

Create NSG and Rules

Objective

- Criar NSG, Rules para SSH (porta 22), e SSH para IP restrito.

Comments

Today I practiced NSG (Network Security Groups), an important topic for the AZ-104 exam, which I'm currently studying for. I used Azure CLI to create a Resource Group, VM, VNet, Subnet, NSG, and an Inbound Rule.

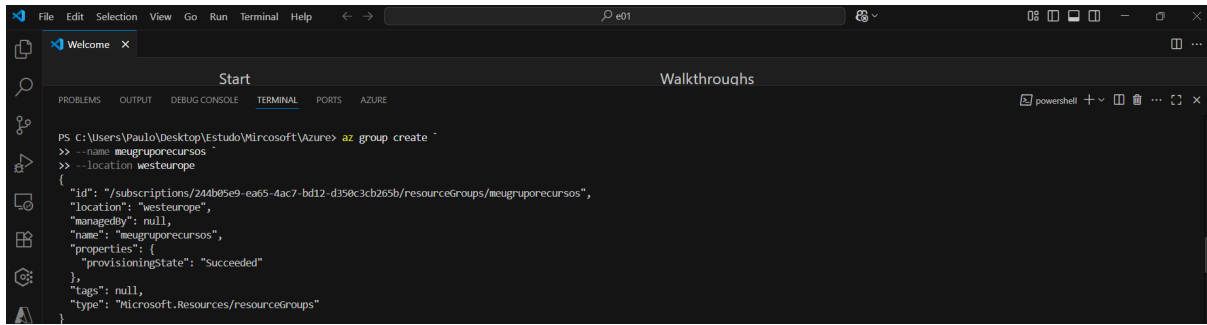
At first, I created an SSH rule that allowed inbound traffic to my subnet.

Then, I deleted that rule and created a new SSH rule restricted to my laptop's public IP — and everything worked as expected.

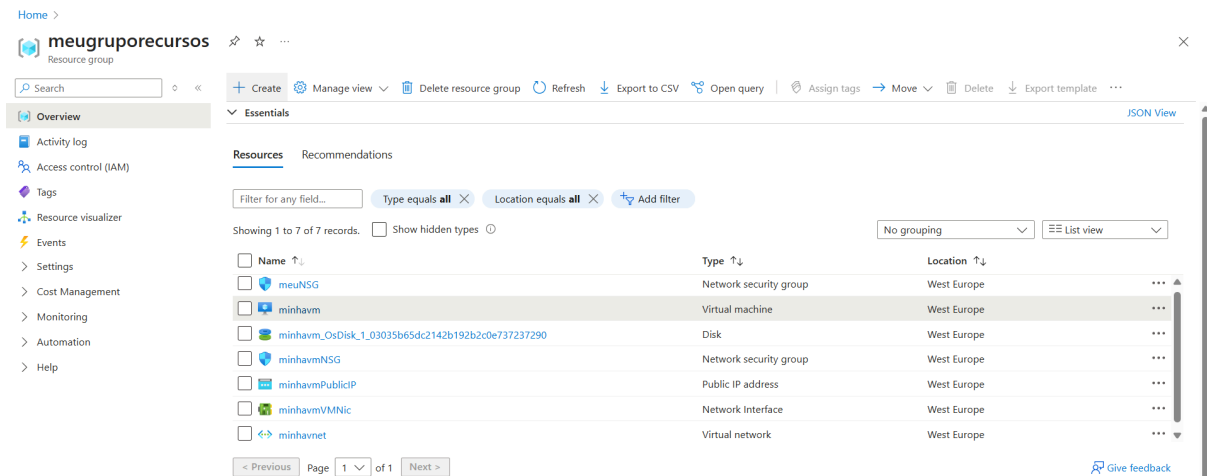
It was a smooth process, and I'm getting more and more comfortable with Azure cloud concepts.

The CLI commands are becoming more intuitive as I keep practicing — and I'm focusing a lot on mastering the CLI, as it will be a solid foundation for my future career as a Cloud Engineer.

