TeleQuill SBC of Alpha Bridge
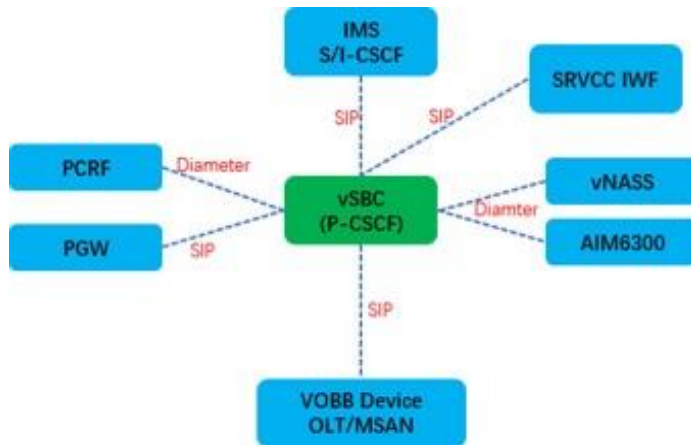
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SBC Co-Working with Different Network   FEATURES

Market flexibility

- simplified operations and management, utilizing the same omc as that of other mswitch network elements
- Intelligent policy management and session visibility
  - Traffic & user screening, authentication, authorization
  - Multi-stage rate limiting and traffic shaping
  - Dynamic blacklist of malicious sources
  - Detection & alarms for fraud & spam

PRODUCT DESCRIPTION

The rapid adoption of IP for many voice and multimedia communications needs of enterprises, consumers, and service providers has resulted in a never-broadening array of IP networks, Customers increasingly expect secure, transparent access and utilization of these advanced networks bringing issues like security, interoperability, protocols, vendor implementations, system complexity, and service assurance are arising for network operators, and in turn they are demanding carrier grade intelligent session border controllers (SBCs) to ensure a seamless communications experience.

For over a decade, Telequill SBC has been an acknowledged industry innovator in session border control, and for developing products to solve the growing challenges of the market.

The Telequill SBC is a Intelligent Session Border Controller for fixed, mobile, cable, and Over-the-Top operators and enterprises. Deployed worldwide and operating in some of the world's largest IP networks, the SBC provides industry-leading security, session management, policy control, and deployment flexibility to enable seamless SIP Trunking, Peering, Intra-Network Interconnect, Multimedia Communication and RCS solutions in IMS VoLTE/VoNR and Fix-Line networks.

Alpha Bridge Technologies Telequill SBC is convergence SBC with the following function support:
- A-SBC
- I-SBC
- P/E-CSCF
- ATCF/ATGW

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Telequill SBC – The Intelligent SBC

The Telequill SBC has smart management technology that reduces operational complexity and simplifies the network edge by securely managing, routing, and controlling real-time voice and multimedia sessions, while providing intelligent insight into network performance. With the SBC, operators gain predictability and assurance to the delivery of secure rich multimedia services. Through its adaptive security, insightful policy enforcement, flexible interworking and normalization, and advanced session routing capabilities, the SBC adds an unparalleled layer of intelligence in managing SIP and other IP-based voice and multimedia sessions.

PRODUCT SPECIFICATIONS

HARDWARE & PLATFORM

- ATCA
- x86 Server
- OpenStack Cloud Native Platform
- Docker container
- AWS

SUPPORTED PROTOCOLS

- SIP, TLS, DIAMETER, etc.
- IPv4 / IPv6
- Rx, Mw, Gm
- SNMP, FTP

INTERWORKING FUNCTIONALITY

- SIP over UDP/TCP/TLS/ SCTP Interworking
- SIP Flexible message manipulation
- SIP over H.323 using external IWF Gateway

INTERWORKING FUNCTIONALITY

- Denial of Service (DoS/DDoS) Protection
- Traffic Control
- Detect and Drop Malformed Packets
- TLS for signaling encryption
- Secure RTP/RTCP for media encryption

