

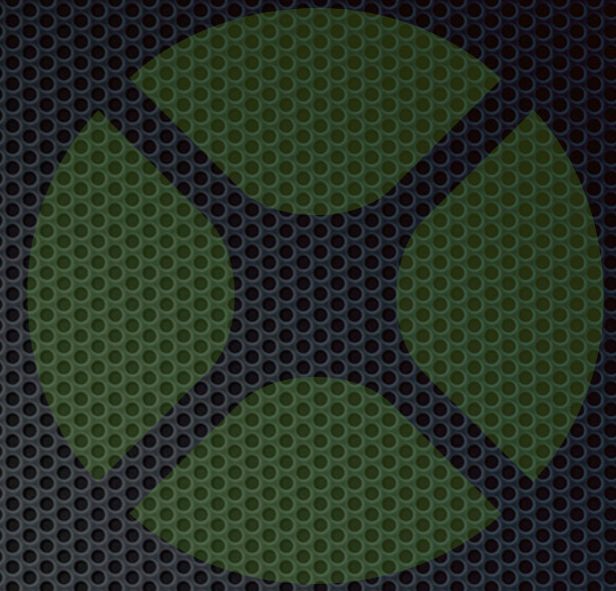


Modern Continuous Integration With Xojo

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Lightspeed, Inc.

Agenda

- The way it was for Lightspeed OnSite
- IDE Communication overview
- Communicating with a socket via the command-line
- Using a shell script to control the IDE
- Debugging issues
- Before-and-after comparison



What we won't cover

- Setting up a CI environment
- Comparison of CI systems

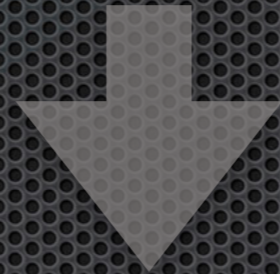




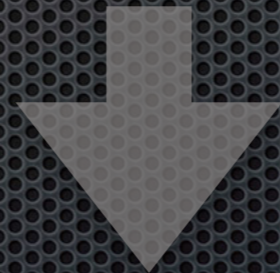
The way it was

« Just a shell script »

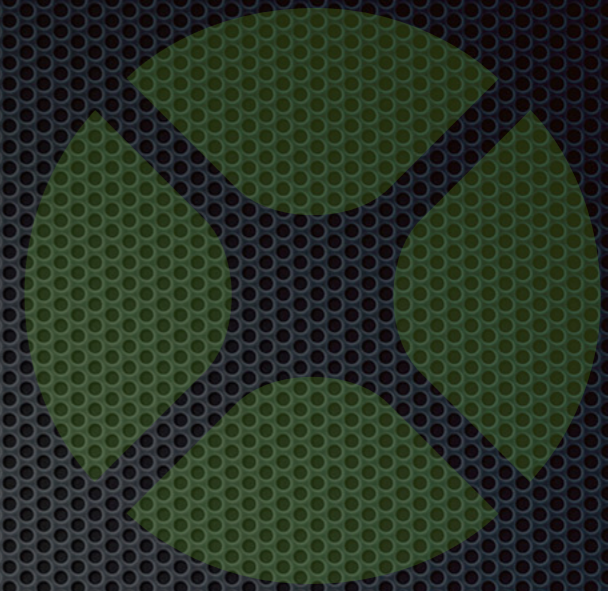
build_client.sh



build_with_xojo.applescript



build.rbs



```
on doXojoCmds(scriptName)
  tell application "System Events"
    tell process "Xojo"
      with timeout of 1200 seconds
        -- Return to the main window. This updates the "File>IDEScripts" menu.
        keystroke "1" using command down

        -- Now we can ask Xojo to run "build.rbs".
        set mb to menu bar 1
        set fileMenu to menu "File" of mb
        set IDEScriptsMenu to menu 1 of menu item "IDE Scripts" of fileMenu
        set scriptItem to menu item scriptName of IDEScriptsMenu
        click scriptItem
      end timeout
    end tell
  end tell
end doXojoCmds
```



Security & Privacy

Search

- General
- FileVault
- Firewall
- Privacy**

- Location Services
- Contacts
- Calendars
- Reminders
- Photos
- Camera
- Microphone
- Accessibility
- Full Disk Access

Allow the apps below to control your computer.