1. Create RG “meugruporecursos”



```
PS C:\Users\Paulo\Desktop\Estudo\Microsoft\Azure> az group create --name meugruporecursos --location westeurope
{"id": "/subscriptions/244b85e9-ea65-4ac7-bd12-d350c3cb265b/resourceGroups/meugruporecursos",
"location": "westeurope",
"managedBy": null,
"name": "meugruporecursos",
"properties": {
  "provisioningState": "Succeeded"
},
"tags": null,
"type": "Microsoft.Resources/resourceGroups"
}
```



Home > meugruporecursos

Overview

Activity log

Access control (IAM)

Tags

Resource visualizer

Events

Settings

Cost Management

Monitoring

Automation

Help

Resources

Filter for any field... Type equals all Location equals all Add filter

Showing 1 to 7 of 7 records. Show hidden types

Name	Type	Location
meuNSG	Network security group	West Europe
minhavam	Virtual machine	West Europe
minhavam_OsDisk_1_03035b65dc2142b192b2c0e737237290	Disk	West Europe
minhavamNSG	Network security group	West Europe
minhavamPublicIP	Public IP address	West Europe
minhavamVMNic	Network Interface	West Europe
minhavnet	Virtual network	West Europe

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Give feedback

2. Create Vnet "minhavnet" and Subnet "minhasubnet"

```
PS C:\Users\Paulo\Desktop\Estudo\Microsoft\Azure> az network vnet create `
> --resource-group meugruporecursos `
> --name minhavnet `
> --address-prefix 10.0.0.0/16 `
> --subnet-name minhasubnet `
> --address-prefix 10.0.1.0/24
{
  "newVnet": {
    "addressSpace": {
      "addressPrefixes": [
        "10.0.1.0/24"
      ]
    },
    "enabledDdosProtection": false,
    "etag": "W/\"84a1dc9e-7535-4f18-8cc0-0db68aabd941\"",
    "id": "/subscriptions/244b05e9-ea65-4ac7-bd12-d350c3cb265b/resourceGroups/meugruporecursos/providers/Microsoft.Network/virtualNetworks/minhavnet",
    "location": "westeurope",
    "name": "minhavnet",
    "privateEndpointVnetPolicies": "Disabled",
    "provisioningState": "Succeeded",
    "resourceGroup": "meugruporecursos",
    "resourceId": "/subscriptions/244b05e9-ea65-4ac7-bd12-d350c3cb265b/resourceGroups/meugruporecursos/providers/Microsoft.Network/virtualNetworks/minhavnet",
    "subnets": [
      {
        "addressPrefix": "10.0.1.0/24",
        "delegations": [],
        "etag": "W/\"84a1dc9e-7535-4f18-8cc0-0db68aabd941\"",
        "id": "/subscriptions/244b05e9-ea65-4ac7-bd12-d350c3cb265b/resourceGroups/meugruporecursos/providers/Microsoft.Network/virtualNetworks/minhavnet/subnets/minhasubnet",
        "name": "minhasubnet",
        "privateEndpointVnetPolicies": "Disabled",
        "privateLinkServiceNetworkPolicies": "Enabled",
        "provisioningState": "Succeeded",
        "resourceGroup": "meugruporecursos",
        "type": "Microsoft.Network/virtualNetworks/subnets"
      }
    ]
  }
}
```

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minhavnet
Virtual network

Search

Move Delete Refresh Give feedback

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Resource visualizer

Settings

Address space

Connected devices

Subnets

Bastion

DDoS protection

Firewall

Microsoft Defender for Cloud

Essentials

Resource group (move) : meugruporecursos

Location (move) : West Europe

Subscription (move) : Azure subscription 1

Subscription ID : 244b05e9-ea65-4ac7-bd12-d350c3cb265b

Tags (edit) : Add tags

Address space : 10.0.0.0/16

DNS servers : Azure provided DNS service

BGP community string : Configure

Virtual network ID : ce99d909-ae77-42be-ae30-f1240ca8f115

Topology Properties Capabilities (5) Recommendations Tutorials

DDoS protection

Configure additional protection from distributed denial of service attacks.

Not configured

Azure Firewall

Protect your network with a stateful L3-L7 firewall.

