

セキュリティ データプロテクション

core topic for today's business applications

SECURITY BREACH

HACKING DETECTED

INTRUSION DETECTED



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SECURITY BREACH

ソフトウェアのアップデート

HACKING DETECTED

日立製作所

VM

Datei Bearbeiten Fenster Hilfe

VM.4DC - 4D Server Administration

Monitor

Anwender (4)

Prozesse (30)

Wartung

Anwendungsserver

SQL Server

HTTP Server

Status: Gestartet

Startzeit: 03.10.2015 um 16:20

Uptime: 683 Tag(e) 21 Stunde(n) 17 Minute(n)

Anmelden ablehnen

Konfiguration

Strukturdatei: "VM.4DC" in Volume "D:"

Datendatei: "VM.4DD" in Volume "D:"

Logbuch: VMJournal

Modus: Kompiliert

Als Dienst gestartet: Nein

Aktiv auf IP: 192.168.20.151

Port: 19813

SSL aktiv: Nein

Speicher

Benutzer Cache-Speicher: 1,6 GB

Gesamter Cache-Speicher: 5,75 GB

Maximale Verbindungen

Anwendungsserver: 102



VM

Datei Bearbeiten Fenster Hilfe

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Konfiguration

Strukturdatei: "VM.4DC" in Volume "D:"

Datendatei: "VM.4DD" in Volume "D:"

Logbuch: VM.journal

Modus: Kompiliert

Als Dienst gestartet: Nein

Aktiv auf IP: 192.168.1.1

Port: 19813

SSL aktiv: Nein

Speicher

Benutzter Cache-Speicher: 1,6 GB

Gesamter Cache-Speicher: 5,75 GB

Maximale Verbindungen

Anwendungsserver: 102

VM

Datei Bearbeiten Fenster Hilfe

VM.4DC - 4D Server Administration

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Anwender (4)

Prozesse (30)

Wartung

Anwendungsserver

SQL Server

HTTP Server

Status: Gestartet

Startzeit: 03.10.2015 um 16:20

Uptime: 683 Tag(e) 21 Stunde(n) 17 Minute(n)

Anmelden ablehnen

Konfiguration

Strukturdatei: "VM.4DC" in Volume "D:"

Datendatei: "VM.4DD" in Volume "D:"

Logbuch: VM.journal

Modus: Kompiliert

Als Dienst gestartet: Nein

Aktiv auf IP: 192.168.1.102

Port: 19813

SSL aktiv: Nein

Speicher

Benutzter Cache-Speicher: 1,6 GB

Gesamter Cache-Speicher: 5,75 GB

Maximale Verbindungen

Anwendungsserver: 102

ユーザーの意識改革

積極的アップデート

- Windows 10
- Windows Server 2016

ユーザーの意識改革

攻撃からの回避

ソフトウェアを常に最新の状態に保つこと

4Dの更新

自動アップデートの仕組みを活用

ソフトウェアを常に最新の状態に保つこと

Linux

Apache

MySQL

PHP

OpenSSL

zlib

ソフトウェアを常に最新の状態に保つこと

4Dが使用しているライブラリ

Linux

Apache

MySQL

PHP

OpenSSL

zlib

iODBC OpenSSL

libzip

xerces

hunspell

CEF

ICU

libldap

zlib

libsasl

(一部)



TLS 1.2

PFS

HSTS

SHA-2



最高レベルのセキュリティ
すべて対応済み

セキュリティガイド

問い合わせに備える
必要な情報を集約
リンクと参照資料

4D SECURITY GUIDE

ABOUT THIS GUIDE

Security encompasses more than risk elimination and blocking unauthorized access or unlawful disclosure of information. It covers data loss prevention and protection against destruction. In this guide, we will go through 4D's different security features that help you protect your databases. We'll also cover how to use 4D security to enforce your own specific security policies.

OVERVIEW

4D's key features to protect your data from breaches, loss and failure events include:

- **Authentication:** 4D supports built-in and custom user authentication, as well as authentication via Active Directory and LDAP.
- **Access control with a low-level authorization system:** A built-in user authorization system is embedded in 4D, allowing you to create groups with different levels of access to information in the database or in database operations.
- **Backup and logs:** tools to verify, maintain, and backup your data and file structure, ensuring data integrity in case of failure, data corruption or accidental deletion.
- **Server monitoring and administration:** easily retrieve a list of processes and users, identify which users initiated a specific process, and disconnect idle users.

