DATAMINER IDP

INFRASTRUCTURE - DISCOVERY - PROVISIONING

SINGLE SOURCE OF TRUTH

a single overview of inventory documentation, wiring, addresses, etc.

CONSISTENCY

M2M sync between as-is network and CMDB

DYNAMICS

integration of full inventory, including VNI

SECURITY

controlled onboarding of inventory, software

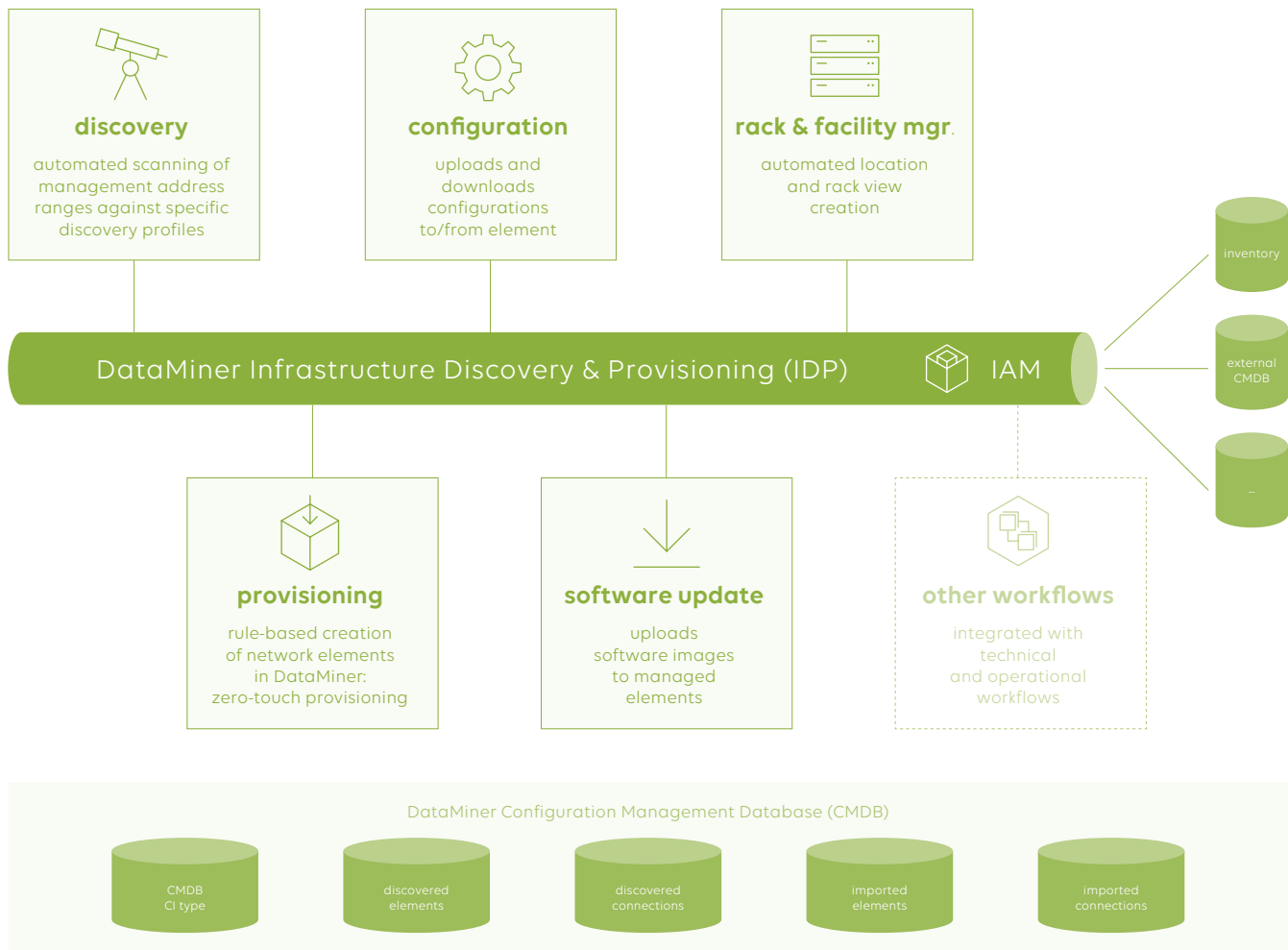**AUTOMATION**

far-reaching automation of inventory management

zero-touch infrastructure deployment

Today's infrastructure deployments are highly dynamic and require a lot of expertise to bring new inventory into the operational environment in an easy and consistent manner, with minimal manual configuration and without breaking any existing services. DataMiner Infrastructure Discovery and Provisioning (IDP) is a unique DataMiner app that manages all aspects of infrastructure deployment. It runs on top of the DataMiner CMDB or is connected to your existing CMDB and takes care of automated and rule-based inventory discovery workflows, synchronized with your central inventory database, user-defined workflows to upload specific software images and system configurations to new inventory, and plug 'n play creation of new managed elements in DataMiner including automated generation of graphical views such as locations, buildings, floors, rooms and highly detailed rack views. The IDP workflows run equally well on hardware inventory, chassis-based modular systems, software appliances and microservices in the data center.

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DataMiner Infrastructure Discovery & Provisioning (IDP)

DataMiner Infrastructure Discovery and Provisioning (IDP) truly connects infrastructure management with operations in a seamless manner and vice versa. Deploying new hardware infrastructure, software appliances and Network Virtualized Functions (NVF) is made easier, faster and more consistent, with a lower risk than ever before by automating the infrastructure deployment and maintenance workflows to the largest extent.

DataMiner IDP is an easy-to-use, preinstalled DataMiner application, but the functions can also be embedded in the operational workflows and the troubleshooting workflows. The app consists of 5 modules that work together in a DataMiner System and provide automated discovery of the as-built network inventory, automated provisioning in DataMiner of the inventory, intelligent configuration and software management, and highly automated creation of rack views. With DataMiner IDP, operators enjoy full control and visibility over the workflows and schedules.

