

SHINY ON AZURE

2017.07.10

KRISTEN



DATA ANALYST AT WAVE-IN COMMUNICATION INC.

#E-COMMERCE

#TELECOM

R-LADIES TAIPEI OFFICER





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- ✓ TIME: 7/22 - 7/23
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R-Ladies Taipei

Taipei, Taiwan

Founded Oct 23, 2016

[Cloud Platform Series] Shiny on Azure

February 6 · 7:30 PM

Dcard Office

[Upload photos](#)[Copy this Meetup](#)

[Agenda] • 19:15-19:30 R Basic: R軟體小故事、安裝與環境介紹 • 19:30-20:30 主講程: Shiny on Azure... [See all](#)

[Tools](#)

49 went



Kristen Chan

Co-Organizer



Chiayi Yen

Organizer,

Event Host

Good to see you



AGENDA

SHINY

+

AZURE



SHINY
ON
AZURE



DATA -- 空氣品質指標(AQI)



空氣品質指標為依據監測資料將當日空氣中臭氧(O₃)、細懸浮微粒(PM_{2.5})、懸浮微粒(PM₁₀)、一氧化碳(CO)、二氧化硫(SO₂)及二氧化氮(NO₂)濃度等數值，以其對人體健康的影響程度，分別換算出不同污染物之副指標值，再以當日各副指標之最大值為該測站當日之空氣品質指標值(AQI)

20個測站

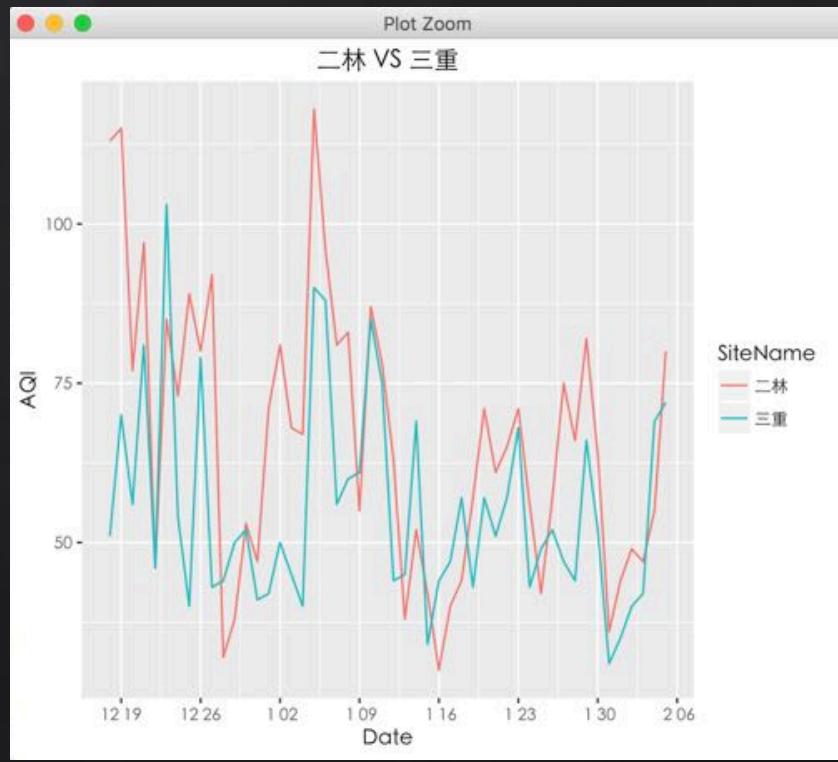
(二林,三重,三義,土城,士林,大同,大里,大園,大寮,小港,中山,中壢,仁武,斗六,冬山,古亭,左營,平鎮,永和,安南)

49天

(2016/12/18 - 2017/02/04)



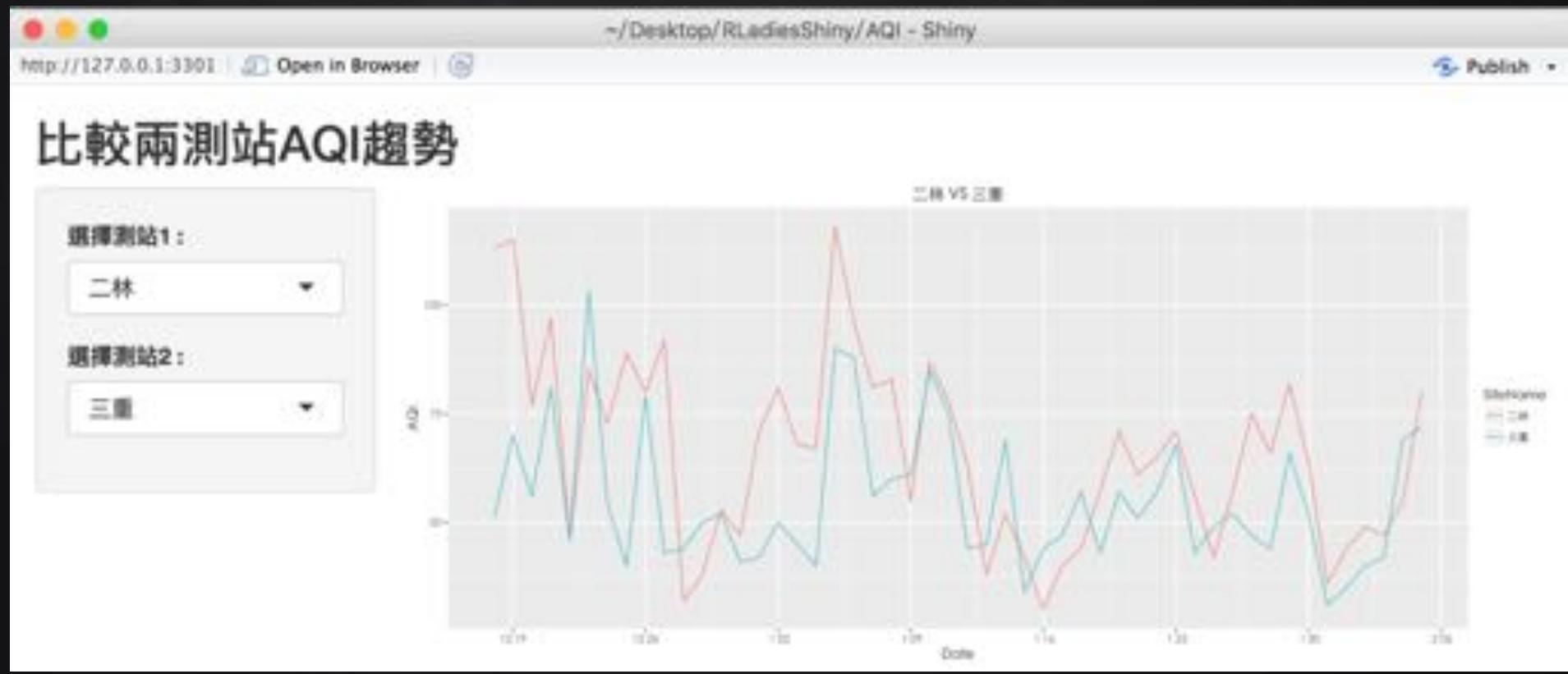
比較兩測站空氣品質指標(AQI)的趨勢



選擇兩個不同測站



比較兩測站空氣品質指標(AQI)的趨勢



1.

BUILDING 'SHINY' APPLICATIONS WITH R



INTRODUCTION TO SHINY

- ✓ Shiny is a package from Rstudio
- ✓ It's a web development framework in R.
- ✓ It can be easy to build interactive web applications with R.

You don't need to know following tools:

- ✗ Html
- ✗ Javascript
- ✗ CSS



INSTALL SHINY

✓ `install.packages("shiny")`

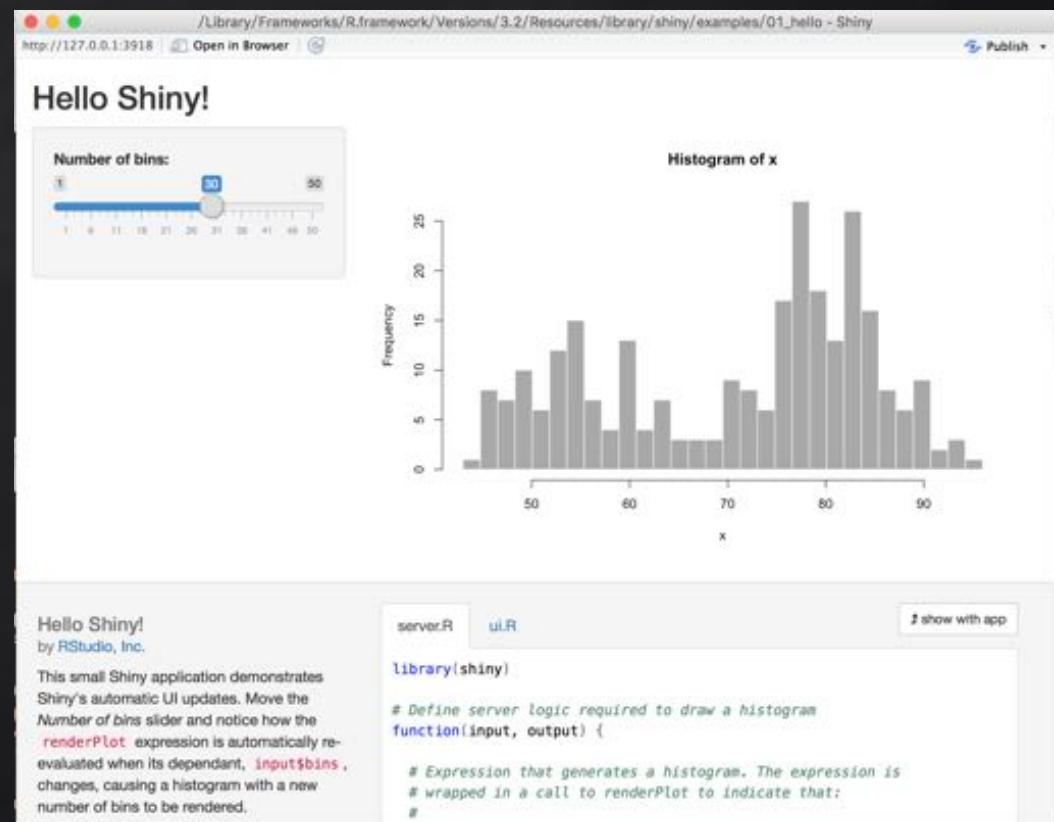
```
Console ~ / 
> install.packages("shiny")
    % Total    % Received % Xferd  Average Speed   Time     Time     Time  Current
                   Dload  Upload Total   Spent   Left Speed
0      0      0      0      0      0      0 --::-- --::-- --::-- 0 0 2631k 0
0      0      0      0      0 --::-- --::-- --::-- 0 4 2631k 4 112k 0 0 6682
4      0 0:00:40 0:00:01 0:00:39 66828 10 2631k 10 288k 0 0 100k 0 0:00:26
0:00:02 0:00:24 100k 23 2631k 23 624k 0 0 164k 0 0:00:15 0:00:03 0:00:12
164k 41 2631k 41 1104k 0 0 233k 0 0:00:11 0:00:04 0:00:07 233k 69 2631k 69
1840k 0 0 314k 0 0:00:08 0:00:05 0:00:03 363k 100 2631k 100 2631k 0 0
397k 0 0:00:06 0:00:06 --::-- 515k

The downloaded binary packages are in
  /var/folders/hb/qyk2y1mj40ld_4fnqdfxjrf80000gn/T//RtmpMuFGUZ/downloaded_packages
>
```



HELLO SHINY

✓ `library(shiny)`
`runExample("01_hello")`





A SHINY PROJECT

You need two files :

- ✓ **Ui.R**
 - User interface
 - Determine how your app looks
- ✓ **Server.R**
 - Backend or engine of the application
 - It's where the data is processed
 - Control what your app does



