VOSS

VOSS Automate
Licensing and Subscriber Data Export Guide

Release 21.4

Mar 26, 2024

Legal Information

DOCUMENT ID: 20240326225851

Contents

1.   What's New

1.1.   Licensing and Subscriber Data Export Guide: Release 21.4-PB5

- VOSS-1261: Implement Simpler License Audit Logic Across the Insights and Automate Products. See: *License Counting Process*

  Added details on version 5.0.0 licensing audit command and output

- VOSS-1261: Implement Simpler License Audit Logic Across the Insights and Automate Products. See: *License Counting Details*

  Added details on version 5.0.0 licensing audit command and output

- VOSS-1261: Implement Simpler License Audit Logic Across the Insights and Automate Products. See: *License Audit Report File Details*

  Added details on version 5.0.0 licensing audit command and output

- VOSS-1261: Implement Simpler License Audit Logic Across the Insights and Automate Products. See: *Process Command Details*

  Added details on version 5.0.0 licensing audit command and output

- VOSS-1363: Add additional file in License audit zip that includes the count of Microsoft license usage. See: *License Counting Details*

  Added details to the documentation for the updated license audit zip file for Microsoft license usage.

1.2.   Licensing and Subscriber Data Export Guide: Release 21.4-PB4

- N/A

1.3. Licensing and Subscriber Data Export Guide: Release 21.4-PB3

- N/A

1.4. Licensing and Subscriber Data Export Guide: Release 21.4-PB2

- VOSS-1138: (EKB-15971: Update webex_teams SDE report). See: *Webex Teams Data Export*

  Added details on Webex Calling numbers, licenses, user management and data export (SDE) reports.

- VOSS-1138: (EKB-15973: Create Webex devices SDE export file). See: *Webex Devices Data Export*

  Added details on Webex Calling numbers, licenses, user management and data export (SDE) reports.

- VOSS-1138: (EKB-15972: Create new Webex workspaces SDE file). See: *Webex Workspaces Data Export*

  Added details on Webex Calling numbers, licenses, user management and data export (SDE) reports.

1.5. Licensing and Subscriber Data Export Guide: Release 21.4-PB1

- EKB-14921: Add entitlement profile into SDE files for Microsoft-only users (no Cisco). See: *MS Office 365 Data Export*

  Added details on entitlement profile in mso365, msteams SDE files.

- EKB-14921: Add entitlement profile into SDE files for Microsoft-only users (no Cisco). See: *MS Teams Data Export*

  Added details on entitlement profile in mso365, msteams SDE files.

- EKB-14929: Fix MS related SDE reports to use the correct data/User foreign key. See: *MS Office 365 Data Export*

  Added details on username fieldmapping.

- EKB-14929: Fix MS related SDE reports to use the correct data/User foreign key. See: *MS Teams Data Export*

  Added details on username fieldmapping.

1.6. Licensing and Subscriber Data Export Guide: Release 21.4

- N/A

2. Licensing

The VOSS Automate licensing capability enables the calculation of user, services and devices license consumption from within the Automate product as well as the generation of the audit files required to report the consumption. This comprises of two separate key processes:

1. License counting - process to calculate and record license usage in the system
2. License audit report - produces export file(s) to enable collection of the license audit data

The processes are separate so that they can run at different times and frequencies. The overall process includes automatically created and enabled schedules out of the box - to coordinate as required - see the details below.

However, if you need to run either or both of the processes manually, you will need to consider what you need. For instance, if you need to simply only update the counts (so you can view them in the admin portal), then you only need to run the license counting. If you need to refresh the counts as well as generate the audit file, then both processes will need to be run.

For Licensing v4 Guide, see: PDF

2.1. License Counting Process

The license counting process is independent from writing the file and runs on its own schedule:

- This includes overall license counts as well as which users are consuming a license in the system
- Enables the license consumption to be viewed in the system via the admin portal
- Runs daily at 1AM UTC- this schedule is created and activated automatically.
- Can also be run manually via CLI as needed outside the schedule – can choose a hierarchy to run it for (e.g just part of the system) - see: *License Counting process commands*.
- For full details on the license counting logic and output, see *License Counting Details*.

2.2. Viewing License Consumption via the Admin Portal

The results of the last license counting process can be viewed via the admin portal. This includes overall license counts as well as which users are consuming a license in the system.:

- User License status - As a **License Audit Status** field in the list view of the **User Management > Users** (`data/User`) menu. You can see this in the list view or when viewing a specific user. When viewing a specific user, the linked services details will indicate the services the user is consuming for further details. The license status field will indicate if the user is:

    - Licensed - consuming a license

    - Unlicensed - not consuming a license

    - Unknown - status has not been determined yet - typically means the user was added since the last calculation was run

    ---

    Note: This column will only show after the first run of the license-audit-service.

- Overall License counts - **License Counts** from the **About** menu (`data/LicenseAuditCounts` model).

2.3. License Audit Report

The process to generate the license audit report is independent from the counting of the licenses. This process simply takes the results of the counting process recorded and writes them to the appropriate files.

- Runs monthly at 3AM UTC on the first day of each month - this schedule is created and activated automatically.

- How the generated file(s) are handled will depend on the setup on your system - see *Distributing Licensing Reports*. This outlines the numerous options to set up the platform to automatically send files off the system to required destination(s) or alternate ways to access the files as required.

- This takes the data recorded by the license counting process above and writes it to a file

- The format of the file and the contents are outlined in *License Audit Report File Details*.

- Files are retained on the system for two years and are automatically removed at the end of this period.

The files generated provides 2 views of the data (different CSV files):

1. Anonymous - Aggregated counts and other data required for billing. The tool does not collect any data identifying users or customers on the system. This file is typically sufficient to provide VOSS for billing purposes.

2. Detailed- As above, except that it includes identifying information about the customers instead of IDs. This same data can be viewed through the admin portal as noted above. This file may need to be shared with VOSS depending on your agreement.

On the billing anniversary determined by your contract (for example, monthly or quarterly) the files required by VOSS need to be collected and provided. This can be done by the partner or via VOSS support if access is available from the partner. This is why automated delivery of the file is recommended as outlined in *Distributing Licensing Reports*.

2.4. License Counting Details

The license counting process captures the following information about license consumption in the system. This is the same data that is written to the files generated by the license audit report process.

2.4.1. License Counting Logic

Overall the system is counting licenses according to the following logic. Note a total is recorded per customer with a total for any resources above the customer level (if relevant). This data is what is available via the admin portal for the overall license counts and also used to write the license audit report files. While all columns are listed here the columns that are excluded from the anonymous file are indicated here for reference.

Column	Description
Provider	Name of the Provider Excluded from Anonymous
Reseller	Name of the Reseller Excluded from Anonymous
Customer	Name of the Customer Excluded from Anonymous
Customer pkid	PKID of the customer. A row where this is blank indicates a count for resources above the customer level. Only in Anonymous file
User Licenses	Total of the user licenses - see details below. Count is for User license consumption
Cisco MS Integrated Services	Number of Users with the VOSS integrated Cisco and Microsoft services (aka Hybrid). Included in User count above.
Standalone Devices	Total of the standalone devices - see details below.
Meeting Rooms	Total of the meeting room devices - see details below
Voss Phone Servers	Total devices configured as part of the VOSS Phone Server capability
Sites	The number of VOSS Sites that exist under the customer. Note this is only hierarchy types of site and excludes any other intermediate nodes (e.g Linked Sites)

2.4.2. Users

A user is defined as present in `data/User` below the `sys.hcs` hierarchy level. A User is defined to be licensed if they have one or more of the services associated to them as defined below. The link indicates how the `data/User` and any relevant service record are associated together to match. The condition indicates any criteria that applies to the matched service record in order to count as a licensed service. Any of the services indicated below matching will result in a user being flagged as licensed and counted. Unless otherwise indicated (e.g. more than 10 devices) the user will consume a single license regardless of how many of the services match.

- Cisco Contact Center Express (`device/uccx/Agent`) - UCCX Agent

- – Link = `username_uccx` is populated OR `userID` matches `username` of the `data/User`

- – Condition - record exists

- Cisco UCM (`device/cucm/User`) - UCM User with some service

  - – Link = `Username_cucm` is populated OR `userid` matches `username` of the `data/User` OR `mailid` matches email of `data/User`

  - – Condition:

    - * `associatedDevices` excluding CTI

    - * `device.cucm.Phone` where `ownerusername = userid`

    - * If the user has more than 10 devices,

      - · multiple licenses are counted in multiples of 10. For example:– a user with 5 phones assigned =1 license and not added to Users With More Than 10 Phones list

      - · a user with 15 phones assigned = 2 licenses and added to Users With More Than 10 Phones list

      - · a user with 30 phones assigned = 3 licenses and added to Users With More Than 10 Phones list

    - * `phoneProfiles` - not empty

    - * `associatedRemoteDestinationProfiles` - not empty

- Cisco Unity Connection (`device/cuc/User`) - User with mailbox

  - – Link = `username_cuc` is populated OR `Alias` matches `username` of the `data/User`

  - – Condition - record exists

- Cisco Webex (`device/Spark/User`) - Webex Cloud Calling User

  - – Link: `username_webex_teams` is populated OR `email` matches `email` of the `data/User`

  - – Condition - related `device/Spark/UserConfig` has `calling_pro` enabled

- MS Teams (`device/msteamsonline/CsOnlineUser`) - MS Teams Voice User

  - – Link: `username_ms_teams` is populated OR `UserPrincipalName` matches `email` of the `data/User`

  - – Condition - all must be true

    - * `accountEnabled = true`

    - * `FeatureTypes` contains `PhoneSystem` and does *not* contain `TeamsRoom` (to not count meeting rooms - covered below)

    - * `enterprisevoiceenabled = true`

- MS Exchange (`device/msexchangeonline/UserMailbox`)

  - – Link - `username_ms_365` is populated OR `UserPrincipalName` matches `email` of the `data/User`

  - – Condition - record exists

- PexIP (`device/pexip/conference`):

  - – Link - `primary_owner_email_address` matches `email` of the `data/User`

When you view the User record in the admin portal, you can see their license status but also you will see linked services, enabling you to see those linked services if the user is consuming a license. So if you don't expect a user to be consuming a license, this can be a great place to investigate and find the service(s).

2.4.3. Devices

Devices related to standalone devices that are *not* associated with a user record counted above. The logic here includes:

- Cisco UCM - Standalone phones in Cisco UCM
    - `device/cucm/Phone` instances where `ownerUserName` is blank
- Cisco Webex: - Workspaces enabled for calling in Cisco Webex
    - `device/spark/Place` where `calling.type` is not none

Note: Standalone Phones (common area phones) in MS Teams will be counted as Users today as the user record (`CsOnlineUser`) does not currently give an indication (e.g `FeatureTypes`) that is different to a normal Voice user.

2.4.4. Meeting Rooms

Devices which are identified as meeting room devices will be captured and counted here. The logic here includes:

- MS Teams - meeting room users - identified as Teams users with Meeting Room license
    - `device/msteamsonline/CsOnlineUser` with
    - `AccountEnabled` and `EnterpriseVoiceEnabled` are both True
    - `FeatureTypes` starts with 'TeamsRoom'

Note:

- Cisco Webex workspaces (both standalone and meeting room devices) are counted under the Devices section above. Future versions of the audit will likely further identify meeting room related workspaces to count these separately.
- Cisco UCM - all devices are treated under the devices section above.

2.5. License Audit Report File Details

The License Audit Report process will generate the following file types as output:

- detailed - csv file - license audit report file.
- license - Zip File - which contains the following file types:
    - anonymous - csv file - anonymous version of the license audit report file
    - anonymous `_breakdown` - csv file - anonymous file containing a few key statistics from the platform - used for support purposes
    - patch - JSON file - list of patches applied to the system as shown **About > Extended Version** - used for support purposes

– `adaptation_log` - JSON file - list of adaptations applied on the system as shown in **About > Adaptation Status** - used for support purposes.

– `.hash` for each file to validate the file

All filenames are of the format:

`vlf_<provider_name>_<host_name>_<file_type>_legacy_<YYYY-MM-DD_HHMM>`

E.g. `vlf_CS-P_VOSS_detailed_legacy_2024-03-05_1958`

2.5.1. Detailed and Anonymous License Audit Report file format

Detailed

The detailed version is a CSV file containing the hierarchy names for ease of understanding the data.

The header of the file contains metadata about the platform the file was generated on such as platform IDs, licensing info, version, and other similar data.

The main content of the file is an export of the Overall License count data as available via the admin portal. For details of the counting for each column, see *License Counting Logic*.

An example of the file:

```
#OrgID=0010O00001kPTUpQAO
#Platform ID=5e54067d116fa10046313224
#hostname=VOSS-UN-1
#Provider Name=CS-P
#Software Version=21.4
#Platform Version=21.4.0-1630252949
#Deployment Mode=Provider with HCMF
#Date Time=2022-11-19 13:11
#License Token=[Token or <license-token-not-found>]
#License Expiry=[Date-time or <license-expiry-not-found>]
#Audit Version=4.1.5
Provider,Reseller,Customer,Customer PKID,One Phone & Spark (No VM & No WebEx), \
One Phone (No VM & No WebEx & No Spark),One Phone & VM (No WebEx), \
One Phone & WebEx,Multiple Phones,Users With More Than 10 Phones, \
UCM User (No Phone & No EM & No VM & No WebEx & No SNR & No Spark), \
SNR (No Phone & No EM & No VM & No WebEx & No Spark), \
VM (No Phone & No EM & No WebEx),WebEx (No Phone & No EM), \
Spark (No Phone & No EM & No SNR & No VM & No WebEx), \
EM & Spark (No Phone & No VM & No WebEx), \
EM (No Phone & No SNR & No VM & No WebEx & No Spark), \
EM & SNR (No Phone & No VM & No WebEx & No Spark), \
EM & VM (No Phone & No WebEx),EM & WebEx (No Phone), \
Standalone Phones (No UCM User),Standalone WebEx (No UCM User), \
Standalone Voicemail (No UCM User),Contact Center Enterprise, \
Contact Center Express,Standalone Spark (No UCM User),Public Sector, \
Inactive Billing,Standalone Analog Ports (No UCM User), \
Standard Users with Spark,MS Teams (No Voice),MS Teams & Voice, \
MS Teams & Voice & Exchange,MS O365 User (no Teams), \
Cisco and MS Integrated Service,Multi-vendor Users,PexIP only, \
Phone Server Phones,Site Count
```

(continues on next page)

```
Provider_01,Reseller_01,Customer_01,6197a2522f7ab2c5dbb8f2aa,3,6,2,6,13,3,6,4,4,2,5,3,4,
↪6,7,6,5,2,3,2,2,12,Y,Y,4,0,0,0,0,0,0,0,0,0,2
Provider_01,Reseller_01,Customer_02,6197a2572f7ab2c5dbb8f2fc,0,4,6,7,0,0,0,0,0,1,4,1,1,2,
↪1,3,2,1,1,1,1,8,Y,N,2,0,0,0,0,0,0,0,0,0,1
```

Note: For licensing:

- `OrgID` is the account id from the Customer Portal: **Company Information**.

