

SolutionPack for IBM LPARs

Release number 1.1

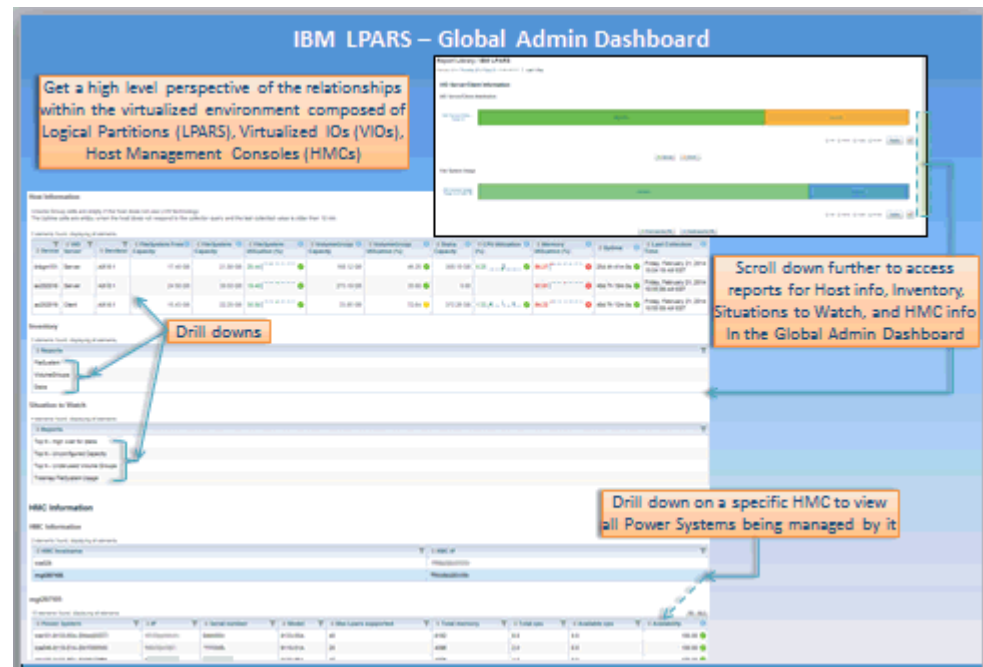
Summary Sheet

June, 2014

- ◆ [Overview](#)..... 2
- ◆ [Technical Specifications](#)..... 2
- ◆ [Configuring VIO for discovery](#)..... 3
- ◆ [Verify adapter IDs in NPIV configuration](#)..... 5
- ◆ [Installing the SolutionPack](#)..... 5
- ◆ [Using Discovery Center to discover the VIO Servers and Clients](#)..... 6
- ◆ [Using Discovery Center to discover an HMC](#)..... 7
- ◆ [SolutionPack Reconfiguration](#)..... 7

Overview

This article explains how to install and configure the SolutionPack for IBM LPARs. The SolutionPack for IBM LPARs collects performance, topology, and capacity data from your IBM AIX LPAR and VIO systems and displays the data in easy-to-use reports within ViPR SRM. With this SolutionPack, you can generate reports to highlight key relationships within the virtual environment, such as: all of the Power Systems being managed by a HMC, the LPARs and VIOs residing on a Power System, and the LPARs to the VIOs that provide the resource sharing capabilities for the constituent LPARs. Capacity reports, such as File System Usage, help you to improve the availability of business critical applications and services by ensuring that those applications have the storage resources they need to operate effectively.



Technical Specifications

SolutionPack version

- ◆ 1.1

Compatible ViPR SRM version

- ◆ 3.5

Polled metrics

- ◆ CPU utilization
- ◆ Disk metrics: Response Time, Throughput, IOPS, Queue Length
- ◆ PowerPath metrics on VIO Clients

Main reports

- ◆ HMC Dashboard

- ◆ LPAR/VIO Client Information and details
- ◆ VIO Server basic details
- ◆ Host Capacity Reports: Usable Capacity by FileSystem, Volume Manager Summary, Chargeable Capacity by Service Level, Disk Inventory
- ◆ Topology end to end maps for VIOS/VIOC

Supported models

Table 1 HMC Data Collection: P Server details

Supported model	Collector	Prerequisites	Port
All P Series servers HMC version = 6,7	Text Collector	Installation of the SolutionPack for IBM LPAR, providing credentials of the Hardware management Console (HMC)	Port 22

Table 2 LPAR (VIOS/VIOC) Data Collection

Supported model	Collector	Prerequisites	Port
IBM AIX 6.1, 7.1 Linux: Redhat 5.x, 6.x SuSE 10.x, 11.x	Generic - RSC	Installation of the SolutionPack for Physical Host. padmin user credentials are not required to discover VIO Servers. INQ 7.6.1.0 is available from ftp://ftp.emc.com/pub/symm3000/inquiry/ ^a perl interpreter 5.6.1 or higher	Port 22

a. Contact Customer Support if you have problems accessing this FTP site.