How DOES SHINY WORK

Ui.R

① User 從 Ui.R 中給一個參數

SERVER.R



How DOES SHINY WORK

Ui.R

① User 從 Ui.R 中給一個參數

Input

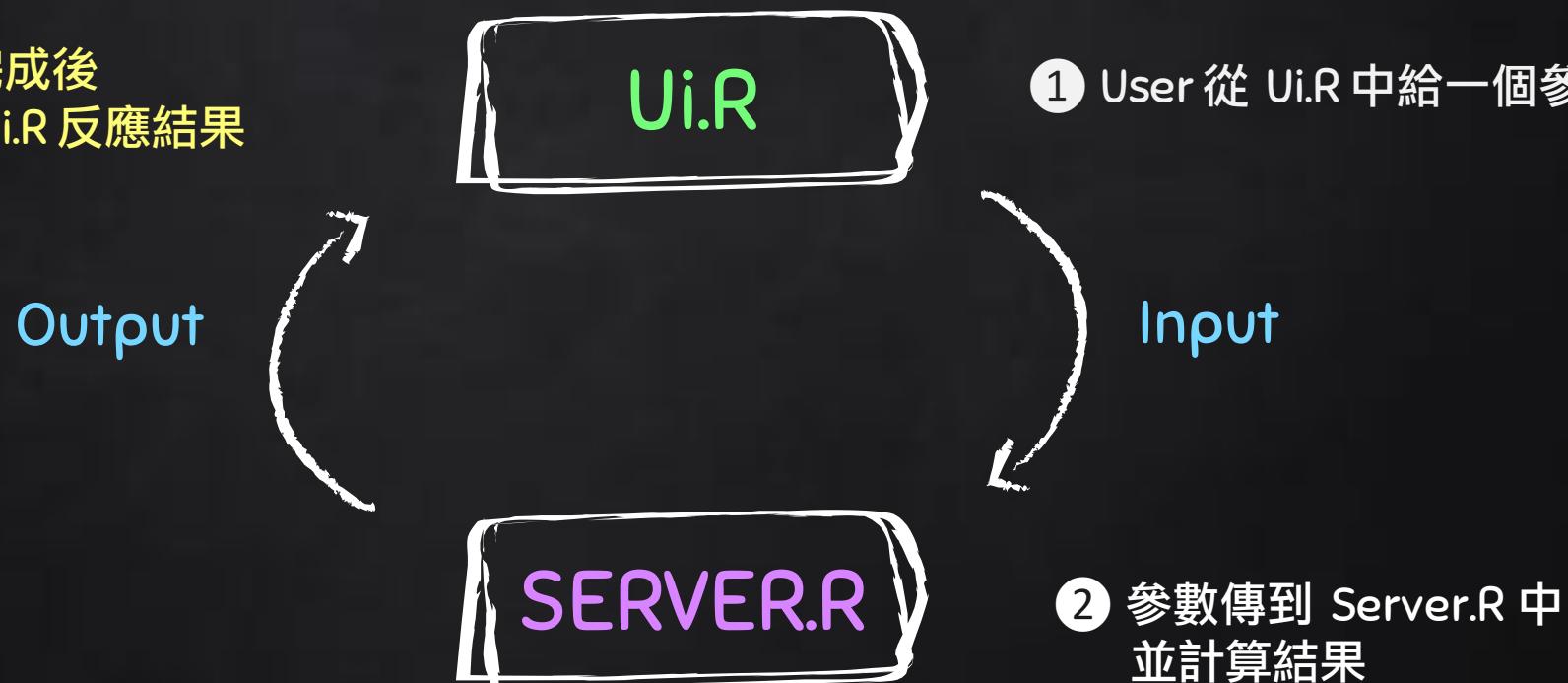
SERVER.R

② 參數傳到 Server.R 中
並計算結果



HOW DOES SHINY WORK

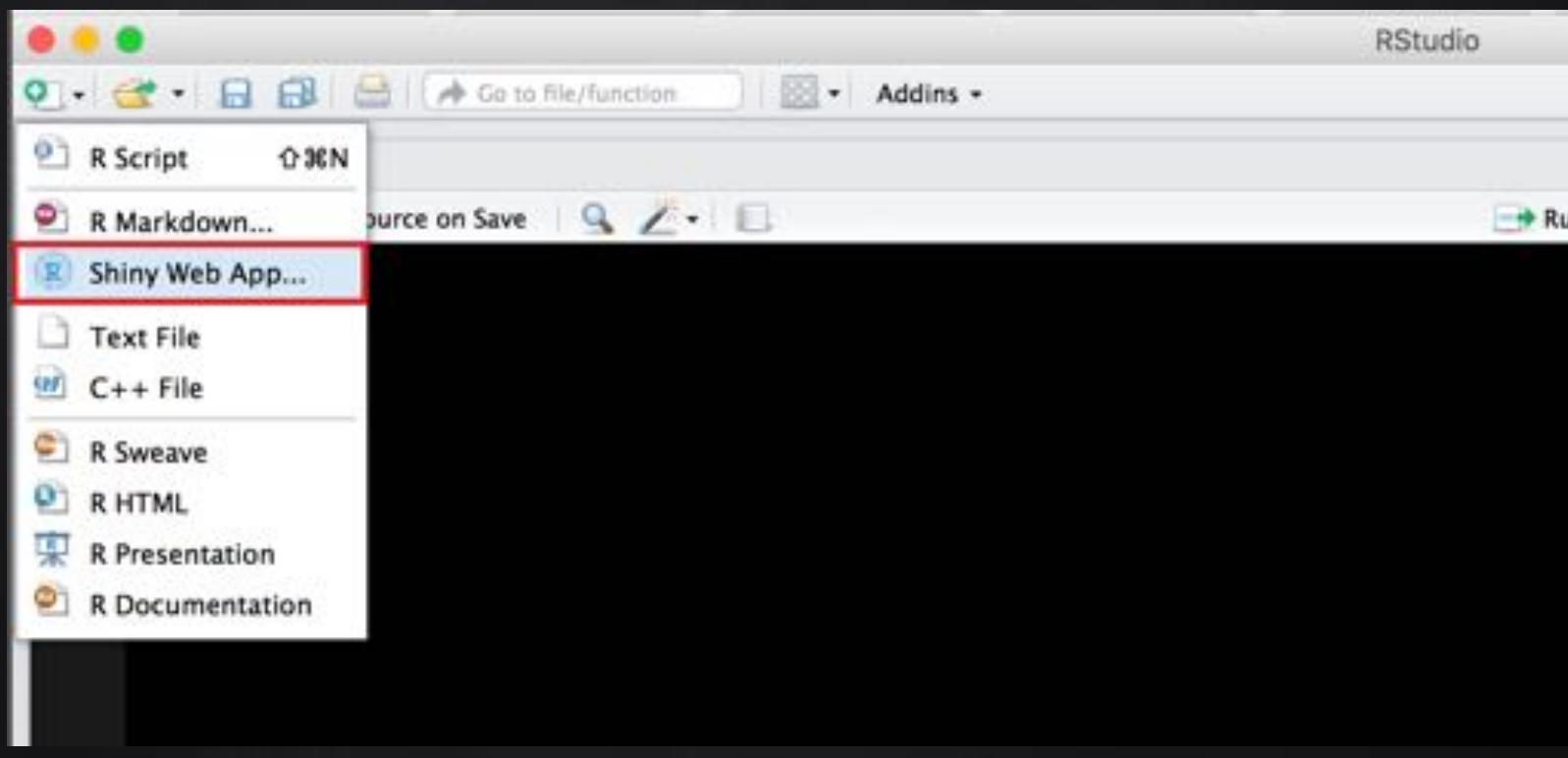
- ③ 計算完成後
傳回 Ui.R 反應結果



- ① User 從 Ui.R 中給一個參數
② 參數傳到 Server.R 中
並計算結果



YOUR FIRST SHINY APP





YOUR FIRST SHINY APP

New Shiny Web Application



Application name: Enter your app's name

Application type: Single File (app.R) Multiple File (ui.R/server.R)

Create within directory:

[? Shiny Web Applications](#) Create Cancel



YOUR FIRST SHINY APP

```
ui.R x server.R x
Run App ▾
1 #>
2 # This is the user-interface definition of a Shiny web application. You can
3 # run the application by clicking 'Run App' above.
4 #
5 # Find out more about building applications with Shiny here:
6 #
7 #   http://shiny.rstudio.com/
8 #
9
10 library(shiny)
11
12 # Define UI for application that draws a histogram
13 shinyUI(fluidPage(
```



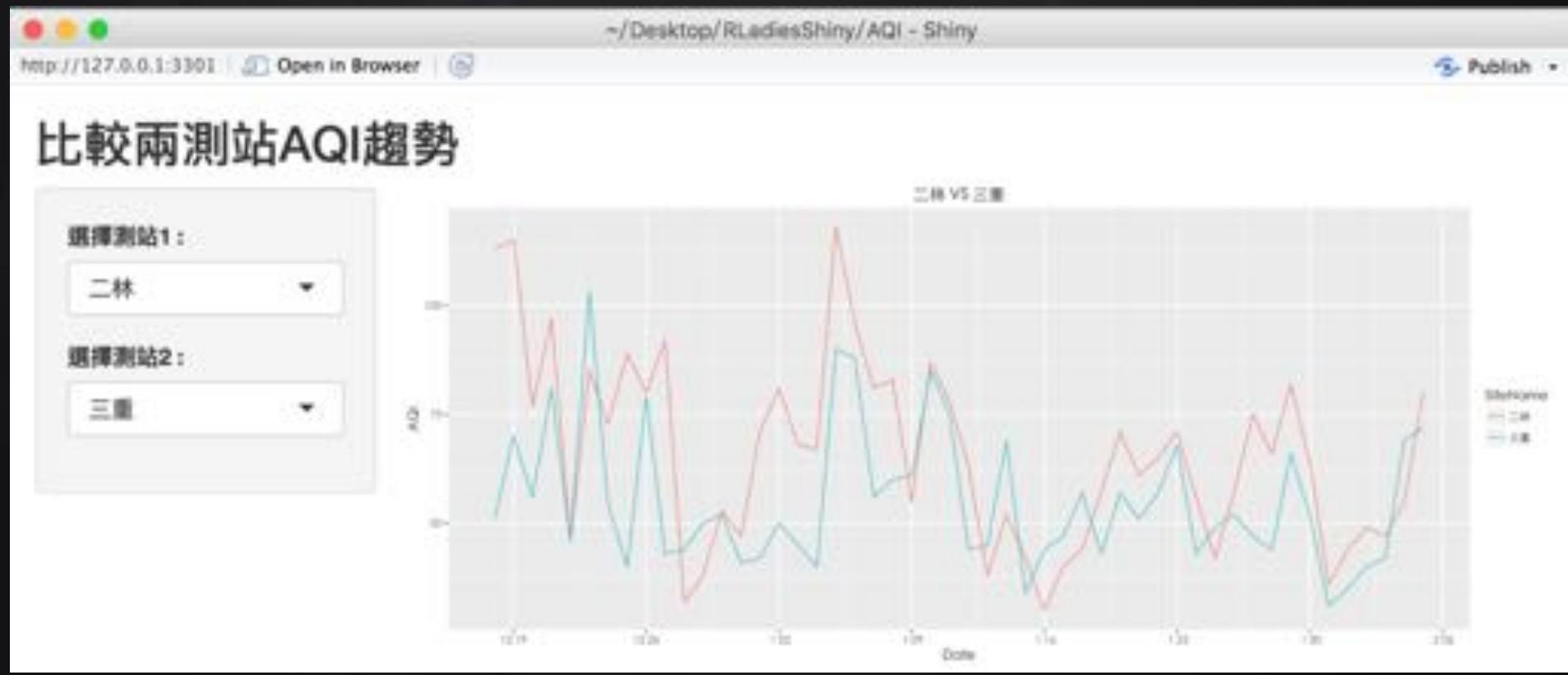
A SHINY PROJECT - UI.R

```
1 library(shiny)  
2  
3 shinyUI(fluidPage(  
4 ))  
5
```





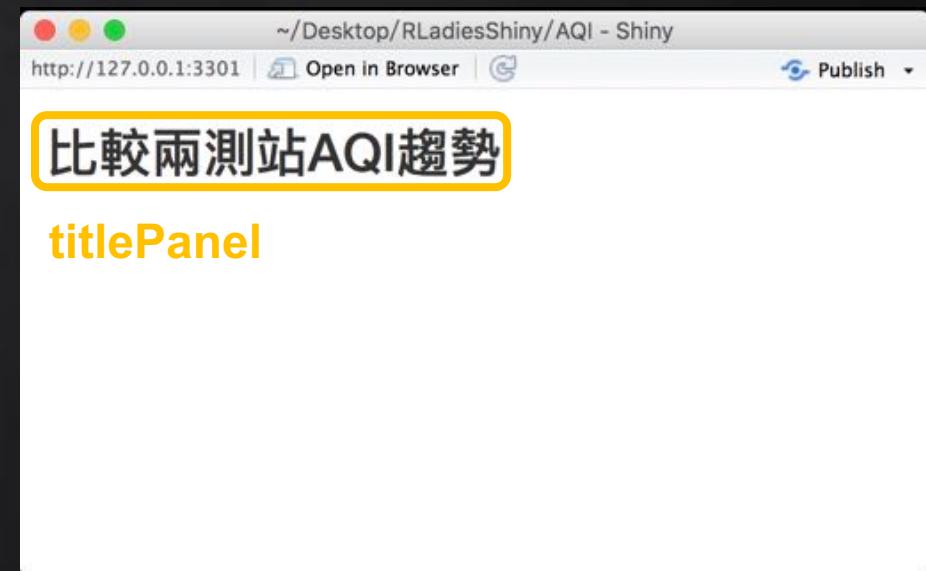
比較兩測站空氣品質指標(AQI)的趨勢





A SHINY PROJECT - UI.R

```
1 library(shiny)  
2  
3 shinyUI(fluidPage(  
4  
5   titlePanel("比較兩測站AQI趨勢")  
6  
7 ))
```





