theben

IP Schnittstelle KNX
Handbuch

LAN (PoE)

theben   KNX

ON

LAN / LINK

Telegram

IP Interface KNX

12...30 V DC

IP Schnittstelle KNX
Inhalt

Inhalt

IP Schnittstelle KNX
Inhalt

1 Allgemein

Die Theben IP Schnittstelle KNX verbindet den KNX-Bus mit einem Ethernet-Netzwerk. Über das Netzwerk können KNX-Telegramme an andere Geräte gesendet oder von diesen empfangen werden.

Die Schnittstelle kann als Programmierschnittstelle (ETS) eingesetzt werden und Clients, wie z.B. Visualisierungen, können über die Schnittstelle auf den KNX-Bus zugreifen.

1.1 Nutzung des Produkthandbuchs

Das vorliegende Handbuch gibt Ihnen detaillierte technische Informationen über Funktion, Montage und Programmierung des Theben KNX-Geräts. Anhand von Beispielen wird der Einsatz erläutert.

Das Handbuch ist in folgende Kapitel unterteilt:

Kapitel 1   Allgemein

Kapitel 2   Gerätetechnik

Kapitel 3   Inbetriebnahme

Kapitel 4   Planung und Anwendung

Kapitel A   Anhang

IP Schnittstelle KNX
Allgemein

Hinweise

In diesem Handbuch werden Hinweise und Sicherheitshinweise folgendermaßen dargestellt:

Hinweis
Bedienungserleichterungen, Bedienungstipps

Beispiele
Anwendungsbeispiele, Einbaubeispiele, Programmierbeispiele

Wichtig
Dieser Sicherheitshinweis wird verwendet, sobald die Gefahr einer Funktionsstörung besteht, ohne Schaden- oder Verletzungsrisiko.

Achtung
Dieser Sicherheitshinweis wird verwendet, sobald die Gefahr einer Funktionsstörung besteht, ohne Schaden- oder Verletzungsrisiko.

⚠ Gefahr
Dieser Sicherheitshinweis wird verwendet, sobald bei unsachgemäßer Handhabung Gefahr für Leib und Leben besteht.

⚠ ⚡ Gefahr
Dieser Sicherheitshinweis wird verwendet, sobald bei unsachgemäßer Handhabung akute Lebensgefahr besteht.

1.2 Produkt- und Funktionsübersicht

Das Theben IP Schnittstelle KNX verbindet den KNX-Bus mit einem Ethernet-Netzwerk. Über das Netzwerk können KNX-Telegramme an andere Geräte gesendet oder von diesen empfangen werden.

Die Schnittstelle kann als Programmierschnittstelle (ETS) eingesetzt werden und Clients, wie z.B. Visualisierungen, können über die Schnittstelle auf den KNX-Bus zugreifen.

Das Gerät verwendet zur Kommunikation das KNXnet / IP-Protokoll der KNX Association (Tunneling).
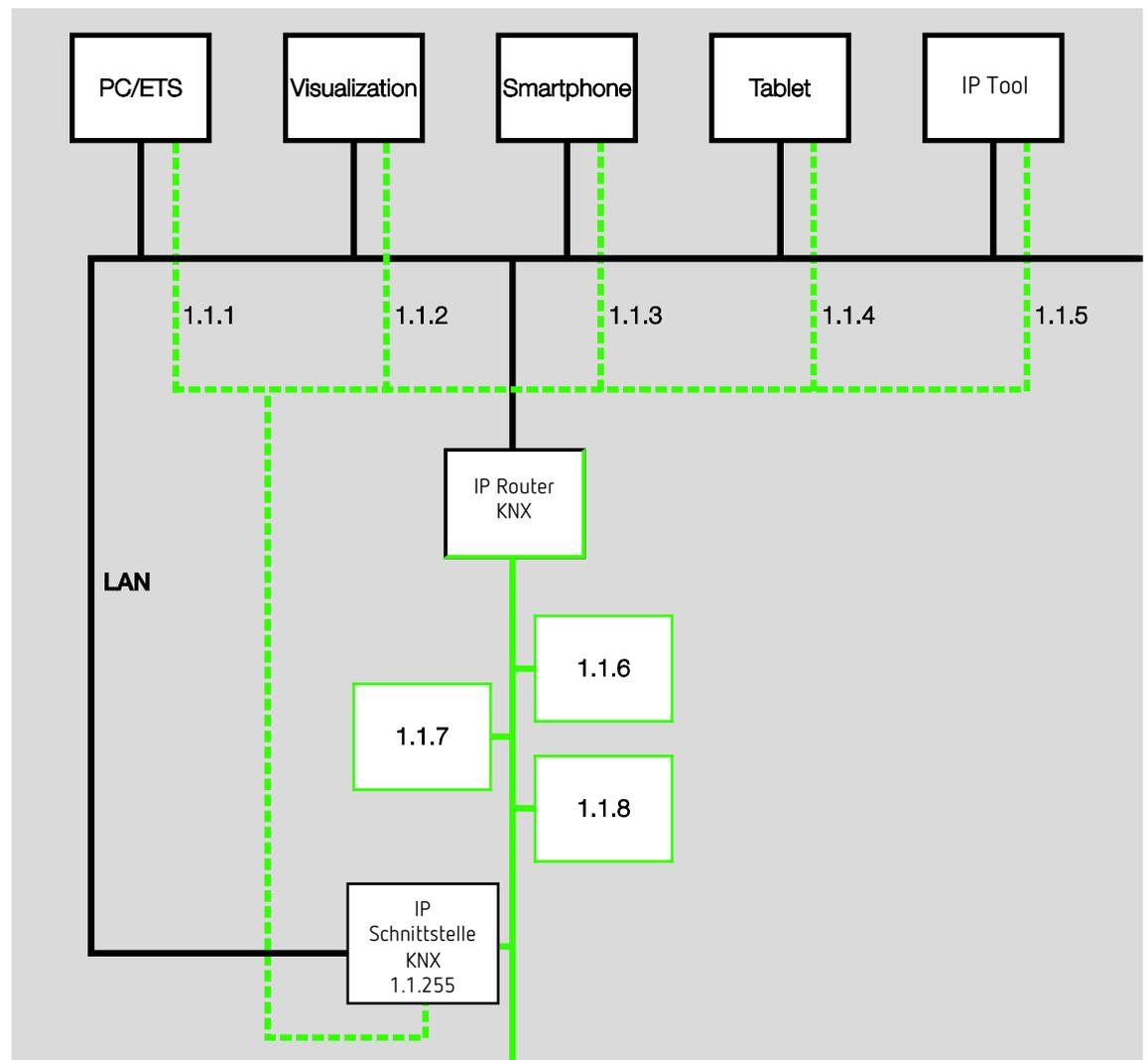
Die Schnittstelle verfügt über 5 Tunneling Server, siehe Kapitel Die Verwendung der integrierten Tunneling Server, S. 23. Diese unterstützen sowohl den Busmonitor- als auch den Gruppenmonitorbetrieb (alternativ).

Die Spannungsversorgung kann über PoE (Power over Ethernet) nach IEEE 802.3af Class 1 erfolgen oder über eine Hilfsspannung.

Für die IP Schnittstelle steht das Theben IP Tool zur Verfügung, mit dem die Schnittstellen im Netzwerk gefunden werden können (IP Discovery) und im Bedarfsfall die Firmware aktualisiert werden kann, siehe Kapitel Das IP Tool, S. 29.

IP Schnittstelle KNX
Allgemein

1.2.1   Übersicht Versionen

Die nachfolgende Tabelle gibt einen Überblick, welche Funktionen mit der IP Schnittstelle KNX und den Applikationsprogrammen *IP Schnittstelle ETS 3* (ETS 3 und ETS 4), *IP Schnittstelle* (ab ETS 4) möglich sind.

Gerät	IP Schnittstelle KNX	
Applikation	IP Schnittstelle ETS3	IP Schnittstelle
ETS	ETS 3	Ab ETS 4
Eigenschaften *IP Schnittstelle KNX*		
Anzahl Tunneling Server	1	5
IP-Discovery (IP Tool)	■	■
Firmware Update (IP Tool)	■	■
Power over Ethernet	■	■

■ = Eigenschaft trifft zu

- = Eigenschaft trifft nicht zu

Hinweis
Die Applikation *IP Schnittstelle* wird in der ETS 4 erst ab Version 4.1.7 unterstützt, in der ETS 5 ab Version 5.0.4.

Hinweis
Eine Beschreibung der Funktionen ist in der Online-Hilfe des IP Tools zu finden.

2 Gerätetechnik

IP SCHNITTSTELLE KNX

Die IP Schnittstelle KNX bildet die Schnittstelle zwischen KNX-Installationen und IP-Netzwerken.
Mit der ETS können KNX-Geräte über das LAN programmiert werden und Clients wie z.B. Visualisierungen können über das IP Schnittstelle KNX auf den KNX-Bus zugreifen (es stehen 5 Tunneling Server zur Verfügung ab ETS 4).

Das Gerät verwendet das KNXnet/IP-Protokoll der KNX-Association (Tunneling). Die Stromversorgung erfolgt über 12 bis 30 V DC oder PoE (Power over Ethernet).

2.1 Technische Daten

Versorgung	Hilfsspannung U_s	12...30 V DC (+10 % / -15 %) oder PoE (IEEE 802.3af Klasse 1)
	Verlustleistung	Maximal 1,8 W
	Stromaufnahme Hilfsspannung	Maximal 120 mA bei 12 V
	Nennspannung U_n	12 V DC
	Stromaufnahme KNX	< 10 mA
Anschlüsse	KNX	Busanschlussklemme
	Steckklemme für Betriebsspannung	Steckklemme
	LAN	RJ45-Buchse für 10/100BaseT, IEEE 802.3 Netzwerke, AutoSensing
Bedien- und Anzeigeelemente	LED rot und Taste	Zur Vergabe der physikalischen Adresse
	LED grün "On"	Anzeige Betriebsbereitschaft
	LED gelb "LAN/Link"	Anzeige Netzwerkverbindung
	LED gelb "Telegram"	Anzeige KNX-Telegrammverkehr
Schutzart	IP 20	Nach DIN EN 60 529
Schutzklasse	II	Nach DIN EN 61 140
Isolationskategorie	Überspannungskategorie	III nach DIN EN 60 664-1
	Verschmutzungsgrad	2 nach DIN EN 60 664-1
KNX-Sicherheitskleinspannung	SELV 30 V DC	
Temperaturbereich	Betrieb	-5 °C...+45 °C
	Lagerung	-25 °C...+55 °C
	Transport	-25 °C...+70 °C
Umgebungsbedingung	maximale Luftfeuchte	95 %, keine Betauung zulässig
	Luftdruck	Atmosphäre bis 2.000 m

IP Schnittstelle KNX
Gerätetechnik

Design	Reiheneinbaugerät (REG)	Modulares Installationsgerät, ProM
	Abmessungen	90 x 36 x 64 mm (H x B x T)
	Einbaubreite	2 Module à 18 mm
	Einbautiefe	68 mm
Montage	Auf Tragschiene 35 mm	Nach DIN EN 60 715
Einbaulage	Beliebig	
Gewicht	0,1 kg	
Gehäuse, Farbe	Kunststoff, halogenfrei, grau	
Approbation	KNX nach EN 50 090-1, -2	
CE-Zeichen	gemäß EMV- und Niederspannungsrichtlinien	

Gerätetyp	Applikation	maximale Anzahl Kommunikationsobjekte	maximale Anzahl Gruppenadressen	maximale Anzahl Zuordnungen
IP SCHNITTSTELLE KNX	IP Schnittstelle/...*	0	0	0

* ... = aktuelle Versionsnummer der Applikation. **Bitte beachten Sie hierzu die Softwareinformationen auf unserer Homepage.**

Hinweis
Für die Programmierung sind die ETS und die aktuelle Applikation des Gerätes erforderlich.
Die aktuelle Applikation finden Sie mit der entsprechenden Softwareinformation zum Download im Internet unter *www.theben.de/downloads*. Nach dem Import in die ETS liegt das Gerät im Fenster *Kataloge* unter *Theben AG/Systemgeräte/IP Schnittstellen*.
Das Gerät unterstützt nicht die Verschließfunktion eines KNX-Geräts in der ETS. Falls Sie den Zugriff auf alle Geräte des Projekts durch einen *BCU-Schlüssel* sperren, hat es auf dieses Gerät keine Auswirkung. Es kann weiterhin ausgelesen und programmiert werden.

IP Schnittstelle KNX
Gerätetechnik

2.2   Anschlussbild
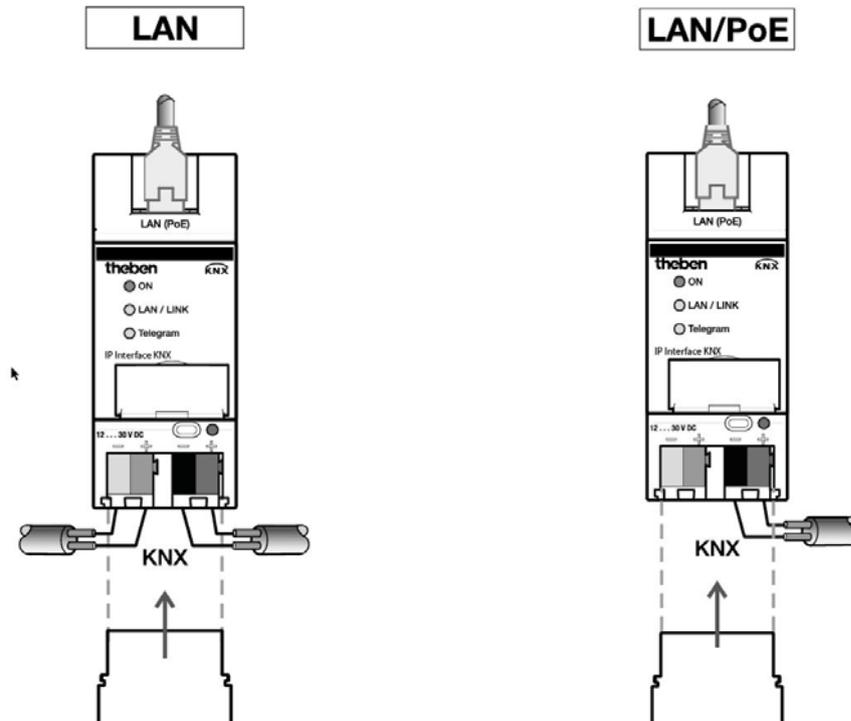
IP SCHNITTSTELLE KNX

1	LED ON	**6**	LED *Programmieren*
2	LED LAN / LINK	**7**	Taste *Programmieren*
3	LED Telegramm	**8**	Schildträger
4	Anschluss Spannungsversorgung	**9**	Anschluss LAN bzw. LAN / PoE
5	Anschluss KNX	**10**	Abdeckkappe

IP Schnittstelle KNX
Gerätetechnik

2.3   Maßbild

IP SCHNITTSTELLE KNX
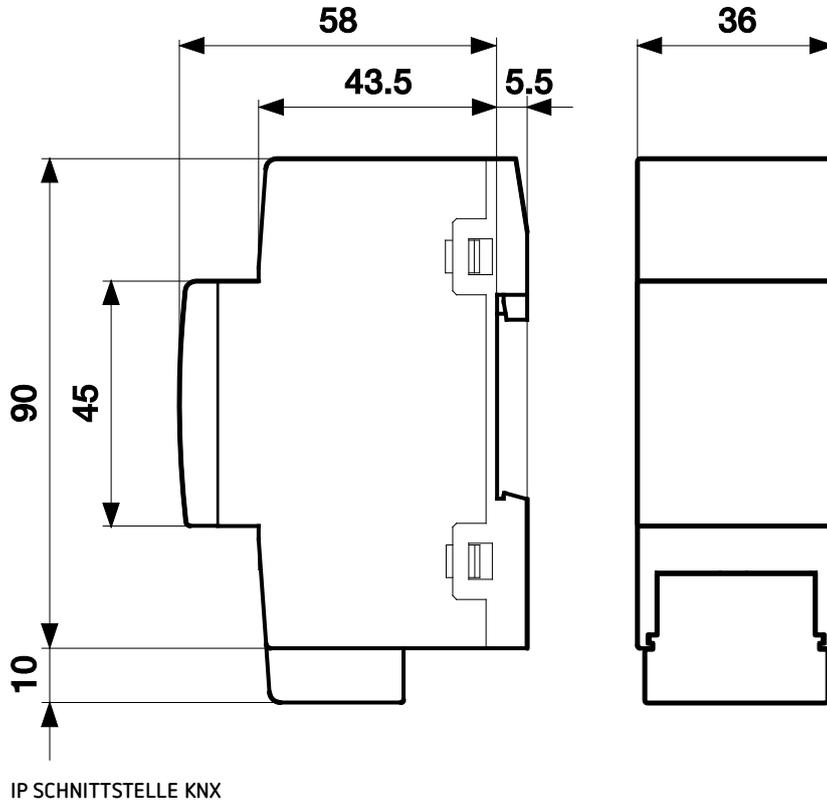
2.4	Montage und Installation

Das Gerät ist ein Reiheneinbaugerät zum Einbau in Verteilern zur Schnellbefestigung auf 35-mm-Tragschienen nach DIN EN 60 715.

Das Gerät kann in jeder Einbaulage montiert werden.

Die Verbindung zum Bus erfolgt über die mitgelieferte Busanschlussklemme. Die Klemmenbezeichnung befindet sich auf dem Gehäuse.

Das Gerät ist betriebsbereit, nachdem die Busspannung und die Hilfsspannung angelegt wurden.

Die Zugänglichkeit des Geräts zum Betreiben, Prüfen, Besichtigen, Warten und Reparieren muss gemäß DIN VDE 0100-520 sichergestellt sein.

Inbetriebnahmevoraussetzung

Um das Gerät in Betrieb zu nehmen, werden ein PC mit der ETS ab ETS 3 V3.0f oder höher sowie eine Versorgungsspannung von 12 bis 30 V DC benötigt. Alternativ kann die Versorgung über PoE (Power over Ethernet) erfolgen.

Mit dem Anlegen der Busspannung und der Hilfsspannung ist das Gerät betriebsbereit.

Montage und Inbetriebnahme dürfen nur von Elektrofachkräften ausgeführt werden. Bei der Planung und Errichtung von elektrischen Anlagen sowie von sicherheitstechnischen Anlagen für Einbruch- und Branderkennung sind die einschlägigen Normen, Richtlinien, Vorschriften und Bestimmungen des jeweiligen Landes zu beachten.

- Gerät bei Transport, Lagerung und im Betrieb vor Feuchtigkeit, Schmutz und Beschädigung schützen!

- Gerät nur innerhalb der spezifizierten technischen Daten betreiben!

- Gerät nur im geschlossenen Gehäuse (Verteiler) betreiben!

