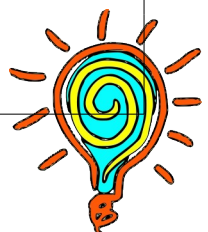# Thinux – Feature List

thinvent

The Product

Thinvent's Thinux is an Embedded Linux Operating Environment for thin client devices. This document lists the important features of Thinux.

#	Feature	Versions
	HARDWARE	
A	**Supported Processors**	
	x86: VIA C3, C7, Eden, Nano. Intel Atom N, D, Z series	
	ARM: TI OMAP3530, 3503. Marvell Kirkwood Series	
B	**Supported Chipsets**	
	VIA CLE266, CN700, CX700, CX700M2, VX800, VN896	
	Intel 945GSE, 945GC, NM10	
C	**Display**	
	DDC – Display Data Control for automatic selection of resolution	
	2D and 3D Acceleration. XvMC for in-chipset decoding of MPEG2 and MPEG4 videos	
	Touchscreens from 3M, eGalax, Elo, and others, with calibration and instant touch support	
D	**Storage and Boot**	
	IDE and SATA Flash	
	USB flash drives, SD card readers	
	Network boot through PXE	
E	**USB Peripheral Support**	
	USB serial and parallel cables	
	USB webcam	
	USB headset and sound	
	USB network device support – Ethernet, WiFi and broadband	
	USB VGA/DVI adaptor support	
	Bluetooth dongles	
	USB touchscreen support	
	USB keyboard, mouse, joystick	
F	**Printing**	
	Built-in support for a large variety of printers, including all commonly used printers.	
	Supports Samsung ML and SCX series (SPL2 and SPLc), Lexmark 1000 series, Konica Minolta laser printers, HP M1005 (XQX), Lexmark C500n (SLX), Samsung CLP series (QPDL), HP Laserjet 1500 (OAKT), HP2600n, Oki, etc.	
	Printing from local applications like web browser	
	Support for adding of printer driver files through the management interface	
	IP based remote printing through RDP, LPD and SMB	
F	**Others**	
	5.1 channel audio support	
	Hardware monitoring support – temperature, voltage, fan speed	
	IR remote control through Serial, USB and CIR dongles	
	Active power conservation through processor frequency scaling, turning off peripherals, etc.	

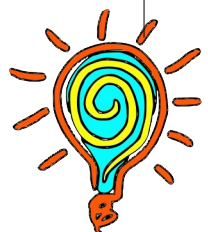| #	Feature	Versions
	NETWORKING	
A	**Protocol Support**	
	TCP/IP v4 and v6	
	DHCP and DNS client	
	NTP and rdate client – remote date synchronisation	
B	**Wired Networking**	
	Wake on LAN	
	Ethernet Autosensing	
C	**Wireless Networking**	
	WiFi – 802.11b, g and n	
	WEP, WPA, WPA2 support	
	RADIUS support	
	Both Ad-hoc and infrastructure modes supported	
D	**Broadband and WAN**	
	USB modem support – POTS, DSL, GPRS, CDMA, 3G, WiMax	
	PPP and PPPoE	
	VPN support – IPSec, PPTP, SSL	
	SOFTWARE	
A	**OS Features**	
	Embedded Linux firmware. System can be switched off any time without proper shutdown.	
	System state can reset remotely or at boot time	
	Stateless system – state storage can be centralised	
	Local and remote upgrade of firmware	
B	**Core Components**	
	Linux Kernel	2.6.35
	Coreutils	8.5
	X11R7	1.9.5
C	**Remote Management**	
	Web based remote management system built into the firmware of all thin clients.	
	Management system can be used locally through browser, or remotely from any computer in the network	
	Single or clustered management of thin clients. Most actions can be applied to a set of thin clients collectively.	
	Automatic discovery of thin clients in the LAN or WAN	
	Remote upgrade of firmware through web interface	
	Remotely enable and disable hardware such as pen drives	
	Cloning of settings from one thin client to many thin clients	
	Remote shutdown, wake-on-lan, reboot	
	Remote network configuration	
	Session mirroring through VNC	
	Remote configuration of local and network file systems	
	Remote configuration of printers, system time, firewall	
	Execution of arbitrary Linux commands, remotely through web interface or SSH console.	
	File transfer through web interface, SCP, FTP.	
	Plugin based architecture for future expansion as per customer needs	

