



TRƯỜNG ĐẠI HỌC CÔNG NGHỆ THÔNG TIN - ĐHQG-HCM  
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# Wildcard mask in ACL

**QUẢN TRỊ MẠNG VÀ HỆ THỐNG**  
Networks and Systems Administration

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# Wildcard Masks in ACLs

- A wildcard mask is a string of 32 binary digits (1s and 0s) used by the router to determine which bits of the address to examine for a match.
  - 0: match
  - 1: ignore

	Decimal	Binary
IP address	192.168.10.0	11000000.10101000.00001010.00000000
Wildcard mask	0.0.255.255	00000000.00000000.11111111.11111111
Input address	192.168.3.1	11000000.10101000.00000011.00000001

Match

# Wildcard Masks in ACLs

- A wildcard mask is a string of 32 binary digits (1s and 0s) used by the router to determine which bits of the address to examine for a match.
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	Decimal	Binary
IP address	192.168.10.0	11000000.10101000.00001010.00000000
Wildcard mask	0.0.0.255	00000000.00000000.00000000.11111111
Input address	192.168.3.1	11000000.10101001.00000011.00000001

Not match

# Wildcard Mask Examples

- Example 1: The wildcard mask matches every bit in the IPv4 192.168.10.1 address.

IP address	192.168.10.1	11000000.10101000.00001010.00000001
Wildcard mask	0.0.0.0	00000000.00000000.00000000.00000000

- Example 2: The wildcard mask matches anything.
- Example 3: The wildcard mask matches that any host within the 192.168.1.0/24 network.

# Wildcard Mask Examples

- Example 1: The wildcard mask matches every bit in the IPv4 192.168.1.1 address must match exactly.
- Example 2: The wildcard mask matches that anything will match.

IP address	192.168.10.1	11000000.10101000.00001010.00000001
Wildcard mask	255.255.255.255	11111111.11111111.11111111.11111111

- Example 3: The wildcard mask matches that any host within the 192.168.1.0/24 network will match.

# Wildcard Mask Examples

- Example 1: The wildcard mask matches every bit in the IPv4 192.168.1.1 address must match exactly.
- Example 2: The wildcard mask matches that anything will match.
- Example 3: The wildcard mask matches that any host within the 192.168.10.0/24 network will match.

IP address	192.168.10.1	11000000.10101000.00001010.00000001
Wildcard mask	0.0.0.255	00000000.00000000.00000000.11111111

# Wildcard Mask keyword

- **host** substitutes for the 0.0.0.0 mask
  - 192.168.10.10 0.0.0.0 = host 192.168.10.10
- **any** substitutes for the 255.255.255.255 mask
  - 0.0.0.0 255.255.255.255 = any



## Exercise 1 – Determine wildcard mask

- Deny all hosts from the 10.10.10.0/24 network
- => Wildcard mask: 0.0.0.255
  
- Deny host 192.168.5.7
- => Wildcard mask: 0.0.0.0

## Exercise 2 - Determine permit or deny

- access-list 50 permit 192.168.122.128 0.0.0.63
  - IP address: 192.168.122.195
  - => Deny
- 
- access-list 50 permit 192.168.233.64 0.0.0.15
  - IP address: 192.168.233.72
  - => Permit