NETWORK FUNCTIONS

- A-SBC, I-SBC
- P/E-CSCF
- ATCF
- ATGW

PERFORMANCE PER UNIT

- Concurrent Call: 32000
- BHCA: 1,080,000
- Business Trunking (SIP Trunking): 1500
- Media Latency: < 15 microsecond
- Switch Throughput: 10G
- Signaling Latency: < 1 milli second
- VLAN Capacity: Up to 2200

POLICY MANAGEMENT AND SESSION VISIBILITY

- Intelligent traffic & user screening, authentication, authorization
- Multi-stage rate limiting and traffic shaping
- Dynamic blacklisting of malicious sources
- Fraud and Spam detection and alarm

LOAD BALANCING

- Signaling and media assignment to the same/separate devices
- Configurable to use multiple devices to share media streams

SUPPORTED CODECS

- PCMU, PCMA, G.729a, G.726-32, G.723.1, G.722, AMR-WB-BWE
- Supports Transcoding functionality

Telequill SBC Element Management System

- Provide unified network management functions

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Telequill SBC Typical Application Scenario

➢ VoIP Service Router/Firewall between Different Networks

IP networks of different areas may not have direct interconnectivity, such as a corporate intranet and the Internet, or the Internet and an NGN operating platform network. SBC can work as a bridge and perform VoIP service routing between these independent networks.
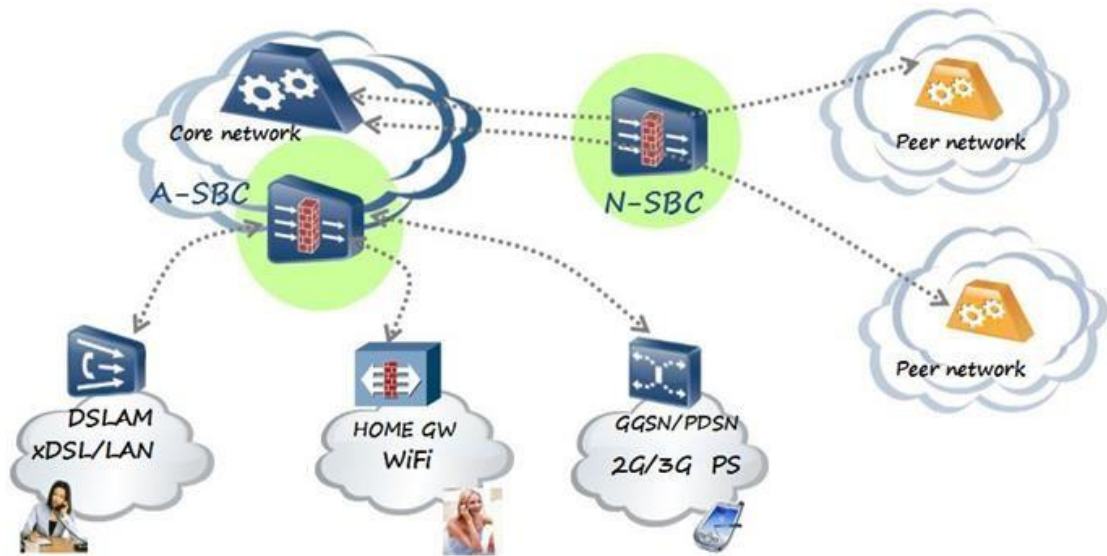
SBC VoIP Service Router/Firewall between Different Networks

➢ High Availability

SBC supports HA function:

◆ **Two SBCs provide services to the outside world through the two planes that constitute the active and standby links.**

◆ **Under normal circumstances, The host is responsible for the business and backs up the business to the standby machine, the backup machine does not provide business but accept business backup.**

