

# IBM PureApplication System

## Reporting



This presentation will cover the reporting capabilities available from the system console in IBM PureApplication™ System.

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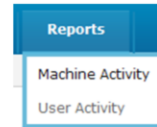
PureApplication System provides two types of reports, the machine activity reports and the user activity reports. This presentation will provide a brief overview and then provide details about both report types.

## ***Overview***

This section of the presentation will provide a brief overview of the reports available in PureApplication System.

## Report types

- PureApplication System provides pre-built reports of machine and user activity
  - Available under the **System Console > Reports** menu
- Machine activity reports
  - Allocation by cloud group
  - Allocation by compute node
  - IP usage by IP group
  - Storage allocation by cloud group
  - Virtual machine usage
- User activity reports, providing the maximum concurrent usage of:
  - Active virtual machines
  - Reserved CPU
  - Reserved memory
  - Reserved storage



PureApplication System provides pre-built reports for machine activity and user activity, detailing the resources used on the system. You access the two report types from the reports tab under the system console.

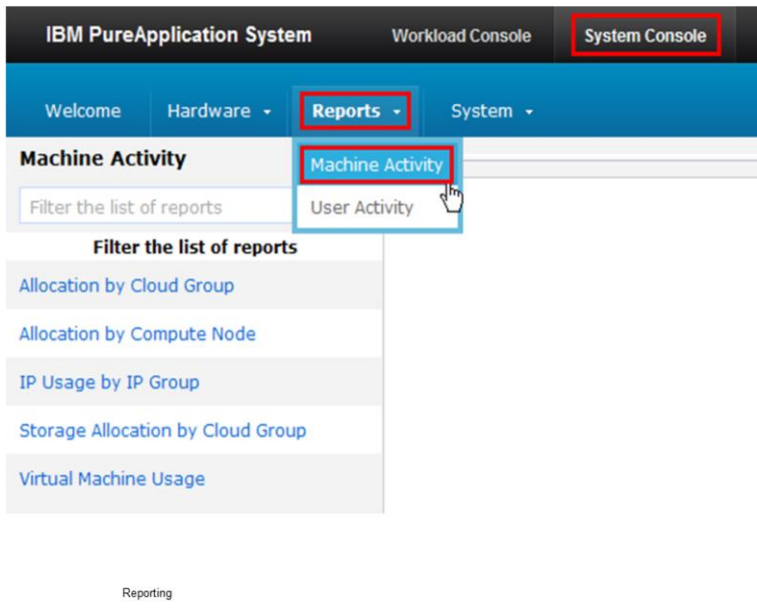
There are five different machine activity reports and one user activity report. The remaining presentation will cover each of these reports in more detail.

## ***Machine activity reports***

This section will cover machine activity reports.

