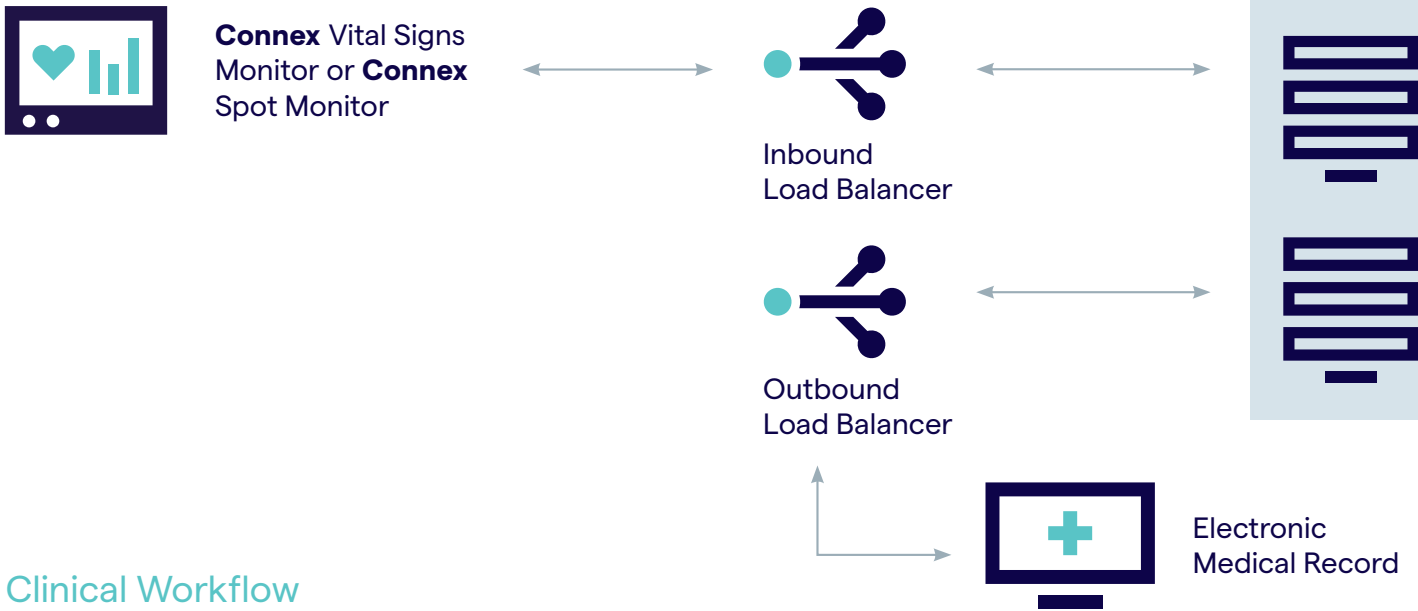Welch Allyn **Connex** Server Application
Software & High Availability Configuration

VITAL SIGNS CONNECTIVITY TO THE EMR

HIGH IMPACT WITH HIGH AVAILABILITY

Connex Server Application Software supports high availability and data redundancy. Application failover helps ensure minimal disruption to clinical workflows.

