

## **AT&T VPN Express Service**





#### Commitment to Enterprise Networking

AT&T VPN Express Service Overview

**AT&T VPN Express Options** 

**AT&T VPN Managed Options** 

**SLAs** 

Web-based Reporting and eServicing

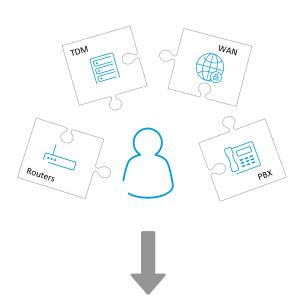
**Awards and Accolades** 



### The evolution to solutions

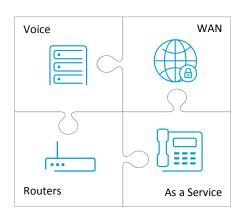
### From...

Complex, multi-vendor, corporate managed solution



### ...to

Reduce complexity and potentially lower costs





### Integrated solutions

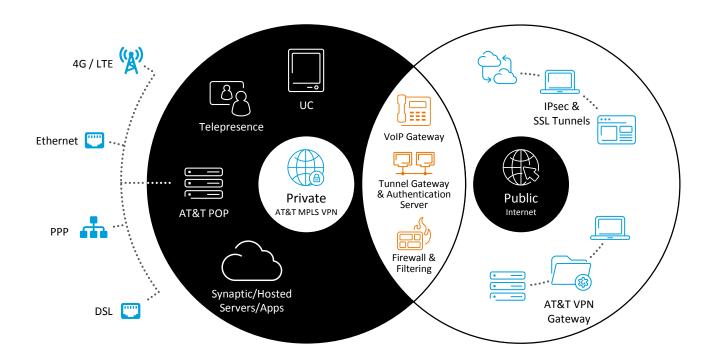
- MPLS network foundation
- Voice and collaboration
- Remote locations
- Mobile productivity apps, fixed mobile convergence
- End –to-end management
- Security services



Integrated and automated experience - One AT&T



### AT&T VPN Express Service | Basics + app gateways + extra reach



#### **VPN**

- Network-based (MPLS)
- Managed and unmanaged options

#### Access

- FR Encap/PPP/Ethernet/PL
- Broadband/DSL
- Wireless

#### Value-Added

- Voice over IP
- IP Telephony and Managed LAN Service
- · Video conferencing
- Cloud-based apps & infrastructure

#### **Security**

- Remote access & managed tunneling
- · Managed firewalls
- · Intrusion detection



### AT&T VPN Express services principles | Enabling business success

## Application enablement

- Compatible and flexible service components
- Easily add locations and applications over IP
- Multiple access options

## Streamline IT operations and speed up application deployment and scaling

#### **AT&T Integrated Service Portfolios**

- Access and Local Services
- Enterprise Mobility
- Hosting Services
- IP and VPN Services
- Security services and Business Continuity
- Voice over IP

## Integration with wireless

- Mobile devices are an extension of corporate VPN
- Remote access virtually any where, on any device
- Single global client, in many operating systems, with same user experience

Empowering mobile employees with tools and resources away from the office

#### **End-to-End SLAs**

- Latency (within and between regions)
- Data Delivery (within and between regions)
- Site Availability
- Provisioning
- Time to Restore
- Jitter

## Management capabilities

- Industry-leading customer visibility, control and command portal and tools
- Flexible management options
- On demand online resources

Reduce operations
Costs and save time

### Integrated, Commercially Available Tools in a Single Platform

- Intelligent Correlation Engine
- See and React to Degradation



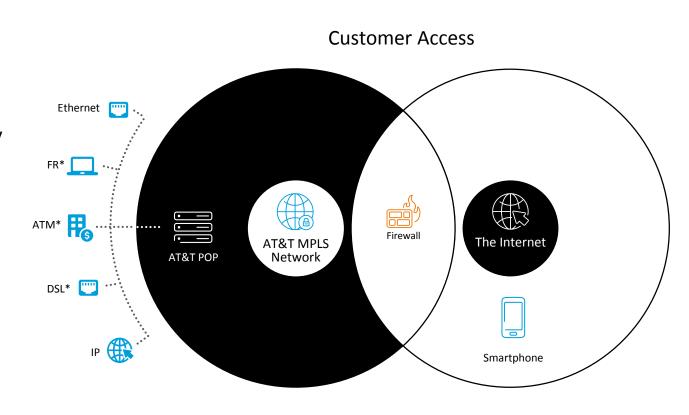
## AT&T VPN Express Service



### **AT&T VPN Express Service Overview**

#### **Benefits**

- Application awareness
- Scalability
- Agile, reliable, flexible any-to-any connectivity
- Easy access to reporting / tools
- Industry-leading Service Level Agreements
- Meshed network with Class of Service
- Built-in Disaster Recovery

