

Cisco Access Point Name Manager R3.0

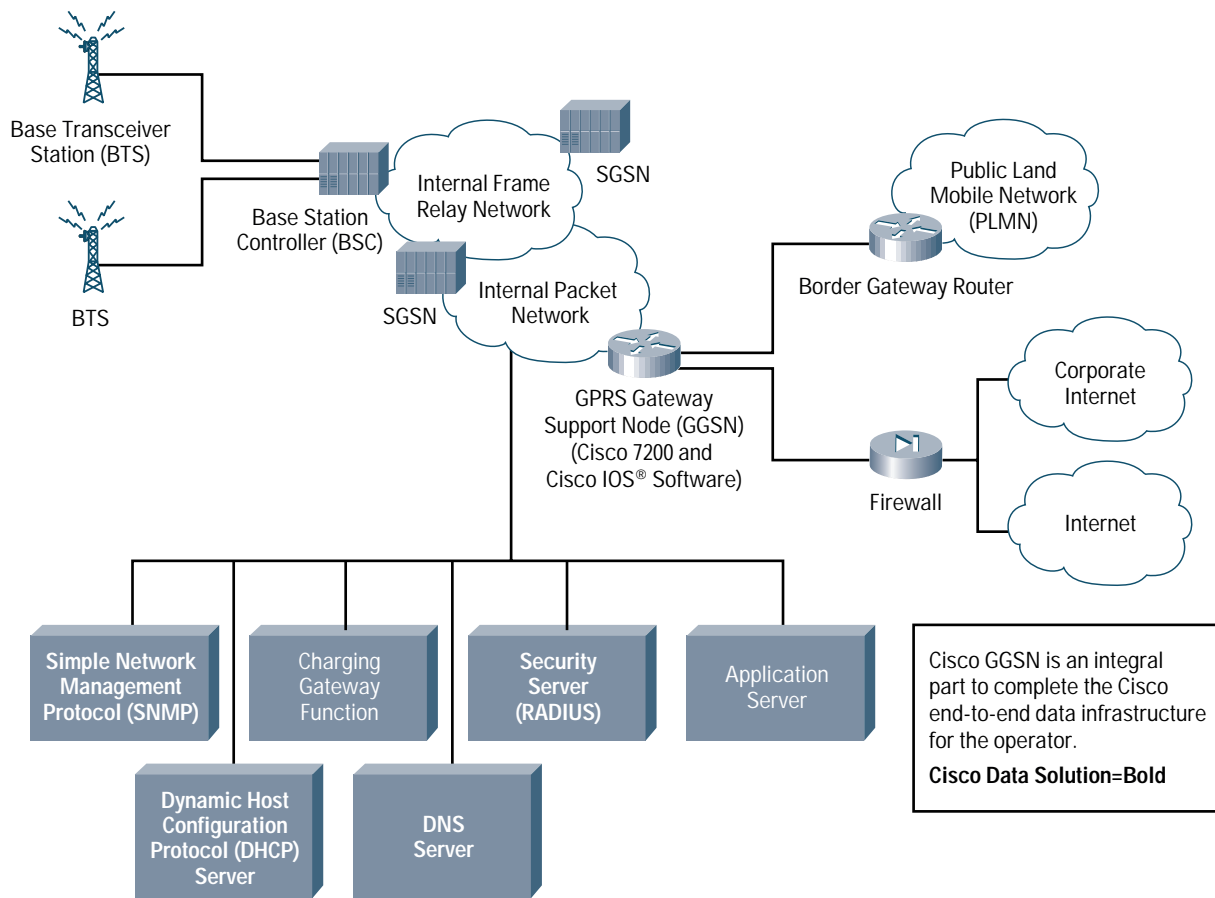
The Cisco Access Point Name Manager is part of the CiscoWorks2000 for Mobile Wireless bundle (see Figure 1), which is a suite of element manager software (EMS) applications that enhances the delivery of new mobile wireless services. Based on CiscoWorks2000, it addresses the element management requirements of mobile operators and provides fault, configuration, accounting, performance, and security (FCAPS) functionality as mobile operators transition their wireless service delivery networks from second-generation (2G) circuit-based traffic to 2.5G and third-generation (3G) IP-based services.

As pictured in Figure 2, the Cisco GPRS solution enables mobile operators to provide packet data service to their wireless subscribers. The Cisco Gateway GPRS Support Node (GGSN) offers European Telecommunications Standards Institute (ETSI) GPRS features and value-added routing functionality on a single Cisco router platform.

Figure 1
CiscoWorks2000 for Mobile Wireless Package



Figure 2
 Mobile Wireless Architecture Map—GPRS Network



An access point name (APN) identifies a packet data network (PDN) that is configured on and accessible from a Gateway GPRS Support Node (GGSN). An APN has several attributes associated with its configuration that define how users can access the network at that entry point.

