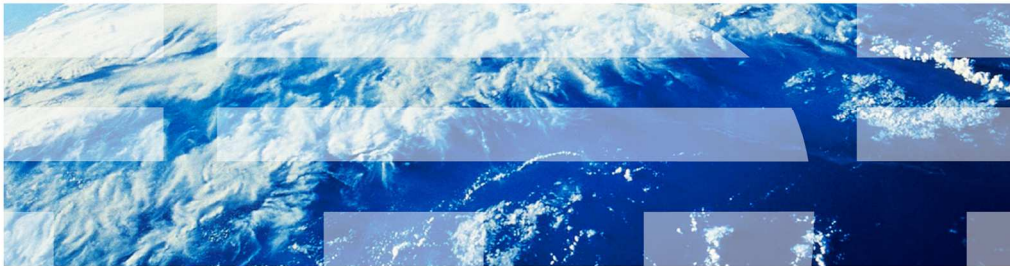# IBM PureApplication System

Other enhancements

This presentation covers a variety of enhancements that cover all aspects of IBM PureApplication™ System.

Table of contents

- Database performance monitor Extended Insight
- New multiplicity option for virtual applications
- New required, valid values, license agreement options for script packages
- Environment variables for emergency fix
- DataPower® network interface controller
- Caching service upgrade
- Passwords in logs
- Globalization

Other enhancements

This presentation covers many different enhancements to IBM PureApplication System. There are new features for database performance monitoring, virtual applications, script packages, emergency fixes, network interface controllers, caching, password obfuscation and globalization.

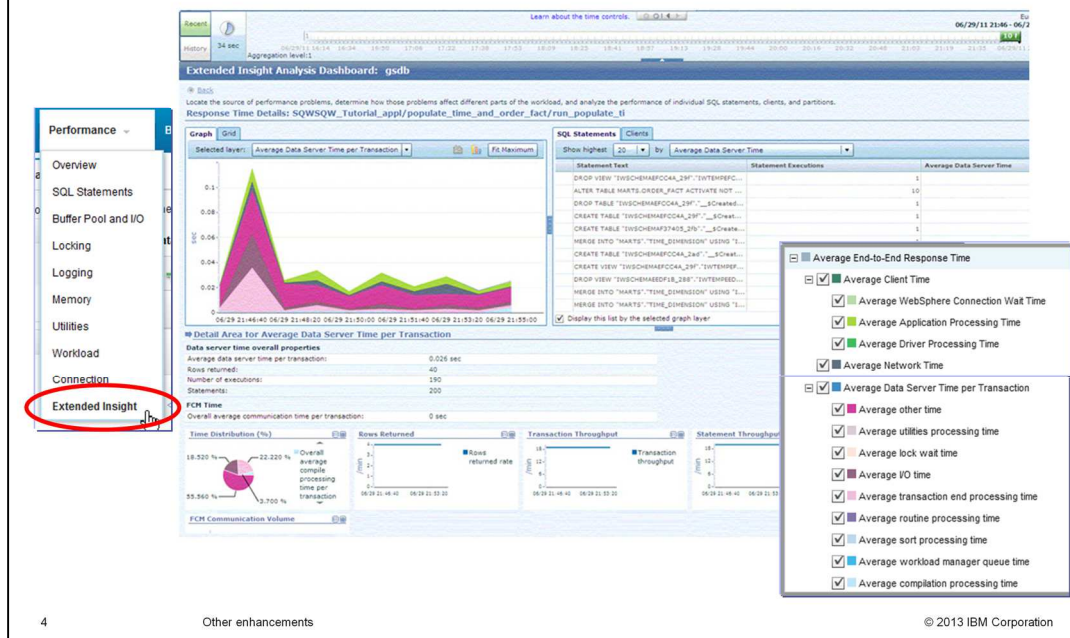Extended Insight in database performance monitoring

- Enable you to understand where database transactions, workloads and SQL requests are spending their time, such as the database server, network and application server
- Auto-deploys Extended Insight client on application server virtual machine if including package WASDB2JDBC – wasdb2 plug-in for IBM Web Application Pattern
- You can install and configure the client manually
- Requires Database Performance Monitor shared service