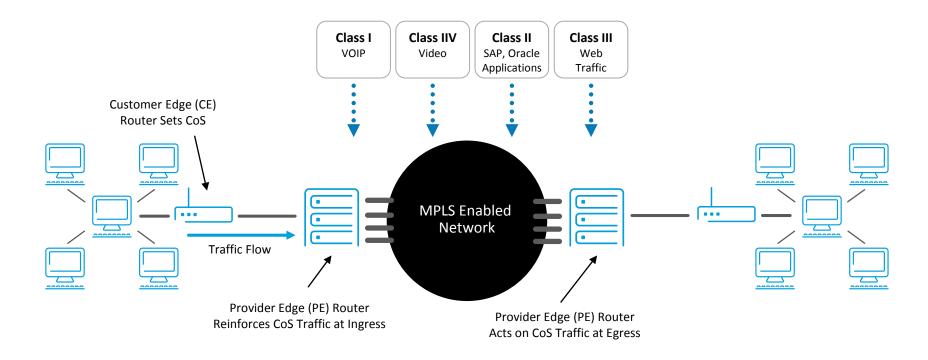


\*AT&T VPN Frame, ATM & DSL Ports are on Sales Hold and Unavailable to New Customers



### **Class of Service**

### Prioritizing your traffic



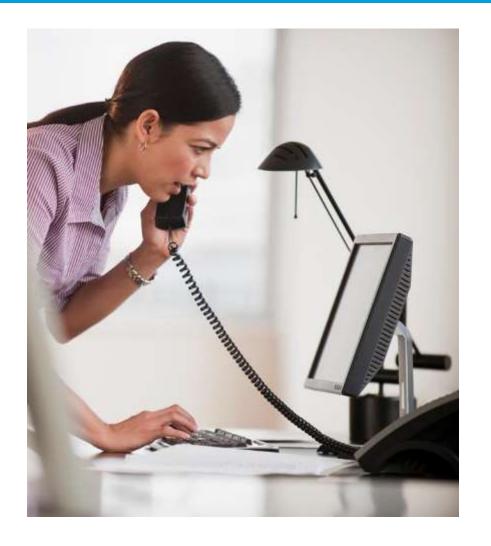


### Smarter Network | IPv6

IP Protocol Version 6 (IPv6) enables a larger, more robust IP Address space to accommodate the growing demand for IP-enabled devices currently used throughout the world. AT&T VPN IPv4/IPv6 Dual Stack enables transitioning from an IPv4 addressing space to a IPv4/IPv6 addressing space. Dual Stack ports can support both IPv4 & IPv6.

#### Benefits of IPv6

- Expands address space
- Simplifies network management and routing
- Platform for future applications
- Integrates end-to-end security
- Enhances mobility applications