The Cisco Access Point Name Manager provides a Web-based graphical user interface (GUI) and a flow-through application programming interface (API) to provision APNs within the Cisco GPRS Support Node (GSN) complex to support centralized public data network (PDN) access (Figure 3). It provides a Common Object Request Broker Architecture (CORBA) interface to view and configure the APNs and Domain Name System (DNS) resource record from a network management system (NMS) and third-party provisioning operations support system (OSS).

Table 1 Features and Benefits of Cisco APN Manager Feature

	Description	Benefits
Scalability	<ul style="list-style-type: none"> Up to 5,000 APNs can be configured by each instance of Cisco APN Manager. Up to 20 API/GUI clients can be served with lock-in mechanism. 	<ul style="list-style-type: none"> Provides enough performance for today's and future network size. Reduces risk of configuration errors by locking software resources before transaction completion.
Autodiscovery	<ul style="list-style-type: none"> During the start-up phase, the Cisco APN Manager automatically imports from CiscoWorks2000 Resource Manager Essentials (RME) Cisco GGSN and Catalyst 5000/6509 Switches data. Alternatively, the user can also add the devices IP address or host name directly in the APN Manager GUI. 	<ul style="list-style-type: none"> Automates the discovery phase so operators don't need to manually enter the Cisco GGSN identifier into the APN Manager. Significantly reduces the time to turn on services.
Intuitive CiscoWorks2000-based GUI	<ul style="list-style-type: none"> APN can be viewed, created, modified, and deleted in a user-friendly dialog screen. GUI provides automatic entry validation to minimize configuration error. APN attributes can also be viewed from RME NetConfig window. 	<ul style="list-style-type: none"> Improves time to market as operators don't need a specialized skill set in Cisco IOS® to configure APNs, and can leverage the widely-deployed CiscoWorks2000 product suite.
Tunnel configuration	<ul style="list-style-type: none"> Creates a generic routing encapsulation (GRE) tunnel between Cisco GGSN Gi (GGSN PDN-facing interface) interface and Cisco Catalyst® switch to target network's router gateway. 	<ul style="list-style-type: none"> Accelerates time to revenue by removing the complexity of creating a transparent route for each APN.
APN "Golden Store"	<ul style="list-style-type: none"> Allow the OSS to always query for latest APN profiles as stored in the GGSN. 	<ul style="list-style-type: none"> Removes the guesswork of discovering most up-to-date APN routing. Inventory systems and other OSSs can access the data to populate their databases.
Flow-through provisioning and CORBA interoperability	<ul style="list-style-type: none"> CORBA object-oriented API for OSS integration. CORBA 2.0-compliant. 	<ul style="list-style-type: none"> Reduces time to market by allowing operators to provision their APNs from their legacy OSSs without having to "swivel-chair" (manually switch systems).
Sample API calls provided to create/query/delete APNs	<ul style="list-style-type: none"> The AVBindList is used to pass dynamic list of parameter name-value bindings and can be passed to the CORBA server as the search criteria. 	<ul style="list-style-type: none"> Reduces time to deployment by providing sample code to developers so they can rapidly build their OSS API interface.
APN Discrepancy Analysis	<ul style="list-style-type: none"> A GUI and API to view all APNs in the GPRS network and highlights any discrepancy in the APN attributes. 	<ul style="list-style-type: none"> Allows operator to quickly identify any APN misconfiguration in the GPRS network in order to reduce any potential down-time.
GGSN Smooth Upgrade Migration	<ul style="list-style-type: none"> Allows operators to preserve APN attributes during a GGSN upgrade. 	<ul style="list-style-type: none"> Minimizes network downtime during migration, reduces potential errors and increases operational efficiency.

