Cisco 800 Series Integrated Services Router

Enabling Consistent Services at the Small Office, Small Enterprise Branch/Teleworker

Technical Overview
Agenda

- Portfolio Overview
- Customer Migration
- Software Feature Overview
- Software & Licensing
- Product Pictures
- Products & Solutions by Technologies
  - Ethernet & SFP
  - Wireless LAN
  - Wireless WAN
  - DSL
  - Voice
- Specialized Products
  - 812
  - 819
- Deployment Scenarios
  - Enterprise
  - SP Managed Services
Portfolio Overview
Branch Infrastructure
Evolving Cisco Integrated Services Router Generation 2 Portfolio

Performance, Scalability, Availability

NEW

860VAE

Teleworker / Managed CPE

Virtual Office

Secure Mobility

Customizable Applications

Secure Collaboration

Scalable Rich-Media Services

Enhancing the Borderless Experience

892F, 880VA, 888E, 819, 881G

1921, 1941, 1941W

2901, 2911, 2921, 2951

3925E*, 3945E*

3925, 3945
Fixed and Flexible
Cisco Fixed ISR Portfolio

Basic Connectivity & Security
Enhanced Performance
Improved Security

Optimum Features
Performance Tradeoff

High Availability
Backup WAN

Features, Scalability, Availability

860VAE Series
- Entry level Connect and Secure
- Multiple WAN options (GE, ADSL2+/VDSL2), WLAN
- Advanced Security or IP Base IOS Features

880VA Series
Enterprise Class 3G/4G
G.SHDSL with EFM
Advanced IP Services IOS Features

890 Series
Highest Perf
LAN port density
Cisco 800 Series Integrated Services Router
Extending Collaboration to Small Office, Small Enterprise Branch/Teleworkers

Cisco 860VAE
Cisco 880
Cisco 890

Extending Voice to Small Office and Teleworker
- First teleworker device with support for voice, video, SRST, and FXS devices
- Brings reliability to collaboration applications

Secure Remote Collaboration
- Secures voice and data end to end
- Provides advanced security and content filtering
  - VPN, firewall, intrusion prevention

Unified Wireless Mobility
- 802.11n support
- Fully integrated with Cisco Unified Wireless
- Optional WWAN connection for anywhere connectivity

Simplified Operations
- Comprehensive Cisco IOS routing, QoS, and network management
- Graphical voice and data configuration
# Cisco 800 Series

## Integrated Services Routers

<table>
<thead>
<tr>
<th>Feature</th>
<th>890</th>
<th>880</th>
<th>860VAE</th>
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<tbody>
<tr>
<td>Enterprise Small Branch</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Cisco Virtual Office (CVO)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Teleworker Only</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Small Box Retail</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Small Business</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Very Small Office</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Performance with Services</td>
<td>20+ Mbps</td>
<td>15 Mbps</td>
<td>10 Mbps</td>
</tr>
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</table>

## Secure Broadband and Mobility Platform

- Enterprise small branch, Cisco Virtual Office (teleworkers), small box retail, small business, very small offices
- 20+ Mbps WAN access with security
- Fixed configurations; pick your:
  1. WAN interface(s)
  2. 802.11 wireless (Y/N)
  3. Voice* (Y/N)
  4. Backup interface

*Requires Voice SKU and available with 10/100 or G.SHDSL WAN.
# Cisco 800 Series Overview

<table>
<thead>
<tr>
<th>Feature</th>
<th>860VAE</th>
<th>860VAE-K9</th>
<th>880/880G</th>
<th>880V</th>
<th>890</th>
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<tbody>
<tr>
<td>GE WAN</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
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<tr>
<td>SFP</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Yes (892F)</td>
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<tr>
<td>FE WAN</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>VDSL2</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>ADSL2/2+</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>G.SHDSL</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Data Backup</td>
<td>No</td>
<td>No</td>
<td>ISDN BRI, 3G (880G Model)</td>
<td>No</td>
<td>ISDN BRI, V.92</td>
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<tr>
<td>PSTN Interconnect</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>FXO or BRI Voice</td>
<td>No</td>
</tr>
<tr>
<td>FXS Ports</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>4</td>
<td>No</td>
</tr>
<tr>
<td>802.11n</td>
<td>No</td>
<td>No</td>
<td>2.4 GHz</td>
<td>2.4 GHz</td>
<td>2.4 GHz, 5 GHz</td>
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</table>
# Cisco 800 Series Overview (Cont.)

<table>
<thead>
<tr>
<th>Feature</th>
<th>860VAE</th>
<th>860VAE-K9</th>
<th>880/880G</th>
<th>880V</th>
<th>890</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managed 10/100 Switch Ports</td>
<td>4 Ports</td>
<td>4 + 1 GE Ports</td>
<td>4 Ports</td>
<td>4 Ports</td>
<td>8 Ports</td>
</tr>
<tr>
<td>VLANs (Wired and Wireless)</td>
<td>5</td>
<td>5</td>
<td>8</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>Hardware-Based IPsec Encryption</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Flash</td>
<td>64M</td>
<td>56M</td>
<td>128M</td>
<td>256M</td>
<td>256M</td>
</tr>
<tr>
<td>DRAM (Standard/Maximum)</td>
<td>256M</td>
<td>256M</td>
<td>256M/768M</td>
<td>512M/768M</td>
<td>512M/768M</td>
</tr>
<tr>
<td>Internal PoE Option</td>
<td>No</td>
<td>No</td>
<td>2 Ports</td>
<td>2 Ports</td>
<td>4 Ports</td>
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<tr>
<td>USB Ports</td>
<td>1 (USB 2.0)</td>
<td>1 (USB 2.0)</td>
<td>1 (USB 1.1)</td>
<td>1 (USB 1.1)</td>
<td>2 (USB 2.0)</td>
</tr>
<tr>
<td>Wireless Features</td>
<td>No</td>
<td>No</td>
<td>Autonomous, Unified</td>
<td>Autonomous, Unified</td>
<td>Autonomous, Unified</td>
</tr>
<tr>
<td>Security Features</td>
<td>No</td>
<td>Basic</td>
<td>Advanced</td>
<td>Advanced</td>
<td>Advanced</td>
</tr>
</tbody>
</table>

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What’s New On the ISR 800 Series

• New C880WD platforms
  ➢ Fanless design
  ➢ Single power supply for chassis and PoE option
  ➢ Embedded WLAN antenna
  ➢ Dual and concurrent 2.4 and 5 GHz wireless

• New C880G platforms
  ➢ Embedded 3G modem support
  ➢ 3.7G HSPA+ options
  ➢ Dual SIM
  ➢ SMS, Voice-Callback and GPS support
  ➢ External antenna, Diversity
  ➢ WWAN MIBs

• CUBE Support on 800 Series
Customer Migration
Why Migrate to the New 800 Series?

- Increased performance and memory
- 802.11n wireless LAN
- Unified wireless management
- Voice with survivability
- True WAN backup with WWAN
- Multimode VDSL2/ADSL2+ support
- G.SHDSL EFM support
- SFP and MetroEthernet support
## Cisco 1811/1812 and 890 Comparison

<table>
<thead>
<tr>
<th>Feature</th>
<th>1811/1812</th>
<th>890</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WAN Technology</strong></td>
<td>2 FE Ports</td>
<td>1FE, 1 GE, or SFP</td>
</tr>
<tr>
<td><strong>Data Backup</strong></td>
<td>ISDN, V.92</td>
<td>ISDN, V.92</td>
</tr>
<tr>
<td><strong>Wireless</strong></td>
<td>802.11a/b/g</td>
<td>802.11n/a/g</td>
</tr>
<tr>
<td><strong>Managed LAN Switch (L2) Ports</strong></td>
<td>Eight port 10/100</td>
<td>Eight port 10/100 or 10/100/1000</td>
</tr>
<tr>
<td><strong>VLANs (Wired and Wireless)</strong></td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td><strong>Hardware IPsec Encryption</strong></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Flash (Default/Maximum)</strong></td>
<td>32 MB/128 MB</td>
<td>256 MB/256 MB</td>
</tr>
<tr>
<td><strong>DRAM (Default/Maximum)</strong></td>
<td>128 MB/384 MB</td>
<td>512 MB/768 MB</td>
</tr>
<tr>
<td></td>
<td></td>
<td>512 MB/1G (892F Only)</td>
</tr>
<tr>
<td><strong>Internal PoE Option</strong></td>
<td>Yes, Eight Ports</td>
<td>Yes, Four Ports</td>
</tr>
<tr>
<td><strong>External Power Input</strong></td>
<td>Yes (80W)</td>
<td>Yes (80W)</td>
</tr>
<tr>
<td><strong>Power Supply</strong></td>
<td>Internal</td>
<td>External</td>
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# Cisco 870 and 880 Series Comparison

