Subnetting class a pdf

Subnetting a class c network. Subnetting a class b network. Subnetting class a b c. Subnetting class a ip address. Subnetting class a b c pdf. Subnetting class a and b. Subnetting class a b c range. Vlsm subnetting class a.

anticipated system for organizing the IPv4 Address Space This article needs additional citations for verification. Please help you improve this item by adding quotes to reliable sources. The material can not be challenged and brought rimosso.Find Sources: Ã "classifying network" Ã ¢ â ¬ "¬ Ã ¢ Â Ã Â · Newspapers · Books · ScholarÃ Ã Â ¢ Â · JSTOR (March 2018) (Learn how and when to remove this message) Map of the Internet prototype in 1982, showing only networks (oval) 8-bit (oval), interconnected by routers (rectangles). a traditional network is a network addressing architecture used on the Internet from 1981 until the introduction of inter-domain routing insufficient in 1993. the method divides the IP address space for Internet Protocol version 4 (IPv4) address into five classes according to the four leading bits of address. the classes a, B and C provide unicast addresses for three different network size networks. the class D is for multicast network and the class E address range is reserved for future or experimental purposes. Since its interruption, the remains network concepts were classified into practice only to a limited extent No and default configuration parameters of some network software and hardware components, in particular in the default configuration of the subnet masks. Background In the definition of the original address, the most significant bits of eight 32-bit IPv4 system has been the field of network Number that specifies the particular network to which a host is connected. The remaining 24 bits specified the local address, also called rest field (the rest of this address), which uniquely identified a host connected to that network. [1] This format was sufficient at a time when there were only a few large networks such as ARPANET (network number 10), and before the wide proliferation of local area networks (LAN). As a result of this architecture, the address space has supported only a low number (254) of independent networks. Before the introduction of address classes, the only available address blocks were these large blocks which later became known as the A-Class networks [2] As a result, some organizations involved in the early development of the Internet have received allocations much larger address space than they would ever need. It became clear early in the growth of the network that this would be a critical constraint of scalability. [Citation needed] Introduction of address classes The network expansion had to ensure compatibility with the existing address space and the structure of the IPv4 packet and avoid renumbering of existing networks. The solution was to expand the field definition of the network number to include more bits, allowing you to designate more networks, each potentially with a smaller number of hosts. © Since all existing network numbers at the time were smaller than 64, had used only 6 bits of the network number field. Thus it was possible to use the most significant bit of an address to introduce a number of classes of addresses preserving existing network numbers in the first of these classes. The new architecture addressing was introduced by RFC 791 in 1981 as part of the Internet Protocol specification. [3] He divided the address space into three main address formats, from now on called address classes and left a fourth reserved range to be defined later. The first class, designated as Class A, contained all the addresses in which the most significant bit is zero. The network number for this class is given by the subsequent 7 bits, so can meet 128 goals in total, including the zero network including already assigned IP networks. A class b was a network in which all the addresses had the two more significant bits respectively at 1 and 0. for these networks, the network address was given by the next 14 bits of the address, leaving 16 bits so For the numbering host on the network for a total of 65536 network addresses. Class C was defined with 3 bits at high order order 1, 1 and 0, and designates the next 21 