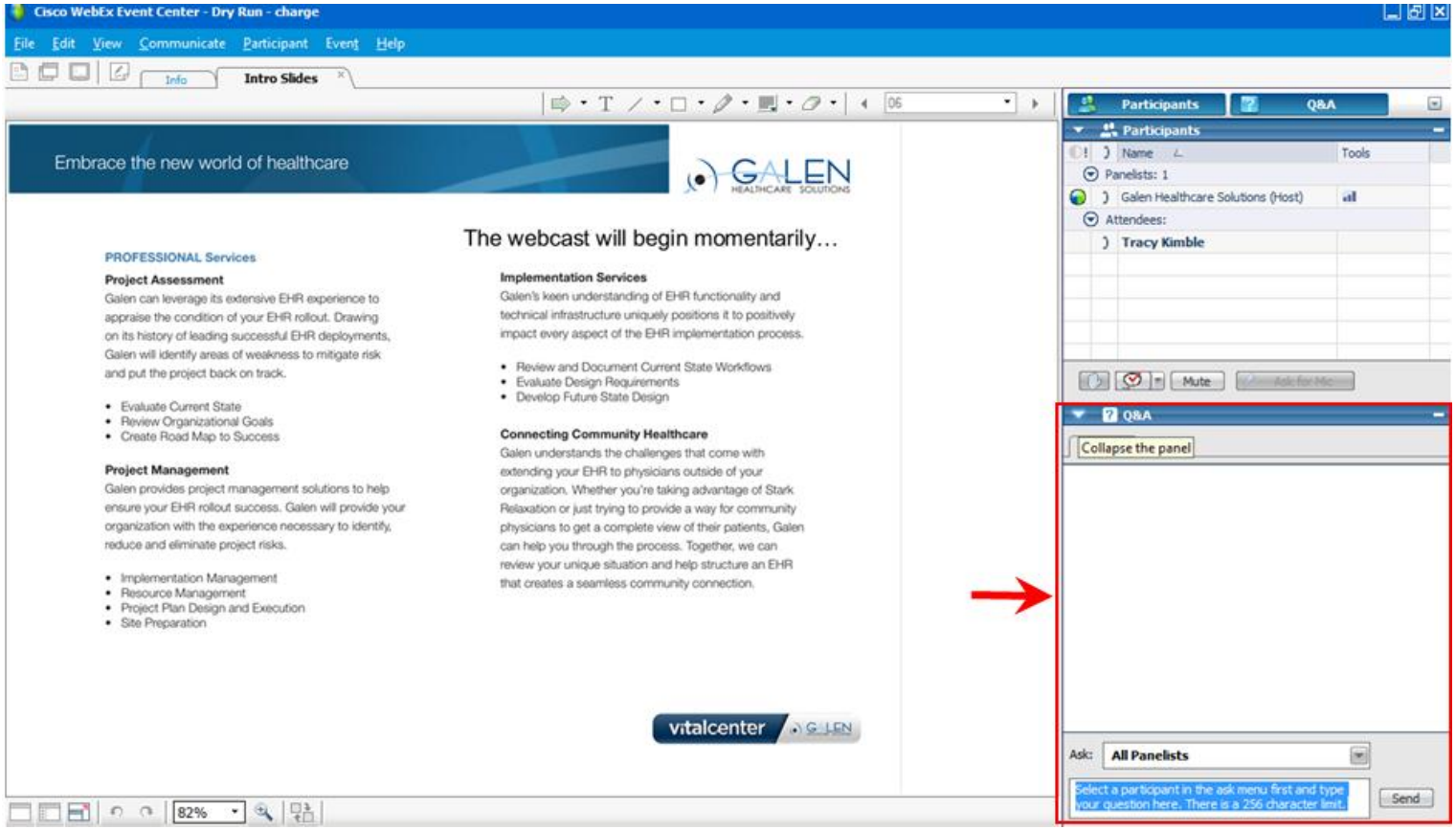
Enterprise EHR Server Fundamentals

October 3, 2012

Embrace the new world of healthcare

Your phone has been automatically muted. Please use the Q&A panel to ask questions during the presentation!



