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IBM Features on Demand

User's Guide

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IBM Features on Demand

User's Guide

Note: Before using this information and the product it supports, read the general information in Appendix B, "Notices," on page 39.

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Chapter 1. Introduction

This document provides an overview of the IBM[®] Features on Demand program and the feature activation process. Features on Demand is the capability to activate or "unlock" features that are integrated in System x products. The feature is in the firmware or software but is "locked" until the activation key is installed.

Features on Demand provides the capability to activate a feature on a server or option with a software key that is referred to as the Features on Demand activation key. Features on Demand features are usually integrated in firmware or software on a server or option, but the feature is "locked" until the Features on Demand activation key is installed. If you purchase a server and a Features on Demand option, manufacturing can install the Features on Demand activation key on the server so that the Features on Demand function is ready for you to use when you receive the server. A Features on Demand option can also be ordered anytime after your initial server purchase just like other IBM options. Features on Demand enables you to buy the features that you need now with the ability to enhance your system later without costly hardware upgrades.

The Features on Demand feature is activated in one of the following ways:

- If you purchase a feature as part of a server or chassis order, the IBM factory or business partner enables the feature as part of the configuration and testing of the server or chassis. You can begin using the feature when you receive the server or chassis.
- If you purchase a Features on Demand option or upgrade that is separate from the server or chassis order, you must complete the feature activation when you install the option. In this case, an authorization code with instructions for activating the feature is mailed to you.

An authorization code is a 22-character alphanumeric string that is the proof of purchase and entitlement to upgrade one or more units with a particular feature. The authorization code and instructions for requesting an activation key are on a printed document that is mailed to you. If you order directly from IBM, the authorization code and instructions can also be sent to the email address that you provide when you register on the Features on Demand website. For more information, see "Registering with IBM" on page 5.

Features on Demand is also supported on certain hardware and software options offered by IBM. To check whether a Features on Demand option is available for your hardware or software option, see the documentation that comes with the option.

Overview

There are four types of Features on Demand features:

- · Server-based features
- Chassis-based features
- I/O Modules or switch features
- Software features

The Features on Demand website is the primary interface that is used to register with IBM for Features on Demand, activate keys, retrieve key history, generate a report, and much more. IBM ToolsCenter has two utilities, the IBM Advanced Settings Utility (ASU) and IBM Dynamic System Analysis (DSA), that you can use to manage the Features on Demand keys. There are manual methods that you can also use to install or remove an activation key. More information about using these tools is provided in Chapter 2, "Using the IBM Features on Demand website," on page 5 and Chapter 3, "System feature activation," on page 19.

The following table provides guidance for determining which tools to use for the different types of Features on Demand features.

Features on Demand type	Administration point	Tools	Protocols	Examples
Server-based	Integrated Management Module II (IMM2)	 Key Management System (KMS) website ASU and DSA IMM2 web interface 	 Intelligent Platform Management Interface (IPMI) Keyboard Controller Style (KCS) Common Information Model (CIM) 	Server functions, for example: • IMM2 Advanced • RAID features • Network features
Chassis-based	Management module of the chassis	KMS websiteASU and DSA	CIM	Chassis features like BladeCenter Open Fabric Manager (BOFM)
I/O module	Management Information Base (MIB)	ASU	Simple Network Management Protocol (SNMP)	Switch features
Software-based		See the software documentation.		IBM System Networking Distributed Switch 5000V

Table 1. Tools to use for each Features on Demand feature type

Managing the Features on Demand features

There are several tools available for you to manage the Features on Demand features. The Features on Demand website (http://www.ibm.com/systems/x/fod/), also referred to as Key Management System (KMS), provides a user interface for creating and retrieving keys and is the repository of Features on Demand key information and history. Use the Features on Demand website to register users, activate keys, retrieve keys or authorization codes, and generate reports. The Features on Demand website is used with all Features on Demand feature types. Chapter 2, "Using the IBM Features on Demand website," on page 5 provides detailed information about the Features on Demand website.

IBM ToolsCenter has two utilities, Advanced Settings Utility (ASU) and Dynamic System Analysis (DSA), to help you manage your Features on Demand activation keys for server-based, chassis-based, and I/O module-based features. These utilities are used to acquire and download keys from the Features on Demand website, install and remove Features on Demand activation keys, export keys for backup, and report on available keys. For an overview of the ToolsCenter utilities, see "Using IBM ToolsCenter utilities to manage Features on Demand activation keys" on page 25.

In addition to the Features on Demand website, tools, and applications, you can also manually manage the Features on Demand keys. For more information about using the IMM2 web interface to manage server-based Features on Demand keys, see "Manually installing a Features on Demand activation key on the IMM2" on page 20 and "Manually removing a Features on Demand activation key on the IMM2" on the IMM2" on page 23.

For software-based features, use the method that is specified in the software documentation.

System requirements

To activate a Features on Demand feature, you must have a hardware or software offering from IBM that supports Features on Demand. Servers must have the Integrated Management Module II (IMM2) to support Features on Demand.

To manage hardware-based Features on Demand features, you can interact directly with the hardware (for example, a server, chassis, or I/O module) through its supported user interfaces, or you can use IBM Systems Director or the IBM ToolsCenter utilities. For more information about IBM Systems Director, see the information center at http://publib.boulder.ibm.com/infocenter/director/v6r1x/ index.jsp?topic=/director_6.1/fqm0_main.html. For more information about the IBM ToolsCenter, see the information center at http://publib.boulder.ibm.com/infocenter/director/v6r1x/ index.jsp?topic=/director_6.1/fqm0_main.html. For more information about the IBM ToolsCenter, see the information center at http://publib.boulder.ibm.com/infocenter/ toolsctr/v1r0/index.jsp.

To manage software Features on Demand that are independent of the hardware, you can interact with the software-provided interface for managing product activation. For specific details about how to access product activation information, see the software product documentation.

Notices and statements in this document

The following notices and statements are used in this document:

- Note: These notices provide important tips, guidance, or advice.
- **Important:** These notices provide information or advice that might help you avoid inconvenient or problem situations.
- **Attention:** These notices indicate potential damage to programs, devices, or data. An attention notice is placed just before the instruction or situation in which damage might occur.

Chapter 2. Using the IBM Features on Demand website

The IBM Features on Demand website is at http://www.ibm.com/systems/x/fod/. You can use the website to perform the following tasks:

- Register with IBM
- · Activate a feature
- · Retrieve history and reactivate a Features on Demand feature
- Manage an IBM customer number
- · Retrieve an authorization code
- · Generate a report
- **Note:** Your IBM ID and password are required to log in to the Features on Demand website. If you are not registered with IBM, go to http://www.ibm.com/systems/x/fod/ and click **register** on the bottom of the page.

Registering with IBM

If you are not registered with IBM, complete the following steps:

1. Go to http://www.ibm.com/systems/x/fod/ and click **register** on the bottom of the page. The My IBM Registration page opens.

