Initial setup of AT&T Switched Ethernet with Network on Demand

We’ll walk through an initial setup of AT&T Switched EthernetSM with Network on Demand.

We’ll show you how do the following:

- Add two locations for AT&T Switched Ethernet with Network on Demand.
- Add an AT&T Switched Ethernet with Network on Demand port to each location.
- Connect the two ports with an Ethernet virtual connection (EVC).

After your initial deployment, you can add additional ports. For more information, see Add an AT&T Switched Ethernet with Network on Demand port.

Before you begin
Add first location for the first port
Specify service details for the first port
Add the first EVC segment
Add the second location for the second port
Specify service details for the second port
Add the second EVC segment
Activate new port
Prepare your location

Before you begin

You can order ports within the AT&T network and for locations outside the AT&T region/franchise area.

When you add a port, you’ll make these choices:

- Location for the port
- Port bandwidth
- Port interface type
- Access speed (ports outside the AT&T region/franchise area only)
- Class of Service (CoS)
- Inside wiring installer (If applicable)
- Entrance facility construction handler (If applicable)
- Port designation (either port-based or VLAN-based)
- Regulatory jurisdiction
- Create a new Ethernet virtual connection (EVC)
About preparing your office building

To add port for AT&T Switched Ethernet with Network on Demand, you need inside wiring in your office building. You also need to make sure your router interface supports the new port. If the AT&T equipment building terminal (demarcation panel) for your port isn’t already installed at the location where you’ll add the port, see Prepare your location. If your inside wiring and compatible router interface aren’t already in place, see Inside wiring and equipment for AT&T Switched Ethernet Service with Network on Demand.

Add the first location for the first port

You need to add a new location before you can add the port. Follow these steps:

1. Log in to Business Center. The Business Center homepage appears.
2. Go to the Network inventory page: Business Center > Manage > Network > View all inventory > Network inventory
3. At the top of the page, click Add location. The Business Center eOrder questionnaire window opens.
4. Click US Add Site – AVPN, ASEoD, ADI single location only. The Select a service window opens.
5. Under AT&T Switched Ethernet on Demand, click Add this service. The Add a location window opens.
6. Enter the address information in the fields, and then click Continue. The Add site window opens.
7. Do one of the following:
   • If the address is valid and AT&T Switched Ethernet with Network on Demand is available at the site, the Continue button is available. Go to step 7.
   • If the address is not valid, or AT&T Switched Ethernet with Network on Demand is not available at the address, or if an active site exists, or a pending installation is in process at the address, you’ll see an error message. You can cancel or try to verify another address.
   • If the address you enter shows multiple matches, select the address you want.
8. After you verify the address, click Continue.
9. Do one of the following:
   • If you have multiple contracts, you see the Select a service contract window. Select the service contract you want to add this port to. Then, click Continue.
   • If you have only one service contract, you see the Service contract details window. Click Continue.
10. The Add port window opens.

Specify service details for the first port

In the following sections, add your service details, such as the type of port interface and port bandwidth you want for the port at the first location.
Select additional location details

In the Add port window, the address is automatically filled in with the location of the site you entered.

If you have optional information, such as floor, building, or room, you can add it. These details help our installer find your location.

1. Enter the information in the Additional location details field (Optional). You can enter location information, such as room or suite number that helps our installer find your exact location.

2. If the location you selected has multiple floors, in the Floor field, enter the floor number where the port will be installed.

   **Note:** If the building has only one floor, this field doesn’t appear. If the building has multiple floors, this field is required.

3. Click Continue. The Add port window refreshes.

Select port bandwidth

The port bandwidth you select determines how much data can flow through the port.

- To change your port bandwidth, under Select your port bandwidth, decrease or increase the speed. For more precise control, use the (+) and (−) buttons.

**Note:** For speeds greater than 1Gbps, contact your AT&T representative for availability at your location.

The following table shows the port bandwidth increments that you can choose for different physical ports. The equipment at your site may limit your bandwidth. If you want a higher bandwidth than your equipment allows, contact your AT&T representative.

<table>
<thead>
<tr>
<th>Physical port bandwidth</th>
<th>Bandwidth increments</th>
</tr>
</thead>
<tbody>
<tr>
<td>100Mbps</td>
<td>2Mbps, 4Mbps, 5Mbps, 8Mbps, 10Mbps, 20Mbps, 50Mbps, 100Mbps</td>
</tr>
<tr>
<td>1Gbps</td>
<td>2Mbps, 4Mbps, 5Mbps, 8Mbps, 10Mbps, 20Mbps, 50Mbps, 100Mbps, 150Mbps, 250Mbps, 400Mbps, 500Mbps, 600Mbps, 1Gbps</td>
</tr>
<tr>
<td>10Gbps</td>
<td>1Gbps, 2Gbps, 2.5Gbps, 4Gbps, 5Gbps, 7.5Gbps, 9.5Gbps, 10Gbps</td>
</tr>
<tr>
<td>100Gbps</td>
<td>10Gbps, 15Gbps, 20Gbps, 25Gbps, 30Gbps, 35Gbps, 40Gbps, 45Gbps, 50Gbps, 60Gbps, 70Gbps, 80Gbps, 90Gbps, 100Gbps</td>
</tr>
</tbody>
</table>

Table 1: Bandwidth increments possible with different physical port bandwidths
Note: You'll only see the bandwidth options that are valid for your physical port and are included in your contract.

