Plot Legend for Design Layouts

This legend is for Design layouts used in the WAE Design GUI.

Note All traffic is displayed in Mbps. In the network plot, the traffic utilization colors represent outbound traffic.

Legend	Descriptions
Interfaces and Circuits	Colors
	Circuit Active, Failed, and Operational States
	Markings and Styles
Sites	Sites
Nodes	Nodes
External Endpoint Members	External Endpoint Members
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LSPs	LSPs
	LSP Paths
	LSP Named Paths
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	Segment-Routed LSP Paths
Layer 1 View	Layer 1 Links
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	Layer 1 Nodes and L1 Waypoints

Interfaces and Circuits
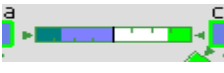
Colors

Table 22-1   Interface and Circuit Colors

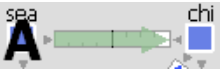| Graphic	Description
The traffic utilization colors are customizable. For information, see the *WAE Network Visualization Guide*.	
	Outbound traffic utilization is depicted by colors. Default colors are light blue, light green, yellow, orange, red, and purple, and left to right, each of these colors represent increased utilization. • In the Measured Traffic and Simulated Traffic views, the color shows the percent of traffic utilized for the available interface capacity. • In the Worst-Case Traffic view, the color represents the worst-case utilization on each interface. This is the highest utilization that a particular interface experiences over all the failure scenarios considered when running a simulation analysis. See the Simulation Analysis chapter in the *WAE Design User Guide*. • In the Failure Impact view, the color represents the failure impact of a circuit. This is defined as the highest utilization experienced by any interface if that circuit were to fail. See the Simulation Analysis chapter in the *WAE Design User Guide*. • In the LSP Reservation view, the color represents the total setup bandwidth that is reserved by LSPs through the interface.
	Blue indicates a selected interface or circuit.
	White indicates 0% utilization.
	Interfaces are light gray for the following reasons. • The interface has no traffic measurement (Measured Traffic view). • This amount of interface capacity is not available due to a QoS bound (Measured Traffic and Simulated Traffic views). • No simulation analysis was performed (Worst-Case and Failure Impact views). • Circuit is operationally down.
	QoS policy violations are indicated by red and white bars. This is displayed when utilization exceeds the QoS bound, which is set through policy or interface queue properties. See the Quality of Service Simulation chapter in the *WAE Design User Guide*.
	Shortest IGP path between two selected nodes or sites. See the IGP Simulation chapter in the *WAE Design User Guide*.

Table 22-1   Interface and Circuit Colors (continued)

Graphic	Description
	Shortest latency path between two selected nodes or sites. See the IGP Simulation chapter in the *WAE Design User Guide*.
	Shortest TE path between two selected nodes or sites. See the IGP Simulation chapter in the *WAE Design User Guide*.

Circuit Active, Failed, and Operational States

Table 22-2   Circuit Active, Failed, and Operational States

Graphic	Description
	Failed circuit.
	Circuit is not operational for one of the following reasons. • A node connected to the circuit failed. • A site failed that contains a node connected to the circuit. • The circuit is a LAG[1] (port channel) that does not meet its operational requirements (minimum number of available ports or minimum capacity, whichever is surpassed first) due to failure of some of its ports or port circuits. • L1 link or L1 node used by the circuit failed. • An SRLG failed that contains the circuit or contains one of the above objects that are required for circuit operation.
	The circuit is a LAG, and one or more ports or port circuits in the LAG failed. The red strikeout line is the percent of unavailable capacity due to the failure.
	Circuit is inactive.

Table 22-2   Circuit Active, Failed, and Operational States (continued)

Graphic	Description
	Circuit is not operational for one of the following reasons. • A node connected to the circuit is inactive. • An inactive site contains a node connected to the circuit. • The circuit is a LAG that does not meet its operational requirements (minimum number of available ports or minimum capacity, whichever is surpassed first) due to some of its ports or port circuits being inactive. • Mapped L1 circuit cannot be routed. • An SRLG is inactive, and the SRLG contains the circuit or contains one of the above objects that are required for circuit operation.
	The circuit is a LAG and one or more ports or port circuits in the LAG is inactive. The gray strikeout line is the percent of unavailable capacity due to the inactive ports or port circuits.

