



*Continuity of Veteran Care
during EHR Modernization and Beyond*

VISTA Data Project

*VHA Health Solutions Management Brief
July 24, 2017*

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*An interagency project with the
U.S. Department of Defense, Defense Health Agency*



- VA-DoD Interagency Project
- EHR modernization Proof of Concept
- Leverages DoD-developed technology
- Formalizes Veterans Care Model
- Execution 2016-2017
- <http://vistadataproject.info>



VHA-DHA: History of Electronic Health Records

DHCP is the common base system

VHA: 151 hospitals; 820 clinics; 300 vet centers; + other (total 1700 care sites)
DHA: 57 hospitals; 350 clinics + other

VHA: 131 VISTA systems operational (since 1981)
DHA: 101 CHCS systems operational (since 1985)
Total: 232 DHCP-based systems across VHA-DHA

DHCP-based systems

Common technology projects

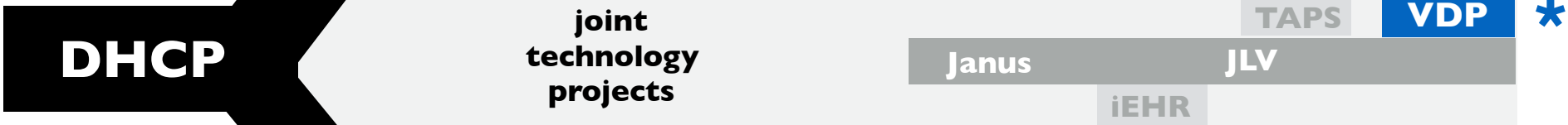
VHA-specific interface and workflow

DHA-specific interface and workflow

Veterans Health Administration (VHA)



Common Base System



Defense Health Administration (DHA)



While DHCP was similar in VHA and DHA originally, it has diverged over time. Today the variety and volume of CHCS data is approximately one-third the scope of VISTA data. One reason for the difference is that DHA migrated a large portion of CHCS operational data and functions to CDR / AHLTA.

	1980	1990	2000	2010	present
VHA-specific		VISTA	CPRS		
Common	DHCP			JLV	iEHR TAPS VDP
DHA-specific		CHCS		AHLTA / CDR	Genesis