Configuration options include the ability to select the port bandwidth according to the needs of the applications that use the connection. The bandwidth set for the physical port is referred to as the port bandwidth. You can choose from a variety of bandwidth increments, ranging from 2 megabits per second (Mbps) to 100 gigabits per second (Gbps), depending on the bandwidth available on the physical port you have. The port bandwidth can't exceed the physical port capacity. For example, a 100Mbps port can have a maximum 100Mbps bandwidth.

If you're not sure of the bandwidth level you need, start with your best estimate and see how it performs for your applications. If needed, you can change the bandwidth later. When you change the bandwidth, keep these points in mind:

- Upgrades are subject to availability of network capacity at the day and time of your order.
- Downgrades may cause congestion or packet loss if you reduce the port bandwidth below what's required for your applications.
- Changes can be made as frequently as once per day.

Select port interface

- In the Port interface your equipment supports list, select the type of port you want.

The port interface, also known as the network interface, determines how many Ethernet virtual connections (EVCs) you can associate with the port. The port type also determines the maximum distances that data can be reliably transmitted.

You can use electrical wiring for speeds up to 1Gbps, but a port bandwidth above 1Gbps requires fiber optic cable. To learn more, see the Inside wiring and equipment for AT&T Switched Ethernet Service with Network on Demand guide.

Note: For speeds higher than 1Gbps, contact your AT&T representative for availability at your location.

This table shows the number of EVCs supported for each port type, and the maximum distance supported by the port type.

<table>
<thead>
<tr>
<th>Port type</th>
<th>Number of EVCs per port</th>
<th>Maximum distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>100Mbps electrical</td>
<td>Up to 8 EVCs</td>
<td>Up to 300 feet/91 meters*</td>
</tr>
<tr>
<td>1Gbps electrical</td>
<td>Up to 64 EVCs</td>
<td>Up to 300 ft./91 m*</td>
</tr>
<tr>
<td>1Gbps single-mode optical</td>
<td>Up to 64 EVCs</td>
<td>Any distance*</td>
</tr>
</tbody>
</table>
Initial setup of AT&T Switched Ethernet with Network on Demand

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<tr>
<th>Port type</th>
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<th>Maximum distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1Gbps multi-mode optical</td>
<td>Up to 64 EVCs</td>
<td>Up to 1,000 ft./304 m*</td>
</tr>
<tr>
<td>10Gbps single-mode optical</td>
<td>Up to 508 EVCs</td>
<td>Any distance*</td>
</tr>
<tr>
<td>10Gbps multi-mode optical</td>
<td>Up to 508 EVCs</td>
<td>Up to 1,000 ft./304 m*</td>
</tr>
<tr>
<td>100Gbps single-mode optical</td>
<td>Up to 4,089 EVCs</td>
<td>Any distance*</td>
</tr>
<tr>
<td>100Gbps multi-mode optical</td>
<td>Up to 4,089 EVCs</td>
<td>Up to 10,000 ft./3,048 m*</td>
</tr>
</tbody>
</table>

Table 2: Number of EVCs and maximum distances supported by port types

*The distance from your router to the AT&T equipment in the building. The distances listed provide a cushion for the actual wire distance limitations.

Select access speed

Access speed is a measure of how fast data can be transferred through a port. **Note:** This option applies to ports outside the AT&T region/franchise area only. This doesn’t appear for ports within the AT&T network.

- Under **Access speed**, decrease or increase the speed. For more precise control, use the (+) and (–) buttons.

Select Class of Service (CoS)

- From the **Class of Service (CoS) for this connection** list, select the CoS that you want.

The CoS you select establishes the thresholds for latency, jitter, and packet delivery rate for your port, as shown in this table. For more information about the service-level agreement, see Section 3 - Service Level Agreement in the AT&T Switched Ethernet Service Guide.

<table>
<thead>
<tr>
<th>Class of Service</th>
<th>Latency (one way)</th>
<th>Jitter</th>
<th>Packet delivery rate</th>
<th>Network availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-critical high</td>
<td>37ms</td>
<td>N/A</td>
<td>99.50%</td>
<td>99.99</td>
</tr>
<tr>
<td>Business-critical medium</td>
<td>30ms</td>
<td>N/A</td>
<td>99.90%</td>
<td>99.99</td>
</tr>
</tbody>
</table>
### Table 3: Specifications for the different classes of service

<table>
<thead>
<tr>
<th>Class of Service</th>
<th>Latency (one way)</th>
<th>Jitter</th>
<th>Packet delivery rate</th>
<th>Network availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business-critical high</td>
<td>20ms</td>
<td>N/A</td>
<td>99.90%</td>
<td>99.99</td>
</tr>
<tr>
<td>Interactive</td>
<td>13ms</td>
<td>10ms</td>
<td>99.95%</td>
<td>99.99</td>
</tr>
<tr>
<td>Real-time</td>
<td>5ms</td>
<td>3ms</td>
<td>99.995%</td>
<td>99.99</td>
</tr>
</tbody>
</table>