- Vor Montagearbeiten ist das Gerät spannungsfrei zu schalten.

⚠ ⚡	**Gefahr**

Um gefährliche Berührungsspannung durch Rückspeisung aus unterschiedlichen Außenleitern zu vermeiden, muss bei einer Erweiterung oder Änderung des elektrischen Anschlusses eine allpolige Abschaltung vorgenommen werden.

Auslieferungszustand

Das Gerät wird mit der physikalischen Adresse 15.15.255 und 5 weiteren physikalischen Adressen 15.15.100 für Tunneling-Verbindungen ausgeliefert.

Die IP-Adresse ist auf automatische Vergabe (DHCP/AutoIP) eingestellt.

Vergabe der physikalischen Adresse

In der ETS erfolgt die Vergabe und Programmierung der physikalischen Adressen und Parameter.

Das Gerät besitzt zur Vergabe der physikalischen Adresse eine Taste *Programmieren*. Nachdem die Taste betätigt wurde, leuchtet die rote LED *Programmieren* auf. Sie erlischt, sobald die ETS die physikalische Adresse vergeben hat oder die Taste *Programmieren* erneut betätigt wurde.

Downloadverhalten

Das Gerät kann auf unterschiedliche Arten programmiert werden: Über einen der integrierten Tunneling Server ("lokaler Download") oder über eine weitere Programmierschnittstelle (USB oder IP).

Damit das Gerät programmiert werden kann, muss eine Verbindung zum KNX TP (Twisted Pair) bestehen.

Ca. 10 Sekunden nach erfolgtem Download startet das Gerät neu und schließt alle offenen Tunneling-Verbindungen. Sofern beim Download die IP-Adresse des Gerätes geändert wurde, müssen die Tunneling-Verbindungen manuell in den Tunneling Clients neu konfiguriert werden. Tunneling Clients stellen die Verbindung zum Server über die IP Adresse her.

Die Übernahme der mit der ETS parametrierten Daten erfolgt ca. 30-60 Sekunden nach dem Download.

Reinigen

Das Gerät ist vor dem Reinigen spannungsfrei zu schalten. Verschmutzte Geräte können mit einem trockenen oder leicht mit Seifenlauge angefeuchteten Tuch gereinigt werden. Auf keinen Fall dürfen ätzende Mittel oder Lösungsmittel verwendet werden.

Wartung

Das Gerät ist wartungsfrei. Bei Schäden, z.B. durch Transport und/oder Lagerung, dürfen keine Reparaturen vorgenommen werden.

2.5	Beschreibung der Ein- und Ausgänge

Versorgungsspannungseingang 12 bis 30 V DC

Am Eingang für die Versorgungsspannung darf nur eine Gleichspannung von 12 bis 30 V angeschlossen werden. Wir empfehlen die Verwendung der Netzteile Spannungsvers. 640 mA S KNX aus unserem Sortiment.

Achtung
Die Versorgungsspannung muss 12 bis 30 V DC betragen, oder das Gerät wird über PoE (Power over Ethernet) nach IEEE 802.3af Class 1 versorgt.
Bei Anschluss von 230 V kann das Gerät zerstört werden!

KNX-Anschluss

Zum Anschluss an den KNX-Bus wird die mitgelieferte Busanschlussklemme verwendet.

Hinweis
Zur Programmierung ist ETS 3 ab Version 3.0f oder höher erforderlich.

LAN-Anschluss

Die Netzwerkanbindung erfolgt über eine Ethernet-RJ45-Schnittstelle für LAN-Netzwerke. Die Netzwerkschnittstelle kann mit einer Übertragungsgeschwindigkeit von 10/100 MBit/s betrieben werden. Die Netzwerkaktivität wird durch die LED LAN/LINK auf der Gehäusefrontseite angezeigt.

2.6   Bedienelemente

Es befinden sich keine Bedienelemente am IP Schnittstelle

2.7   Anzeigeelemente

Auf der Frontseite des Gerätes befinden sich drei LED zur Anzeige:

🟢	🟡	🟡
ON	LAN/LINK	Telegram

ON

- Die LED leuchtet wenige Sekunden nach Zuschalten der Hilfsspannung.

- Die LED leuchtet nach dem Zuschalten der Hilfsspannung zunächst dauerhaft. Nach ca. 40 Sekunden fängt die LED an zu blinken, bis der Aufstartvorgang vollständig abgeschlossen ist und die LED wieder dauerhaft leuchtet. Dies kann 5 bis 60 Sekunden dauern.

LAN/LINK

- Die LED leuchtet, wenn die Hilfsspannung vorhanden ist und die Schnittstelle an ein Ethernet-Netzwerk angeschlossen ist.

- Die LED blinkt, wenn das Gerät Aktivität auf dem Netzwerk erkennt, z.B. wenn Daten ausgetauscht werden.

Telegram

- Die LED leuchtet, wenn die Schnittstelle an ein TP-Netzwerk angeschlossen ist und der Aufstartvorgang (siehe LED "On") vollständig abgeschlossen ist.

- Die LED blinkt, wenn das Gerät Aktivität auf der KNX-Sublinie TP1 (Twisted Pair 1) erkennt, z.B. wenn Daten ausgetauscht werden.

3 Inbetriebnahme

Die Parametrierung der IP Schnittstelle KNX erfolgt mit der Applikation und der Engineering Tool Software ETS.

Die Applikation ist unter *Theben AG/Systemgeräte/IP Schnittstellen* zu finden.

Für die Parametrierung wird ein PC oder Laptop mit der ETS und eine Anbindung an den KNX benötigt.

3.1 Überblick

Die Parametrierung des IP Schnittstelle erfolgt mit der Engineering Tool Software ETS 3 ab Version 3.0f oder höher.

Wichtig
Die Applikationen für ETS 3 ab Version 3.0f und für ETS 4 Version 4.1.7 oder höher unterscheiden sich im Funktionsumfang, siehe Übersicht Versionen, S. 6. Eine Konvertierung ist nicht möglich.

Hinweis
Die Applikation *IP Schnittstelle* wird in der ETS 4 erst ab Version 4.1.7 unterstützt, in der ETS 5 ab Version 5.0.4.

Hinweis
Eine Beschreibung der Funktionen ist in der Online-Hilfe des IP Tools zu finden.

3.2   Parameter

Dieses Kapitel beschreibt die Parameter der IP Schnittstelle an Hand der Parameterfenster.

Die Parameterfenster sind dynamisch aufgebaut, so dass je nach Parametrierung und Funktion der Ausgänge weitere Parameter oder ganze Parameterfenster freigegeben werden.

Die Defaultwerte der Parameter sind unterstrichen dargestellt, z.B.:

Optionen: ja
                 <u>nein</u>

Hinweis
Für alle Applikationen (ETS 3, ETS 4 und ETS 5) wurden die Screenshots in der ETS 5 erstellt. Die Darstellung kann leicht abweichen. Die Parameter und Optionen sind identisch.

IP Schnittstelle KNX
Inbetriebnahme

3.2.1 **Applikation für ETS 4 und ETS 5**

3.2.1.1 **Parameterfenster *IP-Einstellungen***
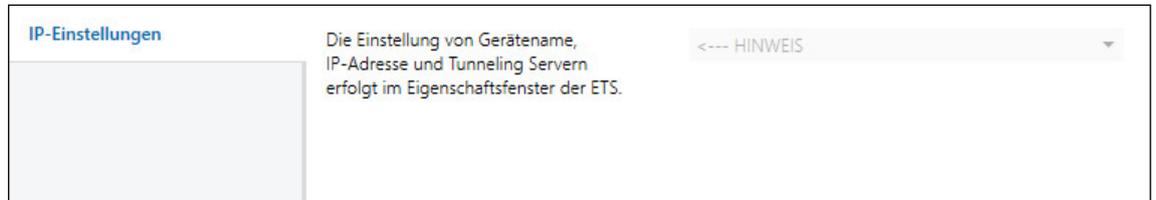
Die Konfiguration der IP-Parameter (Gerätename, Zuweisung der IP-Adresse per DHCP oder fest) erfolgt im entsprechenden Eigenschaftenfenster der ETS.

Im Eigenschaftsfenster *Einstellungen* kann der Gerätename eingetragen werden. Im Feld *Name* kann der Gerätename, der ins Gerät geladen wird, geändert werden.

Der Gerätename dient der Identifizierung des Geräts im LAN. Bei einer Suchanfrage, z.B. durch die ETS, meldet jedes KNXnet/IP-Gerät seinen Namen und kann darüber zugeordnet werden. So kann z.B. durch den Namen IP Schnittstelle, EG, UV7 auch der Einbauort des Geräts mitgeteilt werden.

Hinweis
Bei Auslieferung lautet der Gerätename standardmäßig "IP Schnittstelle". Nach dem ersten Download wird der Gerätename, der im Eigenschaftsfenster der ETS eingetragen wird, ins Gerät geladen.

Achtung
Es werden nur die ersten 30 Zeichen des Gerätenamens ins Gerät geladen, der Rest wird abgeschnitten.

IP Schnittstelle KNX
Inbetriebnahme

Im Eigenschaftsfenster *IP* kann die IP-Adresse definiert werden.
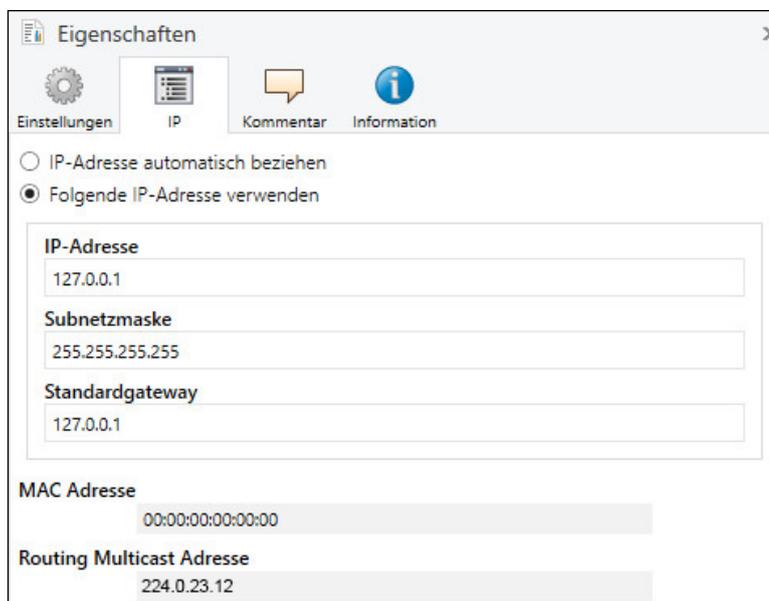
Für die Einstellung der IP-Adresse stehen folgende Optionen zur Verfügung:

Optionen: 	IP-Adresse automatisch beziehen
	Folgende IP-Adresse verwenden

- *IP-Adresse automatisch beziehen*: In der Standardeinstellung erwartet die IP Schnittstelle die Zuweisung einer IP-Adresse durch einen DHCP-Server (dynamic host configuration protocol). Dieser Server vergibt auf Anfrage eine freie IP-Adresse an das Gerät. Ist kein DHCP-Server im Netzwerk verfügbar oder antwortet dieser nicht, so startet das Gerät eine Auto-IP-Prozedur. Es vergibt sich selbst eine Adresse aus dem reservierten Bereich für Auto-IP-Adressen (169.254.xxx.yyy).

  Zu DHCP: siehe Kap. Vergabe der IP-Adresse, S. 27.

- *Folgende IP-Adresse verwenden*: Ist kein DHCP-Server im Netzwerk installiert oder soll die IP-Adresse immer gleich sein, so kann sie auch fest vergeben werden.

IP-Adresse

Optionen: 	192.168.0.3

Subnetzmaske

Optionen: 	255.255.255.0

Standardgateway

Optionen: 	192.168.0.1

MAC Adresse

Optionen: 	00:00:00:00:00:00

IP Schnittstelle KNX
Inbetriebnahme

Hinweis
Die MAC-Adresse wird nach einem Download aus dem Gerät ausgelesen.   Zusätzlich ist die MAC-Adresse auf dem Gerät aufgebracht und kann alternativ über das IP Tool ermitelt werden.

Das IP Tool kann kostenlos von unserer Homepage (www.theben.de/downloads) geladen werden.

Für das IP Tool ist keine ETS und auch keine Installation des Falcon erforderlich.

Die Systemanforderungen sind ein Windows-System ab Betriebssystemversion Windows 7 (Service Pack 3) und das .NET Framework 4.0.

Der integrierte Falcon 5.x unterschützt nur USB und IP Schnittstellen (kein RS232).

Hinweis
Eine Beschreibung der Funktionen ist in der Online-Hilfe des IP Tools zu finden.

3.2.2 **Applikation für ETS 3 (IP Schnittstelle ETS 3)**

3.2.2.1 **Parameterfenster *IP-Einstellungen***

Im Parameterfenster *IP-Einstellungen* werden Einstellungen auf der IP-Seite der IP Schnittstelle vorgenommen.

IP-Einstellungen	Gerätename [max. 30 Zeichen]	IP Schnittstelle KNX
	Zuweisung der IP-Adresse	● automatisch (DHCP, AutoIP) ○ fest

Gerätename [max. 30 Zeichen]

Optionen: Theben IP Schnittstelle KNX

Der Gerätename dient der Identifizierung des Geräts im LAN. Bei einer Suchanfrage, z.B. durch die ETS, meldet jedes KNXnet/IP-Gerät seinen Namen und kann darüber zugeordnet werden. So kann z.B. durch den Namen IP Schnittstelle, EG, UV7 auch der Einbauort des Geräts mitgeteilt werden.

Der Text darf maximal 30 Zeichen lang sein. Dieser Name wird auch angezeigt, wenn das Gerät in der ETS als Kommunikationsschnittstelle ermittelt wird.

Hinweis
Bei Auslieferung lautet der Gerätename standardmäßig "IP Schnittstelle KNX". Nach dem ersten Download wird der Gerätename aus der Applikation übernommen.

Für weitere Informationen siehe Die Verwendung der integrierten Tunneling Server, S. 23

Zuweisung der IP-Adresse

Optionen: automatisch (DHCP, AutoIP)
                         fest

- *automatisch (DHCP, AutoIP)*: In der Standardeinstellung erwartet die IP Schnittstelle die Zuweisung einer IP-Adresse durch einen DHCP-Server (dynamic host configuration protocol). Dieser Server vergibt auf Anfrage eine freie IP-Adresse an das Gerät. Ist kein DHCP-Server im Netzwerk verfügbar oder antwortet dieser nicht, so startet das Gerät eine Auto-IP-Prozedur. Es vergibt sich selbst eine Adresse aus dem reservierten Bereich für Auto-IP-Adressen (169.254.xxx.yyy).

- *fest*: Ist kein DHCP-Server im Netzwerk installiert oder soll die IP-Adresse immer gleich sein, so kann sie auch fest vergeben werden.

  Das Parameterfenster erweitert sich um die Einstellungen der IP-Adresse.

IP Schnittstelle KNX
Inbetriebnahme

Diese Parameter sind nur sichtbar, wenn für den Parameter *Zuweisung der IP-Adresse* die Option *fest* gewählt wurde.

IP-Einstellungen	Gerätename [max. 30 Zeichen]	IP Schnittstelle KNX
	Zuweisung der IP-Adresse	○ automatisch (DHCP, AutoIP) ⦿ fest
	IP-Adresse	
	Byte 1	192
	Byte 2	168
	Byte 3	0
	Byte 4	222
	Subnetzmaske	
	Byte 1	255
	Byte 2	255
	Byte 3	255
	Byte 4	0
	Standardgateway	
	Byte 1	0
	Byte 2	0
	Byte 3	0
	Byte 4	0

IP-Adresse

Byte x

Optionen: 0…255

Die IP-Adresse ist die eindeutige Adresse der IP Schnittstelle im LAN.

Diese Adresse ist byteweise einzutragen, z.B. für die Adresse 192.168.0.222 wie folgt:

Byte 1: 192
Byte 2: 168
Byte 3: 0
Byte 4: 222

Subnetzmaske

Byte x

Optionen: 0…255

Die *Subnet-Maske* definiert die Klasse des Netzwerks. Abhängig von der Anzahl und Struktur der Subnets muss die Subnet-Maske entsprechend gesetzt werden. Im einfachsten Fall eines kleinen Netzwerks sollte die Subnet-Maske 255.255.255.0 wie folgt eingestellt werden:

Byte 1:   255
Byte 2:   255
Byte 3:   255
Byte 4:   0

Standardgateway

Byte x

Optionen: 0…255

Der Parameter *Standard Gateway* gibt die Verbindungsstelle, z.B. die IP-Adresse eines Routers zwischen Netzwerken an, durch die IP-Telegramme übertragen werden sollen. Diese Gateways sind nur in größeren Netzwerken vorhanden. Für kleine Netzwerke kann die Einstellung 0.0.0.0 beibehalten werden.

3.3 Kommunikationsobjekte

Die IP Schnittstelle KNX hat keine KNX-Kommunikationsobjekte.

