

## USB eToken and USB Flash Features Support

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Cisco® Integrated Services Routers provide secure, wire-speed delivery of concurrent data, voice, and video services (Figure 1). The routers' Universal Serial Bus (USB) ports enable important security, and provisioning capabilities, including secure device authentication, storage of removable credentials for establishing secure VPN connections, secure distribution of configuration files, bulk Flash storage for files and configuration, and booting from USB.

**Figure 1.** Cisco 800, 1800, 2800 and 3800 Series Integrated Services Routers, and Cisco 7200 VXR Series Services Aggregation Routers



One of the many architectural enhancements specific to the next-generation integrated services routers as well as the Cisco 7200 VXR Series Services Aggregation Routers is the integration of USB ports. Two new features are available to take advantage of these USB ports—USB eToken support and USB Flash support. A USB is a low-cost, bidirectional, dynamically attachable serial interface.

The USB versions supported are:

- USB 1.1 on the Cisco 1841, 2800 Series, and 3800 Series routers, and Cisco 7200 VXR Series routers (with NPE-G2)
- USB 2.0 on the Cisco 871, 1811, 1812, and Cisco 7200 VXR Series routers (with the Network Processing Engine NPE-G2)

The new eToken and USB Flash features are supported on all routers that have built-in USB ports. This includes Cisco 871, 1811, 1812, and 1841 routers, as well as the Cisco 2800 Series and Cisco 3800 Series integrated services routers and Cisco 7200 VXR Series routers (with NPE-G2).

The USB eToken and Flash features provide Cisco routers with built-in USB ports to support eTokens and USB Flash memory. The USB eToken feature provides secure configuration distribution and allows users to store VPN credentials for deployment. The eTokens are supplied by Aladdin Knowledge Systems and can be ordered by going to <http://www.aladdin.com/etoken/cisco>. The USB Flash feature allows users to store images and

configurations, and boot images directly via USB Flash memory. USB Flash memory can be ordered from Cisco Systems (Table 1).

### USB eToken Feature

The USB eToken feature enables device authentication and simplifies the deployment and secure configuration of Cisco routers. It uses smart card technology in a USB form factor to facilitate the authentication and configuration process. The token provides secure access to the router—the token and a PIN are necessary to access the configuration, keys, and credentials. The token can also be used to securely provide the configuration to the router, because the configuration can be encrypted on the token.

**Figure 2.** Cisco 2851 Integrated Services Router with Two USB Ports; Aladdin Knowledge System eToken



The USB eToken can be used to store files. Any kind of files that need to be securely stored and that can fit on the eToken can be stored. The eToken can store X.509 digital certificates as well as configuration files. These files can be transferred from the router to the eToken with a Cisco IOS® Software CLI command or by using a GUI-based software application called Token Management System (TMS) available from Aladdin Knowledge Systems. For more information on TMS or for ordering eTokens, visit <http://www.aladdin.com/etoken/cisco>.

### USB Flash Feature

The USB Flash feature provides an optional secondary storage capability and an additional boot device. Images, configurations, or other files can be copied to or from the Cisco USB Flash memory with the same reliability as storing and retrieving files using the Compact Flash card. In addition, modular Integrated Services Routers can boot any Cisco IOS image saved on USB flash. Cisco USB Flash memory is available in 64, 128, and 256 MB sizes.

### Deployment Applications

There are three main application drivers for these features—removable credentials, Flash storage, and touchless or low-touch provisioning applications.

#### Removable Credentials Application

This application, meaningful in VPN deployment scenarios, uses the smart card token to store the RSA key pair, one or several root certificates, and configuration for VPN deployment. When inserted into the router, the router will boot from the configuration stored on the token (or from another configuration as per the command-line interface [CLI]). The smart card in the token will use the RSA key pair and root certificates to authenticate one or more IP Security (IPSec) tunnels. The token may contain several root certificates, as a single router may initiate several tunnels to different VPNs. The number of certificates stored may vary by platform (based on role of the

router). The token keys can also be used to securely provide the configuration to the router, because the configuration can be encrypted on the token key.

Since remote devices like routers tend to be deployed in less physically secure areas, there is a greater need to provide additional security. With the removable credentials feature, two-factor authentication can be enforced to provide added security at remote locations. The router at the remote location cannot be deployed unless the following two conditions are met:

- The smart card must be inserted in the router
- The user must have entered the PIN for the smart card (if not using the default token PIN).

