



Encore Server  
Workforce Optimization Solution

# NEC UNIVERGE SV8100 Integration Guide

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# I. Introduction

The Encore system integrates with the NEC UNIVERGE SV8100 system via the NEC Infrontia TSP using TAPI. This integration allows the Encore system to successfully perform the following functions:

- Audio Collection - Capture the audio that needs to be recorded.
- Recording Control - Receive the necessary events that signal when the Encore must start and stop recording.
- Data Capture - Receive data associated with the call.

The Encore system can record calls on an NEC system without the TAPI Application Server integration but the recording controls and data capture are limited; configuration for this integration is not covered in this document.

## Supported data capture

The following is a list of the supported data elements that can be collected with each recording. Not every element is applicable for each call. For a description of each data element, refer to Appendix 1: Glossary.

- ANI
- Call Direction
- Call Type
- DNIS
- Extension
- Other Party Name
- Other Party Number
- Recorded Party Name
- Recorded Party Number

**Note:** If an ACD call or a department group call is recorded, the ACD Group Number or Department Group Number may be assigned to the DNIS.

## Supported recording features

The following matrix should be used to determine which audio collection is best for your business needs. For example, if you need to record encrypted calls, you must use the Trunk-side TDM methods. If you find that more than one collection method will work for you, talk to your Encore representative about which method is more cost-effective. For a description of each feature, refer to Appendix 1: Glossary.

Recording Feature	Audio Collection Method		
	Station-side TDM	Trunk-side TDM	Station-side RTP Packet Capture (Passive Interface)
Max. Recording Ports per Server <sup>^</sup>	192	288	400
Record External Calls	YES	YES	YES
Record Internal Calls	YES		YES
Record Encrypted Calls		YES	
Related Call Lookup			
Full-Time Recording	YES	YES	YES
Scheduled Recording			
Hot Desk			

<sup>^</sup>Small Business Servers are limited to 72 ports.

## Software and hardware requirements

System	Software Requirements
NEC UNIVERGE SV8100 system	<ul style="list-style-type: none"> <li>• Station-side TDM, Trunk-side TDM, and Station-side RTP Packet Capture               <ul style="list-style-type: none"> <li>○ NEC UNIVERGE SV8100 5.0 or later</li> <li>○ Third-party CTI license</li> <li>○ Infrontia 3<sup>rd</sup> Party TSP that matches the version of the software loaded on the SV8100. This needs to be given to the dvsAnalytics installer prior to the installation of Encore. Check with the dvsAnalytics installer to determine if the 32-bit or 64-bit TSP is needed.</li> </ul> </li> </ul>
Encore system	<ul style="list-style-type: none"> <li>• Station-side TDM, Trunk-side TDM, and Station-side RTP Packet Capture               <ul style="list-style-type: none"> <li>○ Encore 2.3.1 or later</li> <li>○ CTGate.exe 7.2.1000 or later</li> <li>○ CTSV8100TAPI.dll 3.2.1000 or later</li> <li>○ NEC Infrontia TSP software</li> <li>○ Only a single TAPI connection is supported. If the customer has another application that communicates with TAPI, such as the NEC Desktop Shared Services application, then CT Gateway must be installed on the same machine with the other application so both applications can share the same connection.</li> </ul> </li> </ul>

System	Hardware Requirements
NEC UNIVERGE SV8100 system	<ul style="list-style-type: none"> <li>• Station-side TDM               <ul style="list-style-type: none"> <li>○ Must allow Encore to tap at the punchdown block</li> </ul> </li> <li>• Trunk-side TDM               <ul style="list-style-type: none"> <li>○ Must allow Encore to tap at the trunk</li> </ul> </li> <li>• Station-side RTP Packet Capture               <ul style="list-style-type: none"> <li>○ Span port on network to route all RTP traffic to Encore server</li> <li>○ DHCP IP address reservation for each station to be recorded</li> </ul> </li> </ul>
Encore system	<ul style="list-style-type: none"> <li>• No special hardware is required</li> </ul>

## Documentation overview

This document provides integration information for a specific phone system. It helps a user to understand the features and benefits of a particular integration as well as what needs to be configured on the phone system. Configuration steps necessary to enable this integration on the Encore system are covered in the *Encore Installer's Guide* and the *NEC UNIVERGE SV8100 Installation Addendum*.

