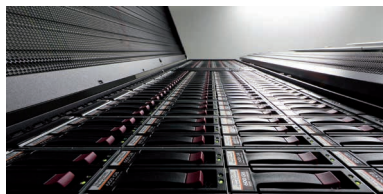




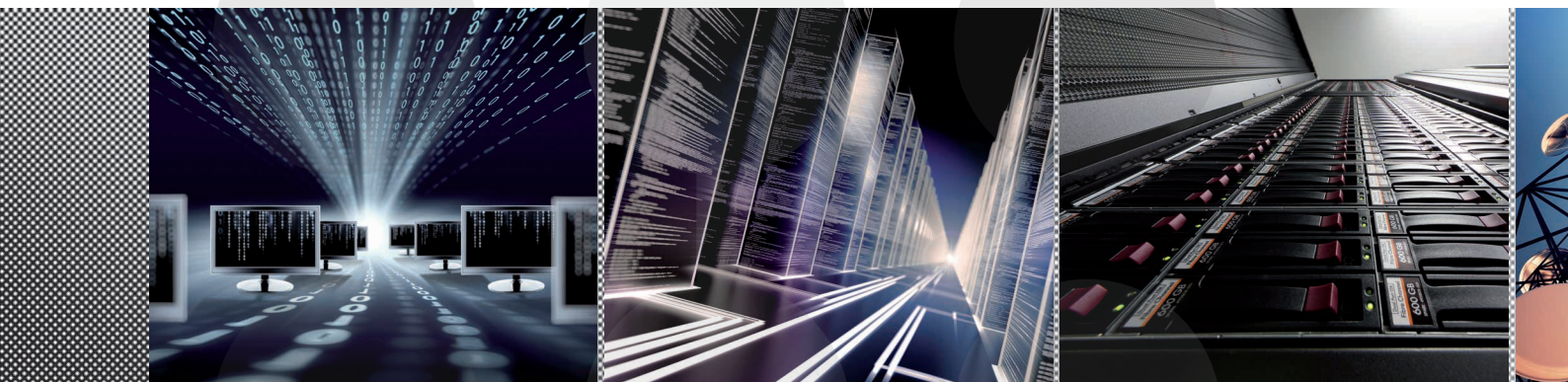
// when transparency matters.

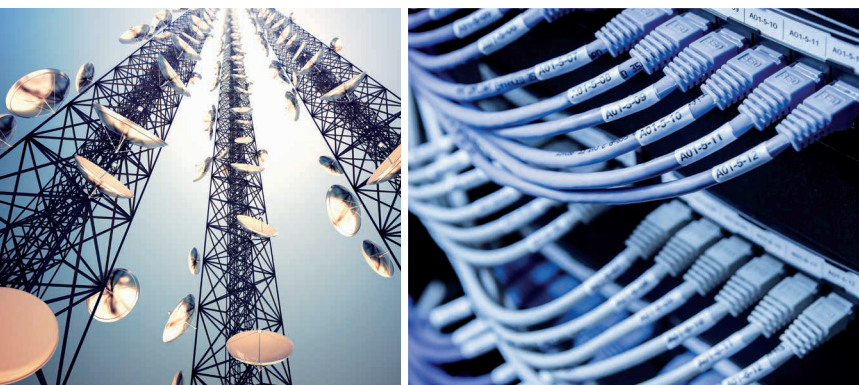
FNT Command-as-a-Service

for Service and Infrastructure Management



Command





Contents

| | |
|---------|---------------------------------------|
| 4 5 | The Challenge |
| 6 7 | Asset & Configuration Management |
| 8 9 | IT Infrastructure Management |
| 10 11 | Data Center Infrastructure Management |
| 12 13 | Telecommunication Resource Inventory |
| 14 15 | Cable Management |
| 16 17 | FNT Command Modules and Services |
| 18 19 | References |



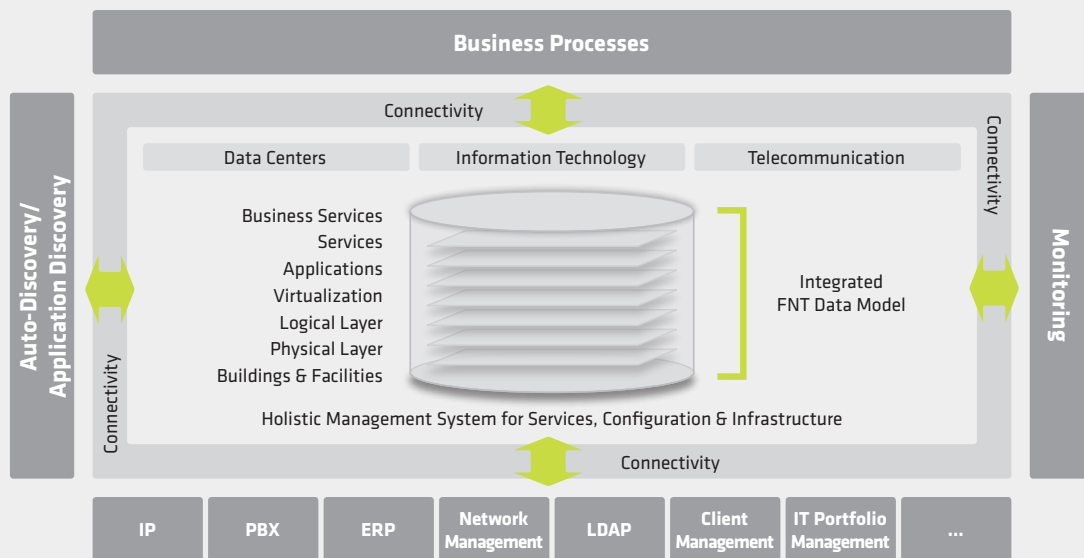
// Get the Overview

IT and telecommunications are the lifeblood of modern enterprises. Developing and upgrading them is therefore vital for maintaining a competitive edge. However, obtaining maximum benefit and efficiency from your IT and telecommunications infrastructure requires full insight into your resources and options.

The challenges are enormous. IT and telecommunications infrastructures are continuously changing. To roll out and operate IT services reliably, you need to know which capacities

and technologies are installed and where – down to the level of individual workstations at a distant subsidiary. And depending on the task, various infrastructure views are needed, from the virtualization layer to the physical component, from the actual state to the planned upgrade.