### Table 4: Descriptions of each Class of Service

<table>
<thead>
<tr>
<th>Class of Service</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-critical high</td>
<td>Supports low-priority business applications that require more tolerance for delay and availability.</td>
</tr>
<tr>
<td>Business-critical medium</td>
<td>Supports business data applications that require moderate tolerance for delay and less sensitivity to jitter.</td>
</tr>
<tr>
<td>Business-critical high</td>
<td>Supports most business data applications that require moderate tolerance for delay and more sensitivity to jitter, needing a higher priority than business-critical medium.</td>
</tr>
<tr>
<td>Interactive</td>
<td>Supports high-priority business data applications or jitter-sensitive applications, such as voice and video.</td>
</tr>
<tr>
<td>Real-time</td>
<td>Supports high-priority business data applications that require minimal loss, are latency-sensitive, and require jitter, including voice and video.</td>
</tr>
</tbody>
</table>

### Specify port designation

- **Under Port designation**, select either **Port-based** or **VLAN-based**.

**Note**: When you select your port designation, consider your choice carefully. If you order one configuration and later decide you want a different configuration, it requires you to order a new port, and the existing port is disconnected.

- **Port-based**—The port is associated with only one EVC. All traffic is passed on to one or more other ports on the one EVC, based on the MAC address and without regard to your assigned virtual local area network ID (VLAN ID) (if used).
**VLAN-based**—Also known as service multiplexing. VLAN-based service supports connections to multiple EVCs over a single port connection. All traffic is passed on to the other ports on any of the EVCs based on your assigned VLAN IDs. VLAN ID assignments must follow the AT&T allowed VLAN numbering limits.

Choose **VLAN-based** when you want the AT&T network to partition traffic between EVCs. Partitioning is created based on the VLAN IDs you assigned to each EVC. The AT&T network uses the VLAN ID to identify the appropriate EVC for the traffic, and then uses the destination MAC address for frame forwarding within the indicated EVC.

VLAN-based service is less common than port-based service, because VLAN-based ports are typically required only when creating multiple (EVCs) over a single physical infrastructure. You can mix VLAN and port-based connections in your network. For example, you might have a host site that needs to communicate with two separate and distinct groups of remote sites. The host could be VLAN-based, while the remote sites could be port-based.

**Select regulatory jurisdiction**

Select whether the endpoints of the traffic on your port are primarily inside or outside of the state.

- Under **Estimated 10 percent or more of your network traffic goes outside the state (jurisdiction)**, do one of the following:
  - When more than 10% of your network traffic originates from or is destined to an endpoint located outside the state (including Internet and international traffic), select **Yes (interstate)**.
  - When less than 10% of your network traffic goes outside the state (including Internet and international traffic), select **No (intrastate)**.

AT&T uses your jurisdiction selection to determine which regulatory agency may have authority over the service. It is also used to assess the required government fees or surcharges that may apply to this port.

**Enable enhanced multicast (optional)**

You can enable enhanced multicast for this port if it's part of your contract.

**Note:** If you want to have enhanced multicast added to your contract, contact your AT&T representative.

- To enable enhanced multicast on your port, under **Additional service options**, check the **Enhanced multi-cast** box.
Add additional media access control (MAC) addresses (optional)

You can increase the limit of MAC addresses from 250 to 500 on each multipoint EVC on the port. This setting is offered on a per-port basis. When you increase the limit to 500, you can set 500 MAC addresses on any multipoint EVC on the port. This setting does not apply to point-to-point EVCs.

**Note:** There is an additional fee for adding MAC addresses.

- To increase the limit to 500 MAC addresses, under Additional MAC Addresses, check the Additional media access control (MAC) addresses box.

Choose AT&T install or self-install

Basic inside wiring from AT&T includes up to 328 feet (100 meters) of electrical wiring or 500 feet (152 meters) of fiber optic interface cabling. There’s no one-time charge for AT&T to install your inside wiring. Limitations do apply. Any one-time and monthly charges for your order appear in your Cart before you checkout.

1. If you want AT&T to install your inside wiring, under Additional service options, check AT&T to install inside wiring.
   **Note:** This option isn’t available for ports outside the AT&T region/franchise area.

   For more information about AT&T inside wiring, including warranty and pricing, see Service Attachment to AT&T Network on Demand Pricing Schedule for AT&T Inside Wiring and the Inside wiring and equipment for AT&T Switched Ethernet Service with Network on Demand guide.

   If you don’t already have cabling installed from your property line into your building, you can hire a vendor to install it, or you can have AT&T install it for you. For more information, see Entrance facility construction.

2. If you want AT&T to install the cabling from your property line into your building, check AT&T to provide Entrance Facility Construction (EFC). Note that this option is only available if you have entrance facility construction on your contract.
   **Note:** This option isn’t available for ports outside the AT&T region/franchise area.

3. Click Continue. A message appears on the Manage AT&T Switched Ethernet page that confirms you’ve added a port to the location.
4. Click OK.

