LynxOS Hardware Support Guide

LynxOS Version 2.5.0

DOC-0186 039704

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Contents

CHAPTER 1

Introduction

This supplement provides information about the supported hardware for LynxOS 2.5.0. Lynx defines “supported hardware” as products that are part of the Lynx test suite and tested as a normal development and verification cycle. Some products are presumed to be supported by LynxOS because they are similar to “supported hardware”.

LynxOS 2.5.0 supports X86, PowerPC, 68K, and SPARC processor families in both Native and Cross Development environments. The chapters within this guide describe the hardware details for each of these families.

In addition, Lynx provides porting kit and source code products to customers who wish to port LynxOS to custom hardware that uses a CPU from one of the basic processor families supported by LynxOS.

CHAPTER 2

LynxOS for X86

Processor Support

Intel 386, 486, Pentium, and Pentium Pro

NOTE: *Intel 386SX and Intel 486SL/SX-based systems require a hardware floating point co-processor for LynxOS installation and development. Without the co-processor, these systems can be targets only for LynxOS applications that do not use floating point instructions.*

Bus Architectures

ISA, EISA, VLB, and PCI

Installation Requirements

Main Memory

- 4 MB minimum
- 8 MB required for Development System
- 16 MB or greater recommended for full Development System with X and Motif.

NOTE: *If your system has less than 24 MB of physical memory, you must enable Virtual memory (VM) to use the full LynxOS Development System with X and Motif. Virtual memory to physical memory must be at least 2:1.*

Hard Disk

Product	Size (MB)
LynxOS 2.5.0 Development OS	65
X11R6	75
Motif 2.0	65

Supported Hardware

The LynxOS Development Operating System includes device drivers in binary form for the following hardware.

Disk Controllers

- Standard and Enhanced IDE interface
- SCSI interface:
  - Adaptec 152x (requires 6260 chipset or disabled 6360 features on 6360 chipset), 154x, 174x, 274x, and 294x families

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NOTE: *CD-ROM devices are not supported on Adaptec 152x.*

  - Symbios Logic SYM 53C810 and 53C825

Floppy Disk Controllers

Standard PC/AT-compatible

Serial Controllers

- Standard PC/AT-compatible
- Digiboard PC/Xe

Parallel Controllers

Standard PC/AT-compatible

Network Controllers

- SMC EtherCard Elite Ultra
- SMC EtherCard Plus Elite
- SMC EtherEZ (ISA)
- SMC EtherPower Combo
  - SMC8432BT (10 Mbit; BNC, RJ-45)
  - SMC9332DST (10/100 Mbit)
  - SMC9332BDT (10/100 Mbit)
- Western Digital EtherCard Elite
  - WD8003E EtherCard Plus
  - WD8001EBT EtherCard Plus 16
- 3Com 3C509 and 3C509B (ISA)
- 3Com 3C579 (EISA)
- Novell NE2100 (shareware)
- AMD 79c970

Native and Cross Development

LynxOS and its native development tools run directly on the target platforms listed in “Processor Support” on page 3. This is a unique benefit relative to other real-time operating systems that require a cross development system to develop and debug applications.

In addition, LynxOS provides a cross development environment for SunOS 4.1.x/5.1 or Solaris (up to 2.5) on Sun workstations.

Booting Over the Network

With the optional Netboot Package, a diskless target can be booted over the network from a server. This package contains a network controller-specific 64KB PROM. The LynxOS Netboot Package is available for the following network controllers:

- SMC EtherCard Elite Ultra
- SMC EtherCard Plus Elite
- SMC EtherEZ (ISA)
- SMC EtherPower Combo
  - SMC8432BT (10 Mbit)
  - SMC9332BDT (10 and 100 Mbit)

Console and Terminal Support

The standard ATC VT100-compatible console provides support for the display, keyboard, and mouse for up to four concurrent virtual console sessions. The TTY Driver and Manager provides support for multiple terminals. It supports BSD cooked, break, and raw, as well as System V and POSIX canonical and non-canonical modes.

X & Motif Development Package

The LynxOS X & Motif Development Package contains X Window System Release 6 (X11R6) based on the Metro Link 3.1.5 general release. It also includes OSF/Motif 2.0.