bits at the number of networks, leaving each network with 256 local addresses. The bit sequence that carries 111 designated a non-specified address mode - Extended addressing mode ("Extended addressing mode"), [3], which was then divided into Class D (1110) for addressing multicast, leaving as reserved for future use of the 1111 block designated as class E. [4] This change in architecture has extended the Internet addressing capacity, but has not prevented the IP address exhaustion. The problem was that many sites needed no bigger address blocks than a class C network provided, and therefore received a class B block, which was in most cases much larger than required. Due to the rapid Internet growth, the pool of unassigned class B (214, amounting to about 16,000) was quickly being exhausted. Classful Networking has been replaced by Classless Inter-Domain Routing (CIDR), since 1993 with the specification of RFC 1518 and RFC 1519, to try to solve this problem. Classful Definition Addressing under Classful Network IPv4 Addressing Space 32-bit addresses has been divided into 5 classes (A-E), as shown in the following tables. Bit Classes Bit Classes Network Number Size Bit Field Rest Size Bit Field Number of Networks Addresses for Network Total addresses in the class Departure address Arrival address Definetito subnet mask in dot-decimal notation Notation CIDR Class A 0 8 24 128 (27) 16.777.216 (224) 2.147.483.648 (231) 0.0.0.0.12.255.255.255 [A] 255.0.0.0 / 8 Class B 10 16 16 16.384 (214) 65.536 (216) 1.073.741.824 (230) 128.0. 0.0 191.255.255.255 255.255.0.0.25.25.255.0.0 / 16 Class C 110 24 8 2.097.152 (221) 256 (28) 536.870.912 (229) 192.0.0.0.25.255.255.255 255.255.255.0 / 24 Class D (multicast) 1110 not defined not Defined not defined not defined 268.435.456 (228) 224.0.0.0.255.255.255 Not defined not defined Class E (reserved) 1111 not defined not defined not defined not defined 268.435.456 (228) 240.0.0.0.25.255.25.255 [b] Not defined not defined bit representation in the following Bit-Wise representation, n indicates a bit used for the network ID. H Indicates a little used for the host ID. X indicates a little without a specific purpose. Class A 0. 0. 0. 0 = 00000000.00000000.00000000.00000000 127,255,255,255 = 01111111.11111111.11111111.11111111 0nnnnnnn.HHHHHHHH.HHHHHHHH.HHHHHHHH Class B 128. 0. 0. 0 = 10000000.00000000.00000000.00000000 191,255,255,255 = 10111111.11111111.11111111.11111111 10nnnnnn.nnnnnnnn .HHHHHHHH.HHHHHHHH class C 192. 0. 0. 0 = 11000000.00000000.00000000.00000000 223,255,255,255 = 11011111.11111111.11111111.11111111 110nnnnn.nnnnnnnn.nnnnnnnn.HHHHHHHH class D 224. 0. 0. 0 = 11100000.00000000.00000000.00000000 239,255,255,255 = 11101111, 11111111. 11111111.11111111 1110XXXX.XXXXXXXX.XXXXXXXX.XXXXXXXX Class 240. 0. 0. 0 = 11110000.00000000.00000000.00000000 255,255,255,255 = 11111111.11111111.11111111.11111111 1111XXXX.XXXXXXXX.XXXXXXXX.XXXXXXXX The number of addresses that can be used to address specific hosts in each network is always 2N - 2, where n is the number of field bits rest, and the removal of 2 rule for the use of the host value all bits to zero to represent the network address and at the L-bit-a value Host for use as a broadcast address. So, for a class C address with 8 bits available in the host field, the maximum number of hosts is 254. Today, IP addresses are associated with a subnet mask. This was not necessary a classful network because the mask is implicit the address itself; Any network device should inspect the first bits of the IP address to determine the address class and then its network mask. The blocks numerically at the beginning and end of the lessons A, B and C were originally For particular addressing or future characteristics, namely, 0.0.0.0.0/8 and 127.0.0.0.0.0 are reserved in ex-Class A; 128.0.0.0.16 and 191.255.0.0.0.16 were reserved in ex-Class B, but are now available for assignment; 192.0.0.0/24 and 223.255.255.0/24 are reserved for a Class C. While 127.0.0.0/8 network is a class A network, is designated for loopback and can not be assigned to a network [5]. The class D is reserved for multicast and can not be used for normal unicast traffic. The class E is reserved and can not be used on the public Internet. Many older router will accept the use