Additional information

- ◆ VIO Servers are discovered using sudo credentials
- ◆ VIO Clients are discovered using SSH public/private key pair, sudo, and root credentials.
- ◆ INQ is pushed to both VIO Servers and Clients.

Configuring VIO for discovery

The VIO Server and VIO Clients needs to be discovered using Generic-RSC independent block. Discovery can be done via two methods:

1. [Sudo user on page 3](#)
2. [SSH Public/private key on page 4](#)

When the VIOS Server is installed the padmin user is automatically created and this user provides restricted shell access. The ViPR SRM 3.0 host data collection mechanism does not work in the restricted shell environment, hence the need to create and configure the sudo user. Create a sudo user and provide the sudo user credentials while discovering the VIO Server.

Configuring sudo for VIO Server and Client host discovery

To discover VIO Server/Client hosts and collect data from these hosts you have to configure sudo as many of the discovery and data collection commands require root

privileges. In order to discover Linux and UNIX hosts you must configure sudo to elevate the user privileges to root privileges for select commands.

Procedure

1. Include the path of sudo command in the environment variable \$PATH for the sudo user.

The variable \$PATH can be set either in /etc/environment or /etc/default/login or any other OS specific file.

2. Include the paths of OS commands in the environment variable \$PATH for sudo user.

By default, most of the command files have the following location: /usr/local/sbin:/usr/local/bin:/sbin:/bin:/usr/sbin:/usr/bin

3. Verify that the \$PATH is correct.

- a. Log in as sudo user
- b. Type **which sudo**.

4. Ensure that the sudoers file is available.

By default, the sudoers file is available in /etc or /opt/sfw/etc/ or /usr/local/etc/sudoers

5. Ensure that the sudo user has root privilege to run the following commands on a given host.

Ensure the absolute path to the packages are provided in sudoers file. It is recommended to use visudo to edit sudoers file. Some packages are not installed by default.

- inq
- powermt
- vxdisk
- dmidecode (Linux)
- vgs (Linux)
- pvs (Linux)
- lvdisplay (Linux, HP-UX)
- vgdisplay (Linux, HP-UX)
- kdb (VIO Client)
- swap (AIX)

Generating a public and private key pair for SSH key based authentication

While using the SSH key based authentication to discover UNIX hosts, you can choose any key generation tool to generate a valid public and private key pair.

Before you begin

You must have a public key present on all the UNIX hosts that are to be discovered using the private key.

These steps describe the procedure to generate a public and private key pair for UNIX hosts using the ssh-keygen tool.

Procedure

1. For UNIX hosts that are not part of ViPR SRM, generate a public and private key pair using the command:

```
ssh-keygen -t rsa -f <location_of_the_private_key/name_of_private_key_file> -N ""
```

For example: `ssh-keygen -t rsa -f /root/.ssh/id_rsa -N ""`

2. Ensure that the public and private key pair that is generated has the following permissions:

- `chmod 600 /root/.ssh/id_rsa`
- `chmod 644 /root/.ssh/id_rsa.pub`

The private key file is `id_rsa`.

The public key file is `id_rsa.pub`.

3. To make the key pair functional, append the public key to *<users home directory>/ .ssh/authorized_keys* in the target UNIX host using the command `cat <location_of_the_public_key/name_of_public_key_file> >> <users home directory>/ .ssh/authorized_keys`

For example: `cat /root/.ssh/id_rsa.pub >> /root/.ssh/authorized_keys`

Next, import the private key into the SolutionPacks

Importing a private key into the SolutionPack

Procedure

1. Place the generated private key in the RSC conf folder `/opt/APG/Collecting/Remote-Shell-Collector/<instance_of_collector>/conf`
2. Change the owner by running the command `chown apg:apg <private_key_file>`

Verify adapter IDs in NPIV configuration

In the NPIV configuration if a VFC Server Adapter is created on the VIOS and a VFC Client Adapter on the VIOC, ensure correlation between the Physical HBA ports and the Virtual FC Client Adapter ports.

