

Establishing ECN Connectivity

Connected Entity Information Guide

(U.S Connected Entity Only)

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1. Introduction

The California ISO (CAISO) is a not-for profit public benefit corporation charged with managing the flow of electricity along California's high voltage electric power grid. The mission of the CAISO is to plan and operate a safe and reliable electric system, provide open and non-discriminatory electric transmission services, and facilitate appropriate investment in electric transmission and generation infrastructures.

AT&T provides the data network infrastructure that supports the CAISO entities that conduct business with the CAISO, and Western Electric Coordinating Council (WECC) participants that require connectivity to the WECC Operations Network (WON). This AT&T network infrastructure is commonly referred to as the Energy Communications Network (ECN). The ECN utilizes AT&T's core backbone and AT&T VPN (AVPN) technology.

The entities that connect to the ECN are commonly referred to as Connected Entities (CEs). CEs can require network connectivity to support various business purposes. Some common CE types include Remote Intelligent Gateways (RIGs), Area Control Centers (ACCs) using Inter Control Center Communications Protocol (ICCP), Revenue Meters, Scheduling Coordinators (SCs), and WON participants.

AT&T offers a variety of transport and managed router service options that are detailed in this guide. AT&T will provide Instructions and forms to assist CEs obtaining an ECN connection.

Please note: the information contained in this document does not apply to CE sites located outside the United States of America. If a Connected Entity is located in either Mexico or Canada, please contact the designated AT&T account team representatives listed in Section 7 of this document for assistance.

2. Types of Service

AT&T offers three (3) access options:

1) **T1 1.544mbps AVPN**

AVPN PoP Diversity & SDO options available upon request*

2) **10mbps Ethernet Access to AVPN (where available)**

AVPN PoP Diversity & SDO options available upon request*

3) **AT&T Network Based IP VPN Remote Access (ANIRA)** – Utilizes an Internet connection (i.e., broadband/DSL/wireless etc.) as the local access.

| Access Options | Installation Cost | Monthly Recurring Cost |
|-------------------|--|--|
| T1 (1.544mbps) | Waived if kept for a minimum of 12 months | Refer to the Connected Entity (CE) Order Form – 1.544mbps (T1) for AVPN |
| Ethernet (10mbps) | Varies depending on the CE's access provider | Refer to the Connected Entity(CE) Order Form – 10mbps Ethernet for AVPN |
| ANIRA | Varies depending on the CE's access provider. (Refer to the AT&T Network Integration Connected Entity Help Desk Services.) | Refer to the Connected Entity (CE) Order Form – ANIRA (Remote Access solution) |

AT&T provides router installation and management as further described in the Statement of Work and Order Form. AT&T purchased and managed router options provide the end user with a new router designed and set up for their specific application. For T1 (1.544mbps) and Ethernet (10mbps) options, a modem and telephone line are required.

2.1 AVPN Diversity Options: (PoP & SDO)

When a customer has more than one (1) port, they can request that those ports be diverse from each other. Two (2) available diversity options are identified below.

- 1) **MPLS Port PoP Diversity** ("Point of Presence" or "Central Office") and **MPLS Port Service Diversity option** (SDO). SDO assigns multiple ports onto different switches in the same central office. **The PoP Diversity option** puts the ports into different central offices (usually different cities).
- 2) **Switch Diversity and PoP Diversity.** For CEs with multiple sites, **Switch Diversity** places groups of sites on diverse switches in the same central office (or "PoP"); **PoP Diversity**, places groups of sites into diverse central offices (or "PoPs"), which are usually in different cities.

The various access options provide connectivity back to the core AT&T ECN. The following table displays the access options. CEs are responsible for any required high voltage protection equipment and extensions beyond AT&T's responsibility for services as set forth in the CE agreement.

2.2 Managed Services

For Managed Services, select the appropriate Site Type as identified below. Specific details including monthly management and maintenance charges detailed on the Connected Entity Order Form – 1.544Mbps (T1) for AVPN and 10Mbps Ethernet for AVPN.

| Option | Details |
|---|---|
| Option 1 – Site Type 1 | Cisco 4321 router (T1 HWIC) |
| Option 2 – Site Type 2 | Cisco 4351 router (T1 HWIC) |
| If CE requires additional equipment for router options 1 -3 above, CE should select from option 4 - 8 below. | |
| Option 3 – Site Type 3 | Cisco 4-port Ethernet switch interface card |
| Option 4 – Site Type 4 | Cisco 4-port Async Serial HWIC |

| Option | Details |
|---|---|
| Option 5 – Site Type 5 | Cisco 8-port Async Serial HWIC |
| Option 6 – Site Type 6 | Cisco 16-port Async Serial HWIC |
| Option 7 – Site Type 7 | Additional T1 HWIC |
| Option for Managed-in-place only (for Management and Maintenance Services of CE existing legacy Equipment) | |
| Option 1 – Site Type 8 | Cisco 1941 router (T1 HWIC with dial backup) |
| Option 2 – Site Type 9 | Cisco 2911 router (T1 HWIC) |
| Option 3 – Site Type 10 | Cisco 2921 router (T1 HWIC) |
| Option 4 – Site Type 11 | Cisco 4321 router (T1 HWIC) |
| Option 5 – Site Type 12 | Cisco 4351 router (T1 HWIC) |
| Option 6– Site Type 13 | Out-of-life Equipment (Management Only = subject to availability) |

3. How to Establish ECN Connectivity

To order service, please complete the following steps:

1) **New Resources**

For new resources, Resource Owners must follow the ISO New Resource Implementation (NRI) process. The process is documented here:

<http://www.caiso.com/Documents/NewResourceImplementationGuide.doc>

During the NRI process the ISO NRI team will provide the Resource Owner with an ISO Project ID. The Resource Owner will then contact the AT&T Account Team (**listed in Section 7 of this Guide**) to initiate the connectivity process.