Ultimately, modern infrastructure management requires an integrated, dynamic system. All the information in one place, consistent, up-to-date, available at the push of a button. If you want that too, read on.



// We Provide You with Transparency

FNT Command-as-a-Service is a modular, standardized software product for infrastructure management. Based on an integrated data model and a single database, FNT Command supports all tasks involved in documenting, managing, and planning IT, telecommunications, and network infrastructures. From cabling to configuration, the system delivers total transparency.

This transparency covers the entire lifecycle. The integrated data model supports every process step from documentation through to planning and implementation. FNT Command-as-a-Service doesn't just document the "as is" state, it serves as a planning tool for analyzing, scheduling, and implementing infrastructure changes.

With over 50,000 IT/telecommunications components, our CI library is both comprehensive and extremely powerful. The CIs are stored as objects in the FNT Command-as-a-Service database along with their logical relationships, thus facilitating the mapping of configurations and infrastructures. An open software architecture, ETL technologies from FNT, and standardized interfaces to other systems – from ERP to monitoring system – all enhance the usability of infrastructure information in your company.

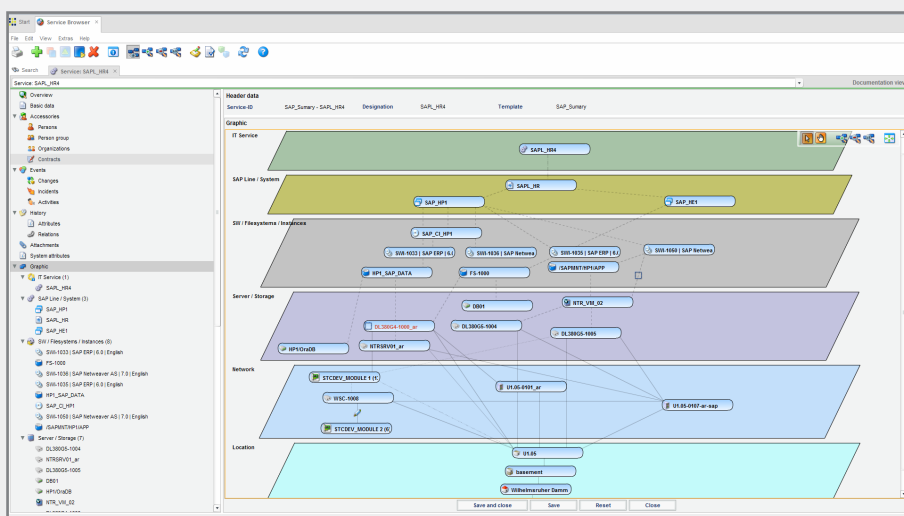
State-of-the-Art Software Architecture

- Multi-tier architecture with a standardized database
- Open system architecture and standardized, pre-defined interfaces for easy integration with other systems
- Workflow support for more efficient processes
- Intuitive, web-based interface with high usability
- Multi-tenant capability
- Multi-language user interface and database content
- Comprehensive, role-based user management and multi-user capability
- User-friendly interface with high usability

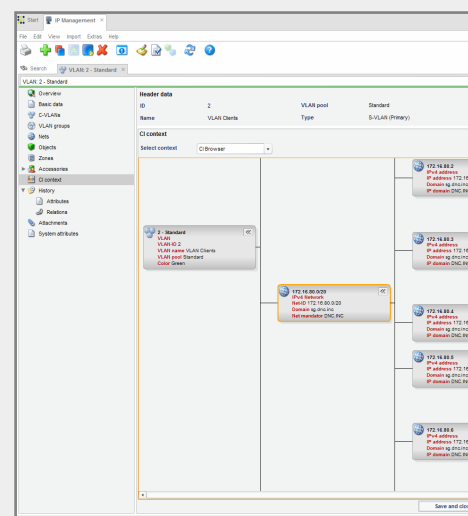
The following pages contain details of standardized solutions of FNT Command-as-a-Service.

// Asset & Configuration Management

Identify, control, and verify infrastructure and configurations.



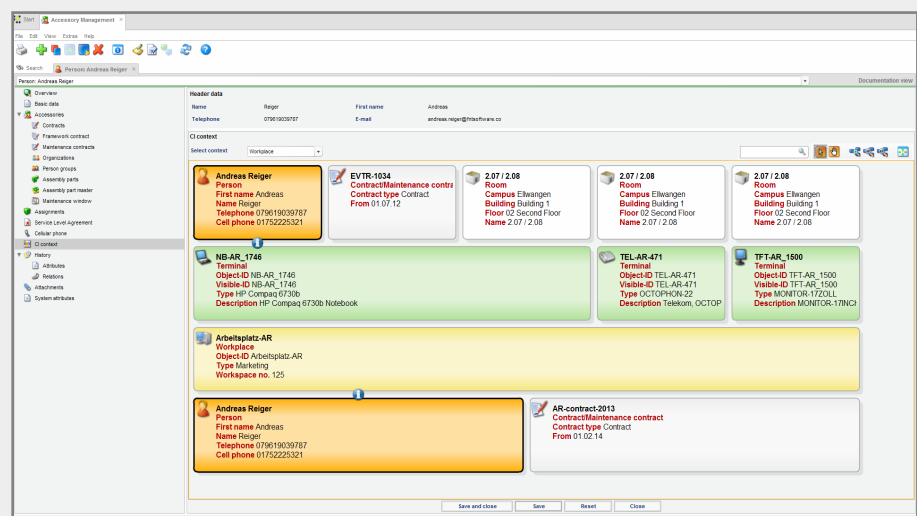
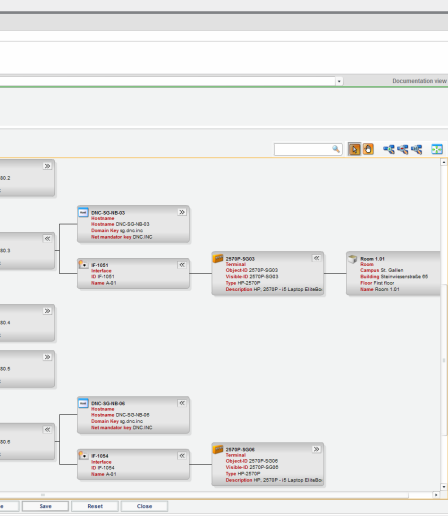
Creation and analysis of comprehensive service trees for representing all logical and physical relationships of service assets



Planning, documentation, and configuration of logical networks and structures

When deployed as an Asset & Configuration Management tool, FNT Command-as-a-Service provides you with information about all configuration items (CIs) in your IT and telecommunications infrastructure. This enables you to identify each individual component and view all their attributes and relationships. A standardized, dynamically expandable data model holds all the information you need to deliver high-value IT services in line with ITIL®.

