

2277: Troubleshooting NetWare on ProLiant Servers

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AGENDA

- Installation
- Optimization
- Support Tools
- Known Issues
- Nakoma

INSTALLATION PREREQUISITES



- CHECK LATEST HP OS SUPPORT MATRIX!!
- <ftp://ftp.compaq.com/pub/products/servers/os-support-matrix-310.pdf>
- Check Latest EBS Support Matrix
- <http://h18007.www1.hp.com/products/storageworks/ebs/EBScompatmatrix.html>

INSTALLATION PREREQUISITES (continued)



- FLASH ALL ROMS to LATEST REVISIONS!!

- <http://www.hp.com> → Support and Drivers → Compaq Driver Downloads

- This includes:
 - System ROM
 - Array Controller ROMS
 - Remote Insight Board Controller ROMs
 - NIC's
 - Storage Controllers

WHY FLASH?

- Option ROM Configuration for Arrays may be supported but NOT enabled
- Unable to set name for storage to support clustering
- Bug Fixes
 - <http://thenew.hp.com/country/us/eng/support.html>
 - is your BEST FRIEND!!

ROM Based Setup Utility (RBSU)



- ROM-Embedded
- User Friendly
- Select via F9
- "Silent" Conflict Resolution
- Virtual Install with RIB
- CAUTION: Re-flashing a server configured with SCU with a RBSU-ROM image may result in potential loss of data, system lockup, and other unpredictable results.

Local Cursor **OFF**

Right mouse drag whenever necessary to align the local and remote cursors.

Refresh Ctrl-Alt-Del Alt Lock Character Set 437: US

ROM-Based Setup Utility, Version 2.00
Copyright 2001, COMPAQ Computer Corporation

- System Options
- PC
- St OS Selection
- Bo S
- Da E Windows NT 4.0
- Au I Windows 2000/Windows .NET
- Se N Linux
- Se E UnixWare 7/OpenUNIX 8
- Ad E OpenServer 5
- Ut D Solaris
- D NetWare 5.x/6
- NetWare 4.2 SMP
- NetWare 4.2 non-SMP
- OS/2
- OS/2 SMP
- Other OS

Compaq ProLiant DL380 G2
S/N: 0116FRW10030

Compaq BIOS P24 12/11/2001
Backup Version 12/11/2001

256MB Memory Installed
Standard ECC Support

Proc 1: Intel 1.133GHz, 512KB Cache
Proc 2: Not Installed

MAC address for NIC 1: 00508B75E867
MAC address for NIC 2: 00508B75E866

<^/v> Changes Configuration Selection
<Enter> Saves Selection; <ESC> to Cancel

Online

Option ROM Configuration for Arrays (ORCA)



- Requires no bootable media for basic configuration
 - Built into ROM
 - SmartStart setup NOT required
 - Designed for Quick Setup of hard disk partition
 - Online spare configuration
 - No scripting support
 - Limited in functionality
 - Utilizing for large drive configuration such as a SAN is not recommended
- FLASH ROM to ensure ORCA enabled!!

Local cursor **OFF**

Right mouse drag whenever necessary to align the local and remote cursors

Refresh

Ctrl-Alt-Del

Alt Lock

Character Set

437: US

Option Rom Configuration for Arrays, version 1.54
Copyright 2000, COMPAQ Computer Corporation

Controller: Compaq Smart Array 5i, slot 0

Logical Drive # 1, RAID 0, 4.0GB, Status OK

-----Assigned Physical Drives-----
SCSI Port # 2, ID 1, COMPAQ 4.3GB Drive OK

-----Assigned Spare Drives-----
No Drives Present

View Logical Drive
<^/v> to scroll; <ESC> to return; <Tab> to navigate

Online

Option ROM Configuration for Array VS Array Configuration Utility XE



■ Option ROM Configuration for Arrays (ORCA)

- Designed for QUICK Setup of a Server
- One logical drive per array
- Cannot change controller cache or priority settings
- Cannot enable or disable logical drive cache
- Cannot perform expansion, migrations or extensions
- Does NOT require SmartStart CD

■ Array Configuration Utility (ACU)

- Designed for large storage subsystems
- Multiple logical drives per array
- Can adjust controller cache and priority settings
- Can enable and disable logical drive cache
- Can perform expansion, migrations and extensions
- Requires SmartStart CD

ORCA Support Matrix

- Integrated Smart Array (limited functionality)
- Smart Array 431 (limited functionality)
- LC2
- Smart Array 5300
- Smart Array 532
- Smart Array 5i
- Smart Array 5312
- And all Smart Array 6* controllers

Installation - Legacy (Retired) Servers

- Utilizes SmartStart 5.5 or earlier ONLY
 - Creates System Partition
 - System Configure from utilities copied to newly created system partition
- Install via SmartStart Boot
- Have OS, License, Server Profile diskette, Latest PSP
- Reboot, Reboot, Reboot

Installation Suggestions

- Ensure configure for NetWare OS (default W2K)
- May want to ensure SYSVOL on local disk
- Utilize Novell Knowledgebase to create Bootable OS CD to include current support Pack
 - 5.1 SP6 and 6.0 SP3
 - Requires 700mb CD
 - NWCONFIG B=SYS:\SYSTEM\PUPDATE.IPS to update Installed Products List
- Apply latest PSP via CPQDPLOY
 - CPQSmStxxx\CPQSupSW\NWCSP\CPQDploy

NetWare 6 Cluster Install & Config Overview



- Install Server O/S via latest SmartStart/RBSU
- Configure servers with external storage turned OFF!!
 - CPQFC.HAM for RA4100
 - QL2300.HAM for MSA1000
 - NOT on base media for NetWare 6!
 - Utilize Assisted Smart Start or RBSU to ensure that driver is available
 - <http://h18006.www1.hp.com/products/storageworks/software/drivers/fca2210/index.html>

NetWare 6 Cluster Install & Config Overview



- Once OS installed
 - 1) Power down servers
 - 2) Power on storage
 - 3) Power on servers
- Configure FC-AL Switches, Fibre Channel Hubs or SAN switches
 - LIST DEVICES at Server to ENSURE Servers recognize external storage
- Configure Storage Subsystem
 - RA4100 – CPQONLIN from NetWare console
 - MSA1000 ACU XE
 - Cold boot Server with CD that comes with the MSA
 - More info at TUT191 “Technical Explanation of the HP StorageWorks Modular SAN Array 1000 “

