Getting Started

Starting QoS provisioning through the ISC GUI requires for certain steps to be completed.

First, examine the general system recommendations and requirements in the *Cisco IP Solution Center Installation Guide, 4.1* to determine if your environment is properly set up for running ISC.

Secondly, study the QoS specific prerequisites described in Prerequisites and Assumptions, page 2-1 in this chapter.

Finally, install the necessary licenses as described in this chapter.

This chapter contains the following sections:

Prerequisites and Assumptions

To implement QoS parameters for a network using the Cisco IP Solution Center (ISC) 4.1, you must have specific configuration information about the devices participating in QoS provisioning.

This section describes how to check your devices for QoS configuration prerequisites, lists configuration and implementation assumptions, describes how to preconfigure certain QoS parameters using the ISC properties file.

Review all prerequisites and assumptions before you implement QoS provisioning.

This section contains the following:

General Prerequisites

To install ISC, you are required to have the necessary license keys. License installation is described in Chapter 2, “Getting Started.”

To use the ISC user interface, you must be using Netscape Version 7.0 or later or Microsoft Internet Explorer, Version 6.0 or later.

See *Cisco IP Solution Center Installation Guide, 4.1* for general system recommendations.

Configuration Information and Assumptions

ISC requires that you have certain pieces of configuration information about the devices participating in QoS provisioning. This configuration information can be obtained by ISC through configuration collection.

This operation is described in *Cisco IP Solution Center Infrastructure Reference, 4.1*.

Configuration Assumptions (IP QoS)

This section describes device configuration assumptions for QoS provisioning. Other system requirements are described in *Release Notes for Cisco IP Solution Center, 4.1*.

QoS provisioning requires that you enable Cisco express forwarding (CEF) or Distributed CEF (dCEF) on all CE and PE devices.

- CEF is an advanced, layer 3 switching technology inside a router. It defines the fastest method by which a Cisco router uses to forward packets from ingress to egress interfaces.
- CEF enables distributed forwarding on versatile interface processors (VIPs) in the Cisco 7500 series and high-performance line cards in the Cisco 12000 series.

Note For Cisco 7500 series routers, MQC supports VIP-based QoS only. Therefore, ISC supports 7500 series (Distributed) routers and not RSP-based 7500 series routers.

Implementation Assumptions

The QoS implementation model deployed in ISC is based upon the Differentiated Services (DiffServ) architecture. DiffServ describes a set of end-to-end QoS parameters that can be used in conjunction with Cisco IOS software, and allows the use of the differentiated service code point (DSCP) marking of the IP header. The DSCP header adds the capability of up to 64 service classes in a QoS policy.

ISC supports the following layer 2 encapsulations for QoS provisioning:

- Ethernet 802.1q (& QinQ)
- ISL
- HDLC
- PPP
- MLPPP
- Frame Relay
- ATM

ISC supports the following Cisco IOS command structures for QoS provisioning:

- Modular QoS CLI framework (MQC)—The Modular QoS CLI is a CLI structure that allows users to create traffic policies and attach these polices to interfaces. A traffic policy contains a traffic class and one or more QoS features. A traffic class is used to classify traffic, while the QoS features in the traffic policy determine how to treat the classified traffic.
- Non-MQC commands —for the following QoS components in Cisco IOS software:
  - FRTS
  - FRF.12
  - CAR
  - LFI over MLPPP.

See the appropriate Cisco IOS documentation on Cisco.com for more information on Cisco IOS commands.

ISC QoS Setup and Installation

Before setting up ISC QoS, the ISC software must be installed. To do so, see *Cisco IP Solution Center Installation Guide, 4.1.*

To set up a new ISC QoS user, one or more users with a QoS role must be created. For step by step instructions and for an explanation of license keys in ISC, see *Cisco IP Solution Center Infrastructure Reference, 4.1.*

To install a QoS license, use the following steps:

Step 1 Make sure you have administrative priviliges to install licenses.

Step 2 Navigate **Administration** > **Control Center** > **Licensing**.

Step 3 Enter the QoS license key:

- Click **Install**.
- Enter the license key.
- Click **Save**.

Step 4 Log out as administrator.

Step 5 Log in as the user created above.

You are now ready to start using ISC QoS.