Conventions used in this guide include:

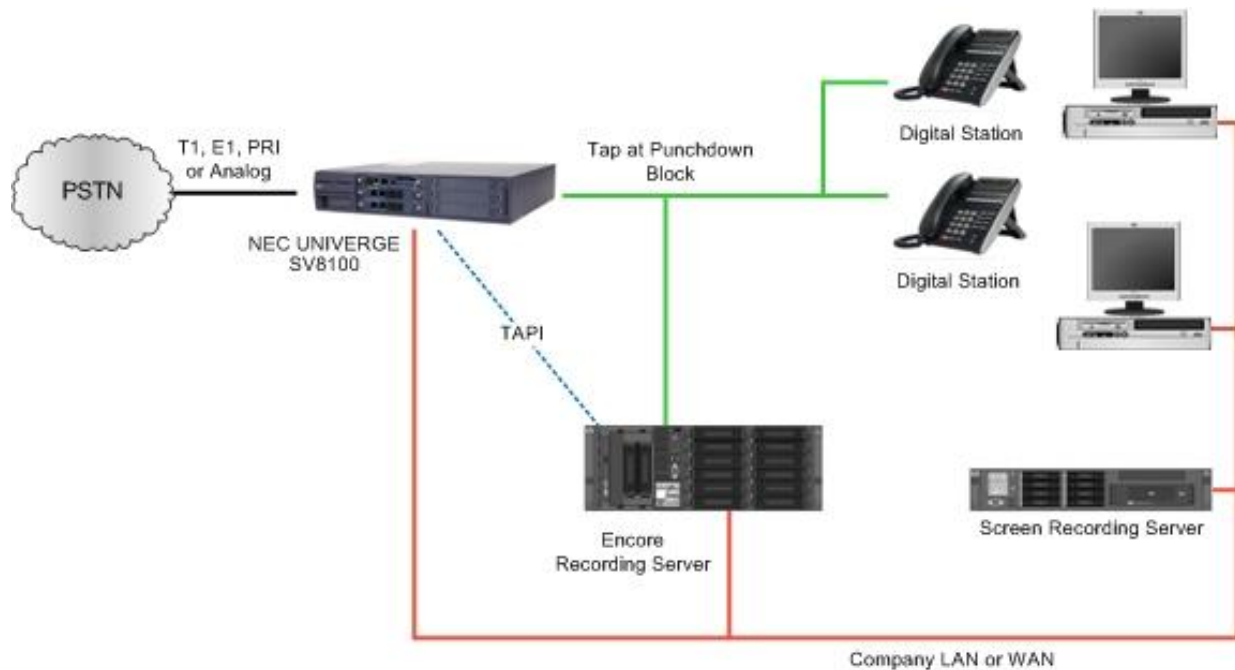
1. Computer commands needed to complete a task appear like this: **Sample** (in black)
2. Keyboard strokes that need to be entered appear like this: [Sample]

## II. Overview of NEC UNIVERGE SV8100 Integration

This section provides an overview of each audio collection method. For simplicity sake, the diagrams only display a single Encore server but there can be multiple Encore servers depending on the number of stations to be recorded.

