



**VOSS**



**VOSS Automate  
Licensing and Subscriber Data Export  
Guide**

**Release 21.4**

Nov 29, 2023

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# 1. Licensing

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## Important:

- VOSS may from time to time add additional fields and reports to update the data export. Note that existing fields will not be removed. Before running any updated release of the export, it is therefore recommended that an impact assessment of the changes in the release be made prior to the processing of exported files.
- There is no License Super Patch available containing features in release 21.3 that can be applied to earlier releases without upgrading to release 21.3. Refer to the *Change Log* section for details on these features.

Also see: [Patch Update](#) for more details.

- For all releases before the 19.x series, there is a known, pre-existing issue where License audit files are not generated when a scheduled License audit overlaps with a scheduled subscriber data extract (SDE).

To avoid this issue in this release, ensure that you have non-overlapping license audit and SDE schedules. You can modify the schedule of your SDE (see *Scheduling* in the Core Feature Guide), but if you wish to modify the License audit default schedule from 3AM UTC, please contact VOSS support.

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## 1.1. What's New

### 1.1.1. Licensing and Subscriber Data Export Guide: Release 21.4

- VOSS-872: (EKB-13382: Add License token ID to License Audit header). See: [Detail License Customer Aggregate Data Export](#)  
Added details on license requirements.
- VOSS-872: (EKB-13382: Add License token ID to License Audit header). See: [License Anonymous Customer Aggregate Data Export](#)  
Added details on license requirements.

### 1.1.2. 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.

### 1.1.3. 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.

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

- N/A

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

- VOSS-1261: Implement Simpler License Audit Logic Across the Insights and Automate Products. See: [Detail License Customer Aggregate Data Export](#)  
Added details on version 5.0.0 licensing audit command and output

## 1.2. Change Log

Version	Re-release(s)	Content
5.0.0	21.4-PB4	
4.1.2	19.3.4, 21.3	<ul style="list-style-type: none"> <li>MS_O365 counts for both the License SDE and Audit reports will only reflect instances of the device/msgraph/MsolUser model type. <ul style="list-style-type: none"> <li><i>Detail License Customer Aggregate Data Export</i></li> <li><i>License Anonymous Customer Aggregate Data Export</i></li> <li><i>MS Office 365 Data Export</i></li> </ul> </li> <li>For release_21.1 and onwards, the lines array field maps to: <ul style="list-style-type: none"> <li>extension &gt; data/User.mvs_extensions.0.line</li> <li>e164 &gt; data/User.mvs_extensions.0.line_e164</li> <li>cos &gt; data/User.mvs_extensions.0.line_cos</li> </ul> </li> <li>MS SKU licensing: on the O365 user file, a disabled_serviceplans section shows any plans with the SKU that are disabled for the user. <ul style="list-style-type: none"> <li><i>MS Office 365 Data Export</i></li> </ul> </li> <li>New Microsoft SKU license service plan export. See: <i>MS Office 365 Service Plans</i>.</li> </ul>
4.0.2	19.3.4, 21.1	<ul style="list-style-type: none"> <li>Fixed the entitlement profile and title fields of the subscriber SDE report</li> <li>Added the 'ownerid' field to the phones SDE report</li> </ul>
4.0.1	19.3.4, 21.1	<ul style="list-style-type: none"> <li>ClientShape audit automation support</li> <li>Include the V4UC organization ID in the CSV header files (for ClientShape)</li> <li>Addition of Microsoft and PexIP related service counts</li> <li>Addition of Voss Phone Server count</li> <li>Added N-to-1 DN to E164 Association to the SDE reports</li> <li>Added various Microsoft related (including Exchange) SDE reports</li> <li>Added a PexIP SDE report</li> <li>Added phone expansion module fields (module 1, 2 and 3) to the phones SDE report</li> </ul>
3.0.1	19.3.2	<ul style="list-style-type: none"> <li>No changes were made to the licensing code itself, but the CLI output of the license super patch was made more descriptive</li> </ul>

Version	Re-lease(s)	Content
3.0.0	19.3.1	<ul style="list-style-type: none"> <li>• The VOSS license audit logic now considers a phone assigned to a user if that device has been setup as an associatedDevice on the user OR phone ownerID</li> <li>• Alternate ways were added to automate the collection of the VOSS license files: <ul style="list-style-type: none"> <li>– SFTP: Send the file to a remote SFTP server</li> <li>– Email: Email the file to an email destination (requires SMTP server access)</li> <li>– HTTP: Send the license file(s) to an HTTP server</li> <li>– File Download via the Portal: Local download via the VOSS Automate GUI</li> </ul> </li> <li>• In the event that the file is not sent for any reason (incorrect configuration, permissions issue, etc. . . ), an alert is created in the Admin GUI which in turn results in an SNMP trap being created</li> <li>• The license output filename format changed to include provider and hostname - this adds support for a single partner/customer that may have multiple platforms</li> <li>• The new filename format: <ul style="list-style-type: none"> <li>– “vlf_&lt;provider_name&gt;_&lt;host_name&gt;_license_&lt;YYYY-MM-DD_HHMM&gt;.zip” (containing anonymous data)</li> <li>– “vlf_&lt;provider_name&gt;_&lt;host_name&gt;_detailed_&lt;YYYY-MM-DD_HHMM&gt;.csv” (containing detailed information)</li> </ul> </li> <li>• Additional headers were added to the output files for platform identification and version: <ul style="list-style-type: none"> <li>– Platform ID (generated by the system and is unique)</li> <li>– Hostname of the system</li> <li>– Provider on the system</li> <li>– Software Version</li> <li>– Deployment Mode</li> </ul> </li> </ul>