- Demo: Using the IBM Optim™ Performance Manager Extended Insight dashboard
  – http://www.ibm.com/developerworks/offers/lp/demos/summary/im-optimpmedashboard.html
- End-to-end database monitoring with Optim Performance Manager Extended Insight
  – http://www.ibm.com/developerworks/data/library/techarticle/dm-1106optimperfmgrextinsight/

For workloads involving a database and an application server, it is desirable to have a more complete understanding of the application's performance particularly as transactions flow from the application server to the database server. In previous releases, the performance behavior is visible on the application server and the database server, using the integrated monitoring tools. However, the area in between the application server and database server was not covered by the built-in monitoring tools.

In this release, the Database Performance Monitor uses a tool called Extended Insight to monitor the activity between the application server and the database server and report on various statistics, metrics, and trends to assist in the isolation and diagnosis of performance or availability issues.

The Extended Insight client installs automatically for your virtual application patterns that include the wasdb2 plug-in. So for example, the pattern 'IBM Web Application Pattern' automatically includes the client. For patterns that do not get the client automatically, you can install and configure the client manually. The information center shows you the steps to do this. Extended Insight requires the Database Performance Monitor shared service.

Extended Insight dashboard

You can access the Extended Insight dashboard from the Performance menu for the Database Performance Monitor service endpoint.

The dashboard shows the response time chart for the transactions for an application. The right side of the dashboard shows the top SQL statements that the application ran. Selecting a statement shows the details in the lower section of the dashboard. You can pick different layers to show in the chart. On the lower right are the different options that are available, grouped by client time, network time and data server time.

New multiplicity option for virtual application links

- Multiplicity
  - many-to-many (default)
  - one-to-one
  - one-to-many

- If the constraint is not met, a warning message displays when a pattern is created, imported, or deployed

```
"id":"WASDB2",
"label":"Data source of DB2",
"type":"link",
"source":[
    "WAS"
],
"target":[
    "DB2"
],

"multiplicity": "many-to-one"
"attributes":[
```

The multiplicity option applies to virtual application links. It is used to set the number of links that can be created between a particular source and target. If the constraint is not met, a warning message displays when a pattern is created, imported, or deployed. Valid values for multiplicity are 'many-to-many' (which is the default), 'one-to-one' and 'one-to-many'.

New options for script packages

- cbscript.json
  - required: true or false
  - validvalues: list of values

Parameters for script ILMT Agent Install Package

* ccc: ddd
* eee: ffff
  aa: ff
* bl: False
  testint: 10
* testoption: a

OK   Cancel

```
"keys":
[
  {
    "scriptkey": "testint",
    "scriptvalue": "",
    "scriptdefaultvalue": "5",
    "type": "integer",
    "required": "false",
    "validvalues": ["5","10","15"],
    "locked": "false"
  }
```

6   Other enhancements   © 2013 IBM Corporation

Use a special JSON object, cbscript.json, to include all the information needed to configure a script package that you add to the catalog. In this example, keys is the list of environment variables that are added to other system environment variables and made available to the script at run time.

There are two new options for this file, required and valid values.

The required field is an optional field indicating if the environment variable is a required or optional variable. Valid values are 'true' or 'false'. The default value is 'true'. An asterisk in the user interface indicates required values.

If the value of the environment variable is to be selected from a predefined list of values, include valid values and specify the valid values in a list. If valid values is defined, the value of scriptdefaultvalue must be contained in valid values. But valid values is ignored for types Boolean and password.

License agreement for script packages

- Multi-lingual license agreements are specified in script package archive
- License acceptance is tracked on the script package
- When a pattern is imported, there is a link from the pattern page for accepting the license on the script package
- A pattern can only be deployed or cloned if all the licenses in the script packages in the pattern are accepted

Other enhancements

You can setup licenses for script packages and for virtual system patterns containing those script packages. The user interface provides the same experience as that provided previously for the image catalog. After you import a script package containing a license or a virtual system pattern containing it, then you must accept the license before using it.

If you do not accept all license agreements in the script package, you cannot clone or deploy patterns which contain it.

License agreement user interface

- New section on script package page

  License agreement: Accepted [view...]

  License agreement: Not accepted [accept...]