HIGH LEVEL BUILT IN PROTECTION

4D SERVER

4D Server is an integrated client/server development system, optimized to build robust business applications with an embedded database. While 4D can send out data (with standards such as HTTP, SOAP, ODBC or OQ) and/or can be accessed from externally (via HTTP/HTTPS, SOAP, ODBC/SQL), its primary interactions are based on the internal 4D development language along with a proprietary network protocol between the client and the server. The direct link between the client and the server and the network communication protocol allows a high level, built-in protection to avoid typical attack scenarios such as SQL injection.

4D LANGUAGE

The 4D language is a powerful and mature language, perfectly designed to build business application systems. It consists of more than 1000 database operations (order by, every, creating, transactions and so on), printing, communicating with other devices or computers, database window layer interface commands, and much more. Take a look at the [4D language manual](#) for more details.

The language itself is tokenized, even in interpreted (development or prototyping) mode. It's never executed as text evaluation.

DATABASE COMPILATION

One of the benefits of code compilation is application protection. In 4D, once you have compiled your database, you can use interpreted code. In this case, access to the Design environment (except, reversely) is blocked, and development commands are not executed.

WEB SERVER

4D features its own built-in HTTP Server, a powerful, multi-threaded server for both static and dynamic content. The server provides increased security.

Besides better code security, it removes the typical "forgotten update" problem. As everything is integrated, there's no "Software Updates" section for additional details. Standard solutions require a huge amount of software packages to be installed and updated. In 4D, everything needs regular updates and it's common that some parts stay unpatched for a long time, especially in specialized IT team.

ENABLE TLS ENCRYPTION

TLS is a cryptographic protocol that provides secure communication over a computer network. Its primary aim is to protect the confidentiality and integrity of data transmitted between communicating computer applications.

4D Web Server can communicate securely via TLS. It's highly recommended to avoid unencrypted communication for business applications.

For 4D server, when using TLS, connections with clients are secured in a way that all intercepted data can not be read. Information can be secured with either a predefined key (via SSL) or a certificate (via TLS). The certificate is used to activate encryption of 4D Client/Server communications. go to the [Client/Server/Network options page of the Database Setup](#). To do the same for web connections, go to the [Web/Configuration page of the Database Setup](#).

BACKUP AND LOG SYSTEM

TRANSACTIONAL-BASED LOGS

4D provides an out-of-the-box transactional-based log system. Every data modification operation is recorded in the log. In case of an interruption, the database can be restored to its previous state. Even in case of failure, the data is not lost. The log is stored in a file (or those in memory, not stored to disk yet) and is restored, to return the database to its previous state. The log is automatically restored from the last full backup and a journal (transaction log file) including the most recent work is integrated.

The journal can also be used in case of accidental deletion as well, both for frequent and data recovery.

Standard backups are part of the 4D product, no additional licensing is required. Just an additional hard disk (in case of disk failure).

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CHECK OUT OUR SECURITY GUIDE!

© November 20, 2017

News

Authentication

Data Access

Activate Access

Assigning Privileges

Enable TLS Encryption

All-in-One Update

Over the years, **security** has become a **core topic for business applications**. As a 4D developer, you are constantly facing customers who pay close attention to the level of security in the solutions they use for running their everyday businesses.

To help you answer your customers' security-related questions, we are pleased to announce the release of the [4D Security Guide](#).

This reference document describes all the built-in tools and techniques involved in creating a secured environment for your business applications: from authentication and TLS encryption, to data access system and data protection.

Now it's time for you to check it out!

[f](#) [t](#) [in](#) [e](#) 7

Tags Database, Network, Security

4D Blog

<https://blog.4d.com/the-4d-security-guide-announcement/>
http://library.4d-japan.com/REFERENCE/Guid_Books/

データプロテクション



専門的なセキュリティ対策

データの盗難や流出
ハッキングや破壊
人為的なミス
物理的な故障

専門的なセキュリティ対策

バックアップ

専門的なセキュリティ対策

緊急時の回復

専門的なセキュリティ対策

4Dのバックアップ

フルバックアップ

+

トランザクション型ジャーナリング

||

最新の状態に復元可能

専門的なセキュリティ対策

4Dのバックアップ

VSS=スナップショット

+
トランザクション型ジャーナリング

||

最新の状態に復元可能