	Services & industry solutions Support & downloads My IBM	
p r ofile	My IBM registration	
registration	Step 1 of 2	
d FAQ	The fields indicated with an asterisk (*) are required to complete this	
esk	transaction; other fields are optional. If you do not want to provide us w the required information, please use the "Back" button on your browser return to the previous page, or close the window or browser session the displaying this page.	to
	Preferred language for profiling : English	
	IBM has sold its PC business to Lenovo Group Ltd. To facilitate your abil to browse for information on PC products and services, your ID and password will provide you access to both the IBM and Lenovo web sites IBM is not responsible for the privacy practices or the content of the Lenovo web site. Learn more about IBM & Lenovo. Please submit the following information, which is required each time you sign in. Please provide an email address as your IBM ID. This can be, b need not be, the same as the email address you provide below as edita	
	contact information. Remember, you can't change your IBM ID once you've signed up. To le what is acceptable as a password, see <u>guidelines for IBM IDs and</u> <u>passwords</u> .	
	* IBM ID:	
	Why do I have to provide an email address as my IBM ID?	
	* Password: (Minimum 8 characters)	
	* Verify password:	
	Please enter a security question that only you can answer. Then, enter the answer to the question. Occasionally, you may be asked to answer this question to confirm your identity. Enter a question that is simple to answer and is easy to remember.	-8
	* Security question:	
	* Answer to security question:	
	* Email:	
	Select the country of your residence to set warranty. Learn more	
	* Country/region of residence: Please select country	
	Your preferences and interests will be associated with your identification information so we can continue to personalize your experience when yo visit IBM.COM sites. If you do not want us to associate your information please check this box. Please do not associate my preference and interest with my identification information.	u
	Continue Cancel	na antara a

- 2. On the "My IBM Registration" page, enter the following information:
 - IBM ID, which is an email address
 - Password
 - · Verification of the password
 - Security question
 - Answer to the security question
 - Email address
 - Country or region of residence

If you have problems registering on the IBM website, click **Help and FAQ** on the left navigation pane, or go to https://www.ibm.com/account/profile/ dk?page=helpdesk.

3. Click **Continue**. The following page opens, thanking you for registering with ibm.com.

TRM.	United States [change	ge] Terms of use Search
Home Products	Services & solutions Support & downloads My account	JEarch
My IBM profile My IBM registration	My IBM registration	
Help and FAQ	Thank you for registering with ibm.com. Continue to explore ibm.com as a	My IBM
	Continue	Welcome back, Funny Love → Edit your profile
		→ Sign out
		If you are not Funny Love, click here.
		-
About IBM Priv	acy Contact	

4. Click **Continue** and the Features on Demand page opens. Go to "Activating the Features on Demand feature" on page 8.

Activating the Features on Demand feature

Before you begin, make sure that the following items are available:

- Authorization code that is at the top of the *IBM Feature Activation Instructions* document that was sent to you in the mail
- · Access to the hardware or software that you want to activate

To activate the Features on Demand feature, complete the following steps:

1. Go to http://www.ibm.com/systems/x/fod/. The Features on Demand page opens.

	United States [change] English	h [change]
		Search
Hond Solutions - Se	ervices * Products * Support & downloads * My IBM *	Welcome [IBM Sign in] [Register]
Features on Demand	Features on Demand	
Help	Systems >	
Contacts	Welcome to the Features on Demand web application.	Quick status
	Use the following options to administer your Features on Demand.	Last action: Not signed in
	Request activation key: Request additional activation keys from existing authorization codes.	
	 Retrieve history: Retrieve existing activation keys. 	
	 Register IBM customer number administrator: Register IBM customer number administrator (option used by IBM support). 	
	 Manage IBM customer number : Manage IBM customer number (option used by customer administrator). 	
	Retrieve authorization code : Retrieve any previously shipped authorization code using sales information.	
	😔 Sign in	
	You must use your IBM ID to sign in to this site. If you have not previously registered for an IBM ID, please register now.	
About IBM Privacy C	Contact Terms of use Accessibility IBM Feeds Jobs	

2. Click Sign in. The Sign in page opens.

ome Solutions *	Services * Products * Support & downloads * My IBM *	
y IBM registration	Sign in	
elp and FAQ		
entral Sign-On	Please enter your IBM ID and Password in the sign in area below. If you are not currently	Additional resources
	registered with our site please register now.	→ Forgot your IBM ID?
	Tip: To easily return to your destination, bookmark the page after this page. Do not bookmark the sign in page.	→ Forgot your password?
	IBM ID:	→ Change password
	Password:	
	Submit	_
	IBM Intranet Users	
	Login with my w3 Intranet ID (requires IDs to be linked using Central Sign-On)	
	Link IDs using <u>Central Sign-On</u>	

3. On the Sign in page, enter your IBM ID and password and click **Submit**. The Welcome page opens.

Home Solutions ▼ Se	rvices * Products * Support & downloads * My IBM * Welcome Lars	Bo Jørgensen (Not you?) (IBM Sig
Features on Demand Request activation key	Welcome	
Retrieve history	Systems > Features on Demand >	
Register IBM customer number administrator	Welcome to the Feature on Demand web application.	Quick status
Manage IBM customer number	Request new activation keys and view history of usage.	Last action: Signed in
telp	Use the following options to administer your Features on Demand.	
Feedback	Request activation key: Request additional activation keys from existing authorization codes.	Features on Demand
	Retrieve history: Retrieve existing activation keys and authorization codes used. Register IBM customer number administrator: Register IBM customer number	Hello, igs1test - test user Tester
	administrator (option used by IBM support). • Manage IBM customer number : Manage IBM customer number (option used by customer	Latest news(0)
	administrator).	→ Contacts

4. On the Welcome page, select **Request activation key** from the left navigation pane.

lome Solutions ▼ Ser	vices * Products * Support & downloads * My IBM * Welcome Lars	Bo Jørgensen [Not you?] (IBM Sig
Features on Demand Request activation key	Welcome	
Retrieve history	Systems > Features on Demand >	
Register IBM customer number administrator	Welcome to the Feature on Demand web application.	Quick status
Manage IBM customer number	Request new activation keys and view history of usage.	Last action: Signed in
Help	Use the following options to administer your Features on Demand.	
Feedback	Request activation key: Request additional activation keys from existing authorization codes.	Features on Demand
	Retrieve history: Retrieve existing activation keys and authorization codes used. Register IBM customer number administrator: Register IBM customer number	Hello, igs1test - test user Tester
	administrator (option used by IBM support). • Manage IBM customer number : Manage IBM customer number (option used by customer	Latest news(0)
	 Manage Isin customer number , Manage Isin customer number (option used by customer administrator). 	→ Contacts

5. On the "Request activation key" page, enter the authorization code and click **Continue**.

lome Solutions • So	ervices • Products • Support & downloads • My IBM •	Welcome Lars Bo Jørgensen [Not you?] [IBM :
Features on Demand	Request activation key	
Request activation key		
Retrieve history	Systems > Features on Demand >	
Register IBM customer number administrator	Step 1: Authorization code	Quick status
number administrator Manage IBM customer number	To request an activation key you will need an authorization code and the r serial numbers for the hardware on which the Features on Demand will b	
Help	The authorization code was supplied to you by email and/or on hardco	py as part of the
Feedback	ordering process.	Features on Demand
	An authorization code is a 22 alphanumeric code which will authorize the activation keys (if there are remaining activation keys left on the authorization	
	Please enter your authorization code	🕞 Latest news(0)
	Authorization code*	→ Contacts
	🕑 Continue 🛛 🛞 Cancel	

- 6. Enter the unique identifier (UID) specified for feature activation. If you do not know the UID that is requested, see the product documentation for further information about how to retrieve and enter the identifier in the key redemption process.
 - **Note:** For server options, the UID is usually the machine type and serial number (entered together with no spaces) of the target server. For I/O modules, the UID is usually the serial number of the I/O module.