X & Motif Development Package Features

- Support for most major VGA, SVGA, and S3 adapters
- SVGA adapters from ATI, Cirrus, Diamond, Matrox, Orchid, Number 9, and others
- Support for up to 1600x1200 resolutions on some adapters
- Support for up to 16 million colors on some adapters
- PEX (PHIGS Extension to X) 3D Library
- Dual-headed X server support for up to 3 Matrox Millennium cards
- Elographics touchscreen support (2300, 400x)
- Scaleable fonts with a Font server
- Microsoft-, PS/2-, Logitech-compatible mouse

Specific Graphics Adapter Support for the Metro-X Server

This section provides a list of supported graphics adapters and their specific configurations that were tested at Lynx with LynxOS 2.5.0. The adapter information is organized into two tables—Table 2-1 lists graphics adapters that were specifically tested in-house at Lynx; Table 2-2 lists graphics adapters that were tested by Metro Link.

We continue to add support for new graphics adapters to this product. Please browse our World Wide Web site (http://www.lynx.com) or contact Lynx Technical Support for updates to these lists.

Table 2-1: : Specific Graphics Adapters Tested at Lynx Real-Time Systems, Inc.

Model Name and Number	Chipset	Bus	Display Configuration	Resolution
ATI Graphics Ultra Pro MACH 32	mach 32 2200688003	ISA	ATI Graphics Ultra PRO (Mach32)	1280x1024 1024x768 800x600 640x480
ATI Ultra Plus	mach 32 2106880006	VLB	ATI Graphics Ultra Plus (Mach32)	1280x1024 1024x768 800x600 640x480
ATI Mach 64 Turbo	mach64 210888GX00	PCI	ATI Pro Turbo	1280x1024 1024x768 800x600 640x480
ATI Xpression Mach 64	mach 64 CT uPD96128-GD-401-LML	PCI	Ati Graphics Xpression (Mach 64)	1024x768 800x600 640x480
ATI Xpression Mach 64	mach 64 210888GX00 (IBM 37RGB514CF17 DAC)	PCI	Ati Graphics Xpression (Mach 64)	1024x768 800x600 640x480
Diamond Speedstar Pro	CLGD-5429-86-QC-B	ISA	Diamond SpeedStar PRO	1024x768 800x600 640x480
Diamond Stealth 64 DRAM (TRIO 64)	S3 (P86C764)	PCI	Diamond Stealth 64 DRAM (TRIO64)	1280x1024 1024x768 800x600 640x480
Diamond Stealth PRO	S3 (P86C928)	ISA	Diamond Stealth PRO	1280x1024 1024x768 800x600 640x480
Diamond Stealth 64 Video 2001 series	S3 Trio 64V + (86C765)	ISA	Diamond Stealth 64 DRAM (TRIO 64)	1280x1024 1024x768 800x600 640x480

Table 2-1: : Specific Graphics Adapters Tested at Lynx Real-Time Systems, Inc.

Model Name and Number	Chipset	Bus	Display Configuration	Resolution
Diamond Stealth 64 Video	S3 (P86C928) Vision 968	PCI	Diamond Stealth 64 Video VRAM V1.xx (TI 3026 DAC)	1280x1024 1024x768 800x600 640x480
Diamond Viper	P9000	VLB	Diamond Viper VLB/PCI	1280x1024 1024x768 800x600 640x480
ET 4000W32P	ET4000W32P	PCI	Tseng Labs ET4000W32	1024x768 800x600 640x480
IBM VGA (Genoa 7900)	ET4000AX	ISA	IBM VGA	640x480
Genoa 7900	ET4000AX	ISA	Genoa 7800/7900	1024x768 800x600 640x480
Genoa 8500	CLGD5428 - 80QC-A	VLB	Genoa 8500	1024x768 800x600 640x480
Genoa Phantom	S3 Trio 64 V+	PCI	Genoa Phantom 64 V2001 PCI	1280x1024 1024x768 800x600 640x480
Matrox Impression	MGA IS-DUBIC	PCI	Matrox Impression	1600x1200 1280x1024 1024x768 800x600 640x480
Matrox Impression Plus	MGA IS-ATHENA-R1	PCI	Matrox Impression Plus (2MB)	1600x1200 1280x1024 1024x768 800x600 640x480
Matrox MGA Millennium	MGA IS_STORM-R2	PCI	Matrox Millennium 2MB	1600x1200 1280x1024 1024x768 800x600 640x480

Table 2-1: : Specific Graphics Adapters Tested at Lynx Real-Time Systems, Inc.

