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## A P P E N D I X C

# Well-Known TCP/IP Port Numbers

This appendix lists the well-known TCP/IP port numbers. This listing is maintained by IANA, and you can find the most recent version at [www.iana.org/assignments/port-numbers](http://www.iana.org/assignments/port-numbers).

(last updated 2003-10-20)

The port numbers are divided into three ranges: the Well Known Ports, the Registered Ports, and the Dynamic and/or Private Ports.

The Well Known Ports are those from 0 through 1023.

The Registered Ports are those from 1024 through 49151

The Dynamic and/or Private Ports are those from 49152 through 65535

### UNASSIGNED PORT NUMBERS SHOULD NOT BE USED. THE IANA WILL ASSIGN THE NUMBER FOR THE PORT AFTER YOUR APPLICATION HAS BEEN APPROVED ###

### WELL KNOWN PORT NUMBERS

The Well Known Ports are assigned by the IANA and on most systems can only be used by system (or root) processes or by programs executed by privileged users.

Ports are used in the TCP [RFC793] to name the ends of logical connections which carry long term conversations. For the purpose of providing services to unknown callers, a service contact port is defined. This list specifies the port used by the server process as

its contact port. The contact port is sometimes called the "well-known port".

To the extent possible, these same port assignments are used with the UDP [RFC768].

The range for assigned ports managed by the IANA is 0-1023.

Port Assignments:

Keyword	Decimal	Description	References
-----	-----	-----	-----
	0/tcp	Reserved	
	0/udp	Reserved	
#		Jon Postel <postel@isi.edu>	
tcpmux	1/tcp	TCP Port Service Multiplexer	
tcpmux	1/udp	TCP Port Service Multiplexer	
#		Mark Lottor <MKL@nisc.sri.com>	
compressnet	2/tcp	Management Utility	
compressnet	2/udp	Management Utility	
compressnet	3/tcp	Compression Process	
compressnet	3/udp	Compression Process	
#		Bernie Volz <VOLZ@PROCESS.COM>	
#	4/tcp	Unassigned	
#	4/udp	Unassigned	
rje	5/tcp	Remote Job Entry	
rje	5/udp	Remote Job Entry	
#		Jon Postel <postel@isi.edu>	
#	6/tcp	Unassigned	
#	6/udp	Unassigned	
echo	7/tcp	Echo	
echo	7/udp	Echo	
#		Jon Postel <postel@isi.edu>	
#	8/tcp	Unassigned	
#	8/udp	Unassigned	
discard	9/tcp	Discard	
discard	9/udp	Discard	
#		Jon Postel <postel@isi.edu>	
#	10/tcp	Unassigned	
#	10/udp	Unassigned	
systat	11/tcp	Active Users	
systat	11/udp	Active Users	
#		Jon Postel <postel@isi.edu>	
#	12/tcp	Unassigned	
#	12/udp	Unassigned	
daytime	13/tcp	Daytime (RFC 867)	
daytime	13/udp	Daytime (RFC 867)	
#		Jon Postel <postel@isi.edu>	
#	14/tcp	Unassigned	
#	14/udp	Unassigned	
#	15/tcp	Unassigned [was netstat]	

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#	15/udp	Unassigned
#	16/tcp	Unassigned
#	16/udp	Unassigned
qotd	17/tcp	Quote of the Day
qotd	17/udp	Quote of the Day
#		Jon Postel <postel@isi.edu>
misp	18/tcp	Message Send Protocol
misp	18/udp	Message Send Protocol
#		Rina Nethaniel <---none--->
chargen	19/tcp	Character Generator
chargen	19/udp	Character Generator
ftp-data	20/tcp	File Transfer [Default Data]
ftp-data	20/udp	File Transfer [Default Data]
ftp	21/tcp	File Transfer [Control]
ftp	21/udp	File Transfer [Control]
#		Jon Postel <postel@isi.edu>
ssh	22/tcp	SSH Remote Login Protocol
ssh	22/udp	SSH Remote Login Protocol
#		Tatu Ylonen <ylo@cs.hut.fi>
telnet	23/tcp	Telnet
telnet	23/udp	Telnet
#		Jon Postel <postel@isi.edu>
	24/tcp	any private mail system
	24/udp	any private mail system
#		Rick Adams <rick@UUNET.UU.NET>
smtp	25/tcp	Simple Mail Transfer
smtp	25/udp	Simple Mail Transfer
#		Jon Postel <postel@isi.edu>
#	26/tcp	Unassigned
#	26/udp	Unassigned
nsw-fe	27/tcp	NSW User System FE
nsw-fe	27/udp	NSW User System FE
#		Robert Thomas <BThomas@F.BBN.COM>
#	28/tcp	Unassigned
#	28/udp	Unassigned
msg-icp	29/tcp	MSG ICP
msg-icp	29/udp	MSG ICP
#		Robert Thomas <BThomas@F.BBN.COM>
#	30/tcp	Unassigned
#	30/udp	Unassigned
msg-auth	31/tcp	MSG Authentication
msg-auth	31/udp	MSG Authentication
#		Robert Thomas <BThomas@F.BBN.COM>
#	32/tcp	Unassigned
#	32/udp	Unassigned
dsp	33/tcp	Display Support Protocol
dsp	33/udp	Display Support Protocol
#		Ed Cain <cain@edn-unix.dca.mil>
#	34/tcp	Unassigned
#	34/udp	Unassigned
	35/tcp	any private printer server

	35/udp	any private printer server
#		Jon Postel <postel@isi.edu>
#	36/tcp	Unassigned
#	36/udp	Unassigned
time	37/tcp	Time
time	37/udp	Time
#		Jon Postel <postel@isi.edu>
rap	38/tcp	Route Access Protocol
rap	38/udp	Route Access Protocol
#		Robert Ullmann <ariel@world.std.com>
rlp	39/tcp	Resource Location Protocol
rlp	39/udp	Resource Location Protocol
#		Mike Accetta <MIKE.ACETTA@CMU-CS-A.EDU>
#	40/tcp	Unassigned
#	40/udp	Unassigned
graphics	41/tcp	Graphics
graphics	41/udp	Graphics
name	42/tcp	Host Name Server
name	42/udp	Host Name Server
nameserver	42/tcp	Host Name Server
nameserver	42/udp	Host Name Server
nicname	43/tcp	Who Is
nicname	43/udp	Who Is
mpm-flags	44/tcp	MPM FLAGS Protocol
mpm-flags	44/udp	MPM FLAGS Protocol
mpm	45/tcp	Message Processing Module [recv]
mpm	45/udp	Message Processing Module [recv]
mpm-snd	46/tcp	MPM [default send]
mpm-snd	46/udp	MPM [default send]
#		Jon Postel <postel@isi.edu>
ni-ftp	47/tcp	NI FTP
ni-ftp	47/udp	NI FTP
#		Steve Kille <S.Kille@isode.com>
auditd	48/tcp	Digital Audit Daemon
auditd	48/udp	Digital Audit Daemon
#		Larry Scott <scott@zk3.dec.com>
tacacs	49/tcp	Login Host Protocol (TACACS)
tacacs	49/udp	Login Host Protocol (TACACS)
#		Pieter Ditmars <pditmars@BBN.COM>
re-mail-ck	50/tcp	Remote Mail Checking Protocol
re-mail-ck	50/udp	Remote Mail Checking Protocol
#		Steve Dorner <s-dorner@UIUC.EDU>
la-maint	51/tcp	IMP Logical Address Maintenance
la-maint	51/udp	IMP Logical Address Maintenance
#		Andy Malis <malis_a@timeplex.com>
xns-time	52/tcp	XNS Time Protocol
xns-time	52/udp	XNS Time Protocol
#		Susie Armstrong <Armstrong.wbst128@XEROX>
domain	53/tcp	Domain Name Server
domain	53/udp	Domain Name Server
#		Paul Mockapetris <PVM@ISI.EDU>

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xns-ch	54/tcp	XNS Clearinghouse
xns-ch	54/udp	XNS Clearinghouse
#		Susie Armstrong <Armstrong.wbst128@XEROX>
isi-gl	55/tcp	ISI Graphics Language
isi-gl	55/udp	ISI Graphics Language
xns-auth	56/tcp	XNS Authentication
xns-auth	56/udp	XNS Authentication
#		Susie Armstrong <Armstrong.wbst128@XEROX>
	57/tcp	any private terminal access
	57/udp	any private terminal access
#		Jon Postel <postel@isi.edu>
xns-mail	58/tcp	XNS Mail
xns-mail	58/udp	XNS Mail
#		Susie Armstrong <Armstrong.wbst128@XEROX>
	59/tcp	any private file service
	59/udp	any private file service
#		Jon Postel <postel@isi.edu>
	60/tcp	Unassigned
	60/udp	Unassigned
ni-mail	61/tcp	NI MAIL
ni-mail	61/udp	NI MAIL
#		Steve Kille <S.Kille@isode.com>
acas	62/tcp	ACA Services
acas	62/udp	ACA Services
#		E. Wald <ewald@via.enet.dec.com>
whois++	63/tcp	whois++
whois++	63/udp	whois++
#		Rickard Schoultz <schoultz@sunet.se>
covia	64/tcp	Communications Integrator (CI)
covia	64/udp	Communications Integrator (CI)
#		Dan Smith <dan.smith@den.galileo.com>
tacacs-ds	65/tcp	TACACS-Database Service
tacacs-ds	65/udp	TACACS-Database Service
#		Kathy Huber <khuber@bbn.com>
sql*net	66/tcp	Oracle SQL*NET
sql*net	66/udp	Oracle SQL*NET
#		Jack Haverty <jhaverty@ORACLE.COM>
bootps	67/tcp	Bootstrap Protocol Server
bootps	67/udp	Bootstrap Protocol Server
bootpc	68/tcp	Bootstrap Protocol Client
bootpc	68/udp	Bootstrap Protocol Client
#		Bill Croft <Croft@SUMEX-AIM.STANFORD.EDU>
tftp	69/tcp	Trivial File Transfer
tftp	69/udp	Trivial File Transfer
#		David Clark <ddc@LCS.MIT.EDU>
gopher	70/tcp	Gopher
gopher	70/udp	Gopher
#		Mark McCahill <mpm@boombox.micro.umn.edu>
netrjs-1	71/tcp	Remote Job Service
netrjs-1	71/udp	Remote Job Service
netrjs-2	72/tcp	Remote Job Service

netrjs-2	72/udp	Remote Job Service
netrjs-3	73/tcp	Remote Job Service
netrjs-3	73/udp	Remote Job Service
netrjs-4	74/tcp	Remote Job Service
netrjs-4	74/udp	Remote Job Service
#		Bob Braden <Braden@ISI.EDU>
	75/tcp	any private dial out service
	75/udp	any private dial out service
#		Jon Postel <postel@isi.edu>
deos	76/tcp	Distributed External Object Store
deos	76/udp	Distributed External Object Store
#		Robert Ullmann <ariel@world.std.com>
	77/tcp	any private RJE service
	77/udp	any private RJE service
#		Jon Postel <postel@isi.edu>
vettcp	78/tcp	vettcp
vettcp	78/udp	vettcp
#		Christopher Leong <leong@kolmod.mlo.dec.com>
finger	79/tcp	Finger
finger	79/udp	Finger
#		David Zimmerman <dpz@RUTGERS.EDU>
http	80/tcp	World Wide Web HTTP
http	80/udp	World Wide Web HTTP
www	80/tcp	World Wide Web HTTP
www	80/udp	World Wide Web HTTP
www-http	80/tcp	World Wide Web HTTP
www-http	80/udp	World Wide Web HTTP
#		Tim Berners-Lee <timbl@W3.org>
hosts2-ns	81/tcp	HOSTS2 Name Server
hosts2-ns	81/udp	HOSTS2 Name Server
#		Earl Killian <EAK@MORDOR.S1.GOV>
xfer	82/tcp	XFER Utility
xfer	82/udp	XFER Utility
#		Thomas M. Smith <Thomas.M.Smith@lmco.com>
mit-ml-dev	83/tcp	MIT ML Device
mit-ml-dev	83/udp	MIT ML Device
#		David Reed <--none-->
ctf	84/tcp	Common Trace Facility
ctf	84/udp	Common Trace Facility
#		Hugh Thomas <thomas@oils.enet.dec.com>
mit-ml-dev	85/tcp	MIT ML Device
mit-ml-dev	85/udp	MIT ML Device
#		David Reed <--none-->
mfcobol	86/tcp	Micro Focus Cobol
mfcobol	86/udp	Micro Focus Cobol
#		Simon Edwards <--none-->
	87/tcp	any private terminal link
	87/udp	any private terminal link
#		Jon Postel <postel@isi.edu>
kerberos	88/tcp	Kerberos