SCSI Cluster Configuration Notes

- Power off all storage subsystems to ensure SYSVOL on LOCAL disk.
- If CR3500 controller (SCSI cluster)
 - Ensure SCSI ID's for 3500 6 on Node 1 and 7 on Node 2!
 - F10 to Save!
 - Save profile to Diskette!
 - Ensure matching firmware if using two controllers

Cluster Notes

- SecurePath
 - Not Novell's MPIO – their native redundant pathing
- List devices from each node to ensure recognize storage subsystems
- Name storage subsystem - CPQONLIN only
- Caveats i.e. MSA1000 not configurable with CPQONLIN.NLM
- To configure external storage use offline utility same as MS and LINUX which utilize ACU
- ORCA will only do one logical drive per array
- ACU will allow more than one logical drive per array

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General Tuning

- **AppNote for Tuning NetWare 4.x-5.1**
- <http://developer.novell.com/research/appnotes/2001/december/01/a0112014.htm>
- **General Performance, Tuning and Optimization - TID10012765**
- http://www.novell.com/documentation/lg/nw6p/smem_enu/data/h9kdb57n.html
- **Tuning the web server:**
<http://www.novell.com/documentation/lg/nw6p/adminenu/data/a2fet23.html>

TCP/IP Tuning

- **Tuning the NetWare 6 TCP/IP Stack via SET Parameters**
- <http://developer.novell.com/research/appnotes/2002/july/02/a020702.doc>
- **NetWare TCPIP Performance Troubleshooting and Tuning Guide - TID10018661**
- **Troubleshooting TCPIP Hangs - TID10018663**

NSS Tuning Considerations

- Ensure latest version of NSS for your OS!!
- LOTS of RAM!
- Do not split resources between two file systems
- See Novell Appnotes July 2002
- “Novell Storage Services (NSS) Performance Monitoring and Tuning” by Matthew Culver

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Novell Tools

- Config.nlm
- Console.log
- Sys\$Log.err
- Health.log
- Abend.novell.com
- NetWare Remote Manager V6
- iMonitor
- <http://www.novell.com/cool solutions/collector/productupdates.html>

Config.nlm

- Get Latest! FCONFIG3.exe
- Load CONFIG /ALL
- Dated: 2/26/03
- Read with new time bombed config reader from
- <http://analyzer.npsh.hu>

DEMO

Log Files

- Console.log
 - From Sys:etc
 - Unload Conlog
 - Shows drivers loading
- SYS\$LOG.ERR
 - From sys:system
 - Historical
- Abend.log
 - Sys:system
- Health.log
 - Sys:system
 - Undocumented F2 from Console Logger Screen on NW6



Abend Analysis System: Premium Access

The ABEND.LOG database returns known solutions for a complete ABEND.LOG.

- The ABEND.LOG is in SYS:SYSTEM or where SERVER.EXE resides.
- NetWare 3.x and 4.10 do not have ABEND.LOG files.
- Only submit a complete ABEND.LOG.
- CONFIG.TXT (from CONFIG.NLM) is not a complete ABEND.LOG.
- Do not modify the ABEND.LOG.

Email* (solutions will be sent to this address)

Novell Technical Support Incident #

ABEND.LOG* (only the last valid abend will be analyzed)

Browse...

* Required

analyze abend

→ what defines a leader today?

promotions

NetWare 6, Portal and NetDevice NAS Promotion

20% Off -- CNA Self-Study Kit for NetWare 5.1 Administration (560 v 2.0, Self-Study Kit)

news & events

6 Dec 2001 AltaVista Search in Novell Portal Services Now Available

29 Nov 2001 New ZENworks Mobile/Wireless Device Management via Callisto Acquisition

June 4 - July 3 Novell Mobile Productivity Seminar

No Abend.log?

- Check the Automatic Server Recovery (ASR) setting in System Configuration
 - Default is to reboot server in 10 minutes
- If memory dump is large, may time out during and server reboot.
- May want to disable ASR while troubleshooting

NOVELL: Cool Solutions: New Product Updates - Microsoft Internet Explorer provided by Compaq Computer Corporation

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Mail Print Refresh Stop Home

Address <http://www.novell.com/cool solutions/collector/productupdates.html> Go Links

Google Search Web Search Site News New! PageRank Page Info Up

Y! Search Sign In My Yahoo! News NCAA Hoops Yahoo!

My Search Google AltaVista Ask Jeeves AlltheWeb LookSmart More

- fresh squeezed ▶
- unabridged ▶
- get involved ▶
- cool solutions to go ▶
- other cools ▶

> cool solutions home [XML](#)

New Product Updates (patches and files)

Here's where we keep track of the files that keep the show on the road between product releases. Some of the files add specific functionality to a product, some improve performance, and some (heaven forbid) fix problems.

[▶ the unabridged collection](#)

filefinder

[▶ the newest 100](#)

27 Mar 2003

Beta: ZfD4 Patches

ZfD4Patch4a.exe contains a complete ZfD4 Agent MSI that has all of the updated files that were included in prior ZfD4 Patches. See the "Issue" section of this patch for the list of issues fixed since the last patch.

27 Mar 2003

Beta: Supplemental ZfD4 Agent Patch Fix

Contains a ZENworks Application Launcher AOT file that removes the Product Code of the ZENworks for Desktops 4 Agent that was installed by the setup.exe from the shipping ZENworks for Desktops 4 product.

27 Mar 2003

Beta: eDirectory 8.6.2 SP3b for NWNT Platforms

This patch contains Novell eDirectory 8.6.2 Support Pack 3b for NetWare and NT platforms.