discovery
automated scanning of management address ranges against specific discovery profiles

configuration
uploads and downloads configurations to/from element

rack & facility mgr.
automated location and rack view creation

DataMiner Infrastructure Discovery & Provisioning (IDP)   IAM

inventory

external CMDB

provisioning
rule-based creation of network elements in DataMiner: zero-touch provisioning

software update
uploads software images to managed elements

other workflows
integrated with technical and operational workflows

DataMiner Configuration Management Database (CMDB)

CMDB CI type

discovered elements

discovered connections

imported elements

imported connections

Full control and visibility over the workflows

DataMiner IDP gives operators unlimited control and visibility over the workflows and schedules. All tasks allow fine-grained administration, including the adjustment and redeployment of the configuration and schedules at runtime without system interruption. A schedule overview provides a comprehensive outlook on all planned IDP tasks and their anticipated duration, and a detailed audit trail logs all operators and IDP activities. What is more, this DataMiner app is able to connect and integrate with your existing CMDB but can also run on top of the DataMiner CMDB.

Some tasks put a lot of load on managed elements (e.g. full configuration updates or full software images updates). DataMiner IDP always takes care not to overload the system or its managed elements by prioritizing tasks while taking predicted duration and idle periods into account, if required.
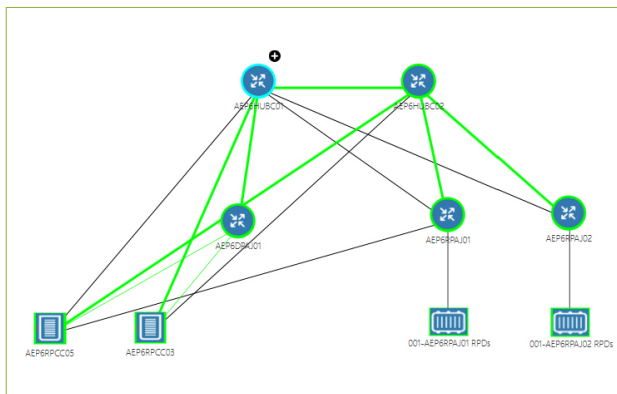
DATAMINER
IDP DISCOVERY MANAGER

DataMiner IDP Discovery Manager discovers inventory in an automated manner, using user-configurable profiles and protocol-specific discovery mechanisms. As such, on top of detecting new inventory, the Discovery Manager also recognizes changes to existing inventory. It comes with a preconfigured and continuously growing set of discovery profiles for most common protocols such as SNMP and LLDP, and automatically identifies the CMDB item type for each element.