Configuration item definitions include responsibilities (ownership) and dependencies for business processes. The ability to analyze processes and the dependencies between CIs allows you to significantly speed up error identification and thus error correction. Thanks to integrated license management and a wide variety of additional cost factors being stored for the CIs, improved cost transparency is an additional benefit.



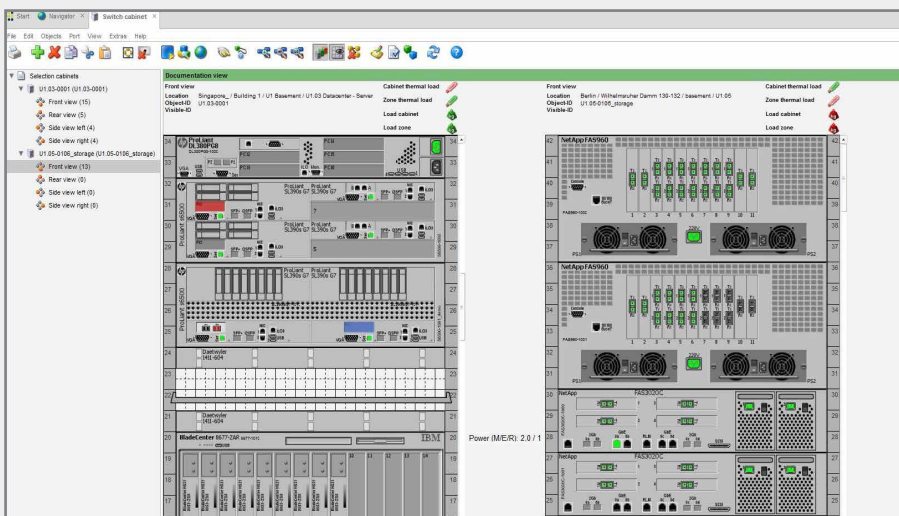
CI environment in FNT Command-as-a-Service for analyzing all relationships in configuration management

Solution Features

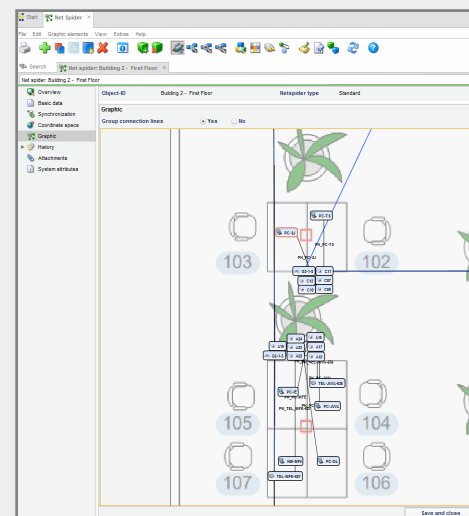
- Integrated view of all service assets and CIs over the entire service lifecycle, from planning to decommissioning, including historization
- Function support for identifying, controlling, checking, and monitoring all service assets and CIs
- All logical and physical relationships associated with an IT service and service asset/CI are available in their respective representations (actual and planning states)
- Coverage of the entire infrastructure (hardware, software, licenses, contracts, documents) and the interrelationships and dependencies
- Integrates easily into existing IT environments and provides information on all relevant ITIL® processes (e.g., incidents and problem and change management)
- Integrated workflows (e.g., automated job management)
- Provides all core information for automated service provisioning
- Storage, software, and application management

// IT Infrastructure Management

Optimize your IT processes and increase the efficiency of your network, hardware, and software management.



