

**Oracle® Communications Session  
Director**

Release Notes

Release S-D7.2.0

*Formerly Net-Net Session Director*

January 2014

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# About this Guide

## Overview

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The *Oracle Communications Session Director Release Notes* provide:

- An overview of new application features
- An overview of new management features
- A summary of ACLI changes
- A summary of MIB changes
- A summary of Documentation Set changes
- A summary of changes in each Maintenance Release

## Supported Platforms

Release Version S-D7.2.0 is supported on the Net-Net 9200.

## Related Documentation

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The following table lists the members that comprise the documentation set for this release:

Document Name	Document Description
ACLI Configuration Guide	Contains information about the administration and software configuration of the SBC.
ACLI Reference Guide	Contains explanations of how to use the ACLI, as an alphabetical listings and descriptions of all ACLI commands and configuration parameters.
Maintenance and Troubleshooting Guide	Contains information about SBC logs, performance announcements, system management, inventory management, upgrades, working with configurations, and managing backups and archives.

Document Name	Document Description
MIB Reference Guide	Contains information about Management Information Base (MIBs), Acme Packet's enterprise MIBs, general trap information, including specific details about standard traps and enterprise traps, Simple Network Management Protocol (SNMP) GET query information (including standard and enterprise SNMP GET query names, object identifier names and numbers, and descriptions), examples of scalar and table objects.
Accounting Guide	Contains information about the SBC's accounting support, including details about RADIUS accounting.
Release Notes	Contains information about the current documentation set release, including new features and management changes.

## Revision History

This section contains a revision history for this document.

Date	Revision Number	Description
July 18, 2013	Revision 1.00	<ul style="list-style-type: none"> <li>Initial Release</li> </ul>
December 4, 2013	Revision 1.01	<ul style="list-style-type: none"> <li>Added Online Upgrades known issue</li> </ul>
January 9, 2014	Revision 1.02	<ul style="list-style-type: none"> <li>Updated known issues with Online Upgrades fix</li> </ul>
January 29, 2014	Revision 1.03	<ul style="list-style-type: none"> <li>Reinstates Online Upgrades known issue</li> </ul>

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# Net-Net OS S-D7.2.0 Release Notes

## Introduction

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The Net-Net OS S-D7.2.0 Release Notes provide the following information about Net-Net OS Release S-D7.2.0:

- A summary of changes in each Maintenance Release
- An overview of the new features available
- An overview of the management enhancements
- An overview of the accounting enhancements
- A summary of changes to the Acme Packet Command Line Interface (ACLI)
- A summary of known issues

## Net-Net OS S-D7.2.0 Upgrade Prerequisites

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SPU1 and NPU1, MIPS-based hardware is unsupported as of this release.

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**Caution:** The bootloader MUST be upgraded to bootloader package SWR-0012-00r2p03.tar prior to loading any Net-Net OS version S-D7.2.0 image/baseline or later on the Net-Net 9000. This bootloader was required for S-D7.1.0 and is backward compatible to all D600, D700, D710b3 or earlier images.

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SWR-0012-00r2p08.tar is the recommended bootloader.

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**Caution:** It is advised to upload NN9200 Diagnostic Image SWR-0016-00, Rev 2.05 (filename: nnD\_diags205.tar) or greater to the Net-Net 9200's /code/images directory before upgrading the bootloader. Older diagnostics images will not work with the 09/27/2010 bootloader.

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## Maintenance Release Content

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Net-Net OS S-D7.2.0 at current GA release rolls up all fixes through S-D710m6 and D723f3p6.

## Overview of New Features for Release S-D7.2.0

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This section describes features and capabilities introduced in Acme Packet's Net-Net OS Release S-D7.2.0.

## **External Policy Servers**

This section describes additions to External Policy Servers features.

### **Diameter Policy Server High Availability**

The Net-Net SBC can provide external policy server redundancy through a combination of multiple servers being returned in one FQDN query and maintaining state of these servers.