For features that include additional constraints, such as the entitlement number of chassis, an additional prompt is displayed during the authorization code redemption process. The current entitlement is displayed and you are asked for the new entitlement number. Enter the value when you are prompted. For more information about constraints, see your feature documentation.

Features on Demand	Request ac	tivation key	
Request activation key	rioquoor do	indion hoy	
Retrieve history	Systems > Features on Dem	and 5	
Register IBM customer	Step 2: Machine details	und *	Quick status
number administrator	Your authorization code i	s displayed below.	Last action:
Manage IBM customer number	Enter your 32 digit Linive	rsally Unique Identifier. (Your Universally Unique Identifier can be found	Signed in
Retrieve authorization code	by using one of the syste		
Generate report	Feature code	RCH1	Features on Demand
lelp	Frank Landa Barra		Hello,
eedback	Feature description	Test feature for UUID UID type	🕒 Latest news(4)
	Part number / PID	RCH0003	→ Contacts
	Remaining keys	838	
	Universally Unique Identifier*		
	Constraint type	Please select a constraint type	
	Constraint value		
		Generate key 🛞 Cancel	

7. Select **Generate key**. A summary of what will be created is displayed. Make sure that the information is correct before you select **Confirm**.

		port & downloads * My IBM *	Welcome [IBM Sign in] [Registe
Features on Demand	Request ac	tivation key	
Request activation key			
Retrieve history	Systems > Features on Den	land >	
Register IBM customer number administrator	Step 3: Machine details	confirm	Quick status
Manage IBM customer	Before request key gene	ration, please confirm the below detail information for key generation.	Last action:
number	Authorization code	DGU	Signed in
Retrieve authorization code	Eastern and a		
Generate report	Feature code	RCH1	Features on Demand Hello.
Help	Feature description	Test feature for UUID UID type	
Feedback	UID type	UniversallyUniqueIdentifier	Latest news(3)
	on type	UniversallyUniqueidentiner	→ Contacts
	Part number / PID	RCH0003	
	UID value	123321123321123321123321ABCCBAAB	
	Constraint type	06	
	Constraint value	2	
		Confirm Cancel	

- 8. Install the activation key file:
 - For a hardware target, use the IBM ToolsCenter utilities. For more information, see Chapter 3, "System feature activation," on page 19 and the product-specific documentation for the feature that you are activating.

Keys can also be installed directly through the local product interfaces on the IMM2 and supported non-server hardware devices, such as I/O modules. For more information about supported direct-installation interfaces, see the hardware product documentation.

• For a software target, use the method that is specified in the software target documentation. For more information, see the product-specific documentation for the feature that you are activating.

Notes:

- a. A restart of the hardware or software system might be required to complete the activation process. For more information about the activation process requirements after the key is installed, see the product documentation for the feature that you are activating.
- b. You can also use the IBM ToolsCenter utilities to activate a Features on Demand feature. For more information, see "Using IBM ToolsCenter utilities to manage Features on Demand activation keys" on page 25.

Retrieving history

On the "Retrieve history" page, you can use the authorization code or the unique identifier (UID) to search for activation key history. The results from a search using the authorization code lists all activation keys that are generated for the authorization code. The results from a search using the UID lists all activation keys that are generated for the UID.

To retrieve the history, complete the following steps:

1. Select **Retrieve history** from the left navigation pane.

		Search
lome Solutions • Servi	ces * Products * Support & downloads * My IBM * Welc	ome Lars Bo Jørgensen [Not you?] [IBM Sign ir
Features on Demand	Retrieve history	
Request activation key		
Retrieve history	Systems > Features on Demand >	
Register IBM customer number administrator	Step 1: Search	Quick status
Manage IBM customer number	Use authorization code or unique identifier(uid) to search for activation key history. A search using authorization code will list all activation keys generated for the authorizati	Last action: Signed in
Retrieve authorization code	code	
Help	A search using uid will list all activation keys generated for the uid	Features on Demand
Feedback	Please enter authorization code	Hello,
	Authorization code	🗗 Latest news(0)
	Or uid	→ Contacts
	Uid	
	Continue 🛞 Cancel	

2. Enter either the authorization code or the UID. Click Continue.

F & L F	United States [change] Engl	ish[change]
▋▋▋▋▌▌		Search
lome Solutions • Servi	ces • Products • Support & downloads • My IBM • Welcome La	rs Bo Jørgensen [Not you?] [IBM Sign in
Features on Demand	Retrieve history	
Request activation key		
Retrieve history	Systems > Features on Demand >	
Register IBM customer number administrator	Step 2: Result	Quick status
Manage IBM customer number	This lists the activation keys generated for the authorization code entered. Select the keys you want to retrieve and download the keys directly or have them sent to your registered email address: R@dk.ibm.com	Last action: Signed in
Retrieve authorization code		Features on Demand
Help	Generated keys for feature code: 0000 - IBM Total keys: 99 Unused keys: 98 Part number: PARTN01	Helo,
Feedback	Machine type Machine serial number Machine type description	
	1936 10AABBC 1936 - IBM BladeCenter	Latest news(0)
	Select all	→ Contacts
	📀 Email 💿 Download 🛞 Cancel	

 Select the device for which you want to retrieve the key (as shown in the previous illustration). To send the key information to the email address of the user who is logged in, click **Email**. To download the activation key directly to your computer, click **Download**.

Managing the IBM customer number

On the "Manage IBM customer number" page, you can see a list of the customer numbers for which you have administrative authority and any users who are registered for the customer number. You can add or remove users as administrators for a customer number.

Note: If you cannot select a customer number in the **Customer number** field, click **Contacts** in the right navigation pane to contact customer support for your region.

To manage the IBM customer number, complete the following steps:

1. Select Manage IBM customer number from the left navigation pane.

TD1#			United States [change] Englis	h [change]
				Search
Home Solutions - Servic	ces * Products * Su	oport & downloads * My IBM *		Welcome [IBM Sign in] [Register
Features on Demand	Manage IB	M customer nun	nber	
Request activation key	U			
Retrieve history	Systems > Features on Der	nand >		
Register IBM customer	Manage IBM customer	number		Quick status
Manage IBM customer number	This page lists the customer numbers to which you have administrative authority and any users registered for the customer number. You may add or remove additional users as administrators for a customer number. Note: if a customer number is not selectable in the table below, you may contact Customer			Last action: Customer number registered
Retrieve Authorization Code				
Help	Support for assistance.	Features on Demand		
Feedback	four your region.			Hello,
	Identification			Latest news(0)
	Customer number*	Please select a customer nu	mber 💌 📀	→ Contacts
		Cancel		
About IBM Privacy Cont	act Terms of use A	ccessibility IBM Feeds Jobs		