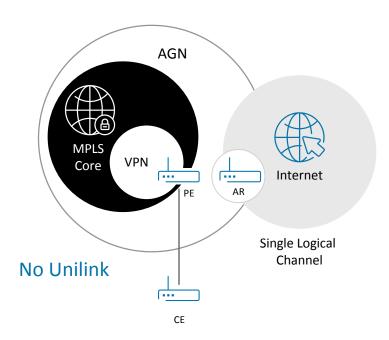


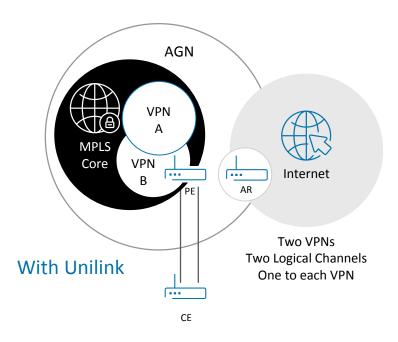
## AT&T VPN Express Feature Options



### Unilink

### Multiple Logical Channels on a single MPLS port





CE = Customer Edge Router

PE = Provider Edge Router

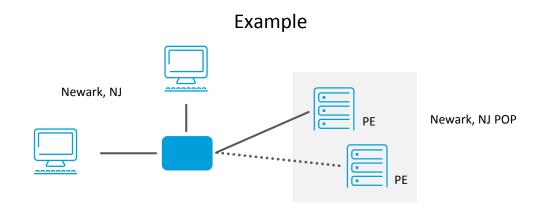
AR = Access Router



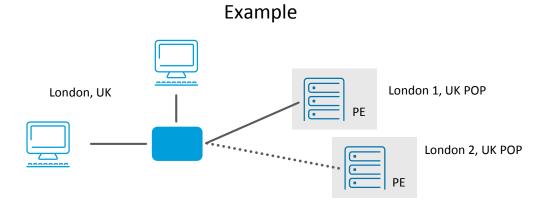
### **Diversity options**

### Global availability

MPLS Port Service Diversity Option

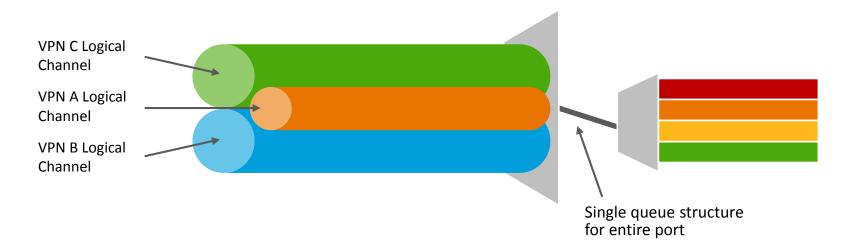


MPLS Port POP Diversity





### Port Level CoS on FR Encap IP Ports



- Logical Channels are defined without a predetermined bandwidth
- All Logical Channels can simultaneously burst to port
- COS Profiles are applied to the port
- Site-to-site performance across ALL Logical Channels s are affected when the port is congested
- Available on FR Encap IP ports



## AT&T VPN Express Managed Feature

**Options** 



### Benefits of a managed CPE solution

#### **Experienced Engineering and Operations Personnel**

- Network design and consultation
- Service Delivery and Service Assurance

### **Designated Global Project Implementation Manager for Large projects**

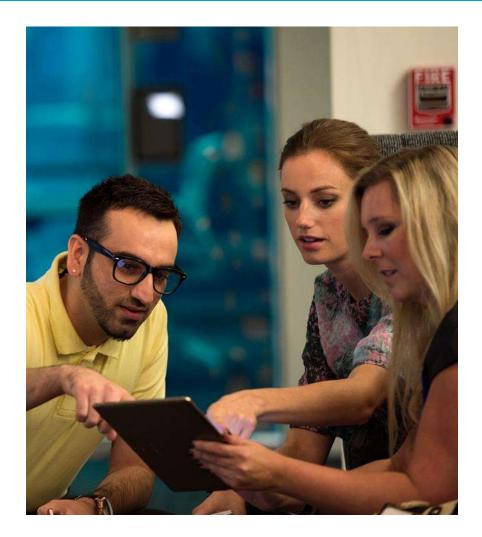
• Global Single Point Of Contact (SPOC) provides coordination and accountability for global implementation of project

#### **Order Managers (OMs) for site implementations**

- Local/Regional SPOC accountable for customer at site delivery level
- Responsible for all aspects of equipment and facilities delivery to the site (e.g. access circuit, Port, CSU, router, Test & Turn Up, etc.)

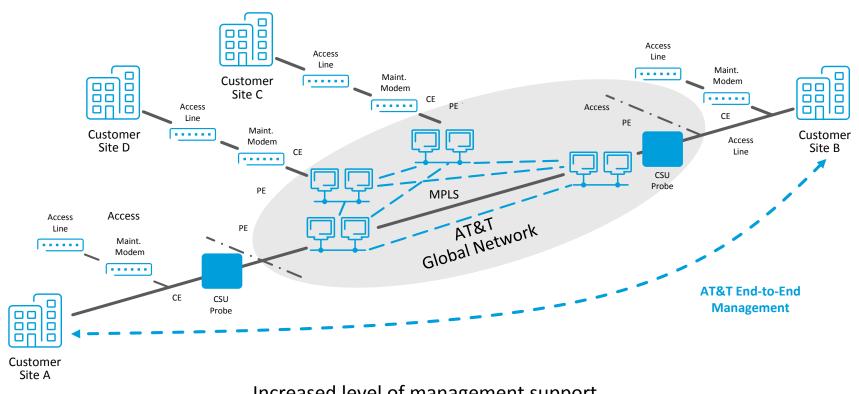
### **Proactive Monitoring, Diagnosis, Trouble Resolution and Notification**

- 24 x 7 x 365 proactive monitoring, ticketing, auto diagnosis and resolution of each site, circuit, and CPE
- Proactive notification of issues to the customer
- Resolution of identified router software bugs and configuration issues.
- Single point of contact for CPE, PTT, ILEC etc.
- Site to Site SLAs vs. Port to Port SLAs
- Increased visibility into network and performance issues, up to Application level reporting including near real time trouble shooting capabilities





