

IPv4 Multicast Address Space Registry

Last Updated

2012-08-28

Experts

Stig Venaas

Note

Host Extensions for IP Multicasting [RFC1112] specifies the extensions required of a host implementation of the Internet Protocol (IP) to support multicasting. The multicast addresses are in the range 224.0.0.0 through 239.255.255.255. Address assignments are listed below.

The range of addresses between 224.0.0.0 and 224.0.0.255, inclusive, is reserved for the use of routing protocols and other low-level topology discovery or maintenance protocols, such as gateway discovery and group membership reporting. Multicast routers should not forward any multicast datagram with destination addresses in this range, regardless of its TTL.

This registry is also available in [plain text](#).

Registries included below

- [Local Network Control Block \(224.0.0.0 - 224.0.0.255 \(224.0.0/24\)\)](#)
- [Internetwork Control Block \(224.0.1.0 - 224.0.1.255 \(224.0.1/24\)\)](#)
- [AD-HOC Block I \(224.0.2.0 - 224.0.255.255\)](#)
- [RESERVED \(224.1.0.0-224.1.255.255 \(224.1/16\)\)](#)
- [SDP/SAP Block \(224.2.0.0-224.2.255.255 \(224.2/16\)\)](#)
- [AD-HOC Block II \(224.3.0.0-224.4.255.255 \(224.3/16, 224.4/16\)\)](#)
- [RESERVED \(224.5.0.0-224.251.255.255 \(251 /16s\)\)](#)
- [DIS Transient Groups 224.252.0.0-224.255.255.255 \(224.252/14\)\)](#)
- [RESERVED \(225.0.0.0-231.255.255.255 \(7 /8s\)\)](#)
- [Source-Specific Multicast Block \(232.0.0.0-232.255.255.255 \(232/8\)\)](#)
- [AD-HOC Block III \(233.252.0.0-233.255.255.255 \(233.252/14\)\)](#)
- [GLOP Block](#)
- [AD-HOC Block III](#)
- [Unicast-Prefix-based IPv4 Multicast Addresses](#)
- [Scoped Multicast Ranges](#)
- [Relative Addresses used with Scoped Multicast Addresses](#)

Local Network Control Block (224.0.0.0 - 224.0.0.255 (224.0.0/24))

Registration Procedures






Expert Review, IESG Approval, or Standards Action






Reference

[\[RFC5771\]](#)

Note

(*) It is only appropriate to use these values in explicitly-configured experiments; they MUST NOT be shipped as defaults in implementations. See [\[RFC3692\]](#) for details.

Address(s) 	Description 	References 	Date Registered 	Last Reviewed 
224.0.0.0	Base Address (Reserved)	[RFC1112] [Jon_Postel]		
224.0.0.1	All Systems on this Subnet	[RFC1112] [Jon_Postel]		
224.0.0.2	All Routers on this Subnet	[Jon_Postel]		
224.0.0.3	Unassigned	[Jon_Postel]		
224.0.0.4	DVMRP Routers	[RFC1075] [Jon_Postel]		
224.0.0.5	OSPFIGP OSPFIGP All Routers	[RFC2328] [OSPF_WG_Chairs]		
224.0.0.6	OSPFIGP OSPFIGP Designated Routers	[RFC2328] [OSPF_WG_Chairs]		
224.0.0.7	ST Routers	[RFC1190] [Karen_Seo]		
224.0.0.8	ST Hosts	[RFC1190] [Karen_Seo]		
224.0.0.9	RIP2 Routers	[RFC1723] [Gary_S_Malkin]		
224.0.0.10	IGRP Routers	[Dino_Farinacci]	1996-03-01	
224.0.0.11	Mobile-Agents	[[Bill Simpson]]		
224.0.0.12	DHCP Server / Relay Agent	[[Unknown]]		
224.0.0.13	All PIM Routers	[Dino_Farinacci]	1996-03-01	
224.0.0.14	RSVP-ENCAPSULATION	[Bob_Braden]	1996-04-01	
224.0.0.15	all-cbt-routers	[Tony_Ballardie] [RFC2189]	1997-02-01	
224.0.0.16	designated-sbm	[Fred_Baker]	1997-06-01	
224.0.0.17	all-sbms	[Fred_Baker]	1997-06-01	
224.0.0.18	VRRP	[RFC3768] [RFC5798]		
224.0.0.19	IPAIL1ISs	[Tony_Przygienda]	1999-10-01	
224.0.0.20	IPAIL2ISs	[Tony_Przygienda]	1999-10-01	
224.0.0.21	IPAILIntermediate Systems	[Tony_Przygienda]	1999-10-01	
224.0.0.22	IGMP	[Steve_Deering]	1999-10-01	
224.0.0.23	GLOBECAST-ID	[Piers_Scannell]	2000-03-01	
224.0.0.24	OSPFIGP-TE	[RFC4973]		
224.0.0.25	router-to-switch	[Ishan_Wu]	2000-03-01	

Address(s) 	Description 	References 	Date Registered 	Last Reviewed 
224.0.0.26	Unassigned	[Jon Postel]		
224.0.0.27	AI MPP Hello	[Brian Martinicky]	2000-03-01	
224.0.0.28	ETC Control	[Steve Polishinski]	2000-03-01	
224.0.0.29	GE-FANUC	[Ian Wacey]	2000-05-01	
224.0.0.30	indigo-vhdp	[Colin Caughie]	2000-05-01	
224.0.0.31	shinbroadband	[Sakon Kittivatcharapong]	2000-05-01	
224.0.0.32	digistar	[Brian Kerkan]	2000-05-01	
224.0.0.33	ff-system-management	[Dave Glanzer]	2003-03-01	
224.0.0.34	pt2-discover	[Ralph Kammerlander]	2000-06-01	
224.0.0.35	DXCLUSTER	[Dirk Koopman]	2000-07-01	
224.0.0.36	DTCP Announcement	[Patrick Cipiere]	2001-01-01	
224.0.0.37-224.0.0.68	zeroconfaddr (renew 12/02)	[Erik Guttman]	2001-12-01	
224.0.0.69-224.0.0.100	Reserved	[IANA]		
224.0.0.101	cisco-nhap	[Mark Bakke]	2001-12-01	
224.0.0.102	HSRP	[Ian Wilson]	2001-12-01	
224.0.0.103	MDAP	[Johan Deleu]	2002-02-01	
224.0.0.104	Nokia MC CH	[Morteza Kalhour]	2002-10-01	
224.0.0.105	ff-lr-address	[Dave Glanzer]	2003-03-01	
224.0.0.106	All-Snoopers	[RFC4286]		
224.0.0.107	PTP-pdelay	[http://ieee1588.nist.gov/][Kang Lee]	2007-02-02	
224.0.0.108	Saratoga	[Lloyd Wood]	2007-08-30	2011-03-17
224.0.0.109	LL-MANET-Routers	[RFC5498]		2011-02-23
224.0.0.110	IGRS	[Xiaoyu Zhou]	2009-01-20	
224.0.0.111	Babel	[RFC6126]		
224.0.0.112	MMA Device Discovery	[Tom White]	2011-11-02	
224.0.0.113	AllJoyn	[Craig Dowell]	2011-11-18	
224.0.0.114	Inter RFID Reader Protocol	[Wayne Wenyu Liu]	2012-06-12	
224.0.0.115-224.0.0.250	Unassigned	[Jon Postel]		
224.0.0.251	mDNS	[RFC-cheshire-dnsext-multicastdns-15]	2000-04-01	
224.0.0.252	Link-local Multicast Name Resolution	[RFC4795]		2011-03-17
224.0.0.253	Teredo	[RFC4380]		2010-02-14
224.0.0.254	RFC3692-style Experiment (*)	[RFC4727]		
224.0.0.255	Unassigned	[Jon Postel]		






Internetwork Control Block (224.0.1.0 - 224.0.1.255 (224.0.1/24))





Registration Procedures


Expert Review, IESG Approval, or Standards Action






Reference

[RFC5771]

Address(s) 	Description 	References 	Date Registered 	Last Reviewed 
224.0.1.0	VMTP Managers Group	[RFC1045][Dave Cheriton]		
224.0.1.1	NTP Network Time Protocol	[RFC1119][RFC5905][David Mills]		
224.0.1.2	SGI-Dogfight	[Andrew Cherenon]		
224.0.1.3	Rwhod	[Steve Deering 2]		
224.0.1.4	VNP	[Dave Cheriton]		
224.0.1.5	Artificial Horizons - Aviator	[Bruce Factor]		
224.0.1.6	NSS - Name Service Server	[Bill Schilit]		
224.0.1.7	AUDIONEWS - Audio News Multicast	[Martin Forssen]		
224.0.1.8	SUN NIS+ Information Service	[Chuck McManis]		
224.0.1.9	MTP Multicast Transport Protocol	[Susie Armstrong]		
224.0.1.10	IETF-1-LOW-AUDIO	[Steve Casner]		
224.0.1.11	IETF-1-AUDIO	[Steve Casner]		
224.0.1.12	IETF-1-VIDEO	[Steve Casner]		
224.0.1.13	IETF-2-LOW-AUDIO	[Steve Casner]		
224.0.1.14	IETF-2-AUDIO	[Steve Casner]		
224.0.1.15	IETF-2-VIDEO	[Steve Casner]		
224.0.1.16	MUSIC-SERVICE			
224.0.1.17	SEANET-TELEMETRY			
224.0.1.18	SEANET-IMAGE			
224.0.1.19	MLOADD	[Bob Braden]	1996-04-01	
224.0.1.20	any private experiment	[Jon Postel]		
224.0.1.21	DVMRP on MOSPF	[John Moy]		
224.0.1.22	SVRLOC	[John Veizades]	1995-05-01	
224.0.1.23	XINGTV	[Howard Gordon]		
224.0.1.24	microsoft-ds	[<arnoldm@microsoft.com>]		
224.0.1.25	nbc-pro	[<bloomer@birch.crd.ge.com>]		
224.0.1.26	nbc-pfn	[<bloomer@birch.crd.ge.com>]		

