \l "vncsdk.Server" \o "vncsdk.Server)) – |
| **Returns:** | None |

**agent\_stopped**(*server*)

Notification that the agent has stopped.

For more information, see vnc\_Server\_AgentCallback::agentStopped.

|  |  |
| --- | --- |
| **Parameters:** | **server** ([vncsdk.Server](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html" \l "vncsdk.Server" \o "vncsdk.Server)) – |
| **Returns:** | None |

Server.CaptureMethod

*class***vncsdk.Server.CaptureMethod**

Enumeration of screen capture methods.

Enumeration Attributes

**vncsdk.Server.CaptureMethod.CAPTURE\_OPTIMAL**

Use the optimal capture method for the platform. This is the default.

**vncsdk.Server.CaptureMethod.CAPTURE\_FALLBACK**

Use a fallback capture method under Windows and Linux. This is likely to be slower, but may solve rendering glitches with certain third-party applications. Not supported under Mac OS X.

# Server.ConnectionCallback

**vncsdk.Server.ConnectionCallback**

Callback receiving connection-related notifications for a Server.

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [connection\_ended](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-ConnectionCallback.html#Server.ConnectionCallback.connection_ended)(server, connection)  Notification that a connection has ended. |
|  | [connection\_started](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-ConnectionCallback.html#Server.ConnectionCallback.connection_started)(server, connection)  Notification that a connection has successfully started. |

## Methods

**connection\_ended**(server, connection)

Notification that a connection has ended.

For more information, see vnc\_Server\_ConnectionCallback::connectionEnded.

|  |  |
| --- | --- |
| **Parameters:** | * **server** ([vncsdk.Server](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html" \l "vncsdk.Server" \o "vncsdk.Server)) – * **connection** ([vncsdk.Connection](https://www.realvnc.com/en/developer/docs/latest/api/python/Connection.html" \l "vncsdk.Connection" \o "vncsdk.Connection)) – |
| **Returns:** | None |

**connection\_started**(server, connection)

Notification that a connection has successfully started.

For more information, see vnc\_Server\_ConnectionCallback::connectionStarted.

|  |  |
| --- | --- |
| **Parameters:** | * **server** ([vncsdk.Server](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html" \l "vncsdk.Server" \o "vncsdk.Server)) – * **connection** ([vncsdk.Connection](https://www.realvnc.com/en/developer/docs/latest/api/python/Connection.html" \l "vncsdk.Connection" \o "vncsdk.Connection)) – |
| **Returns:** | None |

Server.DisconnectFlags

*class***vncsdk.Server.DisconnectFlags**

Enumeration of disconnection flags.

Enumeration Attributes

**vncsdk.Server.DisconnectFlags.DISCONNECT\_ALERT**

The disconnection message is deemed to be sufficiently important that the Viewer should alert the Viewer user.

**vncsdk.Server.DisconnectFlags.DISCONNECT\_RECONNECT**

Set the peer’s CAN\_RECONNECT flag, that is, the Server informs the Viewer that the server may start again soon.

Server.EncryptionLevel

*class***vncsdk.Server.EncryptionLevel**

Enumeration of encryption levels.

Enumeration Attributes

**vncsdk.Server.EncryptionLevel.DEFAULT**

Use strong encryption. This is the default.

**vncsdk.Server.EncryptionLevel.MAXIMUM**

Use the strongest available encryption, possibly at the cost of speed.

# Server.InputEventsCallback

**vncsdk.Server.InputEventsCallback**

Callback for handling input events.

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
| bool | [key\_event\_callback](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-InputEventsCallback.html#Server.InputEventsCallback.key_event_callback)(server, key, down)  Handle keypress events manually. |
| bool | [pointer\_event\_callback](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-InputEventsCallback.html#Server.InputEventsCallback.pointer_event_callback)(server, x, y, button\_mask, is\_relative)  Handle pointer events manually. |

## Methods

**key\_event\_callback**(server, key, down)

Handle keypress events manually.

For more information, see vnc\_Server\_InputEventsCallback::keyEventCallback.

|  |  |
| --- | --- |
| **Parameters:** | * **server** ([vncsdk.Server](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html" \l "vncsdk.Server" \o "vncsdk.Server)) – * **key** (int) – * **down** (bool) – |
| **Return type:** | bool |

**pointer\_event\_callback**(server, x, y, button\_mask, is\_relative)

Handle pointer events manually.

For more information, see vnc\_Server\_InputEventsCallback::pointerEventCallback.

|  |  |
| --- | --- |
| **Parameters:** | * **server** ([vncsdk.Server](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html" \l "vncsdk.Server" \o "vncsdk.Server)) – * **x** (int) – * **y** (int) – * **button\_mask** (int) – * **is\_relative** (bool) – |
| **Return type:** | bool |

Server.Permissions

*class***vncsdk.Server.Permissions**

Enumeration of session permissions that can be granted to a connecting Viewer.

Enumeration Attributes

**vncsdk.Server.Permissions.PERM\_VIEW**

Grants a Viewer permission to see the screen. Rarely omitted.

**vncsdk.Server.Permissions.PERM\_KEYBOARD**

Grants a Viewer permission to inject keyboard events.

**vncsdk.Server.Permissions.PERM\_POINTER**

Grants a Viewer permission to inject mouse and touch events.

**vncsdk.Server.Permissions.PERM\_CLIPBOARD**

Grants a Viewer permission to copy and paste text to and from the Server.

**vncsdk.Server.Permissions.PERM\_ANNOTATION**

Grants a Viewer permission to draw on the Server screen.

**vncsdk.Server.Permissions.PERM\_SELECT\_DISPLAY**

Grants a Viewer pemission to select the Server’s display.

**vncsdk.Server.Permissions.PERM\_LISTEN**

Grants a Viewer pemission to listen to the Server.

**vncsdk.Server.Permissions.PERM\_ALL**

Grants a Viewer a full set of permissions (that is, all of the above).