### End-to-End management

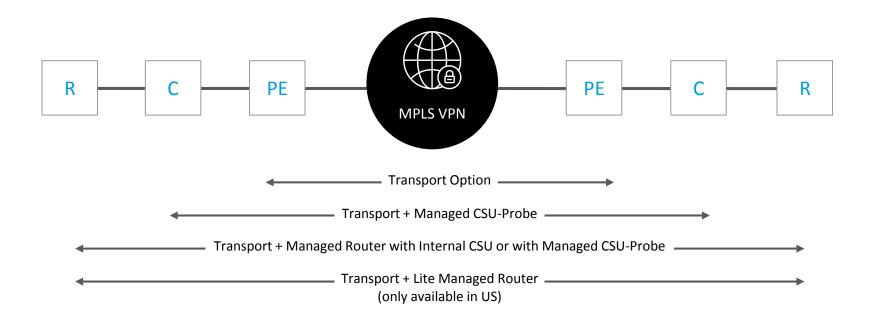








### Management options



#### **CPE** management options

- Basic Transport option
- Basic Transport plus a Managed Router with Internal CSU
- Basic Transport plus a Managed CSU-Probe with or without Enhanced Reports
- Basic Transport plus a Managed Router plus Managed CSU-Probe with or without Enhanced Reports
- Basic Transport plus a Lite Managed Router

#### **Support of hybrids**

- If Transport, all sites on the network required to be Transport
- If Managed, all sites on the network required to be Managed
- For a Managed network, the level of management can be selected by site.



### Managed CPE options to meet your needs

### With Managed Router

- AT&T technicians are provided onsite to cable, install and turn up Managed Router and related hardware
  - For customers with onsite technicians in US, option for customer selfinstall with AT&T telephone support
- AT&T provides and owns the Managed Router, eliminating need for capital investment by customer
  - For customers who need to keep the CPE on their books, option to order/own the new managed router
- Onsite 4 hour parts and labor support for hardware related problems with Managed Router.\*
  - Lite Managed Router option for customers with less stringent hardware fix times in US
- AT&T takes care of WAN interface, routing, traffic classification etc. so customer can focus on their core business and LAN IT functions
- Detailed Performance Reporting including Port, IP and Class of Service level utilization, data delivery, latency and jitter reports
- Required to deliver overlay services like IP-Telephony, Tele-Presence and others

## With Managed CSU-Probe with Enhanced Reports

- AT&T technicians are provided onsite to cable, install and turn up Managed CSU-Probe and related hardware
- Extends Performance SLAs out to customer sites
- Application level performance reporting and virtually real time trouble shooting capabilities from layer 1 through application layer
- VoIP reports including complete call detail records, call quality score
- Traffic capture capability on non-managed router sites
- Option to have managed CSU-probe only (without enhanced reports) for customers looking to extend SLAs to the sites but who do not require extensive reporting/troubleshooting capabilities.
- Available with or without Managed Router



<sup>\*</sup> See Service Guide for details

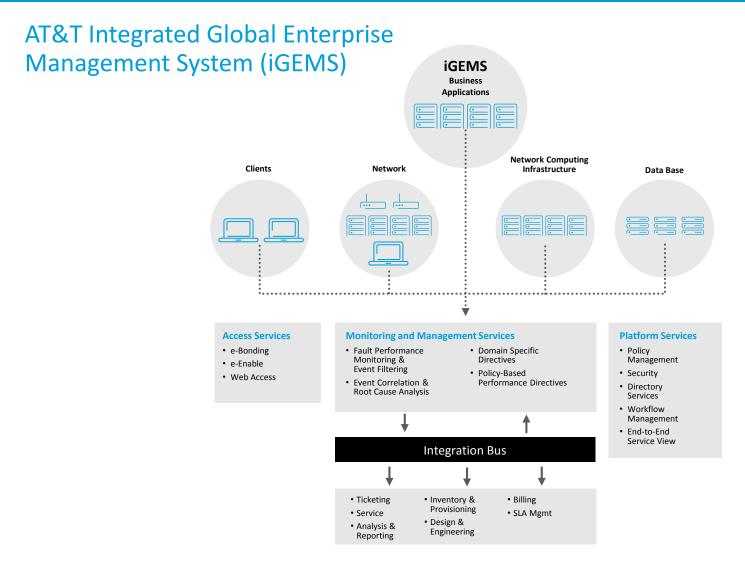
### Managed resiliency options

- Single Router, Single Access Line and ISDN
- Single Router, Dual Access Lines (Optional ISDN)
  - Load sharing or primary/ backup access lines
- Dual Routers, Single Access Line (Mandatory ISDN)
- Dual Routers, Dual Access Lines (Optional ISDN)
  - Load sharing or primary/backup access lines
- Each of the resilient configurations can have CSU-probe and Enhanced reports on one or both circuits





