Transparent Bridging Commands

This section describes the function and displays the syntax of transparent bridging commands. For more information about defaults and usage guidelines, see the corresponding chapter of the *Router Products Command Reference* publication.

access-list *access-list-number* {**permit** | **deny**} *address mask*
no access-list *access-list-number*

Use the **access-list** global configuration command to establish MAC address access lists. Use the **no** form to remove a single access list entry.

access-list-number	Integer from 700 to 799 that you select for the list.
permit	Permits the frame.
deny	Denies the frame.
address mask	48-bit MAC addresses written in dotted triplet form. The ones bits in the *mask* argument are the bits to be ignored in *address*.

access-list *access-list-number* {**permit** | **deny**} *source source-mask destination destination-mask offset size operator operand*

Use the **access-list** global configuration command to provide extended access lists that allow finer granularity of control. These lists allow you to specify both source and destination addresses and arbitrary bytes in the packet.

access-list-number	Integer from 1100 through 1199 that you assign to identify one or more **permit**/**deny** conditions as an extended access list. Note that a list number in the range 1100 through 1199 distinguishes an extended access list from other access lists.
permit	Allows a connection when a packet matches an access condition. The router stops checking the extended access list after a match occurs. All conditions must be met to make a match.
deny	Disallows a connection when a packet matches an access condition. The router stops checking the extended access list after a match occurs. All conditions must be met to make a match.
source	MAC Ethernet address in the form *xxxx.xxxx.xxxx*.
source-mask	Mask of MAC Ethernet source address bits to be ignored. The router uses the *source* and *source-mask* arguments to match the source address of a packet.
destination	MAC Ethernet value used for matching the destination address of a packet.
destination-mask	Mask of MAC Ethernet destination address bits to be ignored. The router uses the *destination* and *destination-mask* arguments to match the destination address of a packet.

offset	Range of values that must be satisfied in the access list. Specified in decimal or in hexadecimal format in the form 0x*nn*. The offset is the number of bytes from the destination address field; it is not an offset from the start of the packet. The number of bytes you need to offset from the destination address varies depending on the media encapsulation type you are using.
size	Range of values that must be satisfied in the access list. Must be an integer 1 through 4.
operator	Compares arbitrary bytes within the packet. Can be one of the following keywords: **lt**—less than **gt**—greater than **eq**—equal **neq**—not equal **and**—bitwise and **xor**—bitwise exclusive or **nop**—address match only
operand	Compares arbitrary bytes within the packet. The value to be compared to or masked against.

access-list *access-list-number* {**permit** | **deny**} *type-code wild-mask*
no access-list *access-list-number*

Use the **access-list** global configuration command to build type-code access lists. Use the **no** form of the command to remove a single access list entry.

access-list-number	User-selectable number between 200 and 299 that identifies the list.
permit	Permits the frame.
deny	Denies the frame.
type-code	16-bit hexadecimal number written with a leading "0x"; for example, 0x6000. You can specify either an Ethernet type code for Ethernet-encapsulated packets or a DSAP/SSAP pair for 802.3 or 802.5-encapsulated packets. Ethernet type codes are listed in the appendix "Ethernet Type Codes" in the *Router Products Command Reference* publication.
wild-mask	16-bit hexadecimal number whose ones bits correspond to bits in the *type-code* argument that should be ignored when making a comparison. (A mask for a DSAP/SSAP pair should always be at least 0x0101. This is because these two bits are used for purposes other than identifying the SAP codes.)

[**no**] **bridge** *group* **acquire**

Use the **bridge acquire** global configuration command to use the system default behavior of forwarding any frames for stations that it has learned about dynamically. Use the **no bridge acquire** global configuration command to change the default behavior.

group	Bridge group number. Must be the same as that specified in the **bridge protocol** command.

bridge *bridge-group* **address** *mac-address* {**forward** | **discard**} [*interface*]
no bridge *bridge-group* **address** *mac-address*

Use the **bridge address** global configuration command to filter frames with a particular MAC layer station source or destination address. Use the **no** form of this command followed by the MAC address to disable the forwarding ability.

group	Group number you assigned to the spanning tree. Must be the same as that specified in the **bridge protocol** command.
mac-address	48-bit dotted-triplet hardware address such as that displayed by the EXEC **show arp** command, for example, 0800.cb00.45e9. It is either a station address, the broadcast address, or a multicast destination address.
forward	Frame sent from or destined to the specified address is forwarded as appropriate.
discard	Frame sent from or destined to the specified address is discarded without further processing.
interface	(Optional) Interface type and number. It is added after the **forward** keyword to indicate the interface on which that address can be reached.

