



# VISULOX 4

VISULOX4\_ReleaseNotes

23.07.2024

**amitego**



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# 1 Preface

The **VISULOX Release Notes** provide information about the new features and changes for this version of VISULOX. This document is intended for system administrators.

## 1.1 How this manual is organized

<a href="#">Preface</a>
<a href="#">Release Notes / Features</a>
<a href="#">Known Issues</a>
<a href="#">Glossary</a>


## 1.2 Legend

 Useful information
 Recommended setting
 Warning / use with caution
 Tipps & tricks

## 1.3 Related documentation

## 1.4 VISULOX documentation

Application	Title	Format
Release Notes	<i>VISULOX Release Notes</i> <i>Platform Support and Release Notes</i>	HTML
Installation	<i>VISULOX Installation Guide</i> <i>Installation Guide</i>	HTML
Administration	<i>VISULOX Admin Guide</i> <i>Administration Guide</i>	HTML
User	<i>VISULOX User Guide</i> <i>User Guide</i>	HTML

 The VISULOX Online Documentation is available at: <https://portal.visulox.com/wiki/>

## 1.5 Documentation feedback

Submit comments about this document by sending a mail to: [support@visulox.com](mailto:support@visulox.com)

## 2 Features

### **VISULOX Release 4.0.1 (December 2023)**

- **Oracle Linux / Red Hat 7 deprecated**
- SEC: Several adjustments after pentests (VD-2165)
- SEC: Several adjustments after pentests (VD-2167)
- SEC: Support for new Java-11 (VD-2221)
- ENH: Additional color for login page (VD-2161)
- ENH: Backend Captcha (VD-2166)
- ENH: Configuration option to hide PIN values in frontend (VD-2193)
- ENH: User feedback in VISULOX Cockpit for messages to users (VD-2202)
- ENH: Filtering application online states in VISULOX Cookpit (VD-2203)
- ENH: Privat host management import / export (VD-2208)
- ENH: Client language taken into account (VD-2210)
- ENH: Alternate sshpass prompt detection (VD-2218)
- ENH: Audit usage of VISULOX Portal Console (VD-2229)
- FIX: Handling passcache secrets via piping on CLI (VD-1984)
- FIX: Sporadic Workspace timeout (VD-2220)

ENH = Enhancement, FIX = Fixed, SEC= Security CVE = Common Vulnerabilities and Exposures

VS = VISULOX Support Ticket, VD = VISULOX Development Task

### **VISULOX Release 4.0.0 (September 2023)**

- New improved login and Workspace  
Captcha, Password Reset, Application Request via Workspace, Checkout Zone, Quick Upload Section,  
Favourites, Application Groups, Recently Used, Running applications, Force Authentication, enhanced Search and Sort
- SEC: New Tomcat version for VISULOX Gateway and VISULOX Portal
- ENH: Bruce Force prevention (VD-1947)
- ENH: Policy based OTP setup (VD-1978)
- ENH: Support of Native Client on Ubuntu 22.04 (VD-1982)

- ENH: OTP with SHA1 and SHA256 (VD-1993)
- ENH: transitimport validates characters in filenames (VD-2010)
- ENH: Diskprotection for VISULOX Filestore (VD-2011)
- ENH: New VISULOX end2end Monitoring (VD-2017)
- ENH: Sandbox for VISULOX Transit Shell and Firefox Wrapper - vlxjail (VD-2038)
- ENH: PAM user authentication (VD-2107)

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### **VISULOX Release 3.6.3 (July 2023)**

- SEC: New Apache version for VISULOX Gateway and VISULOX Portal
- ENH: Mailinggroups in GUI and CLI (VD-1986)
- ENH: Mailinggroup CLI parameter for Access Policy (VD-2006)
- ENH: Filetransit with project tagging (VD-1977)
- ENH: Diskprotection extended to file store (VD-2008)
- ENH: RD Gateway authentication with common user (VD-1996)
- FIX: HTML5 client in Firefox version 106 and later is now supported (VD-1992)
- FIX: Cleanup of temp file (VD-2021)
- FIX: LDAP Connection with umlauts (VD-2012)
- FIX: Transitimport with "space" in filename (VD-2004)

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### **VISULOX Release 3.6.1 (March 2023)**

- Actionlinks in mails for access and transit approval (VD-1919)
- Actionlnks in mails for external MFA (VD-1933)
- VISULOX Runtime Environment 1.2 (VD-1872)
- SEC: Protecting sgdadmin URL (VD-1715)