### Virtually seamless network management



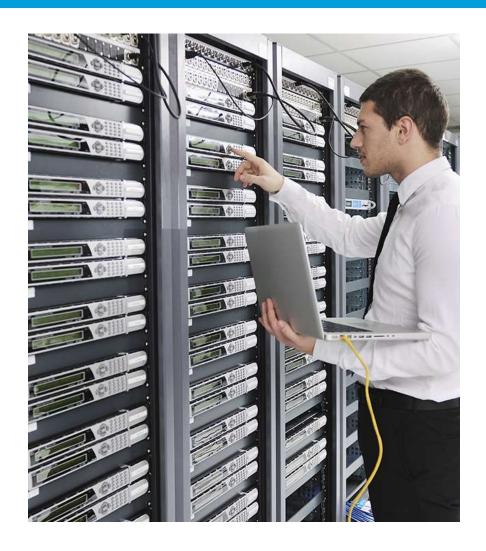


### Network diagnostics and maintenance

## Proactive Monitoring, Ticketing, Resolution and Notifications

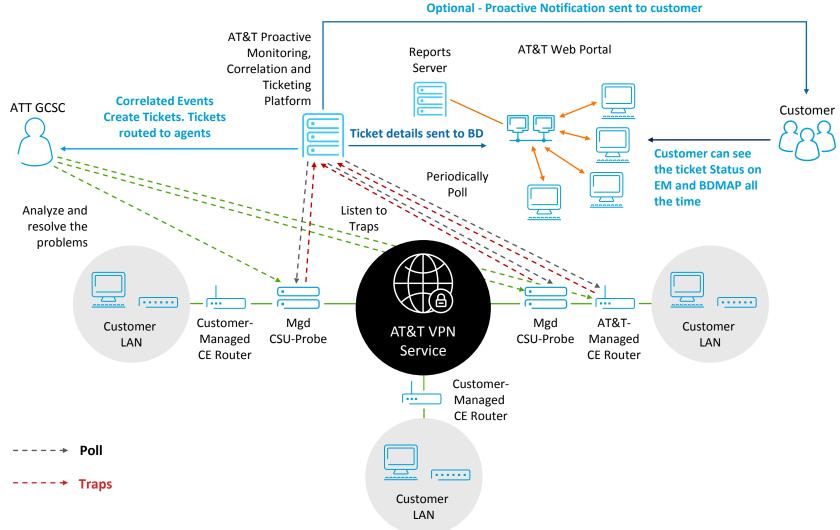
Monitor for up/down alarms on CPE, WAN/LAN physical and logical interfaces

- Monitors end to end connectivity to the CPE equipment up to the LAN interface on the CPE
- Keeps state of each interface, correlates events, creates tickets on outages
- Tickets are routed to the GCSC (Global Customer Support Center)
- Agents assigned to tickets proactively worked until resolved
- Engage Transport work center and access vendor as needed
- · Update eMaintenance Ticket log
- Ticket status and dates available via AT&T Web Portal
- Dispatch AT&T technicians to the site for break fix and CPE replacements
- Customers are notified proactively via Email, Text or voice mail, if customer chooses to receive the notification





### AT&T managed proactive ticketing process





### GCSC work force profile and service assurance

### AT&T associates and managers – available 24 x 7

#### **Entry Level – Tier1.5**

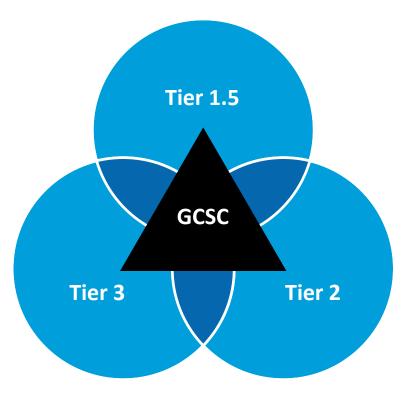
- Profile: College graduate or 10 years network management experience with Basic certification and training including: IPV6, Cisco, Juniper, Edgemarc, basic and advanced troubleshooting
- Service Assurance
  - Reactive and proactive incident management, client notification, and vendor management
  - Own incident from start to finish while continuously providing customer with progress status

#### Mid Level - Tier 2

- Profile: Cisco CCNA, CCNP, CCVP or Juniper JNCIA Certification with 1-2 years of experience within GCSC
- Service Assurance
  - Management of logical network issues: routing, switching, configurations, software bugs
  - Global or regional work center structure

#### **Expert Level – Tier 3**

- Profile: Cisco CCNP, CCVP, CCIE, Juniper JNCIE Router Expert with 5-10 years of experience within GCSC
- Service Assurance
  - Complex technical issues management including issues within the Core Network
  - Global "Follow the Sun" operational model