HP Tools

- ProLiant Essentials including SmartStart Utilities
 - <http://h18000.www1.hp.com/products/servers/SmartStart/Drivers>
- Drivers and Firmware Updates
 - <http://h18023.www1.hp.com/support/files/server/us/index.html>
- White Papers
- Remote Insight Lights Out Edition (RILOE)
- Survey
 - `Survey.nlm -FE - sys:system\survey.txt`
- Insight Manager
- eDirectory Collection Agent
- PCN – Product Change Notification

ProLiant Essentials Foundation Pack



- ProLiant Support Pack
- Insight Manager 7 SP2 (IM7)
- SmartStart 6.4 RELEASED!
- ActiveUpdate

ProLiant Essentials Insight Management Agents



- Provides notification of hardware failures
- Install from ProLiant Essentials Software Management CD
- Ensure SNMP And Community string set
 - Default is “public” lowercase
 - Can configure in INETCFG
- Modify which agents load in CPQAGIN

ProLiant System Management Agents



- CPQHTHSA – Health Agent
- CPQTHRSA – Threshold Agent
- CHQRISA – Remote Insight Agent
- CPQIDESA – IDE Agent
- CPQDASA – Device Array Agent
- CPQSCSA – SCSI Agent
- CPQFCASA – Fibre Channel Agent
- CPQWEBAG – Web Agent

SmartStart 5.5 Utilities

- System Configuration Utility
- Array Configuration Utility
- Update System Partition
- System Erase
- Create Support Software
- ROMPAQ
- Array Diagnostics Utility
- Fibre Channel Diagnostics
- Fibre Fault Interconnect Utility

SmartStart System Maintenance Utilities V6.X



- Array Configuration
- Server Diagnostics Utility
- ROM update Utility
- Erase Utility



software and drivers

Support

- software & drivers
- ask Compaq
- reference library
- forums & communities
- support tools
- warranty information
- contact support
- parts
- give us Feedback

- SmartStart Information
- let ActiveUpdate deliver the latest software to you
- use Product Change

Server products

use one of the options below to find software and drivers:

option 1: locate by product

select the product, model/processor, and operating system

product

ProLiant DL580

model or processor

G2 (1400MHz+)

operating system

Novell NetWare 6.0

[locate software >>](#)

option 2: locate by category

select the operating system and software category

operating system

White Papers Available at HP Website



- Compaq Factory-Installed operating System Software for Novell NetWare 6 User Guide
 - Document # 279955-001
- Upgrading to Novell NetWare 6 on Compaq ProLiant Servers
 - Document # 15YB-1201A-WWEN
- Compaq ProLiant Cluster for NetWare 6 with the MA8000/EMA12000 Storage Subsystem Installation Overview
 - Document # 252350-001
- Compaq ProLiant Cluster for NetWare 6 with the RA4100 Storage Subsystem User Guide
 - Document # 252351-001

Storage White Papers

- MSA1000 Storage whitepapers, User and Installation Guides:

<http://h18006.www1.hp.com/products/storageworks/msa1000/documentation.html>

- MA8000/EMA12000 FC Enterprise Storage RAID Array for Novell NetWare Quick Setup Guide

<ftp://ftp.compaq.com/pub/products/storageworks/techdoc/raidstorage/AA-RFB7B-TE.pdf>

Additional Links

- NetWare Factory Installation Guides

ftp://ftp.compaq.com/pub/supportinformation/techpubs/installation_guides/279955-003_rev4_us.pdf

- MSA1000 Software download for ACU XE

<http://h18006.www1.hp.com/products/storageworks/softwaredrivers/msa1000/index.html>

eDirectory Asset Collection Agent



- NDS Agent for instrumentation of ProLiant hardware information in the directory.
- ConsoleOne snap-in to view and manage hardware data
- Browser links to Remote Insight Board, Compaq Insight Server Agents and Compaq Insight Manager XE
- Now in release. Download at <http://h18004.www1.hp.com/products/servers/management/integration.html>

eDirectory Asset Collection Agent



- Gathers Hardware Data
 - Via SNMP
- Extends The Directory Schema
 - Uses Auxiliary Classes
 - Extend NCP Server Object
 - Writes HW Info To The Newly Added Attributes
- ConsoleOne PageSnapin for Viewing
 - Property Pages of NCP Server Object
- NetWare only
 - cpqdslib.nlm
 - cpqds.nlm
- Runs once

Server Name:	<input type="text" value="NWCLUS2"/>
Product:	<input type="text" value="ProLiant DL580"/>
Serial Number:	<input type="text" value="D043DYT1K627"/>
Asset Tag:	<input type="text" value="N/A"/>
Compaq Management Agents:	<input type="text" value="7.64.7.64:2301"/> 
Compaq Insight Manager XE:	<input type="text"/> 

- Identification
- Health
 - System
 - Devices
 - Remote Ins
 - Network
 - Storage

Pager Message Buffer:
 Pager Number Buffer:
 Pager Status:
 Pager Reboot:
 Timeout:

Supplies:

Supply	Present	Redundant	Condition	HotPlug
	Other	Other	Other	Other
	Present	Redundant	OK	Hot Plugga...
	Present	Redundant	OK	Hot Plugga...

Supply	Present	Speed	Redundant	Condition
	PRESENT	Normal	Redundant	OK
	PRESENT	Normal	Redundant	OK
	PRESENT	Normal	Redundant	OK
	PRESENT	Normal	Redundant	OK

Identification

Health

System

Devices

Remote Insight

Network

Storage

Family: Family 386P20
Date: 09/27/2000
Revision: Type 03

Processors:

Index	Name	Speed	Step
	Pentium III Xeon	700	161

Modules:

Slot	Type	Speed	Size
	dimmm	10ns	131072

Memory: 524032 MB

- Identification
- Health
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- Devices
- Remote Insight
- Network
- Storage

Display Adapter:

Floppy:

Keyboard:

Parallel Ports:

Serial Ports:

- IDE Devices
 - Primary
 - Secondary

- Identification
- Health
- System
- Device
- Remote In
- Network
- Storage

Address:

Net Mask:

Broadcast Address:

- Identificati
- Health
- System
- Devices
- Remote Ins
- Network
- Storage

Array Controllers

-  Compaq Integrated Smart Array Controller
 -  Physical Drives
 - COMPAQ BD0186349B, 17361 MB
 -  Logical Drives
 - 17359 MB, No Fault Tolerance
-  Compaq Storage Works RAID Array 4000 Controller
 -  Physical Drives
 - COMPAQ BD0186349B, 17365 MB
 - COMPAQ BD0186349B, 17365 MB
 -  Logical Drives
 - 19 MB, Distributed Data Guard
 - 19 MB, Distributed Data Guard
 - 1023 MB, Distributed Data Guard
 - 1023 MB, Distributed Data Guard
 - 1023 MB, Distributed Data Guard
 - 1020 MB, Distributed Data Guard

Identification

Health

System

Devices

Remote Insight

Network

Storage



Product Change Notification

- [Support](#)
- [Drivers & drivers](#)
- [Compaq](#)
- [Resource library](#)
- [News & communities](#)
- [Support tools](#)
- [Warranty information](#)
- [Contact support](#)
- [Customer Feedback](#)

Keeping up with the pace of change

- Compaq offers its Product Change Notification program to notify you 30-60 days in advance of upcoming critical changes that may impact your computing environment.
- With PCN, you can plan to integrate software and hardware changes and spend less time and money reacting to unexpected change.
- Through proactive notification, PCN reduces your Customer Service Time/Dollars by assisting in the software update planning process.
- PCN helps you manage change and increase end user satisfaction!