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kerberos      88/udp      Kerberos
#
su-mit-tg     89/tcp      SU/MIT Telnet Gateway
su-mit-tg     89/udp      SU/MIT Telnet Gateway
#
##### PORT 90 also being used unofficially by Pointcast #####
dnsix         90/tcp      DNSIX Securit Attribute Token Map
dnsix         90/udp      DNSIX Securit Attribute Token Map
#
mit-dov       91/tcp      MIT Dover Spooler
mit-dov       91/udp      MIT Dover Spooler
#
npp           92/tcp      Network Printing Protocol
npp           92/udp      Network Printing Protocol
#
dcp           93/tcp      Device Control Protocol
dcp           93/udp      Device Control Protocol
#
objcall       94/tcp      Tivoli Object Dispatcher
objcall       94/udp      Tivoli Object Dispatcher
#
supdup        95/tcp      SUPDUP
supdup        95/udp      SUPDUP
#
dixie         96/tcp      DIXIE Protocol Specification
dixie         96/udp      DIXIE Protocol Specification
#
swift-rvf     97/tcp      Swift Remote Virtual File Protocol
swift-rvf     97/udp      Swift Remote Virtual File Protocol
#
#
# <mailto:uflorida!rml!dnmrt%rmatl@uunet.UU.NET>
tacnews       98/tcp      TAC News
tacnews       98/udp      TAC News
#
metagram      99/tcp      Metagram Relay
metagram      99/udp      Metagram Relay
#
newacct       100/tcp     [unauthorized use]
hostname      101/tcp     NIC Host Name Server
hostname      101/udp     NIC Host Name Server
#
iso-tsap      102/tcp     ISO-TSAP Class 0
iso-tsap      102/udp     ISO-TSAP Class 0
#
gppitnp      103/tcp     Genesis Point-to-Point Trans Net
gppitnp      103/udp     Genesis Point-to-Point Trans Net
acr-nema      104/tcp     ACR-NEMA Digital Imag. & Comm. 300
acr-nema      104/udp     ACR-NEMA Digital Imag. & Comm. 300
#
cso           105/tcp     CCSO name server protocol

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cso	105/udp	CCSO name server protocol
#		Martin Hamilton <martin@mrrl.lut.as.uk>
csnet-ns	105/tcp	Mailbox Name Nameserver
csnet-ns	105/udp	Mailbox Name Nameserver
#		Marvin Solomon <solomon@CS.WISC.EDU>
3com-tsmux	106/tcp	3COM-TSMUX
3com-tsmux	106/udp	3COM-TSMUX
#		Jeremy Siegel <jzs@NSD.3Com.COM>
#####	106	Unauthorized use by insecure poppassd protocol
rtelnet	107/tcp	Remote Telnet Service
rtelnet	107/udp	Remote Telnet Service
#		Jon Postel <postel@isi.edu>
snagas	108/tcp	SNA Gateway Access Server
snagas	108/udp	SNA Gateway Access Server
#		Kevin Murphy <murphy@sevens.lkg.dec.com>
pop2	109/tcp	Post Office Protocol - Version 2
pop2	109/udp	Post Office Protocol - Version 2
#		Joyce K. Reynolds <jkrey@isi.edu>
pop3	110/tcp	Post Office Protocol - Version 3
pop3	110/udp	Post Office Protocol - Version 3
#		Marshall Rose <mrose@dbc.mtview.ca.us>
sunrpc	111/tcp	SUN Remote Procedure Call
sunrpc	111/udp	SUN Remote Procedure Call
#		Chuck McManis <cmcmanis@freegate.net>
mcidas	112/tcp	McIDAS Data Transmission Protocol
mcidas	112/udp	McIDAS Data Transmission Protocol
#		Glenn Davis <support@unidata.ucar.edu>
ident	113/tcp	
auth	113/tcp	Authentication Service
auth	113/udp	Authentication Service
#		Mike St. Johns <stjohns@arpa.mil>
audionews	114/tcp	Audio News Multicast
audionews	114/udp	Audio News Multicast
#		Martin Forssen <maf@dtek.chalmers.se>
sftp	115/tcp	Simple File Transfer Protocol
sftp	115/udp	Simple File Transfer Protocol
#		Mark Lottor <MKL@nisc.sri.com>
ansanotify	116/tcp	ANSA REX Notify
ansanotify	116/udp	ANSA REX Notify
#		Nicola J. Howarth <njh@ansa.co.uk>
uucp-path	117/tcp	UUCP Path Service
uucp-path	117/udp	UUCP Path Service
sqlserv	118/tcp	SQL Services
sqlserv	118/udp	SQL Services
#		Larry Barnes <barnes@broke.enet.dec.com>
nntp	119/tcp	Network News Transfer Protocol
nntp	119/udp	Network News Transfer Protocol
#		Phil Lapsley <phil@UCBARPA.BERKELEY.EDU>
cfdpkt	120/tcp	CFDPKT
cfdpkt	120/udp	CFDPKT
#		John Ioannidis <ji@close.cs.columbia.edu>



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erpc	121/tcp	Encore Expedited Remote Pro.Call
erpc	121/udp	Encore Expedited Remote Pro.Call
#		Jack O'Neil <----none-->
smakynet	122/tcp	SMAKYNET
smakynet	122/udp	SMAKYNET
#		Pierre Arnaud <pierre.arnaud@iname.com>
ntp	123/tcp	Network Time Protocol
ntp	123/udp	Network Time Protocol
#		Dave Mills <Mills@HUEY.UDEL.EDU>
ansatrader	124/tcp	ANSA REX Trader
ansatrader	124/udp	ANSA REX Trader
#		Nicola J. Howarth <njh@ansa.co.uk>
locus-map	125/tcp	Locus PC-Interface Net Map Ser
locus-map	125/udp	Locus PC-Interface Net Map Ser
#		Eric Peterson <lcc.eric@SEAS.UCLA.EDU>
nxedit	126/tcp	NXEdit
nxedit	126/udp	NXEdit
#		Don Payette <Don.Payette@unisis.com>
#####Port	126	Previously assigned to application below#####
#unitary	126/tcp	Unisis Unitary Login
#unitary	126/udp	Unisis Unitary Login
#		<feil@kronos.nisd.cam.unisis.com>
#####Port	126	Previously assigned to application above#####
locus-con	127/tcp	Locus PC-Interface Conn Server
locus-con	127/udp	Locus PC-Interface Conn Server
#		Eric Peterson <lcc.eric@SEAS.UCLA.EDU>
gss-xlicen	128/tcp	GSS X License Verification
gss-xlicen	128/udp	GSS X License Verification
#		John Light <johnl@gssc.gss.com>
pwdgen	129/tcp	Password Generator Protocol
pwdgen	129/udp	Password Generator Protocol
#		Frank J. Wacho <WANCHO@WSMR-SIMTEL20.ARMY.MIL>
cisco-fna	130/tcp	cisco FNATIVE
cisco-fna	130/udp	cisco FNATIVE
cisco-tna	131/tcp	cisco TNATIVE
cisco-tna	131/udp	cisco TNATIVE
cisco-sys	132/tcp	cisco SYSMANT
cisco-sys	132/udp	cisco SYSMANT
statsrv	133/tcp	Statistics Service
statsrv	133/udp	Statistics Service
#		Dave Mills <Mills@HUEY.UDEL.EDU>
ingres-net	134/tcp	INGRES-NET Service
ingres-net	134/udp	INGRES-NET Service
#		Mike Berrow <----none-->
epmap	135/tcp	DCE endpoint resolution
epmap	135/udp	DCE endpoint resolution
#		Joe Pato <pato@apollo.hp.com>
profile	136/tcp	PROFILE Naming System
profile	136/udp	PROFILE Naming System
#		Larry Peterson <llp@ARIZONA.EDU>
netbios-ns	137/tcp	NETBIOS Name Service

netbios-ns	137/udp	NETBIOS Name Service
netbios-dgm	138/tcp	NETBIOS Datagram Service
netbios-dgm	138/udp	NETBIOS Datagram Service
netbios-ssn	139/tcp	NETBIOS Session Service
netbios-ssn	139/udp	NETBIOS Session Service
#		Jon Postel <postel@isi.edu>
emfis-data	140/tcp	EMFIS Data Service
emfis-data	140/udp	EMFIS Data Service
emfis-cntl	141/tcp	EMFIS Control Service
emfis-cntl	141/udp	EMFIS Control Service
#		Gerd Beling <GBELING@ISI.EDU>
bl-idm	142/tcp	Britton-Lee IDM
bl-idm	142/udp	Britton-Lee IDM
#		Susie Snitzer <---none--->
imap	143/tcp	Internet Message Access Protocol
imap	143/udp	Internet Message Access Protocol
#		Mark Crispin <MRC@CAC.Washington.EDU>
uma	144/tcp	Universal Management Architecture
uma	144/udp	Universal Management Architecture
#		Jay Whitney <jw@powercenter.com>
uaac	145/tcp	UAAC Protocol
uaac	145/udp	UAAC Protocol
#		David A. Gomberg <gomberg@GATEWAY.MITRE.ORG>
iso-tp0	146/tcp	ISO-IP0
iso-tp0	146/udp	ISO-IP0
iso-ip	147/tcp	ISO-IP
iso-ip	147/udp	ISO-IP
#		Marshall Rose <mrose@dbc.mtview.ca.us>
jargon	148/tcp	Jargon
jargon	148/udp	Jargon
#		Bill Weinman <wew@bearnnet.com>
aed-512	149/tcp	AED 512 Emulation Service
aed-512	149/udp	AED 512 Emulation Service
#		Albert G. Broscius <broscius@DSL.CIS.UPENN.EDU>
sql-net	150/tcp	SQL-NET
sql-net	150/udp	SQL-NET
#		Martin Picard <---none--->
hems	151/tcp	HEMS
hems	151/udp	HEMS
bftp	152/tcp	Background File Transfer Program
bftp	152/udp	Background File Transfer Program
#		Annette DeSchon <DESCHON@ISI.EDU>
sgmp	153/tcp	SGMP
sgmp	153/udp	SGMP
#		Marty Schoffstahl <schoff@NISC.NYSER.NET>
netsc-prod	154/tcp	NETSC
netsc-prod	154/udp	NETSC
netsc-dev	155/tcp	NETSC
netsc-dev	155/udp	NETSC
#		Sergio Heker <heker@JVNCC.CSC.ORG>
sqlsrv	156/tcp	SQL Service

sqlsrv	156/udp	SQL Service
#		Craig Rogers <Rogers@ISI.EDU>
knet-cmp	157/tcp	KNET/VM Command/Message Protocol
knet-cmp	157/udp	KNET/VM Command/Message Protocol
#		Gary S. Malkin <GMALKIN@XYLOGICS.COM>
pcmail-srv	158/tcp	PCMail Server
pcmail-srv	158/udp	PCMail Server
#		Mark L. Lambert <markl@PTT.LCS.MIT.EDU>
nss-routing	159/tcp	NSS-Routing
nss-routing	159/udp	NSS-Routing
#		Yakov Rekhter <Yakov@IBM.COM>
sgmp-traps	160/tcp	SGMP-TRAPS
sgmp-traps	160/udp	SGMP-TRAPS
#		Marty Schoffstahl <schoff@NISC.NYSER.NET>
snmp	161/tcp	SNMP
snmp	161/udp	SNMP
snmptrap	162/tcp	SNMPTRAP
snmptrap	162/udp	SNMPTRAP
#		Marshall Rose <mrose@dbc.mtview.ca.us>
cmip-man	163/tcp	CMIP/TCP Manager
cmip-man	163/udp	CMIP/TCP Manager
cmip-agent	164/tcp	CMIP/TCP Agent
cmip-agent	164/udp	CMIP/TCP Agent
#		Amatzia Ben-Artzi <---none---
xns-courier	165/tcp	Xerox
xns-courier	165/udp	Xerox
#		Susie Armstrong <Armstrong.wbst128@XEROX.COM>
s-net	166/tcp	Sirius Systems
s-net	166/udp	Sirius Systems
#		Brian Lloyd <brian@lloyd.com>
namp	167/tcp	NAMP
namp	167/udp	NAMP
#		Marty Schoffstahl <schoff@NISC.NYSER.NET>
rsvd	168/tcp	RSVD
rsvd	168/udp	RSVD
#		Neil Todd <mcvax!ist.co.uk!neil@UUNET.UU.NET>
send	169/tcp	SEND
send	169/udp	SEND
#		William D. Wisner <wisner@HAYES.FAI.ALASKA.EDU>
print-srv	170/tcp	Network PostScript
print-srv	170/udp	Network PostScript
#		Brian Reid <reid@DECWRL.DEC.COM>
multiplex	171/tcp	Network Innovations Multiplex
multiplex	171/udp	Network Innovations Multiplex
cl/1	172/tcp	Network Innovations CL/1
cl/1	172/udp	Network Innovations CL/1
#		Kevin DeVault <---none---
xyplex-mux	173/tcp	Xyplex
xyplex-mux	173/udp	Xyplex
#		Bob Stewart <STEWART@XYPLEX.COM>
mailq	174/tcp	MAILQ