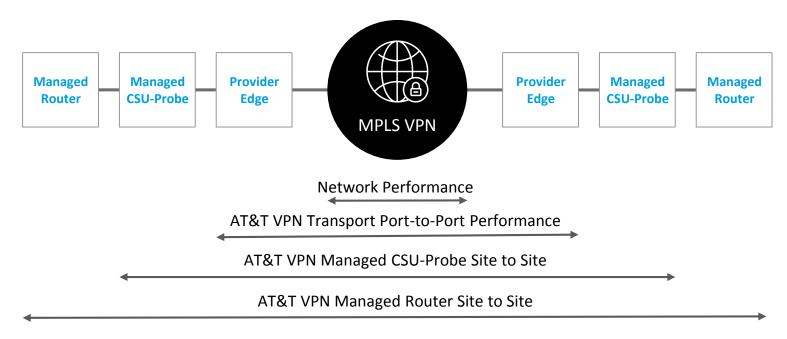


## AT&T VPN Express SLAs



### AT&T VPN Express Service Level Agreements (SLA)

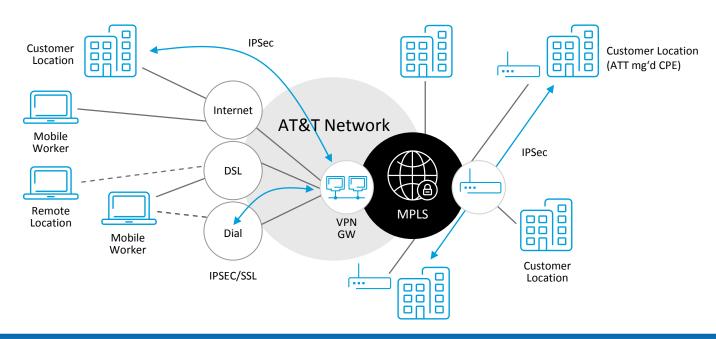
### Assuring network reliability and performance



- Demarcs vary by AT&T VPN service type
- Consult the AT&T VPN Service Guide for full Service Level Agreement details including SLA and country availability



### AT&T VPN Express with Value-Added Services



#### The VPN Solution that fits your needs today and in the future.

#### **Performance**

Application Performance
Management for your critical
business applications. End-to-end
performance management for
network components, transport
and applications.

#### **Agility**

AT&T Transport and
Access flexibility from Managed
Internet Service to Private Line
DSL Copper, Ethernet or Fiber.
Remote Access options, e.g.
broadband, cellular.

#### **Control**

AT&T Web Portal provides you a customized view into your managed infrastructure, including service ticket management, reporting, billing, and more.

#### **Security**

AT&T IP Security Services offers for your security needs for IP networking from Personal Firewall to Network-Based Firewall and Intrusion Detection.



# Web-based reporting and eServicing



### AT&T Web Portal

A consolidated, highly secure, reliable customer extranet. Manage your AT&T services conveniently via the Web – anytime, anywhere via a PC with Internet access.

To achieve our vision and enable you to manage your communication needs better, we are investing in leading-edge technology.

#### **Key Benefits**

- Focus on value-added, self-servicing tools
- Empowers our customers to manage their own telecom resources
- Simplify and redefine our customers' experience
- Lower their costs
- Generate revenue
- Save time
- Improve our customer's experience with AT&T tools

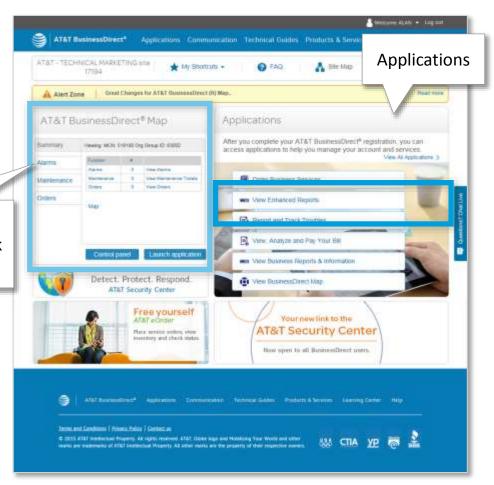




### **Customer Home Page**

- Customized Home Page
- Frequently used Applications
- User friendly navigation
- Support available online

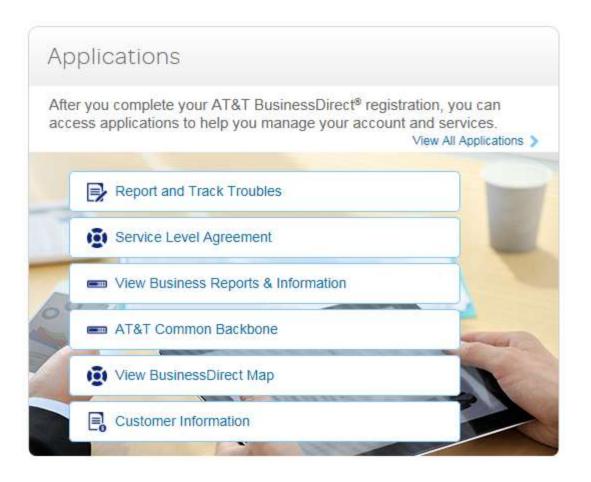
Alarms, Tickets, and Orders Summary with link to Network Map tool





### Applications menu

A full range of online tools available to you, just Click and Go!