- Terminal



Click the lock to prevent further changes.

Advanced...





IDE Communication

Socket communication

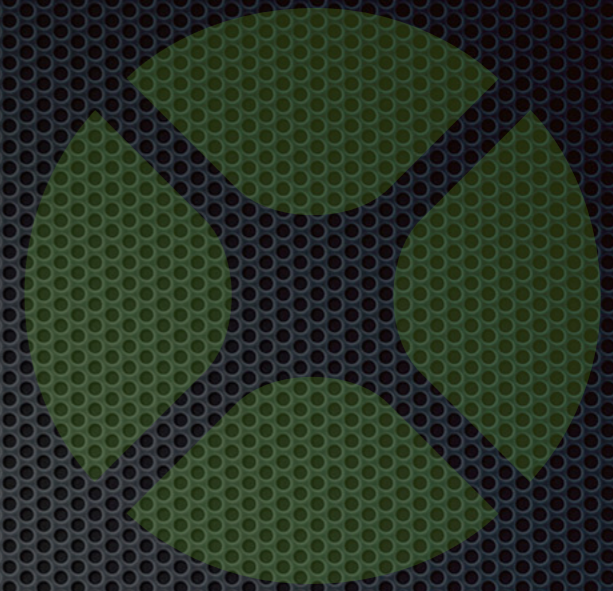


When the IDE is active, it creates a socket for listening:

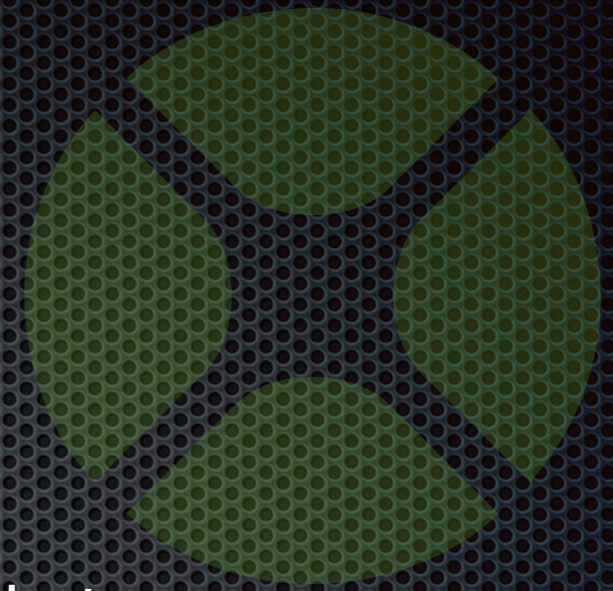
```
/tmp/XojoIDE
```

Socket v1

Send a string containing IDEScript (XojoScript)



Socket v2

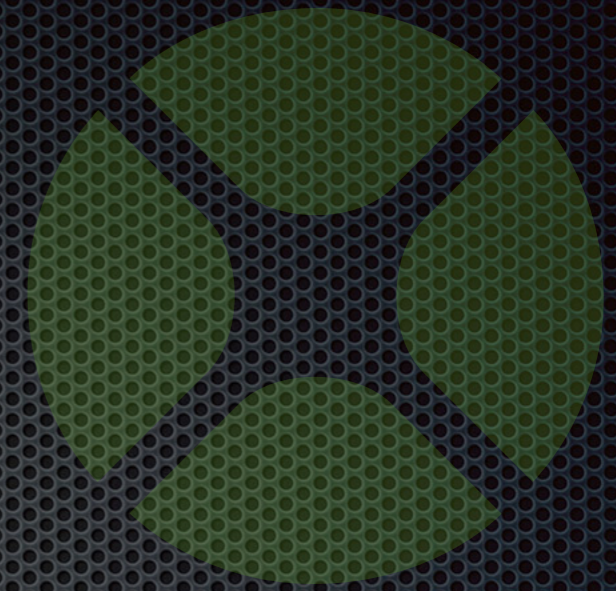


Send a `json` string containing a tag and a script.