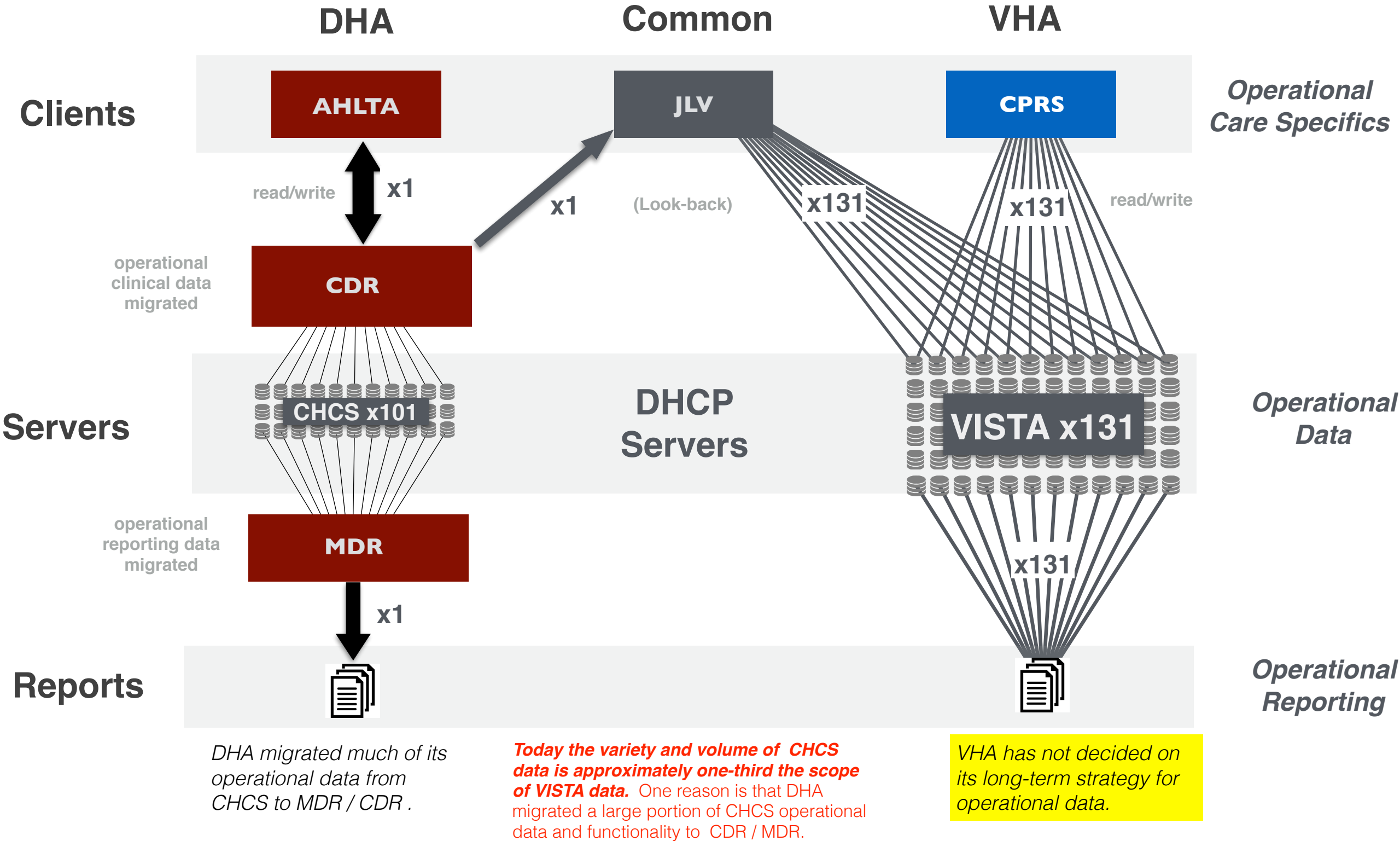
Note: Time scale simplified for clarity

- 1981 - DHCP - Decentralized Hospital Care Program - VA Fileman database and applications [VHA]
- 1985 - CHCS - (DHCP renamed) Composite Health Care System; modified for DHA use [Leidos (SAIC)]
- 1994 - VISTA - (DHCP renamed) Veterans Information Systems Technology Architecture [VHA]
- 1997 - CPRS - Computerized Patient Record System - graphical interface and workflow [VHA]
- 2004 - AHLTA/ CDR/ MDR - Armed Forces Health Longitudinal Technology Application [Northrup Grumman]

- 2003 - JLV - (originally Janus; renamed to JLV in 2011) [DHA-VHA]
- 2011 - iEHR - Integrated Electronic Health Record [SMS]
- 2013 - TAPS - Transition Application Plan Support [DHA-VHA]
- * 2016 - VDP - VISTA Data Project [DHA-VHA]



VHA-DHA: DHCP Servers today



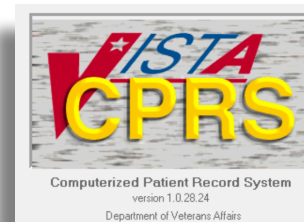


CPRS: Blueprint for Veteran Longitudinal Care

CPRS is VISTA to Physicians, and Embodies Veteran Care specifics

Veteran-specific

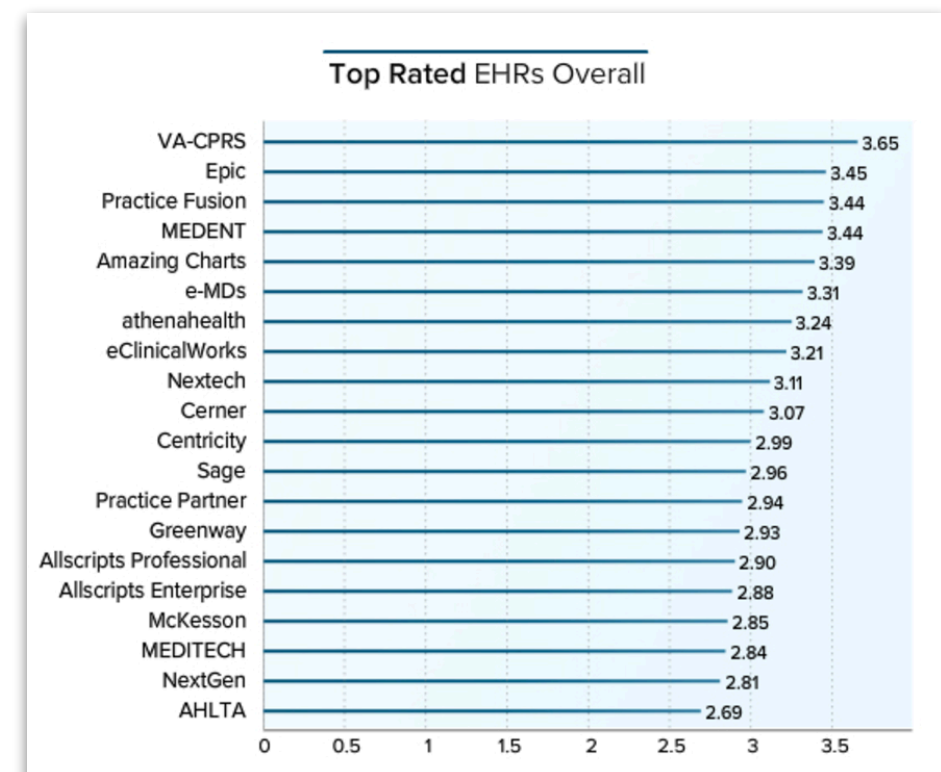
Built specifically around veteran care policies and practice



