

VU Link

Introduction and Technical Overview

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About This Document

This is intended to provide a *brief* summary of VU Link and its role in the HSII managed care application. This document assumes general familiarity with the HSII application, as well as certain data communications concepts. Other documents exist to provide more detail; please see the “Additional Documentation” section at the end of this overview.

VU Link

VU Link (pronounced “view link”) is a family of modules designed to provide an electronic data pathway into the HSII databases when no other way currently exists.

The concept of VU Link is to simulate—and therefore automate—user interaction with HSII screens. Its key feature is that it operates as a Virtual User (VU).

VU Link is designed primarily as an interface *into* the HSII databases. Its goal is to electronically move data to the HSII databases while maintaining HSII business logic rules. Other interfaces exist to extract or replicate data from the HSII databases. These include replication triggers, API Servers, SQL extractions and custom export programs. These are typically much more efficient methods than VU Link and should be used before turning to VU Link for data extraction. VU Link is primarily a data insertion tool.

As an input tool, VU Link provides flexible capabilities where no other automated means exist. Any actions which can be fully defined and repeated via HSII's user interface screens are candidate applications for automation by VU Link, such as:

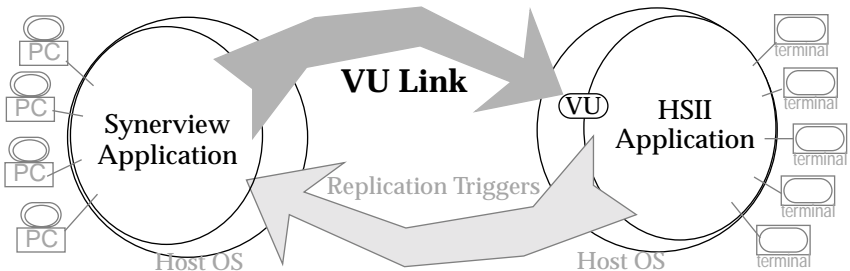
- background data synchronization between two systems
- regular batch uploads
- initial system replication (conversion to HSII)
- automated initiation of batch processes
- regression testing
- stress testing
- HSII release verification

VU Link can be run as a stand-alone program on the HSII system and in a client/server configuration in a distributed processing environment.

Three applications which rely upon VU Link are introduced below, followed by technical summaries of VU Link's modules.

1) Data Synchronization/Replication

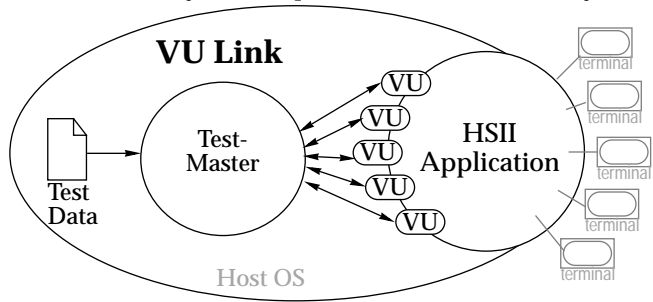
VU Link was initially designed to support KHP Service's Synerview application—a GUI front-end for extended managed care functionality. In this case, VU Link is embedded into the Synerview application as a part of its data synchronization/replication function.



2) Regression and Stress Testing

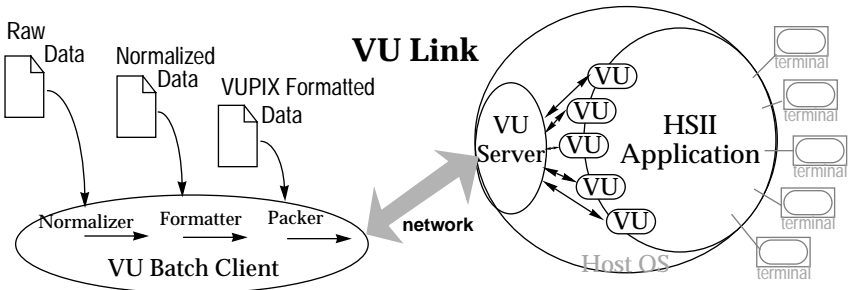
VU Link has been instrumental in regression testing as well as stress testing of the HSII system. In this form, as TestMaster, it measures system performance under actual usage for a given simulated business model. Inputs include selectively generated data sets with configuration options to include user keystroke rate and user think time. Results show expected

real-use performance as well as system requirements (disk, memory, etc.).



3) Automated Batch Uploads

VU Link, using a specialized batch client, exists to handle the batch processing of data from flat files. These may be in the form of raw data (X12, HL7, or customized formats); normalized data (pre-processed by the foreign system to VUPIX Normal Format); or, in rare cases, directly in VUPIX Function Format. This batch client has added functionality for audit logging and error logging with checkpoint/restart capabilities.



Screen Definition Tables

Currently, the HSII system is designed and implemented strictly from an interactive user's perspective. All of HSII business logic rules reside in the screens. Therefore, VU Link is based upon HSII's user interface—acting upon/reacting to data streams from HSII screens.

The core of VU Link is its screen definition tables. They hold all of VU Link's knowledge of the HSII screens with which it can interact. Developing new VU Link abilities involves defining new tables. The tables contain verification controls, error handling controls, sequencing controls, as well as full descriptions of each screen and its fields. Therefore, any changes to the HSII screens *must* also be reflected in the tables. Software tools exist to add and maintain screen definition tables.

The Modules

VU Link is a family of modules to access the full HSII managed care system from other programming environments and flat/batch files. It consists of the following modules:

- VUPIX** Virtual User Processor/Interpreter X(trans)lator. Core module upon which all other modules depend. Accepts function calls in VUPIX function protocol where one function equals one (or more) HSII screen(s). Interacts with the HSII system as a single user.
- VU Server** Front-end controller for multiple VUPIX processors allowing a single network connection to service a large number of VUPIX transactions (maximize throughput, minimize costs). TestMaster is an alternate form of a general VU Server.
- VU Client** Requestor of VUPIX transactions. Typically, but not necessarily, will cross a network medium. VU Clients can take various forms, depending upon their function. They include a Syner-view client module and a batch processor module.
- VU Tools:** These will come into play depending upon the function of the VU Client.
- VU Packer.** Takes a series of sequence-dependent VUPIX functions and bundles them into a logical transaction unit.
- VU Formatter.** Takes normalized (see next item) data format and converts it into VUPIX formatted function protocol.
- VU Normalizer.** Takes raw data format and converts it into normalized format for the VU Formatter. There will be one VU Normalizer (or a set of them) for each data protocol supported (X12, HL7, custom, and others).
- VU Screen Tools.** Program toolsets to automate the process of building VUPIX screen tables. Also used to verify screen changes in a new HSII release.

Additional Documentation

VU Link is more fully described in several documents—each for a specific purpose and audience. Included in these are:

- *VU Link Technical Documentation Guide* by D. Nebinger.
- *VUPIX Function Definition* by W. Hanna.
- *VUPIX Screen Definition Development* by D. Marencic & L. Tiezsen.
- *VUPIX Normal Format* by L. Tiezsen and W. Hanna.
- *VU Link User's Guide* (under development).

Please contact Bill Hanna (717/760-9059) for further information.