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System Management

in heterogeneous networks

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Content

Purpose of the document

This document is a high-level introduction to the

System Management area of the Auconet Business Infrastructure Control Solution (BICS) for heterogeneous office and industrial networks.

It helps future BICS customers to understand the approach, the features and the integration possibilities of the BICS system management.

This document is not a tutorial and does not replace the technical documentation. We recommend contacting Auconet to organize a live demo.

Auconet will also be happy to answer any questions you may have about the product.

BICS System Management for heterogeneous Networks

For explanation: this document describes the component System Management in heterogeneous networks of Auconet Business Infrastructure Control Solution (BICS). Please note that Auconet BICS is a comprehensive platform that can include other modules in addition to system management functionality, such as asset management, port security, and a number of other important functions for enterprise networks.

Reduce the cost of managing your servers, desktops, mobile and kiosk systems and increase the quality of your enterprise-wide software and configuration management.

Auconet BICS monitors and controls heterogeneous networks from a central location. The ability to operate BICS redundantly in a multi-instance network and with a large number of clients predestines the system for use in very large network environments.

1. Introduction

Day-to-day business: A new version of the SAP server and database will be installed at the weekend. How do you get thousands of SAP users to access the corresponding SAP client on Monday morning? How did the IT managers in banks ensure that on January 1, 2002, at 00:01 a.m., the euro was in charge and the DM was out of service on all ATMs?

1.1 Reduce costs

Software configuration management of distributed systems is an indispensable part of large and complex networks. If applications, configurations or data have to be installed at a certain point in time and at several locations, the administration depends on the support of an efficient management tool. Efficiency increases are required, because the infrastructures become constantly larger and more complex.

A software management process that is not tailored to requirements or even manual is no longer acceptable. This is where BICS System Management comes in: BICS System Management automates the essential processes of the software and system configuration management and relieves the administration of these routine tasks.

1.2 Increase service quality

The goal of enterprise-wide software management is the optimal support of business processes - the processes that determine the success of the company. However, this success can only be guaranteed if applications are not disturbed in their actual work by the management product, e.g. by inventory scans or installations. Or what happens if users have to make do with obsolete, insecure or even incompatible applications at times? An unacceptable productivity brake in the "efficiency age". BICS System Management distributes and installs application software, upgrades, any data and configuration settings automatically - controllable via a central management interface and platform independent for all systems.

BICS System Management is based on robust and flexibly configurable processes. All changes can be flexibly controlled by variable time windows. If an installation cannot be prevented during the working hours of the users, it takes place in the background or can be moved individually by the users. Applications are always up-to-date - users can work optimally.

1.3 Keep overview

In practice, the requirements on the IT infrastructure are constantly changing. Updates, release changes or security fixes are the order of the day. The composition and distribution of tasks among employees and teams is also constantly changing. It is good to be able to keep an overview here.

The inventory management integrated in BICS System Management offers this overview. Because only by the offered traceability of the distribution, installation or deinstallation an increase of the quality in the overall process can be achieved. Through the integrated inventory it can be determined at any time which software or configuration is installed on which system. Any data can be collected from the distributed systems and integrated into other business processes. Thus the necessary information is available at a central location and the complexity is reduced.

1.4 Benefit from successful system management technologies

BICS System Management has been successfully used by many large companies and administrations for years. BICS System Management is a mature solution, which has been consistently further developed in the course of years together with the customers. Developments and experiences from which also you can profit.

2. Functionality

BICS System Management offers you all functionalities to manage systems and their configurations efficiently and securely from a central management console - platform-independent and cross-platform. No matter whether UNIX, Linux or Windows.

2.1 Fully automated rollouts - individual configuration

nstalling applications, distributing data and changing configuration settings are some of the most important tasks in the day-to-day business of an administrator in any IT infrastructure. Often these changes have to be made not only on one system, but also synchronously on other systems such as directory service servers. Due to the multiple prerequisites and dependencies that applications have today, a deep understanding of the specific applications and the IT environment is a prerequisite for successful management. In addition, every installation and configuration change must also be weighed against risks and negative business impacts.

