

# IBM PureApplication System

## System settings



This presentation discusses the System settings menu panels for IBM PureApplication™ System.

## Table of contents

- Settings
  - Mail Delivery
  - Date and Time
  - Event Forwarding
  - Domain name service
  - Backup and Restore
  - System Maintenance Report
  - Time Interval

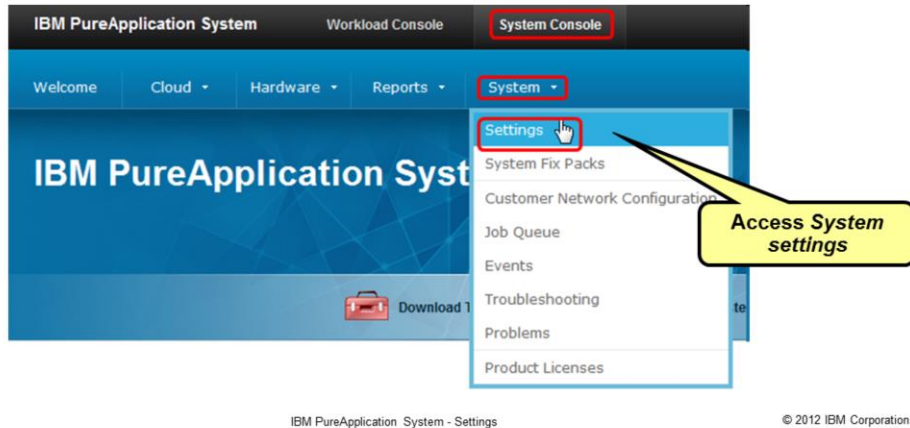
As a hardware administrator for the IBM PureApplication System, you might need to view or modify any of the **System Settings** after the **Genesis** process is complete. This presentation discusses the **Settings** screens for the PureApplication System. The **System Settings** menu includes: **Mail Delivery**, **Date and Time (for NTP setup)**, **Event Forwarding (for SNMP trap setup)**, **Domain name service**, **Backup and restore**, **System Maintenance Report**, and **Time Interval**.

## ***PureApplication System settings***

This presentation provides a general overview of each of the settings in the System Settings menu for the PureApplication System.

## System console &gt; System &gt; Settings

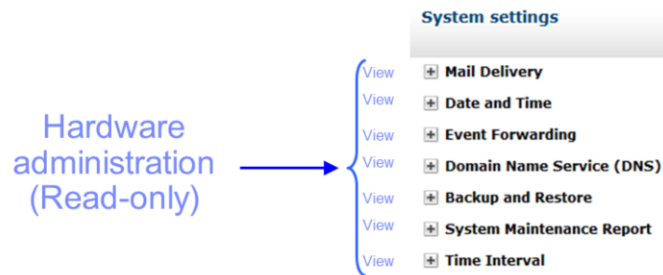
- Hardware administration permission is required for **Settings** access



Here's how to access the System Settings menu. First, only a Hardware administrator can access the **Settings** menu items. Log on to the PureApplication System and navigate to the **System Console**. Click the **System** tab on the blue title bar, and within the pull down that opens, click **Settings**, as shown in the slide.

## Review system settings

- Hardware administrator (Read-only) permission allows:
  - Review of all **System settings** menu items



In this slide, you can see that a Hardware administrator with read-only permission can review all seven items in the **System settings** menu.