## Machine activity reports

### System Console > Reports > Machine Activity



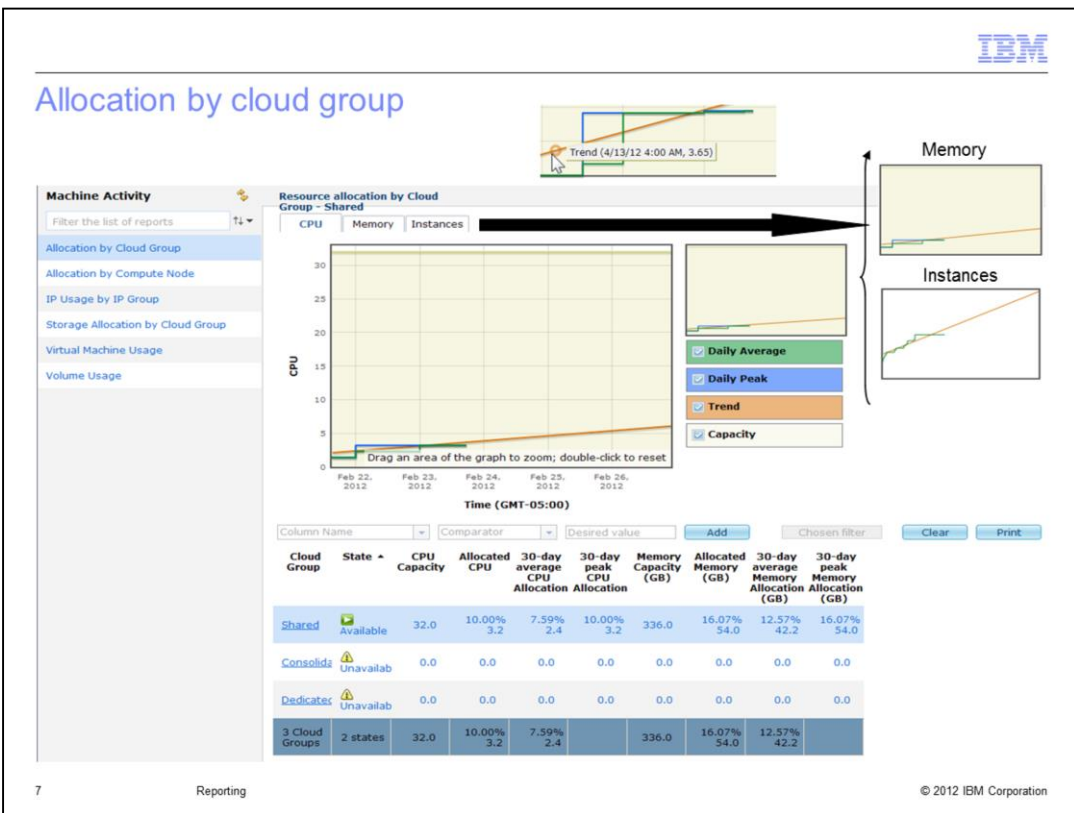
There are several pre-built reports delivered under the machine activity report menu. All the information combined can give you a detailed view of your overall system resource usage.

Click the report name in the left pane to generate and view a specific report in the viewing pane on the right. Once you select the report that you want to view, the data is collected and the report is generated using default settings, which includes data from the last thirty days.

Each report can be filtered allowing you to tailor the report to provide the specific data you need to see.

The reports named “Allocation by cloud group”, “Allocation by compute node” and “Virtual machine usage” all provide the same information, but at different levels as described by their names. The “Storage allocation by cloud group” and “IP usage by IP group” reports provide their own unique information. All reports also provide an in-depth graphical view of the particular resource displayed.