Anonymous

Filename format:

`vlf_<provider_name>_<host_name>_anonymous_legacy_<YYYY-MM-DD_HHMM>.csv`

The anonymous version of the file contains a slightly modified version of the detailed file removing the hierarchy names and replacing it with a customer pkid. The rest of the file content is the same as the detailed version outlined above. For more details on the hierarchy differences - see *License Counting Logic*. Here is an example of the anonymous file:

```
#OrgID=0010O00001kPTUpQAO
#Platform ID=5e54067d116fa10046313224
#hostname=VOSS-UN-1
#Provider Name=CS-P
#Software Version=21.4
#Platform Version=21.4.0-1630252949
#Deployment Mode=Provider with HCMF
#Date Time=2022-11-19 13:11
#License Token=[Token or <license-token-not-found>]
#License Expiry=[Date-time or <license-expiry-not-found>]
#Audit Version=4.1.5
Customer PKID,One Phone & Spark (No VM & No WebEx),One Phone (No VM & No WebEx & No
↪Spark), \
One Phone & VM (No WebEx),One Phone & WebEx,Multiple Phones,Users With More Than 10
↪Phones, \
UCM User (No Phone & No EM & No VM & No WebEx & No SNR & No Spark), \
SNR (No Phone & No EM & No VM & No WebEx & No Spark),VM (No Phone & No EM & No WebEx), \
WebEx (No Phone & No EM),Spark (No Phone & No EM & No SNR & No VM & No WebEx), \
EM & Spark (No Phone & No VM & No WebEx),EM (No Phone & No SNR & No VM & No WebEx & No
↪Spark), \
EM & SNR (No Phone & No VM & No WebEx & No Spark),EM & VM (No Phone & No WebEx), \
EM & WebEx (No Phone),Standalone Phones (No UCM User),Standalone WebEx (No UCM User), \
Standalone Voicemail (No UCM User),Contact Center Enterprise,Contact Center Express, \
Standalone Spark (No UCM User),Public Sector,Inactive Billing, \
Standalone Analog Ports (No UCM User),Standard Users with Spark,MS Teams (No Voice), \
MS Teams & Voice,MS Teams & Voice & Exchange,MS O365 User (no Teams), \
Cisco and MS Integrated Service,Multi-vendor Users,PexIP only,Phone Server Phones, \
Site Count
6197a2522f7ab2c5dbb8f2aa,3,6,2,6,13,3,6,4,4,2,5,3,4,6,7,6,5,2,3,2,2,12,Y,Y,4,0,0,0,0,0,0,
↪0,0,0,2
```

```
6197a2572f7ab2c5dbb8f2fc,0,4,6,7,0,0,0,0,0,1,4,1,1,2,1,3,2,1,1,1,1,8,Y,N,2,0,0,0,0,0,0,0,
↪0,0,1
```

Notes on Vendor Services

- Cisco
    - Phones (basically anything that is a phone in UCM) - hardphones, soft clients, mobility clients, ATAs (analog), SCCP analog ports. Excludes other Analog gateway ports MGCP/H323 as these can't be associated to a user
    - A user's associated devices as well as a phone's ownerUserName are used to determine if a phone belongs to the user or is standalone
    - EM Profile = (device/cucm/deviceprofile associated to the UCM user)
    - VM (device/cuc/User)
    - Webex (device/webex/User) - relates to Webex Meetings
    - SNR (device/cucm/RemoteDestinationProfile)
    - Spark - Webex Teams (device/spark/User)
    - Contact Center - UCCX/UCCE
    - In the case of these services, only instances at the Site level are counted.
- Microsoft
    - O365
    - MS Teams
    - Exchange
    - Meeting Rooms
- PexIP
    - Conferencing
- VOSS Phone Server

Note: Refer to the detailed notes following the table below for additional information.

Audit Details Table

To download this table as a CSV sheet, refer to the HTML version of this document.

Table 1: Licensing Audit Details Sheet

Column	Description	Definition	VOSS License
Customer PKID	Customer hierarchy pkid on the system	PKID of the data/HierarchyNode for the Customer in the system	N - Info
One Phone (No VM & No WebEx & No Spark)	Number of Subscribers with one device (Hard or Soft Phone) but without VM, WebEx or Webex App Services.	device/cucm/user with 1 Phone VM=no Webex=no Spark=no no specific spark check but flows out the count below that takes the spark = yes	Y - Essential
One Phone & Spark (No VM & No WebEx)	Number of Subscribers with one device (Hard or Soft Phone) and Webex App service but without VM or WebEx Meeting Services.	device/cucm/User with 1 Phone VM=no Webex=no Spark=yes	Y - Premium
One Phone & VM (No WebEx)	Number of Subscribers with one device (Hard or Soft Phone) and VM but without WebEx Services.	device/cucm/User 1 Phone VM=yes Webex=no	Y - Premium
One Phone & WebEx	Number of Subscribers with one device (Hard or Soft Phone) and WebEx.	device/cucm/User 1 Phone Webex=yes	Y - Premium
Multiple Phones	Number of Subscribers with more than one device (Hard or Soft Phone). No checks for other services since multiple devices means standard which covers all other services anyway	device/cucm/User More than 1 Phone. 1 license for every 10 phones (2-10 phones = 1 license, 11-20 = 2 licenses	Y - Premium
Users With More Than 10 Phones	Number of Subscribers with more than 10 devices (Hard or Soft Phone) so they are consuming more than 1 license.	Subset of multiple phones users with >10 phones	N - Info
UCM User (No Phone & No EM & No VM & No WebEx & No SNR & No Spark)	Number of Subscribers without any services and without an Extension Mobility Profile. Likely extra LDAP synced users, etc.	device/cucm/User 0 Phones 0 EM Profiles VM=no Webex=no SNR=no	N - Info
SNR (No Phone & No EM & No VM & No WebEx & No Spark)	Number of Subscribers that only have the SNR service enabled.	device/cucm/User 0 Phone 0 EM Profile VM=no Webex=no SNR=yes (RDP configured)	Y - Essential

continues on next page

Table 1 – continued from previous page

Column	Description	Definition	VOSS License
VM (No Phone & No EM & No WebEx)	Number of Subscribers (so has UCM user) that only have the VM service enabled.	device/cucm/User 0 Phone 0 EM Profile VM=yes Webex=no	Y - Premium
WebEx (No Phone & No EM)	Number of Subscribers (has UCM user) that only have the WebEx (Meetings) service enabled.	device/cucm/User 0 Phone 0 EM profile Webex=yes	Y - Premium
Spark (No Phone & No EM & No SNR & No VM & No WebEx	Number of Subscribers (has UCM user) that only have the Spark (Webex app) service enabled.	device/cucm/user 0 Phone 0 EM Profile Spark = yes	Y - Premium
EM & Spark (No Phone & No VM & No WebEx)	Number of Subscribers with an Extension Mobility profile and Spark (Webex App) service but without VM or WebEx Services.	device/cucm/User 1 or more EM profiles 0 Phone VM=no Webex=no Spark=yes	Y - Premium
EM (No Phone & No SNR & No VM & No WebEx & No Spark)	Number of Subscribers with an Extension Mobility profile but without any device or other services.	device/cucm/User 1 or more EM profiles 0 Phone VM=no Webex=no Spark=no	Y - Essential
EM & SNR (No Phone & No VM & No WebEx & No Spark)	Number of Subscribers with an Extension Mobility profile and Remote Destination Profile but without devices or services.	device/cucm/User 1 or more EM profiles SNR=yes (RDP configured) 0 Phone VM=no Webex=no Spark=no	Y - Essential
EM & VM (No Phone & No WebEx)	Number of Subscribers with an Extension Mobility profile and VM but without devices or WebEx service.	device/cucm/User 1 or more EM profiles 0 Phone VM=yes Webex=no	Y - Premium
EM & WebEx (No Phone)	Number of Subscribers with an Extension Mobility profile and WebEx service but without devices.	device/cucm/User 1 or more EM profiles 0 Phone Webex=yes	Y - Premium
Standalone Phones (No UCM User)	Number of phones in the system that are not assigned to a Subscriber.	device/cucm/Phone instances not associated to any users through CUCM user associated devices OR Ownerid on the Phone	Y - Essential License for any devices above agreed standalone allocation (if relevant)

continues on next page

Table 1 – continued from previous page

Column	Description	Definition	VOSS License
Stan-dalone WebEx (No UCM User)	Number of standalone WebEx Meetings accounts in the system (no corresponding UCM user).	device/webex/user where no device/cucm/user exists	Y - Premium
Stan-dalone Voicemail (No UCM User)	Number of VM only accounts in the system (no corresponding UCM user).	device/cuc/user where no matching (same userid) device/cucm/user exists	Y - Premium
Contact Center Enterprise	Number of Contact Center Enterprise users in the system (UCCE).	device/ccdm/user - excluded from other UCM User columns	Y - Contact Center license
Contact Center Express	Number of Contact Center Express users in the system (UCCX).	device/uccx/Agent - excluded from other UCM User columns	Y - Contact Center license
Stan-dalone Spark (No UCM User)	Number of standalone Spark (Webex App) users in the system at any level. This means a Spark (Webex App) user without a corresponding UCM user.	device/spark/user where no device/cucm/user exists	Y - Premium
Public Sector	Flag that indicates if the Customer has been flagged as a public sector customer.	Flag on the customer - public sector.	N - Info - public sector pricing and customer list agreement
Inactive Billing	Flag that indicates if the Customer marked inactive	Flag on customer - inactive billing	N - Info
Stan-dalone Analog Ports (No UCM User)	Number of Analog phones in the system that are not assigned to a Subscriber.	device/cucm/Phone record with product = Analog Phone Only covers SCCP analog ports since they show up as phones (ANXXXX device-name)	N - Info, included in Standalone Phones count. So just for info
Standard Users with Spark	Number of Subscribers with multiple devices, other services (e.g VM and/or WebEx) and Spark (Webex App) service.	All device/spark/user users minus other spark columns (one device and standalone). Note - this is not additive, it is the subset of all the standard counts above that have Spark	N - Info, included in Spark counts above above)

continues on next page

Table 1 – continued from previous page

Column	Description	Definition	VOSS License
MS Teams (No Voice)	Number of Users licensed for Teams but does not have Enterprise Voice enabled - e.g Messaging, Conference, etc. Only appears if licensed in O365 - FeatureType includes some value(s) other than PhoneSystem. If the FeatureTypes list is empty or null, that record is not counted as a license regardless of the license type. Only counted if user does not also have Cisco	device/msteamsonline/CsOnlineUs Record exists AND accountEnabled = true AND EnterpriseVoiceEnabled=false AND FeatureTypes does NOT contain PhoneSystem. Any level in the hierarchy (not site only). NOTE - if featureType is blank it is excluded from the count	N - Info (may need to review as time goes on)
MS Teams & Voice	Number of Microsoft Teams users under the Customer who are enabled for Enterprise Voice. If FeatureType includes PhoneSystem and EnterpriseVoice is enabled. Only counted if user does not also have Cisco	device/msteamsonline/CsOnlineUs exist AND accountEnabled = true AND FeatureTypes contains PhoneSystem AND enterprisevoiceenabled = true AND device/msexchangeonline/UserMai NOT exists Any level in the hierarchy (not site only)	Y - Premium
MS Teams & Voice & Exchange	Number of Microsoft Teams users under the customer who are enabled for Enterprise Voice and have Exchange mailboxes. FeatureType includes PhoneSystem and Exchange Mailbox exists for the user. Only counted if user does not also have Cisco	device/msteamsonline/CsOnlineUs exist AND accountEnabled = true FeatureTypes contains PhoneSystem AND enterprisevoiceenabled=true AND device/msexchangeonline/UserMai exists Any level in the hierarchy (not site only)	Y - Premium
MS O365 User (no Teams)	Number of Microsoft Office 365 users that are licensed but license does not include Microsoft Teams. Only counted if user does not also have Cisco	device/azureadonline/MsolUser OR device/msgraph/MsolUser exist AND Licensed=true AND Csonlineuser does not exist Any level in the hierarchy (not site only)	N - info
Cisco and MS Integrated Service	Number of Subscribers under the Customer with the VOSS integrated Cisco and Microsoft services. (aka Hybrid). Provides a view of users with integrated multi-vendor via VOSS feature vs non-integrated multi-vendor (next column).	data/User where mvs_hybrid_status is not blank Counted in the MSFT/Cisco counts above - so indicated relevant users for additional Hybrid license.	Y - Incremental Hybrid SKU

continues on next page

Table 1 – continued from previous page

Column	Description	Definition	VOSS License
Multi-vendor user	Number of Subscribers under the Customer with devices from multiple vendors, e.g. Cisco and Microsoft. (excluding Hybrid). Typically counted as part of the Cisco numbers if they have Cisco as one service.	User that falls into multiple license columns - see multi-vendor notes below the table Not integrated just parallel services for the user (i.e not counted in the integrated column above above).	N - info
PexIP only	Number of users under the Customer only provisioned with Pexip Conference service.	device/pexip/conference Record exists and email does not match a licensed user (Cisco or MS).	Y - Premium
Phone Server Phones	Number of VOSS Phone Server phones set up under the Customer.	data/PRS_MultiVendorPhone_D. record exists for each phone	Y - Phone Server (See comment below)
Site Count	Number of Sites under the customer	Count of data/HierarchyNode where type = Site and under Customer	N - info but used for some contracts

Notes on Audit Details Table

Microsoft columns detailed notes:

- Are only counted if the user only has Microsoft services. For instance: if the user has Cisco and Microsoft, then the user is included in the relevant Cisco column and excluded from the Microsoft count.

Phone detailed notes:

- Phones (anything that is a phone in UCM) - hard phones, soft clients, mobility clients, ATAs (analog), and SCCP gateway ports

    - CTI Ports are excluded from the counts (these do not consume a license)

    - Spark Remote Device is excluded from the user count if they have more than one phone (i.e. Spark Remote Device is not their only phone).

