

## SISTEMAS E REDES MULTISERVIÇO

### Practical Exercises nº 5 – Monitoring and evaluation

1. **Calculate the availability of a computer network knowing that:**
  - a) The network was being evaluated during the month of January;
  - b) The network was repaired at 00:00 on January 1 and broke down at 00:00 on February 1;
  - c) During the period under review, 4 failures were recorded;
  - d) The total time that the network was inactive was 18 hours;
  
2. **Calculate the availability of a network in April knowing that, in this month, had a breakdown on April 6 during 7 hours and another, on April 23, for 21 hours.**
  
3. **In a *Business Continuity plan of a company***, it was defined that critical information is copied every day at 1:00 pm and 24:00 to a backup server. An assistance contract was concluded with the computer supplier, the only entity capable of managing the company's systems, with 8-hour response SLA (from 9:00 am to 6:00 pm). Considering that applications can be reestablished by the computer provider from the backup server, calculate the maximum RPO and RTO.
  
4. A network broke down at 12:00 p.m. on Tuesday and was reinstated at 1pm on Tuesday, fulfilling the DR plan at its limit. Users complain that they have lost their work since 6pm on Monday. **Can indicate the RTO and RPO defined in this plan?**
  
5. **Monitoring with WMI and Visual Basic Scripts (only available on Windows PC's)**
  - a. Run the following VB script to access information about your PC's Time Zone:

```
Option Explicit
On Error Resume Next
Dim strComputer
Dim strWMINameSpace
Dim strWMIQuery
Dim objWMIService
Dim colItems
Dim objItem

strComputer = "."
strWMINameSpace = "\root\CIMV2"
strWMIQuery = "SELECT * FROM Win32_TimeZone"
```

```
Set objWMIService = GetObject("winmgmts:\\\" & strComputer &
strWMINameSpace)
Set collItems = objWMIService.ExecQuery(strWMIQuery)
```

```
For Each objItem In collItems
    WScript.Echo objItem.Caption
Next
```

- b. Run the following VB script to access information about your PC's operating system (version and installation date):

```
Option Explicit
On Error Resume Next
Dim strComputer
Dim strWMINameSpace
Dim strWMIQuery
Dim objWMIService
Dim collItems
Dim objItem
```

```
strComputer = "."
strWMINameSpace = "\root\CIMV2"
strWMIQuery = "SELECT * FROM Win32_OperatingSystem"
```

```
Set objWMIService = GetObject("winmgmts:\\\" & strComputer &
strWMINameSpace)
Set collItems = objWMIService.ExecQuery(strWMIQuery)
```

```
For Each objItem In collItems
    WScript.Echo objItem.Caption
    WScript.Echo objItem.InstallDate
Next
```

- c. If you compare the previous two scripts, the differences are at the class level and properties that are queried:

```
strWMIQuery = "SELECT * FROM Win32_TimeZone"
```

VS

```
strWMIQuery = "SELECT * FROM Win32_OperatingSystem"
```

*WScript.Echo objItem.Caption*

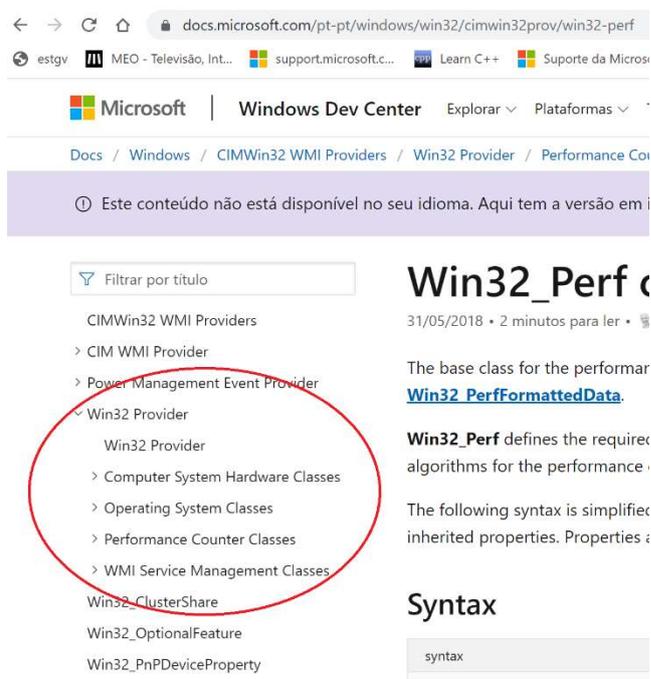
Vs

*WScript.Echo objItem.Caption*

*WScript.Echo objItem.InstallDate*

You can check all classes and their properties available for WMI at the following link:

<https://docs.microsoft.com/pt-pt/windows/win32/cimwin32prov/cimwin32-wmi-providers>



The screenshot shows a web browser window with the URL `docs.microsoft.com/pt-pt/windows/win32/cimwin32prov/win32-perf`. The page title is "Win32\_Perf" and it includes a search bar, a list of WMI providers, and a description of the `Win32_Perf` class. The "Win32 Provider" folder in the left navigation pane is circled in red.

- d. Explore available classes and properties and see, for example, the accounts created on your PC or how many cores your processor has.