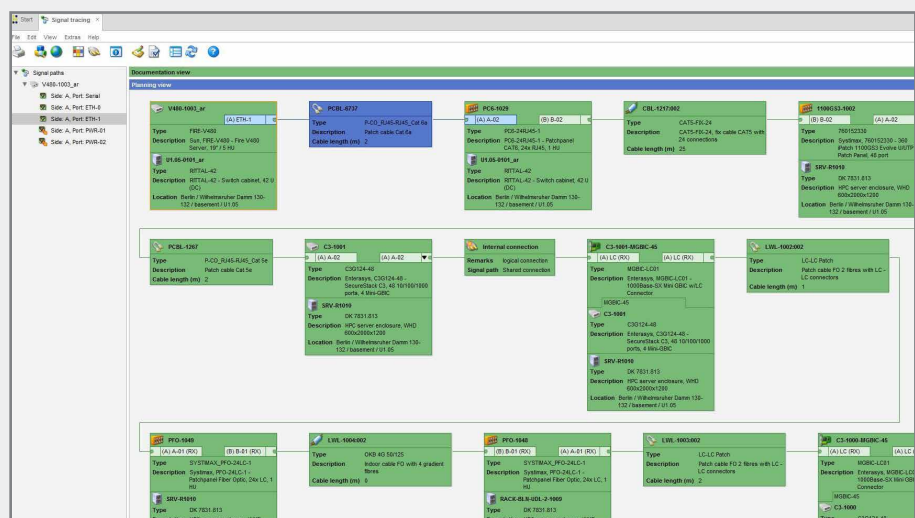
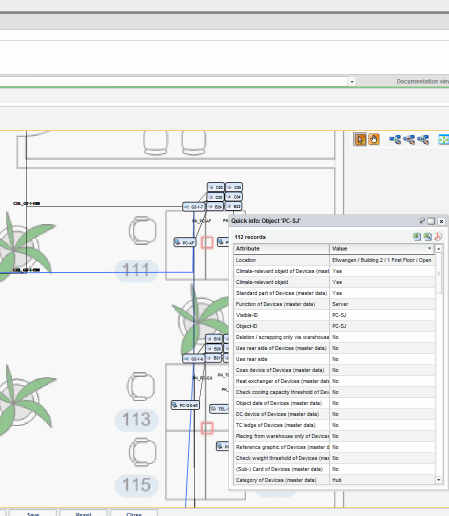
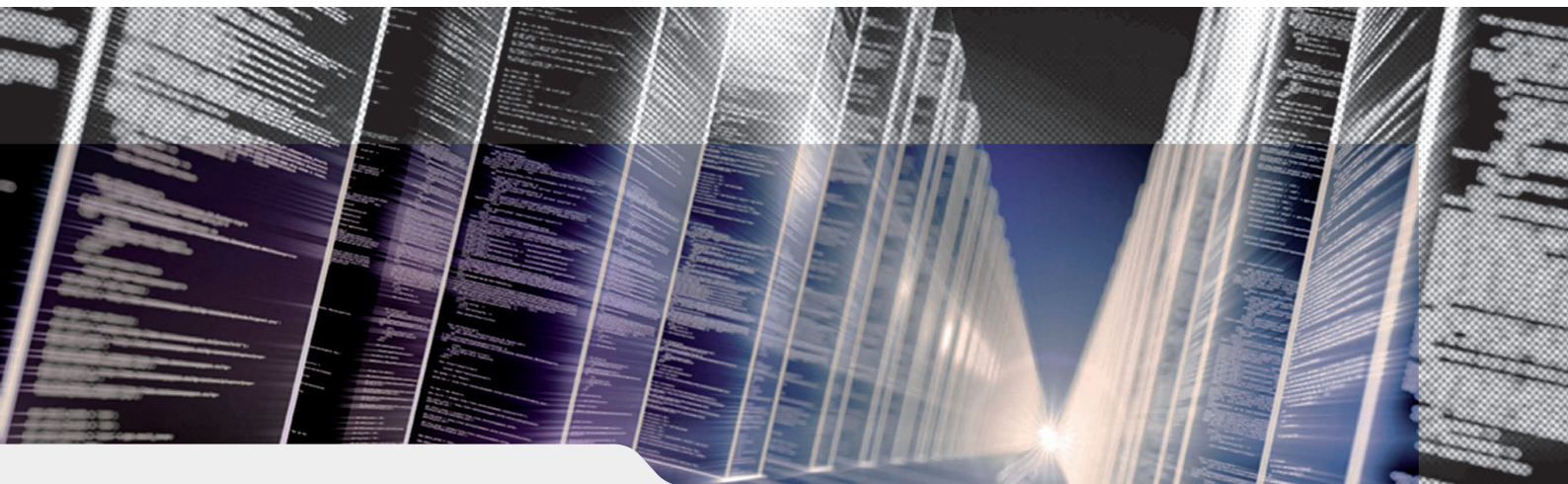
Graphical rack view for planning and documenting all components in the cabinet and the associated cabling



Schematic view of infrastructure with all clients, network infrastructure, and connection sockets

When deployed as an IT Infrastructure Management tool, FNT Command-as-a-Service enables management of all IT assets from various perspectives. Every individual aspect, such as software, licenses, and hardware, can be covered using a single product. The software thus forms the basis for comprehensive network, server, workstation, and software management, providing you with a holistic view from both the technological and business standpoint.

A library containing over 50,000 configuration items (CIs) is available for graphical rack, server, power, and cabling planning, thereby accelerating planning and documentation. Whether you are planning your physical network with all its many active and passive components, upgrading your servers and equipment, assigning IP addresses, or expanding a network, FNT Command-as-a-Service provides the necessary transparency.



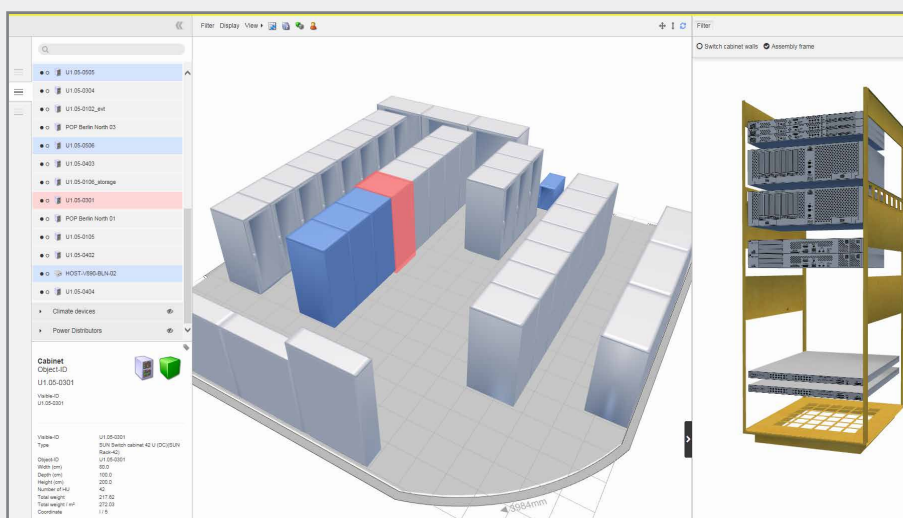
Signal tracing for detailed evaluation of all connected active and passive components

Solution Features

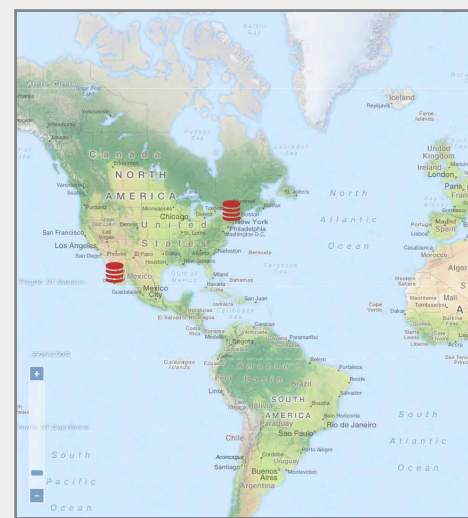
- Efficient analysis and planning of the IT environment thanks to an integrated component library containing over 50,000 active and passive IT components
- Terminal device and server management with evaluation of logical relationships
- Integrated license and contract management
- Planning and documentation of modern server environments at the physical and virtual levels
- Representation and management of physical and logical network structures, including IPv4 and IPv6 address management, WAN, VLAN, and WLAN management
- Open standard interfaces for mass and real-time data integration
- Graphical cabinet editor with photo-realistic representation of actual state and planned upgrade

// Data Center Infrastructure Management

Increase the efficiency of your data centers. Achieve total control of your valuable data center resources.