A SHINY PROJECT - UI.R

sidebarLayout

side
panel

main
panel

splitLayout

object 1

object 2

flowLayout/inputPanel

object
1

object
2

object
3

object
3

fluidRow

column

row

col

column

```
shinyUI(fluidPage(  
  sidebarLayout(  
    sidebarPanel(...),  
    mainPanel(...)  
  ))
```

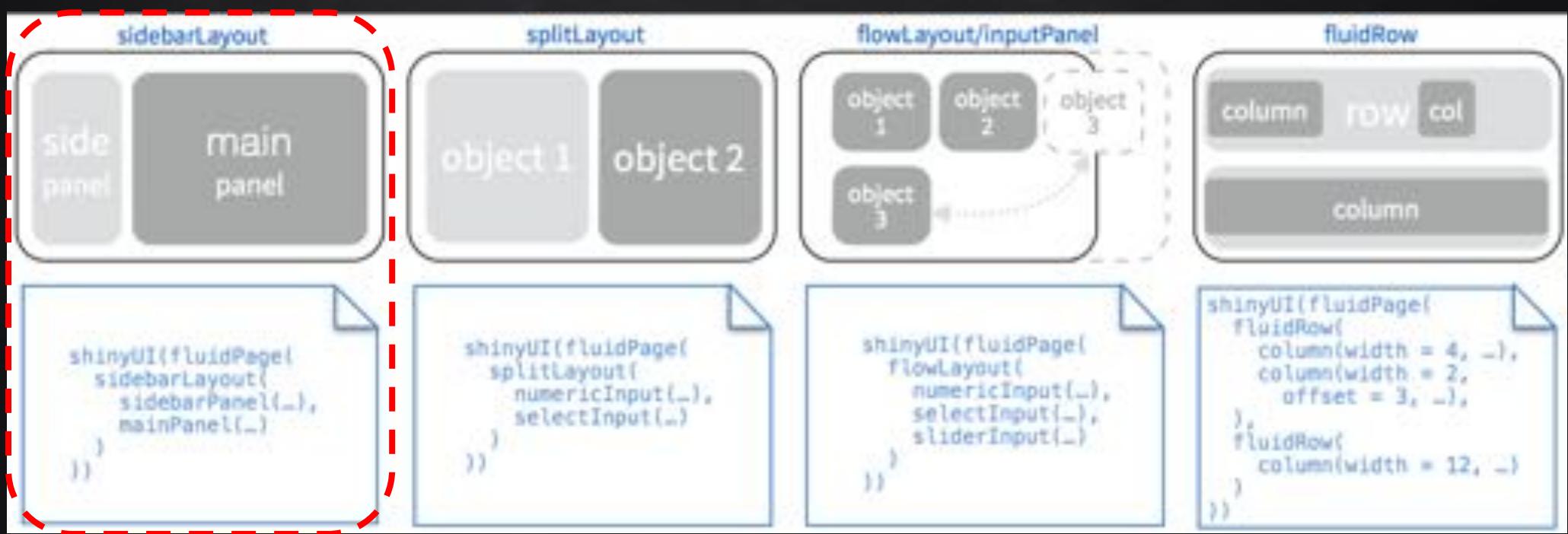
```
shinyUI(fluidPage(  
  splitLayout(  
    numericInput(...),  
    selectInput(...)  
  ))
```

```
shinyUI(fluidPage(  
  flowLayout(  
    numericInput(...),  
    selectInput(...),  
    sliderInput(...)  
  ))
```

```
shinyUI(fluidPage(  
  fluidRow(  
    column(width = 4, ...),  
    column(width = 2, ...,  
      offset = 3, ...),  
  ),  
  fluidRow(  
    column(width = 12, ...)  
))
```



A SHINY PROJECT - UI.R



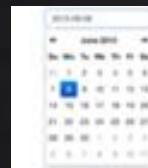


A SHINY PROJECT - U.I.R

1

 `checkboxInput(inputId, label, value)`

2

`dateInput(inputId, label, value, min, max, format, startview, weekstart, language)`

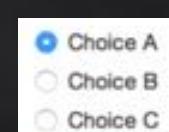
3

`dateRangeInput(inputId, label, start, end, min, max, format, startview, weekstart, language, separator)`

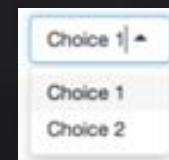
4

`numericInput(inputId, label, value, min, max, step)`

5

`radioButtons(inputId, label, choices, selected, inline)`

6

`selectInput(inputId, label, choices, selected, multiple, selectize, width, size) (also selectizeInput())`

7

`sliderInput(inputId, label, min, max, value, step, round, format, locale, ticks, animate, width, sep, pre, post)`



A SHINY PROJECT - U.I.R

1

 `checkboxInput(inputId, label, value)`

2

`dateInput(inputId, label, value, min, max, format, startview, weekstart, language)`

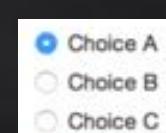
3

`dateRangeInput(inputId, label, start, end, min, max, format, startview, weekstart, language, separator)`

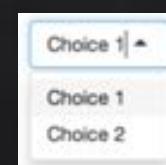
4

`numericInput(inputId, label, value, min, max, step)`

5

`radioButtons(inputId, label, choices, selected, inline)`

6

`selectInput(inputId, label, choices, selected, multiple, selectize, width, size) (also selectizeInput())`

7

`sliderInput(inputId, label, min, max, value, step, round, format, locale, ticks, animate, width, sep, pre, post)`



A SHINY PROJECT - UI.R

```
1 library(shiny)
2 inputPath = '/Users/hsinyu/Desktop/RadiesShiny/AQI'
3 Air_data = read.csv(file.path(inputPath,'data_AQI_new.csv'), stringsAsFactors=FALSE)
4 site = unique(Air_data$SiteName)
5
6 shinyUI(fluidPage(
7
8     titlePanel("比較兩測站AQI趨勢") ,
9
10    sidebarLayout(
11        sidebarPanel(
12            selectInput("site1", "選擇測站1 :", as.vector(site)),
13            selectInput("site2", "選擇測站2 :", as.vector(site)),
14            width=3) ,
15            mainPanel = ( plotOutput("AQIPlot") )
16    )
17
18 ))
```



A SHINY PROJECT - UI.R





A SHINY PROJECT - UI.R

```
1 library(shiny)
2 inputPath = '/Users/hsinyu/Desktop/RadiesShiny/AQI'
3 Air_data = read.csv(file.path(inputPath,'data_AQI_new.csv'), stringsAsFactors=FALSE)
4 site = unique(Air_data$SiteName)
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7
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9
10  sidebarLayout(
11    sidebarPanel(
12      selectInput("site1", "選擇測站1 :", as.vector(site)),
13      selectInput("site2", "選擇測站2 :", as.vector(site)),
14      width=3) ,
15      mainPanel = ( plotOutput("AQIPlot") ) |
16    )
17
18 ))
```

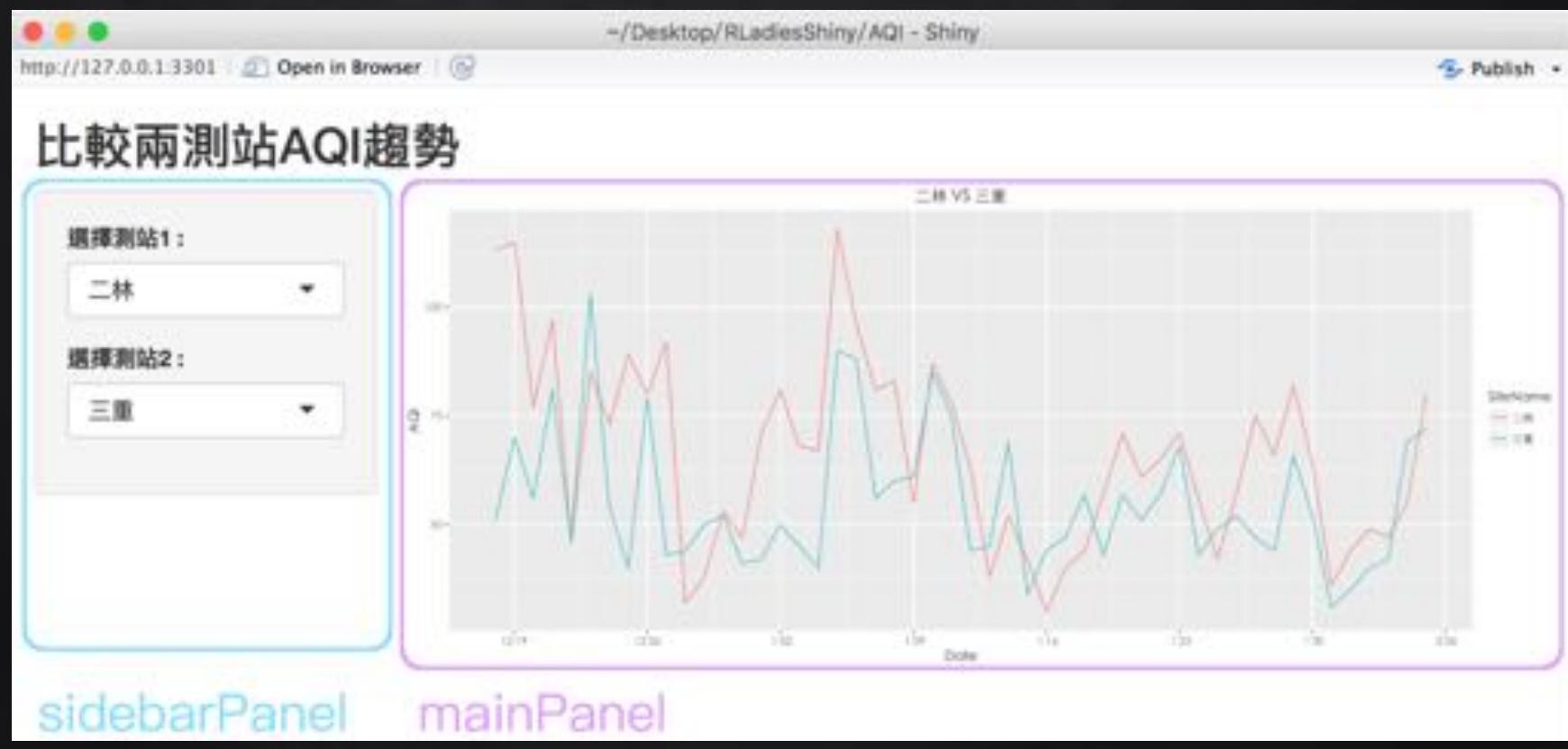


A SHINY PROJECT - UI.R

```
1 library(shiny)
2 inputPath = '/Users/hsinyu/Desktop/RadiesShiny/AQI'
3 Air_data = read.csv(file.path(inputPath,'data_AQI_new.csv'), stringsAsFactors=FALSE)
4 site = unique(Air_data$SiteName)
5
6 shinyUI(fluidPage(
7
8   titlePanel("比較兩測站AQI趨勢") ,
9
10  sidebarLayout(
11    sidebarPanel(
12      selectInput("site1", "選擇測站1 :", as.vector(site)),
13      selectInput("site2", "選擇測站2 :", as.vector(site)),
14      width=3) ,
15      mainPanel = ( plotOutput("AQIPlot") )
16    )
17
18 ))
```



A SHINY PROJECT - UI.R





A SHINY PROJECT – SERVER.R

render* functions		
function	expects	creates
renderDataTable	any table-like object	DataTables.js table
renderImage	list of image attributes	HTML image
renderPlot	plot	plot
renderPrint	any printed output	text
renderTable	any table-like object	plain table
renderText	character string	text
renderUI	Shiny tag object or	UI element (HTML)



A SHINY PROJECT – SERVER.R

function	expects	creates
renderDataTable	any table-like object	DataTables.js table
renderImage	list of image attributes	HTML image
renderPlot	plot	plot
renderPrint	any printed output	text
renderTable	any table-like object	plain table
renderText	character string	text
renderUI	Shiny tag object or	UI element (HTML)



A SHINY PROJECT – SERVER.R

```
1 library(shiny)
2 inputPath = '/srv/shiny-server/AQI'
3 Air_data = read.csv(file.path(inputPath,'data_AQI_new.csv'), stringsAsFactors=FALSE)
4
5 shinyServer(function(input, output) {
6
7   data_plot <- reactive({
8     subset(Air_data, SiteName %in% c(input$site1, input$site2))
9   })
10
11   data_title <- renderText({ paste0(input$site1, ' VS ', input$site2) })
12
13   output$AQIPlot <- renderPlot({
14     ggplot(data_plot(), aes(x = as.Date(MonitorDate), y = AQI , colour = SiteName)) +
15       geom_line() +
16       labs(x = "Date", y = "AQI" , title=data_title() ) +
17       theme(text=element_text(family="STHeitiTC-Light"))
18   })
19
20 })
```

Import AQI Data



A SHINY PROJECT – SERVER.R

```
1 library(shiny)
2 inputPath = '/srv/shiny-server/AQI'
3 Air_data = read.csv(file.path(inputPath,'data_AQI_new.csv'), stringsAsFactors=FALSE)
4
5 shinyServer(function(input, output) {
6
7   data_plot <- reactive({
8     subset(Air_data, SiteName %in% c(input$site1, input$site2))
9   })
10
11   data_title <- renderText({ paste0(input$site1, ' VS ', input$site2) })
12
13   output$AQIPlot <- renderPlot({
14     ggplot(data_plot(), aes(x = as.Date(MonitorDate), y = AQI , colour = SiteName)) +
15       geom_line() +
16       labs(x = "Date", y = "AQI" , title=data_title() ) +
17       theme(text=element_text(family="STHeitiTC-Light"))
18   })
19
20 })
```

Input



A SHINY PROJECT – SERVER.R

```
1 library(shiny)
2 inputPath = '/srv/shiny-server/AQI'
3 Air_data = read.csv(file.path(inputPath,'data_AQI_new.csv'), stringsAsFactors=FALSE)
4
5 shinyServer(function(input, output) {
6
7   data_plot <- reactive({
8     subset(Air_data, SiteName %in% c(input$site1, input$site2))
9   })
10
11   data_title <- renderText({ paste0(input$site1, ' VS ', input$site2)})
12
13   output$AQIPlot <- renderPlot({
14     ggplot(data_plot(), aes(x = as.Date(MonitorDate), y = AQI , colour = SiteName)) +
15       geom_line() +
16       labs(x = "Date", y = "AQI" , title=data_title() ) +
17       theme(text=element_text(family="STHeitiTC-Light"))
18   })
19
20 })
```

Output



DEPLOY SHINY

A yellow circle containing the text "SHINY SERVER".