Provide contact information for the first port

It’s important that you provide correct contact information so AT&T technicians can gain access to the building to establish network connectivity to the AT&T equipment. AT&T asks you to supply an alternate contact if one is available.
To begin installation, an AT&T technician attempts to reach the building contact on the business day following the order. It’s important that the building contact is available that day. Installation of service may take between three to five business days.

In some cases, the building owner may need to grant AT&T access to restricted areas at the location. When you provide the building contact information, it helps AT&T to complete all required activities on the scheduled date.

1. On the Manage AT&T Switched Ethernet page, in the Contacts section, next to Building contact, click the Edit icon. The Edit contact window opens.
   Note: The building contact provides building access.
2. Enter the contact information and then click Save. A message appears indicating that the contact information is updated.
3. Click Ok.
4. Next to Location technical contact, click the Edit icon. The Edit contact window opens.
5. Do one of the following:
   • If the location technical contact is the same as the building contact, from the list, select Building contact.
   • If the location technical contact isn’t the same as the building contact, in the fields, enter the contact information.
6. Click Save. A message appears indicating that the contact information is updated.
7. Click Ok.
8. Next to Alternate contact, click the Edit icon. The Edit contact window opens.
9. Enter the contact information, and then click Save. A message appears indicating that your port details and contacts are updated.
10. Click Add EVC. The Add EVC segment window opens.

Add the first EVC segment

An Ethernet virtual connection (EVC) provides direct connectivity between two or more ports in your network.

You need to configure the following things on each segment of the EVC.

- Bandwidth, also called the committed information rate (CIR)
- Class of Service (CoS)
- Virtual local area network (VLAN) ID (if the port is a VLAN-based port)
- Enhanced multi-cast, if applicable.
- Additional Media Access Control (MAC) addresses, if applicable.

The following image shows an EVC with three segments, each configured for a different bandwidth.
You can configure an EVC to use some or all of the available bandwidth of a physical port. For example, if you have a 100 megabits per second (Mbps) port and another EVC is using 50Mbps bandwidth of that port’s bandwidth, the available bandwidth is 50Mbps. If you know that you won’t connect any other EVCs to the port, then you should either configure the EVC to use all the available bandwidth or lower the bandwidth of the port.

Note: You’re billed for the bandwidth of the port. You’re not billed for the bandwidth consumed by an EVC. If you know you’re not going to use all of a port’s bandwidth, you should consider lowering the port bandwidth.

**Select the bandwidth for the first EVC segment**

The bandwidth you select determines how much data can flow across the EVC segment.

- To change your bandwidth, in the **Add EVC segment** window under **Bandwidth/Committed Information Rate (CIR)**, decrease or increase the speed. For more precise control, use the (+) and (–) buttons.

The bandwidth doesn’t need to match across ports. The bandwidth you select for an individual EVC segment should be based on the expected data requirements of the applications that will transmit data over the segment.

Note: You can only select a bandwidth that’s available at the port. For questions, contact your AT&T representative.
Select Class of Service (CoS) for the first EVC segment

- From the Class of Service list, select the CoS that meets your network performance needs.

The CoS you select establishes the thresholds for latency, jitter, and packet delivery rate across your EVC segment, as shown in this table. Generally, the CoS for the EVC segment should match the one you ordered for the port. For more information about the service-level agreement, see Section 3 - Service Level Agreement in the AT&T Switched Ethernet Service Guide.

Thresholds for the various CoS options are shown in this table.

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<th>Class of Service</th>
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<td>5ms</td>
<td>3ms</td>
<td>99.995%</td>
<td>99.99</td>
</tr>
</tbody>
</table>

Table 5: Specifications for the different classes of service

Descriptions of the different classes of service are shown in this table.

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<td>Supports business data applications that require moderate tolerance for delay and less sensitivity to jitter.</td>
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<td>Business-critical high</td>
<td>Supports most business data applications that require moderate tolerance for delay and more sensitivity to jitter, needing a higher priority than business-critical medium.</td>
</tr>
<tr>
<td>Interactive</td>
<td>Supports high-priority business data applications or jitter-sensitive applications, such as voice and video.</td>
</tr>
<tr>
<td>Real-time</td>
<td>Supports high-priority business data applications that require minimal loss, are latency-sensitive, and require jitter, including voice and video.</td>
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</table>

Table 6: Descriptions of each Class of Service
Virtual local area network ID for the first EVC segment

The virtual local area network ID (VLAN ID) identifies the connection made between ports. The AT&T network uses the VLAN ID you assign to the EVC to partition traffic between VLAN-based ports. VLAN IDs can range from 2 to 4089. The VLAN ID field appears only if you’re adding an EVC to a VLAN-based port.

- In the VLAN ID field, enter a VLAN ID, if applicable.

Add additional service options (optional)

1. Under Additional service options, do one or more of the following:
   - To enable enhanced multicast on this EVC, make sure that the Enhanced multicast box is checked.  
     Note: This option is available only if enhanced multicast is enabled on the port.
   
   - To enable additional MAC addresses on this EVC, make sure that the Additional media access control (MAC) addresses box is checked.  
     Note: This option is available only if Additional media access control (MAC) addresses is enabled on the port.