2. Select a customer number to which your IBM user ID is linked and click the arrow.

Iome Solutions - Servic	es * Products * Support & downloads * My IBM *	Welcome [IBM Sign in] [Reg
Features on Demand	Manage IBM customer number	
Request activation key	, i i i i i i i i i i i i i i i i i i i	
Retrieve history	Systems > Features on Demand >	
Register IBM customer	Manage IBM customer number	Quick status
number administrator Manage IBM customer number	This page lists the customer numbers to which you have administrative authority and any users registered for the customer number. You may add or remove additional users as administrators for a customer number.	Last action: Customer number registered
Retrieve Authorization Code		
Help	Note: If a customer number is not selectable in the table below, you may contact Customer Support for assistance. Please use the 'Contacts' link in the right-hand menu to find support	Features on Demand
Feedback	four your region.	Hello,
	Identification	🕒 Latest news(0)
	Customer number* 8921234567 🗸 🕤	→ Contacts
	Customer name	
	Registered users	
	Userid Username User email	
	igs1test igs1test - test user Tester @dk.ibm.com <u>Remove</u>	
	Add IBM user ID Add user	
	Confirm S Cancel	

- 3. To link additional users to your customer number, complete the following steps.
 - **Note:** Each user must have an IBM user ID and must have signed on at least once on the IBM Features on Demand website.
 - a. In the Add IBM user ID field, enter the IBM user ID.
 - b. Click **Add user**. The user ID, user name, and user email address are displayed.
 - c. Click Confirm.

7215	United States [change] Eng		
╧╧┛╛┊╘╺			Search
Home Solutions - Service	es 🔹 Products 👻 Sup	nport & downloads ▼ My IBM ▼	Welcome [IBM Sign in] [Register]
Features on Demand Request activation key Retrieve history	Manage IBI	M customer number	
Register IBM customer number administrator			Quick status
Manage IBM customer number	Customer numberregistered Customer number 8921234567 registered successfully.		Last action: Customer number registered
Retrieve Authorization Code	You may continue regist		
Help			Features on Demand Hello,
Feedback		ge IBM customer number age lists the customer numbers to which you have administrative authority and any users	
	registered for the custor administrators for a cus	ner number. You may add or remove additional users as tomer number.	→ Contacts
		ber is not selectable in the table below, you may contact Customer Please use the 'Contacts' link in the right-hand menu to find support	
	Identification		
	Customer number*	Please select a customer number 💌 📀	
		Cancel	

All users who are linked to a customer number will receive authorization codes through email for future orders that are placed. However, authorization codes for some software-based Features on Demand features are only delivered by mail.

Retrieving an authorization code

On the "Retrieve Authorization Code" page, you can request to have a PDF file with an authorization code emailed to you.

To retrieve an authorization code, complete the following steps:

1. Select Retrieve Authorization Code from the left navigation pane.

Home Solutions Service	es * Products * Support & downloads * My IBM *	Search
nome solutions + servic	es * Products * Support & downloads * My IBM *	Welcome [IBM Sign in] [Registe
Features on Demand	Retrieve authorization code	
Request activation key		
Retrieve history	Systems > Features on Demand >	
Register IBM customer number administrator	Retrieve authorization code	Quick status
Manage IBM customer	For authorization code retrieval fill out the below mandatory fields and submit the request.	Last action:
number	The application will provide the authorization code by emailing a PDF file if a matching record is	Signed in
Retrieve authorization code	found.	
Generate report	The fields indicated with an asterisk (*) are required to complete this transaction. If you do not	Features on Demand
Help Feedback	want to provide the information use the Cancel button on your browser to return to the previous	Hello,
	page, or close the window or browser session that is displaying this page.	Latest news(4)
	Order number can be one of:	→ Contacts
	Plant order number(10 characters) - Can retrieve a single authorization code Sales order number(10 characters) - Can retrieve all the authorization codes on a sales Order P/N is mandatory when retrieving authorization codes for hardware Features on Demand. When retrieving authorization codes for software Features on Demand, leave Order P/N blank. Note: To ensure that you continue to receive future correspondence without issues, please add R17ACKNOWLEDGEMENTS@dk.ibm.com as an exception to your spam filter.	
	Identification	
	Customer number * Order number * Order P/N	
	Your Email address	
	Other recipients(cc:)	
	Note: By clicking Submit you agree that IBM may process and retain your data for the purposes listed above in accordance with IBM's data privacy policy.	
	Submit Submit	

- 2. Enter the customer number with country code, plant order number, and order part number or product ID. These numbers are on the packing list that comes with your order. The **Your Email address** field is automatically populated with the user email address. In the **Other recipients** field, separate email addresses with commas.
- 3. Click **Submit**. A confirmation window is displayed.

Generating a report

On the "Generate report" page, you can create several report types based on specified criteria and entered information. A comma separated value (.csv) document with the results is emailed to you.

To generate a report, complete the following steps:

1. Select **Generate report** from the left navigation pane.

Features on Demand	Generate re	port	
Request activation key			
Retrieve history	Systems > Features on Deman	4.5	
Register IBM customer	Report generation		Quick status
number administrator			Last action:
Manage IBM customer number	The data in the report will t	The data in the report will be extracted from your Features on Demand profile.	
Retrieve authorization code	Please select a report type and a report "search by" filter The report will be generated and sent to your email address: To ensure that you continue to receive future correspondence without issues, please add R17ACKNOWLEDGEMENTS@dk.ibm.com as an exception to your spam filter.		
Generate report			Features on Demand
Help			Hello,
Feedback			Latest news(4)
			→ Contacts
	Report type*	Please select a report type	-
	Report input*		
	Customer number filter	All available 👻	
		Submit Scancel	

- 2. Select a report type in the **Report type** field. You can generate reports based on searches of the following information:
 - · Machine type and serial number
 - Other UID
 - Authorization code
 - Order number

Features on Demand	Generate rep	port		
Request activation key				
Retrieve history	Systems > Features on Deman	d >		
Register IBM customer	Report generation			Quick status
number administrator				Last action:
Manage IBM customer number	The data in the report will be extracted from your Features on Demand profile.			Signed in
Retrieve authorization code	Please select a report type and a report "search by" filter			
Generate report	The report will be generated and sent to your email address: To ensure that you continue to receive future correspondence without issues, please add R17ACKNOWLEDGEMENTS@dk.ibm.com as an exception to your spam filter.			Features on Demand
Help				Hello,
Feedback				Latest news(4)
				→ Contacts
		Please select a report type	67	
	Report input*	Please select a report type FoD Key Generation Report - search by MT-SN	45	
		FoD Key Generation Report - search by other UID		
	Customer number filter	FoD Key Generation Report - search by Auth. code FoD Authorization Code Report - search by order number		
		A A		
		Submit Submit		

3. Based on the selected report type, enter an applicable value in the **Report input** field. An example is shown in the following window.

eatures on Demand	Generate rep	port	
equest activation key			
etrieve history	Systems > Features on Deman	d >	
egister IBM customer umber administrator	Report generation		Quick status
		and the second	Last action:
anage IBM customer umber	The data in the report will t	Report submitted	
etrieve authorization code	Please select a report type		
enerate report	The report will be generated and sent to your email address: To ensure that you continue to receive future correspondence without issues, please add R17ACKNOWLEDGEMENTS@dk.ibm.com as an exception to your spam filter.		Features on Demand
elp			Hello,
edback			Latest news(3)
	Report type*	F-D K- Organitas David a seath hullT ON	→ Contacts
	Report type	FoD Key Generation Report - search by MT-SN -	
	Report input*	7955AAAAAAA	
	Customer number filter	All available 💌	
		Submit Scancel	
	4		

- 4. You can refine the result by selecting a customer number for which you are an administrator. Select the customer number in the **Customer number filter** field.
- 5. Click **Submit**. A confirmation window is displayed. You will receive an email with the report attached. There is no attachment if the result is empty.

