ribbon

▶ Transformative
IP Networks:
Less Expensive,
More Flexible

▶ CONTENTS

FROM LEGACY TO SOFTWARE DRIVEN NETWORKS

Why Transform?

With increasing pressures to reduce costs, support new applications and deliver a better patient experience, hospital systems, clinics, urgent care facilities and medical universities are looking for sustainable efficiencies and are finding substantial opportunities in their network operations.

Healthcare has already been impacted by powerful digital applications, and has already moved towards mobile applications made secure by identity and access technologies that untether professionals inside large facilities, while also supporting remote and virtual working.

One of the most radical shifts has come from the growing adoption of Electronic Health Records (EHRS) used to track patient health, medical services, insurance policies, payments, prescriptions, and more. Workflows are being rolled out, lifting productivity, and telemedicine is eliminating distance barriers between patients and specialists, and enable collaborative care in ways that were impossible a decade ago.

But none of these innovations function optimally or are affordable if the large networks connecting systems, devices and people are cumbersome, expensive to maintain, and on "life support" as network vendors make their own moves to programmable network solutions, often announcing end-of-life for equipment (switches, routers, servers) particularly "on-prem."

To fully take advantage of better systems, more accurate and cognitive applications, the benefits of secure mobile services, and the up and coming Devops movement, it's time for healthcare companies across the board to revisit their IT and therefore network infrastructure.

Using agile cloud-based technologies, networks and connected applications, including unified communications, are being built with a keen attention to meeting regulatory requirements, improving productivity today, and contributing to the inevitable road map associated with digital transformation of the way patients are diagnosed, treated, and served.

To become a fully digital organization, healthcare companies can no longer thrive without a network, applications and security strategy and transformation to Software Defined Networking, particularly as the overall real time communications industry moves rapidly toward virtualization and cloud.

DRAMATICALLY IMPROVE ECONOMICS & COMPLIANCE

Greater Agility, Greater Productivity

With a modern IP infrastructure, healthcare companies and organizations can dramatically lower their costs, including the need to buy and maintain equipment, the expense of TDM circuit based networks disparate technologies become part of a single platform that is connected through the network, and the costs of IT staff required to keep old networks running.

With a software defined, all IP network, and the appropriate security and compliance policies in place, today healthcare IT departments have visibility into:

- Devices attached to the network
- Operating systems connecting those devices
- Mobile devices often supplied by employees but running enterprise applications
- Voice and video collaboration applications for team care

- Telemedicine applications
- Access rules for sensitive information systems, including EHRs and other patient information
- Data including massive scans and genomic profiles

Only on an all-IP network can governance include what people are doing, how they are communicating, what they are able to access and configure, and how the "sessions" supported on the network can be analyzed and how actions can be automated.

Virtualized, or "cloud" networks, not only reduce costs compared to legacy TDM networks, but ensure compliance by providing visibility into connections and applications. Without next generation networks, digital workflows are not possible.

And those digital workflows include human and machine communications, further improving economics and outcomes.

With Software Defined Networking (SDN) healthcare enterprise networks are transformed into an open and programmable productivity platform. SDN simplifies the network by making deploying applications and data faster, while reducing or eliminating provisioning errors and increasing security and compliance through policy-based automation.

BUILD COMMUNICATIONS INTO WORKFLOWS

More Agility, More Control

Virtualized, or "cloud" networks, not only reduce costs compared to legacy TDM (Analog) networks, but ensure compliance by providing visibility into connections and applications. Without next generation networks, digital workflows are not possible.

And those digital workflows include human and machine communications, further improving economics and outcomes.