Graphical representation of a data center in 3D footprint view



Data center dashboard for visualizing and analyzing key metrics for all monitored data centers

From the building infrastructure (power, cooling, floorspace, etc.) and IT infrastructure (networks, servers, storage, etc.) down to the processes and services (software, applications, services), FNT Command-as-a-Service enables a comprehensive, integrated view of your valuable data center resources.

The standardized software is a field-tested solution with proven functionality for capturing information, monitoring via

live power consumption and temperature values, planning, and operating the entire data center. Analysis and prediction of future consumption based on the FNT data model allows you to implement an energy-efficient data center.

Our partnerships with a range of providers in the data center arena, such as Future Facilities and RF Code, support comprehensive use cases and application options for continuously optimizing your data center.



Dashboard-based analysis in FNT Command,as-a-Service including actual values and target values for specific days

Solution Features

- Detailed capacity, power, cooling, and space planning, including 3D footprint
- Pre-defined interfaces to integrate high-performance, real-time monitoring and evaluating physical infrastructure components
- Graphical representation of a data center in 3D footprint view
- Precision planning and simulation of modifications (including information about power consumption, floor structure, rack weight, etc.)
- Integrated order management workflow for supporting day-to-day install, move, add, and change processes
- Dashboard-based analysis of important data center metrics
- Predefined and open interfaces to other virtualization, accounting, and simulation systems

// Telecommunication Resource Inventory

Improve the management of your network resources in the OSS and BSS.

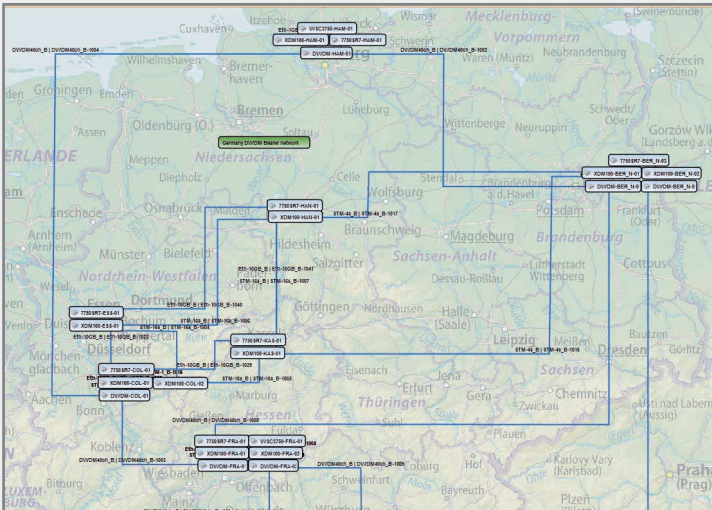
Boost efficiency and customer satisfaction.

Used as a Telecommunication Resource Inventory, FNT Command-as-a-Service provides the foundation for all planning, engineering, service fulfillment, and service assurance processes. The available tools are based on a comprehensive database and include a graphical switch cabinet editor, netspider, and geo-referenced representations (WebGIS).

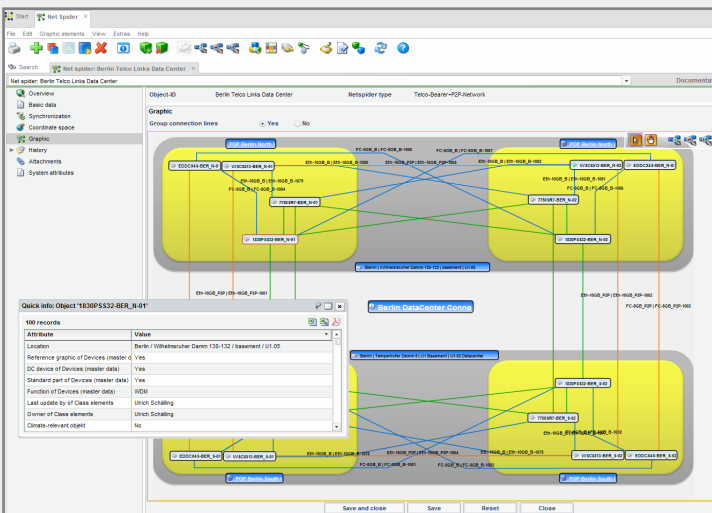
A central repository brings together all the relevant information, from the physical network through the logical network to the end-customer services. Back-office systems are supplied with network information via standardized interfaces. FNT Command-as-a-Service thereby forms the basis of a modern OSS/BSS architecture.

Solution Features

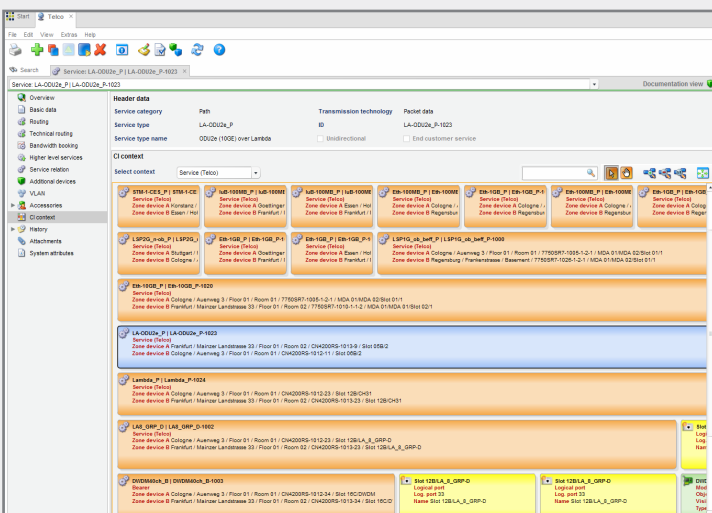
- Seamless integration across all description levels, from physical network to end-customer service, with an end-to-end view
- Provides information on all relationships between resources, plus data on software applications, customers, and additional associated information
- All types of line-based and wireless network technologies for transmission, access, cell phone, and cable networks and for satellite and radio/TV broadcast networks, such as OTN, SDH, PDH, SONET, WDM, ATM, MPLS, Ethernet, IP, VPN, xPON, FTTx, xDSL, HFC, WiFi, radio relay systems, and others
- Clearly structured documentation and management of connections and services in telecommunications networks
- Auto-routing functionality with extensive routing criteria and plausibility checks
- Geo-referenced representation of networks (WebGIS integration)
- Management of leased lines and dark fiber
- Automated visualization of heterogeneous networks and infrastructures for fast graphical impact and root-cause analysis



