



Distributor Technical Reference Bulletin
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NES Contact Recording and Quality Monitoring 7.0 Distributor Technical Reference

REVISION HISTORY

Date	Revision #	Summary of Changes
Nov 23 rd 2009	DTR-2009-0174-Global issue 1.0	Issue 1.0 of this document.
Jan 19 th 2010	DTR-2009-0174-Global issue 2.0	<ul style="list-style-type: none">- Added important note to 2.2.1- Added important note to 3.3.1: Important Licensing change.- Some rebranding of this document and resolved miscellaneous typographical errors.- Added language support section

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1 Introduction

1.1 Objective

The objective of this document is to provide up to date technical information about the Avaya hardware and software components that are required for an NES Contact Recording and Quality Monitoring solution.

1.2 Target Audience for this document

This document is targeted for technical personnel who are responsible for the installation and maintenance of a contact recording solution.

1.3 Product Scope

Avaya has its own portfolio of contact recording equipment, but additionally Avaya can also offer an open interface to 3rd party developers who wish to develop their own contact recording. Specifically, Avaya has introduced an enhancement to the MLS (Meridian Link Services) open interface called “Duplicate Media Stream” which enables 3rd party developers to generate their own applications. As an alternative to this, Avaya do offer a complete solution that includes a portfolio of Contact Recording and Quality Monitoring applications all of which are addressed in this document.

The following System components are within the scope of this document and are required as part of the NES Contact Recording and Quality Monitoring Solution.

(a) Core Infrastructure required for Duplicate media streaming

- Contact Center Manager 7.1/7.0/6.0, Symposium Call Center Server 5.0
- Communication Server 1000 release 4.5/5.0 /5.5/ 6.0
- IP Sets (including soft client)
- Unistim 4 or later is required for Secure Call recording.

(b) Additional Contact Recording and Quality Monitoring Components

- NES Contact Recording
- NES Quality Monitoring
- NES Archive Manager
- NES Viewer
- NES TDM Recording
- CRC card for Quality Monitoring in mixed IP/TDM environments on CS1k
- Custom Adapter (includes Unify and eQConnect)
- RSA Key Manager

If the reader is using a different 3rd party contact recording application, then only section (a) above is of interest.

If using the NES Contact Recording and Quality Monitoring (CRQM), then both (a) and (b) above are relevant, as the NES CRQM portfolio also needs to use the core infrastructure.

2 Component Lineup

2.1 Core infrastructure Components

Table 2.1: Core Infrastructure Versions

System Component	Minimum Software release	Service Updates / Patches Required	Comment
Symposium	5.0	<p><u>GA Load (Non MADN)</u> NN_SCCS_5.0_SU_06 NN_SCCS_5.0_SUS_0601_S NN_SCCS_5.0_SUS_0602_S NN_SCCS_5.0_SUS_0603_S or later</p> <p><u>GA Load (MADN support)</u> NN_SCCS_5.0_SU_07 or later Also please install any PEPS associated with SU07 that that are available on MPL (PEPS are in the format: NN_SCCS_5.0_PEP_070xxx)</p>	<p>Please refer to ESPL as the definitive source of information for any PEPS that are required to be installed with SU's and SUS's.</p> <p>Note that SU_07 or later provides the capability for Call recording of multiple appearance DNS (MADN)</p>
Contact Center Manager	6.0	<p><u>GA Load (Non MADN)</u> CCMS_6.0_SU_03 CCMS_6.0_SUS_0301 or later</p> <p>Also please install any PEPS associated with SUS0301 that that are available on MPL (PEPS are in the format: NN_CCMS_6.0_PEP_0301xx)</p> <p><u>GA Load (MADN Support)</u> CCMS_6.0_SUS_0304</p>	<p>Note that SUS_0304 or later provides the capability for Call recording of multiple appearance DNS (MADN)</p>
Contact Center Manager	7.0	<p>Minimum lineup (or later) CCMS_7.0_SU_01 CCMS_7.0_SUS_0101 CCMS_7.0_SUS_0102 CCMS_7.0_DP_010203</p>	<p>CCMS_7.0_DP_010203 resolves issue with MultiDN registration. This fix is also ported forward into CCMS_7.0_SU_02</p>
Communication Server 1000	4.5, 5.0, 5.5 or 6.0	Refer to Section 3.2.	
IP Sets (non Secure Call recording)	<p><u>Phase II Phones:</u> IP Phone 2001 IP Phone 2002 IP Phone 2004 IP Phone 2007 IP Phone 1110 IP Phone 1120E IP Phone 1140E IP Phone 1150E IP Phone 1165 (see comment column)</p>	<p><u>Minimum Firmware Versions:</u></p> <ul style="list-style-type: none"> • D98 or later for 2001 / 2002 / 2004 IP sets • C26 or later for 2007 Phones • C1F or later for 1120E/1140E IP sets. • C36 or later for 1150E IP sets. 	<p>Does not include Secure Call recording</p> <p>1165 support for Secure Call Recording planned for Unistim 4.1</p>
IP Sets (Secure Call recording)	<p>Ip Phone 1110 IP Phone 1120E IP Phone 1140E IP Phone 1150E IP Phone 1165 (see comment column)</p>	<ul style="list-style-type: none"> • Unistim 4 Firmware version C7C or later required 	<p>Only these Sets/firmware support Secure Call Recording</p> <p>1165 support for Secure Call Recording planned for Unistim 4.1</p>

IP Soft Client	2050 Soft Client	<ul style="list-style-type: none">• Minimum Load for 2050 soft client is B0239.	Warning: See section 6.1.6 regarding an open issue with version 3 of 2050. 2050 currently does not support Secure Call Recording.
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2.2 NES CRQM Portfolio Components

The portfolio of NES CRQM 7.0 components is listed in table 2.2 below.

System Component	DVD #	Existing CRQM 6.5 release		CRQM 7.0 Release	
		Avaya version	Equivalent Internal Version	Avaya version	Equivalent internal Version
NES Contact Recording (includes Contact Recording Desktop)	DVD1	6.5.0.11	6.5.0.11	7.0.0.x	7.0.0.x
NES Quality Monitoring	DVD1	6.5.1.285	7.8.1.285	6.5.1	7.8.1 with SP1 update 468
NES Viewer	DVD1	6.5.1.287	7.8.1.285	7.8.3.x	7.8.3.x
NES TDM Recording	DVD1	6.5.1.280	7.8.1.285	7.8.3.x	7.8.3.x
Cognos Enterprise Reporting	DVD2	6.5.1	6.5.1	6.5.1	6.5.1
NES Archive Manager	DVD3	6.5.1.280	7.8.1.285	7.8.3.x	7.8.3.x
Custom Adapter : Unify	DVD4	7.0.3.27	7.0.3.27	7.0.3.27	7.0.3.27
Custom Adapter: (eQConnect)	DVD4	6.6.0.100	6.6.0.100	6.6.0.100	6.6.0.100
RSA Key Manager Server	DVD5	Not available in CRQM 6.5	Not available in CRQM 6.5	2.0.1	2.0.1
CRC Card	N/A	CRC software Release 0.2	N/A	CRC software Release 0.2	N/A

Note: In a typical installation, System Components should all be at the same minimum software release as shown in this table 2.3. For example, if the NES Call Recorder (NCR) is upgraded from 6.5.0.11 to 7.0.0.x, then any other System Components must also be upgraded to the lineup as shown in table 2.3.

