



IBM Tivoli Training

Netcool/Proviso 4.4.3

Collection versus report grouping



© 2009 IBM Corporation
Updated January 13, 2009

This IBM Education Assistant module will highlight the differences between Collection and Report Grouping in IBM Tivoli Netcool® Proviso® 4.4.3.

Objectives

Upon completion of this module, you should be able to:

- Describe elements and subelements
- Identify the differences between elements and subelements
- Describe collection strategies
- Describe the differences between collection and report grouping

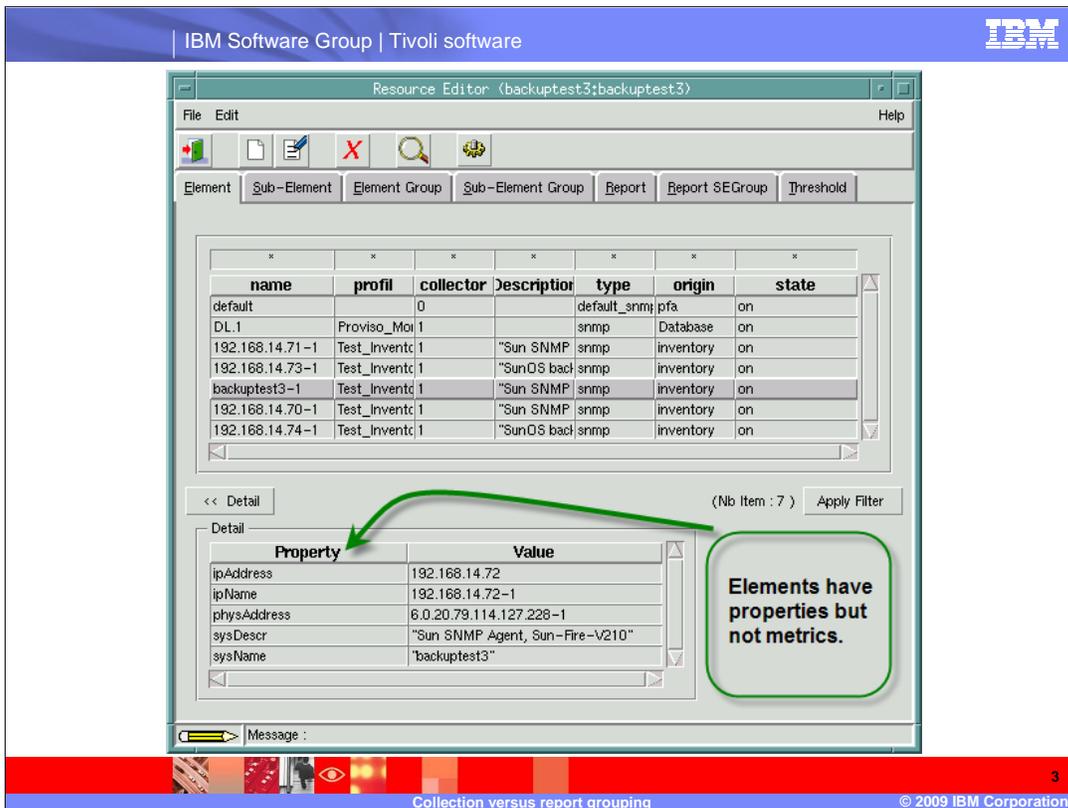
Upon completion of this module, you should be able to:

Describe elements and subelements

Identify the differences between elements and subelements

Describe collection strategies

Describe the differences between collection and report grouping



Resources are the network elements and subelements that are inventoried by Proviso.

Resources are discovered either by polling an SNMP network or by processing the bulk collection files presented to Proviso from network management interfaces.

Discovery of resources that will not be reported on adds additional work to the Proviso installation. Therefore, restrictions can be placed on what is to be discovered.

Once discovered, resources are tracked (synchronized) and grouped. Two grouping types are used in Proviso, collection and reporting.

Elements are a managed network node or host, usually a physical object (for example, a router, switch, or server). Collection is not performed on elements.

Subelements are the component pieces of elements, such as an interface, a memory pool, a fan, a DLCI. They can be physical objects or logical constructs.