3.4 Die Verwendung der integrierten Tunneling Server

Die IP Schnittstelle bietet 5 zusätzliche physikalische Adressen, die für eine Tunneling-Verbindung verwendet werden können. Diese sogenannten Tunneling Server können mit der ETS als Programmierschnittstelle oder mit einem anderen Client, z.B. einer Visualisierung, verwendet werden.
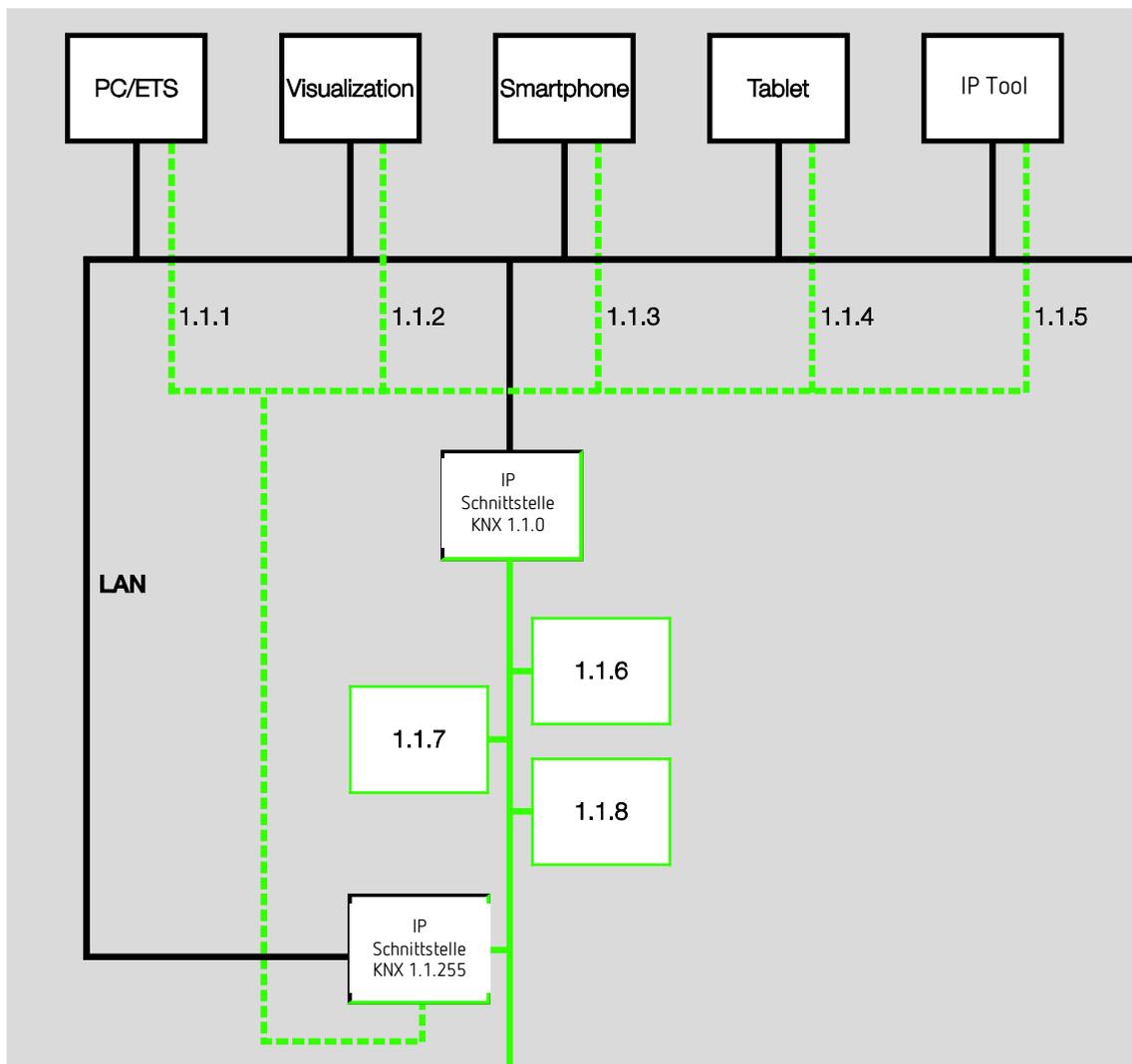
Bei Tunneling verbindet sich ein Client mit einer Buslinie. Das Tunneling-Verfahren verwendet UDP, beinhaltet aber eine Sicherungsschicht, so dass im Fehlerfall Telegramme wiederholt werden.

Hinweis
Die physikalische Adresse für die Tunneling-Verbindung muss in die Topologie passen. Daher müssen die Adressen aus dem Adressbereich der Linie gewählt werden. Bei Auslieferung haben alle Tunneling Server die Adresse 15.15.100.   Die Parametrierung der Tunneling-Verbindungen hängt von der verwendeten ETS-Version ab.   • In der ETS 4 und ETS 5 werden die ersten 5 freien Adressen in der Linie vergeben, nachdem die Schnittstelle in eine Linie eingefügt wurde.   • In der ETS 3 steht 1 Tunneling-Verbindung zur Verfügung.

IP Schnittstelle KNX
Inbetriebnahme

3.4.1   **Einstellungen in ETS 4/ETS 5**

In der ETS ab Version ETS 4 steht für die Einstellung der zusätzlichen physikalischen Adressen ein zusätzliches Eigenschaftenfenster zur Verfügung.

Die ETS reserviert automatisch nach Einfügen der Schnittstelle in die Linie die ersten 5 freien Adressen dieser Linie für die Tunneling Server der Schnittstelle (ETS 4 und ETS 5). Dies ist eine Eigenschaft der ETS und kann nicht geändert werden.

Obwohl das Gerät im Auslieferungszustand alle 5 Adressen auf 15.15.100 stehen hat, werden nach dem ersten Download die Adressen auf die ersten freien Adressen im Projekt umgestellt.

Sollte dies nicht erwünscht sein, kann man das manuell im Eigenschaftenfenster ändern.

Ändern der Adresse
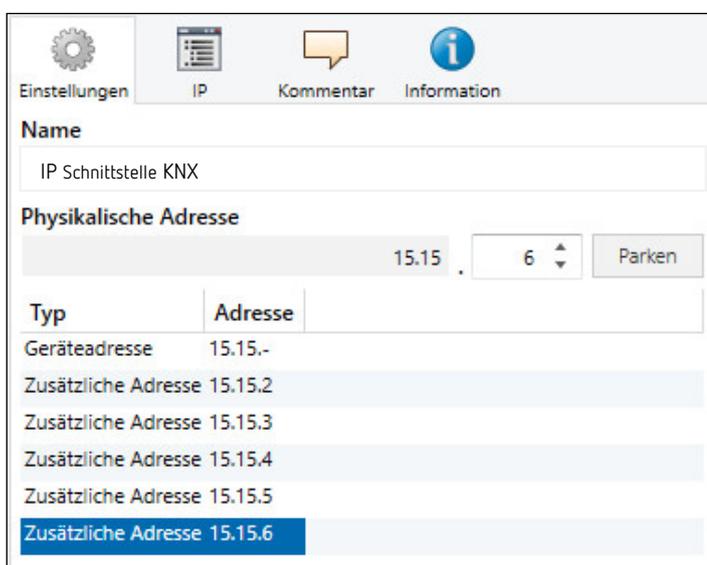
Zum Ändern der Adresse die aktuelle Geräteadresse bzw. zusätzliche Adresse markieren und mit den Pfeiltasten nach oben oder unten die gewünschte Ziffer auswählen. Durch Markieren einer anderen Adresse wird die geänderte Adresse gespeichert.

Die geänderten Adressen werden erst nach einem Download vom Gerät übernommen.

Parken

Ist für einen Tunnel die Option *Parken* aktiviert, so wird dieser Tunnel nicht verwendet.

Sofern bei allen Tunneling Servern die Option *Parken* gewählt wird, erhalten alle Tunneling Server die Adresse 15.15.255. Damit ist nur 1 Tunneling Server verfügbar.

3.4.2   **Einstellungen in ETS 3**

In der ETS 3 erfolgt die Vergabe der zusätzlichen physikalischen Adresse über die Menüpunkte *Extras* → *Optionen* → *Kommunikation* → *Einstellungen*.

4 Planung und Anwendung

4.1 Die IP Schnittstelle im Netzwerk

Die IP Schnittstelle ist für den Einsatz in 10/100-BaseT-Netzwerken nach IEEE 802.3 ausgelegt. Das Gerät besitzt eine AutoSensing-Funktion und stellt die Übertragungsgeschwindigkeit (10 oder 100 MBit) automatisch ein.

4.1.1 Vergabe der IP-Adresse

DHCP/AutoIP

Die IP-Adresse des Geräts kann von einem DHCP-Server bezogen werden. Dazu ist die Einstellung einer automatischen Vergabe der IP-Adresse in der ETS nötig, siehe Parameterfenster IP-Einstellungen, S. 17 (für Applikation *IP Schnittstelle ETS 3*) oder Parameterfenster IP-Einstellungen, S. 20 (für Applikation *IP Schnittstelle*). Wird bei dieser Einstellung kein DHCP-Server gefunden, startet das Gerät eine AutoIP-Prozedur und vergibt sich selbständig eine IP-Adresse aus dem Bereich 169.254.xxx.yyy.

Die IP-Adresse, die das Gerät beim Aufstarten erhält (per DHCP oder AutoIP), wird bis zum nächsten Neustart (Aus-/Einschalten oder Neuprogrammierung) oder der erneuten Verfügbarkeit eines DHCP-Servers beibehalten

Beim Aufstarten ist kein DHPC Server vorhanden:

Sollte beim Aufstarten der IP Schnittstelle kein DHCP Server vorhanden sein, vergibt sich das Gerät selbst eine AutoIP Adresse. Die Schnittstelle sucht dann zyklisch (3 Telegramme im Abstand von 3 Sekunden, anschließend 20 Sekunden Pause) nach einem DHCP Server. Sobald wieder ein Server vorhanden ist, wird die vom DHCP-Server zugeteilte Adresse verwendet.

DHCP-Server fällt aus (Gerät hat IP-Adresse bereits von DHCP bezogen):

Bis zum Ende der Lease-Zeit (Gültigkeitsdauer der IP-Adresse, wird bei der Vergabe der IP-Adresse vom DHCP-Server festgelegt) laufen die Anfragen zur Verlängerung der Nutzungsrechte dieser IP-Adresse ins Leere. Die IP-Adresse wird weiter verwendet.

Am Ende der Lease-Zeit oder nach einem Download suchen sich die Geräte eine AutoIP-Adresse.

Feste IP-Adresse

Soll die IP-Adresse des Gerätes fest zugeordnet sein, so kann in der ETS eine feste IP-Adresse (sowie Subnet-Maske und Standard Gateway) eingestellt werden, siehe Parameterfenster IP-Einstellungen, S. 17 (für Applikation *IP Schnittstelle*) oder Parameterfenster IP-Einstellungen, S. 20 (für Applikation *IP Schnittstelle*).

4.1.2   **KNX-Telegramme im Netzwerk**

Hinweis
Während eines IP-, TCP- oder UDP-Flooding (Zugriff aus dem Internet) ist die IP Schnittstelle nicht erreichbar. Alle Dienste sind wieder verfügbar, sobald das Flooding beendet ist. Um diese Reaktion zu vermeiden, ist eine Datenratenlimitierung auf Netzwerkebene einzustellen. Bitte sprechen Sie dazu mit dem Netzwerkadministrator.

4.2	**Das IP Tool**

Zu den IP-Einstellungen gelangen Sie über die Schaltflächen *Verbinden* und *IP-Geräte* .

Multifunktionsleiste: Umschalten zwischen Discovery, Firmware Update und Unicast

Klicken Sie auf die entsprechende Schaltfläche, um den Modus *Discovery*, *Update* oder *Unicast* auszuwählen.

Die Funktion "Unicast" steht bei der Schnittstelle nicht zur Verfügung.

Discovery

Wählen Sie in der Multifunktionsleiste den Modus *Discovery*.

Diese Funktion dient zum Auffinden und Anzeigen von Theben IP-Geräten im Netzwerk.

Hinweis
Eine Beschreibung der Funktionen ist in der Online-Hilfe des IP Tools zu finden.

Firmware Update

Wählen Sie in der Multifunktionsleiste den Modus *Update*.

Sofern es einmal notwendig sein sollte, kann mit dieser Funktion die Firmware aktualisiert werden.

Wichtig
Die Firmware muss vorab aus dem Internet geladen werden (www.theben.de / downloads*)*. Dazu verbindet sich das IP Tool **bei bestehender Internetverbindung** mit einem Server.   Für die Aktualisierung der Geräte auf der Anlage ist dann keine Internetverbindung mehr notwendig.

Wichtig
Während des Updatevorgangs muss zusätzlich zum IP-Netzwerk (LAN) auch der KNX-Bus (TP) angeschlossen sein, damit die KNX-Parameter korrekt wiederhergestellt werden können. Andernfalls schlägt der Updatevorgang fehl.

Hinweis
Eine Beschreibung der Funktionen ist in der Online-Hilfe des IP Tools zu finden.

Hinweis
Für den Updatevorgang muss das i-bus Tool mit Administratorrechten ausgeführt werden.

A **Anhang**

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Buildroot (v2012-05):

Buildroot is a simple, efficient and easy-to-use tool to generate embedded

Linux systems through cross-compilation.

The documentation can be found in docs/manual. You can generate a text

document with 'make manual-text' and read output/docs/manual/manual.text.

Online documentation can be found at http://buildroot.org/docs.html

To build and use the buildroot stuff, do the following:

1) run 'make menuconfig'

2) select the target architecture and the packages you wish to compile

3) run 'make'

4) wait while it compiles

5) find the kernel, bootloader, root filesystem, etc. in output/images

You do not need to be root to build or run buildroot. Have fun!

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Buildroot comes with a basic configuration for a number of boards. Run

'make list-defconfigs' to view the list of provided configurations.

Please feed suggestions, bug reports, insults, and bribes back to the

buildroot mailing list: buildroot@buildroot.org

You can also find us on #buildroot on Freenode IRC.

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<signature of Ty Coon>, 1 April 1989

Ty Coon, President of Vice

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sshpty.c is taken from OpenSSH 3.5p1,

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=====

loginrec.c

loginrec.h

atomicio.h

atomicio.c

and strlcat() (included in util.c) are from OpenSSH 3.6.1p2, and are licensed

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loginrec is written primarily by Andre Lucas, atomicio.c by Theo de Raadt.

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Gdbserver (v7.2.50.20100908-cvs):

README for GNU development tools

This directory contains various GNU compilers, assemblers, linkers,

debuggers, etc., plus their support routines, definitions, and documentation.

If you are receiving this as part of a GDB release, see the file gdb/README.

If with a binutils release, see binutils/README; if with a libg++ release,

see libg++/README, etc. That'll give you info about this

package -- supported targets, how to use it, how to report bugs, etc.

It is now possible to automatically configure and build a variety of

tools with one command. To build all of the tools contained herein,

run the ``configure'' script here, e.g.:

        ./configure

        make

To install them (by default in /usr/local/bin, /usr/local/lib, etc),

then do:

        make install

(If the configure script can't determine your type of computer, give it

the name as an argument, for instance ``./configure sun4''. You can

use the script ``config.sub'' to test whether a name is recognized; if

it is, config.sub translates it to a triplet specifying CPU, vendor,

and OS.)

If you have more than one compiler on your system, it is often best to

explicitly set CC in the environment before running configure, and to

also set CC when running make. For example (assuming sh/bash/ksh):

CC=gcc ./configure

make

A similar example using csh:

setenv CC gcc

./configure

make

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REPORTING BUGS: Again, see gdb/README, binutils/README, etc., for info

on where and how to report problems.

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Glib (v2.30.2):

General Information

====================

This is GLib version 2.30.2. GLib is the low-level core

library that forms the basis for projects such as GTK+ and GNOME. It

provides data structure handling for C, portability wrappers, and

interfaces for such runtime functionality as an event loop, threads,

dynamic loading, and an object system.

The official ftp site is:

  ftp://ftp.gtk.org/pub/glib

The official web site is:

  http://www.gtk.org/

Information about mailing lists can be found at

  http://www.gtk.org/mailing-lists.html

To subscribe: mail -s subscribe gtk-list-request@gnome.org < /dev/null

(Send mail to gtk-list-request@gnome.org with the subject "subscribe")

Installation

============

See the file 'INSTALL'

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Notes about GLib 2.30

=====================

* GObject includes a generic marshaller, g_cclosure_marshal_generic.

  To use it, simply specify NULL as the marshaller in g_signal_new().

  The generic marshaller is implemented with libffi, and consequently

  GObject depends on libffi now.

Notes about GLib 2.28

=====================

* The GApplication API has changed compared to the version that was

  included in the 2.25 development snapshots. Existing users will need

  adjustments.

Notes about GLib 2.26

=====================

* Nothing noteworthy.

Notes about GLib 2.24

=====================

* It is now allowed to call g_thread_init(NULL) multiple times, and

  to call glib functions before g_thread_init(NULL) is called

  (although the later is mainly a change in docs as this worked before

too). See the GThread reference documentation for the details.

* GObject now links to GThread and threads are enabled automatically

  when g_type_init() is called.

* GObject no longer allows to call g_object_set() on construct-only properties

  while an object is being initialized. If this behavior is needed, setting a

  custom constructor that just chains up will re-enable this functionality.

* GMappedFile on an empty file now returns NULL for the contents instead of

  returning an empty string. The documentation specifically states that code

  may not rely on nul-termination here so any breakage caused by this change

  is a bug in application code.

Notes about GLib 2.22

====================

* Repeated calls to g_simple_async_result_set_op_res_gpointer used

  to leak the data. This has been fixed to always call the provided

  destroy notify.

Notes about GLib 2.20

====================

* The functions for launching applications (e.g. g_app_info_launch() +

  friends) now passes a FUSE file:// URI if possible (requires gvfs

  with the FUSE daemon to be running and operational). With gvfs 2.26,

FUSE file:// URIs will be mapped back to gio URIs in the GFile

constructors. The intent of this change is to better integrate

POSIX-only applications, see bug #528670 for the rationale. The

only user-visible change is when an application needs to examine an

URI passed to it (e.g. as a positional parameter). Instead of

looking at the given URI, the application will now need to look at

the result of g_file_get_uri() after having constructed a GFile

object with the given URI.

Notes about GLib 2.18

====================

* The recommended way of using GLib has always been to only include the

  toplevel headers glib.h, glib-object.h and gio.h. GLib enforces this by

  generating an error when individual headers are directly included.

  To help with the transition, the enforcement is not turned on by

  default for GLib headers (it is turned on for GObject and GIO).

  To turn it on, define the preprocessor symbol G_DISABLE_SINGLE_INCLUDES.

Notes about GLib 2.16

====================

* GLib now includes GIO, which adds optional dependencies against libattr

  and libselinux for extended attribute and SELinux support. Use

  --disable-xattr and --disable-selinux to build without these.

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Notes about GLib 2.10

====================

* The functions g_snprintf() and g_vsnprintf() have been removed from

  the gprintf.h header, since they are already declared in glib.h. This

  doesn't break documented use of gprintf.h, but people have been known

  to include gprintf.h without including glib.h.

* The Unicode support has been updated to Unicode 4.1. This adds several

  new members to the GUnicodeBreakType enumeration.

* The support for Solaris threads has been retired. Solaris has provided

  POSIX threads for long enough now to have them available on every

  Solaris platform.

* 'make check' has been changed to validate translations by calling

  msgfmt with the -c option. As a result, it may fail on systems with

  older gettext implementations (GNU gettext < 0.14.1, or Solaris gettext).

  'make check' will also fail on systems where the C compiler does not

  support ELF visibility attributes.

* The GMemChunk API has been deprecated in favour of a new 'slice

  allocator'. See the g_slice documentation for more details.

* A new type, GInitiallyUnowned, has been introduced, which is

  intended to serve as a common implementation of the 'floating reference'

  concept that is e.g. used by GtkObject. Note that changing the

inheritance hierarchy of a type can cause problems for language

bindings and other code which needs to work closely with the type

system. Therefore, switching to GInitiallyUnowned should be done

carefully. g_object_compat_control() has been added to GLib 2.8.5

to help with the transition.

Notes about GLib 2.6.0

======================

* GLib 2.6 introduces the concept of 'GLib filename encoding', which is the

on-disk encoding on Unix, but UTF-8 on Windows. All GLib functions

returning or accepting pathnames have been changed to expect

filenames in this encoding, and the common POSIX functions dealing

with pathnames have been wrapped. These wrappers are declared in the

header <glib/gstdio.h> which must be included explicitly; it is not

included through <glib.h>.