vitalcenter GALEN HEALTHCARE SOLUTIONS

Overview

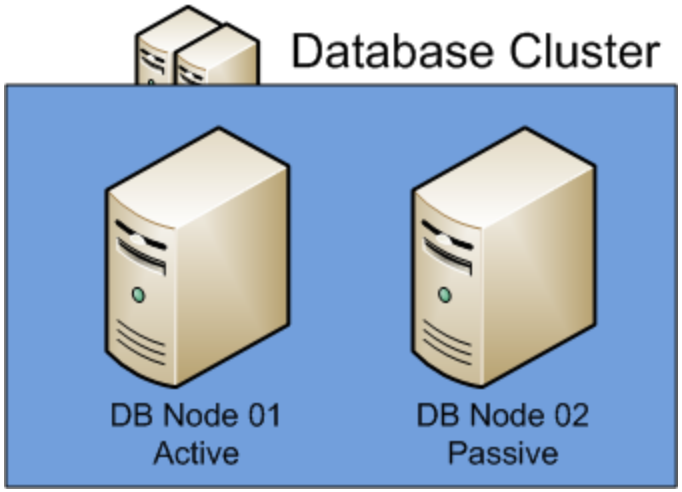
- **Introduction to Servers and Networks**
- **Enterprise EHR Server Roles**
- **Data Storage and Data Flow**
- **Server Access and Application Delivery**

What's a server?

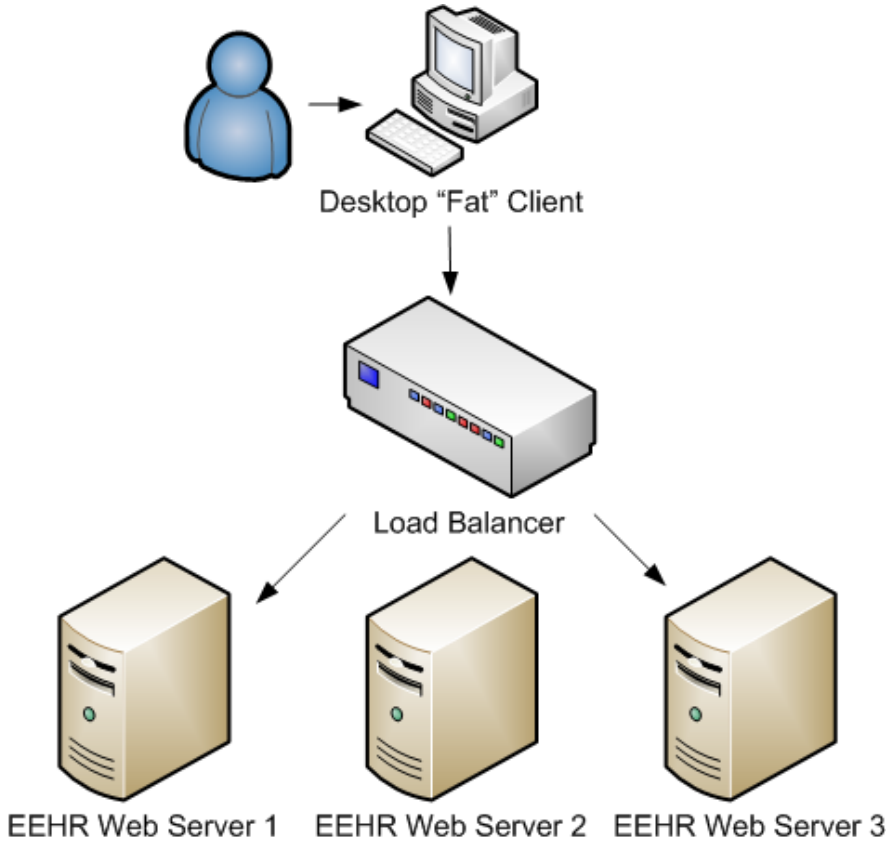
- **Specialized computer**
- **Shares resources to other computers on the network**
- **Responsible for one or more serving "roles"**
- **Must be properly sized and scaled depending on application and level of demand**
- **Can be physical or virtual – but must physically exist somewhere**

Servers and Networks

- **Multiple servers needed for many enterprise applications**
- **Network: links all servers and computers within organization**
- **Clustering: Two servers, active/passive responsibility**
- **Load Balancer: Evenly divides load across 2 or more server**



Load Balancing



What are all these Enterprise EHR servers?