mailq	174/udp	MAILQ
#		Rayan Zachariassen <rayan@AI.TORONTO.EDU>
vmnet	175/tcp	VMNET
vmnet	175/udp	VMNET
#		Christopher Tengi <tengi@Princeton.EDU>
genrad-mux	176/tcp	GENRAD-MUX
genrad-mux	176/udp	GENRAD-MUX
#		Ron Thornton <thornton@qm7501.genrad.com>
xdmcp	177/tcp	X Display Manager Control Protocol
xdmcp	177/udp	X Display Manager Control Protocol
#		Robert W. Scheifler <RWS@XX.LCS.MIT.EDU>
nextstep	178/tcp	NextStep Window Server
nextstep	178/udp	NextStep Window Server
#		Leo Hourvitz <leo@NEXT.COM>
bgp	179/tcp	Border Gateway Protocol
bgp	179/udp	Border Gateway Protocol
#		Kirk Lougheed <LOUGHEED@MATHOM.CISCO.COM>
ris	180/tcp	Intergraph
ris	180/udp	Intergraph
#		Dave Buehmann <ingr!daveb@UUNET.UU.NET>
unify	181/tcp	Unify
unify	181/udp	Unify
#		Mark Ainsley <ianaportmaster@unify.com>
audit	182/tcp	Unisys Audit SITP
audit	182/udp	Unisys Audit SITP
#		Gil Greenbaum <gcole@nisd.cam.unisys.com>
ocbinder	183/tcp	OCBinder
ocbinder	183/udp	OCBinder
ocserver	184/tcp	OCServer
ocserver	184/udp	OCServer
#		Jerrilynn Okamura <---none--->
remote-kis	185/tcp	Remote-KIS
remote-kis	185/udp	Remote-KIS
kis	186/tcp	KIS Protocol
kis	186/udp	KIS Protocol
#		Ralph Droms <rdroms@NRI.RESTON.VA.US>
aci	187/tcp	Application Communication Interface
aci	187/udp	Application Communication Interface
#		Rick Carlos <rick.ticipa.csc.ti.com>
mumps	188/tcp	Plus Five's MUMPS
mumps	188/udp	Plus Five's MUMPS
#		Hokey Stenn <hokey@PLUS5.COM>
qft	189/tcp	Queued File Transport
qft	189/udp	Queued File Transport
#		Wayne Schroeder <schroeder@SDS.SDSC.EDU>
gacp	190/tcp	Gateway Access Control Protocol
gacp	190/udp	Gateway Access Control Protocol
#		C. Philip Wood <cpw@LANL.GOV>
prospero	191/tcp	Prospero Directory Service
prospero	191/udp	Prospero Directory Service
#		B. Clifford Neuman <bcn@isi.edu>

## Appendix C • Well-Known TCP/IP Port Numbers

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osu-nms	192/tcp	OSU Network Monitoring System
osu-nms	192/udp	OSU Network Monitoring System
#		Doug Karl <KARL-D@OSU-20.IRCC.OHIO-STATE.EDU>
srmp	193/tcp	Spider Remote Monitoring Protocol
srmp	193/udp	Spider Remote Monitoring Protocol
#		Ted J. Socolofsky <Teds@SPIDER.CO.UK>
irc	194/tcp	Internet Relay Chat Protocol
irc	194/udp	Internet Relay Chat Protocol
#		Jarkko Oikarinen <jto@TOLSUN.OULU.FI>
dn6-nlm-aud	195/tcp	DNSIX Network Level Module Audit
dn6-nlm-aud	195/udp	DNSIX Network Level Module Audit
dn6-smm-red	196/tcp	DNSIX Session Mgt Module Audit Redir
dn6-smm-red	196/udp	DNSIX Session Mgt Module Audit Redir
#		Lawrence Lebahn <DIA3@PAXRV-NES.NAVY.MIL>
dls	197/tcp	Directory Location Service
dls	197/udp	Directory Location Service
dls-mon	198/tcp	Directory Location Service Monitor
dls-mon	198/udp	Directory Location Service Monitor
#		Scott Bellew <smb@cs.purdue.edu>
smux	199/tcp	SMUX
smux	199/udp	SMUX
#		Marshall Rose <mrose@dbc.mtview.ca.us>
src	200/tcp	IBM System Resource Controller
src	200/udp	IBM System Resource Controller
#		Gerald McBrearty <---none--->
at-rtmp	201/tcp	AppleTalk Routing Maintenance
at-rtmp	201/udp	AppleTalk Routing Maintenance
at-nbp	202/tcp	AppleTalk Name Binding
at-nbp	202/udp	AppleTalk Name Binding
at-3	203/tcp	AppleTalk Unused
at-3	203/udp	AppleTalk Unused
at-echo	204/tcp	AppleTalk Echo
at-echo	204/udp	AppleTalk Echo
at-5	205/tcp	AppleTalk Unused
at-5	205/udp	AppleTalk Unused
at-zis	206/tcp	AppleTalk Zone Information
at-zis	206/udp	AppleTalk Zone Information
at-7	207/tcp	AppleTalk Unused
at-7	207/udp	AppleTalk Unused
at-8	208/tcp	AppleTalk Unused
at-8	208/udp	AppleTalk Unused
#		Rob Chandhok <chandhok@gnome.cs.cmu.edu>
qmtpt	209/tcp	The Quick Mail Transfer Protocol
qmtpt	209/udp	The Quick Mail Transfer Protocol
#		Dan Bernstein <djb@silverton.berkeley.edu>
z39.50	210/tcp	ANSI Z39.50
z39.50	210/udp	ANSI Z39.50
#		Mark H. Needleman <markn@sirsi.com>
914c/g	211/tcp	Texas Instruments 914C/G Terminal
914c/g	211/udp	Texas Instruments 914C/G Terminal
#		Bill Harrell <---none--->

anet	212/tcp	ATEXSSTR
anet	212/udp	ATEXSSTR
#		Jim Taylor <taylor@heart.epps.kodak.com>
ipx	213/tcp	IPX
ipx	213/udp	IPX
#		Don Provan <donp@xlnvax.novell.com>
vmpwscs	214/tcp	VM PWSCS
vmpwscs	214/udp	VM PWSCS
#		Dan Shia <dset!shia@uunet.UU.NET>
softpc	215/tcp	Insignia Solutions
softpc	215/udp	Insignia Solutions
#		Martyn Thomas <---none--->
CAIlic	216/tcp	Computer Associates Int'l License Server
CAIlic	216/udp	Computer Associates Int'l License Server
#		Chuck Spitz <spich04@cai.com>
dbase	217/tcp	dBASE Unix
dbase	217/udp	dBASE Unix
#		Don Gibson
#		<sequent!aero!twinsun!ashtate.A-T.COM!dong@uunet.UU.NET>
mpp	218/tcp	Netix Message Posting Protocol
mpp	218/udp	Netix Message Posting Protocol
#		Shannon Yeh <yeh@netix.com>
uarps	219/tcp	Unisys ARPs
uarps	219/udp	Unisys ARPs
#		Ashok Marwaha <---none--->
imap3	220/tcp	Interactive Mail Access Protocol v3
imap3	220/udp	Interactive Mail Access Protocol v3
#		James Rice <RICE@SUMEX-AIM.STANFORD.EDU>
fln-spx	221/tcp	Berkeley rlogind with SPX auth
fln-spx	221/udp	Berkeley rlogind with SPX auth
rsh-spx	222/tcp	Berkeley rshd with SPX auth
rsh-spx	222/udp	Berkeley rshd with SPX auth
cdc	223/tcp	Certificate Distribution Center
cdc	223/udp	Certificate Distribution Center
#		Kannan Alagappan <kannan@sejour.enet.dec.com>
#####		Possible Conflict of Port 222 with "Masq dialer"#####
###		Contact for Masq dialer is Charles Wright <cpwright@villagenet.com>###
masq dialer	224/tcp	masq dialer
masq dialer	224/udp	masq dialer
#		Charles Wright <cpwright@villagenet.com>
#		225-241 Reserved
#		Jon Postel <postel@isi.edu>
direct	242/tcp	Direct
direct	242/udp	Direct
#		Herb Sutter <HerbS@cntc.com>
sur-meas	243/tcp	Survey Measurement
sur-meas	243/udp	Survey Measurement
#		Dave Clark <ddc@LCS.MIT.EDU>
inbusiness	244/tcp	inbusiness
inbusiness	244/udp	inbusiness
#		Derrick Hisatake <derrick.i.hisatake@intel.com>

link	245/tcp	LINK
link	245/udp	LINK
dsp3270	246/tcp	Display Systems Protocol
dsp3270	246/udp	Display Systems Protocol
#		Weldon J. Showalter <Gamma@MINTAKA.DCA.MIL>
subntbcst_tftp	247/tcp	SUBNTBCST_TFTP
subntbcst_tftp	247/udp	SUBNTBCST_TFTP
#		John Fake <fake@us.ibm.com>
bhfhs	248/tcp	bhfhs
bhfhs	248/udp	bhfhs
#		John Kelly <johnk@bellhow.com>
#	249-255	Reserved
#		Jon Postel <postel@isi.edu>
rap	256/tcp	RAP
rap	256/udp	RAP
#		J.S. Greenfield <greeny@raleigh.ibm.com>
set	257/tcp	Secure Electronic Transaction
set	257/udp	Secure Electronic Transaction
#		Donald Eastlake <dee3@torque.pothole.com>
yak-chat	258/tcp	Yak Winsock Personal Chat
yak-chat	258/udp	Yak Winsock Personal Chat
#		Brian Bandy <bbandy@swbell.net>
esro-gen	259/tcp	Efficient Short Remote Operations
esro-gen	259/udp	Efficient Short Remote Operations
#		Mohsen Banan <mohsen@roostam.neda.com>
openport	260/tcp	Openport
openport	260/udp	Openport
#		John Marland <jmarland@dean.openport.com>
nsiiops	261/tcp	IIOP Name Service over TLS/SSL
nsiiops	261/udp	IIOP Name Service over TLS/SSL
#		Jeff Stewart <jstewart@netscape.com>
arcisdms	262/tcp	Arcisdms
arcisdms	262/udp	Arcisdms
#		Russell Crook (rmc@sni.ca)
hdap	263/tcp	HDAP
hdap	263/udp	HDAP
#		Troy Gau <troy@zyxel.com>
bgmp	264/tcp	BGMP
bgmp	264/udp	BGMP
#		Dave Thaler <thalerd@eeecs.umich.edu>
x-bone-ctl	265/tcp	X-Bone CTL
x-bone-ctl	265/udp	X-Bone CTL
#		Joe Touch <touch@isi.edu>
sst	266/tcp	SCSI on ST
sst	266/udp	SCSI on ST
#		Donald D. Woelz <don@genroco.com>
td-service	267/tcp	Tobit David Service Layer
td-service	267/udp	Tobit David Service Layer
td-replica	268/tcp	Tobit David Replica
td-replica	268/udp	Tobit David Replica
#		Franz-Josef Leuders <development@tobit.com>

#	269-279	Unassigned
http-mgmt	280/tcp	http-mgmt
http-mgmt	280/udp	http-mgmt
#		Adrian Pell
#		<PELL_ADRIAN/HP-UnitedKingdom_om6@hplb.hpl.hp.com>
personal-link	281/tcp	Personal Link
personal-link	281/udp	Personal Link
#		Dan Cummings <doc@cnr.com>
cableport-ax	282/tcp	Cable Port A/X
cableport-ax	282/udp	Cable Port A/X
#		Craig Langfahl
#		<Craig_J_Langfahl@ccm.ch.intel.com>
rescap	283/tcp	rescap
rescap	283/udp	rescap
#		Paul Hoffman <phoffman@imc.org>
corerjd	284/tcp	corerjd
corerjd	284/udp	corerjd
#		Chris Thornhill <cjt@corenetworks.com>
#	285	Unassigned
fxp	286/tcp	FXP Communication
fxp	286/udp	FXP Communication
#		James Darnall <james_r_darnall@sbcglobal.net>
k-block	287/tcp	K-BLOCK
k-block	287/udp	K-BLOCK
#		Simon P Jackson <jacko@kring.co.uk>
#	288-307	Unassigned
novastorbakcup	308/tcp	Novastor Backup
novastorbakcup	308/udp	Novastor Backup
#		Brian Dickman <brian@novastor.com>
entrusttime	309/tcp	EntrustTime
entrusttime	309/udp	EntrustTime
#		Peter Whittaker <pww@entrust.com>
bhmnds	310/tcp	bhmnds
bhmnds	310/udp	bhmnds
#		John Kelly <johnk@bellhow.com>
asip-webadmin	311/tcp	AppleShare IP WebAdmin
asip-webadmin	311/udp	AppleShare IP WebAdmin
#		Ann Huang <annhuang@apple.com>
vslmp	312/tcp	VSLMP
vslmp	312/udp	VSLMP
#		Gerben Wierda <Gerben_Wierda@RnA.nl>
magenta-logic	313/tcp	Magenta Logic
magenta-logic	313/udp	Magenta Logic
#		Karl Rousseau <kr@netfusion.co.uk>
opalis-robot	314/tcp	Opalis Robot
opalis-robot	314/udp	Opalis Robot
#		Laurent Domenech, Opalis <ldomenech@opalis.com>
dpsi	315/tcp	DPSI
dpsi	315/udp	DPSI
#		Tony Scamurra <Tony@DesktopPaging.com>