Feature Description Location: ACLI Configuration Guide, External Policy Servers chapter

## **SIP Features**

This section describes additions to SIP signaling features.

### **SIP REFER-to-BYE**

The Net-Net SBC's SIP REFER-to-BYE capability addresses situations when other network elements do not support the REFER method but do offer blind transfer in a SIP BYE request. The target number is encoded in a Reason header of the BYE request. In such cases, the Net-Net SBC terminates the REFER and passes the Refer-To number in a Reason header of the BYE.

Feature Description Location: ACLI Configuration Guide, SIP Signaling Chapter

## **SIP/H.323 Common Features**

This section describes features that apply to both SIP and H.323.

### **SIP: Disable Media Inactivity Timer for Calls Placed on Hold**

Hardware-based media flow guard timers detect when a call has lost media while it is being relayed through the Net-Net SBC. In response, the system tears down the call. You can configure **disable-guard-timer-sendonly** to disable media inactivity timers for calls placed on hold.

Feature Description Location: ACLI Configuration Guide, Realms and Realm Groups chapter

## **Session Routing and Load Balancing**

This section describes additions to routing and load balancing functionality.

### **CNAM Subtype Support for ENUM Queries**

The Net-Net SBC can perform CNAM queries on the signaling message's ingress or egress from the system by setting the cnam lookup direction parameter to either ingress or egress. If the CNAM lookup direction parameters are configured on both the ingress and egress sides of a call, the Net-Net SBC will only perform the lookup on the ingress side of the call.

Feature Description Location: ACLI Configuration Guide, Session Routing and Load Balancing Chapter

### **DNS Server Status**

The Net-Net SBC monitors the status of all configured DNS servers used by a SIP daemon. If a DNS server goes down, a major alarm is sent. If all DNS servers used by a SIP daemon are down, a critical alarm is sent. The **apAppsDnsServerStatusChangeTrap** is sent for both events.

Feature Description Location: Maintenance and Troubleshooting Guide, Network Management Chapter

## Security Features

### DDoS Protection from Devices Behind a NAT

A DDoS attack could be crafted such that multiple devices from behind a single NAT could overwhelm the Net-Net SBC. The Net-Net SBC would not detect this as a DDoS attack because each endpoint would have the same source IP but multiple source ports. Because the Net-Net SBC allocates a different CAM entry for each source IP:Port combination, this attack will not be detected. This feature remedies such a possibility.

Feature Description Location: ACLI Configuration Guide, Security Chapter

## Transcoding Features

### FAX Fallback

The Net-Net SBC sometimes supports FAX transcoding scenarios using a Re-INVITE that includes two m-lines in the SDP. Some end stations, however, do not support multiple m-lines, causing the FAX setup to fail. You can configure the Net-Net SBC to resolve this problem on a per realm basis via transcoding policy.

Feature Description Location: ACLI Configuration Guide, Transcoding Chapter, Supporting FAX to UAs that Do Not Support Multiple SDP M-Lines. section

### FAX Tone Detection Improvement

The Net-Net SBC has more means to send a reINVITE for a FAX call into realms that use uncompressed codecs.

Feature Description Location: ACLI Configuration Guide, Transcoding Chapter, ReINVITE Toward Caller Using Compressed Codec section

### V.17 Support

The Net-Net SBC supports transcoding to V.17 (14.4kbps) FAX in addition to V.29 (9600 bps). Transcoded FAX calls are created as a single bit rate, end-to-end call. You can configure a maximum FAX bit rate in the media manager which sets a maximum FAX speed for all FAX calls that traverse the TCUs.

Feature Description Location: ACLI Configuration Guide, Transcoding Chapter, FAX Transcoding at V.29 - V.17 Speeds section

### Wideband Support

The following wideband codecs are supported for transcoding:

- AMR-WB
- G.722

### Transcoding Licensing for Royalty Codecs

The Net-Net 9200 supports transcoding between these audio codecs:

AMR—Adaptive Multi-Rate

AMR-WB—Adaptive Multi-Rate Wideband

EVRC—Enhanced Variable Rate Codec

EVRC-B—Enhanced Variable Rate Codec B

Because these codecs are under royalty agreements, you need a special license to use them. This license supports increments starting at 25, increasing up to the codec's full density. This feature has new capacity alarms. See [Transcoding Alarms \(17\)](#).