I strongly recommend to return something from your script, for example:

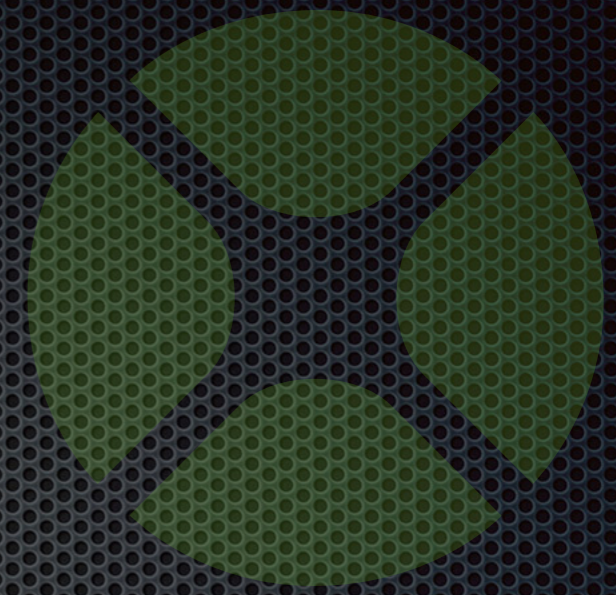
```
print "***DONE***"
```

IDECommunicator



- Xojo Folder
 - Example Projects
 - IDE Scripting
 - IDECommunicator
 - v1
 - v2

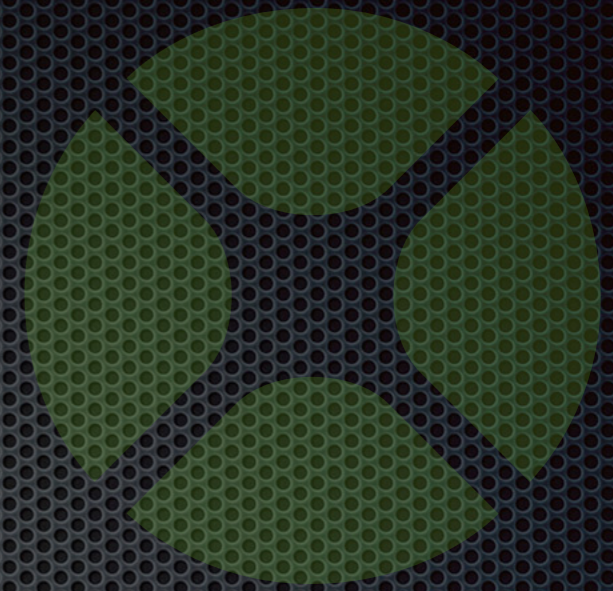
http://docs.xojo.com/UserGuide:IDE_Communicator