# Server.SecurityCallback

**vncsdk.Server.SecurityCallback**

Callback receiving security-related notifications for a Server.

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
| {[vncsdk.Server.Permissions](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-Permissions.html" \l "vncsdk.Server.Permissions" \o "vncsdk.Server.Permissions)} | [authenticate\_user](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-SecurityCallback.html#Server.SecurityCallback.authenticate_user)(server, connection, username, password)  Authenticate credentials presented by a Viewer. |
| bool | [is\_password\_required](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-SecurityCallback.html#Server.SecurityCallback.is_password_required)(server, connection)  Decide if a connecting Viewer is required to provide a password. |
| bool | [is\_user\_name\_required](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-SecurityCallback.html#Server.SecurityCallback.is_user_name_required)(server, connection)  Decide if a connecting Viewer is required to provide a user name. |
| bool | [verify\_peer](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-SecurityCallback.html#Server.SecurityCallback.verify_peer)(server, connection, viewer\_hex\_fingerprint, viewer\_rsa\_public)  Verify a Viewer’s cryptographic identity. |

## Methods

**authenticate\_user**(server, connection, username, password)

Authenticate credentials presented by a Viewer.

For more information, see vnc\_Server\_SecurityCallback::authenticateUser.

|  |  |
| --- | --- |
| **Parameters:** | * **server** ([vncsdk.Server](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html" \l "vncsdk.Server" \o "vncsdk.Server)) – * **connection** ([vncsdk.Connection](https://www.realvnc.com/en/developer/docs/latest/api/python/Connection.html" \l "vncsdk.Connection" \o "vncsdk.Connection)) – * **username** (str or None) – * **password** (str or None) – |
| **Return type:** | {[vncsdk.Server.Permissions](https://www.realvnc.com/en/developer/docs/latest/api/python/Server-Permissions.html" \l "vncsdk.Server.Permissions" \o "vncsdk.Server.Permissions)} |

**is\_password\_required**(server, connection)

Decide if a connecting Viewer is required to provide a password.

For more information, see vnc\_Server\_SecurityCallback::isPasswordRequired.

|  |  |
| --- | --- |
| **Parameters:** | * **server** ([vncsdk.Server](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html" \l "vncsdk.Server" \o "vncsdk.Server)) – * **connection** ([vncsdk.Connection](https://www.realvnc.com/en/developer/docs/latest/api/python/Connection.html" \l "vncsdk.Connection" \o "vncsdk.Connection)) – |
| **Return type:** | bool |

**is\_user\_name\_required**(server, connection)

Decide if a connecting Viewer is required to provide a user name.

For more information, see vnc\_Server\_SecurityCallback::isUserNameRequired.

|  |  |
| --- | --- |
| **Parameters:** | * **server** ([vncsdk.Server](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html" \l "vncsdk.Server" \o "vncsdk.Server)) – * **connection** ([vncsdk.Connection](https://www.realvnc.com/en/developer/docs/latest/api/python/Connection.html" \l "vncsdk.Connection" \o "vncsdk.Connection)) – |
| **Return type:** | bool |

**verify\_peer**(server, connection, viewer\_hex\_fingerprint, viewer\_rsa\_public)

Verify a Viewer’s cryptographic identity.

For more information, see vnc\_Server\_SecurityCallback::verifyPeer.

|  |  |
| --- | --- |
| **Parameters:** | * **server** ([vncsdk.Server](https://www.realvnc.com/en/developer/docs/latest/api/python/Server.html" \l "vncsdk.Server" \o "vncsdk.Server)) – * **connection** ([vncsdk.Connection](https://www.realvnc.com/en/developer/docs/latest/api/python/Connection.html" \l "vncsdk.Connection" \o "vncsdk.Connection)) – * **viewer\_hex\_fingerprint** (str or None) – * **viewer\_rsa\_public** ([vncsdk.DataBuffer](https://www.realvnc.com/en/developer/docs/latest/api/python/DataBuffer.html" \l "vncsdk.DataBuffer" \o "vncsdk.DataBuffer)) – |
| **Return type:** | bool |

# Viewer

class **vncsdk.Viewer**

A VNC-compatible Viewer showing the screen of and controlling a remote computer.

## Nested Classes

* [vncsdk.Viewer.AuthenticationCallback](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-AuthenticationCallback.html#vncsdk.Viewer.AuthenticationCallback)
* [vncsdk.Viewer.ConnectionCallback](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-ConnectionCallback.html#vncsdk.Viewer.ConnectionCallback)
* [vncsdk.Viewer.FramebufferCallback](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-FramebufferCallback.html#vncsdk.Viewer.FramebufferCallback)
* [vncsdk.Viewer.PeerVerificationCallback](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-PeerVerificationCallback.html#vncsdk.Viewer.PeerVerificationCallback)
* [vncsdk.Viewer.ServerEventCallback](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-ServerEventCallback.html#vncsdk.Viewer.ServerEventCallback)
* [vncsdk.Viewer.ConnectionStatus](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-ConnectionStatus.html#vncsdk.Viewer.ConnectionStatus)
* [vncsdk.Viewer.DisconnectFlags](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-DisconnectFlags.html#vncsdk.Viewer.DisconnectFlags)
* [vncsdk.Viewer.EncryptionLevel](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-EncryptionLevel.html#vncsdk.Viewer.EncryptionLevel)
* [vncsdk.Viewer.MouseButton](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-MouseButton.html#vncsdk.Viewer.MouseButton)
* [vncsdk.Viewer.MouseWheel](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-MouseWheel.html#vncsdk.Viewer.MouseWheel)
* [vncsdk.Viewer.PictureQuality](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-PictureQuality.html#vncsdk.Viewer.PictureQuality)

## Constructor Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [\_\_init\_\_](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#constructor)()  Creates and returns a new viewer. |

