| LRS Module: | **VPSX, MFPsecure and optional products** | **V1 R2.021** |
|---|---|---|
| Doc Revision: | June 10, 2020 | |

| Description: | VPSX Print Server (Direct, Workplace, Output Manager, Enterprise), MFPsecure and optional products Innovate Audit, LRS Mobile Connector and AlertX |
|---|---|

**Diagram:**
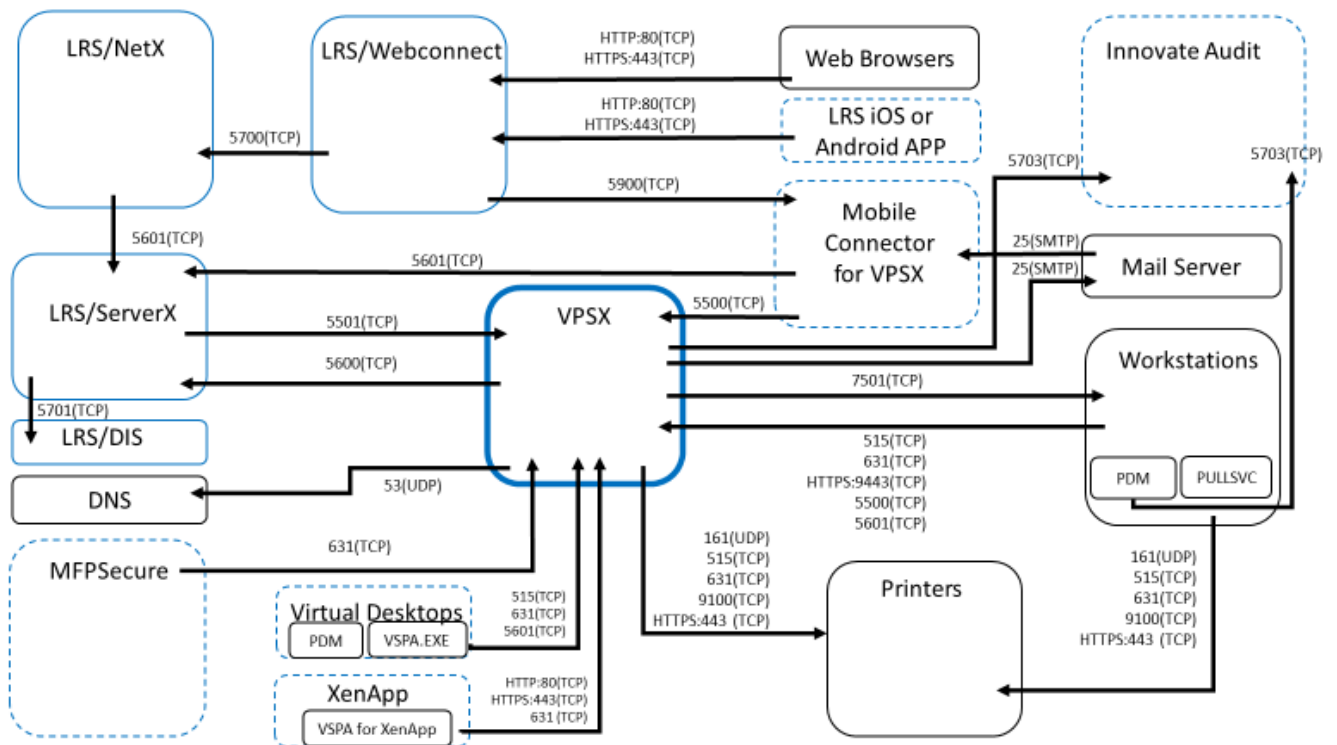


| Ports List: VPSX, MFPsecure and Required Components | | | | |
|---|---|---|---|---|
| **Port** | **Type** | **Source** | **Destination** | **Description** |
| 161 | UDP | VPSX | Printers | SNMP Status query for printers |
| | | PULLSVC | Printers | SNMP status query for printers (only for DSR) |
| 515 | TCP | VPSX | Printers | LPR Printing to devices |
| | | PDM or PULLSVC | Printers | LPR Printing to devices |
| | | PDM | VPSX | LPR Job submission from workstations |
| 631 | TCP | VPSX | Printers | IPP printing to devices |
| | | PDM or PULLSVC | Printers | IPP printing to devices |
| | | PDM | VPSX | IPP Job submission from workstations |
| 5500 | TCP | LRSQ | VPSX | LRS/LRSQ Job submission |
| 5501 | TCP | LRS/ServerX | VPSX | API Communication between LRS/ServerX & VPSX and remote status feedback from VPSX to VPSX |
| 5600 | TCP | VPSX | LRS/ServerX | API Communication LRS/VPSX & LRS/ServerX |
| 5703 | TCP | VPSX | Innovate/Audit | Accounting data to Innovate/Audit Service |
| 7501 | TCP | VPSX | Workstations | Job release for local printing |

| Port | Type | Source | Destination | Description |
|---|---|---|---|---|
| 9100 | TCP | VPSX | Printers | Socket/Raw Printing to devices |
| | | PDM or PULLSVC | Printers | Socket/Raw Printing to devices |
| 443 / 9443 | TCP | VPSX | Printers | Encrypted printing over HTTPS / IPPS |
| | | PULLSVC | Printers | Encrypted printing over HTTPS / IPPS |