Procedure

1. On an HMC, go to the Virtual Adapters tab in the partition Properties of the VIOS/VIOC on which the VFC Server/Client Adapter are created.
2. Verify that a match exists between the Adapter ID of VFC Server Adapter and the Adapter ID of VFC Client Adapter.

Installing the SolutionPack

Before you begin

- ◆ ViPR SRM core modules must be up-to-date in all servers because not all module dependencies are validated during the SolutionPack installation or update process.

Procedure

1. Log in and select **Administration**.
2. Select **Centralized Management** in the Administration tree.
3. Select **SolutionPacks** in the tree.
4. Select **SolutionPack Center**.
5. Select the SolutionPack for IBM LPARs in the **Browse and Install SolutionPacks** screen.
6. Enter an instance name.
7. Click **Install**.
8. In the **Data Collection** field, select the Collector host.
9. In the **Reports** field, select the Frontend host.
10. Click **Next**.
11. In the **Data collection** window, select a value for **Data Collection**.
 - If you select **Add a new data collection**, type information about the data collection.
 - Optionally, enable **Failover-Filter**.
 - In **HostName or the IP address to send data to**, type the Primary Backend host.
12. Click **Click to show device questions** to display HMC configuration window and click the plus sign (+).

IBM LPAR configuration window appears.
13. Type the HMC IP address, username and password.

The SolutionPack installation begins.
14. Optionally, you can change the default HMC polling interval by clicking **Do you want to configure advanced settings**.
15. Click **Next**.
16. Click **Install**.
17. Click **Ok** once installation is complete.

Using Discovery Center to discover the VIO Servers and Clients

Procedure

1. From the User Interface, click **Administration**.
2. Click **Discovery Center**.
3. Under **Device Type**, click **Host configuration**.
4. Click **Add new device**.
5. Enter the VIO Server/Client configuration details and click **Ok**.
6. Add a new device for each VIO Server and Client that will be discovered.
7. Select the **Authentication Type** as:
 - a. Password based - if you wish to use password based method.
 - b. Public key base - if you wish to use SSH public private key based method.
8. Provide username (root or sudo user):

- a. Provide the password of the host for password based authentication
- b. Provide the location of the private key for public key based authentication
(/opt/APG/Collecting/Remote-Shell- Collector/
 <instance_of_collector> /conf/ <name of private key>)
9. Click **Ok**.
10. Select the device added and click **Save**.
11. Add a new device for each VIO Server and client that will be discovered.

Using Discovery Center to discover an HMC

Procedure

1. From the User Interface, click **Administration**.
2. Click **Discovery Center**.
3. Under **Device Type**, click **IBM LPAR configuration**.
4. Click **Add new device**.
5. Enter the HMC hostname, username and password.
6. Click **Ok**.
7. Select the device added and click **Save**.
8. Add a new device for each HMC that will be discovered.

SolutionPack Reconfiguration

If you wish to change the answers that were provided during Solution Pack installation first time, you could change them by reconfiguring the solution pack:

Procedure

1. Click **Administration**.
2. Under **Centralized Management**.
 - a. Click **SolutionPacks** > **Independent SolutionPackBlocks** and select **Generic-RSC for VIOC/VIOS**.
The SolutionPack Reconfiguration dialog box appears.
 - b. Click **SolutionPacks** > **Infrastructure IBM LPAR** and select the instance for LPAR.
3. Change the configuration as desired.
4. Click **Reconfigure**.

Copyright © 2014 EMC Corporation. All rights reserved. Published in USA.

Published June, 2014

EMC believes the information in this publication is accurate as of its publication date. The information is subject to change without notice.

The information in this publication is provided as is. EMC Corporation makes no representations or warranties of any kind with respect to the information in this publication, and specifically disclaims implied warranties of merchantability or fitness for a particular purpose. Use, copying, and distribution of any EMC software described in this publication requires an applicable software license.

EMC², EMC, and the EMC logo are registered trademarks or trademarks of EMC Corporation in the United States and other countries. All other trademarks used herein are the property of their respective owners.

For the most up-to-date regulatory document for your product line, go to EMC Online Support (<https://support.emc.com>).