## Configure and review system settings

- Hardware administration (Full permission) **plus** Cloud administration (Full permission) allows:
  - Review of all **System settings** menu items
  - Configuration of all items
    - Exception: System Maintenance Report is view only

Hardware administration (Full permission)  
+ Cloud administration (Full permission)



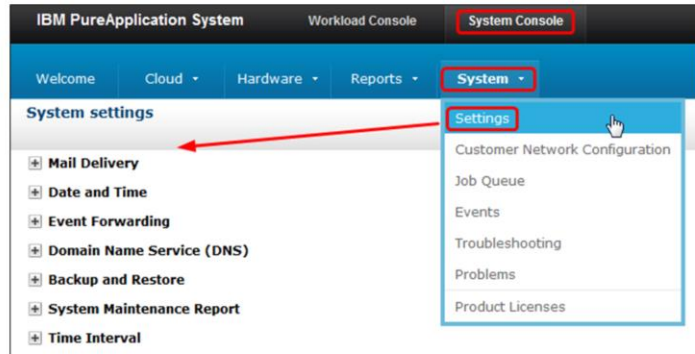
| System settings    |                             |
|--------------------|-----------------------------|
| View and configure | + Mail Delivery             |
| View and configure | + Date and Time             |
| View and configure | + Event Forwarding          |
| View and configure | + Domain Name Service (DNS) |
| View and configure | + Backup and Restore        |
| View               | + System Maintenance Report |
| View and configure | + Time Interval             |

In this slide, you can see that a user ID with Hardware administration full permission plus Cloud administration full permission can review all seven items in the **System settings** menu. This same user ID can also configure six items on the menu. The System Maintenance Report cannot be configured since it is “view-only.”

## System settings - General

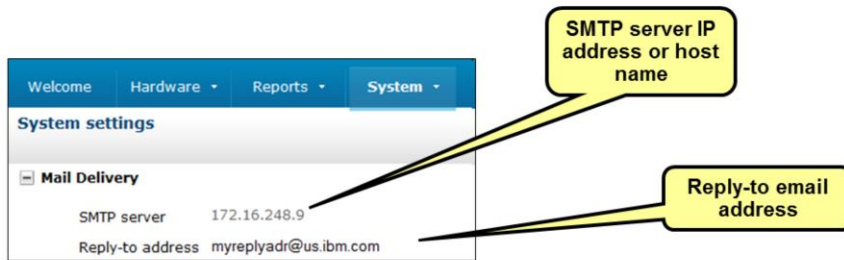
Allows you to review or configure:

- **Mail Delivery** – configure SMTP server
- **Date and Time** – configure NTP servers
- **Event Forwarding** – configure SNMP
- **Domain Name Service (DNS)** – configure domain name servers
- **Backup and Restore** – configure and manage backup server artifacts, backup server, and initiate backup
- **System Maintenance Report** – reports on the maintenance of rack components (view only)
- **Time Interval** – Configure time interval for displaying most recent warning and error events



Within the **System settings** menu, you can configure PureApplication System for integration into your data center. In the **Mail Delivery** settings, you can configure your SMTP server for email delivery. You configure the Network Time Protocol Servers using the **Date and Time** settings, plus you can review the current time and time zone for PureApplication System. **Event Forwarding** is where you configure SNMP traps to monitor the event severities for which you are interested. Using **Domain Name Service** you configure your Domain Name Servers. The **Backup and Restore** menu section allows you to configure your backup security environment and backup server, and allows you to initiate the backup. The **System Maintenance Report** shows you an overview of the maintenance levels of the rack components. The **Time Interval** allows the configuration of the interval for displaying the most recent warning and error events in the System console.

## Settings: Mail delivery



This panel is used to configure the email delivery function on the system. The email delivery function is used in many places within the PureApplication System, but does not function until a valid SMTP server is provided in this panel. In the SMTP server field on this panel, provide the IP address or host name for the SMTP server. If a host name is provided, then it must be able to be resolved by the DNS servers defined for this system. Optionally a Reply-to-address can also be provided, where the email address of a hardware administrator is entered. This allows for password resets and other event notifications to be sent to this email address.



## Settings: Date and time

**Current time and time zone**

The current time is Jul 10, 2012 7:50:27 PM  
The current time zone is UTC (Coordinated Universal Time)

Specify a NTP server to automatically synchronize the system clock periodically.

Accurate time keeping is critical in a highly dense environment. This panel configures Network Time Protocol (NTP) servers for the PureApplication System. This configuration ensures that the system can keep accurate time. These time servers are also propagated to the workloads that are deployed within the system.