For connection requests other than new resources

Please contact the California ISO Service Desk and **888-889-0450** to create an ECN connectivity service request ticket. This ticket will be forwarded to California ISO's Network Services team for review; once the service request ticket is reviewed, an ISO Network Services representative will make contact with the requestor and coordinate the service request with the AT&T Account Team.

- 2) The AT&T Account Manager will contact and assist you with completing the required documentation. The following documentation is required for ECN connectivity:
 - Sign a new US Master Agreement
 - One (1) signed copy of the CE Order Form
 - High Voltage Protection form 1039A
 - One (1) signed copy of the AT&T Network Integration Connected Entity Service Desk Services (this document must be included if you are choosing the ANIRA option)
 - All pages of these documents must be sent to the AT&T Account team for processing
 - AT&T will return a countersigned copy of each document upon customer request.
- 3) The AT&T Account team will ensure that your ordering packet is complete and will verify the site address.
- 4) The AT&T Provisioning team will contact you to confirm the order information.

- 5) Your Local Exchange Carrier (LEC) will determine a due date and will communicate the due date to the AT&T Provisioning team.
- 6) The AT&T Implementation Service Manager will notify your site contact and the AT&T team when the access circuit has been delivered. If you order a Managed Router, the AT&T LCM team will inform you of the delivery date.
- 7) The AT&T Business Manager will work with your site contact to arrange for an installation date and time and will schedule a Field Technician.
- 8) Once the circuit and the necessary hardware are installed, the Provisioning team will work with you to confirm your connectivity to the ECN.
- 9) 24 hours after your installation is complete, responsibility for maintenance/monitoring services of the circuit will be transitioned to the Global Client Support Center and billing will begin.

4. Provisioning Timelines

The average time to provision T1 & ANIRA orders is 30 to 45 days. If special construction is required at your site, the installation interval will vary.

The average time to provision Ethernet orders is 90 to 120 days. If special construction is required at your site, the installation interval could be extended.

5. Technical Overview

Once a completed Order Form is received by the account team, the AT&T Business Manager will contact the CE and make necessary implementation arrangements, based on the type of service requested from AT&T (Managed, Manage-In-Place or Access Only).

- If you requested managed router services, the AT&T Business Manager will order the equipment, dispatch an AT&T technician to install the equipment, configure the router and test router connectivity to the ECN.
- If you requested management of an existing router, the AT&T Business Manager will work with you to bring your location onto the ECN.
- If you requested access only, AT&T's Provisioning team will provide you with your private IP address information. Please note that for this option, you are responsible for configuring your own equipment.

- IP addresses are assigned from an IP pool, which is maintained by the LCM team.

6. How to Request General Help / Reporting Service-Related Issues

| Type of Help | Availability | Who to Contact | Contact Information |
|------------------|--------------------------------------|--------------------|---------------------|
| For general help | 24 hours per day, 7 days per week | CAISO Service Desk | 1-888-889-0450 |
| MACDs* | 24 hours per day, 7 days per week | CAISO Service Desk | 1-888-889-0450 |

*Moves, Adds, Changes, and Deletes (MACDs) as defined in the CE Managed Service Statement of Work.

The following table identifies contact information in the event you have an Incident or Problem related to the Services you receive from AT&T.

| Type of Help | Availability | Who to Contact | Contact Information |
|--|--------------------------------------|--------------------------|---|
| For Managed Router Service | | GCSC | 1-888-504-4001 |
| For escalations - request GCSC Team Leader engage the GCSC Operations Manager on duty. | | | |
| For Non-Managed (Access Only) AVPN Sites – used to report problems or secure status updates | 24 hours per day, 7 days per week | Express Ticketing Portal | https://expressticketing.acss.att.com/expressticketing/ |

| Type of Help | Availability | Who to Contact | Contact Information |
|------------------|--|---------------------------------------|--|
| | | AT&T VPN Customer Support Center | 1-866-287-6288 (within the US) +1-770-750-7572 (outside the US) |
| | 24 hours per day, 7 days per week | AVPN Ticket Status (Automated System) | 1-866-305-5164 |
| For ANIRA | | | 1-855-390-0652 OR caisoservice@dsrglobal.com |

7. AT&T Contact Information

Please contact your account team to initiate the order process.

| AT&T Contact | Address | Contact Information |
|---------------------------------|--|--|
| Primary: Sonia Fernandez | 2700 Watt Avenue Room 4292 Sacramento, CA 95821 | 916-335-4119 Sf6525@att.com |
| Secondary: Alan Holman | 2700 Watt Avenue Sacramento, CA 95821 | 916-505-1959 ah0919@att.com |