» [Subscribe to Product Change Notification and start receiving information now!](#)

Objectives of Change Notification:

- To allow changes while, at the same time, maintain or improve service stability and availability throughout the product life cycle.
- To allow for planning of periodic software upgrades of deployed servers.
- To reduce or minimize the ratio of changes that need to be backed out of due to inadequate preparation.
- To ensure that all parties affected are informed of planned changes.

Start Information
Compaq Active Update
for the latest software
Product Change
Notification to view



customer advisory

- support
- products & drivers
- reference library
- forums & communities
- tools
- contact information
- contact support
- feedback

and support for your product



DOCUMENT NUMBER: EX020125_CW01 **REVISION:** 0

FIRMWARE UPGRADE RECOMMENDED: Operating System May Fail To Load If A Power Event Occurs During A RAID Level Or Stripe Size Migration On A Smart Array 5i Or Smart Array 532 Controller

RELEASE DATE: January 2003

DESCRIPTION

If a power event (loss of power, power cycle, reboot, etc.) occurs during a RAID level or stripe size migration on a ProLiant server configured with a Smart Array 5i Controller or Smart Array 532 Controller with firmware version 1.74 (or earlier), the operating system may fail to load when power is restored. After the Power-On Self-Test (POST) completes, the following message is displayed:

1768 Slot x drive array - resuming logical drive expansion process

SCOPE

Any ProLiant server configured with a Smart Array 5i Controller or Smart Array 532 Controller with firmware version 1.74 (or earlier).

RESOLUTION

The problem is corrected by upgrading to Smart Array 5i Controller and Smart Array 532 Controller Firmware Version 1.80 (or later), which is downloadable as follows:

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- *Known Issues*
- NAKOMA

Always Check for Latest Updates



- Novell Updates:
 - <http://www.novell.com/coolsolutions/collector/productupdates.html>
 - Novell minimum patch list
 - <http://support.novell.com/produpdate/patchlist.html>

- HP Updates:
 - Obtain from: <http://www.hp.com>
 - ProLiant Support Pack for Novell NetWare v6.30

NetWare Peripheral Architecture (NWPA)



- Latest version NW6 now 3.12 (NW6 6/20/2002)
- Latest version NW5.1 sp5 3.09
- NWPA autoloads NWTAPE
 - Fix – rename c:\nwserver\nwtape.cdm
 - HP Customer Advisory EN010406_CW01
 - Can cause performance issues with DLT drives.

NWPA Driver Notes

- SCSIHD.CDM
 - Do not use for HP Compaq controllers and hard drives, rename or delete
- SCSICD.CDM
 - Only used on older servers that does not have IDE CD-ROM drives
- SCSI2TP.CDM, NWTAPE.CDM, DLTTAPE.CDM, and EXATAPE.CDM
 - Do not use if ArcServe or Backup Exec is used for backup
- NWASPI.cdm
 - Not needed if SBackup or SBCon is used for backups
- CANWPA.CDM for ArcServe (from CA)

NIC Teaming for N100

- Utilize ALB for a bigger bandwidth with the capability of failover
- FEC - Fast Ethernet Channel dependent on Cisco Switch
- NFT Network Fault Tolerance
-
- `LOAD CPQANS NAME=ETH_II FRAME=ETHERNET_II MODE=ALB (or FEC or NFT)`
`LOAD CPQANS NAME=ETH_802 FRAME=ETHERNET_802.2 MODE=ALB`
`LOAD N100 SLOT=501 SPEED=100 FORCEDUPLEX=2 FRAME=ETHERNET_II`
`NAME=PRIMARY_N100_1_II PRIMARY`
`LOAD N100 SLOT=501 SPEED=100 FORCEDUPLEX=2`
`FRAME=ETHERNET_802.2 NAME=PRIMARY_N100_802 PRIMARY`
`LOAD N100 SLOT=502 SPEED=100 FORCEDUPLEX=2 FRAME=ETHERNET_II`
`NAME=SEC_N100_II`
`LOAD N100 SLOT=502 SPEED=100 FORCEDUPLEX=2`
`FRAME=ETHERNET_802.2 NAME=SEC_N100_802`
`BIND CPQANS PRIMARY_N100_1_II PRIMARY`
`BIND CPQANS PRIMARY_N100_802 PRIMARY`
`BIND CPQANS SEC_N100_II`
`BIND CPQANS SEC_N100_802`
`LOAD CPQANS COMMIT`
`BIND IPX ETH_802 NET=DEAD2`
`BIND IP ETH_II address=207.94.11.188 mask=255.255.255.0`

NIC Teaming with NC77xx/NC67xx

- LOAD ODINEB.NLM LOAD QASP FRAME=ETHERNET_II
NAME=QASP_1_EII VSLOT=1 LOAD QASP
FRAME=ETHERNET_802.3 NAME=QASP_1_E83 VSLOT=1
LOAD Q57 FRAME=ETHERNET_II NAME=Q57_1_EII
SLOT=10016 Speed=100FD LOAD Q57
FRAME=ETHERNET_802.3 NAME=Q57_1_E83 SLOT=10016
Speed=100FD LOAD Q57 FRAME=ETHERNET_II
NAME=Q57_2_EII SLOT=10017 Speed=100FD LOAD Q57
FRAME=ETHERNET_802.3 NAME=Q57_2_E83 SLOT=10017
Speed=100FD QASP BIND QASP_1_EII Q57_1_EII QASP BIND
QASP_1_EII Q57_2_EII BIND IP QASP_1_EII
ADDR=xxx.xxx.xx.xx MASK=255.255.255.0 BIND IPX
QASP_1_E83 NET=A081xxxx

