Virtual C20

Service providers are facing unprecedented challenges in their voice businesses. Over-the-top (OTT) providers are beginning to skim-off customers with freemium VoIP offers. Business customers are pursuing Unified Communications services, increasingly via the cloud and OTTs. At the same time, "voice" has stepped aside for messaging, texting, email, and social networking – making complex, multi-component voice architectures seem contrary to what service providers need to compete.

Ribbon Communications' C20 Call Session Controller leads the global market in transforming networks, and it is the core services and switching infrastructure platform for tens of millions of users around the world across fixed, mobile, and cable operators. The C20 simplifies complex architectures like IMS by efficiently delivering voice and multimedia services that enable new services, revenue growth, and customer retention while providing customer-at-a-time migration.
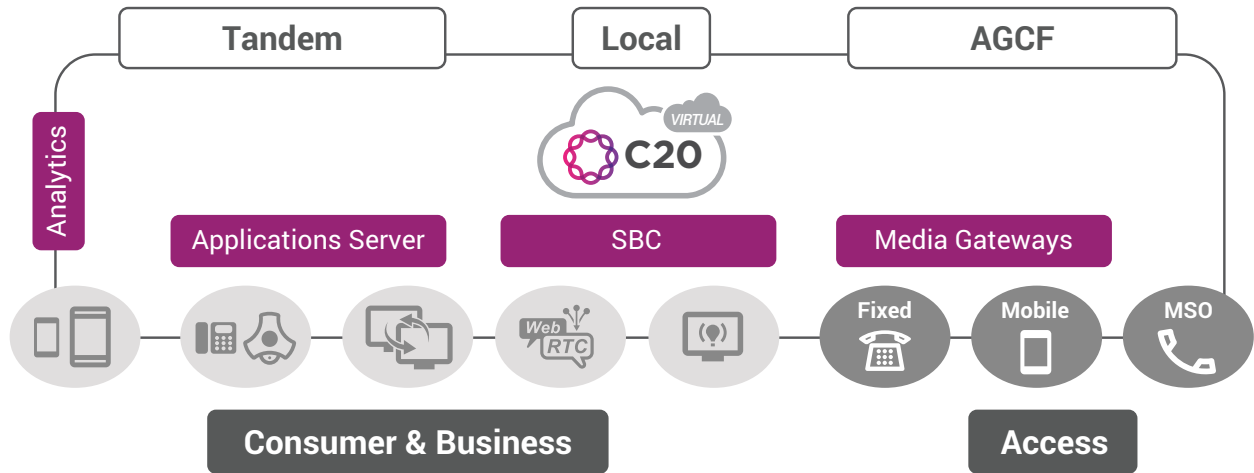
Overview

The C20 is the product of more than a decade of focused development and investment in intelligent design and services innovation. The new Virtual C20 is the next generation, fully virtualized, C20 call server solution. The Virtual C20 is built using an application Virtual Machine (VM) model where the Call Agent runs on Intel processors. This advancement allows the Virtual C20 to run on a much wider variety of Rack Mount Servers (RMS) since an embedded PCI card with Motorolla processor is not required. Virtual C20 replaces legacy TDM infrastructures with ease, substantially reducing power consumption and footprint by 90% or more. Due to its wide- spread use in service provider networks large and small, it has network-proven capabilities to facilitate back office integration and transformation.

Because the C20 is so flexible and versatile, it provides essential switching and subscriber services for many of Ribbon's network transformation solutions like IMS, SIP Trunking, IPX, Peering, and Intra-Network Interconnect. The C20 also provides inherent connectivity to the Ribbon Application Server, enabling SIP and IMS-centric services like multimedia Unified Communications. In order to support such a broad set of solutions, it has intelligent capabilities to handle both legacy and IP voice and multimedia services across many geographies and international standards. It also has widely-proven interoperability with the largest number of end user devices, access platforms, and core elements.

The C20 is at the core of many service providers' plans for network transformation. It is the key call session control element providing switching, media gateway control, signaling and protocol interworking, emergency services, lawful intercept, media server, customer data store, billing, and end user voice and multimedia services support. For service providers that plan on eventually deploying an IMS solution, the C20 and MGCF facilitates migration to IMS by providing comprehensive AGCF support. This ability to serve in both Next Generation Networks and IMS architectures is efficient and powerful, enabling investment protection and services continuity, and allowing operators to migrate customers at their own pace.

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CS2000 Upgrades

Virtual C20 also introduces a new strategy for addressing legacy CS2000 XA-Core and Compact switches in a carrier's current network. The new "CS2000 to Virtual C20 Upgrade" program provides the ability to upgrade a CS2000 switch from CVM17/18/19 software releases to R21 while simultaneously moving all applications into a virtualized environment hosted on the Virtual C20 servers. This allows for all legacy equipment the CS2000 had been hosted on to be removed, including the ERS8600, thereby fully future-proofing the switch for years to come.