- ENH: File check script for Microsoft Defender (VD-1827)
- ENH: Microsoft LAPS integration (VD-1860)
- ENH: All scripts can have additional arguments (VD-1921)
- ENH: Mail client with templates (VD-1926)
- ENH: VISULOX freeRDP applications with RDP configuration file (VD-1988)
- ENH: RD Gateway authentication with common user (VD-1996)
- ENH: Diskprotection extended to File Store (VD-2008)
- ENH: Transitimport validates characters in filename (VD-2010)
- FIX: MFA does not fail on Gateway timeout (VD-1102)

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### **VISULOX Release 3.5.0 (October 2022)**

- New VISULOX logging facility based on journald
- New licensed module: OCR extension
- VISULOX Runtime Environment updated to VISULOX RTE 1.2
- ENH: Update to ETCD v3.5 (VD-1659)
- ENH: License usage reports (VD-1702)
- ENH: visulox portal admin command to change the VISULOX Portal Admin (VD-1713)
- ENH: visulox status command with fields parameter (VD-1733)
- ENH: Presave internal rejected files in Transit Zone (VD-1738)
- ENH: Prevent Unix bash history tracking during login, using vlxUnix.exp (VD-1734)
- ENH: New datasource is enabled by default (VD-1755)
- ENH: Separate MFA request during login process (VD-1626, VD-1769)
- ENH: RHEL8 IDM (VERSION: 4.9.6, API\_VERSION: 2.245) supported (VD-1770)
- ENH: Testing and howto for VISULOX Transit on Ubuntu (VD-1804)
- ENH: Live player in session controller (VD-1809)
- ENH: Provide VLX Resource to standard application connections Unix/Windows (VD-1810)
- ENH: Event content search in online player (VD-1816)
- ENH: New default VISULOX window manager: JVM (VD-1818)

- ENH: Update to VISULOX RTE 1.2 (VD-1828)
- ENH: Configurable GUI offset for Session Controller (VD-1846)
- FIX: Several text / message corrections and renaming
- FIX: MFA does not fail on Gateway timeout (VD-1102)
- FIX: Warning of unconfigured action scripts in Integrity-Check removed (VD-1729)
- FIX: Latest versions of some javascript files (VD-1730)
- FIX: Accounts with "password never expires" handled correctly in VISULOX Cockpit (VD-1731)
- FIX: Firefox Wrapper now in extra archive (VD-1732)
- FIX: Command Guard script validation in VISULOX Cockpit (VD-1752)
- FIX: LDAP pagesize is configurable (VD-1832)

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### **VISULOX Release 3.4.1 (May 2022)**

- CVE-2021-42340 CVE-2021-40438
- SEC: Extended header for X-XSS-Protection (VD-1666)
- ENH: Support pull external OTP validation (VD-1102)
- ENH: Offline player canvas with scaling and scrollbars (VD-1657)
- ENH: Added visulox-gateway support command (VD-1673)
- ENH: Login feedback based on policy (VD-1681)
- ENH: Sort on filesize and filesignature in Cockpit Archive File View (VD-1695)
- ENH: License usage reports (VD-1702)
- ENH: MFA script for RSA SecureID added (VD-1710)
- ENH: Update VISULOX Logos (VD-1712)
- FIX: Wrong download URLs for client after update (VD-1591)
- FIX: Command Connect re-arrange during login optimized (VD-1665)
- FIX: Missing CLI option in Transit Policy -recording on|off (VD-1679)
- FIX: Offline player style issues (VD-1680)
- FIX: store migrate on archive (VD-1694)
- FIX: VLXNODE: host and user profile with the same name (VD-1699)

- FIX: Curl and proxy (VD-1696)
- FIX: VISULOX transit import fails with relative path to file (VD-1703)

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### **VISULOX Release 3.4.0 (March 2022)**

