ORDERING GUIDE

HOW TO ORDER A CISCO AS5400 UNIVERSAL GATEWAY

PRODUCT OVERVIEW

The Cisco® AS5400 Universal Gateway offers high-density data services. The rich set of Cisco IOS® Software features available in the Cisco AS5400 Universal Gateway makes the platform versatile and deployable in a wide range of network architectures.

The Cisco AS5400 Universal Gateway chassis has seven slots that can take trunk cards and Universal Port digital signal processor (DSP) cards. We have created several easy-to-order bundles that meet most customer needs.

BEFORE YOU BEGIN

Before you begin, have information ready as indicated by the following questions:

- Will the customer use AC or DC power supply?
- What is the ingress trunk type?
  - The platform supports CT1, CE1, and CT3 ingress trunks.
- What cable/connector type is required to connect the trunks?
  - Specific cable types like DB15, RJ45, BNC etc. may be required to connect the E1/T1 trunks to the Cisco AS5400 Universal Gateway. The RJ45 is sometimes referred to as RJ48C.
- What trunk signaling is used?

  The Cisco AS5400 Universal Gateway supports a variety of trunk signaling protocols including T1 or E1 Primary Rate Interface (PRI), Channel Associated Signaling (CAS), and E1/R2. If using E1/R2 signaling, check with your Cisco Systems® representative that the platform supports the country specific variant. A list of country variants supported is at http://www.cisco.com/en/US/products/hw/univgate/ps501/products_configuration_guide_chapter09186a008007df5b.html#wp1081171. Signaling System 7 (SS7) signaling is also supported with the use of an external call agent such as the BTS10200 or the PGW2200.
- If T1 or E1 cables will be used for ingress, does the customer need the optional 8-PRI-breakout cable rack mount bracket to organize cabling?
- What kind of calls will be terminated on the platform?
  - Modem calls, ISDN digital calls, wireless (V.110, V.120) calls, voice calls, Voice Extensible Markup Language (VXML), etc., or a combination of the above?
- How many simultaneous sessions need to be supported?
  - The maximum number of sessions that can be supported on one chassis varies depending on the application. The Cisco AS5400 Universal Gateway is designed to handle a maximum of 648 dial sessions. Consult your Cisco representative to determine the performance and capabilities of the platform for your specific applications.
- Is the platform used along with PGW2200 or any other vendor's Signaling System 7 (SS7) controller?
  - To access the Integrated Signaling Link Terminal (SLT) feature, order the license FR54-SLT-LIC (AS5400 Cisco IOS Software Integrated SLT License priced per platform).

- What Cisco IOS Software features are required?
  - Basic Cisco IOS Software features are present in the IP PLUS feature set
  - Applications requiring Triple Data Encryption Standard (3DES) encryption, such as SSHv2 need the IP PLUS 3DES feature set
  - Lawful Intercept is supported in IP PLUS 3DES LAWFUL INTERCEPT feature set
  - X.25, Appletalk, and other non-IP protocols are supported on the ENTERPRISE PLUS feature set
  - Enterprise applications requiring 3DES encryption need the ENTERPRISE PLUS 3DES feature set
- How much memory is required?
  - Refer to the section on memory for defaults and maximums in this document.

Feature Licenses

This product can be ordered with the data license FR54-DATA-LIC. For running voice applications, we recommend that you order the AS5400HPX system.

FR54-DATA-LIC

The Data-Only license covers all Cisco IOS Software features required for remote access and dial services. This license includes support for access VPN, ISDN remote access, and TDM switching. This license does not cover the Cisco IOS Software features required for voice services.

Consult Appendix 1 for the number of licenses that need to be ordered for various CT1, CE1, and CT3 configurations.

Optional Feature Licenses

FR54-SLT-LIC

FR54-SLT-LIC is the feature license for the integrated SLT functions on the Cisco AS5400 Universal Gateway. The Integrated SLT feature pulls existing Cisco distributed Message Transfer Part (MTP) SS7 signaling architecture functions—previously available only on Cisco 26xx-based SLTs—directly onto a Cisco AS5400 Universal Gateway. Like the Cisco 26xx-based SLT, the Integrated SLT on a Cisco AS5400 Universal Gateway backhauls upper-layer SS7 protocols across an IP network using Cisco Reliable User Datagram Protocol (RUDP), terminating the MTP1 and MTP2 layers of the SS7 protocol stack at the Media Gateway Controller (MGC).

Performance and Capacity

The performance and capacity of AS5400 varies for different applications. Consult your Cisco representative for performance characteristics for the specific applications that you will be running on the gateway.

