Town and Country Builds High Reliability Communications Network with Aspen Switching Technology

Headquartered in Palo Alto, California, Town and Country has been doing business for over twenty years and provides premier placement services for nannies and home service workers. The company's 35 employees do this by screening candidates and placing them with clients — with much of this work conducted by phone.

Because telephony and strong network communications are so vital to Town and Country's business, the company wanted to ensure that calls were never dropped and that call quality was consistently high.

Defining Network Requirements

"We originally had a single Internet connection for all of our offices and remote workers," said Stanley Hutchinson, Town and Country's IT Director. "When the Internet Service Provider (ISP) experienced problems, we could encounter a high failure rate on our data connectivity with the data base we used for the core of our business. This was unacceptable, so we began to consider a multiple load balance and failover virtual private network (VPN) with tunnels to our offices, and to reconsider how we were using ISPs."

Town and Country had three major objectives for its voice and data networks:

- **High availability and the ability to load-balance and failover voice and data traffic;**
- **A more effective means of routing data between its headquarters in Palo Alto and its field office in San Francisco; and**

- **A more reliable method of linking its remote teleworkers into its headquarters voice and data network.**

"We wanted to have multiple ISPs for purposes of redundancy," said Hutchinson. "Occasionally, ISPs failed. In making the decision to use multiple ISPs, we had both failover availability and the ability to load-balance traffic whenever we needed to – by automatically routing to ISPs that had additional capacity."

Hutchinson said that Town and Country had considered several ways of linking into multiple ISPs. "We had researched a number of technology solutions that would facilitate the multiple ISP environment, but far and away, the Aspen switch gave us the flexibility and capability that we were looking for," he said.

Planning a Multiple ISP Communications Switching Environment

When Town and Country first discussed with Aspen the need for high reliability that multiple ISPs could facilitate, Aspen made a recommendation that Town and Country use a "mix" of ISPs that could provide it with multiple mode options for the critical "last mile" of corporate communications at its headquarters and at its San Francisco field office. This ISP mix would consist of at least one wireless ISP at both locations, as well as wired ISPs.

"The entire Bay area is vulnerable to earthquakes, which is why

we recommended to Town and Country that it have a mix of communications options that will allow its business to continue to operate in any situation of adverse impact," said Sajit Bhaskaran, Aspen's Chief Technology Officer.

The Aspen-Town and Country project team met to develop a technology approach that would not only address reliability and redundancy, but also their telephony applications and on the ability to link remote teleworkers into central IP telephony resources.

Remote Offices

Town and Country's application requirement was industrial-strength connectivity for teleworkers. The company has several teleworker salespeople in different parts of the country and the state. These salespersons have IP phones. The remote office configurations support VPN tunnels that come in over the Internet and route directly in to the Palo Alto headquarters network and PBX, with a multiple ISP environment for premium reliability.

"We've now established both a direct T1 and a VPN based connection between our offices in Palo Alto and San Francisco. We have four ISPs that we use in Palo Alto and two ISPs in San Francisco," said Town and Country's Stanley Hutchinson. "We also have employees with home offices that link into the VPN, with a Sonic Wall firewall in Palo Alto. In essence, we have created a virtual LAN."

Implementation and Support

Today, Town and Country's telephony network features an IP PBX at its Palo Alto headquarters connected to a local area network. The IP PBX takes all incoming calls to Town and Country from the public switched telephone network (PSTN). An Aspen 2000 switch intelligently routes traffic to three router-connected wired and wireless ISPs in Palo Alto based on Town and Country's voice and data traffic rules, and on load-balancing and failover scenarios. Town and Country's branch office in San Francisco has its own local area network and VPN/firewall and uses a second Aspen N500 switch to route traffic through routers to two other ISPs, one wired and one wireless. The third ingredient in Town and Country's network consists of remote teleworkers who have IP phones with built-in VPN tunnels that seamlessly connect them to the headquarters PBX — and avail them to the full complement of multiple ISP routings and redundancies that in-house corporate users have.

"Once we determined what we wanted to do, the solution was very easy to implement," said Stanley Hutchinson. "We conducted a small pilot of the Aspen switch and technology at headquarters, and Aspen was with us every step of the way to ensure that the programming and the settings were exactly where we needed them."

When pilot testing was completed, the final switch installation time at headquarters was less than an hour. The second Aspen N500 switch, which was brought up at the San Francisco branch office, was immediately activated during off hours and was online for business the following day.

Town and Country has an annual services agreement with Aspen Networks as well so that as they define new application requirements, Aspen works with them on implementation — perfect for Stanley Hutchinson, who describes himself as a "one man" IT shop.