Address(s) 	Description 	References 	Date Registered 	Last Reviewed 
224.0.1.27	lmsc-calren-1	[Yea Uang]	1994-11-01	
224.0.1.28	lmsc-calren-2	[Yea Uang]	1994-11-01	
224.0.1.29	lmsc-calren-3	[Yea Uang]	1994-11-01	
224.0.1.30	lmsc-calren-4	[Yea Uang]	1994-11-01	
224.0.1.31	ampr-info	[Rob Janssen]	1995-01-01	
224.0.1.32	mtrace	[Steve Casner 2]	1995-01-01	
224.0.1.33	RSVP-encap-1	[Bob Braden]	1996-04-01	
224.0.1.34	RSVP-encap-2	[Bob Braden]	1996-04-01	
224.0.1.35	SVRLOC-DA	[John Veizades]	1995-05-01	
224.0.1.36	rln-server	[Brian Kean]	1995-08-01	
224.0.1.37	proshare-mc	[Mark Lewis]	1995-10-01	
224.0.1.38	unassigned			
224.0.1.39	cisco-rp-announce	[Dino Farinacci]	1996-03-01	
224.0.1.40	cisco-rp-discovery	[Dino Farinacci]	1996-03-01	
224.0.1.41	gatekeeper	[Jim Toga]	1996-05-01	
224.0.1.42	iberiagames	[Jose Luis Marochio]	1996-07-01	
224.0.1.43	nwn-discovery	[Arnoud Zwemmer]	1996-11-01	
224.0.1.44	nwn-adaptor	[Arnoud Zwemmer]	1996-11-01	
224.0.1.45	isma-1	[Stephen Dunne]	1997-01-01	
224.0.1.46	isma-2	[Stephen Dunne]	1997-01-01	
224.0.1.47	telerate	[Wenjie Peng]	1997-01-01	
224.0.1.48	ciena	[Mike Rodbell]	1997-01-01	
224.0.1.49	dcap-servers	[RFC2114]		
224.0.1.50	dcap-clients	[RFC2114]		
224.0.1.51	mcntp-directory	[Heiko Rupp]	1997-01-01	
224.0.1.52	mbone-vcr-directory	[Wieland Holdfelder]	1997-01-01	
224.0.1.53	heartbeat	[Louis Mamakos]	1997-03-01	
224.0.1.54	sun-mc-grp	[Michael DeMoney]	1997-04-01	
224.0.1.55	extended-sys	[David Poole]	1997-04-01	
224.0.1.56	pdmcs	[Paul Wissenbach]	1997-06-01	
224.0.1.57	tns-adv-multi	[Jerome Albin]	1997-06-01	
224.0.1.58	vcals-dmu	[Masato Shindoh]	1997-08-01	
224.0.1.59	zuba	[Dan Jackson]	1997-09-01	
224.0.1.60	hp-device-disc	[Shivaun Albright]	1997-07-01	
224.0.1.61	tms-production	[Asad Gilani]	1997-07-01	
224.0.1.62	sunscalar	[Terry Gibson]	1997-08-01	
224.0.1.63	mmtp-poll	[Bryan Costales]	1997-09-01	
224.0.1.64	compaq-peer	[Victor Volpe]	1997-10-01	
224.0.1.65	iapp	[Bob Meier]	1997-12-01	
224.0.1.66	multihasc-com	[Darcy Brockbank]	1997-12-01	
224.0.1.67	serv-discovery	[Chas Honton]	1997-12-01	
224.0.1.68	mdhcpdisover	[RFC2730]		
224.0.1.69	MMP-bundle-discovery1	[Gary Scott Malkin]	1998-02-01	
224.0.1.70	MMP-bundle-discovery2	[Gary Scott Malkin]	1998-02-01	
224.0.1.71	XYPOINT DGPS Data Feed	[Cliff Green]	1998-02-01	
224.0.1.72	GilatSkySurfer	[Yossi Gal]	1998-02-01	
224.0.1.73	SharesLive	[Shane Rowatt]	1997-03-01	
224.0.1.74	NorthernData	[[Sheers]]		
224.0.1.75	SIP	[[Schulzrinne]]		
224.0.1.76	IAPP	[Henri Moelard]	1998-03	
224.0.1.77	AGENTVIEW	[Ram Iyer]	1998-03-01	
224.0.1.78	Tibco Multicast1	[Raymond Shum]	1998-04-01	
224.0.1.79	Tibco Multicast2	[Raymond Shum]	1998-04-01	
224.0.1.80	MSP	[Evan Caves]	1998-06-01	
224.0.1.81	OTT (One-way Trip Time)	[Beverly Schwartz]	1998-06-01	
224.0.1.82	TRACKICKER	[Alan Novick]	1998-08-01	
224.0.1.83	dtm-mc	[Bob Gaddie]	1998-08-01	
224.0.1.84	jini-announcement	[Bob Scheifler]	1998-08-01	
224.0.1.85	jini-request	[Bob Scheifler]	1998-08-01	
224.0.1.86	sde-discovery	[Peter Aronson]	1998-08-01	
224.0.1.87	DirecPC-SI	[Doug Dillon]	1998-08-01	
224.0.1.88	B1RMonitor	[Ed Purkiss]	1998-09-01	
224.0.1.89	3Com-AMP3 dRMON	[Prakash Banthia]	1998-09-01	
224.0.1.90	imFtmSvc	[Zia Bhatti]	1998-09-01	
224.0.1.91	NQDS4	[Michael Rosenberg]	1998-09-01	
224.0.1.92	NQDS5	[Michael Rosenberg]	1998-09-01	
224.0.1.93	NQDS6	[Michael Rosenberg]	1998-09-01	
224.0.1.94	NLVL12	[Michael Rosenberg]	1998-09-01	
224.0.1.95	NTDS1	[Michael Rosenberg]	1998-09-01	
224.0.1.96	NTDS2	[Michael Rosenberg]	1998-09-01	
224.0.1.97	NODSA	[Michael Rosenberg]	1998-09-01	
224.0.1.98	NODSB	[Michael Rosenberg]	1998-09-01	
224.0.1.99	NODSC	[Michael Rosenberg]	1998-09-01	