With Software Defined Networking (SDN) healthcare enterprise networks are transformed into an open and pro-grammable productivity platform. SDN simplifies the network by making deploying applications and data faster, while reducing or eliminating provisioning errors and increasing security and compliance through policy-based automation.
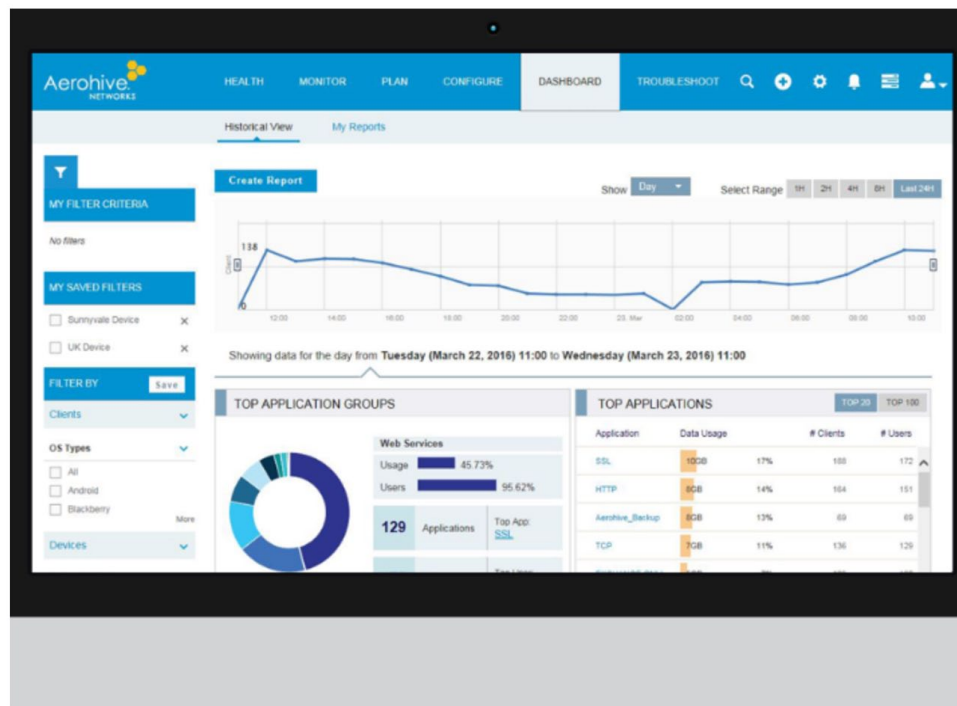
DIGITAL DEVICES AND SERVICES ARE GROWING RAPIDLY

Between 2014 and 2019...

Video traffic will grow	Mobile data traffic will grow	Smartphones will grow by	Machine-to-machine traffic will grow
3.6x[1]	10x[1]	2.2x[1]	34x[1]

And 5G is coming...

10x	100x	1,000x
faster than 4G[2]	more connected devices[2]	more mobile data volume[2]

Today's proprietary, fixed-function networks cannot meet tomorrow's agility, performance and scalability demands.

THE TIME FOR NETWORK TRANSFORMATION IS NOW

FUTURE-PROOF YOUR NETWORK INVESTMENTS
Building on a common architecture platform and an open source code base ensures future extensibility and lowers CapEx and OpEx.

CapEx   OpEx   Service Revenue

IMPROVE NETWORK RESOURCE UTILIZATION
Consolidated workloads on Intel architecture combined with intelligent software orchestration means more effective use of network resources.

DEVELOPER ENVIRONMENT
ORCHESTRATION SOFTWARE
VIRTUALIZATION SOFTWARE
OS, LIBRARIES
RESOURCE POOL
INTEL ARCHITECTURE

GAIN INTEROPERABILITY FROM OPEN STANDARDS
Intel® Open Network Platform and Intel® Network Builders programs facilitate rapid open NFV and SDN solution deployments.

INDUSTRY CONSORTIA
INTEL® NETWORK BUILDERS
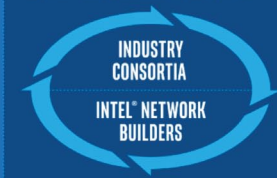
DEPLOY NEW SERVICES FASTER TO GROW REVENUE
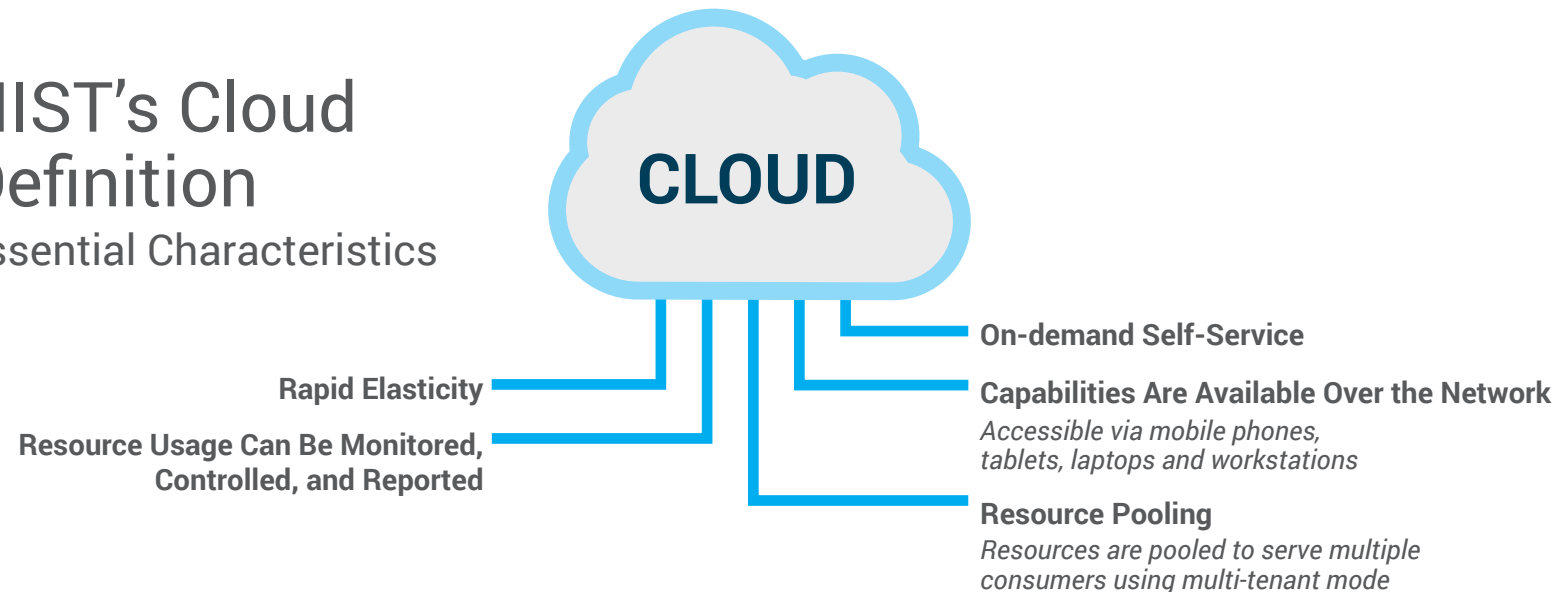Unprecedented flexibility of a virtualized, cloud-ready infrastructure to meet dynamic customer needs.