## Management Enhancements

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This section describes the management enhancements that have been added in software Release Version S-D7.2.0.

### TACACS+ AAA

TACACS+ (Terminal Access Controller Access Control System Plus) is a protocol originally developed by Cisco Systems, and made available to the user community by a draft RFC, TACACS+ Protocol, Version 1.78 (draft-grant-tacacs-02.txt). TACACS+ provides AAA (Authentication, Authorization, and Accounting) services over a secure TCP connection using Port 49.

Feature Description Location: ACLI Configuration Guide, Getting Started Chapter

### Configuration Management

This section describes configuration management enhancements.

Several existing configuration parameters have been enhanced to accept longer string lengths. See [Long Name Support \(13\)](#) in this document.

### Standard XML File Format

Configuration files, referred to as config files, are stored in XML format. Releases prior to D700m3p3, D710A5, and this release saved certain special characters in a non-standard XML format. From the aforementioned releases forward, these characters are saved in formats compliant with current W3C XML standards.

Feature Description Location: Maintenance and Troubleshooting Guide, Configuration Management Chapter

### Network Management

This section describes network management enhancements.

### IP Loopback

The term "IP loopback" refers to defining an IP address in the hip-ip-list for a network interface configuration, where that IP address does not belong to the IP subnet defined for its network interface. IP loopback can be used in IMS residential or SIP peering applications.

When you set up IP loopback, you gain the ability to use a unique public IP address instead of a full public subnet when defining the network interface. So, this is one way you can work around the depletion of public IPv4 addresses.

Feature Description Location: ACLI Configuration Guide, System Configuration chapter

### IPv6 on NPU3

The Net-Net 9200 with a NPU3 card supports IPv6. Please see the Net-Net ACLI Configuration Guide, System Configuration chapter for information regarding the extend of IPv6 Support.

## Transcoding Management

Two sets of transcoding statistics accessible via SNMP have been added. They are:

- Resources in use—Transcoding resources by percentage and count.
- Counts of Codec Pairs In Use—The NN9200 can produce a table of each unique codec pair currently being transcoding and the session count of that pair currently in use.

Feature Description Location: ACLI Configuration Guide, Transcoding Chapter

## MIB, Trap, and Alarm Changes

TCM2 Alarms are found in the Maintenance and Troubleshooting guide, Fault Management chapter.

## Hardware Enhancements

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### NPU3

S-D7.2.0 introduces NPU3 into the mainline D-series SBC software.

See the NPU3 DDoS section of the Security chapter in the Net-Net 9200 ACLI Configuration guide for DDoS2 configuration requirements and limitations.

### NPU3 Caveats

Copper SFP is unsupported

Media over TCP is unsupported

Media policing is unsupported

### TCM2

S-D7.2.0 introduces the second generation transcoding module (TCM2) into the mainline D-series SBC software.

See the Net-Net ACLI Configuration Guide, Transcoding chapter for TCM2 specifications.

## Version S-D7.2.0 ACLI Changes

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This section lists changes to the ACLI for the Net-Net 9000 Release Version S-D7.2.0. It provides lists of the commands, configuration elements, and configuration parameters that have been added, modified, or deleted.

### ACLI Changes: Commands

This section provides tables listing ACLI User and Superuser command that have been added, modified, or deleted.

Change	Description
• show xclient status	includes licensed codec counts
• show mbcd errors	includes licensed codec over-capacity error counts
• show acl	updates output
• show nat	updates output
• show arp	updates output

Change	Description
• show media phy-stats	updates output when an NPU3 is present
• show tcu flair	updates output when an NPU3 is present
• show switch portstate/linkstate	updates output when an NPU3 is present
• show npu gmac-stats	updates output when an NPU3 is present
• show media classify	updates output to include IPv6 traffic statistics when applicable
• show media host-statistics	

## ACLI Changes: Configuration

This section provides tables that list ACLI configuration paths, configurations, and parameters that have been added, modified, or deleted.