Address(s) 	Description 	References 	Date Registered 	Last Reviewed 
224.0.1.100	NODSD	[Michael Rosenberg]	1998-09-01	
224.0.1.101	NQDS4R	[Michael Rosenberg]	1998-09-01	
224.0.1.102	NQDS5R	[Michael Rosenberg]	1998-09-01	
224.0.1.103	NQDS6R	[Michael Rosenberg]	1998-09-01	
224.0.1.104	NLVL12R	[Michael Rosenberg]	1998-09-01	
224.0.1.105	NTDS1R	[Michael Rosenberg]	1998-09-01	
224.0.1.106	NTDS2R	[Michael Rosenberg]	1998-09-01	
224.0.1.107	NODSAR	[Michael Rosenberg]	1998-09-01	
224.0.1.108	NODSBR	[Michael Rosenberg]	1998-09-01	
224.0.1.109	NODSCR	[Michael Rosenberg]	1998-09-01	
224.0.1.110	NODSDR	[Michael Rosenberg]	1998-09-01	
224.0.1.111	MRM	[Liming Wei]	1998-10-01	
224.0.1.112	TVE-FILE	[Dean Blackketter]	1998-11-01	
224.0.1.113	TVE-ANNOUNCE	[Dean Blackketter]	1998-11-01	
224.0.1.114	Mac Srv Loc	[Bill Woodcock]	1998-11-01	
224.0.1.115	Simple Multicast	[Jon Crowcroft]	1998-11-01	
224.0.1.116	SpectraLinkGW	[Mark Hamilton]	1998-11-01	
224.0.1.117	dieboldmcast	[Gene Marsh]	1998-11-01	
224.0.1.118	Tivoli Systems	[Jon Gabriel]	1998-12-01	
224.0.1.119	pq-lic-mcast	[Bob Sledge]	1998-12-01	
224.0.1.120	SPRYWARE LLC	[Michael Kreutzjans]	2007-03-01	
224.0.1.121	Pipesplatform	[Daniel Dissett]	1998-12-01	
224.0.1.122	LiebDevMgmg-DM	[Mike Velten]	1999-01-01	
224.0.1.123	TRIBALVOICE	[Nigel Thompson]	1999-01-01	
224.0.1.124	Unassigned (Retracted 1/29/01)			
224.0.1.125	PolyCom Relay1	[[Coutiere]]		
224.0.1.126	Infront Multi1	[Morten Lindeman]	1999-03-01	
224.0.1.127	XRX DEVICE DISC	[Michael Wang]	1999-03-01	
224.0.1.128	CNN	[Joel Lynch]	1999-04-01	
224.0.1.129	PTP-primary	http://ieee1588.nist.gov/ [Kang Lee]	2007-02-02	
224.0.1.130	PTP-alternate1	http://ieee1588.nist.gov/ [Kang Lee]	2007-02-02	
224.0.1.131	PTP-alternate2	http://ieee1588.nist.gov/ [Kang Lee]	2007-02-02	
224.0.1.132	PTP-alternate3	http://ieee1588.nist.gov/ [Kang Lee]	2007-02-02	
224.0.1.133	ProCast	[Shai Revzen]	1999-04-01	
224.0.1.134	3Com Discp	[Peter White]	1999-04-01	
224.0.1.135	CS-Multicasting	[Nedelcho Stanev]	1999-05-01	
224.0.1.136	TS-MC-1	[Darrell Sveistrup]	1999-06-01	
224.0.1.137	Make Source	[Anthony Daga]	1999-06-01	
224.0.1.138	Teleborsa	[Paolo Strazzera]	1999-06-01	
224.0.1.139	SUMACfg	[Walter Wallach]	1999-07-01	
224.0.1.140	capwap-ac	[RFC5415]		
224.0.1.141	DHCP-SERVERS	[Eric Hall]	1999-10-01	
224.0.1.142	CN Router-LL	[Ian Armitage]	1999-08-01	
224.0.1.143	EMWIN	[Antonio Querubin]	2008-02-04	
224.0.1.144	Alchemy Cluster	[Stacey O'Rourke] [Stacey O'Rourke 2]	1999-08-01	
224.0.1.145	Satcast One	[Julian Nevell]	1999-08-01	
224.0.1.146	Satcast Two	[Julian Nevell]	1999-08-01	
224.0.1.147	Satcast Three	[Julian Nevell]	1999-08-01	
224.0.1.148	Intline	[Robert Sliwinski]	2000-02-01	
224.0.1.149	8x8 Multicast	[Mike Roper]	1999-09-01	
224.0.1.150	Unassigned	[Jon Postel]		
224.0.1.151	Intline-1	[Robert Sliwinski]	2000-02-01	
224.0.1.152	Intline-2	[Robert Sliwinski]	2000-02-01	
224.0.1.153	Intline-3	[Robert Sliwinski]	2000-02-01	
224.0.1.154	Intline-4	[Robert Sliwinski]	2000-02-01	
224.0.1.155	Intline-5	[Robert Sliwinski]	2000-02-01	
224.0.1.156	Intline-6	[Robert Sliwinski]	2000-02-01	
224.0.1.157	Intline-7	[Robert Sliwinski]	2000-02-01	
224.0.1.158	Intline-8	[Robert Sliwinski]	2000-02-01	
224.0.1.159	Intline-9	[Robert Sliwinski]	2000-02-01	
224.0.1.160	Intline-10	[Robert Sliwinski]	2000-02-01	
224.0.1.161	Intline-11	[Robert Sliwinski]	2000-02-01	
224.0.1.162	Intline-12	[Robert Sliwinski]	2000-02-01	
224.0.1.163	Intline-13	[Robert Sliwinski]	2000-02-01	
224.0.1.164	Intline-14	[Robert Sliwinski]	2000-02-01	
224.0.1.165	Intline-15	[Robert Sliwinski]	2000-02-01	
224.0.1.166	marratech-cc	[Peter Parnes]	2000-02-01	
224.0.1.167	EMS-InterDev	[Stephen T Lyda]	2000-02-01	
224.0.1.168	itb301	[Bodo Rueskamp]	2000-03-01	
224.0.1.169	rtv-audio	[Chris Adams]	2000-07-01	
224.0.1.170	rtv-video	[Chris Adams]	2000-07-01	
224.0.1.171	HAVI-Sim	[Stephan Wasserroth]	2000-07-01	

Address(s) 	Description 	References 	Date Registered 	Last Reviewed 
224.0.1.172	Nokia Cluster	[Stacey O Rourke] [Stacey O Rourke 2]	1999-08-01	
224.0.1.173	host-request	[Keith Thompson]	2001-06-01	
224.0.1.174	host-announce	[Keith Thompson]	2001-06-01	
224.0.1.175	ptk-cluster	[Robert Hodgson]	2001-12-01	
224.0.1.176	Proxim Protocol	[Gajendra Shukla]	2002-02-01	
224.0.1.177	Gemtek Systems	[Alex Lee]	2002-10-01	
224.0.1.178	IEEE IAPP	[Stuart Kerry]	2003-01-01	
224.0.1.179	1451_Dot5_802_Discovery	[Ryon Coleman]	2006-04-11	
224.0.1.180	1451_Dot5_802_Group_1	[Ryon Coleman]	2006-04-11	
224.0.1.181	1451_Dot5_802_Group_2	[Ryon Coleman]	2006-04-11	
224.0.1.182	1451_Dot5_802_Group_3	[Ryon Coleman]	2006-04-11	
224.0.1.183	1451_Dot5_802_Group_4	[Ryon Coleman]	2006-04-11	
224.0.1.184	VFSDP	[Adam Yellen]	2007-03-06	
224.0.1.185	ASAP	[RFC5352]		
224.0.1.186	SL-MANET-ROUTERS	[RFC6621]		
224.0.1.187-224.0.1.255	Unassigned			

AD-HOC Block I (224.0.2.0 - 224.0.255.255)

Registration Procedures

Expert Review, IESG Approval, or Standards Action

Reference

[\[RFC5771\]](#)

Address(s) 	Description 	References 	Date Registered 	Last Reviewed 
224.0.2.0	Unassigned			
224.0.2.1	"rwho" Group (BSD) (unofficial)	[Jon Postel]		
224.0.2.2	SUN RPC PMAPPROC_CALLIT	[Brendan Eic]		
224.0.2.3	EPSON-disc-set	[SEIKO EPSON Corp]	2005-01-01	
224.0.2.4	All C1222 Nodes	[RFC6142]	2009-08-28	
224.0.2.5	Monitoring Discovery Protocol	[Alan Robertson]	2012-04-17	
224.0.2.6	BitSend MediaStreams	[Carl-Johan Sjöberg]	2012-04-25	
224.0.2.7-224.0.2.63	Unassigned			
224.0.2.64-224.0.2.95	Amex MDD Service	[Nabeel Madry]	1996-04	2007-07
224.0.2.96-224.0.2.127	BallisterNet	[Tom Ballister]	1997-07-01	
224.0.2.128-224.0.2.191	WOZ-Garage	[Douglas Marquardt]	1997-02-01	
224.0.2.192-224.0.2.255	SIAC MDD Market Service	[Mike Lamberg]	1997-02-01	
224.0.3.0-224.0.3.255	RFE Generic Service	[Daniel Steinber]		
224.0.4.0-224.0.4.255	RFE Individual Conferences	[Daniel Steinber]		
224.0.5.0-224.0.5.127	CDPD Groups	[[Bob Brenner]]		
224.0.5.128-224.0.5.191	SIAC Market Service	[Joan Cho]	1998-10-01	
224.0.5.192-224.0.5.255	SIAC NYSE Order PDP protocol	[Helen Chan]	2001-08-01	
224.0.6.0-224.0.6.127	Cornell ISIS Project	[[Tim Clark]]		
224.0.6.128-224.0.6.143	MoeSingh	[Moe Singh]	2009-09-24	
224.0.6.144-224.0.6.255	Unassigned	[IANA]		
224.0.7.0-224.0.7.255	Where-Are-You	[Bill Simpson]	1994-11-01	
224.0.8.0-224.0.8.255	UNASSIGNED		2011-05-20	
224.0.9.0-224.0.9.255	Invisible Worlds	[Carl Malamud]	1998-04-01	
224.0.10.0-224.0.10.255	DLSw Groups	[Choon Lee]	1996-04-01	
224.0.11.0-224.0.11.255	NCC.NET Audio	[David Rubin]	1996-08-01	
224.0.12.0-224.0.12.63	Microsoft and MSNBC	[Tom Blank]	1996-11-01	
224.0.13.0-224.0.13.255	WorldCom Broadcast Services	[Tony Barber]	1997-01-01	
224.0.14.0-224.0.14.255	NLANR	[Duane Wessels]	1997-02-01	
224.0.15.0-224.0.15.255	Agilent Technologies	[Ron van der Meulen]	1997-02-01	
224.0.16.0-224.0.16.255	XingNet	[Mika Uusitalo]	1997-04-01	
224.0.17.0-224.0.17.31	Mercantile & Commodity Exchange	[Asad Gilani]	1997-07-01	
224.0.17.32-224.0.17.63	NDQMD1	[Michael Rosenberg]	1999-03-01	
224.0.17.64-224.0.17.127	ODN-DTV	[Richard Hodges]	1999-03-01	
224.0.18.0-224.0.18.255	Dow Jones	[Wenjie Peng]	1997-01-01	
224.0.19.0-224.0.19.63	Walt Disney Company	[Scott Watson]	1997-08-01	
224.0.19.64-224.0.19.95	Cal Multicast	[Ed Moran]	1997-10-01	
224.0.19.96-224.0.19.127	Amex Market Service	[Nabeel Madry]	1997-10	2007-07
224.0.19.128-224.0.19.191	IIG Multicast	[Wayne Carr]	1997-12-01	
224.0.19.192-224.0.19.207	Metropol	[James Crawford]	1998-05-01	
224.0.19.208-224.0.19.239	Xenosience, Inc.	[Mary Timm]	1998-07-01	
224.0.19.240-224.0.19.255	MJDPM	[Matthew Straight]	2007-03-01	
224.0.20.0-224.0.20.63	MS-IP/TV	[Tony Wong]	1998-07-01	
224.0.20.64-224.0.20.127	Reliable Network Solutions	[Werner Vogels]	1998-08-01	
224.0.20.128-224.0.20.143	TRACKTICKER Group	[Alan Novick]	1998-08-01	
224.0.20.144-224.0.20.207	CNR Rebroadcast MCA	[Robert Sautter]	1999-08-01	