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
| bytes | [get\_viewer\_fb\_data](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.get_viewer_fb_data)(x, y, w, h)  Returns the viewer framebuffer data for the given rectangle. |
|  | [set\_viewer\_fb](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.set_viewer_fb)(pixels, pf, width, height, stride)  Sets the viewer framebuffer. |
|  | [destroy](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.destroy)()  Destroys the viewer. |
|  | [disconnect](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.disconnect)()  Disconnects this viewer from the server. |
|  | [enable\_audio](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.enable_audio)(enable)  Enables receipt of audio from the Server by the Viewer. |
| [vncsdk.AnnotationManager](https://www.realvnc.com/en/developer/docs/latest/api/python/AnnotationManager.html#vncsdk.AnnotationManager) | [get\_annotation\_manager](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.get_annotation_manager)()  Obtains the Viewer’s [vncsdk.AnnotationManager](https://www.realvnc.com/en/developer/docs/latest/api/python/AnnotationManager.html" \l "vncsdk.AnnotationManager" \o "vncsdk.AnnotationManager) for handling annotation operations. |
| [vncsdk.ConnectionHandler](https://www.realvnc.com/en/developer/docs/latest/api/python/ConnectionHandler.html#vncsdk.ConnectionHandler) | [get\_connection\_handler](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.get_connection_handler)()  Returns the viewer’s [vncsdk.ConnectionHandler](https://www.realvnc.com/en/developer/docs/latest/api/python/ConnectionHandler.html" \l "vncsdk.ConnectionHandler" \o "vncsdk.ConnectionHandler) for accepting connections. |
| [vncsdk.Viewer.ConnectionStatus](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-ConnectionStatus.html#vncsdk.Viewer.ConnectionStatus) | [get\_connection\_status](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.get_connection_status)()  Returns the status of the viewer’s connection. |
| str or None | [get\_disconnect\_message](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.get_disconnect_message)()  Returns a human-readable message sent by the server for the last disconnection, or None if the last disconnection was not initiated by the server. |
| str or None | [get\_disconnect\_reason](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.get_disconnect_reason)()  Returns a string ID representing the reason for the last viewer disconnection. |
| [vncsdk.DisplayManager](https://www.realvnc.com/en/developer/docs/latest/api/python/DisplayManager.html#vncsdk.DisplayManager) | [get\_display\_manager](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.get_display_manager)()  Obtains the Viewer’s [vncsdk.DisplayManager](https://www.realvnc.com/en/developer/docs/latest/api/python/DisplayManager.html" \l "vncsdk.DisplayManager" \o "vncsdk.DisplayManager), for managing the list of displays made available by the Server to the Viewer. |
| [vncsdk.Viewer.EncryptionLevel](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-EncryptionLevel.html#vncsdk.Viewer.EncryptionLevel) | [get\_encryption\_level](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.get_encryption_level)()  Returns the Viewer’s current encryption level. |
| [vncsdk.MessagingManager](https://www.realvnc.com/en/developer/docs/latest/api/python/MessagingManager.html#vncsdk.MessagingManager) | [get\_messaging\_manager](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.get_messaging_manager)()  Obtains the Viewer’s Messaging Manager for handling messaging For more information, see [vnc\_Viewer\_getMessagingManager()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv230vnc_Viewer_getMessagingManagerP10vnc_Viewer" \o "vnc_Viewer_getMessagingManager). |
| str | [get\_peer\_address](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.get_peer_address)()  Returns the address of the viewer’s server. |
| [vncsdk.Viewer.PictureQuality](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-PictureQuality.html#vncsdk.Viewer.PictureQuality) | [get\_picture\_quality](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.get_picture_quality)()  Returns the viewer’s current picture quality. |
| int | [get\_viewer\_fb\_height](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.get_viewer_fb_height)()  Gets the height of the viewer framebuffer. |
| [vncsdk.PixelFormat](https://www.realvnc.com/en/developer/docs/latest/api/python/PixelFormat.html#vncsdk.PixelFormat) | [get\_viewer\_fb\_pixel\_format](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.get_viewer_fb_pixel_format)()  Gets the pixel format of the viewer framebuffer. |
| int | [get\_viewer\_fb\_stride](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.get_viewer_fb_stride)()  Returns the stride of the viewer framebuffer data in pixels, that is, the number of pixels from the start of each row until the start of the next. |
| int | [get\_viewer\_fb\_width](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.get_viewer_fb_width)()  Gets the width of the viewer framebuffer. |
|  | [release\_all\_keys](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.release_all_keys)()  Send key up events for all currently pressed keys. |
|  | [send\_authentication\_response](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.send_authentication_response)(ok, user, passwd)  Provides the SDK with the result of a username/password request. |
|  | [send\_clipboard\_text](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.send_clipboard_text)(text)  Copies the given text to the server’s clipboard. |
|  | [send\_key\_down](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.send_key_down)(keysym, key\_code)  Sends a key down (press) event to the server. |
|  | [send\_key\_up](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.send_key_up)(key\_code)  Sends a key up (release) event to the server. |
|  | [send\_peer\_verification\_response](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.send_peer_verification_response)(ok)  Provides the SDK with the response to the Viewer.PeerVerificationCallbackverifyPeer() request. |
|  | [send\_pointer\_event](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.send_pointer_event)(x, y, button\_state, rel)  Sends a pointer event to the server. |
|  | [send\_scroll\_event](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.send_scroll_event)(delta, axis)  Sends a scroll wheel event to the server. |
|  | [set\_authentication\_callback](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.set_authentication_callback)(callback)  Sets the callback to be called when a username and/or password is required. |
|  | [set\_connection\_callback](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.set_connection_callback)(callback)  Sets the callbacks for the Viewer to call when various events occur during its lifetime. |
|  | [set\_encryption\_level](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.set_encryption_level)(level)  Sets the desired encryption level of the session from the range of options enumerated by ENCRYPTION\_LEVEL. |
|  | [set\_framebuffer\_callback](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.set_framebuffer_callback)(callback)  Sets the framebuffer callback for this viewer. |
|  | [set\_peer\_verification\_callback](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.set_peer_verification_callback)(callback)  Sets the callbacks to be called to verify the identity of the peer (server). |
|  | [set\_picture\_quality](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.set_picture_quality)(quality)  Sets the desired picture quality of the session from the range of options enumerated by PICTURE\_QUALITY. |
|  | [set\_server\_event\_callback](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.set_server_event_callback)(callback)  Sets the server event callback for this viewer. |

## Constructor

**vncsdk.Viewer.\_\_init\_\_**()

Creates and returns a new viewer.