| | | PULLSVC | VPSX | HTTPS/IPPS Job submission from workstations. Note: the VPSX server is likely to also host an IIS server which has port 443 open. Port 9443 is recommended for HTTPS/IPPS transmission from workstation to VPSX. |
| 5501 | TCP | LRS/ServerX | VPSX | API Communications with LRS/VPSX |
| 5600 | TCP | VPSX | LRS/ServerX | Inbound API Communications with LRS/ServerX |
| 5601 | TCP | LRS/NetX | LRS/ServerX | Communication with LRS/ServerX |
| | | PDM and PULLSVC | LRS/ServerX | Workstation communication with LRS/ServerX (only required for download of print policies and Direct Secure Release) |
| | | VSPA for XenDesktop | LRS/ServerX | Communication between Virtual Desktop (VSPA.exe) and LRS/ServerX (only for VSPA) |
| 5701 | TCP | LRS/ServerX | LRS/DIS | Communication with LRS/DIS |
| 80 | TCP | Web Browser | LRS/WebConnect | Browser connection HTTP traffic over port 80 |
| 443 | TCP | Web Browser | LRS/WebConnect | Browser connection HTTPS traffic over port 443 |
| 5700 | TCP | LRS/WebConnect | LRS/NetX | Communication with LRS/NetX |
| 25 | SMTP | VPSX | Mail Server | Email outbound from VPSX (if required) |
| 53 | UDP | VPSX | DNS | Domain Name Server loopup |

| Ports List: Optional Products – Virtual Session Printer Agent | | | | |
|---|---|---|---|---|
| Port | Type | Source | Destination | Description |
| 5601 | TCP | VPSA.EXE | LRS/Serverx | API request from VSPA.EXE (Virtual Desktop) to LRS/ServerX (retrieve printer list) |
| 80 | TCP | VSPA for XenApp | LRS/WebConnect | SOAP connection HTTP traffic over port 80 |
| 443 | TCP | VSPA for XenApp | LRS/WebConnect | SOAP connection HTTPS traffic over port 443 |

| Ports List: Optional Products – Innovate Audit | | | | |
|---|---|---|---|---|
| Port | Type | Source | Destination | Description |
| 5703 | TCP | VPSX | Innovate/Audit | Accounting data to Innovate/Audit Service |
| 5703 | TCP | Workstations | Innovate/Audit | Windows workstations running PDM with accounting enabled |