Not configured

Peerings

Seamlessly connect two or more virtual networks.

Not configured

Microsoft Defender for Cloud

Strengthen the security posture of your environment.

Home > meugruporecursos > minhavnet

minhavnet | Subnets

Virtual network

Search

+ Subnet Refresh Manage users Delete

Create subnets to segment the virtual network address space into smaller ranges for use by your applications. When you deploy resources into a subnet, Azure assigns the resource an IP address from the subnet.

Search subnets

	Name	IPv4	IPv6	Available IPs	Delegated to	Security group	Route table
<input type="checkbox"/>	Name 1						
<input type="checkbox"/>	minhasubnet	10.0.0.0/24	-	250	-	-	

4.Create NSG “meuNSG”

```
PS C:\Users\Paulo\Desktop\Estudo\Microsoft\Azure> az network nsg create --resource-group meugruporecursos --name meuNSG
{
  "NewNSG": {
    "defaultSecurityRules": [
      {
        "access": "Allow",
        "description": "Allow inbound traffic from all VMs in VNET",
        "destinationAddressPrefix": "VirtualNetwork",
        "destinationAddressPrefixes": [],
        "destinationPortRange": "*",
        "destinationPortRanges": [],
        "direction": "Inbound",
        "etag": "W/\"ec282e1e-8173-457e-8b7e-ea2bb026368d\"",
        "id": "/subscriptions/244b05e9-ea65-4ac7-bd12-d350c3cb265b/resourceGroups/meugruporecursos/providers/Microsoft.Network/networkSecurityGroups/meuNSG/defaultSecurityRules/AllowVnetInbound",
        "name": "AllowVnetInbound",
        "priority": 65000,
        "protocol": "*",
        "provisioningState": "Succeeded",
        "resourceGroup": "meugruporecursos",
        "sourceAddressPrefix": "VirtualNetwork",
        "sourceAddressPrefixes": [],
        "sourcePortRange": "*",
        "sourcePortRanges": [],
        "type": "Microsoft.Network/networkSecurityGroups/defaultSecurityRules"
      },
      {
        "access": "Allow",
        "description": "Allow inbound traffic from azure load balancer",
        "destinationAddressPrefix": "*",
        "destinationAddressPrefixes": [],
        "destinationPortRange": "*",
        "destinationPortRanges": [],
        "direction": "Inbound",
        "etag": "W/\"ec282e1e-8173-457e-8b7e-ea2bb026368d\"",

```

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meuNSG

Network security group

Search

Move Delete Refresh Give feedback

Overview

- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems
- Resource visualizer
- Settings
 - Inbound security rules
 - Outbound security rules
 - Network interfaces
 - Subnets
 - Properties
 - Locks
- Monitoring
- Automation
- Help

Essentials

Resource group (move): [meugruporecursos](#) Custom security rules: 1 inbound, 0 outbound

Location: West Europe Associated with: 0 subnets, 0 network interfaces

Subscription (move): [Azure subscription 1](#)

Subscription ID: 244b05e9-ea65-4ac7-bd12-d350c3cb265b

Tags (edit): [Add tags](#)

Filter by name

Port == all Protocol == all Source == all Destination == all Action == all

Priority	Name	Port	Protocol	Source	Destination	Action
Inbound Security Rules						
300	permittedSSHrestrito	Any	Any	62.48.234.226	Any	Allow
65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	AllowAzureLoadBalancerIn	Any	Any	AzureLoadBalancer	Any	Allow
65500	DenyAllInBound	Any	Any	Any	Any	Deny
Outbound Security Rules						
65000	AllowVnetOutBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	AllowInternetOutBound	Any	Any	Any	Internet	Allow

4. Create Rule “permitirSSH”

```
PS C:\Users\Paulo\Desktop\Estudo\Microsoft\Azure> az network nsg rule create ^
>> --resource-group meugruporecursos ^
>> --nsg-name meuNSG ^
>> --name permitirSSH ^
>> --priority 200 ^
>> --access Allow ^
>> --direction Inbound ^
>> --source-address-prefixes "*" ^
>> --source-port-ranges "*" ^
>> --destination-address-prefixes "*" ^
>> --destination-port-ranges "*" ^
```