SHINY
SERVER

A white circle containing the text "SHINYAPPS.IO".

SHINYAPPS.IO

A white circle containing the text "GITHUB".

GITHUB

2.

WHAT IS AZURE

Ref: <https://azure.microsoft.com/zh-tw/overview/what-is-azure/>



CREATE FREE Account

Microsoft Azure

銷售專線 0800-00-88-33#2#9 ▾

我的帳戶

入口網站

搜尋



為何選擇 Azure ? 解決方案 產品 文件 價格 合作夥伴 部落格 資源 支援

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取得 NT\$6,300 的免費點數

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試用任何 Azure 服務

試用任何 Azure 服務組合 30 天以探索我們的雲端。

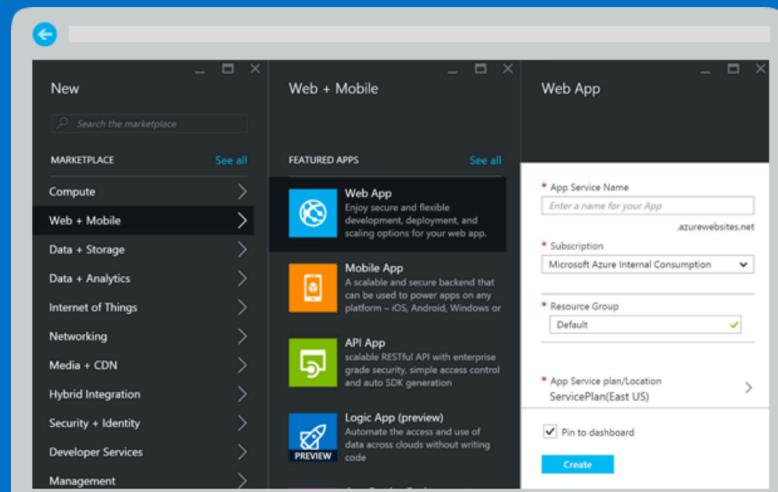


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Microsoft Azure

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退出

一個月試用期

\$6,300 Azure 信用額度

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常見問答集 >

1  關於您* 國家/地區 

* 名字

* 姓氏

* 接收重要通知的電子郵件地址 

* 公司電話

組織

* 索引編號 



CREATE FREE ACCOUNT

Microsoft Azure

免費試用 註冊

Your Account

| 登出

一個月試用期

業完成 \$6,300 Azure 信用額度

無須預付金 - 試用版不會自動升級為付費訂閱

常見問答集 ▶



- 1 + 關於您 ✓
- 2 + 依據手機進行身分識別驗證 ✓ ⓘ
- 3 + 依據卡片進行身分識別驗證 ✓ ⓘ
- 4 - 合約

我同意[訂用帳戶合約、優惠詳細資料及隱私權聲明](#)。

Microsoft 可能會使用我的電子郵件及電話，提供專屬 Microsoft Azure 優惠。

註冊 



我們正在建立您的訂用帳戶。請勿關閉或重新整理
您的瀏覽器。



AZURE

Microsoft Azure



The screenshot shows the Microsoft Azure portal interface. On the left, there's a sidebar with a navigation menu:

- + 新增
- 所有資源
- 資源群組
- 應用程式服務
- SQL 資料庫
- SQL 資料倉儲
- NoSQL (DocumentDB)
- 虛擬機器
- 負載平衡器
- 儲存體帳戶
- 虛擬網路
- Azure Active Directory

The main content area is titled "儀表板" (Dashboard). It features a search bar at the top right and several sections:

- 所有資源**: Shows a message "No 資源 to display".
- 開始使用**: Lists five services with icons:
 - 虛擬機器: "在幾分鐘內佈建 Windows 及 Linux 虛擬機器"
 - App Service: "建立適用於任何平台與裝置的 Web 與行動装置應用程式"
 - SQL Database: "受管理的關聯式資料庫即服務"
 - 儲存體: "持久、高可用性及可大規模調整的儲存體"
 - Azure 入口網站: "了解如何使用 Azure 入口網站"
- 服務健康狀況**: Shows a map of the world with status indicators.



AZURE (LINUX VM)

Detail

Ref : @Microsoft
<https://docs.microsoft.com/zh-tw/azure/virtual-machines/virtual-machines-windows-hero-tutorial>



The screenshot shows the Microsoft Azure portal interface. On the left, a dark sidebar lists various Azure services: 新增 (Add), 所有資源 (All Resources), 資源群組 (Resource Groups), 應用程式服務 (App Service), SQL 資料庫 (SQL Database), SQL 資料倉儲 (SQL Data Warehouse), NoSQL (DocumentDB), 虛擬機器 (Virtual Machines) [highlighted with a red box], 負載平衡器 (Load Balancer), 儲存體帳戶 (Storage Accounts), 虛擬網路 (Virtual Networks), Azure Active Directory, 監視 (Monitoring), and Azure 建議程式 (Azure荐程). The main dashboard area displays a search bar at the top, followed by a "所有資源" (All Resources) section with a message "No resources to display". To the right, there's a "開始使用" (Get Started) section with links to Virtual Machines, App Service, SQL Database, Storage, Azure Portal, and Marketplace. A world map at the bottom indicates global service reach.



AZURE (LINUX VM)

Microsoft Azure 虛擬機器

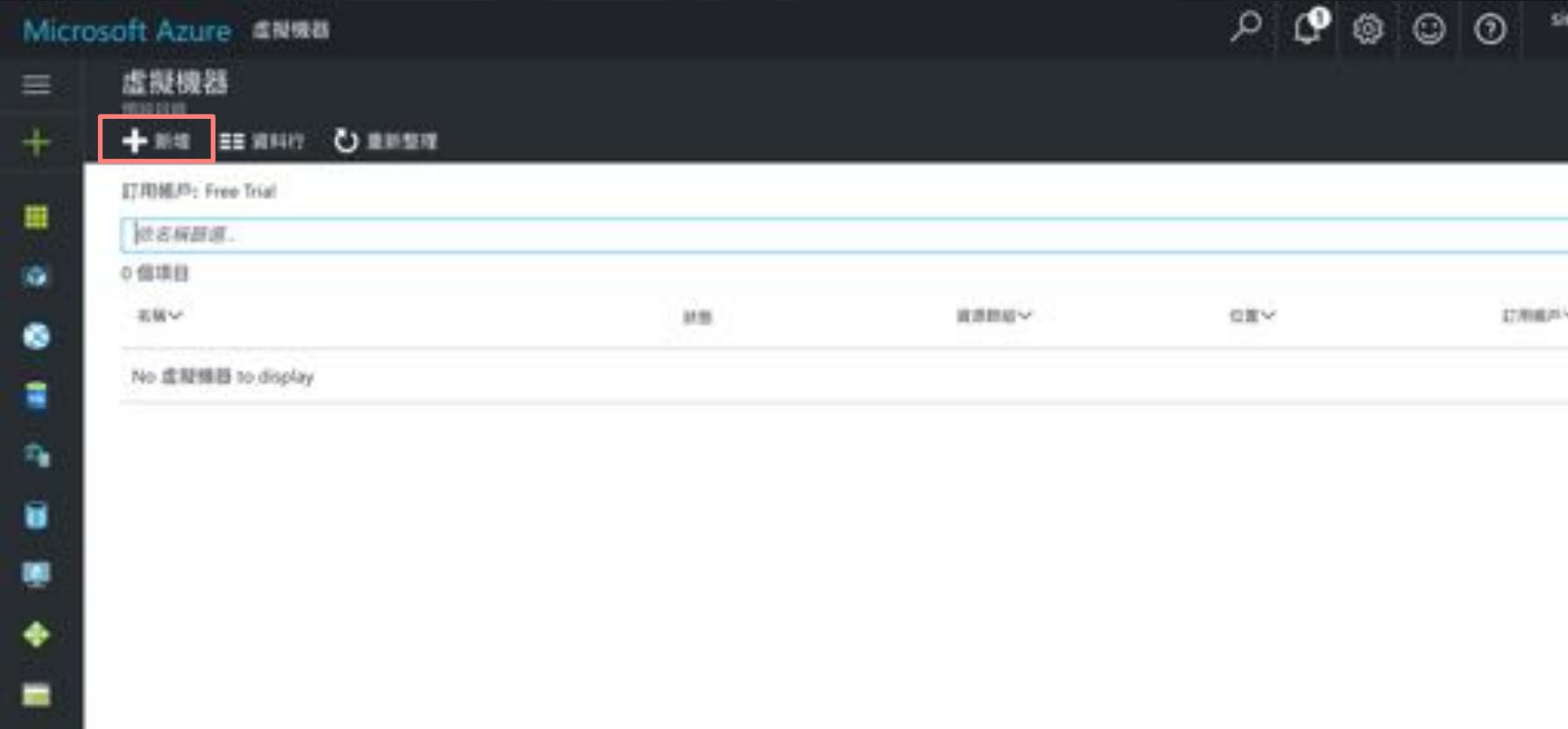
+ 新增

訂用帳戶: Free Trial

搜尋關鍵字:

0 個項目

No 虛擬機器 to display





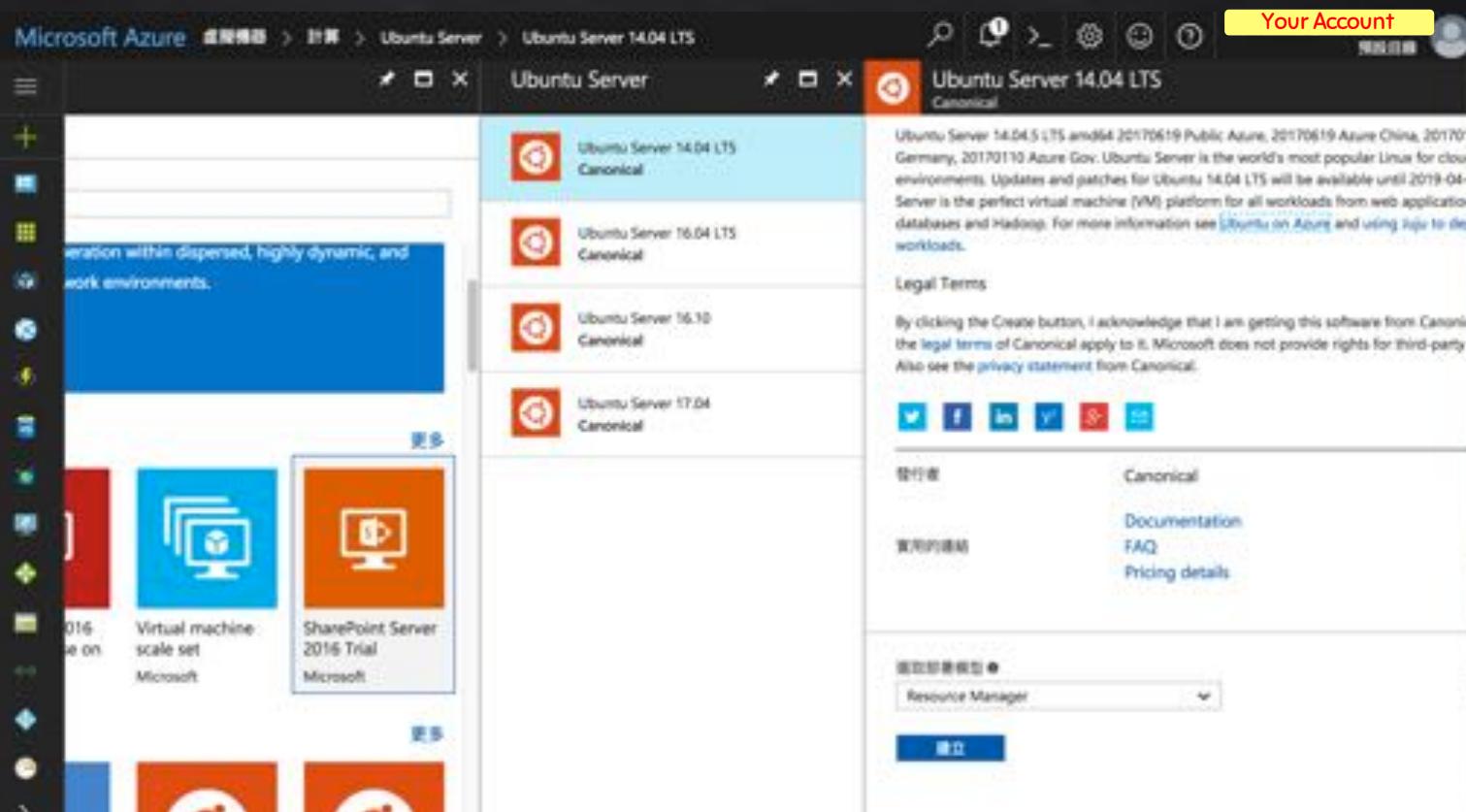
AZURE (LINUX VM)

