

Testing Bots

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Testing Bots

- What Should We Test?
- How do you test a bot?
- Mocking

Unit/Functional/Load Testing

- Channel Testing

Unit Tests

- Mock out the Bot Framework
- Perform Unit Testing by reusing the Bot Builder code
 - DialogTestBase.cs
 - FiberTestBase.cs
 - MockConnectorFactory.cs
- Runs locally

What is Mocking?

Simulate the behaviour of real objects

- Used in unit testing
- Used when the unit being tested has external dependencies
- To isolate the behaviour of object you want to test, the other objects will be replaced by mocks that simulate the behaviour of the real objects
- Useful if the real objects are impractical to incorporate into the unit test
- Moq for Bots - mocking framework for .NET

Testing Channels

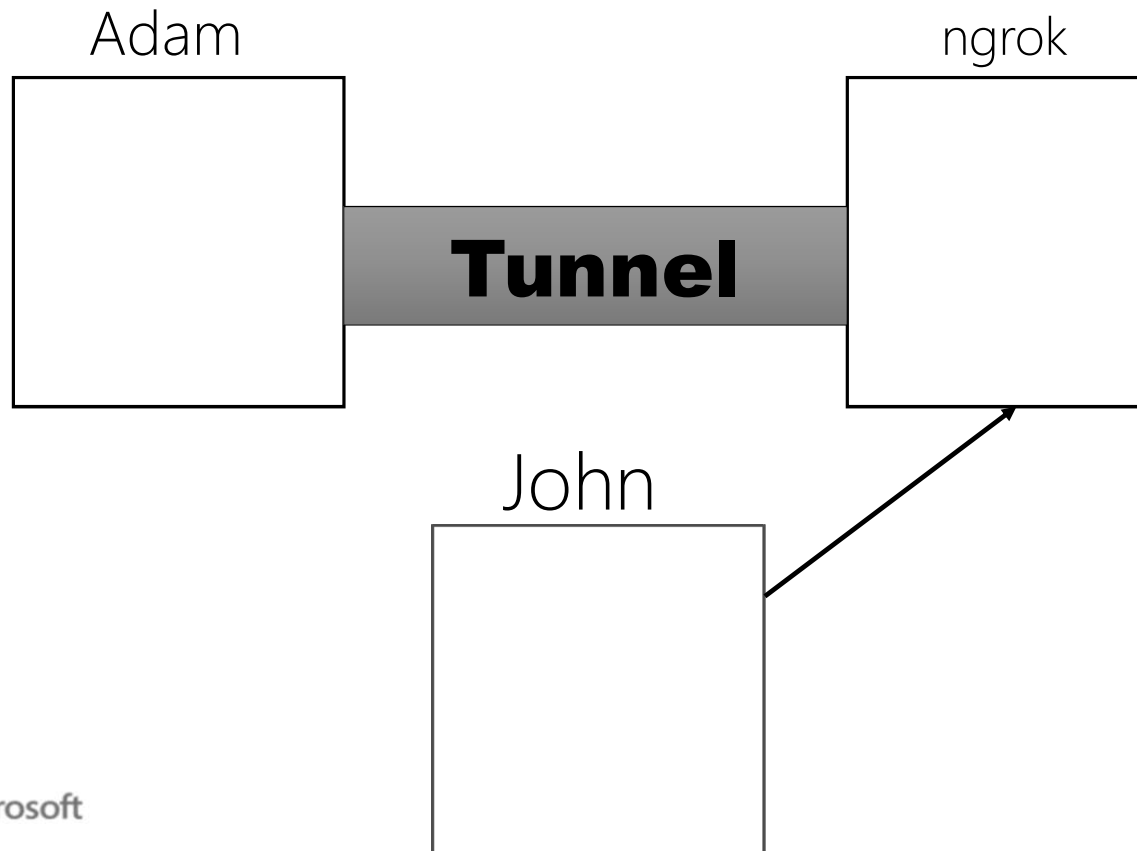
- Host the Bot service on a public URL endpoint
- When designing / building / testing your code, you don't always want to have to redeploy
- Redeploying means paying hosting costs

Ngrok

Secure tunnels to localhost

"I want to expose a local server behind a NAT or firewall to the internet."

What is Ngrok?



Forwarding

ngrok http 1111

```
ngrok                                     <Ctrl+C to quit>
Tunnel Status                           online
Version                                1.6/1.5
Forwarding                               http://6125081c.ngrok.com -> 127.0.0.1:1111
Forwarding                               https://6125081c.ngrok.com -> 127.0.0.1:1111
Web Interface                           127.0.0.1:4040
# Conn                                  22
Avg Conn Time                           16.86ms
```


Forwarding

- Given the bot is being hosted on localhost:3979, use ngrok to expose it to public internet
- `ngrok.exe http 3979 -host-header="localhost:3979"`
- The forwarding url is the public endpoint for the bot service

ngrok by @inconsreveable

```
Session Status      online
Version            2.2.4
Region             United States (us)
Web Interface       http://127.0.0.1:4040
Forwarding          http://542c7f9f.ngrok.io -> localhost:3979
Forwarding          https://542c7f9f.ngrok.io -> localhost:3979

Connections         ttl      opn      rt1      rt5      p50      p90
                    5        0        0.00     0.01     4.34     42.74

HTTP Requests
-----
POST /api/messages  200 OK
POST /api/messages  200 OK
POST /api/messages  500 Internal Server Error
POST /api/messages  200 OK
POST /api/messages  200 OK
```

Testing Emulator on Public Endpoints

- The forwarding public urls from ngrok can be used in the emulator as shown below

Local Port	Emulator Url	Bot Url
9000	https://e4c7108d.ngrok.io/	http://542c7f9f.ngrok.io/api/messages

User: Cor