Advanced Scripting   
Script - Network Functions

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Document Prepared for: CIT361 Student

# Overview

Understanding networks is a key to being a successful system administrator. For this script you will write two networking functions. Get-IPNetwork and Test-IPNetwork. Get-IPNetwork will return a network ID as an [IPAddress] object given an IPAddress and SubnetMask. Test-IPNetwork will take two IPAddresses and a subnet mask and return a true if they are on the same network and a false otherwise. These only need to work for IPv4. MAKE SURE YOU FOLLOW THE REQUIRMENTS CAREFULLY.

# Requirements:

1. Create a script named network.ps1
2. Include the following author comment block

# <# Program Name : <program> Date: <datecreated> Author(s): <yourname(s)> Corse: CIT361 I, <yourname>, affirm that I wrote this script as original work completed by me. #>

1. Function 1
   1. Description: Given an IP address and a Subnet mask return the network ID
   2. Name: **Get-IPNetwork**
   3. Return network id as a [net.ipaddress] object. No other output should occur. If the function can’t complete return a $null or throw an error.
   4. Parameters
      1. –IPAddress: IP address to test, this can either be passed as a string or a [ipaddress] object.
      2. –SubnetMask: Passed as either a string or [IPAddress] object
   5. Functionality: The network address is calculated by performing a bitwise and of the ipaddress and subnetmask (use the address property of the object)
2. Function 2
   1. Description: Determines if two IP addresses are on the same network.
   2. Name: Test-IPNetwork
   3. Return: $true it they are a $false if they are not.
   4. Parameters
      1. -IP1, -IP2: IP addresses to test as either string or [PAddress]
      2. –SubnetMask: Subnet mask to use in tests as either string or [IPAddress]
   5. Functionality. Get the NetworkID of each IP address, use the same Subnet mask for each IP address (Use your Get-IPNetwork function). Compare the NetworkIDs
3. Use the functions in your script.
   1. **After defining the functions**, write code that asks the user to input two IP addresses and a subnet mask.
   2. Output the IP addresses with their corresponding network addresses
   3. Output a statement telling the user if the two IP addresses are on the same network.

# Hints:

* The [Net.IPAddress] object has a property called Address which is the address used for computations.

# Deliverable:

Upload your script to I-Learn

# Grading Rubric:

|  |  |
| --- | --- |
| Element | Points |
| Comment block | 1, -10(if missing) |
| Get-IPNetwork | 4 |
| Test-IPNetwork | 4 |
| Use Functions | 1 |
| Total | 10 |