An element only has properties but a subelement will have properties and metrics. Collection is performed on subelements.

IBM Software Group | Tivoli software IBM

Resource Editor (backuptest3;backuptest3)

File Edit Help

Element Sub-Element Element Group Sub-Element Group Report Report SEGroup Threshold

name	date	state	label	profil	fam	element	instance
192.168.14.	12/04/2008	on	192.168.14.	Test_Invent	IETF_IF	192.168.14.	if<1>
192.168.14.	12/04/2008	on	192.168.14.	Test_Invent	IETF_IF	192.168.14.	if<2>
backuptest3	12/04/2008	on	backuptest3	Test_Invent	IETF_IF	backuptest3	if<1>
backuptest3	12/04/2008	on	backuptest3	Test_Invent	1213_Device	backuptest3	<NULL>
backuptest3	12/04/2008	on	backuptest3	Test_Invent	IETF_IF	backuptest3	if<2>
192.168.14.	12/04/2008	on	192.168.14.	Test_Invent	IETF_IF	192.168.14.	if<1>

<< Detail (Nb Item : 16) Apply Filter

Property	Value
sysName	"backuptest3"
ZerosReported	true
ErrorsReported	true
TrafficDirection	both
DiscardsReported	true
MulticastSupport	NUcast

Message :

Subelements have properties and metrics.

Collection versus report grouping © 2009 IBM Corporation

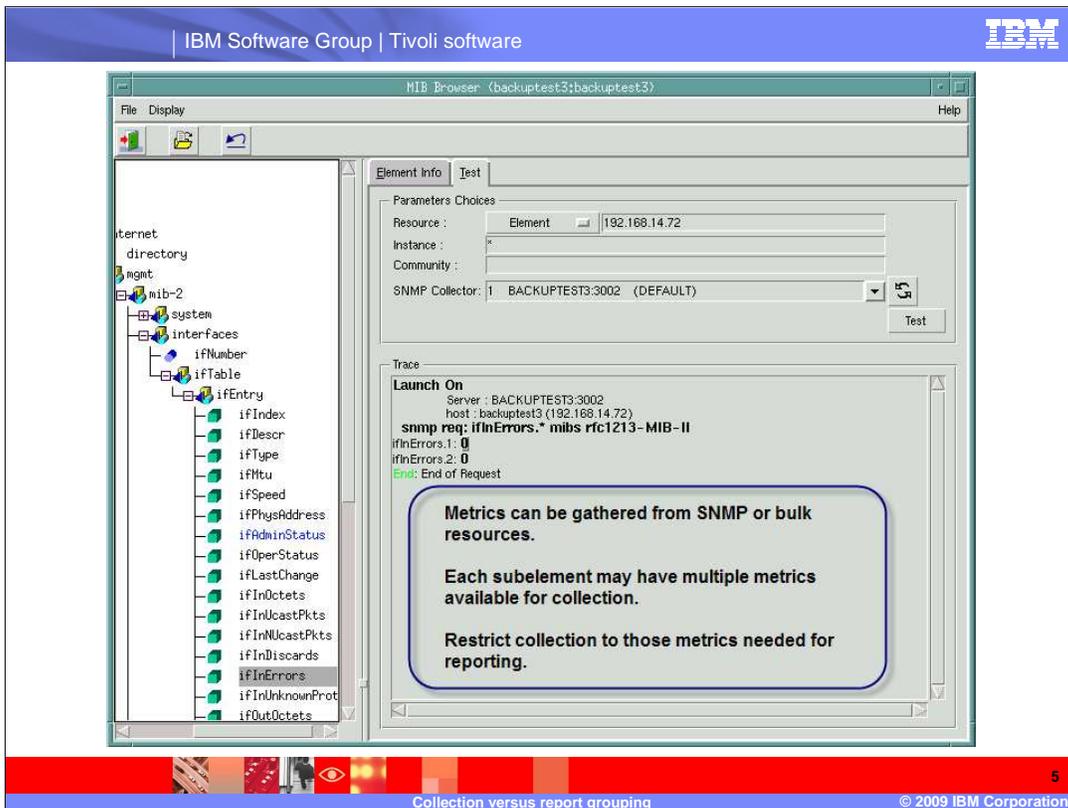
Properties are used to define the resource, either an element or a subelement. Properties are used to identify the resource and are stored as metadata in the Proviso database.