Address(s) 	Description 	References 	Date Registered 	Last Reviewed 
224.0.21.0-224.0.21.127	Talarian MCAST	[Geoff Mendal]	1999-01-01	
224.0.22.0-224.0.22.239	WORLD MCAST	[Ian Stewart]	1999-06-01	
224.0.22.240-224.0.22.255	Jones International	[Jim Ginsburg]	2007-10-31	
224.0.23.0	ECHONET	[Takeshi Saito]	2003-02-01	
224.0.23.1	Ricoh-device-ctrl	[Akihiro Nishida]	2003-02-01	
224.0.23.2	Ricoh-device-ctrl	[Akihiro Nishida]	2003-02-01	
224.0.23.3-224.0.23.10	Telefeed	[Wally Beddoe]	2003-04-01	
224.0.23.11	SpectraTalk	[Madhav Karhade]	2003-05-01	
224.0.23.12	EIBnet/IP	[Marc Goossens]	2003-07-01	
224.0.23.13	TVE-ANNOUNCE2	[Michael Dolan]	2003-10-01	
224.0.23.14	DvbServDisc	[Bert van Willigen]	2004-01-01	
224.0.23.15-224.0.23.31	MJDPM	[Matthew Straight]	2007-03-01	
224.0.23.32	Norman MCMP	[Kristian A Bognaes]	2004-02-01	
224.0.23.33	RRDP	[Tetsuo Hoshi]	2004-06-01	
224.0.23.34	AF_NA	[Bob Brzezinski]	2005-10-28	
224.0.23.35	AF_OPRA_NBBO	[Bob Brzezinski]	2005-10-28	
224.0.23.36	AF_OPRA_FULL	[Bob Brzezinski]	2005-10-28	
224.0.23.37	AF_NEWS	[Bob Brzezinski]	2005-10-28	
224.0.23.38	AF_NA_CHI	[Bob Brzezinski]	2005-10-28	
224.0.23.39	AF_OPRA_NBBO_CHI	[Bob Brzezinski]	2005-10-28	
224.0.23.40	AF_OPRA_FULL_CHI	[Bob Brzezinski]	2005-10-28	
224.0.23.41	AF_NEWS_CHI	[Bob Brzezinski]	2005-10-28	
224.0.23.42	Control for IP Video	[Nadine Guillaume]	2005-02-01	
224.0.23.43	acp-discovery	[Andy Belk]	2005-02-01	
224.0.23.44	acp-management	[Andy Belk]	2005-02-01	
224.0.23.45	acp-data	[Andy Belk]	2005-02-01	
224.0.23.46	oap-multicast	[Bryant Eastham]	2006-06-16	
224.0.23.47	AF_DOB_CHI	[Bob Brzezinski]	2005-10-28	
224.0.23.48	AF_OPRA_FULL2_CHI	[Bob Brzezinski]	2005-10-28	
224.0.23.49	AF_DOB	[Bob Brzezinski]	2005-10-28	
224.0.23.50	AF_OPRA_FULL2	[Bob Brzezinski]	2005-10-28	
224.0.23.51	Fairview	[Jim Lyle]	2006-08-07	
224.0.23.52	Amex Market Data	[Nabeel Madry]	2006-08-11	
224.0.23.53	MCP	[Tim DeBaillie]	2006-11-30	
224.0.23.54	ServDiscovery	[Paul Langille]	2007-01-17	
224.0.23.55	noaaport1	[Antonio Querubin]	2008-02-04	
224.0.23.56	noaaport2	[Antonio Querubin]	2008-02-04	
224.0.23.57	noaaport3	[Antonio Querubin]	2008-02-04	
224.0.23.58	noaaport4	[Antonio Querubin]	2008-02-04	
224.0.23.59	DigaciP7	[Jonathan Niedfeldt]	2008-02-22	
224.0.23.60	AtscSvcSig	[Jerry Whitaker]	2008-12-19	
224.0.23.61	SafetyNET p (potentially IGMPv1)	[Pilz]	2009-03-13	
224.0.23.62	BluemoonGamesMC	[Christopher Mettin]	2009-05-12	
224.0.23.63	iADT Discovery	[Paul Suhler]	2009-05-12	
224.0.23.64-224.0.23.80	Moneyline	[Guido Petronio]	2004-01-01	
224.0.23.81-224.0.23.127	Reserved (Moneyline)			
224.0.23.128-224.0.23.157	PHLX	[Michael Rosenberg]	2004-01-01	
224.0.23.158	VSCP	[Charles Tewiah]	2005-09-01	
224.0.23.159	LXI-EVENT	[Nick Barendt]	2005-11-04	
224.0.23.160	solera_lmca	[Mark Armstrong]	2006-02-09	
224.0.23.161	VBooster	[Alexander Pevzner]	2006-03-17	
224.0.23.162	cajo discovery	[John Catherino]	2006-03-17	
224.0.23.163	INTELLIDEN	[Jeff Schenk]	2006-03-31	
224.0.23.164	IceEDCP	[Oliver Lewis]	2006-07-11	
224.0.23.165	omasg	[Mark Lipford]	2006-07-11	
224.0.23.166	MEDIASTREAM	[Maurice Robberson]	2006-08-15	
224.0.23.167	Systech Mcast	[Dan Jakubiec]	2006-08-21	
224.0.23.168	tricon-system-management	[John Gabler]	2007-07-06	
224.0.23.169	MNET discovery	[Andy Crick]	2008-01-14	
224.0.23.170	CCNx (not for global routing)	[Simon Barber]	2009-09-24	
224.0.23.171	LLAFP	[Michael Lyle]	2009-11-11	
224.0.23.172	UFMP	[Albert Berlovitch]	2010-02-04	
224.0.23.173	PHILIPS-HEALTH	[Anthony Kandaya]	2010-02-26	
224.0.23.174	PHILIPS-HEALTH	[Anthony Kandaya]	2010-02-26	
224.0.23.175	QDP	[Kevin Gross]	2010-03-12	
224.0.23.176	CalAmp WCP	[Pierre Oliver]	2011-06-06	
224.0.23.177	AES discovery	[Kevin Gross 2]	2012-08-28	
224.0.23.178-224.0.23.191	Unassigned			
224.0.23.192-224.0.23.255	PINKOTC	[Sergey Shulgin]	2008-08-12	
224.0.24.0-224.0.24.127	AGSC UK VVs	[Andrew Rowley]	2006-06-09	
224.0.24.128-224.0.24.255	EM-MULTI	[Soren Martin Sorensen]	2006-08-07	
224.0.25.0-224.0.28.255	CME Market Data	[Sarunas Brakauskas]	2007-03-22	
224.0.29.0-224.0.30.255	Deutsche Boerse	[Jan Drwal]	2007-03-22	

Address(s)	Description	References	Date Registered	Last Reviewed
224.0.31.0-224.0.34.255	CME Market Data	[Sarunas Brakauskas]	2007-07-17	
224.0.35.0-224.0.35.255	M2S	[Itamar Gilad]	2007-08-31	
224.0.36.0-224.0.38.255	Unassigned			
224.0.39.0-224.0.40.255	CDAS	[Oyvind H Olsen]	2007-09-12	
224.0.41.0-224.0.41.255	NYSE-EURONEXT	[Pankaj Gupta]	2007-11-28	2011-02-15
224.0.42.0-224.0.45.255	MEDIAL	[Media Alliance JSC]	2008-01-15	
224.0.46.0-224.0.50.255	Deutsche Boerse	[Jan Drwal]	2008-01-25	
224.0.51.0-224.0.51.255	ALCOM-IPTV	[Jan Erik Eriksson]	2008-04-09	
224.0.52.0-224.0.53.255	NYSE-EURONEXT	[Ian Stevenson]	2008-07-23	
224.0.54.0-224.0.57.255	Get - BCN	[Arne Hvidsten]	2008-08-20	
224.0.58.0-224.0.61.255	NYSE-AMEX_L1_L2	[Frank Castillo]	2008-08-27	
224.0.62.0-224.0.62.255	BATS	[Andrew Brown]	2008-12-24	
224.0.63.0-224.0.63.255	BATS Trading	[Tim Gorsline]	2009-03-13	
224.0.64.0-224.0.67.255	NYSE Euronext	[Pankaj Gupta_2]	2009-03-13	2011-02-15
224.0.68.0-224.0.69.255	ISE	[Fabrice Albert]	2009-05-12	
224.0.70.0-224.0.71.255	NYSE-AB-UTP	[Sam Serrano]	2009-06-16	2011-03-01
224.0.72.0-224.0.72.255	TMX	[Michael Caravetta] [Boris Garber]	2009-08-28	
224.0.73.0-224.0.74.255	Direct Edge	[Javier Landin]	2009-08-28	
224.0.75.0-224.0.75.255	ISE	[Fabrice Albert]	2010-01-22	
224.0.76.0-224.0.76.255	NYSE-XDP	[Sam Serrano]	2010-02-26	2011-03-01
224.0.77.0-224.0.77.255	MD_NYSEEURONEXT	[Pankaj Gupta_2]	2010-02-26	
224.0.78.0-224.0.78.255	ALCOM-IPTV	[Jan Erik Eriksson]	2010-03-12	
224.0.79.0-224.0.81.255	ISE	[Fabrice Albert]	2010-08-24	
224.0.82.0-224.0.85.255	BATS Trading	[Tim Gorsline]	2011-01-31	
224.0.86.0-224.0.101.255	NYSE NMS OPRA	[Anthony Aste]	2011-02-10	
224.0.102.0-224.0.102.127	NYSE SYNTHETIC FEEDS	[Anthony Aste]	2011-04-13	
224.0.102.128-224.0.102.255	Unassigned			
224.0.103.0-224.0.104.255	MVS-IPTV	[Andrew Hoyos] [Adam DeMinter]	2011-04-20	
224.0.105.0-224.0.105.127	MIAX Multicast	[Ruben Hernandez]	2011-06-06	
224.0.105.128-224.0.105.255	Unassigned			
224.0.106.0-224.0.106.255	TMX	[Michael Caravetta] [Boris Garber]	2011-06-16	
224.0.107.0-224.0.108.255	Alpha Group	[Zaklina Petkovic]	2011-07-13	
224.0.109.0-224.0.110.255	Zaklina_Petkovic	[David Brett]	2011-10-25	
224.0.111.0-224.0.111.255	VoleraDataFeed	[Richard Tang]	2011-10-25	
224.0.112.0-224.0.112.255	JHB-STOCK-EXCH	[Clem Verwey]	2011-12-07	
224.0.113.0-224.0.114.255	Deutsche Boerse	[Jan Drwal]	2011-12-19	
224.0.115.0-224.0.115.255	TMX	[Michael Caravetta] [Boris Garber]	2012-06-12	
224.0.116.0-224.0.116.255	Ido Rosen	[Ido Rosen]	2012-06-19	
224.0.117.0-224.0.119.255	ISE	[Fabrice Albert]	2012-07-12	
224.0.120.0-224.0.249.255	Unassigned			
224.0.250.0-224.0.251.255	KPN Broadcast Services	[Ad C Spelt][KPN IP Office]	2009-09-01	
224.0.252.0-224.0.252.255	KPN Broadcast Services	[Ad C Spelt][KPN IP Office]	2005-08-01	
224.0.253.0-224.0.253.255	KPN Broadcast Services	[Ad C Spelt][KPN IP Office]	2005-08-01	
224.0.254.0-224.0.254.255	Intelsat IPTV	[Karl Elad]	2006-03-31	2011-02-22
224.0.255.0-224.0.255.255	Intelsat IPTV	[Karl Elad]	2006-03-31	2011-02-22

