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QPSK (Release A63) Software Upgrade and Installation Instructions

Overview

Introduction

These upgrade and installation instructions provide you with the following information:

- An overview of the QPSK A63 software upgrade

- Guidelines that define how and when to monitor Explorer® Digital Home Communications Terminals (DHCTs) sign on rates

- A description of the optional QPSK range extension features which allow DHCTs to sign on to the system and operate at extended distances from the headend

What's New in QPSK A63 Software?

QPSK A63 software builds upon the features and benefits introduced in previous QPSK software releases. The QPSK A63 software also resolves several QPSK and DHCT spontaneous reboot issues.

Read Me

Please read all instructions before beginning the upgrade process. If you are uncomfortable with any of the procedures presented in these instructions, contact Cisco Services for assistance.

Important: Look for this safety symbol throughout these instructions: ⚠. Pay particular attention to safety statements. Complete all of the procedures in the order in which they are presented in these instructions. Failure to follow all of the procedures may lead to undesirable results.

Overview, Continued

Audience

These instructions are written for headend technicians using the Model D9482 QPSK Modulator with either the Cisco Resident Application (SARA) or the Pioneer resident application.

These instructions are also written for Cisco Services engineers and cable service provider personnel qualified in the following skills required to successfully complete the upgrade process:

- Working knowledge of UNIX vi editor

  Important: The UNIX vi editor is not intuitive. Do *not* attempt to edit any files if you are not an experienced vi user.

- Recognizing differences between system errors currently seen on your Digital Broadband Delivery System (DBDS) network and new DBDS network errors

- Troubleshooting for basic system errors

- Stopping and starting system components

- Backing up file systems and databases

- Working knowledge of Sun hardware and Sun Disksuite software

  Note: The Sun Disksuite software is necessary for the disk mirroring procedure.

- Working knowledge of Solaris

  Note: Solaris is the standard format necessary to bundle the software for the installation.

- Working knowledge of script languages

Related Documents

QPSK Documentation

For more information about QPSK software features, refer to the following documents:

- *Upgrading QPSK Demodulators To Software Version A55 and Later Technical Bulletin*, part number 749245

- *Configuring Variable Length Subnet Masks in System Release 2.1 or 3.0 Upgrades Technical Bulletin*, part number 4000375

System Release 2.1.1 and System Release 3.0.1

For more information about SR 2.1.1 and SR3.0.1, refer to the following documents:

- *System Release 2.1.1 Release Notes*, part number 4002061
- *SR 3.0.1 Release Notes*, part number 4002058
- *SR 2.1.1 and SR 3.0.1 UniPack Upgrade Installation Instructions*, part number 4002062
- *SR 2.1.1 / 3.0.1 to SR 2.2 /3.2 CD Upgrade Installation Instructions*, part number 4004618
- *Gigabit QAM Modulator Installation and Operation Guide*, part number 745431
- *GQAM Software Version 1.0 Installation Instructions*, part number 4003477
- *Application Server Migration Procedures*, part number 736097
- *Application Server User's Guide for System Releases 2.1 and 3.0*, for part number 749606
- *Sun Fire V880 DNCS Conversion Procedures*, part number 4003241
- *ATM to Ethernet Network Transition Considerations Application Guide*, part number 4002903
- *Backup and Restore Procedures for the Digital Broadband Delivery System User's Guide*, part number 736094
- *Digital Network Control System User's Guide*, part number 749605

System Release 2.2 and System Release 3.2

For more information about SR 2.2 and SR3.2, refer to the following documents:

- *SR 2.2 Release Notes*, part number 4004065
- *SR 3.2 Release Notes*, part number 4004066
- *SR 2.2 and 3.2 UniPack Upgrade Installation Instructions*, part number 4004064
- *Configuring and Troubleshooting the Digital Emergency Alert System, For Use With All System Releases*, part number 4004455
- *The PowerKEY Conditional Access Module Installation Instructions, Model PKM600*, part number 736104

Document Version

This is the third release of these software upgrade and installation instructions. References to system requirements are changed to state "SR 2.1.1, SR 3.0.1 or later." Also, a list of the documents related to SR 2.2 and SR 3.2 is added to the **Related Documents** section.

Overview, Continued

In This Document

These instructions contain the following topics.

About This Upgrade

Introduction

Several changes (features and improvements) are introduced in the QPSK A63 software and other changes are currently in development. This section provides brief descriptions of the change requests (CRs) implemented in the QPSK A63 software, the CRs currently in development, and the impact of each CR on the subscriber or the cable service provider.

Features and Improvements Introduced in QPSK A63

The following CRs were implemented to resolve several QPSK and DHCT spontaneous reboot issues.

CR Number	Subscriber	Cable Service Provider Impact
9035	No impact	If a QPSK modulator is set to use extended ranging and then QPSK A47 or earlier is downloaded, the extended range distance is kept in memory. When QPSK A5x or later is installed, the extended range mode is enabled correctly.
9441, 9589	No impact	The QPSK modulator maintains DHCT information when the QPSK modulator reboots with several DHCTs in two-way mode. This fix enhances the stability of the system.
10012	No impact	Craft port commands that exceed the maximum of eight arguments (including the command itself) are truncated to eight arguments to avoid an Address Error and a QPSK reboot.
10816	No impact	The QPSK modulator issues an alarm to alert the DNCS of non-responsive demodulators.

CR Number	Subscriber	Cable Service Provider
11110	No impact	The QPSK modulator software is modified to automatically reprovision Explorer 3100 and 2100 DHCTs that are moved from one QPSK demodulator to another.
11288	No impact	The subnet configuration can be modified to more realistically accommodate the needs and the size of the system, and to conservatively use IP address space. **Note:** The QPSK software is still limited to a maximum of 16,000 IP addresses.
12932	No impact	The QPSK modulator front panel carrier wave (CW) mode alarm appears on the EMS client and remains until the alarm is manually turned off at the front panel of the QPSK modulator.
13343	No impact	It is no longer necessary to reboot the QPSK when a router is replaced.
13573	No impact	QPSKs no longer reboot if communication to the DNCS is lost.
14298	No impact	The non-volatile memory (NVM) locations are set for the broadcast period (BCP) to "1" and the ranging algorithm to "ON." The result is improved DHCT sign-on performance.

CR Number	Subscriber	Cable Service Provider
17973	No impact	To enhance the debugging of system problems, only problematic DHCTs are logged to the DNCS. Ordinary non-responsive DHCTs are not logged as errors as they can mislead problem-solving efforts.
17998	No impact	The corruption of the DAVIC Reprovision Frequency message that was causing DHCTs to write over their memory is eliminated.

CRs Currently in Development

Resolutions for the following CRs are currently in development.

CR Number	Subscriber	Cable Service Provider
2839	DHCT cannot get two-way connection. Under certain conditions, the exact details of which are unknown, the QPSK modulator loses communications with the DNCS.	No impact
6781	No impact	The QPSK modulator has been observed to have difficulty in 10/100BaseT auto detection and operation with network equipment. Workaround: Lock the port on the network equipment to 10BaseT mode.