- **Production EHR environments**
  - Separate EHR Servers required for server roles: Database, Web, Message/Print, Scan, Interface
- **Non-Production EHR environments**
  - Separate test environment required for upgrades/changes testing
  - Other uses: Training, QA, Conversions
  - Can be run as All-in-One: All server roles installed on single server

Database Server

- **Houses databases needed to support environment**
- **Considered the heart of Enterprise EHR**
- **Normally configured as a cluster (for reliability purposes)**
- **Key databases:**
  - **Works** – Clinical data storage and processing
  - **IDXwf** – Framework and system user data
  - **Impact** – Scan application data

Web Server

- **Presents Enterprise EHR to end users**
- **Manages connections between users and database**
- **Typically multiple web servers situated behind load balancer**
- **Provides print preview and Medcin functionalities**

Message Server (Print/Fax)

- **Compiles and delivers print and fax jobs**
- **Exchanges prescription messages with SureScripts**
- **Print and fax jobs based on Crystal Reports**
- **Typically houses Delta Service (clinical data updates)**
- **Special hardware required for faxing**
- **Print, Fax, Delta can be consolidated on one server – or separated and spread across multiple servers (Allscripts recommends separate server for messages)**

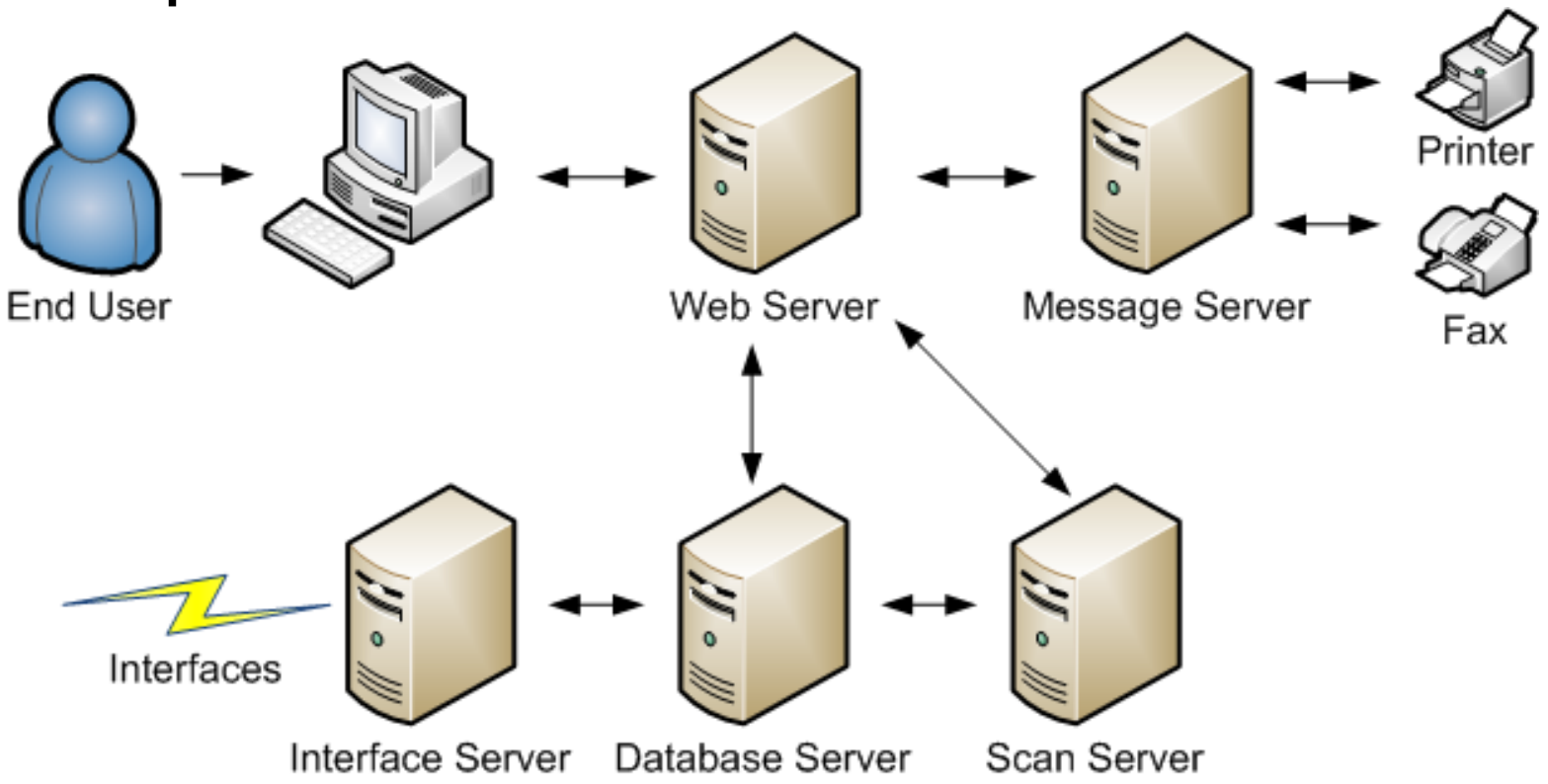
Scan Server

- **Houses server installation and files for Allscripts Document Management (also known as Scan, TouchChart, ImpactMD)**
- **Typically houses Image Warehouse(s) – location of all scanned documents in Enterprise EHR**

Interface Server

- **Processes transactions to and from 3rd party vendors and applications**
- **Conduit for information to and from Practice Management System**
- **Houses ConnectR (interface engine)**

Enterprise EHR – Basic Data Flow



Event Bus Server

- **Required for Stimulus Set implementation**
- **Processes transactions to and from Allscripts Cloud**
- **Events can include:**
  - Immunization Registration
  - Patient Portal
  - Population Health Management
  - CQS Recommendations
  - Lab Orders/Results

Analytics Server

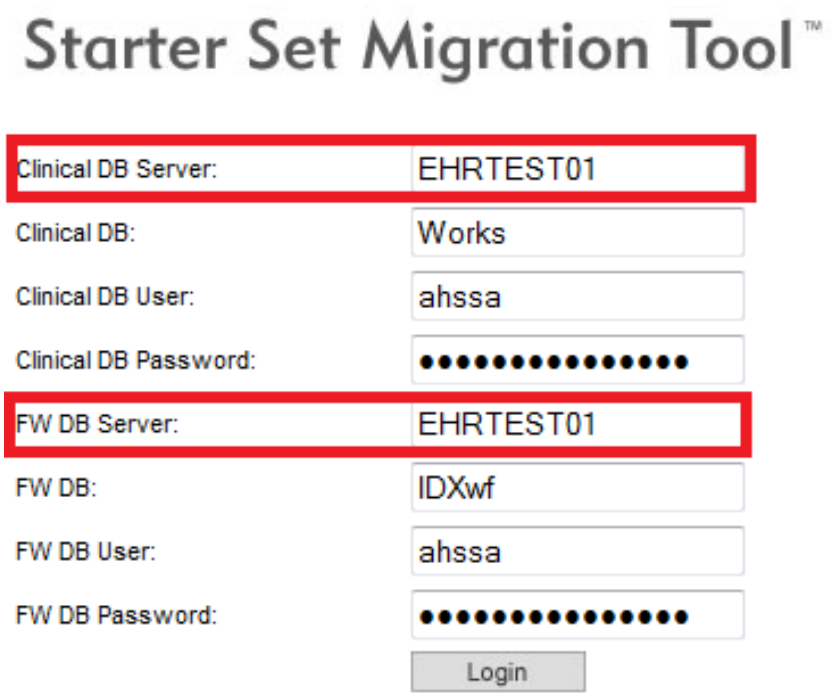
- **Optional server/software offered by Allscripts**
- **Houses a separate, recent copy of clinical data from EHR**
  - ETL Process (Extract, Transform, Load)
- **Houses advanced business intelligence software**
  - Graphical report writing interface
  - Automatic report generation
  - Provides advanced detail on specific clinical data (example: How many patients have diabetes and have not been seen in the last year?)