RESERVED (224.1.0.0-224.1.255.255 (224.1/16))

Reference

[RFC5771]

Note

No new assignments are being made in this range for the time being.






Address(s)	Description	References	Date Registered	Last Reviewed
224.1.0.0-224.1.0.37	Reserved	[IANA]		
224.1.0.38	dantz	[Richard Zulch]	2004-05-01	
224.1.0.39-224.1.1.255	Reserved	[IANA]		
224.1.2.0-224.1.2.255	arca-ex	[Dave Andrews]	2006-02-17	
224.1.3.0-224.1.4.255	NOB Cross media facilities	[Technicolor_NL_NOC]	2006-05-22	
224.1.5.0-224.1.255.255	Reserved	[IANA]		

SDP/SAP Block (224.2.0.0-224.2.255.255 (224.2/16))

Reference

[RFC5771]

Address(s)	Description	References	Date Registered	Last Reviewed
224.2.0.0-224.2.127.253	Multimedia Conference Calls	[Steve Casner]		
224.2.127.254	SAPv1 Announcements	[Steve Casner]		

Address(s) 	Description 	References 	Date Registered 	Last Reviewed 
224.2.127.255	SAPv0 Announcements (deprecated)	[Steve Casner]		
224.2.128.0-224.2.255.255	SAP Dynamic Assignments	[Steve Casner]		






AD-HOC Block II (224.3.0.0-224.4.255.255 (224.3/16, 224.4/16))

Registration Procedures

Expert Review, IESG Approval, or Standards Action

Reference






[\[RFC5771\]](#)

Address(s) 	Description 	References 	Date Registered 	Last Reviewed 
224.3.0.0-224.3.0.63	Nasdaqmfeeds (re-new/March 2003)	[Michael Rosenberg]	1999-03-01	
224.3.0.64-224.3.255.255	Reserved	[IANA]		
224.4.0.0-224.4.0.255	London Stock Exchange	[Guy Whitehouse]	2006-03-31	
224.4.1.0-224.4.1.255	London Stock Exchange	[Greig Saunders]	2008-02-25	
224.4.2.0-224.4.2.255	London Stock Exchange	[Greig Saunders]	2008-02-29	
224.4.3.0-224.4.4.255	London Stock Exchange	[Greig Saunders]	2008-12-24	
224.4.5.0-224.4.6.255	London Stock Exchange	[Greig Saunders]	2009-05-12	
224.4.7.0-224.4.7.255	CBOE Holdings	[John Rittner]	2012-04-10	
224.4.8.0-224.4.9.255	ISE	[Fabrice Albert]	2012-04-11	
224.4.10.0-224.4.13.255	London Stock Exchange	[Tim Johnson]	2012-04-11	
224.4.14.0-224.4.255.255	Reserved	[IANA]		

RESERVED (224.5.0.0-224.251.255.255 (251 /16s))

Reference






[\[RFC5771\]](#)

Address(s) 	Description 	References 	Date Registered 	Last Reviewed 
224.5.0.0-224.251.255.255	Reserved	[IANA]		

DIS Transient Groups 224.252.0.0-224.255.255.255 (224.252/14))

Reference






[\[RFC2365\]](#)

Address(s) 	Description 	References 	Date Registered 	Last Reviewed 
224.252.0.0-224.255.255.255	DIS Transient Groups	[IANA] [RFC2365]		

RESERVED (225.0.0.0-231.255.255.255 (7 /8s))

Reference

[\[RFC5771\]](#)

Address(s) 	Description 	References 	Date Registered 	Last Reviewed 
225.0.0.0-231.255.255.255	Reserved	[IANA]		






Source-Specific Multicast Block (232.0.0.0-232.255.255.255 (232/8))

Reference

[\[RFC5771\]](#)

Note

Addresses within the 232.0.1.0-232.255.255.255 are dynamically allocated by hosts when needed [\[RFC4607\]](#)

Relative 	Description 	References 	Date Registered 	Last Reviewed 
232.0.0.0	Reserved	[RFC4607]		
232.0.0.1-232.0.0.255	Reserved for IANA allocation	[RFC4607]		
232.0.1.0-232.255.255.255	Reserved for local host allocation	[RFC4607]		

AD-HOC Block III (233.252.0.0-233.255.255.255 (233.252/14))

Registration Procedures

Expert Review, IESG Approval, or Standards Action

Reference

[\[RFC5771\]](#)

Address(s) 	Description 	References 	Date Registered 	Last Reviewed 
--	---	--	---	---

Address(s)	Description	References	Date Registered	Last Reviewed
233.252.0.0-233.252.0.255	MCAST-TEST-NET	[IANA] [RFC5771] [RFC6676]	2010-01-20	2010-01-20
233.252.1.0-233.252.1.31	Spyware	[Kenneth_Felix]	2010-08-12	
233.252.1.32-233.252.1.255	Unassigned	[IANA]		
233.252.2.0-233.252.7.255	Tradition	[Tradition_Network_Operations_and_Command_Center]	2010-08-12	
233.252.8.0-233.252.11.255	BVMF_MKT_DATA	[Roberto_Costa_Simoes]	2010-08-12	
233.252.12.0-233.252.13.255	blizznet-tv-services	[Paul_Wallner]	2010-09-14	
233.252.124.0-233.255.255.255	Unassigned	[IANA]		

GLOP Block

Reference

[\[RFC3180\]](#)

Address(s)	Description	References	Date Registered	Last Reviewed
233.0.0.0-233.251.255.255	GLOP Block	[RFC3180]		

AD-HOC Block III

Reference

[\[RFC5771\]](#)

Address(s)	Description	References	Date Registered	Last Reviewed
233.252.0.0-233.255.255.255	AD-HOC Block III	[RFC5771]		

Unicast-Prefix-based IPv4 Multicast Addresses

Reference

[\[RFC6034\]](#)

Address(s)	Description	References	Date Registered	Last Reviewed
234.0.0.0-234.255.255.255	Unicast-Prefix-based IPv4 Multicast Addresses	[RFC6034]	2010-08-11	

Scoped Multicast Ranges

Reference

[\[RFC5771\]](#)

Address(s)	Description	References	Date Registered	Last Reviewed
235.0.0.0-238.255.255.255	Reserved	[IANA]		
239.0.0.0-239.255.255.255	Organization-Local Scope	[David_Meyer] [RFC2365]	1997-01-01	

Relative Addresses used with Scoped Multicast Addresses

Reference

[\[RFC5771\]](#)






Note

(*) It is only appropriate to use these values in explicitly-configured experiments; they MUST NOT be shipped as defaults in implementations. See [\[RFC3692\]](#) for details.



These addresses are listed in the Domain Name Service under MCAST.NET and 224.IN-ADDR.ARPA.





Note that when used on an Ethernet or IEEE 802 network, the 23 low-order bits of the IP Multicast address are placed in the low-order 23 bits of the Ethernet or IEEE 802 net multicast address 1.0.94.0.0.0. See the section on "IANA ETHERNET ADDRESS BLOCK".