Important Note:

In the case of the QM, TDM, Viewer and Archive products, the DVD'S contain the previous 6.5.1 version in addition to a Service Pack update that must then additionally be applied to bring the product up to the latest version.

3 Software Distribution and Updates

3.1 SCCS 5.0/ CCMS 6.0/CCMS 7.0

- All patches available via ESPL, under Multimedia PEP Tools (www.nortel.com/espl)
- In the event that some patches are not yet in “released” status (and therefore not available via ESPL) please contact support team directly.

3.2 Communication Server 1000 Release 4.5, 5.0, 5.5 and 6.0

- All Patches available via ESPL, under Multimedia PEP Tools (www.nortel.com/espl)
- In the event that some patches are not yet in “released” status (and therefore not available via ESPL) please contact support team directly.

3.2.1 CS1k Release 6 Patches

The follow CS1k Release 6 patches are required for Call Recording:

MPLR28819: COR: Fail to record when TN is acquired by both CCMS and NCR. **Note that this is an important patch for any installations that are using MultiDN functionality.**

MPLR29105: Merge: MPLR29105(Fix for No recording after C2 abandons call during consultative transfer call)+ MPLR28998[(Fix for -OC Status Not Updated for Outgoing calls from Non-Marp Set in the MADN group) + MPLR28592 (USM(busy cancel) for OCS marp causing SIPL UEXT transfer failure)]

MPLR29106: COR: Calls to PVR DN are not getting recorded

3.3 NES Contact Recording (NCR) Software

- All software images delivered via DVD
- All patches available via ESPL, under Multimedia PEP Tools (www.nortel.com/espl)
- Avaya maintains an internal up to date listing of all Call Recording Software patches that are directly related to Call Recording. This listing includes all released patches, but also any recent patches that are still in development. This listing is available to support teams, located at:

<http://livelink-gal.europe.nortel.com/galway/livelink.exe?func=ll&objId=1683902&objAction=browse&sort=name>

3.3.1 License Key Generation Change

IMPORTANT NOTE:

As of 4th January, the license key generation mechanism for CRQM 7.0 is changed. In order for this new license key scheme to work correctly, it is mandatory that the Contact Recorder has a minimum patch level of NCR70016 or later.

For any sites that have deployed pre Jan 4th, the older key code generation scheme was used – therefore if /when any of these installations upgrade to NCR70016 or later, they will require a new key code to be supplied.

3.4 Patching Strategy

All application software patches (e.g. SCCS, CCMS, Contact Recording portfolio etc) are stored in ESPL (www.nortel.com/espl) under Multimedia PEP Tools.

[Multi media PEP Tools](#)

Multi Media PEP Search

Click Here

Specifically, the various products can be selected from the Product drop down menu and clicking on search, as shown below.

SU/PEP ID <input type="text"/>	Type PATCH	PR Number <input type="text"/>
Product Nortel Contact Recording	Platform Server	Release 7.0
Language Any Language	Category Any Category GEN EMG LTD	Status RELEASED
Keyword search <input type="text"/>	Maximum Results 1000 Records	
<input checked="" type="radio"/> PR Title <input type="radio"/> Problem Text	Search	
<input checked="" type="radio"/> All words <input type="radio"/> One or more words	Reset	

This will then yield any released patches associated with the selected product.

3.4.1 NCR 7.0

For NCR 7.0, there will only ever be is a single cumulative patch that is visible via ESPL for a given release of Contact Recording. An example of this is shown in the picture below. In this example the patch is still in trial status and is therefore marked as status “VO”.

PEP ID	Type	Release	Status	Category	Superceded By	Platform
NCR7008	PATCH	7.0	VO	LTD		Server
Title	Multiple fixes reside within this content. Please see problem text for a description.					

Your search returned 1 results for Nortel Contact Recording Product

Because there will only ever be a single cumulative patch installed on the contact recorder, this patch can be identified by looking at the file size & date of the .jar. This information is contained in the README for the patch under the section “HOW TO IDENTIFY THIS Dev Patch”.

3.4.2 NES TDM Recorder, QM, Viewer and Archive

All patches for QM, TDM, Viewer and Archive will be packaged as .MSI files for easier installation and removal. This means that they can be added or removed using the standard Windows Add/Remove utility.

The order of patch installation is described in ESPL.

4 Remote Support

The Remote Support strategy for Contact Recording and Quality Monitoring needs to be consistent with the current remote support guidelines that have been defined for the multimedia applications portfolio.

Preferred access mechanism is via VPN but in some cases modems may still be used and this is a supported access mechanism.

Remote access strategies and related security policies can vary depending on the customer, therefore it is not possible to define a single mandatory remote support configuration but instead a range of preferred remote support options that can be deployed. This applies to both the access mechanism (e.g. VPN, Modem) and the actual remote support application (e.g. PCanywhere)

PCanywhere (host only version) is shipped as part of the Contact Centre portfolio and can also be deployed onto the Contact Recording and Quality Monitoring Servers.

Microsoft Remote Desktop is an alternative that is also fully supported on Contact Recording and Quality Monitoring Servers (this is usually deploy in conjunction with VPN access)

If a different remote architecture is being used, then this needs to be mutually agreed between all parties who will need to use the remote support solution (e.g. customer, channel, support, or other parties as appropriate)

As part of the site installation, an explicit check should be performed to confirm remote support is available and operational for all servers that require it.

Remote support for Application Servers

If you require remote technical support, your distributor or technical support staff must be able to connect remotely to your server. Virtual Private Network (VPN) is more secure than direct connected modems. While many VPN technologies and configurations are available, for remote support of Enterprise voice equipment, Avaya supports a standard with a technology based on the VPN Router 1100 (as a minimum) in a particular host-to-gateway configuration.

This chapter provides guidelines for the standard Remote Support VPN configuration.

Remote support over a direct-connect modem

If VPN is not available, it is still possible to provide remote support over a direct-connect modem (however, many enterprises view this as a security risk).

