

IP Address Management in Windows Environment

IP Address Management (IPAM) is a crucial aspect of network administration in any IT infrastructure. It involves the planning, tracking, and managing of IP addresses to ensure efficient utilization and smooth operation of the network. In a Windows environment, IPAM is equally important and can be effectively managed using built-in tools and features provided by Microsoft. This article will explore the various aspects of IPAM in a Windows environment and provide practical examples and instructions.

Examples:

1. Managing IP Addresses using PowerShell:

- To retrieve the IP configuration of a Windows machine, use the following PowerShell command:

```
Get-NetIPAddress
```

- To assign a new IP address to a network adapter, use the following PowerShell command:

```
New-NetIPAddress -InterfaceAlias "Ethernet" -IPAddress "192.168.1.100" -PrefixLength 24 -DefaultGateway "192.168.1.1"
```

2. DHCP Server Management:

- To install the DHCP Server role in Windows Server, use the following PowerShell command:

```
Install-WindowsFeature -Name DHCP -IncludeManagementTools
```

- To create a new DHCP scope, use the following PowerShell command:

```
Add-DhcpServerv4Scope -Name "LAN" -StartRange "192.168.1.100" -EndRange "192.168.1.200" -SubnetMask "255.255.255.0"
```

3. DNS Management:

- To add a new DNS record, use the following PowerShell command:

```
Add-DnsServerResourceRecordA -Name "webserver" -ZoneName "example.com" -IPv4Address "192.168.1.50"
```

- To flush the DNS cache on a Windows machine, use the following command in



Command Prompt:

```
ipconfig /flushdns
```