bridge *group* **domain** *domain-number*
no bridge *group* **domain**

Use the **bridge domain** global configuration command to establish a domain by assigning it a decimal value between 1 and 10. Use the **no** form of the command to return to the default single bridge domain.

group	Bridge group number. It must be the same as that specified in the **bridge protocol ieee** command. The **dec** keyword is not valid for this command.
domain-number	Domain number you choose. The default domain number is zero; this is the domain number required when communicating to IEEE bridges that do not support this domain extension.

bridge *group* **forward-time** *seconds*

Use the **bridge forward-time** global configuration command to specify the forward delay interval for the router.

group	Bridge group number. It must be the same as specified in the **bridge protocol** command.
seconds	Forward delay interval. It must be a value in the range 10 through 200 seconds. The default is 30 seconds.

bridge *group* **hello-time** *seconds*

Use the **bridge hello-time** global configuration command to specify the interval between Hello Bridge Protocol Data Units (BPDUs).

group	Bridge group number. It must be the same as specified in the **bridge protocol** command.
seconds	Any value between 1 and 10 seconds. The default is 1 second.

[**no**] **bridge** *group* **lat-service-filtering**

Use the **bridge lat-service-filtering** global configuration command to specify LAT group-code filtering. Use the **no** form of the command to disable the use of LAT service filtering on the bridge group.

group	Bridge group in which this special processing is to take place

bridge *group* **max-age** *seconds*

Use the **bridge max-age** global configuration command to change the interval the bridge will wait to hear BPDUs from the root bridge. If a bridge does not hear BPDUs from the root bridge within this specified interval, it assumes that the network has changed and will recompute the spanning-tree topology.

group	Bridge group number. It must be the same as specified in the **bridge protocol** command.
seconds	Interval the bridge will wait to hear BPDUs from the root bridge. It must be a value in the range 10 through 200 seconds. The default is 15 seconds.

[**no**] **bridge** *group* **multicast-source**

Use the **bridge multicast-source** global configuration command to configure bridging support to allow the forwarding, but not the learning, of frames received with multicast source addresses. Use the **no** form of this command to disable this function on the bridge.

group	Bridge group number. It must be the same as specified in the **bridge protocol** command.

bridge *group* **priority** *number*

Use the **bridge priority** global configuration command to configure the priority of an individual bridge, or the likelihood that it will be selected as the root bridge.

group	The bridge group number. It must be the same as specified in the **bridge protocol** command.
number	The lower the number, the more likely the bridge will be chosen as root. When the IEEE spanning-tree protocol is enabled on the router, *number* ranges from 0 through 65535; the default is 32768. When the Digital spanning-tree protocol is enabled, *number* ranges from 0 through 255; the default is 128.

[**no**] **bridge** *group* **protocol** {**ieee** | **dec**}

Use the **bridge protocol** global configuration command to define the type of spanning-tree protocol. Use the **no bridge protocol** command, with the appropriate keywords and arguments, to delete the bridge group.

group	Number in the range 1 through 9 that you choose to refer to a particular set of bridged interfaces. Frames are bridged only among interfaces in the same group. You will use the group number you assign in subsequent bridge configuration commands.
ieee	IEEE Ethernet spanning-tree protocol.
dec	Digital spanning-tree protocol.

[**no**] **bridge-group** *group*

Use the **bridge-group** interface configuration to assign each network interface to a bridge group. Use the **no** form of this command to remove the interface from the bridge group.

group	Number of the bridge group to which the interface belongs.

[**no**] **bridge-group** *group* **cbus-bridging**

Use the **bridge-group cbus-bridging** interface configuration command to enable autonomous bridging on a ciscoBus II-resident interface. Use the **no** form of this command to disable autonomous bridging.

group	Number of the bridge group to which the interface belongs

[**no**] **bridge-group** *group* **circuit** *number*

Use the **bridge-group circuit** interface configuration command to establish load balancing by assigning a set of serial lines to a circuit group. Use the **no** form of this command to remove the assigned bridge group number.

group	Bridge group number.
number	Circuit group number. It can be in the range 1 through 254. Specify a zero (0) to disable the circuit group number.

bridge-group *group* **input-address-list**
no bridge-group *group* **input-address-list** *access-list-number*

Use the **bridge-group input-address-list** interface configuration command to assign an access list to a particular interface. This access list is used to filter packets received on that interface based on their MAC source addresses. Use the **no** form of this command to remove an access list from an interface.

group	Bridge group number. It must be in the range 1 through 9 and the same as defined by the **bridge-group** command.
access-list-number	Access list number you assigned with the bridge **access-list** command. It must be in the range 700 through 799.