To facilitate remote support through a direct-connect modem the following is required:

- A modem connected to each Contact Center - Manager server
- Remote Access Services (RAS) configured on each server

Guidelines for the Remote Support VPN

When you set up your VPN for remote support, follow these guidelines:

- Create a dedicated subnet for voice application servers (for example, the Server Subnet), and treat this subnet as mission-critical. (It is a good network engineering practice, even in a non-VPN environment, to optimize network traffic by grouping servers that need to communicate with each other on a subnet.)
- Install, at a minimum, VPN Router 1100 (or later) version 4.8 (or later) with the modem option. Configure the modem as a user-tunnel to listen on the PSTN.
- Connect the VPN Router to the Server Subnet.
- Configure the VPN Router, as well as any network routers and firewalls, to give inbound remote support users unrestricted access to the application servers.
- Optionally, restrict remote support users' access to other subnets in your LAN/WAN. As usual, ensure that the application servers have unrestricted access to the enterprise LAN/WAN.
- Ensure that the ELAN subnet is connected to the Server Subnet through one (and only one) router. Take the additional precaution of configuring the network router to allow only intended traffic into the ELAN subnet.
- Activate Split Tunneling on the VPN Router. Concerns over access into the corporate network may be alleviated by restricting access (through the VPN Router and firewalls) of remote support staff from other subnets upon logon.

5 Non-CTI Recording

The NES TDM Recorder supports recording in environments where CTI is not available. This will most likely occur in environments where:

- a) The PBX is CS1000 earlier than release 4.5, or
- b) The PBX is a 3rd party PBX

In Non-CTI Recording, the supportable modes of recording are restricted to the following:

- VOX
- D-channel
- Line Voltage
- CASS

Please refer to the TDM recorder Installation guide (NN44480-301) for more details on each mode.

When the TDM Recorder is deployed in any of these modes, Search and Replay will be limited due to the absence of CTI. The minimum searchable parameters will be date and time stamp as well as the channel number. You may be able to obtain additional searchable parameters such as Caller ID and DNIS if these events are provided on the D-channel.

6 NCR Capacity

With secure call recording enabled, the concurrent channel capacity of the NCR Server will be reduced by approximately 10% when compared to a non-secure Call recording installation.

Also, if KMS (Key management Server) is enabled, this will have a further impact on concurrent channel capacity (also approximately 10%).

7 Language Support

The following languages are supported in the NES CRQM portfolio:

7.1 NCR

- English - default
- French
- Italian
- Spanish
- German
- Korean
- Dutch
- Portuguese
- Russian
- Japanese
- Simplified Chinese
- Traditional Chinese

7.2 NES TDM Recorder

- English
- Japanese

7.3 NES Viewer, Archive Manager, QM

- English

8 Known Problems, Limitations & Workarounds

8.1 cc.v6 mode

With NCR 7.0, there are a number of features that require both CC7 and also CS1k release 6.

IMPORTANT NOTE

The default operation of NCR 7.0 assumes that *both* CCMS 7 and CS1k 6 are present. If *either* of these two conditions are not present, then you should manually place an entry into the NCR properties file that ensures the NCR is operating in “CC6 mode”.

The required entry is:

```
cc.v6=true
```

Example:

NCR properties setting	CCMS release	CS1k Release
No entry	7	6
cc.v6=true	7	5.5 or less
cc.v6=true	6 or less	6 or less

Note that when in cc.v6 = true mode, certain functionality is not available as follows:

- MultiDN recording (therefore AST licenses are required on the CS1k)
- Save/ Delete Key
- Record by Skillset.

8.2 SCCS/CCMS MADN Support

Recording of multiple appearance DNS only works when all of the sets that are MADN'd together actually support the duplicate media stream feature. For example you are NOT allowed to configure TDM and IP duplicate media stream with the same multiple-appearance DN.

Multiple Appearance DN's (“MARP” and “MADN”) can only be recorded when in Bulk Recording mode in a knowledge worker environment. These are not supported by the Quality Monitoring application, or the Contact Center environment.

Recording of calls made from one instance of a number to another line key on the same number are NOT supported. The CSTA computer telephony model which underpins the call state tracking cannot handle the same address being involved in two separate connections on the same call.

8.3 Quality Monitoring using CRC Card

- The consult portion of a call that has been conferenced or transferred cannot be recorded. This is an inherent and known limitation of the “agent observe” feature upon which QM/CRC solution is based, and this limitation is being documented in the user documentation.
- After a conference call is complete between customer, agent 1 and agent 2, it is not possible to record both agent 1 and agent 2 simultaneously. Again this is due to limitations with the “agent observe” feature – both agents 1 and 2 cannot be observed at the same time, and therefore both cannot be recorded.
- When an agent goes on hold, this second component (post the hold/unhold) of the call is not present correctly in the playback file - there is silence present instead. Reason: CRC recording operates using the “agent observe” feature that creates a 3-party conference when recording is underway. The Quality Monitoring application is not really aware that this 3-party conference is happening "under the hood" within the CS1k. When the agent goes on hold, the CS1k sends a "return from 3-way to 2-way" status change that occurs when the call is put on hold and the observation stops. This confuses the Quality Monitoring application, and may cause the recording operation to fail. If this issue is experienced , it can be resolved by placing the following entry into the NCR properties file:

`crc.ignoreconfertosimple=true`

8.4 Call Server Release 4.5 Implementation

In CS1000 R4.5, the same IP address and port number must be used for both DN’s on a physical TN, which created some limitations with the call recording solution. However these limitations have been resolved as a product improvement in CS1000 R5.0. As a result of this improvement, from CS1000 R5.0 and later, the IP address/port number can be different.

8.5 Agent Observe

This feature can be invoked from a supervisor ACD set. It is not possible to record a call that the supervisor hears on the supervisor set using the agent observe feature. (It is of course possible that this call could be recorded on the actual agent set).

Note that is limitation also applies to the Remote Agent Observe feature, which is built upon the Agent Observe feature.

8.6 IP Softphone Release 3

A problem Q01796067 was found on release 3 of the 2050 soft client, where call recording does not work. This problem is currently being worked and has been resolved in version 3.1 or later of the 2050.

8.7 Group Call Key Not Supported

Currently in CS1k there is no DN associated with a Group Call key, therefore it is not possible to monitor this type of key via the MLS interface and hence no events are presented to the Call recorder application to trigger call recording.

8.8 TDM Recorder Requirements and Supported Trunk Types

Note that the TDM recorder uses specific MLS content that is available with the latest software and patch lineup for both Symposium and Communication Server 1000, therefore the minimum software versions as described in Section 2 of this document are also applicable to the TDM recorder.