### View Map

#### **Features**

- View your network at a glance on an electronic map of the world and get underlying detail at the click of a mouse
- View your inventory at the site and network level across AT&T services
- Receive proactive notifications and perform many functions – all in one place

### **Key Benefit**

 Work more efficiently by executing multiple tasks with a single tool





### **Report and Track Troubles**

#### **Features**

- Report a trouble and track its resolution quickly and conveniently
- All electronic tickets for AT&T services flow directly to AT&T back-end systems without human intervention, so troubles can be resolved significantly faster, enabling services to be restored sooner.
- Customers can check near real-time status information on their tickets, provide updates and escalate online.
- Customers can view a running thirteen month window of trouble ticket history from a reporting perspective to analyze trouble conditions.
- Launch circuit tests (US only)
- Save time on phone calls to report trouble or seek status.





### View Business Reports & Information | Managed router feature

- Analyze the performance of your network quickly, easily, any time
- Easily view current or historical performance
- Make informed decisions about your network

#### **Access Link**

Provides VPN port measurements obtained from the CE router WAN interface

#### **CE Router COS**

Provides bandwidth usage defined to Class Of Service (COS) and Logical Channel, with Policing measurements

#### **CE Router Performance**

Provides measurements pertaining to CE router buffer, CPU, and memory usage

#### LAN

Provides measurements obtained from the CE router LAN interface

#### **Site Availability**

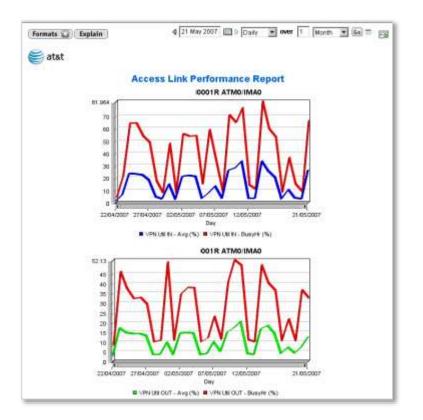
Provides site-level availability measurements determined by management responses from CE router interfaces

#### Site to Site

Provides end-to-end availability at the site level, and end-to-end performance at the COS level for predetermined pairs of customer sites

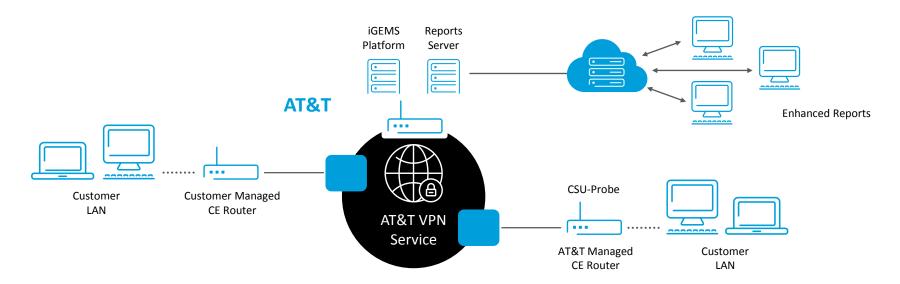
#### **Dashboard**

Provides Top 10 VPN Port usage and Top/Bottom 10 COS measurements





### AT&T VPN Express Enhanced Reports architecture



#### **Technologies Used**

 The CSU-Probe is placed between the Customer Edge (CE) Router and the network termination equipment. It passively collects measurements without adding management traffic to the network, storing the information locally until requested by the Reports Server.

#### **Service Delivery**

- The Reports Server (located at the AT&T Management Center) collects measurements from the CSU-Probes
- The CSU-Probe is managed and monitored by the award-winning AT&T integrated Global Enterprise Management System (iGEMS) platform
- The Customer accesses the Enhanced Reports tool via the AT&T Web Portal

#### **Features and Benefits**

- No CE Router dependencies
- Passive Data Collection No network or CE router overheads
- Layer 1 Layer 7 measurements provided
- Delivers an Interactive near Real-Time troubleshooting toolset
- Site-to-Site pairing of probes provides latency, jitter, and data delivery measurements
- Measurements are obtained on demand without massive collection pulls ... only the requested measurements are sent to the Enhanced Reports Server
- Ideal for large sites such as headquarters and data centers, or sites which require the capture of a large range of measurements



### View Enhanced Reports | Software modules

#### **Select AppFlows**

Delivers detailed views of the individual application flows across the entire infrastructure to isolate issues between the application, server, and the network

#### Select AppSummary

Dynamically identifies applications and performance across the enterprise

#### **Select Back-in-Time**

Presents detailed dynamic historical visibility and the ability to scroll back through time while navigating rapidly between layers of the protocol stack

#### **Select Class-of-Service**

Provides in-depth visibility into IP traffic classification to allow you to verify the applications are prioritized correctly and not exceeding thresholds

### **Select Network Troubleshooting**

Offers live, virtually real-time monitoring and troubleshooting of network and application performance

#### Select Service Summary

Provides a single-screen view of status counts, errors, and health indicators

#### **Select VolP**

Delivers near real-time detailed \VoIP analysis, measuring VoIP metrics per individual call

#### **Select Traffic Capture**

(Not available with AT&T VPN Managed Router Feature) Delivers a full-function protocol analyzer



Troubleshooting – Site Pair Summary



### View Business Reports & Information | Transport

#### **MPLS Port LC list**

An inventory report, which includes Circuit ID, Access Speed, VPN Name, Location of Site and Provider Edge Router, Protocol Type, COS Profile, etc.