CR Number	Subscriber	Cable Service Provider
6888	Temporary inability to get or use two-way connection. The QPSK modulator will reboot when it has exhausted its available buffers. This may occur due to heavy traffic load, such as when there are a large number of DHCTs signing on. After the QPSK modulator reboots, all of its DHCTs attempt to sign on.	No impact
8885	No impact	The QPSK demodulator may not correctly download new software when the terminal server is connected to the craft port.
8887	No impact	Poor QPSK upstream reservation mode performance. **Note:** This mode is rarely used.
11644	Temporary inability to get or use two-way connection. The QPSK modulator may spontaneously reboot without warning to the operator.	No impact
11654	Temporary inability to get or use two-way connection. QPSKs may experience spontaneous reboots and/or abnormally slow sign-on rates.	No impact
12250	No impact	The Element Management System may display alarms for a QPSK Demodulator that are no longer active alarms (if the Demod was reset or rebooted).

CR Number	Subscriber	Cable Service Provider
14309	Temporary inability to get or use two-way connection. A sustained high rate of small packets of upstream traffic causes a QPSK modulator to reboot. **Note:** This is not typical usage.	No impact
20337	No impact	As a craft port user, if you type stblist without a number parameter when a large population of DHCTs is signed on, the entire list of DHCTs is printed. This can lead to a QPSK reboot. Work around: When using QPSK craft port, type the stblist command with a small number (<500) as a parameter to avoid the QPSK rebooting.
24997	No impact	The extended range reverts to the default range when only the PPC reboots.
26882	To avoid reboots, QPSK Mod processing needs to be enhanced to more quickly process DHCT verification requests.	No impact
26987	Temporary inability to get or use two-way connection. The QPSK reboots when attempting to send too many alarms to DNCS.	No impact

About This Upgrade, Continued

CR Number	Subscriber	Cable Service Provider
27016	Temporary inability to get or use two-way connection. The QPSK sends unnecessary ranging alarms, causing the QPSK to reboot due to volume of alarm traffic.	No impact
27017	Temporary inability to get or use two-way connection. When RPC message volume accumulates in the buffer the QPSK reboots.	No impact
27239	No impact	The QPSK provision fails a couple times after multiple reboots.

The Upgrade Process

Introduction

This section includes a list of procedures that are not included in system release installation instructions. provides a timeline for each of the upgrade tasks, and describes the system requirements for upgrading to QPSK A63.

If SR 2.1.1, SR 3.0.1 or Later *Is Installed* on Your System

If SR 2.1.1, SR 3.0.1 or later was installed on your system according to the procedures provided in the installation instructions, the QPSK A63 software is already installed and downloaded to the QPSK modulators. Do not install the QPSK A63 software again.

Take Full Advantage of QPSK DHCT Monitoring and Ranging Features

However, to take full advantage of the DHCT monitoring and ranging features provided in the QPSK software, Cisco recommends that you complete the procedures described in the following sections. These procedures are not included in system release installation instructions.

- Monitor the DNCS Disk Space
- Monitor DHCT Sign-On Rates
- Set DNCS Tracing Levels
- What to Look For in the signonCount Data
- Continue to Monitor the DHCT Sign-On Traffic
- What Is the QPSK Range Extension Feature?
- Activate Range Extension Feature (Optional)

If SR 2.1.1, SR 3.0.1 or Later Is *Not Installed* on Your System

If SR 2.1.1, SR 3.0.1 or later is *not installed* on your system, complete all of the procedures provided in these instructions.

The Upgrade Process, Continued

How Much Time is Required to Install the QPSK A63 Software?

The initial monitoring of the system and installing the QPSK A63 software requires approximately 2 hours. When installation is complete, continue to monitor the DHCT sign-on traffic for several hours. The following table provides a description and approximate time required for each stage of the QPSK A63 upgrade and installation process.

Stage	Description	Time Required
1	Monitor the available DNCS disk space. If the percentage of used disk space exceeds 80 percent, the DNCS is at risk of becoming full which would cause the DNCS to stop abruptly. Call Cisco Services immediately.	5 minutes
2	Monitor the DHCT sign-on rates using the data produced by the signonCount utility. Review the signonCount utility Help window for an understanding of the procedure.	30 – 60 minutes
3	Set the DNCS tracing levels to trace the maximum level of system activity.	5 minutes
4	Display and interpret the data produced by the signonCount utility so you can take appropriate action.	30 – 60 minutes
5	Install the QPSK A63 software onto the DNCS.	15 minutes
6	Reset the QPSK modulator. Allow the new QPSK A63 software to download to the QPSK modulator and wait for DHCTs to reconnect to the system. Verify that the software successfully downloaded to the QPSK modulator.	15 minutes per unit, average
7	After downloading the QPSK A63 software, continue to monitor the DHCT sign-on traffic for 10 to 48 hours. **Note:** You do not need to watch the sign-on traffic continuously for 10 to 48 hours. You should check occasionally during this time to ensure that there are no problems.	10 – 48 hours

Is Service Impacted During the Upgrade?

The service impact to subscribers will vary based on the applications installed on your system and how the applications react to a loss of both the forward and reverse QPSK data paths. For a subscriber not actively using an interactive application the outage will most likely go unnoticed.

System Requirements

The installation information in these instructions applies only to systems operating SR 2.1.1 or SR 3.0.1 or later, and QPSK software version A47 or later. If you have QPSK software version A34 or earlier installed on your system, you cannot directly upgrade to A63. To upgrade from QPSK software version A34 or earlier, you must first upgrade to QPSK software version A47, then upgrade to version A63 or later. Call Cisco Services to obtain information about upgrading from earlier versions of QPSK software.

To take advantage of variable-length subnet masks (VLSM), you must have SR 2.1/3.0 or later installed. SR 2.1/3.0 utilizes the Solaris 8 operating system (OS) that includes full support for VLSM. To optimize network configuration and to take advantage of VLSM network technology, Cisco recommends that you modify all applicable network configuration files on both the Digital Network Control System (DNCS) and the Application Server when upgrading to SR 2.1/3.0.

Monitor the DNCS Disk Space

Introduction

The utilities used in monitoring the system during the loading of QPSK A63 software require that you enable the process tracing for some DNCS functions. This tracing may result in a significant increase in the size of the dncsLog file. If allowed to grow unchecked, the dncsLog file could, in rare cases, fill the hard disk and as a result cause the DNCS to stop functioning.

The procedures in this section describe how to monitor the DNCS disk space that is presently available. The procedures also indicate when to call Cisco Services to take action should the system start to run low on storage space. Use these monitoring procedures each time you are directed to check available disk space.

Monitoring Disk Space

To monitor the disk space on the DNCS, complete the following steps.

1. From an xterm window, type **df –k** and **Enter**.

   Result: A list of DNCS files and disk space appears in the xterm window.

2. In the **Mounted On** column locate /**var**, and in the **Capacity column**, locate the **percentage** that relates to /var.

3. Before you activate the tracing process, is the capacity of used disk space in /var less than 80 percent?

   - If **yes**, it is safe to set the tracing levels for DNCS processes. But first, go to **Monitor DHCT Sign-On Rates**, next in these instructions, to understand how the signonCount utility can facilitate the DHCT sign-on process.

   - If **no**, call Cisco Services for assistance in freeing up space.

Monitor DHCT Sign-On Rates

Introduction

When DHCTs download new software for the operating system and resident application, they lose the contents of their volatile memory. After the download, DHCTs sign back on to the network and their network configuration data is reloaded. The signonCount utility is useful in monitoring the rate at which DHCTs sign on to the network.