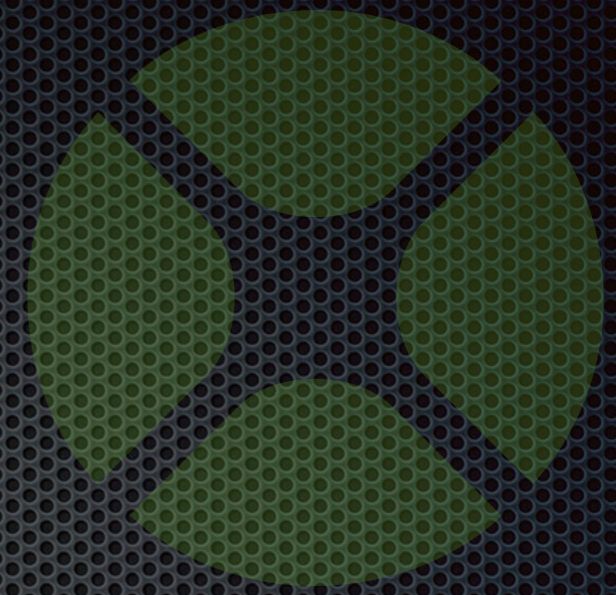


Sockets and the CLI

Windows

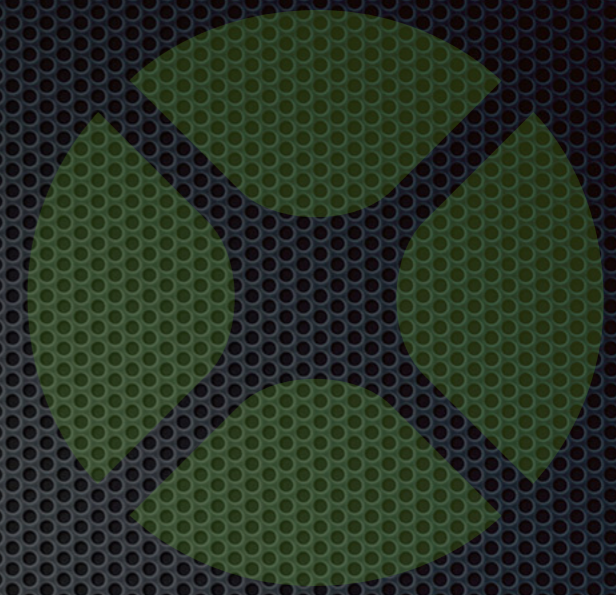
- The socket also exists on Window
- Talk to it using your favourite technique
- Start with IDE Communicator sample





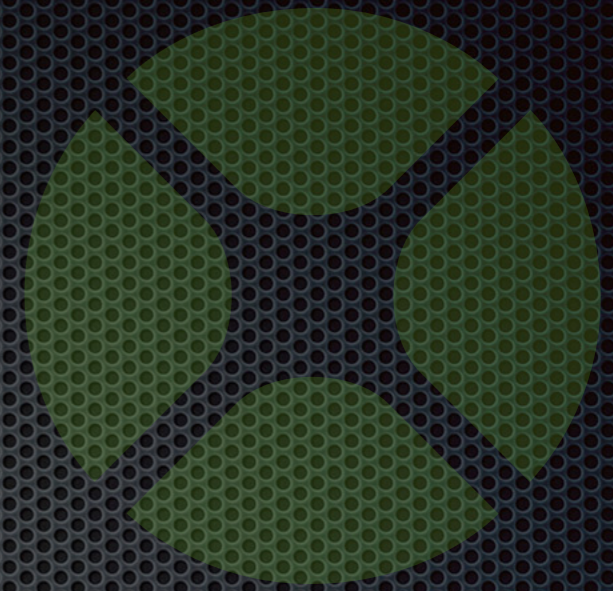
Shell scripts and the IDE

Socket v1



- We can use `nc` (netcat) with the `-U` option

```
BUILD_SCRIPT=$(cat <<EOF
OpenFile("/$SCRIPT_PATH/$PROJECT_NAME")
DoCommand "BuildApp"
QuitIDE(false)
EOF
)
echo $BUILD_SCRIPT | nc -U "/tmp/XojoIDE"
```

Socket v2

ideconnect.py

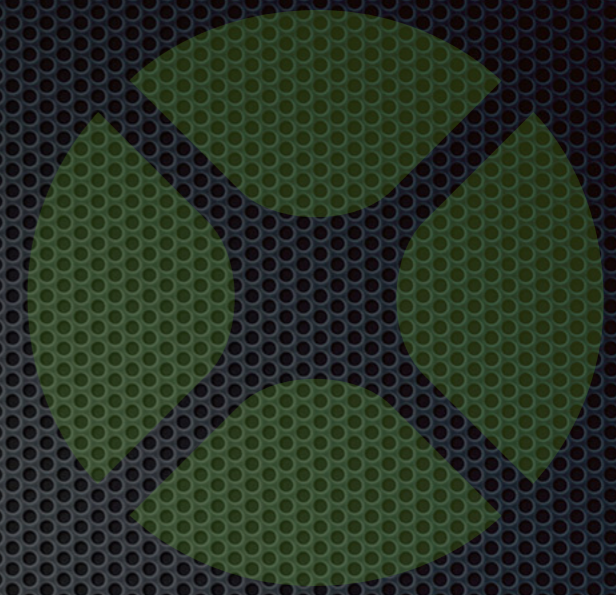


```
clientsocket = socket.socket(socket.AF_UNIX,  
socket.SOCK_STREAM)  
clientsocket.connect('/tmp/XojoIDE')
```

```
clientsocket.send('{"protocol":2}' + chr(0))
```

```
tag = 'command'  
what_to_send = {}  
what_to_send['tag'] = tag  
what_to_send['script'] = sys.stdin.read()
```