The full inventory of the as-built network is stored in the DataMiner Inventory Database, which can be accessed from the customer's OSS/BSS environment using the DataMiner Inventory and Asset Management (IAM) option. This allows the as-built inventory to be shared in real time with external inventory management systems and vice versa. On top of that, the planned inventory can also be imported into DataMiner.

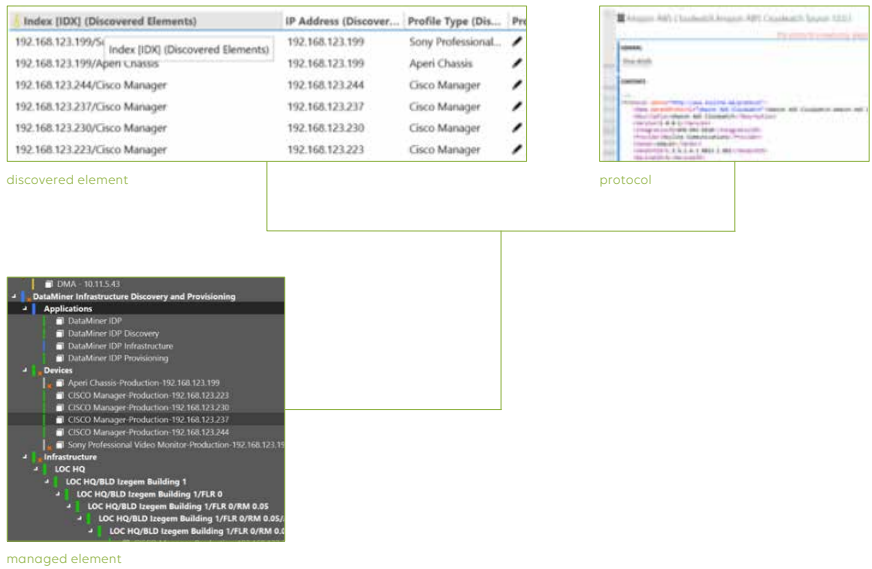
KEY FEATURES

- Interoperates with inventory from any vendor and any management protocol

- Rule-based automated discovery of network elements, software appliances and permanent microservices

- Supports any element type from any vendor, using any protocol type (by default including SNMP and LLDP)

- Detects optional cards, plugins and licenses in existing inventory, e.g. new card additions to modular chassis

- Direct element discovery or discovery through intermediate systems:
  - IS-04 NMOS Discovery and Registration ready (AMWA specification)
  - System controllers (e.g. CMTS reporting RPDs, VMWare reporting VMs, etc.)

- User-defined discovery profiles with configurable address scan ranges and preferred protocol selection

- Understands login and access control credentials for each type of inventory

- Fine-grained configuration item (CI) type resolving as a result of polling any custom property in real time, e.g.:
  - RFC1213 MIB-III sysDescr, sysName
  - RFC 4133 entPhysicalMfgName, entPhysicalModelName, entPhysicalHardwareRev, etc.

- Discovers physical network topology using Link Layer Discovery Protocol (LLDP)

- Configure discovery process to run round robin, on operator command or scheduled in time

- High-availability distributed or centralized inventory database deployment

- Management of as-built as well as planned inventory

- Bidirectional synchronization (import of planned inventory, export of as-built inventory) of DataMiner Inventory with third-party inventory management systems

- Reports differences between the as-built network inventory and the planned inventory

DATAMINER
IDP PROVISIONING MANAGER

The DataMiner Provisioning Manager completely automates the workflow. As soon as DataMiner discovers new inventory, the Provisioning Manager will provision the inventory in DataMiner fully or semi-automatically. This not only saves operators from having to do a lot of exhausting manual work, but also allows them to rest assured that any device and NVF in the network is visible in DataMiner for monitoring and control.

discovered element

protocol

managed element

KEY FEATURES

- Zero-touch provisioning of inventory (discovered or imported) in the DataMiner NMS/OSS, with the ability to be enabled for all or for specific CMDB item types

- User-configurable default DataMiner view selection following the CMDB CI type info
  - Map all IP switches in the view "IP Network"
  - Map all elements with sysLocation = "New York" in DataMiner view "New York"

- Operator- or rule-based mapping of elements to specific nodes of the DataMiner cluster

- Fully automated creation of CMDB properties on the managed elements
  (e.g. extract rack position from sysDescr)
  - CMDB property creation is automated for each CMDB item type based on DataMiner Automation

- Supports both DataMiner Standard CMDB properties and custom CDMB properties

- Centralized and user-configurable repository of configuration item (CI) types. Each CI type contains metadata, rules and intelligence on how new inventory is created in the DataMiner System:
  - Automated selection of matching drivers and driver versions
  - Selection and activation of the default DataMiner information, alarm and trend templates
  - Mapping of inventory in user-defined DataMiner views, including automated creation of new DataMiner views
  - Definition of whether and how configuration and/or software updates need to happen
  - Rule-based extraction of CMDB properties from inventory data (e.g. using the operator's naming convention rules to calculate the elements' location, rack position, etc.)