Features on Demand	Generate report		
Request activation key			
Retrieve history	Systems > Features on Demand >		
Register IBM customer	The report has been submitted.	Quick status	
number administrator		Last action:	
Manage IBM customer number	Thank you for your request. The report has been submitted for processing. You can continue to generate report by selecting another report type or report input or custon number.	er Report submitted	
Retrieve authorization code	Once the report is completed it will be sent to:	Features on Demand	
Generate report		Hello.	
Help	Report generation		
Feedback		Latest news(3)	
	The data in the report will be extracted from your Features on Demand profile.	→ Contacts	
	Please select a report type and a report "search by" filter		
	The report will be generated and sent to your email address:		
	To ensure that you continue to receive future correspondence without issues, please add R17ACKNOWLEDGEMENTS@dk.ibm.com as an exception to your spam filter.		
	Report type* FoD Key Generation Report - search by MT-SN -		
	Report input* 7955AAAAAAA		
	Customer number filter All available 👻		
	Submit 🛞 Cancel		

Chapter 3. System feature activation

The administration of a Features on Demand activation key is different depending on the type of feature that you install:

· Server-based Features on Demand

The server Integrated Management Module II (IMM2) is the point of administration for Features on Demand activation keys. If the server supports a web interface into the IMM2, you can administer activation keys with a web browser connection. For more information about the IMM2 web interface, see the IMM2 *User's Guide*.

Software-based Features on Demand

The software package configuration interface is the point of administration for Features on Demand activation keys.

• Switches and I/O module Features on Demand

The management interface of the device is the point of administration for Features on Demand activation keys.

Chassis-based Features on Demand

The management module of the chassis is the point of administration for Features on Demand activation keys.

For each device type, device-applicable standard protocols are supported, according to the following information:

- Simple Network Management Protocol (SNMP) is supported through a Features on Demand management information base (MIB) on I/O modules, network switches, and the IMM2 devices that support the Features on Demand feature. For details about the Features on Demand MIB, see Appendix A, "Features on Demand MIB," on page 33.
- A web interface or command line interface (CLI) is supported on a device-by-device basis. Where applicable and aligned with the device operational semantics, support for administering Features on Demand activation keys is available through the native command line or web interface of the Features on Demand-compliant device.
- **Note:** These interfaces are not standard and are not universally available across all Features on Demand-compliant implementations. For more information about how web and CLI interfaces operate and whether they support feature key administration, see the device-specific documentation.

Manually installing a Features on Demand activation key on the IMM2

For an Features on Demand activation key that is stored in the IMM2, you can use the IMM2 web interface to manually install the Features on Demand activation key to activate the feature that you purchased. You can also use the IMM2 CLI keycfg command to display, add, or delete Features on Demand activation keys. For details and syntax of the keycfg command, see the IMM2 *User's Guide* at http://www-947.ibm.com/support/entry/portal/docdisplay?Indocid=MIGR-5089484.

Before you install an activation key, you must have the Features on Demand activation key on your system or removable media. That is, you must have ordered a Features on Demand option and received the authorization code through the mail or email and per the instructions in Chapter 2, "Using the IBM Features on Demand website," on page 5, you must have received the key from KMS. The IMM2 web interface on the target server is accessed by using a remote interface from a workstation over the network. If you need more information about the remote access, see the IMM2 *User's Guide*.

To manually install a Features on Demand by using the IMM2 web interface, complete the following steps:

- 1. Open a web browser. In the address or URL field, type the IP address or host name of the IMM2 server to which you want to connect.
- 2. Type your user name and password in the IMM2 Login window.
- 3. Click Log In to start the session.

4. From the IMM2 web interface, click on the **IMM Management** tab; then click on **Activation Key Management**.

Server Management 👻	IMM Management 👻 Search	
	IMM Properties	Various properties and settings related to the IMM
	Users	Create and modify user accounts that will have access to the IMM console
Valid	Network	Network settings such as SNMP and LDAP used by the IMM
	Security	Configure security protocols such as SSL and SSH
	IMM Configuration	View a summary of the current configuration settings.
	Restart IMM	Restart the IMM. Typically only needed when experiencing problems with the IMM
	Reset IMM to factory defaults	Sets all current configuration settings back to default values
	Activation Key Management	Add and remove activation keys for additional functionality

5. From the Activation Key Management page, click Add.



Activation Key Management



6. In the Add Activation Key window, click Select File; then, select the activation key file to add in the File Upload window and click Open to add the file or click Cancel to stop the installation. To finish adding the key, click OK, in the Add Activation Key window, or click Cancel to stop the installation.

х

The Success window indicates that the activation key is installed correctly.

Success	х
Success	
Close	

Notes:

• If the activation key is not valid, the following error window is displayed.



• If you are attempting to install the activation key on a machine type that does not support the Features on Demand feature, the following error window is displayed.



7. Click OK to close the Success window.

The selected activation key is added to the server and is displayed on the Activation Key Management page.

Note: You might have to restart your system to complete the installation of the activation key.

Add a	Activation Key Management Add and remove activation keys for additional functionality. Add Delete					
	Descriptor Type 🔺	Feature Description	Valid Through	Uses Remaining	Status	
	32781	LSI CCoH Enablement	No Constraints	No Constraints	Activation key is valid	

Manually removing a Features on Demand activation key on the IMM2

To remove a Features on Demand activation key, complete the following steps:

- 1. Open a web browser. In the address or URL field, type the IP address or host name of the IMM2 server to which you want to connect.
- 2. Type your user name and password in the IMM2 Login window.
- 3. Click Log In to start the session.
- 4. From the IMM2 web interface, click on the **IMM Management** tab; then click on **Activation Key Management**.

			weicome	
Server Management 👻	IMM Management 👻	Search		
			Various properties and settings related to the IMM	
	Users		e and modify user accounts that we access to the IMM console	
Valid	Network		rk settings such as SNMP and used by the IMM	
	Security	Config and S	pure security protocols such as SSL SH	
	IMM Configuration		a summary of the current uration settings.	
	Restart IMM		rt the IMM. Typically only needed experiencing problems with the	
	Reset IMM to facto defaults		all current configuration settings to default values	
	Activation Key Management		nd remove activation keys for onal functionality	

5. From the Activation Key Management page, select the activation key to remove; then, click **Delete**.

Activation Key Management

Add and remove activation keys for additional functionality.

Add Delete		
Descriptor Type 🔺	Feature Description	Valid Thro
32781	LSI CCoH Enablement	No Constra

6. In the Confirm Activation Key Deletion window, click **OK** to confirm activation key deletion or click **Cancel** to keep the key file.



The selected activation key is removed from the server and is no longer displayed on the Activation Key Management page.

Note: You might have to restart your system to complete the removal of the activation key.