NTP server address:

NTP servers

|              |       |
|--------------|-------|
| 172.16.248.2 | ▲ ▼ ✕ |
|--------------|-------|

**Add NTP server**

**Reorder or delete NTP servers**

9

IBM PureApplication System - Settings

© 2012 IBM Corporation

This Date and Time panel allows you to enter one or more NTP servers to synchronize the system clock and to propagate consistent time to the workloads running on the system. The first available NTP server in the list is used to maintain synchronization.

The servers in the list can be reordered by selecting a server and using the up and down icons. A selected server can also be removed from the list by selecting the delete icon.

## Settings: Event forwarding (1 of 3)

1. [PureApplication System name](#)
2. [System contact](#)
3. [System location](#)
4. [Create trap destination](#)
5. [List of trap destinations](#)
6. [Download MIB link](#)
7. [Download rules link](#)
8. [Save](#)

- Destination clients can use Tivoli® OMNibus rules or management information base (MIB) file
- Download MIB or rules file to provide to destination clients

Event Forwarding

Configure IBM PureApplication System to forward events as SNMP traps.

System Identification

1 PureApplication System name: My IPAS name

2 PureApplication System contact: My IPAS contact

3 PureApplication System location: My IPAS location

Trap Destinations [Create trap destination](#) 4

| IP address | Port number | Community | SNMP version | Minimum Event severity |
|------------|-------------|-----------|--------------|------------------------|
| 1.1.1.1    | 162         | public    | 2c           | Critical               |
| 2.2.2.2    | 163         | private   | 1            | Minor                  |

[Download MIB](#) [Download OMNibus Rules](#)

8 Save 6 7

IBM PureApplication System - Settings © 2012 IBM Corporation

In the System Identification section of the screen, you describe the name, contact information, and location of your PureApplication System. The PureApplication Systems name is included with SNMP alert notifications to identify the source of the alert.

SNMP itself does not define which information (which variables) a managed system should offer. Rather, SNMP uses an extensible design, where the available information is defined by management information bases (MIBs). MIBs describe the structure of the management data of a device subsystem; they use a hierarchical namespace containing object identifiers (OID). Each OID identifies a variable that trap destination clients can read.

To use Simple Network Monitoring Protocol (SNMP) to monitor the status of a IBM PureApplication System, you must download a management information base (MIB).

SNMP trap destinations point to the SNMP clients you use to receive the SNMP data from your system.

The SNMP settings page allows you to create an SNMP trap destination by providing the information required in that section of the screen.

You can use OMNibus rules or the MIB files to configure the SNMP destination clients to process the SNMP information that PureApplication System sends.

## Settings: Event forwarding (2 of 3)

| IP address | Port number | Community | SNMP version | Minimum Event severity |
|------------|-------------|-----------|--------------|------------------------|
| ✘ 1.1.1.1  | 162         | public    | 2c           | Critical               |
| ✘ 2.2.2.2  | 163         | private   | 1            | Minor                  |

Example: "Minor" also receives Fatal, Critical, Major

- Minor
- Fatal
- Critical
- Major
- Warning
- Informational
- Debug
- Audit
- Unknown

Fields in the 'Create trap destination' dialog:

- IP address: [ ]
- Port number: 162
- Community: public
- SNMP version: 1
- Minimum Event severity: Minor

Callouts:

- Destination IP
- Destination port; default 162
- Define SNMP community
- SNMP version 1 or 2c
- Severity dropdown

SNMP trap destinations define the SNMP clients you are using to access the SNMP data on your system.

The SNMP Create trap destination button allows you to define: the IP address of the destination, the destination port, define the SNMP community, the SNMP version, and the SNMP severity. Note that authentication in SNMP Versions 1 and 2c amounts to nothing more than a password (community string) sent in clear text between a manager and agent,

The Minimum Event severity can be set to fatal, critical, major, minor, warning, informational, debug, audit, and unknown. As an example of how "Minimum Event" security functions, a severity level set to Minor also sets Major, Critical and Fatal event notifications.