1. A link aggregation group (LAG) is a group of physical ports that are bundled into a single logical interface. It is also known as *bundling* or *trunking*.

Markings and Styles

Table 22-3   Interface and Circuit Markings and Styles

Graphic	Description
	Interface styles and colors are customizable. For information, see the *WAE Network Visualization Guide*.
	Circuits are rectangles divided in half by a vertical black line. Each half shows an interface. Tick marks show 25%, 50%, 75% utilization levels.
	If parallel circuits are grouped for visual display, each side of the circuit shows its constituent interfaces. Here, there are two circuits (two interfaces on each side) grouped by site. If the circuits are between sites, the utilization includes the utilization of nested interfaces, if applicable. • The color fill on each side shows the average utilization of the grouped interfaces, which is weighted against the sum of the grouped capacities. For example, the average utilization for the interfaces from chi to mia is color filled green. • Each interface within a grouped circuit has a thin colored border showing the utilization of that interface. For example, one interface going from mia to chi is bordered by yellow and another by blue, each showing the traffic utilization for the bordered interface.
	Width of circuit shows capacity. Width increases a fixed amount for every 4x increase in capacity.
	Full-length interface style, which is the default.

Table 22-3   Interface and Circuit Markings and Styles (continued)

Graphic	Description
	Shortened interface style, showing the same information as a full-length view, just in shorter representations that are repeated at each end of the circuit. In this example, all chi interfaces are shortened at both ends of the circuit.
	Collapsed interface view, showing the presence of interfaces as up/down arrows inside the site. The color of the arrows show the highest utilization of any of the collapsed interfaces (in this example, blue for sea and yellow for chi). In this example, all chi interfaces are collapsed at both ends of the circuit.

Sites

Table 22-4   Sites

Graphic	Description
	A site is shown as a blue square with a border. The color of the border is the maximum utilization color of all intrasite interfaces within the site. These colors are customizable. For information, see the *WAE Network Visualization Guide*.
	A white border surrounds the site if all intrasite interfaces have zero utilization.
	A gray border surrounds the site in the following cases. • There is no measured traffic on intrasite interfaces (Measured Traffic view). • No simulation analysis was performed (Worst-Case and Failure Impact views).
	Solid blue indicates the site is selected.
	One or more sites, nodes, or circuits within the site are selected.
	Up/down triangles show that one or more egress interfaces from within the site have been collapsed.
	The site failed.
	One or more sites, nodes, or circuits within the site failed.
	One or more nodes or circuits within the site are not operational because they are contained in a failed SRLG.

Table 22-4   Sites (continued)

| Graphic	Description
	The site is inactive.
	One or more sites, nodes, or circuits within the site are inactive.
	One or more nodes or circuits within the site are not operational because they are contained in an SRLG that is not active.
	One or more selected VPN nodes exist on nodes within the site.

Nodes

Table 22-5   Nodes

Graphic	Description
	A node is shown as a blue rectangle. The green border surrounds the node if it is the source or destination of simulated or measured traffic, or of LSPs with nonzero bandwidth reservations (Simulated Traffic, Measured Traffic, and LSP Reservation views, respectively).
	A white border surrounds the node if it is not the source or destination of simulated or measured traffic, or of LSPs with nonzero bandwidth reservations (Simulated Traffic, Measured Traffic, and LSP Reservation views, respectively).
	A node always has a gray border in the Worst-Case Traffic views.
	In the Failure Impact view, the node border color represents the failure impact of a node. This is defined as the highest utilization experienced by any circuit if that node were to fail. See the Simulation Analysis chapter in the *WAE Design User Guide*.
	Solid blue indicates the node is selected.
	Up/down triangles show that some interfaces from the node have been collapsed.
	Failed node.
	Node is not operational because it is contained in a failed site or SRLG.