- **BigUpload will be discontinued** and is **now integrated in File Transfer**
- ENH: Checkout password displayed in File Checkout Area, Reports and in VISULOX Cockpit (VD-1285)
- ENH: Integrity-Check of database connection (VD-1545)
- ENH: Recorder improved (smaller files) (VD-1572)
- ENH: Gateway IP listed in VLX Cockpit / Online view (VD-1584)
- ENH: Checkout password displayed in Workspace and event table (VD-1589)
- ENH: Better usability during download of large files (VD-1597)
- ENH: Extended webserver header for security reasons (VD-1603)
- ENH: Extended check for transitmapping (VD-1604)
- ENH: Better Integrity Check in VISULOX X11 Forwarding (VD-1606)
- ENH: visulox transit delete supported (VD-1609)
- ENH: GUI title with several placeholders (VD-1614)
- ENH: Integrity-Check verifies FQDN length (VD-1625)
- ENH: Improved Integrity-Checks (VD-1630)
- ENH: New archive mode: nosnapshot (VD-1644)
- FIX: Matching objects in VISULOX Command Line Interface (VD-847)
- FIX: Adding an Archive Server to VISULOX Cluster without restart (VD-984)
- FIX: yum update on local gateway setups (VD-1582)
- FIX: Wrong download URLs for client after update (VD-1591)
- FIX: Matching objects in VLX Commandline Interface (VD-847) (VD-1608)
- FIX: SIEM integration with error logging (VD-1617)
- FIX: Returncode of visulox status of several commands corrected (VD-1621)
- FIX: Webservice user now uses logical name (VD-1636)
- FIX: Command Connect handles resource with wrong password (VD-1641)

- FIX: Large snapshot creation removed in session controller (VD-1647)

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### **VISULOX Release 3.3.3 (November 2021)**

- Major update for VISULOX PORTAL
- CVE-2021-35649 CVE-2021-35650 CVE-2021-33037
- ENH: Handling five digit toplevel domains (VD-1579) (VS-920)
- ENH: Recoder optimization (VD-1572) (VD-1574)
- ENH: Placeholders in messages (VD-1562)
- ENH: VISULOX PORTAL uses pam stack only for local Unix users (VD-1560)
- ENH: More design parameters added (VD-1536)
- ENH: With no Transit Policy, the Transit Policy and the Transit Zone is disabled in Workspace (VD-1541)
- ENH: Integrity-Check supports timedatectl (VD-1535)
- ENH: Template and configuration for load balancer probing file (VD-1559)
- ENH: Fluxbox design (VD-1491)
- FIX: Player handling with screen change before recording started (VD-1580)
- FIX: Cookpit - correction in application creation (VD-1471)
- FIX: Cookpit - correction in application creation / AppWizzard vlx Controls (VD-1465)
- FIX: Upload multiple selected files in FT-Client (VD-1368)
- FIX: bindfs not cancelled correctly in Big Upload mode - additional fixes (VD-1517)
- FIX: File Transfer with spaces in directory (VD1526)
- FIX: Core file Fluxbox (VD-1563)
- FIX: Error closing Command Connect (VD-886)

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### **VISULOX Release 3.3.2 (September 2021)**

- ENH: Customizable Login / Workspace color design and company logos (VD-1513)
- ENH: SMS Kannel interface support timeout (VD-1519)
- FIX: Resize Command Connect shell arrangement (VD-1511)
- FIX: bindfs not cancelled correctly in Big Upload (VD-1517)
- FIX: (Security) information process table reduced (VD-1421)

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### **VISULOX Release 3.3.1 (August 2021)**

- CVE-2019-17567 CVE-2020-1935 CVE-2020-1938 CVE-2020-8284 CVE-2020-8285  
CVE-2020-8286 CVE-2020-13938 CVE-2020-13950 CVE-2019-17569 CVE-2021-2446  
CVE-2021-2447 CVE-2021-22901 CVE-2021-25122 CVE-2021-25329 CVE-2021-26690  
CVE-2021-26691 CVE-2021-30641 CVE-2021-31618 CVE-2020-35452
- ENH: end2end availability monitoring (VD-1302)
- ENH: VISULOX PORTAL configuration from VISULOX Service without registration (VD-1420)
- FIX: Connection AD with dh key too small (VD-1494)
- FIX: Application Assistant and application presentation (VD-1488)

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### **VISULOX Release 3.3 (June 2021)**

- **VISULOX PORTAL Service Embedded**
- **VISULOX Helpdesk is no longer available**
- RPM package signatures can be used for the VISULOX RPM packages
- New Application Assistant in VISULOX Cockpit
- ENH: Branding of login page ([.Access Branding](#)) (VD-1459)
- ENH: Accesspoint management (VD-1477)
- ENH: end2end monitoring ([How to setup VISULOX end2end monitoring](#)) (VD-1302)