Physicians favorite

Medscape EHR Report 2016: Physicians Rate Top EHRs

Carol Peckham, Author; Leslie Kane, Sr. Director, Medscape Business of Medicine; Susanna Rosensteel, Editor | August 25, 2016



<http://www.medscape.com/features/slideshow/public/ehr2016>

Department of Veterans Affairs

Memorandum

Date: OCT 17 2012
From: Deputy Under Secretary for Health for Operations and Management (10N)
Subj: National Patient Record Flag for High Risk for Suicide
To: Network Director (10N1-23)
Chief Medical Officer (10N1-23)
Network Mental Health Liaisons

1. The purpose of this memo is to provide guidance for the implementation of a new Category I Patient Record Flag (PRF) for High Risk for Suicide.

Agent Orange

Agent Orange (AO) is an herbicide that was used in Vietnam between 1962 and 1971 to remove unwanted plant life that provided cover for enemy forces. The VA has recognized the following conditions as associated with but not necessarily caused by exposure to Agent Orange:

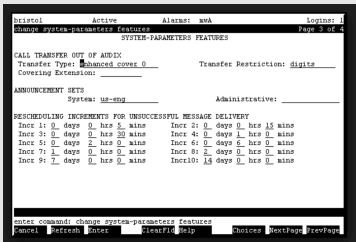
- AL Amyloidosis
- Diabetes (type 2)

Opportunity:
Supporting CPRS (for a period) ensures
Continuity of Care as VA's EHR is modernized.

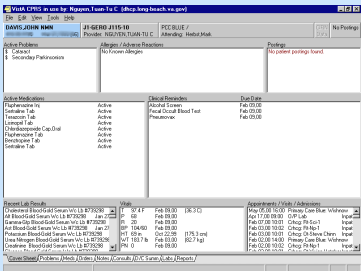
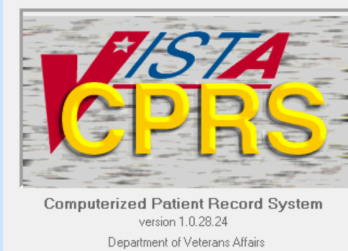


CPRS workflow: Captured in VISTA Server

CLIENTS
(User Interfaces)



Terminal Interface
(integrated in VISTA server)



Graphical Interface
(remote from VISTA server)

1981

1997

2017

INTEGRATED SERVER:

Database +
Applications +
Workflow Engine +
Integration Engine +
Terminal Interface

ScreenMan

RPCs (workflow)

VISTA Server (x131)

1980

1990

2000

2010

present

Because the VISTA server's remote procedure call (RPC) interfaces captures the clinical operational data and workflow of the CPRS client, migrating CPRS/VISTA "server-first" ensures VA Continuity of Care.