2. Click Continue. The Add an Ethernet virtual connection (EVC) window opens. Next, you'll add another location and port to connect to.

Add the second location for the second port

1. In the Add an Ethernet virtual connection (EVC) window, from the Street address list, click Add new location.
2. Click Continue. The Add a location window opens.
3. Enter the address information in the fields, and then click Continue.
4. The Location qualifies for service window opens. Do one of the following:
   - If the address is valid, and AT&T Switched Ethernet with Network on Demand is available at the site, the Continue button is available. Go to step 5.
   - If the address is not valid, or AT&T Switched Ethernet with Network on Demand is not available at the address, or if an active site exists, or a pending installation is in process at the address, you'll see an error message. You can cancel or try to verify another address.
   - If the address you enter shows multiple matches, select the address you want.
5. After you verify the address, click Continue.

Next, you select the contract you want to use for the second port.

1. Do one of the following:
   - If you have multiple contracts, you see the Select a service contract window.  
     Select the service contract you want to add this port to. Then, click Continue.
• If you have only one service contract, you see the Service contract details window. Click **Continue**.

2. The **Add port** window opens.

### Specify service details for the second port

In the following sections, add your service details, such as the type of port interface and port bandwidth you want for the port at the second location.

#### Select additional location details

In the **Add port** window, the address is automatically filled in with the location of the site you entered.

If you have optional information, such as floor, building, or room, you can add it. These details help our installer find your location.

1. Enter the information in the **Additional location details** field (Optional). You can enter location information, such as room or suite number that helps our installer find your exact location.

2. If the location you entered has multiple floors, in the **Floor** field, enter the floor number where the port will be installed.
   
   **Note:** If the building has only one floor, this field doesn’t appear. If the building has multiple floors, this field is required.

3. Click **Continue**. The Add port window refreshes.

#### Select port bandwidth

The port bandwidth you select determines how much data can flow through the port.

• To change your port bandwidth, under **Select your port bandwidth**, decrease or increase the speed. For more precise control, use the (+) and (–) buttons.

**Note:** For speeds greater than 1Gbps, contact your AT&T representative for availability at your location.

The following table shows the port bandwidth increments that you can choose for different physical ports. The equipment at your site may limit your bandwidth. If you want a higher bandwidth than your equipment allows, contact your AT&T representative.

<table>
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<tr>
<th>Physical port bandwidth</th>
<th>Bandwidth increments</th>
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</thead>
<tbody>
<tr>
<td>100Mbps</td>
<td>2Mbps, 4Mbps, 5Mbps, 8Mbps, 10Mbps, 20Mbps, 50Mbps, 100Mbps</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Physical port bandwidth</th>
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<tbody>
<tr>
<td>1Gbps</td>
<td>2Mbps, 4Mbps, 5Mbps, 8Mbps, 10Mbps, 20Mbps, 50Mbps, 100Mbps, 150Mbps, 250Mbps, 400Mbps, 500Mbps, 600Mbps, 1Gbps</td>
</tr>
<tr>
<td>10Gbps</td>
<td>1Gbps, 2Gbps, 2.5Gbps, 4Gbps, 5Gbps, 7.5Gbps, 9.5Gbps, 10Gbps</td>
</tr>
<tr>
<td>100Gbps</td>
<td>10Gbps, 15Gbps, 20Gbps, 25Gbps, 30Gbps, 35Gbps, 40Gbps, 45Gbps, 50Gbps, 60Gbps, 70Gbps, 80Gbps, 90Gbps, 100Gbps</td>
</tr>
</tbody>
</table>

Table 7: Bandwidth increments possible with different physical port bandwidths

**Note:** You’ll only see the bandwidth options that are valid for your physical port and are included in your contract.

Configuration options include the ability to select the port bandwidth according to the needs of the applications that use the connection. The bandwidth set for the physical port is referred to as the port bandwidth. You can choose from a variety of bandwidth increments, ranging from 2 megabits per second (Mbps) to 100 gigabits per second (Gbps), depending on the bandwidth available on the physical port you have. The port bandwidth can’t exceed the physical port capacity. For example, a 100Mbps port can have a maximum 100Mbps bandwidth.

If you’re not sure of the bandwidth level you need, start with your best estimate and see how it performs for your applications. If needed, you can change the bandwidth later. When you change the bandwidth, keep these points in mind:

- Upgrades are subject to availability of network capacity at the day and time of your order.
- Downgrades may cause congestion or packet loss if you reduce the port bandwidth below what’s required for your applications.
- Changes can be made as frequently as once per day.

### Select port interface

- In the **Port interface your equipment supports** list, select the type of port you want.

The port interface, also known as the network interface, determines how many Ethernet virtual connections (EVCs) you can associate with the port. The port type also determines the maximum distances that data can be reliably transmitted.

You can use electrical wiring for speeds up to 1Gbps, but a port bandwidth above 1Gbps requires fiber optic cable. To learn more, see the **Inside wiring and equipment for AT&T Switched Ethernet Service with Network on Demand** guide.
**Note:** For speeds higher than 1Gbps, contact your AT&T representative for availability at your location.

This table shows the number of EVCs supported for each port type and the maximum distance supported by the port type.