Note also that TDM recording is limited to the following Hardware:

- E1 Trunks
- T1 Trunks
- DPNSS Trunks
- Octal Density Line cards (digital or analog)
 - Only IPE Shelves for Line cards (EPE not supported)

DTI Trunks (DTI2, DTI 1.5 with either D2 or D3 frame formats) are not supported

EPE shelves are not supported

GEC Shelves are not supported.

8.9 Viewer Stitching

Note that stitching of calls in Viewer is not supported specifically for TDM recorded calls (stitching of IP calls is supported)

8.10 MS SQL Cluster Support.

The Quality Monitoring databases may be installed on a MS SQL 2005 Cluster if required by the customer. There are no specific requirements in addition to those applicable to a non-clustered deployment.

8.11 Phantom DNS

MLS does not support monitoring of Phantom DNS, therefore Phantom DNS should not be configured on the Call Recorder.

8.12 Call Recording Desktop

Call Recording Desktop (CRD) has been introduced on release 6.0.1 of Contact Recording.

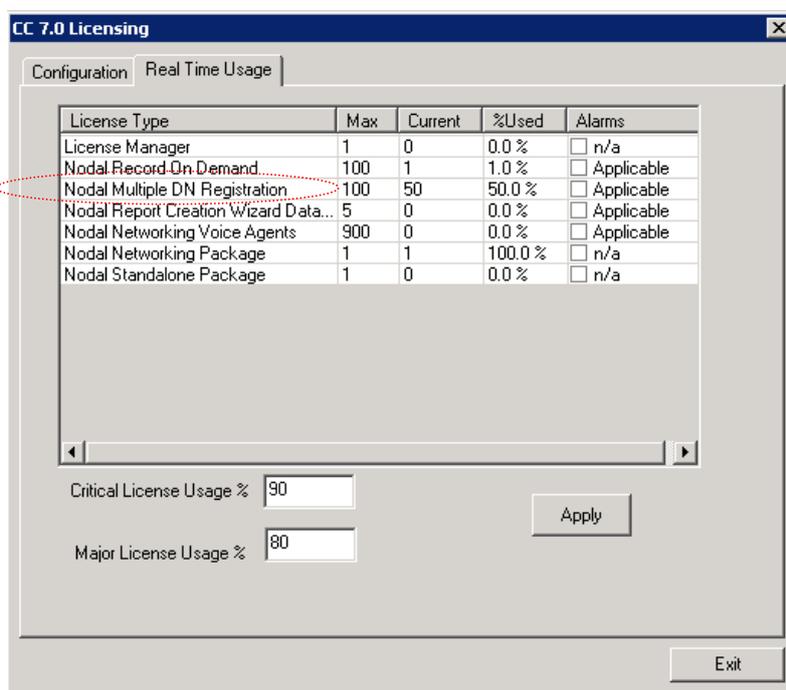
Note that CRD can only be used with single appearance DNS i.e. cannot be used with DN's that have been configured as a Multiple Appearance (MADN).

8.13 MultiDN Recording

Multi-DN recording is a new feature introduced on CRQM 7.0 that requires both CS1K 6.0 and CC 7.0. It eliminates the 2-key restriction on call recording that is currently imposed by the MLS interface. With this feature, there are no longer any restrictions on the number of keys that can be recorded on an IP terminal that supports the duplicate media stream feature.

Multi-DN recording also introduces a new CCMS 7.0 licensing mechanism whereby there is no longer a requirement to have AST licenses on the CS1k, but instead there is a simple numerical count of the total number of DN's or POSID's via the CCMS 7.0 License Manager.

The License Key used on CCMS is LM_MLSM_DN_REG



License Type	Max	Current	%Used	Alarms
License Manager	1	0	0.0 %	<input type="checkbox"/> n/a
Nodal Record On Demand	100	1	1.0 %	<input type="checkbox"/> Applicable
Nodal Multiple DN Registration	100	50	50.0 %	<input type="checkbox"/> Applicable
Nodal Report Creation Wizard Data...	5	0	0.0 %	<input type="checkbox"/> Applicable
Nodal Networking Voice Agents	900	0	0.0 %	<input type="checkbox"/> Applicable
Nodal Networking Package	1	1	100.0 %	<input type="checkbox"/> n/a
Nodal Standalone Package	1	0	0.0 %	<input type="checkbox"/> n/a

Critical License Usage %

Major License Usage %

Apply

Exit

Figure xx: Screenshot from CCMS licence Manger

This number counts the total number of POSID's and DN'S (including Multiple Appearance DNS) on the CS1k that can be recorded. Hence with the introduction of this feature, the licensing has effectively moved from an AST-based mechanism on the CS1k to a CCMS License Manager implementation (for IP call recording).

Under the Multi-DN scheme, all of the following will consume a license:

- DN
- Multiple Appearance DN
- POSID (= Position ID)
- All of the above on a Standby Call Recorder.

This feature is available only for *IP Call Recording* (i.e. Call Recording using the IP Phone duplicate media stream feature). For TDM recording, AST licenses are still required as per current CRQM 6.5 operation.

Note: Customers can continue to use the AST licensing mechanism even for IP terminals if they wish – this would usually be in a scenario where the customer does not have a need to record more than 2 keys per phone. Keep in mind that these features are mutually exclusive and therefore you should use either AST or MultiDN licensing.

The default installation on CRQM 7.0 will assume a MultiDN licensing model.

It is important to note that when MultiDN recording is used, it is a mandatory requirement to have sufficient licenses on the CCMS server to handle all of the IP DN's/POSID's being recorded. For example if you have 50 IP terminals each with 4 DNS to be recorded, then a total of 200 MultiDN licenses are required. For IP terminals, it is not possible to mix AST and MultiDN licensing. Thus if a customer already has AST licenses for their IP Phones but wish to move to a MultiDN licensing configuration (usually because they want to record more than 2 keys per phone) then they must procure enough MultiDN licenses on CCMS to handle all of the IP DN's being recorded. One exception to this case is when the installation has both TDM and IP terminals. For the TDM terminals only AST licensing is currently supported, therefore the CCMS will allow this to co-exist with the MultiDN licensing for IP terminals

Alternatively customers who have already purchased AST licenses for their IP terminals can continue to use these licenses by configuring the NCR into “CC6” mode – essentially this makes it behave as a CRQM 6.5 system and it will only perform the normal AST registration. This is configured by adding the following line into the NCR properties file

```
cc.v6=true
```

This setting effectively turns off the MultiDN capability on the NCR.

Some examples of MultiDN licensing are provided below:

Example 1:

The NCR master registers for 10 DNS, each of which has 4 appearances.