Metrics only exist for subelement resources. A subelement may have more than one metric available for collection. For example an interface may have metrics for availability, packets in, and packets out, among other items.

Often a set of metrics must use a collection formula to present useful data to the users. As an example, the percent utilization of an interface must be computed by using the metrics for utilization and the bandwidth properties of the interface.

Collection formulas should not be confused with the formulas used in the Complex Metric Engine. The CME formulas, for example, can compute averages, min, or max values over a range of resources or time unlike the collection formulas. Collection formulas are applied only to the single subelement's metric for the immediate period collected.

Only those metrics that are of interest to Proviso users should be collected.



Collection is the process of gathering useful metrics from resources. Metrics can be gathered from SNMP devices or from bulk interfaces. The metrics are associated to specific resources by referencing the properties of the resource.

The individual metrics collected by the DataLoad are used by the corresponding DataChannel's CME as input to aggregation. There the individual metrics will be aggregated

Collection should be restricted only to those metrics that are needed to support the Proviso reports required by end users. Collecting metrics that will not be reported is counterproductive.

The screenshot shows the Resource Editor interface. On the left, a tree view displays 'SUB-ELEMENTS' including 'NOC Reporting', 'Sub-Element Collect', 'ATM', 'Alcatel 5620', 'Cisco CWM', 'Cisco NetFlow', 'Cisco SAA', 'Devices', 'Dynamic Inventory Suppo', 'Frame Relay', 'Interfaces', 'No Counter Support', 'Traffic In', 'Discards Reported', 'Errors Reported', 'Octet Support', 'Packet Support', 'Traffic Out', 'Zeros Reported', 'Juniper ERX Interfaces', and 'Juniper_CoS'. A green arrow points from the 'Traffic In' sub-element to a callout box.

The callout box contains the following text:

- Collect by technology or vendor.
- Use the application pack defaults.
- Collect only once for efficiency.

On the right, a table displays collected items:

name	label	family	element	instance
192.168.14.	192.168.14.	IETF_IF	192.168.14.	If<2>
192.168.14.	192.168.14.	IETF_IF	192.168.14.	If<2>
192.168.14.	192.168.14.	IETF_IF	192.168.14.	If<2>
192.168.14.	192.168.14.	IETF_IF	192.168.14.	If<2>
backuptest3	backuptest3	IETF_IF	backuptest3	If<2>

At the bottom right of the table area, it says '(Nb Item : 5)'. A message bar at the bottom left is empty.

Ideally collection will use the minimum amount of processing capacity and network bandwidth necessary to complete the work.

This implies that collection should be optimized around technology, especially where a single collection formula can be employed for a set of collected metrics.

When an application pack is applied for a specific technology/vendor product, its default collection strategies should be utilized.

The screenshot shows the Resource Editor interface for a resource named 'backuptest3:backuptest3'. The left pane displays a tree view of sub-elements, including 'Sub-Element Collect' which contains a 'Duplicate' sub-element. A red circle highlights this 'Duplicate' sub-element. A red arrow points from this circle to a table in the right pane. The table has columns for 'name', 'label', 'family', 'element', and 'instance'. The table contains five rows of data, with the last row being 'backuptest3:backuptest3: IETF_IF backuptest3:'. A red text box with a white background and black border contains the text: 'Duplication of collection is wasteful. It increases effort without benefit.'

name	label	family	element	instance
192.168.14.	192.168.14.	IETF_IF	192.168.14.	If<2>
192.168.14.	192.168.14.	IETF_IF	192.168.14.	If<2>
192.168.14.	192.168.14.	IETF_IF	192.168.14.	If<2>
192.168.14.	192.168.14.	IETF_IF	192.168.14.	If<2>
backuptest3:	backuptest3:	IETF_IF	backuptest3:	If<2>

(Nb Item : 5)

Collecting an individual metric from the same resource more than once is wasted effort. If an SNMP metric is to be collected, collecting it more than once places additional workload on the network you are collecting from. It also produces additional work for the DataLoad collector, wasting processor and memory resources on a metric value that has already been processed.

