Cisco-Westcon Group-WSC

Expand your Business Opportunities with the Cisco Integrated Services Routers

Speakers:
Britt Heaps, Regional Sales Manager, Westcon
Mahbubul Alam, Business Development Manager, Cisco
Don Ochoa, Wireless Services Center (WSC)
Agenda

Expand Business Opportunities with 3G HWIC

- Webinar Overview, Logistics – Errol Hayward, Marketing Mgr, Cisco
- Westcon Group
  Westcon Group Partner Support Services
  Britt Heaps, Westcon Group
- Cisco 3G High-speed WAN Interface Card
  Technology, Applications, Bundles, How to Sell
  Mahbubul Alam, Business Development Manager, Cisco
- Wireless Services Center
  3G HWIC Activation Program
  Don Ochoa, Wireless Services Center (WSC)
- Q&A – All
- iPOD Touch Giveaway
Take-Aways

- Information on How to Sell ISRs and New Bundles
- New Business Opportunities
- Quick and Easy Activation
Programs and Services Overview
Vision | Mission | Value Proposition

- **Vision**: We believe that building and enabling unique and effective routes to high growth advanced technology markets is key to ensuring fundamental growth for customers and manufacturers. We achieve this through recruitment, retention and delivering ongoing value to best-of-breed and best-in-class vendors, customers and employees.

- **Mission**: We support your business by providing products, selling tools, technical, integration and financial services, market and technology expertise and an environment to enable you to more efficiently and profitably sell solutions to your end customers.

- **Value Proposition**: We are the world's leading specialty distributor in networking, security, mobility and convergence. We provide the most effective route to market for our vendors, the highest levels of support to our customers and through our success and growth, the industry's best employee experience.
<table>
<thead>
<tr>
<th></th>
<th>WestconGroup</th>
<th>Broadline Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Core Vendors</td>
<td>4-6</td>
<td>Numerous</td>
</tr>
<tr>
<td>Number of OEMs (Core)</td>
<td>10-12</td>
<td>2,000 +</td>
</tr>
<tr>
<td>Account Management Approach</td>
<td>Core vendor-driven and mapped to vendor geographies</td>
<td>Team based with pooled random support</td>
</tr>
<tr>
<td></td>
<td>Dedicated Account Managers</td>
<td></td>
</tr>
<tr>
<td>Sales Force Certifications</td>
<td>Vendor Sales Certifications</td>
<td>N/A</td>
</tr>
<tr>
<td>Advanced Technology Focus</td>
<td>Dedicated Advanced Technology focus</td>
<td>Pooled tech teams that support multiple OEMs</td>
</tr>
<tr>
<td>Non-Core OEM Strategy</td>
<td>Key partners that drive a true solution (i.e. IPcelerate, RSA, Trend Micro)</td>
<td>Line card focused</td>
</tr>
</tbody>
</table>
Westcon Group TECHNICAL SERVICES

PRESALES

• Conference call support for discussions with the reseller/end user about product or design with certified network engineers with many years of industry experience.

POSTSALES

• Staging services to insure against DOA equipment & to provide proper code upgrades and installation of modules.
• 4 hour and up time blocks of technical support to resellers during configuration and installation of equipment.
• Installation and configuration services for locations outside of the resellers area of business operations or for equipment beyond their in house technical abilities.
• Installation services for large rollouts that involve geographically dispersed sites that need turn up over a short period of time.
• UC500 configuration assistance service
Solution Program Philosophy

- A complete portfolio, that will enable the reseller to become a “trusted business advisor” for this customers
- Complete solutions, which a reseller should offer to be successful. If not, they might risk leaving money on the table or losing deals.
- Finding and managing the right solutions partner can be a complex task, which diverts the reseller from their primary sales, services and support activities.
Solution Program Elements

- **How-to-Sell Guides**: mini-sales guide highlighting the vendor solution and key benefits.
- **Multi-Vendor Solutions Guide**: multi-vendor business case to address end-user challenges in a certain vertical market with a proven solution.
- **Program Brochure**: program overview, benefits and participating vendors.
- **Solutions Handbook**: a global, hardcopy Comstor version of the Cisco Quick Reference Guide, completed with How-to-Sell guides. 9,000 copies, shipped twice a year.
Solution Program Elements – Partner Enablement