◆ **When the host fails, the backup machine takes over the external service, thereby automatically ensuring that the system can continuously provide the service without manual intervention.**
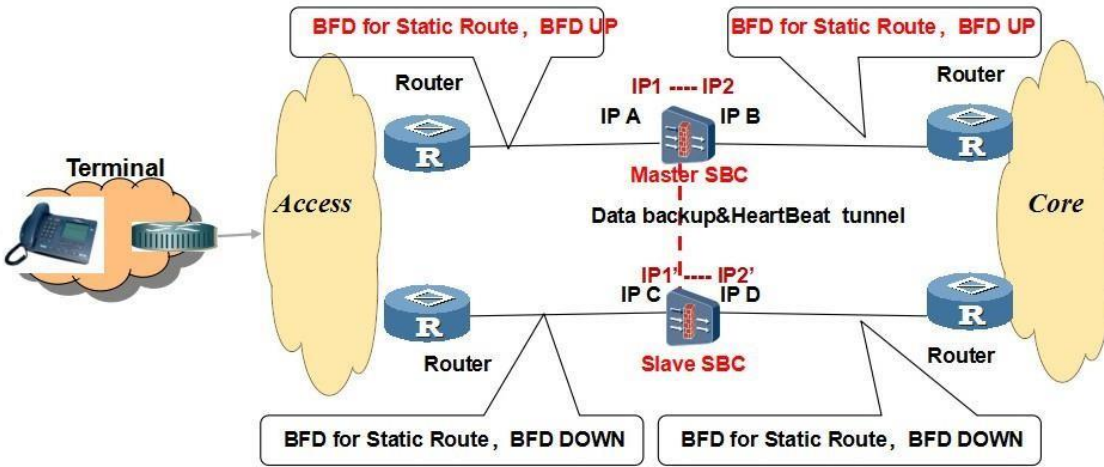
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BFD for Static Route, BFD UP

BFD for Static Route, BFD UP

Router

IP1 ---- IP2

IP A   IP B

Terminal

Router

Access

Master SBC

Core

Data backup&HeartBeat tunnel

IP1' ---- IP2'

IP C   IP D

Router

Slave SBC

Router

BFD for Static Route, BFD DOWN

BFD for Static Route, BFD DOWN

SBC High Availability Network

Site A

Core network

SBC

Access

Terminal

Site B

Core network

SBC

Access

Terminal

➢ Core Pool and Dual Attribution

- Dual attribution is a special case of pool.
- After the main CORE fails, SBC automatically switch to other CORE
  The SBC can be rewound if the original CORE is restored