Table 22-5   Nodes (continued)

Graphic	Description
	Node is not active.
	Node is not operational because it is contained in a site or an SRLG that is not active.
	One or more selected VPN nodes exist on the node.

External Endpoint Members

Table 22-6   External Endpoints

Graphic	Description
	If the external endpoint member is a node, this icon appears under that node in the plot. If the member is an external AS or an external AS via a node, this icon appears under all nodes in the AS. For more information, see the Advanced Routing with External Endpoints chapter in the *WAE Design User Guide*.
	Failed external endpoint member.
	External endpoint member is not operational because it is contained in a failed SRLG.
	External endpoint member is not active.
	External endpoint member is not operational because it is contained in an SRLG that is not active.

Demands and Routings

Table 22-7   Demands and Routings
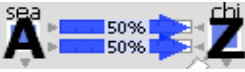
Graphic	Description
	For more information, see the Traffic Demand Modeling chapter in the *WAE Design User Guide*.
	"A" and "Z" mark source and destination site/node of a demand. Blue arrows show demands routed through an interface on a circuit.

Table 22-7   Demands and Routings (continued)

Graphic	Description
	Percentages show the proportion of a split demand (for example from ECMP) through an interface.
	Reroute of a demand under a failure.
	Demand is routed through an LSP.
	Demand is rerouted through an FRR LSP.
	Shortest IGP path of a demand.
	Shortest latency path of a demand.
	Multicast flow and multicast flow hops. See the Multicast Simulation chapter in the *WAE Design User Guide*.

LSPs

For more information, see the MPLS Simulation chapter in the *WAE Design User Guide*.

Table 22-8   LSPs
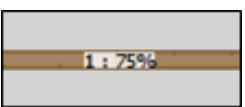
Graphic	Description
	"A" and "Z" mark source and destination site/node of an LSP. Brown arrows show how LSP traffic is routed.
	Rerouting of an LSP traffic when a failure occurs in Convergence mode
	Fast Reroute (FRR) LSP path that would be taken if there were a failure that required its use.

Table 22-8   LSPs (continued)

| Graphic	Description
	FRR LSP that is currently rerouting LSP traffic around a failure in FRR mode.
	Shortest IGP path of an LSP.
	Shortest latency path of an LSP.
	Shortest TE path of an LSP.

LSP Paths

Table 22-9   LSP Paths

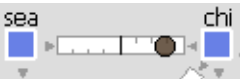| Graphic	Description
	"A" and "Z" mark source and destination site/node of an LSP path. The brown arrow indicates the LSP path is active, that is, carrying traffic. The number in the gray rectangle (here 1) is the path option.
	A lighter brown arrow indicates the LSP path is not active and is not carrying traffic. The yellow rectangle indicates a standby path. The number in a yellow rectangle (here 2) is the path option.
	The percent value is the loadshare percentage that this LSP path is carrying for the selected LSP. In this example, the LSP loadshare percentage is 75%.

LSP Named Paths

Table 22-10   LSP Named Paths

| Graphic	Description
	"A" marks the source of a named path. The brown diamond on an interface denotes it as a named path hop. A black dot in the center denotes a strict hop.
	A brown diamond on a site denotes that the site contains a node or interface that is a named path hop. No black dot in the center denotes a loose hop. The site is shown as containing a loose hop unless all hops within the site are set to strict or exclude.
	A brown diamond on a node denotes it as a named path hop. No black dot in center denotes a loose hop.
	"A" marks the source of a named path. A red circle with a white X on an interface denotes it as a named path hop that is set to *exclude*.
	A red circle with a white X on a site denotes that the site contains a named path hop on a node or interface and that it is set to *exclude*.
	A red circle with a white X on a node denotes it as a named path hop that is set to *exclude*.

LSP Actual Paths

Table 22-11   LSP Actual Paths

Graphic	Description
	A dark brown circle on an interface denotes an LSP actual path hop on the interface.
	A dark brown circle on site denotes an actual path hop on a node or interface within the site.
	A dark brown circle on a node denotes an actual path hop on the node.