On current (NT-based) Windows versions, where the on-disk file names

are Unicode, these wrappers use the wide-character API in the C

library. Thus applications can handle file names containing any

Unicode characters through GLib's own API and its POSIX wrappers,

not just file names restricted to characters in the system codepage.

To keep binary compatibility with applications compiled against

older versions of GLib, the Windows DLL still provides entry points

with the old semantics using the old names, and applications

compiled against GLib 2.6 will actually use new names for the

functions. This is transparent to the programmer.

When compiling against GLib 2.6, applications intended to be

portable to Windows must take the UTF-8 file name encoding into

consideration, and use the gstdio wrappers to access files whose

names have been constructed from strings returned from GLib.

* Likewise, g_get_user_name() and g_get_real_name() have been changed

to return UTF-8 on Windows, while keeping the old semantics for

applications compiled against older versions of GLib.

* The GLib uses an '_' prefix to indicate private symbols that

must not be used by applications. On some platforms, symbols beginning

with prefixes such as _g will be exported from the library, on others not.

In no case can applications use these private symbols. In addition to that,

GLib+ 2.6 makes several symbols private which were not in any installed

header files and were never intended to be exported.

* To reduce code size and improve efficiency, GLib, when compiled

with the GNU toolchain, has separate internal and external entry

points for exported functions. The internal names, which begin with

IA__, may be seen when debugging a GLib program.

* On Windows, GLib no longer opens a console window when printing

warning messages if stdout or stderr are invalid, as they are in

"Windows subsystem" (GUI) applications. Simply redirect stdout or

stderr if you need to see them.

* The child watch functionality tends to reveal a bug in many

  thread implementations (in particular the older LinuxThreads

  implementation on Linux) where it's not possible to call waitpid()

  for a child created in a different thread. For this reason, for

  maximum portability, you should structure your code to fork all

  child processes that you want to wait for from the main thread.

* A problem was recently discovered with g_signal_connect_object();

  it doesn't actually disconnect the signal handler once the object being

  connected to dies, just disables it. See the API docs for the function

  for further details and the correct workaround that will continue to

  work with future versions of GLib.

How to report bugs

==================

Bugs should be reported to the GNOME bug tracking system.

(http://bugzilla.gnome.org, product glib.) You will need

to create an account for yourself.

In the bug report please include:

* Information about your system. For instance:

  - What operating system and version

  - For Linux, what version of the C library

And anything else you think is relevant.

* How to reproduce the bug.

  If you can reproduce it with one of the test programs that are built

  in the tests/ subdirectory, that will be most convenient. Otherwise,

  please include a short test program that exhibits the behavior.

  As a last resort, you can also provide a pointer to a larger piece

  of software that can be downloaded.

* If the bug was a crash, the exact text that was printed out

  when the crash occured.

* Further information such as stack traces may be useful, but

  is not necessary.

Patches

=======

Patches should also be submitted to bugzilla.gnome.org. If the

patch fixes an existing bug, add the patch as an attachment

to that bug report.

Otherwise, enter a new bug report that describes the patch,

and attach the patch to that bug report.

 Patches should be in unified diff form. (The -up option to GNUdiff.)

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Gzip (v1.5):

This is the file README for the gzip distribution.

The GNU gzip home page is http://www.gnu.org/software/gzip.

gzip (GNU zip) is a compression utility designed to be a replacement

for 'compress'. Its main advantages over compress are much better

compression and freedom from patented algorithms. The GNU Project

uses it as the standard compression program for its system.

gzip currently uses by default the LZ77 algorithm used in zip 1.9 (the

portable pkzip compatible archiver). The gzip format was however

designed to accommodate several compression algorithms. See below

for a comparison of zip and gzip.

gunzip can currently decompress files created by gzip, compress or

pack. The detection of the input format is automatic. For the

gzip format, gunzip checks a 32 bit CRC. For pack, gunzip checks the

uncompressed length. The 'compress' format was not designed to allow

consistency checks. However gunzip is sometimes able to detect a bad

.Z file because there is some redundancy in the .Z compression format.

If you get an error when uncompressing a .Z file, do not assume that

the .Z file is correct simply because the standard uncompress does not

complain. This generally means that the standard uncompress does not

check its input, and happily generates garbage output.

gzip produces files with a .gz extension. Previous versions of gzip

used the .z extension, which was already used by the 'pack'

Huffman encoder. gunzip is able to decompress .z files (packed

or gzip'ed).

Several planned features are not yet supported (see the file TODO).

See the file NEWS for a summary of changes since the last release.

See the file INSTALL for installation instructions.

WARNING: gzip is sensitive to compiler bugs, particularly when

optimizing. Use "make check" to check that gzip was compiled

correctly. Try compiling gzip without any optimization if you have a

problem.

Please send all comments and bug reports by electronic mail to

<bug-gzip@gnu.org>.

Bug reports should ideally include:

  * The complete output of "gzip -V" (or the contents of revision.h

    if you can't get gzip to compile)

  * The hardware and operating system (try "uname -a")

  * The compiler used to compile (if it is gcc, use "gcc -v")

  * A description of the bug behavior

  * The input to gzip, that triggered the bug

If you send me patches for machines I don't have access to, please test them

very carefully. gzip is used for backups, it must be extremely reliable.

The znew and gzexe shell scripts provided with gzip benefit from

(but do not require) the (non-GNU) cpmod utility to transfer file attributes.

The sample programs zread.c, sub.c and add.c in subdirectory sample

are provided as examples of useful complements to gzip. Read the

comments inside each source file. The perl script ztouch is also

provided as example (not installed by default since it relies on perl).

gzip is free software, you can redistribute it and/or modify it under

the terms of the GNU General Public License, a copy of which is

provided under the name COPYING. The latest version of gzip are always

available from ftp://ftp.gnu.org/gnu/gzip or in any of the gnu

mirror sites.

- sources in gzip-*.tar (or .shar or .tar.gz).

- MSDOS lha self-extracting exe in gzip-msdos-*.exe. Once extracted,

  copy gzip.exe to gunzip.exe and zcat.exe, or use "gzip -d" to decompress.

  gzip386.exe runs much faster but only on 386 and above; it was compiled with

  djgpp 1.10 available in directory omnigate.clarkson.edu:/pub/msdos/djgpp.

A VMS executable is in ftp://ftp.spc.edu/[.macro32.savesets]gzip-1-*.zip

(use [.macro32]unzip.exe to extract). A PRIMOS executable is available

in ftp://ftp.lysator.liu.se/pub/primos/run/gzip.run.

Some ftp servers can automatically make a tar.Z from a tar file. If

you are getting gzip for the first time, you can ask for a tar.Z file

instead of the much larger tar file.

Many thanks to those who provided me with bug reports and feedback.

See the files THANKS and ChangeLog for more details.

Note about zip vs. gzip:

The name 'gzip' was a very unfortunate choice, because zip and gzip

are two really different programs, although the actual compression and

decompression sources were written by the same persons. A different

name should have been used for gzip, but it is too late to change now.

zip is an archiver: it compresses several files into a single archive

file. gzip is a simple compressor: each file is compressed separately.

Both share the same compression and decompression code for the

'deflate' method. unzip can also decompress old zip archives

(implode, shrink and reduce methods). gunzip can also decompress files

created by compress and pack. zip 1.9 and gzip do not support

compression methods other than deflation. (zip 1.0 supports shrink and

implode). Better compression methods may be added in future versions

of gzip. zip will always stick to absolute compatibility with pkzip,

it is thus constrained by PKWare, which is a commercial company. The

gzip header format is deliberately different from that of pkzip to

avoid such a constraint.

On Unix, gzip is mostly useful in combination with tar. GNU tar

1.11.2 and later has a -z option to invoke gzip automatically. "tar -z"

compresses better than zip, since gzip can then take advantage of

redundancy between distinct files. The drawback is that you must

scan the whole tar.gz file in order to extract a single file near

the end; unzip can directly seek to the end of the zip file. There

is no overhead when you extract the whole archive anyway.

If a member of a .zip archive is damaged, other files can still

be recovered. If a .tar.gz file is damaged, files beyond the failure

point cannot be recovered. (Future versions of gzip will have

error recovery features.)

gzip and gunzip are distributed as a single program. zip and unzip

are, for historical reasons, two separate programs, although the

authors of these two programs work closely together in the Info-ZIP

team. zip and unzip are not associated with the GNU project.

See http://info-zip.org/ for more about zip and unzip.

For any copyright year range specified as YYYY-ZZZZ in this package

note that the range specifies every single year in that closed interval.

==

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Documentation License'' file as part of this distribution.

Kmod (v8):

kmod - Linux kernel module handling

OVERVIEW

========

kmod is a set of tools to handle common tasks with Linux kernel modules like

insert, remove, list, check properties, resolve dependencies and aliases.

These tools are designed on top of libkmod, a library that is shipped with

kmod. See libkmod/README for more details on this library and how to use it.

The aim is to be compatible with tools, configurations and indexes from

module-init-tools project.

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Compilation and installation

============================

In order to compiler the source code you need following software packages:

- GCC compiler

- GNU C library

Optional dependencies:

- ZLIB library

- LZMA library

Typical configuration:

./configure CFLAGS="-g -O2" --prefix=/usr \

      --sysconfdir=/etc --libdir=/usr/lib

Configure automatically searches for all required components and packages.

To compile and install run:

make && make install

Hacking

=======

Run 'bootstrap' script before configure. If you want to accept the recommended

flags, you just need to run 'bootstrap-configure'.

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Make sure to read the CODING-STYLE file and the other READMEs: libkmod/README

and testsuite/README.

Information

==========

Signed packages:

      http://www.kernel.org/pub/linux/utils/kernel/kmod/

Mailing list:

      linux-modules@vger.kernel.org

Git:

      git://git.kernel.org/pub/scm/utils/kernel/kmod/kmod.git

      http://git.kernel.org/pub/scm/utils/kernel/kmod/kmod.git

      https://git.kernel.org/pub/scm/utils/kernel/kmod/kmod.git

Gitweb:

      http://git.kernel.org/?p=utils/kernel/kmod/kmod.git

Irc:

      #kmod on irc.freenode.org

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Libffi (3.0.11):

Status

======

libffi-3.0.11 was released on April 11, 2012. Check the libffi web

page for updates: <URL:http://sourceware.org/libffi/>.

What is libffi?

===============

Compilers for high level languages generate code that follow certain

conventions. These conventions are necessary, in part, for separate

compilation to work. One such convention is the "calling

convention". The "calling convention" is essentially a set of

assumptions made by the compiler about where function arguments will

be found on entry to a function. A "calling convention" also specifies

where the return value for a function is found.

Some programs may not know at the time of compilation what arguments

are to be passed to a function. For instance, an interpreter may be

told at run-time about the number and types of arguments used to call

a given function. Libffi can be used in such programs to provide a

bridge from the interpreter program to compiled code.

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The libffi library provides a portable, high level programming

interface to various calling conventions. This allows a programmer to

call any function specified by a call interface description at run

time.

FFI stands for Foreign Function Interface. A foreign function

interface is the popular name for the interface that allows code

written in one language to call code written in another language. The

libffi library really only provides the lowest, machine dependent

layer of a fully featured foreign function interface. A layer must

exist above libffi that handles type conversions for values passed

between the two languages.

Supported Platforms

===================

Libffi has been ported to many different platforms.

For specific configuration details and testing status, please

refer to the wiki page here:

 http://www.moxielogic.org/wiki/index.php?title=Libffi_3.0.11

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At the time of release, the following basic configurations have been

tested:

```
|-------------+-----------------|
| Architecture | Operating System |
|-------------+-----------------|
| Alpha       | Linux           |
| Alpha       | Tru64           |
| ARM         | Linux           |
| ARM         | iOS             |
| AVR32       | Linux           |
| HPPA        | HPUX            |
| IA-64       | Linux           |
| M68K        | FreeMiNT        |
| M68K        | RTEMS           |
| MIPS        | IRIX            |
| MIPS        | Linux           |
| MIPS        | RTEMS           |
| MIPS64      | Linux           |
| PowerPC     | AMIGA           |
| PowerPC     | Linux           |
| PowerPC     | Mac OSX         |
| PowerPC     | FreeBSD         |
| PowerPC64   | Linux           |
| S390        | Linux           |
| S390X       | Linux           |
| SPARC       | Linux           |
```

SPARC	Solaris
SPARC64	Linux
SPARC64	FreeBSD
X86	FreeBSD
X86	Interix
X86	kFreeBSD
X86	Linux
X86	Mac OSX
X86	OpenBSD
X86	OS/2
X86	Solaris
X86	Windows/Cygwin
X86	Windows/MingW
X86-64	FreeBSD
X86-64	Linux
X86-64	Linux/x32
X86-64	OpenBSD
X86-64	Windows/MingW

|-------------+-----------------|

Please send additional platform test results to

libffi-discuss@sourceware.org and feel free to update the wiki page

above.

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Installing libffi

=================

First you must configure the distribution for your particular

system. Go to the directory you wish to build libffi in and run the

"configure" program found in the root directory of the libffi source

distribution.

You may want to tell configure where to install the libffi library and

header files. To do that, use the --prefix configure switch. Libffi

will install under /usr/local by default.

If you want to enable extra run-time debugging checks use the the

--enable-debug configure switch. This is useful when your program dies

mysteriously while using libffi.

Another useful configure switch is --enable-purify-safety. Using this

will add some extra code which will suppress certain warnings when you

are using Purify with libffi. Only use this switch when using

Purify, as it will slow down the library.

It's also possible to build libffi on Windows platforms with

Microsoft's Visual C++ compiler. In this case, use the msvcc.sh

wrapper script during configuration like so:

path/to/configure CC=path/to/msvcc.sh LD=link CPP=\"cl -nologo -EP\"

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For 64-bit Windows builds, use CC="path/to/msvcc.sh -m64".

You may also need to specify --build appropriately. When building with MSVC

under a MingW environment, you may need to remove the line in configure

that sets 'fix_srcfile_path' to a 'cygpath' command. ('cygpath' is not

present in MingW, and is not required when using MingW-style paths.)

For iOS builds, run generate-ios-source-and-headers.py and then

libffi.xcodeproj should work.

Configure has many other options. Use "configure --help" to see them all.

Once configure has finished, type "make". Note that you must be using

GNU make. You can ftp GNU make from prep.ai.mit.edu:/pub/gnu.

To ensure that libffi is working as advertised, type "make check".

This will require that you have DejaGNU installed.

To install the library and header files, type "make install".

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History

=======

See the ChangeLog files for details.

3.0.11 Apr-11-12

Add support for variadic functions (ffi_prep_cif_var).

Add Linux/x32 support.

Add thiscall, fastcall and MSVC cdecl support on Windows.

Add Amiga and newer MacOS support.

Add m68k FreeMiNT support.

Integration with iOS' xcode build tools.

Fix Octeon and MC68881 support.

Fix code pessimizations.

Lots of build fixes.

3.0.10 Aug-23-11

Add support for Apple's iOS.

Add support for ARM VFP ABI.

Add RTEMS support for MIPS and M68K.

Fix instruction cache clearing problems on

ARM and SPARC.

Fix the N64 build on mips-sgi-irix6.5.

Enable builds with Microsoft's compiler.

Enable x86 builds with Oracle's Solaris compiler.

Fix support for calling code compiled with Oracle's Sparc

Solaris compiler.

Testsuite fixes for Tru64 Unix.

Additional platform support.

3.0.9 Dec-31-09

Add AVR32 and win64 ports. Add ARM softfp support.

Many fixes for AIX, Solaris, HP-UX, *BSD.

Several PowerPC and x86-64 bug fixes.

Build DLL for windows.

3.0.8 Dec-19-08

Add *BSD, BeOS, and PA-Linux support.

3.0.7 Nov-11-08

Fix for ppc FreeBSD.

(thanks to Andreas Tobler)

3.0.6 Jul-17-08

Fix for closures on sh.

Mark the sh/sh64 stack as non-executable.

(both thanks to Kaz Kojima)

3.0.5 Apr-3-08

Fix libffi.pc file.

Fix #define ARM for IcedTea users.

Fix x86 closure bug.

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3.0.4 Feb-24-08

Fix x86 OpenBSD configury.

3.0.3 Feb-22-08

Enable x86 OpenBSD thanks to Thomas Heller, and

x86-64 FreeBSD thanks to Björn König and Andreas Tobler.

Clean up test instruction in README.

3.0.2 Feb-21-08

Improved x86 FreeBSD support.

Thanks to Björn König.

3.0.1 Feb-15-08

Fix instruction cache flushing bug on MIPS.

Thanks to David Daney.

3.0.0 Feb-15-08

Many changes, mostly thanks to the GCC project.

Cygnus Solutions is now Red Hat.

[10 years go by...]

1.20 Oct-5-98

Raffaele Sena produces ARM port.

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1.19 Oct-5-98

Fixed x86 long double and long long return support.

m68k bug fixes from Andreas Schwab.

Patch for DU assembler compatibility for the Alpha from Richard

Henderson.

1.18 Apr-17-98

Bug fixes and MIPS configuration changes.

1.17 Feb-24-98

Bug fixes and m68k port from Andreas Schwab. PowerPC port from

Geoffrey Keating. Various bug x86, Sparc and MIPS bug fixes.

1.16 Feb-11-98

Richard Henderson produces Alpha port.

1.15 Dec-4-97

Fixed an n32 ABI bug. New libtool, auto* support.

1.14 May-13-97

libtool is now used to generate shared and static libraries.

Fixed a minor portability problem reported by Russ McManus

<mcmanr@eq.gs.com>.

1.13 Dec-2-96

Added --enable-purify-safety to keep Purify from complaining

about certain low level code.

Sparc fix for calling functions with < 6 args.

Linux x86 a.out fix.

1.12 Nov-22-96

Added missing ffi_type_void, needed for supporting void return

types. Fixed test case for non MIPS machines. Cygnus Support

is now Cygnus Solutions.

1.11 Oct-30-96

Added notes about GNU make.

1.10 Oct-29-96

Added configuration fix for non GNU compilers.

1.09 Oct-29-96

Added --enable-debug configure switch. Clean-ups based on LCLint

feedback. ffi_mips.h is always installed. Many configuration

fixes. Fixed ffitest.c for sparc builds.

1.08 Oct-15-96

Fixed n32 problem. Many clean-ups.

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1.07 Oct-14-96

Gordon Irlam rewrites v8.S again. Bug fixes.

1.06 Oct-14-96

Gordon Irlam improved the sparc port.

1.05 Oct-14-96

Interface changes based on feedback.

1.04 Oct-11-96

Sparc port complete (modulo struct passing bug).