Faulty changes - especially to server systems - can ultimately have a significant impact on a company's business success and user satisfaction. Be it that a user cannot carry out important transactions or that hundreds of users are no longer able to work. BICS System Management offers security here.

Through the powerful Automated Configuration Management (ACM), BICS System Management automates the entire software and system configuration management process, ensuring that all requirements for installing an application are met, that all dependencies are met, that affected applications are installed in the correct order, and that all necessary pre- and post-processing actions are performed. With its efficient configuration management technology, BICS System Management can parameterize each change individually for each system. Thus, individual configurations can be realized even in large environments with several thousand to tens of thousands of systems.

2.2 Central diagnosis and transparent inventory management

If a change fails, how do I get the necessary log files or configuration information? If a user calls the helpdesk, how can I access the remote system? BICS System Management supports not only the high-performance distribution of software and data from a central location. It also offers the possibility to capture any decentrally available data, log files and configuration settings from these distributed systems and make them available on the central management server.

Out-of-the-box, BICS System Management already collects a multitude of standard system information about installed applications and many operating system and hardware information such as available memory space, processor type and network settings. All information contained in the Common Information Model (CIM) standard can be automatically read and analyzed by BICS System Management using so-called scanners. Depending on requirements, these standard scanners can also be extended to provide customer-specific data from the decentralized systems.

To further increase the degree of automation, these data can then also be made available to other systems via an API.

In addition, BICS System Management can take over the control of remote systems from a central location via the integrated remote control functionality. Inputs and outputs of any systems can be routed to the administration system.

2.3 Secure Management

Attacks on IT systems are increasing worldwide. How can you quickly close security holes on distributed systems? Or what happens if a virus can infiltrate the software distribution? The effects would certainly be fatal.

With BICS System Management you get a solution that is characterized by multiple security features. A strong encryption and the signing of any

communication are integrated. Therefore BICS System Management could prove itself successfully especially in high security relevant IT infrastructures. And thanks to the robust and scalable architecture, any updates or changes can be distributed to the end systems safely and efficiently. Current daily record for a customer: 380,000 changes in a productive network with more than 20,000 systems. Performed in one night.

2.4 Kiosk-Management

Kiosk systems are increasingly dominating our everyday lives. ATMs and self-service systems, ticket vending machines and lottery systems, as well as information terminals, are all part of our daily lives. With vending machines, customers have the opportunity to easily carry out additional services or even complex transactions - ideally around the clock.

2.4.1 Defective vending machines mean significant revenue losses and image damage

Whether an ATM is located in an airport or a shop, whether it is an ATM or a POS system: if it does not work, customers will not be able to complete transactions or retrieve the information they need.

The availability of an ATM or a ticket machine is also a prerequisite for achieving planned sales: A functioning ATM set up in an airport usually achieves its return on investment in a few months. After that, it only makes a profit. This is hardly possible with an unmanaged system.

2.4.2 Increase availability

Many analyses have shown: Almost 80% of computer downtime results from manual administration and configuration errors. By automating and controlling change and configuration management with BICS System Management, the availability of self-service systems can be significantly increased.

The processes are highly automated - manual configuration errors are drastically reduced. BICS System Management is a mature solution for the efficient management of automat systems of a central management console - at any time, for a multiplicity of operating systems, for automats of each manufacturer.

BICS System Management supports the XFS interface especially for use in connection with ATMs. This standard interface is implemented by all ATM manufacturers in order to ensure uniform monitoring of the ATMs. Via this interface, for example, the fill level of the cash cassettes can be checked and alerted in good time before the machine can no longer dispense cash.