## Settings: Event forwarding (3 of 3)

- Any monitoring solution that imports a MIB can be used for external monitoring
  - MIB download link provided
- External IBM Tivoli NetCool/OMNIBus server
  - Can be configured as trap destination
  - OMNIBus rules download link provided
- MIB and OMNIBus rules help you monitor for:
  - Hardware events
    - Compute node, chassis, network storage, and more
  - Software events
    - Management infrastructure, deployments, VM starts and stops, OS events, WebSphere® Application Server events, DB2® events, and more
- Integration with IBM Tivoli Monitoring 6.2.2 or later
  - ITM Agent provided
    - “Appliance” view of the rack – hardware metrics
    - Deployment details – high level view of VM information, IP addresses, and status

Many external enterprise monitoring solutions can be used with PureApplication System. For example, an IBM Tivoli/Omnibus external server can be configured as a trap destination for SNMP events from PureApplication System. These events include the hardware events and software events listed on this slide. A single PureApplication System MIB is provided for external enterprise monitoring solutions and a set of OMNIBus rules are provided for IBM Tivoli NetCool/OMNIBus.

For integration with external ITM 6.2.2 (or later) environments, PureApplication System provides an ITM agent which provides an "appliance" view of the rack. This slide shows the hardware metrics and high-level deployment information provided, such as status, VM information, and IP addresses.

Within PureApplication System itself, you can use the monitoring-as-a-service provided within the rack. These services provide drill-down into detailed metrics collected for operating systems, WebSphere Application Server, DB2 and other products, along with the hardware metrics, including compute nodes, chassis, network, and storage devices. Information about this service is provided in a separate presentation.

## Settings: Domain Name Service (DNS)

**Domain Name Service (DNS)**

Configure the search order for DNS servers.

This panel configures the DNS services for the PureApplication System. The DNS services are used by the management and deployment system. Virtual machines and workloads that are deployed can be given different DNS servers. This DNS, and all DNS servers, must support both forward and backward resolution of host names and IP addresses.

DNS server search order:

DNS servers

|              |       |
|--------------|-------|
| 127.0.0.1    | ▲ ▼ ✕ |
| 172.17.248.2 | ▲ ▼ ✕ |

Lookup host name or IP address

172.17.248.2

Host name: ipas-lpar-248-002.purescale.raleigh.ibm.com ← "Lookup" results

IP address: 172.17.248.2

13 IBM PureApplication System - Settings © 2012 IBM Corporation

The Domain Name Service settings allow you to review, reorder, delete, and add domain name servers. To add a DNS, type in the host name or IP address of the DNS in the **DNS server search order** field and click **Add**. The DNS's are listed under **DNS servers**. Use the graphical control to the right of each host name or IP address to reorder or delete the entries. Click **Save** to save your changes. In the bottom portion of the screen a "lookup" function is provided for you to test host names or IP addresses.

## Settings: Backup and restore – Four steps

- Four steps for backup setup and backup
- Only configuration data is stored in the backup data
  - Deployments are not backed up
- In the initial release, an IBM service representative must come on-site to restore the system

The screenshot shows the 'Backup and Restore' settings page. It is divided into two main sections: 'Automatic Backups' and 'External Backup'. The 'Automatic Backups' section includes a description and a dropdown menu for 'Start automatic backup at' set to '2:00 AM' in 'UTC (Coordinated Universal Time)'. The 'External Backup' section includes a description and a list of four steps: 'Step 1: Store your certificate and private key', 'Step 2: Generate or upload the certificate and private key', 'Step 3: Configure backup storage', and 'Step 4: Perform Backup'. Four yellow callout boxes on the left point to these steps with the following text:

- Define where to store "backup" cert and private key (points to Step 1)
- Create and manage the "backup" security artifacts (points to Step 2)
- Define "backup" server, file path, and credentials (points to Step 3)
- Initiate the backup (points to Step 4)

At the bottom of the screenshot, the page number '14', the text 'IBM PureApplication System - Settings', and the copyright notice '© 2012 IBM Corporation' are visible.