1.03 Oct-10-96

Passing struct args, and returning struct values works for

all architectures/calling conventions. Expanded tests.

1.02 Oct-9-96

Added SGI n32 support. Fixed bugs in both o32 and Linux support.

Added "make test".

1.01 Oct-8-96

Fixed float passing bug in mips version. Restructured some

of the code. Builds cleanly with SGI tools.

1.00 Oct-7-96

First release. No public announcement.

Authors & Credits

=================

libffi was originally written by Anthony Green <green@moxielogic.com>.

The developers of the GNU Compiler Collection project have made

innumerable valuable contributions. See the ChangeLog file for

details.

Some of the ideas behind libffi were inspired by Gianni Mariani's free

gencall library for Silicon Graphics machines.

The closure mechanism was designed and implemented by Kresten Krab

Thorup.

Major processor architecture ports were contributed by the following

developers:

alpha   Richard Henderson

arm   Raffaele Sena

cris   Simon Posnjak, Hans-Peter Nilsson

frv   Anthony Green

ia64   Hans Boehm

m32r   Kazuhiro Inaoka

m68k   Andreas Schwab

mips   Anthony Green, Casey Marshall

mips64	David Daney
pa	Randolph Chung, Dave Anglin, Andreas Tobler
powerpc	Geoffrey Keating, Andreas Tobler, David Edelsohn, John Hornkvist
powerpc64	Jakub Jelinek
s390	Gerhard Tonn, Ulrich Weigand
sh	Kaz Kojima
sh64	Kaz Kojima
sparc	Anthony Green, Gordon Irlam
x86	Anthony Green, Jon Beniston
x86-64	Bo Thorsen

Jesper Skov and Andrew Haley both did more than their fair share of stepping through the code and tracking down bugs.

Thanks also to Tom Tromey for bug fixes, documentation and configuration help.

Thanks to Jim Blandy, who provided some useful feedback on the libffi interface.

Andreas Tobler has done a tremendous amount of work on the testsuite.

Alex Oliva solved the executable page problem for SElinux.

The list above is almost certainly incomplete and inaccurate. I'm happy to make corrections or additions upon request.

If you have a problem, or have found a bug, please send a note to the

author at green@moxielogic.com, or the project mailing list at

libffi-discuss@sourceware.org.

Libjpeg (v9a):

The Independent JPEG Group's JPEG software

==

README for release 8d of 15-Jan-2012

====================================

This distribution contains the eighth public release of the Independent JPEG

Group's free JPEG software. You are welcome to redistribute this software and

to use it for any purpose, subject to the conditions under LEGAL ISSUES, below.

This software is the work of Tom Lane, Guido Vollbeding, Philip Gladstone,

Bill Allombert, Jim Boucher, Lee Crocker, Bob Friesenhahn, Ben Jackson,

Julian Minguillon, Luis Ortiz, George Phillips, Davide Rossi, Ge' Weijers,

and other members of the Independent JPEG Group.

IJG is not affiliated with the ISO/IEC JTC1/SC29/WG1 standards committee

(also known as JPEG, together with ITU-T SG16).

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DOCUMENTATION ROADMAP

=====================

This file contains the following sections:

OVERVIEW   General description of JPEG and the IJG software.

LEGAL ISSUES   Copyright, lack of warranty, terms of distribution.

REFERENCES   Where to learn more about JPEG.

ARCHIVE LOCATIONS   Where to find newer versions of this software.

ACKNOWLEDGMENTS   Special thanks.

FILE FORMAT WARS   Software *not* to get.

TO DO   Plans for future IJG releases.

Other documentation files in the distribution are:

User documentation:

  install.txt   How to configure and install the IJG software.

  usage.txt   Usage instructions for cjpeg, djpeg, jpegtran,

                  rdjpgcom, and wrjpgcom.

  *.1   Unix-style man pages for programs (same info as usage.txt).

  wizard.txt   Advanced usage instructions for JPEG wizards only.

  change.log   Version-to-version change highlights.

Programmer and internal documentation:

  libjpeg.txt   How to use the JPEG library in your own programs.

  example.c   Sample code for calling the JPEG library.

  structure.txt   Overview of the JPEG library's internal structure.

  filelist.txt   Road map of IJG files.

  coderules.txt   Coding style rules --- please read if you contribute code.

Please read at least the files install.txt and usage.txt. Some information

can also be found in the JPEG FAQ (Frequently Asked Questions) article. See

ARCHIVE LOCATIONS below to find out where to obtain the FAQ article.

If you want to understand how the JPEG code works, we suggest reading one or

more of the REFERENCES, then looking at the documentation files (in roughly

the order listed) before diving into the code.

OVERVIEW

========

This package contains C software to implement JPEG image encoding, decoding,

and transcoding. JPEG (pronounced "jay-peg") is a standardized compression

method for full-color and gray-scale images.

This software implements JPEG baseline, extended-sequential, and progressive

compression processes. Provision is made for supporting all variants of these

processes, although some uncommon parameter settings aren't implemented yet.

We have made no provision for supporting the hierarchical or lossless

processes defined in the standard.

We provide a set of library routines for reading and writing JPEG image files,

plus two sample applications "cjpeg" and "djpeg", which use the library to

perform conversion between JPEG and some other popular image file formats.

The library is intended to be reused in other applications.

In order to support file conversion and viewing software, we have included considerable functionality beyond the bare JPEG coding/decoding capability; for example, the color quantization modules are not strictly part of JPEG decoding, but they are essential for output to colormapped file formats or colormapped displays. These extra functions can be compiled out of the library if not required for a particular application.

We have also included "jpegtran", a utility for lossless transcoding between different JPEG processes, and "rdjpgcom" and "wrjpgcom", two simple applications for inserting and extracting textual comments in JFIF files.

The emphasis in designing this software has been on achieving portability and flexibility, while also making it fast enough to be useful. In particular, the software is not intended to be read as a tutorial on JPEG. (See the REFERENCES section for introductory material.) Rather, it is intended to be reliable, portable, industrial-strength code. We do not claim to have achieved that goal in every aspect of the software, but we strive for it.

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============

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of any program generated from the IJG code, this does not limit you more than

the foregoing paragraphs do.

The Unix configuration script "configure" was produced with GNU Autoconf.

It is copyright by the Free Software Foundation but is freely distributable.

The same holds for its supporting scripts (config.guess, config.sub,

ltmain.sh). Another support script, install-sh, is copyright by X Consortium

but is also freely distributable.

The IJG distribution formerly included code to read and write GIF files.

To avoid entanglement with the Unisys LZW patent, GIF reading support has

been removed altogether, and the GIF writer has been simplified to produce

"uncompressed GIFs". This technique does not use the LZW algorithm; the

resulting GIF files are larger than usual, but are readable by all standard

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We are required to state that

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REFERENCES

==========

We recommend reading one or more of these references before trying to

understand the innards of the JPEG software.

The best short technical introduction to the JPEG compression algorithm is

      Wallace, Gregory K. "The JPEG Still Picture Compression Standard",

      Communications of the ACM, April 1991 (vol. 34 no. 4), pp. 30-44.

(Adjacent articles in that issue discuss MPEG motion picture compression,

applications of JPEG, and related topics.) If you don't have the CACM issue

handy, a PostScript file containing a revised version of Wallace's article is

available at http://www.ijg.org/files/wallace.ps.gz. The file (actually

a preprint for an article that appeared in IEEE Trans. Consumer Electronics)

omits the sample images that appeared in CACM, but it includes corrections

and some added material. Note: the Wallace article is copyright ACM and IEEE,

and it may not be used for commercial purposes.

A somewhat less technical, more leisurely introduction to JPEG can be found in

"The Data Compression Book" by Mark Nelson and Jean-loup Gailly, published by

M&T Books (New York), 2nd ed. 1996, ISBN 1-55851-434-1. This book provides

good explanations and example C code for a multitude of compression methods

including JPEG. It is an excellent source if you are comfortable reading C

code but don't know much about data compression in general. The book's JPEG

sample code is far from industrial-strength, but when you are ready to look

at a full implementation, you've got one here...

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The best currently available description of JPEG is the textbook "JPEG Still

Image Data Compression Standard" by William B. Pennebaker and Joan L.

Mitchell, published by Van Nostrand Reinhold, 1993, ISBN 0-442-01272-1.

Price US$59.95, 638 pp. The book includes the complete text of the ISO JPEG

standards (DIS 10918-1 and draft DIS 10918-2).

Although this is by far the most detailed and comprehensive exposition of

JPEG publicly available, we point out that it is still missing an explanation

of the most essential properties and algorithms of the underlying DCT

technology.

If you think that you know about DCT-based JPEG after reading this book,

then you are in delusion. The real fundamentals and corresponding potential

of DCT-based JPEG are not publicly known so far, and that is the reason for

all the mistaken developments taking place in the image coding domain.

The original JPEG standard is divided into two parts, Part 1 being the actual

specification, while Part 2 covers compliance testing methods. Part 1 is

titled "Digital Compression and Coding of Continuous-tone Still Images,

Part 1: Requirements and guidelines" and has document numbers ISO/IEC IS

10918-1, ITU-T T.81. Part 2 is titled "Digital Compression and Coding of

Continuous-tone Still Images, Part 2: Compliance testing" and has document

numbers ISO/IEC IS 10918-2, ITU-T T.83.

IJG JPEG 8 introduces an implementation of the JPEG SmartScale extension

which is specified in two documents: A contributed document at ITU and ISO

with title "ITU-T JPEG-Plus Proposal for Extending ITU-T T.81 for Advanced

Image Coding", April 2006, Geneva, Switzerland. The latest version of this

document is Revision 3. And a contributed document ISO/IEC JTC1/SC29/WG1 N

5799 with title "Evolution of JPEG", June/July 2011, Berlin, Germany.

The JPEG standard does not specify all details of an interchangeable file

format. For the omitted details we follow the "JFIF" conventions, revision

1.02. JFIF 1.02 has been adopted as an Ecma International Technical Report

and thus received a formal publication status. It is available as a free

download in PDF format from

http://www.ecma-international.org/publications/techreports/E-TR-098.htm.

A PostScript version of the JFIF document is available at

http://www.ijg.org/files/jfif.ps.gz. There is also a plain text version at

http://www.ijg.org/files/jfif.txt.gz, but it is missing the figures.

The TIFF 6.0 file format specification can be obtained by FTP from

ftp://ftp.sgi.com/graphics/tiff/TIFF6.ps.gz. The JPEG incorporation scheme

found in the TIFF 6.0 spec of 3-June-92 has a number of serious problems.

IJG does not recommend use of the TIFF 6.0 design (TIFF Compression tag 6).

Instead, we recommend the JPEG design proposed by TIFF Technical Note #2

(Compression tag 7). Copies of this Note can be obtained from

http://www.ijg.org/files/. It is expected that the next revision

of the TIFF spec will replace the 6.0 JPEG design with the Note's design.

Although IJG's own code does not support TIFF/JPEG, the free libtiff library

uses our library to implement TIFF/JPEG per the Note.

ARCHIVE LOCATIONS

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The "official" archive site for this software is www.ijg.org.

The most recent released version can always be found there in

directory "files". This particular version will be archived as

http://www.ijg.org/files/jpegsrc.v8d.tar.gz, and in Windows-compatible

"zip" archive format as http://www.ijg.org/files/jpegsr8d.zip.

The JPEG FAQ (Frequently Asked Questions) article is a source of some

general information about JPEG.

It is available on the World Wide Web at http://www.faqs.org/faqs/jpeg-faq/

and other news.answers archive sites, including the official news.answers

archive at rtfm.mit.edu: ftp://rtfm.mit.edu/pub/usenet/news.answers/jpeg-faq/.

If you don't have Web or FTP access, send e-mail to mail-server@rtfm.mit.edu

with body

     send usenet/news.answers/jpeg-faq/part1

     send usenet/news.answers/jpeg-faq/part2

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ACKNOWLEDGMENTS

===============

Thank to Juergen Bruder for providing me with a copy of the common DCT

algorithm article, only to find out that I had come to the same result

in a more direct and comprehensible way with a more generative approach.

Thank to Istvan Sebestyen and Joan L. Mitchell for inviting me to the

ITU JPEG (Study Group 16) meeting in Geneva, Switzerland.

Thank to Thomas Wiegand and Gary Sullivan for inviting me to the

Joint Video Team (MPEG & ITU) meeting in Geneva, Switzerland.

Thank to Thomas Richter and Daniel Lee for inviting me to the

ISO/IEC JTC1/SC29/WG1 (also known as JPEG, together with ITU-T SG16)

meeting in Berlin, Germany.

Thank to John Korejwa and Massimo Ballerini for inviting me to

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Thank to Hendrik Elstner, Roland Fassauer, Simone Zuck, Guenther

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Thank to Nico Zschach and Dirk Stelling of the technical support team

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Thank to Richard F. Lyon (then of Foveon Inc.) for fruitful

communication about JPEG configuration in Sigma Photo Pro software.

Thank to Andrew Finkenstadt for hosting the ijg.org site.

Last but not least special thank to Thomas G. Lane for the original

design and development of this singular software package.

FILE FORMAT WARS

================

The ISO/IEC JTC1/SC29/WG1 standards committee (also known as JPEG, together

with ITU-T SG16) currently promotes different formats containing the name

"JPEG" which is misleading because these formats are incompatible with

original DCT-based JPEG and are based on faulty technologies.

IJG therefore does not and will not support such momentary mistakes

(see REFERENCES).

There exist also distributions under the name "OpenJPEG" promoting such

kind of formats which is misleading because they don't support original

JPEG images.

We have no sympathy for the promotion of inferior formats. Indeed, one of

the original reasons for developing this free software was to help force

convergence on common, interoperable format standards for JPEG files.

Don't use an incompatible file format!

(In any case, our decoder will remain capable of reading existing JPEG

image files indefinitely.)

Furthermore, the ISO committee pretends to be "responsible for the popular

JPEG" in their public reports which is not true because they don't respond to

actual requirements for the maintenance of the original JPEG specification.

There are currently distributions in circulation containing the name

"libjpeg" which claim to be a "derivative" or "fork" of the original

libjpeg, but don't have the features and are incompatible with formats

supported by actual IJG libjpeg distributions. Furthermore, they

violate the license conditions as described under LEGAL ISSUES above.

We have no sympathy for the release of misleading and illegal

distributions derived from obsolete code bases.

Don't use an obsolete code base!

TO DO

=====

Version 8 is the first release of a new generation JPEG standard

to overcome the limitations of the original JPEG specification.

More features are being prepared for coming releases...

Please send bug reports, offers of help, etc. to jpeg-info@jpegclub.org.

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Libkmod (v8):

libkmod - linux kernel module handling library

ABSTRACT

========

libkmod was created to allow programs to easily insert, remove and

list modules, also checking its properties, dependencies and aliases.

there is no shared/global context information and it can be used by

multiple sites on a single program, also being able to be used from

threads, although it's not thread safe (you must lock explicitly).

OVERVIEW

========

Every user should create and manage it's own library context with:

```
  struct kmod_ctx *ctx = kmod_new(kernel_dirname);

  kmod_unref(ctx);
```

Modules can be created with by various means:

```
struct kmod_module *mod;

int err;


err = kmod_module_new_from_path(ctx, path, &mod);

if (err < 0) {

  /* code */

} else {

  /* code */

  kmod_module_unref(mod);

}


err = kmod_module_new_from_name(ctx, name, &mod);

if (err < 0) {

  /* code */

} else {

  /* code */

  kmod_module_unref(mod);

}
```

Or could be resolved from a known alias to a list of alternatives:

```
struct kmod_list *list, *itr;

int err;

err = kmod_module_new_from_lookup(ctx, alias, &list);
```

```
if (err < 0) {

  /* code */

} else {

  kmod_list_foreach(itr, list) {

    struct kmod_module *mod = kmod_module_get_module(itr);

    /* code */

  }

}
```

Libxml2 (v2.7.8):

Except where otherwise noted in the source code (e.g. the files hash.c, list.c and the trio files, which are covered by a similar licence but with different Copyright notices) all the files are:

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LibPcap (v1.2.1):

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Linux (v3.2.26):

Linux kernel release 3.x <http://kernel.org/>

These are the release notes for Linux version 3. Read them carefully,

as they tell you what this is all about, explain how to install the

kernel, and what to do if something goes wrong.

WHAT IS LINUX?

Linux is a clone of the operating system Unix, written from scratch by

Linus Torvalds with assistance from a loosely-knit team of hackers across

the Net. It aims towards POSIX and Single UNIX Specification compliance.

It has all the features you would expect in a modern fully-fledged Unix,

including true multitasking, virtual memory, shared libraries, demand

loading, shared copy-on-write executables, proper memory management,

and multistack networking including IPv4 and IPv6.

It is distributed under the GNU General Public License - see the

accompanying COPYING file for more details.

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ON WHAT HARDWARE DOES IT RUN?

Although originally developed first for 32-bit x86-based PCs (386 or higher),

today Linux also runs on (at least) the Compaq Alpha AXP, Sun SPARC and

UltraSPARC, Motorola 68000, PowerPC, PowerPC64, ARM, Hitachi SuperH, Cell,

IBM S/390, MIPS, HP PA-RISC, Intel IA-64, DEC VAX, AMD x86-64, AXIS CRIS,

Xtensa, Tilera TILE, AVR32 and Renesas M32R architectures.

Linux is easily portable to most general-purpose 32- or 64-bit architectures

as long as they have a paged memory management unit (PMMU) and a port of the

GNU C compiler (gcc) (part of The GNU Compiler Collection, GCC). Linux has

also been ported to a number of architectures without a PMMU, although

functionality is then obviously somewhat limited.

Linux has also been ported to itself. You can now run the kernel as a

userspace application - this is called UserMode Linux (UML).

DOCUMENTATION:

- There is a lot of documentation available both in electronic form on

  the Internet and in books, both Linux-specific and pertaining to

  general UNIX questions. I'd recommend looking into the documentation

  subdirectories on any Linux FTP site for the LDP (Linux Documentation

  Project) books. This README is not meant to be documentation on the

  system: there are much better sources available.

- There are various README files in the Documentation/ subdirectory:

  these typically contain kernel-specific installation notes for some

drivers for example. See Documentation/00-INDEX for a list of what

is contained in each file. Please read the Changes file, as it

contains information about the problems, which may result by upgrading

your kernel.

 - The Documentation/DocBook/ subdirectory contains several guides for

   kernel developers and users. These guides can be rendered in a

   number of formats: PostScript (.ps), PDF, HTML, & man-pages, among others.

   After installation, "make psdocs", "make pdfdocs", "make htmldocs",

   or "make mandocs" will render the documentation in the requested format.

INSTALLING the kernel source:

 - If you install the full sources, put the kernel tarball in a

   directory where you have permissions (eg. your home directory) and

   unpack it:

             gzip -cd linux-3.X.tar.gz | tar xvf -

or

             bzip2 -dc linux-3.X.tar.bz2 | tar xvf -

Replace "XX" with the version number of the latest kernel.