- ENH: Integrity-Check for Transit Zone (VD-1455)
- ENH: Access consent during login (VD-1444)
- CVE: CVE-2021-2248 CVE-2021-3450 CVE-2021-2177 CVE-2021-2221

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### **VISULOX Release 3.2 (April 2021)**

- Supports SGD version 5.60.535 **only**
- **SGD version 5.3 / 5.4 / 5.5 deprecated**
- **Oracle Linux / Red Hat 6 deprecated**
- **VISULOX Helpdesk support will expire in the next release**
- **Java Client is no longer supported**
- Naming: VISULOX Management Console has been renamed to **VISULOX Cockpit**
- Naming: vlXRdp.exp (still usable) has been renamed to **vlxWindows.exp**
- New recorder and player (no flash) (VD-11)
- New Remote IP handling (VD-629)
- ENH: Object ID to address users ([Object ID](#)) (VD-1430)
- ENH: Optimized VISULOX Service processes (VD-1240)
- ENH: Location / zone extensions ([VISULOX Node hierarchy](#)) (VD-1203)
- ENH: Extended VISULOX Services restart (VD-1394)
- ENH: More time frame selections and quick query for applications / users in VISULOX Cockpit (VD-1393)
- ENH: Login page is landing page (VD-1311)
- ENH: Administration command visulox in /usr/sbin (VD-1310)
- ENH: No restart needed for portal attach command (VD-1287)
- ENH: Policy based file check / virus scan (VD-1272)
- ENH: AD password handling in VISULOX Cockpit / Objects (VD-1197)
- ENH: Added last import run and last import duration in VISULOX Cockpit / Objects (VD-1224)
- ENH: File Exchange certificate configuration (VD-1125)
- ENH: Recording of RandR applications fully supported (VD-289)
- ENH: Internal groups for domains are created (VD-1112)



- ENH: VISULOX import follows VISULOX PORTAL Primary Node (VD-191)
- ENH: vlxhsell handles nla/nonla with credential check (VD-727)
- ENH: More events for File Transit client connections ([Enable events for VLX Shell, FreeRDP and File Transit connections](#)) (VD-626)
- ENH: tarantella object info (VD-907)
- ENH: SSL certificate handling for transit/webservice (VD-867)
- ENH: Extended the number of vlxtransit users to 512 per server (VD-713)
- ENH: Enforce reload of LDAP import by user within the VISULOX Cockpit (VD-694)
- ENH: end2end monitoring (VD-677)
- ENH: table list presentation (VD-654)
- ENH: Provide a filecheck script for Sophos Anti Virus (VD-652)
- ENH: Downgrade to one Archive / Revision Server (VD-899)
- ENH: Player stops playback in VISULOX Cockpit / Dual Control mode (VD-590)
- ENH: More info in VISULOX Support Report (VD-437)
- ENH: Multiple session checkout via VISULOX Cockpit and CLI (VD-67)
- ENH: Redesign history database and license usage (VD-141)
- FIX: DoS on File Exchange (VD-1398)
- FIX: Mime header created by mailclient (VD-1376)
- FIX: Usage diagram spaces (VD-1306)
- FIX: Correct CLI error messages, if a node is down (VD-701)
- FIX: Missing known\_hosts not notified each time an xterm is opened (VD-668)

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## 3 Known Issues

### • Access Management

- VISULOX 2FA is not supported in case of a Third Party Authentication.
- 2FA & Unix user profiles without a profile in datastore are not supported (Created profiles in datastore based on Unix users are supported).
- Reset OTP keys via VISULOX Cockpit is not available for Unix users.

### • File Transit

- Files with non-ASCII characters sometimes are presented wrong.
- File names with special chars like "\ / : \* ? " <> |" that are transferred to Windows servers will be substituted
- VISULOX FTPD does not support IPv6.
- Depending on the Tomcat version, the file size is limited to 4GB.
- If two persons are using the same user name to connect to a Unix application server, this can lead to an undefined behaviour regarding the Transit Zone.
- For File Transfer within Command Connect, MaxSessions in sshd\_config on the destination server has to be set at least to 2.  
With a MaxSession setting of 1, only the FT Client can be used without Command Connect.

### • Cooperation / Assistance

- If the source and destination displays in a cooperation have different keyboard layouts, this can cause side effects.
- Dual Control is currently only possible in observation mode for members.