=> The total CCMS license count required is $10 \times 4 = 40$

Example 2:

The NCR master registers for 10 DNS, each of which has 4 appearances. The NCR Standby registers for the same set of DN's. The license count for the Master is $10 \times 4 = 40$ and the license count for the Standby is also 40.

=> The total license count required is 80

Example 3:

The NCR master registers for 10 POSIDS and 10 DNS. Each of the DN's has 4 appearances. The NCR Standby registers for the same set of DN's and POSIDS. The license count for the Master is $10 + 10 \times 4 = 50$ and the license count for the Standby is also 50

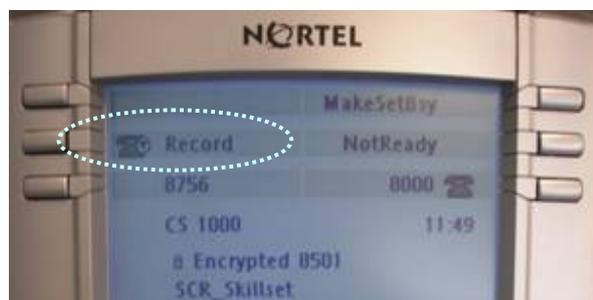
=> The total license count required is 100

8.14 Record on Demand

The ROD key provides an IP Phone user with the ability to manually start and stop recording of a call using a key on the Phone.

The ROD key offers a “toggle” operation – this means that after initially hitting the key to start recording, the same key can then be used to stop recording. This process can continue during the call, resulting in several call recording segments based on the key sequence from the user.

The ROD key has an associated LCD ICON that displays the status of recording. When the LCD telephone ICON is lit, the call is being recorded (and therefore *not* under recording when unlit).



This feature requires specific configuration on the Call Recorder on a per-user basis.

This feature requires a minimum of CC 7.0, CS1k 6.0 and CRQM 7.0.

Note: The ROD key is intended only for use where the far end phone is not under control of the same Call Recorder. If both parties on a call are under control of the same Call recorder then the feature will not function correctly as there may be conflicts between what the near end and far end phones are trying to achieve. The Call Recorder will recognize that both parties are on the same call and will stream from one of these terminals (this optimizes bandwidth and CPU and is also consistent with the CS1k Call recording solution).

Note: ROD is only applicable to DNs/POSID's that are configured for bulk recording on the NCR (not on QM) - this is the same as per CRD operation (Contact Recording Desktop)

Note: CRD/ROD/SAVE features are mutually exclusive, so if CRD is already being used, then ROD should not be used as there may be conflicts with these two features trying to control bulk recording.

The recommended settings for ROD on the NCR are as follows:

Start recording automatically at start of call	<input type="radio"/> As specified for this recording mode as a whole <input type="radio"/> Yes <input checked="" type="radio"/> No
When set false, recording is only started when the user instructs the recorder to. Note that this setting should normally be true when using manual retention.	
Allow user to start/restart recording	<input type="radio"/> As specified for this recording mode as a whole <input checked="" type="radio"/> Yes <input type="radio"/> No
Set to true if the user is allowed to start or restart recording.	
Allow user to stop recording	<input type="radio"/> As specified for this recording mode as a whole <input checked="" type="radio"/> Yes <input type="radio"/> No
Set to true if the user is allowed to stop recording.	
Allow user to delete recording	<input type="radio"/> As specified for this recording mode as a whole <input checked="" type="radio"/> Yes <input type="radio"/> No
Set to true if the user is allowed to delete recordings.	
Retain ONLY those recordings requested by user	<input type="radio"/> As specified for this recording mode as a whole <input type="radio"/> Yes <input checked="" type="radio"/> No

There is a new on/off key code (LM_MLSM_ROD_REG) on the CCMS License Manager that enables this feature. Thus *only one license* is used regardless of the number of users.

8.15 Save Conversation

The SAVE key provides the phone user the ability to retrospectively record the entire call, provided they invoke the feature while the Call is still active. For example, if a user decides in the middle of a call that they would like to save the entire call, this is possible using the SAVE key.

The SAVE key, also provides a “toggle” operation, similar to the ROD Key. In this case, the status of the entire call toggles from status “Entire call will be saved” to “Entire call will NOT be saved”.

The SAVE key has an associated LCD that displays the status of recording. When the LCD is lit during the call, this means that the entire call will be saved by the call Recorder. If the LCD is dark, this means that the entire call will not be saved.

This feature requires specific configuration on the Call Recorder on a per user basis.

This feature requires a minimum of CC 7.0, CS1k 6.0 and CRQM 7.0

Note: The SAVE key is intended only for use where the far end phone is not under control of the same Call Recorder. If both parties on a call are under control of the same Call recorder then the feature will not function correctly as there may be conflicts between what the near end and far end phones are trying to achieve. The Call Recorder will recognize that both parties are on the same call and will stream from one of these terminals (this optimizes bandwidth and CPU and is also consistent with the CS1k Call recording solution).

Note: The SAVE is only applicable to DNs/POSID's that are configured for bulk recording on the NCR (not on QM) - this is the same as per CRD operation (Contact Recording Desktop)

Note: CRD/ROD/SAVE features are mutually exclusive, so if CRD is already being used, then SAVE should not be used as there may be conflicts with these two features trying to control bulk recording.

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The recommended settings for SAVE on the NCR are as follows:

Start recording automatically at start of call	<input type="radio"/> As specified for this recording mode as a whole <input checked="" type="radio"/> Yes <input type="radio"/> No
When set false, recording is only started when the user instructs the recorder to. Note that this setting should normally be true when using manual retention.	
Allow user to start/restart recording	<input type="radio"/> As specified for this recording mode as a whole <input type="radio"/> Yes <input checked="" type="radio"/> No
Set to true if the user is allowed to start or restart recording.	
Allow user to stop recording	<input type="radio"/> As specified for this recording mode as a whole <input type="radio"/> Yes <input checked="" type="radio"/> No
Set to true if the user is allowed to stop recording.	
Allow user to delete recording	<input type="radio"/> As specified for this recording mode as a whole <input checked="" type="radio"/> Yes <input type="radio"/> No
Set to true if the user is allowed to delete recordings.	
Retain ONLY those recordings requested by user	<input type="radio"/> As specified for this recording mode as a whole <input checked="" type="radio"/> Yes <input type="radio"/> No
Save/Delete Key Present	<input checked="" type="checkbox"/>
The recorder must know if a Save/Delete is present or no lamp updates will be sent for it.	

AS in the case of ROD, the SAVE Functionality is also enabled by the on/off key code (LM_MLSM_ROD_REG) on the CCMS License Manager. Thus *only one license is used* regardless of the number of users.