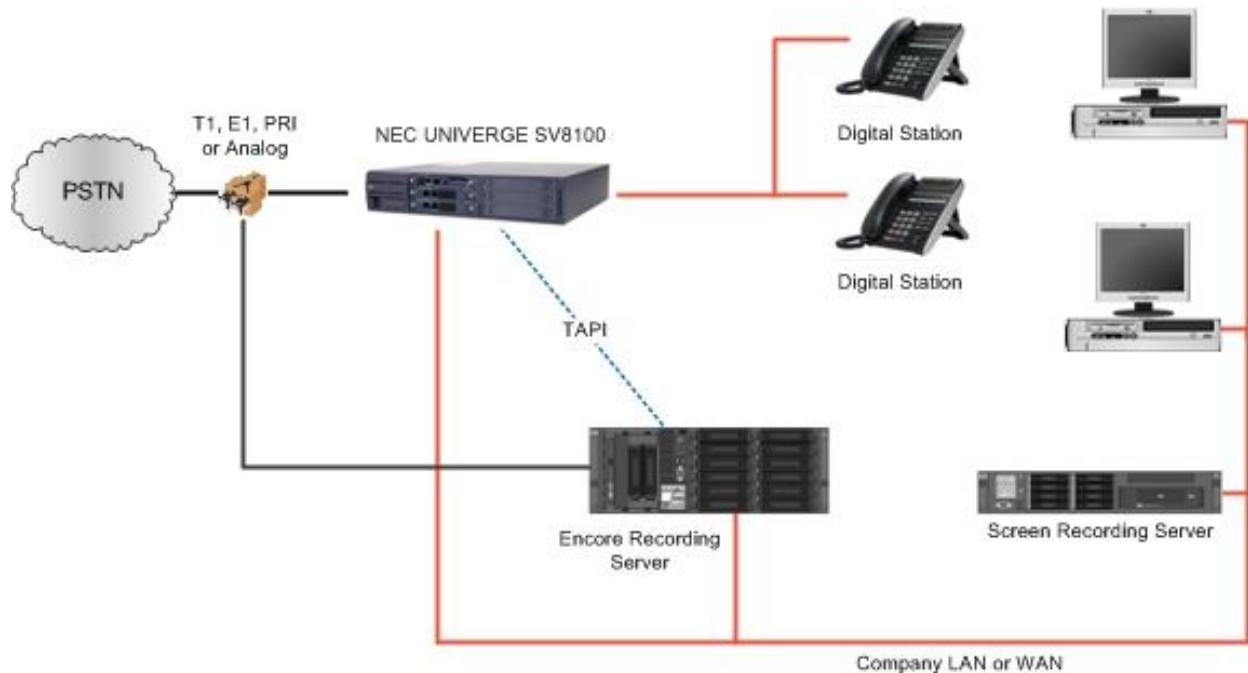
### Station-side TDM

The Station-side TDM method uses a passive tap on the phones connected to the NEC UNIVERGE SV8100 to collect audio. These may be analog or digital phone sets. This passive tap is connected to the recording boards in the Encore server. Based on events received from the TAPI interface, the Encore server collects the audio on the recording boards and the data associated with the call from the TAPI messages.