Address(s)	Description	References	Date Registered	Last Reviewed
0	SAP Session Announcement Protocol	[Mark_Handley]	1998-12-01	
1	MADCAP Protocol	[RFC2730]		
2	SLPv2 Discovery	[Erik_Guttman]	2001-12-01	
3	MZAP	[Dave_Thaler]	2000-06-01	
4	Multicast Discovery of DNS Services	[Bill_Manning]	1999-08-01	
5	SSDP	[UPnP_Forum]	2006-06-27	
6	DHCP v4	[Eric_Hall]	1999-10-01	
7	AAP	[Stephen_Hanna]	2000-07-01	
8	MBUS	[RFC3259]		
9	UPnP	[UPnP_Forum]	2006-06-27	
10	MCAST-TEST-NET-2	[RFC6676]		

Address(s) 	Description 	References 	Date Registered 	Last Reviewed 
11-252	Reserved - To be assigned by the IANA			
253	Reserved			
254	RFC3692-style Experiment (*)	RFC4727		
255	Reserved - To be assigned by the IANA			

People

ID 	Name 	Contact URI 	Last Updated 
[Ad_C_Spelt]	Ad C. Spelt	mailto:a.c.spelt@kpn.com	2009-09-01
[Adam_DeMinter]	Adam DeMinter	mailto:adam.deminter@mwt.net	2011-04-20
[Adam_Yellen]	Adam Yellen	mailto:adam@videofurnace.com	2009-08-12
[Akihiro_Nishida]	Akihiro Nishida	mailto:nishida@src.ricoh.co.jp	2003-02-01
[Alan_Novick]	Alan Novick	mailto:anovick@tdc.com	1998-08-01
[Alan_Robertson]	Alan Robertson	mailto:alanr@unix.sh	2012-04-17
[Albert_Berlovitch]	Albert Berlovitch	mailto:albertb@voltaire.com	2010-02-04
[Alex_Lee]	Alex Lee	mailto:alex_mrlee@gemtek.com.tw	2002-10-01
[Alexander_Pevzner]	Alexander Pevzner	mailto:pzz@pzz.msk.ru	2006-03-17
[Andrew_Brown]	Andrew Brown	mailto:abrown@batstrading.com	2008-12-24
[Andrew_Cherenson]	Andrew Cherenson	mailto:arc@sgi.com	
[Andrew_Hoyos]	Andrew Hoyos	mailto:andrew@hoyosconsulting.com	2011-04-20
[Andrew_Rowley]	Andrew Rowley	mailto:Andrew.Rowley@manchester.ac.uk	2006-06-09
[Andy_Belk]	Andy Belk	mailto:register1@azulsystems.com	2005-02-01
[Andy_Crick]	Andy Crick	mailto:acrick@haascnc.com	2008-01-14
[Anthony_Aste]	Anthony Aste	mailto:aaste@nyx.com	2011-02-10
[Anthony_Daga]	Anthony Daga	mailto:anthony@mksrc.com	1999-06-01
[Anthony_Kandaya]	Anthony Kandaya	mailto:Anthony.kandaya@philips.com	2012-05-23
[Antonio_Querubin]	Antonio Querubin	mailto:tony@lava.net	2008-02-04
[Arne_Hvidsten]	Arne Hvidsten	mailto:arne.hvidsten@get.no	2008-08-20
[Arnoud_Zwemmer]	Arnoud Zwemmer	mailto:arnoud@nwn.nl	1996-11-01
[Asad_Gilani]	Asad Gilani	mailto:agilani@nymex.com	1997-07-01
[Bert_van_Willigen]	Bert van Willigen	mailto:bert.vanwilligen@philips.com	2004-01-01
[Beverly_Schwartz]	Beverly Schwartz	mailto:bschwartz@bbn.com	1998-06-01
[Bill_Manning]	Bill Manning	mailto:bmanning@isi.edu	1999-08-01
[Bill_Schilit]	Bill Schilit	mailto:schilit@parc.xerox.com	
[Bill_Simpson]	Bill Simpson	mailto:bill.simpson@um.cc.umich.edu	1994-11-01
[Bill_Woodcock]	Bill Woodcock	mailto:woody@zocalo.net	1998-11-01
[Bob_Braden]	Bob Braden	mailto:braden@isi.edu	1996-04-01
[Bob_Brzezinski]	Bob Brzezinski	mailto:bob.brzezinski@activfinancial.com	2005-10-28
[Bob_Gaddie]	Bob Gaddie	mailto:bobg@dtm.com	1998-08-01
[Bob_Meier]	Bob Meier	mailto:meierb@norand.com	1997-12-01
[Bob_Scheifler]	Bob Scheifler	mailto:Bob.Scheifler@sun.com	1998-08-01
[Bob_Sledge]	Bob Sledge	mailto:bob@pqsystems.com	1998-12-01
[Bodo_Rueskamp]	Bodo Rueskamp	mailto:br@itchigo.com	2000-03-01
[Boris_Garber]	Boris Garber	mailto:Boris.Garber@tsx.com	2012-06-12
[Brendan_Eic]	Brendan Eic	mailto:brendan@illyria.wpd.sgi.com	
[Brian_Kean]	Brian Kean	mailto:bkean@dca.com	1995-08-01
[Brian_Kerkan]	Brian Kerkan	mailto:brian@satcomsystems.com	2000-05-01
[Brian_Martinicky]	Brian Martinicky	mailto:Brian_Martinicky@automationintelligence.com	2000-03-01
[Bruce_Factor]	Bruce Factor	mailto:ahilbigapple@bruce@uunet.uu.net	
[Bryan_Costales]	Bryan Costales	mailto:bcx@infobeat.com	1997-09-01
[Bryant_Eastham]	Bryant Eastham	mailto:protocols@pewla.us.pewg.panasonic.com	2006-06-16
[Carl-Johan_Sjöberg]	Carl-Johan Sjöberg	mailto:cjs@bitsend.se	2012-04-25
[Carl_Malamud]	Carl Malamud	mailto:carl@invisible.net	1998-04-01
[Charles_Tewiah]	Charles Tewiah	mailto:charles.tewiah@westlb-systems.co.uk	2005-09-01
[Chas_Honton]	Chas Honton	mailto:chas@secant.com	1997-12-01
[Choon_Lee]	Choon Lee	mailto:cwl@nsd.3com.com	1996-04-01
[Chris_Adams]	Chris Adams	mailto:jc.adams@reuters.com	2000-07-01
[Christopher_Mettin]	Christopher Mettin	mailto:cmettin@gqbc-online.com	2009-05-12
[Chuck_McManis]	Chuck McManis	mailto:cmcmans@sun.com	
[Clem_Verwey]	Clem Verwey	mailto:clemv@jse.co.za	2011-12-07
[Cliff_Green]	Cliff Green	mailto:cgreen@xypoint.com	1998-02-01
[Colin_Caughie]	Colin Caughie	mailto:cfc@indigo-avs.com	2000-05-01

