

Forth to .NET Bridge

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Stacks

Number n and d

Float

Bool

String

Type allow casting, `t" System.Windows.Forms.Form"`

Object “data” stack, no meaningful operations

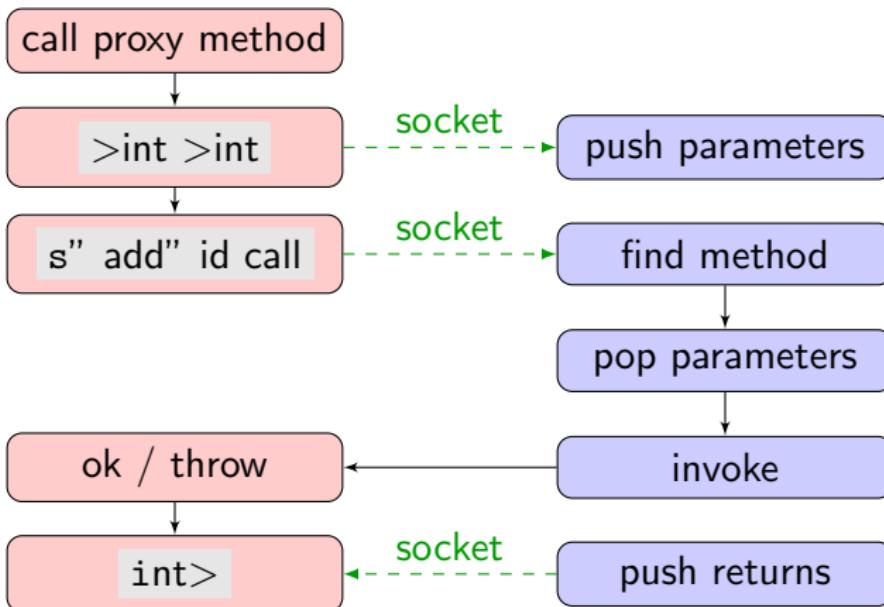
Forth-System in .NET

- interpretation mode only
- simple type conversion: >o o>s
- primitives by reflection of classes:
class math{ public int add(int a, int b) { return a+b; } }
- load assemblies at runtime
- inspect types and activae (instance) them