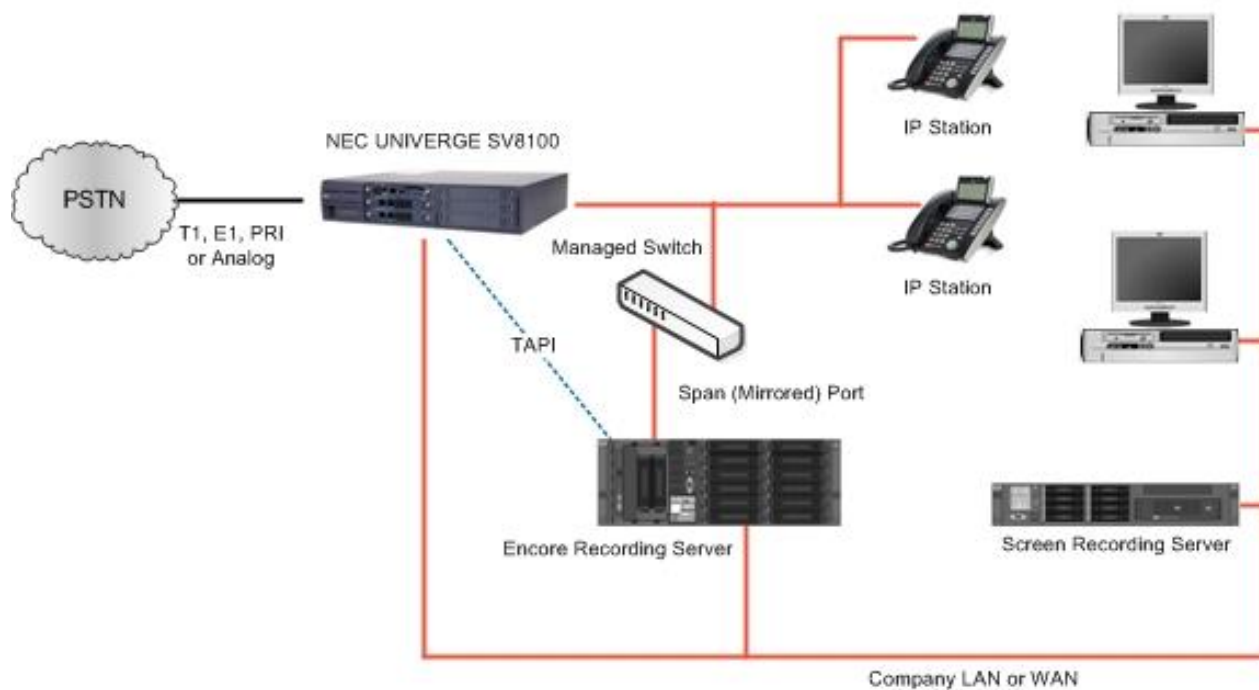
## Trunk-side TDM

The Trunk-side TDM method uses a passive tap on the telephony trunks that connect the NEC UNIVERGE SV8100 PBX to the PSTN. The trunks can be T1, E1, or Analog. This passive tap is connected to the recording boards in the Encore server. The audio is collected via the passive tap. Based on events received from the recording boards or from events received from the TAPI interface, call recordings can be started or stopped, and the data associated with the call record.



## Station-side RTP Packet Capture

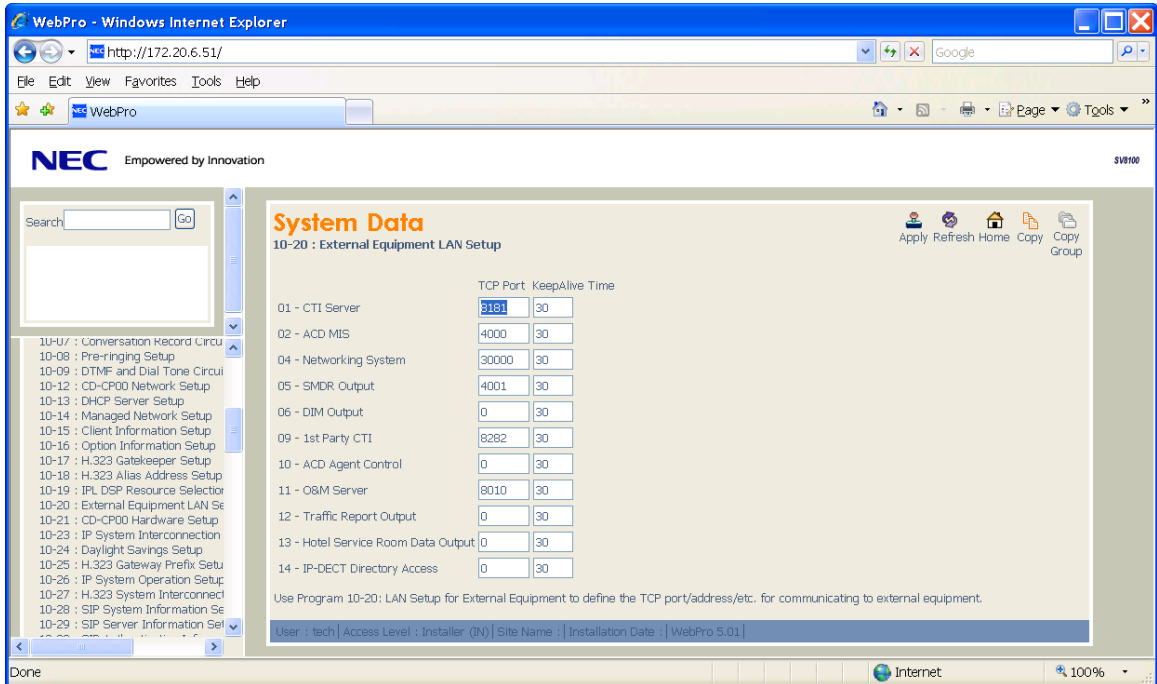
The Station-side RTP Packet Capture method uses a span port to collect the RTP audio packets directly from the network segment that includes the VoIP traffic. Based on events received from the TAPI interface, the Encore server collects the RTP packets for a specific IP address and converts the RTP data to an audio recording file. Encore collects data associated with the call from the TAPI messages.