For more information, see [vnc\_Viewer\_create()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv217vnc_Viewer_createv" \o "vnc_Viewer_create).

## Methods

**get\_viewer\_fb\_data**(x, y, w, h)

Returns the viewer framebuffer data for the given rectangle.

|  |  |
| --- | --- |
| **Parameters:** | * **x** (int) – * **y** (int) – * **w** (int) – * **h** (int) – |
| **Return type:** | bytes |

**set\_viewer\_fb**(pixels, pf, width, height, stride)

Sets the viewer framebuffer. Note: The viewer does not keep a strong reference to any user-allocated framebuffer passed in via the pixels parameter, therefore users must keep their own reference to the framebuffer to prevent it from being garbage collected while it is being used by the viewer.

|  |  |
| --- | --- |
| **Parameters:** | * **pixels** (undefined) – * **pf** ([vncsdk.PixelFormat](https://www.realvnc.com/en/developer/docs/latest/api/python/PixelFormat.html" \l "vncsdk.PixelFormat" \o "vncsdk.PixelFormat)) – * **width** (int) – * **height** (int) – |

**destroy**()

Destroys the viewer.

For more information, see [vnc\_Viewer\_destroy()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv218vnc_Viewer_destroyP10vnc_Viewer" \o "vnc_Viewer_destroy).

**disconnect**()

Disconnects this viewer from the server.

For more information, see [vnc\_Viewer\_disconnect()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv221vnc_Viewer_disconnectP10vnc_Viewer" \o "vnc_Viewer_disconnect).

**enable\_audio**(enable)

Enables receipt of audio from the Server by the Viewer.

For more information, see [vnc\_Viewer\_enableAudio()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv222vnc_Viewer_enableAudioP10vnc_Viewer10vnc_bool_t" \o "vnc_Viewer_enableAudio).

|  |  |
| --- | --- |
| **Parameters:** | **enable** (bool) – |

**get\_annotation\_manager**()

Obtains the Viewer’s [vncsdk.AnnotationManager](https://www.realvnc.com/en/developer/docs/latest/api/python/AnnotationManager.html" \l "vncsdk.AnnotationManager" \o "vncsdk.AnnotationManager) for handling annotation operations.

For more information, see [vnc\_Viewer\_getAnnotationManager()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv231vnc_Viewer_getAnnotationManagerP10vnc_Viewer" \o "vnc_Viewer_getAnnotationManager).

|  |  |
| --- | --- |
| **Return type:** | [vncsdk.AnnotationManager](https://www.realvnc.com/en/developer/docs/latest/api/python/AnnotationManager.html#vncsdk.AnnotationManager) |

**get\_connection\_handler**()

Returns the viewer’s [vncsdk.ConnectionHandler](https://www.realvnc.com/en/developer/docs/latest/api/python/ConnectionHandler.html" \l "vncsdk.ConnectionHandler" \o "vncsdk.ConnectionHandler) for accepting connections.

For more information, see [vnc\_Viewer\_getConnectionHandler()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv231vnc_Viewer_getConnectionHandlerP10vnc_Viewer" \o "vnc_Viewer_getConnectionHandler).

|  |  |
| --- | --- |
| **Return type:** | [vncsdk.ConnectionHandler](https://www.realvnc.com/en/developer/docs/latest/api/python/ConnectionHandler.html#vncsdk.ConnectionHandler) |

**get\_connection\_status**()

Returns the status of the viewer’s connection.

For more information, see [vnc\_Viewer\_getConnectionStatus()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv230vnc_Viewer_getConnectionStatusP10vnc_Viewer" \o "vnc_Viewer_getConnectionStatus).

|  |  |
| --- | --- |
| **Return type:** | [vncsdk.Viewer.ConnectionStatus](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-ConnectionStatus.html#vncsdk.Viewer.ConnectionStatus) |

**get\_disconnect\_message**()

Returns a human-readable message sent by the server for the last disconnection, or None if the last disconnection was not initiated by the server.

For more information, see [vnc\_Viewer\_getDisconnectMessage()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv231vnc_Viewer_getDisconnectMessageP10vnc_Viewer" \o "vnc_Viewer_getDisconnectMessage).

|  |  |
| --- | --- |
| **Return type:** | str or None |

**get\_disconnect\_reason**()

Returns a string ID representing the reason for the last viewer disconnection.

For more information, see [vnc\_Viewer\_getDisconnectReason()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv230vnc_Viewer_getDisconnectReasonP10vnc_Viewer" \o "vnc_Viewer_getDisconnectReason).

|  |  |
| --- | --- |
| **Return type:** | str or None |

**get\_display\_manager**()

Obtains the Viewer’s [vncsdk.DisplayManager](https://www.realvnc.com/en/developer/docs/latest/api/python/DisplayManager.html" \l "vncsdk.DisplayManager" \o "vncsdk.DisplayManager), for managing the list of displays made available by the Server to the Viewer.

For more information, see [vnc\_Viewer\_getDisplayManager()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv228vnc_Viewer_getDisplayManagerP10vnc_Viewer" \o "vnc_Viewer_getDisplayManager).

|  |  |
| --- | --- |
| **Return type:** | [vncsdk.DisplayManager](https://www.realvnc.com/en/developer/docs/latest/api/python/DisplayManager.html#vncsdk.DisplayManager) |

**get\_encryption\_level**()

Returns the Viewer’s current encryption level.