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decauth	316/tcp	decAuth
decauth	316/udp	decAuth
#		Michael Agishtein <misha@unx.dec.com>
zannet	317/tcp	Zannet
zannet	317/udp	Zannet
#		Zan Oliphant <zan@accessone.com>
pkix-timestamp	318/tcp	PKIX TimeStamp
pkix-timestamp	318/udp	PKIX TimeStamp
#		Robert Zuccherato <robert.zuccherato@entrust.com>
ptp-event	319/tcp	PTP Event
ptp-event	319/udp	PTP Event
ptp-general	320/tcp	PTP General
ptp-general	320/udp	PTP General
#		John Eidson <eidson@hpl.hp.com>
pip	321/tcp	PIP
pip	321/udp	PIP
#		Gordon Mohr <gojomo@usa.net>
rtsp	322/tcp	RTSPS
rtsp	322/udp	RTSPS
#		Anders Klemets <anderskl@microsoft.com>
#	323-332	Unassigned
texar	333/tcp	Texas Security Port
texar	333/udp	Texas Security Port
#		Eugen Bacic <ebacic@texar.com>
#	334-343	Unassigned
pdap	344/tcp	Prospero Data Access Protocol
pdap	344/udp	Prospero Data Access Protocol
#		B. Clifford Neuman <bcn@isi.edu>
pawserv	345/tcp	Perf Analysis Workbench
pawserv	345/udp	Perf Analysis Workbench
zserv	346/tcp	Zebra server
zserv	346/udp	Zebra server
faterv	347/tcp	Fatmen Server
faterv	347/udp	Fatmen Server
csi-sgwp	348/tcp	Cabletron Management Protocol
csi-sgwp	348/udp	Cabletron Management Protocol
mftp	349/tcp	mftp
mftp	349/udp	mftp
#		Dave Feinleib <davefe@microsoft.com>
matip-type-a	350/tcp	MATIP Type A
matip-type-a	350/udp	MATIP Type A
matip-type-b	351/tcp	MATIP Type B
matip-type-b	351/udp	MATIP Type B
#		Alain Robert <arobert@par.sita.int>
#	# The following entry records an unassigned but widespread use	
bhoetty	351/tcp	bhoetty (added 5/21/97)
bhoetty	351/udp	bhoetty
#		John Kelly <johnk@bellhow.com>
dttag-ste-sb	352/tcp	DTAG (assigned long ago)

```
dtag-ste-sb      352/udp      DTAG
#
# The following entry records an unassigned but widespread use
bhoedap4        352/tcp      bhoedap4 (added 5/21/97)
bhoedap4        352/udp      bhoedap4
#
# John Kelly <johnk@bellhow.com>
ndsauth         353/tcp      NDSAUTH
ndsauth         353/udp      NDSAUTH
#
# Jayakumar Ramalingam <jayakumar@novell.com>
bh611           354/tcp      bh611
bh611           354/udp      bh611
#
# John Kelly <johnk@bellhow.com>
datex-asn       355/tcp      DATEX-ASN
datex-asn       355/udp      DATEX-ASN
#
# Kenneth Vaughn <kvaughn@mail.viggen.com>
cloanto-net-1  356/tcp      Cloanto Net 1
cloanto-net-1  356/udp      Cloanto Net 1
#
# Michael Battilana <mcb-iana@cloanto.com>
bhevent         357/tcp      bhevent
bhevent         357/udp      bhevent
#
# John Kelly <johnk@bellhow.com>
shrinkwrap      358/tcp      Shrinkwrap
shrinkwrap      358/udp      Shrinkwrap
#
# Bill Simpson <wsimpson@greendragon.com>
nsrmp           359/tcp      Network Security Risk Management Protocol
nsrmp           359/udp      Network Security Risk Management Protocol
#
# Eric Jacksch <jacksch@tenebris.ca>
scoi2odialog    360/tcp      scoi2odialog
scoi2odialog    360/udp      scoi2odialog
#
# Keith Petley <keithp@sco.COM>
semantix        361/tcp      Semantix
semantix        361/udp      Semantix
#
# Semantix <xsSupport@semantix.com>
srssend         362/tcp      SRS Send
srssend         362/udp      SRS Send
#
# Curt Mayer <curt@emergent.com>
rsvp_tunnel     363/tcp      RSVP Tunnel
rsvp_tunnel     363/udp      RSVP Tunnel
#
# Andreas Terzis <terzis@cs.ucla.edu>
aurora-cmgr     364/tcp      Aurora CMGR
aurora-cmgr     364/udp      Aurora CMGR
#
# Philip Budne <budne@auroratech.com>
dtk             365/tcp      DTK
dtk             365/udp      DTK
#
# Fred Cohen <fc@all.net>
odmr            366/tcp      ODMR
odmr            366/udp      ODMR
#
# Randall Gellens <randy@qualcomm.com>
mortgageware    367/tcp      MortgageWare
mortgageware    367/udp      MortgageWare
#
# Ole Hellevik <oleh@interlinq.com>
```

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qbikgdp	368/tcp	QbikGDP
qbikgdp	368/udp	QbikGDP
#		Adrien de Croy <adrien@qbik.com>
rpc2portmap	369/tcp	rpc2portmap
rpc2portmap	369/udp	rpc2portmap
codaaauth2	370/tcp	codaaauth2
codaaauth2	370/udp	codaaauth2
#		Robert Watson <robert@cyrus.watson.org>
clearcase	371/tcp	Clearcase
clearcase	371/udp	Clearcase
#		Dave LeBlang <leblang@atria.com>
ulistproc	372/tcp	ListProcessor
ulistproc	372/udp	ListProcessor
#		Anastasios Kotsikonas <tasos@cs.bu.edu>
legent-1	373/tcp	Legent Corporation
legent-1	373/udp	Legent Corporation
legent-2	374/tcp	Legent Corporation
legent-2	374/udp	Legent Corporation
#		Keith Boyce <----none-->
hassle	375/tcp	Hassle
hassle	375/udp	Hassle
#		Reinhard Doelz <doelz@comp.bioz.unibas.ch>
nip	376/tcp	Amiga Envoy Network Inquiry Proto
nip	376/udp	Amiga Envoy Network Inquiry Proto
#		Heinz Wrobel <hwrobel@gmx.de>
tnETOS	377/tcp	NEC Corporation
tnETOS	377/udp	NEC Corporation
dsETOS	378/tcp	NEC Corporation
dsETOS	378/udp	NEC Corporation
#		Tomoo Fujita <tf@arc.bsl.fc.nec.co.jp>
is99c	379/tcp	TIA/EIA/IS-99 modem client
is99c	379/udp	TIA/EIA/IS-99 modem client
is99s	380/tcp	TIA/EIA/IS-99 modem server
is99s	380/udp	TIA/EIA/IS-99 modem server
#		Frank Quick <fquick@qualcomm.com>
hp-collector	381/tcp	hp performance data collector
hp-collector	381/udp	hp performance data collector
hp-managed-node	382/tcp	hp performance data managed node
hp-managed-node	382/udp	hp performance data managed node
hp-alarm-mgr	383/tcp	hp performance data alarm manager
hp-alarm-mgr	383/udp	hp performance data alarm manager
#		Frank Blakely <frankb@hpptc16.rose.hp.com>
arns	384/tcp	A Remote Network Server System
arns	384/udp	A Remote Network Server System
#		David Hornsby <djh@munnari.OZ.AU>
ibm-app	385/tcp	IBM Application
ibm-app	385/udp	IBM Application
#		Lisa Tomita <----none-->
asa	386/tcp	ASA Message Router Object Def.
asa	386/udp	ASA Message Router Object Def.
#		Steve Laitinen <laitinen@brutus.aa.ab.com>

aurp	387/tcp	Appletalk Update-Based Routing Pro.
aurp	387/udp	Appletalk Update-Based Routing Pro.
#		Chris Ranch <cranch@novell.com>
unidata-ldm	388/tcp	Unidata LDM
unidata-ldm	388/udp	Unidata LDM
#		Glenn Davis <support@unidata.ucar.edu>
ldap	389/tcp	Lightweight Directory Access Protocol
ldap	389/udp	Lightweight Directory Access Protocol
#		Tim Howes <Tim.Howes@terminator.cc.umich.edu>
uis	390/tcp	UIS
uis	390/udp	UIS
#		Ed Barron <---none--- &gt;</td
synoptics-relay	391/tcp	SynOptics SNMP Relay Port
synoptics-relay	391/udp	SynOptics SNMP Relay Port
synoptics-broker	392/tcp	SynOptics Port Broker Port
synoptics-broker	392/udp	SynOptics Port Broker Port
#		Illan Raab <iraab@synoptics.com>
meta5	393/tcp	Meta5
meta5	393/udp	Meta5
#		Jim Kanzler <jim.kanzler@meta5.com>
embl-ndt	394/tcp	EMBL Nucleic Data Transfer
embl-ndt	394/udp	EMBL Nucleic Data Transfer
#		Peter Gad <peter@bmc.uu.se>
netcp	395/tcp	NETscout Control Protocol
netcp	395/udp	NETscout Control Protocol
#		Anil Singhal <---none--- &gt;</td
netware-ip	396/tcp	Novell Netware over IP
netware-ip	396/udp	Novell Netware over IP
mptn	397/tcp	Multi Protocol Trans. Net.
mptn	397/udp	Multi Protocol Trans. Net.
#		Soumitra Sarkar <sarkar@vnet.ibm.com>
kryptolan	398/tcp	Kryptolan
kryptolan	398/udp	Kryptolan
#		Peter de Laval <pdl@sectra.se>
iso-tsap-c2	399/tcp	ISO Transport Class 2 Non-Control over TCP
iso-tsap-c2	399/udp	ISO Transport Class 2 Non-Control over UDP
#		Yanick Pouffary <pouffary@taec.enet.dec.com>
work-sol	400/tcp	Workstation Solutions
work-sol	400/udp	Workstation Solutions
#		Jim Ward <jimw@worksta.com>
ups	401/tcp	Uninterruptible Power Supply
ups	401/udp	Uninterruptible Power Supply
#		Charles Bennett <chuck@benatong.com>
genie	402/tcp	Genie Protocol
genie	402/udp	Genie Protocol
#		Mark Hankin <---none--- &gt;</td
decap	403/tcp	decap
decap	403/udp	decap
nced	404/tcp	nced
nced	404/udp	nced
ncld	405/tcp	ncld

nclcd	405/udp	nclcd
#		Richard Jones <---none--->
imsp	406/tcp	Interactive Mail Support Protocol
imsp	406/udp	Interactive Mail Support Protocol
#		John Myers <jgm+@cmu.edu>
timbuktu	407/tcp	Timbuktu
timbuktu	407/udp	Timbuktu
#		Marc Epard <marc@netopia.com>
prm-sm	408/tcp	Prospero Resource Manager Sys. Man.
prm-sm	408/udp	Prospero Resource Manager Sys. Man.
prm-nm	409/tcp	Prospero Resource Manager Node Man.
prm-nm	409/udp	Prospero Resource Manager Node Man.
#		B. Clifford Neuman <bcn@isi.edu>
decladdebug	410/tcp	DECLaddebug Remote Debug Protocol
decladdebug	410/udp	DECLaddebug Remote Debug Protocol
#		Anthony Berent <anthony.berent@reo.mts.dec.com>
rmt	411/tcp	Remote MT Protocol
rmt	411/udp	Remote MT Protocol
#		Peter Eriksson <pen@lysator.liu.se>
synoptics-trap	412/tcp	Trap Convention Port
synoptics-trap	412/udp	Trap Convention Port
#		Illan Raab <iraab@synoptics.com>
smsp	413/tcp	Storage Management Services Protocol
smsp	413/udp	Storage Management Services Protocol
#		Murthy Srinivas <murthy@novell.com>
infoseek	414/tcp	InfoSeek
infoseek	414/udp	InfoSeek
#		Steve Kirsch <stk@infoseek.com>
bnet	415/tcp	BNet
bnet	415/udp	BNet
#		Jim Mertz <JMertz+RV09@rvdc.unisys.com>
silverplatter	416/tcp	Silverplatter
silverplatter	416/udp	Silverplatter
#		Peter Ciuffetti <petec@silverplatter.com>
onmux	417/tcp	Onmux
onmux	417/udp	Onmux
#		Stephen Hanna <hanna@world.std.com>
hyper-g	418/tcp	Hyper-G
hyper-g	418/udp	Hyper-G
#		Frank Kappe <fkappe@iicm.tu-graz.ac.at>
ariel1	419/tcp	Ariel 1
ariel1	419/udp	Ariel 1
#		Joel Karafin <jkarafin@infotrieve.com>
smppte	420/tcp	SMPTE
smppte	420/udp	SMPTE
#		Si Becker <71362.22@CompuServe.COM>
ariel2	421/tcp	Ariel 2
ariel2	421/udp	Ariel 2
ariel3	422/tcp	Ariel 3
ariel3	422/udp	Ariel 3
#		Joel Karafin <jkarafin@infotrieve.com>