<table>
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<tr>
<th>Feature</th>
<th>870</th>
<th>880</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WAN Technology</strong></td>
<td>FE, ADSL2+oPOTS, ADLSL2+oISDN, G.SHDSL</td>
<td>FE, VDSL2 &amp; ADSL2+ over POTS and ISDN, G.SHDSL (ATM/EFM Options)</td>
</tr>
<tr>
<td><strong>Data Backup</strong></td>
<td>ISDN</td>
<td>ISDN, 3G</td>
</tr>
<tr>
<td><strong>Wireless</strong></td>
<td>802.11b/g</td>
<td>802.11n/g, Unified Wireless Option</td>
</tr>
<tr>
<td><strong>Managed LAN Switch (L2) Ports</strong></td>
<td>Four port 10/100</td>
<td>Four port 10/100</td>
</tr>
<tr>
<td><strong>VLANs (Wired and Wireless)</strong></td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td><strong>Hardware-Based IPsec Encryption</strong></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Flash</strong></td>
<td>24 MB/52 MB</td>
<td>128M or 256M *</td>
</tr>
<tr>
<td><strong>Default DRAM</strong></td>
<td>128 MB</td>
<td>256 MB or 512 MB *</td>
</tr>
<tr>
<td><strong>Max DRAM</strong></td>
<td>192 MB</td>
<td>768 MB or 1024 MB *</td>
</tr>
<tr>
<td><strong>Internal PoE Option</strong></td>
<td>No, External Module</td>
<td>Yes, Two Ports</td>
</tr>
<tr>
<td><strong>Voice Ports</strong></td>
<td>No</td>
<td>Yes, Four-Port FXS (SRST &amp; Voice)</td>
</tr>
<tr>
<td><strong>SRST</strong></td>
<td>No</td>
<td>Yes, FXO or BRI PSTN Fallback (SRST &amp; Voice)</td>
</tr>
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</table>

* Check notes for details
#Cisco 860 and 860VAE Series Comparison

<table>
<thead>
<tr>
<th></th>
<th>860</th>
<th>860VAE</th>
</tr>
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<tbody>
<tr>
<td><strong>WAN</strong></td>
<td>FE, ADSL2_oPOTS (separate SKUs)</td>
<td>GE, VDSL2/ADSL2+ (single SKU) over POTS or ISDN</td>
</tr>
<tr>
<td><strong>Wireless</strong></td>
<td>802.11n/g</td>
<td>Coming up</td>
</tr>
<tr>
<td><strong>Managed LAN Switch (L2) Ports</strong></td>
<td>Four-Port 10/100</td>
<td>Four-Port 10/100 K9 models + 1 GE</td>
</tr>
<tr>
<td><strong>VLANs (Wired and Wireless)</strong></td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td><strong>Hardware-Based IPsec Encryption</strong></td>
<td>Yes</td>
<td>Yes (K9)</td>
</tr>
<tr>
<td><strong>Security</strong></td>
<td>No</td>
<td>ScanSafe (K9 Models)</td>
</tr>
<tr>
<td><strong>Performance</strong></td>
<td>4 Mbit/s</td>
<td>10 Mbit/s</td>
</tr>
<tr>
<td><strong>IPv6 Ready</strong></td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td><strong>BGP routing</strong></td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td><strong>Hardware</strong></td>
<td>With fan, normal 800 form factor</td>
<td>Fan less, compact form factor</td>
</tr>
</tbody>
</table>
Software Feature Overview
## Software Feature Set Overview

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy VPN</td>
<td>✓ (K9 model)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>SSL VPN</td>
<td></td>
<td>✓</td>
<td>(User License Required)</td>
</tr>
<tr>
<td>GETVPN/DMVPN</td>
<td></td>
<td></td>
<td>(User License Required)</td>
</tr>
<tr>
<td>Firewall</td>
<td>✓ (K9 model)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ScanSafe</td>
<td>✓ (K9 model) (Subscription-Based)</td>
<td>✓</td>
<td>(Subscription-Based)</td>
</tr>
<tr>
<td>IPS</td>
<td></td>
<td></td>
<td>✓</td>
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<tr>
<td>WAAS Express</td>
<td></td>
<td></td>
<td>881G and 890 Only</td>
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<tbody>
<tr>
<td>WFQ/CBWFFQ</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>LLQ</td>
<td>✓ (K9 model)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>CoS to DSCP Mapping</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>HQoS</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>RSVP</td>
<td></td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>NBAR</td>
<td>✓ (K9 model)</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>DiffServ</td>
<td></td>
<td></td>
<td>✓</td>
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## Software Feature Set Overview (Cont.)

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<tbody>
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<td>RIPv1/v2</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>EIGRP</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>BGP</td>
<td>✓ (K9 model)</td>
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<td>✓</td>
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<tr>
<td>OSPF</td>
<td></td>
<td>✓</td>
<td></td>
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<tr>
<td>IPv6</td>
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<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>VLANs</td>
<td>5</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Storm Control</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>SPAN</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>PoE (802.3af and Cisco)</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAC Filtering</td>
<td>✓ (K9 model)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>802.1x</td>
<td></td>
<td></td>
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<tr>
<td>Port Security</td>
<td>✓ (K9 model)</td>
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<tr>
<td>Protected Port</td>
<td>✓ (K9 model)</td>
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### Software Feature Set Overview (Cont.)

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<tbody>
<tr>
<td>Autonomous AP Mode</td>
<td>✓</td>
<td></td>
<td>✓</td>
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<tr>
<td>Unified Wireless Mode</td>
<td></td>
<td>✓</td>
<td></td>
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<tr>
<td>H-REAP Mode</td>
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<table>
<thead>
<tr>
<th>Voice</th>
<th></th>
<th></th>
<th>(Voice Models Only)</th>
</tr>
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<tbody>
<tr>
<td>SRST v7.0</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>SIP</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>MGCP</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>SCCP</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>H.323</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>CUBE</td>
<td></td>
<td>✓</td>
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<table>
<thead>
<tr>
<th>High Availability</th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>HSRP/VRRP</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Integrated Backup Port</td>
<td>✓</td>
<td>✓</td>
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</table>

<table>
<thead>
<tr>
<th>Embedded Management</th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>EEM</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>IP SLA</td>
<td>✓ (K9 model)</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>NetFlow</td>
<td>✓ (K9 model)</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
### IPv6 Technologies on ISR G2s

**As of IOS 15.2(4)M (July 2012)**

#### Security
- IPv4 and IPv6 over DMVPN IPv6
- USGv6 IPv6 / IPSecv3
- PKI App Support for IPv6
- IPv6 ACLs
- IPv6– OSPFv3 authentication
- IPv6 Site-to-site
- IPv6 Firewall (ZBF)
- Win7 VPN Termination for IPv6

#### Applications & Mgmt
- Telnet, TFTP, DNS resolver, HTTP(s), Ping, Traceroute, SSH, NTPv4, SLA
- Cisco IP & IP-Forwarding MIBs
- Flexible Netflow IPv6 Support
- SNMP, Syslog over IPv6
- CNS Agents, Config logger, Netconf, SOAP, TCL

#### Unified Communications
- TDM Gateways : SIP over IPv6
- CUBE: H.323/SIP IPv4 to SIP IPv6 Interworking
- CUBE: Transcoding
- CME: SCCP line side support for IPv6

#### Integration
- Configured & Automatic Tunnels
  - (RFC 2893)
- 6to4 (RFC 3056 & 3068)
- IPv6 over GRE/IPv4 (Pr. SW)
- IPv6 over MPLS (6PE)
- IPv6 VPN over MPLS (6VPE)
- ISATAP, 6RD
- IP over IPv6 Tunnels, DMVPN

#### Mobile IPv6
- MIPv6 Home Agent
- Lite Authentication, NEMO

#### IPv6 QoS (MQC)

#### IPv6 Multicast

#### Broadband Access
- Cisco VSA AAA
- AAA: Radius & TACACS IPv6
- PPPoA, PPPoE, RBE and ATM 1483 encapsulations
- DHCPv6 Prefix Delegation (RFC3633), DHCPv6 Relay
- Individual Address DHCP (RFC 3315)
- Generic Prefix

#### Routing & Core
- RIPng, OSPFv3 graceful restart, fast conv
- IS-IS & MT IS-IS for IPv6
- EIGRP for IPv6
- MP-BGP IPv6 Unicast & Multicast
- Policy Based Routing
- CEFv6/dCEFv6
- uRPF Strict & Loose Mode
- CEFv6 Switched Tunnels
- HSRP & GLBP for IPv6
- Default Router Selection
- Stateless Auto-Configuration
- Anycast
IPv6 Roadmap for ISR G2s

15.2(4)M (July 2012)

Security
- ISM VPN Module IPv6 support
- IKEv2 Load Balancer

AVC Enhancement
- Performance Agent support for IPv6

Mobility
- Proxy Mobile IPv6 MAG

Routing
- FHRP – unified VRRP for IPv6
- EIGRP NSF for IPv6
- EIGRP BFD for IPv6
- ISIS admin-tag support for IPv6
- ISIS IPv6 advertise passive-only

15.3(1)T (Nov 2012)