Link to QASP and CPQANS Docs



<http://h18007.www1.hp.com/support/files/server/us/download/17169.html>

- Note with teaming INETCFG not used as unable to add the teaming statements. Configure in Autoexec.ncf

Q57 Communications Issue

- Communications And DHCP Addressing Failures After Applying NetWare 5.1 SP5 Or NetWare 6.0 SP2 If Running Q57.LAN Version 2.34
- Customer Advisory **EN021219_CW01**
- Update to Q57.LAN v2.38

<http://h18007.www1.hp.com/support/files/server/us/download/17267.html>

Known Issues

- Customer Advisory - EN030203_CW02
- No Initial NetWare Support For StorageWorks 64-Bit/133-MHz Dual Channel Ultra320 SCSI Adapter
- Check latest OS and Storage support Matrix!

- Qlogic Driver QLCSFTE.CDM Erroneously loads on Some ProLiant Servers NW6 Install
 - QLogic SCSI Access Fault-Tolerant Enclosure (SAF-TE)
 - Delete during text portion of setup

Do Not Select a DOS Partition over 1400 MB Using SmartStart 6.00-6.30



- Customer Advisory Number: EN030609_CW01
 - Description: When Using SmartStart 6.00, 6.10, 6.20 or 6.30 to install NetWare 5.1 or NetWare 6 on a ProLiant Server, creating a DOS partition that exceeds 1400 MB will result in File Allocation Table (FAT) integrity issues that could eventually lead to some of the system files in the DOS partition to be overwritten, preventing the server from booting to the DOS partition.
 - Fix: Install NetWare using SmartStart, create a DOS partition less than 1400 MB or install NetWare using the Novell media if a large DOS partition must be created.
- This issue is fixed in SmartStart 6.40

Intermittent Failure Connecting to Novell eDirectory through RILOE/RILOE II or iLO



- Customer Advisory Number: EN030523_CW01
 - Description: While attempting a login from a workstation to Novell eDirectory through iLO, RILOE or RILOE II, the Secure Sockets Layer (SSL) authentication may fail resulting in the following error message: “Directory Server Connect Failed”.
 - Fix:
 - Make sure you are running the latest firmware for your Remote Insight Board
 - eDirectory 8.7 and ConsoleOne 1.3.4 perform the following:
 - Connect to the eDirectory Tree
 - Locate the NDSPKI: Key Material object (SSL Object) specified in the LDAP Server object that corresponds to the eDirectory server object which is refusing connections
 - On the property pages of the objects, choose the “Validate Certificate” option. The tool should report a valid certificate.

Survey Utility May Not Read Information from Hard Drives Installed in some storage enclosures 4200/4300 Drive Bays



- Customer Advisory Number: ES010906_CW02
 - Description: When a StorageWorks 4200/4300 is connected to a Smart Array Controller, the Survey Utility Report does not show the hard drives installed in drive bays 7 through 14 under the “Physical Devices Attached” section of the report. This does not occur when attached to an embedded SCSI controller.
 - Fix: Use the Array Diagnostic Utility (ADU) to view drive information

Dropped IP Traffic Under NetWare when both IP and IPX Protocols are bound to N100.LAN Version 7.03



- Customer Advisory Number: EN030509_CW01
 - Description: When using a workstation that is running Microsoft Windows to copy files to a ProLiant server that is configured with NC31xx-series NICs and running NetWare 5.1 or NetWare 6.0 with N100.LAN Version 7.03 (02/20/2003), IP traffic will be dropped and the copy operation will fail if N100.LAN is loaded with all frame types and bound to BOTH the IP and IPX protocols.
 - Fix: To prevent this problem from occurring, disable the RxChecksum parameter in the N100.LAN load statement by performing either of the following workarounds:
 - If the N100.LAN load statement is executed manually at the NetWare Console or by AUTOEXEC.NCF, disable the RxChecksum parameter as in the following example:
 - *LOAD N100 SPURIOUS=1 RxChecksum=0
FRAME=Ethernet_II NAME=n100_1_EII SLOT= 1*
 - If the N100.LAN load statement is configured using NWCONFIG.NLM, enter "0" for the RxChecksum parameter

Problems Using The NC67xx/NC77xx Gigabit Ethernet NIC Teaming Driver (QASP.LAN) Version 2.10 Or Version 2.19 Under NetWare 5.1 Or NetWare 6.0



- Customer Advisory Number: EN030516_CW01
 - Description: A ProLiant Server that is running NetWare 5.1 or NetWare 6.0 with the NC67xx/NC77xx Gigabit Ethernet NIC Teaming Driver (QASP.LAN) version 2.10 or Version 2.19 may encounter one of the following:
 - NetWare may ABEND when the Transmit Failed/Carrier Sense Missing Counter is not passed correctly
 - Incorrect MAC addresses may be displayed on the NetWare console even after a force of the MAC address
 - The server may advertise the team to the rest of the network under IP using the IP address of the primary NIC instead of the NIC team MAC address
 - Fix: Configure NIC teaming using the native NetWare NIC teaming capability rather than QASP.LAN.