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Do NOT use the /usr/src/linux area! This area has a (usually

incomplete) set of kernel headers that are used by the library header

files. They should match the library, and not get messed up by

whatever the kernel-du-jour happens to be.

- You can also upgrade between 3.x releases by patching. Patches are

distributed in the traditional gzip and the newer bzip2 format. To

install by patching, get all the newer patch files, enter the

top level directory of the kernel source (linux-3.x) and execute:

      gzip -cd ../patch-3.x.gz | patch -p1

or

      bzip2 -dc ../patch-3.x.bz2 | patch -p1

(repeat xx for all versions bigger than the version of your current

source tree, _in_order_) and you should be ok. You may want to remove

the backup files (xxx~ or xxx.orig), and make sure that there are no

failed patches (xxx# or xxx.rej). If there are, either you or me has

made a mistake.

Unlike patches for the 3.x kernels, patches for the 3.x.y kernels

(also known as the -stable kernels) are not incremental but instead apply

directly to the base 3.x kernel. Please read

Documentation/applying-patches.txt for more information.

Alternatively, the script patch-kernel can be used to automate this

process. It determines the current kernel version and applies any

patches found.

      linux/scripts/patch-kernel linux

The first argument in the command above is the location of the

kernel source. Patches are applied from the current directory, but

an alternative directory can be specified as the second argument.

- If you are upgrading between releases using the stable series patches

  (for example, patch-3.x.y), note that these "dot-releases" are

  not incremental and must be applied to the 3.x base tree. For

  example, if your base kernel is 3.0 and you want to apply the

  3.0.3 patch, you do not and indeed must not first apply the

  3.0.1 and 3.0.2 patches. Similarly, if you are running kernel

  version 3.0.2 and want to jump to 3.0.3, you must first

  reverse the 3.0.2 patch (that is, patch -R) _before_ applying

  the 3.0.3 patch.

  You can read more on this in Documentation/applying-patches.txt

- Make sure you have no stale .o files and dependencies lying around:

      cd linux

      make mrproper

You should now have the sources correctly installed.

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SOFTWARE REQUIREMENTS

Compiling and running the 3.x kernels requires up-to-date

versions of various software packages. Consult

Documentation/Changes for the minimum version numbers required

and how to get updates for these packages. Beware that using

excessively old versions of these packages can cause indirect

errors that are very difficult to track down, so don't assume that

you can just update packages when obvious problems arise during

build or operation.

BUILD directory for the kernel:

When compiling the kernel all output files will per default be

stored together with the kernel source code.

Using the option "make O=output/dir" allow you to specify an alternate

place for the output files (including .config).

Example:

  kernel source code: /usr/src/linux-3.N

  build directory: /home/name/build/kernel

To configure and build the kernel use:

cd /usr/src/linux-3.N

make O=/home/name/build/kernel menuconfig

make O=/home/name/build/kernel

sudo make O=/home/name/build/kernel modules_install install

Please note: If the 'O=output/dir' option is used then it must be

used for all invocations of make.

CONFIGURING the kernel:

Do not skip this step even if you are only upgrading one minor

version. New configuration options are added in each release, and

odd problems will turn up if the configuration files are not set up

as expected. If you want to carry your existing configuration to a

new version with minimal work, use "make oldconfig", which will

only ask you for the answers to new questions.

 - Alternate configuration commands are:

      "make config"   Plain text interface.

      "make menuconfig" Text based color menus, radiolists & dialogs.

      "make nconfig"   Enhanced text based color menus.

      "make xconfig"   X windows (Qt) based configuration tool.

      "make gconfig"   X windows (Gtk) based configuration tool.

      "make oldconfig" Default all questions based on the contents of

                  your existing ./.config file and asking about

                  new config symbols.

      "make silentoldconfig"

                  Like above, but avoids cluttering the screen

                  with questions already answered.

                  Additionally updates the dependencies.

      "make defconfig" Create a ./.config file by using the default

                  symbol values from either arch/$ARCH/defconfig

or arch/$ARCH/configs/${PLATFORM}_defconfig,

depending on the architecture.

"make ${PLATFORM}_defconfig"

Create a ./.config file by using the default

symbol values from

arch/$ARCH/configs/${PLATFORM}_defconfig.

Use "make help" to get a list of all available

platforms of your architecture.

"make allyesconfig"

Create a ./.config file by setting symbol

values to 'y' as much as possible.

"make allmodconfig"

Create a ./.config file by setting symbol

values to 'm' as much as possible.

"make allnoconfig" Create a ./.config file by setting symbol

values to 'n' as much as possible.

"make randconfig" Create a ./.config file by setting symbol

values to random values.

You can find more information on using the Linux kernel config tools

in Documentation/kbuild/kconfig.txt.

NOTES on "make config":

- having unnecessary drivers will make the kernel bigger, and can

  under some circumstances lead to problems: probing for a

  nonexistent controller card may confuse your other controllers

- compiling the kernel with "Processor type" set higher than 386

will result in a kernel that does NOT work on a 386. The

kernel will detect this on bootup, and give up.

- A kernel with math-emulation compiled in will still use the

coprocessor if one is present: the math emulation will just

never get used in that case. The kernel will be slightly larger,

but will work on different machines regardless of whether they

have a math coprocessor or not.

- the "kernel hacking" configuration details usually result in a

bigger or slower kernel (or both), and can even make the kernel

less stable by configuring some routines to actively try to

break bad code to find kernel problems (kmalloc()). Thus you

should probably answer 'n' to the questions for

"development", "experimental", or "debugging" features.

COMPILING the kernel:

- Make sure you have at least gcc 3.2 available.

For more information, refer to Documentation/Changes.

Please note that you can still run a.out user programs with this kernel.

- Do a "make" to create a compressed kernel image. It is also

possible to do "make install" if you have lilo installed to suit the

kernel makefiles, but you may want to check your particular lilo setup first.

To do the actual install you have to be root, but none of the normal

build should require that. Don't take the name of root in vain.

- If you configured any of the parts of the kernel as `modules', you

  will also have to do "make modules_install".

- Verbose kernel compile/build output:

  Normally the kernel build system runs in a fairly quiet mode (but not

  totally silent). However, sometimes you or other kernel developers need

  to see compile, link, or other commands exactly as they are executed.

  For this, use "verbose" build mode. This is done by inserting

  "V=1" in the "make" command. E.g.:

      make V=1 all

  To have the build system also tell the reason for the rebuild of each

  target, use "V=2". The default is "V=0".

- Keep a backup kernel handy in case something goes wrong. This is

  especially true for the development releases, since each new release

  contains new code which has not been debugged. Make sure you keep a

  backup of the modules corresponding to that kernel, as well. If you

  are installing a new kernel with the same version number as your

  working kernel, make a backup of your modules directory before you

  do a "make modules_install".

  Alternatively, before compiling, use the kernel config option

  "LOCALVERSION" to append a unique suffix to the regular kernel version.

  LOCALVERSION can be set in the "General Setup" menu.

- In order to boot your new kernel, you'll need to copy the kernel

  image (e.g. .../linux/arch/i386/boot/bzImage after compilation)

  to the place where your regular bootable kernel is found.

- Booting a kernel directly from a floppy without the assistance of a

  bootloader such as LILO, is no longer supported.

  If you boot Linux from the hard drive, chances are you use LILO which

  uses the kernel image as specified in the file /etc/lilo.conf. The

  kernel image file is usually /vmlinuz, /boot/vmlinuz, /bzImage or

  /boot/bzImage. To use the new kernel, save a copy of the old image

  and copy the new image over the old one. Then, you MUST RERUN LILO

  to update the loading map!! If you don't, you won't be able to boot

  the new kernel image.

  Reinstalling LILO is usually a matter of running /sbin/lilo.

  You may wish to edit /etc/lilo.conf to specify an entry for your

  old kernel image (say, /vmlinux.old) in case the new one does not

  work. See the LILO docs for more information.

  After reinstalling LILO, you should be all set. Shutdown the system,

  reboot, and enjoy!

If you ever need to change the default root device, video mode,

ramdisk size, etc. in the kernel image, use the 'rdev' program (or

alternatively the LILO boot options when appropriate). No need to

recompile the kernel to change these parameters.

 - Reboot with the new kernel and enjoy.

 IF SOMETHING GOES WRONG:

 - If you have problems that seem to be due to kernel bugs, please check

   the file MAINTAINERS to see if there is a particular person associated

   with the part of the kernel that you are having trouble with. If there

   isn't anyone listed there, then the second best thing is to mail

   them to me (torvalds@linux-foundation.org), and possibly to any other

   relevant mailing-list or to the newsgroup.

 - In all bug-reports, *please* tell what kernel you are talking about,

   how to duplicate the problem, and what your setup is (use your common

   sense). If the problem is new, tell me so, and if the problem is

   old, please try to tell me when you first noticed it.

 - If the bug results in a message like

        unable to handle kernel paging request at address C0000010

        Oops: 0002

        EIP: 0010:XXXXXXXX

        eax: xxxxxxxx ebx: xxxxxxxx ecx: xxxxxxxx edx: xxxxxxxx

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esi: xxxxxxxx   edi: xxxxxxxx   ebp: xxxxxxxx

ds: xxxx es: xxxx fs: xxxx gs: xxxx

Pid: xx, process nr: xx

xx xx xx xx xx xx xx xx xx xx

or similar kernel debugging information on your screen or in your

system log, please duplicate it *exactly*. The dump may look

incomprehensible to you, but it does contain information that may

help debugging the problem. The text above the dump is also

important: it tells something about why the kernel dumped code (in

the above example it's due to a bad kernel pointer). More information

on making sense of the dump is in Documentation/oops-tracing.txt

- If you compiled the kernel with CONFIG_KALLSYMS you can send the dump

  as is, otherwise you will have to use the "ksymoops" program to make

  sense of the dump (but compiling with CONFIG_KALLSYMS is usually preferred).

  This utility can be downloaded from

  ftp://ftp.<country>.kernel.org/pub/linux/utils/kernel/ksymoops/ .

  Alternately you can do the dump lookup by hand:

- In debugging dumps like the above, it helps enormously if you can

  look up what the EIP value means. The hex value as such doesn't help

  me or anybody else very much: it will depend on your particular

  kernel setup. What you should do is take the hex value from the EIP

  line (ignore the "0010:"), and look it up in the kernel namelist to

  see which kernel function contains the offending address.

To find out the kernel function name, you'll need to find the system binary associated with the kernel that exhibited the symptom. This is the file 'linux/vmlinux'. To extract the namelist and match it against the EIP from the kernel crash, do:

```
nm vmlinux | sort | less
```

This will give you a list of kernel addresses sorted in ascending order, from which it is simple to find the function that contains the offending address. Note that the address given by the kernel debugging messages will not necessarily match exactly with the function addresses (in fact, that is very unlikely), so you can't just 'grep' the list: the list will, however, give you the starting point of each kernel function, so by looking for the function that has a starting address lower than the one you are searching for but is followed by a function with a higher address you will find the one you want. In fact, it may be a good idea to include a bit of "context" in your problem report, giving a few lines around the interesting one.

If you for some reason cannot do the above (you have a pre-compiled kernel image or similar), telling me as much about your setup as possible will help. Please read the REPORTING-BUGS document for details.

- Alternately, you can use gdb on a running kernel. (read-only; i.e. you

  cannot change values or set break points.) To do this, first compile the

  kernel with -g; edit arch/i386/Makefile appropriately, then do a "make

  clean". You'll also need to enable CONFIG_PROC_FS (via "make config").

  After you've rebooted with the new kernel, do "gdb vmlinux /proc/kcore".

  You can now use all the usual gdb commands. The command to look up the

  point where your system crashed is "l *0xXXXXXXXX". (Replace the XXXes

  with the EIP value.)

  gdb'ing a non-running kernel currently fails because gdb (wrongly)

  disregards the starting offset for which the kernel is compiled.

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Lsof (v4.85):

lsof (LiSt Open Files) version 4

(revision 4.85)

```
*****************************************************************

| The latest release of lsof is always available via anonymous ftp |

| from lsof.itap.purdue.edu.  Look in pub/tools/unix/lsof.        |

*****************************************************************



*************************************************************************

| CHECK THE PATCHES/ SUBDIRECTORY FOR FIXES TO THE LATEST LSOF DISTRIBUTION. |

*************************************************************************

 *********************************************************************

| AVOID USING PRE-BUILT LSOF BINARIES: SEE THE "PRE-BUILT LSOF BINARIES" |

|           SECTION IN 00README FOR AN EXPLANATION.             |

*************************************************************************



 ***********************************************************************

| READ 00LSOF-L FOR INFORMATION ON THE LSOF-L LISTSERV MAILING LIST. |

 ***********************************************************************



 ***********************************************************************

|    CHECK 00FAQ BEFORE REPORTING BUGS TO <abe@purdue.edu>.       |

| 00FAQ ALSO AT: ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/FAQ |

 ***********************************************************************
```

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```
  ****************************************************************