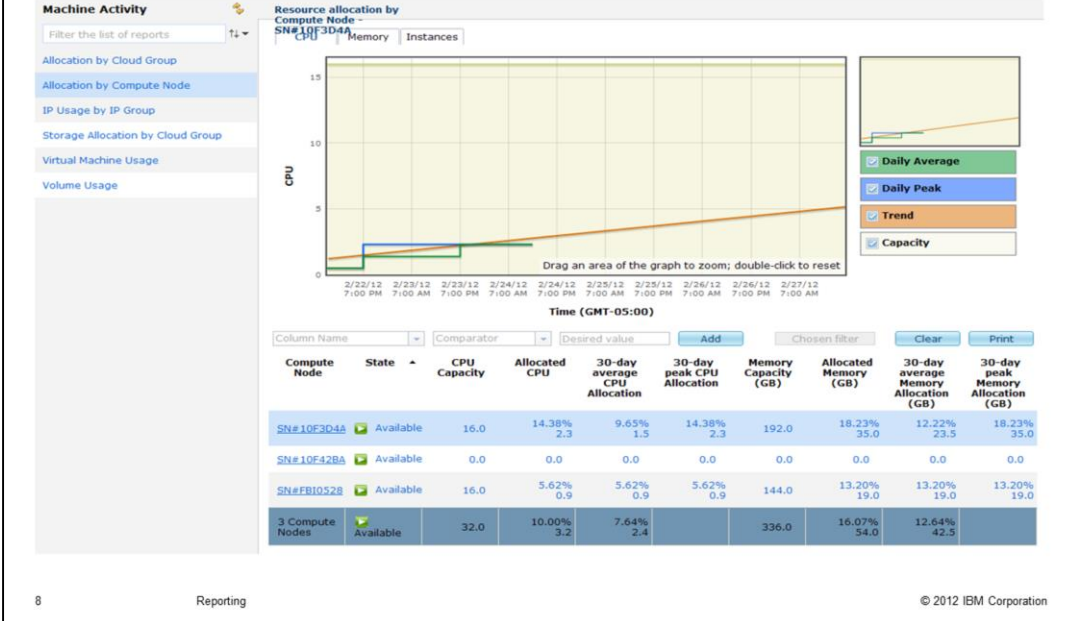
## Allocation by cloud group



The “Allocation by cloud group” report is an aggregate of all compute nodes in the cloud group. The report shows resource allocation for a cloud group by CPU, memory or instances. There are three corresponding clickable tabs which will display a summary graph of each selected resource (that is, CPU, memory or instances) for the cloud group selected. Shown here in the main part of the foil is the CPU report for the shared cloud group. Additionally are seen inserts of examples of memory and instances graphs, and an example of placing the cursor on a graph point to see further details.

This information provides analytical capabilities of each resource, thus enabling optimized utilization, increased productivity and an accurate display of resources in one location. For example, if a new application is scheduled to come online in an environment that needs to share Pure Application System resources, an administrator using the “Allocation by cloud group” data can determine resource usage in each cloud group. The administrator is able to view trends and determine if consumption is increasing or decreasing. Once the administrator determines which cloud group the new application is to be added to, the administrator can check the virtual machine utilization from the virtual machine report. If a new cloud group is required, then the reports assist with the re-balance of resources between the cloud groups. The administrator also must review the usage and trends of the existing IP groups to determine if more IP addresses need to be added for the new application.

## Allocation by compute node

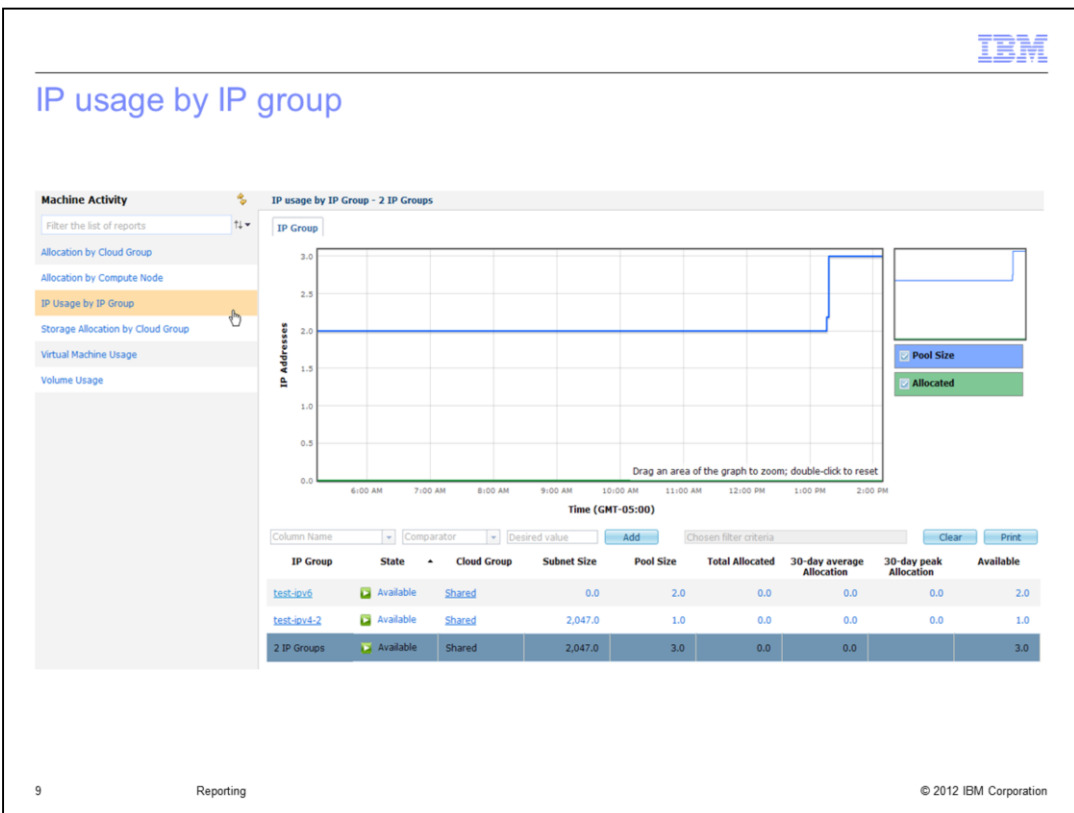


The “Allocation by compute node” report is an aggregate of all virtual machines on a particular compute node. Again you can view CPU, memory and instances for each compute node by selecting the appropriate tab. The displayed bar graph correlates to the currently highlighted compute node in the table at the bottom part of the screen. If you click the compute node link, you are taken to the detailed display screen for that compute node.