Because some DHCTs make repeated attempts to sign on to the network before they are successful, too many sign-on attempts by DHCTs contribute to network congestion. The signonCount utility can help system operators quickly identify those DHCTs that are having trouble signing on, and the utility can then be used to facilitate the DHCT sign-on process.

When to Use the signonCount Utility

The signonCount utility enables system operators and Cisco engineers to monitor the rate at which DHCTs sign on to the network. This monitoring is required in the following circumstances:

- When DHCTs download new software—DHCTs lose the contents of their volatile memory when the DHCT downloads new software for the operating system and resident application. DHCTs reconnect to the network after the download, and the memory that contained information about the DHCT network connection (IP address, transmit timing, and level) is re-loaded. For systems that are forced to rapidly load DHCT software, the signonCount utility is useful in determining when to trigger the next group of DHCTs to load code.

- When the QPSK modulator and demodulator software is upgraded—In this case, the signonCount utility is used in the following two situations:

  – The first situation is to determine if the system is healthy enough to be upgraded. If it is not, the signonCount utility also provides a secondary mode of operation that can dramatically improve the health of the system prior to moving forward with the upgrade.

  – The second situation is to use the signonCount utility to provide more meaningful guidance regarding when you can move forward with upgrading the next QPSK modulator. Previous upgrade guides instructed you either to wait a little while between upgrading units or to monitor the log file, but they offered no real tools to help in this effort.

Two Modes of Operation

You can run the signonCount utility in two modes: **Fix Mode Off** and **Fix Mode On**. Both modes help system operators monitor the rate at which DHCTs are trying to sign on to the network. When run in *Fix Mode Off*, the utility takes no corrective action regarding DHCTs that are having difficulty signing on. When run in *Fix Mode On*, however, the utility reboots those DHCTs that have tried to sign on more than three times during a 10-minute period.

Note: By forcing DHCTs that are having trouble signing on to reboot, the memory in the DHCT is refreshed and the sign-on process is made easier.

Important: By default, the utility runs in Fix Mode Off. Because the utility interacts with the database when run in Fix Mode On, Cisco recommends that you contact Cisco Services before switching modes.

Accessing the signonCount Help Window

Before using the signonCount utility to monitor the DHCT sign-on rates, Cisco recommends that you review the information on the signonCount utility Help window. The information on the Help window may supplement the information and procedures in these instructions.

Note: If the signonCount utility is not currently installed on your system, call Cisco Services for assistance.

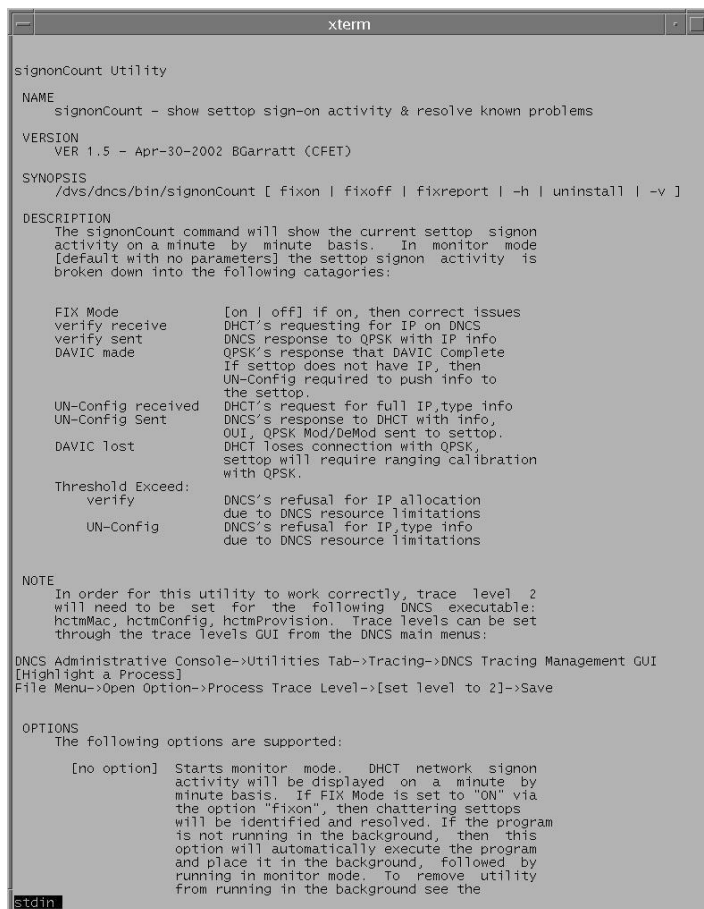To access the signonCount utility Help window, complete the following instructions.

1.   Open an xterm window on the DNCS and then maximize the window.

Result: The Help window for the signonCount utility is enlarged.

2.   Type **signonCount -h** and press **Enter**.

Result: The Help window for the signonCount utility opens.

```
┌─────────────────────────────────────────────── xterm ─────────────────────────┬─────┐
│                                                                                      │
│ signonCount Utility                                                                  │
│                                                                                      │
│  NAME                                                                                │
│      signonCount - show settop sign-on activity & resolve known problems             │
│                                                                                      │
│  VERSION                                                                             │
│      VER 1.5 - Apr-30-2002 BGarratt (CFET)                                           │
│                                                                                      │
│  SYNOPSIS                                                                            │
│      /dvs/dncs/bin/signonCount [ fixon | fixoff | fixreport | -h | uninstall | -v ]  │
│                                                                                      │
│  DESCRIPTION                                                                         │
│      The signonCount command will show the current settop  signon                    │
│      activity on a minute  by  minute  basis.   In  monitor  mode                    │
│      [default with no parameters] the settop signon  activity  is                    │
│      broken down into the following catagories:                                      │
│                                                                                      │
│          FIX Mode            [on | off] if on, then correct issues                   │
│          verify receive      DHCT's requesting for IP on DNCS                        │
│          verify sent         DNCS response to QPSK with IP info                      │
│          DAVIC made          QPSK's response that DAVIC Complete                     │
│                              If settop does not have IP, then                        │
│                              UN-Config required to push info to                      │
│                              the settop.                                             │
│          UN-Config received  DHCT's request for full IP,type info                    │
│          UN-Config Sent      DNCS's response to DHCT with info,                      │
│                              OUI, QPSK Mod/DeMod sent to settop.                     │
│          DAVIC lost          DHCT loses connection with QPSK,                        │
│                              settop will require ranging calibration                 │
│                              with QPSK.                                              │
│          Threshold Exceed:                                                           │
│              verify          DNCS's refusal for IP allocation                        │
│                              due to DNCS resource limitations                        │
│              UN-Config       DNCS's refusal for IP,type info                         │
│                              due to DNCS resource limitations                        │
│                                                                                      │
│  NOTE                                                                               │
│      In order for this utility to work correctly, trace  level  2                    │
│      will need to be  set  for  the  following  DNCS  executable:                    │
│      hctmMac, hctmConfig, hctmProvision.  Trace levels can be set                    │
│      through the trace levels GUI from the DNCS main menus:                          │
│                                                                                      │
│ DNCS Administrative Console->Utilities Tab->Tracing->DNCS Tracing Management GUI      │
│ [Highlight a Process]                                                                │
│ File Menu->Open Option->Process Trace Level->[set level to 2]->Save                  │
│                                                                                      │
│  OPTIONS                                                                            │
│      The following options are supported:                                            │
│                                                                                      │
│          [no option]  Starts monitor  mode.   DHCT  network  signon                  │
│                       activity will be displayed  on  a  minute  by                  │
│                       minute basis.  If FIX Mode is set to "ON" via                  │
│                       the option "fixon", then chattering settops                    │
│                       will be identified and resolved. If the program                │
│                       is not running in the background,  then  this                  │
│                       option will automatically execute the program                  │
│                       and place it in the background,  followed  by                  │
│                       running in monitor mode.  To  remove  utility                  │
│                       from running in the background see the                         │
│ stdin                                                                               │
└──────────────────────────────────────────────────────────────────────────────────────┘
```

3.   Press the **Spacebar** as often as necessary to page through the Help window.

4.   After reviewing the signonCount utility Help window, go to **Set DNCS Tracing Levels**, next in these instructions.

Set DNCS Tracing Levels

Introduction

To ensure that the DNCS captures the maximum level of detail, you need to set the tracing levels of three DNCS processes to level 2. The three DNCS processes are:

- hctmConfig
- hctmMac
- hctmProvision.