2.4.3 Transparent key and content management

Self-service systems generally have an intuitive user interface that can include forms, editorial information, advertisements, and many other elements. However, transactions can only be successful if the correct forms are displayed on the kiosk system. Advertising revenues can only be billed correctly if the booked advertising placements are actually active. An information system is only visited if the information is up-to-date. With BICS System Management these distributions can be fully automated and manual updates are no longer necessary.

Through the audit-proof recording of the changes executed via BICS System Management, you can additionally prove at any time that the planned changes were actually carried out.

A system is more strongly endangered, the more exposed it is set up. This applies in particular to kiosk systems that are generally set up in places that are publicly accessible. This makes it all the more important that the security-relevant configuration settings and key information are regularly updated. With BICS System Management these tasks can be completely automated. This ensures that the kiosk systems are optimally protected against external attacks at all times.

3. Technical overview

BICS System Management has been consistently further developed in over twenty years of close cooperation with customers. Through this close coordination, BICS System Management is based on mature concepts that are specially designed for complex and heterogeneous IT environments.

3.1 Fast implementation and easy integration

BICS System Management can be implemented very quickly in large distributed environments - in production environments in days or weeks rather than months. Reason for this: BICS System Management is a focused solution and does not require any additional infrastructure. Only a lean agent is installed on the managed systems. The supplied tools guarantee the fast rollout of the agents.

Furthermore, software and data of any kind can be easily and automatically transferred to BICS System Management via a defined interface. It functions even more comfortably with the integrated PKG, RPM, DEB, MSI and terminal server support. This means that appropriately packaged applications can be transferred directly.

A further feature of BICS System Management are the multiple interfaces for simple and fast integration into the customer's business processes. Depending on the know-how and requirements of the integration, you can choose between integration at command line level, an API based on the C programming language, a web service or an API in Java that can also be accessed remotely. In addition to these interfaces, BICS System Management also offers the possibility to trigger external procedures (user exits) for important events, e.g. for further processing of certain data and events in other business processes.

Adapters already available for integration into system management frameworks, such as Tivoli or Patrol, also simplify integration into existing system environments.

3.2 Automated configuration management

BICS System Management covers all phases of the software and data lifecycle in the productive operation of your system: from distribution and installation, through configuration and activation, to any updates and eventual removal of the corresponding software or data.

In addition to support for Windows systems, BICS System Management - unlike many other products - also includes identical functions for other platforms such as Linux. New or differently in the net set up systems are automatically recognized thereby by BICS system management.

To simplify change and configuration management, BICS System Management does not rely on individual packages, but on modular system configurations that are formed from individual applications and data. With installation, configuration, activation or Deinstallation of such a system configuration BICS system management evaluates dependencies and sequences automatically - also system-spreading (Multi-tier Support). In this way, even cross-system client-server installations can be fully automated.

Through the configuration engine ACM integrated in BICS System Management, specific configuration settings are calculated individually and dynamically for each change via inheritance and exception rules. ACM automatically determines only those actions that are actually required to convert a system or group of systems from the current actual configuration to a target configuration. Superfluous changes are avoided - the load on the network connection is minimized.

ACM offers the possibility to flexibly group the systems, e.g. according to organizational, geographical or technical aspects. This simplifies administration considerably, since changes do not have to be initiated individually for each system, but are commissioned in one step for a whole group of systems.

Through the integrated impact analysis, the administrator can control and edit the changes and their parameters before the actual assignment. BICS System Management then automatically performs all changes in the correct order - even for cross-system client-server installations - and displays the results of all intermediate steps on the central management console.

Due to the extensive automation of all these processes, the administrator is relieved of routine tasks and BICS System Management ensures that manual configuration errors are excluded. All decentralized changes are recorded in a revision-proof manner.

3.3 Continuous transparency through flexible inventory management

The inventory management integrated in BICS System Management recognizes and collects all relevant information about the existing systems through various scanner tools. Thus, BICS System Management guarantees an always up-to-date information status about the operating systems, patches, hardware equipment, applications or any configuration files.