#	Feature	Versions
	Task scheduling for unattended upgrades, other administrative tasks	
D	**GUI Features**	
	Desktop and kiosk modes	
	Support for saving files on the Desktop and in folders	
	Automatic mounting of removable drives	
	Customisation of boot and desktop background as per customer needs	
E	**File System Support**	
	Microsoft – DOS, FAT32, NTFS	
	Linux – Ext2, Ext3, Ext4	
	SMB and CIFS, client and server	
	NFSv3 and NFSv4, client and server	
	Mounting of FTP and SSH trees	
F	**Remote Monitoring**	
	Comprehensive remote monitoring system with continuous graphing of important system parameters	
	Monitor disk performance and usage, network traffic, network connections, system temperature and voltages, processor utilisation and number of processes running, memory usage, uptime, time synchronisation, etc.	
	New parameters can be monitored as per customer needs	
	Monitor specific process – such as number of browser sessions	
	Remote and local logging. Centralised log processing.	
	SNMP support with MIB extensions	v1, v2c, v3
	Support for centralised monitoring software such as Nagios	

APPLICATIONS	

#	Feature	Versions
A	**Multimedia Support**	
	CD Digital Audio	
	DVD playback with navigation menus	
	Video CDs	
	Video codecs: H.263, H.264/MPEG-4 AVC, MJPEG, MPEG-1, MPEG-2, MPEG-4 Part 2, RealVideo, Sorenson, Theora, WMV	
	Audio codecs: AAC, AC3, AMR, DTS, FLAC, MP3, RealAudio, Speex, Vorbis, WMA	
	Protocols: RTP, RTSP, HTTP, FTP, MMS	
	Streaming video – transmission, playback and recording	
	Local web camera and TV tuner support	
	Music player with library organisation	
B	**Office Applications**	
	OpenOffice.Org	3.3
	Spreadsheet, Word processor, Presentation, Drawing, equation support	
	PDF Viewer	
	Image viewer – all popular image formats supported	
C	**Internet Applications**	
	Skype, with webcam support	2.1.0
	Videoconferencing with H.261 and Theora codecs	
	VoIP with SIP protocol; G.722, G.726, Speex, GSM and PCM codecs	
	Chat client with Yahoo!, MSN, Gtalk, Jabber and IRC support	

#	Feature	Versions
D	**Local Applications**	
	Support for DOS applications through DOS emulator	
	Support for Win32 applications through Windows emulator	
	Support for Linux console applications, as well as GTK and QT GUI applications	
	Support for local databases – MySQL, Sybase Anywhere, Lotus Expeditor	
	Support for local web applications through Apache and LAMP stack	
	Support for local .NET applications through the Mono stack	

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THIN CLIENT PROTOCOLS

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#	Feature	Versions
A	**Remote Redisplay Clients**	
	Citrix ICA client	11.x
	RDP Client	RDP version 5[1]
	VMware View Client	4.5.x
	VNC Client	
	XDMCP Client	
	NX Client	
	Graph-On Go Global	2.2.9
	Remote Execution – RSH, SSH, telnet	
B	**Server Support**	
	Windows Terminal Server	2003, 2008
	Windows	XP, Vista, 7
	Citrix XenApp, XenDesktop, Presentation Server	
	Red Hat Linux	4, 5, 6
	Ubuntu Linux	All releases up to 11.04
	Fedora Linux	All releases up to 14
	VMware View	4.0
C	**RDP Features**	
	Automatic username and password	
	Seamless RDP	
	Numlock synchronisation	
	Compression and encryption	
	Selectable Bandwidth consumption	
	Serial and Parallel Port forwarding	
	Local disk forwarding	
	Local printer forwarding	
	Sound forwarding	
	Smart Card device forwarding	
D	**Cloud Computing Support**	
	Mozilla Firefox	3.6.16, 4.0
	Google Chrome	9.0
	Adobe Reader	9.4.2
	Adobe Flash Player	10.2.153

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1 There is no support in the Linux RDP client – rdesktop – for the enhanced features of RDP protocol versions 6 and 7.

#	Feature	Versions
	Sun Java Runtime Environment	1.6.0 u24
	Embedded Multimedia Player	
	Archives – ZIP, ARJ, GZIP, BZIP2, ACE, CAB	
E	**Printing**	
	Printer redirection in RDP and ICA	
	LPD server for Linux/UNIX printing	
F	**Others**	
	Session sharing under ICA, VNC	
	Hot desking – Session migration from one thin client to another under RDP, ICA, VNC	
	Session view only support, for training and presentation purpose	
	Remote session management through management interface. Ability to copy sessions from one thin client to multiple thin clients, remotely.	

Conclusion

As evident from the list above, Thinux is a comprehensive thin client firmware that provides for all the features expected from a modern thin client. In addition, Thinvent provides customisation services where specific applications, devices, protocols or network can be supported as per customer requirements. Please contact us at the below mentioned address to discuss your requirement in detail.