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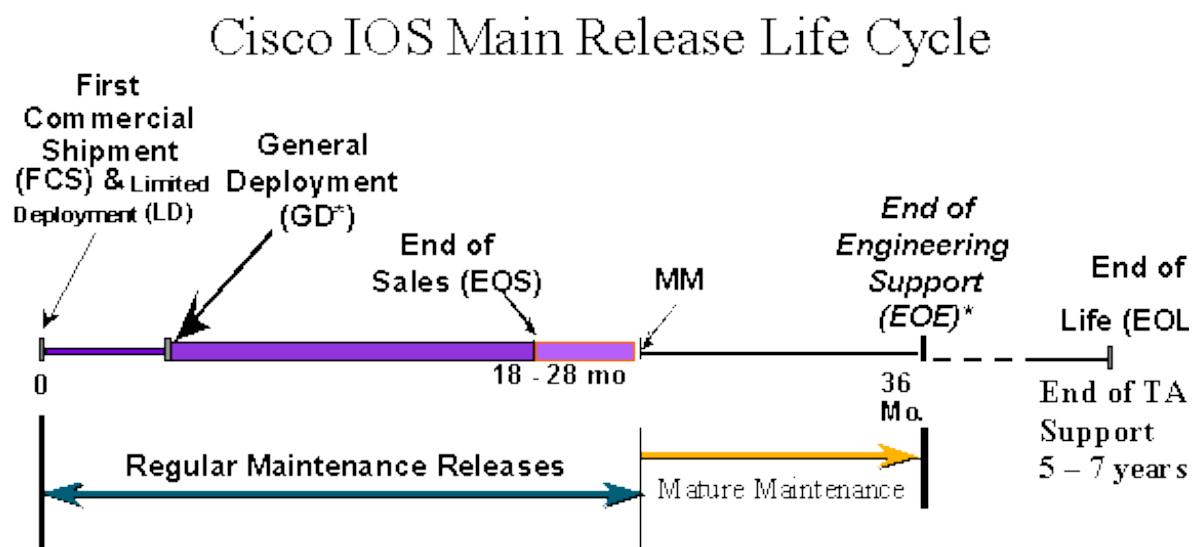
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# White Paper: Cisco IOS Reference Guide

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## 3. Appendix

### 3.1. Cisco IOS® Main Release Life Cycle



- Only main releases achieve General Deployment (GD) certification. Mature Maintenance (MM) is to an Early Deployment (ED) what GD is to a mainline release.
- End of Engineering (EOE) occurs in twenty-four months. In this case, the release goes into MM revisions that are provided every sixteen weeks. Only severity 1, severity 2, priority 1, and priority 2 defects are fixed.
- On occasion, and per a customer's request, EOE is extended to thirty-six months or later. In this case, there is no MM phase.
- All Cisco IOS Software Releases are supported until End of Life (EOL) which occurs five years after it goes into End of Sales (EOS).

### 3.2. Cisco IOS Images Identifiers

The table below is also available from the Software Naming Conventions for IOS page.

## Cisco IOS Platforms

as5200	Cisco AS5200 Universal Access Server
ca1003	Cisco Advantage 1003
ca1005	Cisco Advantage 1005
cpa1003	CiscoPro 1003,4
cpa1005	CiscoPro 1005
cpa2500	CiscoPro 2500
cpa3620	CiscoPro 3620
cpa3640	CiscoPro 3640
cpa4500	CiscoPro 4500
*cs	Communication Server
cs500	cs500
c1000	Cisco 1003 and Cisco 1004 Series Routers
c1005	Cisco 1005 Series Router
c10k	Cisco 10000 Edge Services Router (ESR)
c1600	Cisco 1600 Series Router
c2500	Cisco 25xx, 3xxx, 5100, and AO Series Routers (Cisco IOS Software Release 11.2 and later)
c25fx	Cisco 2500 Fixed Frame Relay Access Device (FRAD)
c2600	Cisco 2600 Quake
c2800	Catalyst 2800
c2900	Catalyst 2910 and 2950
c29atm	Catalyst 2900 ATM
c3620	Catalyst 3620
c3640	Catalyst 3640
c3800	Catalyst 3800
c4000	Catalyst 4000 (Cisco IOS Software Release 11.2 and later)
c4500	Catalyst 4500 and 4700
c5rsfc	Catalyst 5000 Route Switch Feature Card (RSFC)
c5rsp	Catalyst 5000 Route Switch Processor (RSP)
c5atm	Catalyst 5000 ATM
c6400s	Cisco 6400 Node Switch Processor (NSP)
c6400r	Cisco 6400 Node Route Processor (NRP)
c6msm	Catalyst 6000 Multilayer Switch Module (MSM)
c7000	Catalyst 7000 and 7010 (Cisco IOS Software Release 11.2 and later)