Certain NetWare 5.1 and NetWare 6.0 Support Packs Install CPQACPI.PSM Incorrectly



- Customer Advisory Number: EN030430_CW02
 - Description: After installing NetWare 5.1 SP 6 or NetWare 6 SP3 (both upgrade and overlay CD's) on a multi-processor ProLiant Server, multiple processors will not be utilized on NetWare.
 - Fix: To correct this problem after the NetWare Support Pack has been installed, apply the latest ProLiant Support Pack (PSP). The PSP will install files in the correct locations and will update drivers and agents. The latest PSPs are available from the SmartStart CD and the following URL:

<http://h18007.www1.hp.com/support/files/server/us/index.html>

NetWare NIC Teaming Driver CPQANS.LAN will not load after applying NetWare 6 SP3



- Customer Advisory Number: EN030430_CW01
 - Description: when installing the Advanced Network Services System Console Driver (CPQANS.LAN) for NIC teaming using the NetWare 6 Support Pack 3 on a ProLiant Server that is configured with NC31xx/NC61xx/NC71xx Series Adapters, the following message will be displayed

CPQANS 3.24.0 – Fatal – Base driver’s configuration table version is not 1.14
 - Fix: Use the earlier versions of ETHERTSM.NLM (version 3.88) and MSM.NLM (version 4.09) that are available in NetWare 6.0 Support Pack 2

Instructions For NetWare NIC Teaming (Using QASP.LAN) For NC77XX-Series NICs Are Not Correctly Linked On The Network Communications Drivers Ethernet CD



- Customer Advisory Number: EN030414_CW01
 - Description: The instructions for NIC Teaming of NC77XX-Series Adapters under NetWare, which are located on the Network Communications Drivers Ethernet (NCDE) Version 7.2 CD, erroneously link to information for NIC Teaming under Microsoft Windows 2000 Server and Microsoft Windows Server 2003.
 - Fix: Use the instructions on NIC Teaming under NetWare that are located in the base driver documentation file Q57NWARE.HTM under the heading "Installing Advanced Server Program (ASP)."

Higher Than Usual CPU Utilization Under NetWare 6.0 On ProLiant Servers Based On Intel Pentium 4 Or Intel Pentium Xeon Processors And Running CPQACPI Version 1.04



■ Customer Advisory Number: EN030130_CW01

- Description: CPU utilization may be 10 to 20 percent higher than average on a ProLiant server that is based on the Intel Pentium 4 or Intel Pentium Xeon processor and running NetWare 6.0 and the Advanced Configuration and Power Interface Platform Support Module for NetWare (CPQACPI.PSM) Version 1.04. This issue is more likely to occur on a multi-processor server in which one of the processors has a light workload.

There is no degradation of performance because the process responsible for the higher utilization has a low priority and will yield control of the processor to processes having a higher priority.

- Fix: To allow normal CPU utilization on a ProLiant server that is based on the Intel Pentium 4 or Intel Pentium Xeon processor and running NetWare 6.0 and the Advanced Configuration and Power Interface Platform Support Module for NetWare (CPQACPI.PSM), upgrade to CPQACPI.PSM Version 1.05 (or later), which is included in SmartStart Release 6.30 and the ProLiant Support Pack (PSP) for Novell NetWare Version 6.30. Version 6.30 (or later) of the PSP is available at the following URL:

<http://h18007.www1.hp.com/support/files/server/us/locate/5257.html>

Power Button Unresponsive On ProLiant ML530 G2 And ProLiant DL580 G2 Servers Running NetWare 6 And CPQACPI.PSM 1.00 Or 1.01 After NetWare Shutdown



- Customer Advisory Number: EN020612_CW01
- Description: A ProLiant ML530 G2 or DL580 G2 server that is running NetWare 6 and the Advanced Configuration and Power Interface Platform Support Module (CPQACPI.PSM) versions 1.00 or 1.01 may not respond when the power button is pressed after a NetWare shutdown.
- Fix: To correct this problem, upgrade the CPQACPI.PSM driver to version 1.02 (or later) by downloading the hp ProLiant ACPI Platform Support Module for NetWare v 6.x.
- The hp ProLiant ACPI Platform Support Module for NetWare v 6.x Version 1.04 is available for download as CP002618.NLM at the following URL:
- <http://h18007.www1.hp.com/support/files/server/us/download/15731.html>

NetWare 5.1 Service Pack 6 (Included In The Novell Consolidated Support Pack 9) Contains An Unsupported Version Of CPQARRAY.HAM



- Customer Advisory Number: EN030429_CW01
 - Description: The Novell Consolidated Support Pack 9 (CSP 9), which includes NetWare 5.1 Support Pack 6 (SP 6), erroneously installs version 2.16 of the 32-Bit Array Controller Driver for Novell NetWare (CPQARRAY.HAM). CPQARRAY.HAM Version 2.16 may appear to run normally on the server, but it was not designed for (or tested with) NetWare 5.1 and should not be used in this configuration.
 - **Note:** CPQARRAY.HAM Version 2.09 is the correct version to be used with NetWare 5.1.
 - Fix: To avoid installing version 2.16 of the 32-Bit Array Controller Driver for Novell NetWare (CPQARRAY.HAM) during the installation of CSP 9, select to NOT update the hardware device drivers.
 - If version 2.16 of the 32-Bit Array Controller Driver for Novell NetWare (CPQARRAY.HAM) has already been installed during the installation of CSP 9, perform the following to install CPQARRAY.HAM Version 2.09 instead:
 - Install the ProLiant Support Pack Version 6.30 (or later), using the following selections:
 - Deselect all drivers from the drivers list and then select ONLY the "Compaq Drive Array Driver for Novell NetWare" (CPQARRAY.HAM).
 - Set "Force Installation: Yes" for this driver.
 - Refer to the help line at the bottom of the screen for making these selections.
- Restart the server.

Reasons to ensure ROMS Flashed to Latest Version

- ProLiant ML350 G3, ProLiant DL380 G3 And ProLiant ML370 G3 Servers May Generate an Error or Cease Responding When Booting Or During An Operating System Installation
 - Customer Advisory EL030116_CW01
 - Solution is to obtain Updated BIOS

- ProLiant DL380 G3 Server May Hang With Blank Screen During Warm Boot With Smart Array 5300 Series Controllers
 - Customer Advisory 030122_CW01
 - Solution to Update System ROM

Server Hang Exiting to DOS or on Restart Server- ACPI



- NW6, SmartStart 5.5
- Advanced Configuration and Power Mgmt ACPI v1.01
- ACPI 1.05 should correct –DL580 G2, MI310, MI350 G3, ML370G3, ML530 G2
- Ensure the following in ORDER:
 - CPQACA.NLM
 - LOAD CPQACPI.PSM
 - LOAD CPQACMGR (not loaded by default = cause of hang)

NW6 SP2 Hangs with USB Keyboard



- Hang while NetWare initializes and attempts to load the USB driver OHCIDRV.NLM.
 - Utilize PS2 style mouse or keyboard
 - Legacy USB System ROM support list at <http://www.compaq.com/products/servers/platforms/usb-support.html>

Steps to Reinstall Insight Management Agents



- Ensure minimum 5.1 SP3.
- Start the server without loading the CIM.
- Do this by commenting out "LOAD CPQWEBAG" in autoexec.ncf.
- Restart the server.