- DataMiner creates the corresponding DataMiner Connectivity Framework (DCF) entries if the inventory also has connectivity information (e.g. LLDP)

DATAMINER
IDP CONFIGURATION MANAGER

As new devices, software appliances and virtualized functions are added to the network, the risk of service interruptions grows exponentially. The vast number of new elements and NVFs have IP ports for data, control and management planes. All-IP connectivity brings agility and flexibility into the operation, but it increases the vulnerability of the system as well. Adding inventory with open IP ports inevitably creates a risk towards service outages on the one hand and cybersecurity threats on the other.
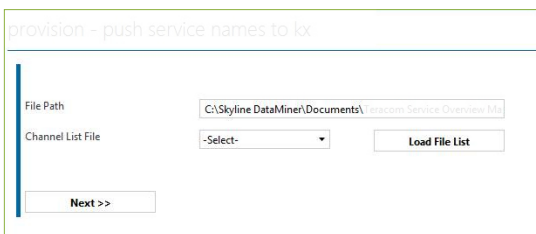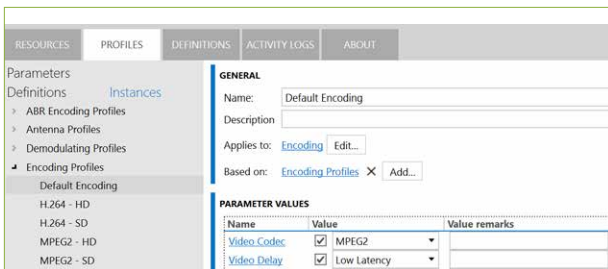
The DataMiner IDP Configuration Manager manages the baseline configuration of your operational assets, and is the key component to managing element and NVF configurations in all imaginable aspects. It stores and restores configurations to elements individually or at scale to groups of elements.

KEY FEATURES

- Upload preapproved golden configurations to network elements in an automated manner
- Table stakes capability for any securely managed infrastructure (IP)
- Guarantees alignment of configurations in the data center and the network
- Detects and reports unexpected configurations
- Each CI type has at least one default configuration
- Configurations can be stored on the network drive or in the cloud (e.g. GitHub)
- Upload and download processes may be triggered manually, by a schedule or included in an overall IDP workflow
- Update function can be triggered at any time during operations as part of the LSO workflows
- Default configurations can be loaded as part of the service life cycle workflows when used together with DataMiner Service and Resource Manager (SRM)
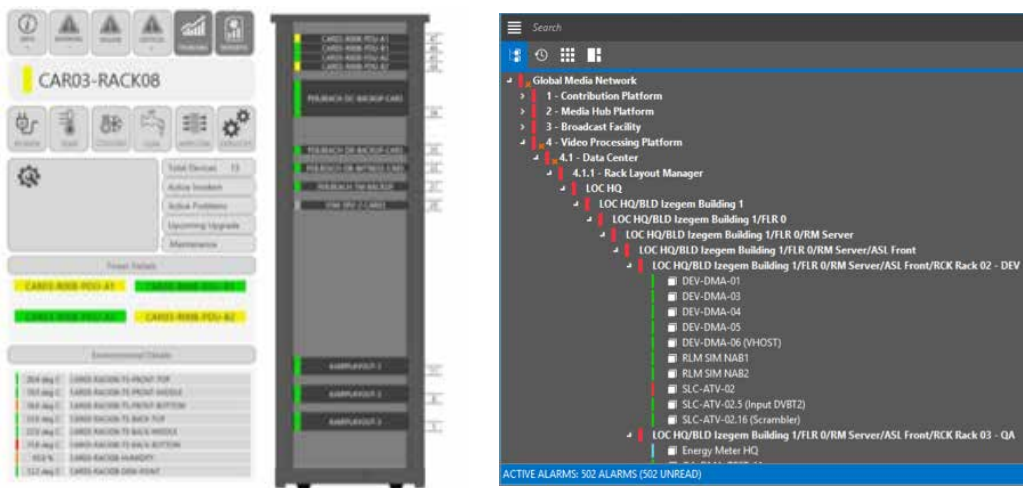
DATAMINER
IDP SOFTWARE UPDATE MANAGER

