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 [IPAdderss] object given an IPAddress and SubnetMask. Test-IPNetwork will take two IPAddresses and a subnet mask and return *true* if they are on the same network and *false* if otherwise. These only need to work for IPv4.

# Game Play and Requirements

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

# <# Program Name : <program> Date: <datecreated> Author: <yourname> 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 are as follows:
      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.
2. Function 2:
   1. Description: Determines if two IP addresses are on the same network.
   2. Name: Test-IPNetwork.
   3. Return: $true ir they are, a $false if they are not.
   4. Parameters are as follows:
      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. Compare the NetworkIDs.
3. Use the functions.
   1. After defining the functions, ask 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 |