<table>
<thead>
<tr>
<th>Port type</th>
<th>Number of EVCs per port</th>
<th>Maximum distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>100Mbps electrical</td>
<td>Up to 8 EVCs</td>
<td>Up to 300 feet/91 meters*</td>
</tr>
<tr>
<td>1Gbps electrical</td>
<td>Up to 64 EVCs</td>
<td>Up to 300 ft./91 m*</td>
</tr>
<tr>
<td>1Gbps single-mode optical</td>
<td>Up to 64 EVCs</td>
<td>Any distance*</td>
</tr>
<tr>
<td>1Gbps multi-mode optical</td>
<td>Up to 64 EVCs</td>
<td>Up to 1,000 ft./304 m*</td>
</tr>
<tr>
<td>10Gbps single-mode optical</td>
<td>Up to 508 EVCs</td>
<td>Any distance*</td>
</tr>
<tr>
<td>10Gbps multi-mode optical</td>
<td>Up to 508 EVCs</td>
<td>Up to 1,000 ft./304 m*</td>
</tr>
<tr>
<td>100Gbps single-mode optical</td>
<td>Up to 4,089 EVCs</td>
<td>Any distance*</td>
</tr>
<tr>
<td>100Gbps multi-mode optical</td>
<td>Up to 4,089 EVCs</td>
<td>Up to 10,000 ft./3,048 m*</td>
</tr>
</tbody>
</table>

Table 8: Number of EVCs and maximum distances supported by port types

*The distance from your router to the AT&T equipment in the building. The distances listed provide a cushion for the actual wire distance limitations.

### Select access speed

Access speed is a measure of how fast data can be transferred through a port. **Note:** This option applies to ports outside the AT&T region/franchise area only. This doesn't appear for ports within the AT&T network.

- Under **Access speed**, decrease or increase the speed. For more precise control, use the (+) and (−) buttons.

### Select Class of Service (CoS)

- From the **Class of Service (CoS) for this connection** list, select the CoS that you want.

The CoS you select establishes the thresholds for latency, jitter, and packet delivery rate for your port, as shown in this table. For more information about the service-level...
agreement, see Section 3 - Service Level Agreement in the AT&T Switched Ethernet Service Guide.

Thresholds for the various CoS options are shown in this table.

<table>
<thead>
<tr>
<th>Class of Service</th>
<th>Latency (one way)</th>
<th>Jitter</th>
<th>Packet delivery rate</th>
<th>Network availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-critical high</td>
<td>37ms</td>
<td>N/A</td>
<td>99.50%</td>
<td>99.99</td>
</tr>
<tr>
<td>Business-critical medium</td>
<td>30ms</td>
<td>N/A</td>
<td>99.90%</td>
<td>99.99</td>
</tr>
<tr>
<td>Business-critical high</td>
<td>20ms</td>
<td>N/A</td>
<td>99.90%</td>
<td>99.99</td>
</tr>
<tr>
<td>Interactive</td>
<td>13ms</td>
<td>10ms</td>
<td>99.95%</td>
<td>99.99</td>
</tr>
<tr>
<td>Real-time</td>
<td>5ms</td>
<td>3ms</td>
<td>99.995%</td>
<td>99.99</td>
</tr>
</tbody>
</table>

Table 9: Specifications for the different classes of service

Descriptions of the different classes of service are shown in this table.

<table>
<thead>
<tr>
<th>Class of Service</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-critical high</td>
<td>Supports low-priority business applications that require more tolerance for delay and availability.</td>
</tr>
<tr>
<td>Business-critical medium</td>
<td>Supports business data applications that require moderate tolerance for delay and less sensitivity to jitter.</td>
</tr>
<tr>
<td>Business-critical high</td>
<td>Supports most business data applications that require moderate tolerance for delay and more sensitivity to jitter, needing a higher priority than business-critical medium.</td>
</tr>
<tr>
<td>Interactive</td>
<td>Supports high-priority business data applications or jitter-sensitive applications, such as voice and video.</td>
</tr>
<tr>
<td>Real-time</td>
<td>Supports high-priority business data applications that require minimal loss, are latency-sensitive, and require jitter, including voice and video.</td>
</tr>
</tbody>
</table>

Table 10: Descriptions of each Class of Service

**Specify port designation**

- Under **Port designation**, select either **Port-based** or **VLAN-based**.
Note: When you select your port designation, consider your choice carefully. If you order one configuration and later decide you want a different configuration, it requires you to order a new port, and the existing port is disconnected.

Port-based—The port is associated with only one EVC. All traffic is passed on to one or more other ports on the one EVC, based on the MAC address and without regard to your assigned virtual local area network ID (VLAN ID) (if used).

VLAN-based—Also known as service multiplexing. VLAN-based service supports connections to multiple EVCs over a single port connection. All traffic is passed on to the other ports on any of the EVCs based on your assigned VLAN IDs. VLAN ID assignments must follow the AT&T allowed VLAN numbering limits.

Choose VLAN-based when you want the AT&T network to partition traffic between EVCs. Partitioning is created based on the VLAN IDs you assigned to each EVC. The AT&T network uses the VLAN ID to identify the appropriate EVC for the traffic, and then uses the destination MAC address for frame forwarding within the indicated EVC.