### • Objects / Datastore

- Character and doc applications are displayed in VISULOX Cockpit / Online and Filter Objects, but these applications can not be selected in policies and can not be recorded, locked, etc.
- Objects in the datastore do not support the following special chars: "/ ; #=" for VISULOX PORTAL Administrators.

### • VISULOX Portal

- The VISULOX PORTAL Console is not supported on Safari browsers.
- After the command visulox-portal discover gateway -local, the following entries are missing in /opt/SUNWsgdg/httpd/httpd-default/conf/extra/gateway/httpd-gateway.conf:  
SSLProxyCheckPeerExpire off and ProxyPass /lb\_endpoint.html.

- Secondary VISULOX Portal servers must be online and have a connection to the Primary to attach VISULOX.
  - TTAXPE and RDP session must have the same color depth.
  - XRDP on VISULOX Portal servers is not supported (VISULOX Portal supports x11 native, so it makes no sense using an x11-client to map RDP to x11 from a server which maps x11 to RDP).
  - Redrawing issues with session controller in seamless RDP sessions.
  - Launching Windows applications using the HTML5 client in a Firefox private window is not supported
  - HTML5 applications closed via X on the tab will still be displayed as running in the Workspace
  - Dynamic applications are not supported in VISULOX 4
- **Miscellaneous**
    - Time zone interval for Bangalore / India is not a full hour.
    - Nested groups are not supported.
    - In a checked out ZIP archive special chars sometimes are not displayed properly on the info page.
    - Effective Policies in Cockpit / Online for Access and Application Policies are only displayed completely, if the Access Point has been provided.
    - Linux file command is not reliable on Oracle Linux 8. A workaround is available on request.
    - Platform with SELINUX and Unix vlxtransit based on NFS Home Shares works only with NFS4.2.
    - AD LDAP paging with a pagesize of 100 can cause issues (an LDAP paging configuration parameter has been implemented).
    - Printing is currently not supported on Oracle Linux 9

## 4 Appendix\_R

### 4.1 Appendix

#### 4.1.1 Glossary

<b>Expression</b>	<b>Description</b>
<b>3PA</b>	Third Party Authentication
<b>Access Branding</b>	With Access Branding it is possible to display different login page designs for different users according to their access point.
<b>Access Management</b>	Enhanced VISULOX Concept for administrating the access of users
<b>AD</b>	<b>A</b> ctive <b>D</b> irectory
<b>AIP</b>	<b>A</b> daptive <b>I</b> nternet <b>P</b> rotocol: Client communication protocol from the VISULOX PORTAL Service
<b>Ambiguous login</b>	The situation where an authentication mechanism has found more than one match for a user and cannot distinguish between them without further information from the user
<b>Annotation</b>	A short text, that can be entered before a recorded session is confirmed, during a recorded session or in VISULOX Cockpit / Archive for closed sessions
<b>API</b>	<b>A</b> pplication <b>P</b> rogramming <b>I</b> nterface

<b>Expression</b>	<b>Description</b>
<b>Application server</b>	A server which provides applications, that can be accessed via the VISULOX PORTAL
<b>Application session</b>	See: <b>emulator session</b>
<b>Args</b>	The arguments an application is started with
<b>Assist / Assistance</b>	See: <b>Assisting Cooperation</b>
<b>Assisting cooperation</b>	Within the VISULOX Cockpit, the user can select an application and press assist to join the application. The owner of the application selects the cooperation mode
<b>Chapter</b>	A chapter equals 20 minutes film of a recorded session
<b>CLI</b>	<b>Command Line Interface</b>
<b>CMD</b>	The command / path an application is started with
<b>Cooperation</b>	When two or more users are watching or working with the same application in realtime on their own desktop
<b>Cooperation master</b>	The user, who has started the application (owner) will be the master of this application in a Cooperation
<b>Cooperation member</b>	A user, who is not owner of an application and who is not able to switch the cooperation modes