[**no**] **bridge-group** *group* **input-lat-service-deny** *group-list*

Use the **bridge-group input-lat-service-deny** interface configuration command to specify the group codes by which to deny access upon input. Use the **no** form of this command to remove this access condition.

group	Bridge group number defined by the **bridge-group** command. It must be a value in the range 1 through 9.
group-list	List of LAT service groups. Single numbers and ranges are permitted. Specify a zero (0) to disable the LAT group code for the bridge group.

[**no**] **bridge-group** *group* **input-lat-service-permit** *group-list*

Use the **bridge-group input-lat-service-permit** interface configuration command to specify the group codes by which to permit access upon input. Use the **no** form of this command to remove this access condition.

group	Bridge group number defined in the **bridge-group** command. It must be a value in the range 1 through 9.
group-list	LAT service groups. Single numbers and ranges are permitted. Specify a zero (0) to disable the LAT group code for the bridge group.

[**no**] **bridge-group** *group* **input-lsap-list** *access-list-number*

Use the **bridge-group input-lsap-list** interface configuration command to filter IEEE 802.2-encapsulated packets on input. Use the **no** form of this command to disable this capability.

group	Bridge group number. It must be the same as defined in the **bridge-group** command. It must be a value in the range 1 through 9.
access-list-number	Access list number you assigned with the bridge **access-list** command. Specify a zero (0) to disable the application of the access list on the bridge group.

[**no**] **bridge-group** *group* **input-pattern** *access-list-number*

Use the **bridge-group input-pattern** interface configuration command to associate an extended access list with a particular interface in a particular bridge group. Use the **no** form of this command to disable this capability.

group	Bridge group number. It must be the same as defined in the **bridge-group** command. It must be a value in the range 1 through 9.
access-list-number	Access list number you assigned using the bridge **access-list** command. Specify a zero (0) to disable the application of the access list on the interface.

[**no**] **bridge-group** *group* **input-type-list** *access-list-number*

Use the bridge-group input-type-list interface configuration command to filter Ethernet- and SNAP-encapsulated packets on input. Use the no form of this command to disable this capability.

group	Bridge group number. It must be the same as defined in the **bridge-group** command.
access-list-number	Access list number you assigned with the bridge **access-list** command. Specify a zero (0) to disable the application of the access list on the bridge group.

[**no**] **bridge-group** *group* **lat-compression**

Use the **bridge-group lat-compression** interface configuration command to reduce the amount of bandwidth that LAT traffic consumes on serial interface by specifying a LAT-specific form of compression. Use the **no** form of this command to disable LAT compression on the bridge group.

group	Bridge group number. It must be the same as defined in the **bridge-group** command.

[**no**] **bridge-group** *group* **output-address-list** *access-list-number*

Use the **bridge-group output-address-list** interface configuration command to assign an access list to a particular interface for filtering the MAC destination addresses of packets that would ordinarily be forwarded out that interface. Use the **no** form of this command to remove an access list from an interface.

group	Bridge group number in the range 1 through 9. It must be the same as defined in the **bridge-group** command.
access-list-number	Access list number you assigned with the bridge **access-list** command.

[**no**] **bridge-group** *group* **output-lat-service-deny** *group-list*

Use the **bridge-group output-lat-service-deny** interface configuration command to specify the group codes by which to deny access upon output. Use the **no** form of this command to cancel the specified group codes.

group	Bridge group number in the range 1 through 9. It must be the same as specified in the **bridge-group** command.
group-list	List of LAT groups. Single numbers and ranges are permitted.

[**no**] **bridge-group** *group* **output-lat-service-permit** *group-list*

Use the **bridge-group output-lat-service-permit** interface configuration command to specify the group codes by which to permit access upon output. Use the **no** form of this command to cancel specified group codes.

group	Bridge group number in the range 1 through 9. It must be the same as specified in the **bridge-group** command.
group-list	LAT service advertisements.

[**no**] **bridge-group** *group* **output-lsap-list** *access-list-number*

Use the **bridge-group output-lsap-list** interface configuration command to filter IEEE 802-encapsulated packets on output. Use the **no** form of this command to disable this capability.

group	Bridge group number in the range 1 through 9. It must be the same as specified in the **bridge-group** command.
access-list-number	Access list number you assigned with the bridge **access-list** command. Specify a zero (0) to disable the application of the access list on the bridge group.

[**no**] **bridge-group** *group* **output-pattern** *access-list-number*

Use the **bridge-group output-pattern** interface configuration command to associate an extended access list with a particular interface. Use the **no** form of this command to disable this capability.

group	Bridge group number in the range 1 through 9. It must be the same as specified in the **bridge-group** command.
access-list-number	Extended access list number you assigned using the extended **access-list** command. Specify a zero (0) to disable the application of the access list on the interface.