WEEKS → MINUTES

SOURCES:
- Intel Network Builders Infographic
- Emerson Network Power – Energy Logic for Telecom

3

▶ MOVE TO THE CLOUD

Most people are familiar with cloud terminology based on their life experience with personal devices (Apple. Android, Kindle) with access to various cloud-type accounts (ICloud, Google, Amazon). If so, you know that once you store music, books, photos or other media on the cloud, you can quickly access it from any device from wherever you are. Furthermore, you can share this content with friends or family almost instantly. The same technology exists in the business world, but with the assurance of a private, secure and redundant, carrier-grade network that can be delivered by your trusted service provider.

By migrating your communications solutions, data and other applications to a cloud environment, you gain the benefits of increasing response time and the ability for simultaneous access for your staff while reducing cost and outsourcing IT functions that distract you from focusing on your passion and focus on patient care.

NIST's Cloud Definition
Essential Characteristics

CLOUD

Rapid Elasticity

Resource Usage Can Be Monitored, Controlled, and Reported

On-demand Self-Service

Capabilities Are Available Over the Network
Accessible via mobile phones, tablets, laptops and workstations

Resource Pooling
Resources are pooled to serve multiple consumers using multi-tenant mode

FACT

Recently, the National Institute of Standards and Technology published **definition** criteria for cloud as it relates to the business world and the CDT specifically published the **HIPPA and Cloud FAQ** for reference by Healthcare Professionals that provides guidance on the benefit of cloud as it relates to storing PHI.

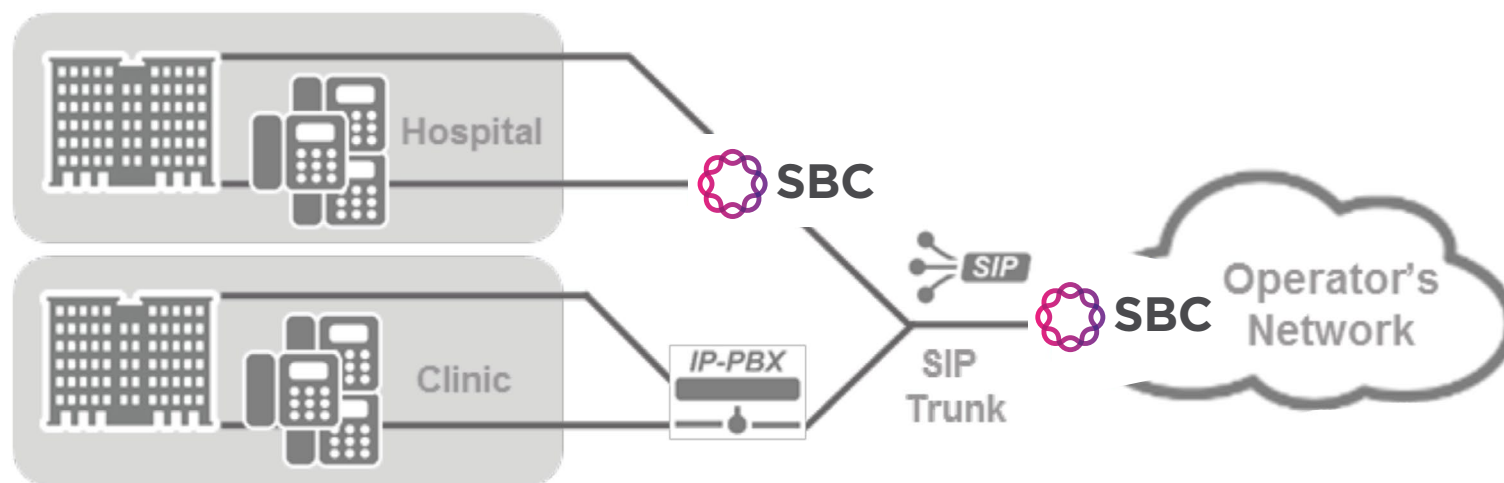# BENEFIT FROM SIP

Session Initiation Protocol – SIP Trunking

SIP trunking is a service that connects internet-based VoIP systems with the phone network, eliminating the need for traditional landline or digital phone services.