Expression	Description
<b>Cooperation modes</b>	<p><b>On hold:</b> Member is assigned to a Cooperation, but does not participate</p> <p><b>Observe:</b> Member is able to watch the Cooperation application, but can not interact</p> <p><b>Interact:</b> Member can interact with the application</p>
<b>CP</b>	Short form for <b>Cooperation</b>
<b>Datastore</b>	Internal VISULOX PORTAL Service database, where all defined objects (users, hosts, applications) are stored. A VISULOX PORTAL Array replicates the datastore between all members simultaneously
<b>DMZ</b>	Demilitarized zone (Perimeter zone)
<b>DSI</b>	<b>D</b> irectory <b>S</b> ervice <b>I</b> ntegration
<b>Dual Control</b>	Cooperation enforcing a real four-eye-principle
<b>ELU</b>	<b>E</b> xtended <b>L</b> icense <b>U</b> sage - When ELU has expired, its not possible to start more recorders or display more users than allowed under MD / Status, max users / recorders
<b>Emulator session</b>	The running session, when an application is started with the Workspace on an application server
<b>Expect script</b>	VISULOX PORTAL connection script started during the launch of an application
<b>External DNS name</b>	The name by which an VISULOX PORTAL Server is known to a client device. A VISULOX PORTAL Server can have multiple external DNS names.

<b>Expression</b>	<b>Description</b>
<b>File Exchange</b>	File Transfer web access for transferring files between a client and the Transit Zone for users without access to the VISULOX PORTAL
<b>File Transfer Client</b>	VISULOX Component for transferring files securely from Transit Zone to application servers and back
<b>Film</b>	Summary of the recorded chapters
<b>Forced authentication</b>	When VISULOX PORTAL prompts for a user name or password, by displaying an authentication dialog box For example, if a user holds down the Shift key when clicking on an application's link on the Workspace
<b>FQDN</b>	<b>Fully Qualified Domain Name</b> - The full name of a system, containing its hostname and its domain name. For example: portal.visulox.com, where portal is the hostname of a server, and visulox.com is the domain name
<b>Group Access</b>	Group Access is used to define an Access Policy for a specific list of users. This is needed when users are working together in a project and the project is represented by a group object in the repository
<b>Host object</b>	Host objects can be assigned to File Transit, Command Guard and Command Connect groups.
<b>Host Connect</b>	See: <b>VISULOX Command Connect / VISULOX Command Guard</b>
<b>IAR</b>	<b>Intelligent Array Routing</b>
<b>ICA</b>	<b>Independent Computing Architecture</b> : Client communication protocol from Citrix
<b>Integrity-Check</b>	Tool to check the VISULOX components and services

<b>Expression</b>	<b>Description</b>
<b>Internal / external message</b>	The VISULOX Service supplies an external message for the login page and an internal message for the user's Workspace
<b>Kiosk mode</b>	VISULOX PORTAL display mode, where an application is displayed in full-screen
<b>LDAP</b>	Lightweight <b>D</b> irectory <b>A</b> ccess <b>P</b> rotocol
<b>LDAPS</b>	Lightweight <b>D</b> irectory <b>A</b> ccess <b>P</b> rotocol over <b>S</b> SL. Used for secure connections to an LDAP directory.
<b>LID</b>	Short form for <b>L</b> icense <b>I</b> D - Contains the date, the license started
<b>Management Console</b>	See: <b>VISULOX Cockpit</b>
<b>MFA</b>	<b>M</b> ulti <b>F</b> actor <b>A</b> uthentication
<b>Native Client</b>	A VISULOX PORTAL component that can be installed on client devices. The client maintains communication with the VISULOX PORTAL Server and is required to run applications The Native Client is provided by Oracle.
<b>NEP</b>	Short form for <b>N</b> etwork <b>E</b> ntry <b>P</b> oint
<b>Network Entry Point</b>	See: <b>RIP</b>
<b>NFS</b>	<b>N</b> etwork <b>F</b> ile <b>S</b> ystem

Expression	Description
<b>Notifications</b>	Implemented notification system for access, Workspace / File Transfer and emulator sessions in the VISULOX Services
<b>Object</b>	A self-contained entity, defined by a number of attributes and values. VISULOX PORTAL Objects have different types, such as an X application. The available attributes for each type are defined by a schema
<b>One Time Passcode</b>	The One Time Passcode is used for authentication and will become invalid after usage. A provided OTP is based on a secret key and the time via a smartphone APP
<b>Organization object</b>	A VISULOX PORTAL Object used to represent the top level of an organizational hierarchy. Organization objects can contain <b>OU=</b> or user profile objects. Organization objects have an <b>O=</b> naming attribute.
<b>Organizational hierarchy</b>	The collection of objects in the VISULOX PORTAL Datastore, descending from one or more organization or domain component objects. Represents the collection of people, application servers, and applications within an organization.
<b>Organizational unit object</b>	A VISULOX PORTAL Object used to distinguish different departments, sites, or teams in an organizational hierarchy. Organizational unit ( <b>OU</b> ) objects can be contained in an organization or domain component object. Organizational unit objects have an <b>OU=</b> naming attribute
<b>OTP</b>	Short form for <b>One Time Passcode</b>
<b>Peer DNS name</b>	The name by which an VISULOX PORTAL Server is known to other VISULOX PORTAL Servers in the same array
<b>Primary server</b>	The VISULOX PORTAL Server that acts as the authoritative source for global information, and maintains the definitive copy of the VISULOX PORTAL Datastore