⚠ **CAUTION:**

Activating the tracing process as described in this section could cause the dncslog file to grow large enough to fill the hard disk. If this is allowed to happen, the DNCS will stop functioning. While gathering data, carefully monitor the disk usage.

Once you begin the tracing process, do not leave the DNCS unattended. The disk space capacity must be closely monitored because it can change rapidly. If the disk space capacity approaches or exceeds 80 percent, call Cisco Services immediately.

Setting the DNCS Tracing Levels

To set the tracing levels of the hctmConfig, hctmMac, and hctmProvision processes to level 2, complete the following instructions.

1. From the DNCS Administrative Console, select the **Utilities** tab.

2. Click **Tracing**.

   Result: The DNCS Tracing Management window opens.
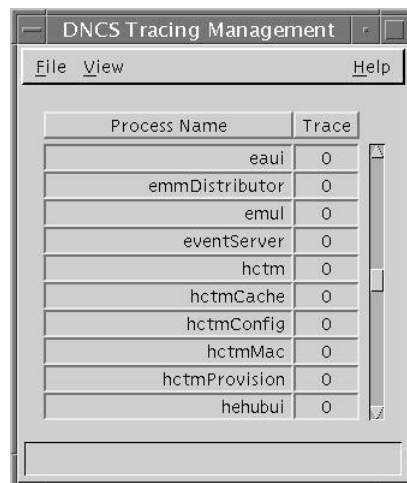
3. Scroll down until the **hctmConfig**, **hctmMac**, and **hctmProvision** processes come into view.

4. Are the tracing levels for all three of these processes already set to **2**?

   - If **yes**, continue with **What to Look for in the signonCount Data**, next in these instructions.

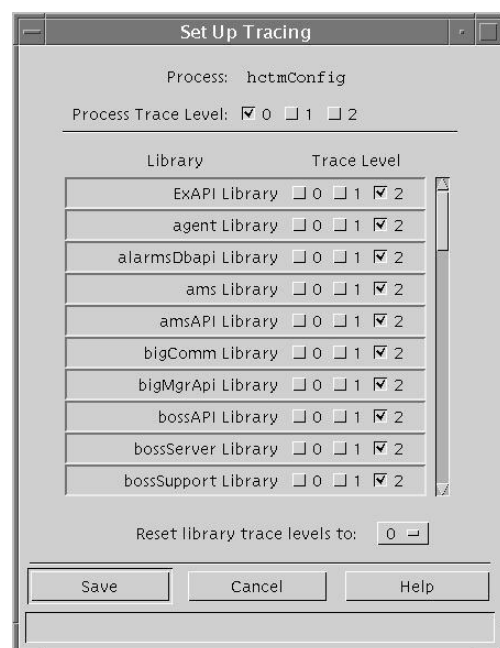   - If **no**, go to step 5 to begin setting the tracing levels.

   Note: The **Trace** column lists the current tracing level.

   Example: In the example in step 3, the tracing levels are all set to **0**.

5. Double-click one of the processes.

   Example: Double-click hctmConfig.

   Result: The Set Up Tracing window opens.

6. To configure the Set Up Tracing window, complete the following steps.

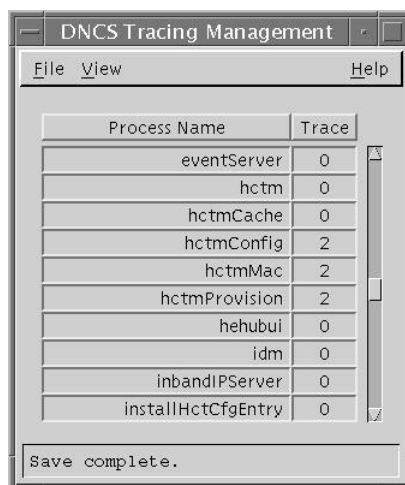   a) In the Process Trace Level field, select **2**.

   b) Click **Save**.

   Results:

   - The DNCS Tracing Management window updates with the new tracing level.

   - The Set Up Tracing window closes.

7. Repeat steps 5 and 6 for the hctmMac and hctmProvision processes (if necessary) to update the tracing level to 2.

    Example: When you are finished, the DNCS Tracing Management window should look like the following example. The tracing levels for the hctmConfig, hctmMac, and hctmProvision utilities are set to level 2.

Process Name	Trace
eventServer	0
hctm	0
hctmCache	0
hctmConfig	2
hctmMac	2
hctmProvision	2
hehubui	0
idm	0
inbandIPServer	0
installHctCfgEntry	0

    Save complete.

8. Click **File** and select **Close** to close the DNCS Tracing Management window.

9. Go to **What to Look for in the signonCount Data**, next in these instructions.

What to Look for in the signonCount Data

Introduction

This section provides instructions on how to display the signonCount utility interface, provides an explanation of each field of the interface, and states which fields you should focus on first.

Displaying the signonCount Interface

Follow these steps to display the interface of the signonCount utility.

1.   If necessary, open an xterm window on the DNCS.

2.   Click and drag the edges of the xterm window to maximize the screen width.

     Note: The signonCount utility fills the width of the screen with data.

3.   Type **signonCount** and press **Enter**.

     Result: The signonCount utility interface opens.

4.   Look at the following example of the signonCount utility interface; then, go to **Understanding the signonCount Utility Data Fields**, next in this section.

signonCount Utility Example

The signonCount utility interface is similar to the following example.

TIME	FIX Mode	Verified Rcvd	Verified Sent	DAVIC Made	UN-Config Rcvd	UN-Config Sent	DAVIC Lost	Threshold Exceeds Ver	Threshold Exceeds UCfg	Inv HCT Type	IHCT Wrng Mod	Total In-Srvc 2-Way	Total DHCTs NonResponding w/o IP	Total DHCTs NonResponding w/IP	Total DAVIC 2-Way	NUM of DHCT CHANGE	TOTAL PERCENT SIGN-ON	QPSK Reboots
Nov 11 16:40	OFF	9	9	7	13	5	9	0	0	0	0	93643	3973	3203	86467	0	92.33%	
Nov 11 16:41	OFF	16	16	11	19	11	17	0	0	0	0	93643	3973	3203	86467	0	92.33%	
Nov 11 16:42	OFF	9	9	6	20	4	7	0	0	0	0	93643	3973	3203	86467	0	92.33%	
Nov 11 16:43	OFF	18	18	16	28	15	16	0	0	0	0	93643	3972	3203	86468	1	92.33%	
Nov 11 16:44	OFF	16	16	14	13	8	13	0	0	0	0	93643	3972	3203	86468	0	92.33%	
Nov 11 16:45	OFF	14	14	13	20	12	14	0	0	0	0	93643	3972	3203	86468	0	92.33%	
Nov 11 16:46	OFF	19	19	16	17	9	14	0	0	0	0	93645	3973	3202	86469	1	92.33%	
Nov 11 16:47	OFF	18	18	13	22	14	18	0	0	0	0	93652	3980	3202	86470	1	92.33%	
Nov 11 16:48	OFF	16	16	13	21	6	19	0	0	0	0	93660	3988	3201	86471	1	92.32%	
Nov 11 16:49	OFF	15	15	13	18	8	14	0	0	0	0	93664	3992	3201	86471	0	92.32%	

SETTOP SIGNON STATUS

Understanding the signonCount Utility Data Fields

This section provides an explanation of the meaning associated with each field of the signonCount utility.