5. Create VM “minhavam”

```
PS C:\Users\Paulo\Desktop\Estudo\Microsoft\Azure> az vm create ^
>> --resource-group meugruporecursos ^
>> --name minhavam ^
>> --vnet-name minhavnet ^
>> --subnet minhavsubnet ^
>> --image Ubuntu2204 ^
>> --size Standard_B1s ^
>> --admin-username azureuser ^
>> --admin-password Nikola9530801 ^
>> --public-ip-sku Standard ^
>> ^
The default value of '--size' will be changed to 'Standard_D2s_v5' from 'Standard_D51_v2' in a future release.
Selecting "uksouth" may reduce your costs, the region you've selected may cost more for the same services. You can disable this message in the future with the command "az config set core.display_region_
identified=false". Learn more at https://go.microsoft.com/fwlink/?linkid=222571

{
  "fqdns": "",
  "id": "/subscriptions/244b05e9-ea65-4ac7-bd12-d350c3cb265b/resourceGroups/meugruporecursos/providers/Microsoft.Compute/virtualMachines/minhavam",
  "location": "westeurope",
  "macAddress": "7C-ED-80-15-83-BE",
  "powerState": "VM running",
  "privateIpAddress": "10.0.0.4",
  "publicIpAddress": "4.210.160.83",
  "resourceGroup": "meugruporecursos",
  "zones": ""
}
```

Home > meugruporecursos >

minhavam

Virtual machine

Search

Help me copy this VM in any region

Connect Start Restart Stop Hibernate Capture Delete Refresh Open in mobile Feedback CLI / PS

Essentials

Resource group (move)	: meugruporecursos	Operating system	: Linux (ubuntu 22.04)
Status	: Running	Size	: Standard_B1s
Location	: West Europe	Public IP address	: 4.210.160.83
Subscription (move)	: Azure subscription 1	Virtual network/subnet	: minhavnet/minhavsubnet
Subscription ID	: 244b05e9-ea65-4ac7-bd12-d350c3cb265b	DNS name	: Not configured
		Health state	: -
		Time created	: 7/21/2025, 6:39 AM UTC

Tags (edit) : Add tags

Properties

Virtual machine	Monitoring	Capabilities (7)	Recommendations	Tutorials
Computer name	minhavam			
Operating system	Linux (ubuntu 22.04)			
VM generation	V2			
Amount of static	Reserved			

Networking

Public IP address	4.210.160.83 (Network interface minhavamVMNic)
Public IP address (IPv6)	-
Private IP address	10.0.0.4
Private IP address (IPv6)	-

6. Access SSH VM

```

azureuser@minhavam: ~
austriaco@LAPTOP-1DJED4Q6:~$ ssh azureuser@4.210.160.83
The authenticity of host '4.210.160.83 (4.210.160.83)' can't be established.
ED25519 key fingerprint is SHA256:gNaxpQr2FSuFYzyyg/glxkp5Y486mDFksXXeVh9b0/c.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '4.210.160.83' (ED25519) to the list of known hosts.
azureuser@4.210.160.83's password:
Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 6.8.0-1031-azure x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/pro

System information as of Mon Jul 21 06:42:05 UTC 2025

System load:  0.12           Processes:            107
Usage of /:   5.4% of 28.89GB Users logged in:       0
Memory usage: 31%           IPv4 address for eth0: 10.0.0.4
Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.


0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

```

7. Delete Rule “permitirSSH”

I deleted the rule to create another restricted SSH rule.