High Availability Architecture: How It Works

Connex Vital Signs Monitor or **Connex** Spot Monitor

Inbound Load Balancer

Outbound Load Balancer

Electronic Medical Record

Clinical Workflow

1. Scan clinician badge to login
*Also supports Imprivata SSO

2. Scan wristband to ID patient

ENSURING UPTIME

Unplanned downtime can lead to serious consequences for your clinicians, your organization and ultimately your patients. We can help ensure application availability and protect clinical workflows.
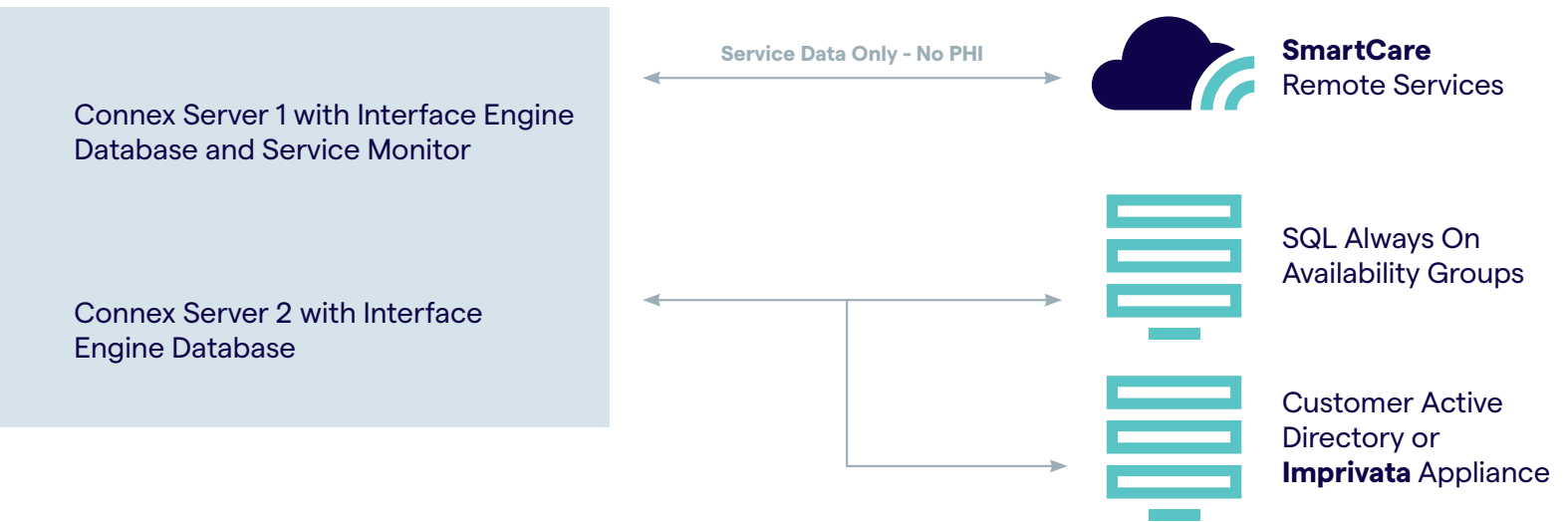
Avoid delays or loss of important patient data

Single site studies show that manually documented vital signs typically have a delay of more than 30 minutes to the patient chart and have errors nearly 38% of the time.[1,2]

Prevent damage to end user productivity

Manually charted vitals are associated with loss of end user efficiency and clinical productivity up to 72 minutes per round.[3]

Connex Server 1 with Interface Engine Database and Service Monitor

Connex Server 2 with Interface Engine Database

Service Data Only - No PHI

SmartCare Remote Services

SQL Always On Availability Groups

Customer Active Directory or **Imprivata** Appliance

*If a customer load balancer can meet ADT and ORU payloads and number of connections, a single load balancer may be used.

3. Capture vitals

4. Information sent from bedside to patient chart as validated

Retain confidence from key stakeholders

During technology downtimes, clinical downtime procedures were correctly followed only 46% of the time.[4]

Avert legal and regulatory impacts

Delays in data used for clinical decision making may have serious impacts to patient safety and compliance.[4, 5]

Consider cost of unplanned downtime

According to the Ponemon Institute Report, the average cost of an unplanned IT outage is $9,000 per minute.[6]