ID 	Name 	Contact URI 	Last Updated 
[Craig_Dowell]	Craig Dowell	mailto:cdowell@quicinc.com	2011-11-18
[Dan_Jackson]	Dan Jackson	mailto:jdand@us.ibm.com	1997-09-01
[Dan_Jakubiec]	Dan Jakubiec	mailto:dan.jakubiec@systech.com	2006-09-21
[Daniel_Dissett]	Daniel Dissett	mailto:ddissett@peerlogic.com	1998-12-01
[Daniel_Steinber]	Daniel Steinber	mailto:Daniel.Steinberg@eng.sun.com	
[Darcy_Brockbank]	Darcy Brockbank	mailto:darcy@hasc.com	1997-12-01
[Darrell_Sveistrup]	Darrell Sveistrup	mailto:darrells@truesolutions.net	1999-06-01
[Dave_Andrews]	Dave Andrews	mailto:DAndrews@archipelago.com	2006-02-17
[Dave_Cheriton]	Dave Cheriton	mailto:cheriton@dsq.stanford.edu	
[Dave_Glanzer]	Dave Glanzer	mailto:dave.glanzer@fieldbus.org	2003-03-01
[Dave_Thaler]	Dave Thaler	mailto:dthaler@microsoft.com	2000-06-01
[David_Brett]	David Brett	mailto:david.brett@alpha-group.ca	2011-10-25
[David_Meyer]	David Meyer	mailto:meyer@ns.uoregon.edu	1997-01-01
[David_Mills]	David Mills	mailto:mills@udel.edu	
[David_Poole]	David Poole	mailto:davep@extendsys.com	1997-04-01
[David_Rubin]	David Rubin	mailto:drubin@ncc.net	1996-08-01
[Dean_Blackketter]	Dean Blackketter	mailto:dean@corp.webtv.net	1998-11-01
[Dino_Farinacci]	Dino Farinacci	mailto:dino@procket.com	1996-03-01
[Dirk_Koopman]	Dirk Koopman	mailto:djk@tobit.co.uk	2000-07-01
[Doug_Dillon]	Doug Dillon	mailto:dillon@hns.com	1998-08-01
[Douglas_Marquardt]	Douglas Marquardt	mailto:dmarquar@woz.org	1997-02-01
[Duane_Wessels]	Duane Wessels	mailto:wessels@nlanr.net	1997-02-01
[Ed_Moran]	Ed Moran	mailto:admin@cruzjazz.com	1997-10-01
[Ed_Purkiss]	Ed Purkiss	mailto:epurkiss@wdmacodi.com	1998-09-01
[Eric_Hall]	Eric Hall	mailto:ehall@ntrg.com	1999-10-01
[Erik_Guttman]	Erik Guttman	mailto:Erik.Guttman@sun.com	2001-12-01
[Evan_Caves]	Evan Caves	mailto:evan@acc.com	1998-06-01
[Fabrice_Albert]	Fabrice Albert	mailto:fabert@ise.com	2012-07-12
[Frank_Castillo]	Frank Castillo	mailto:fcastillo@nyx.com	2008-08-27
[Fred_Baker]	Fred Baker	mailto:fred@cisco.com	1997-06-01
[Gajendra_Shukla]	Gajendra Shukla	mailto:gshukla@proxim.com	2002-02-01
[Gary_S_Malkin]	Gary S. Malkin	mailto:GMALKIN@xylogics.com	
[Gary_Scott_Malkin]	Gary Scott Malkin	mailto:gsmalkin@baynetworks.com	1998-02-01
[Gene_Marsh]	Gene Marsh	mailto:MarshM@diebold.com	1998-11-01
[Geoff_Mendal]	Geoff Mendal	mailto:mendal@talarian.com	1999-01-01
[Greig_Saunders]	Greig Saunders	mailto:gsaunders@londonstockexchange.com	2009-05-12
[Guido_Petronio]	Guido Petronio	mailto:guido.petronio@moneyline.com	2004-01-01
[Guy_Whitehouse]	Guy Whitehouse	mailto:gwhitehouse@londonstockexchange.com	2006-03-31
[Heiko_Rupp]	Heiko Rupp	mailto:hwr@xlink.net	1997-01-01
[Helen_Chan]	Helen Chan	mailto:hchan@siac.com	2001-08-01
[Henri_Moelard]	Henri Moelard	mailto:HMOELARD@wcnd.nl.lucent.com	1998-03
[Howard_Gordon]	Howard Gordon	mailto:hgordon@xingtech.com	
[IANA]	IANA	mailto:iana@iana.org	
[Ian_Armitage]	Ian Armitage	mailto:ian@coactive.com	1999-08-01
[Ian_Stevenson]	Ian Stevenson	mailto:ian.stevenson@aems.net	2008-07-23
[Ian_Stewart]	Ian Stewart	mailto:iandbige@yahoo.com	1999-06-01
[Ian_Wacey]	Ian Wacey	mailto:iain.wacey@gefalbany.ge.com	2000-05-01
[Ian_Wilson]	Ian Wilson	mailto:iwilson@cisco.com	2001-12-01
[Ido_Rosen]	Ido Rosen	mailto:iana@idorosen.com	2012-06-19
[Ishan_Wu]	Ishan Wu	mailto:iwu@cisco.com	2000-03-01
[Itamar_Gilad]	Itamar Gilad	mailto:itamar@arootz.com	2007-08-31
[James_Crawford]	James Crawford	mailto:jcrawford@metropol.net	1998-05-01
[Jan_Drwal]	Jan Drwal	mailto:Jan.Drwal@deutsche-boerse.com	2011-12-19
[Jan_Erik_Eriksson]	Jan-Erik Eriksson	mailto:jee@alcom.ax	2010-03-12
[Javier_Landin]	Javier Landin	mailto:jlandin@directedge.com	2009-08-28
[Jeff_Schenk]	Jeff Schenk	mailto:Jeff.Schenk@intelliden.com	2006-03-31
[Jerome_Albin]	Jerome Albin	mailto:albin@taec.enet.dec.com	1997-06-01
[Jerry_Whitaker]	Jerry Whitaker	mailto:jwhitaker@atsc.org	2008-12-19
[Jim_Ginsburg]	Jim Ginsburg	mailto:JGinsburg@jonescorp.com	2007-10-31
[Jim_Lyle]	Jim Lyle	mailto:jim.lyle@siliconimage.com	2006-08-07
[Jim_Toga]	Jim Toga	mailto:jtoga@ibeam.intel.com	1996-05-01
[Joan_Cho]	Joan Cho	mailto:jcho@siac.com	1998-10-01
[Joel_Lynch]	Joel Lynch	mailto:joel.lynch@cnn.com	1999-04-01
[Johan_Deleu]	Johan Deleu	mailto:johan.deleu@alcatel.be	2002-02-01
[John_Catherino]	John Catherino	mailto:cajo@dev.java.net	2006-03-31
[John_Gabler]	John Gabler	mailto:john.gabler@ips.invensys.com	2007-07-06
[John_Rittner]	John Rittner	mailto:rittnerj@cboe.com	2012-04-10
[John_Veizades]	John Veizades	mailto:veizades@tgv.com	1995-05-01
[Jon_Crowcroft]	Jon Crowcroft	mailto:jon@hocus.cs.ucl.ac.uk	1998-11-01
[Jon_Gabriel]	Jon Gabriel	mailto:grgabriel@tivol.com	1998-12-01

ID 	Name 	Contact URI 	Last Updated 
[Jon_Postel]	Jon Postel	mailto:postel@isi.edu	
[Jonathan_Niedfeldt]	Jonathan Niedfeldt	mailto:jon@digitalacoustics.com	2008-02-22
[Jose_Luis_Marcho]	Jose Luis Marcho	mailto:73374.313@compuserve.com	1996-07-01
[Julian_Nevell]	Julian Nevell	mailto:JNEVELL@vbs.bt.co.uk	1999-08-01
[Kang_Lee]	Kang Lee	mailto:kang.lee@nist.gov	2007-02-02
[Karen_Seo]	Karen Seo	mailto:kseo@bbn.com	
[Karl_Elad]	Karl Elad	mailto:karl.elad@intelsat.com	2006-03-31
[Keith_Thompson]	Keith Thompson	mailto:thompson@ridgeback.east.sun.com	2001-06-01
[Kevin_Gross]	Kevin Gross	mailto:kvng@ieee.org	2010-03-12
[Kevin_Gross_2]	Kevin Gross	mailto:kevin.gross@avanw.com	2012-08-28
[KPN_IP_Office]	KPN IP Office	mailto:kpn-ip-office@kpn.com	2011-04-18
[Kristian_A_Bognaes]	Kristian A. Bognaes	mailto:kbo@norman.no	2004-02-01
[Liming_Wei]	Liming Wei	mailto:lwei@cisco.com	1998-10-01
[Lloyd_Wood]	Lloyd Wood	mailto:L.Wood@surrey.ac.uk	2011-03-17
[Louis_Mamakos]	Louis Mamakos	mailto:louie@uu.net	1997-03-01
[Kenneth_Felix]	Kenneth Felix	mailto:ken@spryware.com	2010-08-12
[Madhav_Karhade]	Madhav Karhade	mailto:Madhav.Karhade@wibhu.com	2003-05-01
[Marc_Goossens]	Marc Goossens	mailto:mgoossens@eiba.com	2003-07-01
[Mark_Armstrong]	Mark Armstrong	mailto:Mark.Armstrong@soleratec.com	2006-02-09
[Mark_Bakke]	Mark Bakke	mailto:mbakke@cisco.com	2001-12-01
[Mark_Hamilton]	Mark Hamilton	mailto:mah@spectralink.com	1998-11-01
[Mark_Handley]	Mark Handley	mailto:mjh@isi.edu	1998-12-01
[Mark_Lewis]	Mark Lewis	mailto:Mark.Lewis@ccm.jf.intel.com	1995-10-01
[Mark_Lipford]	Mark Lipford	mailto:mark.a.lipford@sprint.com	2006-07-11
[Martin_Forssen]	Martin Forssen	mailto:maf@dtek.chalmers.se	
[Mary_Timm]	Mary Timm	mailto:mary@xenoscience.com	1998-07-01
[Masato_Shindoh]	Masato Shindoh	mailto:jl11456@yamato.ibm.co.jp	1997-08-01
[Matthew_Straight]	Matthew Straight	mailto:matt_straight@yahoo.com	2007-03-01
[Maurice_Robberson]	Maurice Robberson	mailto:ceo@mediastreamusa.com	2006-09-15
[Media_Alliance_JSC]	Media Alliance JSC	mailto:noc@medi-a.ru	2008-01-15
[Michael_Caravetta]	Michael Caravetta	mailto:Michael.Caravetta@tsx.com	2012-06-15
[Michael_DeMoney]	Michael DeMoney	mailto:demoney@eng.sun.com	1997-04-01
[Michael_Dolan]	Michael Dolan	mailto:miked@tbt.com	2003-10-01
[Michael_Kreutzjans]	Michael Kreutzjans	mailto:mike@spryware.com	2007-03-01
[Michael_Lyle]	Michael Lyle	mailto:protocols@translattice.com	2009-11-11
[Michael_Rosenberg]	Michael Rosenberg	mailto:michael.rosenberg@nasdaqomx.com	2012-03-15
[Michael_Wang]	Michael Wang	mailto:Michael.Wang@usa.xerox.com	1999-03-01
[Mika_Uusitalo]	Mika Uusitalo	mailto:msu@xingtech.com	1997-04-01
[Mike_Lamberg]	Mike Lamberg	mailto:mlamberg@siac.com	1997-02-01
[Mike_Rodbell]	Mike Rodbell	mailto:mrodbell@ciena.com	1997-01-01
[Mike_Roper]	Mike Roper	mailto:mroper@8x8.com	1999-09-01
[Mike_Velten]	Mike Velten	mailto:mike_velten@liebert.com	1999-01-01
[Moe_Singh]	Moe Singh	mailto:moesingh@hotmail.com	2009-09-24
[Morten_Lindeman]	Morten Lindeman	mailto:Morten.Lindeman@os.telia.no	1999-03-01
[Morteza_Kalhour]	Morteza Kalhour	mailto:morteza.kalhour@nokia.com	2002-10-01
[Nabeel_Madry]	Nabeel Madry	mailto:nabeel.madry@amex.com	2007-07-05
[Nadine_Guillaume]	Nadine Guillaume	mailto:nadine.guillaume@sciatf.com	2005-02-01
[Nedelcho_Stanev]	Nedelcho Stanev	mailto:nstanev@csoft.bg	1999-05-01
[Nick_Barendt]	Nick Barendt	mailto:nbarendt@vxitech.com	2005-11-01
[Nigel_Thompson]	Nigel Thompson	mailto:nigelt@tribal.com	1999-01-01
[Oliver_Lewis]	Oliver Lewis	mailto:o.lewis@icerobotics.co.uk	2006-07-11
[OSPF_WG_Chairs]	OSPF WG Chairs	mailto:ospf-chairs@ietf.org	
[Oyvind_H_Olsen]	Oyvind H. Olsen	mailto:oyvind-hollup.olsen@canaldigital.com	2007-09-12
[Pankaj_Gupta]	Pankaj Gupta	mailto:pgupta@nyse.com	2007-11-28
[Pankaj_Gupta_2]	Pankaj Gupta	mailto:pgupta@nyx.com	2010-02-26
[Paolo_Strazzera]	Paolo Strazzera	mailto:p.strazzera@telematica.it	1999-06-01
[Patrick_Cipiere]	Patrick Cipiere	mailto:Patrick.Cipiere@udcast.com	2001-01-01
[Paul_Langille]	Paul Langille	mailto:plangille@dnpg.com	2007-01-17
[Paul_Suhler]	Paul Suhler	mailto:paul.suhler@quantum.com	2009-05-12
[Paul_Wallner]	Paul Wallner	mailto:paul.wallner@wienstrom.at	2010-09-14
[Paul_Wissenbach]	Paul Wissenbach	mailto:paulwi@vnd.tek.com	1997-06-01
[Peter_Aronson]	Peter Aronson	mailto:paronson@esri.com	1998-08-01