The AS5400 platform occupies two Rack Units (RUs) = 3.5 inches of rack space. The maximum power consumption of one AS5400 is 345W in the CT3 configuration with 648 active calls. The heat dissipation is 106 W/feet 2/vert. feet, 683-1177 BTU/hour.

ORDERING A SYSTEM

We have created easy-to-order bundle options for the most commonly used configurations.

Ordering Bundles

Pick the appropriate bundle based on the requirements (refer to the previous sections).

Each easy-order bundle contains the following (the quantities of each vary based on the configuration):

- IP Plus Cisco IOS Software
- Universal Port DSP card(s) (NP60s and/or NP108s)
- Trunk feature cards (8CT1/8CE1/CT3)
- Data licenses (the number of licenses depends upon the configuration)
- Dual AC Power Supply
- Power cord
- 2 meter Octal cable included when configuration uses 8PRI feature cards
- Cisco AS5400 Universal Gateway chassis with default memory for boot flash, system flash, shared I/O memory, and main memory

You will have to choose

- The Cisco IOS software containing the features required
- The appropriate AC power cable, T1/E1 cables, and octal cables
- Optionally upgrade to a Dual DC Power supply
- Optionally upgrade the main synchronous dynamic RAM (SDRAM)

Appendix 2 contains a list of all the available bundles with a description of the included components.

Ordering Spares

Memory

The Cisco AS5400 Universal Gateway chassis comes with the default memory sizes shown in Table 1. You can order spare memory to your order, as required.

Table 1. AS5400 Memory Spares Use this template for one-column Documents.

Memory Type	Spare Memory Sizes	Part Numbers	Default Size
System Flash	32 MB, 64 MB	MEM-32F-AS54= MEM-64F-AS54=	64 MB
Boot Flash	8 MB, 16 MB	MEM-8BF-AS54= MEM-16BF-AS54=	16 MB
Main SDRAM	256 MB, 512 MB	MEM-256M-AS54= MEM-512M-AS54=	256 MB
Shared SDRAM	64MB,128MB	MEM-64S-AS54= MEM-128S-AS54=	128MB

Chassis and Feature Cards

Order spare chassis and feature cards as required (Table 2).

Table 2. AS5400 chassis and feature card spares

Spare	Description	Part Numbers
Chassis	Cisco AS5400 Spare chassis; AC/DC power; Default Memory	AS5400-AC= AS5400-DC=
Trunk Cards	Spare CE1/CT1/CT3 trunk cards for Cisco AS5400	AS54-DFC-2CT1= AS54-DFC-2CE1= AS54-DFC-4CT1= AS54-DFC-4CE1= AS54-DFC-8CT1= AS54-DFC-8CE1= AS54-DFC-CT3=
Universal Port DSP Cards	60, 108 Universal port DSP cards	AS54-DFC-60NP= AS54-DFC-108NP=

Miscellaneous Spares

You can order optional 19 or 24-inch rack mount kits (AS5400RM-19/AS5400RM-24), cables, and cable shelves.

For a complete list of all orderable parts, spares, and bundles for the Cisco AS5400 Universal Gateway, search for the Cisco AS5400 product family on the Pricing Tool at https://tools.cisco.com/qtc/pricing/MainServlet.

EXAMPLE CONFIGURATIONS

This section provides a typical order that you can use as a reference

Large Indonesia ISP—Data Only

A large ISP in Indonesia wants to add capacity to existing dialup network by adding a network access server to terminate up to 16CE1s terminating at their central office.

You have determined that a single Cisco AS5400 with two octal CE1 trunk cards and five NP108 DSP cards, memory upgrade to 512 M of main memory, and a DC power supply are required. The customer will need a 1RU Octal cable patch panel. The signaling used is E1/R2 and you have verified that R2 country variant for Indonesia is supported. The ENTERPRISE PLUS IPSEC 3DES feature set is required.

The complete system configuration with the AS54-16E1-480-AC and upgrades for memory, DC power, Cisco IOS Software, and cables/shelves is shown in Table 3.