Security
- DMVPN IPv6 – Per Tunnel QoS
- Remote Access VPN IPv6

AVC Enhancement
- NBAR IPv6 Phase 2

Medianet Enhancement
- Flow Metadata IPv6 support

Routing
- IPv6 VRF Aware PBR next-hop enhancement
- MFIB – MVPNv6
- EIGRP IPv6 MIBS
- IP Tunnel support for multicast o mGRE (IPv6)

Radar (2013)

Unified Communications
- CUBE support for IPv6
- TDM-SIP GW for IPv6
- cRTP for IPv6
- IPv6 RSVP mCAC

Routing
- NAT 64, NAT 66, NAT 46
- BGP – IPv6 feature enablement
- DNS FlexVPN IPv6
- DHCP FlexVPN IPv6
- HSRP – IPv6 Global virtual address
- Multicast Socket support for IPv6
- DMVPN IPv6 per tunnel QoS
- LDAP over IPv6

WAASX Support for IPv6

Disclaimer: Many of the products and features described herein remain in varying stages of development and will be offered on a when-and-if-available basis. This roadmap is subject to change at the sole discretion of Cisco, and Cisco will have no liability for delay in the delivery or failure to deliver any of the products or features set forth in this document.
Software & Licensing
Cisco SW Activation: Universal Image

Universal K9 Image

+ Advanced Security Services License

= Cisco IOS Packaged Images

Advanced Security License*

*Not an upgrade SKU, but included in the router purchase.
# Cisco 860VAE, 880, and 890 Series Feature Set Software Activation

<table>
<thead>
<tr>
<th></th>
<th>860VAE</th>
<th>860VAE-K9</th>
<th>880</th>
<th>880G/880Voice</th>
<th>890</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IP Base</strong></td>
<td>Default</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Advanced Security Feature Set</strong></td>
<td>N/A</td>
<td>Default</td>
<td>Default</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Advanced IP Services Feature Set</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>✓</td>
<td>Default</td>
<td>Default</td>
</tr>
<tr>
<td><strong>Software Upgrade SKU</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>SL-880-AIS</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*Nonpayload encryption (NPE) license and Cisco IOS software images are also available.*
Software Upgrade Process

1. Customer purchases required Product Activation Key (PAKs)
2. Product ID (PID) and Serial Number (SN) are obtained from the device
3. The PID, SN, and PAK are entered into Cisco’s licensing portal
4. License file is sent to customer via email
5. Customer installs licenses on the devices to activate the additional features
Software Activation Management Tool

- Cisco License Manager (CLM) is a downloadable License tool to allow users to install licenses on multiple devices in their network: up to 30,000 devices

- CLM offers the following functions and capabilities
  - Discovers the network
  - Offers per device license inventory, reporting, and status
  - Obtains and deploys licenses via secure connections
  - Offers integration into the existing license management application

GUI-Based Wizards to Obtain and Deploy Licenses Securely in the Network
# Cisco 800 Series Feature Set Additional Licensing Options

<table>
<thead>
<tr>
<th>860VAE Series</th>
<th>880/880G Series</th>
<th>880VOICE</th>
<th>890 Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>(c860vae-advsecurityk9.bin)</td>
<td>(c880data-universalk9-mz)</td>
<td>(c880voice-universalk9-mz)</td>
<td></td>
</tr>
<tr>
<td>(c860vae-ipbasek9.bin)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WAAS Express</td>
<td>FL-C880-WAASX</td>
<td>N/A</td>
<td>FL-C890-WAASX</td>
</tr>
<tr>
<td>SSL VPN</td>
<td>FL-WEBVPN-10-K9 (12.4T-Based IOS Releases)</td>
<td>FL-WEBVPN-10-K9 (12.4T-Based IOS Releases)</td>
<td>FL-SSLVPN25-K9 (15.x-Based IOS Releases)</td>
</tr>
<tr>
<td></td>
<td>FL-SSLVPN10-K9 (15.x-Based IOS Releases)</td>
<td>FL-SSLVPN10-K9 (15.x-Based IOS Releases)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>N/A</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>
Product Pictures
800 Series Front View

* Positioned as M2M router, therefore this presentation doesn't go into detail
** Used in special deployment scenarios, therefore this presentation doesn't go into detail
Cisco 892F Series

Memory
Flash
Default: 256 MB
Max: 256 MB

DRAM
Default: 512 MB
Max: 1G MB

- Desktop chassis with external power supply
- ISDN backup
- Two USB 2.0 flash memory or security e-token
- Default Cisco IOS Advanced IP Services feature set

802.11n WLAN
2.4 GHz and 5 GHz (Factory Option)

Power over Ethernet
(4 Ports)

Security Cable Lock

ISDN BRI Backup
GE WAN
FE WAN
SFP
AUX
Console Port
8-Port 10/100
FE Managed Switch

802.11n WLAN
2.4 GHz and 5 GHz (Factory Option)

Power over Ethernet
(4 Ports)

Security Cable Lock

ISDN BRI Backup
GE WAN
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Power over Ethernet
(4 Ports)
Cisco 892FSP Series

Memory
Flash
Default: 256 MB
Max: 256 MB

DRAM
Default: 512 MB
Max: 1G MB

• Desktop chassis with external power supply
• One USB 2.0 flash memory or security e-token
• Default Cisco IOS Advanced IP Services feature set
Cisco 897VAMW Series

Memory
Flash
Default: 256 MB
Max: 256 MB

DRAM
Default: 512 MB
Max: 1G MB

- Desktop chassis with external power supply
- One USB 2.0 flash memory or security e-token
- Default Cisco IOS Advanced IP Services feature set

- Integrated 2.4 & 5 GHz Antenna
- VDSL2/ADSL2+ Over POTS
- USB 2.0 Port
- RJ45/SFP Combo WAN
- 8-Port 10/100/1000 FE Managed Switch
- 4 Port PoE
- Power Switch
- Power Connector
- Security Cable Lock
- Console & AUX Port
- Reset Button
Cisco 880/880VA Series
Integrated Services Routers

Memory
Flash
Default: 128 MB
Max: 128 MB

DRAM
Default: 256 MB
Max: 768 MB

- Desktop chassis with external power supply
- One USB (1.1) flash memory or security e-token
- Default Cisco IOS Advanced Security feature set, upgradeable to Advanced IP Services feature set

WAN Port:
- 881 = 10/100 Fast Ethernet
- 886VA = Multimode VDSL2/ADSL2+ Annex B
- 886VA-J = Multimode VDSL2/ADSL2+ Annex J
- 887VA = Multimode VDSL2/ADSL 2+ Annex A
- 887VA-M = Multimode VDSL2 ADSL 2+ Annex M
- 888 = G.SHDSL ATM Support
- 888E = G.SHDSL EFM Support
- 888EA = G.SHDSL EFM/ATM Support

ISDN Backup on Select Models

Power over Ethernet (Factory Option)

4-Port 10/100 FE Managed Switch

Console Port/ Virtual AUX Port

Power Connector

Reset Button

Security Cable Lock

Desktop chassis with external power supply
One USB (1.1) flash memory or security e-token
Default Cisco IOS Advanced Security feature set, upgradeable to Advanced IP Services feature set

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C880W/880GW Series
Integrated Services Routers

Memory
Flash
Default: 128 MB
Max: 128 MB

DRAM
Default: 512 MB
Max: 512 MB

- Desktop chassis with external power supply
- 802.11b/g/n WLAN (factory option)
- One USB (1.1) flash memory or security e-token
- Default Cisco IOS Advanced Security feature set, upgradeable to Advanced IP Services feature set

WAN Port:
- 881 = 10/100 Fast Ethernet
- 886VA = Multimode VDSL2/ADSL2+ Annex B
- 887VA = Multimode VDSL2/ADSL 2+ Annex A
- 887VAM = Multimode VDSL2 ADSL 2+ Annex M
- 888 = G.SHDSL ATM Support (with External WLAN Antenna
- 888E = G.SHDSL EFM Support (with External WLAN Antenna

- 802.11n WLAN with Embedded Antenna
- ISDN Backup on Select Models
- USB
- Power over Ethernet (Factory Option)
- Console Port/ Virtual AUX Port
- Power Connector
- Security Cable Lock
- Reset Button
- 4-Port 10/100 FE Managed Switch
C880G Series
Integrated Services Routers

Memory
Flash
Default: 256 MB
Max: 256 MB

DRAM
Default: 512
Max: 1G MB

3G Antenna
- Desktop chassis with external power supply
- 3G backup (factory options)
- One USB (1.1) flash memory or security e-token
- Default Cisco IOS Advanced IP Services feature set

USB

Dual SIM Slot

Power over Ethernet (Factory Option)

4-Port 10/100 FE Managed Switch

Reset Button

Power Connector

Security Cable Lock

3G Diagnostic Port

WAN Port:
881 = 10/100 Fast Ethernet
887VA = Multimode VDSL2/ADSL 2+ Annex A
887VAM = Multimode VDSL2 ADSL 2+ Annex M
888E = G.SHDSL EFM Support

4-Port 10/100 FE Managed Switch

Console Port/
Virtual AUX Port

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Cisco 880 VOICE

802.11n WLAN (Factory Option)