in any context. [Citation needed] See also the reference list of IPv4 address blocks sottoreting of Assigned / 8 IPv4 Notes ^ 127.0.0.0 to 127.255.2555.255 are reserved for loopback addresses. Although reserved, even stop the class address group A. ^ 255.255.255.2555 is reserved as the IPv4 broadcast address. References ^ Postel, J., ed. (January 1980). "Internet header format". DoD standard Internet Protocol. IETF. Sec.a 3.1. DOI: 10.17487 / RFC0760. RFC 760. Retrieved 08/11/2013. ^ Clark, David D. (June 1978). A proposal for addressing and routing in the Internet. IETF. IEN 46. Retrieved 08/01/2014. ^ B Internet Protocol Ã ¢ ¬ "Specifications of the DARPA Internet Program Protocol. IETF. September 1981. doi: 10.17487 / RFC0791. RFC 791. ^ if Deering (July 1986). Guest Extensions for IP multicasting. RFC 988 . ^ M. cotton, L. Vegoda (January 2010). Using special IPv4 addresses. it's RFC 5735. external links IANA, current IPv4 / 8 IP Overview delegations, both classless and ranking (404) Postel, Jon (September 1981). numbers assigned. DOI: 10.17487 / RFC0790. RFC 790, which includes a list of class a networks as of that date. Retrieved from " ? title = classful_network & oldid = 1033304095 "Introduction This document provides basic information needed to configure the router for IP routing, such as the addresses are divided and How does sottoreting. Learn how to assign each interface on the router an IP address with a unique subnet. There are examples included to help to égaré everything together. Requirements for Cisco prerequisites is recommended to have a basic understanding of the binary and decimal numbers. Components Used This document is not restricted to specific software and hardware versions. The information in this document was created from devices in â â a specific lab environment. All devices used in this document started with a cleared (default) configuration. If your network is live, make sure you understand the potential impact of any command. Additional Information If the definitions are useful to you, use these terms in the dictionary to get you started: Address: The unique ID number assigned to a host or the interface in a network. Subnet - a portion of a network that shares a particular subnet address. Subnet Mask - a 32-bit combination used to describe which portion of an address refers to the subnet and which part refers to the host. Interface: a network connection. If you have already received your legitimate address (ES) by the Internet Network Information Center (InterNIC), you're ready to start. If you plan to connect to the Internet, Cisco strongly suggests to use the reserved addresses from RFC 1918. Understanding IP Addresses An IP address is an address used to uniquely identify a device on an IP network. The address is composed of 32 binary bits, which can be divisible into a network portion and a host portion with the help of a subnet mask. The 32 binary bits are divided into four octets (1 octet = 8 bits). Each octet is converted to decimal and separated by a period (dot). For this reason, it is said that an IP address is expressed in dotted decimal format (for example 172.16.81.100). The value in each octet ranges from 0 to 255 decimal or 00000000 - 11111111 binary. Here's how the octets converted into binary The best, or less significant bit, of an octet contains a value of 20. The bit only to the left of this contains a value of 21. This continues up to the left, or more significant, which holds a value of 27. So if All binaries are one, the decimal equivalent would be 255 as shown here: 1 1 1 1 1 1 1 1 128 64 32 16 8 4 2 1 (128 + 64 + 32 + 16 + 8 + 4 + 2 + 1 = 255) Here is a conversion of octet sample when not all the bits are set to 1. 0 1 0 0 0 0 0 0 1 0 0 64 0 0 0 0 0 0 (0 + 64 + 0 + 0 + 0 + 0 + 0 + 1 = 65) And this sample shows an IP address represented in binary to decimal. 10. 1. 23. 