Descriptor Type Feature Description Valid Through Uses Remaining Status	Activation Key Management Add and remove activation keys for additional functionality. Add Delete					
	Descriptor Type 🔺	Feature Description	Valid Through	Uses Remaining	Status	

Using IBM ToolsCenter utilities to manage Features on Demand activation keys

IBM ToolsCenter V9.00 provides the following two utilities to help you manage Features on Demand activation keys:

- Advanced Settings Utility (ASU)
- Dynamic System Analysis (DSA)

Using the IBM Advanced Settings Utility

The IBM Advanced Settings Utility (ASU) is a command line utility that enables you to manage keys. The ASU is supported on Windows and Linux operating system clients and is designed to automate the process of managing Features on Demand keys. The ASU commands enable you to manage activation keys for all Features on Demand features: server-based, software-based, switches, I/O modules, and chassis-based features.

The ASU commands support the following functions:

- Install a key. Use the ASU installkey command to install an activation key. You can also use the ASU to acquire the activation from the Features on Demand website (KMS) and install the key to activate your Features on Demand feature. To utilize this function, you must have the feature authorization code and have network connectivity to http://www.ibm.com/.
- Remove (or uninstall) a key. Use the ASU uninstallkey command to uninstall or deactivate a feature key.
- Export a key. Use the ASU **exportkey** command to export an activation key from the IMM2 on which it is installed if you must back up the server, or if you are instructed to export the key before you replace the server system board.
- Inventory keys. Use the ASU **reportkey** command to retrieve inventory information and activation status for the Features on Demand features. The **reportkey** command generates a list of all keys that are installed on the system and gives their descriptions.

For more information about using the ASU to manage Features on Demand activation keys, including complete syntax instructions, see http://www-947.ibm.com/ support/entry/portal/docdisplay?Indocid=MIGR-5085890 and the ToolsCenter for System x and BladeCenter information center documentation at http://publib.boulder.ibm.com/infocenter/toolsctr/v1r0/topic/toolsctr/asu_main.html.

Using IBM Dynamic System Analysis

IBM Dynamic System Analysis (DSA) collects and analyzes system information to aid in diagnosing problems. DSA has two utilities, Preboot DSA and Portable DSA, that you can use for Features on Demand key management functions, including online and offline key installation, key removal, Features on Demand key inventory reporting, and exporting Features on Demand information.

For more information and instructions for using DSA to manage Features on Demand activation keys, see http://www-947.ibm.com/support/entry/portal/ docdisplay?Indocid=MIGR-5084901, http://publib.boulder.ibm.com/infocenter/toolsctr/ v1r0/topic/dsa/dsa_main.html, and the ToolsCenter for System x and BladeCenter information center documentation at http://publib.boulder.ibm.com/infocenter/toolsctr/ v1r0/topic/toolsctr/asu_main.html.

Portable DSA

Portable DSA is a command line utility that requires that the operating system is running. The following Features on Demand key management functions are provided by the Portable DSA utility:

- Reporting the available Features on Demand keys for a target device. (IMM, management module of the chassis, or switch)
- Acquiring and downloading activation keys from an IBM website (KMS). This task requires a network connection to http://www.ibm.com/ (IMM, management module of the chassis, or switch)
- Installing activation keys from key files on a user-specified location to a target device. (IMM, management module of the chassis, or switch)
- Exporting the local Features on Demand unique IDs to a file saved in the DSA output path. (IMM only)
- Uninstalling activation keys from a target device or switch (IMM or management module of the chassis)
 - **Note:** For Features on Demand activation key install or uninstall on the management module of the chassis, switch, or remote IMM2, make sure that there is a LAN connection available.

Preboot DSA

Preboot DSA is used on a basic system without the operating system enabled and consists of a GUI interface and command-line interface (CLI). Through the Preboot DSA GUIs or CLI, you can manage features for server-based, chassis-based, and switch Features on Demand features.

If an Internet connection is not available, the Preboot DSA GUIs or CLI enable you to perform the following functions:

- Display the Features on Demand features installed on your device and also display the other available Features on Demand features for purchase.
- Install activation keys from removable media.
- · Uninstall activation keys
- Export activation keys or removable media for backup or before a repair is performed, for example, a planar replacement.

If an Internet connection is available, the Preboot DSA GUIs or CLI enable you to perform the following functions:

- Display the Features on Demand features that are installed on your device and also display the other available Features on Demand features for purchase.
- Install activation keys directly on the KMS website.
 - **Note:** If a key is available for the Features on Demand feature that has been generated previously, no authorization code is needed for the installation. If a key is not available for the Features on Demand feature, an authorization code is needed for key generation.
- · Install activation keys from removable media
- Uninstall activation keys
- Export activation keys or removable media for backup or before a repair is performed, for example, a planar replacement

Chapter 4. Troubleshooting

This chapter provides some problems, the possible cause, and how to fix it.

Table 2. Features on Demand troubleshooting

Sympton	Possible cause	Fix
Machine type and serial number are not seen in the Features on Demand website	If the system board was replaced, the vital product data (VPD) on the new system board might not be updated with the machine type and serial number.	Follow the instruction in the <i>Problem</i> <i>Determination and Service Guide</i> for the system to update the VPD. The instructions are in the remove and replace the system board sections.
Feature shows in the Features on Demand website, but the function does not work	There might be a problem with the hardware.	Use the <i>Problem Determination and</i> <i>Service Guide</i> to isolate the problem. If the issue cannot be resolved, contact Hardware Support.
Feature is not working	The feature might not be set up as authorized on Features on Demand	Follow the steps in this <i>User Guide</i> to activate or reactivate your feature.
	The feature is entitled to a specific server, which is not the server the adapter is installed in.	Moving the adapter will deactivate the feature by separating it from its key file/entitled hardware pair.
	The feature is attached to a movable adapter, which has been installed in a new system, but the key has not also been moved to the new system.	The feature activation key must be installed on the system where the adapter is installed to be activated. You can obtain a copy of the entitled key for the adapter from the KMS website or by exporting it from the system it was previously installed in.
	The feature key unique identifier does not match the target identifier.	Make sure that the unique identifier embedded in the key matches the identifier in the file. The unique identifier is case sensitive. The key file is a binary file and the critical fields can be viewed with a text editor. The unique identifier is displayed between the system description and the feature description text in the key file.

System board replacement

The Features on Demand activation keys for server-based and chassis-based keys are stored on the system board on the Integrated Management Module II (IMM2) or the Chassis Management Module (CMM) respectively. As such, activation keys are not easily lost, except if the system board is replaced.

To prevent the loss of activation key information if the system board is replaced, use the following best practices guidelines:

- If the system board is replaced, make sure that the vital product data (VPD) for the machine type and serial number (MTSN) are restored to their original values. Most of the Features on Demand activation keys are tied to MTSN and do not work if the system MTSN is changed. For more information about restoring the VPD information, see the system *Problem Determination and Service Guide*.
- Periodically run the DSA tools to obtain the report on the Features on Demand features that are activated on your system. Store this information in an external storage device so that in the event of a system board failure, you have the key information readily available.
 - **Note:** The key activation history can be obtained from the IBM Features on Demand website (KMS), if needed. If you have trouble retrieving the key history from the Features on Demand website, contact IBM support as described in Chapter 5, "How to get help with Features on Demand," on page 31.
- If the system board is replaced and the VPD data is restored to the original values, you can import the existing activation keys.