opc-job-start	423/tcp	IBM Operations Planning and Control Start
opc-job-start	423/udp	IBM Operations Planning and Control Start
opc-job-track	424/tcp	IBM Operations Planning and Control Track
opc-job-track	424/udp	IBM Operations Planning and Control Track
#		Conny Larsson <cocke@VNET.IBM.COM>
icad-el	425/tcp	ICAD
icad-el	425/udp	ICAD
#		Larry Stone <lcs@icad.com>
smartsdp	426/tcp	smartsdp
smartsdp	426/udp	smartsdp
#		Alexander Dupuy <dupuy@smarts.com>
svrloc	427/tcp	Server Location
svrloc	427/udp	Server Location
#		<veizades@ftp.com>
ocs_cmu	428/tcp	OCS_CMU
ocs_cmu	428/udp	OCS_CMU
ocs_amu	429/tcp	OCS_AMU
ocs_amu	429/udp	OCS_AMU
#		Florence Wyman <wyman@peabody.plk.af.mil>
utmpsd	430/tcp	UTMPSD
utmpsd	430/udp	UTMPSD
utmpcd	431/tcp	UTMPCD
utmpcd	431/udp	UTMPCD
iasd	432/tcp	IASD
iasd	432/udp	IASD
#		Nir Baroz <nbaroz@encore.com>
nnsdp	433/tcp	NNSDP
nnsdp	433/udp	NNSDP
#		Rob Robertson <rob@gangrene.berkeley.edu>
mobileip-agent	434/tcp	MobileIP-Agent
mobileip-agent	434/udp	MobileIP-Agent
mobilip-mn	435/tcp	MobilIP-MN
mobilip-mn	435/udp	MobilIP-MN
#		Kannan Alagappan <kannan@sejour.lkg.dec.com>
dna-cml	436/tcp	DNA-CML
dna-cml	436/udp	DNA-CML
#		Dan Flowers <flowers@smaug.lkg.dec.com>
comscm	437/tcp	comscm
comscm	437/udp	comscm
#		Jim Teague <teague@zso.dec.com>
dsfgw	438/tcp	dsfgw
dsfgw	438/udp	dsfgw
#		Andy McKeen <mckeen@osf.org>
dasp	439/tcp	dasp Thomas Obermair
dasp	439/udp	dasp tommy@inlab.m.eunet.de
#		Thomas Obermair <tommy@inlab.m.eunet.de>
sgcp	440/tcp	sgcp
sgcp	440/udp	sgcp
#		Marshall Rose <mrose@dbc.mtview.ca.us>
decvms-sysmgt	441/tcp	decvms-sysmgt

decvms-sysmgmt	441/udp	decvms-sysmgmt
#		Lee Barton <barton@star.enet.dec.com>
cvc_hostd	442/tcp	cvc_hostd
cvc_hostd	442/udp	cvc_hostd
#		Bill Davidson <billd@equalizer.cray.com>
https	443/tcp	http protocol over TLS/SSL
https	443/udp	http protocol over TLS/SSL
#		Kipp E.B. Hickman <kipp@mcom.com>
snpp	444/tcp	Simple Network Paging Protocol
snpp	444/udp	Simple Network Paging Protocol
#		[RFC1568]
microsoft-ds	445/tcp	Microsoft-DS
microsoft-ds	445/udp	Microsoft-DS
#		Pradeep Bahl <pradeepb@microsoft.com>
ddm-rdb	446/tcp	DDM-Remote Relational Database Access
ddm-rdb	446/udp	DDM-Remote Relational Database Access
ddm-dfm	447/tcp	DDM-Distributed File Management
ddm-dfm	447/udp	DDM-Distributed File Management
#		Steven Ritland <srr@us.ibm.com>
ddm-ssl	448/tcp	DDM-Remote DB Access Using Secure Sockets
ddm-ssl	448/udp	DDM-Remote DB Access Using Secure Sockets
#		Steven Ritland <srr@us.ibm.com>
as-servermap	449/tcp	AS Server Mapper
as-servermap	449/udp	AS Server Mapper
#		Barbara Foss <BGFOSS@rchvmv.vnet.ibm.com>
tserver	450/tcp	Computer Supported Telecommunication Applications
tserver	450/udp	Computer Supported Telecommunication Applications
#		Harvey S. Schultz <harvey@acm.org>
sfs-smp-net	451/tcp	Cray Network Semaphore server
sfs-smp-net	451/udp	Cray Network Semaphore server
sfs-config	452/tcp	Cray SFS config server
sfs-config	452/udp	Cray SFS config server
#		Walter Poxon <wdp@ironwood.cray.com>
creativeserver	453/tcp	CreativeServer
creativeserver	453/udp	CreativeServer
contentserver	454/tcp	ContentServer
contentserver	454/udp	ContentServer
creativepartnr	455/tcp	CreativePartnr
creativepartnr	455/udp	CreativePartnr
#		Jesus Ortiz <jesus_ortiz@emotion.com>
macon-tcp	456/tcp	macon-tcp
macon-udp	456/udp	macon-udp
#		Yoshinobu Inoue
#		<shin@hodaka.mfd.cs.fujitsu.co.jp>
scohelp	457/tcp	scohelp
scohelp	457/udp	scohelp
#		Faith Zack <faithz@sco.com>
appleqtc	458/tcp	apple quick time
appleqtc	458/udp	apple quick time
#		Murali Ranganathan
#		<murali_ranganathan@quickmail.apple.com>

ampr-rcmd	459/tcp	ampr-rcmd
ampr-rcmd	459/udp	ampr-rcmd
#		Rob Janssen <rob@sys3.pechl.ampr.org>
skronk	460/tcp	skronk
skronk	460/udp	skronk
#		Henry Strickland <strick@yak.net>
datasurfsrv	461/tcp	DataRampSrv
datasurfsrv	461/udp	DataRampSrv
datasurfsrvsec	462/tcp	DataRampSrvSec
datasurfsrvsec	462/udp	DataRampSrvSec
#		Diane Downie <downie@jibe.MV.COM>
alpes	463/tcp	alpes
alpes	463/udp	alpes
#		Alain Durand <Alain.Durand@imag.fr>
kpasswd	464/tcp	kpasswd
kpasswd	464/udp	kpasswd
#		Theodore Ts'o <tytso@MIT.EDU>
urd	465/tcp	URL Rendevous Directory for SSM
igmpv3lite	465/udp	IGMP over UDP for SSM
#		Toerless Eckert <eckert@cisco.com>
digital-vrc	466/tcp	digital-vrc
digital-vrc	466/udp	digital-vrc
#		Peter Higginson <higginson@mail.dec.com>
mylex-mapd	467/tcp	mylex-mapd
mylex-mapd	467/udp	mylex-mapd
#		Gary Lewis <GaryL@hq.mylex.com>
photuris	468/tcp	proturis
photuris	468/udp	proturis
#		Bill Simpson <Bill.Simpson@um.cc.umich.edu>
rcp	469/tcp	Radio Control Protocol
rcp	469/udp	Radio Control Protocol
#		Jim Jennings +1-708-538-7241
scx-proxy	470/tcp	scx-proxy
scx-proxy	470/udp	scx-proxy
#		Scott Narveson <sjn@cray.com>
mondex	471/tcp	Mondex
mondex	471/udp	Mondex
#		Bill Reding <redingb@nwdt.natwest.co.uk>
ljk-login	472/tcp	ljk-login
ljk-login	472/udp	ljk-login
#		LJK Software, Cambridge, Massachusetts
#		<support@ljk.com>
hybrid-pop	473/tcp	hybrid-pop
hybrid-pop	473/udp	hybrid-pop
#		Rami Rubin <rami@hybrid.com>
tn-tl-w1	474/tcp	tn-tl-w1
tn-tl-w2	474/udp	tn-tl-w2
#		Ed Kress <eskress@thinknet.com>
tcpnethasprv	475/tcp	tcpnethasprv
tcpnethasprv	475/udp	tcpnethasprv
#		Charlie Hava <charlie@aladdin.co.il>



tn-tl-fd1	476/tcp	tn-tl-fd1
tn-tl-fd1	476/udp	tn-tl-fd1
#		Ed Kress <eskress@thinknet.com>
ss7ns	477/tcp	ss7ns
ss7ns	477/udp	ss7ns
#		Jean-Michel URSCH <ursch@taec.enet.dec.com>
spsc	478/tcp	spsc
spsc	478/udp	spsc
#		Mike Rieker <mikea@sp32.com>
iafserver	479/tcp	iafserver
iafserver	479/udp	iafserver
iafdbase	480/tcp	iafdbase
iafdbase	480/udp	iafdbase
#		ricky@solect.com <Rick Yazwinski>
ph	481/tcp	Ph service
ph	481/udp	Ph service
#		Roland Hedberg <Roland.Hedberg@umdac.umu.se>
bgs-nsi	482/tcp	bgs-nsi
bgs-nsi	482/udp	bgs-nsi
#		Jon Saperia <saperia@bgs.com>
ulpnet	483/tcp	ulpnet
ulpnet	483/udp	ulpnet
#		Kevin Mooney <kevinm@bfs.unibol.com>
integra-sme	484/tcp	Integra Software Management Environment
integra-sme	484/udp	Integra Software Management Environment
#		Randall Dow <rand@randix.m.isr.de>
powerburst	485/tcp	Air Soft Power Burst
powerburst	485/udp	Air Soft Power Burst
#		<gary@airsoft.com>
avian	486/tcp	avian
avian	486/udp	avian
#		Robert Ullmann
#		<Robert_Ullmann/CAM/Lotus.LOTUS@crd.lotus.com>
saft	487/tcp	saft Simple Asynchronous File Transfer
saft	487/udp	saft Simple Asynchronous File Transfer
#		Ulli Horlacher <framstag@rus.uni-stuttgart.de>
gss-http	488/tcp	gss-http
gss-http	488/udp	gss-http
#		Doug Rosenthal <rosenth1@krypton.einet.net>
nest-protocol	489/tcp	nest-protocol
nest-protocol	489/udp	nest-protocol
#		Gilles Gameiro <ggameiro@birdland.com>
micom-pfs	490/tcp	micom-pfs
micom-pfs	490/udp	micom-pfs
#		David Misunas <DMisunas@micom.com>
go-login	491/tcp	go-login
go-login	491/udp	go-login
#		Troy Morrison <troy@graphon.com>
ticf-1	492/tcp	Transport Independent Convergence for FNA
ticf-1	492/udp	Transport Independent Convergence for FNA
ticf-2	493/tcp	Transport Independent Convergence for FNA