	later)
c7200	Catalyst 7200
cva120	Cable Voice Adapter (CVA) 120
igs	IGS, 25xx, 3xxx, 5100, and application processor (AP)
gs3	Gateway Server (Advanced Gateway Server (AGS), AGS+)
gs7	Gateway Server 7000 and 7010
gsr	Gigabit Switch Router (12000)
ls1010	Lightstream 1010
mc3810	Ardent Multiservice Cisco 3810
MWR1900	Cisco IOS Mobile Wireless Edge Router
p<n>	Partners' platform n
*pt	Protocol Translator
rpm	MGX 8850 Multiservice Switch
rsp	Cisco 75xx RSP
ubr7200	Universal Broadband Router 7200
ubr900	Universal Broadband Router 900
ubr905	Universal Broadband Router 905
ubr920	Universal Broadband Router 920
ubr925	Universal Broadband Router 925
vcw	Voice Card Ware
xx	4000
igsetx	2500 (media specific image that supports only Ethernet, token ring, and x.25)

### Cisco IOS Feature Descriptors

a	Advanced Peer-to-Peer Networking (APPN)
a2	ATM
a3	SNA Switching (APPN replacement)

### b

b	AppleTalk
boot	boot image
boot2	DSL boot image for NI2-155SM-155SM2 and NI2-155MM-155MM2 Network Interface cards.

**C**

c	CommServer/Remote Access Server (RAS) subset (Simple Network Management Protocol (SNMP), IP, Bridging, Internetwork Packet Exchange (IPX), AppleTalk, Decnet, Frame Relay, High-Level Data Link Control (HDLC), Point-to-Point Protocol (PPP), X, 25, AppleTalk Remote Access Protocol (ARAP), TN3270, PT, XRemote, Local-area Transport (LAT)) (non-CiscoPro)
c	CommServer lite (CiscoPro)
c2	CommServer/RAS subset (SNMP, IP, Bridging, IPX, AppleTalk, Decnet, FR, HDLC, PPP, X, 25, ARAP, TN3270, PT, XRemote, LAT) (CiscoPro)
c3	Clustering
c4	CiscoView Network Management Software
c5	Packet Data Service Node (PDSN)–8k session support and peer-to-peer clustering.
c6	PDSN–20K session support and master/slave clustering.

**d**

d	Desktop subset (SNMP, IP, Bridging, WAN, Remote Node, Terminal Services, IPX, AppleTalk, ARAP) (Cisco IOS Software Release 11.2 – Decnet)
d2	Reduced Desktop subset (SNMP, IP, IPX, AppleTalk, ARAP)
diag	Cisco IOS based diagnostic images
dsl	DSL for the NI2 platform.

**e**

e	IPeXchange is no longer used in Cisco IOS Software Release 11.3 and later. StarPipes DB2 Access enables Cisco IOS to act as a Gateway to all IBM DB2 products for downstream clients/servers in Cisco IOS Software Release 11.3T.
eboot	Ethernet boot image for the mc3810 platform.

**f**

f	FRAD subset (SNMP, FR, PPP, Synchronous Data Link Control (SDLC)–to–LAN Conversion (SDLCC), Serial Tunneling (STUN))
f2	Modified FRAD subset, Enhanced Interior Gateway Routing Protocol (EIGRP), PCbus, and LAN Manager are removed. Open Shortest Path First (OSPF) is added.

## g

g	ISDN subset (SNMP, IP, Bridging, ISDN, PPP, IPX, AppleTalk)
g2	Gatekeeper proxy, voice, and video.
g3	ISDN subset for c800 (IP, ISDN, FR)
g4	Service Selection Gateway (SSG)
g5	Mobile Wireless

## h

h	For Malibu (2910), 8021D, switch functions, and IP Host.
h1	High availability for MWG for use with the PDSN platform.
hdiag	Diagnostics image for Malibu (2910).