- A phone being associated with a user for the license count is driven by:

    - Association to user driven by the Subscriber/UCM User setting for associated devices (aka controlled devices). This is how VOSS associates the device with the user in the system (e.g relation Subscriber, self-service, etc).

    - ownerID on the Phone (in the event the association above is not set up). This is to cover cases when overbuild might have been used and association is not set up correctly per the above.

    - If the phone does not fall into either of the above, then it is counted as a Standalone Phone.

Note: If the phone has an ownerID set but that UCM user is not in the VOSS system (i.e no device/cucm/User records for the user - e.g not synced in, etc) then the ownerID is ignored and it is counted as a standalone phone

Spark detailed notes:

- UCM user at site that has a Spark user somewhere (including intermediate node beneath site) - then that will initiate the search for Spark and it will look up/down as needed and count as a premium user or other subscriber permutation. E.g. UCM User at site and Spark user at site = appropriate Subscriber column. UCM User at site, Spark user at Customer = appropriate Subscriber column Spark user without a UCM user at site level - then search initiated by Spark.

- If the UCM user is at the same level or lower, then it will count as premium. If UCM user higher or non-existent, then counts as standalone Spark. E.g. Spark User at customer level, UCM user at customer level = Premium. Spark User at site, UCM user at customer = Standalone Spark.

Multi-vendor column notes:

- Counted if the user has more than one of:

    - `device/cucm/User`

    - `device/cuc/User`

    - `device/cucm/Phone`

    - `device/webex/User`

    - `device/spark/User`

    - `device/ccdm/Agent`

    - `device/uccx/Agent`

    - `device/msgraph/MsolUser`

    - `device/msteamsonline/CsOnlineUser`

    - `device/azureadonline/MsolUser`

    - `device/pexip/Conference`

Acronyms

- UCM: Unified Communications Manager

- UCCX: Unified Contact Center Express

- UCCE: Unified Contact Center Enterprise

- EM: Extension Mobility profile

- VM: Voicemail

- SNR: Single Number Reach

- Public Sector: boolean flag on Customer to indicate public sector customer. Can be set with an API call or on the GUI Customer form.

- MS O365: Microsoft Office 365

- MS Teams: Microsoft Teams

2.6. Process Command Details

As highlighted in the overview, both the license counting and license audit report processes will automatically run regularly on a schedule. In the event a manual run of the license counting or license audit report process is required (adhoc data between schedules, or schedule failure), the commands can be run via the VOSS CLI.

This section provides additional details of actions and behavior of the processes as well the details of the commands to run them manually as needed.

2.6.1. License Counting process commands

This will only update the license counts captured (`data/LicenseAuditCounts`) and visible in the admin portal **About > License Counts** menu. If you want to generate the license audit report, then that process will also need to be run.

When the command runs (either manual or via schedule) the following behavior is invoked:

- An entry will exist in the counts for each customer in the system - the count record is created at the customer level in the hierarchy. That record is updated during each run of the audit while new records are created for any new customers since the last audit. The record is removed when the customer is removed from the product.

- Any resources (Users, devices, etc) above the customer level will be captured in an entry at the provider level then handled similarly to the customer record above.

- An error will be generated if no provider or customer hierarchy exists in the system

- There is a "cool down" period of 3 minutes during which the command cannot be re-run.

- There is a time-out period of 120 minutes after which a running command execution will stop - for situations where an error occurs. A log entry is also added in this case.

To run this command via the platform CLI:

```
voss license-audit-counting [--from-hierarchy-pkid <optional hierarchy pkid>]
```

You can optionally provide a hierarchy pkid for the license counting process to run at (e.g for a specific customer, or reseller and its customers).For instance

```
voss license-audit-counting --from-hierarchy-pkid 64d409101a27f48dbce445b7
```

In this case, only the customer record(s) under the hierarchy with the pkid `64d409101a27f48dbce445b7` will be processed. This is useful if you are testing or only need to update a specific hierarchy level between schedules.

Example oputput:

```
$ voss license-audit-counting
Executing the License Audit counting service...
The License Audit counting command took '7.3950326209997' seconds to execute.
The License Audit counting service completed successfully.
```

2.6.2. License Audit Reporting process commands

This will only export to file the current license counts captured (`data/LicenseAuditCounts`) and visible in the admin portal **About > License Counts** menu. If you want to update the counts before you generate the export file, then the license count process should be run first.

Important: Since a data export can take time, the **voss export** command can only be run in a `screen` session. First run **screen** and then **voss export** and its parameters.

To run this command via the platform CLI:

```
voss export type license_audit_legacy
```

When the command runs (either manual or via schedule) the behavior is as outlined in *License Audit Report* in terms of generating and handling the files.

Example output:

```
$ voss export type license_audit_legacy
Starting license_audit export_legacy, please wait...
Completed license_audit export, created vlf_CS-P_VOSS_license_legacy_2024-02-21_0553.zip,
↪ vlf_CS-P_VOSS_detailed_legacy_2024-02-21_0553.csv.
```

2.7. Distributing Licensing Reports

As part of the license reporting process, the product has multiple options to enable sending the generated license report files automatically and/or to make them available via the admin portal. This simplifies the collection of the files for internal use as well as sending to VOSS as required. It is highly recommended that at least one of the options is set up to make the process of file collection/sharing easier in the environment.

The easiest and most recommended approach to sharing the file with VOSS is to utilize the **VOSS Cloud Licensing Service**. This process will register your platform which streamlines support engagement but also will automate the license audit collection required. This can be used in conjunction with the other automatic file sending options for internal use as needed. However if this is not possible, there are a number of other options to still streamline getting the file which can then be sent on to VOSS.

As a reminder, for internal use, the license audit data can be reviewed via the admin portal and does not require the files to be viewed. Further details are available in *License Counting Details*.

In order to set up automated handling of the generated license audit report, the summary of steps are:

1. Decide the destination(s) and the file for each destination

2. Set up the destinations and related configuration

3. Validate that the destinations are utilized when the file is generated (via schedule or adhoc).

In the event that it is required, you can also access the files via SFTP to the platform:

- Connect to the primary node IP using SCP or SFTP on port 22.

- The extracts will be located in the `media/data_export/license/` directory.

- Collect the appropriate file(s)

2.7.1. Configure License Delivery

System administrators with the required permissions (default is sysadmin) have the option from the **Licensing** menu to configure the delivery of the audit data by means of one or more of the following delivery methods and combine them into one or more **File Transfer Destinations**. These destinations can then be used to transfer the audit data.

The delivery method configuration can be accessed from the menus:

- **VOSS Cloud Licensing Service** (recommended)

    - Automatically upload license audit files to the VOSS Customer Portal - see: *VOSS Cloud Licensing Service*.

- **Email Destinations**

    - Requires an SMTP server configured on the **SMTP Server** menu. (*Add a SMTP Server*)

    - Destination name, SMTP server, sender, addressee and email subject are mandatory.

    - Options can be input for email addressees, otherwise the addressee is the sender.

- **File Destinations**

    - Allows for data files to be stored in the database and downloaded via the **Audit Report Files** menu.

    - A mandatory **Name** at either the sys hierarchy level or provider hierarchy level is added to define the file destination.

    - If this destination is used, as an instance of the **File Transfer Destinations**, the **Audit Report Files** menu shows the list of data files at the specified hierarchy level. Files on the system starting with vlf are listed here.

        Note: If needed, the files can be deleted from the list, but this action does not remove files saved to the file system.

        To download the files, choose **Export** > **JSON** from the menu bar. The export will be a .zip file with a FILES directory containing all the files selected in the list view.

- **HTTP Destinations**

    - Destination name, hostname, HTTP method and URL endpoint must be provided.

    - Options are available for user credentials, port, a secure connection and a client certificate.

- **SFTP Destinations**

    - Destination name, hostname and username is mandatory

    - Options are available for port, user password and destination directory

- **Web Proxies**

    - Proxy setup for delivery methods using web proxies - see: *Set up a Web Proxy for Licensing Delivery*.

When the required methods have been configured, the scheduled audit data collection can also deliver the data files by these methods.

Workflow steps:

1. Set up one or more delivery method destinations listed above.

2. Combine configured delivery method destinations into one or more file transfer destinations (**File Transfer Destinations** menu).

3. On the **Settings** menu:

   - Configure one or more settings instances that combines a file transfer destination and a file format and save the settings.

   - The **File format** options correspond with the available audit report file types.

     For details on the format and contents, refer to the Licensing and Subscriber Data Export Guide.

     - `Anonymous CSV` (file format: `vlf_<provider_name>_<host_name>_anonymous_legacy_<YYYY-MM-DD_HHMM>.csv`)

     - `Anonymous ZIP` (file format: `vlf_<provider_name>_<host_name>_license_legacy_<YYYY-MM-DD_HHMM>.zip`)

       Contains `<YYYY-MM-DD_HHMM>_license` directory with files of format:

       * `vlf_<provider_name>_<host_name>_anonymous_legacy_<YYYY-MM-DD_HHMM>.csv`

       * `vlf_<provider_name>_<host_name>_anonymous_legacy_<YYYY-MM-DD_HHMM>.csv.hash`

       The files with `_breakdown_` in the name refer to Microsoft license usage.

       * `vlf_<provider_name>_<host_name>_anonymous_breakdown_legacy_<YYYY-MM-DD_HHMM>.csv`

       * `vlf_<provider_name>_<host_name>_anonymous_breakdown_legacy_<YYYY-MM-DD_HHMM>.csv.hash`

       Additional files:

       * `vlf_<provider_name>_<host_name>_adaptation_log_legacy_<YYYY-MM-DD_HHMM>.json`

       * `vlf_<provider_name>_<host_name>_adaptation_log_legacy_<YYYY-MM-DD_HHMM>.json.hash`

       * `vlf_<provider_name>_<host_name>_patch_legacy_<YYYY-MM-DD_HHMM>.json`

       * `vlf_<provider_name>_<host_name>_patch_legacy_<YYYY-MM-DD_HHMM>.json.hash`

     - `Detailed CSV` (file format: `vlf_<provider_name>_<host_name>_detailed_legacy_<YYYY-MM-DD_HHMM>.csv`)

   - More than one combination of destination and file format can be set up if needed.

   - An option is available to test the delivery of sample dummy data from an instance of the settings, in other words, delivery to the configured destinations.

4. At the scheduled collection date of the system or when the command is run manually on the platform CLI, the files are then:

   - saved to the platform filesystem (see Licensing and Subscriber Data Export Guide)

   - transferred to destinations and with methods according to the configured **Settings** combination(s) of: file transfer destination and file format

   - if the **File Destinations** destination is used:

     - available for export on the GUI from the **Audit Report Files** menu

     - an entry is shown in the transaction log (*data/File save* with either *succeeded* or *failed*)

If it's easy, on the bullet list of destinations, just stick VOSS Cloud Licensing Service first in the list and indicate it is the recommended set up.

2.7.2. VOSS Cloud Licensing Service

In order to automate the retrieval of the VOSS license audit files from the system to deliver them to VOSS as required, the files can automatically be uploaded to the VOSS Customer Portal.

The integration and automation is carried out by:

- Capturing and activating customer organization details on VOSS Cloud Licensing Service from VOSS Automate:

    - *Set Up the VOSS Cloud Licensing Service*

    - *Set up a Web Proxy for Licensing Delivery*

- Automatic inclusion upload of license audit files to the VOSS Cloud Licensing Service when the system runs an internal schedule to generate monthly license reports.

    - *License Counting Process*

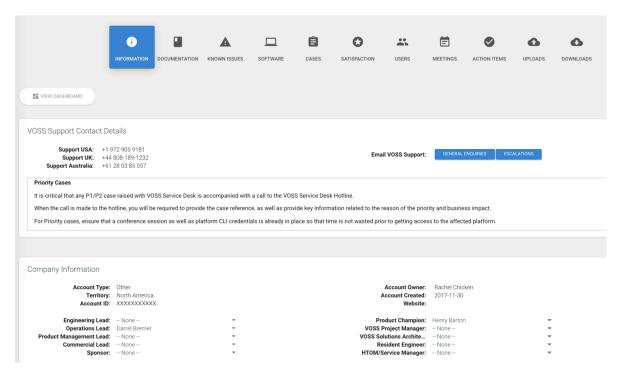## 2.7.3. Set Up the VOSS Cloud Licensing Service

VOSS Automate provides options to set up your VOSS Cloud Licensing service. The system registers your VOSS Cloud Licensing Service when saving the form.
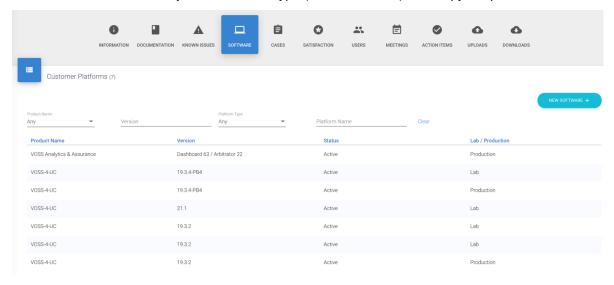
Before you start

1. Open these ports to communicate with the VOSS Customer Portal:

    - Default HTTP: port 80

    - Default HTTPS: port 443

        See Network Communications External to the Cluster in the Installation Guide.

2. Add the host name to an allowlist for trusted servers: platform.voss-solutions.com

3. Obtain license details for your organization from the **VOSS Customer Portal**, at voss.portalshape.com/organisations:

- On the **Information** tab, locate and copy your **Account ID**.

- On the **Software** tab, identify the installation type (Lab or Platform), and copy the platform name.

To add and activate the license

1. Log in to the Admin Portal as a high-level administrator (system admin or above).

2. Go to **Administration Menu > Licensing > VOSS Cloud Licensing Service**.

3. In the **Organization ID** field, enter the account ID you obtained from the VOSS Customer Portal.

4. In the **Customer account information** field, enter the platform name you obtained from the VOSS Customer Portal (or enter a new server name) to identify your VOSS Automate installation.

5. Choose your **Installation Type**, either `Lab` or `Production`, as obtained from the VOSS Customer Portal.

6. At the **File format** drop-down, choose your file format. The default, `Anonymous ZIP`, includes a checksum hash.

   See also the Data Export Types section in the Licensing and Subscriber Data Export Guide.

7. Choose whether to enable **File Upload Active**.

8. If a web proxy is required, ensure that it is set up on the **Web proxy** menu and choose it from the drop down.

   For web proxy setup, see *Set up a Web Proxy for Licensing Delivery*.