ticf-2	493/udp	Transport Independent Convergence for FNA
#		Mamoru Ito <Ito@pcnet.ks.pfu.co.jp>
pov-ray	494/tcp	POV-Ray
pov-ray	494/udp	POV-Ray
#		POV-Team Co-ordinator
#		<iana-port.remove-spamguard@povray.org>
intecourier	495/tcp	intecourier
intecourier	495/udp	intecourier
#		Steve Favor <sfavor@tigger.intecom.com>
pim-rp-disc	496/tcp	PIM-RP-DISC
pim-rp-disc	496/udp	PIM-RP-DISC
#		Dino Farinacci <dino@cisco.com>
dantz	497/tcp	dantz
dantz	497/udp	dantz
#		Richard Zulch <richard_zulch@dantz.com>
siam	498/tcp	siam
siam	498/udp	siam
#		Philippe Gilbert <pgilbert@cal.fr>
iso-ill	499/tcp	ISO ILL Protocol
iso-ill	499/udp	ISO ILL Protocol
#		Mark H. Needleman <markn@sirsi.com>
isakmp	500/tcp	isakmp
isakmp	500/udp	isakmp
#		Mark Schertler <mjs@tycho.ncsc.mil>
stmf	501/tcp	STMF
stmf	501/udp	STMF
#		Alan Ungar <aungar@farradyne.com>
asa-appl-proto	502/tcp	asa-appl-proto
asa-appl-proto	502/udp	asa-appl-proto
#		Dennis Dube <ddube@modicon.com>
intrinsa	503/tcp	Intrinsa
intrinsa	503/udp	Intrinsa
#		Robert Ford <robert@intrinsa.com>
citadel	504/tcp	citadel
citadel	504/udp	citadel
#		Art Cancro <ajc@uncnsrd.mt-kisco.ny.us>
mailbox-lm	505/tcp	mailbox-lm
mailbox-lm	505/udp	mailbox-lm
#		Beverly Moody <Beverly_Moody@stercomm.com>
ohimsrv	506/tcp	ohimsrv
ohimsrv	506/udp	ohimsrv
#		Scott Powell <spowell@openhorizon.com>
crs	507/tcp	crs
crs	507/udp	crs
#		Brad Wright <bradwr@microsoft.com>
xvttp	508/tcp	xvttp
xvttp	508/udp	xvttp
#		Keith J. Alphonso <alphonso@ncs-ssc.com>
snare	509/tcp	snare
snare	509/udp	snare
#		Dennis Batchelder <dennis@capres.com>

fcpx	510/tcp	FirstClass Protocol
fcpx	510/udp	FirstClass Protocol
#		Mike Marshburn <paul@softarc.com>
passgo	511/tcp	PassGo
passgo	511/udp	PassGo
#		John Rainford <jrainford@passgo.com>
exec	512/tcp	remote process execution;
#		authentication performed using
#		passwords and UNIX login names
comsat	512/udp	
biff	512/udp	used by mail system to notify users
#		of new mail received; currently
#		receives messages only from
#		processes on the same machine
login	513/tcp	remote login a la telnet;
#		automatic authentication performed
#		based on privileged port numbers
#		and distributed data bases which
#		identify "authentication domains"
who	513/udp	maintains data bases showing who's
#		logged in to machines on a local
#		net and the load average of the
#		machine
shell	514/tcp	cmd
#		like exec, but automatic authentication
#		is performed as for login server
syslog	514/udp	
printer	515/tcp	spooler
printer	515/udp	spooler
videotex	516/tcp	videotex
videotex	516/udp	videotex
#		Daniel Mavrakis <system@venus.mctel.fr>
talk	517/tcp	like tenex link, but across
#		machine - unfortunately, doesn't
#		use link protocol (this is actually
#		just a rendezvous port from which a
#		tcp connection is established)
talk	517/udp	like tenex link, but across
#		machine - unfortunately, doesn't
#		use link protocol (this is actually
#		just a rendezvous port from which a
#		tcp connection is established)
ntalk	518/tcp	
ntalk	518/udp	
utime	519/tcp	unixtime
utime	519/udp	unixtime
efs	520/tcp	extended file name server
router	520/udp	local routing process (on site);
#		uses variant of Xerox NS routing
#		information protocol - RIP
ripng	521/tcp	ripng

ripng	521/udp	ripng
#		Robert E. Minnear <minnear@epsilon.com>
ulp	522/tcp	ULP
ulp	522/udp	ULP
#		Max Morris <maxm@MICROSOFT.com>
ibm-db2	523/tcp	IBM-DB2
ibm-db2	523/udp	IBM-DB2
#		Juliana Hsu <jhsu@ca.ibm.com>
ncp	524/tcp	NCP
ncp	524/udp	NCP
#		Don Provan <donp@sjf.novell.com>
timed	525/tcp	timeserver
timed	525/udp	timeserver
tempo	526/tcp	newdate
tempo	526/udp	newdate
#		Unknown
stx	527/tcp	Stock IXChange
stx	527/udp	Stock IXChange
custix	528/tcp	Customer IXChange
custix	528/udp	Customer IXChange
#		Ferdi Ladeira <ferdi.ladeira@ixchange.com>
irc-serv	529/tcp	IRC-SERV
irc-serv	529/udp	IRC-SERV
#		Brian Tackett <cym@acrux.net>
courier	530/tcp	rpc
courier	530/udp	rpc
conference	531/tcp	chat
conference	531/udp	chat
netnews	532/tcp	readnews
netnews	532/udp	readnews
netwall	533/tcp	for emergency broadcasts
netwall	533/udp	for emergency broadcasts
mm-admin	534/tcp	MegaMedia Admin
mm-admin	534/udp	MegaMedia Admin
#		Andreas Heidemann <a.heidemann@ais-gmbh.de>
iiop	535/tcp	iiop
iiop	535/udp	iiop
#		Jeff M. Michaud <michaud@zk3.dec.com>
opalis-rdv	536/tcp	opalis-rdv
opalis-rdv	536/udp	opalis-rdv
#		Laurent Domenech <ldomenech@opalis.com>
nmosp	537/tcp	Networked Media Streaming Protocol
nmosp	537/udp	Networked Media Streaming Protocol
#		Paul Santinelli Jr. <psantinelli@narrative.com>
gdomap	538/tcp	gdomap
gdomap	538/udp	gdomap
#		Richard Frith-Macdonald <richard@brainstorm.co.uk>
apertus-ldp	539/tcp	Apertus Technologies Load Determination
apertus-ldp	539/udp	Apertus Technologies Load Determination
uucp	540/tcp	uucpd

## Appendix C • Well-Known TCP/IP Port Numbers

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uucp	540/udp	uucpd
uucp-rlogin	541/tcp	uucp-rlogin
uucp-rlogin	541/udp	uucp-rlogin
#		Stuart Lynne <sl@wimsey.com>
commerce	542/tcp	commerce
commerce	542/udp	commerce
#		Randy Epstein <repstein@host.net>
klogin	543/tcp	
klogin	543/udp	
kshell	544/tcp	krcmd
kshell	544/udp	krcmd
appleqtcsrvr	545/tcp	appleqtcsrvr
appleqtcsrvr	545/udp	appleqtcsrvr
#		Murali Ranganathan
#		<Murali_Ranganathan@quickmail.apple.com>
dhcpv6-client	546/tcp	DHCPv6 Client
dhcpv6-client	546/udp	DHCPv6 Client
dhcpv6-server	547/tcp	DHCPv6 Server
dhcpv6-server	547/udp	DHCPv6 Server
#		Jim Bound <bound@zk3.dec.com>
afpovertcp	548/tcp	AFP over TCP
afpovertcp	548/udp	AFP over TCP
#		Leland Wallace <randall@apple.com>
idfp	549/tcp	IDFP
idfp	549/udp	IDFP
#		Ramana Kovi <ramana@kovi.com>
new-rwho	550/tcp	new-who
new-rwho	550/udp	new-who
cybercash	551/tcp	cybercash
cybercash	551/udp	cybercash
#		Donald E. Eastlake 3rd <dee@cybercash.com>
devshr-nts	552/tcp	DeviceShare
devshr-nts	552/udp	DeviceShare
#		Benjamin Rosenberg <brosenberg@advsyscon.com>
pirp	553/tcp	pirp
pirp	553/udp	pirp
#		D. J. Bernstein <djb@silverton.berkeley.edu>
rtsp	554/tcp	Real Time Stream Control Protocol
rtsp	554/udp	Real Time Stream Control Protocol
#		Rob Lanphier <robla@prognnet.com>
dsf	555/tcp	
dsf	555/udp	
remotefs	556/tcp	rfs server
remotefs	556/udp	rfs server
openvms-sysipc	557/tcp	openvms-sysipc
openvms-sysipc	557/udp	openvms-sysipc
#		Alan Potter <potter@movies.enet.dec.com>
sdnskmp	558/tcp	SDNSKMP
sdnskmp	558/udp	SDNSKMP
teedtap	559/tcp	TEEDTAP
teedtap	559/udp	TEEDTAP

#		Mort Hoffman <hoffman@mail.ndhm.gtegsc.com>
rmonitor	560/tcp	rmonitord
rmonitor	560/udp	rmonitord
monitor	561/tcp	
monitor	561/udp	
chshell	562/tcp	chcmd
chshell	562/udp	chcmd
nntp	563/tcp	nntp protocol over TLS/SSL (was snntp)
nntp	563/udp	nntp protocol over TLS/SSL (was snntp)
#		Kipp E.B. Hickman <kipp@netscape.com>
9pfs	564/tcp	plan 9 file service
9pfs	564/udp	plan 9 file service
whoami	565/tcp	whoami
whoami	565/udp	whoami
streetwork	566/tcp	streetwork
streetwork	566/udp	streetwork
banyan-rpc	567/tcp	banyan-rpc
banyan-rpc	567/udp	banyan-rpc
#		Tom Lemaire <toml@banyan.com>
ms-shuttle	568/tcp	microsoft shuttle
ms-shuttle	568/udp	microsoft shuttle
#		Rudolph Balaz <rudolphb@microsoft.com>
ms-rome	569/tcp	microsoft rome
ms-rome	569/udp	microsoft rome
#		Rudolph Balaz <rudolphb@microsoft.com>
meter	570/tcp	demon
meter	570/udp	demon
meter	571/tcp	udemon
meter	571/udp	udemon
sonar	572/tcp	sonar
sonar	572/udp	sonar
#		Keith Moore <moore@cs.utk.edu>
banyan-vip	573/tcp	banyan-vip
banyan-vip	573/udp	banyan-vip
#		Denis Leclerc <DLeclerc@banyan.com>
ftp-agent	574/tcp	FTP Software Agent System
ftp-agent	574/udp	FTP Software Agent System
#		Michael S. Greenberg <arnoff@ftp.com>
vemmi	575/tcp	VEMMI
vemmi	575/udp	VEMMI
#		Daniel Mavrakis <mavrakis@mctel.fr>
ipcd	576/tcp	ipcd
ipcd	576/udp	ipcd
vnas	577/tcp	vnas
vnas	577/udp	vnas
ipdd	578/tcp	ipdd
ipdd	578/udp	ipdd
#		Jay Farhat <jfarhat@ipass.com>
decbsrv	579/tcp	decbsrv
decbsrv	579/udp	decbsrv
#		Rudi Martin
		<movies::martin"@movies.enet.dec.com>

sntp-heartbeat	580/tcp	SNTP HEARTBEAT
sntp-heartbeat	580/udp	SNTP HEARTBEAT
#		Louis Mamakos <louie@uu.net>
bdp	581/tcp	Bundle Discovery Protocol
bdp	581/udp	Bundle Discovery Protocol
#		Gary Malkin <gmalkin@xylogics.com>
scc-security	582/tcp	SCC Security
scc-security	582/udp	SCC Security
#		Prashant Dholakia <prashant@semaphorecom.com>
philips-vc	583/tcp	Philips Video-Conferencing
philips-vc	583/udp	Philips Video-Conferencing
#		Janna Chang <janna@pmc.philips.com>
keyserver	584/tcp	Key Server
keyserver	584/udp	Key Server
#		Gary Howland <gary@systemics.com>
imap4-ssl	585/tcp	IMAP4+SSL (use 993 instead)
imap4-ssl	585/udp	IMAP4+SSL (use 993 instead)
#		Terry Gray <gray@cac.washington.edu>
#		Use of 585 is not recommended, use 993 instead
password-chg	586/tcp	Password Change
password-chg	586/udp	Password Change
submission	587/tcp	Submission
submission	587/udp	Submission
#		Randy Gellens <randy@qualcomm.com>
cal	588/tcp	CAL
cal	588/udp	CAL
#		Myron Hattig <Myron_Hattig@ccm.jf.intel.com>
eyelink	589/tcp	EyeLink
eyelink	589/udp	EyeLink
#		Dave Stampe <dstampe@psych.toronto.edu>
tns-cml	590/tcp	TNS CML
tns-cml	590/udp	TNS CML
#		Jerome Albin <albin@taec.enet.dec.com>
http-alt	591/tcp	FileMaker, Inc. - HTTP Alternate (see Port 80)
http-alt	591/udp	FileMaker, Inc. - HTTP Alternate (see Port 80)
#		Clay Maeckel <clay_maeckel@filemaker.com>
eudora-set	592/tcp	Eudora Set
eudora-set	592/udp	Eudora Set
#		Randall Gellens <randy@qualcomm.com>
http-rpc-epmap	593/tcp	HTTP RPC Ep Map
http-rpc-epmap	593/udp	HTTP RPC Ep Map
#		Edward Reus <edwardr@microsoft.com>
tpip	594/tcp	TPIP
tpip	594/udp	TPIP
#		Brad Spear <spear@platinum.com>
cab-protocol	595/tcp	CAB Protocol
cab-protocol	595/udp	CAB Protocol
#		Winston Hetherington
smsd	596/tcp	SMSD
smsd	596/udp	SMSD
#		Wayne Barlow <web@unx.dec.com>

