NetCracker Outside Plant

Outside Plant Challenges

The changing needs of Communications Service Providers (CSPs), primarily driven by the growth of high-bandwidth, converged services, are having a significant impact on access and transport networks all over the world. Networks everywhere are undergoing a metamorphosis: from TDM to IP, narrowband to broadband, and in the backbone, copper to fiber.

On one hand, the overall transmission stack is simplifying toward a "flat" IP/MPLS world, but the access networks are becoming far more complex. Existing mature HFC, wireless, and TDM networks are being supplemented with new technologies like FTTP, FTTH, and Ethernet over Copper (EoC).

As a result of this complexity, the provisioning and assurance needs of these next-gen, hybrid, and overlay networks are getting much more complicated. A host of factors is contributing to this challenge.

First, the passive nature of outside plant (OSP) assets makes them invisible to remote automated discovery. The wide distribution of outside plant assets coupled with inaccurate geo-spatial positioning hampers the necessary on-demand testing. Capacity Management becomes difficult due to a lack of adequate information about the location and asset details.

All of this results in over-engineering as well as under-utilization of the outside plant, order fall-outs, and increased dispatch and repair costs due to incorrect assignments.

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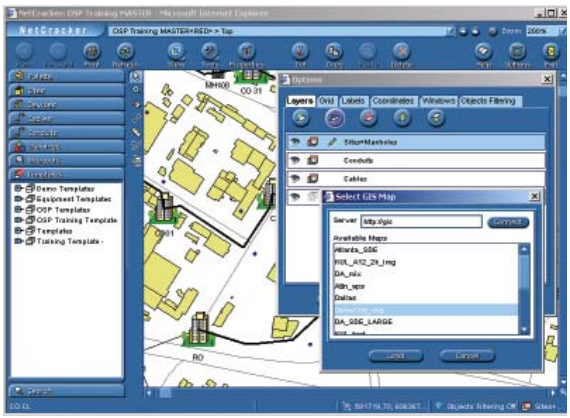
To address such gaps in tracking outside plant assets, NetCracker provides highly detailed, web-based views of the physical and logical assets of the outside plant network. NetCracker Outside Plant extends the Resource Inventory module to provide integrated views of the service and network infrastructure in a geo-spatial environment.

The NetCracker approach to outside plant differs from traditional OSP products in a number of significant ways:



- NetCracker OSP models the actual structure of the outside plant network and does not just add custom information to geo-spatial items.
- It provides an OSP-specific resource model that is seamlessly integrated with the Resource Inventory data model. This allows OSP resource assignment for a service or logical connection in the same way as ISP resource assignment enables planning and capacity management.
- It provides physical connectivity of ISP and OSP resources in a single GUI environment by associating pairs/strands with inside plant connectors.
- NetCracker's OSP aggregates multiple physical items, like cable segments, into higher-level logical items like routes, loops, and rings.

NetCracker Outside Plant also includes:

- OSP Resource Models
- GIS Integration

The NetCracker OSP Resource Models enable the

storing and tracking of information on objects like manholes, poles, controlled environment vaults, demarcation patch panels, splice closures, cross-connect devices, terminals, test taps, buffers, slack loops, conductor loops, main distribution frames, distribution point cable bundles, conduits, ducts, strands, load coils, splice closures, and splices.

All these objects supply the outside link topology and can also be laid out in a precise geo-spatial context. NetCracker OSP Resource Models also allow multiple physical items (such as cable segments) to be aggregated into route loops and rings which are higher-level logical items.

The NetCracker GIS Integration Component enables integration with external GIS systems and allows service and network infrastructure to be mapped on GIS objects like location, road, and region. This hierarchical location management approach can be used to represent different GIS location maps for different levels of infrastructure.

Integration with such leading GIS tools as ESRI ArcView or MapInfo is achieved through standard APIs provided by ESRI products.

When coupled with GIS, NetCracker Outside Plant binds OSP resources to coordinates of GIS map objects and generates consistent geo-spatial views without wasting hours on manual drag-and-drop operations.

Outside Plant Reports

NetCracker Outside Plant provides a number of reports that contain comprehensive information intended to be used for capacity management, assurance, planning, and other activities.

- The OSP Resource Usage Report is a powerful tool for capacity management. It provides detailed information on consumed and available pairs/strands of cable and fiber. It provides an accurate crossing/splicing capacity of distribution points and terminals. It incorporates intermediate crosses/splices per route, per direction, per district, as well as the broad footprint of an entire region. The OSP Resource Usage Report can also represent usage trends with different time intervals.
- The OSP Dependent Services Report provides support for assurance functions representing potentially affected routes, logical connections, services, and customers by cables, strand/pair, intermediate, demarcation, or terminal frame damage.
- The Cross-Connect Report provides schematic views of “as-built” and “designs” of cable distribution across frame, manhole, pedestal splicers, or other points of wiring for field engineering departments

Benefits of NetCracker Outside Plant

- A unified view of the outside plant infrastructure together with the inside plant and services allows for quicker provisioning and assurance.
- Easy cable and cross-management functions supported with effective naming conventions, color codes, and aliases provide auto-generated and highly representative schematic views and controls for managing cross-connection/splicing points and line art figures for OSP links.
- Centralized document management for records and attachments of OSP documentation—which staff can easily access—allows service providers to use their field engineers with much higher efficiency.
- The association of resource test results as attribute values or attachment files and the seamless involvement of this data in OSS processes reduce the quantity of expensive test repeats.
- The “Several user actions in one” concept allows ranges of objects to be manipulated in one action. In massive cross-connect operations, for example, this concept minimizes the time required for design and planning.
- The tight integration of OSP and ISP physical data models allows connectivity to be traced through internal and external cabling and pre-wiring and enables the path of a service to be traced from end to end.

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