If you are going to experience a surge in application traffic due to an upcoming event, you can ensure you have adequate resources by using the data provided by the “Allocation by compute node” report. From the cloud group report, you can review the current cloud group resources that host the application. You need to pay particular attention to peak usage and compare that with the actual allocated capacity. If the cloud group needs more servers to meet the expected surge, then you can add more compute nodes to the cloud group. If needed, you can add additional IP addresses as well.



## IP usage by IP group

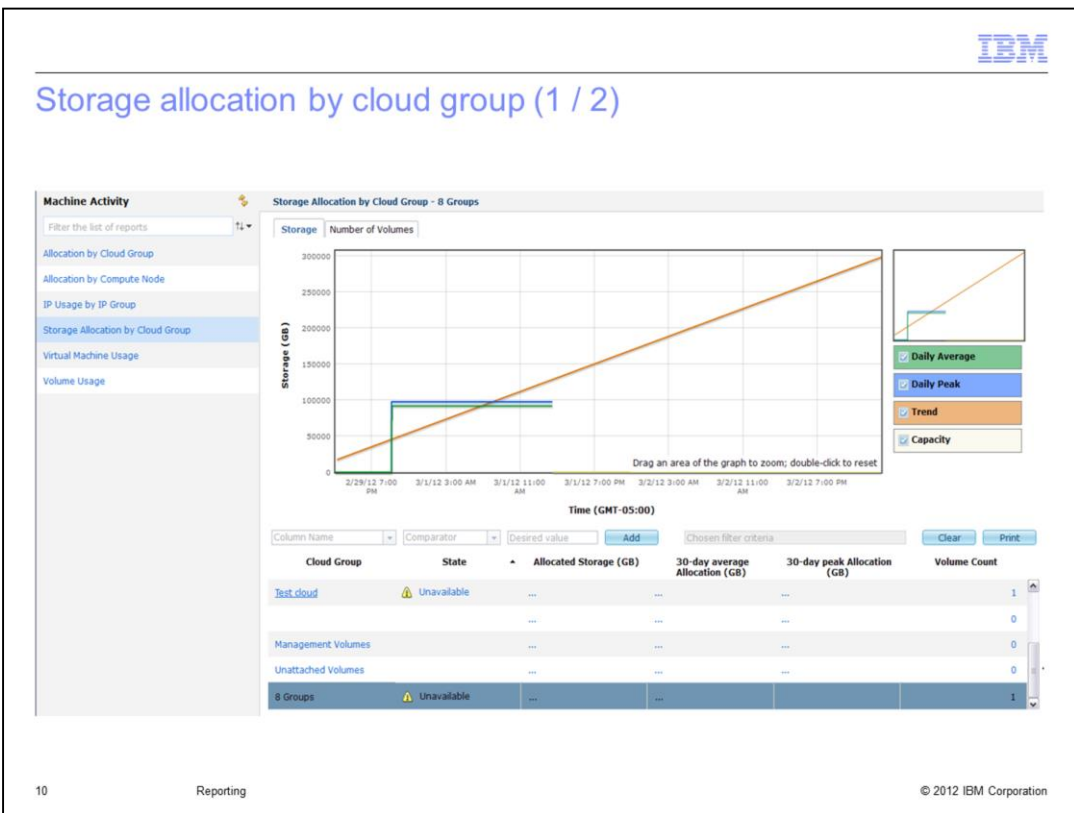


The “IP usage by IP group” report provides information about all the IP groups over the last thirty days. At the bottom of the screen is a scrollable list of all the IP groups. There, the state of the IP group and the cloud group it resides in are listed. The subnet and pool size values are also shown. The subnet size represents the maximum number of addresses that potentially can be assigned, and the pool size represents the number of IP addresses actually available for use. The total allocated column represents the number of addresses in use and the available column is the number of IP addresses still available to use.