Table 3. System Configuration

Quantity	Part Number	Description
1	AS5400	Cisco AS5400 Base Chassis
1	AS54-DC-RPS	Cisco AS5400 Dual DC Power Supply
2	AS54-DFC-8CE1	Cisco AS5400 Octal E1/PRI DFC cards
4	AS54-DFC-108NP	Cisco AS5400 108 Universal Port Cards
1	AS54-DFC-60NP	Cisco AS5400 60 Universal Port Card
1	S54AK9-12302T	Cisco AS5400 Series Cisco IOS Software Enterprise Plus 3DES Feature Set
480	FR54H-DATA-LIC	Cisco AS5400 Cisco IOS Software Data Licenses Per Port
1	DFC-CABLE-SHELVE	DFC Octal Cable Patch Panel Shelf 1 RU
2	CAB-DFC-OCTAL-2MF	2 Meter 8 PRI DFC Cables—Female RJ45
1	MEM-16BF-AS54	Cisco AS5400 16 MB Boot Flash Upgrade
1	MEM-512M-AS54	Cisco AS5400 512 MB Main SDRAM Upgrade
1	MEM-128S-AS54	Cisco AS5400 128 MB Shared I/O Upgrade
1	MEM-64F-AS54	Cisco AS5400 64 MB System Flash Upgrade

APPENDIX 1—MANDATORY LICENSES

Ordering bundles automatically include the required licenses with your order. The rules in Tables 4, 5, and 6 help you to with nonstandard configurations.

Table 4. CT1 Licensing Rules

Configuration	Number of Trunk Cards	Number of Universal Port Cards	Minimum Number of Base Licenses
2T1 with 48 ports	1 2PRI	1 NP60	48
4T1 with 96 ports	1 4PRI	1 NP108	96
7T1 with 168 ports	1 8PRI	1 NP108 and 1 NP60	168
8T1 with 192 ports	1 8PRI	2 NP108	192
11T1 with 264 ports	1 8PRI and 1 4PRI	2 NP108 and 1 NP60	264
12T1 with 288 ports	1 8PRI and 1 4PRI	3 NP108	288
16T1 with 384 ports	2 8PRI	3 NP108 and 1 NP60	384
Greater than 16T1	More than 2 8PRI	Fewer than 4 NP108/NP60 (incomplete DSP coverage)	Num T1s *24

Table 5. CE1 Licensing Rules

Configuration	Number of Trunk Cards	Number of Universal Port Cards	Minimum Number of Base Licenses
2E1 with 60 ports	1 2PRI	1 NP60	60
4E1 with 120 ports	1 4PRI	1 NP108 and 1 NP60	120
7E1 with 210 ports	1 8PRI	2 NP108	210
8E1 with 240 ports	1 8PRI	2 NP108 and 1 NP60	240
10E1 with 300 ports	1 8PRI and 1 2PRI	3 NP108	300
12E1 with 360 ports	1 8PRI and 1 4PRI	3 NP108 and 1 NP60	360
14E1 with 420 ports	2 8PRI	4 NP108	420
16E1 with 480 ports	2 8PRI	4 NP108 and 1 NP60	480
Greater than 16E1s	More than 2 8PRI	Fewer than 4 NP108/NP60 (incomplete DSP coverage)	Num E1s *30

Table 6. CT3 Licensing Rules

Configuration	Number of Universal Port Cards	Minimum Number of Base Licenses
CT3 with 60 ports	1 NP60	60
CT3 with 108 ports	1 NP108	108
CT3 with 168 ports	1 NP108 and 1 NP60	168
CT3 with 192 ports	2 NP108	192
CT3 with 264 ports	2 NP108 and 1 NP60	264
CT3 with 288 ports	3 NP108	288
CT3 with 384 ports	3 NP108 and 1 NP60	384
CT3 with 432 ports	4 NP108	432
CT3 with 480 ports	4 NP108 and 1 NP60	480
CT3 with 648 ports	6NP108	648

APPENDIX 2—EASY-TO-ORDER BUNDLES

Tables 7 and 8 list currently available easy-to-order bundles for commonly used data-only configurations

Table 7. Low-Density Bundles

Part Number	Description	Number of PRI Cards	Number of Universal Port Cards
AS54-8T1-192-AC	Cisco AS5400;8T1,216 ports,Dual AC,IP+ Cisco IOS Software, 192 Data Licenses	1 8T1	2 NP108
AS54-8E1-240-AC	Cisco AS5400;8E1, 276 ports,Dual AC,IP+ Cisco IOS Software,240 Data Licenses	1 8E1	2 NP108 and 1NP60

Table 8. High-Density Bundles

Part Number	Description	Number of PRI Cards	Number of Universal Port Cards
AS54-16T1-384-AC	Cisco AS5400;16T1,384 ports,Dual AC,IP+ Cisco IOS Software,384 Data Licenses	2 8T1	3 NP108 and 1 NP60
AS54-16E1-480-AC	Cisco AS5400;16E1,492 ports,Dual AC,IP+ Cisco IOS Software,480 Data Licenses	2 8E1	4 NP108 and 1 NP60
AS54-CT3-648-AC	AS5400;1CT3,648 ports, Dual AC, IP+ Cisco IOS Software, 648 Data Licenses	1 CT3	6 NP108

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