VLAN-based service is less common than port-based service, because VLAN-based ports are typically required only when creating multiple (EVCs) over a single physical infrastructure. You can mix VLAN and port-based connections in your network. For example, you might have a host site that needs to communicate with two separate and distinct groups of remote sites. The host could be VLAN-based, while the remote sites could be port-based.

Select regulatory jurisdiction

Select whether the endpoints of the traffic on your port are primarily inside or outside of the state. This includes both internet and international traffic.

- Under Estimated 10 percent or more of your network traffic goes outside the state (jurisdiction), select one of the following:
  - When more than 10% of your network traffic originates from or is destined to an endpoint located outside the state, select Yes (interstate).
  - When less than 10% of your network traffic goes outside the state, select No (intrastate).

AT&T uses your jurisdiction selection to determine which regulatory agency may have authority over the service. It is also used to assess the required government fees or surcharges that may apply to this port.

Enable enhanced multicast (optional)

You can enable enhanced multicast for this port if it’s part of your contract.

Note: If you want to have enhanced multicast added to your contract, contact your AT&T representative.
• To enable enhanced multicast on your port, under Additional service options, check the Enhanced multi-cast box.

Add additional media access control (MAC) addresses (optional)

You can increase the limit of MAC addresses from 250 to 500 on each multipoint EVC on the port. This setting is offered on a per-port basis. When you increase the limit to 500, you can set 500 MAC addresses on any multipoint EVC on the port. This setting does not apply to point-to-point EVCs.

Note: There is an additional fee for adding MAC addresses.

• To increase the limit to 500 MAC addresses, under Additional MAC Addresses, check the Additional media access control (MAC) addresses box.

Choose AT&T install or self-install

Basic inside wiring from AT&T includes up to 328 feet (100 meters) of electrical wiring or 500 feet (152 meters) of fiber optic interface cabling. There’s no one-time charge for AT&T to install your inside wiring. Limitations do apply. Any one-time and monthly charges for your order appear in your Cart before you checkout.

1. If you want AT&T to install your inside wiring, under Additional service options, check AT&T to install inside wiring.
   Note: This option isn’t available for ports outside the AT&T region/franchise area.
   For more information about AT&T inside wiring, including warranty and pricing, see Service Attachment to AT&T Network on Demand Pricing Schedule for AT&T Inside Wiring and the Inside wiring and equipment for AT&T Switched Ethernet Service with Network on Demand guide.
   If you don’t already have cabling installed from your property line into your building, you can hire a vendor to install it, or you can have AT&T install it for you. For more information, see Entrance facility construction.

2. If you want AT&T to install the cabling from your property line into your building, check AT&T to provide Entrance Facility Construction (EFC). Note that this option is only available if you have entrance facility construction on your contract.
   Note: This option isn’t available for ports outside the AT&T region/franchise area.

3. Click Continue. A message appears on the Manage AT&T Switched Ethernet page that confirms you’ve added a port to the location.

4. Click OK.
Provide contact information for the second port

It’s important that you provide correct contact information so AT&T technicians can gain access to the building to establish network connectivity to the AT&T equipment. AT&T asks you to supply an alternate contact if one is available.

To begin installation, an AT&T technician attempts to reach the building contact on the business day following the order. It’s important that the building contact is available that day. Installation of service may take between three to five business days.

In some cases, the building owner may need to grant AT&T access to restricted areas at the location. When you provide the building contact information, it helps AT&T to complete all required activities on the scheduled date.

1. On the Manage AT&T Switched Ethernet page, in the Contacts section, next to Building contact, click the Edit icon. The Edit contact window opens.
   Note: The building contact provides building access.
2. Enter the contact information and then click Save. A message appears indicating that the contact information is updated.
3. Click Ok.
4. Next to Location technical contact, click the Edit icon. The Edit contact window opens.
5. Do one of the following:
   • If the location technical contact is the same as the building contact, from the list, select Building contact.
   • If the location technical contact isn’t the same as the building contact, in the fields, enter the contact information.
6. Click Save. A message appears indicating that your contacts have been updated.
7. Click Ok.
8. Next to Alternate contact, click the Edit icon. The Edit contact window opens.
9. Enter the contact information, and then click Save. A message appears indicating that your port details and contacts are updated.
10. Click Return to EVC. The Add EVC segment window opens.

Add the second EVC segment

Complete the following steps to specify the settings for the second EVC segment

Select the bandwidth for the second EVC segment

The bandwidth you select determines how much data can flow across the EVC segment.

- To change your bandwidth, in the Add EVC segment window under Bandwidth/Committed Information Rate (CIR), decrease or increase the speed. For more precise control, use the (+) and (−) buttons.
The bandwidth doesn’t need to match across EVC segments. The bandwidth you select for an individual EVC segment should be based on the expected data requirements of the applications that will transmit data over the segment.

**Note:** You can only select a bandwidth that’s available at the port. For questions, contact your AT&T representative.

**Select Class of Service (CoS) for the second EVC segment**

- From the Class of Service list, select the CoS that meets your network performance needs.