Memory
Flash
Default: 256 MB
Max: 256 MB

DRAM
Default: 512 MB
Max: 768 MB

WAN Port:
881 = 10/100 FE
887 = VDSL/ADSL

• Desktop chassis with external power supply
• 4-port FXS with BRI or FXO for PSTN fallback
• Supports up to four phones
• One USB (1.1) flash memory or security e-token
• Cisco IOS Advanced IP Services feature set

Power over Ethernet (Factory Option)

Memory
Flash
Default: 256 MB
Max: 256 MB

DRAM
Default: 512 MB
Max: 768 MB

WAN Port:
881 = 10/100 FE
887 = VDSL/ADSL

• Desktop chassis with external power supply
• 4-port FXS with BRI or FXO for PSTN fallback
• Supports up to four phones
• One USB (1.1) flash memory or security e-token
• Cisco IOS Advanced IP Services feature set

Power over Ethernet (Factory Option)
Cisco 860VAE Series
Integrated Services Router

Memory
Flash
860VAE Default & Max: 64 MB
860VAE-K9 Default & Max: 56 MB

DRAM
Default & Max: 256 MB

- Desktop chassis with external power supply
- Cisco IOS feature set:
  - 860VAE: IP Base
  - 860VAE-K9: Advanced Security

WAN Ports:
866 = Multimode DSL (ISDN) + GE
867 = Multimode DSL (POTS) + GE

1-Port 10/100/1000 LAN (K9 version only)

Console Port/
Virtual AUX Port
Reset
Button

1-Port USB (2.0)

Power Connector & Switch

Security Cable Lock

4-Port 10/100 FE Switch
Products & Solutions

Ethernet & SFP
# 890 SFP Options

## Cisco SFPs

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLC-LH-SM</td>
<td>1000BASE-LX/LH SFP Transceiver Module for MMF and SMF, 1300-nm Wavelength</td>
</tr>
<tr>
<td>GLC-SX-MM</td>
<td>1000BASE-SX SFP Transceiver Module for MMF, 850-nm Wavelength</td>
</tr>
<tr>
<td>GLC-ZX-SM</td>
<td>1000BASE-ZX SFP Transceiver Module for SMF, 1550-nm wavelength</td>
</tr>
<tr>
<td>GLC-BX-D</td>
<td>1000BASE-BX10-D Downstream Bidirectional Single Fiber; with DOM</td>
</tr>
<tr>
<td>GLC-BX-U</td>
<td>1000BASE-BX10-U Upstream Bidirectional Single Fiber; with DOM</td>
</tr>
<tr>
<td>GLC-T</td>
<td>1000BASE-T standard</td>
</tr>
</tbody>
</table>

3rd party SFP support is on the Roadmap, estimate is Q2/Q3 CY 2013
Products & Solutions
Wireless LAN
Wireless Broadband
Superior Customer Experience with Seamless Mobility with Secure Wireless Data

Wireless Any Place, Any Time
- Secure, scalable, and remote management/monitoring of AP
- AP part of Unified Wireless Networking Architecture

ISR G2: “Secure Mobility Lives Here”

802.11

Small Branch/ Rural Untethered Micro-Branch/Office Everything in Branch Becomes Wireless-Enabled

Multipath, Nonterrestrial Redundant Broadband Connectivity for Enterprise Branch

Digital Signage and NG Vending Machines Streaming Video and WLAN Hotspot
Cisco Unified Wireless LAN: Extending Cisco Wireless Router Solution

- 2.4 GHz and 5 GHz, 802.11n support
- Extended range and higher throughput
- Hands-free wireless provisioning with controller
- Dynamic RF management with WCS

- Mix and match embedded AP with external APs with consistent feature and management capabilities
- HREAP option providing local traffic switching support for branch office and teleworkers
802.11n Wireless LAN Highlights

- Embedded access point in Cisco 890, and 880 series, factory option only
- Dedicated AP processor, memory, and Cisco IOS image
  - Full compatibility with Cisco Unified Wireless LAN Management using Cisco Wireless LAN Controller and Wireless Control System
  - Feature parity with Cisco Aironet® 1250 access points and shared feature roadmap
- Default Autonomous Mode, upgradeable to Unified mode (LWAPP)
  - Cisco Unified Wireless Network architecture
- New C880W platforms with enhanced mechanical design
  - Embedded WLAN antenna
  - Fanless
  - Single power supply for chassis and PoE option
  - IOS release 15.1(4)M
  - WLC version 7.0.116.0 (new C880W models are not supported by WLC 2100)
  - WCS version 7.0.172.0
Next Generation Wireless – AP802

- AP model AP802AGN is a Dual radio 802.11n AP, supported by Next generation c8xx series of host platforms.
- AP802 Single Radio(AP802GN)
- AP802 Dual Radio(AP802AGN).
- AP802 will be running on 2nd core. Host Router will be running on 1st core.
- AP802 Embedded AP will maintain feature parity with older AP801.
- DFS and Cleanair will be supported.
- Embedded AP supports a default autonomous mode image which can be upgraded to a unified mode.
- AP will be fully compatible with WNBU wireless management (dependency on WNBU’s releases), achieve feature parity for single AP deployments, and leverage ongoing WNBU feature roadmap.
- AP802 is **NOT** supported by WLC 2100 due to memory constraints.
# AP802GN – Single Radio SKUs:

<table>
<thead>
<tr>
<th>880</th>
</tr>
</thead>
<tbody>
<tr>
<td>C881W-A-K9</td>
</tr>
<tr>
<td>C881W-E-K9</td>
</tr>
<tr>
<td>C881W-P-K9</td>
</tr>
<tr>
<td>C886VA-W-E-K9</td>
</tr>
<tr>
<td>C887VAM-W-E-K9</td>
</tr>
<tr>
<td>C887VA-W-A-K9</td>
</tr>
<tr>
<td>C887VA-W-E-K9</td>
</tr>
</tbody>
</table>
## AP802AGN – Dual Radio SKUs:

<table>
<thead>
<tr>
<th></th>
<th>812</th>
<th>819</th>
<th>880</th>
<th>890</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C812G-CIFI+7-N-K9</td>
<td>C819HGW+7-N-K9</td>
<td>C881GW+7-E-K9</td>
<td>C897VAW-E-K9</td>
</tr>
<tr>
<td></td>
<td>C819HWD-E-K9</td>
<td>C887VAGW+7-E-K9</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>C887VA-WD-A-K9</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>C887VA-WD-E-K9</td>
</tr>
</tbody>
</table>
AP802AGN Hardware Overview

- Runs on 2nd core of the CPU chip used by Host router running on 1st core.
- 128MB of DRAM
- 64MB Compact flash (For images and configuration)
- 1.5MB of Boot flash (For MIC keys, Bootloader and Cookie)
- Dual Radio 802.11n radio card. Radio hardware is leveraged from AP3500 Radio.
- Console redirect access thru Router console.
- Data packet path to Host Router thru internal GE switch-port connection.
AP802 PIDs

- X – Regional domain; A & E Regional domains will be supported in 1\textsuperscript{st} release.

<table>
<thead>
<tr>
<th>PID</th>
<th>Antenna Type</th>
<th>AP Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>AP802AGN-X-K9</td>
<td>Internal</td>
<td>Indoor</td>
</tr>
<tr>
<td>AP802H-AGN-X-K9</td>
<td>External</td>
<td>Outdoor</td>
</tr>
</tbody>
</table>

Host router purchase with WLAN support will include one of the above PIDs.
## Difference between AP801 & AP802

<table>
<thead>
<tr>
<th></th>
<th>AP801</th>
<th>AP802</th>
</tr>
</thead>
<tbody>
<tr>
<td>Runs on</td>
<td>Runs on a separate CPU chip different from Host Router.</td>
<td>Runs on the 2nd core of the same CPU chip used by the Host router running on 1st core</td>
</tr>
<tr>
<td></td>
<td>Even if the Host router is reloaded/crashed, WLAN AP can</td>
<td>If the host router goes down, WLAN AP will also go down</td>
</tr>
<tr>
<td></td>
<td>continue to stay up.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>If the WLAN AP goes down, Host router will continue to stay up.</td>
<td>If the WLAN AP goes down, Host Router will stay up unless it is a very critical that mandates complete system shutdown.</td>
</tr>
<tr>
<td></td>
<td>Supports External Antenna</td>
<td>Supports embedded Internal and External antenna</td>
</tr>
<tr>
<td></td>
<td>Has dedicated Flash and DRAM chips</td>
<td>Shares the Bootflash, Compact flash and DRAM with 1st core.</td>
</tr>
<tr>
<td></td>
<td>Bootloader upgrade is possible from Bootloader itself by</td>
<td>Bootloader upgrade is possible only from Host router using “service-module wlan-ap 0 upgrade bootloader” command.</td>
</tr>
<tr>
<td></td>
<td>issuing “copy &lt;new_bootloader_file&gt; bs:”.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cleanair not supported</td>
<td>Cleanair supported</td>
</tr>
</tbody>
</table>
Difference between AP801 & AP802