There also are a “thirty day average allocation” and “thirty day peak allocation” columns. These fields are helpful in debugging a failed system deployment where not enough IP addresses are available to support the deploy.

The graph represents the total allocated addresses over the previous thirty day period, where the vertical axis represents the pool size.

## Storage allocation by cloud group (1 / 2)



The “Storage allocation by cloud group” is an overall view of storage and volume usage by a cloud group over the past thirty days. At the bottom of the screen is a scrollable list of cloud groups, and usage information by cloud group. Information is provided for the state, current allocated storage, the average allocated storage over the past thirty days, the thirty day peak allocation, and the volume count.

The graph has two tabs, one for displaying storage information and the other tab displays volume count. For both tabs, the information remains the same in the scrollable list at the bottom of the screen.

## Storage allocation by cloud group (2 / 2)

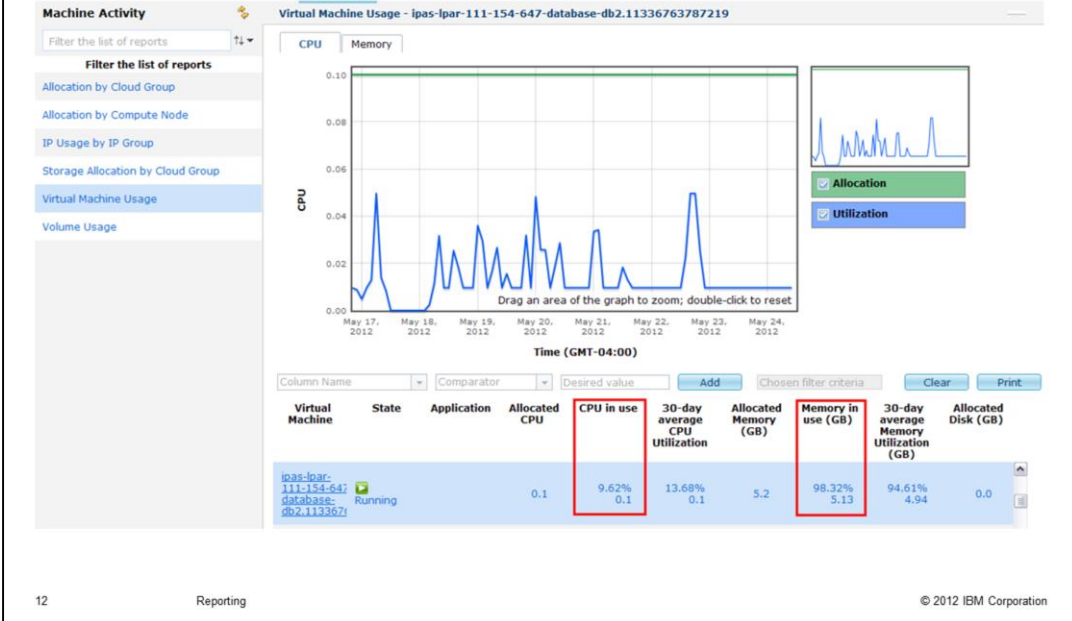
Storage Allocation by Cloud Group

Cloud Group	State	Allocated Storage (GB)	30-day average Allocation (GB)	30-day peak Allocation (GB)	Volume Count
Shared	Available	0.0 0.00%	0.0 0.00%	0.0 0.00%	0
VirtualManagement	Unavailable	0.0 0.00%	0.0 0.00%	0.0 0.00%	0
Unattached Volumes		6,235.0 13.96%	4,201.0 9.40%	6,342.0 14.20%	500
<b>3 Groups</b>	<b>2 States</b>	<b>6,235.0 13.96%</b>	<b>4,201.0 9.40%</b>		<b>500</b>
Total Allocated (GB)		40,261.0 90.13%	30,122.0 67.43%	40,261.0 90.13%	573
Total Capacity (GB)		44,669.0 100.00%			

On the same screen as seen on the previous foil, at the bottom of the scrollable list of cloud groups is a summary of storage allocation. This includes a row for “unattached volumes”. Since storage is SAN based, a storage volume is not fixed to any particular entity until the associated virtual machine instance is running on the compute node, at which time the storage volume is associated with a cloud group and is reflected as such on this report.