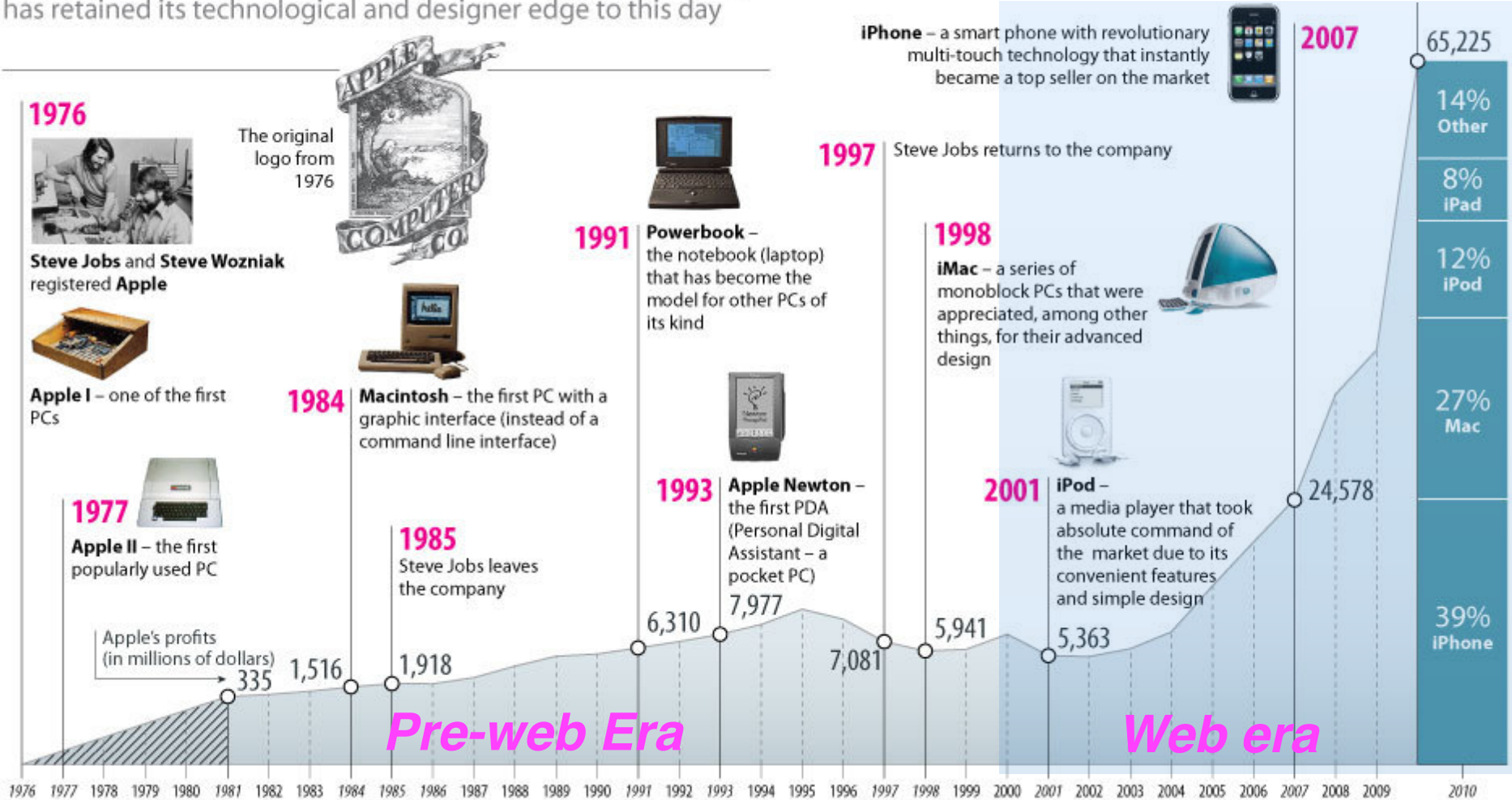


Apple: Playbook for platform evolution

Emulation was their key to platform modernization

35 years of Apple history

Apple, one of the pioneers on the personal computer market, has retained its technological and designer edge to this day



In 2001 Apple migrated from their bespoke pre-web “Apple Classic” operating system to a to a modern, web-centric OS.

This new web OS allowed Apple to expand their platform, services, and applications across all devices, and into the Cloud, giving them exponential growth and market reach.

Clients

Classic Applications

Classic Apps (continue)

Web / Mobile (new enabled)

Server

Classic OS

Emulator

Services

Web OS

Apple’s seamless migration to a modern web OS while maintaining continuity of operation of their Classic applications was enabled through Emulation.