The CoS you select establishes the thresholds for latency, jitter, and packet delivery rate across your EVC segment, as shown in this table. Generally, the CoS for the EVC segment should match the one you ordered for the port. For more information about the service-level agreement, see Section 3 - Service Level Agreement in the AT&T Switched Ethernet Service Guide.

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</tr>
</tbody>
</table>

Table 12: Descriptions of each Class of Service

**Virtual local area network ID for the second EVC segment**

The virtual local area network ID (VLAN ID) identifies the connection made between ports. The AT&T network uses the VLAN ID you assign to the EVC to partition traffic between VLAN-based ports. VLAN IDs can range from 2 to 4089. The VLAN ID field appears only if you’re adding an EVC to a VLAN-based port.

- In the VLAN ID field, enter a VLAN ID, if applicable.

**Add additional service options (optional)**

1. Under Additional service options, do one or more of the following:
   - To enable enhanced multicast on this EVC, make sure that the Enhanced multicast box is checked. **Note:** This option is available only if enhanced multicast is enabled on the port.
   - To enable additional MAC addresses on this EVC, make sure that the Additional media access control (MAC) addresses box is checked. **Note:** This option is available only if Additional media access control (MAC) addresses is enabled on the port.

2. Click Save. A message appears indicating that you’ve completed the required network configurations.
3. Click Review order. The Review order page appears.
4. Review the information. Then, click Submit order. An order submitted confirmation message appears.

After you complete your order, we’ll schedule the port activation for you. We’ll notify you within eight business days of placing your order. We’ll email updates and send notifications.

To see these messages and notifications:

- On the Business Center homepage, at the top of the page, click Messages.

**Note:** After we schedule your port activation date, from the Orders widget, you can reschedule it up to two times.
Activate new port

If your site has AT&T fiber optic cable and qualifying equipment in place, we'll send a technician to install the port within three to five business days of completing your order, even if your port activation date is scheduled for a later time.

If your site needs optical fiber or equipment installation, an AT&T engineer contacts you within eight business days to set up a site visit to your location for site requirements (see Prepare your location). After the site visit, we'll send you an email to schedule your activation. After the fiber optic cable or new equipment is installed, our port installer completes the port installation within two business days, even if the port activation is scheduled for a later time.

After the port is active, you can order additional Ethernet virtual connections (EVC) for the port.

Prepare your location

Typically, your site preparation addresses the following:

- Entrance facility construction
- Inside wiring
- Equipment space
- Power and grounding

Entrance facility construction

If this is the first port that you're adding to AT&T Switched Ethernet Service, you need cabling from your property line into your building. You have the choice to manage the entrance facility construction yourself or have AT&T do it for you.

For more information, see the AT&T Entrance Facility Construction video.

You need to provide a path for cable from the property line into the building. You need a clear underground or aerial path from the property line where AT&T or other access provider facilities exist to the telephone equipment room that you specify to support the entrance fiber. If you hire vendors to do the entrance facility construction, make sure they install a conduit that’s a minimum of two inches wide with sweeping bends and a pull string.

Inside wiring

You need to provide the cable path between AT&T equipment to the building's demarcation handoff panel to your router (if inside wiring that supports the port interface you'll use isn't already in place). These path requirements may include available space in existing floor sleeves and conduits. The conduits must have a minimum two-inch width with sweeping bends and a pull string. For more information about inside wiring, see the
Inside wiring and equipment for AT&T Switched Ethernet Service with Network on Demand guide.

**Equipment space**

Typically, fiber transport equipment is installed in a temperature-controlled common area with access to the entire building. You need to get permission from the building owner for use of the common area. Equipment space requirements can include plywood backboard space for wall-mounted equipment or floor space for placement of a new equipment rack. If you choose to let AT&T handle the entrance facility construction, we can secure the AT&T FiberSM building terminal, also called the demarcation panel for you.

**Power and ground**

You need to provide permanent dedicated power for the AT&T equipment being installed. Power requirements specific to the equipment being installed can consist of nominal voltages, such as –48VDC, +24/-24 VDC, 110V, 125V, and 220V. The AT&T equipment should be installed within six feet of an AC electrical outlet.

You need to provide a valid #6 ground source for the AT&T equipment being installed. This ground wire needs to be attached to the closest ground rod (earth ground) or building steel and extend to where the equipment is installed.

If you choose to let AT&T handle the entrance facility construction, we can install a dedicated power outlet and ground, if needed.

**Site visit**

If necessary, we’ll visit your site to determine what’s needed for your installation. It’s important that you provide a local customer site contact who knows your site and can make decisions about what work needs to be done at the site. AT&T works directly with the site contact throughout the installation and activation process.

After the AT&T engineer completes a site visit, we’ll provide you with site preparation details.

After the site visit, here’s what happens next:

- We’ll send you an email from AT&T engineering with the site readiness requirements.
- You’ll ready your site for installation. It’s important your site is ready for us to deliver the service. Delays in getting your site ready could impact your installation and service activation dates. If you experience a delay in readying the site by the negotiated site ready date, notify your AT&T Ethernet order manager and the AT&T engineer for the order.