Expression	Description
<b>RDP</b>	<b>Remote Desktop Protocol</b> : Client communication protocol from Microsoft
<b>Remote IP</b>	Remote IP address, the information, from where a client request is coming
<b>Report</b>	The VISULOX Service is collecting data about workspace sessions, emulator sessions, recordings and cooperations. The information can be clearly arranged in reports. In VISULOX Cockpit a variety of possible reports can be created on several pages
<b>Resume</b>	To redisplay an application session that has been suspended. See also: <b>suspend</b>
<b>RIP</b>	Short form for <b>Remote IP</b> address
<b>RVA</b>	<b>Remote Vendor Access</b>
<b>S &amp; M</b>	Short form for <b>Support and Maintenance</b>
<b>Secondary server</b>	An array member that is not the primary server. The primary server replicates information to secondary servers.
<b>Session</b>	The VISULOX PORTAL generates a session for any X11 or RDP application, which has an unique session ID
<b>SIEM</b>	<b>Security Information and Event Management</b>
<b>SOX</b>	Short form for <b>Sarbanes-Oxley Act</b>

Expression	Description
<b>SSL certificate</b>	A digital passport that establishes credentials on the web. In VISULOX PORTAL Service, allows client devices to trust the identity of a VISULOX PORTAL Server
<b>Suspend</b>	To pause an application session. A suspended application is not closed, it can be resumed. See also: <b>resume</b>
<b>TAP</b>	Short form for <b>Temporary Access PIN</b> , part of the Multi Factor Authentication (MFA)
<b>TCC</b>	Short form for <b>Tarantella Client Component</b> : Component for login into the VISULOX PORTAL via <b>Native Client</b>
<b>TCL</b>	Programming Language. Most of the VISULOX products are based on TCL
<b>Temporary Access PIN</b>	VISULOX method for the Multi Factor Authentication ( <b>MFA</b> )
<b>TFN</b>	Tarantella Full Naming, X.500 format to address a VISULOX PORTAL object
<b>Transit Zone</b>	Zone, where files are transferred from/to application servers/clients
<b>VAP</b>	Short form for <b>Virtual Access Point</b>
<b>Virtual Access Point</b>	VISULOX method to get an independent URL of the VISULOX Access Nodes for reliability and Workspace balancing
<b>VISULOX Access Node</b>	Node running the VISULOX PORTAL Service and the VISULOX Service
<b>VISULOX Base</b>	Single VISULOX Node

Expression	Description
<b>VISULOX Cluster</b>	Two or more VISULOX Nodes, that are joined together because of scalability, redundancy and load balancing
<b>VISULOX Cockpit</b>	Central VISULOX application to control sessions, access, recording, cooperations and to generate reports
<b>VISULOX Command Connect</b>	VISULOX component, which provides the possibility to connect to multiple hosts and to open an X-Client on these hosts. The connection method can be SSH, RDP or telnet. Former: <b>Host Connect</b>
<b>VISULOX Command Guard</b>	VISULOX component, which provides the possibility to connect to multiple hosts and to open an X-Client on these hosts Command Guard has command level controls for the application. It allows and denies the usage of certain commands by the user Additionally server side scripts can be issued either to multiple endpoints or to a single one
<b>VISULOX Common Access Platform</b>	The whole environment, that is built with the VISULOX GATEWAY, VISULOX Portal Service, VISULOX Service and databases
<b>VISULOX Data</b>	VISULOX Database and VISULOX Filestore
<b>VISULOX Filestore</b>	File system which stores the films. 5 MByte per user and per hour. Recommended for VISULOX is a local disk with 150-250 GB, for VISULOX Archive Node depending on the lifetime of films, up to x TB on a NAS/SAN storage
<b>VISULOX GATEWAY</b>	The VISULOX GATEWAY is a proxy server designed to be deployed in front of a VISULOX PORTAL Array in a demilitarized zone (DMZ). This enables the VISULOX PORTAL Array to be located on the internal network of an organization. Additionally, all connections can be authenticated in the DMZ before any connections are made to the VISULOX PORTAL servers in the array. The VISULOX GATEWAY manages load balancing of HTTP connections for the VISULOX PORTAL Servers in the array.