Winscribe Server

- **Optional server/software offered by Allscripts**
- **Used to collect, store, and process dictations**
- **Manages transcription queues, allows transcriptionists to review dictation and submit transcription online**
- **Transcriptions file into EHR as unstructured notes**

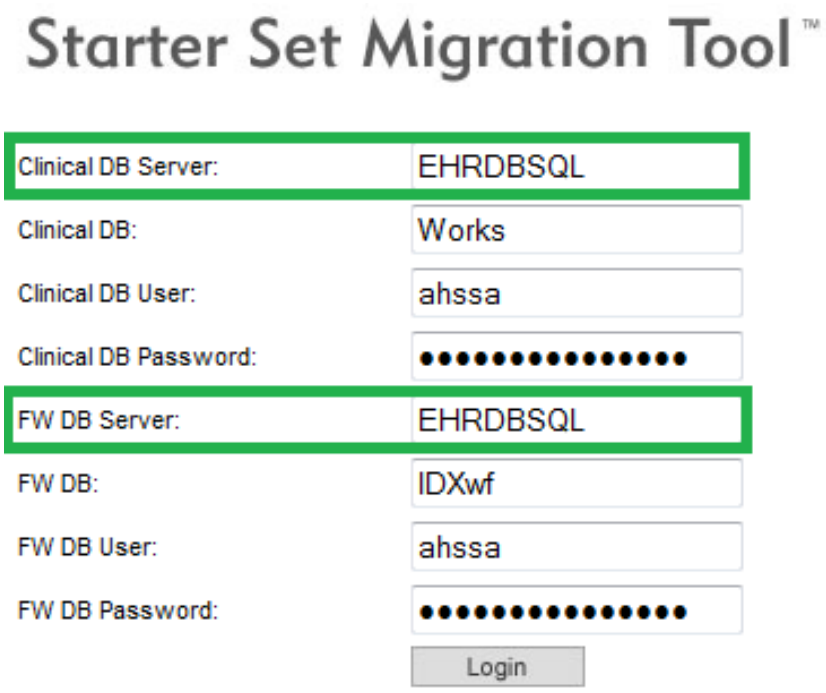
Real World Example – SSMT in Test

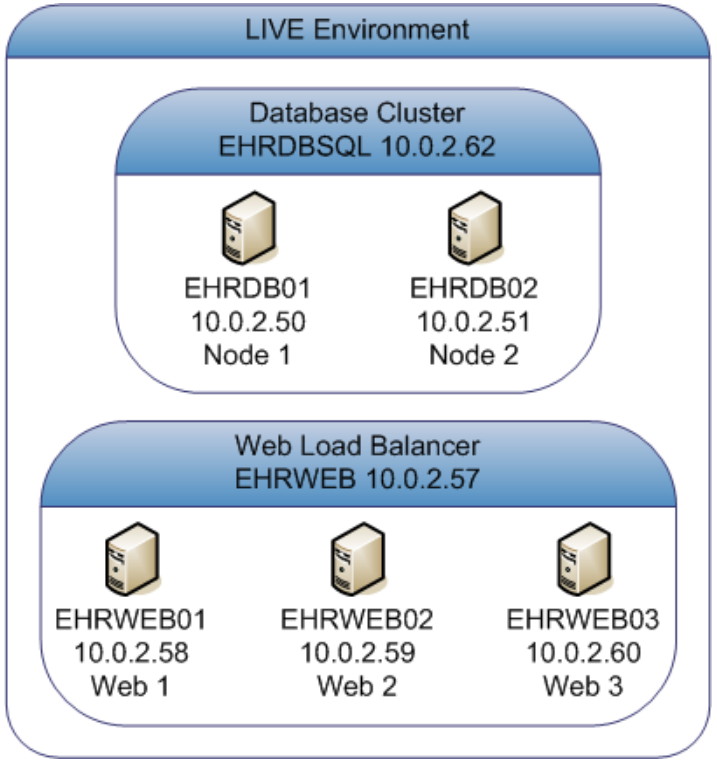
- http://**EHRTEST01**/touchworks/imps/ssmt/ssmt.asp