8.16 Secure Call Recording

Below are some useful points regarding the configuration of the secure call recording feature. Please also refer to the NTP'S for more detail.

8.16.1 Effect on NCR Server Performance

With secure call recording enabled, the concurrent channel capacity of the NCR Server will be reduced by approximately 10% when compared to a non secure call recording installation.

8.16.2 Provisioning Server Setup

1. Create a folder on a server – for example: TFTP.
2. Copy 2 files system.prv and Tftppd32.exe to the folder TFTP.
3. Modify the system.prv file with following lines:

st=y;

mscr=y;

callrec=N

The meaning of the above parameters in system.prv file is as follows:

mscr=y: Mirror Mode encryption Setting: This basically means that the DMS will be the same as primary stream. If the primary stream is encrypted, the DMS will be too. If the primary stream is not encrypted, neither will the DMS.

Callrec=N

This identified the Call Recording Vendor: N = Avaya Call Recorder

4. Run the Tftppd32.exe (remember to keep the window open or else it wont work. As the IP sets reboot, you should see dialog windows flashing up on the TFTP server, and they will pickup the system.prv).

8.16.3 IP Phone Setup

1. On IP phone, double-press on Services button and open Network configuration.
2. Also in Network Config, scroll down to Provisioning, and enter IP of the TFTP server. Note that when entering “.” (dot) for IP, press double “*”.
3. Press apply.
4. On the CS1000, change the TN configuration at LD 11: CLS MSBT (Media Security Best Try)

8.16.4 Signalling Server Setup:

1. Go to Element Manager. Under Security->Policies->Media, you must first check the “Media Security” option and from the drop down list which appears, select MSBT.

The screenshot shows the Nortel CS 1000 Element Manager web interface in a Microsoft Internet Explorer browser. The browser address bar shows the URL: `https://10.30.4.21/emWeb_6_0/SECURE_OBJECT_ID/com.nortel.ems.CS1000/856b5b41-6621-11de-9e7e-ef71a4decf39/ElementManagerLaunchServlet.secure`. The page title is "CS 1000 ELEMENT MANAGER". The user is logged in as "admin" with the IP address "10.30.2.137". The navigation menu on the left includes categories like Alarms, Core Equipment, IP Network, Interfaces, Customers, Routes and Trunks, Dialing and Numbering Plans, Phones, Tools, and Security. The "Security" section is expanded to show "Policies" and "Media". The "Media Security" configuration page is displayed, showing a table with the following data:

Input Description	Input Value
Media Security (MSEC):	<input checked="" type="checkbox"/>
Media Security System Default for TN (MSSD):	Media Security Best Try (MSBT)
Secured Number of packets (NKEY):	31 (16 - 31)
Session Key Validity Time (TKEY):	24 (8 - 168 hours)

At the bottom of the configuration area, there are three buttons: "Submit", "Refresh", and "Cancel". The footer of the page contains the copyright notice: "Copyright © 2002-2009 Nortel Networks. All rights reserved."

2. Select parameters as per the screenshot above and click Submit.

3. Upload firmware to Signaling server by navigating to the page:

The screenshot shows the Nortel CS 1000 Element Manager web interface. The browser is Microsoft Internet Explorer. The address bar shows the URL: https://10.30.4.21/emWeb_6_0/SECURE_OBJECT_ID/com.nortel.ems.CS1000/858b5b41-6621-11de-9e7e-ef71a4decf39/ElementManagerLaunchServlet.secure. The page title is "CS 1000 ELEMENT MANAGER".

The left navigation menu includes:

- + Alarms
- Maintenance
- + Core Equipment
- Peripheral Equipment
- + IP Network
- + Interfaces
- Engineered Values
- + Emergency Services
- Software
 - Call Server PEPs
 - Loadware PEPs
 - File Upload
 - **IP Phone Firmware**
 - Voice Gateway Media Card
 - Media Cards PEPs
- Customers
- Routes and Trunks
 - Routes and Trunks
 - D-Channels
 - Digital Trunk Interface
- Dialing and Numbering Plans
 - Electronic Switched Network
 - Flexible Code Restriction
 - Incoming Digit Translation
- Phones
 - Templates
 - Reports
 - Properties
 - Migration
- Tools
 - + Backup and Restore
 - Call Server Initialization
 - Date and Time
 - + Logs and reports
- Security
 - + Passwords

The main content area displays:

must be reset to load new firmware.

Recommended firmware list dated: March 13, 2009 11:22:18AM. [Refresh...](#)

Current Firmware

View firmware on IP Telephony Node:

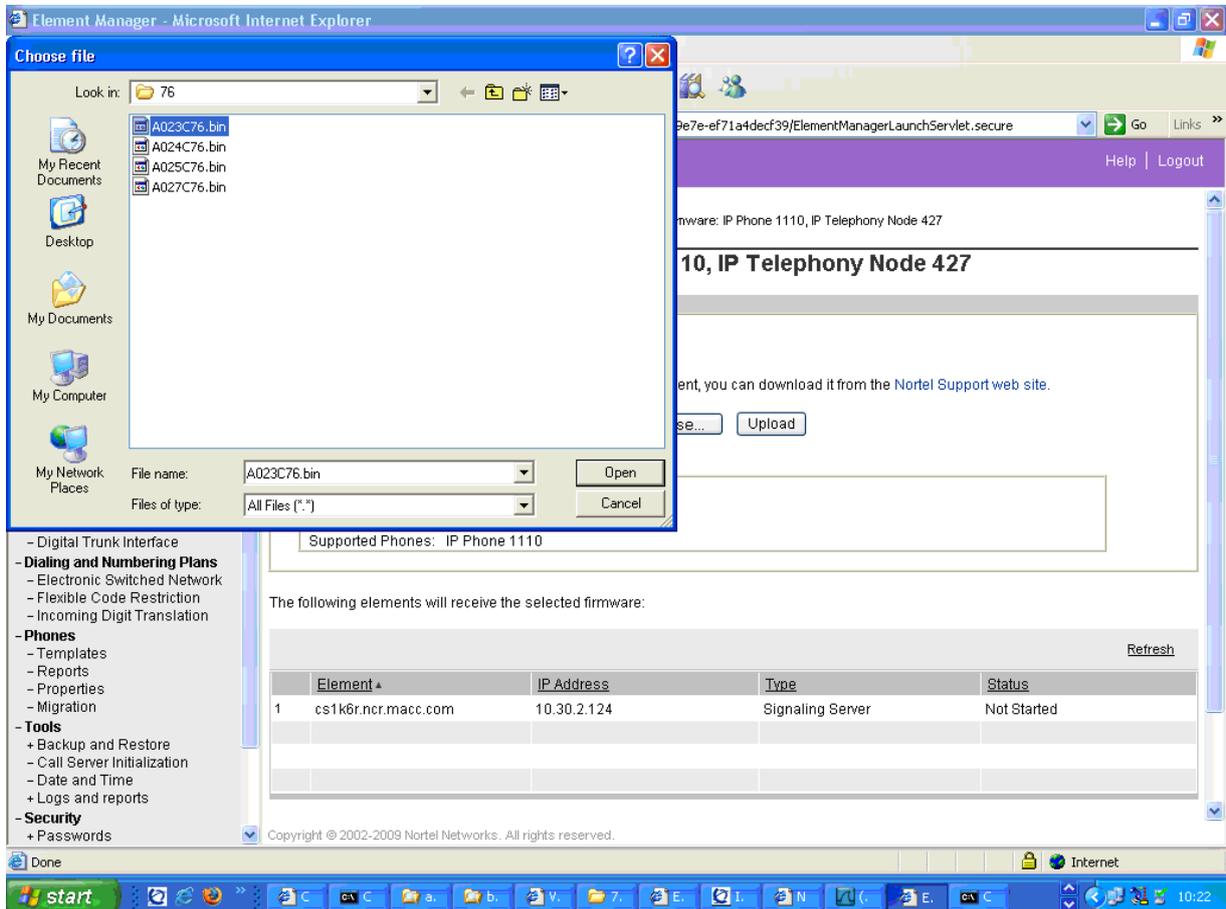
[Update...](#) [Refresh](#)