  | IMPORTANT!  This README file explains how the lsof tar archive   |

  | is assembled -- it's a "wrapper" tar archive.  Please read the   |

  | explanation of its naming and construction, immediately        |

  | following the initial list of supported dialects.            |

  ****************************************************************
```

Lsof version 4 lists open files for running UNIX processes. It is a

descendent of ofiles, fstat, and lsof versions 1, 2, and 3. It has

been tested recently on these UNIX dialects.

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AIX 5.3

Apple Darwin 9 and Mac OS X 10.[56]

FreeBSD 4.9 and 6.4 for x86-based systems

FreeBSD 8.[02] and 9.0 for AMD64-based systems

Linux 2.1.72 and above for x86-based systems

Solaris 9, 10 and 11

Lsof 4 may work on other versions of these dialects, but hasn't been

tested there recently. Lsof versions 2 and 3 are still available and

may provide older dialect version support. See the notes on them in

this file.

The pub/tools/unix/lsof/contrib directory on lsof.itap.purdue.edu also

contains information on other ports.

Version 4 of lsof is distributed as bzip2'd, gzip'd and compressed tar

archives in the files:

  ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/lsof.tar.bz2

 and

  ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/lsof.tar.gz

 and

  ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/lsof.tar.Z

These files are links to the current distribution, whose name includes

the revision number:

ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof_<rev>.tar.bz2

and

ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof_<rev>.tar.gz

and

ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof_<rev>.tar.Z

<rev> is the revision number -- e.g., 4.85. These archives are called

wrappers, because the lsof source tar archive, its GPG certificate

(lsof_<rev>_src.tar.sig), and some documentation files are wrapped

together inside them. (The GPG certificate authenticates the source

tar archive.) A tar archive with: a ``.bz2'' suffix has been

compressed with bzip2; ``.gz'', with gzip; and ``.Z'', with compress.

When the wrapper tar is gunzip'd or uncompressed, and its tar archive

contents are extracted, an lsof_4.85 subdirectory is created in the

directory where the extraction was performed. The lsof_4.85

subdirectory contains these files:

00.README.FIRST   contains introductory distribution

                        information.

README.lsof_4.85   contains instructions for the

                        security-conscious on how to be

                        sure that no one has tampered with

                        the distribution.

RELEASE_SUMMARY_4.85   is this file.

lsof_4.85_src.tar   is a tar archive, containing the

lsof sources. When extracted with

tar it creates a subdirectory named

lsof_4.85_src in the directory

where the extraction was performed.

The lsof source files will be found

in lsof_4.85_src.

lsof_4.85_src.tar.sig   is a GPG certificate, authenticating

the lsof_4.85_src.tar archive. See the

README.lsof_4.85 file for more

information on GPG authentication of

lsof_4.85_src.tar.

If you've obtained this file and an lsof distribution from a mirror

site, please be aware that THE LATEST VERSION OF LSOF IS AVAILABLE VIA

ANONYMOUS FTP FROM LSOF.ITAP.PURDUE.EDU IN THE PUB/TOOLS/UNIX/LSOF

DIRECTORY.

Patches to lsof distributions may be found in the patches/ sub-

directory where you found lsof.tar.bz2, lsof.tar.gz or lsof.tar.Z.

If there are any patches to the current distribution, they will be

found in the patches/4.85/ branch.

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(If you need a copy of gunzip, look for it at prep.ai.mit.edu in

pub/gnu/gzip*.)

* The September 27, 2011 revision (4.85): adds an automatic work-around for

   an lgrp_root conflict in some Solaris 9 and 10 versions; supports FreeBSD

   7.4 and 8.[12] (8.1 not tested); adds fixes for Solaris 11 kernel module

   path determination; picked lint for Linux; added more Linux cross

   configuration support; adds support for Mac OS X 10.6; tested on FreeBSD

   6.4; adapts to FreeBSD ZFS update; drops support for FreeBSD 7.x; adjusts

   for Solaris 10 with patch 144488-10; added Linux +|-e option support;

   adjusts for a FreeBSD 9 change; fixes a Linux AF_UNIX path reporting bug;

   adjusts for dropping of RPC headers from Linux GlibC 2.14; adds Linux

   Netlink protocol support; corrects UDP6-lite Linux path.

Read the 00.README.FIRST in the lsof distribution first.

Read the 00DIST distribution file for more details on feature additions
and bug fixes.

The 00README distribution file has build instructions, dialect

descriptions, special feature discussions, and installation hints.

The 00FAQ file contains a list of frequently asked questions and their

answers.

The 00DCACHE file explains device cache file path formation.

The 00PORTING file contains information on porting lsof to other UNIX

dialects.

The 00QUICKSTART file gives a quick introduction to using lsof.

The distribution files lsof.8 (nroff source) and lsof.man (nroff

formatted output) contain the manual page for lsof; it is the only

other documentation besides the source code (it's included).

Version 4 Binaries

==================

Version 4 binaries for some revisions, dialects, and platforms may be

found in pub/tools/unix/lsof/binaries. Check the README files for

exact descriptions. Check the dialect-specific Makefiles for

installation instructions. CHECKSUMS and GPG certificates are provided

for authentication.

Please think very carefully before you decide to use a pre-built binary

instead of making your own from the sources. Here are some points to

consider:

1. Lsof must run setgid or setuid. Are you willing to trust that

   power to a binary you didn't construct yourself?

2. Lsof binaries may be generated on a system whose configuration

   header files differ from yours. Under Digital UNIX (DEC OSF/1), for

   example, lsof includes header files from the machine's configuration

   directory, /sys/<name>. Are you willing to gamble that your

   configuration directory's header files match the ones used to

   compile lsof?

3. Lsof is often configured with specific options that are determined

   from the configuration of the system on which it is configured --

   e.g., Solaris patch level, dynamic loader libraries, etc. Are you

   sure that the lsof binary you retrieve will have been configured for

   your system? If you get a binary that is misconfigured for you, it

   may not work at all.

If you haven't already guessed, I believe firmly that you should

retrieve sources and build your own binary. If you still want to use

the distribution binaries, please authenticate what you retrieved with

the GPG certificates; please compare checksums, too.

Version 4 Checksums

===================

Security checksums -- both MD5 and sum(1) -- for revisions of lsof

version 4 are contained in the README.lsof_<rev> files in the wrapper

tar archives of pub/tools/unix/lsof.

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The CHECKSUMS file, found with the distribution archives, contains

information on validating the archives with external MD5 checksums and

external GPG certificates.

GPG Certificates

================

The lsof wrapper tar archive includes a GPG certificate file in its

contained lsof_4.71_src.tar.sig file.

Binary files have detached GPG certificates that may be found in their

directories with ".sig" extensions.

The certificates are signed with my GPG public key, which may be found

in the file:

   ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/Victor_A_Abell.gpg

My key may also be available at some public key servers,

There is also authentication information in the CHECKSUMS file (a link

to CHECKSUMS_<rev>), found with the lsof distribution files. CHECKSUMS

contains external MD5 checksums for the distribution files and

information on using the external GPG certificates, found with the lsof

distribution files.

Old Dialect Support

==================

Remnants of source code and binaries for dialects for which lsof once

provided support may be obtained by request. Send the request to

abe@purdue.edu.

Dialects no longer supported include:

      CDC EP/IX

      MIPS RISC/os

      Motorola V/88

      Pyramid DC/OSx

      Pyramid Reliant UNIX

      Sequent DYNIX

      SGI IRIX

      SunOS 4.1.x

      Ultrix

Generally I drop support for a dialect when I no longer have access to

a test system.

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Lsof Version 2

==============

The version 3 predecessor, revision 36 of version 2, is also available

upon request. Send the request to abe@purdue.edu.

I recommend you avoid lsof version 2. It's out of date and I no

longer provide support for it. (Versions 3 and 4 support more

dialects, and have many enhancements, bug fixes, and improvements.)

Version 2 was tested on the following UNIX dialects:

AIX 3.2.[1234] for the IBM RISC/System 6000

DEC OSF/1 1.[23] and 2.0 for the DEC Alpha

EP/IX 1.4.3 and 2.1.1 for the CDC 4680

ETAV 1.17 for the ETA-10P*

FreeBSD 1.0e for x86-based systems

HP-UX [789].x for HP systems

IRIX 4.0.5 and 5.1.1 for SGI systems

NEXTSTEP 2.1, 3.0, 3.1 for NeXT systems

Sequent Dynix 3.0.12 for Sequent Symmetry systems

SunOS 4.1.[123] for Sun 3 and 4 systems

SunOS 5.[13] (Solaris 2.[13]) for Sun 4 systems

Ultrix 2.2 and 4.2 for DEC systems

(If you need a copy of gunzip, look for it at prep.ai.mit.edu in

pub/gnu.)

Version 2 Checksums

===================

MD5:

      (OLD/lsof236tar.gz) = f8a1ab3971ea2f6a3ea16752f84409e8

sum(1):

      39996   106 OLD/lsof236tar.gz

The file OLD/lsof236tar.gz.asc is a detached PGP certificate that may

be used to authenticate OLD/lsof236tar.gz with my PGP public key. You

may find my PGP public key at:

  ftp://lsof.itap.purdue.edu/pub/tools/unix/lsof/OLD/Victor_A_Abell.pgp

Lsof Version 3

==============

The last revision of lsof version 3, 3.88, may obtained by request.

Send the request to abe@purdue.edu.

I recommend version 4 over version 3. It is the version I actively

support.

Lsof version 3 was tested on these UNIX dialects:

AIX 3.2.5, 4.1[.[1234]], and 4.2

BSDI BSD/OS 2.0, 2.0.1, and 2.1 for x86-based systems

DC/OSx 1.1 for Pyramid systems

Digital UNIX (DEC OSF/1) 2.0, 3.0, 3.2, and 4.0

EP/IX 2.1.1 for the CDC 4680

FreeBSD 1.1.5.1, 2.0, 2.0.5, 2.1, 2.1.5 for x86-based

   systems

HP-UX 8.x, 9.x, 10.01, 10.10, and 10.20

IRIX 5.2, 5.3, 6.0, 6.0.1, and 6.[124]

Linux 2.0.3[01] and 2.1.57 for x86-based systems

NetBSD 1.0, 1.1, and 1.2 for x86 and SPARC-based

   systems

NEXTSTEP 2.1 and 3.[0123] for NEXTSTEP architectures

OpenBSD 1.2 and 2.0 for x86-based systems

Reliant UNIX 5.43 for Pyramid systems

RISC/os 4.52 for MIPS R2000-based systems

SCO OpenServer 1.1, 3.0, and 5.0.[024] for x86-based

   systems

SCO UnixWare 2.1 and 2.1.1 for x86-based systems

Sequent PTX 2.1.[1569], 4.0.[23], 4.1.[024], 4.2[.1],

   and 4.3

Solaris 2.[12345], 2.5.1, and 2.6-Beta

SunOS 4.1.x

Ultrix 4.2, 4.3, 4.4, and 4.5

Vic Abell <abe@purdue.edu>

September 27, 2011

LibXml2 (v2.7.8):

Except where otherwise noted in the source code (e.g. the files hash.c,

list.c and the trio files, which are covered by a similar licence but

with different Copyright notices) all the files are:

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Memstat (v0.8):

This is Debian GNU/Linux's prepackaged version of Joshua M. Yelon's memstat,

for a long time maintained upstream by Bernd Eckenfels <ecki@debian.org> and

now maintained by Michael Meskes <meskes@debian.org>.

This package was put together by me, Bernd Eckenfels <ecki@debian.org>,

from the sources, which I obtained from

http://charm.cs.uiuc.edu/~jyelon/software.html

The debian/* Files are based on Ian Jacksons hello Package.

All patches by me are subject to the GPL.

Original Copyright from memstat.c:

 * This software copyright 1997 Joshua M. Yelon.

 * Distribution subject to the terms of the GPL.

On Debian GNU/Linux systems, the complete text of the GNU General

Public License can be found in `/usr/share/common-licenses/GPL'.

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Ncurses (v5.7):

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--   --

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-- $Id: README,v 1.23 2006/04/22 22:19:37 tom Exp $

                    README file for the ncurses package

See the file ANNOUNCE for a summary of ncurses features and ports.

See the file INSTALL for instructions on how to build and install ncurses.

See the file NEWS for a release history and bug-fix notes.

See the file TO-DO for things that still need doing, including known bugs.

Browse the file misc/ncurses-intro.html for narrative descriptions of how

to use ncurses and the panel, menu, and form libraries.

Browse the file doc/html/hackguide.html for a tour of the package internals.

ROADMAP AND PACKAGE OVERVIEW:

You should be reading this file in a directory called: ncurses-d.d, where d.d

is the current version number (see the dist.mk file in this directory for

that). There should be a number of subdirectories, including `c++', `form',

`man', `menu', `misc', `ncurses', `panel', `progs', `test', 'tack' and `Ada95'.

(The 'tack' program may be distributed separately).

A full build/install of this package typically installs several libraries, a

handful of utilities, and a database hierarchy. Here is an inventory of the

pieces:

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The libraries are:

      libncurses.a   (normal)

      libncurses.so   (shared)

      libncurses_g.a   (debug and trace code enabled)

      libncurses_p.a   (profiling enabled)

      libpanel.a   (normal)

      libpanel.so   (shared)

      libpanel_g.a   (debug and trace code enabled)

      libmenu.a   (normal)

      libmenu.so   (shared)

      libmenu_g.a   (debug enabled)

      libform.a   (normal)

      libform.so   (shared)

      libform_g.a   (debug enabled)

If you configure using the --enable-widec option, a "w" is appended to the library names (e.g., libncursesw.a), and the resulting libraries support wide-characters, e.g., via a UTF-8 locale. The corresponding header files are compatible with the non-wide-character configuration; wide-character features are provided by ifdef's in the header files. The wide-character library interfaces are not binary-compatible with the non-wide-character version.

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The ncurses libraries implement the curses API. The panel, menu and forms

libraries implement clones of the SVr4 panel, menu and forms APIs. The source

code for these lives in the `ncurses', `panel', `menu', and `form' directories

respectively.

In the `c++' directory, you'll find code that defines an interface to the

curses, forms, menus and panels library packaged as C++ classes, and a demo program in C++

to test it. These class definition modules are not installed by the 'make

install.libs' rule as libncurses++.

In the `Ada95' directory, you'll find code and documentation for an

Ada95 binding of the curses API, to be used with the GNAT compiler.

This binding is built by a normal top-level `make' if configure detects

an usable version of GNAT (3.11 or above). It is not installed automatically.

See the Ada95 directory for more build and installation instructions and

for documentation of the binding.

To do its job, the ncurses code needs your terminal type to be set in the

environment variable TERM (normally set by your OS; under UNIX, getty(1)

typically does this, but you can override it in your .profile); and, it needs a

database of terminal descriptions in which to look up your terminal type's

capabilities.

In older (V7/BSD) versions of curses, the database was a flat text file,

/etc/termcap; in newer (USG/USL) versions, the database is a hierarchy of

fast-loading binary description blocks under /usr/lib/terminfo. These binary

blocks are compiled from an improved editable text representation called

`terminfo' format (documented in man/terminfo.5). The ncurses library can use

either /etc/termcap or the compiled binary terminfo blocks, but prefers the

second form.

In the `misc' directory, there is a text file terminfo.src, in editable

terminfo format, which can be used to generate the terminfo binaries (that's

what make install.data does). If the package was built with the

--enable-termcap option enabled, and the ncurses library cannot find a terminfo

description for your terminal, it will fall back to the termcap file supplied

with your system (which the ncurses package installation leaves strictly

alone).

The utilities are as follows:

      tic   -- terminfo source to binary compiler

      infocmp   -- terminfo binary to source decompiler/comparator

      clear   -- emits clear-screen for current terminal

      tput   -- shell-script access to terminal capabilities.

      toe   -- table of entries utility

      tset   -- terminal-initialization utility

The first two (tic and infocmp) are used for manipulating terminfo

descriptions; the next two (clear and tput) are for use in shell scripts. The

last (tset) is provided for 4.4BSD compatibility. The source code for all of

these lives in the `progs' directory.

Detailed documentation for all libraries and utilities can be found in the

`man' and `doc' directories. An HTML introduction to ncurses, panels, and

menus programming lives in the `doc/html' directory. Manpages in HTML format

are under `doc/html/man'.

The `test' directory contains programs that can be used to verify or

demonstrate the functions of the ncurses libraries. See test/README for

descriptions of these programs. Notably, the `ncurses' utility is designed to

help you systematically exercise the library functions.

AUTHORS:

Pavel Curtis:

   wrote the original ncurses

Zeyd M. Ben-Halim:

   port of original to Linux and many enhancements.

Thomas Dickey (maintainer for 1.9.9g through 4.1, resuming with FSF's 5.0):

   configuration scripts, porting, mods to adhere to XSI Curses in the

   areas of background color, terminal modes. Also memory leak testing,

   the wresize, default colors and key definition extensions and numerous

   bug fixes (more than half of those enumerated in NEWS beginning with

   the internal release 1.8.9).

Florian La Roche (official maintainer for FSF's ncurses 4.2)

Beginning with release 4.2, ncurses is distributed under an MIT-style license.

Eric S. Raymond:

the man pages, infocmp(1), tput(1), clear(1), captoinfo(1), tset(1), toe(1), most of tic(1), trace levels, the HTML intro, wgetnstr() and many other entry points, the cursor-movement optimization, the scroll-pack optimizer for vertical motions, the mouse interface and xterm mouse support, and the ncurses test program.

Juergen Pfeifer

The menu and form libraries, C++ bindings for ncurses, menus, forms and panels, as well as the Ada95 binding. Ongoing support for panel.

CONTRIBUTORS:

Alexander V. Lukyanov

for numerous fixes and improvements to the optimization logic.

David MacKenzie

for first-class bug-chasing and methodical testing.

Ross Ridge

for the code that hacks termcap parameterized strings into terminfo.

Warren Tucker and Gerhard Fuernkranz,

for writing and sending the panel library.

Hellmuth Michaelis,

for many patches and testing the optimization code.

Eric Newton, Ulrich Drepper, and Anatoly Ivasyuk:

the C++ code.

Jonathan Ross,

for lessons in using sed.

Keith Bostic (maintainer of 4.4BSD curses)

for help, criticism, comments, bug-finding, and being willing to

deep-six BSD curses for this one when it grew up.

Richard Stallman,

for his commitment to making ncurses free software.

Countless other people have contributed by reporting bugs, sending fixes,

suggesting improvements, and generally whining about ncurses :-)

BUGS:

See the INSTALL file for bug and developer-list addresses.

The Hacker's Guide in the doc directory includes some guidelines

on how to report bugs in ways that will get them fixed most quickly.

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OpenSSL (v1.0.1g):

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Pcre (v8.30):

PCRE LICENCE

PCRE is a library of functions to support regular expressions whose syntax and semantics are as close as possible to those of the Perl 5 language.

Release 8 of PCRE is distributed under the terms of the "BSD" licence, as specified below. The documentation for PCRE, supplied in the "doc" directory, is distributed under the same terms as the software itself.

The basic library functions are written in C and are freestanding. Also included in the distribution is a set of C++ wrapper functions, and a just-in-time compiler that can be used to optimize pattern matching. These are both optional features that can be omitted when the library is built.

THE BASIC LIBRARY FUNCTIONS

Written by: Philip Hazel

Email local part: ph10

Email domain: cam.ac.uk

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University of Cambridge Computing Service,

Cambridge, England.

PCRE JUST-IN-TIME COMPILATION SUPPORT

Written by: Zoltan Herczeg

Email local part: hzmester

Emain domain: freemail.hu

STACK-LESS JUST-IN-TIME COMPILER

Written by: Zoltan Herczeg

Email local part: hzmester

Emain domain: freemail.hu

THE C++ WRAPPER FUNCTIONS

Contributed by: Google Inc.

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Popt (v1.16):

This is the popt(3) command line option parsing library. While it is similiar

to getopt(3), it contains a number of enhancements, including:

    1) popt is fully reentrant

    2) popt can parse arbitrary argv[] style arrays while

      getopt(3) makes this quite difficult

    3) popt allows users to alias command line arguments

    4) popt provides convience functions for parsing strings

      into argv[] style arrays

Complete documentation on popt(3) is available in popt.ps (included in this

tarball), which is excerpted with permission from the book "Linux

Application Development" by Michael K. Johnson and Erik Troan (available

from Addison Wesley in May, 1998).

Comments on popt should be addressed to popt-devel@rpm5.org.

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ROM-Bootloader:

Boot strategies

AT91 chips embed a boot ROM code. It is enabled depending on BMS (Boot Mode Select) pin state on reset.

The ROM code scans the contents of different media like serial FLASH, NAND FLASH, SD/MMC Card and serial EEPROM.

If a valid application is available then it downloads this application into the chip internal SRAM and runs it.

To determine if a valid application is present the ROM code checks the eight ARM exception vectors.

If no valid application is available then SAM-BA Monitor is executed. It waits for transactions either on the USB device,

or on the DBGU serial port, then the SAM-BA tool can be used to program FLASH or EEPROM present on your board.

For more information on this topic, please check the corresponding SAM product datasheet section Boot Strategies.

GNU Tar (v1.17):

README for GNU tar

See the end of file for copying conditions.

* Introduction

Please glance through *all* sections of this

'README' file before starting configuration. Also make sure you read files

'ABOUT-NLS' and 'INSTALL' if you are not familiar with them already.

If you got the 'tar' distribution in 'shar' format, time stamps ought to be

properly restored; do not ignore such complaints at 'unshar' time.

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GNU 'tar' saves many files together into a single tape or disk

archive, and can restore individual files from the archive. It includes

multivolume support, the ability to archive sparse files, automatic archive

compression/decompression, remote archives and special features that allow

'tar' to be used for incremental and full backups. This distribution

also includes 'rmt', the remote tape server. The 'mt' tape drive control

program is in the GNU 'cpio' distribution.

GNU 'tar' is derived from John Gilmore's public domain 'tar'.

See file 'ABOUT-NLS' for how to customize this program to your language.

See file 'COPYING' for copying conditions.

See file 'INSTALL' for compilation and installation instructions.

See file 'PORTS' for various ports of GNU tar to non-Unix systems.

See file 'NEWS' for a list of major changes in the current release.

See file 'THANKS' for a list of contributors.

Besides those configure options documented in files 'INSTALL' and

'ABOUT-NLS', an extra option may be accepted after './configure':

* Install

** Selecting the default archive format.

The default archive format is GNU, this can be overridden by

presetting DEFAULT_ARCHIVE_FORMAT while configuring. The allowed

values are GNU, V7, OLDGNU, USTAR and POSIX.

** Selecting the default archive device

The default archive device is now 'stdin' on read and 'stdout' on write.

The installer can still override this by presetting 'DEFAULT_ARCHIVE'

in the environment before configuring (the behavior of '-[0-7]' or

'-[0-7]lmh' options in 'tar' are then derived automatically). Similarly,

'DEFAULT_BLOCKING' can be preset to something else than 20.

** Selecting full pathname of the "rmt" binary.

Previous versions of tar always looked for "rmt" binary in the

directory "/etc/rmt". However, the "rmt" program included

in the distribution was installed under "$prefix/libexec/rmt".

To fix this discrepancy, tar now looks for "$prefix/libexec/rmt".

If you do not want this behavior, specify full path name of

"rmt" binary using DEFAULT_RMT_DIR variable, e.g.:

./configure DEFAULT_RMT_DIR=/etc

If you already have a copy of "rmt" installed and wish to use it

instead of the version supplied with the distribution, use --with-rmt

option:

./configure --with-rmt=/etc/rmt

This will also disable building the included version of rmt.

** Installing backup scripts.

This version of tar is shipped with the shell scripts for producing

incremental backups (dumps) and restoring filesystems from them.

The name of the backup script is "backup". The name of the

restore script is "restore". They are installed in "$prefix/sbin"

directory.

Use option --enable-backup-scripts to compile and install these

scripts.

** '--disable-largefile' omits support for large files, even if the

operating system supports large files. Typically, large files are

those larger than 2 GB on a 32-bit host.

* Installation hints

Here are a few hints which might help installing 'tar' on some systems.

** gzip and bzip2.

GNU tar uses the gzip and bzip2 programs to read and write compressed

archives. If you don't have these programs already, you need to

install them. Their sources can be found at:

ftp://ftp.gnu.org/gnu/gzip/

http://sourceware.cygnus.com/bzip2/

If you see the following symptoms:

    $ tar -xzf file.tar.gz

    gzip: stdin: decompression OK, trailing garbage ignored

    tar: Child returned status 2

then you have encountered a gzip incompatibility that should be fixed

in gzip test version 1.3, which as of this writing is available at

<ftp://alpha.gnu.org/gnu/gzip/>. You can work around the

incompatibility by using a shell command like

 'gzip -d <file.tar.gz | tar -xzf -'.

** Solaris issues.

GNU tar exercises many features that can cause problems with older GCC

versions. In particular, GCC 2.8.1 (sparc, -O1 or -O2) is known to

miscompile GNU tar. No compiler-related problems have been reported

when using GCC 2.95.2 or later.

Recent versions of Solaris tar sport a new -E option to generate

extended headers in an undocumented format. GNU tar does not

understand these headers.

** Static linking.

Some platform will, by default, prepare a smaller 'tar' executable

which depends on shared libraries. Since GNU 'tar' may be used for

system-level backups and disaster recovery, installers might prefer to

force static linking, making a bigger 'tar' executable maybe, but able to

work standalone, in situations where shared libraries are not available.

The way to achieve static linking varies between systems. Set LDFLAGS

to a value from the table below, before configuration (see 'INSTALL').

PlatformCompiler	LDFLAGS
(any) Gnu C	-static
AIX (vendor)	-bnso -bI:/lib/syscalls.exp
HPUX (vendor)	-Wl,-a,archive
IRIX (vendor)	-non_shared
OSF (vendor)	-non_shared
SCO 3.2v5 (vendor)	-dn
Solaris (vendor)	-Bstatic
SunOS (vendor)	-Bstatic

** Failed tests 'ignfail.sh' or 'incremen.sh'.

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In an NFS environment, lack of synchronization between machine clocks might create difficulties to any tool comparing dates and file time stamps, like 'tar' in incremental dumps. This has been a recurrent problem with GNU Make for the last few years. We would like a general solution.

** BSD compatibility matters.

Set LIBS to '-lbsd' before configuration (see 'INSTALL') if the linker complains about 'bsd_ioctl' (Slackware). Also set CPPFLAGS to '-I/usr/include/bsd' if <sgtty.h> is not found (Slackware).

** OPENStep 4.2 swap files

Tar cannot read the file /private/vm/swapfile.front (even as root). This file is not a real file, but some kind of uncompressed view of the real compressed swap file; there is no reason to back it up, so the simplest workaround is to avoid tarring this file.

* Special topics

Here are a few special matters about GNU 'tar', not related to build matters. See previous section for such.

** File attributes.

About *security*, it is probable that future releases of 'tar' will have some behavior changed. There are many pending suggestions to choose from.

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Today, extracting an archive not being 'root', 'tar' will restore suid/sgid

bits on files but owned by the extracting user. 'root' automatically gets

a lot of special privileges, '-p' might later become required to get them.

GNU 'tar' does not properly restore symlink attributes. Various systems

implement flavors of symbolic links showing different behavior and

properties. We did not successfully sorted all these out yet. Currently,

the 'lchown' call will be used if available, but that's all.

** POSIX compliance.

GNU 'tar' is able to create archive in the following formats:

  *** The format of UNIX version 7

  *** POSIX.1-1988 format, also known as "ustar format"

  *** POSIX.1-2001 format, also known as "pax format"

  *** Old GNU format (described below)

In addition to those, GNU 'tar' is also able to read archives

produced by 'star' archiver.

A so called 'Old GNU' format is based on an early draft of the

POSIX 1003.1 'ustar' standard which is different from the final

standard. It defines its extensions (such as incremental backups

and handling of the long file names) in a way incompatible with

any existing tar archive format, therefore the use of old GNU

format is strongly discouraged.

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Please read the file NEWS for more information about POSIX compliance

and new 'tar' features.

* What's next?

GNU tar will be merged into GNU paxutils: a project containing

several utilities related to creating and handling archives in

various formats. The project will include tar, cpio and pax

utilities.

* Bug reporting.

Send bug reports to <bug-tar@gnu.org>. A bug report should contain

an adequate description of the problem, your input, what you expected,

what you got, and why this is wrong. Diffs are welcome, but they only

describe a solution, from which the problem might be uneasy to infer.

If needed, submit actual data files with your report. Small data files

are preferred. Big files may sometimes be necessary, but do not send them

to the report address; rather take special arrangement with the maintainer.

Your feedback will help us to make a better and more portable package.

Consider documentation errors as bugs, and report them as such. If you

develop anything pertaining to 'tar' or have suggestions, let us know

and share your findings by writing to <bug-tar@gnu.org>.

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range that applies to every year in the range. For example: 2005-2008

represents the years 2005, 2006, 2007, and 2008.

Local Variables:

mode: outline

paragraph-separate: "[]*$"

version-control: never

End:

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u-boot (v2010.09):

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 -- Wolfgang Denk

Like many other projects, U-Boot had a tradition of including big blocks of License headers in all files. This not only blew up the source code with mostly redundant information, but also made it very difficult to generate License Clearing Reports. An additional problem was that even the same licenses were referred to by a number of slightly varying text blocks (full, abbreviated, different indentation, line wrapping and/or white space, with obsolete address information, ...) which made automatic processing a nightmare.

To make this easier, such license headers in the source files have been replaced with a single line reference to Unique Lincense Identifiers as defined by the Linux Foundation's SPDX project [1]. For example, in a source file the full "GPL v2.0 or later" header text was replaced by a single line:

SPDX-License-Identifier: GPL-2.0+

We use the SPDX Unique Lincense Identifiers here; these are available at [2].

[1] http://spdx.org/

[2] http://spdx.org/licenses/

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uClibc (v0.9.31.1):

A C library for embedded Linux

uClibc (aka µClibc/pronounced yew-see-lib-see) is a C library for developing embedded Linux systems. It is much smaller than the GNU C Library, but nearly all applications supported by glibc also work perfectly with uClibc. Porting applications from glibc to uClibc typically involves just recompiling the source code. uClibc even supports shared libraries and threading. It currently runs on standard Linux and MMU-less (also known as µClinux) systems with support for alpha, amd64, ARM, Blackfin, cris, h8300, hppa, i386, i960, ia64, m68k, mips/mipsel, PowerPC, SH, SPARC, and v850 processors.

If you are building an embedded Linux system and you find that glibc is eating up too much space, you may want to consider using uClibc. If you are building a huge fileserver with 12 Terabytes of storage, then using glibc may make more sense. Unless, for example, that 12 Terabytes will be Network Attached Storage and you plan to burn Linux into the system's firmware...

uClibc is maintained by Erik Andersen and is licensed under the GNU LESSER GENERAL PUBLIC LICENSE . This license allows you to make closed source commercial applications using uClibc. (Please consider sharing some of the money you make ;-). You do not need to give away all your source code just because you use uClibc and/or run on Linux. See the list of Frequently Asked Questions for details.

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Udev (v058):

udev - a userspace implementation of devfs

For more information on the design, and structure of this project, see the

files in the docs/ directory.

To use:

- You must be running a 2.6 version of the Linux kernel.

- Your 2.6 kernel must have had CONFIG_HOTPLUG enabled when it was built.

- Make sure sysfs is mounted. udev will figure out where sysfs is mounted, but

  the traditional place for it is at /sys. You can mount it by hand by running:

        mount -t sysfs none /sys

- Make sure you have the latest version of the linux-hotplug scripts. They are

  available at linux-hotplug.sf.net or from your local kernel.org mirror at:

        kernel.org/pub/linux/utils/kernel/hotplug/

  They are required in order for udev to work properly.

  If for some reason you do not install the hotplug scripts, you must tell the

  kernel to point the hotplug binary at wherever you install udev at. This can

  be done by:

        echo "/sbin/udev" > /proc/sys/kernel/hotplug

- Build the project:

    make

Note:

There are a number of different flags that you can use when building

udev. They are as follows:

prefix

    set this to the default root that you want udev to be

    installed into. This works just like the 'configure --prefix'

    script does. Default value is ''. Only override this if you

    really know what you are doing.

USE_KLIBC

    if set to 'true', udev is built and linked against the

    included version of klibc. Default value is 'false'.

USE_LOG

    if set to 'true', udev will emit messages to the syslog when

    it creates or removes device nodes. This is helpful to see

    what udev is doing. This is enabled by default. Note, if you

    are building udev against klibc it is recommended that you

    disable this option (due to klibc's syslog implementation.)

USE_SELINUX

    if set to 'true', udev will be built with SELinux support

    enabled. This is disabled by default.

DEBUG

    if set to 'true', debugging messages will be sent to the syslog

    as udev is run. Default value is 'false'.

KERNEL_DIR

If this is not set it will default to /lib/modules/`uname -r`/build

This is used if USE_KLIBC=true to find the kernel include

directory that klibc needs to build against. This must be set

if you are not building udev while running a 2.6 kernel.

So, if you want to build udev using klibc with debugging messages, you

would do:

make USE_KLIBC=true DEBUG=true

- Install the project:

make install

This will put the udev binary in /sbin, create the /udev and /etc/udev

directories, and place the udev configuration files in /etc/udev. You

will probably want to edit the *.rules files to create custom naming

rules. More info on how the config files are set up are contained in

comments in the files, and is located in the documentation.

- Add and remove devices from the system and marvel as nodes are created

and removed in /udev/ based on the device types.

- If you later get sick of it, uninstall it:

make uninstall

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Things are still quite rough, but it should work properly. If nothing

seems to happen, make sure your build worked properly by running the

udev-test.pl script as root in the test/ subdirectory of the udev source

tree.

Development and documentation help is very much appreciated, see the TODO

file for a list of things left to be done.

Any comment/questions/concerns please let me and the other udev developers

know by sending a message to the linux-hotplug-devel mailing list at:

      linux-hotplug-devel@lists.sourceforge.net

greg k-h

greg@kroah.com

Util-Linux (v2.20.1):

          util-linux

     util-linux is a random collection of Linux utilities

  Note that in years 2006-2010 this project used the name "util-linux-ng".

WEB PAGE:

  http://kernel.org/~kzak/util-linux/

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MAILING LIST:

E-MAIL: util-linux@vger.kernel.org

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DOWNLOAD:

ftp://ftp.kernel.org/pub/linux/utils/util-linux/

SOURCE CODE:

Web interface:

http://git.kernel.org/?p=utils/util-linux/util-linux.git

Checkout:

git clone git://git.kernel.org/pub/scm/utils/util-linux/util-linux.git util-linux

NLS (PO TRANSLATIONS):

PO files are maintained by:

http://translationproject.org/domain/util-linux-ng.html

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NEUTRALITY:

The stuff in util-linux should be rather distribution-neutral.

No RPMs/DEBs/... are provided - get yours from your distributor.

VERSION SCHEMA:

Standard releases:

    <major>.<minor>[.<maint>[.<bugfix>]]

      major = fatal and deep changes

      minor = typical release with new features

      maint = maintenance releases; bug fixes only

      bugfix = unplanned releases for critical/security bugs

Development releases:

    <major>.<minor>-rc<N>

COMPILATION:

See the INSTALL file for more details.

Notes:

  * use SUID_CFLAGS and SUID_LDFLAGS when you want to define special

  compiler options for typical suid programs, for example:

    ./configure SUID_CFLAGS="-fpie" SUID_LDFLAGS="-pie"

  This feature is currently supported for chfn, chsh, newgrp,

  write, mount, and umount.

STATIC LINKING:

  Use --enable-static-programs[=LIST] configure option when you want to use

  statically linked programs.

  Note, mount(8) uses get{pw,gr}nam() and getpwuid() functions for

  translation from username and groupname to UID and GID. These functions

  could be implemented by dynamically loaded independent modules (NSS) in

  your libc (e.g. glibc). These modules are not statically linked to

  mount(8) and mount.static is still using dlopen() like dynamically

  linked version.

  The translation won't work in environment where NSS modules are

  not installed.

For example normal system (NSS modules are available):