Launching the ISC GUI

To launch the ISC GUI:

Step 1 Open a web browser and enter the following URL to access the login screen (Figure 2-1):

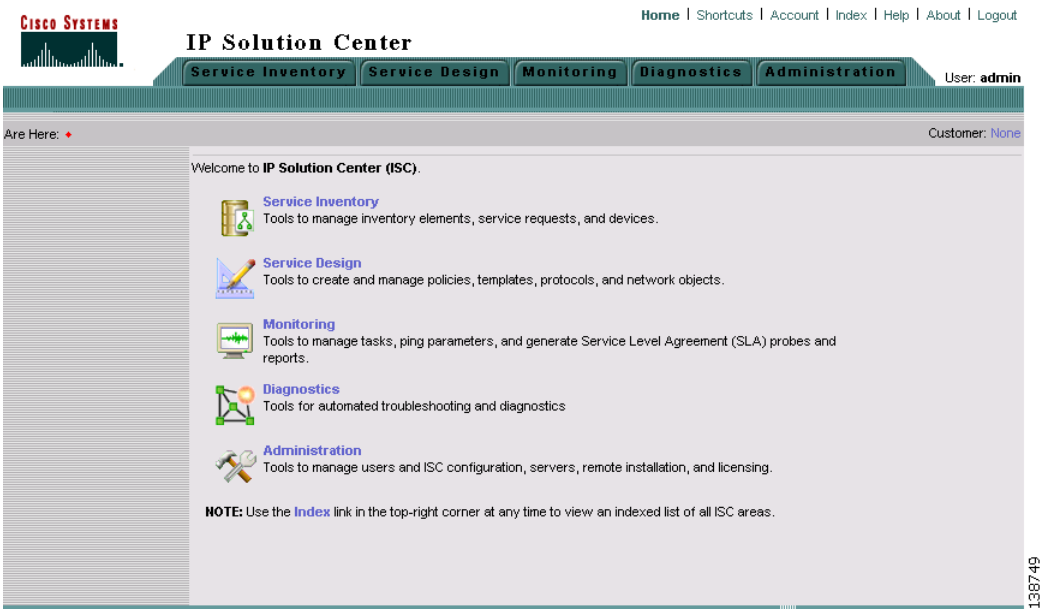
http://<*hostname or IP address of ISC Interface server*>:8030/isc/login

Figure 2-1 ISC Login Screen

Step 2 Enter your User Name and Password and click **Login**. Contact the network administrator if you cannot log into the ISC GUI.

Step 3 If the login is successful, the ISC home window appears (Figure 2-2).

Figure 2-2 ISC Home



The home window provides access to the five main areas of operation in ISC; Service Inventory, Service Design, Monitoring, Diagnostics and Administration.

For QoS provisioning, the two main areas of operation are:

- Service Inventory—In this area you can construct QoS service requests and deploy them to the network. Here, some distinction needs to be made between IP QoS and Ethernet QoS:
  - QoS provisioning in this area involves either defining QoS link endpoints and then manually selecting these defined endpoints during QoS service creation or using an existing MPLS service request for link definition (no need to define link endpoints). These operations are described in Creating QoS Link Candidate Objects, page 3-2 and IP QoS for MPLS VPNs, page 3-28 respectively.
  - For Ethernet QOS, the Service Inventory is used in a similar way but without editing of link endpoints. Existing Layer 2 services must be used for link definition (L2VPN or VPLS services).
- Service Design—QoS provisioning in this area includes creating a QoS policy and defining link level QoS settings. These operations are described in Creating IP QoS Policies, page 3-9 and Configuring Link-Level IP QoS Settings, page 3-15 for IP QoS and Creating Ethernet QoS Policies, page 4-3 and Configuring Link-Level Ethernet QoS Settings, page 4-9 for Ethernet QoS.

Note The ISC home window that appears depends on the licensed service packages you purchased.

QoS User Roles

ISC is designed so that different types of users can manage different aspects of the QoS provisioning process.

The roles available for your installation are listed under Administration > Security > User Roles.

There are two predefined QoS user roles that represent distinct levels of access permission:

- QoSRole—supports the ability to create both QoS Policies and QoS Services
- QoSServiceOpRole—only supports the ability to create QoS Services

You can also create new user roles. How to manage user roles is described in *Cisco IP Solution Center Infrastructure Reference, 4.1.1*