Model Name and Number	Chipset	Bus	Display Configuration	Resolution
Number Nine GXE lev 14	S3 (P86C928)	ISA	Number Nine GXE Level 14	1280x1024 1024x768 800x600 640x480
Number Nine GXE/64 PRO	S3 P86C964	ISA	Number Nine GXE/64 PRO	1280x1024 1024x768 800x600 640x480
Number Nine 9FX Motion771	S3 Vision968	PCI	Number Nine 9FX Motion771	1600x1200 1280x1024 1024x768 800x600 640x480
Oak OTI87	oak	ISA	Oak OTI87	1024x768 800x600 640x480
Orchid Fahrenheit 1280	S3 (P86C924)	ISA	Orchid Fahrenheit 1280 (S3 911)	1024x768 800x600 640x480
Orchid Kelvin (Cirrus CLGD5434)	CLGD5434	VLB	Orchid Kelvin	1280x1024 1024x768 800x600 640x480
Orchid ProDesigner Pro IIs	ET4000 AX	ISA	Orchid Pro Designer IIs	1024x768 800x600 640x480
Trident TVGA8900	TVGA 8900D	ISA	Trident 8900	1024x768 800x600 640x480
Toshiba Tecra 720CDT (CHIPS 65550)	ct	-	Toshiba Tecra 720CDT (CHIPS 65550)	1024x768 800x600 640x480
Video 7 ergo 1 M	HT209/D	ISA	Video7 ERGO II	1024x768 800x600 640x480
Western Digital VGA	WD90C30-LR	ISA	Western Digital VGA WD90C3x	1024x768 800x600 640x480

Graphics Adapters and Resolutions Tested at Metro Link

For some cards, such as ATI Mach 32, ATI Mach 64, Matrox Impression, Matrox Impression Plus, and Matrox Ultima, many different combinations of the graphics chips and various DACs are available. In Table 2-2, if a chipset has been tested in combination with more than one DAC, it has been listed only once.

Table 2-2: Specfic Graphics Adapters Tested at Metro Link, Inc.

Model Name and Number	Chipset	Bus
Actix Engine 32	P86C801	ISA
ATI 8514/Ultra	ATI 38800-1	ISA
ATI Wonder XL	ATI 28800-5	ISA
ATI Mach 32	2200688003	VLB
ATI Mach 32	210688AX00	PCI
ATI Mach 32 Graphics Ultra Plus	6880003	ISA
ATI Mach 32 Graphics Ultra Plus	6880006	ISA
ATI Mach 32 Graphics Ultra Pro	68800	ISA
ATI PCI Mach 64	215CT2200	PCI
ATI PCI Mach 64 Pro Turbo	uPD96128D-401-LML	PCI
ATI Mach 64 Xpression	210888GX00	PCI
ATI Mach 64 Xpression	210888GX00 -gxf	PCI
ATI Mach 64 VT-EDO	uPD96602GD-004-LML	PCI
ATI Winturbo PCI Mach 64	210888GX00	PCI
Cardex	ET4000AX	VLB
Cardex	ET4000W32	ISA
Cirrus Logic	CLGD5428-80QC-A	VLB
Diamond Speedstar 24X	WD90C31A	ISA
Diamond Speedstar Pro	CLGD5429	ISA
Diamond Speedstar Pro SE PCI	CLGD5430-QC-C	PCI
Diamond Stealth 24	86C801	ISA
Diamond Stealth 32 PCI	ET4000/W32P	PCI
Diamond Stealth Pro VL	P86C928	VLB
Diamond Stealth 64 DRAM PCI	86C864	PCI
Diamond Stealth 64 DRAM	86C764-P (Trio 64)	PCI
Diamond Stealth 64 Video VRAM PCI	86C968-P	PCI
Diamond Viper	Weitek P9000	VLB
Diamond Viper SE	P9100	VLB

Table 2-2: Specfic Graphics Adapters Tested at Metro Link, Inc.

Model Name and Number	Chipset	Bus
Diamond Viper Pro VLB 2+2	P9100	VLB
Generic	CLGD5428-60AC-A	PCI
Genoa 8500	CLGD5428-80QC-A	VLB
Genoa Phantom 64	S3 Trio 64 V+	PCI
Hercules Stingray 64	ARK2000PV	PCI
Hercules PCI Bus Stingray	ALG2301.B	PCI
Matrox Impression	MGA	VLB
Matrox Impression /32/A	IS-TITAN	ISA
Matrox Impression +/P	IS-Athena R1	PCI
Matrox Marvel	ET4000AX	ISA
Matrox Marvel II/FULL	ET4000/W32P	PCI
Matrox MGA Plus	MGA	VLB
Matrox MGA Plus	Athena	PCI
Matrox Millenium /4I	MGA IS-STORM R2	PCI
Matrox Millenium /4N	IS-STORM R2	PCI
Matrox Ultima II	Atlas	PCI
Metheus Premier 928	P86C928	ISA
Number Nine GXE 64	86C864	PCI
Number Nine GXE 64	86C928	VLB
Number Nine GXE 64 PRO	86C964-P	VLB
Number Nine GXE 64 PRO	86C964	PCI
Number Nine Imagine 128	Imagine I128	PCI
Number Nine Vision 330	S3-86764-P	PCI
Number Nine Motion 531	86C896-P	PCI
Number Nine Motion 771	86C968-P	PCI
Orchid Fahrenhiet VA	P86C801	ISA
Orchid Kelvin 64-PCI	CLGD 5434-QC-D	PCI
Orchid Fahrenheit 1280	P86C924	ISA
Orchid Pro Designer II s	ET4000AX	ISA
Paradise Accelerator 24	WD90C33-ZZ	ISA
Paradise Accelerator	WD90C30-LR	ISA
Sigma Designs VGA Legend	ET4000AX	ISA
Trident 8900	TVGA8900C	ISA