- Search and Delete ALL the CIM agents.
- - CPQAGIN CPQFCASA CPQDASA CPQHMMO CPQBSSA
 - CPQSCSA CPQHOST CPQWEBAG CPQTHRSA CPQSSSA
 - CPQNCSA CPQRISA CPQHTHSA CPQIDESA
-
- Delete the directory SYS:System\CPQMGMT
 - Search and delete CPQHMMMD.*
- NOTE: There may be several copies of this file. Please ensure ALL are deleted.
- Re-install the new agents using CPQAGIN.
- Restart the server.

CR3500 Management Agent Discontinued In Version 5.50



- **EN020815_CW01**
- ProLiant CL380 and ProLiant CL1850
- Load Foundation agents FIRST from from v5.42
- <http://www.compaq.com/support/files/server/us/download/15009.html>
- Load storage agent CQEAGLE.NLM from
- <http://www.compaq.com/support/files/server/us/download/15007.html>

NetWare Server May Shut Down Unexpectedly After Upgrading CPM From V1.80 To V 1.81



- Compaq Power Management Agents – Error
 - *Communications Failure With UPS*
 - NetWare 3.x-6.x
- CPM Version 1.81 is included in the Management CD Release 5.30
- Any later versions of CPM are to be delivered only by SoftPaq
- The CPM agent no longer included on Management CD post 5.40
- Prevent via delete from SYS:SYSTEM BEFORE upgrading to CPM Version 1.81:

CPM.ABM	CPM.NCF	CPM.CFG	CPM.RNT
CPM.CHL	CPM.RST	CPM.CMP	CPM.WKL
CPM.GRP	CPMAGENT.NLMCP	CPM.LOG	CPMIP.NLM
CPM.LST	MIPX.NLM	CPM.MFG	UPSBASE.NLM

To Manually Reset Scheduled Server Shutdown Time While Connected To UPS



- Start NetWare.
- After the Power Management Agents have loaded, immediately unload the CPM components by typing the following statements at the NetWare console:
 - UNLOAD CPMIPX
 - UNLOAD CPMIP
 - UNLOAD CPMAGENT
 - UNLOAD UPSBASE
- At the console, load CPMSETUP.NLM and reset the SHUTDOWN value.
- **Note:** This step must be performed within 30 seconds after the CPM agents have loaded.

To Manually Reset Scheduled Server Shutdown Time While Disconnected From UPS



- With the NetWare server powered down, disconnect the server from the UPS.
- Power up the server and start NetWare.
- After the Power Management Agents have loaded, immediately unload the CPM components by typing the following statements at the NetWare console:

```
UNLOAD CPMIPX  
UNLOAD CPMIP  
UNLOAD CPMAGENT  
UNLOAD UPSBASE
```

- Modify the the server shutdown values either through Insight Manager or by using CPMSETUP.NLM.

SYS Volume Automatically renamed to SYS_AR



- Can occur if neglect to set up Selective Storage Presentation (SSP) on Storage and install second server into a storage cabinet
- See Novell TID 2961332 for NR6rvol.exe
- Perl program to rename SYSVOL from console
- `perl c:\nserver\renvol.pl VolumeName SYS`

AGENDA

- Installation
- Optimization
- Support Tools
- Known Issues
- *Nakoma*

Nakoma Minimum Requirements



- A Server Class PC with a Pentium II or AMD K7 processor
- 512 MB of RAM
- A Super VGA display adapter
- A DOS Partition of at least 200 MB and 200 MB available space
- 2 GB of available disk space outside the DOS partition for volume SYS:
- One Network board
- CDROM Drive
- USB, PS/2 or serial mouse

Nakoma Recommended Requirements



- A Server Class PC with Two Pentium III 700 Mhz or higher Processors
- 512 MB of RAM
- A Super VGA or higher resolution display adapter
- A DOS Partition with 1GB of available space
- 4 GB or available disk space outside the DOS partition
- One or more network boards
- A bootable CD Drive that supports the El Torito specification
- USB, PS/2 or Serial Mouse

HP ProLiant Servers that will Support Nakoma



■ ML Servers

- ML310
- ML330 (1.13 Ghz and higher)
- ML350
- ML370
- ML530
- ML570
- ML750

■ DL Servers

- DL360
- DL380
- DL560
- DL580
- DL760 G1 only
- CL380 (cluster)
- DL380 G2 & G3 Packaged Clusters

All generations are supported unless specifically noted above

Nakoma Patterned Server Deployments



Nakoma offers Patterned Deployment of Servers to Customize and Optimize the Environment for the Application. Servers can be patterned for the following applications:

1. DNS/DHCP Server
2. eXtend J2EE Web Application Server
3. LDAP Server
4. NetWare AMP (Apache, MySQL, PHP, Perl) Server
5. NetWare Backup Server
6. NetWare Web Search Server
7. Novell iPrint Server
8. Nterprise Branch Office – Central Office Server
9. Apache/Tomcat Server
10. Network Attached Storage (NAS) Server
11. Management Server
12. Novell iFolder 2.1
13. Virtual Office Server

Nakoma Installation Suggestions

- FLASH ALL
ROMS!!!