Within the Backup and Restore settings, you define the information and customize the environment needed for backing up and restoring the PureApplication System. The backup data includes only configuration data and does not include virtual application or virtual system deployments. In the initial release of PureApplication System, the restore must be performed by an on-site IBM service representative.

There are four steps to the Backup and Restore settings menu. First you define where you want to store the certificates and keys related to the backup process. You then either generate a self-signed certificate and keypair or upload your own certificate and private key. Then you tell the system where you want to store the backup data files. The last step allows you to initiate a backup. The next slides provide you more details about each step.

Notice the Automatic Backups section of this screen. Once the first three steps are configured you can set the time for an automatic backup to begin, so that you do not have to manually start the backup process.

## Backup - Step 1: Store your certificate and private key

- Specify:
  - Where to store the certificate and private key
  - Credentials required for storing the certificate and key
- For:
  - Your certificate and private key, or
  - PureApplication System generated certificate and keypair

**Define "Host"**

**Define "Path" for certificate and key**

**Specify credentials**

**Step 1: Store your certificate and private key**

Specify where the certificate and private key can be stored. These credentials should only be shared with administrators trusted to perform a restore operation.

Host: 172.16.98.32

Path: /data2

User name: root

Password: ..... [Edit]

Test connection

✓ Connection was successful!

15 IBM PureApplication System - Settings © 2012 IBM Corporation

In Step one, you specify a location where you want to store your certificate and private key. If you generate a self-signed certificate and keypair using PureApplication System, those artifacts are stored in this location by the system. The next step provides more information about generating and uploading your certificates and keys.

On this screen you define the host and file path for the certificate and key storage, along with the necessary access credentials for the server.

## Backup – Step 2: Generate or upload the certificate and private key

- Generate self-sign certificate and keypair
- If not using self-signed certificate and keypair:
  - Upload your own certificate (for backup) and private key (for restore)

Step 2: Generate or upload the certificate and private key

Generate a self-signed certificate and keypair or provide your own certificate and private key.

| Generate a self-signed certificate and keypair | Upload your own certificate            | Upload your own private key                 |
|--|--|---|
| <input type="text" value="New password"/>      | <input type="text" value="Browse..."/> | <input type="text" value="Private key..."/> |
| <input type="text" value="Verify password"/>   | <input type="button" value="Upload"/>  | <input type="text" value="Passphrase"/>     |
| <input type="button" value="Generate"/>        |  | <input type="button" value="Upload"/>       |

Provide "password" to generate self-signed certificate and keypair

Upload your own certificate

Upload your own private key using "Passphrase"

16 IBM PureApplication System - Settings © 2012 IBM Corporation

Step two allows you to either generate your own self-signed certificate and keypair, or allows you to upload your own certificate – used during backup – and upload your own private key - used during the restore process. The upload of the certificate and private key are not necessary if you generated a self-signed certificate and keypair.

To generate a self-signed certificate and keypair, supply the required password and click **Generate**. To upload your own certificate, click **Browse**, navigate to your certificate file, and click **Upload**. To upload your own private key, click **Browse**, navigate to your own private key file, and click **Upload**.



## Backup – Step 3: Configure backup storage

- Specify where you want the backup data to be stored
- Ensure adequate storage available on the backup server
  - Start with 100 gigabytes of storage
    - Space required depends on the number of virtual applications and virtual systems
    - Only configuration data is stored – not actual deployments

The screenshot shows the configuration interface for backup storage. It includes fields for Host, Path, User name, and Password, along with a 'Test connection' button and a success message. Three yellow callout boxes highlight specific fields: 'Define host for "backup" data' points to the Host field (172.16.98.32), 'Define path for "backup" data' points to the Path field (/data2/config/purescale.console.system/backup), and 'Host credentials' points to the User name field (root).