### III. Configure NEC UNIVERGE SV8100 System

The steps to configure the NEC system are included in this section. It is assumed that the reader has a working knowledge of the NEC UNIVERGE SV8100 software and only needs specific configuration assistance.

1. Enable the CTI feature in the UNIVERGE SV8100 with Third-Party CTI License.
2. Enable the TCP port in SV8100 programming (Program 10-20-01: Device 1 Port Number).





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## IV. Call Handling Scenarios

This section explains how different calls are displayed in Encore. The descriptions in this section are from a station-side recording system and it is assumed that all stations involved in the calls are configured to be recorded.

Certain situations affect how recordings are created:

- Hold – When a call is put on hold, the recording is stopped. When the call is retrieved, a new recording is created.
- Consultation Call – If an agent is on a call and then places an internal consultation call, the first call is put on hold and the recording is stopped. The consultation call is recorded as two separate recordings—one for each extension. When each extension hangs up the consultation call, their respective recordings stop. When the agent retrieves the first call, a new recording is created.
- Blind Transfer – When a call is blind transferred (also called an unannounced transfer), the first recording ends when the first agent puts the call on hold to initiate the transfer. The second recording begins when the second agent answers the transferred call. The second recording ends when the second agent hangs up the call.
- Supervised Transfer – If the agent brings the caller on the line before transferring him, a new recording starts. It stops when the agent transfers the caller. The caller and the third party are now on the call, and a new recording starts. This recording ends when the third party hangs up.
- Conference Call – When an agent decides to bring a third party into a current call (where the call to the third party is internal), the agent usually puts the caller on hold to first consult with the third party. When the agent puts the caller on hold, the first recording stops. The consultation call creates two recordings, one for the agent and another for the third party. When the consultation call ends, both recordings stop.
- Internal Call – If both extensions are monitored by Encore, two recordings are created – one for each extension.

**If the customer is using a trunk-side recording system**, internal calls are not recorded. So, any example above where a call is made to an internal party would not be recorded by Encore.

Consider a conference call as an example. The first recording starts when the agent answers the call. When the agent presses the conference button to make a consultation call, the first recording stops. The second recording starts immediately and it records the hold music that the caller is hearing since internal calls cannot be recorded. When the third party joins the agent and the caller, the second recording continues and it records the conversation.

If one of the agents hang up the call and the caller continues with the other party, the second recording stops and a third recording starts.

Lastly, during a conference call if the third party hangs up before the agent that originally answered the call, the recording does not indicate that it was a conference call. This occurs because the original start command from the first recording overwrites any information that indicates the call was a conference.

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## Appendix 1: Glossary

### **abandoned call**

An incoming call which is answered by the ACD but terminated by the caller before it is answered by an agent.