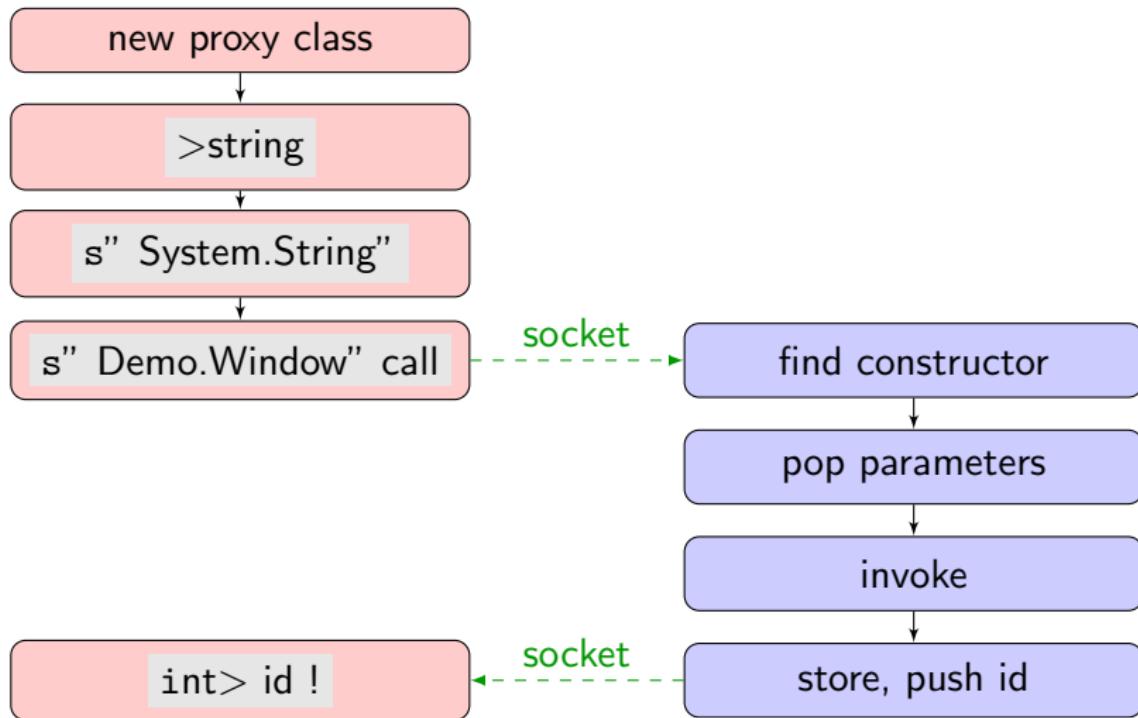
Protocol

- 2 TCP-connections per thread (ok+exceptions, events)
- Netstring based `2:s",5:hello;`
- Stack interface `>int, int>, >string, string>`

Calling a function



Instance Class



Overloading

```
class math {  
    public int add( int a, int b ) {  
        return a+b;  
    }  
    public float add( float a, float b, float c ) {  
        return a+b+c;  
    }  
}
```

- Distinguish between signatures
 - add:n-n
 - add:r-r-r

Overloading

```
class math {  
    public int add(params int[] numbers ) {  
        int sum = 0;  
        foreach( int number in numbers )  
            sum += number;  
        return sum;  
    }  
}
```

- Distinguish between signatures
 - add:o

Demo

Inspector - GlueForth

Scan Load Assemblies Types Client Run Client Debug Protocol Help

Assemblies

Name	Version	Runtime	Filename
DemoTarget	1.0.0.0	v2.0.50727	file:///C:/Users/Ger...

Types

- DemoClass
 - Constructors
 - Methods
 - add(Int32, Int32) : int
 - sub(Int32, Int32) : int
 - concat(String, String) : string
 - replace(String, String, String) : string
 - messageBox
 - messageBoxYesNo : bool
 - customMessageBox(String, String)
 - customMessageBoxYesNo(String, String) : bool
 - getName : string
 - newDemoWindow : DemoWindow
 - newPoint : Point
 - get_LowerText : string
 - get_UpperText : string
 - get_Text : string

All Interfaces Classes Properties Enums

Passive

The screenshot shows the 'Inspector - GlueForth' application window. At the top, there's a menu bar with 'Scan', 'Load', 'Assemblies', 'Types', 'Client', 'Run', 'Client', 'Debug Protocol', and 'Help'. Below the menu is a toolbar with icons for Scan, Load, Assemblies, Types, Client, Run, Client, Debug Protocol, and Help. The main area is divided into sections: 'Assemblies' and 'Types'. The 'Assemblies' section lists a single assembly named 'DemoTarget' with version 1.0.0.0, runtime v2.0.50727, and filename file:///C:/Users/Ger... The 'Types' section shows a tree view of the 'DemoClass' type. Under 'Methods', there are 12 methods listed, all of which have checkboxes next to them, all of which are checked. These methods are: add(Int32, Int32) : int, sub(Int32, Int32) : int, concat(String, String) : string, replace(String, String, String) : string, messageBox, messageBoxYesNo : bool, customMessageBox(String, String), customMessageBoxYesNo(String, String) : bool, getName : string, newDemoWindow : DemoWindow, newPoint : Point, get_LowerText : string, get_UpperText : string, and get_Text : string. At the bottom of the 'Types' section are checkboxes for 'All', 'Interfaces', 'Classes', 'Properties', and 'Enums', with 'All' being checked. The bottom left corner of the window has the word 'Passive'.

Future Work

- Construct Classes on the fly in .NET
- coexistence of COM and .NET:
 - switch calling convention
 - wrap COM into .NET class