	Phone Type	TPS Firmware	Recommended
1	<input type="radio"/> IP Audio Conference Phone 2033	S74	S74
2	<input checked="" type="radio"/> IP Phone 1110	C75	C60
3	<input type="radio"/> IP Phone 1120E	C76	C60
4	<input type="radio"/> IP Phone 1140E	C7A	C60
5	<input type="radio"/> IP Phone 1150E	C76	C60
6	<input type="radio"/> IP Phone 1210	C60	C60
7	<input type="radio"/> IP Phone 1220	C60	C60
8	<input type="radio"/> IP Phone 1230	C60	C60
9	<input type="radio"/> IP Phone 2001 Phase 2	DCJ	DCJ
10	<input type="radio"/> IP Phone 2002 Phase 1	B76	B76
11	<input type="radio"/> IP Phone 2002 Phase 2	DCJ	DCJ
12	<input type="radio"/> IP Phone 2004 Phase 0/1	B76	B76
13	<input type="radio"/> IP Phone 2004 Phase 2	DCJ	DCJ
14	<input type="radio"/> IP Phone 2007 Phase 2	C6M	C6M

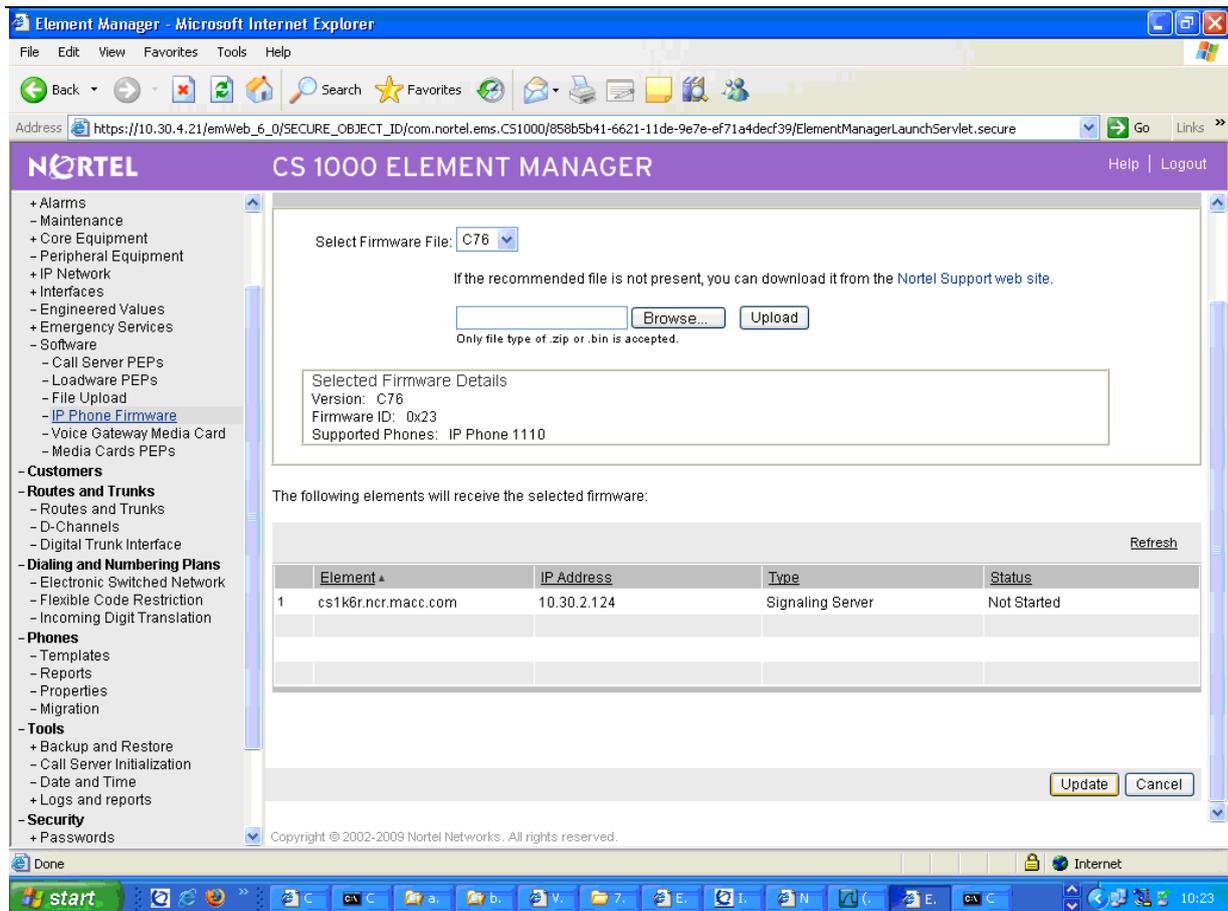
Note: All the listed IP phones may not be applicable to the selected IP Telephony Node.