- **Current Analysis:** market intelligence, industry data and product analysis across multiple technology categories, to help the reseller gain a competitive advantage in a sales situation.
- **Events for resellers:** A complete range of events are organized for resellers throughout the year. These can be technology-oriented (workshops and hands-on sessions), as well as sales-oriented (seminars and coffee clubs).
- **Training for resellers**
  - FutureTrack: seminars to provide multi-vendor information and demonstrations
  - TeleTrack: on-line audio training sessions covering technology and solutions
  - WebTrack: internet-based training sessions supported by a live presentation
  - FastTrack: technology-based trainings to help the reseller to get up to speed on how to sell and deploy vendor solutions. FastTracks can also be complete certification / accreditation plans.
The MobilityPoint program is built upon a collection of the industry’s leading mobility and wireless communication technologies.

This collection of products, combined with Westcon’s professional services, delivers a powerful, comprehensive, flexible business solution-based offering that gives you a compelling mix of technologies and support resources to draw upon.

us.mobilitypoint.westcon.com
RESELLER BENEFITS

- A range of complete programs that support end user selling process
- Access to unique material, tools, information and training that makes “higher profit margin solution based consultative selling” a reality
- Making resellers more competitive by sales development and sales support, training and marketing programs
- Faster identification of business opportunities in high-growth markets
- Pre and Post Sales Technical Support
- Competitive market analysis and reports
- Additional leverage and business efficiency by procurement, inventory management, staging and delivery.
- Financing options, including joint PO, 3rd party financing, & special financing for SMB and Enterprise accounts.
Expand Your Business Opportunity with the Cisco 3G Integrated Services Routers

Mahbubul Alam
Business Development
June 4, 2008
Why do Businesses Need 3G Wireless WAN Access?

- As the “on-demand” economy grows and E-commerce flourishes, the network is the life-line.

- Network downtime not only means loss of productivity, but also loss of revenue, opportunities and damage to the reputation of the business.

- In many instances of network failure, businesses run the risk of losing both primary and backup wireline connections.

- Multi-path backup scenarios are important to provide higher availability and access.

- Businesses are also seeking newer technology and lower cost in network connections.

With convergence of voice, video and data over IP, Enterprises are seeking WAN solutions that offer highest resilience and cost efficiency.
Wireless WAN Connectivity Service
Solutions to Meet Business Requirements

- **Challenges:**
  - To get connectivity where and when needed
  - To maintain reliable network connectivity
  - To build a cost effective solution

- **Wireless WAN Connectivity provides:**
  - Diverse, cost-effective backup for data applications
  - Good ISDN alternative for T1/E1 backup
  - Quick deployment for new applications, remote locations, or mobile workers
  - Consistent network connectivity
  - Primary connectivity for low-bandwidth / telemetry applications
  - Devices to meet specific application needs

Cisco Cellular Wireless WAN enabled ISRs provides customers the benefit of integrated wireless and wireline primary and backup connectivity solutions
3G Wireless WAN  Typical Applications

- Reliable, resilient WAN Backup
  - Network outages, Disaster recovery
  - True alternative to local loop

- Portable Deployment
  - Instant branch connectivity for temporary or new sites
  - Temporary connectivity for Nomadic Sites
  - Kiosks, construction trailers, mobile banks

- Primary Data Connection
  - Store-in-store, smaller retail stores, ATM connectivity, gas stations, telemetry applications

- Alternative where there is no fixed wireline
  - (FR, DSL, cable, ISDN)

- Wireless Last Mile (Wireless local loop)
  - Extend broadband connectivity to remote locations
Case Study: Financial Services

**Overview:** A large bank needed a more efficient wireless automated teller machine network – to speed installation and implementation of machines, to serve customers at non-traditional locations, to cut costs, all without compromising on customer service.

**Solution:** Using the wireless carrier’s broadband mobile network with additional security, the bank replaced fixed line frame relay with 3G broadband and began a methodical implementation across the automated teller network.