## i (used for image names of platforms c2500 and larger)

i	IP subset (SNMP, IP, Bridging, WAN, Remote Node, Terminal Services)
i2	Subset similar to the IP subset for system controller image (3600).
i3	Reduced IP subset with Border Gateway Protocol (BGP)/MIB, External Gateway Protocol (EGP)/MIB, Next Hop Resolution Protocol (NHRP), and Director responder (DIRRESP) removed.
i4	Subset of IP (5200)
i5	Reduced IP subset with WAN, Remote Node, and Terminal services removed.
ipss7	IP subset with SS7 (2600).
i6	Reduced IP subset. IP routing, WAN, Remote Node, Terminal services, and Stack MIB removed.
i8	IP routing (Routing Information Protocol (RIP), OSPF, BGP, Static), Network Address Translation, VoIP, and Voice over ATM Adaptation Layer 2 (VoAAL2)
i9	Reduced IP subset with IP routing, WAN, Remote Node, and Terminal services removed.
i10	IP routing (RIP, OSPF, BGP, Static), Network Address Translation (same as i8), ISDN, with ISDN, Network-Based Application Recognition (NBAR), and DSL removed.
itp	IP subset with Transfer Point (2600).

## j

j	Enterprise subset (formerly BPX) includes protocol translation. <b>Note:</b> Not used until Cisco IOS Software Release 10.3.
j1	Basic Enterprise for c2600/c3600

## k

k	Kitchen sink (enterprise for high-end) (same as BX). Not used after Cisco IOS Software Release 10.3.
k1	Baseline privacy key encryption. On Cisco IOS Software Release 11.3 and up.
k2	High-end enterprise with Channel Interface Processor (CIP2) ucode. Not used after Cisco IOS Software Release 10.3.
k2	Triple Data Encryption Standard (DES) on Cisco IOS Software Release 11.3 and up. Includes Secure Shell Protocol (SSH) in Cisco IOS Software Release 12.1 and up.
k3	Reserved for future encryption capabilities. On Cisco IOS Software Release 11.3 and up.
k4	Reserved for future encryption capabilities. On Cisco IOS Software Release 11.3 and up.
k5	Reserved for future encryption capabilities. On Cisco IOS Software Release 11.3 and up.
k6	Reserved for future encryption capabilities. On Cisco IOS Software Release 11.3 and up.
k7	Reserved for future encryption capabilities. On Cisco IOS Software Release 11.3 and up.
k8	Less than or equal to 64-bit encryption. On Cisco IOS Software Release 12.2 and up.
k9	Greater than 64-bit encryption. On Cisco IOS Software Release 12.2 and up.

## l

l	IPeXchange IPX, Static Routing, and Gateway.
l2	Layer 2 switching
l9	Long Reach Ethernet

## m

m	Remote Monitoring (RMON) in Cisco IOS Software Release 11.1 only.
m	Catalyst 2820—kernel, parser, ATM signaling, Lane Client, and bridging.

## n

n	IPX
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## o

o	Firewall (formerly IPeXchange Net Management)
o3	Firewall with Intrusion Detection (Firewall Phase II).

## p

p	Service Provider (IP RIP/IGRP/EIGRP/OSPF/BGP, Connectionless Network Service (CLNS) Intermediate System-to-Intermediate System (IS-IS)/Interior Gateway Routing Protocol (IGRP))
p2	Service Provider with CIP2 Ucode
p3	AS5200 service provider
p4	5800 (Nitro) service provider
p5	Service Provider (6400 NRP)
p6	PRE-1 Route Engine for Cisco 10000 ESR.
p7	Service Provider with PT/Target Identifier Address Resolution Protocol (TARP) (2600, 3640).
p8	PRE-2 Route Engine for c10k (Cisco 10000 ESR).
p9	Service Provider for c5850
p10	PRE-1, ECC (c10k)
p11	PRE-1, Broadband (c10k)
p12	RPM-XF route processor module for MGX8850/8950

## q

q	Async
q2	IPeXchange Async
q3	Quality of Service (QoS)
q4	Reduced QoS subset. Access Control List (ACL) merge and Virtual-LAN (VLAN) map removed.

## r

r	IBM base option. Source-Route Bridging (SRB), SDLLC, STUN, Data-Link Switching (DLSw), and Qualified Logical Link Control (QLLC) used with i and d.
r2	IBM variant for Cisco 1600 images.
r3	IBM variant for Ardent images (3810).
r4	Reduced IBM subset with Binary Synchronous Communication (BSC)/MIB, Block Serial Tunneling (BSTUN)/MIB, Asynchronous Security Protocol (ASPP)/MIB, and remote source-route bridging (RSRB)/MIB removed.