TIME
Feb 21 09:40
Feb 21 09:41
Feb 21 09:42
Feb 21 09:43
Feb 21 09:44
Feb 21 09:45
Feb 21 09:46
Feb 21 09:47
Feb 21 09:48
Feb 21 09:49

TIME—The system polls the communication link between the QPSK modulators and the DNCS every minute and records the date and time.

What to Look for in the signonCount Data, Continued

Fix Mode
OFF
OFF
OFF
OFF
OFF
OFF
OFF
OFF
OFF
OFF

FIX Mode — This field reveals whether the signonCount utility is configured to correct DHCT sign-on problems (*Fix Mode On*) or whether the utility is running in information-only mode (*Fix Mode Off*).

Note: By default, the utility runs in Fix Mode Off.

Important: Do not change modes unless you have been instructed to do so by Cisco Services engineers.

Verified	
Rcvd	**Sent**
57	55
73	73
62	59
66	61
64	62
74	64
94	95
70	66
67	65
78	72

Verified Rcvd — The QPSK modulator reports the number of DHCTs that have made sign-on requests.

Verified Sent — The DNCS has responded to this number of DHCTs.

DAVIC Made
18
26
8
15
20
16
37
17
19
22

DAVIC Made — The QPSK modulator reports the number of DHCTs that have connected to the QPSK modulator and are waiting for UN-Config information.

UN-Config	
Rcvd	**Sent**
0	0
0	0
4	4
3	3
6	6
4	4
8	8
3	3
5	5
2	2

UN-Config Rcvd — This number of DHCTs is requesting a UN-Config message from the DNCS.

The UN-Config message contains information, like an IP address, that allows DHCTs to sign on to the network.

UN-Config Sent — The DNCS has sent this number of UN-Config messages to DHCTs, allowing the DHCTs to sign on to the network.

At this point, the DHCTs are physically in two-way mode and have completed the sign-on process

What to Look for in the signonCount Data, Continued

DAVIC Lost
30
23
23
19
28
26
33
20
32
17

DAVIC Lost—This field indicates the number of DHCTs that have lost the communication link with the QPSK modulator.

The QPSK modulator then sends a message to DHCTs that have lost the communication link. The message requests that the DHCTs recalibrate themselves with the modulator so the entire sign-on process can begin again.

Threshold Exceeds	
Ver	UCfg
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0
0	0

Threshold Exceeds Ver—The DNCS reports the number of DHCTs that simultaneously attempt to verify their configuration in excess of what the system queues allow.

Threshold Exceeds UCfg—The DNCS reports the number of DHCTs that simultaneously attempt to sign on to the system in excess of what the system queues allow.

The numbers in the Threshold Exceeds Ver and Threshold Exceeds UCfg columns should be zero.

Inv HCT Type
0
0
0
0
0
0
0
0
0
0

Inv HCT Type—This field represents the number of DHCTs reporting a DHCT type that does not match the values presently in the database.

IHCT Wrng Mod
0
0
0
0
0
0
0
0
0
0

IHCT Wrng Mod—This field represents the number of DHCTs that have responded through a QPSK modulator that differs from the modulator through which the DHCT responded in the past.

Numbers in this column typically represent DHCTs that have been moved from one subscriber's home to another without having gone through the correct process.

What to Look for in the signonCount Data, Continued

Total In-Srvc 2-Way
100694
100694
100695
100695
100697
100697
100697
100702
100703
100704

Total In-Srvc 2-Way—The utility reports the number of DHCTs listed in the database with a status of In-Service 2-Way.

These DHCTs should be capable of two-way communication.

Total DHCTs NonResponding	
w/o IP	w/IP
6114	12331
6113	12328
6114	12338
6113	12343
6115	12346
6115	12349
6115	12348
6118	12351
6119	12358
6120	12356

The following fields list the number of DHCTs in the database that should be capable of two-way communication, but they are listed as non-responders:

- **w/o IP**—This number of non-responding DHCTs do not have an IP address.

- **w/IP**—This number of non-responding DHCTs have an IP address.

Total DAVIC 2-Way
82249
82253
82243
82239
82236
82233
82234
82233
82226
82228

Total DAVIC 2-Way—This field represents the number of DHCTs that have physically signed on to the network with two-way communication ability.

NUM of DHCT Change
-8
4
-10
-4
-3
-3
1
-1
-7
2

NUM of DHCT Change—This field represents the number of DHCTs with two-way capability that have been added to or removed from the database during the last minute.

Substantial numbers in this column usually indicate staging activity.

What to Look for in the signonCount Data, Continued

TOTAL PERCENT SIGN-ON
81.68%
81.68%
81.67%
81.66%
81.66%
81.66%
81.65%
81.65%
81.68%
81.68%

TOTAL PERCENT SIGN-ON—The DNCS reports the percentage of DHCTs with two-way capability that are signed on to your network.

QPSK Reboots

QPSK Reboots—In the event that a QPSK modulator reboots, the name and ID of the modulator is listed in this column.

Concentrate on Three Fields

Allow the system to gather signonCount data for several minutes and then examine the numbers in the following fields:

- **Verified Rcvd** (Verified Received)
- **Verified Sent**
- **DAVIC Made**

These fields track the number of sign-on requests made by DHCTs (Verified Rcvd and Verified Sent), as well as the number of sign-on requests that were successful (DAVIC Made). Ideally, the numbers in the three fields should be equal.

If you notice that the numbers in the DAVIC Made column regularly becoming less than the numbers in the Verified Rcvd and Verified Sent columns, your DHCTs may be having trouble signing on and may be contributing to network congestion.

When to Call Cisco Services for Assistance

If you notice that the numbers in the DAVIC Made column regularly becoming less than the numbers in the Verified Rcvd and Verified Sent columns, call Cisco Services. Cisco Services engineers may log in to your system and examine the logfiles associated with the hctmConfig, hctmMac, and hctmProvision processes. Additionally, Cisco Services engineers may instruct you to run the signonCount utility in *Fix Mode On*.

Important: Do not run the utility in *Fix Mode On* unless you have been instructed to do so by Cisco Services engineers.

Install QPSK A63 Software Onto the DNCS

Introduction

This section provides instructions for installing the QPSK A63 software onto the DNCS. If your system is operating on a system release earlier than SR or SR 3.0.1, complete the procedures in this section.

Important: If SR 2.1.1, SR 3.0.1 or later is installed on your system, the QPSK A63 software was installed at the same time. Do not install the QPSK A63 software again.