  All licenses have been accepted. You can review the text of each agreement.
  - License 1
  - License 2

  OK   Cancel

- New section on virtual system page

  License status in this pattern: Windows 2008 R2 Enterprise Edition - 30 GB Maestro [Accepted]
  guardium - windows - install 3 [Accepted]

- New status on virtual system page

  Current status: License not accepted

There is a new section on the virtual system page. It indicates whether there are any license agreements for the pattern, and whether they are all accepted. For any license agreements that are not yet accepted, you can click a link that takes you to the appropriate page to accept the license agreements. You must accept all license agreements before you can deploy the virtual system pattern. When there are outstanding license agreements to be accepted, the deploy and clone links in the toolbar are also disabled.

In the current status field, you see values such as 'draft', 'read-only' or 'license not accepted', depending on the status of the virtual system.

License agreement creation

- When you accept a license agreement in any language, it is accepted for all languages

```
[
  {
    "licenses" :
    [
      {
        "title" : "License 1 title",
        "text" : "This is a simple license definition..."
      },
      {
        "title" : "License 2 title",
        "text" : "This is a second license..."
      }
    ]
  }
]
```

```
cbscript.json          JSON File
de-DE-bundle.json      JSON File
en-US-bundle.json      JSON File
fr-FR-bundle.json      JSON File
zh-CN-bundle.json      JSON File
scriptAction.sh        File
```

9   Other enhancements   © 2013 IBM Corporation

If you are creating your own compressed archive file with information to be uploaded into a script package, you can add license information for license agreements that must be accepted before deploying the script package in virtual system patterns. A single script package can contain multiple licenses.

License information is included in JSON-formatted language bundle files. These bundle files are located at the top level of the compressed archive file directory structure. The language bundle contains the license information as a JSON array, named licenses, with each license defined with a title and accompanying text information.

Add environment variables to emergency fix

- Click fix to open environment variable dialog

Describe your service request.

- Schedule service
- Select service level or fixes
  - Move to service level
  - Apply emergency fixes
    - ☑ abasetest
    - ☑ abasetest2
- Product administrator user name and password

A snapshot will be taken before applying service.

OK   Cancel

Fill in the required values for this emergency fix.

* ENV1: 980
* ENV2: INV2
* ENV3: ••••••••
* Verify password: ••••••••
* ENV4: A
* ENV5: False

OK   Cancel

If an emergency fix has additional environment variables that need to be configured, the name of the emergency fix is displayed as a link. Click the link to display a dialog and provide values as needed to configure the additional environment variables.

In this example, a base test is an emergency fix without environment variables but abasetest2 has environment variables so it opens as a clickable link. When you click it, a dialog opens to allow you to enter the variable values.

Add environment variables to emergency fix – service.xml

- service.xml in the fix contains the new EnvVariables section

```
- <rmsd:EnvVariables>
    <rmsd:EnvVariable type="integer" defaultValue="980" key="ENV1"/>
    <rmsd:EnvVariable type="string" defaultValue="INV2" key="ENV2"/>
    <rmsd:EnvVariable type="password" key="ENV3"/>
    <rmsd:EnvVariable type="enum:A,B,C" defaultValue="A" key="ENV4"/>
    <rmsd:EnvVariable type="boolean" defaultValue="false" key="ENV5"/>
  </rmsd:EnvVariables>
```

- After up...

| Emergency Fixes	✚	abasetest2	
Search...	↑↓▾	**Description:**	None provided
MQ sample eFix		**Created on:**	May 9, 2013, 8:39:20 PM
abasetest		**Updated on:**	May 9, 2013, 8:42:05 PM
abasetest2		**Emergency fix files:**	Browse...
			Upload
			The script package is in 89123 testGT.zip.
		Environment:	ENV1 = 980
			ENV2 = INV2
			ENV3 = (no default value)
			ENV4 = A
			[show less]
			ENV5 = false

When you package your own customized emergency fix to run a maintenance package against existing workload instances, you must include a special XML file that provides specific information about the emergency fix to IBM PureApplication System. The file is named service.xml, and is located in the root directory of the emergency fix archive.

Each environment variable consists of a variable name, an optional default value, and a type designation. Default values can be specified, and you can modify their values when the emergency fix is applied.