For more information, see [vnc\_Viewer\_getEncryptionLevel()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv229vnc_Viewer_getEncryptionLevelP10vnc_Viewer" \o "vnc_Viewer_getEncryptionLevel).

|  |  |
| --- | --- |
| **Return type:** | [vncsdk.Viewer.EncryptionLevel](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-EncryptionLevel.html#vncsdk.Viewer.EncryptionLevel) |

**get\_messaging\_manager**()

Obtains the Viewer’s Messaging Manager for handling messaging

For more information, see [vnc\_Viewer\_getMessagingManager()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv230vnc_Viewer_getMessagingManagerP10vnc_Viewer" \o "vnc_Viewer_getMessagingManager).

|  |  |
| --- | --- |
| **Return type:** | [vncsdk.MessagingManager](https://www.realvnc.com/en/developer/docs/latest/api/python/MessagingManager.html#vncsdk.MessagingManager) |

**get\_peer\_address**()

Returns the address of the viewer’s server.

For more information, see [vnc\_Viewer\_getPeerAddress()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv225vnc_Viewer_getPeerAddressP10vnc_Viewer" \o "vnc_Viewer_getPeerAddress).

|  |  |
| --- | --- |
| **Return type:** | str |

**get\_picture\_quality**()

Returns the viewer’s current picture quality.

For more information, see [vnc\_Viewer\_getPictureQuality()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv228vnc_Viewer_getPictureQualityP10vnc_Viewer" \o "vnc_Viewer_getPictureQuality).

|  |  |
| --- | --- |
| **Return type:** | [vncsdk.Viewer.PictureQuality](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-PictureQuality.html#vncsdk.Viewer.PictureQuality) |

**get\_viewer\_fb\_height**()

Gets the height of the viewer framebuffer.

For more information, see [vnc\_Viewer\_getViewerFbHeight()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv228vnc_Viewer_getViewerFbHeightP10vnc_Viewer" \o "vnc_Viewer_getViewerFbHeight).

|  |  |
| --- | --- |
| **Return type:** | int |

**get\_viewer\_fb\_pixel\_format**()

Gets the pixel format of the viewer framebuffer.

For more information, see [vnc\_Viewer\_getViewerFbPixelFormat()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv233vnc_Viewer_getViewerFbPixelFormatP10vnc_Viewer" \o "vnc_Viewer_getViewerFbPixelFormat).

|  |  |
| --- | --- |
| **Return type:** | [vncsdk.PixelFormat](https://www.realvnc.com/en/developer/docs/latest/api/python/PixelFormat.html#vncsdk.PixelFormat) |

**get\_viewer\_fb\_stride**()

Returns the stride of the viewer framebuffer data in pixels, that is, the number of pixels from the start of each row until the start of the next.

For more information, see [vnc\_Viewer\_getViewerFbStride()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv228vnc_Viewer_getViewerFbStrideP10vnc_Viewer" \o "vnc_Viewer_getViewerFbStride).

|  |  |
| --- | --- |
| **Return type:** | int |

**get\_viewer\_fb\_width**()

Gets the width of the viewer framebuffer.

For more information, see [vnc\_Viewer\_getViewerFbWidth()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv227vnc_Viewer_getViewerFbWidthP10vnc_Viewer" \o "vnc_Viewer_getViewerFbWidth).

|  |  |
| --- | --- |
| **Return type:** | int |

**release\_all\_keys**()

Send key up events for all currently pressed keys.

For more information, see [vnc\_Viewer\_releaseAllKeys()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv225vnc_Viewer_releaseAllKeysP10vnc_Viewer" \o "vnc_Viewer_releaseAllKeys).

**send\_authentication\_response**(ok, user, passwd)

Provides the SDK with the result of a username/password request.

For more information, see [vnc\_Viewer\_sendAuthenticationResponse()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv237vnc_Viewer_sendAuthenticationResponseP10vnc_Viewer10vnc_bool_tPKcPKc" \o "vnc_Viewer_sendAuthenticationResponse).

|  |  |
| --- | --- |
| **Parameters:** | * **ok** (bool) – * **user** (str or None) – * **passwd** (str or None) – |

**send\_clipboard\_text**(text)

Copies the given text to the server’s clipboard.

For more information, see [vnc\_Viewer\_sendClipboardText()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv228vnc_Viewer_sendClipboardTextP10vnc_ViewerPKc" \o "vnc_Viewer_sendClipboardText).

|  |  |
| --- | --- |
| **Parameters:** | **text** (str) – |

**send\_key\_down**(keysym, key\_code)

Sends a key down (press) event to the server.

For more information, see [vnc\_Viewer\_sendKeyDown()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv222vnc_Viewer_sendKeyDownP10vnc_Viewer12vnc_uint31_ti" \o "vnc_Viewer_sendKeyDown).

|  |  |
| --- | --- |
| **Parameters:** | * **keysym** (int) – * **key\_code** (int) – |

**send\_key\_up**(key\_code)

Sends a key up (release) event to the server.

For more information, see [vnc\_Viewer\_sendKeyUp()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv220vnc_Viewer_sendKeyUpP10vnc_Vieweri" \o "vnc_Viewer_sendKeyUp).

|  |  |
| --- | --- |
| **Parameters:** | **key\_code** (int) – |

**send\_peer\_verification\_response**(ok)

Provides the SDK with the response to the Viewer.PeerVerificationCallbackverifyPeer() request.

For more information, see [vnc\_Viewer\_sendPeerVerificationResponse()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv239vnc_Viewer_sendPeerVerificationResponseP10vnc_Viewer10vnc_bool_t" \o "vnc_Viewer_sendPeerVerificationResponse).

|  |  |
| --- | --- |
| **Parameters:** | **ok** (bool) – |

**send\_pointer\_event**(x, y, button\_state, rel)

Sends a pointer event to the server.