RM	ROM monitor (ROMmon) image.
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## S

s	Source route switch (SNMP, IP, Bridging, and SRB) for Cisco IOS Software Releases 10.2 and 10.3. Not used in Cisco IOS Software Releases 11.0 and 11.1.														
s	Platform-specific PLUS pack features defined below. Cisco IOS Software Release 11.2 and up.														
	<table border="1"> <tr> <td>c1000</td> <td>OSPF, Protocol Independent Multicast (PIM), Simple Multicast Routing Protocol (SMRP), NetWare Link-Services Protocol (NLSP), ATIP, ATAURP, FRSVC, Resource-Reservation Protocol (RSVP), and Network Address Translation (NAT)</td> </tr> <tr> <td>c1005</td> <td>X.25, full WAN, OSPF, PIM, NLSP, SMRP, ATIP, ATAURP, FRSVC, (RSVP), and NAT</td> </tr> <tr> <td>c1600</td> <td>OSPF, IP Multicast, NHRP, Network Time Protocol (NTP), NAT, RSVP, and FRAME_RELAY_SVC. AT "s" images also have SMR, ATIP, and AURP. IPX "s" images also have NLSP and NHRP.</td> </tr> <tr> <td>c2500</td> <td>NAT, RMON, IBM, Multichassis Multilink PPP (MMP), and Virtual private dial-up networks (VPDN)/Layer 2 Forwarding (L2F)</td> </tr> <tr> <td>c2600</td> <td>NAT, IBM, MMP, VPDN/L2F, VoIP, and ATM</td> </tr> <tr> <td>c3620</td> <td>(NAT, IBM, MMP, VPDN/L2F) Cisco IOS Software Release 11.3T added VoIP.</td> </tr> <tr> <td>c3640</td> <td>(NAT, IBM, MMP, VPDN/L2F) Cisco IOS Software Release 11.3T</td> </tr> </table>	c1000	OSPF, Protocol Independent Multicast (PIM), Simple Multicast Routing Protocol (SMRP), NetWare Link-Services Protocol (NLSP), ATIP, ATAURP, FRSVC, Resource-Reservation Protocol (RSVP), and Network Address Translation (NAT)	c1005	X.25, full WAN, OSPF, PIM, NLSP, SMRP, ATIP, ATAURP, FRSVC, (RSVP), and NAT	c1600	OSPF, IP Multicast, NHRP, Network Time Protocol (NTP), NAT, RSVP, and FRAME_RELAY_SVC. AT "s" images also have SMR, ATIP, and AURP. IPX "s" images also have NLSP and NHRP.	c2500	NAT, RMON, IBM, Multichassis Multilink PPP (MMP), and Virtual private dial-up networks (VPDN)/Layer 2 Forwarding (L2F)	c2600	NAT, IBM, MMP, VPDN/L2F, VoIP, and ATM	c3620	(NAT, IBM, MMP, VPDN/L2F) Cisco IOS Software Release 11.3T added VoIP.	c3640	(NAT, IBM, MMP, VPDN/L2F) Cisco IOS Software Release 11.3T
c1000	OSPF, Protocol Independent Multicast (PIM), Simple Multicast Routing Protocol (SMRP), NetWare Link-Services Protocol (NLSP), ATIP, ATAURP, FRSVC, Resource-Reservation Protocol (RSVP), and Network Address Translation (NAT)														
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c2600	NAT, IBM, MMP, VPDN/L2F, VoIP, and ATM														
c3620	(NAT, IBM, MMP, VPDN/L2F) Cisco IOS Software Release 11.3T added VoIP.														
c3640	(NAT, IBM, MMP, VPDN/L2F) Cisco IOS Software Release 11.3T														

		added VoIP.	
	c4000	NAT, IBM, MMP, and VPDN/L2F	
	c4500	NAT, Inter-switch Link (ISL), LAN Emulation (LANE), IBM, MMP, and VPDN/L2F	
	c5200	PT, v.120, Modem Management, RMON, MMP, and VPDN/L2F	
	c5300	MMP, VPDN, NAT, Modem Management, RMON, and IBM	
	c5rsm	NAT, LANE, and VLANs	
	c7000	ISL, LANE, IBM, MMP, and VPDN/L2F	
	c7200	NAT, ISL, IBM, MMP, and VPDN/L2F	
	rsp	NAT, ISL, LANE, IBM, MMP, and VPDN/L2F	
s2		Voice IP to IP Gateway (c5350)	
s3		Basic Plus for c2600/c3600	