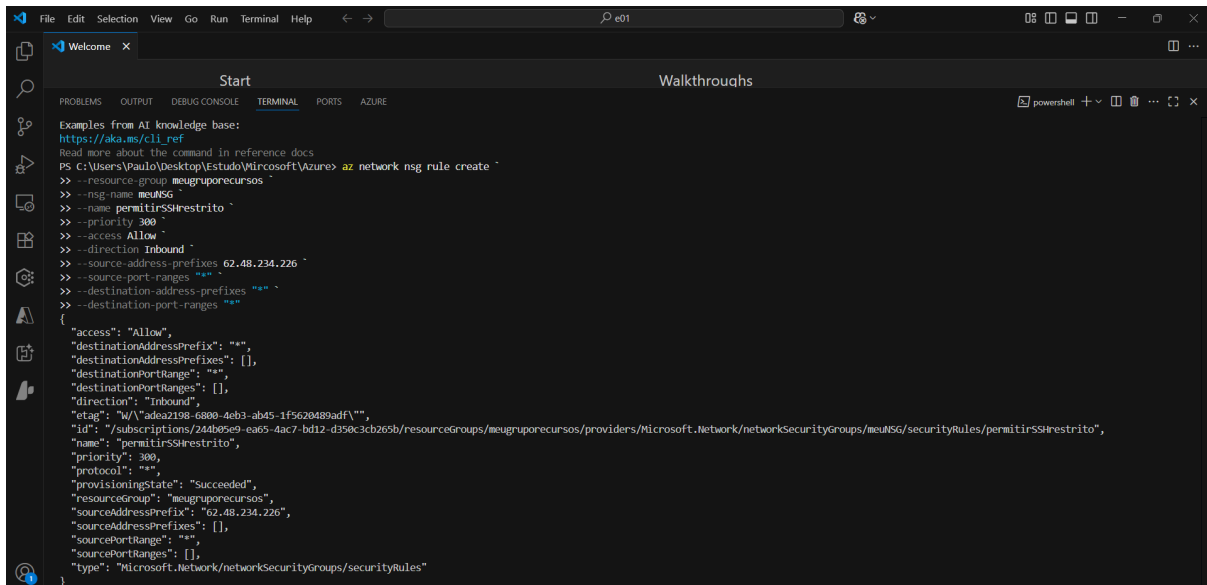


```
PS C:\Users\Paulo\Desktop\Estudo\Microsoft\Azure> az network rule delete `
> --resource-group meugruporecursos `
> --nsg-name meut66 `
> --name PermitirSSH
'rule' is misspelled or not recognized by the system.

Examples from AI knowledge base:
https://aka.ms/cli_ref
Read more about the command in reference docs
PS C:\Users\Paulo\Desktop\Estudo\Microsoft\Azure> az network nsg rule delte `
> --resource-group meugruporecursos `
> --nsg-name meut66 `
> --name permitirSSH
'delte' is misspelled or not recognized by the system.
Did you mean 'delete' ?

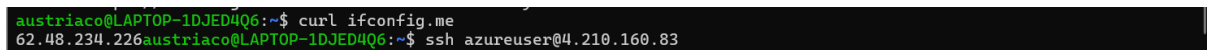
Examples from AI knowledge base:
https://aka.ms/cli_ref
Read more about the command in reference docs
PS C:\Users\Paulo\Desktop\Estudo\Microsoft\Azure> az network nsg rule delete `
> --resource-group meugruporecursos `
> --nsg-name meut66 `
> --name permitirSSH
```