In the end, regardless of the additional collection, the CME will discard the redundant metrics.

Reporting is at the heart of Proviso. Proviso reports give customers, executives, and network managers the ability to assess network performance from their perspective.

Using historical data, in addition to recently collected data, Proviso can provide trending analysis as well as alert on burst or potential threshold violations.

Further, everything that is collected should end up in a report; otherwise the effort expended to collect the metric is wasted.

Resource Editor (backuptest3;backuptest3)

File Edit Help

Element Sub-Element Element Group Sub-Element Group Report Report SEGroup Threshold

SUB-ELEMENTS

- Customer Interfaces
 - RU_...(AP... type)
- NOC Reporting
 - ATM
 - Cisco NetFlow
 - Cisco SAA
 - Devices
 - Frame Relay
 - Interfaces
 - Juniper CoS
 - Latency
 - Layer 2
 - MPLS-TE
 - Netflow
 - QoS
 - Router
 - VDIP
- Sub-Element Collect

name	url	type	comment
Health Summary	PVLs_AP_Group	By Group	AP Cisco Device
Bit Throughput	PVLs_AP_Group	By Group	AP Interfaces Pa
Global Availability	PVLs_AP_Group	By Group	AP Interfaces Pa

Proviso provides the ability to create customized reports. The NOC reporting group is the default subelement reporting structure.

Each Proviso installation should have custom reports deployed.

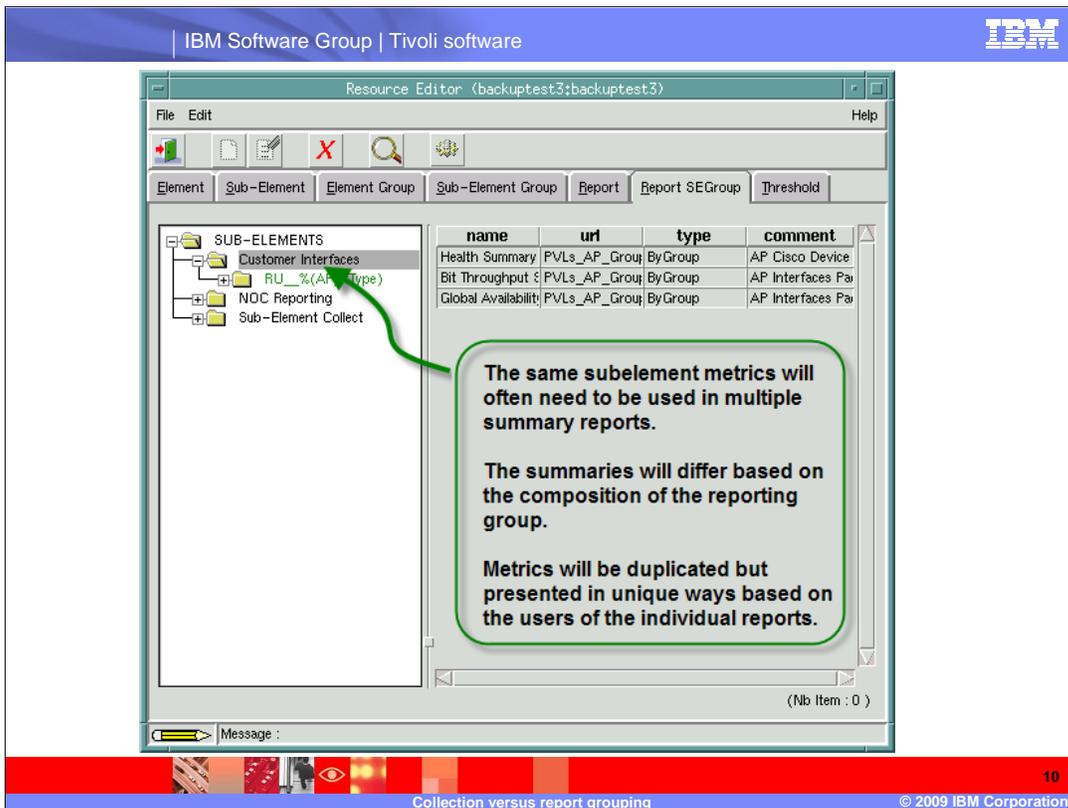
(No Item : 0)

Message :

Collection versus report grouping © 2009 IBM Corporation 9

Reports are generated for use by reporting groups. Each Proviso installation should have a variety of customized reporting groups created for use beyond the default NOC reporting group.