VISTA Data Project

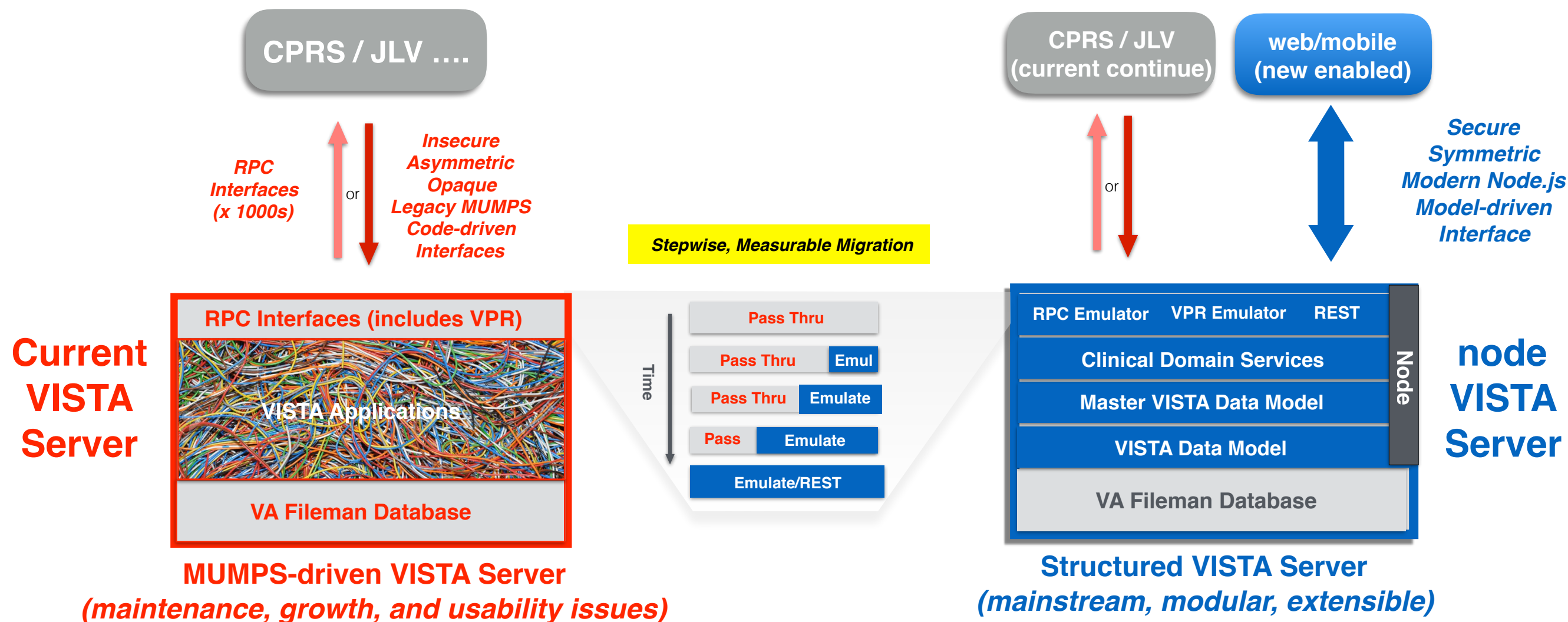
*Prove Stepwise Server Migration
while maintaining Continuity of Care*

Key Features

- VHA-DHA Interagency project
- Modernization Proof of Concept
- Leverages DHA-developed technology
- Formalizes Veterans Care Model
- Migrate Server; Support CPRS/JLV
- Execution 2016-2017

131 Current VISTAs

VISTA Data Project



M Legacy VISTA (MUMPS)
■ Master VISTA Data Model (MVDM) Node.js - Driven VISTA

Strategic Benefits

- New, maintainable veteran care **server** based on mainstream technology
- New web and mobile clients enabled with mainstream technology
- Current clients (CPRS/JLV) supported and enforce VA Care coverage
- May now safely incrementally retire legacy MUMPS VISTA [spaghetti]
- (Some) Clinical Domain Services may be implemented over COTS



VISTA Data Project

Stepwise Server Migration while maintaining Continuity of Care

Enables Cloud-based, COTS-integrated
National Veteran Care Services
Preserving Continuity of Care

Supports the current...

Enables the new...

Clients



CPRS



JLV



VPR



**web mobile
commercial**

Current and
New Clients

*Security
Enhanced*

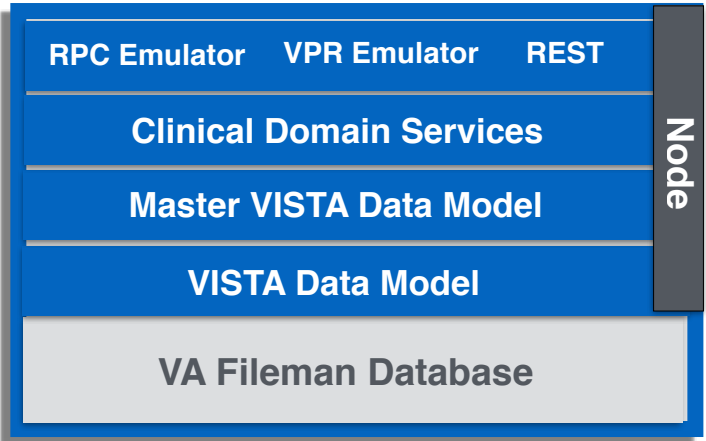
*Veteran
Care Specifics
maintained*



*Secure
Symmetric
Modern Node.js
Model-driven
Interface*



Servers



**node
VISTA**

**New, Structured VISTA Server
(mainstream, modular, extensible)**



Resources

Web: ***vistadataproject.info***

Github: ***github.com/vistadataproject***

Contact: ***rafael.richards@va.gov***