The screenshot shows the Microsoft Azure portal interface for managing virtual machines. The left sidebar lists various service categories like Storage, Compute, and Network. The main area is titled 'Virtual Machines' under the 'Compute' section. A search bar and filter options are at the top. A yellow banner on the right says 'Your Account'. The main content area features a 'MongoDB with Replication' solution template, which includes a diagram of a MongoDB cluster with three nodes and a brief description: 'Scale above two VMs using this Solution Template. MongoDB with Replication gives you the ability to allow individual vertical scaling of nodes, break out configuration into two nodes for replication & backups, and more with just a single click.' Below this, there's a 'Create' button. At the bottom, there's a grid of icons representing different VM images:

Image	Name	Provider
	Windows Server	Microsoft
	Red Hat Enterprise Linux	Red Hat
	Ubuntu Server	Canonical
	SQL Server 2016 SP1 Enterprise on Windows Server 2016 Datacenter	Microsoft
	Virtual machine scale set	Microsoft
	Azure Container Service	Microsoft



AZURE (LINUX VM)



Microsoft Azure 開始頁面 > 計算 > Ubuntu Server > Ubuntu Server 14.04 LTS

Your Account

Ubuntu Server 14.04 LTS Canonical

Ubuntu Server 14.04 LTS and64 20170619 Public Azure, 20170619 Azure China, 20170111 Germany, 20170110 Azure Gov. Ubuntu Server is the world's most popular Linux for cloud environments. Updates and patches for Ubuntu 14.04 LTS will be available until 2019-04-11. Server is the perfect virtual machine (VM) platform for all workloads from web applications to databases and Hadoop. For more information see [Ubuntu on Azure](#) and [using Azure to deploy workloads](#).

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說明文件 Documentation

常见問題 FAQ

價格資訊 Pricing details

選取部署類型 * Resource Manager

建立

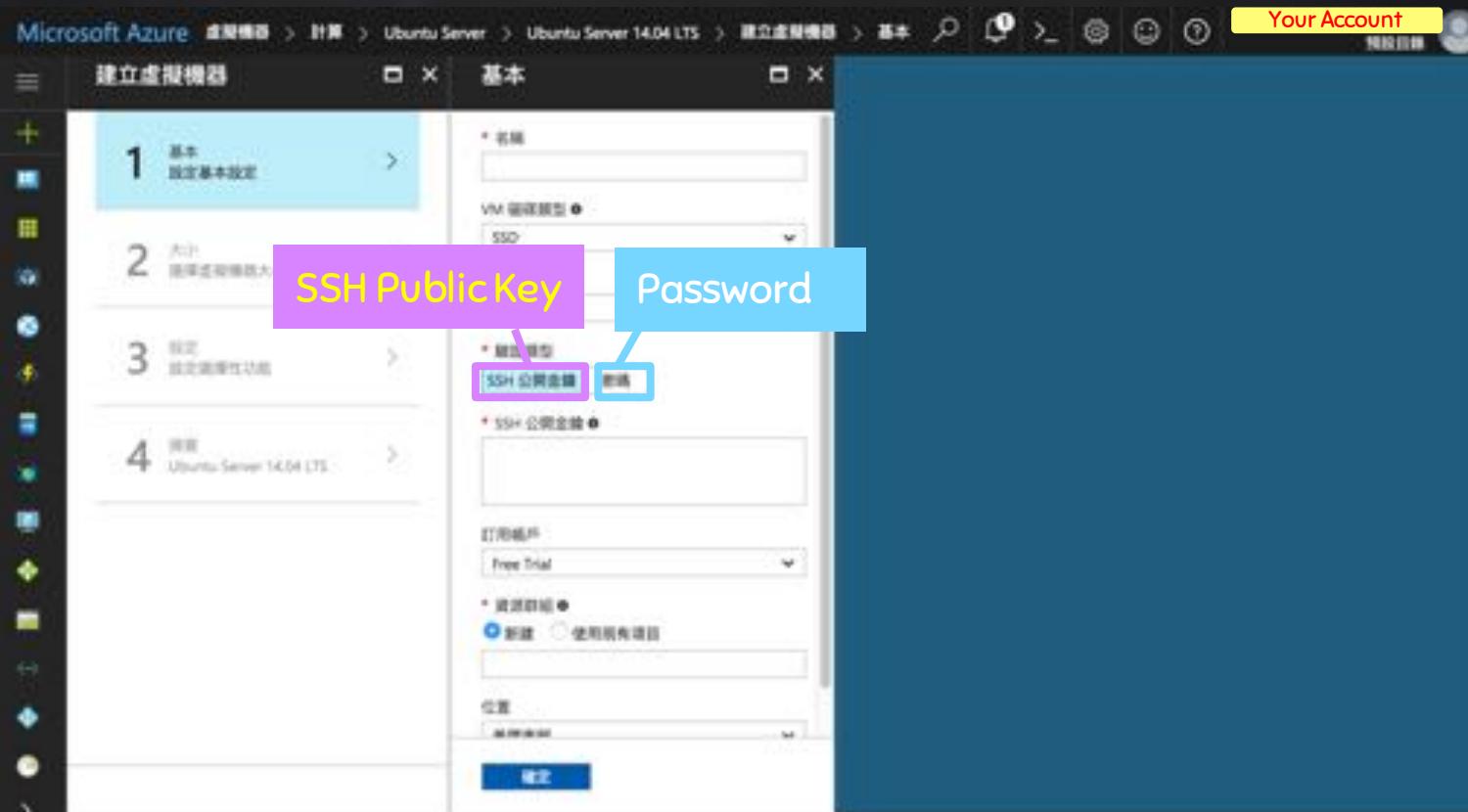
更多

Virtual machine scale set Microsoft

SharePoint Server 2016 Trial Microsoft



AZURE (LINUX VM)



The screenshot shows the Microsoft Azure 'Create Virtual Machine' wizard. The current step is 'Basic' (Step 1). The 'VM 安全类型' dropdown is set to 'SSH 公钥密鑰'. Two input fields are highlighted: 'SSH Public Key' (purple box) and 'Password' (blue box). The rest of the wizard steps are visible on the left.

Microsoft Azure 虛擬機器 > 計算 > Ubuntu Server > Ubuntu Server 14.04 LTS > 建立虛擬機器 > 基本

Your Account

建立虛擬機器

基本

1 基本
設定基本設定

2 大小
選擇虛擬機器大小

3 組定
設定連接性功能

4 預覽
Ubuntu Server 14.04 LTS

SSH Public Key

Password

VM 安全類型

SSH 公钥密鑰 密碼

SSH 公钥密鑰

打開範例: Free Trial

資源組

新建 使用現有項目

位置

確定



AZURE (LINUX VM) SSH Public Key

STEP 1

```
Hsin-Yu:Azure hsinyu$ pwd  
/Users/hsinyu/Desktop/Azure  
Hsin-Yu:Azure hsinyu$ info ssh-keygen  
  
Hsin-Yu:Azure hsinyu$ ssh-keygen -t rsa -b 2048 -C "Ubuntu@shiny-server"  
Generating public/private rsa key pair.  
Enter file in which to save the key (/Users/hsinyu/.ssh/id_rsa): shinyserver-  
Enter passphrase (empty for no passphrase):  
Enter same passphrase again:  
Your identification has been saved in shinyserver-key.  
Your public key has been saved in shinyserver-key.pub.
```

→ Choose save file location



AZURE (LINUX VM) SSH Public Key

```
[Hsin-Yu:Azure hsinyu$ pwd
```

```
/Users/hsinyu/Desktop/Azure
```

```
Hsin-Yu:Azure hsinyu$ info ssh-keygen
```

STEP 2

```
Hsin-Yu:Azure hsinyu$ ssh-keygen -t rsa -b 2048 -C "Ubuntu@shiny-server"
Generating public/private rsa key pair.
Enter file in which to save the key (/Users/hsinyu/.ssh/id_rsa): shinyserver-
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in shinyserver-key.
Your public key has been saved in shinyserver-key.pub.
```

[STEP 2.1] \$ ssh-keygen -t rsa 2048 -C “User Name @ VM Name”



AZURE (LINUX VM) SSH Public Key

```
[Hsin-Yu:Azure hsinyu$ pwd
```

```
/Users/hsinyu/Desktop/Azure
```

```
Hsin-Yu:Azure hsinyu$ info ssh-keygen
```

STEP 2

```
Hsin-Yu:Azure hsinyu$ ssh-keygen -t rsa -b 2048 -C "Ubuntu@shiny-server"
Generating public/private rsa key pair.
Enter file in which to save the key (/Users/hsinyu/.ssh/id_rsa): shinyserver-
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in shinyserver-key.
Your public key has been saved in shinyserver-key.pub.
```

[STEP 2.2] Enter file in which to save the key : Key Name



AZURE (LINUX VM) SSH Public Key

```
[Hsin-Yu:Azure hsinyu$ pwd  
/Users/hsinyu/Desktop/Azure  
[Hsin-Yu:Azure hsinyu$ info ssh-keygen  
  
[STEP 2] Hsin-Yu:Azure hsinyu$ ssh-keygen -t rsa -b 2048 -C "Ubuntu@shiny-server"  
Generating public/private rsa key pair.  
Enter file in which to save the key (/Users/hsinyu/.ssh/id_rsa): shinyserver-  
Enter passphrase (empty for no passphrase):  
Enter same passphrase again:  
Your identification has been saved in shinyserver-key.  
Your public key has been saved in shinyserver-key.pub.
```

[STEP 2.3] Enter passphrase : Key password



AZURE (LINUX VM) SSH Public Key

STEP 3

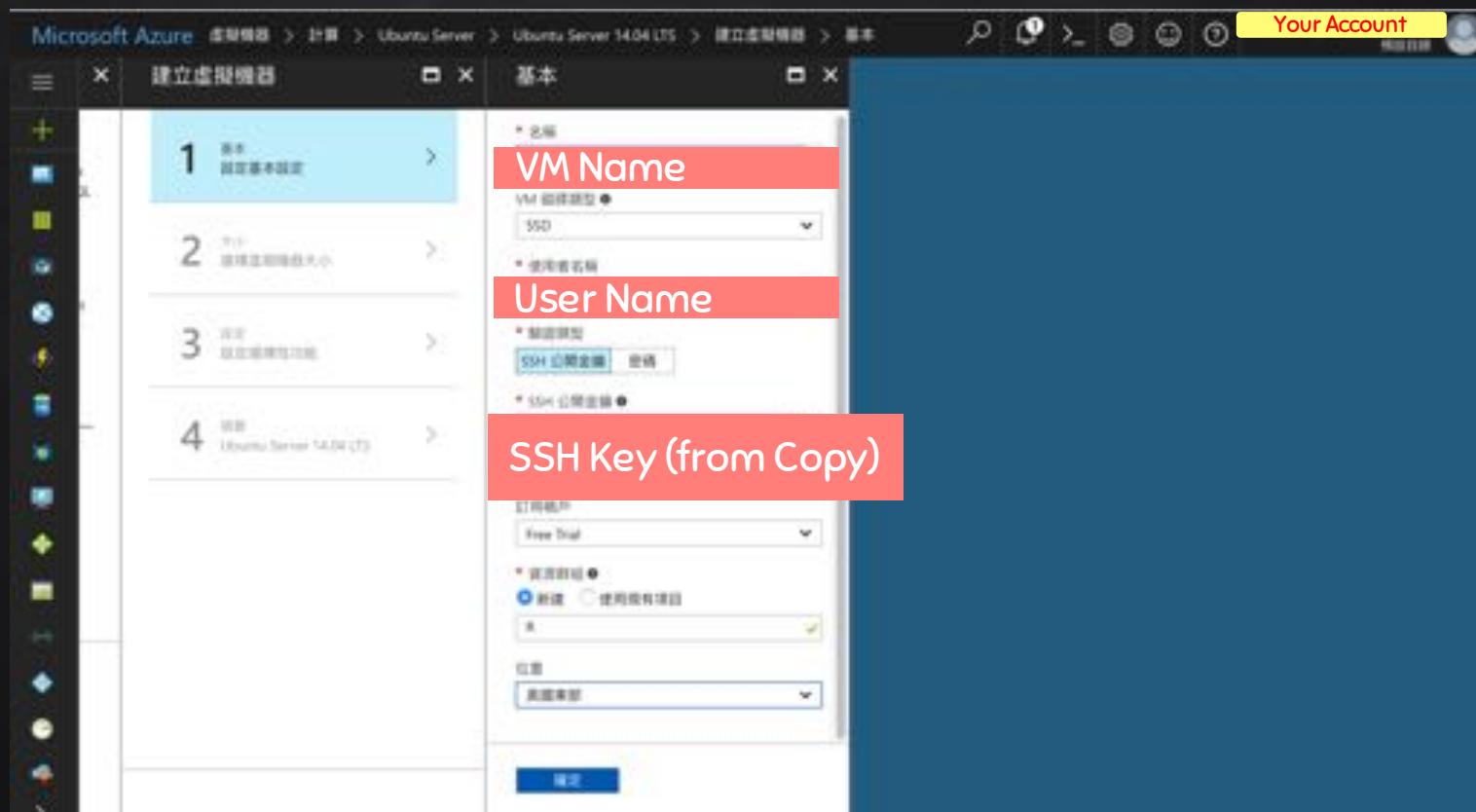
```
Hsin-Yu:Azure hsinyu$ cat shinyserver-key.pub
```

```
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAAQDANTFWN4V12K+KQq1B4WqKEQ2XXbw6
IUG)
4Zqs
sEC4
R09)
/nh)
```