In addition to the possibility of distributing software and data to decentralized systems in a high-performance and robust manner and installing them there, BICS System Management also has flexible options for recording information and files in a decentralized manner. These are then displayed on the central management console and can be further processed by BICS System Management and other business processes.

BICS System Management is based on the flexible Common Information Model (CIM) standard for the decentralized acquisition of software and hardware information of the systems.

These standard scanners can be easily supplemented with further customer-specific acquisition scanners, e.g. to capture customer-specific configuration settings and transfer them to central administration. The information captured by the various scanners can then be displayed centrally by the reporting integrated in the interface and conveniently exported as a CSV or PDF file.

Furthermore, any files available on decentralized systems can be transferred to the central management server via BICS System Management, e.g. for recording decentralized usage statistics. This transfer can also be used for installations or other actions, e.g. for the transfer of diagnostic or configuration files.

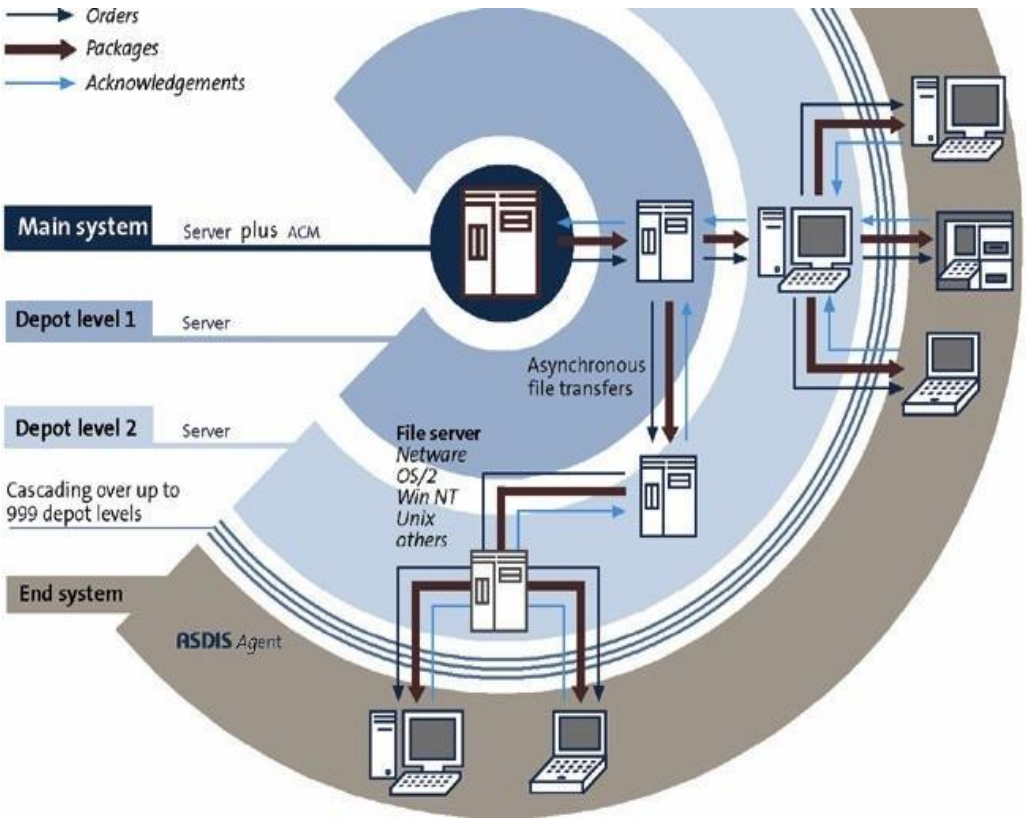
3.4 Scalable and robust infrastructure

BICS System Management has a mature communication structure, which can be adapted very flexibly to the requirements of the existing infrastructure. The communication can be individually adapted to the existing infrastructure via various time windows and configuration settings.