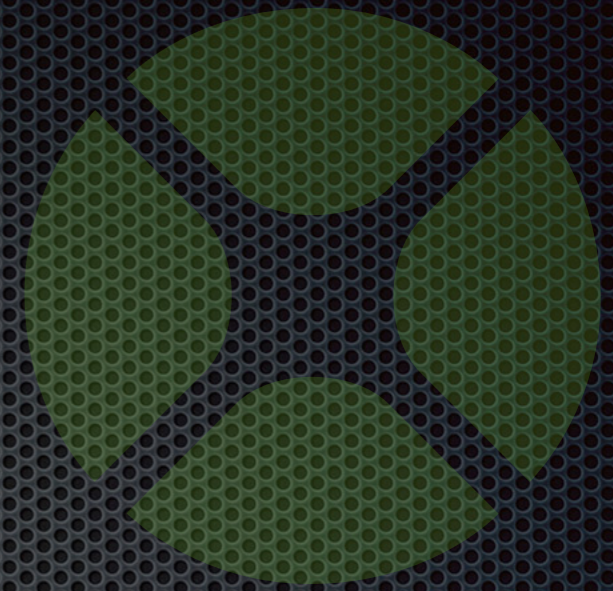
```
clientsocket.send(json.dumps(what_to_send) + chr(0))  
print "Reply from Xojo: " + clientsocket.recv(4096)  
clientsocket.close()
```



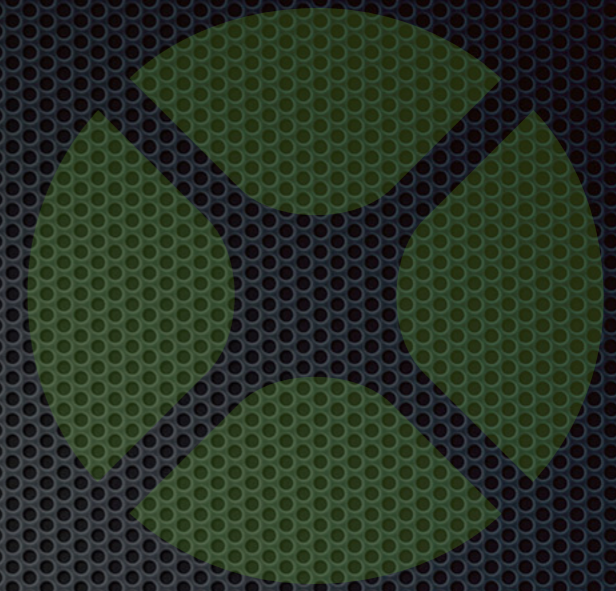
Debugging issues

Debugging 101

- Bash: Caveman debugging
- Ruby: pry
 - <http://pryrepl.org>
 - `require 'pry'`
 - `binding.pry`