Benefits

Market Flexibility

- Utilized worldwide as a call session controller across cable, fixed, and mobile operators
- Widespread applicability and services integration across TDM and IP networks
- Extensive set of subscriber services for business and residential markets
- Network-proven, global interoperability with a wide array of devices, access equipment, and core elements
- Smooth, customer-at-a-time or en-masse migration from legacy networks
- New CS2000 to Virtual C20 Upgrade program provides per switch evolution to future-proofed C20

Solutions Support

- Supports both Next Generation Networks and IMS
- Concurrently supports and integrates legacy services — POTS, Centrex, Regulatory, Lawful Intercept, PBX
- Network Transformation and switch replacement including Class 5 and Class 4, IP Tandem, Tandem, Long Distance, and IP Trunking

- Interconnect services including SIP Trunking, IPX, Peering, and Intra-Network Interconnect
- Access services including Hosted VoIP, Hosted PBX, IP Centrex, and Unified Communications

Cost Efficiency

- Flexibility to run on a much wider variety of Rack Mount Servers (RMS), either Ribbon or Customer provided
- Can sustain legacy networks and customer groups for extended years, enabling gradual migration to end state architecture as CapEx allows
- Very low power and real estate footprint vs. comparable TDM alternatives
- Many integrated functions and services to reduce operational complexity and cost
- Highly-scalable density and capacity for optimal cost per subscriber
- Multiple IP interconnect options to reduce transmission costs (SIGTRAN, SIP-T, SIP-I)
- Ribbon C20 OA&M platform for optimized, simplified management

Revenue Generation

- Provides a host with the new VoIP and multimedia applications and features of Ribbon Application Server; enhances the user experience and engenders loyalty and "customer stickiness"
- Integration of legacy services and networks with IMS evolution to ensure revenue continuity and mitigate customer attrition

Seamless Migration to IMS
- Seamless migration path from Next Generation Network to IMS architecture
- In IMS, provides AGCF, MGCF, and TAS network elements

Capacity
- Up to 5M Busy Hour Call Attempts (BHCAs) depending on configuration
- Up to 1.25 million lines plus 160,000 trunks (International end office configuration)
- Up to 600,000 trunks (tandem configuration)
- Up to 10 GWC VMs with 10 GWC instances per VM

Standards-Based Protocol Support
- SIP, SIP-I, SIP-T, MGCP, TGCP, H.248, H.323, NCS
- ISUP, LNP, CALEA, GETS, E911, TR-08, GR-303, V5.2, PRI, DPNSS, QSIG, BRI
- PCMM policy and IMS MGCF and AGCF interfaces
- ENUM and LDAP
- REST, ParlayX, WSRP
- SS7, PRI, BRI, V5.2

Ribbon C20 Management

The integrated management solution provides full fault, configuration, accounting, performance and security (FCAPS) functionality for the C20.

Ribbon C20 EMS is compatible with multiple legacy OSS systems. This enables smooth transformations that leverage current back office investments and minimize retraining costs.

Ribbon Analytics for C20

Ribbon Analytics enables retrospective root cause analysis with near-real time and historical data, identification of key network trends and issues over periods of time, and provides advanced insights across your fixed voice networks. Capabilities includes: monitor network KPIs and key trends; resolve network issues; plan network growth; reduce time to problem resolution; reclaim revenue leakage.

Virtual C20 Specifications & Characteristics

VM Name	VM Description	Simplex Config VM Numbers	VM Resiliency
CA on Intel	Call Agent	1 VM	1+1
DM & GVM/C20MM (G6MM opt)	Data Manager & Genview Manager	1 VM	1+1
GWC	Gateway Controller	Up to 10 VM, 10 GWC/VM	1+1
SST	SIP Session Server	Up to 4 VM	1+1
GMS	Media Server	Up to 4 VM	1+1
vSP2K (opt)	Signaling Gateway	1 VM	1+1
G9EM (opt)	G9 Element Manager	1 VM	1+1
VR (opt)	Virtual Router for Geo Configurations	2 VM	1+1

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Platform

Virtual C20 is built using an application Virtual Machine (VM) model which allows the solution to run on a wide variety of Rack Mount Servers, either Ribbon or Customer provided. Ribbon provided servers are NEBS compliant Dell PowerEdge R740 servers.   Customer provided servers are required to meet Ribbon's Virtual C20 hardware requirement specifications. Virtual C20 enables service providers to easily scale IP voice and multimedia services from a small market introduction to a large-scale offering, while supporting a growing end user base.

Carrier Grade Reliability and Fault Tolerance

The C20 is network-proven as a fully redundant Call Session Controller designed with five nines (99.999%) availability, best-in-class faulthandling, and layers of redundancy throughout. It is also fully geo-resilient and can be seen as a single logical entity by the network while being split physically across two sites up to 2000 km apart. In such a configuration, it is designed to sustain multiple faults, temporary site failure, or complete site destruction without losing capacity or billing data, and without dropping ongoing calls.

Contact Us   We are here to help. Let us know if you are interested in a quote or if you have any questions.

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