### **ACD**

Automatic Call Distributor. An application that answers calls and directs them to a predetermined queue, or line, of waiting calls. In most cases, the ACD ensures that the first call in is the first call answered. It also determines which agent receives a call based on predetermined criteria such as idle time or availability and generates reports on call volume and distribution.

### **agent**

A person who handles phone calls. Other variations include operator, attendant, representative, customer service representative (CSR), telemarketer, phone sales representative (TSR), and so on.

### **ANI**

Automatic Number Identification. For inbound calls, this is the customer's number (may not be supported by the trunk). For outbound calls, this is the dialed number. For a recording of a "Barge-In" call, the ANI will be incorrect.

### **automated attendant**

A voice processing system that answers calls with a recording and then enables callers to press touch-tone buttons to navigate through a menu system to a person, department, or voice mail.

### **Barge-In**

This NEC UNIVERGE SV8100 feature permits an extension user to break into another extension user's established call, including Conference calls. This sets up a conference-type conversation between the intruding extension and the parties on the initial call. With Barge-In, an extension user can get a message through to a busy co-worker right away.

There are two Barge-In modes: Monitor Mode (Silent Monitor) and Speech Mode. With Monitor Mode, the caller barging in can listen to another user conversation but cannot participate. With Speech Mode, the caller barging in can listen and join another user conversation.

### **call direction**

The direction is either incoming (inbound) or outgoing (outbound). Field is blank if the Call Type is Conference.

### **call record**

An entry in a database that holds the data associated with a call.

### **call type**

The call type is either internal, external, or conference.

### **digital recording**

A method of recording that converts analog sound into a series of pulses that are translated into binary code, which is read by computers.

**DNIS**

Dialed Number Identification Service. For inbound calls, this is the number the customer dialed or the agent's extension number (may not be supported by the trunk). For a recording of a "Barge-In" call, the DNIS will be incorrect.

**encrypted calls**

Calls that have the audio RTP packets encrypted. This prevents 3<sup>rd</sup> party applications, such as the Encore system, from using the RTP packets for recording.

**extension**

The number associated with a person's station. Extension and station are sometimes used interchangeably.

**external calls**

In these calls, the calling or called parties are outside the PBX.

**Hot Desk**

Each Hot Desk user has a user identifier (which is the user's directory number) and a pin number to log into the system. When logging into a phone that is Hot Desk enabled, the user takes complete control of the set (including line keys, soft keys, etc.) The set now has a new prime directory number—the user's directory number. The registration directory number is unavailable as long as the user is logged into the phone. When the user logs out of the phone, the registration directory number (with line keys, soft keys, etc.) is restored, and the user directory number becomes unavailable.

**inbound**

Calls which are received/answered by a recorded party.

**internal calls**

In these calls, the calling and called parties are extensions on the PBX.

**other party name**

Name of the other party on the line with the person being recorded. Field is blank if the Call Type is Conference.

**other party number**

Number of the other party on the line with the person being recorded; if external and incoming call, this is the ANI. Field is blank if the Call Type is Conference. Field includes the dialed number for an outbound call.

**outbound**

Calls which are initialed/placed by a recorded party.

**PBX (PABX)**

Private (Automated) Branch Exchange. The phone system to which the office phones are connected.

**recorded party name**

Name of person being recorded. An external audio recording only includes the recorded party name after the recorded party receives or makes an internal call or outbound call. If the first call handled by the recorded party is an external call, the recording does not include the recorded party name.

**recorded party number**

Number of person being recorded.

**recording**

The audio recording, screen recording, and database record associated with a single phone call or conversation.

**station**

A phone connected to the PBX.

**Telephony Application Programming Interface (TAPI)**

A telephony software interface included in Microsoft Windows operating system that supports the incorporation of telephony control by other applications.

**trunk**

The connection between the phone company and the PBX that carries incoming calls.

**Trunk ID**

The trunk of a call. If the call is an internal call, then this field is blank. Captured for all inbound/outbound calls.