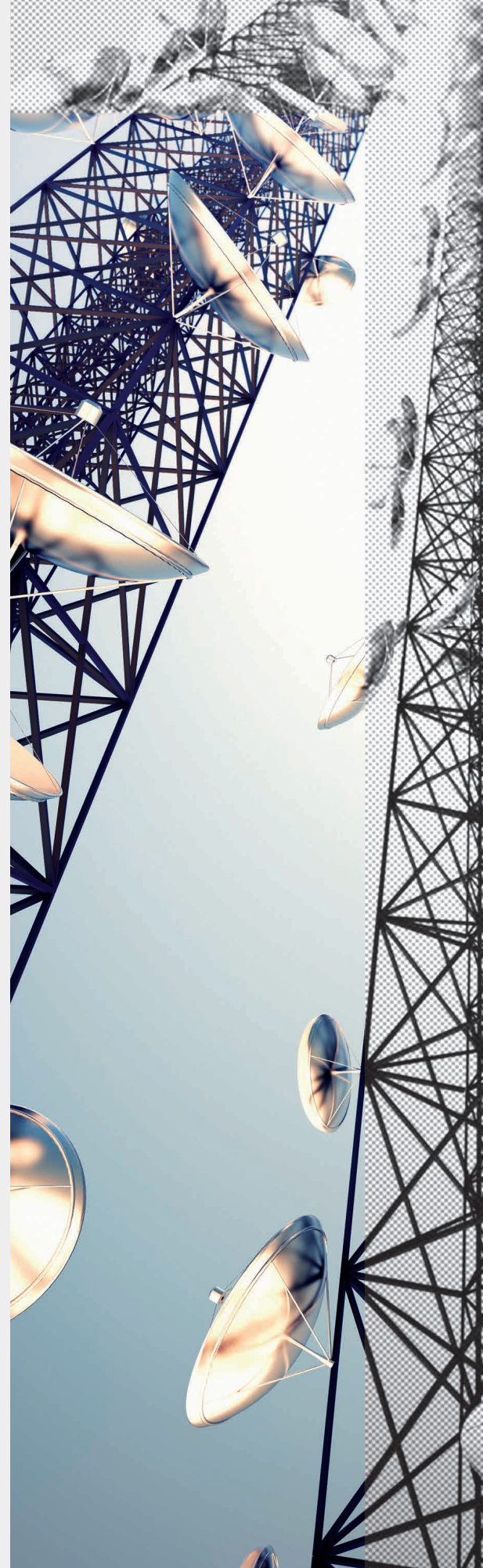
Schematic representation of the bearer connections in a telecommunications infrastructure



Schematic representation of network and connections between different data centers for planning network capacity



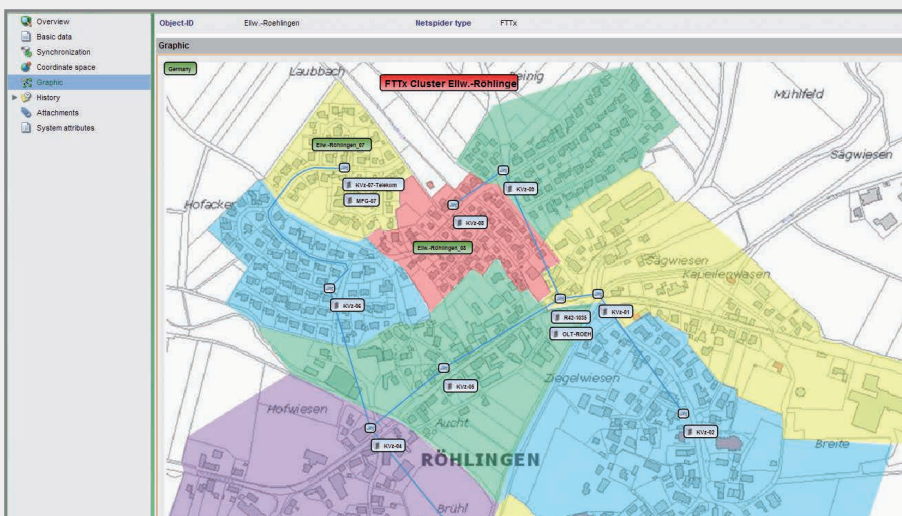
Graphical representation of the hierarchical structure of telecommunications services for analyzing and documenting physical and logical service layers



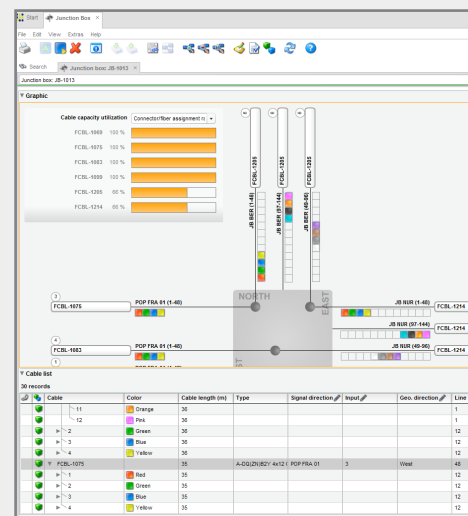
// Cable Management

Get comprehensive insight into your cable and network infrastructure.

Base your planning on seamless documentation.



FTTx cluster view for planning and documenting the service connections in each cluster



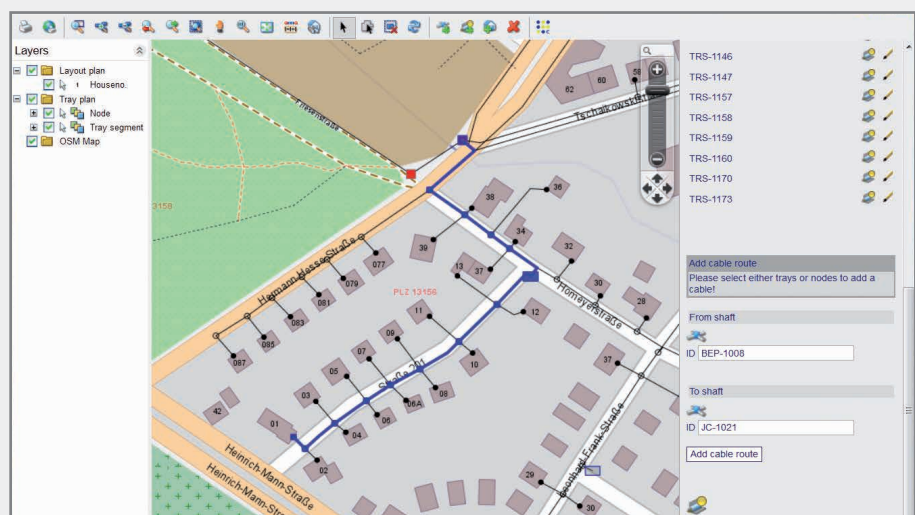
Junction box view and splice planning for precision capacity and allocation planning of services