ptcnameservice	597/tcp	PTC Name Service
ptcnameservice	597/udp	PTC Name Service
#		Yuri Machkasov <yuri@ptc.com>
sco-websrvrmg3	598/tcp	SCO Web Server Manager 3
sco-websrvrmg3	598/udp	SCO Web Server Manager 3
#		Simon Baldwin <simonb@sco.com>
acp	599/tcp	Aeolon Core Protocol
acp	599/udp	Aeolon Core Protocol
#		Michael Alyn Miller <malyn@aeolon.com>
ipcserver	600/tcp	Sun IPC server
ipcserver	600/udp	Sun IPC server
#		Bill Schiefelbein <schief@aspen.cray.com>
syslog-conn	601/tcp	Reliable Syslog Service
syslog-conn	601/udp	Reliable Syslog Service
#		RFC 3195
xmlrpc-beep	602/tcp	XML-RPC over BEEP
xmlrpc-beep	602/udp	XML-RPC over BEEP
#		RFC3529 <ftp://ftp.isi.edu/in-notes/rfc3529.txt> March 2003
idxp	603/tcp	IDXP
idxp	603/udp	IDXP
#		RFC-ietf-idwg-beep-idxp-07.txt
tunnel	604/tcp	TUNNEL
tunnel	604/udp	TUNNEL
#		RFC-ietf-idwg-beep-tunnel-05.txt
soap-beep	605/tcp	SOAP over BEEP
soap-beep	605/udp	SOAP over BEEP
#		RFC3288 <ftp://ftp.isi.edu/in-notes/rfc3288.txt> April 2002
urm	606/tcp	Cray Unified Resource Manager
urm	606/udp	Cray Unified Resource Manager
nqs	607/tcp	nqs
nqs	607/udp	nqs
#		Bill Schiefelbein <schief@aspen.cray.com>
sift-uft	608/tcp	Sender-Initiated/Unsolicited File Transfer
sift-uft	608/udp	Sender-Initiated/Unsolicited File Transfer
#		Rick Troth <troth@rice.edu>
npmp-trap	609/tcp	npmp-trap
npmp-trap	609/udp	npmp-trap
npmp-local	610/tcp	npmp-local
npmp-local	610/udp	npmp-local
npmp-gui	611/tcp	npmp-gui
npmp-gui	611/udp	npmp-gui
#		John Barnes <jbarnes@crl.com>
hmmp-ind	612/tcp	HMMP Indication
hmmp-ind	612/udp	HMMP Indication
hmmp-op	613/tcp	HMMP Operation
hmmp-op	613/udp	HMMP Operation
#		Andrew Sinclair <andrstin@microsoft.com>
sshell	614/tcp	SSLshell
sshell	614/udp	SSLshell
#		Simon J. Gerraty <sjg@quick.com.au>



sco-inetmgr	615/tcp	Internet Configuration Manager
sco-inetmgr	615/udp	Internet Configuration Manager
sco-sysmgr	616/tcp	SCO System Administration Server
sco-sysmgr	616/udp	SCO System Administration Server
sco-dtmgr	617/tcp	SCO Desktop Administration Server
sco-dtmgr	617/udp	SCO Desktop Administration Server
#		Christopher Durham <chrisdu@sco.com>
dei-icda	618/tcp	DEI-ICDA
dei-icda	618/udp	DEI-ICDA
#		David Turner <digital@Quetico.tbaytel.net>
compaq-evm	619/tcp	Compaq EVM
compaq-evm	619/udp	Compaq EVM
#		Jem Treadwell <Jem.Treadwell@compaq.com>
sco-websrvrmgr	620/tcp	SCO WebServer Manager
sco-websrvrmgr	620/udp	SCO WebServer Manager
#		Christopher Durham <chrisdu@sco.com>
escp-ip	621/tcp	ESCP
escp-ip	621/udp	ESCP
#		Lai Zit Seng <lzs@pobox.com>
collaborator	622/tcp	Collaborator
collaborator	622/udp	Collaborator
#		Johnson Davis <johnsond@opteamasoft.com>
asf-rmcp	623/tcp	ASF Remote Management and Control Protocol
asf-rmcp	623/udp	ASF Remote Management and Control Protocol
#		Carl First <Carl.L.First@intel.com>
cryptoadmin	624/tcp	Crypto Admin
cryptoadmin	624/udp	Crypto Admin
#		Tony Walker <tony@cryptocard.com>
dec_dlm	625/tcp	DEC DLM
dec_dlm	625/udp	DEC DLM
#		Rudi Martin <Rudi.Martin@edo.mts.dec.com>
asia	626/tcp	ASIA
asia	626/udp	ASIA
#		Michael Dasenbrock <dasenbro@apple.com>
passgo-tivoli	627/tcp	PassGo Tivoli
passgo-tivoli	627/udp	PassGo Tivoli
#		Chris Hall <chall@passgo.com>
qmqp	628/tcp	QMQP
qmqp	628/udp	QMQP
#		Dan Bernstein <djb@cr.yip.to>
3com-amp3	629/tcp	3Com AMP3
3com-amp3	629/udp	3Com AMP3
#		Prakash Banthia <prakash_banthia@3com.com>
rda	630/tcp	RDA
rda	630/udp	RDA
#		John Hadjioannou <john@minster.co.uk>
ipp	631/tcp	IPP (Internet Printing Protocol)
ipp	631/udp	IPP (Internet Printing Protocol)
#		Carl-Uno Manros <manros@cp10.es.xerox.com>
bmpp	632/tcp	bmpp
bmpp	632/udp	bmpp
#		Troy Rollo <troy@kroll.corvu.com.au>

servstat	633/tcp	Service Status update (Sterling Software)
servstat	633/udp	Service Status update (Sterling Software)
#		Greg Rose <Greg_Rose@sydney.sterling.com>
ginad	634/tcp	ginad
ginad	634/udp	ginad
#		Mark Crother <mark@eis.calstate.edu>
rlzdbase	635/tcp	RLZ DBase
rlzdbase	635/udp	RLZ DBase
#		Michael Ginn <ginn@tyxar.com>
ldaps	636/tcp	ldap protocol over TLS/SSL (was sldap)
ldaps	636/udp	ldap protocol over TLS/SSL (was sldap)
#		Pat Richard <patr@xcert.com>
lanserver	637/tcp	lanserver
lanserver	637/udp	lanserver
#		Chris Larsson <clarsson@VNET.IBM.COM>
mcns-sec	638/tcp	mcns-sec
mcns-sec	638/udp	mcns-sec
#		Kaz Ozawa <k.ozawa@cablelabs.com>
msdp	639/tcp	MSDP
msdp	639/udp	MSDP
#		Dino Farinacci <dino@cisco.com>
entrust-sps	640/tcp	entrust-sps
entrust-sps	640/udp	entrust-sps
#		Marek Buchler <Marek.Buchler@entrust.com>
repcmd	641/tcp	repcmd
repcmd	641/udp	repcmd
#		Scott Dale <scott@Replicase.com>
esro-emsdp	642/tcp	ESRO-EMSDP V1.3
esro-emsdp	642/udp	ESRO-EMSDP V1.3
#		Mohsen Banan <mohsen@neda.com>
sanity	643/tcp	SANity
sanity	643/udp	SANity
#		Peter Viscarola <PeterGV@osr.com>
dwr	644/tcp	dwr
dwr	644/udp	dwr
#		Bill Fenner <fenner@parc.xerox.com>
pssc	645/tcp	PSSC
pssc	645/udp	PSSC
#		Egon Meier-Engelen <egon.meier-engelen@dlr.de>
ldp	646/tcp	LDP
ldp	646/udp	LDP
#		Bob Thomas <rhthomas@cisco.com>
dhcp-failover	647/tcp	DHCP Failover
dhcp-failover	647/udp	DHCP Failover
#		Bernard Volz <volz@ipworks.com>
rrp	648/tcp	Registry Registrar Protocol (RRP)
rrp	648/udp	Registry Registrar Protocol (RRP)
#		Scott Hollenbeck <shollenb@netsol.com>
cadview-3d	649/tcp	Cadview-3d - streaming 3d models over the internet

cadview-3d	649/udp	Cadview-3d - streaming 3d models over the internet
#		David Cooper <david.cooper@oracle.com>
obex	650/tcp	OBEX
obex	650/udp	OBEX
#		Jeff Garbers <FJG030@email.mot.com>
ieee-mms	651/tcp	IEEE MMS
ieee-mms	651/udp	IEEE MMS
#		Curtis Anderson <canderson@turbolinux.com>
hello-port	652/tcp	HELLO_PORT
hello-port	652/udp	HELLO_PORT
#		Patrick Capiere <Patrick.Capiere@UDcast.com>
repscmd	653/tcp	RepCmd
repscmd	653/udp	RepCmd
#		Scott Dale <scott@tioga.com>
aodv	654/tcp	AODV
aodv	654/udp	AODV
#		Charles Perkins <cperkins@eng.sun.com>
tinc	655/tcp	TINC
tinc	655/udp	TINC
#		Ivo Timmermans <itimmermans@bigfoot.com>
spmp	656/tcp	SPMP
spmp	656/udp	SPMP
#		Jakob Kaivo <jkaivo@nodomainname.net>
rmc	657/tcp	RMC
rmc	657/udp	RMC
#		Michael Schmidt <mmaass@us.ibm.com>
tenfold	658/tcp	TenFold
tenfold	658/udp	TenFold
#		Louis Olszyk <lolszyk@10fold.com>
#	659	Removed (2001-06-06)
mac-srvr-admin	660/tcp	MacOS Server Admin
mac-srvr-admin	660/udp	MacOS Server Admin
#		Forest Hill <forest@apple.com>
hap	661/tcp	HAP
hap	661/udp	HAP
#		Igor Plotnikov <igor@uroam.com>
pftp	662/tcp	PFTP
pftp	662/udp	PFTP
#		Ben Schluricke <support@pftp.de>
purenoise	663/tcp	PureNoise
purenoise	663/udp	PureNoise
#		Sam Osa <pristine@mailcity.com>
asf-secure-rmcp	664/tcp	ASF Secure Remote Management and Control Protocol
asf-secure-rmcp	664/udp	ASF Secure Remote Management and Control Protocol
#		Carl First <Carl.L.First@intel.com>
sun-dr	665/tcp	Sun DR
sun-dr	665/udp	Sun DR
#		Harinder Bhasin <Harinder.Bhasin@Sun.COM>

mdqs	666/tcp	
mdqs	666/udp	
doom	666/tcp	doom Id Software
doom	666/udp	doom Id Software
#		<ddt@idcube.idsoftware.com>
disclose	667/tcp	campaign contribution disclosures - SDR Technologies
disclose	667/udp	campaign contribution disclosures - SDR Technologies
#		Jim Dixon <jim@lambda.com>
mecomm	668/tcp	MeComm
mecomm	668/udp	MeComm
mereregister	669/tcp	MeRegister
mereregister	669/udp	MeRegister
#		Armin Sawusch <armin@esdl.esd.de>
vacdsm-sws	670/tcp	VACDSM-SWS
vacdsm-sws	670/udp	VACDSM-SWS
vacdsm-app	671/tcp	VACDSM-APP
vacdsm-app	671/udp	VACDSM-APP
vpps-qua	672/tcp	VPPS-QUA
vpps-qua	672/udp	VPPS-QUA
cimplex	673/tcp	CIMPLEX
cimplex	673/udp	CIMPLEX
#		Ulysses G. Smith Jr. <ugsmith@cesl.com>
acap	674/tcp	ACAP
acap	674/udp	ACAP
#		Chris Newman <chris.newman@sun.com>
dctp	675/tcp	DCTP
dctp	675/udp	DCTP
#		Andre Kramer <Andre.Kramer@ansa.co.uk>
vpps-via	676/tcp	VPPS Via
vpps-via	676/udp	VPPS Via
#		Ulysses G. Smith Jr. <ugsmith@cesl.com>
vpp	677/tcp	Virtual Presence Protocol
vpp	677/udp	Virtual Presence Protocol
#		Klaus Wolf <wolf@cobrow.com>
ggf-ncp	678/tcp	GNU Generation Foundation NCP
ggf-ncp	678/udp	GNU Generation Foundation NCP
#		Noah Paul <noahp@altavista.net>
mrm	679/tcp	MRM
mrm	679/udp	MRM
#		Liming Wei <lwei@cisco.com>
entrust-aaas	680/tcp	entrust-aaas
entrust-aaas	680/udp	entrust-aaas
entrust-aams	681/tcp	entrust-aams
entrust-aams	681/udp	entrust-aams
#		Adrian Mancini <adrian.mancini@entrust.com>
xfr	682/tcp	XFR
xfr	682/udp	XFR
#		Noah Paul <noahp@ultranet.com>
corba-iiop	683/tcp	CORBA IIOP