Step 3: Configure backup storage

Specify where backup artifacts are stored. The location and credentials should be separate from those used to store the private key pair.

Host: 172.16.98.32

Path: /data2/config/purescale.console.system/backup

User name: root

Password: ..... [Edit]

Test connection

✓ Connection was successful!

17 IBM PureApplication System - Settings © 2012 IBM Corporation

Step three is where you specify where you want to store your backup data files. You should ensure there is adequate space on the backup server, which might require you to perform test backups during various usage scenarios. IBM suggests you start with one hundred gigabytes of available storage when you begin testing your backup procedure. The amount of file space required depends on various factors, including the number of scripts, patterns, and instances you have running. Only the configuration data is stored in the backup – not the actual deployments themselves.

On this screen, you specify the host and path for the backup data, along with the required host access credentials.

## Backup – Step 4: Perform backup

- Available to user ID with cloud administration (Full permission) plus hardware administration (Full permission)
- A backup will cause the PureApplication System to “suspend” some operations until the backup completes
  - A “backup in progress” warning message is issued when other operations are attempted
- Important note: An IBM service representative must come on-site to restore the system

Click to initiate backup

### Step 4: Perform Backup

A full backup of your system configuration will be transferred to the specified host machine. Some functions may not be available during this operation.

Backup now

In Step four, you initiate the backup by clicking **Backup now**. This action is available to user IDs which have both cloud administration full permission plus hardware administration full permission. During backup operation, some operations within PureApplication System are suspended, and users receive a warning message that indicates that a backup is in progress. Operations automatically resume once the backup completes.

## Settings: System maintenance report

**Download as .csv file**

**Link to System > System Fix Packs in Workload Console**

**Download SGEN logs**

| Name      | Model                     | Type           | Firmware level | FRU serial | Serial Number  | Version | Unified extensible firmware interface level | Vendor              |
|-----------|---------------------------|----------------|----------------|------------|----------------|---------|---|---------------------|
| 8283/1234 | 8283-3C2                  | racks          |                |            | 12345          |         |   | IBM                 |
| Cluster 1 | 1                         | cluster        |                |            | 1              |         |   | IBM                 |
| SN#23FBW  | HC1                       | compute_node_  |                | Y130BG161  | 23FBW91        |         |   | IBM (BG)            |
| SN#23FBW  | Chassis Management Module | chassis_manage |                | Y034BG171  | Not Available1 |         |   | IBM (CLCN)          |
| SN#23FBW  | Fan Module                | chassis_fans   |                | YK10GM17   | Not Available  |         |   | IBM (Not Available) |
| SN#23FBW  | Fan Module                | chassis_fans   |                | YK10GM17   | Not Available  |         |   | IBM (Not Available) |
| SN#23FBW  | Fan Module                | chassis_fans   |                | YK10GM18   | Not Available  |         |   | IBM (Not Available) |
| SN#23FBW  | Fan Module                | chassis_fans   |                | YK10GM18   | Not Available  |         |   | IBM (Not Available) |
| SN#23FBW  | Fan Module                | chassis_fans   |                | YK10GM17   | Not Available  |         |   | IBM (Not Available) |
| SN#23FBW  | Fan Module                | chassis_fans   |                | YK10GM17   | Not Available  |         |   | IBM (Not Available) |

1 - 10 of 326 items

The System Maintenance Report provides a consolidated report of hardware firmware updates to the PureApplication System. The report includes the key information you see here about your hardware.

The Download CSV file link at the top of the panel provides you a way to download this report into a spreadsheet. The Install Fix pack link provides a convenient shortcut to the panel where you can install fix packs, a function which requires the user ID to have cloud administration full permission plus hardware administration full permission. The Download SGEN Logs link allows you to download the system generation logs for review.