Adapter replacement guidelines

Some Features on Demand keys activate optional function on adapters, such as activating additional ports or a network function such as Fibre Channel over Ethernet. If a repair action requires that you replace an adapter on which an Features on Demand feature is activated, a new Features on Demand key might be required. Most Features on Demand features are associated with the machine type and serial number of the server, in this case, the Features on Demand feature will be available as soon as the new adapter is installed in the server. However, some server-based options are tied to a different UID, which might be the case for a network adapter. If the Features on Demand function is tied to a different UID, a new key must be generated. To obtain a new Features on Demand activation key, contact IBM support as described in Chapter 5, "How to get help with Features on Demand," on page 31.
Chapter 5. How to get help with Features on Demand

Many answers to questions you might have about IBM registration, Features on Demand website functions, activating or reactivating features, or lost features can be found in this *User's Guide*.

If you need technical assistance for the feature that you have purchased, review the *Problem Determination and Service Guide* for your product. If you are unable to find the answers to your questions, contact IBM support at http://www.ibm.com/planetwide/.

The Features on Demand team can assist with activation, lost keys, and reactivation questions worldwide.

How you can contact IBM:

- Features on Demand support. Go to http://www.ibm.com/systems/x/fod/ and click **Contacts** in the left navigation pane.
- English-only email request to FOD@us.ibm.com.
- Local language level 1 submissions through IBM Support for your software product. For software contacts in your country, go to http://www.ibm.com/ planetwide/.

If you are unable to access the Features on Demand website, you can send an email directly to FOD@us.ibm.com. Make sure that you enter F0D in the subject line of the email.

Before you submit a Features on Demand request for support, make sure that you have the following information available:

- · Customer name
- Phone number
- · Email address
- Machine type and serial number of the system, and if applicable, the unique identifier (UID) of the device with the feature
- Authorization Code
- · Any specific details you want to provide

Appendix A. Features on Demand MIB

This chapter provides the Features on Demand management information base (MIB).

---- File : fod.mib -- Description : MIB definitions for IBM Features On Demand Activation Key functions. ---- Bv : IBM -- Version : 1.5 -- Date : February 2, 2012 ---- Copyright (c) 2010-11 IBM All Rights Reserved. ------ Contains MIB description for: This MIB is to be used to provide configuration support of IBM Features ---on Demand features. -- Revisions: IBM-FEATURE-ACTIVATION-MIB DEFINITIONS ::= BEGIN IMPORTS MODULE-IDENTITY, OBJECT-TYPE, enterprises, NOTIFICATION-TYPE FROM SNMPv2-SMI --RFC2578 MODULE-COMPLIANCE, OBJECT-GROUP, NOTIFICATION-GROUP FROM SNMPv2-CONF --RFC2580 DateAndTime, DisplayString FROM SNMPv2-TC --RFC2579 Uri FROM URI-TC-MIB; --RFC5017 ibmFeatureActivationMIB MODULE-IDENTITY LAST-UPDATED "201202021538Z" --2 February 2012 15:38 GMT ORGANIZATION "International Business Machines Corp." CONTACT-INFO "Fred Bower International Business Machines Corporation Systems and Technology Group System x Development Research Triangle Park, NC, USA E-mail: bowerf@us.ibm.com" DESCRIPTION "This module provides a simple interface for IBM Features On Demnad Activation Key functions." -- Revision History REVISION "201202021538Z" --2 February 2012 DESCRIPTION "Added return code definition for device still performing key action requirested to indicate that a long-running process is still pending completion. Users should poll status until this status clears." "201108111805Z" REVISION --11 August 2011 DESCRIPTION

```
"Added return code definition for pre-requisite
           key action required to indicate that another key
           must be installed or uninstalled prior to the
           action attempted by the command that triggers this
           return code."
   REVISION
               "201106072003Z"
                                       --7 June 2011
   DESCRIPTION
           "Updated return code definitions to include
           return code for protocol not supported when
           URI specifies protocol not supported by device."
   REVISION
               "201103300733Z"
                                        --30 March 2011
   DESCRIPTION
           "Updated data types and added traps for status
            change notification. Clarified return codes
            from events."
   REVISION
               "201102021949Z"
                                       --2 February 2011
   DESCRIPTION
           "Added support for SFTP protocol file transfers."
               "201012081833Z"
   REVISION
                                     --8 December 2010
   DESCRIPTION
           "Initial Revision."
   ::= { ibmArchitecture 31 }
   -- IBM enterprise group
              OBJECT IDENTIFIER ::= { enterprises 2 }
   ibm
   -- IBM architecture group
   ibmArchitecture
                       OBJECT IDENTIFIER ::= { ibm 5 }
   -- Features on Demand Objects
   ibmFodNotifications OBJECT IDENTIFIER ::= {ibmFeatureActivationMIB 0 }
   ibmFodObjects OBJECT IDENTIFIER ::= { ibmFeatureActivationMIB 1 }
   ibmFodConformance OBJECT IDENTIFIER ::= { ibmFeatureActivationMIB 2 }
-- Activation Key Install/Update
   -- Feature activation keys can be installed (to activate), uninstalled
   -- (to deactivate), exported (for backup purposes), and inventoried.
   -- The action desired is set via the ibmFodAction object (which is never
   -- read). The required sub-objects and their use is listed here as well
   -- as in the DESCRIPTION comments for each of the fields for user
   -- understanding.
   -- Action: installActivationKey
   -- Requires: ibmFodFileUri
   -- Process: Installer sets the ibmFodFileUri field to indicate where to
   -- retrieve activation key file from, then sets the ibmFodAction to
   -- installActivationKey.
   -- Result: Activation key is transferred from URI to the target device,
   -- validated, and result is available for reading via ibmFodStatus. An
   -- alert should also be issued if the key actually changes device state.
   -- That is, if the key is successfully validated and stored and function
   -- is either queued for activation after a reboot or is activated, an
   -- alert should be generated with the updated key status information.
   -- Action: inventoryInstalledActivationKeys
   -- Requires: ibmFodFileUri
   -- Process: Administrator sets ibmFodFileUri field to indicate where to
   -- place file with results of inventory of device, then sets ibmFodAction
   -- to inventoryInstalledActivationKeys.
   -- Result: Activation key inventory is transferred to URI from target
   -- device and result is available for reading from ibmFodStatus.
   -- Inventory file format is comma-separated with fields ordered as
   -- follows:
   -- <Index>,<status>,<Feature Descriptor Type Description (text)>
```