| Ports List: Optional Products – LRS Mobile Connector | | | | |
|---|---|---|---|---|
| Port | Type | Source | Destination | Description |
| 5601 | TCP | MobileConnector | LRS/ServerX | Communication with LRS/ServerX |
| 5500 | TCP | MobileConnector | VPSX | Job submission from MobileConnector |
| 5900 | TCP | LRS/WebConnect | MobileConnector | Communication with MobileConnector |
| 25 | SMTP | Mail Server | MobileConnector | Email forwarded from mail server |

| Ports List: Optional Products – MFPsecure | | | | |
|---|---|---|---|---|

# LRS Network Port Requirements

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|---|---|---|---|---|
| **Note: See also separate Network Port Requirements document for each MFPsecure client used (HP, Lexmark, Xerox, Ricoh, etc)** | | | | |
| **Port** | **Type** | **Source** | **Destination** | **Description** |
| 631 | TCP | MFPsecure | VPSX | IPP Job Information and release |
| 80 | TCP | Workstation | MFPsecure | User card enrolment via MyCodes or email enrollment (if used) |
| 443 | TCP | Workstation | MFPsecure | User card enrolment via MyCodes or email enrollment (if used) |

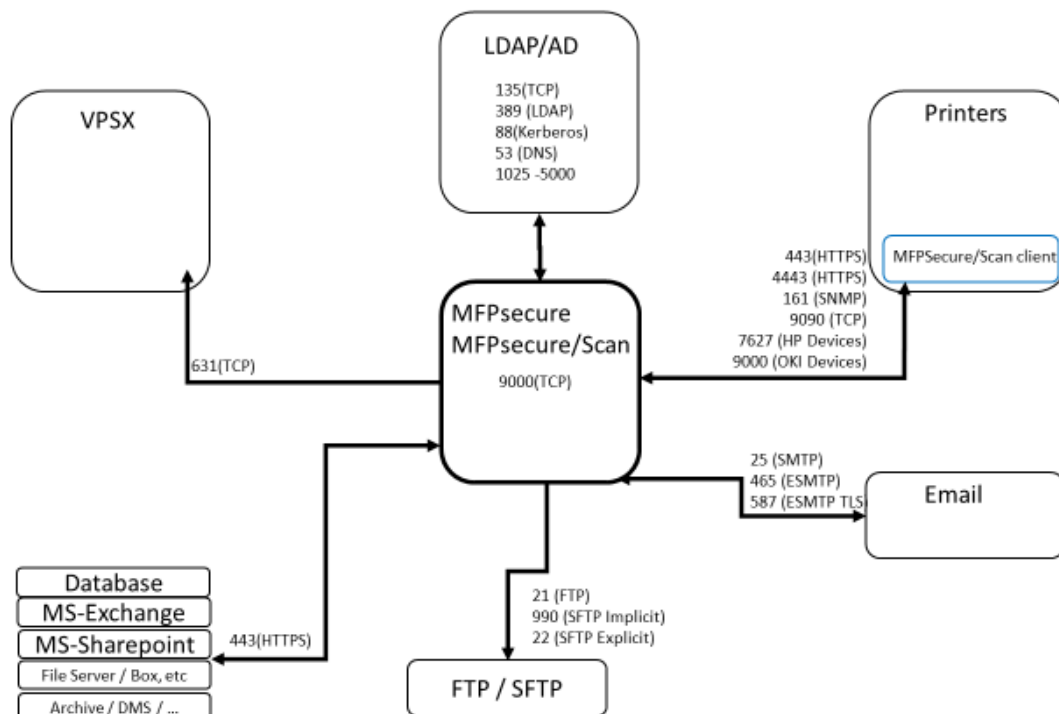| | | | | |
|---|---|---|---|---|
| **Ports List: Optional Products – AlertX** | | | | |
| **Port** | **Type** | **Source** | **Destination** | **Description** |
| 5555 | TCP | Load Balancer | AlertX | Used by AlertX to communicate to Cluster/Load Balancer software |
| 5556 | TCP | Load Balancer | AlertX | Used by AlertX to check whether there are surviving nodes besides itself |
| 5557 | TCP | Load Balancer | AlertX | Service Address of resource group of Cluster or Load Balancer. Used to query Alertx Last Man Standing Port |