19 (decimal) 00001010.00000001.00010111.0001001.0001011.00010011 (binary) These octets are divided to provide an addressing scheme that can accommodate large and small networks. There are five different classes of networks, A to E. This document focuses on the classes A to C, since © D and E classes are reserved and discussion of them is beyond the scope of this document. Note: Also note that the terms "Class A, Class B" and so on are used herein to facilitate understanding of IP addressing and subnetting. These terms are rarely used in the industry due to the introduction of interdomaino classless routing (CIDR). Given an IP address, its class can be determined by the three high order bits (three bits left in the first octet). Figure 1 shows the significance in the three high order bits and the range of addresses that fall in each class. For information purposes, also the class D addresses are shown and class D. In Figure 1 a class A address, the first octet is the network portion, then the class an example of Figure 1 has a major network address of 1.0.0.0 - 127255255255. Octets 2, 3 and 4 (the next 24 bits) are for the network manager to divide into subnets and hosts as he sees fit. The Class A addresses are used for networks that have more than 65,536 hosts (actually, up to 16777214 hosts!). In a class B address, the first two octets are the network portion, then the example of class B in Figure 1 has an important 128.0.0.0 - 191.2555555.255 network address. Octets 3 and 4 (16 bits) are for local subnets and guests. The Class B addresses are used for networks that have ratings between 256 and 65534. In a class C address, the first three octets are the network portion. The example of class C in Figure 1 has a major 192.0.0.0 - 223.255.255.255 network address. Octet 4 (8 bits) is for local subnets and hosts - perfect for networks with less than 254 hosts. Netmasks A network mask allows you to know which part of the address identifies the network and which portion of the address identifies the node. The networks of class A, B, C and and have default masks, also known as natural masks, as shown here: Class A: 255.0.0.0 Class B: 255.255.0.0 Class C: 255.255.255.0 An IP address on a Class A network which has a network was not subnetleted would have an address / mask similar to: 255.0.0.0 8.20.15.1. To see how the mask helps you identify the parts of the network and node address, convert the address and mask of binary numbers. 8.20.15.1 = 00001000.00010100.00001111.00000001 255.0.0.0 = 11111111.00000000.00000000.00000000 After entering the address and represented in binary mask, the identification of the network and host ID is easier. Any address bits that have corresponding mask bits set to 1 represent the network ID. Any address bits that have corresponding mask bits set to 0 represent the node ID. 8.20.15.1 = 00001000.00010100.00001111.00000001 255.0.0.0 = 11111111.00000000 00000000 -------- ----------------------------- ------ Net ID |. NetID host ID = 00001000 = 8 = hostid 00010100.00001111.00000001 = 20.15.1 Understanding Subneting Mobile subnet allows you to create multiple logical networks that exist within a network of a single Class A, B, or C. If you can not subnet, you can use only one network from the network of Class a, B, or C, which is not realistic. Each data link on a network must have a unique network ID, Each node on that connection is a member of the same network. If you break a main network (Class A, B, or C) in smaller subnets, it allows you to create a network of interconnected subtoworks. Each data connection on this network would therefore have a unique network ID / sub-work. Any device or gateway, which connects ... n n has no distinct IP addresses, one for each network / subnet that interconnects. To subnet a network, extend the natural mask witha some of the bits of host address portion ID in order to create a subnet ID. For example, given a class C network of 204.17.5.0 which has a natural mask of 255.255.255.0, you can create subnets in this manner: 204.17.5.0 - 11001100.00010001.00000101.00000000 255.255.255.224 - 11111111.11111111.11111111.11100000 --- --- -------------------- | sub | ---- extending the mask to be 255.255.255.224, they have taken three bits (indicated by "sub") from the original host portion of the address and used them to make subnets. With these three bits, it is possible to create eight subnets. With the remaining five host ID bits, each subnet can have up to 32 host addresses, 30 of which can actually be assigned to a device as the host ID of all zeros or all ones are not allowed (it's very important to remember this). So with that in mind, these subnets have been created. 