9. Click **Save**.

Note:

- Save will fail if no internet connection can be established to the VOSS Cloud Licensing Service.

- Once the configuration is saved, the connection to the VOSS Cloud Licensing Service can be tested through the **Test Connection** actions on the form when investigating failures to upload license data files.

- In the unlikely event that it is required to change the **Organization ID** associated with the platform, it is possible to modify the instance, which will attempt to re-register the platform with the VOSS Cloud Licensing Service. A failure will rollback the configuration to the previous state.

2.7.4. Add a SMTP Server

This procedure adds a SMTP server at a hierarchy level.

Prerequisites:

- Enable email in the Global Settings (Email tab).

Perform these steps:

1. Log in to the Admin Portal.

2. Choose the relevant hierarchy.

   Note: Configure the SMTP server at the hierarchy where you want to allow VOSS Automate to send email messages.

   You may only set up one SMTP server at each hierarchy level. The SMTP server will be available at the current hierarchy and below. For example, for a SMTP set up at a specific customer, the sites below that customer can use that SMTP server.

   ---

3. Go to (default menus) **Apps Management > SMTP Server**.

4. Click the toolbar Plus sign (+) to add a new SMTP server.

5. On the **SMTP Server** form, fill out details for the new SMTP server in the form fields:

Field	Description
Name	The SMTP server name.
Description	A description for the email account.
Port	The port number.
Secure	Relevant only for SSL connections to the SMTP server. Select the checkbox (enable) to use the SSL protocol for connections to the SMTP server. Default is disabled (checkbox is left clear), for TLS and unsecure logins to the SMTP server.
Username	The username credential for establishing a connection to the SMTP server.
Password	The password credential for establishing a connection to the SMTP server.

6. Save your changes.

Related Topics

- Email in the Core Feature Guide
- Global Settings in the Core Feature Guide

2.7.5. Set up a Web Proxy for Licensing Delivery

If your licensing delivery method configuration includes a destination that allows for the selection of a web proxy, the proxy setup can be added from the **Web Proxies** menu.

Add a web proxy to capture its connection details in the partner deployment.

1. From the menu, add an instance and complete the necessary fields:

   - Name
   - Web protocol (http/https)
   - Proxy protocol (http)
   - Proxy address
   - Proxy port
   - Username
   - Password

2. Click **Save**.

The web proxy **Name** will be available to select on file transfer destination input forms that have **Web proxy** drop downs, for example **VOSS Cloud Licensing Service**.

2.8. Troubleshooting and Error Handling

After the monthly schedule is run, a check is carried out for the generated report. If the report was generated successfully, no messages are sent and no notifications are generated. If the report was not generated successfully, a number of notification methods are available:

- CLI login or health check. The message shows on the CLI console when logging in or when typing the **health** command:

  ```
  LICENSE REPORT: FAILED - Please run 'voss export type license_audit'
  ```

  The command to execute varies according to the release and license version:

  - Run: `voss export type license_audit`

  This message will continue to show until the report is generated successfully by running the command shown in the message.

- Email Notification

  If email notification is configured, a notification is also sent to the configured address after the check fails. Refer to the **notify emailrelay** and **notify add** commands in the Platform Guide. (For example, `notify add error mailto:sysadmin@mycompany.com`)

  The message contains:

  ```
  ERROR: License file generation failed
  The license audit report scheduled for <month> <year> was not successful.
  Please contact your VOSS account manager.
  ```

- SNMP Trap

  If SNMP is configured, a SNMP trap will be sent upon failure. An example SNMP trap that is generated when the report fails to run is show below - <month> <year> are variables in the example:

  ```
  May 23 02:01:00 robot-slave snmptrapd[18891]: 2018-05-23 02:01:00 <UNKNOWN>
  [UDP: [192.168.100.3]:11814->[192.168.100.25]:162]:
  #012iso.3.6.1.2.1.1.3.0 = Timeticks: (207758) 0:34:37.58
  #011iso.3.6.1.6.3.1.1.4.1.0 = OID: iso.3.6.1.2.1.88.2.0.1
  #011iso.3.6.1.2.1.88.2.1.1.0 = STRING:
  "ERROR: License file generation failed"
  #011iso.3.6.1.2.1.88.2.1.3.0 = STRING:
  "The license audit report scheduled for <month> <year> was not successful.
  #012Please contact your VOSS account manager. "
  #011iso.3.6.1.2.1.88.2.1.5.0 = INTEGER: 1
  #011iso.3.6.1.2.1.1.5.0 = STRING: "VOSS"
  ```

- Action on failure

  In the case of a schedule failure, you should attempt to run the license audit by logging into the VOSS CLI and running the commands as detailed in the section Manual Command Execution above. If it continues to fail, then please raise a VOSS support ticket and contact your VOSS Account Manager or Global Services representative. If left to not run, this can lead to billing issues at reconciliation time, so it is best to ensure that it is running regularly as expected and address issues when it is not.

3. Subscriber Data Export

3.1. Introduction

The Subscriber Data Extract is a capability to provide an adhoc or scheduled basic data feed via the generation of a set of files.

The content of the files is settings around Subscribers and other key services in order to support billing/expense management operations and is not intended as a general data feed.

Additional fields or files may be added to the collection over time via the roadmap, so any planned file consumption should take that into account to minimize impact.

3.1.1. Data Export Overview

The **voss export** command is used to carry out a bulk data export from the VOSS Automate system database. The exported data can for example be imported into a warehouse.

Important: Since a data export can take time, the **voss export** command can only be run in a `screen` session. First run **screen** and then **voss export** and its parameters.

Type **voss export help** for details.

The data extract schedule can be managed with the **schedule** command. For details on the use of the command, see: *Scheduling*. Since bulk data exports can typically take more than an hour on a scale system, it is recommended to schedule this task instead of running it manually from the console.

The export file format is JSON as per RFC 7159. For details on the filename, format and contents of the export files, refer to the Data Export Types topic in the Appendices.

The **voss export** command takes a `type` or `group` parameter to indicate the type of data to export.

The following are values of the `group` parameter:

- `subscriber`
- `license`

For example:

voss export group subscriber

```
platform@VOSS:~$ voss export group subscriber
Starting subscriber group export consisting of analogue_line_mgcp,
 analogue_line_sccp, call_pickup_group, contact_center_enterprise,
 contact_center_express, customer, extension_mobility, fmc,
 hunt_group, line, phones, site, subscriber, webex_teams, please wait...
Starting analogue_line_mgcp export, please wait...
Completed analogue_line_mgcp export,
 created 2019-09-30_0859_analogue_line_mgcp.json.gz.
[...]
```

3.2. Data Export Commands

3.2.1. Subscriber Data Export Command

Note: The command **voss subscriber_data_export** is equivalent to **voss export group subscriber**.

Important:

- To optimise performance:
  - On a unified node topology, run and schedule the data export command from the *secondary* database server if possible.
  - On a modular topology, run and schedule the data export command from any *application* server.
- Since a data export can take time, the **voss subscriber_data_export** and **voss export** commands can only be run in a screen session. First run **screen** and then **voss export** and its parameters. See also: *Using the screen command*.
- Since the data export command runs database queries, it is recommended that the data exports be scheduled. Refer to the topic on scheduling for details and syntax.

  for example:

  schedule add subscriber_export voss export group subscriber

  schedule time subscriber_export weekly 1

  Best practices for scheduling to consider, are:
  - Individual report exports should be scheduled in a serial manner so that they do not overlap and result in a high database load.
  - For resilience:
    * Stagger the schedule based on how long it is expected to run - in accordance with the number of subscribers in the database.
    * For better failover support, schedules can be created on all active Unified Nodes. This requires a more complex schedule staggering and collection management.
    * For simplified schedule staggering and the export collection management, schedules can be created and staggered on a single Unified Node. This option but requires a manual re-schedule in the case of node failover.

More than one `type` parameter can be specified for the command by using the `type` parameter for each. For example:

voss export type line type site.

The `type` parameter values by `subscriber` group are listed below, as well as a reference to the content details:

- `analogue_line_mgcp` (*Analogue line MGCP Data Export*)
- `analogue_line_sccp` (*Analogue Line SCCP Data Export*)
- `call_pickup_group` (*Call Pickup Group Data Export*)
- `contact_center_enterprise` (*Contact Center Enterprise Data Export*)
- `contact_center_express` (*Contact Center Express Data Export*)
- `customer` (*Customer Data Export*)
- `extension_mobility` (*Extension Mobility Data Export*)
- `fmc` (*FMC Data Export*)
- `hunt_group` (*Hunt Group Data Export*)
- `hybrid` (*Hybrid Data Export*)
- `line` (*Line Data Export*)
- `ms_o365` (*MS Office 365 Data Export*)
- `ms_teams` (*MS Teams Data Export*)
- `ms_exchange` (*MS Exchange Data Export*)
- `pexip_conference` (*Pexip Data Export*)
- `phones` (*Phones Data Export*)
- `site` (*Site Data Export*)
- `subscriber` (*Subscriber Data Export*)
- `voss_phone_servers` (*VOSS Phone Servers Data Export*)
- `webex_teams` (*Webex Teams Data Export*)

The export file directory and file format of the `subscriber` group is:

- directory: `media/data_export/<YYYY-MM-DD>`
- file naming format: `<YYYY-MM-DD_HHMM>_<type>.json.gz`

For `subscriber` group files:

- A retention policy of 30 days is in place. After each successful extraction of the data, any extract files 31 days old or older will be removed.
- If an export contains no data, a JSON file will contain an empty JSON list: `[]`.

Example:

`media/data_export/2018-10-11/2018-10-11_1236_analogue_line_sccp.json.gz`

Command examples:

- Single type

```
$ voss export type line
Starting line export, please wait...
Completed line export, created 2018-10-11_1236_line.json.gz.
```

- Multiple types

```
$ voss export type line type site
Starting line export, please wait...
Completed line export, created 2018-10-11_1236_line.json.gz.
Starting site export, please wait...
Completed site export, created 2018-10-11_1236_site.json.gz.
```

- Group

    All types in a group are exported.

```
$ voss export group subscriber
Starting subscriber group export consisting of analogue_line_mgcp, analogue_line_sccp, [..
↪.]
Starting analogue_line_mgcp export, please wait...
Completed analogue_line_mgcp export, created 2018-10-11_1236_analogue_line_mgcp.json.gz.
Starting analogue_line_sccp export, please wait...
Completed analogue_line_sccp export, created 2018-10-11_1236_analogue_line_sccp.json.gz.
[...]
Completed subscriber group export.
```

The export files can then be copied to a remote system. For example, from the VOSS Automate system, list out the data export files:

```
$ ls media/data_export/2018-10-11
2018-10-11_1236_analogue_line_sccp.json.gz
```

The exported files can be copied to a remote system using SCP or SFTP on port 22. For example:

```
remote_system:~$ scp <platform_user>@<voss_system>:media/data_export/2018-10-11/2018-10-
↪11_1236_analogue_line_sccp.json.gz .
```

Note: Contact your VOSS Account team for details regarding the reports obtained from the following commands:

- `voss export type nbi-subscriber` (internal)

3.2.2. Scheduling

Any CLI command can be scheduled to run automatically, including but not restricted to backups and security upgrades.

By default there is no backup maintenance scheduled. Backup maintenance can be scheduled with the number of copies to be kept - refer to the backup maintenance topic.

Note: Scheduled commands will not run while the system is in maintenance mode. See System Maintenance Mode in the Platform Guide.

The automated job schedule format is as follows:

- **schedule add <job-name> <user-command>**
- **schedule time <job-name> <hour> <minute>**
- **schedule time <job-name> every <N> hours**
- Alternatively the job can be scheduled to run every week on Monday with **schedule time <job-name> weekly 1**; where 0 is Sunday, 1 is Monday, 2 is Tuesday, 3 is Wednesday, 4 is Thursday, 5 is Friday and 6 is Saturday
- **schedule enable <job-name>**

Example:

schedule add mybackups backup create localbackup

schedule time mybackups 2 0

schedule time mybackups weekly 0

schedule enable mybackups

Among the tasks that can be scheduled are:

- Backup creation, e.g. **schedule add backupme backup create localbackup**
- Backup maintenance, e.g. **schedule add backupclean backup clean localbackup keep 5**
- Health reports, e.g. **schedule add reports diag report**

Note: If a schedule is in a state where the last executed and next execution time are equal, then the next execution time will be recalculated to ensure its execution.

3.2.3. Using the `screen` command

The **screen** command is available to execute long-running commands (for example, when upgrading) in the background.

The following commands require the running of **screen**:

- **cluster provision**
- **cluster upgrade**
- **app template**

- **voss export type <args>**

- **voss export group <args>**

- **voss subscriber_data_export**

A message is displayed to indicate that **screen** should be run first:

```
This is a potentially long-running command and should be executed in a screen session
Run `screen` and then execute the command again
```

The use of **screen** is *not affected* by the use of the `--force` parameter with any of these commands.

The commands then run in a screen session that can be reconnected. The standard screen command parameters are available, in particular:

- **screen** - start a new session

- **screen -ls** - show sessions already available

- **screen -r [screen PID]** - reconnect to a disconnected session

The version of **screen** used in VOSS Automate also supports the creation of a log file. If long-running commands will be run, the log file captures screen console output up to the session timeout. A message shows:

```
timed out waiting for input: auto-logout
```

To create a screen log file:

1. Run **screen** and wait for screen to open.

2. Press **<Ctrl>-a** then **:** (colon). This will enter screen command mode at the bottom of the console.

3. Create your screen logfile in the `media/` directory:

   a. In screen command mode, type **logfile media/<screen-logfilename>.log**

   b. Press **<Enter>**

   c. Press **<Ctrl>-a** and then **H** to start writing to the log file

   d. Run your commands.