Real World Example – SSMT in Live

- http://**EHRWEB**/touchworks/imps/ssmt/ssmt.asp





Server Access

- **Remote Desktop Protocol**
  - Used to remotely *administer* servers
- **SecureLink**
  - Secure tunnel technology used by Allscripts and Galen for Remote Desktop access to client servers
- **Gatekeeper**
  - SecureLink software placed on one (or more) servers to establish secure tunnel

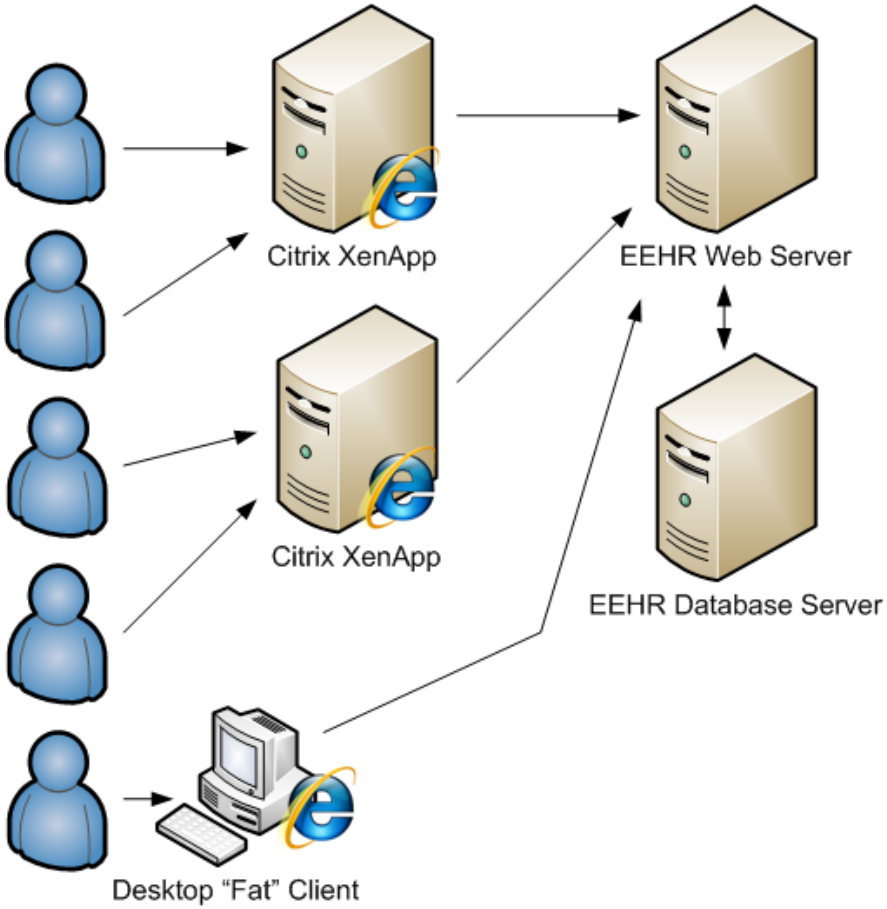
Application Delivery

- **Internet Explorer**
  - Program used to present the main EHR application to users
  - Only supported browser for Enterprise EHR
  - Pre-requisites and proper versions of Allscripts and GE ActiveX Controls required
- **Allscripts Remote and Allscripts Wand**

Application Delivery

- **Terminal Services**
  - Full desktop session running on the server
  - Internet Explorer centrally managed and running on server
  - Similar technologies: Virtual Desktop, Citrix Published Desktop
- **Citrix XenApp**
  - Internet Explorer sessions running on server
  - Internet Explorer application appears to run locally (“seamless”)

Application Delivery Example



Questions?

Questions later?

education@galenhealthcare.com

Slides (and more) available at

http://wiki.galenhealthcare.com/Webcasts