The summary also shows the Total Allocated and Total Capacity values for the storage, which is one shared global pool. The Total Allocated amount is very close to the sum of all the allocated storage amounts. The slight difference in value is the overhead due to volume management that is not shown in the individual allocated storage amounts but is shown in the overall total allocated amount.

## Virtual machine usage



The “Virtual machine usage” report lists the state and allocated resources for every individual virtual machine in the scrollable area near the bottom of the screen. Selecting a virtual machine in the scrollable area will provide either the CPU usage or memory usage on the graph, depending on which tab is selected.

Using the filtering capabilities or the column sort capabilities provided with this report, you can determine which application is consuming the most resources. For example, you can combine the virtual machines by application with a filter, and then sort the results by allocated CPU or allocated memory.

## ***User activity reports***

This section will cover user activity reports.

## User activity report (1 of 2)

- **System Console > Reports > User Activity**
- Adjust the **date range**, click **Update**

The screenshot shows the IBM PureApplication System console. The 'Reports' menu is open, and 'User Activity' is selected. The date range is set from 6/25/2012 4:37:02 PM to 7/25/2012 4:37:02 PM. The table below shows the following data:

User name	Maximum concurrent active virtual machines	Maximum concurrent CPUs reserved	Maximum concurrent memory reserved (MB)	Maximum concurrent storage reserved (MB)
aaa1	0	0	0	0
admin	21	42	79948	462943
ajq-test0	0	0	0	0
dave	0	0	0	0
deploy	0	0	0	0
deploy1	18	20	113248	248843
deploy1-nadmin	12	12	60832	161113
deploy1-nadmin1	4	4	34016	49283
deploy1-nadmin2	4	4	34016	49285

The user activity report provides information about maximum resource usage per user name of active virtual machines, reserved CPUs, reserved memory, and reserved storage. This report is accessed from the reports tab in the system console. You must specify a specific date range to obtain reports. The default date range is the previous thirty days.

## User activity report (2 of 2)

- To download user data, click the **Download Filtered Data** link

**User Activity**

Start: 6/25/2012 4:37:02 PM  
End: 7/25/2012 4:37:02 PM

[Update](#) [Download filtered data](#)

The statistics are collected between Jun 25, 2012 4:37:02 PM and Jul 25, 2012 4:37:02 PM

User name	Maximum concurrent active virtual machines	Maximum resource usage
aaa1	0	0
admin	21	42
ajq-test0	0	0
dave	0	0

Opening user-activity.csv

You have chosen to open

**user-activity.csv**  
which is a: Microsoft Office Excel Comma Separated Values File (2.1)  
from: https://172.18.104.12

What should Firefox do with this file?

Open with Microsoft Office Excel (default)

Save File

Do this automatically for files like this from now on.

OK Cancel

15 Reporting © 2012 IBM Corporation

You can click the Download Filtered Data link to download a **csv** file of the data seen on the screen.

## Sample report – User activity

- Lists resources consumed by each user

	A	B	C	D	E
1	User name	Max active VMs	Max CPUs	Max Memory (MB)	Max Storage (MB)
2	admin	12	14	32268	122884
3	ibmeng	0	0	0	0
4	rack15	0	0	0	0
5	deploy1	15	16	82400	185008
6	deploy2	1	2	4096	31744
7	deploy3	61	92	226536	478341
8	deploy4	1	2	9024	12538
9	deploy5	11	19	32864	304128
10	deploy6	12	12	24576	440320
11	deploy7	8	58	460800	286720
12	deploy8	11	19	51200	360508
13	deploy9	31	81	400480	395740
14	deploy10	19	19	22880	246260
15	deploy11	9	9	21376	20476

Shown here is a sample **csv** report that is produced, with the same information as was seen on the previous foil.



## ***Summary***

This section will give an overview of what you covered in the presentation.

## Summary

- There are two kinds of reports
  - Machine activity reports
  - User activity reports
- Machine activity reports provide information pertaining to the system in place
- User activity reports provide information pertaining to user actions

The presentation has looked at both machine activity and user activity reports. These reports provide information pertaining to system resource utilization both at the machine level and at the user level. These reports will assist you in managing the resources used on the PureApplication System.

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