204.17.5.0 255.255.255.224 host address range from 1 to 30 204.17.5.32 255.255.255.224 host address range 33 to 62 204.17.5.64 255.255.255.224 host address range 65 to 94 204.17.5.96 255.255.255.224 host address range 97 to 126 204.17. 5128 255.255.255.224 host address range 129-158 204.17.5.160 address 255.255.255.224 255.255.255.224 host 204.17.5.192 host address range 161-190 193-222 225-254 range 204.17.5.224 host address 255.255.255.224 Note: There are two ways to denote these masks. First, since you use three bits more than the "natural" class C mask, you can indicate these addresses like having a 3-bit subnet mask. Or, secondly, the mask of 255.255.255.224 can also be indicated as / 27 as there are 27 bits set in the mask. This second method is used with CIDR. With this method, one of these networks can be described with the prefix / length notation. For example, 204.17.5.32/27 indicates the network 204.17.5.32 255.255.255.224. Where appropriate, the prefix / length notation is used to indicate the mask throughout the rest of this document. The network subnetting speed in this section allows from eight subnets, and the network may appear as: Figure 2 Note that each of the routers in Figure 2 is fixed to four subnets, a subnet is common to both routers. Furthermore, each router has an IP address for each subnet to which it is connected. Each subnet could potentially support up to 30 host addresses. This leads to an interesting point. The most bits of hosts that are used for a subnet mask, plus subnets you have available. However, more subnets available, the hosts less available for subnets. For example, a class C network of 204.17.5.0 and a mask of 255.255.255.224 (/ 27) allows to have eight subnets, each with 32 host addresses (30 of which could be assigned to the devices). If you use a mask of 255.255.255.240 (/ 28), the breakdown is: 204.17.5.0 - 11001100.00010001.00000101.0000010001.00000101.00000000 255.255.255.240 - 11111111 11111111 11111111 1111111111111111111110000 ---------------- - -------- | sub | --- Since now they have four bits to make subnets with, you have only four bits on the left for host addresses. Thus, in this case you can have up to 16 subnets, each of which can have up to 16 host addresses (of which 14 can be assigned to the devices). Take a look at how a class B could be subnet. If you have a network 172.16.0.0, then you know that its natural mask is 255.255.0.0 or 172.16.0.0/16. Extend the mask for nothing to LÃ 255.255.0.0 means is subnetting. You can quickly see that you have the ability to create a lot more subnets than with the Class C network If you use Mask of 255.255.248.0 (/ 21), the number of subnets and hosts for subnet do this to allow? 172.16.0.0 - 10101100.00010000.000000.0000.00000000000000.0000000000000000.0000000000000000000.000000000000000000.0024.0 - 11111111.11111111.11111000.00000000 ---------------- | sub | ----------- You use five bits of the original host bits for subnets. This allows you to have 32 subnets (25). After using used Five bits for subnets, left us with 11 bits for host addresses. This allows each subnet to have 2048 host addresses (211), 2046 of which could be assigned to the devices. Note: In the past, there were limitations to the use of a subnet 0 (all subnet bits are set to zero) and all those subnet (all subnet bits set to one). Some devices would not allow the use of these subnets. Cisco Systems devices allow the use of these subnets when the Zero Subnet IP command is configured. Examples Exercise examples 1 hour that you have an understanding of subnets, put this knowledge for use. In this example, there is two address / mask combinations, written with the prefix / length notation, which were assigned to two devices. Your job is to determine if these devices are on the same different subnet or subnet. You can use the address and mask of each device to determine which subnet each address belongs. Device: 172.16.17.30/20 DeviceB: 172.16.28.15/20 Determine the subnet for Devicea: 172.16.17.30 - 10101100.00010000.00010001.00011110 255.255.240.0 - 11111111.11111111111111111111111110000.00000000 ---------------- - | sub | ----------- Subnet = 10101100.000100.00.000100.0000.000000.000100.000000000000.0000.0000.0000000000.00010000.0000000000.0000.00.16.0 