FNT Command-as-a-Service is the world's most comprehensive solution for cable management. All types of topologies and technologies can be geo-referenced or schematically represented. Your cable and network infrastructures are rendered completely transparent – from splice plan to signal tracing. The comprehensive FNT data model enables inside plant management of IT networks and outside plant management of telecommunications and broadband networks (for example, FTTx) in a wide-area, city, or local loop network via a central database.

No matter how complex or heterogeneous the network infra-structures are, all information is linked and can be evaluated in a centralized repository. When incidents occur, troubleshooting is faster, and your decisions about wiring cables to services can be based on hard facts. FNT Command-as-a-Service offers comprehensive functionality, including tray management, routing mechanisms, junction box and splice planning, and capacity planning, for supporting the entire process from planning and provisioning through to documentation of your cable and network infrastructure.



| Free | Placed | Insert | Destination | connected to... |
|------|--------|--------|---|--------------------------|
| 0 | 1 | 0 | Frankfurt/Maincar Landstrasse 21 / Floor 01 / Rou | Cable FCBL-1009 Floor 11 |
| 0 | 1 | 0 | Frankfurt/Maincar Landstrasse 21 / Floor 01 / Rou | Cable FCBL-1009 Floor 12 |
| 0 | 12 | 0 | Frankfurt/Maincar Landstrasse 21 / Floor 01 / Rou | |
| 0 | 12 | 0 | Frankfurt/Maincar Landstrasse 21 / Floor 01 / Rou | |
| 0 | 12 | 0 | Frankfurt/Maincar Landstrasse 21 / Floor 01 / Rou | |
| 0 | 40 | 0 | Frankfurt/Maincar Landstrasse 21 / Floor 01 / Rou | |
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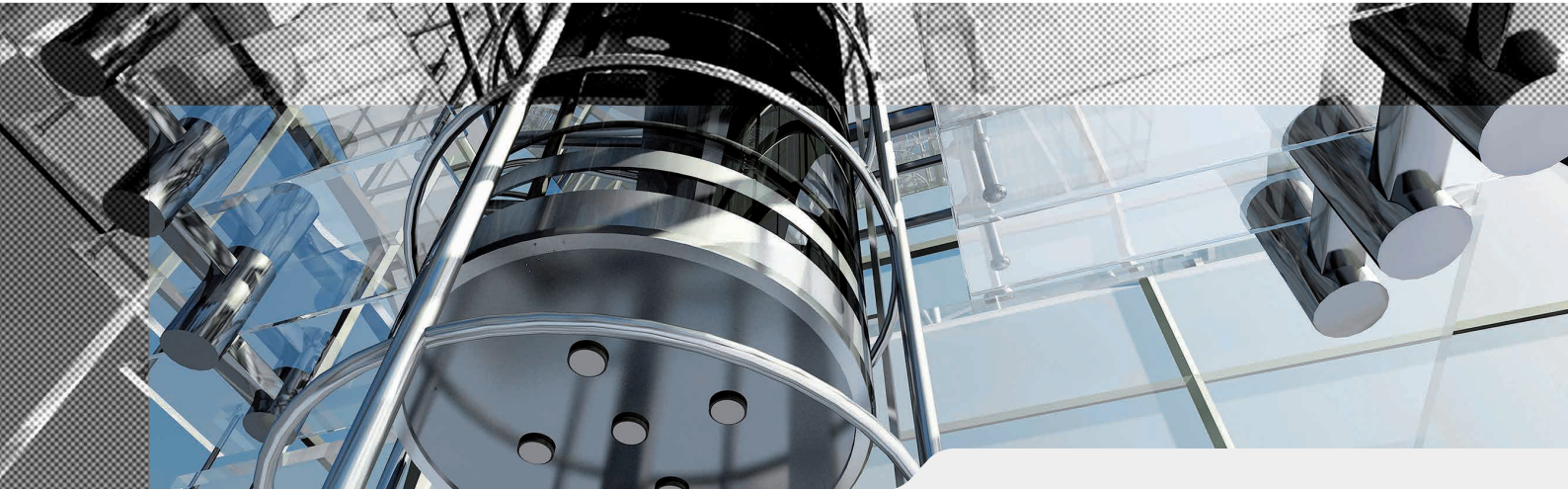
FNT Command WebGIS for geo-referenced representation of trays and service connections

Solution Features

- Comprehensive graphical documentation and planning of entire cable routes, including all nodes, trays, tray sections, and ducts
- Media-independent cable planning down to the level of individual glass fiber assignments, including junction boxes and splice plans
- Comprehensive auto-routing functionality
- Signal tracing across all devices and cables in both actual and planning views
- Powerful planning and workflow functionality with plausibility checks and routing functions
- Geo-referenced representation of networks (WebGIS integration)
- Visualization of all cable routes using schematic network representations

// FNT Command Software Modules

The building blocks of your infrastructure management solution.



FNT Command features a modular approach to the provision of packaged software. The functional elements, implementation services, and training course are all available as clearly defined modules at fixed prices.

FNT Command C base

The C base module incorporates basic functions that are necessary for using and administering FNT Command.

- Realistic management of real estate/zones
- CI library with more than 50,000 predefined components
- Convenient master data administration
- Access management for highly granular user administration
- Entity manager for flexible database expansion
- Integrated planning function
- Lifecycle management and history
- Comprehensive accessory and CI management
- Import templates for standardized file formats
- Modern user interface with personalization options

FNT Command C line

C line is the module for managing physical and logical network structures. All assets can be linked to each other in order to create seamless transparency across the network.