If the **screen** session times out, you can obtain console output from the log file, for example:

$ sftp platform@<host>:media/<screen-logfilename>.log

3.3. Data Export Types

3.3.1. Analogue line MGCP Data Export

Filename: `<YYYY-MM-DD_HHMM>_analogue_line_mgcp.json.gz`

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VER-SION
provider_name	Name of the Provider	string	v2
reseller_name	Name of the Reseller	string	v2
customer_name	name of the customer	string	v1
division_name	Intermediate Node (e.g Division or other node)	string	v1
location_name	Site Name	string	v1
hierarchy	The full hierarchy path for the item being exported	string	v1

- ELEMENT: usernames
    - DESCRIPTION: List of users assigned to the analog port
    - SOURCE FIELD: device/cucm/User.userid
    - DATA TYPE: Array of strings
    - VERSION: v1

- ELEMENT: gateway
    - DESCRIPTION: name of the gateway that the port is on
    - SOURCE FIELD: device/cucm/GatewayEndpointAnalogAccess.domainName
    - DATA TYPE: string
    - VERSION: v1

- ELEMENT: port_number
    - DESCRIPTION: gateway port for this configuration
    - SOURCE FIELD: device/cucm/GatewayEndpointAnalogAccess.endpoint.port.portNumber
    - DATA TYPE: string
    - VERSION: v1

- ELEMENT: port_type
    - DESCRIPTION: the type of port for this gateway (typically FXS for analog)
    - SOURCE FIELD: device/cucm/GatewayEndpointAnalogAccess.endpoint.product
    - DATA TYPE: string
    - VERSION: v1

- ELEMENT: description
    - DESCRIPTION: description of the gateway
    - SOURCE FIELD: device/cucm/GatewayEndpointAnalogAccess.endpoint.description
    - DATA TYPE: string
    - VERSION: v1

- ELEMENT: cucm_dn
    - DESCRIPTION: Internal Number assigned to the device profile (as configured in the PBX)
    - SOURCE FIELD: device/cucm/GatewayEndpointAnalogAccess.endpoint.port.lines.line.0.dirn.pattern

- – DATA TYPE: string

  - – VERSION: v1

- • ELEMENT: E164Members

  - – DESCRIPTION: Array of E164 numbers and ranges assigned to `pilot_number` in the case of N-1 mapped lines

  - – SOURCE FIELD: device/cucm/GatewayEndpointAnalogAccess.endpoint.port.lines.line.0.dirn.pattern

  - – DATA TYPE: string

  - – VERSION: v4

- • ELEMENT: E164Members.e164_number

  - – DESCRIPTION: E164 number in the case of N-1 mapped lines

  - – DATA TYPE: string

  - – VERSION: v4

- • ELEMENT: E164Members.e164_range

  - – DESCRIPTION: E164 range of `E164Members.e164_number` in the case of N-1 mapped lines

  - – DATA TYPE: string

  - – VERSION: v4

- • ELEMENT: E164

  - – DESCRIPTION: External Number (E164 number) assigned to the device profile

  - – SOURCE FIELD: device/cucm/GatewayEndpointAnalogAccess.endpoint.port.lines.line.0.dirn.pattern

  - – DATA TYPE: string

  - – VERSION: v1

Example

```
[
{
 "division_name": "Intermed1",
 "usernames": [],
 "location_name": "Site1",
 "description": "",
 "port_number": 0,
 "hierarchy": "sys.171FDD8C03A6.Prov1.Resel1.Cust1.Intermed1.Intermed1_1.Site1",
 "gateway": "site_1_endpoint_1_gateway_name",
 "E164": "s1e1_e164_value",
 "port_type": "Cisco MGCP FXS Port",
 "reseller_name": "Resel1",
 "provider_name": "Prov1",
 "cucm_dn": "11111",
 "customer_name": "Cust1"
},
{
 "division_name": "Intermed1",
 "usernames": [],
 "location_name": "Site1",
```

(continues on next page)

```
  "description": "",
  "port_number": 1,
  "hierarchy": "sys.171FDD8C03A6.Prov1.Resel1.Cust1.Intermed1.Intermed1_1.Site1",
  "gateway": "site_1_endpoint_2_gateway_name",
  "E164": "",
  "port_type": "Cisco MGCP FXS Port",
  "reseller_name": "Resel1",
  "provider_name": "Prov1",
  "cucm_dn": "",
  "customer_name": "Cust1"
},
{
  "division_name": "Intermed2",
  "usernames": [
    "fred",
    "bob"
  ],
  "location_name": "Site2",
  "description": "",
  "port_number": 1,
  "hierarchy": "sys.171FDD8C03A6.Prov2.Resel2.Cust2.Intermed2.Site2",
  "gateway": "site_2_endpoint_1_gateway_name",
  "E164": "",
  "port_type": "Cisco MGCP FXS Port",
  "reseller_name": "Resel2",
  "provider_name": "Prov2",
  "cucm_dn": "333333",
  "customer_name": "Cust2"
}
]
```

3.3.2. Analogue Line SCCP Data Export

Filename: `<YYYY-MM-DD_HHMM>_analogue_line_sccp.json.gz`

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VER-SION
provider_name	Name of the Provider	string	v2
reseller_name	Name of the Reseller	string	v2
customer_name	name of the customer	string	v1
division_name	Intermediate Node (e.g Division or other node)	string	v1
location_name	Site Name	string	v1
hierarchy	The full hierarchy path for the item being exported	string	v1
usernames	List of users assigned to the analog port device/cucm/User.userid	Array of strings	v1
gateway	name of the gateway that the port is on device/cucm/GatewaySccpEndpoints.domainName	string	v1
port_number	gateway port for this configuration device/cucm/GatewaySccpEndpoints.endpoint.index	string	v1
port_type	the type of port for this gateway (typically FXS for analog) device/cucm/GatewaySccpEndpoints.endpoint.product	string	v1
description	description of the gateway device/cucm/GatewaySccpEndpoints.endpoint.description	string	v1
E164Members	Array of E164 numbers and ranges assigned to `pilot_number` in the case of N-1 mapped lines	string	v4

- ELEMENT: cucm_dn
    - DESCRIPTION: Internal Number assigned to the device profile (as configured in the PBX)
    - SOURCE FIELD: device/cucm/GatewaySccpEndpoints.endpoint.lines.line.0.dirn.pattern
    - DATA TYPE: string
    - VERSION: v1

- ELEMENT: E164
    - DESCRIPTION: External Number (E164 number) assigned to the device profile
    - SOURCE FIELD: device/cucm/GatewaySccpEndpoints.endpoint.lines.line.0.dirn.pattern
    - DATA TYPE: string
    - VERSION: v1

- ELEMENT: E164Members.e164_number
    - DESCRIPTION: E164 number in the case of N-1 mapped lines
    - DATA TYPE: string
    - VERSION: v4

- ELEMENT: E164Members.e164_range
    - DESCRIPTION: E164 range of `E164Members.e164_number` in the case of N-1 mapped lines
    - DATA TYPE: string
    - VERSION: v4

Example

```
[
{
  "division_name": "Intermed1",
  "usernames": [
    "test_userid"
  ],
  "location_name": "Site1",
  "description": "AN202AAAA202000",
  "port_number": 0,
  "hierarchy": "sys.48D13080D77F.Prov1.Resel1.Cust1.Intermed1.Intermed1_1.Site1",
  "gateway": "SKIGW202AAAA202",
  "E164": "test_e164",
  "port_type": "Analog Phone",
  "reseller_name": "Resel1",
  "provider_name": "Prov1",
  "cucm_dn": "\\+155545",
  "customer_name": "Cust1"
}
]
```

3.3.3. Call Pickup Group Data Export

(New report in version 2)

Filename: `<YYYY-MM-DD_HHMM>_call_pickup_group.json.gz`

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VER-SION
provider_name	Name of the Provider	string	v2
reseller_name	Name of the Reseller	string	v2
customer_name	Name of the Customer	string	v2
division_name	Intermediate Node (e.g Division or other node)	string	v2
location_name	Name of the Site	string	v2
hierarchy	The full hierarchy path for the item being exported	string	v2
pickup_group_name	The name of the Call Pickup Group device/cucm/CallPickupGroup.name	string	v2
pickup_group_number	The DN for the Call Pickup Group device/cucm/CallPickupGroup.pattern	string	v2
pickup_group_partition	The route partition for the Call Pickup Group DN device/cucm/CallPickupGroup.routePartitionName	string	v2
member	Array of member lines	array	v2
member.cucm_dn	Description of the directory number and partition device/cucm/Line.pattern	string	v2
member.parition	Route partition associated with the member directory number device/cucm/Line.routePartitionName	string	v2

Example

```
[

    {
        "provider_name": "CS-P",
        "reseller_name": "CS-NB",
        "customer_name": "CustomerName",
        "division_name": "",
        "location_name": "AAA-Boston",
        "hierarchy": "sys.hcs.CS-P.CS-NB.CustomerName.AAA-Boston",
        "pickup_group_name": "Support",
        "pickup_group_number": "80000",
        "pickup_group_partitiion": "Cu1-AllowVm-PT",
        "member": [
            {
                "cucm_dn": "50409",
                "partition": "Cu1-AllowVm-PT"
            }
        ]
    }
]
```

3.3.4. Contact Center Enterprise Data Export

Filename: `<YYYY-MM-DD_HHMM>_contact_center_enterprise.json.gz`

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VER-SION
provider_name	Name of the Provider	string	v2.2
reseller_name	Name of the Reseller	string	v2.2
customer_name	name of the customer	string	v2.2
division_name	Intermediate Node (e.g Division or other node)	string	v2.2
location_name	Site Name	string	v2.2
hierarchy	The full hierarchy path for the item being exported	string	v2.2
Name	Contact Center Username device/ccdm/Agent.Name	string	v2.2
PeripheralNumber	Skill group peripheral number device/ccdm/Agent.PeripheralNumber	integer	v2.2
Supervisor	User type device/ccdm/Agent.Supervisor	boolean	v2.2

Example

```
[
 {
   "division_name":"",
   "Supervisor":false,
   "Name":"standalone_ccdm_user_2",
   "hierarchy":"sys.hcs.Provider_01.Reseller_01.Customer_01.Site_01",
   "reseller_name":"Reseller_01",
   "location_name":"Site_01",
   "provider_name":"Provider_01",
   "PeripheralNumber":2,
   "customer_name":"Customer_01"
 }
]
```

3.3.5. Contact Center Express Data Export

Filename: `<YYYY-MM-DD_HHMM>_contact_center_express.json.gz`

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VER-SION
provider_name	Name of the Provider	string	v2.2
reseller_name	Name of the Reseller	string	v2.2
customer_name	name of the customer	string	v2.2
division_name	Intermediate Node (e.g Division or other node)	string	v2.2
location_name	Site Name	string	v2.2
hierarchy	The full hierarchy path for the item being exported	string	v2.2
username	Contact Center Express username	string	v2.2
userID	CUCM user ID device/uccx/Agent.userID	string	v2.2
firstName	Agent first name device/uccx/Agent.firstName	string	v2.2
lastName	Agent last name device/uccx/Agent.lastName	string	v2.2
extension	Agent extension device/uccx/Agent.extension	string	v2.2
teamName	Contact Center Express team name device/uccx/Agent.teamName	string	v2.2
type	Contact Center Express user type device/uccx/Agent.type	string	v2.2
autoAvailable	Availability status of the user device/uccx/Agent.autoAvailable	boolean	v2.2

Example

```
[
 {
   "division_name":"",
   "location_name":"Site_01",
   "firstName":"user_46",
   "extension":2,
   "hierarchy":"sys.hcs.Provider_01.Reseller_01.Customer_01.Site_01",
   "lastName":"Latame",
   "userID":"user_46",
   "teamName":"Default",
   "reseller_name":"Reseller_01",
   "provider_name":"Provider_01",
   "customer_name":"Customer_01",
   "type":"Agent",
   "autoAvailable":false
 }

]
```

3.3.6. Customer Data Export

(New report in version 2)

Filename: `<YYYY-MM-DD_HHMM>_customer.json.gz`

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VER-SION
provider_name	Name of the Provider	string	v2
reseller_name	Name of the Reseller	string	v2
customer_name	Name of the Customer	string	v2
hierarchy	The full hierarchy path for the item being exported	string	v2
account_id	The customer's account identifier device/hcmf/Customer.accountID	string	v2
external_id	An externally defined identifier for the customer device/hcmf/Customer.externalCustomerID	string	v2

Example

```
[
  {
      "provider_name": "CS-P",
      "reseller_name": "CS-NB",
      "customer_name": "Customer1",
      "hierarchy": "sys.hcs.CS-P.CS-NB.Customer1",
      "account_id": "ABCXYZ",
      "external_id": ""
  }
]
```

3.3.7. Extension Mobility Data Export

Filename: `<YYYY-MM-DD_HHMM>_extension_mobility.json.gz`

Layout:

ELEMENT	DESCRIPTION AND FIELD SOURCE	DATA TYPE	VER-SION
provider_name	Name of the Provider	string	v2
reseller_name	Name of the Reseller	string	v2
customer_name	name of the customer	string	v1
division_name	Intermediate Node (e.g Division or other node)	string	v1
location_name	Site Name	string	v1
hierarchy	The full hierarchy path for the item being exported	string	v1
username	the username of the owner of device profile device/cucm/User.userid	string	v1
device_type	Model the extension mobility profile is setup as device/cucm/DeviceProfile.product	string	v1
device_profile_name	Name of the extension mobility profile device/cucm/DeviceProfile.name	string	v2
lines	Array of objects containing line information	array	v1
lines.cucm_dn	Internal Number assigned to the device profile (as configured in the PBX) device/cucm/DeviceProfile.lines.line.dirn.pattern	string	v1
lines.line_order	Line index. device/cucm/DeviceProfile.lines.line.index	integer	v2
lines.E164	External Number (E164 number) assigned to the device profile device/cucm/DeviceProfile.lines.line.dirn.pattern	string	v1
E164Members	Array of E164 numbers and ranges assigned to `cucm_dn` in the case of N-1 mapped lines	string	v4
E164Members.e164_number	E164 number in the case of N-1 mapped lines	string	v4
E164Members.e164_range	E164 range of `E164Members.e164_number` in the case of N-1 mapped lines	string	v4

Example:

```
[
{
  "division_name": "Intermed1",
  "username": "ba_user2",
  "location_name": "Site1",
  "hierarchy": "sys.822AF46F8FD3.Prov1.Resel1.Cust1.Intermed1.Intermed1_1.Site1",
  "lines": [
    {
      "line_order": 1,
      "cucm_dn": "50407",
      "E164": "91107"
    },
    {
      "line_order": 2,
      "cucm_dn": "50408",
```

```
      "E164": "91108"
    }
  ],
  "device_type": "Cisco 9971",
  "device_profile_name": "ba_user2-UDP",
  "reseller_name": "Resel1",
  "provider_name": "Prov1",
  "customer_name": "Cust1"
},
{
  "division_name": "Intermed2",
  "username": "",
  "location_name": "Site2",
  "hierarchy": "sys.822AF46F8FD3.Prov2.Resel2.Cust2.Intermed2.Site2",
  "lines": [],
  "device_type": "Cisco 9971",
  "device_profile_name": "ba_user3-UDP",
  "reseller_name": "Resel2",
  "provider_name": "Prov2",
  "customer_name": "Cust2"
}
]
```

3.3.8. FMC Data Export

(New report in version 2)

This report includes users who have the FMC feature configured. The report includes the destination configured and an indication of whether the service is currently enabled or disabled (based on v2 FMC with CIM-based FMC). Any users without the FMC feature configured will not appear in the file. This report is only populated if the FMC adaptation is installed on the system - the file will be blank on systems without any users configured or if the adaptation is not installed.