DataPower enhancement – Network interface controller (NIC)

Add-Ons (6/9)

- Default add NFS
  Adds a virtual disk to the virtual machine and optionally formats and mounts the disk.
- Default add user
  Defines an additional user on the virtual machine.
- Default AIX add disk
  Adds a virtual disk to the virtual machine and optionally formats and mounts the disk.
- Default AIX add NIC
  Adds a virtual NIC to the virtual machine, configures its IP address information and activates it.
- Default configure NIC
  Adds a virtual NIC to the virtual machine and configures its IP address information as part of initial virtual machine activation. This is not an executable add-on script.
- Default raw disk
  Adds a virtual disk to the virtual machine, the disk is added raw without partitions or formatting. Do not delete the default version as it may affect Virtual Application deployments.

- New option 'Default configure NIC'
- DataPower image contains four NIC's by default
- Maximum number is three user NIC's plus one management NIC
- 'Default configure NIC' is used for closed VM's such as DataPower
  – Closed VM setup using VMConfigurationSupport.xml in root directory of OVA archive

❗ Neither script packages nor add-ons can be added to this kind of image parts.

WebSphere DataPower XI52 Virtual Edition (Non-Production)
6.0.0.0 ▼
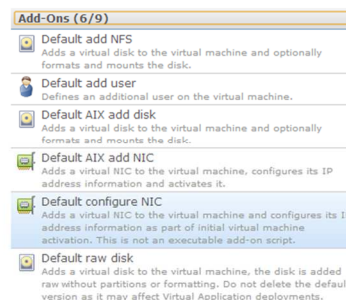
DataPower virtual images do not support access to the virtual machine using SSH. Because of this restriction, add-ons cannot be added to this type of image. If you attempt to add an add-on to this type of image, this error message is displayed: "Neither script package nor add-ons can be added to this kind of image part."

There is a new option to configure network interface controllers (NIC). **Default configure NIC** is a special add-on that is different from the other add-ons. It is not an executable script, and there are no associated environment variables. This add-on is configured during the initial startup of the virtual machine during deployment, compared to other add-ons that are started and configured after the VM is started. For DataPower, one NIC is configured by default for the virtual image part, and three more **Default configure NIC** add-ons are automatically added to the part. You can delete excess NICs from the virtual image part if you do not need the number that are configured by default.

The OVA has four NICs configured by default, one for management and three for DataPower traffic. In the screen capture, it shows the three NIC's for DataPower but does not show the PureApplication System management NIC. Since four NIC's is the maximum supported by the DataPower firmware, any additional NIC's beyond the four are ignored.

In v1.0, the OVA had four NIC's but IBM PureApplication System did not honor them, so it only deployed two NIC's. Now in v1.1, four NICs are created by default. One has a private address and the other three have addresses from the IP group.

Closed VM's are setup using the VMConfigurationSupport.xml file which is in the root directory of the OVA archive. In this file, you disable support for add-ons and extend and capture.

XC10 has been upgraded from version 2.1.0.2 to version 2.5. There is a new deployment option called transport type which administrators use when deploying the caching service. Two options exist for transports within WebSphere® eXtreme Scale: the Object Request Broker (ORB) or IBM eXtremeIO (XIO). XIO is the new default, but it is only supported by the newest client levels. To support older clients, you need to deploy with the ORB transport type. When you use ORB, cache entries are stored on the Java heap. Generally, the relative response time is slower than XIO due to the periodic garbage collection that occurs in this environment. When you use XIO, cache entries are stored in native memory, or IBM eXtremeMemory. Because cache entries are stored in native memory, relative response time is faster than the ORB.

Password in logs

- Remove or obfuscate all plain text password in logs

Other enhancements   © 2013 IBM Corporation

For security best practices, passwords should not be visible in the log files. For this release, all passwords are either removed from the logs or they are obfuscated by changing the password to asterisks.