- Cable descriptions (including additional information, such as lengths, attenuation, material, etc.)
- Tray documentation
- Signal tracing
- Switch cabinet representations
- Schematic network representations and netspiders
- Geo-referencing (WebGIS)
- Connection matrix
- Inventory creation and management
- Splice plan and junction box management
- Tray management

// FNT ValuePack and Training Courses

Expertise and know-how direct from FNT specialists.

Based on twenty years of rolling out and integrating FNT software, we have identified a proven best-practice approach for almost every application scenario. Accordingly, we can offer standardized service modules for implementation and operation at a fixed price.

Areas covered by FNT ValuePack include: data consolidation, managed services, third-party system integration, method-based product definition, and interface customization.

These packages are complemented by an extensive training program. Three-day basic training courses are available for learning about the basic functions of our software, while additional training is offered for specific areas of expertise and modules.

FNT Command C logic

C logic contains modules for handling various services as a basic service or an end-customer service. In order to maximize the scalability and flexibility of FNT Command, the software elements are provided separately in C logic.

- Aircon: Control of cooling circuits and data center climate zones
- Data Center Cockpit: Control center for capacity management of power, cooling, floorspace, and weight
- IP Management: Transparent management of IP networks, IP addresses, and VLANs
- Software Management: Comprehensive planning, documentation, and provisioning of software products and release management for your IT systems
- Server Management: Planning and documentation of modern server infrastructures and distributed systems
- Graphic Center: Automated visualization of networks and infrastructures for simplified graphical analysis
- Dashboard: Comprehensive capacity and resource analysis for data centers, cable networks, and telecommunications networks
- FNT Command Mobile: Mobile access for analysis and management of CI and asset information

- Additional modules: Power Management, Mobile Card Management, Service Browser, Signal Management, Radio Network Management, Telco, WAN, Carrier Line, IT Security Point, Node Management, Client Management, Query Editor

FNT Connectivity Layer

With its open system architecture, FNT Command integrates easily with many tools and solutions from other leading vendors. FNT Connectivity Layer includes the following pre-defined interfaces:

- FNT Command API
- FNT Auto Discovery Gateway
- FNT Interface for vCenter
- FNT Interface for SCCM
- FNT Interface for Cisco Prime
- FNT Interface for Visio
- FNT Interface for Telephone Systems
- FNT Interface for StableNet

// References

Automobile Industry

- Audi
- BMW
- Daimler
- John Deere
- Norma Group
- Porsche
- Schenck
- Volkswagen

Banking and Insurance

- Bausparkasse Schwäbisch-Hall
- Bayerische Landesbank
- Commerzbank
- Deutsche Bank
- Deutsche Börse
- Deutsche Bundesbank
- ERGO Versicherungsgruppe
- Erste Group Bank
- Finanz Informatik
- First Data
- gkv Informatik
- HSH Nordbank AG
- HUK Coburg
- ITSCare
- Provinzial Versicherung
- Raiffeisen Informatik (Wien)
- Uni Credit Group
- WWK Versicherungen

Chemical/ Pharmaceutical Industries

- Bayer
- Boehringer Ingelheim
- Evonik
- Merck KBaA
- Sanofi

Energy

- EnBW
- Energie Steiermark
- E.ON
- Gazprom
- IEC Israel Electric Corp.
- RWE Power
- Shell
- Transnet BW
- UNECO (Moskau)
- Wien Energie

Airports

- Flughafen Düsseldorf
- Flughafen Hamburg
- Flughafen Stuttgart
- Flughafen Hannover
- Flughafen Köln/Bonn
- Flughafen München
- Fraport Flughafen Frankfurt

Hospitals

- Donau-Ries Klinik
- Inselspital Bern
- Klinikum Darmstadt
- University Hospital Aachen
- University Hospital Munich
- University Hospital Ulm

Media

- Arvato (Bertelsmann)
- ARD
- Axel Springer
- Heinrich Bauer Verlag
- ProSiebenSat.1
- SWR
- WDR
- ZDF

Manufacturing

- Airbus
- Jungheinrich
- Krones
- MTU
- Osram
- Siemens
- Voest-Alpine
- Wincor Nixdorf

Telecommunications and IT Service Providers

- Alcatel Lucent
- Atos IT Solutions and Services
- Beltelecom (Belarus)
- Controlware
- CoreSite
- Etisalat
- Fujitsu TDS
- Hewlett-Packard
- H3G

- IBM
- I.T.E.N.O.S.
- Kartel
- Liberty Global
- Media Broadcast
- Pfalzkom MANET
- RTRS
- Swisscom
- STC Saudi Telecom
- TelX
- T-Systems
- unitymedia kabel bw
- Versatel
- Vodafone D2

Public Institutions

- Bavarian State Agency for Statistics
- Bavarian State Office for Taxes
- Berlin Police
- Bundespolizei
- Canton Aargau
- City of München
- City of Zürich
- City of Dortmund
- City of Stuttgart
- Dataport
- Deutsche Rente
- Dubai Customs
- EKOM 21 – KGRZ Hessen
- German Federal Employment Agency
- German Armed Forces
- Federal State of Thuringa
- United Nations

Mail Order and Bulk Mailers

- EDEKA
- Eurogate GmbH & Co. KGaA
- Home Shopping Europe GmbH
- Otto

Universities/Research Establishments

- Deutsches Elektronen-Synchrotron
- Forschungszentrum Karlsruhe
- GSI Darmstadt
- Montclair State University (USA)
- RWTH Aachen
- University of Bern
- University of Hamburg



// FNT – Your Specialist for Transparency in Service and Infrastructure Management

Headquartered in Ellwangen, Germany, FNT is a leading provider of integrated software products for documenting and managing IT and telecommunications solutions and data centers. FNT's innovative FNT Command software has been deployed worldwide since 1994 as an OSS/IT management solution by telecommunications service providers, enterprises, and governmental organizations, with the number of users exceeding 25,000 across a client base of over 500 customers worldwide.

These include a wide range of well-known organizations in various sectors, including the automotive industry, banking,

insurance, chemicals, energy management, airports, hospitals, the media, manufacturing, telecommunications, IT service providers, and public institutions. More than half of all DAX 30 companies are FNT customers, deploying FNT Command as their central platform for optimizing and industrializing IT and telecommunications.

FNT is an independent, owner-managed company with a strong track record of innovation. All products are developed in close cooperation with customers to meet genuine market needs. As a result, each product delivers relevant functionality backed by German quality standards.



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