TECHNICAL SPECIFICATIONS

Deployment Type Supported	Active-Active
Device Support	Episodic connections only, up to 800 connections per hour
Networking: Hard-wired or Wireless	Ethernet and 802.11 a/b/g
Supported WLANs[5]	Multiple WLANs supported including **Aruba**, **Cisco**
Radio Card (802.11a)[5]	5.15–5.25, 5.25–5.35, 5.47–5.725, 5.725–5.85 GHz; Quality of service: 802.11e QoS; Receiver sensitivity: -65 dBm (minimum); Transmit power: 14 dBm (typical)
Authentication/Encryption	WEP 64 and 128, WPA2 Personal, WPA2 Enterprise (EAP-TLS, EAP-TTLS, EAP-PEAP [MSCHAPv2]), supports TLS encryption up to version 1.2
FIPS Compliant	Yes
Vital Signs Monitored	Welch Allyn **Connex** Vital Signs Monitor (CVSM) 6000 Series, **Connex** Spot Monitor and **Connex** Integrated Wall System -NIBP, temperature, SpO2 (**Nellcor** or **Masimo**) -Manually entered parameters -Custom scoring
Welch Allyn Connex HIS Interfaces	Admit/Discharge/Transfer (ADT), and Outbound ORU; **Connex** CS application is designed to work with HL7 revisions: 2.3, 2.3.1, 2.4, 2.5; **Imprivata ConfirmID** for Medical Devices for Clinician Authentication; Active Directory for Clinician Authentication
Connex Server Application Software (CSAS) Server Operating Systems Supported	**Windows Server** 2012 R2; **Windows Server** 2016; **Windows Server** 2019
SQL Versions Supported	SQL Always On (2016 & 2019) support for high availability groups
Number of Machines Required	4 machines: 2 for **Connex** Server Application Software, 2 for SQL Always On; Replicate test system required
Interface Engine Databases	SQL Express local to one or both application servers SQL Always On instance may support 1 of the 2 interface engine databases required
Load Balancer	Requires at least one customer supplied load balancer on customer network that can support up to 800 TCP/IP connections plus ADT inbound and outbound ORU payloads
Remote Diagnostics[6]	Welch Allyn **PartnerConnect** enables remote technical support of devices and software; Secure Internet connection required on port 443 (SSL)[3]; No transfer of patient information (HIPAA compliant)
Remote Diagnostics Device and System Monitoring	Compatible with **SmartCare** Remote Management to enable customer self-support of devices and software: **Connex** Vital Signs Monitor 6000 Series, **Connex** Spot Monitor, **Connex** Server Application Software (CSAS); View device status, configuration, locations, calibration schedules, software/firmware versions, licensing, services (applications) **PartnerConnect** required. Supported browsers: **Internet Explorer** 8+, **Google** Chrome V15+, **Apple Safari** V5.1+

Contact your Hillrom sales representative to evaluate your current workflow efficiency and learn how Connex Server Application Software for Electronic Vitals Documentation can help.

hillrom.com

[1] CIN: Computers, Informatics, Nursing: Eliminating Errors in Vital Signs Documentation, Fieler, Vicki K. PhD, RN, AOCN; Jaglow ski, Thomas BSN, RN; Richards, Karen DNP, RN, NE-BC, 2013

[2] Vital Signs Time Study and CIT Nursing Unit Assessment Report, Data on File

[3] JHIM FALL 2010 Volume 24:Number 4, Vital Time Savings: Evaluating the Use of an Automated Vital Signs Documentation System on a Medical/Surgical Unit based on 30-bed unit with 6:1 staffing ratio

[4] Larsen, E., Fong, A., Wernz, C. & Ratwani, R. (2018). Implications of electronic health record downtime: an analysis of patient safety event reports. Journal of the American Medical Informatics Association, 25(2), 2018, 187–191. doi: 10.1093/jamia/ocx057

[5] American Journal of Health-System Pharmacy, Volume 66, Issue 12, 15 June 2009, Pages 1119–1124, https://doi.org/10.2146/ajhp080389.

[6] Ponemon Institute, LLC. (2016). Cost of Data Center Outages. https://www.vertiv.com/globalassets/documents/reports/2016-cost-of-datacenter-outages-11-11_51190_1.pdf.