**Benefits:** Today the bank no longer waits for a local phone company to install a landline to the machine, speeding the deployment and driving down costs. With wireless carrier’s broadband mobile network and the Cisco HWIC, the bank is now more agile, efficient and responsive to customers.
Case Study: Retail

**Overview:** A major specialty retailer was challenged with staying on schedule opening new stores and to have a solution to bring their store back on line quickly in the case of a disaster.

**Solution:** The retailer used Cisco 3G HWIC with wireless carrier’s broadband mobile service for all new store openings to remove the delay and uncertainly from traditional wireline activations. They also maintained the wireless connection for diverse network in the case of a disaster or wire line outage. The highly successful solution had the added benefit of being easy and cost effective to replicate for additional stores.

**Benefits:** As a result the retailer has increased on time store openings and reduced the monthly costs of traditional wireline connections.
Case Study: Construction

Overview: A construction company setting up a work site needed to tighten timelines right from the start. They could not afford to wait for the phone lines that would connect the construction trailer to headquarters and they needed immediate connectivity for the site manager’s computer.

Solution: Using the 3G HWIC, the construction company was able to connect the site trailer immediately and provide any computer with a wireless card connectivity to the wireless carrier’s broadband mobile network.

Benefits: The job came in on time and under budget – making for a satisfied customer and successful project.
3G HWIC Solves 3 Key Business Needs

**Business Continuity**
Seamless, Multi-path and Cost Effective WAN Backup services.
ISDN Replacement and Bundling with Wireline Primary.

**Business Agility**
Rapid Network Deployment package for new branch office/stores, construction sites and nomadic locations.

**Business Portability**
Network Infrastructure in a box for Kiosks, ATMs, Store-in-a-Store, etc. ISR bundle with security/WAN Optimization.

**Converged Management**

**Extending the Empowered Branch to the 3G Network Edge**

**Integrated Security**

**3G Application Integration**
Cisco 3G HWIC - Modular ISR Platforms
1841, 1861, 2800 Series, 3800 Series

- WAN Aggregation
  - 7600 Series
  - 7200 Series

- Feature Breadth and Scale at Highest Performance
  - 3800 Series

- High Density and Performance for Concurrent Services
  - 2800 Series

- Embedded, Advanced Voice, Video, Data and Security Services
  - 1800 Series
  - 800 Series

- Embedded Wireless, Security and Data

Integrated Services Routers: ISRs

Cisco 3G HWIC Supported platforms

INTEGRATED SERVICES ROUTERS
Cisco 3G Wireless WAN HWIC

The Cisco 3G Wireless WAN HWIC provides a cost-effective alternative to ISDN dial back up and provides Business Continuity for critical applications.

- Enterprise-class 3G broadband cellular/wireless WAN interface card
- Broadband speeds with peak data rate downlink of 3.6/3.2Mbps and uplink of 1.8 Mbps/384 Kbps
- Offers Broadband data rates (Typical 600-1400 Kbps downlink / 220-600 Kbps uplink)
- True multi-path back-up solution
- Primary data connection
  - Rapid deployment
  - Portable businesses
- Supports GSM and CDMA Standards
  - HSDPA and backward compatible to UMTS, EDGE and GPRS
  - EVDO Rev A and backward compatible to EVDO Rev 0 and 1xRTT

Per ISR multiple 3G HWICs are supported for bandwidth aggregation, load balancing and multi-homing thus improve further network resilience.

GLP $850
Cisco 3G Wireless WAN HWIC
A Closer Look & Accessories

- Diagnostics and Monitoring Port for Industry Standard Management Applications
- Antenna Connectors Support Multiple Remote Antenna Options
- LED Indication for HWIC Status, RSSI, and Service Connectivity Allowing Visual Troubleshooting

Cisco 1841 with 3G HWIC

Antenna Accessories:
- Multi-Band Dipole Antenna
- Remote cradle with 15ft Cable
- Multi-Band Omni Ceiling Mount Antenna

Antenna LMR 400 20/50 ft Cable

Ceiling Mount

Dipole Antenna

Dipole on Cradle with 15 feet cable
Secure 3G Mobile Data Service for WAN Backup

- Cellular network backup with primary leased line
- Use a combination of the cellular network and a different VPN service for backup using secure 3G-ISR bundles

1. Primary link down
2. Failover to Mobile data network

HQ

Public Internet

Cellular carrier 3G Network

Leased Line T1/E1

Branch

3G HWIC + Adv Sec
Converged Wired & Wireless Services Using 3G Enabled ISRs

Business Continuity & Broadband Alternative for Predictable Business Services
Security Complements 3G Offerings

1. **3G Data Access**: Utilize 3G network for high speed data access. Ideal for 3G/Wi-Fi hotspot coverage.