Nakoma Installation Instructions – Step by Step



- Servers using SmartStart 5.5 or Earlier
 - Use SmartStart CD
 - Select Manual Path
 - Choose NetWare 6 as the OS
 - When prompted to put in the NetWare 6 CD, place the Nakoma CD in the CDROM drive and power off the server
 - Power on the server to begin the Nakoma installation
- Servers using SmartStart 6.0 or Later
 - Do not use SmartStart CD
 - ORCA (F8)
 - Configure your logical drives
 - RBSU (F9)
 - Select NetWare 5.x/6.x as OS
 - Make sure to set the correct Date/Time

Nakoma Installation Instructions – Step by Step



1. Regional Settings
 1. Country
 2. Code Page
 3. Keyboard
2. Nakoma License Agreement
3. JReport Runtime License Agreement
4. Install Type (Custom or Express) ('C' for Custom)
5. Boot Partition
 1. Select Modify to create a boot partition
 2. Select Free Space, press enter
 3. Note: If you have an older server with System Partition, you will already have a DOS partition listed
 4. Format the partition without rebooting the server

Nakoma Installation Instructions - Step by Step



5. Server Settings

- Server ID
- Load Server at Reboot
- Server SET Parameters
- Video

6. NetWare Installation DOS Copy

7. Drivers

1. Platform Support Module – ACPIDRV.PSM
 1. NOTE: CPQACPI.PSM will not be supported under Nakoma
2. Hot Plug Support Module
3. Storage Adapters

Nakoma Installation Instructions - Step by Step



8. Device Types/Drives

- Storage Devices
- Network Boards
- NetWare Loadable Modules

9. NSS Management Utility

1. Create SYS: volume
2. Default is 4 GB

10. NSS Management Utility (Disk Management)

1. Devices
2. Partitions
3. Pools
4. RAID Devices (Software RAID)
5. Volumes

Nakoma Installation Instructions – Step by Step



11. File Copy – System Files – Load the GUI

12. Choose a Pattern

- 1. Customized NetWare Server**
- 2. Basic NetWare File Server**
- 3. Pre-Migration Server**
- 4. Pre-Configured Servers**
 1. DNS/DHCP Server
 2. eXtend J2EE Web Application Server
 3. LDAP Server
 4. NetWare AMP (Apache, MySQL, PHP, Perl) Server
 5. NetWare Backup Server
 6. NetWare Web Search Server
 7. Novell iPrint Server
 8. Nterprise Branch Office – Central Office Server
 9. Apache/Tomcat Server
 10. Network Attached Storage (NAS) Server
 11. Management Server
 12. Novell iFolder 2.1
 13. Virtual Office Server

Nakoma Installation Instructions – Step by Step



13. Summary Screen

1. Minimum Requirements for Hardware
2. Recommended Requirements for Hardware

14. At this point, you will be prompted to insert the Nakoma Products CD

15. License Disk

1. The license is found on the Nakoma media for public beta at:
<\\nw65prod\license\mla>

16. Network Protocols for Network Boards

1. IP or IPX
2. Advanced Button
 1. IPX Compatibility
 2. IPX Frame Types
 3. SNMP (Simple Network Management Protocol)
 4. SLP (Service Location Protocol)

Nakoma Installation Instructions – Step by Step



17. Set up DNS

1. Host Name
2. Name Server IP Address

18. Select your Time Zone

19. eDirectory Installation

1. Install in New Tree
2. Install in an Existing Tree

- **NOTE:** Make sure your date/time is configured through RBSU so that you do not have TIMESYNC issues when installing eDirectory

Nakoma Installation Instructions – Step by Step



20. eDirectory Information

1. Tree Name
2. Context
3. Administrator Information

21. Install eDirectory

22. eDirectory Installation Successful confirmation screen

23. Install any additional licenses (not needed for public beta testing)

24. MLA License Certificate Context (O=)

Nakoma Installation Instructions – Step by Step



25.LDAP Configuration

1. Clear Text 389
2. SSL/TLS 636

26.NMAS Login Method

1. Select Additional NMAS Login Methods
2. NDS is default

27.Copy Files – Install

28.Installation Complete

1. Remove Media
2. Yes to Restart

HP Changes for Nakoma

- **CPQPOWER.NLM is being removed**
 - Why? This information is available through Insight Manager 7
- **CPQFM.NLM is being removed**
 - Why? Novell has incorporated this functionality in to their GUI, making this utility obsolete
- **CPQEIML.NLM is being removed**
 - Why? There are a small number of servers that have an IMD option that support Nakoma
- **CPQONLIN.NLM**
 - CPQONLIN.NLM is being enhanced to support > 500GB volumes. Also applies to NW5.1 and NW6. However, it will not support MSA1000 configurations. The MSA1000 must be configured using the ACU XE utility (offline utility). This is the same for Microsoft and Linux customers

PSM Changes for Nakoma New Default

- No HP Specific Platform Support Module
 - CPQACPI.PSM will be replaced with Novell's PSM
 - Startup.ncf SET Parameters:
 - ACPI AUTO POWER DOWN DELAY TIME=(# of seconds 30 default)
 - Stop it by typing shutdown abort at console (will not exit to DOS)
 - ACPI AUTO POWER DOWN=(On or Off) (Default is ON)
- Behavior Changes of the PSM (I – Interactive, F – Force)

ACPI AUTO POWER DOWN=ON	ACPIDRV.PSM
DOWN	SHUTDOWN (F)
RESTART	RESET (F)
RESET	RESET (F)
SHUTDOWN	SHUTDOWN (F)
POWER BUTTON	SHUTDOWN (F)

PSM Behavior Changes Non-Default

ACPI AUTO POWER DOWN = OFF	ACPIDRV.PSM
DOWN	DOWN (I)
RESTART	RESTART (I)
RESET	RESET (F)
SHUTDOWN	NOTHING
POWER BUTTON	NOTHING

This is the same behavior as NetWare 6.0 version of ACPI

Nakoma Known Issues

- N1000.Ian issues loading with some server ROMS
- Not a problem for this audience as everyone has FLASHED ALL ROMS before installing.
- Problems with Express Installation Paths
- Workaround – use Custom
- Problem with Network install that default ACPI PSM will not initialize and load across the network
- Complete install with MPS14.PSM

Nakoma Known Issues (continued)



- Issue with Java/GUI when using USB devices during installation
 - Do not use USB devices during install
- NSS Management Utility issue specific to software RAID
 - Do not use Software RAID
- Nakoma CD License Issue
 - Use MLA if possible
 - Should not be an issue when released

Nakoma Final Thoughts

- HP working on an “Implementing Novell Nakoma 6.5 on ProLiant Servers White Paper”
- Keep checking:
- http://wwss1pro.compaq.com/support/reference_library/viewreferencelibrary.asp?countrycode=1000&catid=773&famid=812&prodid=2212|NetWare+6.X
- HP Services is not officially supporting the public beta testing of Nakoma.
- Please use <http://beta.novell.com> to report any issues.
- A beta e-mail address for HP will be available for HP-related Nakoma issues when the whitepaper becomes available on the site.

■ Questions?

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