Table 2-2: Specfic Graphics Adapters Tested at Metro Link, Inc.

Model Name and Number	Chipset	Bus
Trident 8900	TVGA8900D	ISA
Western Digital	WD90C31-LR	ISA

All Supported Graphics Adapters and Resolutions

Table 2-3 is the comprehensive list of graphics adapters and resolutions supported by this release of X & Motif Development Package on X86 systems.

Table 2-3: Complete List of Supported Graphics Adapters and Resolutions for X & Motif Development Package on X86 Systems

Model Name and Number	Chipset	Resolutions and Colors Supported																							
		640x480				800x600				1024x768				1152x864				1280x1024				1600x1200			
		16	256	65K	16.7 M	16	256	65K	16.7 M	16	256	65K	16.7 M	16	256	65K	16.7 M	16	256	65K	16.7 M	16	256	65K	16.7 M
AST Premmia Motherboard (Mach32)	Mach32		✓	✓			✓	✓			✓	✓			✓										
ATI Graphics Ultra (Mach8)	ibm8514	✓	✓							✓	✓														
ATI Graphics Ultra PRO (Mach32)	Mach32		✓	✓			✓	✓			✓	✓			✓										
ATI Graphics Ultra Plus (Mach32)	Mach32		✓	✓			✓	✓			✓	✓			✓										
ATI Graphics Xpression (Mach64)	Mach64		✓	✓			✓	✓			✓	✓			✓										
ATI Pro Turbo (Mach64)	Mach64		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓									
ATI Pro Turbo 1600 (Mach64)	Mach64		✓	✓			✓	✓		✓	✓	✓			✓	✓			✓	✓					
ATI Ultra (Mach8)	ibm8514	✓	✓							✓	✓														
Actix GraphicsENGINE	S3		✓				✓			✓	✓														
Actix GraphicsENGINE 64	S3		✓	✓			✓	✓		✓	✓	✓													
Actix ProSTAR 64	cirrus		✓	✓			✓	✓			✓	✓			✓										
Cardex ET4000W32	et4000		✓				✓			✓	✓														
Chips & Technologies 65520 (Flat Panel)	ct		✓																						
Chips & Technologies 65530 (Flat Panel)	ct		✓																						
Chips & Technologies 65535 (External)	ct		✓				✓				✓														
Chips & Technologies 65535 (Flat Panel)	ct		✓																						
Chips & Technologies 65540 (External)	ct		✓				✓				✓														
Chips & Technologies 65540 (Flat Panel)	ct		✓	✓																					
Chips & Technologies 65545 (External)	ct		✓				✓				✓														
Chips & Technologies 65545 (Flat Panel)	ct		✓	✓	✓																				
Cirrus Logic 6440 Laptop	cl6440		✓				✓																		
Cirrus Logic GD542x	cirrus		✓				✓				✓														

Table 2-3: Complete List of Supported Graphics Adapters and Resolutions for X & Motif Development Package on X86 Systems