Installing the QPSK A63 Software

To install the QPSK A63 software onto the DNCS, complete the following steps.

1. From an xterm window on the DNCS, log in as a **root** user.

2. Type **cd /tftpboot** and **Enter** to change the directory.

3. Type **grep demod_ qpsk.config** and **Enter** to verify the current version of QPSK software installed on your system.

    Note: Be sure to type a space before typing qpsk.config.

    Result: The response identifies the *current* QPSK demodulator software version installed on your system.

    Example: setenv demodfile demod_A55

4. Is the current QPSK software installed on your system version A47 or later?

    - If **yes**, go to step 5.

    - If **no**, do not continue with these procedures. You must upgrade the QPSK software on your system to version A47 or later before installing the QPSK A63 software. Refer to the *Upgrading QPSK Demodulators To Software Version A55 and Later Technical Bulletin* for detailed upgrade information

5. Type **cp -p qpsk.config qpsk.config.<xxx>** and **Enter** to make a backup copy of the current file.

    Note: Replace the <xxx> in this entry with the number of the current QPSK software version installed on your system.

    Example: cp -p qpsk.config qpsk.config.A55

    Result: The system makes a backup file of the current configuration file.

6. Insert the CD labeled **QPSK Mod/Demod A63** into the CD drive of the DNCS.

7.   Type **df** and **Enter** to confirm that the system mounted the CD successfully.

     Result: The last line of the df command output lists the number of free disk blocks on the CD.

     Note: The number of free disk blocks existing on the CD does not matter. The fact that the CD is listed in the df command output verifies that the system successfully mounted the CD.

8.   Type **swmtool -d /cdrom/cdrom0** and **Enter**.

     Result: The Admintool: Add Software window opens.

9.   Click **Cancel** on the Admintool: Add Software window.

     Result: The Admintool: Software window opens.

10. From the Admintool: Software window, select **Properties** and choose **Package Administration**.

     Result: The Admintool: Package Administration window opens.

11. Set the fields on the Admintool: Package Administration window to the following values:

     - Existing Files—**Overwrite**
     - Existing Packages—**Overwrite**
     - Existing Partial Installations—**Ask**
     - Install setuid/setgid Files—**Yes**
     - Run setuid/setgid Scripts—**Yes**

     Note: Leave the remaining fields at their default value.

12. Select **OK** on the Admintool: Package Administration window.

     Result: The Admintool: Software window reappears.

13. From the Admintool: Software window, select **Edit** and choose **Add**.

     Result: The Admintool: Add Software window reappears.

14. Click the **QPSK Modulator and Demodulator** option.

     Result: A check mark appears.

15. Select **Add** on the Admintool: Add Software window.

     Results:
     - A copyright message appears.
     - The QPSK software begins to install.

16. When the system displays a message that indicates that the QPSK software installed successfully, press the right mouse button while the cursor is anywhere within the Admintool: Add Software window.

     Result: A Term Pane window opens.

17. Click the right mouse button from within the Term Pane window and select **History** from the resulting menu.

     Result: A History menu opens.

18. Select **Store log as new file**.

     Result: A file directory opens.

19. Save the file as **/dvs/dncs/tmp/qpsk_inst_<Date>.out**.

     Note: Use today's date in mmddyy format as <Date>.

20. **Enter** to exit the Admintool: Add Software window.

     Result: The Admintool: Software window reappears.

21. From the Admintool: Software window, select **File** and choose **Exit**.

     Result: The Admintool: Software window closes.

22. Type **eject** and **Enter**.

     Result: The CD ejects.

23. Next, verify the DNCS IP address in the QPSK.config file. Go to **Verifying the DNCS IP Address**, next in this section.

Install QPSK A63 Software Onto the DNCS, Continued

Verifying the DNCS IP Address

The DNCS IP address in the qpsk.config file is normally automatically updated during the installation process. However, if the disk you are using to install QPSK A63 is dated *earlier* than 1/3/03, it is recommended that you complete the steps in this section to verify that the qpsk.config file is updated with your DNCS IP address.

1. From an xterm window on the DNCS, log in as a **root** user.

2. Type **grep dncsatm /etc/hosts** and **Enter** to find your DNCS IP address and record it here _____.

3. Type **cd /tftpboot** and **Enter** to change the directory.

4. Type vi qpsk.config in a UNIX editor to open the qpsk.config file.

5. Scroll through the qpsk.config file and notice the DNCS IP addresses in the following parameters:
    - setenv qpsk_man_ip <*DNCS IP address*>
    - setenv hct_ man_ip <*DNCS IP address*>
    - setenv nms_ man_ip <*DNCS IP address*>
    - setenv stat_mgr_ip <*DNCS IP address*>

6. Do the IP addresses in the file match the DNCS IP address you recorded it step 2?
    - If **yes**, the qpsk.config file is updated with your DNCS IP address. Go to **Download QPSK A63 Software to the QPSK Modulators**, next in these instructions.
    - If **no**, go to step 7 to edit the DNCS IP address.

7. In your UNIX editor, change the IP address in each of these parameters in the qpsk.config file to match your DNCS IP address.
    - setenv qpsk_man_ip <*DNCS IP address*>
    - setenv hct_ man_ip <*DNCS IP address*>
    - setenv nms_ man_ip <*DNCS IP address*>
    - setenv stat_mgr_ip <*DNCS IP address*>

    Example: setenv qpsk_man_ip 10.253.0.1

8. After verifying and changing (if necessary) your DNCS IP address in the qpsk.config file, go to **Download QPSK A63 Software to the QPSK Modulators**, next in these instructions.

Download QPSK A63 Software to the QPSK Modulators

Introduction

After installing the QPSK A63 software on the DNCS, your next step is to upgrade the QPSK modulators.

When you reset a QPSK modulator, the DNCS downloads the new QPSK software to the QPSK modulator. Follow the instructions in this section to download the QPSK A63 software to the QPSK modulators.

Do I Need to Place the QPSKs in Broadcast Mode Before Upgrading?

No. When upgrading the QPSK software, it is no longer required that you place the QPSKs in Broadcast mode.

For sites that have interactive applications deployed, download the QPSK A63 software at a time when subscribers or staging activity will be least impacted.

For sites that do *not* have interactive applications deployed, you can download the QPSK A63 software and reset a QPSK at any time with little, if any, noticeable impact to subscribers or staging activity.

Downloading the QPSK A63 Software

To download the QPSK A63 software to the QPSK modulators, complete the following steps.

1. From the DNCS Administrative Console, select the **DNCS** tab.

2. Select the **Element Provisioning** tab.

3. Click **QPSK**.

    Result: The QPSK List window opens.

4. From the QPSK List window, highlight the QPSK you are upgrading.

    Important: Cisco recommends that when you are downloading software to the QPSKs, begin with a test hub or a QPSK with the smallest DHCT population.

5. Select **File** and choose **Reset**.

    Result: A confirmation message appears.

6. Click **Yes** on the confirmation message.

    Result: A message appears stating that the QPSK modulator has received the reset command.

7. Go to **Verify QPSK A63 Software Downloaded**, next in these instructions.

Verify QPSK A63 Software Downloaded

Verifying Software Download

To verify that the QPSK A63 software downloaded to the DHCTs successfully, complete the following steps.