For more information, see [vnc\_Viewer\_sendPointerEvent()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv227vnc_Viewer_sendPointerEventP10vnc_Vieweriii10vnc_bool_t" \o "vnc_Viewer_sendPointerEvent).

|  |  |
| --- | --- |
| **Parameters:** | * **x** (int) – * **y** (int) – * **button\_state** ({[vncsdk.Viewer.MouseButton](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-MouseButton.html" \l "vncsdk.Viewer.MouseButton" \o "vncsdk.Viewer.MouseButton)}) – * **rel** (bool) – |

**send\_scroll\_event**(delta, axis)

Sends a scroll wheel event to the server.

For more information, see [vnc\_Viewer\_sendScrollEvent()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv226vnc_Viewer_sendScrollEventP10vnc_Vieweri21vnc_Viewer_MouseWheel" \o "vnc_Viewer_sendScrollEvent).

|  |  |
| --- | --- |
| **Parameters:** | * **delta** (int) – * **axis** ([vncsdk.Viewer.MouseWheel](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-MouseWheel.html" \l "vncsdk.Viewer.MouseWheel" \o "vncsdk.Viewer.MouseWheel)) – |

**set\_authentication\_callback**(callback)

Sets the callback to be called when a username and/or password is required.

For more information, see [vnc\_Viewer\_setAuthenticationCallback()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv236vnc_Viewer_setAuthenticationCallbackP10vnc_ViewerPK33vnc_Viewer_AuthenticationCallbackPv" \o "vnc_Viewer_setAuthenticationCallback).

|  |  |
| --- | --- |
| **Parameters:** | **callback** ([vncsdk.Viewer.AuthenticationCallback](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-AuthenticationCallback.html" \l "vncsdk.Viewer.AuthenticationCallback" \o "vncsdk.Viewer.AuthenticationCallback) or None) – |

**set\_connection\_callback**(callback)

Sets the callbacks for the Viewer to call when various events occur during its lifetime.

For more information, see [vnc\_Viewer\_setConnectionCallback()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv232vnc_Viewer_setConnectionCallbackP10vnc_ViewerPK29vnc_Viewer_ConnectionCallbackPv" \o "vnc_Viewer_setConnectionCallback).

|  |  |
| --- | --- |
| **Parameters:** | **callback** ([vncsdk.Viewer.ConnectionCallback](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-ConnectionCallback.html" \l "vncsdk.Viewer.ConnectionCallback" \o "vncsdk.Viewer.ConnectionCallback) or None) – |

**set\_encryption\_level**(level)

Sets the desired encryption level of the session from the range of options enumerated by ENCRYPTION\_LEVEL.

For more information, see [vnc\_Viewer\_setEncryptionLevel()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv229vnc_Viewer_setEncryptionLevelP10vnc_Viewer26vnc_Viewer_EncryptionLevel" \o "vnc_Viewer_setEncryptionLevel).

|  |  |
| --- | --- |
| **Parameters:** | **level** ([vncsdk.Viewer.EncryptionLevel](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-EncryptionLevel.html" \l "vncsdk.Viewer.EncryptionLevel" \o "vncsdk.Viewer.EncryptionLevel)) – |

**set\_framebuffer\_callback**(callback)

Sets the framebuffer callback for this viewer.

For more information, see [vnc\_Viewer\_setFramebufferCallback()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv233vnc_Viewer_setFramebufferCallbackP10vnc_ViewerPK30vnc_Viewer_FramebufferCallbackPv" \o "vnc_Viewer_setFramebufferCallback).

|  |  |
| --- | --- |
| **Parameters:** | **callback** ([vncsdk.Viewer.FramebufferCallback](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-FramebufferCallback.html" \l "vncsdk.Viewer.FramebufferCallback" \o "vncsdk.Viewer.FramebufferCallback) or None) – |

**set\_peer\_verification\_callback**(callback)

Sets the callbacks to be called to verify the identity of the peer (server).

For more information, see [vnc\_Viewer\_setPeerVerificationCallback()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv238vnc_Viewer_setPeerVerificationCallbackP10vnc_ViewerPK35vnc_Viewer_PeerVerificationCallbackPv" \o "vnc_Viewer_setPeerVerificationCallback).

|  |  |
| --- | --- |
| **Parameters:** | **callback** ([vncsdk.Viewer.PeerVerificationCallback](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-PeerVerificationCallback.html" \l "vncsdk.Viewer.PeerVerificationCallback" \o "vncsdk.Viewer.PeerVerificationCallback) or None) – |

**set\_picture\_quality**(quality)

Sets the desired picture quality of the session from the range of options enumerated by PICTURE\_QUALITY.

For more information, see [vnc\_Viewer\_setPictureQuality()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv228vnc_Viewer_setPictureQualityP10vnc_Viewer25vnc_Viewer_PictureQuality" \o "vnc_Viewer_setPictureQuality).

|  |  |
| --- | --- |
| **Parameters:** | **quality** ([vncsdk.Viewer.PictureQuality](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-PictureQuality.html" \l "vncsdk.Viewer.PictureQuality" \o "vncsdk.Viewer.PictureQuality)) – |

**set\_server\_event\_callback**(callback)

Sets the server event callback for this viewer.

For more information, see [vnc\_Viewer\_setServerEventCallback()](https://www.realvnc.com/en/developer/docs/latest/api/c/Viewer.h.html" \l "_CPPv233vnc_Viewer_setServerEventCallbackP10vnc_ViewerPK30vnc_Viewer_ServerEventCallbackPv" \o "vnc_Viewer_setServerEventCallback).

|  |  |
| --- | --- |
| **Parameters:** | **callback** ([vncsdk.Viewer.ServerEventCallback](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-ServerEventCallback.html" \l "vncsdk.Viewer.ServerEventCallback" \o "vncsdk.Viewer.ServerEventCallback) or None) – |

# Viewer.AuthenticationCallback

**vncsdk.Viewer.AuthenticationCallback**

Callback receiving requests for authentication for a Viewer.