Availability	Change	Description
session-router > sip-profile	• cnam-lookup-server • cnam-lookup-dir • cnam-unavailable-ptype • cnam-unavailable-utype	Added for CNAM Subtype Support
security > authentication >	• type • tacacs-authorization • tacacs-accounting • server-assigned-privilege • management-strategy • tacacs-servers	Added for TACACS+ support
security > authentication > tacacs-servers	• address • port • state • secret • realm-id • dead-time • authentication-methods	
media-manager > realm-config	• max-endpoints-per-nat • nat-invalid-message-threshold • wait-time-for-invalid-register (also in access-control)	Added for DDoS Protection from Devices Behind a NAT feature
media-manager > transcoding-policy	• reverse-fax-tone-detection-reinvite	Added for ReINVITE Toward Caller improved FAX tone detection feature
media-manager > media-manager-config	• xcode-fax-max-rate	Added for FAX transcoding at V.29-V.17 speeds
media-manager > transcoding-policy	• fax-single-m-line	Adds support for improved FAX fallback support

**Note:** NPU3: See the NPU3 DDoS Section of the ACLI Configuration Guide's Security chapter for NPU3 parameter definition changes

## Long Name Support

The following parameters may be configured as strings, 128 characters in length. These parameters may also start with a number character.

### media-manager

The following configuration elements and parameters are found under the media-manager path.

Configuration Element or subelement	Parameter
codec-policy	name
dns-config	Client-realm
dns-config > server-dns-attributes	server-realm
ext-policy-server	name realm
media-policy	name
realm-config	identifier parent-realm dns-realm media-policy Media-sec-policy Class-profile enforcement-profile
static-flow	in-realm-id out-realm-id
steering-pool	realm-id
vbg-config	realm-id

### security

The following configuration elements and parameters are found under the security path.

Configuration Element or subelement	Parameter
certificate-recorder	name
ike> data-flow	name realm-id
ike> dpd-params	name
ike> ike-interface	Dpd-params-name
ike> ike-sainfo	name
ike> local-address-pool	name dns-realm- id Data-flow
ike> tunnel-orig-params	name
ims-aka-profile	name
media-media-sec-policy	name

Configuration Element or subelement	Parameter
media-mikey-policy	name
media-sdec-policy	name
public-key	name
tls-profile	name

## session-router

The following configuration elements and parameters are found under the session-router path.

Configuration Element or subelement	Parameter
access-control	realm-id
call-recording-server	primary-realm secondary-realm
class-profile	media-policy
class-profile> policy	profile-name
enforcement-profile	name
enum-config	name realm-id Service-type health-query-number failover-to
h248-config> h248-mgc-config	realm-id
h248-config> h248-mg-config	realm-id
h323> h32h-stack	name realm-id assoc-stack gk-identifier filename
local-routing-config	name file-name
media-profile	name subname
mgcp-config	private-realm public-realm
net-management-control	name next-hop rph-profile
qos-constraints	name
rph-policy	name
rph-profile	name Media-policy
session- constraints	name
session- router	sr-primary-name sr-secondary-name

Configuration Element or subelement	Parameter
session-agent	realmid egress-realm-id response-map local-response-map enforcement-profile sip-profile sip-isup-profile
session-group	group-name
sip-config	Home-realm-id egress-realm-id enforcement-profile
sip-interface	realm-id operator-identifier ext-policy-server constraint-name response-map local-response-map enforcement-profile sip-profile sip-isup-profile tunnel-name
sip-manipulations	name
sip-nat	Realm-id
sip-profile	name
sip-response-map	name
sup-isup-profile	name
surrogate-agent	realm-id

## system

The following configuration elements and parameters are found under the system path.

Configuration Element or subelement	Parameter
network-interface	name
phy-interface	name
redundancy> peer	name
snmp-user-entry	user-name

## Version S-D7.2.0 HDR Changes

There are no HDR changes in release Version S-D7.2.0.