## Settings: Time interval

- Sets the range for the time interval for displaying events on the administrative console for:
  - Warning events
  - Error events
- Set to **Last Hour, Last 24 Hours, or All**
  - Default: **Last 24 Hours**

The screenshot shows the IBM PureApplication System settings page. A callout box titled "Time Interval" shows a dropdown menu with options: "Last 24 Hours", "Last Hour", "Last 24 Hours", and "All". The "Last 24 Hours" option is selected. Below this, the "System Console" interface is shown. A callout box titled "Warning Events" points to a yellow warning icon in the console header. Another callout box titled "Error Events" points to a red error icon in the console header. The console displays a list of events, with the "Last 24 Hours" filter selected. The events list includes a warning about a Virtual Machine heartbeat loss and a Linux low space warning.

The Time Interval setting allows you to set the time interval range to display for the most recent Warning Events and Error Events available for display in the System Console. If you click the yellow triangle at the upper right corner of the System Console, you see a listing of the most recent Warning Events for PureApplication System within a pop-up window. If you click the red circle with an “x” at the upper right-hand corner of the System Console, you see a listing of the most recent Error Events within a pop-up window. The range of time for the events that display within this pop-up window is controlled by the Time Interval setting. The range can be set to **Last Hour, Last 24 Hours**, (which is the default setting) or **All**.

## ***Summary***

This section summarizes the settings presentation.

## Summary

- Customize settings
  - Mail Delivery
  - Date and Time
  - Event Forwarding
  - Domain Name Service
  - Backup and Restore
  - System Maintenance Report
  - Time Interval

This presentation discussed the PureApplication System settings. The Mail Delivery settings allow you to configure the SMTP function on the system. Use the Date and Time settings to specify the time zone and to review, add, or delete network time protocol servers. Use the SNMP settings to identify the PureApplication System and to configure and list the destination traps for SNMP clients. Use the Domain Name Service settings to review, add, or delete domain name servers. Using Backup and Restore settings, you define and manage your backup security artifacts, define the backup server, and initiate a backup of the system. Use the System Maintenance Report menu to review or download the firmware level reports for PureApplication System, and review the SGEN logs, and to easily navigate to the **Install Fix pack** screen. The Time Interval allows you to manage the time interval for the most recent Warning Events and Error Events that display from the links in the upper right corner of the System Console.

## Trademarks, disclaimer, and copyright information

IBM, the IBM logo, ibm.com, DB2, Tivoli, WebSphere, and PureApplication System are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of other IBM trademarks is available on the web at "[Copyright and trademark information](http://www.ibm.com/legal/copytrade.shtml)" at <http://www.ibm.com/legal/copytrade.shtml>

THE INFORMATION CONTAINED IN THIS PRESENTATION IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY. WHILE EFFORTS WERE MADE TO VERIFY THE COMPLETENESS AND ACCURACY OF THE INFORMATION CONTAINED IN THIS PRESENTATION, IT IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. IN ADDITION, THIS INFORMATION IS BASED ON IBM'S CURRENT PRODUCT PLANS AND STRATEGY, WHICH ARE SUBJECT TO CHANGE BY IBM WITHOUT NOTICE. IBM SHALL NOT BE RESPONSIBLE FOR ANY DAMAGES ARISING OUT OF THE USE OF, OR OTHERWISE RELATED TO, THIS PRESENTATION OR ANY OTHER DOCUMENTATION. NOTHING CONTAINED IN THIS PRESENTATION IS INTENDED TO, NOR SHALL HAVE THE EFFECT OF, CREATING ANY WARRANTIES OR REPRESENTATIONS FROM IBM (OR ITS SUPPLIERS OR LICENSORS), OR ALTERING THE TERMS AND CONDITIONS OF ANY AGREEMENT OR LICENSE GOVERNING THE USE OF IBM PRODUCTS OR SOFTWARE.

© Copyright International Business Machines Corporation 2012. All rights reserved.