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [cancel\_user\_credentials\_request](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-AuthenticationCallback.html#Viewer.AuthenticationCallback.cancel_user_credentials_request)(viewer)  Notification to cancel a username and/or password request. |
|  | [request\_user\_credentials](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-AuthenticationCallback.html#Viewer.AuthenticationCallback.request_user_credentials)(viewer, need\_user, need\_passwd)  Request for a username and/or password. |

## Methods

**cancel\_user\_credentials\_request**(viewer)

Notification to cancel a username and/or password request.

For more information, see vnc\_Viewer\_AuthenticationCallback::cancelUserCredentialsRequest.

|  |  |
| --- | --- |
| **Parameters:** | **viewer** ([vncsdk.Viewer](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html" \l "vncsdk.Viewer" \o "vncsdk.Viewer)) – |
| **Returns:** | None |

**request\_user\_credentials**(viewer, need\_user, need\_passwd)

Request for a username and/or password.

For more information, see vnc\_Viewer\_AuthenticationCallback::requestUserCredentials.

|  |  |
| --- | --- |
| **Parameters:** | * **viewer** ([vncsdk.Viewer](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html" \l "vncsdk.Viewer" \o "vncsdk.Viewer)) – * **need\_user** (bool) – * **need\_passwd** (bool) – |
| **Returns:** | None |

# Viewer.ConnectionCallback

**vncsdk.Viewer.ConnectionCallback**

Callback receiving state-change notifications for a Viewer.

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [connected](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-ConnectionCallback.html#Viewer.ConnectionCallback.connected)(viewer)  Notification that is called when the viewer successfully connects to a server (after authentication). |
|  | [connecting](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-ConnectionCallback.html#Viewer.ConnectionCallback.connecting)(viewer)  Notification that is called when the viewer begins a connection attempt to the server. |
|  | [disconnected](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-ConnectionCallback.html#Viewer.ConnectionCallback.disconnected)(viewer, reason, flags)  Notification that is called when the viewer disconnects from the server. |

## Methods

**connected**(viewer)

Notification that is called when the viewer successfully connects to a server (after authentication).

For more information, see vnc\_Viewer\_ConnectionCallback::connected.

|  |  |
| --- | --- |
| **Parameters:** | **viewer** ([vncsdk.Viewer](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html" \l "vncsdk.Viewer" \o "vncsdk.Viewer)) – |
| **Returns:** | None |

**connecting**(viewer)

Notification that is called when the viewer begins a connection attempt to the server.

For more information, see vnc\_Viewer\_ConnectionCallback::connecting.

|  |  |
| --- | --- |
| **Parameters:** | **viewer** ([vncsdk.Viewer](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html" \l "vncsdk.Viewer" \o "vncsdk.Viewer)) – |
| **Returns:** | None |

**disconnected**(viewer, reason, flags)

Notification that is called when the viewer disconnects from the server.

For more information, see vnc\_Viewer\_ConnectionCallback::disconnected.

|  |  |
| --- | --- |
| **Parameters:** | * **viewer** ([vncsdk.Viewer](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html" \l "vncsdk.Viewer" \o "vncsdk.Viewer)) – * **reason** (str or None) – * **flags** ({[vncsdk.Viewer.DisconnectFlags](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-DisconnectFlags.html" \l "vncsdk.Viewer.DisconnectFlags" \o "vncsdk.Viewer.DisconnectFlags)}) – |
| **Returns:** | None |

Viewer.ConnectionStatus

*class***vncsdk.Viewer.ConnectionStatus**

Enumeration of connection statuses.

Enumeration Attributes

**vncsdk.Viewer.ConnectionStatus.DISCONNECTED**

The viewer is not connected to a server.

**vncsdk.Viewer.ConnectionStatus.CONNECTING**

The viewer is negotiating a connection to a server (includes authentication).

**vncsdk.Viewer.ConnectionStatus.CONNECTED**

The viewer is connected to a server.

**vncsdk.Viewer.ConnectionStatus.DISCONNECTING**

[Viewer.disconnect()](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html#Viewer.disconnect) has been called but we’ve not yet disconnected from the server.

Viewer.DisconnectFlags

*class***vncsdk.Viewer.DisconnectFlags**

Enumeration of disconnection flags.

Enumeration Attributes

**vncsdk.Viewer.DisconnectFlags.ALERT\_USER**

The disconnection message could be shown to the user. This is set if the server sent this flag with its disconnection message, or the viewer disconnected due to an error.

**vncsdk.Viewer.DisconnectFlags.CAN\_RECONNECT**

The connection has been broken, but a reconnection attempt may succeed.

Viewer.EncryptionLevel

*class***vncsdk.Viewer.EncryptionLevel**

Enumeration of encryption levels.

Enumeration Attributes

**vncsdk.Viewer.EncryptionLevel.DEFAULT**

Use strong encryption. This is the default.

**vncsdk.Viewer.EncryptionLevel.MAXIMUM**

Use the strongest available encryption, possibly at the cost of speed.

**vncsdk.Viewer.EncryptionLevel.SERVER**

Respect the server’s choice of encryption level. This means the viewer will allow connections to third-party servers, but also represents the weakest security, and may open the user up to man-in-the-middle type attacks. Use with caution. Note: to enable this feature, you will need a Third Party Connectivity Add-on code - contact RealVNC for more information.

# Viewer.FramebufferCallback

**vncsdk.Viewer.FramebufferCallback**

Callback receiving framebuffer event notifications for a Viewer.

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [server\_fb\_size\_changed](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-FramebufferCallback.html#Viewer.FramebufferCallback.server_fb_size_changed)(viewer, w, h)  Notification that the server’s framebuffer size has changed. |
|  | [viewer\_fb\_updated](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-FramebufferCallback.html#Viewer.FramebufferCallback.viewer_fb_updated)(viewer, x, y, w, h)  Notification that the given rectangle of the viewer’s framebuffer has been updated with new pixel data. |

## Methods

**server\_fb\_size\_changed**(viewer, w, h)

Notification that the server’s framebuffer size has changed.