Copy it



AZURE (LINUX VM) SSH Public Key

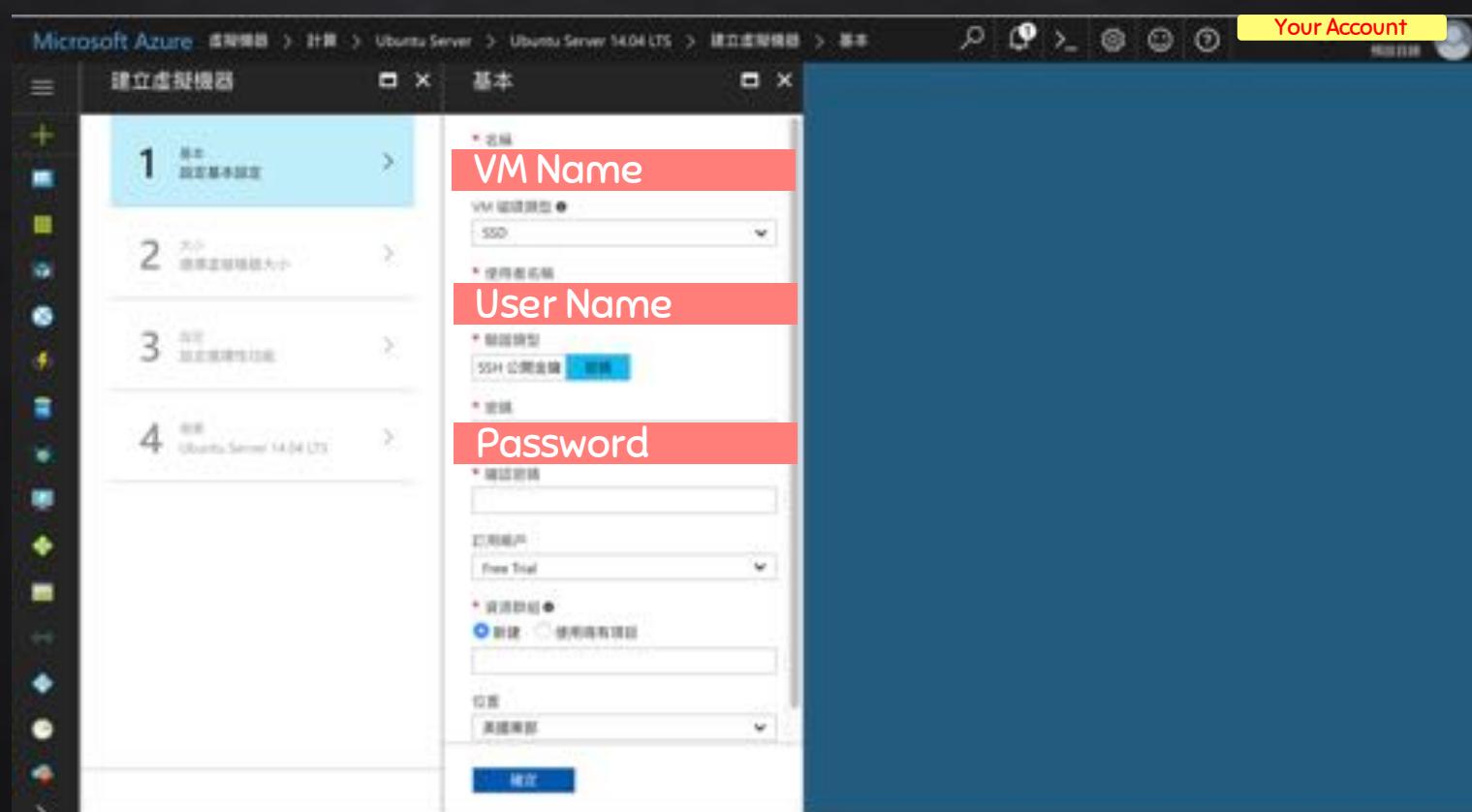


The screenshot shows the Microsoft Azure portal interface for creating a new virtual machine. The top navigation bar includes 'Your Account'. The main window displays the 'Create Virtual Machine' wizard, specifically Step 1: Basic settings. The 'SSH Public Key' section is highlighted with a red box and the text 'SSH Key (from Copy)'. Other visible fields include 'VM Name' (set to 'SSD'), 'User Name' (set to 'Administrator'), and 'SSH Public Key' (set to 'None'). The sidebar on the left lists other Azure services like Storage, Network, and Compute.



AZURE (LINUX VM)

Password

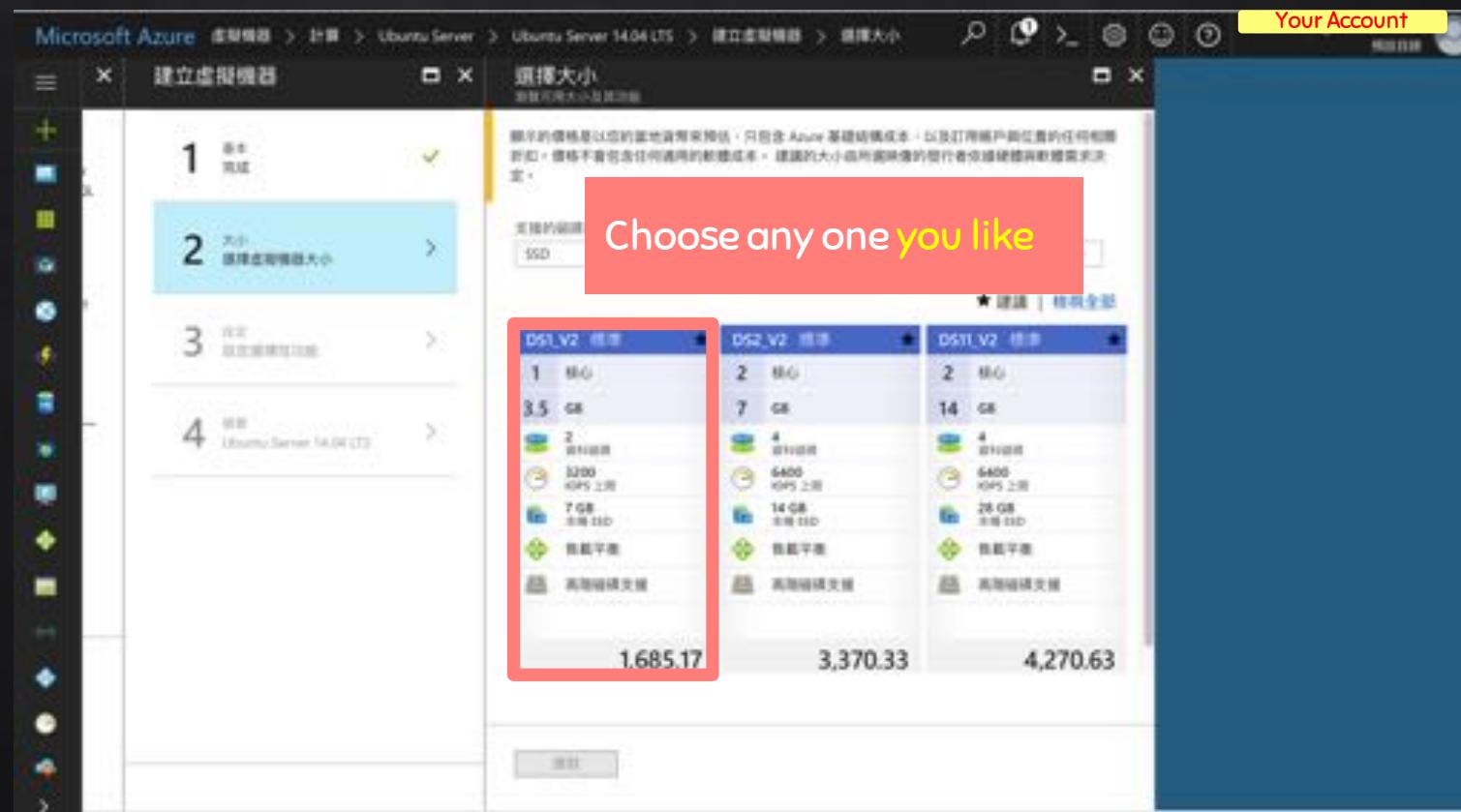


The screenshot shows the Microsoft Azure portal interface for creating a new virtual machine. The top navigation bar includes 'Your Account' in yellow. The main window displays a four-step wizard:

- 1 基本 設定基本設定**: The 'VM Name' field is highlighted with a red border. It contains the text 'VM Name'. Below it, the 'VM 硬體類型' dropdown is set to 'SSD'.
- 2 大小 選擇虛擬機器大小**: The 'User Name' field is highlighted with a red border. It contains the text 'User Name'. Below it, the '連接埠號' dropdown is set to 'SSH 公開連接'.
- 3 資源 設定虛擬機器資源**: The 'Password' field is highlighted with a red border. It contains the text 'Password'. Below it, there are fields for '密碼' (Password) and '說明文字' (Description), which is set to 'Free Trial'. The '資源群組' dropdown is set to '新建' (New) and '新群組名稱' (New group name) is empty. The '位置' (Location) dropdown is set to '美國東部' (East US).
- 4 完成 Ubuntu Server 14.04 LTS**: This step is partially visible on the right.



AZURE (LINUX VM)