Model Name and Number	Chipset	Resolutions and Colors Supported																							
		640x480				800x600				1024x768				1152x864				1280x1024				1600x1200			
		16	256	65K	16.7 M	16	256	65K	16.7 M	16	256	65K	16.7 M	16	256	65K	16.7 M	16	256	65K	16.7 M	16	256	65K	16.7 M
Cirrus Logic GD543x	cirrus		✓	✓			✓	✓			✓	✓			✓										
Cirrus Logic GD754x	cirrus		✓	✓			✓	✓			✓	✓			✓										
Compaq Qvision 2000	MGA		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓			✓	✓					
Dell OptiPlex XL 5100	S3		✓	✓			✓	✓		✓	✓	✓			✓										
Dell OptiPlex XMT 590	S3		✓	✓			✓	✓		✓	✓	✓													
Diamond SpeedStar 16	et4000		✓				✓			✓	✓														
Diamond SpeedStar PRO	cirrus		✓				✓				✓														
Diamond SpeedStar PRO SE	cirrus		✓	✓			✓	✓			✓	✓			✓										
Diamond Stealth	S3		✓				✓				✓				✓										
Diamond Stealth 24	S3		✓				✓				✓				✓										
Diamond Stealth 32	et4000		✓	✓			✓	✓		✓	✓	✓													
Diamond Stealth 64 DRAM (SDAC)	S3		✓	✓			✓	✓		✓	✓	✓			✓										
Diamond Stealth 64 DRAM (TRIO64)	S3		✓	✓			✓	✓		✓	✓	✓			✓										
Diamond Stealth 64 DRAM SE (TRIO32)	S3		✓				✓			✓	✓														
Diamond Stealth 64 PCI	S3		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓									
Diamond Stealth 64 VRAM	S3		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓									
Diamond Stealth 64 Video VRAM V1.xx (TI 3026 DAC)	S3		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓									
Diamond Stealth 64 Video VRAM V3.xx (IBM DAC)	S3		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓			✓	✓					
Diamond Stealth PRO	S3		✓				✓				✓				✓										
Diamond Viper PRO VLB/PCI	p9100		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓									
Diamond Viper SE VLB/PCI	p9100		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓									
Diamond Viper VLB/PCI	p9000		✓				✓				✓				✓										
ELSA WINNER 1000AVI	S3		✓	✓			✓	✓		✓	✓	✓			✓										
ELSA WINNER 1000TRIO	S3		✓	✓			✓	✓		✓	✓	✓			✓										
Everex VGA Trio 64P	S3		✓	✓			✓	✓		✓	✓	✓			✓										
Genoa 7800/7900	et4000		✓				✓			✓	✓														
Genoa 8500	cirrus		✓				✓				✓														
Genoa Phantom 64	S3		✓	✓			✓	✓		✓	✓	✓			✓										

Table 2-3: Complete List of Supported Graphics Adapters and Resolutions for X & Motif Development Package on X86 Systems

Model Name and Number	Chipset	Resolutions and Colors Supported																							
		640x480				800x600				1024x768				1152x864				1280x1024				1600x1200			
		16	256	65K	16.7 M	16	256	65K	16.7 M	16	256	65K	16.7 M	16	256	65K	16.7 M	16	256	65K	16.7 M	16	256	65K	16.7 M
Genoa Phantom 64 V2001 PCI	S3		✓	✓			✓	✓		✓	✓	✓			✓										
HP Vectra XU 5/90	S3		✓	✓			✓	✓		✓	✓	✓													
Helios TurboColor 256	S3		✓				✓			✓	✓														
Hercules Dynamite	et4000		✓				✓			✓	✓														
Hercules Dynamite Power	et4000		✓	✓			✓	✓		✓	✓	✓													
Hercules Dynamite Pro	et4000		✓				✓			✓	✓														
Hercules Graphite Terminator PRO (S3 968)	S3		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓			✓	✓					
IBM 8514	ibm8514									✓	✓														
IBM S3 (86C864) motherboards	S3		✓	✓			✓	✓		✓	✓	✓			✓										
IBM VGA	STDVGA	✓																							
Matrox Comet	et4000		✓	✓			✓	✓		✓	✓	✓													
Matrox Impression	MGA		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓			✓	✓					
Matrox Impression PRO	MGA				✓				✓				✓				✓								
Matrox Impression Plus (2MB)	MGA		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓				✓						
Matrox Impression Plus (4MB)	MGA		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓			✓	✓					
Matrox Marvel	et4000		✓				✓			✓	✓														
Matrox Marvel II	et4000		✓	✓			✓	✓		✓	✓	✓													
Matrox Millennium 2MB	MGA		✓	✓	✓		✓	✓			✓	✓			✓				✓						
Matrox Millennium 4MB	MGA		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓			✓	✓					
Matrox Millennium 8MB	MGA		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓			✓	✓					
Matrox Ultima	MGA		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓			✓	✓					
Matrox Ultima Plus (MGA-II)	MGA		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓			✓	✓					
Metheus Premier 1MB/2MB	S3		✓				✓			✓	✓														
Metheus Premier 928 4MB	S3		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓										
Micron Spectrum	et3000		✓				✓																		
NCR 2277C2E Chip	ncrvga		✓				✓				✓														
Nth Engine/150	ibm8514									✓	✓			✓	✓										
Number Nine 9FX Motion531	S3		✓	✓			✓	✓		✓	✓	✓													