^{-- &}lt;Constraint Descriptor Type Description (text)>:<Constraint Descriptor,

```
-- Type Optional Information (text)> 0...
-- The 0..n notation is to indicate that there may be zero or more
-- constraints for any given activation key. New records start with a
-- newline character after the last constraint. If a constraint does not
-- have optional information text, the colon separator is omitted and a
-- comma denotes the start of the next constraint descriptor type
-- description. This activity should not result in any alerts, as it
-- does not alter activation key state on the device.
-- Action: uninstallActivationKey
-- Requires: ibmFodIndex
-- Process: Administrator sets ibmFodIndex with value from inventory
-- report process, above, then sets ibmFodAction to
-- uninstallActivationKey.
-- Result: Activation key is uninstalled and result of action is placed
-- in ibmFodStatus for reading. An alert should also be issued if the
-- action changes device state. That is, if there is a key at the
-- designated index and it is uninstalled, the device key state will
-- change, thus triggering an alert with the updated device information.
-- Action: exportActivationKey
-- Requires: ibmFodIndex, ibmFodFileUri
-- Process: Administrator sets ibmFodIndex with value from inventory
-- report process, above, then sets ibmFodFileUri to the desired location
-- for the exported key file to be placed, then sets ibmFodAction to
-- exportActivationKey.
-- Result: Activation key file is exported to designated URI location
-- provided that the index supplied maps to an existing key. Status of
-- the command is placed in ibmFodStatus for reading. No alert will be
-- issued from this activity, as it does not affect activation key state
-- on the device.
--
ibmFodAction OBJECT-TYPE
                SYNTAX INTEGER {
                installActivationKey(1),
                uninstallActivationKey(2),
                exportActivationKey(3),
                inventoryInstalledActivationKeys(4)
             MAX-ACCESS read-write
              STATUS current
              DESCRIPTION
              "Target action for activation method.
               1 - Install Activation Key
                2 - Uninstall Activation Key
                3 - Export Activation Key
                4 - Inventory Installed Activation Keys"
              DEFVAL { 4 }
              ::= { ibmFodObjects 1 }
ibmFodIndex OBJECT-TYPE
              SYNTAX INTEGER (1..255)
              MAX-ACCESS read-write
              STATUS current
              DESCRIPTION
              "Activation key index to uninstall or export.
              This is only required for uninstall and export actions.
              This is also used to identify the key associated with alerts."
              ::= { ibmFodObjects 2 }
ibmFodFileUri
               OBJECT-TYPE
              SYNTAX Uri
              MAX-ACCESS read-write
              STATUS current
              DESCRIPTION
              "URI of where key file resides for install and
```

```
where it should be placed for export or inventory.
              This is not used for uninstall action.'
              ::= { ibmFodObjects 3 }
ibmFodStatus OBJECT-TYPE
              SYNTAX INTEGER {
                success(1),
                rebootRequired(2).
                versionMismatch(3),
                corruptKeyFile(4),
                invalideKeyFileTarget(5),
                keyFileNotPresent(6)
                communicationFailure(7),
                keyStoreFull(8),
                ftpServerFull(9),
                userAuthenticationFailed(10),
                invalidIndex(11),
                protocolNotSupported(12),
                preRequisiteKeyActionRequired(13),
                actionIncompleteDeviceBusy(14)
             MAX-ACCESS read-only
              STATUS current
              DESCRIPTION
              "Return status of the last firmware activation method
              initiated through SNMP method.
              Valid return codes are:
              Code
                    Action(s) Meaning
                     1,2,3,4
               1
                                 Success
               2
                     1,2
                                 Reboot Required
               3
                     1
                                 Firmware Version/Update Issue
               4
                     1
                                 Key Corrupt
               5
                                 Key Not Valid for Device
                     1
               6
                     1,2,4
                                 Key File Not Found
               7
                     1,3,4
                                 Failure to Communicate with File Server
               8
                     1
                                 Key Storage Full
               9
                     3,4
                                 TFTP/SFTP Server Storage Full
               10
                     1,3,4
                                 SFTP User/Password Authentication Failed
               11
                     2,3
                                 Invalid Index
                                 Protocol Specified in URI Not Supported
               12
                     1,3,4
               13
                     1,2
                                 Pre-Requisite Key Action Required
                     1,2,3,4
               14
                                 Action Still In Process/Busy"
              ::= { ibmFodObjects 4 }
ibmFodKeyChangeTime OBJECT-TYPE
              SYNTAX DateAndTime
              MAX-ACCESS accessible-for-notify
              STATUS current
              DESCRIPTION
              "The date and time of the event described in
              this notification of activated function status change."
              ::= { ibmFodObjects 5 }
ibmFodKeyOldStatus OBJECT-TYPE
              SYNTAX INTEGER {
                noPreviousStatus (1),
                keyValid (2),
                keyInvalid (3),
                keyValidElsewhere (4),
                keyFeatureActive (5),
                keyFeatureRequiresHostReboot (6),
                keyFeatureRequiresBMCReboot (7),
                keyExpired (8),
                keyUseLimitExceeded (9),
                keyInProcessOfValidation (10)
              MAX-ACCESS accessible-for-notify
              STATUS current
```

```
DESCRIPTION
               "The prior status of the activation key associated
               with this status change."
               ::= { ibmFodObjects 6 }
 ibmFodKeyNewStatus OBJECT-TYPE
               SYNTAX INTEGER {
                 keyRemoved (1),
                 keyValid (2),
                 keyInvalid (3),
                 keyValidElsewhere (4),
                 keyFeatureActive (5),
                 keyFeatureRequiresHostReboot (6),
                 keyFeatureRequiresBMCReboot (7),
                 keyExpired (8),
                 keyUseLimitExceeded (9),
                 keyInProcessOfValidation (10),
                 keyReplaced (11)
               MAX-ACCESS accessible-for-notify
               STATUS current
               DESCRIPTION
               "The new status of the activation key associated
               with this status change."
               ::= { ibmFodObjects 7 }
ibmFodKeyUpdateData OBJECT-TYPE
               SYNTAX DisplayString
               MAX-ACCESS accessible-for-notify
               STATUS current
               DESCRIPTION
               "String containing constraint data. This is only used
               for ibmFodNewStatus value of keyReplaced (10). Otherwise,
               this string should be NULL."
               ::= { ibmFodObjects 8 }
 -- Notifications
 ibmFodActivationChangeAlert NOTIFICATION-TYPE
               OBJECTS {
                  ibmFodIndex,
                  ibmFodKeyChangeTime,
                  ibmFodKey01dStatus,
                  ibmFodKeyNewStatus,
                  ibmFodKeyUpdateData
               STATUS current
               DESCRIPTION
               "This is an SNMP notification of a change to an existing
               feature activation on an endpoint. Data in the
              notification payload describes the change."
               ::= { ibmFodNotifications 1 }
 -- Conformance Information
 -- Compliance Statements
 ibmFeatureActivationCompliances OBJECT IDENTIFIER ::= { ibmFodConformance 1 }
 ibmFeatureActivationGroups OBJECT IDENTIFIER ::= { ibmFodConformance 2 }
 ibmFeatureActivationCompliance MODULE-COMPLIANCE
    STATUS current
     DESCRIPTION
         "The compliance statement for the IBM-FEATURE-ACTIVATION-MIB."
    MODULE -- This module
    MANDATORY-GROUPS { ibmFeatureActivationBaseGroup,
                        ibmFeatureActivationNotifGroup }
     ::= { ibmFeatureActivationCompliances 1 }
```

```
-- MIB Groupings
```

```
ibmFeatureActivationBaseGroup OBJECT-GROUP
   OBJECTS {
       ibmFodAction,
       ibmFodIndex,
       ibmFodFileUri,
       ibmFodStatus,
       ibmFodKeyChangeTime,
       ibmFodKey01dStatus,
       ibmFodKeyNewStatus,
       ibmFodKeyUpdateData
    3
   STATUS current
   DESCRIPTION
        "The group of mandatory objects for all implementations
       to be compliant."
   ::= { ibmFeatureActivationGroups 1 }
ibmFeatureActivationNotifGroup NOTIFICATION-GROUP
   NOTIFICATIONS { ibmFodActivationChangeAlert }
   STATUS current
   DESCRIPTION
       "The notification group required for compliance in alert
       semantics for feature activation implementations."
   ::= { ibmFeatureActivationGroups 2 }
```

END

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