SBC Core Pool and Dual Attribution

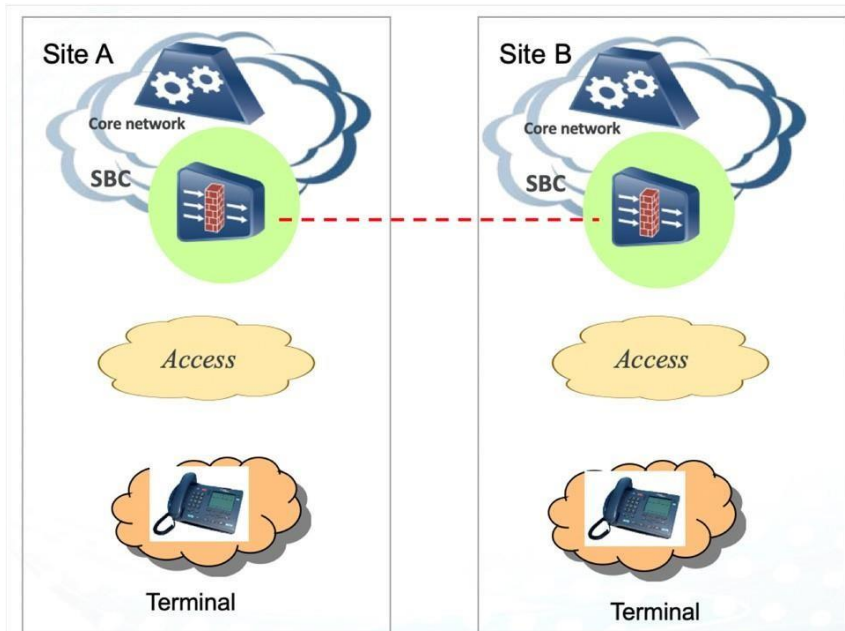357D, Udyog Vihar Industrial Area
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We are a rapidly developing OEM with a
focus on R&D, Patents, and State-of-the-
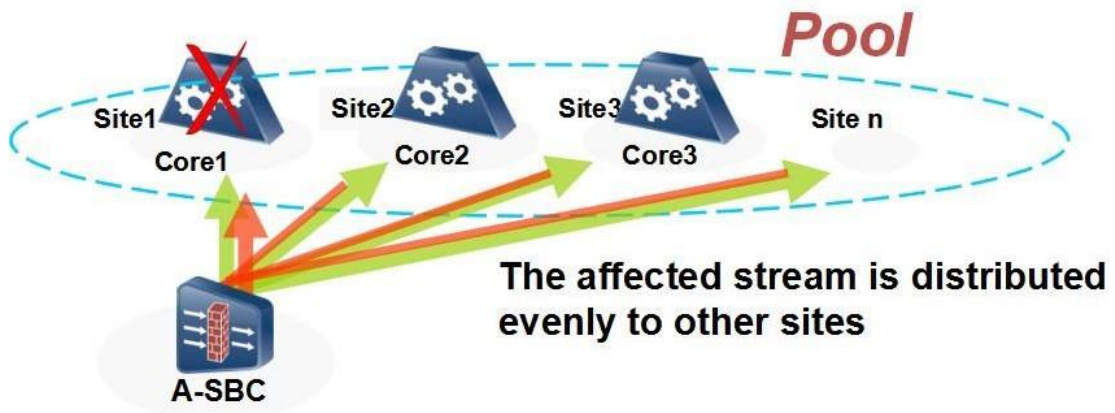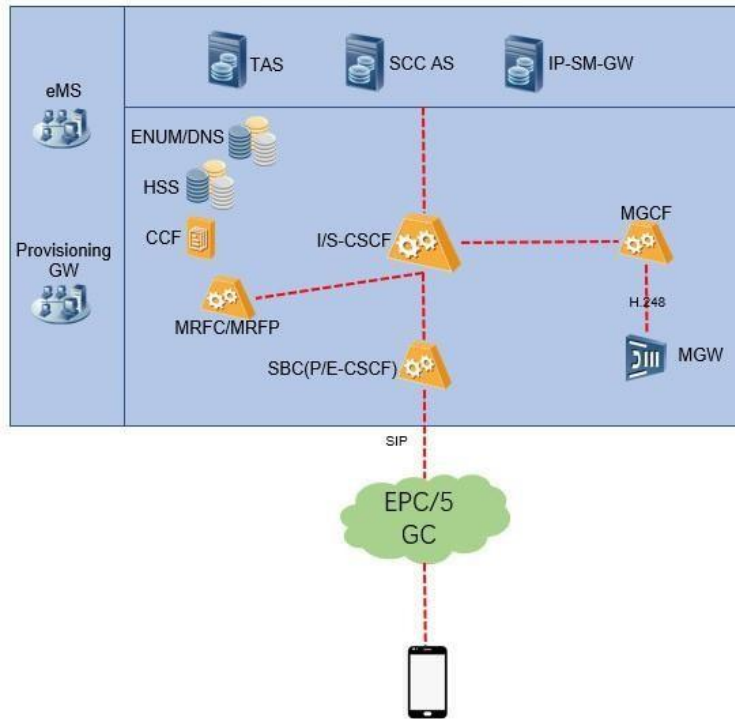art networking products including
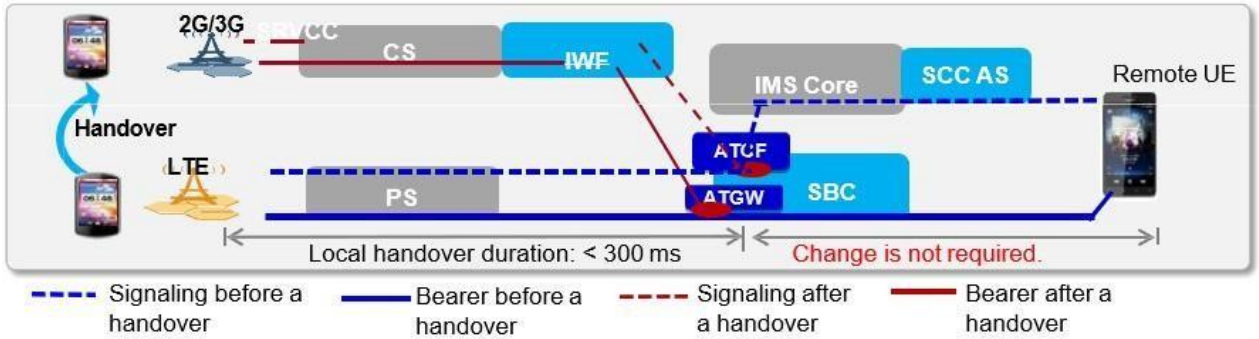hardware and software development