For more information, see vnc\_Viewer\_FramebufferCallback::serverFbSizeChanged.

|  |  |
| --- | --- |
| **Parameters:** | * **viewer** ([vncsdk.Viewer](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html" \l "vncsdk.Viewer" \o "vncsdk.Viewer)) – * **w** (int) – * **h** (int) – |
| **Returns:** | None |

**viewer\_fb\_updated**(viewer, x, y, w, h)

Notification that the given rectangle of the viewer’s framebuffer has been updated with new pixel data.

For more information, see vnc\_Viewer\_FramebufferCallback::viewerFbUpdated.

|  |  |
| --- | --- |
| **Parameters:** | * **viewer** ([vncsdk.Viewer](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html" \l "vncsdk.Viewer" \o "vncsdk.Viewer)) – * **x** (int) – * **y** (int) – * **w** (int) – * **h** (int) – |
| **Returns:** | None |

Viewer.MouseButton

*class***vncsdk.Viewer.MouseButton**

Enumeration of mouse buttons.

Enumeration Attributes

**vncsdk.Viewer.MouseButton.MOUSE\_BUTTON\_LEFT**

The logical left mouse button.

**vncsdk.Viewer.MouseButton.MOUSE\_BUTTON\_MIDDLE**

The logical middle mouse button.

**vncsdk.Viewer.MouseButton.MOUSE\_BUTTON\_RIGHT**

The logical right mouse button.

Viewer.MouseWheel

*class***vncsdk.Viewer.MouseWheel**

Enumeration of mouse wheel directions.

Enumeration Attributes

**vncsdk.Viewer.MouseWheel.MOUSE\_WHEEL\_HORIZONTAL**

The horizontal scroll wheel.

**vncsdk.Viewer.MouseWheel.MOUSE\_WHEEL\_VERTICAL**

The vertical scroll wheel.

# Viewer.PeerVerificationCallback

**vncsdk.Viewer.PeerVerificationCallback**

Callback receiving verification requests to check the peer’s identity.

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [cancel\_peer\_verification](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-PeerVerificationCallback.html#Viewer.PeerVerificationCallback.cancel_peer_verification)(viewer)  Notification to cancel a prior request for peer verification. |
|  | [verify\_peer](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-PeerVerificationCallback.html#Viewer.PeerVerificationCallback.verify_peer)(viewer, hex\_fingerprint, catchphrase\_fingerprint, server\_rsa\_public)  Request to verify the identity of the peer (the server). |

## Methods

**cancel\_peer\_verification**(viewer)

Notification to cancel a prior request for peer verification.

For more information, see vnc\_Viewer\_PeerVerificationCallback::cancelPeerVerification.

|  |  |
| --- | --- |
| **Parameters:** | **viewer** ([vncsdk.Viewer](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html" \l "vncsdk.Viewer" \o "vncsdk.Viewer)) – |
| **Returns:** | None |

**verify\_peer**(viewer, hex\_fingerprint, catchphrase\_fingerprint, server\_rsa\_public)

Request to verify the identity of the peer (the server).

For more information, see vnc\_Viewer\_PeerVerificationCallback::verifyPeer.

|  |  |
| --- | --- |
| **Parameters:** | * **viewer** ([vncsdk.Viewer](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html" \l "vncsdk.Viewer" \o "vncsdk.Viewer)) – * **hex\_fingerprint** (str or None) – * **catchphrase\_fingerprint** (str or None) – * **server\_rsa\_public** ([vncsdk.DataBuffer](https://www.realvnc.com/en/developer/docs/latest/api/python/DataBuffer.html" \l "vncsdk.DataBuffer" \o "vncsdk.DataBuffer)) – |
| **Returns:** | None |

Viewer.PictureQuality

*class***vncsdk.Viewer.PictureQuality**

Enumeration of picture quality levels.

Enumeration Attributes

**vncsdk.Viewer.PictureQuality.AUTO**

Auto quality means that the viewer selects an appropriate encoding and colour level based on its own line speed estimate.

**vncsdk.Viewer.PictureQuality.HIGH**

**vncsdk.Viewer.PictureQuality.MEDIUM**

**vncsdk.Viewer.PictureQuality.LOW**

# Viewer.ServerEventCallback

**vncsdk.Viewer.ServerEventCallback**

Callback receiving server event notifications for a Viewer.

## Method Summary

| **Modifier and Type** | **Method and Description** |
| --- | --- |
|  | [server\_clipboard\_text\_changed](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-ServerEventCallback.html#Viewer.ServerEventCallback.server_clipboard_text_changed)(viewer, text)  Notification that the server’s clipboard contains new text. |
|  | [server\_friendly\_name\_changed](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer-ServerEventCallback.html#Viewer.ServerEventCallback.server_friendly_name_changed)(viewer, name)  Notification that the server’s friendly name has changed. |

## Methods

**server\_clipboard\_text\_changed**(viewer, text)

Notification that the server’s clipboard contains new text.

For more information, see vnc\_Viewer\_ServerEventCallback::serverClipboardTextChanged.

|  |  |
| --- | --- |
| **Parameters:** | * **viewer** ([vncsdk.Viewer](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html" \l "vncsdk.Viewer" \o "vncsdk.Viewer)) – * **text** (str or None) – |
| **Returns:** | None |

**server\_friendly\_name\_changed**(viewer, name)

Notification that the server’s friendly name has changed.

For more information, see vnc\_Viewer\_ServerEventCallback::serverFriendlyNameChanged.

|  |  |
| --- | --- |
| **Parameters:** | * **viewer** ([vncsdk.Viewer](https://www.realvnc.com/en/developer/docs/latest/api/python/Viewer.html" \l "vncsdk.Viewer" \o "vncsdk.Viewer)) – * **name** (str or None) – |
| **Returns:** | None |