Filename: `<YYYY-MM-DD_HHMM>_fmc.json.gz`

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VER-SION
provider_name	Name of the Provider	string	v2
reseller_name	Name of the Reseller	string	v2
customer_name	Name of the Customer	string	v2
division_name	Intermediate Node (e.g Division or other node)	string	v2
location_name	Name of the Site	string	v2
hierarchy	The full hierarchy path for the item being exported	string	v2
username	The userid of the remote destination profile data/GS_FMC_UserExtended_DAT.username	string	v2
destination	The mobile number associated with CIM device data/GS_FMC_UserExtended_DAT.fmc.mobile	string	v2
fmc_enabled	An indication of whether fixed mobile convergence is en-abled for the destination data/GS_FMC_UserExtended_DAT.fmc.enabled	boolean	v2

Example

```
[
    {
        "provider_name": "CS-P",
        "reseller_name": "CS-NB",
        "customer_name": "AAAGlobal",
        "division_name": "",
        "location_name": "AAA-Boston",
        "hierarchy": "sys.hcs.CS-P.CS-NB.AAAGlobal.AAA-Boston"
        "username": "ba_user4",
        "destination": "08212345678",
        "fmc_enabled": true
    }
]
```

3.3.9. Hunt Group Data Export

Filename: `<YYYY-MM-DD_HHMM>_hunt_group.json.gz`

Layout:

ELEMENT	DESCRIPTION	DATA TYPE	VER-SION
provider_name	Name of the Provider	string	v2
reseller_name	Name of the Reseller	string	v2
customer_name	name of the customer	string	v1
division_name	Intermediate Node (e.g Division or other node)	string	v1
hierarchy	The full hierarchy path for the item being exported	string	v1
location_name	Site Name	string	v1
hunt_group_name	Name assigned to the hunt group	string	v1
pilot_number	the internal number assigned as the pilot for the hunt group (as configured in the PBX) device/cucm/HuntPilot.pattern	string	v1
E164	the external number (Full E164 format) assigned as the pilot for the hunt group (as configured in the PBX) device/cucm/HuntPilot.pattern	string	v1
lines	Array of objects containing line information device/cucm/LineGroup	array	v1
lines.cucm_dn	Internal Number assigned to the device profile (as configured in the PBX) device/cucm/LineGroup.members.member.directoryNumber.	string	v1
lines.line_group_name	Name of the line group device/cucm/LineGroup.members.member.name	string	v2
E164Members	Array of E164 numbers and ranges assigned to `pilot_number` in the case of N-1 mapped lines	string	v4
E164Members.e164_number	E164 number in the case of N-1 mapped lines	string	v4
E164Members.e164_range	E164 range of `E164Members.e164_number` in the case of N-1 mapped lines	string	v4
partition	The route partition to which the Hunt Pilot number belongs device/cucm/HuntPilot.routePartitionName	string	v2

Example

```
[
{
  "division_name": "Intermed1",
  "location_name": "Site1",
  "hierarchy": "sys.57C1130EED66.Prov1.Resel1.Cust1.Intermed1.Intermed1_1.Site1",
  "lines": [
    {
      "cucm_dn": "HuntList1LineGroup1DirectoryNumber1Pattern",
      "line_group_name": "HuntList1LineGroup1"
    },
    {
      "cucm_dn": "HuntList1LineGroup1DirectoryNumber2Pattern",
      "line_group_name": "HuntList1LineGroup1"
    },
```

```
    {
      "cucm_dn": "HuntList1LineGroup2DirectoryNumber1Pattern",
      "line_group_name": "HuntList1LineGroup2"
    },
    {
      "cucm_dn": "HuntList1LineGroup2DirectoryNumber2Pattern",
      "line_group_name": "HuntList1LineGroup2"
    }
  ],
  "partition": "RoutePartition1",
  "hunt_group_name": "HuntList1",
  "E164": "E164AssocDAT1",
  "reseller_name": "Resel1",
  "pilot_number": "PTCHuntPilot1",
  "provider_name": "Prov1",
  "customer_name": "Cust1"
},
{
  "division_name": "",
  "location_name": "",
  "hierarchy": "sys.57C1130EED66.Prov2.Resel2.Cust2",
  "lines": [],
  "partition": "",
  "hunt_group_name": "HuntList2",
  "E164": "E164AssocDAT2",
  "reseller_name": "Resel2",
  "pilot_number": "2222",
  "provider_name": "Prov2",
  "customer_name": "Cust2"
},
{
  "division_name": "Intermed1",
  "location_name": "Site1",
  "hierarchy": "sys.57C1130EED66.Prov1.Resel1.Cust1.Intermed1.Intermed1_1.Site1",
  "lines": [],
  "E164Members": [
    {
      "e164_number": "\\+495557000",
      "e164_range": "10"
    }
  ],
  "partition": "",
  "hunt_group_name": "HuntList3",
  "E164": "\\+495557000",
  "reseller_name": "Resel1",
  "pilot_number": "8217500",
  "provider_name": "Prov1",
  "customer_name": "Cust1"
}
]
```

3.3.10. Hybrid Data Export

Filename: `<YYYY-MM-DD_HHMM>_hybrid.json.gz`

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VER-SION
provider_name	Name of the Provider	string	v4
reseller_name	Name of the Reseller	string	v4
customer_name	name of the customer	string	v4
hierarchy	The full hierarchy path for the item being exported	string	v4
username	First name of user	string	v4
service_type	Hybrid type	string	v4
lines	array of lines: extension, e164, cos	array	v4
lines.extension	*release 19.3.4* data/MultiVendorServiceData_DAT.line1Dn (and line2Dn) *release >= 21.1* data/User.mvs_extensions.0.line	string	v4
lines.e164	*release 19.3.4* data/MultiVendorServiceData_DAT.line1E164 (and line2E164) *release >= 21.1* data/User.mvs_extensions.0.line_e164	string	v4
lines.cos	*release 19.3.4* data/MultiVendorServiceData_DAT.line1CoS (and line2CoS) *release >= 21.1* data/User.mvs_extensions.0.line_cos	string	v4

Example (19.3.4)

```
[
  {
    "username": "user_1",
    "hierarchy": "sys.9F73F4303A93.Provider1Hierarchy.Reseller1Hierarchy.
↪Customer1Hierarchy",
    "lines": [
      {
        "e164": "\\+441184025574",
        "class_of_service": "International-24Hrs-Enhanced",
        "extension": "8445574"
      },
      {
        "e164": "\\+441184025576",
        "class_of_service": "International-24Hrs-Enhanced",
        "extension": "8445576"
```

```
        }
    ],
    "service_type": "Cisco-MS",
    "reseller_name": "Reseller1Hierarchy",
    "provider_name": "Provider1Hierarchy",
    "customer_name": "Customer1Hierarchy"
  }
]
```

3.3.11. Line Data Export

(New report in version 2)

Filename: `<YYYY-MM-DD_HHMM>_line.json.gz`

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VER-SION
provider_name	Name of the Provider	string	v2
reseller_name	Name of the Reseller	string	v2
customer_name	Name of the Customer	string	v2
division_name	Intermediate Node (e.g Division or other node)	string	v2
location_name	Name of the Site	string	v2
hierarchy	The full hierarchy path for the item being exported	string	v2
cucm_dn	Internal Number of this line device/cucm/Line.pattern	string	v2
partition	The route partition to which the number belongs device/cucm/Line.routePartitionName	string	v2
description	Description of the directory number and partition device/cucm/Line.description	string	v2
call-ing_search_space	This is mapped to the shareLineAppearanceCssName of the line device/cucm/Line.shareLineAppearanceCssName	string	v2

Example

```
[

    {
        "provider_name": "CS-P",
        "reseller_name": "CS-NB",
        "customer_name": "CustomerName",
        "division_name": "",
        "location_name": "AAA-Boston",
        "hierarchy": "sys.hcs.CS-P.CS-NB.CustomerName.AAA-Boston",
```

```
        "cucm_dn": "50409",
        "partition": "Cu1-AllowVm-PT",
        "description": "Front Desk",
        "calling_search_space": "Cu1-ANumAnaly-CSS"
    }
]
```

3.3.12. Phones Data Export

Filename: `<YYYY-MM-DD_HHMM>_phones.json.gz`

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VER-SION
provider_name	Name of the Provider	string	v2
reseller_name	Name of the Reseller	string	v2
customer_name	name of the customer	string	v1
division_name	Intermediate Node (e.g Division or other node)	string	v1
location_name	Site Name	string	v1
hierarchy	The full hierarchy path for the item being exported	string	v1
usernames	list of usernames associated to the phones via Unified CM user, associated devices device/cucm/User.userid	array	v1
device_name	the name of the device (includes mac address if hardphone, softclients no mac) device/cucm/Phone.name	string	v1
description	Text field attached to the device device/cucm/Phone.description	string	v3
device_type	the model of the phone device/cucm/Phone.product	string	v1
device_css	Calling search space of the phone device/cucm/Phone.callingSearchSpaceName	string	v2
lines	Array of objects containing line information device/cucm/Phone.lines.line	array	v1
lines.line_order	Line index. device/cucm/Phone.lines.line.index	integer	v2
lines.cucm_dn	Internal Number assigned to the device profile (as configured in the PBX) device/cucm/Phone.lines.line.dirn.pattern	string	v1
lines.E164	External Number (E164 number) assigned to the device profile device/cucm/Phone.lines.line.dirn.pattern	string	v1

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VER-SION
E164Members	Array of E164 numbers and ranges assigned to `cucm_dn` in the case of N-1 mapped lines	string	v4
E164Members.e164_number	E164 number in the case of N-1 mapped lines	string	v4
E164Members.e164_range	E164 range of `E164Members.e164_number` in the case of N-1 mapped lines	string	v4
owner_username	User ID of the assigned phone user *Only in release >= 21.1* device/cucm/Phone.ownerUserName	string	v4
add_on_modules	Array of phone addon modules, incl. name, model, position *Only in release >= 21.1* cache.addOnModules.addOnModule	array	v4

- ELEMENT: add_on_modules.name

    - DESCRIPTION: phone addon module name

    - SOURCE FIELD: *Only in release >= 21.1*

        device/cucm/Phone.addOnModules.addOnModule.loadInformation

    - DATA TYPE: string

    - VERSION: v4

- ELEMENT: add_on_modules.model

    - DESCRIPTION: phone addon module model

    - SOURCE FIELD: *Only in release >= 21.1*

        device/cucm/Phone.addOnModules.addOnModule.model

    - DATA TYPE: string

    - VERSION: v4

- ELEMENT: add_on_modules.position

    - DESCRIPTION: phone addon module model

    - SOURCE FIELD: *Only in release >= 21.1*

        device/cucm/Phone.addOnModules.addOnModule.index

    - DATA TYPE: integer

    - VERSION: v4

Example:

```
[
{
  "division_name": "Intermed1",
  "usernames": [
    "s1p1_user1"
  ],
  "location_name": "Site1",
```

```
    "description": "s1p1_desc",
    "hierarchy": "sys.AB707E3E6FC2.Prov1.Resel1.Cust1.Intermed1.Intermed1_1.Site1",
    "lines": [
      {
        "line_order": 0,
        "cucm_dn": "11111",
        "E164": "s1p1l1_e164"
      }
    ],
    "add_on_modules": [
      {
        "position": 0,
        "model": "add_on_module_model-01",
        "name": "add_on_module_info-01"
      }
    ],
    "device_type": "s1p1_product_value",
    "reseller_name": "Resel1",
    "provider_name": "Prov1",
    "device_name": "s1p1_name",
    "device_css": "s1p1_css",
    "customer_name": "Cust1"
},
{
    "division_name": "Intermed1",
    "usernames": [],
    "location_name": "Site1",
    "description": "",
    "hierarchy": "sys.AB707E3E6FC2.Prov1.Resel1.Cust1.Intermed1.Intermed1_1.Site1",
    "lines": [],
    "add_on_modules": [],
    "device_type": "s1p2_product_value",
    "reseller_name": "Resel1",
    "provider_name": "Prov1",
    "device_name": "s1p2_name",
    "device_css": "s1p2_css",
    "customer_name": "Cust1"
},
{
    "division_name": "Intermed2",
    "usernames": [
      "s2p1_user1",
      "s2p1_user2"
    ],
    "location_name": "Site2",
    "description": "",
    "hierarchy": "sys.AB707E3E6FC2.Prov2.Resel2.Cust2.Intermed2.Site2",
    "lines": [
      {
        "line_order": 1,
        "cucm_dn": "33333",
```

```
        "E164": "s2p1l1_e164"
    },
    {
        "line_order": 2,
        "cucm_dn": "44444",
        "E164": ""
    }
],
"add_on_modules": [],
"device_type": "s2p1_product_value",
"reseller_name": "Resel2",
"provider_name": "Prov2",
"device_name": "s2p1_name",
"device_css": "s2p1_css",
"customer_name": "Cust2"
}
]
```

3.3.13. Site Data Export

Filename: `<YYYY-MM-DD_HHMM>_site.json.gz`

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VER.
provider_name	Name of the Provider	string	v2
reseller_name	Name of the Reseller	string	v2
customer_name	Name of the customer	string	v1
division_name	Intermediate Node (e.g Division or other node)	string	v1
location_name	Site Name	string	v1
hierarchy	The full hierarchy path for the item being exported	string	v1
cus-tomer_address1	Address string 1 for the customer device/hcmf/Customer.contactAddress1	string	v1
cus-tomer_address2	Address string 2 for the customer device/hcmf/Customer.contactAddress2	string	v1
cus-tomer_address3	Address string 3 for the customer	string	v1
location_address1	Address string 1 for the site data/BaseSiteDAT.Address1	string	v1
location_address2	Address string 2 for the site data/BaseSiteDAT.Address2	string	v1
location_address3	Address string 3 for the site data/BaseSiteDAT.Address3	string	v1
emer-gency_number	External emergency callback number assigned to the site data/DpSite.emerNumber	string	v1
ndl	The NDL name that the site uses data/Ndl.ndl.name	string	v1
inter_site_prefix	Digit dialled to prefix intersite calls (if the dial plan is setup that way) data/DpCustomer.isp	string	v1
exter-nal_access_prefix	Digit dialled to make external calls (if the dial plan is setup that way) data/DpSite.ext	string	v1
site_code	Dial Plan site code assigned to the site (if the dial plan is setup that way) data/DpSite.slc	string	v1
published_number	External published callback number assigned to the site data/DpSite.pubNumber	string	v1
country_code	Country code identifying the site data/Countries.international_dial_code	string	v1