SIP Trunking is increasingly implemented by healthcare provides across the globe as they want to reduce costs and improve service agility, but many enterprises are constrained by PRIs, legacy PBXs and disjointed multivendor networks that are difficult to maintain, let alone extend.

With cloud based SIP Trunking from managed service providers, healthcare companies can enjoy security and mediation capabilities with innovative unified and collaborative communications applications.

SIP Trunk security is ensured and allows access to the benefits of SIP Trunking while providing a secure network, significantly decreasing costs associated with maintaining multiple phone lines while working with existing or new telephony systems.

Fully tested and documented end-to-end virtual NFV based SIP Trunking solutions ensure healthcare companies that they are not saving money at the expense of security and compliance.

SIP to SIP Calling

Calling via SIP Trunk

SIP Provider's Network

········· **Direct IP Connection**
─── **Traditional Phone Line**

Desktop Soft Phone   **Traditional Phone**

Hospital

SBC

Clinic

IP-PBX

SIP

SIP Trunk

SBC

Operator's Network

Scale	Cost Efficiency	Advanced Services	Interoperability	Security

http://www.softwareadvice.com/resources/what-is-sip-trunking/

5

▶ BENEFIT FROM UNIFIED COMMUNICATIONS

Once you have made the decision to move to a cloud-environment, you will also gain new cloud-based features and functionality that will provide your staff with accessibility from anywhere, anytime. With Real-time communications features such as private messaging, video collaboration tools and mobility, your staff stays connected and is armed with the tools necessary to deliver a team–based care approach to your patients through a collaborative environment.

If your network extends outside of your practice, consider partnering within your network or across departments to share the cost of an upgrade and the advantages of sharing the same cloud and communications solutions. Consider labs, radiology, hospitals, transportation services, clinics, Associated Physicians, Treatment centers, and even Pharmacies. Who are the providers and associates that you deal with daily that should be part of your network?

TIP

Unite your your team to deliver team-based care to your patients. Whether mobile, on–site or remote, Your team can work together through state of the art technology that enables and empowers them to deliver the best in patient care quickly and simply.

Better Outcomes Through Better Collaboration: When Care Teams & Patients Connect Healthcare Improves While Costs Are Reduced
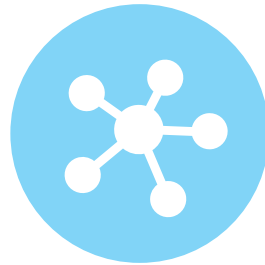
Connect. Collaborate. Communicate.

DELIVER ON THE DIGITAL PROMISE

Integrated, Real-Time Communications
Innovative Ideas to incorporate Virtual communications into your Healthcare Practice
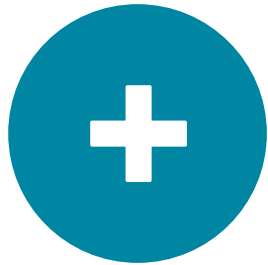
Leverage video collaboration for telemedicine applications

Share patient files, x-rays and lab results using secure screen share sessions

Integration with existing digital applications including management of scripts, and access to electronic medical records

Educate new staff to address growing patient base using video collaboration

Remotely monitor patient health

Minimize re-admissions through virtual video follow-up appointments

Use face-to face secure conferencing for consultation services

Allow in-room patient care staff to connect to nurse stations and on-call physicians via tablets for support

Automation of routine tasks such as making appointment-reminder calls or delivering test results

OUR SOLUTION

Deliver On The Digital Promise

Technology Built by Ribbon and Delivered By Partners, Service Providers and Integrators Located across the Globe

CLOUD –BASED COMMUNICATIONS
Private, secure, carrier-grade, voice, video, messaging, mobility

MOBILITY APPS
Private, secure and accessible via smartphones and tablets

COLLABORATION
Voice, video, screen share via desktop, laptop, smartphones & tablets

WEB-INTEGRATION
via APIs and SDK's for customizable solutions with click to call, click to view, share, or collaborate capabilities

MESSAGING
Voice, fax, text, video, voicemail to text transcription

NO CAPITAL INVESTMENT
Pay per seat, per month options