Equivalent to the execution of a logical value "and" between the mask and the address), shows of which subnet address belongs. In this case, Devicea belongs to the subnet 172.16.16.0. Determine the subnet for DeviceB: 172.16.28.15 - 10101100.000100.00.00011100.00001111 255.255.240.0 - 11111111.11111111.11110000.00000000 ---------------- | sub | ----------- Subnet = 10101100.00010000.000100.0000.00000000.000100.0000000000 = 172.16.16.0 From these determinations, devices and devices have addresses that are part of the same subnet. Sample exercise 2 Date The class C network of 204.15.5.0/24, subnet network to create the network of figure 3 with the hosted requirements indicated. Figure 3 Looking at the network shown in Figure 3, you can see that you are required to create five subnets. The largest network must support 28 host addresses. This is possible with a class C network? And if it's so, then how? You can start looking at the subnet requirement. In order to create the five necessary subnets you would need to use three bits of class C host bits. Two bits would only allow four subnets (22). Since you need three subnet bits, which leaves you with five bits for the address host. How many hosts do this support? 25 = 32 (30 usable). This satisfies the requirement. Therefore it is established that it is possible to create this network with a class C network. An example of how you can assign subnets is: Neta: address interval 204.15.5.0/27 Host 1 to 30 NetB: interval of addresses 204.15.5.32/27 Host 33 to 62 Netc: address interval 204.15.5.64/27 host 65 to 94 NetD: address interval 204.15.5.96/27 guest 97-126 net: 204.15.128/27 guest address interval 129-158 VLSM Example In all previous subnet examples, note that the same subnet mask has been applied for all subnets. This means that each subnet contains the same number of host addresses available. You may need this, in some cases, but, in most cases, have the same subnet mask for all subnets ends up wasting addressing space. For example, in the Example Exercise 2 section, a class C network was divided into eight equal size subnets; However, each subnet does not use all available host addresses, which translates into wasted address space. Figure 4 illustrates this space of wasted addresses. Figure 4 Figure 4 shows that the subnets that are used, Neta, Netc and NetD have a lot of unused host address space. It is possible that this was an intentional design that represent future growth, but in many cases this is only wasted address space due to the fact that the same subnet mask is used for all subnets. Variable Subnet Masks Length (VLSM) Allows you to use different different For each subnet, so you use the address space efficiently. Example VLSMs given the same network and requirements as in the sample 2 develop a subnetting scheme with the use of VLSM, given: Neta: must support 14 host NETB: must support 28 host Netc: 2 host must support NETD must 7 support host Nete: must support 28 host determine which mask allows the required number of hosts. Neta: requires a mask A / 28 (255.255.255.240) to support 14 host NETB: requires A / 27 (255.255.255.224) Mask to support 28 host Netc: requires a mask A / 30 (255.255.255.252) to support host 2 Netd *: require a mask a / 28 (255.255.255.240) to support host Nete 7: requires a mask a / 27 (255.255.255.224) to support host 28 * a / 29 (255.255.255.248) allow only 6 host addresses usable Netd therefore requires A / 28 Mask. The simplest way to assign subnets is assigned before the biggest. For example, it is possible to assign this way: NETB: 204.15.5.0/27 range of host addresses from 1 to 30 Nete: 204.15.5.32/27 range of host addresses from 33 to 62 Neta: 204.15.5.64/28 Range host addresses from 65 to 78 NetD: 204.15.5.80/28 range of host addresses from 81 to 94 Netc: 204.15.5.96/30 range of host addresses from 97 to 98 This can be represented graphically as shown in Figure 5: Figure 5 the figure 5 shows how to use VLSM helped save more than half of the address space. The interdomain routing CIDR short (CIDR) has been introduced to improve both the use of the address space that the scalability of routing on the Internet. It was necessary due to the rapid growth of the Internet