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VER.
external_id	An externally defined ID for the site device/hcmf/CustomerLocation.externalID OR data/GS_LinkedSiteData_DAT.externalID	string	v2
extended_name	An expanded name for the site device/hcmf/CustomerLocation.extendedName OR data/GS_LinkedSiteData_DAT.extendedName	string	v2

- ELEMENT: voice_bandwidth

    – DESCRIPTION: voice bandwidth allocation for the site

    – SOURCE FIELD: device/cucm/Location.betweenLocations.betweenLocation.audioBandwidth

    – DATA TYPE: string

    – VERSION: v1

- ELEMENT: video_bandwidth

    – DESCRIPTION: video bandwidth allocation for the site

    – SOURCE FIELD: device/cucm/Location.betweenLocations.betweenLocation.videoBandwidth

    – DATA TYPE: string

    – VERSION: v1

Example:

(* marked fields are new in version 2)

```
[
  {
  *  "provider_name": "CS-P",
  *  "reseller_name": "CS-NB",
      "customer_name": "Varidion",
      "division_name": "",
      "location_name": "Varidion-Reading",
      "hierarchy": "sys.hcs.CS-P.CS-NB.Varidion.Varidion-Reading",
      "customer_address1": "Varidion New York (Head Office)",
      "customer_address2": "L23, 33 Central Square",
      "customer_address3": "Dallas,TX, USA",
      "ndl": "GS-R3-VDN-CL1-NDL",
      "inter_site_prefix": "",
      "site_code": "",
      "video_bandwith": "",
      "emergency_number": "",
      "voice_bandwith": "",
      "country_code": "44",
      "external_access_prefix": "",
      "location_address1": "Varidion Reading",
      "location_address3": "Reading, Berkshire",
      "location_address2": "Atlantic House, Imperial Way",
```

```
        "published_number": "",
      * "external_id": "ABCXYZ",
      * "extended_name": "UK IT"
    }
]
```

3.3.14. Subscriber Data Export

Filename: `<YYYY-MM-DD_HHMM>_subscriber.json.gz`

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VER-SION
provider_name	Name of the Provider	string	v2
reseller_name	Name of the Reseller	string	v2
customer_name	name of the customer	string	v1
division_name	Intermediate Node (e.g Division or other node)	string	v1
location_name	Site Name	string	v1
hierarchy	The full hierarchy path for the item being exported	string	v1
username	username of the user device/cucm/User.userid	string	v1
first_name	First name of the user device/cucm/User.firstName	string	v1
middle_name	Middle name of the user device/cucm/User.middleName	string	v3
last_name	Last name of the user device/cucm/User.lastName	string	v1
email	email address of the user device/cucm/User.mailid	string	v1

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VER-SION
entitlement_profile	the profile assigned to the user that defines the features they are enabled to have configured *release 19.3.4* data/HcsUserProvisioningStatusDAT.entitlement_profile *release >= 21.1* data/User.entitlement_profile or data/HcsUserProvisioningStatusDAT.entitlement_profile	string	v1
role	The role assigned to the user - defines privileges in the portal data/User.role	string	v1
credential_policy	The security profile assigned to the user - defined credential and other security rules for portal access data/User.account_information.credential_policy	string	v1
snr	Does the user have the SNR service configured device/cucm/RemoteDestinationProfile.userId	boolean	v1
voicemail	Does the user have a voicemail box configured device/cuc/User.Alias	boolean	v1
title	Subscriber's title *release 19.3.4* data/NormalizedUser.title *>= release 21.1* data/User.title or data/NormalizedUser.title	string	v2

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VER-SION
department	Subscriber's department device/cucm/User.department	string	v2
telephone_number	Subscriber's telephone number as configured in the CUCM user record device/cucm/User.telephoneNumber	string	v2
pager_number	Subscriber's pager number device/cucm/User.pagerNumber	string	v3
imp_enabled	User enabled for Unified CM IM and Presence device/cucm/User.imAndPresenceEnable	boolean	v4

Example

(Fields marked * are new in version 2, fields marked ** are new in version 3, and fields marked *** are for v4)

```
[
    {
*       "provider_name": "CS-P",
*       "reseller_name": "CS-NB",
        "customer_name": "AAAGlobal",
        "division_name": "",
        "location_name": "AAA-Boston",
        "hierarchy": "sys.hcs.CS-P.CS-NB.AAAGlobal.AAA-Boston",
        "username": "ba_user4",
        "first_name": "Dean",
**      "middle_name": "John",
        "last_name": "Daniels",
        "voicemail": false,
        "entitlement_profile": "AAAGlobal-Foundation-EP",
        "snr": false,
        "credential_policy": "HcsCredentialPolicy",
        "role": "AAA-BostonSelfService",
        "email": "email@theinternet.com",
*       "title": "Dr.",
*       "department": "R&D",
*       "telephone_number": "0215252020",
**      "pager_number": "5551234545",
***     "imp_enabled": False
    }
]
```

3.3.15. Webex Teams Data Export

Filename: `<YYYY-MM-DD_HHMM>_webex_teams.json.gz`

Layout:

ELEMENT	DESCRIPTION	DATA TYPE	VER-SION
provider_name	Name of the Provider	string	v2.2
reseller_name	Name of the Reseller	string	v2.2
customer_name	name of the customer	string	v2.2
division_name	Intermediate Node (e.g. Division or other node)	string	v2.2
location_name	Site Name	string	v2.2
hierarchy	The full hierarchy path for the item being exported	string	v2.2
firstName	First name of user device/spark/User.firstName	string	v2.2
lastName	Last name of user device/spark/User.lastName	string	v2.2
email	User email address device/spark/User.email	string	v2.2
type	device/spark/User.type	string	
loginEnabled	device/spark/User.loginEnabled	boolean	
phoneNumbers	device/spark/User.phoneNumbers	array (objects)	
	• type • value Example: `[{"type": "work", "value": "\\+13125557007"}]`	• string • string	
extension	User extension device/spark/User.extension	string	v2.2
status	Webex App user status device/spark/User.status	string	v2.2
licenses	Webex licenses:	array (objects)	
	• license device/spark/User.licenses	• string	

Example

```
[
  {
  "provider_name": "Provider_01",
  "reseller_name": "Reseller_01",
  "customer_name": "Customer_01",
  "division_name": "Intermediate_Node_01",
  "location_name": "Site_02",
  "hierarchy": "sys.hcs.Provider_01.Reseller_01.Customer_01.Intermediate_Node_01.Site_02
↪",
  "firstName": "Randall",
```

```
    "lastName": "Stephens",
    "email": "randall.stephens@shawshank.gov",
    "type": "person",
    "loginEnabled": true,
    "phoneNumbers": [
      {
        "type": "work",
        "value": "\\+13125557007"
      }
    ],
    "extension": "7007",
    "licenses": [
      {
      "license" : "Call on Webex"
      },
      {
      "license" : "Free message"
      },
      {
      "license" : "Free screen share"
      }
    ],
    "status": "The user has never logged in; a status cannot be determined."
  }
]
```

Note: Services reported on are dynamically included. The reference material and JSON snippet here are examples.

ELEMENT	DESCRIPTION	DATA TYPE	VER-SION
hybrid_call_services:			v2.2
connect	Users' incoming calls will ring their work phones and the Cisco Webex App app. Users can call their colleagues from either their phones or the app, too. Aware must be enabled before the user can be enabled for Connect.	boolean	v2.2
aware	Users can share content from the Cisco Webex App app during a call from their work phones and view their call history in the app.	boolean	v2.2

ELEMENT	DESCRIPTION	DATA TYPE	VER-SION
hy-brid_calendar_services:			v2.2
google	Google Calendar	boolean	v2.2
microsoft_exchange	Microsoft Exchange/Office 365	boolean	v2.2

ELEMENT	DESCRIPTION	DATA TYPE	VER-SION
meeting	Named User Licence. Each Named User license allows 1 user to be entitled as a meeting host. Named users can hold unlimited meetings.	N/A	N/A
webex_enterprise_200		boolean	v2.2
webex_support_center		boolean	v2.2
webex_meeting_center		boolean	v2.2
webex_cmr		boolean	v2.2
webex_event_center		boolean	v2.2
webex_training_center		boolean	v2.2
meeting		boolean	v2.2

Example

```
[
 {
   "division_name":"",
   "status":"",
   "location_name":"Site_03",
   "firstName":"",
   "hierarchy":"sys.hcs.Provider_01.Reseller_01.Customer_02.Site_03",
   "lastName":"",
   "provider_name":"Provider_01",
   "services":{
     "hybrid_call_services":{
       "connect":false,
       "aware":false
     },
     "message":{
       "messaging":false
     },
     "meeting":{
       "webex_enterprise_200":false,
       "webex_support_center":false,
       "webex_meeting_center":false,
       "webex_cmr":false,
       "webex_event_center":false,
```

(continues on next page)

```
        "webex_training_center":false,
        "meeting":false
      },
      "hybrid_calendar_services":{
        "google":false,
        "microsoft_exchange":false
      },
      "hybrid_message_services":{
        "message":false
      }
    },
    "reseller_name":"Reseller_01",
    "line":"",
    "email":"spark_user_36@emailaccount.com",
    "customer_name":"Customer_02"
  },
]
```

3.3.16. Webex Devices Data Export

Filename: `<YYYY-MM-DD_HHMM>_webex_devices.json.gz`

Layout:

ELEMENT	DESCRIPTION	DATA TYPE	VER-SION
provider_name	Name of the Provider	string	
reseller_name	Name of the Reseller	string	
customer_name	name of the customer	string	
division_name	Intermediate Node (e.g. Division or other node)	string	
location_name	Site Name	string	
hierarchy	The full hierarchy path for the item being exported	string	
id	Device ID E.g. : *ID_<device_name>*	string	
displayName	Device displayName E.g.: *DN_<device_name>*	string	
workspace	WorkspaceName E.g.: Boardroom	string	
username	Device username E.g.: *<device_name>_PersonID*	string	
product	product name, e.g. "Cisco Webex DX80"	string	

Example

```
{
  "provider_name": "Provider_01",
  "reseller_name": "Reseller_01",
  "customer_name": "Customer_01",
  "division_name": "Intermediate_Node_01",
  "location_name": "Site_02",
  "hierarchy": "sys.hcs.Provider_01.Reseller_01.Customer_01.Intermediate_Node_01.Site_02
↪",
  "id": "ID_spark_device_1",
  "displayName": "DN_spark_device_1",
  "workspace": "Boardroom",
  "username": "spark_device_1_PersonID",
  "product": "Cisco Webex DX80"
}
```

3.3.17. Webex Workspaces Data Export

Filename: `<YYYY-MM-DD_HHMM>_webex_workspaces.json.gz`

Layout:

ELEMENT	DESCRIPTION	DATA TYPE	VER-SION
provider_name	Name of the Provider	string	
reseller_name	Name of the Reseller	string	
customer_name	name of the customer	string	
division_name	Intermediate Node (e.g. Division or other node)	string	
location_name	Site Name	string	
hierarchy	The full hierarchy path for the item being exported	string	
id	Device ID	string	
displayName	Workspace display name `device/spark/WorkspaceLocation`	string	
type	Workspace type E.g. "huddle","focus","meetingRoom","open",. . .	string	
callingType	Workspace calling type E.g. "freeCalling"	string	

Example

```
{
  "provider_name": "Provider_01",
  "reseller_name": "Reseller_01",
  "customer_name": "Customer_01",
  "division_name": "Intermediate_Node_01",
  "location_name": "Site_02",
  "hierarchy": "sys.hcs.Provider_01.Reseller_01.Customer_01.Intermediate_Node_01.Site_02
```

```
↪",
  "id": "ID",
  "displayName": "DN_device",
  "type": "huddle",
  "callingType": "freeCalling"
}
```

3.3.18. MS Office 365 Data Export

Filename: `<YYYY-MM-DD_HHMM>_ms_o365.json.gz`

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VER-SION
username	VOSS Username of the user tied to this O365 service instance. For release 21.3 and later, the `data/User.username` field mapping is: `data/User.username_ms_365 = device/graph/MSOLUser.UserPrincipalName` If this field is blank, it means there is not a corresponding `data/User` for this MSOLUser.	string	v4
first_name	First name of the user device/msgraph/MsolUser.FirstName	string	v4
last_name	Last name of the user device/msgraph/MsolUser.LastName	string	v4
entitlement_profile	Entitlement profile of the user data.User.entitlement_profile of matching data/User	string	v4
o365_username	user name on O365 device/msgraph/MsolUser.UserPrincipalName	string	v4

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VER- SION
display_name	displayed name of user device/msgraph/MsolUser.DisplayName	string	v4
is_licensed	User licensing status device/msgraph/MsolUser.IsLicensed	string	v4
licenses	List of licenses device/msgraph/MsolUser.Licenses	array	v4
licenses.account_sku_id	license SKUId licenses.AccountSkuId	string	v4
li- censes.disabled_serviceplans	List of disabled service plans Licenses.X.ServicePlans	array	v4
li- censes.disabled_serviceplans.§	Disabled service plan name Licenses.X.ServicePlans.X.ServiceName where Enabled is False	string	v4