Segment-Routed LSP Paths

Table 22-12   SR LSP Paths

Graphic	Description
	An interface segment in a segment-routed (SR) LSP.
	The site contains a node segment or an interface segment.
	A node segment in an SR LSP.
	A site containing one or more nodes belonging to an anycast group.
	Node belonging to an anycast group.

Layer 1 View

For more information, see the Layer 1 Simulation chapter in the *WAE Design User Guide*.

Layer 1 Links

Table 22-13   Layer 1 Links in L1 View
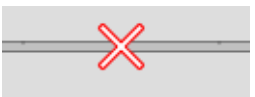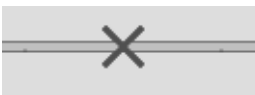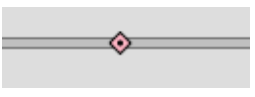
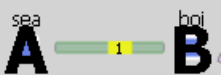| Graphic	Description
	Selected L1 link.
	In the L1 Failure Impact view, the color represents the failure impact of an L1 link. This is defined as the highest utilization experienced by any L3 interface if that L1 link were to fail.
	L1 link failed.

Table 22-13   Layer 1 Links in L1 View (continued)

Graphic	Description
	L1 link is not operational because of one of the following reasons. • L1 node failed that is connected to the L1 link. • A site failed that contains the L1 link. • An SRLG failed that contains the L1 link. • An SRLG failed that contains an L1 node connected to the L1 link.
	L1 link is inactive.
	L1 link is inactive for one of the following reasons. • An L1 node that is connected to the L1 link is inactive. • An inactive SRLG contains the L1 link.
	L1 link is a strict L1 circuit path hop.
	L1 link is an excluded L1 circuit path hop.

Layer 1 Circuit Paths

Table 22-14   Layer 1 Circuit Paths in L1 View

Graphic	Description
Active Sim Path **Sim Path**	Simulated L1 circuit path from L1 node "A" to L1 node "B" highlights in green when any of the following are selected. • L1 circuit or L1 circuit path • Circuit or associated interface mapped to L1 circuit • Port circuit mapped to L1 circuit The simulated active path appears in a darker green than simulated paths that are not active.
Standby Path **Non-Standby Path**	Path options are numerically identified within a rectangular label. Standby paths have a yellow background, and non-standby paths have a gray background. In this example, path option 2 is a standby path, and path option 3 is a non-standby path.
(sea — 1 — boi)	Actual L1 circuit path.
(sea — 1 — boi)	Shortest latency of an L1 circuit path
(— 2 —)	Rerouted L1 circuit path that is in use.
(atl — wdc)	Unrouted L1 circuit path.

Sites in Layer 1 View

Table 22-15   *Sites in Layer 1 View*

Graphic	Description
	One or more sites, L1 nodes, or links within the site failed.
	One or more L1 nodes or L1 links within the site are not operational because they are contained in a failed SRLG.
	One or more L1 nodes or L1 links within the site are inactive.
	One or more L1 nodes or L1 links within the site are not operational because they are contained in an SRLG that is not active.
	Site contains an L1 node that is a strict L1 circuit path hop.
	Site contains an L1 node that is a loose L1 circuit path hop.
	Site contains an L1 node that is excluded as an L1 circuit path hop.

Layer 1 Nodes and L1 Waypoints

Table 22-16   *Layer 1 Nodes and L1 Waypoints in L1 View*

Graphic	Description
LON	An L1 node is shown as a blue rectangle without borders.
LON	A selected L1 node is a darker shade of blue.
	L1 node failed.
	L1 node is not operational because it is contained in a failed site or SRLG.

Table 22-16   Layer 1 Nodes and L1 Waypoints in L1 View (continued)

Graphic	Description
	L1 node is inactive.
	L1 node is not operational because an SRLG containing it is inactive.
	L1 node is a strict L1 circuit path hop.
	L1 node is a loose L1 circuit path hop.
	L1 node is excluded as an L1 circuit path hop.
	L1 link waypoint.
	Selected L1 link waypoint.

■ **Layer 1 View**