| | | | |
|---|---|---|---|
| **Description of LRS components** | | | |
| **Component** | **Optional or Required** | **Platforms supported** | **Description** |
| VPSX (Direct Print, Workplace, Enterprise, Output Manager) or used with standalone MFPSecure/Print, MFPSecure/Scan or LRS Mobile Connector products). | Required | Windows, Unix, Linux | Receives, processes and distributes output files. Each VPSX print server can register with one or more LRS/ServerX servers.<br><br>For VPSX/Direct Print (standalone), the VPSX server does not receive, process or distribute output files – output files are sent directly from client device to printer. |
| LRS/ServerX | Required | Windows, Unix, Linux | Provides directory and security services for administrator and user access to one or more VPSX servers. |
| LRS/NetX | Required | Windows, Unix, Linux | Web Application Server. |
| LRS/Webconnect | Required | Windows, Unix, Linux | Connector from the customers web server to the LRS/NetX server. |
| Virtual Session Printer Agent (VSPA) | Optional | VPSX on Windows, Unix, Linux XenDestop and/or XenAPP on Windows | Provision VPSX printers to users of XenDesktop and/or XenApp. |

| Innovate Audit | Optional | Windows | Audit server – collects audit data from VPSX and PDM instances. |
|---|---|---|---|
| MFPsecure | Optional | Windows | Provides services for pull printing. Connects to MFPsecure agents and VPSX systems. |
| LRS Mobile Connector | Optional | Windows | Allows print submission to VPSX from email and/or APP. |
| PDM (Printer Driver Manager) | Optional | Windows (or linux / mac with limited function) | Allows definition of printer queues, drivers, options and preferences using LRS Printer Locator or Portal. Generates audit data for windows print events. PDM Advanced includes Policy Print function. |
| PULLSVC (Pull Service) | Optional | Windows | Enables Direct Secure Release (DSR - client based pull print) function. Used to send files printers in Direct Print mode when COMMTYPE=IPPS is used. |
| LRS iOS or Android APP | Optional | iOS or Android | Print submission APP for iOS and Android. Allows user discovery of printers and print submission. |
| LRS/AlertX | Optional | Windows | Provides services for resource synchronization and alerting for high availability (cluster or load balancer) environments. |

**MFPsecure/Scan Diagram:**

## Encrypted Connections Diagram:

Network transmission in green is encrypted

- 443(IPPS) TLS with signed certificate
- 161(SNMP) SNMP V3
- 5500(LRSQ) AES

SAP

Business Applications

Innovate Audit

5500(LRSQ)

5703(TCP)

5501(TCP)

VPSX

LRS/ServerX

5600(TCP)

Web Browsers

LRS/NetX

443(HTTPS)

LRS iOS or Android APP

LRS/WebConnect

443(HTTPS)

443(HTTPS)

Mobile Connector

Virtual Desktops

PDM    VSPA.EXE

515(TCP)
631(TCP)
443(HTTPS/IPPS)
5601(TCP)

XenApp

VSPA for XenApp

443(HTTPS/IPPS)
631 (TCP)

Workstations

PDM / DSR

5701(TCP)

515(LPD)
631(IPP)
431(IPPS)
5500(TCP)
5501(TCP)

Database
MS-Exchange
MS-Sharepoint
Email
File Server / Box, etc
Archive / DMS / ...

MFPsecure

MFPsecure/Print
MFPsecure/Scan

631(TCP)s

161(SNMP)
515(LPD)
631(IPP)
443(IPPS)
9100(SOK/PJL)

Printers

MFPsecure/Print client
MFPsecure/Scan client

443(HTTPS)

161(SNMP)
515(LPD)
631(IPP)
443(IPPS)
9100(SOK/PJL)

443(HTTPS), Exchange Web Services, ODBC, Etc