Example

```
[
{
  "username": "user_1",
  "first_name": "FirstName_1",
  "last_name": "LastName_1",
  "display_name": "DisplayName_user_1",
  "hierarchy": "sys.A242BC6E4F94.Prov1.Resel1.Cust1",
  "is_licensed": "N",
  "entitlement_profile": "Default-EP",
  "o365_username": "user_1@emailaccount.com",
  "licenses": [
    {
      "account_sku_id": "DEVELOPERPACK_E5"
      "disabled_serviceplans": [
       {
         "Service_Name": "AAD_PREMIUM"
       }
      ]
    }
  ],
  "reseller_name": "Resel1",
  "provider_name": "Prov1",
  "customer_name": "Cust1"
},
{
  "username": "user_2",
  "first_name": "FirstName_2",
  "last_name": "LastName_2",
  "display_name": "DisplayName_user_2",
  "hierarchy": "sys.A242BC6E4F94.Prov1.Resel1.Cust1",
  "is_licensed": "N",
```

```
      "entitlement_profile": "Default-EP",
      "o365_username": "user_2@emailaccount.com",
      "licenses": [
        {
          "account_sku_id": "DEVELOPERPACK_E5"
        }
      ],
      "reseller_name": "Resel1",
      "provider_name": "Prov1",
      "customer_name": "Cust1"
    },
    {
      "username": "user_3",
      "first_name": "FirstName_3",
      "last_name": "LastName_3",
      "display_name": "DisplayName_user_3",
      "hierarchy": "sys.A242BC6E4F94.Prov1.Resel1.Cust1",
      "is_licensed": "N",
      "entitlement_profile": "Default-EP",
      "o365_username": "user_3@emailaccount.com",
      "licenses": [
        {
          "account_sku_id": "DEVELOPERPACK_E5"
        }
      ],
      "reseller_name": "Resel1",
      "provider_name": "Prov1",
      "customer_name": "Cust1"
    },
    {
      "username": "user_4",
      "first_name": "FirstName_4",
      "last_name": "LastName_4",
      "display_name": "DisplayName_user_4",
      "hierarchy": "sys.A242BC6E4F94.Prov1.Resel1.Cust1",
      "is_licensed": "N",
      "entitlement_profile": "Default-EP",
      "o365_username": "user_4@emailaccount.com",
      "licenses": [
        {
          "account_sku_id": "DEVELOPERPACK_E5"
        }
      ],
      "reseller_name": "Resel1",
      "provider_name": "Prov1",
      "customer_name": "Cust1"
    },
    {
      "username": "user_5",
      "first_name": "FirstName_5",
      "last_name": "LastName_5",
```

```
    "display_name": "DisplayName_user_5",
    "hierarchy": "sys.A242BC6E4F94.Prov1.Resel1.Cust1",
    "is_licensed": "N",
    "entitlement_profile": "Default-EP",
    "o365_username": "user_5@emailaccount.com",
    "licenses": [
      {
        "account_sku_id": "DEVELOPERPACK_E5"
      }
    ],
    "reseller_name": "Resel1",
    "provider_name": "Prov1",
    "customer_name": "Cust1"
}
]
```

3.3.19. MS Office 365 Service Plans

Filename: `<YYYY-MM-DD_HHMM>_ms_o365_sku_service_plans.json.gz`

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VERSION
sku_name	SKU name	string	v4
service_plans	List of service plans	array	v4
service_plans.Service_Name	Service plan name	string	v4

Example

```
[
{
  "sku_name": "MS_SERVICE_NAME_01",
  "service_plans": [
    {
      "Service_Name": "AAD_PREMIUM"
    }
  ],
  "reseller_name": "Resel1",
  "provider_name": "Prov1",
  "customer_name": "Cust1"
}
]
```

3.3.20. MS Teams Data Export

Filename: `<YYYY-MM-DD_HHMM>_ms_teams.json.gz`

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VER-SION
ms_teams_username	UserPrincipalName device/msteamsonline/CsOnlineUser.UserPrincipalName	string	v4
alias	user alias device/msteamsonline/CsOnlineUser.Alias	string	v4
username	VOSS Username of the user tied to this MS Teams service instance. For release 21.3 and later, the `data/User.username` field mapping is: `data/User.username_ms_teams = device/msteamsonline/CsOnlineUser.UserPrincipalName` If this field is blank, it means there is not a corresponding `data/User` for this CsOnlineUser.	string	v4
entitlement_profile	Entitlement profile of the user data.User.entitlement_profile of matching data/User	string	v4
department	User department device/msteamsonline/CsOnlineUser.Department	string	v4
account_enabled	AccountEnabled device/msteamsonline/CsOnlineUser.AccountEnabled	boolean	v4
enterprise_voice	EnterpriseVoiceEnabled (not used) device/msteamsonline/CsOnlineUser.EnterpriseVoiceEnabled	string	v4
feature_types	FeatureTypes, e.g. Teams, Phone System, etc device/msteamsonline/CsOnlineUser.FeatureTypes	array	v4
line	OnPremLineURI device/msteamsonline/CsOnlineUser.LineURI	string	v4
line_type	LineURIType, e.g. OperatorConnect, DirectRouting, CallingPlan device/msteamsonline/CCsOnlineUser.LineURIType	string	v4
voice_routing_policy	OnlineVoiceRoutingPolicy device/msteamsonline/CsOnlineUser.OnlineVoiceRoutingPolicy	string	v4
tenant_dialplan	TenantDialPlan device/msteamsonline/CsOnlineUser.TenantDialPlan	string	v4
voicemail_policy	HostedVoicemailPolicy device/msteamsonline/CsOnlineUser.HostedVoicemailPolicy	string	v4
teams_upgrade_mode	TeamsUpgradeEffectiveMode device/msteamsonline/CsOnlineUser.TeamsUpgradeEffectiveMode	string	v4

Note: From release 21.4-PB1 onwards, the `first_name` and `last_name` fields have been removed as they are no longer used.

Example

```
[
{
  "username": "user_2",
  "entitlement_profile": "MsTeamsUser",
  "hierarchy": "sys.02676185F05F.Prov1.Resel1.Cust1",
  "ms_teams_username": "user_2@emailaccount.com",
  "voicemail_policy": "BusinessVoice",
  "teams_upgrade_mode":"TeamsOnly",
  "voice_routing_policy": "Global",
  "alias": "user_2",
  "account_enabled": True,
  "tenant_dialplan": "",
  "department": "R&D",
  "reseller_name": "Resel1",
  "provider_name": "Prov1",
  "line": "18694400002",
  "line_type": "OperatorConnect",
  "feature_type": ["Teams"],
  "customer_name": "Cust1"
},
{
  "username": "user_3",
  "entitlement_profile": "MsTeamsUser",
  "hierarchy": "sys.02676185F05F.Prov1.Resel1.Cust1",
  "ms_teams_username": "user_3@emailaccount.com",
  "voicemail_policy": "BusinessVoice",
  "teams_upgrade_mode":"TeamsOnly",
  "voice_routing_policy": "Global",
  "alias": "user_3",
  "account_enabled": True,
  "tenant_dialplan": "",
  "department": "R&D",
  "reseller_name": "Resel1",
  "provider_name": "Prov1",
  "line": "18694400002",
  "line_type": "OperatorConnect",
  "feature_type": ["Teams"],
  "customer_name": "Cust1"
},
{
  "username": "user_1",
  "entitlement_profile": "MsTeamsUser",
  "hierarchy": "sys.02676185F05F.Prov1.Resel1.Cust1",
  "ms_teams_username": "user_1@emailaccount.com",
  "voicemail_policy": "BusinessVoice",
  "teams_upgrade_mode":"TeamsOnly",
  "voice_routing_policy": "Global",
  "alias": "user_1",
  "account_enabled": True,
  "tenant_dialplan": "",
  "department": "R&D",
  "reseller_name": "Resel1",
```

(continues on next page)

```
  "provider_name": "Prov1",
  "line": "18694400002",
  "line_type": "OperatorConnect",
  "feature_type": ["Teams"],
  "customer_name": "Cust1"
}
]
```

3.3.21. MS Exchange Data Export

Filename: `<YYYY-MM-DD_HHMM>_ms_exchange.json.gz`

Layout:

ELEMENT	DESCRIPTION	DATA TYPE	VERSION
provider_name	Name of the Provider	string	v4
reseller_name	Name of the Reseller	string	v4
customer_name	name of the customer	string	v4
hierarchy	The full hierarchy path for the item being exported	string	v4
username	MS Exchange User Name	string	v4
exchange_mailbox_details	dictionary of permission types	dictionary	v4
exchange_mailbox_details.calendar_permissions	List of calendar permissions	array	v4
calendar_permissions.user	Calendar username	string	v4
calendar_permissions.access_rights	list of calendar permission rights	array	v4
exchange_mailbox_details.permissions	List of permissions	array	v4
permissions.user	Permissions username	string	v4
permissions.access_rights	list of permission rights	array	v4

Example

```
[
{
  "username": "ms_exchange_user_1@emailaccount.com",
  "hierarchy": "sys.003954111679.Prov1.Resel1.Cust1",
  "exchange_mailbox_details": {
    "calendar_permissions": [
      {
        "user": "ms_exchange_user_1",
        "access_rights": [
          "Editor",
          "Publishing Author",
          "Author"
```

```
        ]
      }
    ],
    "permissions": [
      {
        "user": "ms_exchange_user_1",
        "access_rights": [
          "FullAccess",
          "SendAs"
        ]
      }
    ]
  },
  "reseller_name": "Resel1",
  "provider_name": "Prov1",
  "customer_name": "Cust1"
},
{
  "username": "ms_exchange_user_2@emailaccount.com",
  "hierarchy": "sys.003954111679.Prov1.Resel1.Cust1",
  "exchange_mailbox_details": {
    "calendar_permissions": [
      {
        "user": "ms_exchange_user_2",
        "access_rights": [
          "Editor",
          "Publishing Author",
          "Author"
        ]
      }
    ],
    "permissions": [
      {
        "user": "ms_exchange_user_2",
        "access_rights": [
          "FullAccess",
          "SendAs"
        ]
      }
    ]
  },
  "reseller_name": "Resel1",
  "provider_name": "Prov1",
  "customer_name": "Cust1"
}
]
```

3.3.22. Pexip Data Export

Filename: `<YYYY-MM-DD_HHMM>_pexip_conference.json.gz`

Layout:

ELEMENT	DESCRIPTION	DATA TYPE	VER-SION
provider_name	Name of the Provider	string	v4
reseller_name	Name of the Reseller	string	v4
customer_name	name of the customer	string	v4
hierarchy	The full hierarchy path for the item being exported	string	v4
name	First name of user	string	v4
description	Last name of user	string	v4
owner_email	User email address	string	v4
type	service type	string	v4

Example

```
[
 {
   "name": "user_1",
   "hierarchy": "sys.0ECD98831FCF.Provider1Hierarchy.Reseller1Hierarchy.
→Customer1Hierarchy",
   "description": "Description_PexIp_1",
   "owner_email": "user_1@dummy-emailaccount.com",
   "reseller_name": "Reseller1Hierarchy",
   "provider_name": "Provider1Hierarchy",
   "type": "conference",
   "customer_name": "Customer1Hierarchy"
 }
]
```

3.3.23. VOSS Phone Servers Data Export

Filename: `<YYYY-MM-DD_HHMM>_voss_phone_servers.json.gz`

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VER- SION
mac	MAC address of phone server data/PRS_MultiVendorPhone_DAT.mac	string	v4
phone_vendor	Vendor name data/PRS_MultiVendorPhone_DAT.phoneVendor	string	v4
phone_model	Model Name data/PRS_MultiVendorPhone_DAT.phoneModel	string	v4
lines	Lines names and CoS	array	v4
lines.name	Lines names data/PRS_MultiVendorPhone_DAT.line1Name data/PRS_MultiVendorPhone_DAT.line2Name	array	v4
lines.class_of_service	Lines CoS's data/PRS_MultiVendorPhone_DAT.line1Cos data/PRS_MultiVendorPhone_DAT.line2Cos	array	v4

Example

```
[
{
  "phone_model": "Cisco 6921",
  "hierarchy": "sys.F28DA5B756D7.Prov1.Resel1.Cust1",
  "lines": [
    {
      "class_of_service": "International-24Hrs-Enhanced",
      "name": "8445574"
    },
    {
      "class_of_service": "International-24Hrs-Enhanced",
      "name": "8445576"
    }
  ],
  "mac": "2C:54:91:88:C9:02",
  "phone_vendor": "Cisco",
  "reseller_name": "Resel1",
  "provider_name": "Prov1",
  "customer_name": "Cust1"
},
{
  "phone_model": "Cisco 6921",
  "hierarchy": "sys.F28DA5B756D7.Prov1.Resel1.Cust1",
  "lines": [
    {
```

```
        "class_of_service": "International-24Hrs-Enhanced",
        "name": "8445574"
    },
    {
        "class_of_service": "International-24Hrs-Enhanced",
        "name": "8445576"
    }
  ],
  "mac": "2C:54:91:88:C9:01",
  "phone_vendor": "Cisco",
  "reseller_name": "Resel1",
  "provider_name": "Prov1",
  "customer_name": "Cust1"
}
]
```

3.4. Appendix

3.4.1. Network Communications External to the Cluster

The following details are all based on the default settings. These can vary depending on the application setup and network design (such as NAT) of the solution, so may need adjustment accordingly. Where a dependant is noted, this is fully dependant on the configuration with no default.

These communications are all related to communications with devices external to the cluster.

Outbound Communications to Devices from the Application/Unified Nodes

Communication	Protocol	Port
Cisco Unified Communications Manager (UCM)	HTTPS	TCP 8443
Cisco Unity Connection (CUXN)	HTTPS	TCP 443
Webex	HTTPS	TCP 443
LDAP directory	LDAP	TCP/UDP 389 and/or 636(TLS/SSL)
Cisco HCM-F	HTTPS	TCP 8443
MS PowerShell Proxy Node	HTTPS	TCP 5986
Microsoft 365 (Graph API)	HTTPS	TCP 443
Zoom	HTTPS	TCP 443

Outbound to External Systems from the Proxy Node

Communication	Protocol	Network Protocol and Port
API Sync and Async responses	HTTPS	TCP 443
Northbound Notification messages	HTTPS	dependant
Microsoft Teams / Microsoft Exchange	HTTPS	443
VOSS Cloud Licensing Service	HTTP HTTPS	80 443

Outbound to External Systems from All Nodes

Communication	Protocol	Port
SNMP	SNMP	TCP/UDP 162
SFTP as required for backup destinations	SFTP	TCP 22
NTP	NTP	UDP 123

Inbound Communications From External Systems to the Proxy Node

Communication	Protocol	Port
Web Access	HTTPS	TCP 443
API Request	HTTPS	TCP 443

Inbound Communications to All Nodes

Communication	Protocol	Port
SSH and SFTP for management and files transfers	SFTP/SSH	TCP/UDP 22

Index

A

app
 app template, 31

C

cluster
 cluster provision, 31
 cluster upgrade, 31

S

schedule
 schedule add, 31
 schedule enable, 31
 schedule time, 31
screen, 31

V

voss
 voss export, 28
voss export
 voss export group, 31
 voss export type, 31
voss subscriber_data_export, 31