Bidirectional support is now available in PureApplication Systems V1.1. When a sentence in a language is written, you type a string of words which has a sentence direction which is left-to-right (such as English and Spanish) or right-to-left (such as Hebrew or Arabic). Within a sentence you can also include a word or a string of words from another language which might have an opposite sentence direction from the previous language string. Bidirectional support allows the typing of two or more different languages into a user-input field, where one or more languages can have a sentence direction that is opposite of one of the other languages. A string made of adjacent words in one language is called a "directional run". Once the **Enable bidirection** check box is selected, the relative order of the "directional runs" of user-input fields is controlled by a profile setting called "Base Text Direction". For your Base Text Direction setting, you can specify "Left to Right", "Right to Left", or "Contextual". The Contextual setting allows PureApplication System software to make a best guess as to the appropriate base text direction as input screens are displayed. The bidirectional support also allows you to select one of three National calendars: Gregorian, Hijri, or Hebrew. The National Calendar setting controls the calendar that you see when PureApplication System presents a calendar to you for a date selection or date review. When the user is defined, the administrator can optionally set the bidirectional support preferences.

This slide shows the user profile screen. Users can set or change the Bidirectional support preferences within their own profile at any time to meet their needs.

Base text direction

- Base text direction allows you to specify text direction preference
- Controls text direction of user originated text

Hebrew left to right

* Name:	MyCloud
Description:	מופיעה בהרבה מדינת כולל IBM Israel.
* Type:	Average ▾

Hebrew right to left

* Name:	MyCloude
Description:	.Israel מופיעה בהרבה מדינת כולל IBM
* Type:	Average ▾

Here are two examples of the effect of Base Text Direction settings, using a left-to-right language (English), and a right-to-left language (Hebrew). Remember, Base Text Direction allows you to specify your preference for relative order of directional runs. Neutral characters, such as spaces, inside a directional run follow the direction of the directional run. Neutral characters on the border BETWEEN directional runs or at the end of a sentence follow the direction set by Base Texas Direction. The example uses a Hebrew text string preceded and followed by a space, surrounded by two English strings ("IBM" and "Israel"). The entire sentence is ended with a period.

Review the first example called "Hebrew left to right" in a left-to-right fashion. You see an English string ("IBM"), followed by a string of Hebrew text which reads from right to left, followed by another English string ("Israel") , followed by a period.

Review the second example called "Hebrew right to left" in a right-to-left fashion. You see an English string ("IBM"), followed by a string of Hebrew text which reads from right to left, followed by another English string ("Israel") , followed by a period.

Note that system-generated fields, such as the drop-down settings for the "Type" field in this example, are not affected by the Base text direction.

Hebrew and Hijri national calendar support

- Calendar selections
  - Gregorian
  - Hebrew
  - Hijri
- Example: When you enter a date in the screen below, the calendar picker shown depends on your **National calendar** preference:
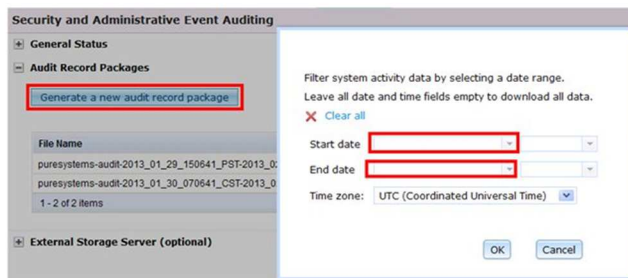
National Calendar support allows you to see your preferred calendar when working with dates. In this example, when a "Start date" is selected in the user interface, your preferred calendar displays from which you select the date. So a National Calendar setting of Hijri results in the display of a month in the Hijri calendar for your selection.

Summary

- Covered miscellaneous enhancements to IBM PureApplication System

Other enhancements

In summary, you have seen many new features in IBM PureApplication System. These include new options for database performance monitoring, virtual applications, script packages, emergency fixes, network interface controllers, caching, password obfuscation and globalization.

Feedback

Your feedback is valuable

You can help improve the quality of IBM Education Assistant content to better meet your needs by providing feedback.

1. Did you find this module useful?

2. Did it help you solve a problem or answer a question?

3. Do you have suggestions for improvements?

Click to send email feedback:

mailto:iea@us.ibm.com?subject=Feedback_about_PureASv11_Other_Enhancements.ppt

This module is also available in PDF format at: ../PureASv11_Other_Enhancements.pdf

Other enhancements

You can help improve the quality of IBM Education Assistant content by providing feedback.