2. **Secure 3G Data Access**: Secure 3G data connection from remote location to enterprise through IPSec tunnel. Multiple IOS security features protect the privacy of end-user data.
   - In a hub and spoke topology remote/branch offices are connected to HQ over T1/E1, FR or MPLS. Typically security features are implemented at HQ. When primary connectivity to remote/branch office is disrupted, there is a need for secure 3G data connection to HQ.

3. **Secure 3G Network Services**: Offered as secure primary and backup 3G services

4. **Secure Converged Wired & Wireless Services**: Services with primary link as MPLS VPN and backup service over 3G network connect back to MPLS VPN cloud.
40+ Certified Service Providers Worldwide

Belgium - Proximus
Germany, Austria, Croatia, Czech Republic, Hungary, Macedonia, Montenegro, UK – T-Mobile
Finland – Elisa
France – Orange Business Services
Italy – Wind
Lithuania – Bite
Mexico - Movistar, Telcel
Netherlands – Vodafone, KPN, T-Mobile
Poland - Telekomunikacja Polska
Portugal – Vodafone
Spain – Telefonica Moviles, Orange, Euskatel
Switzerland – Sunrise
Slovakia – T-Mobile
Turkey – Turkcell
UK- Vodafone

Saudi Arabia – Mobily, Saudi Telecom
Kuwait – Watanya, Zain
Qatar - Qtel

USA - AT&T, Sprint, Verizon
Canada – Bell Mobility, Telus

South Africa - Vodacom & MTN

Australia – Telstra
New Zealand - TNZ

Globally shipped over 20K units – Faster than DSL and Cable HWICs
## 3G can Effectively Compete with Satellite, ISDN and Frame Relay

<table>
<thead>
<tr>
<th>Alternate Technologies</th>
<th>Cellular (3G)</th>
<th>DSL</th>
<th>Satellite</th>
<th>ISDN</th>
<th>Frame Relay</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Installation Cost</strong></td>
<td>Low</td>
<td>Low</td>
<td>Med</td>
<td>Low</td>
<td>Med</td>
</tr>
<tr>
<td><strong>Monthly Charges</strong></td>
<td>$20-$100</td>
<td>$50-$300</td>
<td>$100-$999+</td>
<td>$120</td>
<td>$250-550</td>
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<tr>
<td><strong>SLA</strong></td>
<td>No</td>
<td>No</td>
<td>Avail</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Time to Install</strong></td>
<td>Minutes</td>
<td>Days – Weeks</td>
<td>Days – Weeks</td>
<td>Days – Weeks</td>
<td>Weeks</td>
</tr>
<tr>
<td><strong>Latency</strong></td>
<td>med</td>
<td>Low</td>
<td>Highest</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Service Coverage</strong></td>
<td>Good</td>
<td>Fair</td>
<td>Excellent</td>
<td>Ubiquitous</td>
<td>Fair</td>
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<tr>
<td><strong>Performance (download)</strong></td>
<td>600 Kbps – 1.4 Mbps</td>
<td>384 Kbps - 2.3 Mbps</td>
<td>1.5Mbps - 6 Mbps</td>
<td>128 Kbps</td>
<td>56 – 512 Kbps</td>
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</tbody>
</table>
ROI & Cost Savings for Businesses with 3G-ISRs

### ROI Comparison Between Dial-up, ISDN & 3G Per Location

<table>
<thead>
<tr>
<th>Month</th>
<th>ISDN CUM - 1 site ($)</th>
<th>3G CUM - 1 site ($)</th>
<th>Dialup</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td>1</td>
<td>$500</td>
<td>$500</td>
<td>$500</td>
</tr>
<tr>
<td>2</td>
<td>$1,000</td>
<td>$1,000</td>
<td>$1,000</td>
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<tr>
<td>3</td>
<td>$1,500</td>
<td>$1,500</td>
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<tr>
<td>4</td>
<td>$2,000</td>
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<tr>
<td>5</td>
<td>$2,500</td>
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<tr>
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<td>7</td>
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<td>10</td>
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<tr>
<td>24</td>
<td>$12,000</td>
<td>$12,000</td>
<td>$12,000</td>
</tr>
</tbody>
</table>