1. Is the QPSK modulator located at the headend?

   - If **yes**, verify that the new software downloaded successfully by completing the following steps.

     a) Press the **Options** button on the front panel of the QPSK modulator until the LED displays **OPTION: 302 App Version**. If the LED display includes **A302_A63** on the bottom line, the software downloaded successfully. Otherwise, repeat the **Download QPSK A63 Software to the QPSK Modulators** procedures earlier in these instructions.

     b) Press the **Status** button on the front panel of the QPSK demodulators associated with the QPSK modulator until the LED displays **STATUS: Software Version**. If the LED display includes **app_A63** on the bottom line, the software downloaded successfully. Otherwise, repeat the **Download QPSK A63 Software to the QPSK Modulators** procedures earlier in these instructions.

     Note: If the software did not download successfully after the second attempt, call Cisco Services.

   - If **no**, go to step 2.

2. From an xterm window on the DNCS, type **ping <IP address>**; then, after the alarm indicator disappears, press **Enter.**

   Note: The <IP address> refers to the IP address of the QPSK modulator.

   Result: A message similar to **Device is alive** appears.

3. Before downloading the QPSK A63 software to the next modulator, go to **Continue to Monitor the DHCT Sign-On Traffic**, next in these instructions.

Continue to Monitor the DHCT Sign-On Traffic

Introduction

With the signonCount interface displayed, continue to monitor the signonCount utility output to determine the health of your system before downloading the QPSK A63 software to the next QPSK modulator.

Monitoring the DHCT Sign-On Traffic

To determine when it is safe to download the QPSK A63 software to the next QPSK modulator, complete the following steps.

1. Continue to monitor the DHCT sign-on traffic. Your system is healthy if the following conditions are true:

   - The values in the **Verified Rcvd**, **Verified Sent**, and **DAVIC Made** columns are the same.

   - The values in the **Un-Config Rcvd** and **Un-Config Sent** fields are approximately one fourth of the values in the **DAVIC Made** column.

   - The values in the **Threshold Exceeds Ver** and **Threshold Exceeds UCfg** columns are zero.

   - No QPSK modulators have rebooted.

2. Is your system healthy?

   - If **yes**, go to step 3.

   - If **no**, call Cisco Services. Do not continue with these instructions.

3.   Wait approximately 15 minutes before resetting the next QPSK. Then, repeat the procedures in the **Download QPSK A63 Software to the QPSK Modulators** and **Verify QPSK A63 Software Downloaded** sections, earlier in these instructions, for each QPSK modulator you are upgrading.

    Important:

- After resetting each QPSK modulator, continue to monitor the DHCT sign on traffic. As each QPSK modulator reboots, notice that the values in the signonCount utility interface increases. This is to be expected. Also notice that as DHCTs sign on to the system, the values decrease, and the system returns to its healthy state.

- After downloading the QPSK A63 software, continue to monitor the DHCT sign-on traffic for 10 to 48 hours. It is not necessary to watch the sign-on traffic continuously, but you should check occasionally during this time to ensure that there are no problems.

- In the QPSK Reboots column of the signonCount Interface, you may notice that a QPSK modulator reboots automatically. If this occurs, wait 15 minutes before resetting (rebooting) the next QPSK.

4.   When you have completed upgrading all QPSK modulators on your system, select **File** from the QPSK List window, and choose **Close**.

    Results:

- The QPSK List window closes.
- The QPSK A63 software is loaded and the default setting is 0 km.

5.   You have completed the QPSK A63 software installation.

What Is the QPSK Range Extension Feature?

Introduction

With prior versions of software, the Model D9482 QPSK Modulator was capable of successfully connecting and operating DHCTs within a distance of approximately 128 km round trip (64 km each way when forward and reverse paths are equal).

This distance limitation is mainly due to the width of the ranging slots defined in the Digital Audio-Visual Council (DAVIC) standard for operation over the hybrid fiber-coax (HFC) plant.

The width of the ranging slots limits the maximum distance *between* DHCTs for successful connection and operation. Because the current modulator software assumes that the closest DHCT is at the same location as the QPSK modulator, an unnecessary limit is placed on the farthest distance that a DHCT can be located from that QPSK modulator.

Some cable service providers would prefer to physically locate the QPSK hardware in the headend and extend coverage to DHCTs that are farther from the QPSK modulator than the currently allowable maximum distance.

This optional feature for the Model D9482 QPSK Modulator allows Explorer DHCTs to sign on to the system and operate properly at extended distances from the QPSK modulator. (This feature provides the resolution to CR 6922.)

Using the front panel of the QPSK modulator, you can select one of nine different values of one-way range extension. The front panel displays the extension distance in kilometers.

Note: Though it is not possible to extend the maximum distance *between* the DHCTs, which must remain within 64 km, it is possible to delay the timing within the modulator such that the distance to all DHCTs can be extended. This software feature allows you to extend the distance to the closest DHCT from 0 km to 248 km, one way, in steps of 31 km.

What Is the QPSK Range Extension Feature?, Continued

Distance and Delay

The distance that appears on the front panel of the QPSK modulator is approximate and based on fiber with a propagation velocity of 68 percent of the speed of light in a vacuum.

Note: The modulator has no way of calculating how much coax or fiber is deployed between and to the DHCTs.

If you anticipate that DHCTs will be deployed near the limits of the distance ranges, Cisco recommends that you use delay numbers and translate the numbers to the actual length of fiber and/or coaxial cable deployed.

The delay numbers used in the modulator are as follows:

- With no extension, the modulator can range DHCTs to a distance corresponding to 628 microseconds round trip.

- Each front-panel step of 31 km (one way) corresponds to a round-trip delay extension of 300 microseconds.

Distance Between DHCTs

When the range extension mode is activated, the QPSK modulator expects a transmission delay that is equal to or greater than the distance value programmed into the QPSK modulator.

The distance between the closest and the farthest DHCT is still a maximum of 64 km. Thus, the closest a DHCT can be located is the distance programmed on the front panel of the QPSK modulator. The farthest a DHCT can be located from the headend is the sum of the programmed distance plus the 64 km ranging distance.

DHCTs operated outside these bounds may not be able to connect to the system and may also potentially interfere with the transmissions of other DHCTs. The programmed distance applies to all of the demodulators connected to that modulator.

Range Distance Settings Diagram

The following diagram illustrates the correct range distance settings.
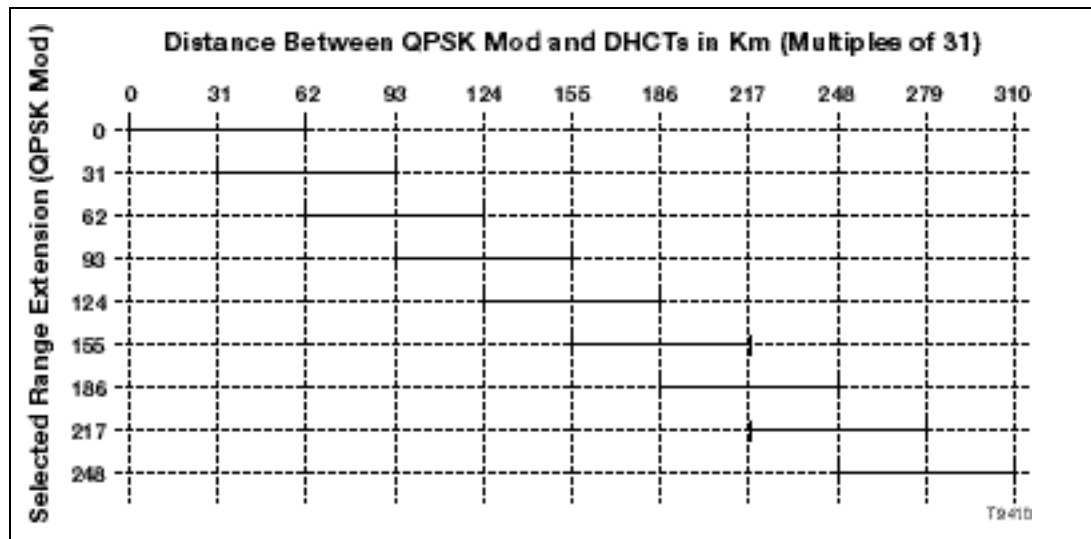
Example: With 155 km set on the QPSK, the closest distance you could locate a DHCT to a QPSK modulator is 155 km. The farthest distance you could locate a DHCT to a QPSK modulator is 217 km.