DataMiner Software Update Manager is the centralized coordinator of the software images in your inventory. The rate at which software versions are released surges in all organizations. In today's complex environments, with highly specialized network elements and NVFs, it is imperative that software versions are tested, deployed at a small scale and approved prior to large-scale deployments. Software releases almost always come with known and unknown shortcomings, so every deployment should be the result of a well-thought-out decision-making process.

Deploying software versions to individual elements or at scale is exactly what the DataMiner Software Update Manager does. In addition to that, the system will signal if elements do not run the expected version. The latter can happen when elements return from repair or maintenance, or after canary deployments that have been left untouched.

KEY FEATURES

- Uploads a user-selected software image to provision network elements

- Guarantees alignment of software images in the data center and the network

- Detects and reports unexpected software versions

- Software version management is fundamental to build secure networks: never run unapproved and untested software images in your network

- Supports deployment of software versions to individual elements or at scale

- Each CI type has its own default software image

- Software images can be stored on the network drive or in the cloud (e.g. GitHub)

- Software update processes can be triggered manually, by a schedule or included in the overall IDP workflow

- Update function can be triggered at any time during operations as part of the LSO workflows

DATAMINER
IDP RACK & FACILITY MANAGER

The DataMiner Rack & Facility Manager provides an out-of-the-box solution for fully automated physical navigation through your entire operational ecosystem and makes life much easier for operators. This component automatically creates the hierarchy of DataMiner rack views without any operator intervention. Taking the element CMDB properties, the system understands how to represent an element in the DataMiner Visual Overviews, where to map the element in the DataMiner Surveyor hierarchy, and how to position it in the physical rack layouts in DataMiner. The Rack & Facility Manager offers zero-touch provisioning and automatic updates, saving valuable time and increasing the overall efficiency of the operation.
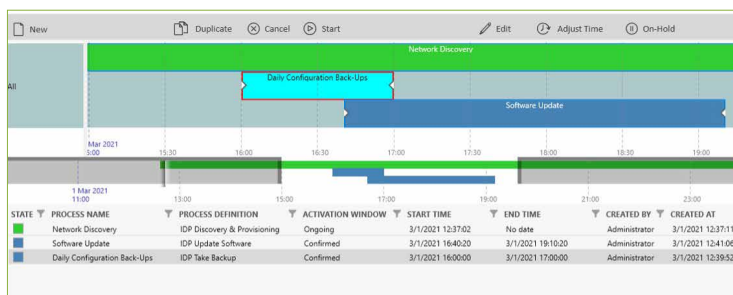

KEY FEATURES

• Fully automated creation of DataMiner geographical and rack views based on CI info

• Creation of initial views (greenfield), dynamic updates of views (brownfield)

• Built-in support and visuals for locations, buildings, floors, rooms, aisles (front and rear), racks, etc.

• Supports all rack sizes and element sizes (including half-rack and multi-rack unit inventory)

• Zero-touch setup of DataMiner Surveyor

• Alarm filtering and status aggregation on all levels

• KPI aggregation from network, HVAC systems, PDU, PSU and generators, security and temperature sensors, weather stations, etc.

DATAMINER
IDP PROCESS AUTOMATION

The IDP app comes with a powerful automation module, running on the DataMiner Process Automation technology, allowing users to completely automate their inventory and infrastructure management. The automation is done by defining processes, deploying those processes on DataMiner nodes, and scheduling them for automatic execution. The IDP processes can be designed using different IDP activities including auto-discovery of inventory and network topology on the network, importing inventory and connectivity data from external inventory and topology databases, zero-touch provisioning of elements in the DataMiner System, backup and restore of element configurations, upload of software to network elements, auto-creation of facility and rack views in DataMiner, etc.

