

daNCe

device architecture in a Network Centric environment

Future-oriented control of special peripherals in network-centric architectures

The pace of change in information technology is rapidly increasing. Standardization, (re)centralization with network-centric application structures and solution components that serve all delivery channels are just some of the buzzwords that are steadily gaining importance. An additional requirement is operating system and platform independence.

As a Java-based solution, daNCe meets all these needs. And even more: the innovative architecture operates and controls present and future special peripherals at low cost and at high speed.

daNCe stands for "device architecture in a Network Centric environment", and emphasizes the solution's network-centric concept. daNCe offers future, state-of-the-art applications in front-office enhancements for administration, configuration and installation based on current standards, and unites a standardized platform with functional, innovative software applications.



■ The optimization of bank branch equipment increasingly demands a state-of-the-art network-centric architecture to handle banking business and control existing and future special peripheral equipment.

The Java-based platform daNCe[®] is the ideal solution for the front office: it greatly simplifies administration, device installation and configuration and therefore also reduces provisioning times and cuts operating costs.

daNCe

A network-centric architecture platform

daNCe is the future-oriented software platform that Wincor Nixdorf delivers for control of special peripherals in the front office. It is based on standardized Java™ technology and provides support for all standard devices such as ATSS, card readers and passbook or document printers.

The benefits are immediately apparent: the network-centric architecture allows direct access from the application server at the data center to the clients in the branches. This eliminates the need for individual branch servers. At the same time, the administration effort for clients is reduced through automated software distribution. High system availability and reduced costs are additional convincing arguments.

daNCe is a software platform that excels with its innovative features:

■ Independence through standards

The J/XFS standard is characterized by the fact that all leading vendors in the finance industry recognize this peripherals interface. This guarantees high peripherals coverage and the maximum flexibility required in a multivendor strategy. The use of Java technology means that every suitable operating system is supported. The specifications of the middleware components (operating system, WWW server) are therefore open and ensure that there are no system dependencies.

■ Device sharing

daNCe enables access to all devices that are connected to the network. Devices can be shared, and processes can be continued by changing from one peripheral device to another. daNCe always identifies the most suitable device (in terms of function

and location) and provides the user access to it. It is also possible for several applications to access devices concurrently.

■ Configuration and administration

The configuration data for the peripheral devices is stored centrally, making central administration possible. The concrete storage mechanism (file system, database, etc.) is shielded from the rest of the daNCe components, so that when a peripheral device is replaced, there is no need for a new configuration process. To edit central configuration files, daNCe provides a Java library (configuration API) that can be used by custom Java applications.

■ Installation and update

daNCe supports largely automated installation and startup procedures for device clients. Since all daNCe components are located on the WWW server, software updates can be performed centrally. A storage mechanism ensures that software distribution is not necessary prior to each program start: it only takes place in the event of updates or new installations.

■ Automatic fault elimination

daNCe assigns great importance to different problem scenarios. For example, J/XFS defines how device services will respond if a peripheral fails. The device service will always abort the current process, report the fault and try to eliminate it automatically (crash recovery).

The J/XFS Config Server also offers storage services for the persistent data that is needed in a concrete restart scenario, e.g. following a system crash. For this purpose, it

uses a so-called lease protocol. In a distributed system, this protocol ensures that the active devices can adapt fully automatically to the new system configuration if a failure occurs – a process known as self-healing capability.

■ Security

Thanks to its design and the use of standards, daNCe can adapt to future security requirements. The daNCe components can be integrated into the network operator's PKI (Public Key Infrastructure).

The SCOP® security function (Secure Cash Out Procedure) developed by Wincor Nixdorf can be used to guarantee strong protection for transactions. SCOP works with the dispenser module (ATS) on the basis of digital certificates. Following successful authorization, the certificates are obtained from the transaction protocol.

This function prevents attacks on the cash from internal or external sources. SCOP is a patented Wincor Nixdorf system.

daNCe technology: Network computing

The technology

daNCe is the end-to-end solution for a future-proof, innovative architecture, and consists of a central and a local component:

■ daNCe central

This term refers to the services that are always available to all distributed components and the actual applications. daNCe central supports identification of front-office peripherals on a network-centric basis. In addition, daNCe controls the administration and storage of configuration data. daNCe central consists of two modules that function fully independently in separate Java runtime environments: the daNCe Lookup Service and the daNCe Config Service.