Cisco APN Manager Interface Definition Language Interfaces

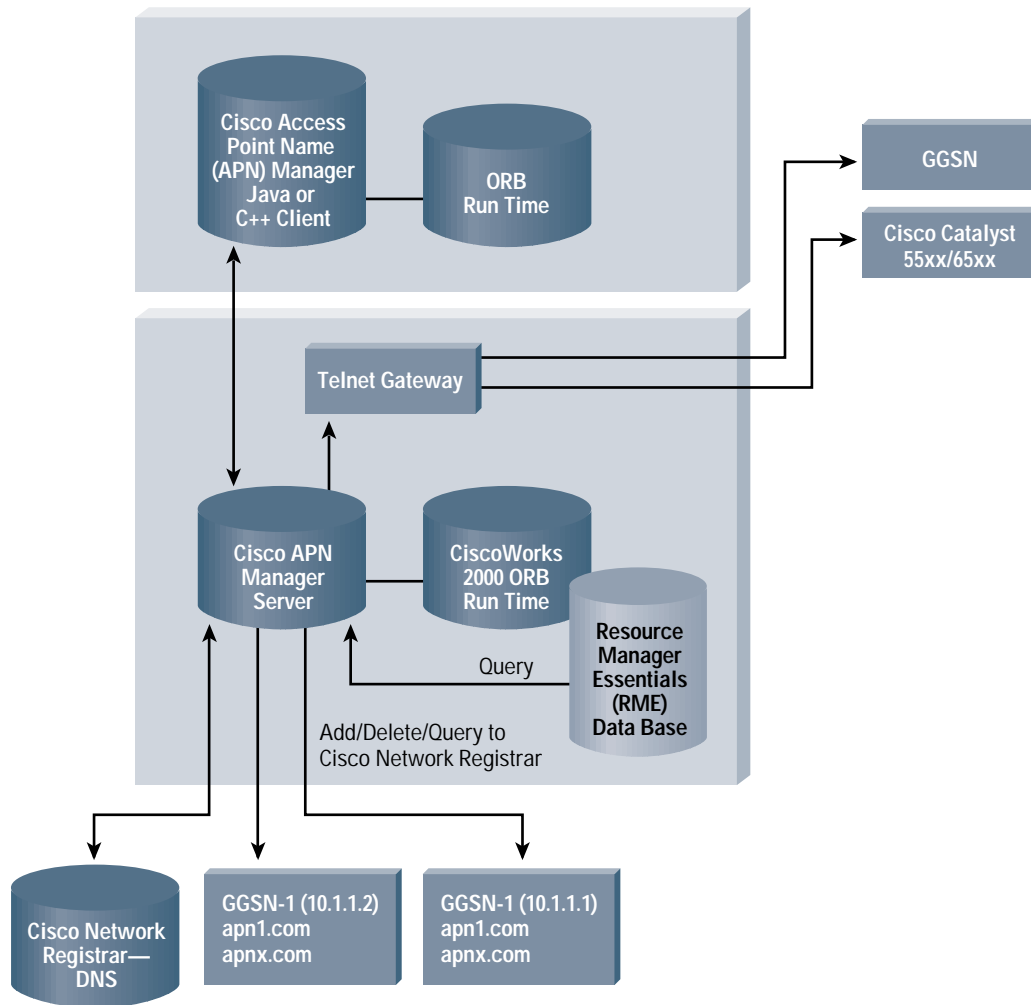
The following features are made available to the OSS client application via the API:

- APN creation: A sample API code is provided to specify all the attributes to create an APN
- APN deletion: This function allows the client application to delete an APN in both the Cisco GGSN and the Cisco Network Registrar
- APN modification: This module allows an operator to change the attributes of an existing APN
- APN query: This function returns all the APNs and their attributes as they pertain to a Cisco GGSN

Cisco APN Manager Architecture

As described in Figure 4, the Cisco APN Manager is a CORBA server that provides a set of Interface Definition Language (IDL) interfaces to configure the APNs on one or more Cisco GGSN nodes in the GPRS network. To perform APN configuration updates with the Cisco APN Manager server, sample Java and C++ client programs (which can be customized) are provided.

Figure 4
Cisco APN Manager Architecture



Cisco APN Manager supports a single Java client program or C++ client program. The Java client can be run on either the Operations and Maintenance Center IP (OMC-IP) platform, or on the OMC-G (GPRS) platform. However, the C++ client is supported only on the OMC-G. Multiple users (also called clients) can access a Java or C++ client on the OMC-G.

Specifications

Supported Platforms

The Cisco APN Manager supports the following platforms:

- Cisco GGSN Release 1.4, 3.0, and 4.0
- Cisco Network Registrar Release 5.0. (DNS)

Object Request Broker (ORB) API

- API client applications must be developed using any CORBA 2.0-compliant software

APN Parameters Configured by Cisco APN Manager

For APN attributes that are optional and not set by the operator, the Cisco APN Manager will use the default global values as configured in the Cisco GGSN. The following is a sample of attributes configured by the Cisco APN Manager (via the GUI or CORBA API):

- APN unique identifier (Name/Index)
- IP address allocation method
- Primary/secondary DHCP server IP address
- Primary/secondary charging gateway IP address
- Access control lists for PDN and mobile station packets
- Gi interface and next-hop IP address
- Access violation result
- User subscription to APN prior to access
- PDN PDP-initiated sessions
- PPP regeneration setup
- APN VRF name
- Idle PDP purge timer

The following parameters are set in Cisco Network Registrar

- DNS resource record
- DNS zone

Compliance

- APN naming scheme as defined by the Global System for Mobile Communication (GSM) Standard 03.03.
- CORBA 2.0-compliant

System Requirements

Sun Solaris Server Minimum Requirements

The server system requirements can be found in the product overview documents for the CiscoWorks2000 for Mobile Wireless solution. Please refer to these and other product installation documentation for more detailed information on setting up and configuring these solutions.

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Ordering Information

Cisco APN Manager is sold as an integral part of the CiscoWorks2000 for Mobile Wireless solution.

To place an order, contact your local Cisco sales representative.

For More Information

To learn more about Cisco mobile wireless products and solutions, please go to <http://www.cisco.com/go/mobile>



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