## MPLS Port LC performance

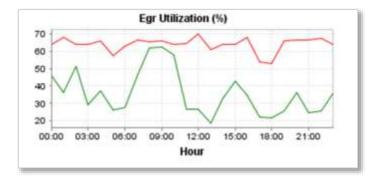
- Monthly, weekly, daily and hourly Ingress and Egress utilization
- Peak and busy hour utilization over measurement interval in ingress and egress direction

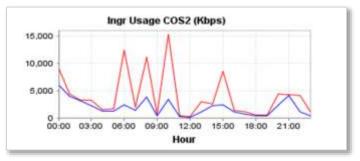
#### **COS** traffic

- Monthly, weekly, daily and hourly Ingress and Egress usage
- Peak usage over measurement interval in ingress and egress direction

## COS drops – discards at the CoS level

- Monthly, weekly, daily and hourly ingress traffic exceeding allocated
- Peak and busy hour ingress traffic exceeding allocated bandwidth
- Monthly, weekly, daily and hourly egress drops for each CoS



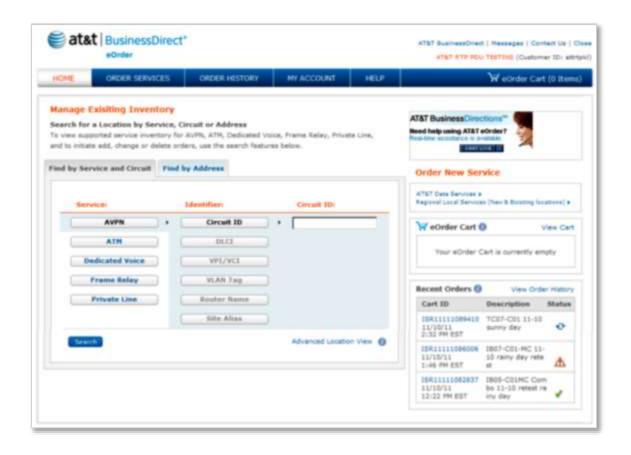




### **Order Business Services**

## The new look and feel includes:

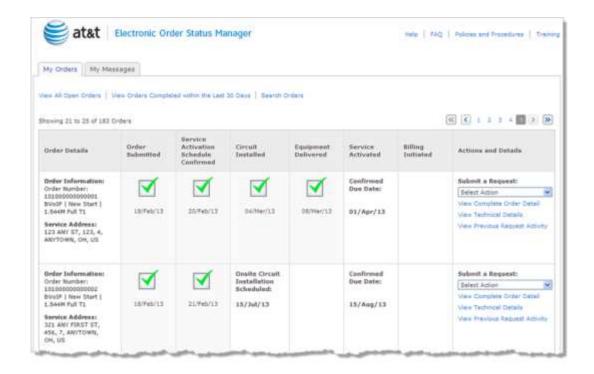
- Real-time MACD order initiation allows for fast network changes
- Robust searching by service, circuit or address
- Advanced location view and filtering
- Simple point-and-click navigation
- Current view of recent order activity





### **View Order Status**

- Easily track your AT&T
   Business Services orders
   online in near-real-time.
- With the new web-based, stand-alone "AT&T Electronic Order Status Manager" application, you can monitor the status of your orders virtually anywhere and anytime from your desktop, laptop or mobile device.
- You can also submit changes and updates to your orders – all in one convenient place – as you enjoy round-the-clock access to your order details and status on the web





## Awards and accolades



### AT&T a Leader in the Magic Quadrant for Network Services, Global







Gartner.
Access the report here

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### Total Telecom - World Communication Awards, names AT&T the Best Global Operator

The US-based operator serves a diverse portfolio of business customers throughout the world, including multinational corporations; small businesses; government, education and medical organizations; and wholesale customers.

It made significant investments in infrastructure and services during the entry period. It also made great strides in its home market, buying satellite TV provider DirecTV, and entered Mexico with the acquisitions of mobile operators Iusacell and Nextel, through which it is working on the creation of a single North American service area.

### Access the report here



"Whether it's capital investment, market acquisition, new services, technology innovation...it has all been going ahead at AT&T"