ID 	Name 	Contact URI 	Last Updated 
[Peter_Parnes]	Peter Parnes	mailto:peppar@marratech.com	2000-02-01
[Peter_White]	Peter White	mailto:peter_white@3com.com	1999-04-01
[Pierre_Oliver]	Pierre Oliver	mailto:polivier@calamp.com	2011-06-06
[Piers_Scannell]	Piers Scannell	mailto:piers@globecastne.com	2000-03-01
[Pilz]	Pilz GmbH and Co. KG	mailto:pilz.gmbh@pilz.de	2009-03-17
[Prakash_Banthia]	Prakash Banthia	mailto:prakash_banthia@3com.com	1998-09-01
[Ralph_Kammerlander]	Ralph Kammerlander	mailto:ralph.kammerlander@khe.siemens.de	2000-06-01
[Ram_Iyer]	Ram Iyer	mailto:ram@aaccorp.com	1998-03-01
[Raymond_Shum]	Raymond Shum	mailto:rshum@ms.com	1998-04-01
[Richard_Hodges]	Richard Hodges	mailto:rh@source.net	1999-03-01
[Richard_Tang]	Richard Tang	mailto:rtang@hanweckassoc.com	2011-10-25
[Richard_Zulch]	Richard Zulch	mailto:richard_zulch@dantz.com	2004-05-01
[Rob_Janssen]	Rob Janssen	mailto:rob@pe1chl.ampr.org	1995-01-01
[Robert_Hodgson]	Robert Hodgson	mailto:robert@paratek.co.uk	2001-12-01
[Robert_Sautter]	Robert Sautter	mailto:rsautter@acdij.itt.com	1999-08-01
[Robert_Sliwinski]	Robert Sliwinski	mailto:robert.sliwinre@mail1st.com	2000-02-01
[Roberto_Costa_Simoes]	Roberto Costa Simoes	mailto:rcosta@bvmf.com.br	2010-08-18
[Ron_van_der_Meulen]	Ron van der Meulen	mailto:ron_vandermeulen@agilent.com	1997-02-01
[Ruben_Hernandez]	Ruben Hernandez	mailto:rhernandez@miami-holdings.com	2011-06-06
[Ryon_Coleman]	Ryon Coleman	mailto:rcoleman@3eti.com	2006-04-11
[SEIKO_EPSON_Corp]	SEIKO EPSON Corp	mailto:ogata.hideaki@exc.epson.co.jp	2005-01-01
[Sakon_Kittivatcharapong]	Sakon Kittivatcharapong	mailto:sakonk@cscoms.net	2000-05-01
[Sam_Serrano]	Sam Serrano	mailto:sserrano@nyx.com	2010-02-26
[Sarunas_Brakauskas]	Sarunas Brakauskas	mailto:sbrakaus@cme.com	2007-07-17
[Scott_Watson]	Scott Watson	mailto:scott@disney.com	1997-08-01
[Sergey_Shulgin]	Sergey Shulgin	mailto:sshulgin@pinkotc.com	2008-08-12
[Shai_Revzen]	Shai Revzen	mailto:shai.revzen@harmonicinc.com	1999-04-01
[Shane_Rowatt]	Shane Rowatt	mailto:shane.rowatt@star.com.au	1997-03-01
[Shivaun_Albright]	Shivaun Albright	mailto:shivaun_albright@hp.com	1997-07-01
[Simon_Barber]	Simon Barber	mailto:simon.barber@parc.com	2009-09-24
[Soren_Martin_Sorensen]	Soren Martin Sorensen	mailto:sms@energimidt.dk	2006-08-07
[Stacey_O_Rourke]	Stacey O'Rourke	mailto:stacey@network-alchemy.com	1999-08-01
[Stacey_O_Rourke_2]	Stacey O'Rourke	mailto:stacey@cips.nokia.com	2001-01-01
[Stephan_Wasserroth]	Stephan Wasserroth	mailto:wasserroth@fokus.gmd.de	2000-07-01
[Stephen_Dunne]	Stephen Dunne	mailto:sdun@isma.co.uk	1997-01-01
[Stephen_Hanna]	Stephen Hanna	mailto:steve.hanna@sun.com	2000-07-01
[Stephen_T_Lyda]	Stephen T. Lyda	mailto:slyda@emsg.com	2000-02-01
[Steve_Casner]	Steve Casner	mailto:casner@precept.com	
[Steve_Casner_2]	Steve Casner	mailto:casner@isi.edu	1995-01-01
[Steve_Deering]	Steve Deering	mailto:deering@cisco.com	1999-10-01
[Steve_Deering_2]	Steve Deering	mailto:deering@parc.xerox.com	
[Steve_Polishinski]	Steve Polishinski	mailto:spolishinski@etconnect.com	2000-03-01
[Stuart_Kerry]	Stuart Kerry	mailto:stuart.kerry@philips.com	2003-01-01
[Susie_Armstrong]	Susie Armstrong	mailto:Armstrong.wbst128@xerox.com	
[Takeshi_Saito]	Takeshi Saito	mailto:takeshi.saito@toshiba.co.jp	2003-02-01
[Technicolor_NL_NOC]	Technicolor NL NOC	mailto:noc@technicolor.com	2009-12-23
[Terry_Gibson]	Terry Gibson	mailto:terry.gibson@sun.com	1997-08-01
[Tetsuo_Hoshi]	Tetsuo Hoshi	mailto:tetsuo.hoshi@jp.yokogawa.com	2004-06-01
[Tim_DeBaillie]	Tim DeBaillie	mailto:debaillie@ciholas.com	2006-11-30
[Tim_Gorsline]	Tim Gorsline	mailto:tgorsline@batstrading.com	2011-01-31
[Tim_Johnson]	Tim Johnson	mailto:tjohnson@londonstockexchange.com	2012-04-11
[Tom_Ballister]	Tom Ballister	mailto:tom@ballister.com	1997-07-01
[Tom_Blank]	Tom Blank	mailto:tomblank@microsoft.com	1996-11-01
[Tom_White]	Tom White	mailto:info@midi.org	2011-11-02
[Tony_Ballardie]	Tony Ballardie	mailto:A.Ballardie@cs.ucl.ac.uk	1997-02-01
[Tony_Barber]	Tony Barber	mailto:tony.barber@wcom.com	1997-01-01
[Tony_Przygienda]	Tony Przygienda	mailto:prz@siara.com	1999-10-01
[Tony_Wong]	Tony Wong	mailto:wongt@ms.com	1998-07-01
[Tradition_Network_Operations_and_Command_Center]	Tradition Network Operations and Command Center	mailto:SH-Networking@tradition.com	2010-09-22
[UPnP_Forum]	UPnP Forum	mailto:upnpadmin@forum.upnp.org	2006-06-27

ID 	Name 	Contact URI 	Last Updated 
[Victor_Volpe]	Victor Volpe	mailto:vvolpe@smtp.microcom.com	1997-10-01
[Wally_Beddoe]	Wally Beddoe	mailto:WBeddoe@tkusa.com	2003-04-01
[Walter_Wallach]	Walter Wallach	mailto:walt@sumatech.com	1999-07-01
[Wayne_Carr]	Wayne Carr	mailto:Wayne_Carr@ccm.intel.com	1997-12-01
[Wayne_Wenyu_Liu]	Wayne Wenyu Liu	mailto:wayne.wenyu.liu@gmail.com	2012-06-12
[Wenjie_Peng]	Wenjie Peng	mailto:wpeng@tts.telerate.com	1997-01-01
[Werner_Vogels]	Werner Vogels	mailto:vogels@rnets.com	1998-08-01
[Wieland_Holdfelder]	Wieland Holdfelder	mailto:whd@pi4.informatik.uni-mannheim.de	1997-01-01
[Xiaoyu_Zhou]	Xiaoyu Zhou	mailto:zhouxy@lenovo.com	2009-01-20
[Yea_Uang]	Yea Uang	mailto:uang@force.decnat.lockheed.com	1994-11-01
[Yossi_Gal]	Yossi Gal	mailto:yossi@gilat.com	1998-02-01
[Zaklina_Petkovic]	Zaklina Petkovic	mailto:zaklina.petkovic@alphatradingsystems.ca	2011-07-13
[Zia_Bhatti]	Zia Bhatti	mailto:zia@netright.com	1998-09-01