Reporting groups should be created that present a comprehensive view of network performance for each type of user or customer group. The reports should progress from summaries of resources to resource specific reports.



Given multiple users, all interested in the same resources but with differing aggregation requirements; the same metrics will be incorporated into multiple reports.

Proviso aggregates based on the needs of reporting. Therefore, while individual metrics are processed by the CME, they are then utilized as often as needed to provide optimized reporting performance.

By pre populating the metrics into reporting groups before those reports are requested by users, reporting speed in Proviso is enhanced.

Training Roadmap for *Netcool/Proviso*

http://www.ibm.com/software/tivoli/education/edu_prd.html



Copy and paste the link provided into the browser of your choice to explore the training roadmap for Netcool/Proviso.

Summary

You should now be able to:

- Describe elements and subelements
- Identify the differences between elements and subelements
- Describe collection strategies
- Describe the differences between collection and report grouping

You should now be able to:

Describe elements and subelements

Identify the differences between elements and subelements

Describe collection strategies

Describe the differences between collection and report grouping

Feedback

Your feedback is valuable

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

- Did you find this module useful?
- Did it help you solve a problem or answer a question?
- Do you have suggestions for improvements?

Click to send e-mail feedback:

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

This module is also available in PDF format at: [../coll_v_report.pdf](..../coll_v_report.pdf)



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

Trademarks, copyrights, and disclaimers

IBM, the IBM logo, ibm.com, and the following terms are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both:

Netcool Proviso Tivoli

If these and other IBM trademarked terms are marked on their first occurrence in this information with a trademark symbol (® or ™), these symbols indicate U.S. registered or common law trademarks owned by IBM at the time this information was published. Such trademarks may also be registered or common law trademarks in other countries. A current list of other IBM trademarks is available on the Web at "Copyright and trademark information" at <http://www.ibm.com/legal/copytrade.shtml>

Other company, product, or service names may be trademarks or service marks of others.

Product data has been reviewed for accuracy as of the date of initial publication. Product data is subject to change without notice. This document could include technical inaccuracies or typographical errors. IBM may make improvements or changes in the products or programs described herein at any time without notice. Any statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only. References in this document to IBM products, programs, or services does not imply that IBM intends to make such products, programs or services available in all countries in which IBM operates or does business. Any reference to an IBM Program Product in this document is not intended to state or imply that only that program product may be used. Any functionally equivalent program, that does not infringe IBM's intellectual property rights, may be used instead.

THE INFORMATION PROVIDED IN THIS DOCUMENT IS DISTRIBUTED "AS IS" WITHOUT ANY WARRANTY, EITHER EXPRESS OR IMPLIED. IBM EXPRESSLY DISCLAIMS ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NONINFRINGEMENT. IBM shall have no responsibility to update this information. IBM products are warranted, if at all, according to the terms and conditions of the agreements (for example, IBM Customer Agreement, Statement of Limited Warranty, International Program License Agreement, etc.) under which they are provided. Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products in connection with this publication and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products.

IBM makes no representations or warranties, express or implied, regarding non-IBM products and services.

The provision of the information contained herein is not intended to, and does not, grant any right or license under any IBM patents or copyrights. Inquiries regarding patent or copyright licenses should be made, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.

Performance is based on measurements and projections using standard IBM benchmarks in a controlled environment. All customer examples described are presented as illustrations of how those customers have used IBM products and the results they may have achieved. The actual throughput or performance that any user will experience will vary depending upon considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve throughput or performance improvements equivalent to the ratios stated here.

© Copyright International Business Machines Corporation 2009. All rights reserved.

Note to U.S. Government Users - Documentation related to restricted rights-Use, duplication or disclosure is subject to restrictions set forth in GSA ADP Schedule Contract and IBM Corp.