8. Create Rule “permitirSSHrestrito”

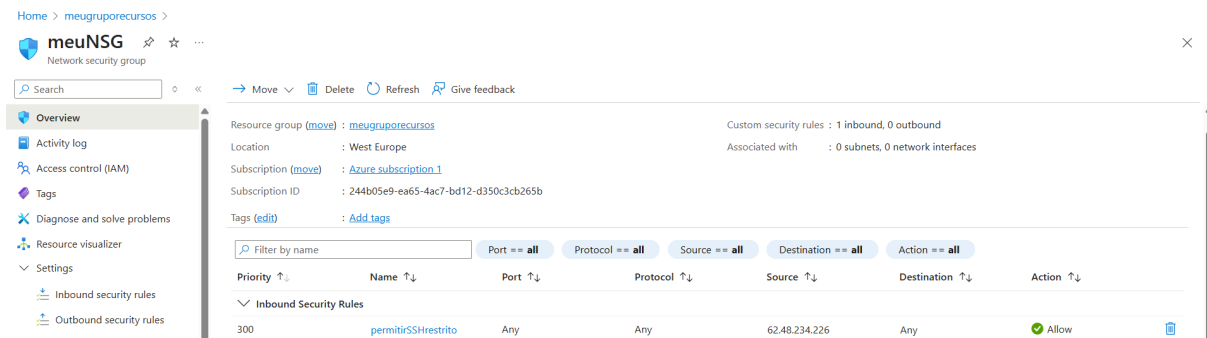


```
PS C:\Users\Paulo\Desktop\Estudo\Microsoft\Azure> az network nsg rule create --resource-group meugruporecursos --nsg-name meuNSG --name permitirSSHrestrito --priority 300 --access Allow --direction Inbound --source-address-prefixes 62.48.234.226 --source-port-ranges "*" --destination-address-prefixes "*" --destination-port-ranges "*"
{
  "access": "Allow",
  "destinationAddressPrefix": "*",
  "destinationAddressPrefixes": [],
  "destinationPortRange": "*",
  "destinationPortRanges": [],
  "direction": "Inbound",
  "etag": "W/\"adea2298-6889-4db3-ab45-1f5620489adf\"",
  "id": "/subscriptions/244b05e9-ea65-4ac7-bd12-d350c3cb265b/resourceGroups/meugruporecursos/providers/Microsoft.Network/networkSecurityGroups/meuNSG/securityRules/permitirSSHrestrito",
  "name": "permitirSSHrestrito",
  "priority": 300,
  "protocol": "*",
  "provisioningState": "Succeeded",
  "resourceGroup": "meugruporecursos",
  "sourceAddressPrefix": "62.48.234.226",
  "sourceAddressPrefixes": [],
  "sourcePortRange": "*",
  "sourcePortRanges": [],
  "type": "Microsoft.Network/networkSecurityGroups/securityRules"
}
```

9. Comand Public Ip my Laptop



```
austriaco@LAPTOP-1DJED4Q6:~$ curl ifconfig.me
62.48.234.226austriaco@LAPTOP-1DJED4Q6:~$ ssh azureuser@4.210.160.83
```



Home > meugruporecursos > meuNSG

Network security group

Overview

Resource group (move) : meugruporecursos

Location : West Europe

Subscription (move) : Azure subscription 1

Subscription ID : 244b05e9-ea65-4ac7-bd12-d350c3cb265b

Tags (edit) : Add tags

Custom security rules : 1 inbound, 0 outbound

Associated with : 0 subnets, 0 network interfaces

Filter by name

Port == all Protocol == all Source == all Destination == all Action == all

Priority	Name	Port	Protocol	Source	Destination	Action
300	permitirSSHrestrito	Any	Any	62.48.234.226	Any	Allow

10.Connect via SSH my laptop

```
azureuser@minhvm: ~  
62.48.234.226austriaco@LAPTOP-1DJED4Q6:~$ ssh azureuser@4.210.160.83  
azureuser@4.210.160.83's password:  
Welcome to Ubuntu 22.04.5 LTS (GNU/Linux 6.8.0-1031-azure x86_64)  
  
* Documentation:  https://help.ubuntu.com  
* Management:    https://landscape.canonical.com  
* Support:       https://ubuntu.com/pro  
  
System information as of Mon Jul 21 07:20:22 UTC 2025  
  
System load:  0.0      Processes:      105  
Usage of /:   5.5% of 28.89GB   Users logged in:  0  
Memory usage: 31%      IPv4 address for eth0: 10.0.0.4  
Swap usage:   0%  
  
Expanded Security Maintenance for Applications is not enabled.  
  
0 updates can be applied immediately.  
  
Enable ESM Apps to receive additional future security updates.  
See https://ubuntu.com/esm or run: sudo pro status  
  
New release '24.04.2 LTS' available.  
Run 'do-release-upgrade' to upgrade to it.  
  
Last login: Mon Jul 21 06:42:07 2025 from 62.48.234.226  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.
```


Thank you if you've seen this far, it may seem a little, but for those who are studying for the AZ-104 exam, this is the way, because practicing every day is what will make me become an excellent Cloud Engineer, thank you all, let's go for more!!!