[**no**] **bridge-group** *group* **output-type-list** *access-list-number*

Use the **bridge-group output-type-list** interface configuration command to filter Ethernet- and SNAP-encapsulated packets on output. Use the **no** form of this command to disable this capability.

group	Bridge group number in the range 1 through 9. It must be the same as specified in the **bridge-group** command.
access-list-number	Access list number you assigned with the bridge **access-list** command. Specify a zero (0) to disable the application of the access list on the bridge group. This access list is applied just before sending out a frame to an interface.

[**no**] **bridge-group** *group* **path-cost** *cost*

Use the **bridge-group path-cost** interface configuration command to set a different path cost. Use the **no** form of this command to choose the default path cost for the interface.

group	Bridge group number. It must be the same as specified in the **bridge-group** command.
cost	Path cost can range from 1 through 65535, with higher values indicating higher costs. This range applies regardless of whether the IEEE or Digital spanning-tree protocol has been specified.

bridge-group *group* **priority** *number*

Use the **bridge-group priority** interface configuration command to set an interface priority when two bridges tie for position as the root bridge. The priority you set breaks the tie.

group	Bridge group number. It must be the same as specified in the **bridge-group** command.
number	Priority number ranging from 0 through 255 (Digital), or 0 through 64000 (IEEE). The defaults are: 128—Digital spanning-tree protocol 32768—IEEE spanning-tree protocol.

[**no**] **bridge-group** *group* **spanning-disabled**

Use the **bridge-group spanning-disabled** interface configuration command to disable the spanning tree on a given interface.

group	Bridge group number of the interface. It must be the same as specified in the **bridge-group** command.

[**no**] **bridge-group** *bridge-group* **sse**

Use the **bridge-group sse** interface configuration command to enable Cisco's silicon switching engine (SSE) switching function. Use the **no** form of this command to disable SSE switching.

bridge-group	Bridge group number in the range 1 through 9, specified in the **bridge-group** command

clear bridge *group*

Use the **clear bridge** EXEC command to remove any learned entries from the forwarding database and to clear the transmit and receive counts for any statically or system-configured entries.

group	Bridge group number. It must be a value in the range 1 through 9.

clear sse

Use the **clear sse** privileged EXEC command to reinitialize the Silicon Switch Processor (SSP) on the Cisco 7000 series.

ethernet-transit-oui [**90-compatible** | **standard** | **cisco**]
no ethernet-transit-oui

Use the **ethernet-transit-oui** interface configuration command to choose the Organizational Unique Identifier (OUI) code to be used in the encapsulation of Ethernet Type II frames across Token Ring backbone networks. Various versions of this OUI code are used by Ethernet/Token Ring translational bridges. The default OUI form is **90-compatible**, which can be chosen with the **no** form of the command.

90-compatible	(Optional) Default OUI form.
standard	(Optional) Standard OUI form.
cisco	(Optional) Cisco's OUI form.

frame-relay map bridge *dlci* **broadcast**
no frame-relay map bridge *dlci*

Use the **frame-relay map bridge broadcast** global configuration command to bridge over a Frame Relay network. Use the **no** form of this command to delete the mapping entry.

dlci	DLCI number in the range 16 through 1007.

[**no**] **ip routing**

Use the **ip routing** global configuration command to enable IP routing. Use the **no** form of the command to disable IP routing so that you can then bridge IP.

show bridge [*group*] [*interface*]
show bridge [*group*] [*address* [*mask*]]

Use the **show bridge** privileged EXEC command to view classes of entries in the bridge forwarding database.

group	(Optional) Number you chose that specifies a particular spanning tree.
interface	(Optional) Interface type and number.
address	(Optional) 48-bit canonical (Ethernet ordered) MAC address. This may be entered with an optional mask of bits to be ignored in the address, which is specified with the *mask* argument.
mask	(Optional) Bits to be ignored in the address. You must specify the *address* argument if you want to specify a mask.

show span

Use the **show span** privileged EXEC command to display the spanning-tree topology known to the router/bridge. The display includes whether or not LAT group code filtering is in effect.

show sse summary

Use the **show sse summary** EXEC command to display a summary of Silicon Switch Processor (SSP) statistics.

x25 map bridge *x.121-address* **broadcast** [*options-keywords*]
no x25 map bridge

Use the **x25 map bridge broadcast** interface configuration command to configure the bridging of packets in X.25 frames. Use the **no** form of this command to disable the Internet-to-X.121 mapping.

x.121-address	The X.121 address.
options-keywords	(Optional) Services that can be added to this map. These services are listed in the X.25 map options command in the "X.25 and LAPB Commands" chapter in the *Router Products Command Reference*.