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4. Select phone type and click Update



5. Browse to firmware file and click Upload.

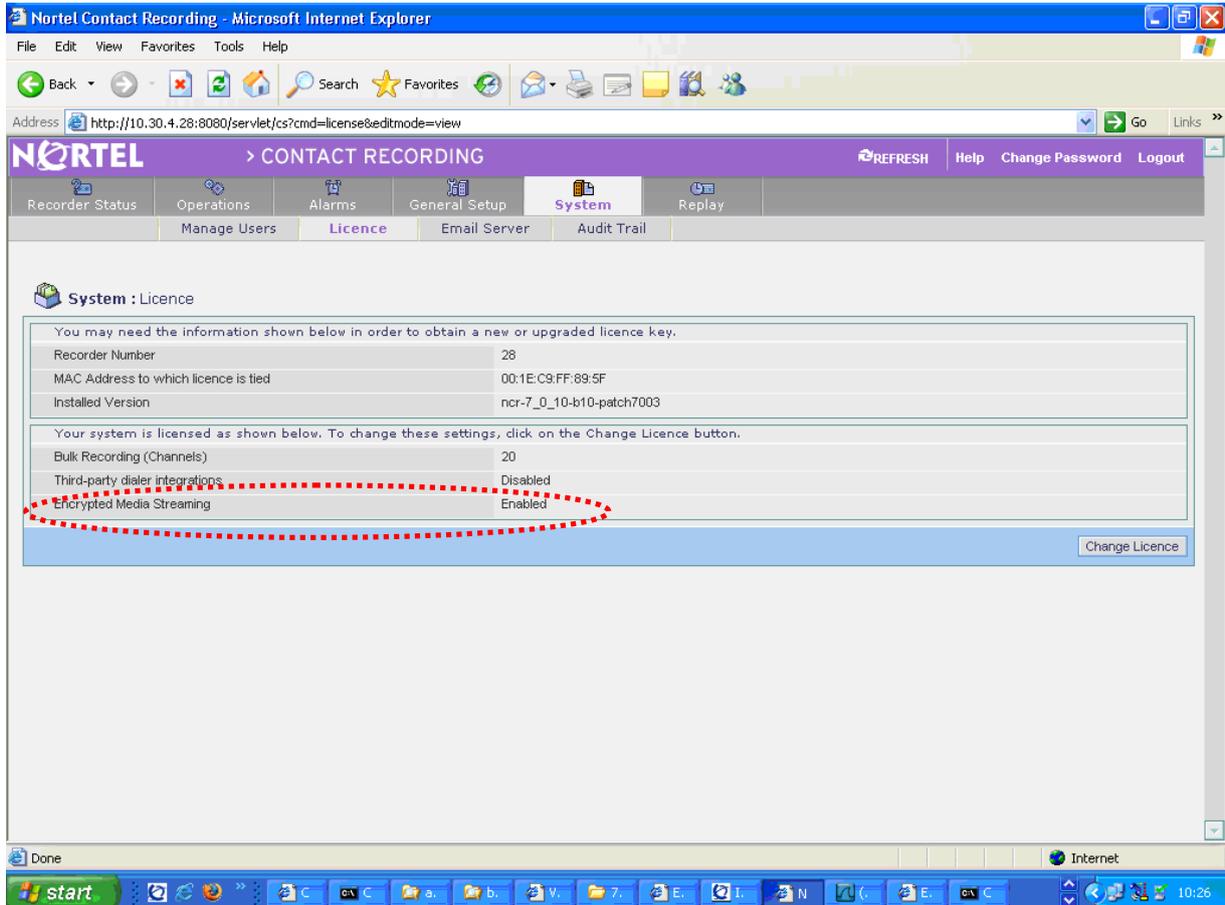


6. Click Update to update the firmware

7. When completed, restart the phone set. When the phone comes up, it will download the firmware from the signaling server.

8.16.5 NES Call Recorder Setup

Ensure that the NCR is licensed to support encryption by checking the System->License Window – see example below:



The screenshot shows the Nortel Contact Recording web interface in Microsoft Internet Explorer. The browser address bar displays `http://10.30.4.28:8080/servlet/cs?cmd=license&editmode=view`. The interface has a purple header with the Nortel logo and navigation tabs for Recorder Status, Operations, Alarms, General Setup, System, and Replay. The 'System' tab is active, and the 'Licence' sub-tab is selected. The main content area is titled 'System : Licence' and contains two tables of configuration data. The first table lists Recorder Number (28), MAC Address (00:1E:C9:FF:89:5F), and Installed Version (ncr-7_0_10-k10-patch7003). The second table lists Bulk Recording (Channels) (20), Third-party dialer integrations (Disabled), and Encrypted Media Streaming (Enabled). A red dashed circle highlights the 'Encrypted Media Streaming' row. A 'Change Licence' button is located at the bottom right of the configuration area.

You may need the information shown below in order to obtain a new or upgraded licence key.	
Recorder Number	28
MAC Address to which licence is tied	00:1E:C9:FF:89:5F
Installed Version	ncr-7_0_10-k10-patch7003

Your system is licensed as shown below. To change these settings, click on the Change Licence button.	
Bulk Recording (Channels)	20
Third-party dialer integrations	Disabled
Encrypted Media Streaming	Enabled

8.16.6 How To Check if Secure Call Recording is Enabled

Configuration required to log into phone set:

1. From set->Local Diagnostics->Advanced Diag Tools. (On the 1140E set, this menu is accessed by double clicking on the “Globe” button)
2. Check the “Enable SSH” check box
3. Enter UserID: xxxx (on 11xx phones, the central navigation button enables edit mode)
4. Enter password: xxxx
5. Press Apply

(Alternatively if you are using a provisioning Server, this User ID and password may already be defined in the system.prv file.)

To view secure call recording status:

1. Use putty SSH to log into the set, using the User ID and Password defined in previous step.
2. Make a call to the set
3. From pdt command, type scrShow (note “scrShow” is case sensitive) and you will see something like this:

```
PDT> scrShow
```

```
Secure Call Recording Setting and Status  
CR Vendor: Nortel call recorder  
SCR license: Granted  
NT shared secret: valid  
Mirror Mode Setting: Same as primary stream  
UNIStim Encryption Setting: Not set
```

```
SCR Info for Rx duplicate stream:
```

```
SCR session: Active  
SCR state: SCR_STAT_SUCCESS  
DTLS state: SCR_DTLS_STAT_SRTP_ESTABLISHED  
Source Port: 12000  
Remote Port: 10992  
Remote IP: 10.30.4.28
```

```
SCR Info for Tx duplicate stream:
```

```
SCR session: Active  
SCR state: SCR_STAT_SUCCESS  
DTLS state: SCR_DTLS_STAT_SRTP_ESTABLISHED  
Source Port: 12100  
Remote Port: 10994  
Remote IP: 10.30.4.28
```

```
PDT>
```

9 References

- [1] Nortel Contact Recording Planning, Installation and Administration Guide, Product release 7.0, Standard 02.05, September 2009

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