Expression	Description
<b>VISULOX Host Connect</b>	See: <b>VISULOX Command Connect</b>
<b>VISULOX Hotfix</b>	Tool to check the software status in the cluster, backup and apply hotfixes
<b>VISULOX keystroke recording with analyzing engine</b>	In this recording mode all user keyboard interactions are registered and can be checked for unwanted entries (analyzing engine)
<b>VISULOX Node</b>	Node running the VISULOX Service to control sessions, films and recorders
<b>VISULOX PAM</b>	<b>VISULOX Privileged Access Management</b>
<b>VISULOX PORTAL Array</b>	Two or more VISULOX Access Nodes, that are joined together because of scalability, redundancy and load balancing
<b>VISULOX PORTAL Benchmark</b>	Tool to create a defined number of demo-users, who log into the VISULOX PORTAL and start recorded applications automatically. All settings can be configured easily within a GUI
<b>VISULOX PORTAL Console</b>	Web-based management console for the VISULOX PORTAL Service (Former: Administration Console)
<b>VISULOX PORTAL Web Server</b>	A pre-built web server installed and configured along with the VISULOX PORTAL Service, contains Apache, mod_ssl for HTTPS support, and Tomcat for Java Servlet and JSP support
<b>VISULOX PORTAL Web Services</b>	An API collection that allows developers to build their own applications to work with the VISULOX PORTAL Service. The APIs can be used to authenticate users, launch applications, and interact with the VISULOX PORTAL Datastore

Expression	Description
<b>VISULOX Revision Server</b>	VISULOX Node which replicates the production database into Revision Server database and transfers the films from the production filestore into the Revision Server filestore (also known as Archive Server)
<b>VISULOX Service Group</b>	See: <b>VISULOX Cluster</b>
<b>VISULOX Short Support Report</b>	A Short Support Report to send via eMail created with <b>visulox support -info</b> . The Short Support Report should be sent to the VISULOX Support Team every time a new Support Request is opened
<b>VISULOX Support Report</b>	Package generated by the <b>visulox support</b> command, containing all information, necessary for support
<b>VISULOX Transit Area</b>	File Transfer component embedded in the Workspace to transfer files between client and Transit Zone
<b>VISULOX Transit Mapping</b>	To setup the VISULOX Transit Zone on Unix application servers, that are not a VISULOX Node, an RPM file is available for installation.
<b>VISULOX Videolog Player</b>	Player to view the recorded films inside the VISULOX Cockpit or checked out films in a browser
<b>VISULOX Webservice User</b>	Each VISULOX Service needs this user in the datastore to read the webservices on the VISULOX Access Nodes. The VISULOX webservice user has to be setup once in the datastore
<b>VISULOX_Setup.xls</b>	Excel-sheet, which has to be filled out in the planning phase by the responsible project leader, together with the amitego consultant
<b>vlxMode</b>	VISULOX variable set in the VISULOX PORTAL Console
<b>VLX Password SelfService</b>	Active Directory (AD) and Oracle Unified Directory (OUD) users are able to change their password by themselves with this application assigned.

Expression	Description
<b>Webtop</b>	In the current version, the Webtop is called the <b>Workspace</b> . A Workspace is the term used to describe a user's applications, documents, and desktops. See: <b>Workspace</b>
<b>WM</b>	Short form for <b>Window Manager</b>
<b>Workspace</b>	The Workspace is displayed after logging into the VISULOX PORTAL. It is a special web page, that lists the applications that are assigned to the user
<b>Workspace balancing</b>	VISULOX load balancing mechanism including a virtual access point
<b>Workspace session</b>	The running session, after a user has logged into the VISULOX PORTAL via browser or Native Client
<b>X11 forwarding</b>	The process of forwarding, or tunneling, the windows of a remotely started X application to a client desktop
<b>X Window System</b>	A distributed window system for UNIX platform operating systems, based on the X11 protocol. Also called X11, or X Windows
<b>X.509 certificate</b>	See: <b>SSL certificate</b>