Network Configuration Application Rules

Follow these application rules when configuring the network for the QPSK ranging-distance extension mode.

Rule	Description
1	The QPSK modulator operates normally when no delay value is configured.
2	Only four D9482 QPSK Demodulators can be connected to a QPSK modulator operating in delay mode. These demodulators must be connected to ATM-25 port locations 5, 6, 7, and/or 8. (Ports 1 through 4 may not be used in the range extension mode.) The configuration at the DNCS should reflect this requirement.
3	The programmed delay distance should be less than or equal to the sum of the transport cable to the hub, plus the shortest optical cable distance on any of the attached nodes.

What Is the QPSK Range Extension Feature?, Continued

Rule	Description
4	The ranging radius is 0 km to 64 km, with 0 km set at the programmed cable length.
5	Transport distances are in integer multiples of 31 km, to a maximum of 248 km.
6	All four demodulators are delayed by the same value programmed in the QPSK modulator.
7	The distance ranges stated in this document are approximate and based on a velocity of propagation in fiber of 68 percent of the speed of light in a vacuum (3×10^8 meters per second). Corrections to the setting of the QPSKs should be made where these distances do not apply, as in coaxial cable.
8	DHCTs closer than the programmed distance value may not range and may interfere with other DHCTs.
9	The delay distances that appear on the front panel of the QPSK are one-way path distances and assume an equal distance path on the forward and reverse connection. It is not necessary for the forward and reverse path to be the same distance, as long as the total propagation delay matches the equivalent time delay.
10	It will *not* be possible to use a co-located DHCT directly connected to the QPSK modem as a test device for QPSK link verification when the ranging extension mode is used. This connection violates rule 8. However, you can test for QPSK link verification with a DHCT directly connected to the QPSK as long as the reverse path is not active.

Activate Range Extension Feature (Optional)

Introduction

This section provides instructions for changing the modulator-to-node distance settings for the QPSK modulators on your system.

Changing the Distance Settings

If the modulator-to-node distance of the QPSK modulators on your system is more than 64 km, complete these steps to change the distance settings.

1. If the hub you are configuring supports existing customers, disconnect the **modulator RF output cable** for 15 minutes. Otherwise, go to step 2.

    Note: While the QPSK is disconnected, the DHCTs on the hub are not fully functional.

2. See the **Range Distance Settings Diagram**, earlier in this section, to determine the QPSK range distance settings appropriate for your system setup. Then, complete the following steps to set the modulator-to-node distances.

    a) On the front panel of the QPSK modulator, press the **Options** button until the Mod-Node Dist option appears.

    b) Select a value of **optical fiber length** that is less than or equal to the sum of the actual optical cable length used for distribution to the remote hub, plus the minimum optical cable length used in the HFC network from the hub.

    c) Adjust the setting if the cable propagation velocity factor is not equal to 68 percent of the speed of light in a vacuum.

    d) Press the **up** and **down** buttons to choose the desired one-way fiber delay and **Enter**.

    Results:

    - The first time you change the modulator-to-node distance setting from 0 (zero) to xx, the QPSK will reboot.

    - The modified code is downloaded to the QPSK modulator and demodulator.

3. Reconnect the **cable** to force all DHCTs on the hub to reestablish a DAVIC connection with the appropriate time offsets.

4. Place a DHCT at the closest possible location to where the HFC network transitions from optics to cable; then, boot the DHCT and press the **Power** button.

5.   Check the delay time on the DHCT diagnostic screen by choosing one of the following options:

- For sites using SARA, look at the RF Statistical Information diagnostic screen, and choose one of the following options:
  - If the delay value is *less* than 761, the delay time is correct. Go to step 6.
  - If the delay value is *more* than 761, the DHCT is "too close." Repeat step 2 and lower the modulator-to-node distance. Then, reboot the QPSK modulator.
- For sites using the Pioneer resident application, call Pioneer for assistance in determining the current time delay.

6.   Place a DHCT in the location with the maximum possible cable distance from the QPSK.

7.   Again, check the delay time in the DHCT diagnostic screen by choosing one of the following options:

- For sites using SARA, choose one of the following options from the RF Statistical Information diagnostic screen.
  - If the delay values fall within the 134 and 761 microsecond delay-time bound, the programmed delay values are correct.
  - If the delay value is less than 134 microseconds, the overall delay between DHCTs is "too far." Call Cisco Services for assistance.
- For sites using the Pioneer resident application, call Pioneer for assistance in determining the current time delay.

Rollback Procedures

Introduction

After loading the QPSK A63 software, if you notice that the system is reacting adversely, call Cisco Services. If they determine it is necessary to roll back the procedure, complete the steps in this section to restore the qpsk.config file and to deactivate the signonCount utility.

Important: Do not initiate these rollback procedures before contacting Cisco Services.

Restoring the qpsk.config Files

To restore the qpsk.config files, complete the following steps.

1. From an xterm window on the DNCS, log in as **root** user.

2. Type **cd /tftpboot** and **Enter**.
    Result: The /tftpboot directory becomes your working directory.

3. Type **cp -p qpsk.config.<xxx> qpsk.config** and **Enter**.

    Note: Replace the <xxx> in this entry with the number of the QPSK software version number you entered in step 5 of the **Install QPSK A63 Software Onto the DNCS** procedures, earlier in these instructions.

    Example: cp -p qpsk.config.A55 qpsk.config
    Result: The system restores the original qpsk.config file.

4. Use the **Download QPSK A63 Software to the QPSK Modulators** procedures, earlier in these instructions, to reboot each QPSK modulator on your system.

Deactivating the signonCount Utility

Deactivating the signonCount utility stops it from running in the background. To stop the signonCount utility, deactivate it by completing the following steps.

1. Check if the signonCount utility is currently running. From an xterm window on the DNCS, type **ps –ef |grep sign** and **Enter**.
    Result: If the signonCount utility is currently running, a message appears similar to the following:

    /bin/ksh /dvs/dncs/bin/signonCount.ksh

    If the message does not appear, then signonCount is not running. You do not need to perform step 2.

2. If the signonCount utility is running in the background and you want to deactivate it, from an xterm window on the DNCS, type **signonCount uninstall** and **Enter**.
    Result: The following message appears: "SignonCount" has been removed as a background process.

For Information

If You Have Questions

If you have technical questions, call Cisco Services for assistance. Follow the menu options to speak with a service engineer.