and the growth of IP routing tables held in the Internet router. CIDR is away from traditional IP classes (Class A, Class B, Class C and so on). In CIDR, an IP network is represented by a prefix, which is an IP address and some indication of the length of the mask. The length means the number of bit mask contiguous left set to one. So the 172.16.0.0 255.255.0.0 network can be represented as 172.16.0.0/16. CIDR also depicts more hierarchical Internet architecture, where each domain takes its IP addresses from a record high. What allows the list of domains to be done at a higher level. For example, if an ISP owns the 172.16.0.0/16 network, your ISP can offer 172.16.1.0/24, 172.16.2.0/24, and so on to customers. However, when the advertising to other providers, the ISP only needs to advertise 172.16.0.0/16. For more information on CIDR, refer to RFC 1518 and RFC 1519. Special Submits Sottotadri 3D-bit A 30-bit subnet mask has four IPv4 addresses two host addresses, a network of all zeros and a broadcast address to all others. A point-to-point can have only two host addresses. There's the need to have the broadcast addresses and all-zero with point-to-point. A 31-bit subnet mask will allow exactly two host addresses and eliminates transmission addresses and all-zeros, so preserving the use of IP addresses to a minimum for puntit-to-point connections. Refer to RFC 3021 - using the 31-bit prefixes on the links Point-to-Point IPv4. The mask is 255.255.255.254 or / 31. The subnet / 31 can be used on the true point-to-point links, such as serial interfaces or pos. However, they can also be used on the types of transmission interfaces such as Ethernet interfaces. If this is the case, make sure that there are only two IPv4 addresses required on the Ethernet segment. Example 192.168.1.0 and 192.168.1.1 are on the 192.168.1.0/31 subnet. R1 (config) #int gigabitethernet 0 / 1R1 (config-if) #ip address 192.168.1.0 255.255.255.254% WARNING: USE / 31 mask Not point-to-point cautiously the warning is printed because Gigabitethernet is a transmission segment. 32-bit subnets A subnet mask of 255.255.255.255 (A / 32 subnet) describes a subnet with a single IPv4 host address. These subnets cannot be used for assigning the address to network connections, because they always need more than one connection address. Use of / 32 is strictly reserved for use on links that can only have only one address. The example for Cisco routers is the loopback loopback These interfaces are internal interfaces and do not connect to other devices. As such, they can have a subnet. Example of a loopback0 interface IP address 192.168.2.1 255.255.255.255 Appendix Example of Router Configuration A and B are connected by a serial interface. Router A Hostname Router! IP Routing! INT and 0 IP address 172.16.50.1 255.255.255.0! (subnet 50) int and 1 IP address 172.16.55.1 255.255.255.0! (subnet 55) INT S IP address 172.16.60.1 0 255.255.255.0! (subnet 60) int s 0 IP address 172.16.65.1 255.255.255.0 (subnet 65)! S 0 Connect to Router B Rip Rip 172.16.0.0 Router B HostName Routerb! IP Routing! int and 0 IP address 255.255.255.240 192.1.10.200! (subnet 192) int and 1 IP address 255.255.255.240 192.1.10.66! (Subnet 64) int s 0 IP address 172.16.65.2 (same subnet of the router A 0)! INT S 0 Connect to the router A RIP NETWORK ROUTER 192.1.10.0 NETWORK 172.16.0.0 HOST / SUBNET QUANTITY OF LIST Class B effective effective # bit of the subnet mask Host ------- ------- ----- --- --------- --------- 1 255.255.128.0 2 32766 2 255.255.192.0 4 16382 3 255.255.224.0 8 8190 4 255.255.240.0 16 4094 5 255.255.248.0 32 2046 6 255.255.252.0 64 1022 7 255.255.254.0 128 510 8 255.255.255.0 256 254 9 255.255.255.128 512 126 10 255.255.255.192 1024 62 11 2048 30 12 255.255.255.224 255.25.255.240.224 255.255.255.240 4096 14 13 255.255 .255.248 8192 6 14 255.255.255.252 16384 2 CLASS C effective effective # Bit of the subnet mask Host ------- --------------- -------- - ----- ---- 1 255.255.255.128 2 126 2 255.255.255.192 4 62 3 255.255.255.224 8 30 4 255.255.255.240 16 14 5 255.255.255.248 32 6 6 255.255.255.252 64 2 * Subnet all zeros An all those included. These may not be supported on some legacy systems. * Host all zeros and all those excluded. Related information Information