## Version S-D7.2.0 VSA Changes

There are no RADIUS VSA changes in release Version S-D7.2.0.

## Version S-D7.2.0 Local CDR Changes

There are no Local CDR changes in release Version S-D7.2.0.

## Version S-D7.2.0 MIB Changes

The Net-Net OS Version S-D7.2.0 Release Notes provide the following information about the changes in MIBs between release D7.1.0 and release D7.2.0.

### SNMP Changes

This section summarizes the SNMP/MIB changes that appear in Net-Net OS Release D7.2.0.

Availability	Changes	MIB Details	Description
<b>S-D7.2.0</b>			
	Capability group in ap-codec.mib	apCodecTranscodingResourceMIBObject Includes: <ul style="list-style-type: none"><li>• apCodecTranscodingResourcesTotal</li><li>• apCodecTranscodingResourcesCurrent</li><li>• apCodecTranscodingResourcesHigh</li><li>• apCodecTranscodingInUsePercentCurrent</li><li>• apCodecTranscodingInUsePercentHigh</li></ul>	Transcoding current resources
	Table in ap-codec.mib	<ul style="list-style-type: none"><li>• apCodecPairTranscodingCurrent</li><li>• apCodecPairTranscodingHigh</li></ul>	Current, in use, transcoding pairs.
	Contained in apSecurityTaca csPlusStats Table	<ul style="list-style-type: none"><li>• apSecurityTacacsCliCommands</li><li>• apSecurityTacacsSuccessAuthentications</li><li>• apSecurityTacacsFailureAuthentications</li><li>• apSecurityTacacsSuccessAuthorizations</li><li>• apSecurityTacacsFailureAuthorizations</li></ul>	
	Contained in apAppsDnsServ erStatusTable	<ul style="list-style-type: none"><li>• apAppsDnsInterfaceName</li><li>• apAppsDnsServerinetAddressType</li><li>• apAppsDnsServerinetAddress</li><li>• apAppsDnsServerStatus</li></ul>	
	Entity MIB for 10Gig NIU	<ul style="list-style-type: none"><li>• apevPort10GFiber</li></ul>	

### Traps

The following traps are new in S-D7.2.0:

apSysMgmtTacacsDownTrap (See TACACs feature description)

apSysMgmtTacacsDownClearTrap

apSecurityTacacsFailureNotification

apSysMgmtExpDOSTrap (See DDoS Protection from Devices Behind a NAT feature description)

apAppsDnsServerStatusChangeTrap (see DNS server status feature)

## Transcoding Alarms

### DSP Boot Failure

An alarm is triggered if a DSP fails to boot during system initialization. This is a health affecting critical alarm (100% health score degrade) that cannot be cleared. This condition sends the **apSysMgmtHardwareErrorTrap**. For example:

ID	Task	Severity	First Occurred	Last Occurred
65584	527739792	3	2011-10-11 10:11:49	2011-10-11 10:11:49
Count	Descript ion			
1	DSP#0 Boot Failure!			

### DSP Communication Timeout

An alarm is triggered if a DSP fails to reply to the host processor within 2 seconds after 3 retries. This is a health affecting critical alarm (100% health score degrade) that cannot be cleared. This condition sends the **apSysMgmtHardwareErrorTrap**.

ID	Task	Severity	First Occurred	Last Occurred
65586	527739792	3	2011-10-11 10:11:49	2011-10-11 10:11:49
Count	Descript ion			
1	DSP Timeout on Device #0			

### DSP Alert

An alarm is triggered if a DSP sends an asynchronous alert to the host processor indicating a DSP core halt. This is a health affecting critical alarm (100% health score degrade) that cannot be cleared. This condition sends the **apSysMgmtHardwareErrorTrap**.

ID	Task	Severity	First Occurred	Last Occurred
65585	527739792	3	2011-10-11 10:11:49	2011-10-11 10:11:49
Count	Descript ion			
1	DSP Core Halt on Device #0!			