Table 2-3: Complete List of Supported Graphics Adapters and Resolutions for X & Motif Development Package on X86 Systems

Model Name and Number	Chipset	Resolutions and Colors Supported																							
		640x480				800x600				1024x768				1152x864				1280x1024				1600x1200			
		16	256	65K	16.7 M	16	256	65K	16.7 M	16	256	65K	16.7 M	16	256	65K	16.7 M	16	256	65K	16.7 M	16	256	65K	16.7 M
Number Nine 9FX Motion771	S3		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓			✓	✓					
Number Nine 9FX Vision330	S3		✓	✓			✓	✓		✓	✓	✓			✓										
Number Nine GXE Level 11 (ATT 20C491 DAC)	S3		✓				✓			✓	✓				✓										
Number Nine GXE Level 11 (BT485 DAC)	S3		✓	✓	✓		✓	✓	✓	✓	✓	✓			✓	✓									
Number Nine GXE Level 12	S3		✓	✓	✓		✓	✓	✓	✓	✓	✓			✓	✓									
Number Nine GXE Level 13	S3		✓	✓	✓		✓	✓	✓	✓	✓	✓			✓	✓									
Number Nine GXE Level 14	S3		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓			✓	✓					
Number Nine GXE/64	S3		✓	✓			✓	✓		✓	✓	✓													
Number Nine GXE/64 PRO	S3		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓									
Number Nine I-128	i128		✓	✓	✓		✓	✓	✓		✓	✓	✓		✓	✓			✓	✓					
Oak OTI67	oak		✓				✓				✓														
Oak OTI77	oak		✓				✓				✓														
Oak OTI87	oak		✓				✓				✓														
Orchid Fahrenheit 1280 (S3 911)	S3		✓				✓			✓	✓														
Orchid Fahrenheit 1280 Plus (S3 801/805)	S3		✓				✓			✓	✓														
Orchid Kelvin	cirrus		✓	✓			✓	✓			✓	✓			✓										
Orchid Pro Designer	et3000		✓				✓																		
Orchid Pro Designer II	et4000		✓				✓			✓	✓														
Orchid Pro Designer IIs	et4000		✓				✓			✓	✓														
Paradise 8514	ibm8514									✓	✓														
Paradise Accelerator 24	wd		✓				✓			✓	✓														
Paradise Bahamas 64	S3		✓	✓			✓	✓		✓	✓	✓			✓										
Paradise PVGA1	pvga1		✓																						
Pixelworks ImageXact 1600 (2MB)	S3																		✓						
Pixelworks ImageXact 1600 (4MB)	S3																		✓						
Pixelworks ImageXact 1600 with Bt485 DAC (2MB)	S3																		✓						

Table 2-3: Complete List of Supported Graphics Adapters and Resolutions for X & Motif Development Package on X86 Systems

Model Name and Number	Chipset	Resolutions and Colors Supported																							
		640x480				800x600				1024x768				1152x864				1280x1024				1600x1200			
		16	256	65K	16.7 M	16	256	65K	16.7 M	16	256	65K	16.7 M	16	256	65K	16.7 M	16	256	65K	16.7 M	16	256	65K	16.7 M
Pixelworks WW1280 with VGA	CT481													✓	✓										
Pixelworks WW1280 with VGA Disabled	CT481													✓	✓										
Pixelworks WW1280 with no VGA	CT481													✓	✓										
Pixelworks WW1600	CT481																	✓							
Power Brick Laptop	wd90c20		✓																						
S3 86C801/86C805	S3		✓				✓			✓	✓														
S3 86C911	S3		✓				✓			✓	✓														
S3 Trio32	S3		✓				✓			✓	✓														
S3 Trio64	S3		✓	✓			✓	✓		✓	✓	✓			✓										
SPEA Mercury	S3		✓								✓				✓										
SPEA Mirage	S3		✓				✓			✓	✓														
SPEA Mirage P64 Trio	S3		✓	✓			✓	✓		✓	✓	✓			✓										
STB Evolution	cirrus		✓				✓				✓														
STB Evolution Plus	cirrus		✓	✓			✓	✓			✓	✓			✓										
STB Horizon	cirrus		✓				✓				✓														
STB Nitro	cirrus		✓	✓			✓	✓			✓	✓			✓										
STB PowerGraph 64	S3		✓	✓			✓	✓		✓	✓	✓			✓										
STB PowerGraph Pro	S3		✓	✓			✓	✓		✓	✓	✓			✓										
STB PowerGraph VL-24	S3		✓				✓			✓	✓				✓										
STB PowerGraph X-24	S3		✓				✓			✓	✓				✓										
Sigma Legend VGA	et4000		✓				✓																		
Toshiba 4500/4600/4700 Laptop	wd90c20		✓																						
Toshiba Tecra 720CDT (CHIPS 65550)	ct		✓				✓				✓														
Trident 8900	trident		✓				✓				✓														
Tseng Labs ET3000	et3000		✓				✓																		
Tseng Labs ET4000	et4000		✓				✓			✓	✓														
Tseng Labs ET4000W32	et4000		✓				✓			✓	✓														