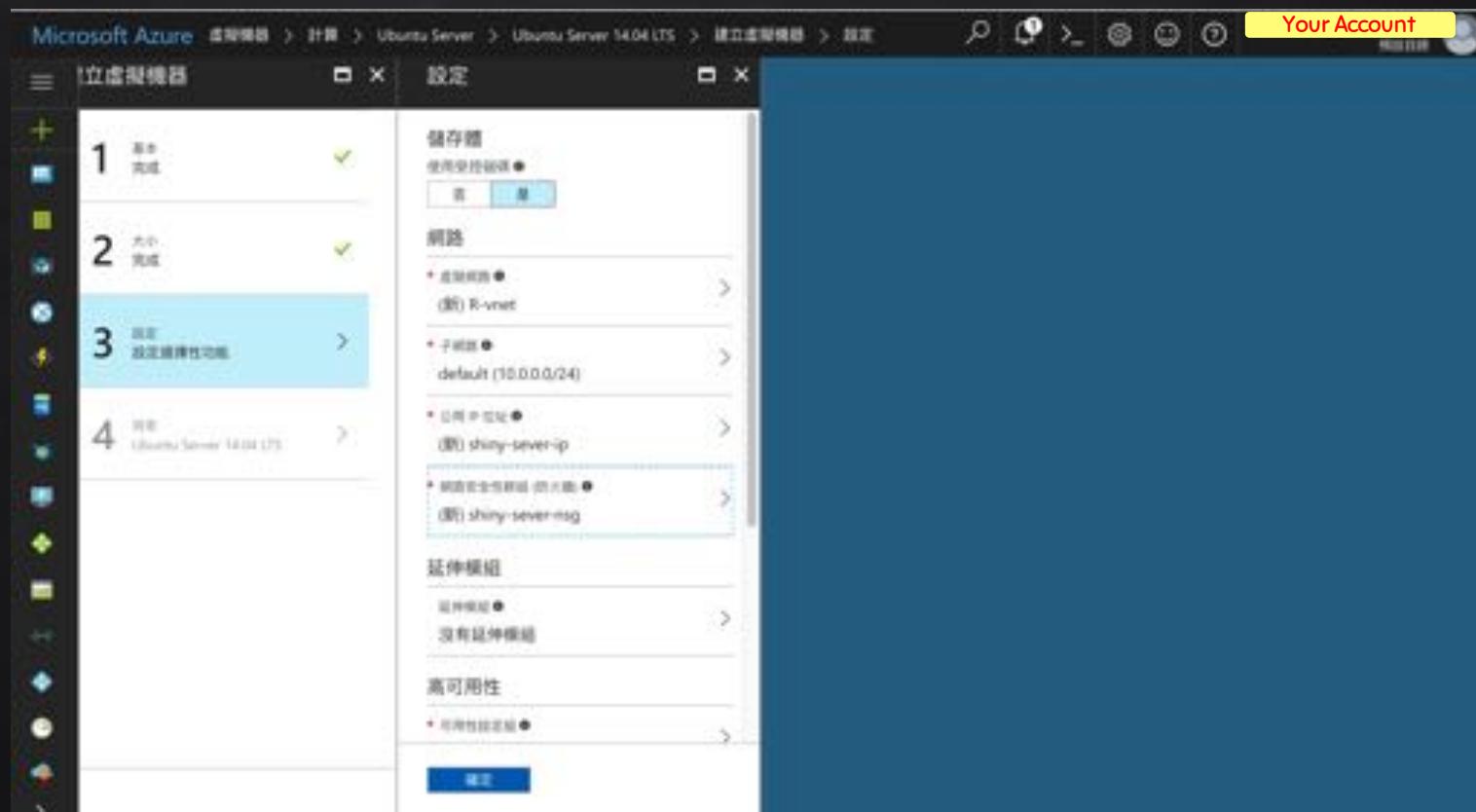
Your Account

Choose any one you like

	DS1_V2	DS2_V2	DS3_V2
1 核心	1 核心	2 核心	2 核心
3.5 GB	3.5 GB	7 GB	14 GB
2 附加磁盘	2 附加磁盘	4 附加磁盘	4 附加磁盘
3200 IOPS 上限	3200 IOPS 上限	6400 IOPS 上限	6400 IOPS 上限
7 GB 主机 SSD	14 GB 主机 SSD	28 GB 主机 SSD	28 GB 主机 SSD
智能平衡	智能平衡	智能平衡	智能平衡
高带宽磁盘支持	高带宽磁盘支持	高带宽磁盘支持	高带宽磁盘支持
	1,685.17	3,370.33	4,270.63



AZURE (LINUX VM)



The screenshot shows the Microsoft Azure portal interface for creating a virtual machine. The top navigation bar includes 'Your Account'. The main window displays the 'Create Virtual Machine' wizard, currently on step 3: 'Configure disk properties'. The steps are listed on the left:

- 1 基本 完成
- 2 大小 完成
- 3 磁盘 > **設定磁碟属性功能**
- 4 問題 Ubuntu Server 14.04 LTS >

The right pane shows configuration options for the disk:

- 儲存體:
 - 使用受控磁碟:
 - 新:
- 網路:
 - * 此虛擬機:
 - (新) R-vnet
- 子網路:
 - default (10.0.0.0/24)
- 公用 IP 位址:
 - (選) shiny-server-ip
- 網際網路連線 (防火牆):
 - (選) shiny-server-rsg
- 延伸模組:
 - 延伸模組:
 - 沒有延伸模組
- 高可用性:
 - * 可用性群組:

At the bottom of the configuration pane is a 'Next' button.



AZURE (LINUX VM)

Microsoft Azure 虛擬機器 > 計算 > Ubuntu Server > Ubuntu Server 14.04 LTS > 建立虛擬機器 > 摘要

Your Account 預設目錄

建立虛擬機器

1 基本 完成 ✓

2 大小 完成 ✓

3 設定 完成 ✓

4 摘要 Ubuntu Server 14.04 LTS >

驗證成功

基本

訂用帳戶	Free Trial
資源群組	(新) R
位置	美國東部

設定

電腦名稱	shiny-sever
磁碟類型	SSD
使用者名稱	ubuntu
大小	標準 DS1 v2
受管理	是
虛擬網路	(新) R-vnet
子網路	(新) default (10.0.0.0/24)
公用 IP 位址	(新) shiny-sever-ip
網路安全性群組 (防火牆)	(新) shiny-sever-nsg
可用性設定組	無
客體 OS 診斷	已停用
開機診斷	已啟用
診斷儲存體帳戶	(新) rdiag153



AZURE (LINUX VM)





AZURE (LINUX VM)



Microsoft Azure

儀表板

所有資源

我的資源

資源群組

應用程式服務

虛擬應用程式

SQL 資料庫

Azure Cosmos DB

虛擬機器

負載平衡器

所有資源

我的資源

資源群組

應用程式服務

虛擬應用程式

SQL 資料庫

Azure Cosmos DB

虛擬機器

負載平衡器

My VM Name: shiny-server

shiny-server

正在執行

Windows 虛擬機器

Linux 虛擬機器

App Service

functions



AZURE (LINUX VM)



The screenshot shows the Azure portal interface for a Linux VM named "shiny-server".

左侧菜单栏 (Left sidebar):

- shiny-server (正在运行)
- 选择 (Select) (当前选中)
- 活动监控 (Activity)
- 存取控制 (IAM)
- 标记 (Tags)
- 诊断日志解决方案 (Log Analytics)
- 设置 (Settings)
- 可移植性设置 (Portability)
- 磁盘 (Disks)
- 延伸存储 (Storage)
- 网络适配器 (Network Adapter)

右侧主要区域 (Main area):

顶部工具栏 (Top toolbar):

- 选择 (Select)
- 上一个 (Previous)
- 搜索 (Search)
- 重新加载 (Refresh)
- 停止 (Stop)
- 启动 (Start)
- 禁用 (Disable)
- 启用 (Enable)
- 连接 (Connect)
- 更多操作 (More options)

资源组 (Resource group):

名称: shiny-server
状态: 正在执行
位置: 黄金海岸
订阅: 免费试用 (Free Trial)
订阅账户: shiny-server
ID: /subscriptions/67bc4f2e-89b3-4897-b0f9-33

详细信息 (Details):

- 名称: shiny-server
- 操作系统: Linux
- 大小: 标准 DS1 v2 (1 核心 + 3.5 GB 起始磁盘)
- 公用 IP 地址: (显示在红色高亮框内)
- 连接到路由/子网: R-vmnet/default
- DNS 名称: shiny-server

显示下列时间段内的数据: 1 小时 (当前选中) | 8 小时 | 12 小时 | 1 天 | 7 天 | 30 天

性能指标 (Performance metrics):

- CPU (平均) (Average CPU)
- 带宽 (总计) (Total bandwidth)



SHINY VM

SSH Public Key

```
* Azure — ssh -i shinyserver-key ubuntu@52.168.149.241 — 97x34
Hsin-Yu:Azure hsinyu$ ls
Icon?          shinyserver-key      shinyserver-key.pub
Hsin-Yu:Azure hsinyu$ ssh -i shinyserver-key ubuntu@52.168.149.241
The authenticity of host '52.168.149.241' can't be established.
ECDSA key fingerprint: 5f:4e:3d:4c:5f:5f:5f:5f:5f:5f:5f:5f:5f:5f:5f:5f:5f
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '52.168.149.241' (ECDSA) to the list of known hosts.
ssh -i your_keyname vm_username@IP
```





SHINY VM

Password

```
hsinyu — ssh root@192.168.1.201 -p 22 — 80x24
Last login: Mon Jul 10 15:53:13 on ttys001
[Hsin-Yu:~ hsinyu$ ssh vm_username@IP
vm_username@IP 's password: 
```



SHINY VM

```
ubuntu@shiny-sever:~$ lsb_release -a
No LSB modules are available.
Distributor ID: Ubuntu
Description:      Ubuntu 14.04.5 LTS
Release:        14.04
Codename:       trusty
```



WHAT YOU NEED TO DO NOW

✓ Installing R

```
hsinyu — kristen@Shiny: ~ — ssh kristen@52.175.156.99
[kristen@Shiny:~$ R

R version 3.3.2 (2016-10-31) -- "Sincere Pumpkin Patch"
Copyright (C) 2016 The R Foundation for Statistical Computing
Platform: x86_64-pc-linux-gnu (64-bit)

R is free software and comes with ABSOLUTELY NO WARRANTY.
You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.

Natural language support but running in an English locale

R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
```

Ref: <https://www.digitalocean.com/community/tutorials/how-to-set-up-r-on-ubuntu-14-04>
<https://www.digitalocean.com/community/tutorials/how-to-install-r-on-ubuntu-16-04-2>



WHAT YOU NEED TO DO NOW

- ✓ Installing RStudio



Ref: <https://www.rstudio.com/products/rstudio/download-server/>



WHAT YOU NEED TO DO NOW

- ✓ Open port 8787



The screenshot shows the Microsoft Azure portal interface. On the left, there's a sidebar with various service icons: 新增 (Add), 所有資源 (All Resources), 資源群組 (Resource Group), 應用程式服務 (App Service), SQL 資料庫 (SQL Database), SQL 資料倉庫 (SQL Data Warehouse), NoSQL (DocumentDB), 虛擬機器 (Virtual Machines), and 負載平衡 (Load Balancer). The main area is titled '儀表板' (Dashboard) and shows a list of resources under '所有資源' (All Resources). One resource, 'Shiny-nsg' (Network Security Group), is highlighted with a red box. Other visible resources include 'Shiny-ip' (IP Address), 'ShinySet-vnet' (Virtual Network), 'shiny324' (Storage Account), 'Shiny' (Virtual Machine), 'shinyvfdiag281' (Cloud Service), and 'shinysetdisks443' (Disk). To the right of the resource list, there's a '開始使用' (Get Started) section with links for Virtual Machines, App Service, SQL Database, and Storage. A vertical sidebar on the far right shows a 'Shiny' card with the status '正在執行' (Running).



WHAT YOU NEED TO DO NOW

- ✓ Open port 8787



Microsoft Azure shiny-server-nsq - 輸入安全性規則

shiny-server-nsq - 輸入安全性規則

+ 新增 預設規則

優先順序	名稱	來源	目的地	埠
1000	default-allow-ssh	Any	Any	SSH (TCP/22)