If only a weak network connection is available, the software can in exceptional cases also be transferred offline via data carriers such as CD-ROM, while the lean command communication continues to be carried out via the online connection. Even with fixed network connections that are only available for a short time or at irregular intervals, BICS System Management makes optimum use of the available time and transfers the data distributed over several time windows. Due to this flexibility, BICS System Management can be used in almost any communication infrastructure.

Features such as encryption, certification, wake-on-LAN, relative and absolute bandwidth control and checkpoint restart mechanisms can be flexibly configured and easily embedded into the existing network infrastructure. BICS System Management thus offers an extremely robust, secure and high-performance option for communication between the systems.

BICS System Management ensures via decentralized management depots that software can be stored on decentralized systems and from there efficiently distributed and installed to the connected systems. Thus BICS System Management ensures that network connections are optimally used and scales even in the largest distributed environments, since software is installed performantly from the decentralized management depots and is not transferred several times over the same network connections.



3.5 Safety for the highest requirements

Many ATMs and ticket machines in Germany and Europe are managed with BICS System Management. One reason for this: As a software management product, BICS System Management fulfils security requirements even for high-security environments.

As communication is only actively initiated by the central management servers, BICS System Management ensures that attacks on the infrastructure are made more difficult already in the conception phase. In addition, the communication is consistently encrypted and the data is signed. BICS System Management thus ensures that communication cannot be intercepted and that packages cannot be falsified or introduced without authorization.

BICS System Management also has a comprehensive role concept that can be applied both at function and object level (e.g. for systems, groups, packages). This makes it possible to map client concepts and ensures that only authorized users can trigger appropriate changes.

4. Platforms

In contrast to many other products, BICS System Management is available for all market-relevant UNIX, Linux and Windows platforms and thus offers the possibility to manage the end devices, independent of the operating system, with only one platform.

BICS System Management 6.2 platforms

- AIX
- CentOS
- Debian GNU/Linux
- Mac OS X
- openSuSE
- Red Hat Enterprise Linux
- Solaris 10, 11 (SPARC & x86/x64)
- SuSE Linux Enterprise Server 10 (x86/x64), 11 (x86/x64/s390x)
- Ubuntu
- Windows XP, Vista, 7, 8, 8.1, 10
- Windows Server 2003, 2008, 2008 R2, 2012, 2016

Additional platforms available on request.

BICS System Management offers the possibility to manage Linux systems efficiently:

Due to the integrated RPM and DEB support, an optimized Linux agent and a special rollout procedure for Linux environments, BICS System Management is especially suitable for heterogeneous Linux infrastructures.

5. Summary

The IT sector plays a key role in large companies. The ability of entire parts of a company to work depends on IT services that are available at any time of the day or night. A smooth IT service management with BICS System Management secures you decisive competitive advantages. Through the use of BICS System Management you benefit from

- sustainable cost reductions through the automation of all processes for software and system configuration management
- a significant increase in the quality of your IT processes
- a massive relief of the administration from costly routine tasks
- a continuous transparency of your software and system configuration management processes

With its mature technical concepts, platform-independent approach and flexible interfaces, BICS System Management guarantees investment security for the future. The fast implementation and simple integration into other business processes ensure a ROI within a short time. The scalable and robust structure of BICS System Management enables a high-performance and largely automated management of the IT infrastructure. Due to the manifold security features BICS System Management is even suitable for high security environments.

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About Infraray

Infraray was founded in 1998 by a German engineering team with many years of experience in the field of IT operation management. The company offers solutions for information technology and offers solutions for network management, network security, IT infrastructure management, cloud, network automation, and business infrastructure management.

Infraray BICS is the next-generation ITOM platform for controlling large and heterogeneous corporate networks. BICS not only offers network infrastructure management for all devices and end devices of the manufacturers, but also serves as a basis for a new generation of IT infrastructure management.

Infraray has been part of the Beta Systems Group since the beginning of 2018.

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