### Total Transcoding Capacity Threshold Alarm

An alarm is triggered if the transcoding utilization exceeds 95% of capacity. This is a non-health affecting warning level alarm. This condition sends the **apSysMgmtGroupTrap** with the MIB OID **apSysXCodeCapacity**. The alarm is cleared when the transcoding utilization falls below 80% of capacity and the **apSysMgmtGroupClearTrap** is sent.

ID	Task	Severity	First Occurred	Last Occurred
131158	527739792	6	2011-10-11 10:11:49	2011-10-11 10:11:49
Count	Descript ion			
1	Transcoding capacity at 96 (over threshold of 95)			

### Licensed AMR Transcoding Capacity Threshold Alarm

An alarm is triggered if the AMR transcoding utilization exceeds 95% of licensed capacity. This is a non-health affecting warning level alarm. This condition sends the **apSysMgmtGroupTrap** with the MIB OID **apSysXCodeAMRCapacity**. The alarm is cleared when the AMR transcoding utilization falls below 80% of licensed capacity and the **apSysMgmtGroupClearTrap** is sent.

ID	Task	Severity	First Occurred	Last Occurred
131159	527739792	6	2011-10-11 10:11:49	2011-10-11 10:11:49
Count	Descript ion			
1	AMR Transcoding capacity at 97 (over threshold of 95)			

## Licensed AMR-WB Transcoding Capacity Threshold Alarm

An alarm is triggered if the AMR-WB transcoding utilization exceeds 95% of licensed capacity. This is a non-health affecting warning level alarm. This condition sends the `apSysMgmtGroupTrap` with the MIB OID `apSysXCodeAMRWBCapacity`. The alarm is cleared when the AMR-WB transcoding utilization falls below 80% of licensed capacity and the `apSysMgmtGroupClearTrap` is sent.

ID	Task	Severity	First Occurred	Last Occurred	
131160	527739792	6	2011-10-11 10:11:49	2011-10-11 10:11:49	
Count	Description				
1	AMR-WB Transcoding capacity at 100 (over threshold of 95)				

## Known Issues

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### Transcoding

A TCU switchover may occur due to TXserv process crash during fax transcoded call scenarios.

### Online Upgrades

Online upgrades to S-D7.2.0 are unsupported. Offline upgrades to S-D7.2.0 remain supported.

## Documentation Updates

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The contents of the Version S-D7.2.0 documentation set remains the same as in the previous release; it is comprised the following:

Document Number	Document Name	Description
400-0073-20	Net-Net 9200 Hardware Guide 2.0	Describes the hardware components of the Net-Net 9200, and provides removal and replacement procedures
400-0074-72	Net-Net 9000 S-D7.2.0 ACL Configuration Guide	Provides explanations of features and functions, and provides instructions for configuring your Net-Net 9000 using the Acme Packet command-line interface
400-0076-72	Net-Net 9000 S-D7.2.0 ACL Reference Guide	Provides detailed alphabetical descriptions of the commands and configurations available on the Net-Net 9000
400-0077-72	Net-Net 9000 S-D7.2.0 MIB Reference Guide	Provides information about the Net-Net 9000's MIB, trap, and alarm support <ul style="list-style-type: none"><li>Includes ZIP file of current MIBs</li></ul>
400-0078-72	Net-Net 9000 S-D7.2.0 Accounting Reference Guide	Provides information about the Net-Net 9000's RADIUS support, including Acme Packet VSAs

Document Number	Document Name	Description
400-0079-72	Net-Net 9000 S-D7.2.0 Maintenance and Troubleshooting Guide	Provides information about viewing and interpreting Net-Net 9000 statistics, as well as other system maintenance information
400-0080-72	Net-Net 9000 S-D7.2.0 Release Notes	Provides an overview of the Net-Net 9000 OS Release S-D7.1.0 ; includes caveats and limitations, and known issues with workarounds

The Net-Net 9200 Hardware Installation Guide document remains unchanged at revision 2.0.



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