### Annual Cost Saving ($) for your business

<table>
<thead>
<tr>
<th>Year</th>
<th>Total ISDN Sites</th>
<th>Total 3G Sites</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>$22,200</td>
<td>$13,685</td>
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</tr>
<tr>
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<td></td>
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<tr>
<td>5</td>
<td></td>
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</tbody>
</table>

3G HWIC (card + monthly charges) offer ROI in months when compared to ISDN and dial-up connections.

Huge cost savings for business with 5 locations when its migrate from ISDN to 3G-ISR router plus monthly charges.
Market Acceptance of Integrated Services
Cisco Integrated Services Router

- Operational efficiency (70% lower Opex)
- Services consistency (branch ↔ HQ)
- Guaranteed interoperability
- Investment protection

Overlay Appliances
- 3G Modem
- Router
- Switch
- Wireless LAN
- WAN/App Optimization
- Security Appliance
- Voice Appliance

Integrated Services Router
- Cisco ISR 28xx or 38xx
- With Voice, Wireless, Video, WAN Optimization, Switch

4 Million Installed Based ISRs and 2.5 Millions of EoL Access Routers
Small / Medium Business Access
Cisco Integrated Services Router

**Full Unified Communications Solution**
- Communications Manager Express
- Survivable Remote Site Telephony - SRST
- Cisco Unity Express—now includes IVR

**Comprehensive Security**
- IPSec VPN acceleration
- Firewall, IPS, SSL-VPN, GET-VPN, DM-VPN, ..

**Centralized / Decentralized Management**
- Managed Voice, Security, SIP, ...

**Integrated Application Services**
- WAN Optimization
- Integrated Video Surveillance
- Application Intelligence for Custom Services

**Comprehensive Routing and QoS**
## Small / Medium Business Access

**Cisco Integrated Services Router**

Empowering business customers with the tools to be successful in Connected Life economies

<table>
<thead>
<tr>
<th>Yesterday’s SMB</th>
<th>Today’s Empowered SMB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aging, Disparate Data/Voice Networks</td>
<td>Unified Voice/Data/Video Network Platform</td>
</tr>
<tr>
<td>Saturated WAN, Poor Response Time</td>
<td>Optimized WAN, Accelerated Applications</td>
</tr>
<tr>
<td>Blended Security Threats, Compliance</td>
<td>Self Defending Networks</td>
</tr>
<tr>
<td>Limited Mobility, Limited Disaster Recovery</td>
<td>High Availability, Unified Wireless—Wireline Business</td>
</tr>
<tr>
<td>Inconsistent Branches and Branch-HQ solutions</td>
<td>Consistent Branches and Branch-HQ Services</td>
</tr>
</tbody>
</table>

Small / Medium Business Access

**Cisco Integrated Services Router**

Empowering business customers with the tools to be successful in Connected Life economies
Cisco 3G HWIC, Accessories & 3G-ISR Bundles
# Pricing for 3G HWIC, Antennas & Cables