```
# ./mount.static -v -f -n -ouid=kzak /mnt/foo

LABEL=/mnt/foo on /mnt/foo type vfat (rw,uid=500)

                                ^^^^^^^
```

and without NSS modules:

```
# chroot . ./mount.static -v -f -n -ouid=kzak /mnt/win

LABEL=/mnt/win on /mnt/win type vfat (rw,uid=kzak)

                                ^^^^^^^^
```

XML-RPC++ (v0.7):

#ifndef _XMLRPC_H_

#define _XMLRPC_H_

//

// XmlRpc++ Copyright (c) 2002-2003 by Chris Morley

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//

/* changed by ise GmbH 2013 */

#if defined(_MSC_VER)

pragma warning(disable:4786)   // identifier was truncated in debug info

#endif

#ifndef MAKEDEPEND

include <string>

#endif

#include "dllexport.h"

#include "XmlRpcClient.h"

#include "XmlRpcException.h"

#include "XmlRpcServer.h"

#include "XmlRpcServerProxy.h"

#include "XmlRpcServerMethod.h"

#include "XmlRpcValue.h"

#include "XmlRpcUtil.h"

namespace XmlRpc {

//! An interface allowing custom handling of error message reporting.

class XMLRPC_DLLEXPORT XmlRpcErrorHandler {

public:

 //! Returns a pointer to the currently installed error handling object.

 static XmlRpcErrorHandler* getErrorHandler()

 { return _errorHandler; }

 //! Specifies the error handler.

 static void setErrorHandler(XmlRpcErrorHandler* eh)

 { _errorHandler = eh; }

 //! Report an error. Custom error handlers should define this method.

 virtual void error(const char* msg) = 0;

 //! Define virtual destructor to avoid compiler warnings

 virtual ~XmlRpcErrorHandler(){};

protected:

 static XmlRpcErrorHandler* _errorHandler;

};

```
//! An interface allowing custom handling of informational message reporting.

class XMLRPC_DLLEXPORT XmlRpcLogHandler {

public:

  //! Returns a pointer to the currently installed message reporting object.

  static XmlRpcLogHandler* getLogHandler()

  { return _logHandler; }


  //! Specifies the message handler.

  static void setLogHandler(XmlRpcLogHandler* lh)

  { _logHandler = lh; }


  //! Returns the level of verbosity of informational messages. 0 is no output, 5 is very verbose.

  static int getVerbosity()

  { return _verbosity; }


  //! Specify the level of verbosity of informational messages. 0 is no output, 5 is very verbose.

  static void setVerbosity(int v)

  { _verbosity = v; }


  //! Output a message. Custom error handlers should define this method.

  virtual void log(int level, const char* msg) = 0;


  //! Define virtual destructor to avoid compiler warnings

  virtual ~XmlRpcLogHandler(){};
```

```
protected:

  static XmlRpcLogHandler* _logHandler;

  static int _verbosity;

};
```

```
//! Returns log message verbosity. This is short for XmlRpcLogHandler::getVerbosity()

int XMLRPC_DLLEXPORT getVerbosity();

//! Sets log message verbosity. This is short for XmlRpcLogHandler::setVerbosity(level)

void XMLRPC_DLLEXPORT setVerbosity(int level);
```

```
//! Version identifier

extern const char XMLRPC_VERSION[];
```

```
} // namespace XmlRpc
```

```
#endif // _XMLRPC_H_
```

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Zlib (v1.2.6):

ZLIB DATA COMPRESSION LIBRARY

zlib 1.2.6 is a general purpose data compression library. All the code is

thread safe. The data format used by the zlib library is described by RFCs

(Request for Comments) 1950 to 1952 in the files

http://tools.ietf.org/html/rfc1950 (zlib format), rfc1951 (deflate format) and

rfc1952 (gzip format).

All functions of the compression library are documented in the file zlib.h

(volunteer to write man pages welcome, contact zlib@gzip.org). A usage example

of the library is given in the file test/example.c which also tests that

the library is working correctly. Another example is given in the file

test/minigzip.c. The compression library itself is composed of all source

files in the root directory.

To compile all files and run the test program, follow the instructions given at the top of Makefile.in. In short "./configure; make test", and if that goes well, "make install" should work for most flavors of Unix. For Windows, use one of the special makefiles in win32/ or contrib/vstudio/ . For VMS, use make_vms.com.

Questions about zlib should be sent to <zlib@gzip.org>, or to Gilles Vollant <info@winimage.com> for the Windows DLL version. The zlib home page is http://zlib.net/ . Before reporting a problem, please check this site to verify that you have the latest version of zlib; otherwise get the latest version and check whether the problem still exists or not.

PLEASE read the zlib FAQ http://zlib.net/zlib_faq.html before asking for help.

Mark Nelson <markn@ieee.org> wrote an article about zlib for the Jan. 1997 issue of Dr. Dobb's Journal; a copy of the article is available at http://marknelson.us/1997/01/01/zlib-engine/ .

The changes made in version 1.2.6 are documented in the file ChangeLog.

Unsupported third party contributions are provided in directory contrib/ .

zlib is available in Java using the java.util.zip package, documented at http://java.sun.com/developer/technicalArticles/Programming/compression/ .

A Perl interface to zlib written by Paul Marquess <pmqs@cpan.org> is available

at CPAN (Comprehensive Perl Archive Network) sites, including

http://search.cpan.org/~pmqs/IO-Compress-Zlib/ .

A Python interface to zlib written by A.M. Kuchling <amk@amk.ca> is

available in Python 1.5 and later versions, see

http://docs.python.org/library/zlib.html .

zlib is built into tcl: http://wiki.tcl.tk/4610 .

An experimental package to read and write files in .zip format, written on top

of zlib by Gilles Vollant <info@winimage.com>, is available in the

contrib/minizip directory of zlib.

Notes for some targets:

- For Windows DLL versions, please see win32/DLL_FAQ.txt

- For 64-bit Irix, deflate.c must be compiled without any optimization. With

 -O, one libpng test fails. The test works in 32 bit mode (with the -n32

 compiler flag). The compiler bug has been reported to SGI.

- zlib doesn't work with gcc 2.6.3 on a DEC 3000/300LX under OSF/1 2.1 it works

 when compiled with cc.

- On Digital Unix 4.0D (formely OSF/1) on AlphaServer, the cc option -std1 is

  necessary to get gzprintf working correctly. This is done by configure.

- zlib doesn't work on HP-UX 9.05 with some versions of /bin/cc. It works with

  other compilers. Use "make test" to check your compiler.

- gzdopen is not supported on RISCOS or BEOS.

- For PalmOs, see http://palmzlib.sourceforge.net/

Acknowledgments:

  The deflate format used by zlib was defined by Phil Katz. The deflate and

  zlib specifications were written by L. Peter Deutsch. Thanks to all the

  people who reported problems and suggested various improvements in zlib; they

  are too numerous to cite here.

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Jean-loup Gailly   Mark Adler

jloup@gzip.org   madler@alumni.caltech.edu

If you use the zlib library in a product, we would appreciate *not* receiving

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Version 3, 29 June 2007

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However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

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Appendix: How to Apply These Terms to Your New Programs

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   (For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

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If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

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   b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

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(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

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