- AP802 Embedded AP will maintain feature parity with AP801.
- How can you tell if you have AP801 or AP802?

show version

32K bytes of flash-simulated non-volatile configuration memory.
Base ethernet MAC Address: 00:22:BD:D4:8B:01
Part Number : 74-7519-01
PCA Assembly Number : 800-34361-01
PCA Revision Number : 01
PCB Serial Number : FOC14314RZ0
Top Assembly Part Number : 800-34361-01
Top Assembly Serial Number : FCW1434001Z
Top Revision Number : 03
Product/Model Number : AP802AGN-E-K9
Products & Solutions

Wireless WAN
Cisco 880 Integrated Services Router
Featuring Integrated WWAN

Embedded Modem available on:
- C88xG(C881G, 880VAG, 888G)
- Same architecture as E/HWIC

WWAN Benefits
- Backup or main WAN link
- High Availability - True multi path backup
- Broadband speeds
- Rapid deployment
- Ideal for Portable Businesses
- Operational Efficiency
- Cost-effective
## Cisco 800 Series WWAN
### SKU & Carrier Overview

<table>
<thead>
<tr>
<th></th>
<th>C881G+7</th>
<th>C886VAG+7</th>
<th>C887VAG+7</th>
<th>C887VAMG+7</th>
<th>C881G+7-A</th>
<th>C881G-U</th>
<th>C881G-V</th>
<th>C881G-S</th>
<th>C881G-B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Global 3.7G</strong></td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>North America 3.7G</strong></td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Global 3.5G</strong></td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Verizon US 3G</strong></td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sprint US 3G</strong></td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>BSNL India 3G</strong></td>
<td>✔</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Cisco 3G Accessory

Antennas

<table>
<thead>
<tr>
<th>Name</th>
<th>PID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dipole Antenna</td>
<td>3G-ANTM1919D</td>
</tr>
<tr>
<td>Ceiling Mount</td>
<td>3G-ANTM1916-CM</td>
</tr>
<tr>
<td>Outdoor LP Antenna</td>
<td>3G-ANTM-OUT-LP</td>
</tr>
<tr>
<td>Omnidirectional Outdoor Antenna</td>
<td>3G-ANTM-OUT-OM</td>
</tr>
</tbody>
</table>
### Cisco 3G Accessory

**Cables, Extensions, Bundles & Other**

- **Antenna LMR 240**
  - 20/50/75 ft Cable

- **Antenna LMR 400**
  - 20/50 ft Cable

### Table: Accessories and Cables

<table>
<thead>
<tr>
<th>Name</th>
<th>PID</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>LMR 400 Cable (Ultra Low Loss)</td>
<td>3G-CAB-ULL-20, 3G-CAB-ULL-50</td>
<td>20 ft (6 m), 50 ft (15 m)</td>
</tr>
<tr>
<td>LMR 240 Cable</td>
<td>3G-CAB-LMR240-25, 3G-CAB-LMR240-50, 3G-CAB-LMR240-75</td>
<td>25 ft (7.5 m), 50 ft (15 m), 75 ft (22.5 m)</td>
</tr>
<tr>
<td>Antenna Extension Base</td>
<td>3G-AE010-R, 3G-AE015-R</td>
<td>10 ft (3 m), 15 ft (4.5 m)</td>
</tr>
<tr>
<td>Lightning Arrestor</td>
<td>3G-ACC-OUT-LA</td>
<td>-</td>
</tr>
</tbody>
</table>

**Bundles**

- **Outdoor LP Antenna with cable**
  - 3G-ANT-OUT-LP
  - 15 ft (4.5 m)

- **Omni outdoor Antenna & Lightning Arrestor Combo**
  - 3G-ANT-OUT-COMBO
  - -
# C88x WWAN Fixed ISRs

<table>
<thead>
<tr>
<th></th>
<th>C88xG-U-K9</th>
<th>C88xG+7-K9</th>
<th>C88xG-V/S/B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Modem</strong></td>
<td>MC8795</td>
<td>MC8705</td>
<td>MC5728v</td>
</tr>
<tr>
<td><strong>Speeds</strong></td>
<td>HSxPA (x-D/U) 7.2Mbps down 5.7Mbps up</td>
<td>HSPA+ 21Mbps down 5.7Mbps up</td>
<td>Up to EVDO-RevA 3.1 Mbps down 1.8 Mbps up</td>
</tr>
<tr>
<td><strong>IOS Release</strong></td>
<td>15.1(3)T /later</td>
<td>15.1(4)M1 /later</td>
<td>15.1(3)T or later</td>
</tr>
<tr>
<td><strong>Frequency</strong></td>
<td>850/900/1800/ 1900 MHz GPRS/EDGE &amp; 850/900/1900/2100 MHz UMTS/HSPA bands</td>
<td>800 MHz &amp;1900 MHz</td>
<td>x: V-Verizon, S-Sprint, B-BSNL</td>
</tr>
<tr>
<td><strong>ISP</strong></td>
<td>Global</td>
<td>Global, -A:AT&amp;T</td>
<td>x: V-Verizon, S-Sprint, B-BSNL</td>
</tr>
<tr>
<td><strong>SKUs</strong></td>
<td>C881G-U-K9</td>
<td>C881G+7, C886VAG+7-K9, C887VAG+7-K9, C887VAMG+7-K9, C888EG+7-K9, C881G+7-A</td>
<td>C881G-V-K9, C881G-S-K9, C881G-B-K9, C887VAG-S-K9</td>
</tr>
</tbody>
</table>
## Feature Highlights

<table>
<thead>
<tr>
<th>Feature</th>
<th>C88xG-U/+7</th>
<th>C88xG-S/V/B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3G Wireless</strong></td>
<td>Supports HSPA+, HSPA, HSDPA, HSUPA, UMTS, GPRS/EDGE</td>
<td>Supports 1xRTT, EVDO Rel0, EVDO RevA</td>
</tr>
<tr>
<td></td>
<td>Automatic best network/service selection</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SMS (send/receive/archive)</td>
<td>SMS (send/receive/archive)</td>
</tr>
<tr>
<td></td>
<td>Standalone GPS (NMEA)</td>
<td>Standalone GPS (NMEA)</td>
</tr>
<tr>
<td></td>
<td>Quad band GPRS + Tri UMTS bands</td>
<td>PCS and Cellular bands</td>
</tr>
<tr>
<td></td>
<td>16 Configurable Data Profiles</td>
<td>Support Mobile IP and Simple IP</td>
</tr>
<tr>
<td></td>
<td>SIM card slot for carrier provisioning</td>
<td>OTASP/OMA-DM provisioning</td>
</tr>
<tr>
<td></td>
<td>Remote FW upgrade and diagnostics</td>
<td>Remote FW upgrade and diagnostics</td>
</tr>
<tr>
<td><strong>IOS Interface</strong></td>
<td>Dial on Demand (DDR) Interface (Interface Cellular), Seamless Dial backup</td>
<td></td>
</tr>
<tr>
<td></td>
<td>for primary link failure</td>
<td></td>
</tr>
<tr>
<td><strong>Management</strong></td>
<td>IOS CLI for modem activation/provisioning, SNMP MIB for remote modem</td>
<td></td>
</tr>
<tr>
<td></td>
<td>management</td>
<td></td>
</tr>
<tr>
<td><strong>Security/VPN</strong></td>
<td>IPsec with hardware acceleration, SSH, Firewall, IPS, Tunnel less VPN,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NAT/PAT, GRE Tunneling, NBAR</td>
<td></td>
</tr>
<tr>
<td><strong>Interfaces</strong></td>
<td>Wide array of LAN/WAN options on ISR like FE/GE/T1/E1/Serial/DSL</td>
<td></td>
</tr>
<tr>
<td><strong>Wireless LAN</strong></td>
<td>Integrated Access Point (HWIC-AP) and WLAN Controller</td>
<td></td>
</tr>
</tbody>
</table>
Broadband xDSL

VDSL2/ADSL2+
ANNEX B & J ARE FOR ISDN, ANNEX A & M ARE FOR POTS
EACH ANNEX HAS AN INDIVIDUAL SKU, REFERENCE THE SKU TABLE LATER ON FOR DETAILS

<table>
<thead>
<tr>
<th>Annex</th>
<th>Upstream*</th>
<th>Downstream*</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>1.4 Mbit/s</td>
<td>22 Mbit/s</td>
</tr>
<tr>
<td>J</td>
<td>3.3 Mbit/s</td>
<td>22 Mbit/s</td>
</tr>
<tr>
<td>A</td>
<td>1.4 Mbit/s</td>
<td>24 Mbit/s</td>
</tr>
<tr>
<td>M</td>
<td>3.3 Mbit/s</td>
<td>22 Mbit/s</td>
</tr>
</tbody>
</table>

* These are theoretical numbers only
# VDSL2

<table>
<thead>
<tr>
<th>Profile</th>
<th>Upstream*</th>
<th>Downstream*</th>
</tr>
</thead>
<tbody>
<tr>
<td>8a</td>
<td>15 Mbit/s</td>
<td>50 Mbit/s</td>
</tr>
<tr>
<td>8b</td>
<td>15 Mbit/s</td>
<td>50 Mbit/s</td>
</tr>
<tr>
<td>8c</td>
<td>15 Mbit/s</td>
<td>50 Mbit/s</td>
</tr>
<tr>
<td>8d</td>
<td>15 Mbit/s</td>
<td>50 Mbit/s</td>
</tr>
<tr>
<td>12a</td>
<td>22 Mbit/s</td>
<td>68 Mbit/s</td>
</tr>
<tr>
<td>12b</td>
<td>22 Mbit/s</td>
<td>68 Mbit/s</td>
</tr>
<tr>
<td>17a</td>
<td>50 Mbit/s</td>
<td>100 Mbit/s</td>
</tr>
<tr>
<td>30a**</td>
<td>100 Mbit/s</td>
<td>200 Mbit/s</td>
</tr>
</tbody>
</table>

* Maximum theoretical value, real life deployments have less.