Table 2-3: Complete List of Supported Graphics Adapters and Resolutions for X & Motif Development Package on X86 Systems

Model Name and Number	Chipset	Resolutions and Colors Supported																							
		640x480				800x600				1024x768				1152x864				1280x1024				1600x1200			
		16	256	65K	16.7 M	16	256	65K	16.7 M	16	256	65K	16.7 M	16	256	65K	16.7 M	16	256	65K	16.7 M	16	256	65K	16.7 M
Video7 ERGO II	video7		✓			✓	✓				✓														
Western Digital VGA WD90C3x	wd		✓				✓			✓	✓														

CHAPTER 3

PowerPC Family

Processor Support

PowerPC 603, 603e, 604, and 604e

Bus Architectures

ISA, VME, PCI

Target Platforms

- Motorola MVME1600 VME Boards
- Motorola MVME2600 VME Boards
- Motorola PowerStack Series E Systems
- Motorola Ultra Boards and Ultra-based PowerStack RISC PC Systems

Installation Requirements

Main Memory

- 8 MB minimum for development purposes.
- 16 MB or greater recommended for full Development System with X and Motif.

NOTE: *If your system has less than 24 MB of physical memory, you must enable Virtual memory (VM) to use the full LynxOS Development System with X and Motif. Virtual memory to physical memory must be at least 2:1.*

Hard Disk

Product	Size (MB)
LynxOS 2.5.0 Development OS	85
X11R6	105
Motif 2.0	125

Peripheral Chips Supported

LynxOS supports the standard hardware on the target platforms listed in "Target Platforms" on page 19. Table 3-1 lists specific hardware supported by LynxOS for PowerPC.

Table 3-1: List of PowerPC Peripheral Chips Supported by LynxOS 2.5.0

Chip	Description
SYM53C825	Symbios Logic SCSI interface chip
SYM53C810	Symbios Logic SCSI interface chip
82378ZB	Multifunction I/O chip
Z8536	Zilog timer chip
M48T18	Onboard TOD clock chip
8254	AT-compatible serial I/O chip
DEC2104x	DEC Ethernet Controller chip
DEC21140	DEC Ethernet Controller chip
VME ASIC	VME2 Multifunction chip
5434	Cirrus Logic Video Chip
5436	Cirrus Logic Video Chip
Universe VME	VME Controller

Native and Cross Development

LynxOS and its native development tools run directly on the target platforms listed in "Target Platforms" on page 19. This is a unique benefit relative to other real-time operating systems that require a cross development system.

In addition, LynxOS provides a cross development environment for SunOS 4.1.x/5.1 or Solaris (up to 2.5) on Sun workstations or AIX 4.1 on IBM workstations.

Booting Over the Network

Both disk-based and diskless targets can be booted over the network using the Netboot function of Motorola's PPCbug.

Snugly Coupled Multiprocessing

LynxOS provides support for Snugly Coupled Multiprocessing (SCMP) on Motorola MVME1600 VME boards.

Console and Terminal Support

The standard ATC VT100-compatible console provides support for the display, keyboard, and mouse for up to four concurrent virtual console sessions. The TTY Driver and Manager provides support for multiple terminals. It supports BSD cooked, break, and raw, as well as System V and POSIX canonical and non-canonical modes.

X & Motif Development Package

The LynxOS X & Motif Development Package contains X Window System Release 6 (X11R6) based on the Metro Link 3.1.5 general release. It also includes OSF/Motif 2.0.