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Carrier</th>
<th>List Price</th>
<th>Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HWIC-3G-GSM (incl. 3G-ANTM1919D)</td>
<td>AT&amp;T</td>
<td>$850</td>
<td>3G Wireless WAN HWIC Supporting HSDPA, UMTS, EDGE &amp; GPRS</td>
<td></td>
</tr>
<tr>
<td>HWIC-3G-CDMA-S (incl. 3G-ANTM1919D)</td>
<td>Sprint</td>
<td>$850</td>
<td>3G Wireless WAN HWIC Supporting Sprint’s CDMA2000 EDVO Rev A, Rev 0, 1xRTT</td>
<td></td>
</tr>
<tr>
<td>HWIC-3G-CDMA-V (incl. 3G-ANTM1919D)</td>
<td>Verizon</td>
<td>$850</td>
<td>3G Wireless WAN HWIC Supporting Verizon’s CDMA2000 EDVO Rev A, Rev 0, 1xRTT</td>
<td></td>
</tr>
<tr>
<td>3G-ANTM1919D</td>
<td>All</td>
<td>$25</td>
<td>Multiband swivel mount dipole antenna. Faceplate mount</td>
<td></td>
</tr>
<tr>
<td>3G-ANTM1916-CM</td>
<td>All</td>
<td>$275</td>
<td>Multiband Omni-directional antenna. Ceiling mount</td>
<td></td>
</tr>
<tr>
<td>3G-AE015R</td>
<td>All</td>
<td>$125</td>
<td>15 feet antenna extension cable with cradle</td>
<td></td>
</tr>
<tr>
<td>3G-CAB-ULL-20</td>
<td>All</td>
<td>$275</td>
<td>20 feet (6 m) Ultra Low Loss LMR 400 cable with TNC Connector</td>
<td></td>
</tr>
<tr>
<td>3G-CAB-ULL-50</td>
<td>All</td>
<td>$550</td>
<td>50 feet (15 m) Ultra Low Loss LMR 400 cable with TNC Connector</td>
<td></td>
</tr>
</tbody>
</table>
## Cisco 3G-ISR & Secure 3G ISR Bundles

<table>
<thead>
<tr>
<th>Bundle SKU IDs</th>
<th>Carrier</th>
<th>Descriptions</th>
<th>List Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1841-3G-G (3G Bundle)</td>
<td>AT&amp;T</td>
<td>Cisco 1841, HWIC-3G-GSM, 64MB FL /128MB DRAM, IP Base</td>
<td>$2,095</td>
</tr>
<tr>
<td>C1841-3G-S (3G Bundle)</td>
<td>Sprint</td>
<td>Cisco 1841, HWIC-3G-CDMA-S, 64MB FL /128MB DRAM, IP Base</td>
<td>$2,095</td>
</tr>
<tr>
<td>C1841-3G-V (3G Bundle)</td>
<td>Verizon</td>
<td>Cisco 1841, HWIC-3G-CDMA-V, 64MB FL /128MB DRAM, IP Base</td>
<td>$2,095</td>
</tr>
<tr>
<td>C1841-3G-G-SEC/K9 (Secure Bundle)</td>
<td>AT&amp;T</td>
<td>Cisco 1841, HWIC-3G-GSM, 64MB FL /256MB DRAM, Adv Security</td>
<td>$3,050</td>
</tr>
<tr>
<td>C1841-3G-S-SEC/K9 (Secure Bundle)</td>
<td>Sprint</td>
<td>Cisco 1841, HWIC-3G-CDMA-S, 64MB FL /256MB DRAM, Adv Security</td>
<td>$3,050</td>
</tr>
<tr>
<td>C1841-3G-V-SEC/K9 (Secure Bundle)</td>
<td>Verizon</td>
<td>Cisco 1841, HWIC-3G-CDMA-V, 64MB FL /256MB DRAM, Adv Security</td>
<td>$3,050</td>
</tr>
<tr>
<td>C2811-3G-G-SEC/K9 (Secure Bundle)</td>
<td>AT&amp;T</td>
<td>Cisco 2811, HWIC-3G-GSM, 64MB FL /256MB DRAM, Adv Security</td>
<td>$3,950</td>
</tr>
<tr>
<td>C2811-3G-S-SEC/K9 (Secure Bundle)</td>
<td>Sprint</td>
<td>Cisco 2811, HWIC-3G-CDMA-S, 64MB FL /256MB DRAM, Adv Security</td>
<td>$3,950</td>
</tr>
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<td>C2811-3G-V-SEC/K9 (Secure Bundle)</td>
<td>Verizon</td>
<td>Cisco 2811, HWIC-3G-CDMA-V, 64MB FL /256MB DRAM, Adv Security</td>
<td>$3,950</td>
</tr>
</tbody>
</table>
3G HWIC Resources

- Product Page on cisco.com:
  - http://www.cisco.com/go/3g

- 3G HWIC Software Configuration Guide:

- 3G HWIC Hardware Installation Guide:

- VODs and How To Sell Resources at Cisco Partner Central:

For questions, email cs-3g@cisco.com
Performance for Services Currently Supported on 3G HWIC

Note: Typical Data Rate based on Cisco Internal testing and field trials - Several factors can affect data rates, including coverage and congestion.
Network Capacity Expansion for Wireless WAN
Cisco Network Capacity Expansion (NCE) Optimization for Wireless WAN Links

- Cisco Network Capacity Expansion (NCE) blade for ISRs is Cost-efficient solution to maximize value of existing Wireless/Cellular WAN bandwidth
## Cisco Network Capacity Expansion (NCE)
### Quick Return On Investment

<table>
<thead>
<tr>
<th>Typical Designation</th>
<th>WAN Link Speed</th>
<th>Speed With NCE</th>
<th>Price Of Equivalent Bandwidth/Month</th>
<th>Payback In Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISDN</td>
<td>64 kbps</td>
<td>256 kbps</td>
<td>100 USD</td>
<td>20</td>
</tr>
<tr>
<td>ISDN</td>
<td>128 kbps</td>
<td>512 kbps</td>
<td>150 USD</td>
<td>13</td>
</tr>
<tr>
<td>Business DSL</td>
<td>256 kbps</td>
<td>1 Mbps</td>
<td>400 USD</td>
<td>5</td>
</tr>
<tr>
<td>Business DSL</td>
<td>512 kbps</td>
<td>2 Mbps</td>
<td>600 USD</td>
<td>3</td>
</tr>
<tr>
<td>½ T1</td>
<td>768 kbps</td>
<td>3 Mbps</td>
<td>900 USD</td>
<td>2</td>
</tr>
<tr>
<td>½ E1</td>
<td>1 Mbps</td>
<td>4 Mbps</td>
<td>1200 USD</td>
<td>2</td>
</tr>
<tr>
<td>T1</td>
<td>1.5 Mbps</td>
<td>6 Mbps</td>
<td>1800 USD</td>
<td>1</td>
</tr>
<tr>
<td>E1</td>
<td>2 Mbps</td>
<td>8 Mbps</td>
<td>2400 USD</td>
<td>1</td>
</tr>
<tr>
<td>2 x T1</td>
<td>3 Mbps</td>
<td>12 Mbps</td>
<td>3600 USD</td>
<td>1</td>
</tr>
<tr>
<td>2 x E1</td>
<td>4 Mbps</td>
<td>16 Mbps</td>
<td>4800 USD</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Pricing reflects typical bandwidth costs in the US in January 2008.
### Cisco NCE TCP Throughput Gain

#### Bandwidth vs. Latency

<table>
<thead>
<tr>
<th>RTT (ms)</th>
<th>64 kbps</th>
<th>128 kbps</th>
<th>256 kbps</th>
<th>512 kbps</th>
<th>768 kbps</th>
<th>1.0 Mbps</th>
<th>1.5 Mbps</th>
<th>2.0 Mbps</th>
<th>3.0 Mbps</th>
<th>4.0 Mbps</th>
</tr>
</thead>
<tbody>
<tr>
<td>600 ms</td>
<td>3.0</td>
<td>3.0</td>
<td>3.4</td>
<td>4.7</td>
<td>7.0</td>
<td>9.0</td>
<td>13.6</td>
<td>18.5</td>
<td>26.9</td>
<td>36.0</td>
</tr>
<tr>
<td>500 ms</td>
<td>3.0</td>
<td>3.0</td>
<td>3.4</td>
<td>4.0</td>
<td>6.1</td>
<td>7.7</td>
<td>11.6</td>
<td>15.8</td>
<td>23.2</td>
<td>29.3</td>
</tr>
<tr>
<td>400 ms</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.2</td>
<td>4.8</td>
<td>6.2</td>
<td>9.3</td>
<td>12.5</td>
<td>18.3</td>
<td>23.5</td>
</tr>
<tr>
<td>300 ms</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.2</td>
<td>3.5</td>
<td>4.6</td>
<td>6.7</td>
<td>9.1</td>
<td>13.3</td>
<td>18.0</td>
</tr>
<tr>
<td>200 ms</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.1</td>
<td>3.0</td>
<td>3.2</td>
<td>4.6</td>
<td>6.3</td>
<td>9.2</td>
<td>12.3</td>
</tr>
<tr>
<td>100 ms</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.1</td>
<td>2.9</td>
<td>3.2</td>
<td>3.0</td>
<td>3.2</td>
<td>4.6</td>
<td>5.9</td>
</tr>
<tr>
<td>75 ms</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.2</td>
<td>3.0</td>
<td>3.2</td>
<td>3.0</td>
<td>3.1</td>
<td>3.4</td>
<td>4.6</td>
</tr>
<tr>
<td>50 ms</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.1</td>
<td>3.2</td>
<td>3.1</td>
<td>3.2</td>
<td>3.1</td>
<td>3.1</td>
</tr>
<tr>
<td>25 ms</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.1</td>
<td>3.2</td>
<td>3.1</td>
<td>3.2</td>
<td>3.1</td>
<td>3.1</td>
</tr>
<tr>
<td>1 ms</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.0</td>
<td>3.1</td>
<td>3.0</td>
<td>3.2</td>
<td>3.1</td>
<td>3.0</td>
</tr>
</tbody>
</table>

