

NetCracker Discovery & Reconciliation

Data Accuracy Challenge

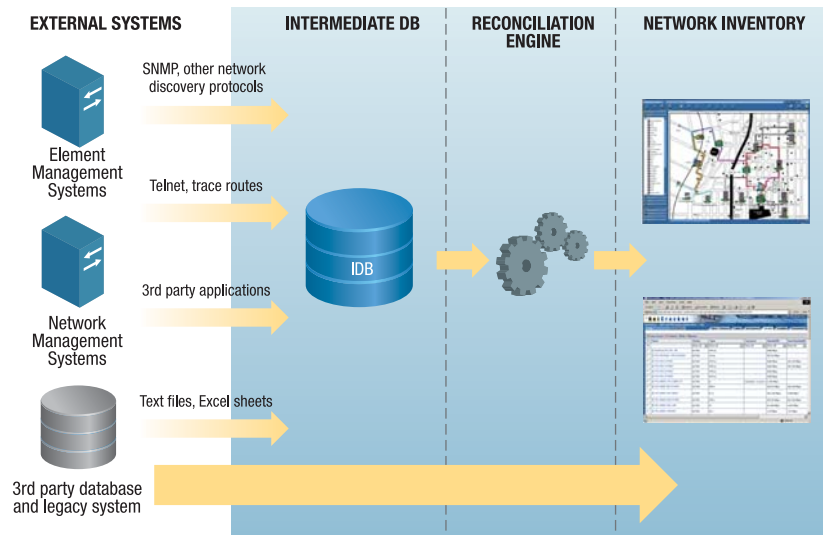
Poor data integrity is a major contributor to revenue loss. For example, designing a service based on incorrect physical resource information will create problems during provisioning and activation and will require expensive rework later on. When inaccurate network and service configuration information prevents the root cause of a network fault from being determined in time or prevents the identification of customers affected by an outage, SLA violations can result. If an order management system can't find correct information on the capacity available for a specific address, it may even result in lost customers.

Inaccurate network capacity information also makes it difficult to plan efficiently for network growth. And it will be difficult to estimate how much effort and time are needed to upgrade a network for the next "killer app" that a CSP wants to introduce.

Multiple data sources are the main threat to data integrity. In all but the smallest companies, multiple sources and multiple systems hold the data, and often those systems update and maintain the same piece of data independently. Frequently, a clear business case does not exist for retiring such systems, so they remain while the CSP struggles to synchronize their legacy data

with new, next-generation systems. In addition, the back-office systems may not reflect changes to the network caused by maintenance or restoration operations.

With bad data, even the most sophisticated operations and business support systems (OSS/BSS) are prone to do more harm than good, putting a CSP's organization in a reactive mode. To ensure that OSS/BSS information is accurate, CSPs need tools that can interface with all their important data sources on a real-time or periodic basis, gather important customer, service, or network resource configuration data, and compare that information to the right OSS/BSS databases. The solution must also be able to interact with back-office databases and systems as well as directly with the network, if needed.



NetCracker Discovery & Reconciliation

The NetCracker Discovery & Reconciliation module improves data integrity by interfacing with network management systems and back-office databases. It compares collected data with data stored in the NetCracker Service Inventory and Resource Inventory modules and generates intelligent exception reports if any discrepancies are detected.

Discovery & Reconciliation then reconciles the two sets of data and, as necessary, automatically updates inventory information or issues a change notification for manual reconciliation.

Discovery & Reconciliation collects network configuration information directly from network elements,

element management systems, network management systems, Excel and XML files, etc. In addition, it collects service, customer, or open trouble-ticket information from appropriate back office systems.

Discovery & Reconciliation analyzes, transforms, and aggregates this collected information to create a consolidated snapshot of the data. The solution's powerful built-in synchronization engine:

- Manages data mapping models
- Generates configurable discrepancy reports
- Automatically resolves discrepancies
- Provides periodic, event-driven, and ad-hoc scanning

- Allows configurable rules to be set for comparison checks

This reconciliation process uses fully configurable rules to compare collected data to data stored in other NetCracker modules. Using these rules, the solution pinpoints discrepancies in the physical presence or structure, logical configuration, or connectivity of a device, and then reports or takes action. For example, for certain discrepancy types, the database of record might be updated automatically. In other cases, discrepancies might be resolved through the issuing of a work order.

NetCracker Discovery & Reconciliation Components

Mediation Dataflow retrieves information from external systems over commonly used protocols and transforms it into data that can be placed in intermediate storage. Data can be collected over LDAP, SNMP, CORBA, CLI, and file access protocols.

Intermediate DataBase stores the external data as tables, thus simplifying further processing. The IDB prevents discrepancies by analyzing data before submitting it to the OSS. IDB can be populated by Mediation Dataflow or by other software that can perform SQL database updates.

The Reconciliation Component compares data from the IDB with the data stored in the OSS using logic defined through the intuitive GUI. When discrepancies are found, the component eliminates them automatically or assigns them for manual resolution.

Object	Attributes	Network value	Inventory value	Table	Field	Action	Adapters
Network Element - Network Element 1				TW_NETWORK_ELEMENT		Present	
Network Element - Network Element 2				TW_NETWORK_ELEMENT		Present	
Device - Device 1	NE_ID	Network Element 1	Network Element 1	TW_DEVICE	NE_ID	Present	Default action
	Name	Device 1	Device 1	TW_DEVICE	NAME_ID	Present	Default action
Switch - Switch 1	SW_ID	2007000012	2007000012	TW_SWITCH	SW_ID	Present	Default action
	SW_ID	2007000012	2007000012	TW_SWITCH	SW_ID	Present	Default action
	SW_ID	Device 1	Device 1	TW_SWITCH	SW_ID	Present	Default action
	Name	SW 1	SW 1	TW_SWITCH	SW_ID	Present	Default action
Card - Card 1				TW_CARD		Present	
Port - Port 2				TW_PORT		Present	
Port - Port 3				TW_PORT		Present	
Device - Device 2				TW_DEVICE		Present	
Device - Device 3				TW_DEVICE		Present	
Device - Device 4				TW_DEVICE		Present	
Port - Port 1				TW_PORT		Present	
Port - Port 2				TW_PORT		Present	
Port - Port 3				TW_PORT		Present	

Discovery & Reconciliation uses NetCracker Framework functionality to launch scheduled or on-demand reconciliation sessions and generate reports. The pre-integration of Discovery & Reconciliation, other modules in the NetCracker product suite, and Framework facilitates interoperability and decreases implementation time.

Benefits of NetCracker Discovery & Reconciliation

- Keeps data compliance high by establishing an automated data audit process
- Reduces typical data accuracy problems by analyzing comprehensive discrepancy reports
- Resolves conflicts by updating data automatically or by issuing work orders
- Provides a quick way to get information directly from network elements via a configurable toolkit for network

- management drivers, with support for multiple protocols including SNMP, TL1, Telnet, and SSH
- Eliminates duplicate information and incremental reconciliation through an intermediate database for data collection and aggregation from multiple sources
- Reduces the amount of manual work needed to understand the cause of differences in data by providing a flexible synchronization engine that detects higher-level discrepancies