**Profile 30a is not supported on currently shipping hardware**

The actual data rate negotiated during the line training process is dependent on the profiles supported by the DSLAM, CPE’s distance from the central office where the DSLAM is located, noise conditions, and other parameters associated with line quality.
ADSL2+ and VDSL2 Frequencies

- ADSL2+
  - Tx Power: 20.5 dBm
  - Frequency Ranges:
    - VDSL2 8b
    - VDSL2 8a
    - VDSL2 8d
- ADSL2
  - Frequency Ranges:
    - VDSL2 12a,b
    - VDSL2 17a
    - VDSL2 30a

Bandwidths:
- Analog Bandwidth: 30 MHz
- # of Tones:
  - 4 kBaud: 256 512
  - 8 kBaud: 2048 2782 4096
  - Total: 3478 Tones

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# Cisco 800 Series Broadband A/VDSL

## Overview

<table>
<thead>
<tr>
<th></th>
<th>866VAE</th>
<th>867VAE</th>
<th>886VA</th>
<th>886VA-J</th>
<th>887VA</th>
<th>887VA-M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multimode over POTS, Annex A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(limited)</td>
</tr>
<tr>
<td>Multimode over POTS, Annex M</td>
<td>(limited)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multimode over ISDN, Annex B</td>
<td></td>
<td></td>
<td>✓</td>
<td></td>
<td></td>
<td>(limited)</td>
</tr>
<tr>
<td>Multimode over ISDN, Annex J</td>
<td>(limited)</td>
<td></td>
<td></td>
<td></td>
<td>(limited)</td>
<td>✓</td>
</tr>
<tr>
<td>ISDN Backup</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
## VDSL/ADSL+ Chipsets and SKUs

<table>
<thead>
<tr>
<th>BROADCOM 63168</th>
<th>BROADCOM 6366U</th>
</tr>
</thead>
<tbody>
<tr>
<td>CISCO866VAE</td>
<td>CISCO886VA-K9</td>
</tr>
<tr>
<td>CISCO866VAE-K9</td>
<td>C886VAG+7-K9</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>CISCO886VA-SEC-K9</td>
<td>C897VA-K9*</td>
</tr>
<tr>
<td>CISCO867VAE</td>
<td>C886VA-W-E-K9</td>
</tr>
<tr>
<td>CISCO867VAE-K9</td>
<td>C897VAW-E-K9*</td>
</tr>
<tr>
<td></td>
<td>C897VA-M-K9*</td>
</tr>
<tr>
<td>CISCO887VA-K9</td>
<td>C897VAM-W-E-K9*</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>C887VA-SEC-K9</td>
<td></td>
</tr>
<tr>
<td>C887VA-V-K9</td>
<td></td>
</tr>
<tr>
<td>C887VA-V-W-E-K9</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>C887VA-W-A-K9</td>
<td></td>
</tr>
<tr>
<td>C887VA-W-E-K9</td>
<td></td>
</tr>
<tr>
<td>C887VAG-S-K9</td>
<td></td>
</tr>
<tr>
<td>C887VAG+7-K9</td>
<td></td>
</tr>
<tr>
<td>C887VAM-W-E-K9</td>
<td></td>
</tr>
<tr>
<td>CISCO887VA-M-K9</td>
<td></td>
</tr>
</tbody>
</table>

* Upcoming SKUs

C887VAMG+7-K9
VDSL/ADSL+ Chipsets FW Versions

- **6366U Chipset (880VA & 890VA)**
  - Product ID: FW-VA-[firmware-version, like -32B, 35D etc.]
    - Filename (example): VA_A_37H_B_37G_24d.bin
      - The filename consists of: [chipset][ADSL Annex & version][VDSL Annex & version][Linux version].bin
      - In this example: Annex A Firmware 37H, Annex B Firmware 37G, Linux version 24d

- **63168 Chipset (860VAE)**
  - Product ID: FW-VAE-[firmware-version, like -32B, 35D etc.]
    - Filename (example): VAE_A_37H_B_37G_24d.bin

- The firmware versions have feature-parity but as the chipsets differ the software has do be adapted to the chipset and therefore is NOT interchangeable!
- The firmware can be selected during ordering or can be manually updated afterwards.
**IOS Software integrated DSL Firmware**

- Each IOS has a certain DSL Firmware version integrated. This firmware version can be updated manually or selected during ordering process.

- The IOS has a default DSL FW version integrated:
  - Starting from IOS 15.1(2)T we integrated DSL FW 30H
  - Starting from IOS 15.1(2)T2 we integrated DSL FW 32B
  - Starting from IOS 15.2(4)M we integrated DSL FW 35J

* Please make sure the FW is certified by the Service Provider
### VDSL2/ADSL2+ Features

#### Broadcom 6366U & 63168 (all 800 VA and VAE)

<table>
<thead>
<tr>
<th>General DSL Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dying gasp</td>
</tr>
<tr>
<td>IEEE 802.1q VLAN tagging</td>
</tr>
<tr>
<td>Independent DSL firmware loading</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VDSL2 Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITU G.993.2 (VDSL2)</td>
</tr>
<tr>
<td>997 and 998 band plans</td>
</tr>
<tr>
<td>VDSL2 profiles: 8a, 8b, 8c, 8d, 12a, 12b, and 17a</td>
</tr>
<tr>
<td>U0 band support (25-276 kHz)</td>
</tr>
<tr>
<td>Ethernet PTM mode only based on IEEE 802.3ah 64/65 octet encapsulation</td>
</tr>
<tr>
<td>DELT diagnostics mode</td>
</tr>
<tr>
<td>G.1NP, PhyR, SRA</td>
</tr>
<tr>
<td>Vectoring (ROADMAP)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ADSL2/2+ Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADSL over basic telephone service with Annex A and Annex B ITU G. 992.1 (ADSL), G.992.3 (ADSL2), and G.992.5 (ADSL2+)</td>
</tr>
<tr>
<td>ADSL over basic telephone service with Annex M (extended upstream bandwidth) G.992.3 (ADSL2) and G.992.5 (ADSL2+)</td>
</tr>
<tr>
<td>Cisco 887VA-M is optimized for PSD Mask EU-64 M9.</td>
</tr>
<tr>
<td>Cisco 887VA-M supports UK Annex M.</td>
</tr>
<tr>
<td>G.994.1 ITU G.hs</td>
</tr>
<tr>
<td>Reach-extended ADSL2 (G.922.3) Annex L</td>
</tr>
<tr>
<td>T1.413 ANSI ADSL DMT issue 2 compliance</td>
</tr>
<tr>
<td>DSL Forum TR-067/TR-100 conformity</td>
</tr>
<tr>
<td>Impulse Noise Protection (INP) and extended INP-delay</td>
</tr>
<tr>
<td>Upstream / Downstream Power Back Off (U/DPBO)</td>
</tr>
<tr>
<td>ATM mode only</td>
</tr>
</tbody>
</table>
Cisco 880VA Series DSLAM Interoperability

- Alcatel ISAM 7302, ASAM7300
- ZTE 9806
- Huawei 5603, MA 5600
- ECI Hi-Focus 480
- Ericsson ECN 320, EDA 2.1
- Siemens HiX 5300
- Fujitsu FDX Hub 1000
- Lucent Stinger
- Nokia D500
- More details on supported linecards and firmware

Broadband xDSL
G.SHDSL
Basics of G.SHDSL

G.SHDSL (Single-Pair High-speed Digital Subscriber Line)

• ITU-T G.991.2

• Annex A and B: Symmetrical data rates from 192 kbit/s to 2,304 kbit/s over a single copper pair, and 384 kbit/s to 4,608 kbit/s over two copper pairs

• Annex F and G: symmetrical data rates from 768 kbps to 5.696 Mbps over a single copper pair and from 1.536 to 11.392 Mbps over two copper pairs

