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A single, flat network with overmillion IP Addressing: Basics. A single workstation (unicast) Efficient for data between pairs of addresses. An organization can subnet, or use bits from the host portion of the address as part of the network prefix, to create more networks with fewer Solution. Find the class, then the Netid, then set Hostid =Example: IP= is a class B () with Netid=, so its network address is Use a Mask which is a bit binary number that gives the first address in the block (the network address) when bitwise ANDed with an address in the block FigurePrinciple Classful IP Address Formats One of the fundamental features of classful IP addressing is that each address contains a self-encoding key that identifies the dividing point between the network-prefix and the host-number. Globally unique (for "public" IP addresses) IP address: bit identifier for host, router interface. Class-based addressing. Interface: connection between host/router and Routing Table Lookup (Classful) assumption: IP datagram with a given IP address is received by a classful router. – Equal amount per country? The class is B because the first byte is between and The block has a netid of The addresses range from to Example Given the network address, find the class, the block, and the range of the addresses. SubnettingClassless addressing. Henceis the first sub-Network ID E.g. address is Using extra two bits in Network ID– Can't use because this is the part of the original Class C's Network ID– Available =– Available =– Can't use because this is part of the original Class C's broadcast address. Solution. A single, flat network with overmillion hosts is not practical. A specific list of workstations (multicast) Efficient for One of the fundamental features of classful IP addressing is that each address contains a self-encoding key that identifies the dividing point between the network prefix and the IP address → Network Address. IP Addresses. Forwarding table contains: List of network names and next hop routers Local networks have entries specifying which interface. In classful addressing, the network address (the first address in the block) is the one that is assigned to the organization. LectureOverview. Example Given the network address, find the class, the block, and the range of the addresses. Route IP Addresses. IP address is interpreted as class A, B or C. the major net Addressing. In classful addressing, the network address (the first address in the block) is the one that is assigned to the organization. The class is B because the first byte is between and The block has a netid of Router needs to know where to forward a packet. Link-local hosts can be delivered with Layerforwarding. MIT sll has FigureClassful addresses In the classful model, the class A address space consists of networks, each with,, hosts. CSE Computer Networks Alex C. Snoeren. – What about addresses already allocated? For example, if the first two bits of an IP address are, the dividing classful prefix – Mixture of Class A, B, and C addresses – Depends on the first couple of bits of the desnaon Idenfy the mask automacally from the address – First bit ofclass A address (/8) – First two bits of class B address FigureClassful addresses In the classful model, the class A address space consists of networks, each with,, hosts. An IP Packet can be sent to. – Proporonal to the populaon? Example Given the network address, find • How much address space per geographic region?