➢ SBC as P/E-CSCF in IMS Network

• **SBC with P/E CSCF function in IMS Network**

Interface Support for SBC P/E-CSCF Function

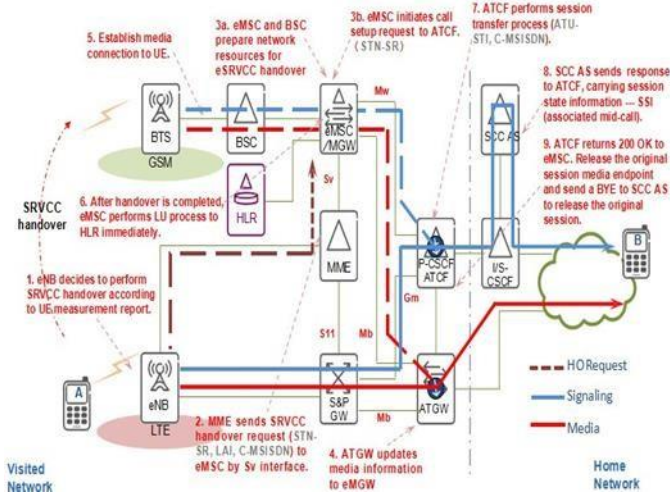| Reference Point	Connection	Protocol
Gm	UE P-CSCF	SIP
Mw	P-CSCF E/I/S-CSCF/IBCF	SIP
Mi	E-CSCF MGFC	SIP
Rx	P-CSCF PCRF	Diameter

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➤ ATCF/ATGW in eSRVCC solution

SBC with ATCF/ATGW Function in IMS Network

The main handover process steps are described as below:

1. When the MME detects that the LTE signal weakening needs to be handed over to the CS domain to ensure call continuity, the MME initiates an SRVCC handover procedure to the associated eMSC through the SRVCC PS to CS request message. It carries the updated STN-SR (ATCF) and the C-MSISDN used to associate users.

1. After receiving the message, the eMSC will perform route addressing analysis through the STN-SR (ATCF), and find the route to the ATCF node that allocates the STN-SR.

2. The eMSC send the INVITE message to the corresponding ATCF. It carries the STN-SR (ATCF) and C-MSISDN obtained from the MME. (The PSI route may be addressed to the ATCF through the I-CSCF, or the ATCF IP may be obtained directly by the DNS resolution. The specific implementation is determined by the routing strategy of different operators.)

3. After receiving the INVITE message from the eMSC, the ATCF determines whether the STN-SR is equal to the STN-SR predefined by the node. If they are equal, the SRVCC process is continued, and the ATGW is notified to perform corresponding bearer switching according to the user session in which the C-MSISDN is carried that needs to perform handover.