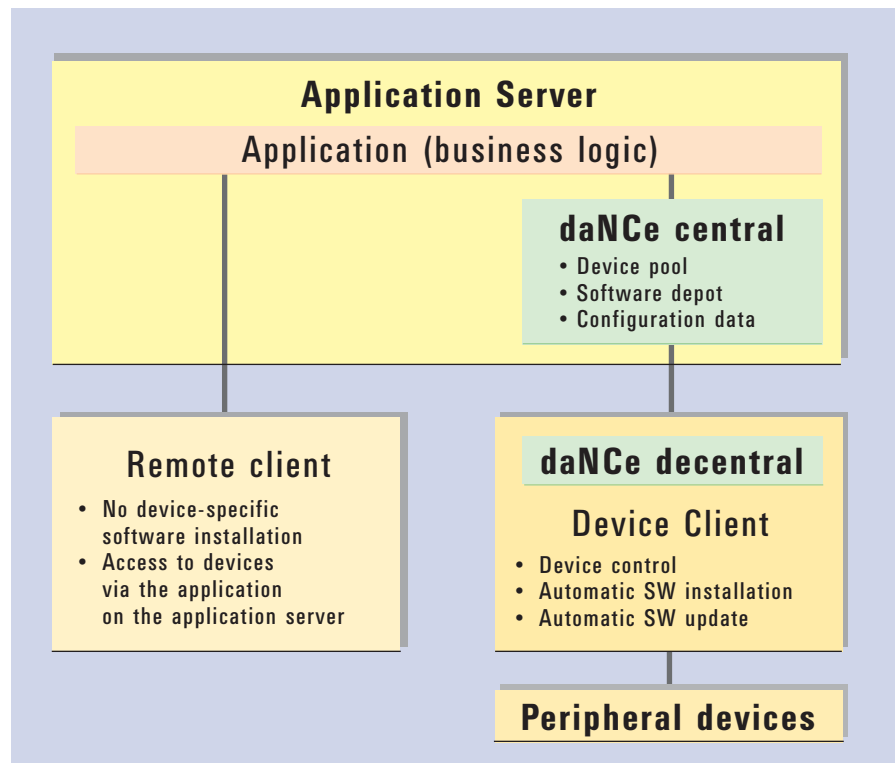
The daNCe Lookup Service is the core component, the device pool. Peripherals use their features as known identities to log on to the pool, enabling all applications to use the device pool in order to access a connected device. The daNCe Lookup Service runs on its own Java Virtual Machine and can be launched on any server, depending on the network configuration.

The daNCe Config Service is responsible for central administration of the configuration data for all the peripheral devices.

It should also be noted that the two modules can also be executed on different servers.

■ daNCe decentral

The local daNCe components are used on the systems to which the peripheral devices are physically connected. These systems assume the role of device client. The local daNCe component thus allows convenient



Here you see the central and local daNCe components. They link the application on the application server to the peripheral devices, which are connected to a device client. The remote client does not have peripherals of its own.

device address and links applications on an application server via state-of-the-art Internet technology. The peripherals are connected to the terminal via a standard, application-oriented interface using the latest access methods, and are therefore based on existing standards. Use of the standard peripherals interface J/XFS positions daNCe as a future-proof solution that supports implementation of innovative branch concepts.

The ease of application integration, for example, makes it possible to combine the solution with ProCash/FOnet. This enables teller-based cash-in and cash-out transactions on cash recycling systems to be shifted to self-service.

■ daNCe API

The daNCe API is used as an application-oriented interface on the application server. This involves Java class libraries that are available for the use of daNCe.

daNCe summary

The daNCe software platform from Wincor Nixdorf is strongly geared to the network computing paradigm and therefore sets standards for a future-oriented control of front-office peripherals. On the basis of the standard J/XFS interface for peripherals control, daNCe offers enhanced device access that greatly simplifies such functions as administration, installation and configuration. Here as well, daNCe is based on available standards such as Jini™ and Java™ Web Start.

J/XFS's great strength lies in the fact that all leading vendors in the finance industry recognize it as a peripherals interface. This guarantees the maximum peripherals coverage and flexibility that multivendor strategies require. Furthermore, the component structure enables custom extensions to be made whenever needed and therefore unites a standardized platform with innovative functions such as integration of a lookup service.

daNCe is a concept that meets today's needs for peripherals control under Java. At the same time, daNCe is a future-proof, flexible solution, enabling growth when, for example, bandwidths or demand increase.

Your benefits are:

- Network-centric architecture
- Device sharing and device locking
- Investment security through state-of-the-art SW architecture
- System and platform independence
- Automatic software distribution
- Application-oriented interface
- High system availability
- Universal application for peripherals from different vendors
- Support for modern branch concepts
- Automated installation and configuration
- Central device control and monitoring
- Dynamic assignment of front-office peripherals
- Centralized storage of configuration data

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