The easy-to-use process designer that comes with IDP allows users to either choose a standard out-of-the-box process or build their own custom ones using the many available IDP activities in the catalog. The behavior of each activity in the process can be customized to meet the specific needs on the network. Once the process has been fully configured, it can be deployed to the entire network at once, on a range of IP addresses or CI types, or even to a specific network element only. Processes can be run as a single shot or recurringly at specific intervals. All process configurations are stored in reusable profiles, ensuring maximum consistency across the different processes in your operational environment.

KEY FEATURES

- Build inventory and infrastructure mgmt processes with the different IDP activities.

- Deploy processes to your entire network, an IP range, a CI type, or specific elements.

- Manage consistency and repeatability via profiles.

- Schedule processes for single-shot or recurring execution

DataMiner Process Automation technology

Process Automation (PA) is DataMiner's own automation engine with built-in resource management. It allows DataMiner users to design, run and optimize any of their technical, operational, or business processes. These processes are built up from a catalog of process activities, for example the ones coming with the DataMiner IDP app*. The process automation module also has an open API to integrate seamlessly with third-party BPM tools, such as Camunda.

* IDP license includes only automation of activities provided by IDP. Access to full process automation module for cross-domain automation requires separate license.

IDP KEY FEATURES

- Easy navigation through the entire infrastructure
- Automated alarm filter and aggregation
- Infrastructure planning KPIs
- End-to-end automation of all infrastructure deployment and configuration workflows
- Interoperates with your entire inventory, regardless of vendor or protocol
- Operator has full control and visibility over all workflows
- Keeps your inventory up to date, at all times and without any effort
- Synchronizes with external inventory databases
- Zero-touch provisioning of inventory in DataMiner
- Automated configuration loading on existing and new inventory
- Centralized configuration management in DataMiner or in the cloud
- Keeps your software images of elements aligned
- Fully integrated with DataMiner operational workflows including service orchestration
- Interoperates with OSS systems such as ticketing and planned maintenance

YOUR BENEFITS

- Decreased opex thanks to far-reaching automation
- Increased service availability and performance
- Reduction of mistakes in network installation and network upgrades
- Consistent and predictable operation
- Permanently up-to-date inventory database of the as-is network
- Protects networks against cybersecurity threats
- Alignment with your corporate policies and processes

INTEGRATED INTO THE OPERATIONAL ENVIRONMENT

DataMiner IDP works seamlessly together with other operational workflows in the DataMiner platform. In addition to the DataMiner Automation and DataMiner Scheduling engines, DataMiner IDP also interoperates with for example:

DataMiner OSS/BSS Inventory and Asset Manager Gateway (IAM)
This integration facilitates an M2M interface to any third-party CMDB. DataMiner is guaranteed to interact with any CMDB vendor or technology, even home-grown proprietary systems.

DataMiner Service and Resource Manager (SRM)
During service life cycle management, it may be preferred to deploy specific software images or load specific well-known configurations as part of the service workflows. DataMiner IDP works together with SRM to facilitate such workflows.

DataMiner OSS/BSS Planned Maintenance Gateway (PLM)
Fault conditions during infrastructure deployment can trigger the creation of a ticket in a fully automated or operator-assisted manner.

ORDER INFO

SLC-DMS-APP-IDP-PCK1 [CHARGE PER DMA]

DataMiner Infrastructure Discovery and Provisioning
Autodiscovery and autocreation of network elements and connectivity in a DMS (SNMP and LLDP included, and other protocols on request).

DataMiner Configuration Manager
Automated and manually triggered network element configuration backup and restore. Supports standard configuration file transfers for uploads and downloads, other configuration options on request.

DataMiner Software Update Manager
Automated and manually triggered software image updates. Supports standard file transfer to upload software images, other protocols on request.

DataMiner Facility and Rack Manager
Autogenerated views from location down to detailed rack views. The view hierarchy in the DataMiner Surveyor is also automatically generated accordingly.

SLC-DMS-APP-IDPR

DataMiner Facility and Rack Manager
Autogenerated views from location down to detailed rack views. The view hierarchy in DataMiner Surveyor is also automatically generated accordingly.

Included in **SLC-DMA-Pxxxx-PCK-1** and **SLC-DMA-Exxx-PCK-1**

PLATFORM COMPATIBILITY

DataMiner Enterprise and Professional editions with SLC-DMS-PCK-1

DataMiner System Volume Equipment edition with SLC-DMS-PCK-1

Request a webinar session on the Infrastructure Discovery and Provisioning app (IDP) via **www.skyline.be/webinars** or contact **sales@skyline.be** for more information.

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