"We get excellent service from Aspen," said Hutchinson. "Aspen reprograms their switches whenever we want to do new things…We are in the process of reconfiguring our telephony, and we are also moving to a new ISP. We can configure all of this through the Aspen switch."

> "Aspen was with us every step of the way to ensure that the programming and the settings were exactly where we needed them"

Future Moves

Town and Country is growing 25% a year in a telephony-centric business. "We are able to keep pace with this growth and gain tremendous efficiencies by using multiple ISPs that the Aspen switch easily facilitates," said Stanley Hutchinson. "In many respects, we are set up like a call center with a central database at headquarters. From our Palo Alto headquarters, our San Francisco office and our home office workers can all work off this database and simultaneously use the phones, and we can easily have all of our people on the phones and using the database simultaneously. There is no other product like Aspen's that so easily supports the multiple ISP concept, with such ease of resource allocation and reallocation."

"Aspen's switch solutions are designed for the increased reliance that companies have on Internet links," said Dan Berger, Aspen's President and CEO. "These businesses need high reliability solutions for their network access and communications that often involve multiple access modes and ISPs. Our switches provide best of breed functionality for this environment, and are highly scalable to meet the variety of traffic routing, workload-balancing and failover situations that businesses encounter."

Final Remarks

Town and Country's original motivation was to create a dual wireless ISP configuration, with wireless ISP capability at both its Palo Alto and its San Francisco sites, to ensure 24/7 reliability and high quality for its voice and data resources. It has since moved into several complementary applications that rest on this network backbone, facilitated by facile switching and built-in intelligence of Aspen switches that apply Town and Country's communications business rules to corporate communications networks.

"Nobody else has the flexibility of Aspen"

"Nobody else has the flexibility of Aspen," said Town and Country's Stanley Hutchinson. "The Aspen switch has enormous capability, and the communications implementation that we have in place has also brought us cost savings. We have multiple traffic routing ability to ISPs. Load balancing is simplified, and we can guarantee high availability and uptime for our communications which are so critical to our business."

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Transworld Data   TWD_Transworld@msn.com, Main 360-959-9536

Town & Country resources WANs & LANs as of 03-08-2007

35 People and
50 Phones in use
between the 4 offices

Servers

FM Pro "Intel"

Spare G5

G5 Mail & File & LDAP & Domain
Retrospect Backup Server

Spare G5 Old FMP

Mac Mini G5 Backup LDAP&Domain
Win XP MXIE Admin Manager

Static IP's
201-245

DHCP IP's
51-200

User Phones &
Workstations
LAN

2 FXO Analog lines in hunt gp.
(If all the PRI circuits are busy or failed
then roll over to these. If both of these
are busy roll over to SF PRI.)

Dell Ethernet
Switch
1000/12 (14)

Zultys POE
Ethernet Switch
10/100/48

Phone Switch Zultys
MX 250 DHCP
licensed for 50 users

Cisco 2610XM 3 megs

SonicWall 2040

8 FXS analog lines
out for fax,
Polycom etc.

Palo Alto
24 people
32 Phones

Aspen N2000 Switch
4 ISP's to 1

PRI

SMC Managed Switch

Adtran 600R

Comcast Web & FTP

Covad DSL backup

WiLine A (Black Moutain) 2 meg VPN

TelePacific Dynamic T1: 13
Phone circuits, data, & VPN

3 megs

3rd party email "scrubber"
SafeGuardMail.com

WWW

WWW & TelePacific

Remote
Workers (VPN)

XO Private Double T1's
PA:
to
SF:

DSL Extreme & AT&T line
Web & FTP

TelePacific Dynamic T1: 8
Phone circuits, data, & VPN

San Francisco
12 people
17 Phones

SMC Managed Switch

Adtran 600R

Aspen N500 Switch
2 ISP's to 1

PRI

SonicWall 2040

8 FXS analog
lines out for fax,
Polycom, etc.

Cisco 2610XM 3 megs

Zultys POE
Ethernet Switch
10/100/48

Phone Switch Zultys
MX 250 DHCP
licensed for 28 users

Mac Mini G5 Backup LDAP & Domain, Retrospect
Backup Server, Win XP MX250 Admin Manager

ReadyNAS 1100 RAID 5 Storage

LAN
User Phones & Workstations

2 FXO Analog lines in hunt group.
(If all the PRI circuits are busy or failed
then roll over to these. If both of these are
busy roll over to PA PRI.)

Static IP's
201-230

DHCP IP's
51-200