corba-iiop	683/udp	CORBA IIOP
corba-iiop-ssl	684/tcp	CORBA IIOP SSL
corba-iiop-ssl	684/udp	CORBA IIOP SSL
#		Henry Lowe <lowe@omg.org>
mdc-portmapper	685/tcp	MDC Port Mapper
mdc-portmapper	685/udp	MDC Port Mapper
#		Noah Paul <noahp@altavista.net>
hcp-wismar	686/tcp	Hardware Control Protocol Wismar
hcp-wismar	686/udp	Hardware Control Protocol Wismar
#		David Merchant <d.f.merchant@livjm.ac.uk>
asipregistry	687/tcp	asipregistry
asipregistry	687/udp	asipregistry
#		Erik Sea <sea@apple.com>
realm-rusd	688/tcp	REALM-RUSD
realm-rusd	688/udp	REALM-RUSD
#		Jerry Knight <jknight@realminfo.com>
nmap	689/tcp	NMAP
nmap	689/udp	NMAP
#		Peter Dennis Bartok <peter@novonyx.com>
vatp	690/tcp	VATP
vatp	690/udp	VATP
#		Atica Software <comercial@aticasoft.es>
msexch-routing	691/tcp	MS Exchange Routing
msexch-routing	691/udp	MS Exchange Routing
#		David Lemson <dlemson@microsoft.com>
hyperwave-isp	692/tcp	Hyperwave-ISP
hyperwave-isp	692/udp	Hyperwave-ISP
#		Gerald Mesaric <gmesaric@hyperwave.com>
connendp	693/tcp	connendp
connendp	693/udp	connendp
#		Ronny Bremer <rbremer@future-gate.com>
ha-cluster	694/tcp	ha-cluster
ha-cluster	694/udp	ha-cluster
#		Alan Robertson <alanr@unix.sh>
ieee-mms-ssl	695/tcp	IEEE-MMS-SSL
ieee-mms-ssl	695/udp	IEEE-MMS-SSL
#		Curtis Anderson <ecanderson@turbolinux.com>
rushd	696/tcp	RUSHD
rushd	696/udp	RUSHD
#		Greg Ercolano <erco@netcom.com>
uuidgen	697/tcp	UUIDGEN
uuidgen	697/udp	UUIDGEN
#		James Falkner <james.falkner@sun.com>
olsr	698/tcp	OLSR
olsr	698/udp	OLSR
#		Thomas Clausen <thomas.clausen@inria.fr>
accessnetwork	699/tcp	Access Network
accessnetwork	699/udp	Access Network
#		Yingchun Xu <Yingchun_Xu@3com.com>
epp	700/tcp	Extensible Provisioning Protocol
epp	700/udp	Extensible Provisioning Protocol
#		RFC-ietf-provreg-epp-tcp-06.txt

```
#          701-703      Unassigned
elcsd     704/tcp      errlog copy/server daemon
elcsd     704/udp      errlog copy/server daemon
agentx    705/tcp      AgentX
agentx    705/udp      AgentX
#          Bob Natale <natale@acec.com>
silc      706/tcp      SILC
silc      706/udp      SILC
#          Pekka Riikonen <priikone@poseidon.pspt.fi>
borland-dsj 707/tcp      Borland DSJ
borland-dsj 707/udp      Borland DSJ
#          Gerg Cole <gcole@corp.borland.com>
#          Unassigned
708
entrust-kmsh 709/tcp      Entrust Key Management Service Handler
entrust-kmsh 709/udp      Entrust Key Management Service Handler
entrust-ash  710/tcp      Entrust Administration Service Handler
entrust-ash  710/udp      Entrust Administration Service Handler
#          Peter Whittaker <pww@entrust.com>
cisco-tdp  711/tcp      Cisco TDP
cisco-tdp  711/udp      Cisco TDP
#          Bruce Davie <bsd@cisco.com>
#          Unassigned
712-728
netviewdm1 729/tcp      IBM NetView DM/6000 Server/Client
netviewdm1 729/udp      IBM NetView DM/6000 Server/Client
netviewdm2 730/tcp      IBM NetView DM/6000 send/tcp
netviewdm2 730/udp      IBM NetView DM/6000 send/tcp
netviewdm3 731/tcp      IBM NetView DM/6000 receive/tcp
netviewdm3 731/udp      IBM NetView DM/6000 receive/tcp
#          Philippe Binet (phbinet@vnet.IBM.COM)
#          Unassigned
732-740
netgw      741/tcp      netGW
netgw      741/udp      netGW
#          Oliver Korfmacher (okorf@netcs.com)
netrcs     742/tcp      Network based Rev. Cont. Sys.
netrcs     742/udp      Network based Rev. Cont. Sys.
#          Gordon C. Galligher <gorpong@ping.chi.il.us>
#          Unassigned
743
flexlm     744/tcp      Flexible License Manager
flexlm     744/udp      Flexible License Manager
#          Matt Christiano
#          <globes@matt@oliveb.atc.olivetti.com>
#          Unassigned
745-746
fujitsu-dev 747/tcp      Fujitsu Device Control
fujitsu-dev 747/udp      Fujitsu Device Control
ris-cm     748/tcp      Russell Info Sci Calendar Manager
ris-cm     748/udp      Russell Info Sci Calendar Manager
kerberos-adm 749/tcp      kerberos administration
kerberos-adm 749/udp      kerberos administration
rfile      750/tcp
loadav     750/udp
kerberos-iv 750/udp      kerberos version iv
#          Martin Hamilton <martin@mrrl.lut.as.uk>
```

## Appendix C • Well-Known TCP/IP Port Numbers

441

pump	751/tcp	
pump	751/udp	
qrh	752/tcp	
qrh	752/udp	
rrh	753/tcp	
rrh	753/udp	
tell	754/tcp	send
tell	754/udp	send
#		Josyula R. Rao <jrrao@watson.ibm.com>
#	755-756	Unassigned
nlogin	758/tcp	
nlogin	758/udp	
con	759/tcp	
con	759/udp	
ns	760/tcp	
ns	760/udp	
rx	761/tcp	
rx	761/udp	
quotad	762/tcp	
quotad	762/udp	
cycleserv	763/tcp	
cycleserv	763/udp	
omserv	764/tcp	
omserv	764/udp	
webster	765/tcp	
webster	765/udp	
#		Josyula R. Rao <jrrao@watson.ibm.com>
#	766	Unassigned
phonebook	767/tcp	phone
phonebook	767/udp	phone
#		Josyula R. Rao <jrrao@watson.ibm.com>
#	768	Unassigned
vid	769/tcp	
vid	769/udp	
cadlock	770/tcp	
cadlock	770/udp	
rtip	771/tcp	
rtip	771/udp	
cycleserv2	772/tcp	
cycleserv2	772/udp	
submit	773/tcp	
notify	773/udp	
rpasswd	774/tcp	
acmaint_dbd	774/udp	
entomb	775/tcp	
acmaint_transd	775/udp	
wpages	776/tcp	
wpages	776/udp	
#		Josyula R. Rao <jrrao@watson.ibm.com>
multiling-http	777/tcp	Multiling HTTP
multiling-http	777/udp	Multiling HTTP
#		Alejandro Bonet <babel@ctv.es>

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#           778-779      Unassigned
wpgs       780/tcp
wpgs       780/udp
#
#           781-785      Unassigned
#           786          Unassigned (Removed 2002-05-08)
#           787          Unassigned (Removed 2002-10-08)
#           788-799      Unassigned
mdbs_daemon 800/tcp
mdbs_daemon 800/udp
device     801/tcp
device     801/udp
#           802-809      Unassigned
fcp-udp    810/tcp      FCP
fcp-udp    810/udp      FCP Datagram
#           Paul Whittemore <paul@softarc.com>
#           811-827      Unassigned
itm-mcell-s 828/tcp      itm-mcell-s
itm-mcell-s 828/udp      itm-mcell-s
#           Miles O'Neal <meo@us.itmasters.com>
pkix-3-ca-ra 829/tcp      PKIX-3 CA/RA
pkix-3-ca-ra 829/udp      PKIX-3 CA/RA
#           Carlisle Adams <Cadams@entrust.com>
#           830-846      Unassigned
dhcp-failover2 847/tcp      dhcp-failover 2
dhcp-failover2 847/udp      dhcp-failover 2
#           Bernard Volz <volz@ipworks.com>
gdoi       848/tcp      GDOI
gdoi       848/udp      GDOI
#           RFC-ietf-msec-gdoi-07.txt
#           849-859      Unassigned
iscsi      860/tcp      iSCSI
iscsi      860/udp      iSCSI
#           RFC-draft-ietf-ips-iscsi-20.txt
#           861-872      Unassigned
rsync      873/tcp      rsync
rsync      873/udp      rsync
#           Andrew Tridge <tridge@samba.anu.edu.au>
#           874-885      Unassigned
iclnet-locate 886/tcp      ICL coNETion locate server
iclnet-locate 886/udp      ICL coNETion locate server
#           Bob Lyon <bl@oasis.icl.co.uk>
iclnet_svinfo 887/tcp      ICL coNETion server info
iclnet_svinfo 887/udp      ICL coNETion server info
#           Bob Lyon <bl@oasis.icl.co.uk>
accessbuilder 888/tcp      AccessBuilder
accessbuilder 888/udp      AccessBuilder
#           Steve Sweeney <Steven_Sweeney@3mail.3com.com>
# The following entry records an unassigned but widespread use
cddbp      888/tcp      CD Database Protocol
#           Steve Scherf <steve@moonsoft.com>
#

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## Appendix C • Well-Known TCP/IP Port Numbers

443

#	889-899	Unassigned
omginitialrefs	900/tcp	OMG Initial Refs
omginitialrefs	900/udp	OMG Initial Refs
#		Christian Callsen
		<Christian.Callsen@eng.sun.com>
smpnameres	901/tcp	SMPNAMERES
smpnameres	901/udp	SMPNAMERES
#		Leif Ekblad <leif@rdos.net>
ideafarm-chat	902/tcp	IDEAFARM-CHAT
ideafarm-chat	902/udp	IDEAFARM-CHAT
ideafarm-catch	903/tcp	IDEAFARM-CATCH
ideafarm-catch	903/udp	IDEAFARM-CATCH
#		Wo'o Ideafarm <l@ideafarm.com>
#	904-910	Unassigned
xact-backup	911/tcp	xact-backup
xact-backup	911/udp	xact-backup
#		Bill Carroll <billc@exactlabs.com>
apex-mesh	912/tcp	APEX relay-relay service
apex-mesh	912/udp	APEX relay-relay service
apex-edge	913/tcp	APEX endpoint-relay service
apex-edge	913/udp	APEX endpoint-relay service
#		[RFC3340]
#	914-988	Unassigned
ftps-data	989/tcp	ftp protocol, data, over TLS/SSL
ftps-data	989/udp	ftp protocol, data, over TLS/SSL
ftps	990/tcp	ftp protocol, control, over TLS/SSL
ftps	990/udp	ftp protocol, control, over TLS/SSL
#		Christopher Allen <ChristopherA@consensus.com>
nas	991/tcp	Netnews Administration System
nas	991/udp	Netnews Administration System
#		Vera Heinau <heinau@fu-berlin.de>
#		Heiko Schlichting <heiko@fu-berlin.de>
telnets	992/tcp	telnet protocol over TLS/SSL
telnets	992/udp	telnet protocol over TLS/SSL
imaps	993/tcp	imap4 protocol over TLS/SSL
imaps	993/udp	imap4 protocol over TLS/SSL
ircs	994/tcp	irc protocol over TLS/SSL
ircs	994/udp	irc protocol over TLS/SSL
#		Christopher Allen <ChristopherA@consensus.com>
pop3s	995/tcp	pop3 protocol over TLS/SSL (was spop3)
pop3s	995/udp	pop3 protocol over TLS/SSL (was spop3)
#		Gordon Mangione <gordm@microsoft.com>
vsinet	996/tcp	vsinet
vsinet	996/udp	vsinet
#		Rob Juergens <robj@vsi.com>
maitrd	997/tcp	
maitrd	997/udp	
busboy	998/tcp	
puparp	998/udp	
garcon	999/tcp	
applix	999/udp	Applix ac



```
puprouter      999/tcp
puprouter      999/udp
cadlock2       1000/tcp
cadlock2       1000/udp
#              1001-1009  Unassigned
#              1008/udp   Possibly used by Sun Solaris????
surf           1010/tcp     surf
surf           1010/udp     surf
#              Joseph Geer <jgeer@peapod.com>
#              1011-1022  Reserved
#              1023/tcp   Reserved
#              1023/udp   Reserved
#              IANA <iana@iana.org>
```