• IMA, M-pair, or EFM bonding

• ATM or EFM mode
## G.SHDSL Product Overview

<table>
<thead>
<tr>
<th>Cisco 888 (Conexant GS2237)</th>
<th>Cisco 888E (Conexant Orion Plus)</th>
<th>Cisco 888EA/898EA (Lantiq Socrates-4e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CISCO888-K9</td>
<td>CISCO888E-K9</td>
<td>C888EA-K9</td>
</tr>
<tr>
<td>CISCO888W-GN-A-K9</td>
<td>C888EG+7-K9</td>
<td>C898EA-K9</td>
</tr>
<tr>
<td>CISCO888W-GN-E-K9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CISCO888GW-GN-A-K9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CISCO888GW-GN-E-K9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# G.SHDSL Feature Highlights

<table>
<thead>
<tr>
<th>Feature</th>
<th>Cisco 888</th>
<th>Cisco 888E</th>
<th>Cisco 888EA/898EA</th>
</tr>
</thead>
<tbody>
<tr>
<td>ITU G.991.2</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Annex A &amp; B</td>
<td>192 kbps to 2.304 Mbps per pair</td>
<td>192 kbps to 2.304 Mbps per pair</td>
<td>192 kbps to 2.304 Mbps per pair</td>
</tr>
<tr>
<td>Annex F &amp; G</td>
<td>768 kbps to 5.696 Mbps per pair</td>
<td>768 kbps to 5.696 Mbps per pair</td>
<td>768 kbps to 5.696 Mbps per pair</td>
</tr>
<tr>
<td>Number of pairs (non bonding)</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>ATM</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>ATM 4 wire mode (physical layer bonding)</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>EFM</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Number of pairs (EFM bonding)</td>
<td>No</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>IMA</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
# G.SHDSL Feature Highlights

<table>
<thead>
<tr>
<th>Feature</th>
<th>Cisco 888</th>
<th>Cisco 888E</th>
<th>Cisco 888EA/898EA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line coding</td>
<td>16-TCPAM</td>
<td>16-TCPAM/32-TCPAM</td>
<td>16-TCPAM/32-TCPAM</td>
</tr>
<tr>
<td>Wetting Current</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Rate Adaptive Mode</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Dying Gasp</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Extensive ATM QoS features</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Independent DSL firmware upgrade</td>
<td>No</td>
<td>Yes*</td>
<td>No**</td>
</tr>
</tbody>
</table>

* Firmware needs to be named gtidsp.bin and stored on router flash, followed by a router reload
** Engage the BU for support if separate firmware is required
Cisco 800 Series ADSL2/2+, G.SHDSL Interoperability

• Interoperability info can be found at:
Products & Solutions
Voice
Cisco 880 Voice Integrated Services Router
Entry level Voice Platforms for Small Medium Business

Desktop form factor
- WAN Interfaces - FE, VDSL2/ADSL2+
- PSTN Fallback – FXO
- Voice Ports - 4 FXS and 2 BRI ports
- 4 Port FE Managed Switch with POE
- Voice Protocols-H.323,SIP,MGCP,SCCP
- Software: Advanced IP Services

For SMB, Branch Offices, Enterprise Teleworker and Remote Call Center Agent

Offers Voice Gateway upgradeable to IP PBX, Survivability or CUBE Features
- Best-in-class integration of data & toll-quality analog/digital voice services for Branch offices/Enterprise Teleworker
- Support for CUBE on Cisco 881, 886V, 887V, 888E, 888, and 892F hardware platforms
- Up to 15 sessions on Cisco 880 Series models and up to 25 sessions on the Cisco 892F.

- New WAN/LAN Technologies
  VDSL2/ADSL2+
  802.11a/b/g/n WLAN
- Comprehensive security
  IPSec VPN acceleration
  Firewall, IPS, URL Filtering, SSL-VPN, GET VPN
- Comprehensive Routing and QoS
- Ease of Management
  Cisco Configuration Professional
  CiscoWorks
  Unified Wireless Management
## Cisco Unified SRST Features Available on Voice Models

<table>
<thead>
<tr>
<th>Cisco Unified SRST 4.2</th>
<th>• Support for Cisco 1861 Integrated Services Router</th>
</tr>
</thead>
</table>
| Cisco Unified SRST 4.3/7.0 | • Support for up to eight active calls per line  
| | • **Support for 880 Series Integrated Services Routers**  
| | • CDR enhancement |
| Cisco Unified SRST 7.1 | • Increase of phone user scalability on Cisco ISR G2 platforms  
| | • International +E.164 registration and basic call dialing  
| | • New phone type: Cisco Unified IP phone 8961, 9951, and 9971 |
| Cisco Unified SRST 8.0 | • Secure SIP SRST support on Cisco SIP phone  
| | • Five MoH streams stored in the SRST router flash memory  
| | • New phone type: Cisco Unified IP phone 6921, 6941, and 6961 model support  
| | • Logical partition Class-of-Restriction on PSTN trunk |
| Cisco Unified SRST 8.5 | • SRST support for +E.164 with support for supplementary service calls |
| Cisco Unified SRST 9.1 | Cisco Unified SRST 9.1 supports the following new features:  
| | • KEM Support for Cisco Unified 8961, 9951, and 9971 SIP IP Phones  
| | • Enhancement in Speed-Dial Support  
| | • Voice Hunt Group Support |
| Cisco Unified SRST 9.0 | Cisco Unified SRST 9.0 supports the following new Cisco Unified SIP IP phones:  
| | • Cisco Unified 6901 and 6911 SIP IP Phones  
| | • Cisco Unified 6921, 6941, 6945, and 6961 SIP IP Phones  
| | • Cisco Unified 8941 and 8945 SIP IP Phones  
| | Cisco Unified SRST 9.0 supports the following new features:  
| | • Multiple Calls Per Line  
| | • Voice and Fax Support on Cisco ATA-187 |
## SIP Features

<table>
<thead>
<tr>
<th>Solution</th>
<th>Features</th>
</tr>
</thead>
</table>
| **Basic**    | • Standards-based, RFC 3261-compliant  
• Gateway/per-line registration and authentication  
• Codecs: G.711, G.729, G.726, iLBC  
• P-Asserted Identify/PPI  
• Fax(T.38) and modem  
• DTMF: RFC2833/KPML  
• Accounting (start/stop records)  
• Media Forking  
• Domain Based Routing |
| **Analog Supplementary** | • Call hold/resume  
• Call transfer  
• Call conference  
• Call waiting indicator  
• Distinctive ringing  
• Message waiting indicator (audible) |
| **Security** | • TLS/sRTP  
• NAT ALG/firewall  
• Gateway authentication  
• CUBE-Lite  
• Call Admission Control |
Cisco Unified Border Element Key Features

**Session Management**
- Real-Time Session Management
- Call Admissions Control
- Ensuring QoS
- PSTN GW Fallback
- Statistics and Billing
- Redundancy/Scalability

**Interworking**
- H.323 and SIP
- SIP Normalization
- DTMF Interworking
- Transcoding
- Codec Filtering
- Fax/Modem Support

**Demarcation**
- Fault Isolation
- Topology Hiding
- Network Borders
- L5/L7 Protocol Demarc
- Statistics and Billing

**Security**
- Encryption
- Authentication
- Registration
- SIP Protection
- FW Placement
- Toll Fraud

**Mine**

**Yours**
CUBE Capabilities

- Generic router capabilities
  - Routing, IP connectivity, Interfaces, ACLs
  - DHCP, QoS, FW…
- Global CUBE capabilities
  - Enable CUBE
  - CAC and SIP capabilities
  - Transcoding, codec classes and preferences
- Security Configuration
  - Secure peer IP addresses
  - Call Spike monitoring

- SIP Configuration
  - Message handling and interpretation
  - SIP Normalization (all calls)
  - Fax (all calls)
  - Failover timers

- Dial-peer Configuration
  - Dial-plan; Digit Manipulation
  - SIP Normalization (per destination)
  - DTMF settings
  - Fax (per destination)
  - QoS Marking
Cisco.com SIP Trunk and CUBE Resources

- Cisco CUBE on Cisco.com  
  http://www.cisco.com/go/cube
- Cisco Interoperability Portal  
  www.cisco.com/go/interoperability > Cisco Unified Border Element (CUBE)/SIP Trunking Solutions
- Cisco SRND Portal  
  www.cisco.com/go/srnd  
  CUCM SIP Trunk Documentation  
  CUCM 8.x SRND, CUCM 7.x SRND, CVP 7.0 SIP Trunk integration
- Management specification  
  http://www.cisco.com/go/cube > white papers
- Marketing support: ask-cube@external.cisco.com
- Cisco Press: SIP Trunks  
  SIP Trunking @ www.ciscopress.com/title/1587059444
- CUBE management specification  
  http://www.cisco.com/go/cube > product literature > white papers
- TechWise TV: SIP, Session Management, and Beyond  
  http://www.youtube.com/watch?v=YFoLTsqEI0w
Specialized Products

812
Cisco “CiFi” – 812 Series ISR
Enterprise Class IOS based 3G and/or WLAN AP

- C812 CiFi Indoor Enterprise Class AP with 3G Backup
  - Targeted for deployments SMB, Retail, etc
  - Extends Wireless Coverage – Window Unit
  - Leverage existing Ent. class 3G architecture
  - Complements WNBU AP portfolio