---

1Files: Standard Canterbury Corpus, [www.data-compression.info/Corpora/CanterburyCorpus/](www.data-compression.info/Corpora/CanterburyCorpus/), Packet Loss Rate (PLR) - 0.01%

2Round Trip Time (RTT) - time for a packet to go from sender to receiver and back
Cisco Network Capacity Expansion (NCE)
Key Business Benefits

Cost Reduction
- Eliminates the need to upgrade bandwidth
- Minimizes TCO by integrating into the ISR

Performance
- Increases overall data throughput 3x-20x
- Improves response time on latent links

Efficiency
- Captures full value of existing bandwidth
- Simplifies deployment and management

Supports Industry Standards
- Deflate Compression (RFC 1951)
- SCTP Protocol (RFC 2960)
Cisco NCE Service Module Offer
Modular ISRs (1841, 2800 & 3800 Series Routers)

- **AIM-TPO-1**
  - Up to 2 Mbps WAN connections
  - Supported on 1841, 28xx ISRs
  - List Price $1,995 USD

- **AIM-TPO-2**
  - Up to 4 Mbps WAN connections
  - Supported on 1841, 28xx, 38xx ISRs
  - List Price $2,995 USD

- **NME-TPO**
  - Up to 45 Mbps WAN connections
  - Supported on 3825, 3845 ISRs
  - List Price $7,495 USD

Symmetric Solution - Module required at both ends of transmission
Cisco Network Capacity Expansion (NCE)

Head-end Aggregation

- Depends on size of deployment and bandwidth requirements
- In-path and out-of-path deployment options
  - Out-of-path interception through Policy Based Routing (PBR)

<table>
<thead>
<tr>
<th>Outbound WAN Bandwidth(^1)</th>
<th>Deployment Size (Remote Sites)</th>
<th>Head-end Aggregation</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 10 Mbps</td>
<td>&lt; 10</td>
<td>2851 ISR + AIM-TPO-2</td>
</tr>
<tr>
<td>&lt; 20 Mbps</td>
<td>&lt; 10</td>
<td>3825 ISR + AIM-TPO-2</td>
</tr>
<tr>
<td>&lt; 40 Mbps</td>
<td>&lt; 20</td>
<td>3845 ISR + 2 AIM-TPO-2</td>
</tr>
<tr>
<td>&lt; 40 Mbps</td>
<td>&lt; 50</td>
<td>3845 ISR + NME-TPO</td>
</tr>
<tr>
<td>&lt; 80 Mbps</td>
<td>&lt; 100</td>
<td>3845 ISR + 2 NME-TPO</td>
</tr>
<tr>
<td>&lt; 120 Mbps</td>
<td>&lt; 150</td>
<td>3845 ISR + 3 NME-TPO</td>
</tr>
<tr>
<td>&lt; 160 Mbps</td>
<td>&lt; 200</td>
<td>3845 ISR + 4 NME-TPO</td>
</tr>
</tbody>
</table>

\(^1\)Inbound WAN bandwidth (WAN to LAN) is unrestricted