By storing the VPN credentials on the secure eToken, the credentials can easily be removed if the router needs to be redeployed, returned when a lease expires, or returned for repair.

### **Flash Storage Application**

Customers may deploy configurations and Cisco IOS® Software images on USB token Flash devices. These USB Flash drives can be used to store Cisco IOS images, configurations, or any other type of file. While this can be accomplished with Compact Flash devices, the Flash storage feature provides customers with an alternative. Many customers will find the USB form factor to be a preferable deployment media to Compact Flash.

USB Flash storage can facilitate Cisco IOS Software distribution. A Cisco IOS image may be downloaded via a PC directly to USB Flash in the PC, then moved to the router.

### **Touchless or Low-Touch Provisioning Application**

Enterprise customers or service providers can use these USB features to deploy many routers in the network without the need to physically load different configurations to each device prior to shipment and deployment. The routers can also be shipped directly to end users from the factory without any configuration. Both USB features support loading a bootstrap configuration into the eToken or USB Flash. Once connectivity is established at the remote site with the help of boot configuration, either a Cisco Configuration Engine or a Trivial File Transfer Protocol (TFTP) server can be contacted to download a complete configuration. Another value derived from this application is that the task at the remote site can be performed without a high degree of technical knowledge.

### **Cisco IOS Upgrade**

Customers can now easily upgrade their Cisco IOS images in remote locations, even if they can not download large file over their network. Cisco's USB Flashes are orderable with preloaded Cisco IOS images. Once the USB Flash has been sent to the branch and plugged into the Cisco router, the router is able to reboot from USB Flash and run the newest Cisco IOS image.

### **Feature Benefits**

#### **eToken USB Feature**

- Removable credentials allow remote provisioning of routers.
- Security credentials are physically separated from the chassis of the router.
- The eToken can be used for security purposes that require the user to enter a PIN to access the stored information. This adds to the security of the application because it requires both the smart card itself (something you have) and a password (something you know), providing a two-factor authentication for added security enforcement. This greatly

reduces the possibility of a third party being able to access the information on the card if it is lost or stolen.

- From a provisioning perspective, customers will see value in being able to order routers directly from Cisco (or a reseller) with a desired Cisco IOS image installed, to have the routers shipped directly to the customer premises, and to provide configuration files in a touchless or low-touch manner by distributing an eToken device. This allows the customer or service provider to use deployment technicians of a lower skill set for router installations.

### USB Flash Feature

- Customers can store configurations and images on USB token Flash devices.
- The USB Flash drive provides an alternative mechanism to Compact Flash for storing files and images. As for Compact Flash, it is possible to boot any Cisco IOS image from USB Flash. Since the USB form factor is ubiquitous, customers can see value in using such a device over a Compact Flash.
- Customer can order the Cisco USB Flash with pre-loaded Cisco IOS images.

The USB eToken and USB Flash features are supported in the following Cisco IOS Software Releases:

- For the Integrated Services Routers—Cisco 871, 1811/1812, 1841, 2800, 3800: As of 12.3(14)T
- For the Cisco 7200 VXR Services Aggregation Routers: With NPE-G2 as of 12.4(4)XD (in the future: also in 12.4T and 12.2SB)

For more details on USB eToken and USB Flash features, please go to the link below:

<http://www.cisco.com/go/USB>

### Ordering Information

The USB eToken is supplied by Aladdin Knowledge Systems. To order eTokens or for more information, please contact Aladdin Knowledge Systems at <http://www.aladdin.com/etoken/cisco>.

The USB Flash tokens are available in 64 MB, 128 MB, and 256 MB sizes. Table 1 lists the part numbers for ordering.

**Table 1.** USB Flash Memory Part Numbers

Part Number	Description
<b>MEMUSB-64FT</b>	64 MB USB Flash
<b>MEMUSB-64FT=</b>	64 MB USB Flash (spare)
<b>MEMUSB-128FT</b>	128 MB USB Flash
<b>MEMUSB-128FT=</b>	128 MB USB Flash (spare)
<b>MEMUSB-256FT</b>	256 MB USB Flash
<b>MEMUSB-256FT=</b>	256 MB USB Flash (spare)

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## For More Information

For more information about the Cisco ISRs and USB Options, visit <http://www.cisco.com/go/isr> or contact your local account representative.



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