輸入安全性規則

輸出安全性規則



WHAT YOU NEED TO DO NOW

✓ Open port 8787

新增連入安全性規則
Shiny-nsq
X 進階

* 名稱

* 優先順序 ①
1020

* 來源 ②
 Any CIDR block Tag

服務 ③
 自訂

* 通訊協定
 Any TCP UDP

* 連接埠範圍 ④
 8787

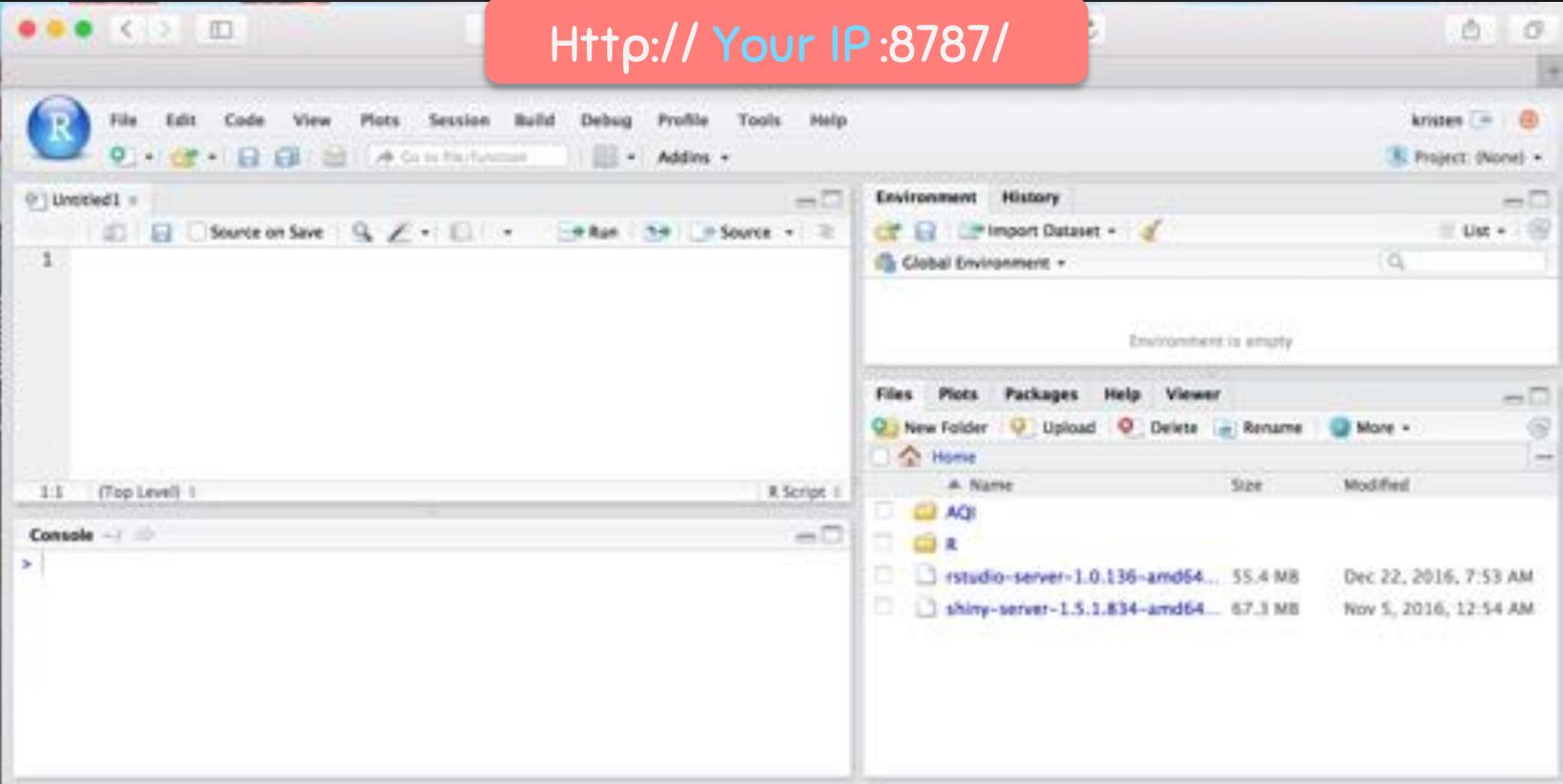
* 動作
 拒絕 允許





RSTUDIO SERVER

Http:// Your IP:8787/



The screenshot shows the RStudio Server interface. At the top, there's a navigation bar with File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, and Help. On the right, there's a user icon for 'kristen' and a 'Project: (None)' dropdown. Below the navigation bar is a toolbar with various icons for file operations like Open, Save, and Run. The main workspace is divided into several panes: a code editor for 'Untitled1.R' with a single line of code '1', a console pane, and a file browser pane on the right. The file browser pane shows the directory structure under 'Home': 'AQI' (modified Dec 22, 2016, 7:53 AM), 'R' (modified Nov 5, 2016, 12:54 AM), 'rstudio-server-1.0.136-amd64...' (55.4 MB), and 'shiny-server-1.5.1.834-amd64...' (67.3 MB).



WHAT YOU NEED TO DO NOW

✓ Installing ShinyServer

Welcome to Shiny Server!

If you're seeing this page, that means Shiny Server is installed and running. **Congratulations!**

What's Next?

Now you're ready to setup Shiny — if you haven't already — and start deploying your Shiny applications.

If you see a Shiny application running on the right side of this page, then Shiny is configured properly on your server and already running an example. Bravo! You can see this application on your server at </sample-apps/hello/>.

If you see a gray box or an error message, then there's a bit more work to do to get Shiny running fully. You can continue with [the installation instructions](#) or use the Admin Guide for more information. If you're seeing an error message in the panel to the right, you can use it to help diagnose what may be wrong. If you think Shiny is installed and setup properly and things still aren't working, you can look in the Shiny Server log which may have more information about what's wrong. By default, the log is stored in [/var/log/shiny-server.log](#).

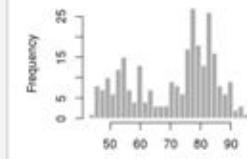
If you're really stuck and you've read the relevant sections in [the Admin Guide](#), then you can file a bug report on the [Shiny GitHub repository](#).

It's Alive!

Number of bins: 30 50

1 8 11 16 21 28 31 36 41 46 50

Histogram of x



Frequency

When Shiny is properly configured on your server.

Ref: <https://www.rstudio.com/products/shiny/download-server/>



WHAT YOU NEED TO DO NOW

✓ Open port 3838

新增連入安全性規則
Shiny-nsq
X 進階

* 名稱

* 優先順序 ①
1020

* 來源 ②
 Any CIDR block Tag

服務 ③
 自訂

* 通訊協定
 Any TCP UDP

* 連接埠範圍 ④
 3838

* 動作
 拒絕 允許



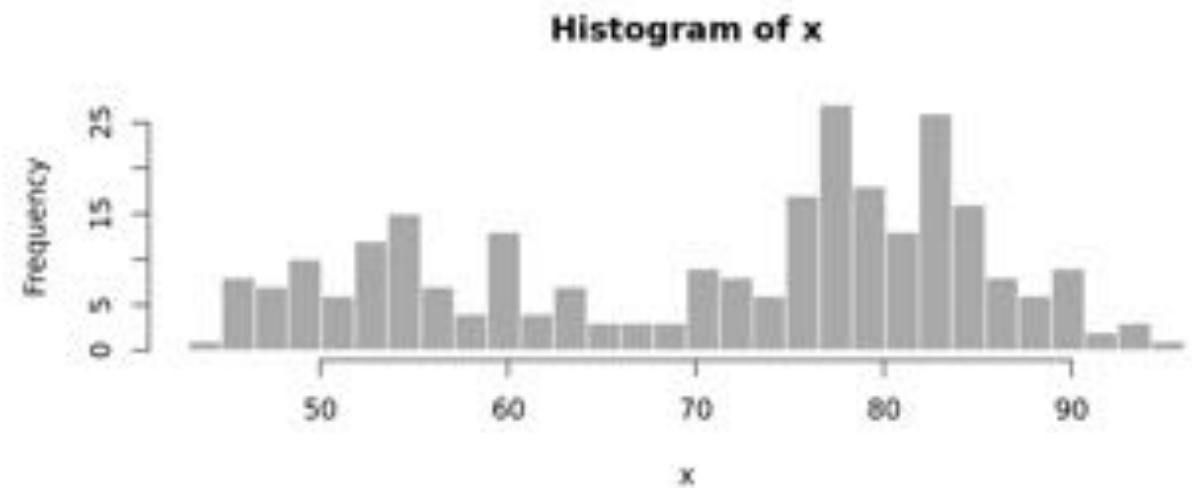
TESTING SHINY APPS

[Http:// Your IP:3838/sample-apps/hello/](http://Your IP:3838/sample-apps/hello/)

It's Alive!

It's Alive!

Number of bins:

1 8 11 18 21 28 31 38 41 46 56



YOUR SHINY APPS

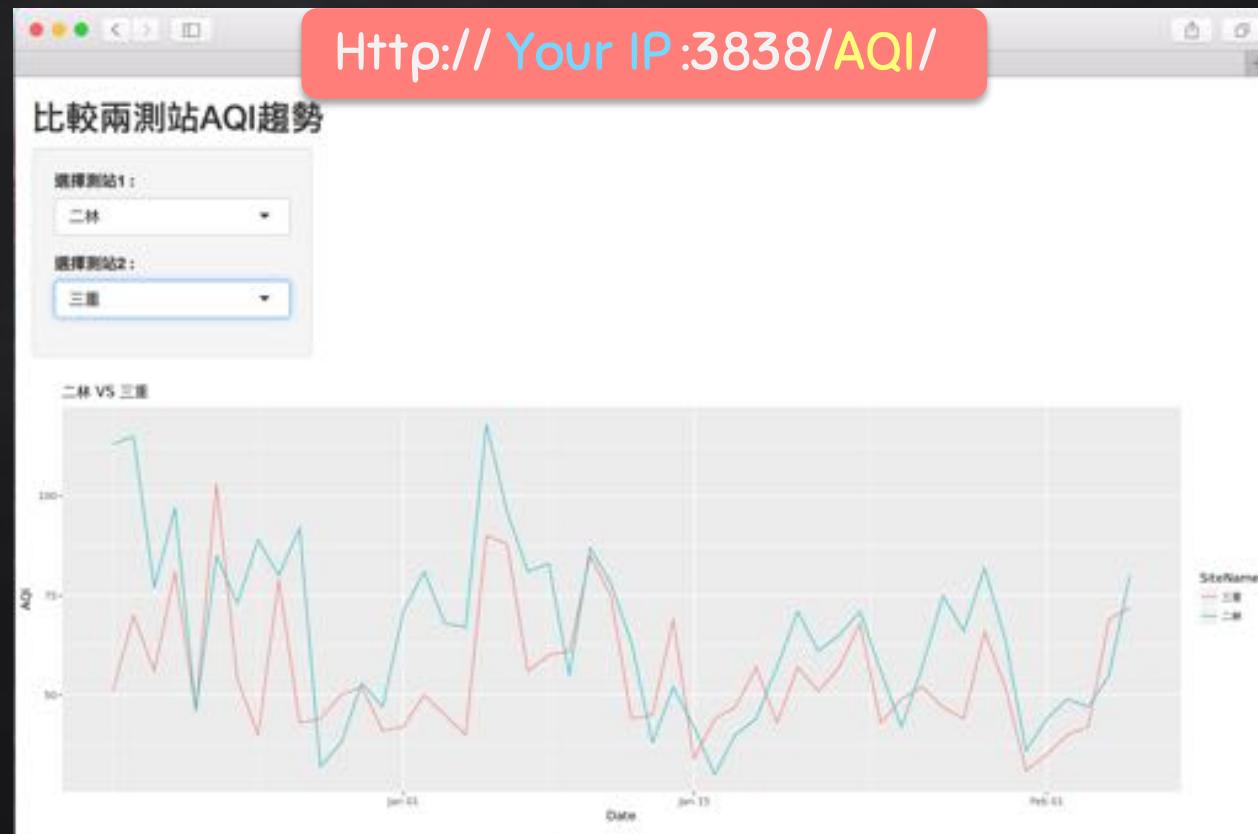
```
hsinyu — kristen@Shiny: /srv/shiny-server/AQI — ssh
[kristen@Shiny:~$ cd /srv/shiny-server/AQI
[kristen@Shiny:/srv/shiny-server/AQI$ ls
data_AQI_new.csv  server.R  ui.R
kristen@Shiny:/srv/shiny-server/AQI$
```

Folder Name

MOVE

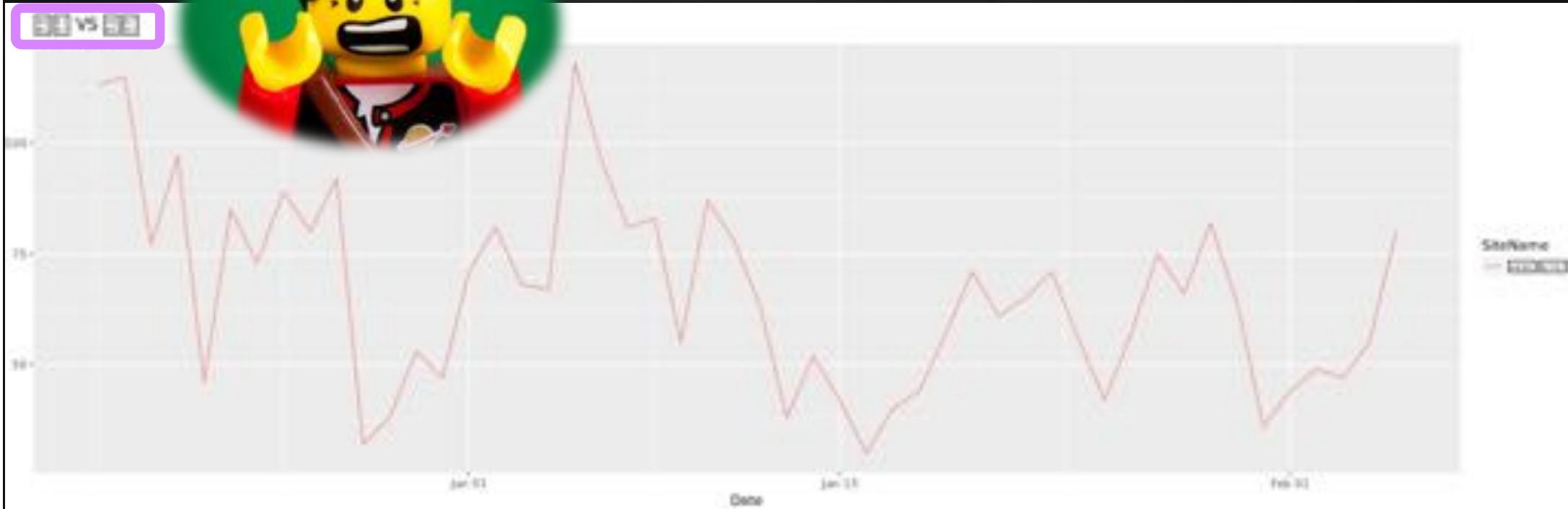


YOUR SHINY APPS





YOUR SHINY APPS





WHAT YOU NEED TO DO NOW

- ✓ Installing 中文字型

<ggplot show chinese character ERROR>

→ install Chinese fonts in your server, then reboot

Ubuntu:

```
sudo apt-get install fonts-wqy-zenhei
```

```
sudo apt-get install fonts-archic-bkai00mp fonts-archic-bsmi00lp fonts-archic-gbsn00lp fonts-archic-gkai00mp fonts-archic-ukai fonts-archic-uming fonts-cns11643-kai fonts-cns11643-sung fonts-cwtex-fs fonts-cwtex-heib fonts-cwtex-kai fonts-cwtex-ming fonts-cwtex-yen
```



THANKS!



Any questions?