- Platform Specifications
  - Internal dual radio WiFi Antennas
  - 512MB DRAM and 512MB Flash (WAASX with limited TCP support)
  - External POE+ power supply (75% will use POE+ upgrade option)
  - WNBU AP style looks and feels (as much as possible)
  - One L2/L3 GE port for wired access
  - One Console/AUX port for local configuration
# Enterprise IOS based C812G 3G/4G Standalone & CiFi

<table>
<thead>
<tr>
<th>Features</th>
<th>3G Standalone - C812G</th>
<th>3G CiFi – C812G CiFi</th>
</tr>
</thead>
<tbody>
<tr>
<td>3G WAN</td>
<td>EVDO Rev A / HSPA / HSPA+ Rel 7</td>
<td>EVDO Rev A / HSPA / HSPA+ Rel 7</td>
</tr>
<tr>
<td>3G Antenna</td>
<td>External</td>
<td>External</td>
</tr>
<tr>
<td>3G Diversity Antenna</td>
<td>External</td>
<td>External</td>
</tr>
<tr>
<td>WiFi (a/b/g/n)</td>
<td>NO</td>
<td>2.4 GHz or 5.0 GHz</td>
</tr>
<tr>
<td>WiFi Antenna</td>
<td>NO</td>
<td>Internal</td>
</tr>
<tr>
<td>Autonomous and Unified WiFi</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>Onboard WAN Port</td>
<td>1 GE</td>
<td>1 GE</td>
</tr>
<tr>
<td>Standalone GPS</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>GPS Antenna</td>
<td>Multiplex with Diversity External</td>
<td>Multiplex with Diversity External</td>
</tr>
<tr>
<td>Business SMS</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Operating System</td>
<td>IOS Rich Features</td>
<td>IOS Rich Features</td>
</tr>
<tr>
<td>Power Supply</td>
<td>External</td>
<td>External</td>
</tr>
<tr>
<td>Power over Ethernet (POE+)</td>
<td>External</td>
<td>External</td>
</tr>
<tr>
<td>Dimension (WxDxH)</td>
<td>8.75x8.5x1.85 inches</td>
<td>8.75x8.5x1.85 inches</td>
</tr>
<tr>
<td>Mounting Options</td>
<td>Ceiling/Wall</td>
<td>Ceiling/Wall</td>
</tr>
<tr>
<td>FCS</td>
<td>Q3CY2012</td>
<td>Q3/Q4 CY2012</td>
</tr>
</tbody>
</table>

## New SKUs
- C812G+7-K9 (no WiFi)
- C812G-CIFI+7-E-K9
- C812G-CIFI+7-N-K9
- C812G-CIFI-V-A-K9
- C812G-CIFI-S-A-K9

## Enterprise Class Multimode
3G Standalone & 3G CiFi
Planned FCS
Q3/Q4 CY 2012
Specialized Products
Cisco 819 ISR: Smallest Cisco Router

- Feature rich IOS management capabilities
- 3G / 4G with dual SIM and SMS/GPS
- Sync/async and FE LAN
- Industrial grade ISR in a small footprint
- Ruggedized for extreme temperatures, environmental factors, shock and vibe
- Mounts on rails, floor and wall
ISR 819H Key Software Features

- Smallest IOS enterprise class router within the Cisco family of routers
- SMS and SMS Initiated Data Callback
- GPS (standalone), GPS NMEA streaming
- WLAN Features (Dual Radio, Clean Air)
- 3G Management Capabilities
- WAN Optimization
- Scansafe (Web security and Web Filtering)
- Remote Device and Asset Management
- Push Reset Button
- Environmental Temperature Logging
- 3G Accessories
# Cisco 819 Upcoming SKUs

## 4G LTE
- C819HG-4G-V-K9
- C819HG-4G-A-K9
- C819HG-4G-G-K9
- C819G-4G-V-K9
- C819G-4G-A-K9
- C819G-4G-G-K9

**Orderable September and FCS October for Verizon & ATT 15.2(4)M2**

## Dual radio 802.11n
- C819HWD-E-K9 (no 3G)
- C819HWD-A-K9 (no 3G)
- C819H-K9 (no 3G & no WiFi)

**Orderable October and FCS November 15.2(4)M2**

## Hardened 3G and dual radio 802.11n
- C819HGW+7-E-K9
- C819HGW+7-N-K9
- C819HGW+7-A-A-K9
- C819HGW-V-A-K9
- C819HGW-S-A-K9

**Orderable September/October and FCS October/November 15.2(4)M2**
Deployment Scenarios
Enterprise
Small Box Retail

Business Requirements

- POS registers
- Credit card processing
- PC/printers
- Servers
- Unified Communications
- Video surveillance
- Digital signage
- Wi-Fi hotspot
- Average store size between 2000–6000 sq. ft.
- Fewer than 25 devices requiring network connectivity
- Single router with integrated Ethernet switch
- Wireless connectivity
Unified Communications for Enterprise Branch

- Access to same UC apps and Cisco Unified Communications Manager features at HQ
- Centralized voicemail or distributed with Cisco Unity® Express on 1861/2900/3900
- Backup IP telephony features if WAN link fails
- Centralized management and IT support
- Same look and feel as HQ
Cisco Virtual Office

- Advanced Application Support (Voice, Video)
- Centralized Management IT-Managed Security Policies
- Corporate Pushed Security Policies (Not User-Managed)
- Corporate Phone, Toll-Bypass, Centralized Voicemail
- Integrated Security and Identity Services
- Optional Secure Wireless LAN

Diagram elements:
- IP Phone
- Cisco 800 Series
- MPLS/Encrypted VPN Tunnel
- Broadband
- Internet
- VPN Headend Router
- Corporate Network
- Call Manager/CCME
- Email
- Apps
- Voice
- Video
- Wireless
# Financial/ Retail Industry

## C819/812 inside ATM, PoS, Vending Machine, Kiosk at Store in Remote Locations

<table>
<thead>
<tr>
<th>Feature</th>
<th>Cisco Mobility Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Devices in remote location with no wired infrastructure</td>
<td>Dual-SIM, Dual-Carrier for HA wireless backhauls with Global SKU</td>
</tr>
<tr>
<td>Video Surveillance and RT ad message display</td>
<td>Bi-directional Video Streaming over Cellular</td>
</tr>
<tr>
<td>Secured monetary transactions and inventory reporting</td>
<td>Strong IP Security Features with QoS for data over 3G</td>
</tr>
<tr>
<td>Secured Wi-Fi Hotspot for Store Owner and Guests</td>
<td>Multimedia Traffic on Dual Radio with multiple SSIDs for Secured and Open Access</td>
</tr>
<tr>
<td>Remote Device Management</td>
<td>SNMP, SMS</td>
</tr>
</tbody>
</table>

Multiple transport options (Serial, 3G Cellular, Ethernet, Wi-Fi)
Deployment Scenarios

SP Managed Services
Hosted Collaboration Solution
Applications Can Be Deployed in the Cloud, on Premise, or a Hybrid of Both

Unified Communications and Collaboration

WAN Diversity

Pure Hosted
Customer 1
Customer 2

Hybrid
Customer 3
Customer 4
Customer 5

Remote Managed on Prem

Dedicated/Private Network
HCS: Pure Hosted with Cisco 880V

HCS Partner’s WAN Cloud

SRST-Enabled Router
Optional: DHCP, DSP, FW

SIP

FXO/BRI/PRI

PSTN

Mobile Network
Cisco Mobile (iPhone, BB, Android)
Nokia Call Connect

WLAN
(802.11a/b/g)

SNR

Customer Premise

CUPC, CUCIMOC, etc.
IP Phone/Video

Fax

HCS Partner’s WAN Cloud

Cisco Mobile (iPhone, BB, Android)
Nokia Call Connect

WLAN
(802.11a/b/g)

SNR

Customer Premise

CUPC, CUCIMOC, etc.
IP Phone/Video

Fax

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Managed Business Class Broadband Services

Managed Services

- IP VPN
- Firewall
- IPS

Hosted Collaboration Services

- ADSL2+
- VDSL2
- Cabinet DSLAMs
- Ethernet
- G.SHDSL ATM/EFM

WAN Diversity

Customer 1
Customer 2
Customer 3
Customer 4
Public WLAN Service

Hotspot Location

Hotspot User Devices

Web Portal for Access Control

Internet Traffic

890W

Internet

VPN Traffic

Back Office PCs/ Wireless Devices

SP Network

AAA/ Billing

Corporate HQ

Corporate Servers

890W

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Managed Ethernet Services

Small Branch or Teleworker

- Data
- Video
- IP Phone

C.O. N-PE
7600/ASR

Remote C.O. or Environmentally Controlled Cabinet or Building Basement or Enterprise Wiring Closet

Cat 4500 ME 3400 ME 3400E

Service Provider Core

Mobile

Enterprise

892F

Fiber