## t

t	ATM Interface Processor (AIP) with modified Ucode to connect to Teralink 1000 Data (Cisco IOS Software Release 11.2).
t	Telco return (Cisco IOS Software Release 12.0).
telco	Telco

## u

u	IP with VLAN RIP for Network Layer 3 Switching Software, RSRB, Source-route Transparent (SRT), SRB, and Source-Route Translational Bridging (SR/TLB).
u2	Lawful Intercept

## v

v	Versatile Interface Processor (VIP) and dual RSP (High System Availability (HSA)) support.
v2	Voice V2D

v3	Voice Feature Card
v4	Cable modem voice H.323/xGCP (Media Gateway Control Protocol (MGCP)/Simple Gateway Control Protocol (SGCP))
v5	VOIP_APP, SGCP, SGCP_APP, XGCP_MIB, and VOIP_IVR (mc3810)
v6	Cable modem voice H.323
v7	Cable modem voice xGCP (MGCP/SGCP)
v8	Extended voice feature set (c1700)
v9	Cable modem voice SIP/H.323/xGCP (MGCP/SGCP)
v10	4-port Voice feature line card (c8500)
v11	VoIP with FALBACK/KEYSWITCH, VoAAL2, T-CCS, MWI-APP, and Trunk Group Resource Manager (TGRM) removed.

## W

	WBU Feature Sets	
w	i	IISP
	l	LANE & Permanent Virtual Circuit (PVC)
	p	Private Network-to-Network Interface (PNNI)
	v	PVC traffic shaping
w2	Cisco Advantage ED train Feature Sets	
	a	IPX, Static Routing, and Gateway
	b	Net Management
	c	FR/X25
	y	Async
w3	Distributed Director Feature Sets	
w4	wiretap	
w5	Wireless Application Protocol (WAP) Gateway (3640 and 3660)	
w6	Multipoint Broadband Wireless Subscriber	

## X

x	X.25 in Cisco IOS Software Release 11.1 and earlier, and on c800 in Cisco IOS Software Release 12.0T.
x	FR/X.25 in Cisco IOS Software Release 11.2 (IPeXchange).

x	H.323 Gatekeeper/Proxy in Cisco IOS Software Release 11.3 and later releases for Cisco 2500, 3620, 3640, and mc3810.
x2	H.323 Cisco Multimedia Conference Manager (MCM)
x3	H.323 Voice

## y (used for image names of platforms smaller than c2500)

y	Reduced IP (SNMP, IP RIP/IGRP/EIGRP, Bridging, ISDN, and PPP) (c1003 and 1004)
y	Reduced IP (SNMP, IP RIP/IGRP/EIGRP, Bridging, and WAN – X.25) (c1005) Cisco IOS Software Release 11.2 includes X.25 (Cisco 1005).
y	IP variant. No Kerberos, Radius, NTP, OSPF, PIM, SMRP, NHRP, and so on. (c1600)
y1	Reduced IP variant (SOHO 70)
y2	IP variant (SNMP, IP RIP/IGRP/EIGRP, WAN – X.25, OSPF, and PIM). (c1005)
y2	IP Plus variant. No Kerberos, Radius, NTP, and so on. (c1600)
y3	IP/X.31
y4	Reduced IP variant (Cable, MIBs, DHCP, and EzHTTP).
y5	Reduced IP variant (Cable, MIBs, Dynamic Host Control Protocol (DHCP), and EZIP) Home Office.
y6	Reduced IP variant (c800)
y7	IP/Asymmetric Digital Subscriber Line (ADSL) (c1700)
y8	Reduced IP variant (c950 Fireplace Wireless Access Router).
y9	SSL Termination Engine for Catalyst 6000 Family (c6ssl)

## z

z	Managed modems
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## 0–9

40	40-bit encryption
56	56-bit encryption
56i	56-bit encryption with IPSEC. Includes SSH in Cisco IOS Software Release 12.1 and up.

## Obsolete

h	Reduced desktop subset (SNMP, IP RIP/IGRP/EIGRP, Bridging, ISDN, PPP, IPX, and AppleTalk) c1003/4.
h	Reduced desktop subset (SNMP, IP RIP/IGRP/EIGRP, Bridging, WAN – X.25, IPX, and AppleTalk) c1005.

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## Format

Location of the image running in the router.

**fFlashmRAMrROMIRelocatable**

## Compression Types

zzip compressed (note lower case) xmzip compressed wSTAC compressed

## Extensions

.tar	A utility and file format used for packaging files together. These files are compressed using gzip or some other form of compression.
.html	The file is used with a Web browser application.