The X server for PowerPC supports the CLGD5434 and the CLGD5436 chipsets in the following resolutions (256 colors only):

- 640x480
- 800x600
- 1024x768 (with at least 1 MB of Video RAM)
- 1280x1024 (with 2 MB Video RAM)

CHAPTER 4

LynxOS for 68K

Processor Support

MC68030, MC68040, MC68LC040, and MC68060

Bus Architectures

VME, IP Modules

Target Platforms

- Motorola MVME147 (TimeScan, TotalView and `gdb` not available)
- Motorola MVME162 with MC68040 or MC68LC040
- Motorola MVME167
- Motorola MVME177

Installation Requirements

Main Memory

- 4 MB minimum
- 8 MB required for Development System
- 16 MB or greater recommended for full Development System with X and Motif.

NOTE: *If your system has less than 24 MB of physical memory, you must enable Virtual memory (VM) to use the full LynxOS Development System with X and Motif. Virtual memory to physical memory must be at least 2:1.*

Hard Disk

Product	Size (MB)
LynxOS 2.5.0 Development OS	65
X11R6	45
Motif 2.0	60

Supported Hardware

LynxOS supports the standard hardware on the boards listed in “Target Platforms” on page 23.

Native and Cross Development

LynxOS and its native development tools run directly on the target platforms listed in “Target Platforms” on page 23. This is a unique benefit relative to other real-time operating systems that require a cross development system.

In addition, LynxOS provides a cross development environment for SunOS 4.1.x/5.1 or Solaris (up to 2.5) on Sun workstations.

Booting Over the Network

Both disk-based and diskless targets can be booted over the network using the Netboot function of Motorola’s VMEbug.

Snugly Coupled Multiprocessing

LynxOS provides support for Snugly Coupled Multiprocessing (SCMP) on MVME162, MVME167, and MVME177 boards.

Console and Terminal Support

The TTY Driver and Manager provides support for multiple terminals. It supports BSD cooked, break, and raw, as well as System V and POSIX canonical and non-canonical modes.

X Window System and Motif

The LynxOS X & Motif Development Package contains X Window System Release 6 (X11R6) based on the Metro Link 3.1.5 general release. It also includes OSF/Motif 2.0.

The LynxOS X & Motif Development Package only allows X and Motif operations in the client mode on 68K systems.

CHAPTER 5

LynxOS for SPARC

Processor Support

microSPARC and microSPARC II

Target Platforms

- SPARCclassic
- SPARCstation 5
- SPARC station LX
- SPARCclassicEngine, SPARCEngine LX, and SPARCEngine 5 boards
- TADPOLE TP91 and TP912

Installation Requirements

Main Memory

- 8 MB minimum for development purposes.
- 16 MB or greater recommended for full Development System with X and Motif.

NOTE: *If your system has less than 24 MB of physical memory, you must enable Virtual memory (VM) to use the full LynxOS Development System with X and Motif. Virtual memory to physical memory must be at least 2:1.*

Hard Disk

Product	Size (MB)
LynxOS 2.5.0 Development OS	70
X11R6	70
Motif 2.0	90

CD-ROM Drive Support

Due to limitations in the SPARC Open Firmware Boot (OBP), you must use a Sun-compatible CD-ROM drive to install LynxOS products from CD-ROM on SPARC systems.

Boards and Chips Supported

LynxOS supports the standard hardware on the target platforms listed in “Target Platforms” on page 25. Table 5-1 lists specific hardware supported by LynxOS for SPARC.

Table 5-1: SPARC Boards and Chips Supported by LynxOS 2.5.0

Device	Description
AM8530H	Floppy controller inside a SLAVIO chip
NCR53C90	NCR SCSI interface chip
NCR89C100	SLAVIO integrated floppy controller
NCR89C100	Timers inside the SLAVIO chip
i82072	Intel serial I/O chip inside the SLAVIO chip
NCR89C105	MACIO Multifunction chip
AM7990	AMD Ethernet Controller Chip (LANCE) in the NCR Multifunction chip

Native and Cross Development

LynxOS and its native development tools run directly on the target platforms listed in “Target Platforms” on page 25. This is a unique benefit relative to other real-time operating systems that require a cross development system to develop and debug applications.

In addition, LynxOS provides a cross development environment for SunOS 4.1.x/5.1 or Solaris (up to 2.5) on Sun workstations.

Booting Over the Network

Both disk-based and diskless targets can be booted over the network using the SPARC OpenBoot PROM firmware.

Console and Terminal Support

The TTY Driver and Manager provides support for multiple terminals. It supports BSD cooked, break, and raw, as well as System V and POSIX canonical and non-canonical modes.

X Window System and Motif

The LynxOS X & Motif Development Package contains X Window System Release 6 (X11R6) based on the Metro Link 3.1.5 general release. It also includes OSF/Motif 2.0.

The LynxOS X & Motif Development Package only allows X and Motif operations in the client mode on this platform.