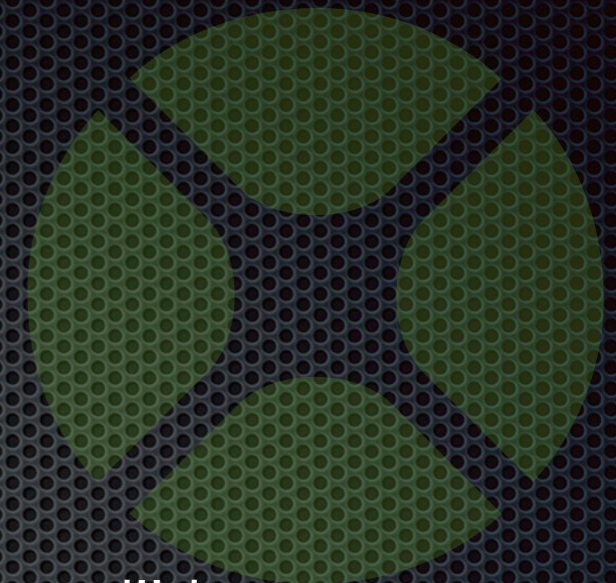


Displaying results

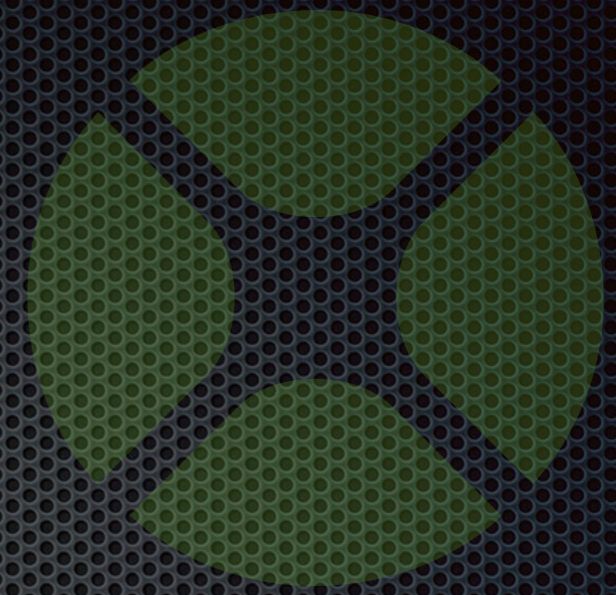


- Formatting json output
 - `| python -mjson.tool # to pretty-print`
 - Extract the relevant json code or text
- `exit / errorlevel` codes
- Unit Test results

Crashes



- If your IDE crashes during operations, the socket may still be open
- Run a « prepare_for_build » script prior to builds
 - Stop any leftover Xojo instances
 - `killall "xojo" 2>/dev/null || true`
 - `rm -rf /tmp/XojoIDE`
 - Remove any Autosaved projects to prevent a recovery dialog
 - `find "/Users/$USER/Library/Application Support/Xojo" -name "AutoSave Projects" -print0 | xargs -0 rm -rf || true`



Comparison

client — -bash — 77x21

```
Floater:client phil$ ./build_tools/prepare_for_build.sh &&  
ditto /Users/Shared/gilbert /Users/Shared/build &&  
RB_BUILD_NUMBER=123 ./build_tools/build_client.sh -s -o /Users/Shared/build/  
█
```




```
Floater:client phil$ git diff
diff --git a/REALbasic/source/NthApp.rbbas b/REALbasic/source/NthApp.rbbas
index 0fa7a8b40f..6685a577a6 100644
--- a/REALbasic/source/NthApp.rbbas
+++ b/REALbasic/source/NthApp.rbbas
@@ -1308,7 +1308,7 @@ Inherits Application
         if currentList = "" then
             return addItem
         else
-             if noDuplicatess = true then
+             if noDuplicatess = true then
                 foundAddItem = 0
                 for i = 1 to countFields(currentList,"||")
                     if nthField(currentList,"||",i) = addItem then
Floater:client phil$ ./build_tools/prepare_for_build.sh &&
ditto /Users/Shared/master /Users/Shared/build &&
RB_BUILD_NUMBER=123 ./build_tools/build_client.sh -s -o /Users/Shared/build/
```

```
client — -bash — 77x21
Floater:client phil$ git diff
diff --git a/REALbasic/source/NthApp.rbbas b/REALbasic/source/NthApp.rbbas
index 09168d20f7..c5f3749925 100644
--- a/REALbasic/source/NthApp.rbbas
+++ b/REALbasic/source/NthApp.rbbas
@@ -1298,7 +1298,7 @@ Inherits Application
     if currentList = "" then
         return addItem
     else
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RB_BUILD_NUMBER=123 ./build_tools/build_client.sh -s -o /Users/Shared/build/
```

Q & A

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Give us feedback on this session in the XDC app!