Version	Re-release(s)	Content
2.3.0	19.1.2	<ul style="list-style-type: none"> <li>• First version to be delivered via a super patch that is compatible with CUCDM 11.5.1 SU1 / VOSS-4-UC 17.4 and later</li> <li>• Alignment with CUCM licensing rules, including: <ul style="list-style-type: none"> <li>– Exclusion of CTI Ports from license counts</li> <li>– Spark Remote Device type only consuming a license when it is a subscriber's only device</li> </ul> </li> <li>• Addition of a Site Count column to report the number of sites per customer</li> </ul>
2.0.0	11.5.3 18.1	<ul style="list-style-type: none"> <li>• The expanded ability to audit in terms of VOSS-4-UC added capabilities, such as Webex Teams (aka Spark) and Contact Center</li> <li>• Built in schedule to execute at the end of the month automatically. Schedule cannot be edited by customer to avoid conflict. This replaces any schedule that would have been setup under v1 and that schedule should be removed to avoid duplication, etc.</li> <li>• Public sector setting on customer</li> <li>• Notifications when the scheduled run of the audit fails for some reason - CLI, email, SNMP.</li> </ul>
1.0.0	11.5.3 18.1	<ul style="list-style-type: none"> <li>• The ability to audit the existing deployment in terms of CUCDM functionality and licenses.</li> <li>• A schedule can be created to execute it on a monthly basis (similar to the Subscriber Data Extract in general). This is a visible and customer configurable schedule.</li> </ul>

## 1.3. License Data Export Overview

The license data export functionality provides a way to collect the appropriate audit data to track VOSS license usage in the system each month. This is required to ensure the billing is aligned with the license usage in the system according to our contract.

License data export is required on all production systems.

This functionality provides two views of the data:

Data to be provided to VOSS	Aggregated counts and other data required for billing. The tool does not collect any data identifying users or customers on the system. This data is provided to VOSS for billing.
Local view for the partner	As above, except that it includes identifying information about the customers. This is to help you better understand the data in terms of your customer base. No user data is collected. It is the partner's discretion to share this data with VOSS.

Files are raw JSON format, and contain the data used when processing into the CSV files. These are typically used by VOSS to view the raw data in the event of anomalies in the CSV files.



The data is correlated and written to a file locally on the system, scheduled for the end of each month, and provides an aggregated snapshot of services consumed in the system, in terms of VOSS license definitions.

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.

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

The **Public Sector** setting at the customer hierarchy node allows you to flag a customer as *Public Sector* for licensing purposes, in the event that the contract includes public sector licenses. The setting should be checked for any customers that are consuming public sector licenses to ensure accurate billing. It can be modified on any existing customers or set for new customers, as required.

## 1.4. Schedule Details

The system runs an internal schedule to generate monthly license reports. The schedule is configured to run at 3AM UTC on the first day of the month. The schedule cannot be disabled nor can the date be changed from the CLI. The time can however be changed. Please contact your VOSS account manager if a schedule time change is required, so that this can be done via support.

### 1.4.1. Manual Command Execution

In the event a manual run of the process is required (ad hoc data, or schedule failure), the commands can be run via the VOSS CLI.

**Important:** 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: [Using the screen command](#).

#### **voss export type license\_initial\_audit**

Expected output example:

```
platform@VOSS:~$ voss export type license_initial_audit
Starting license_initial_audit export, please wait...
Completed license_initial_audit export, created license_2019-09-30_0914.zip,
license_detailed_customer_aggregate_2019-09-30_0914.csv.
```

#### **voss export group license**

Expected output example:

```
platform@VOSS:~$ voss export group license
Starting license group export consisting of license_initial_audit, please wait...
Starting license_initial_audit export, please wait...
Completed license_initial_audit export, created license_2019-09-30_0910.zip,
license_detailed_customer_aggregate_2019-09-30_0910.csv.
Completed license group export.
```

## 1.5. Single Licensing Update Patch

### 1.5.1. Patch Update

**Important:** There is no License Super Patch available containing 4.1.2 features in release 21.3 that can be applied to earlier releases without upgrading to release 21.3.

The details below refer to the License Super Patch for releases *prior* to release 21.3.

From Version 2.3.0 of the License Audit tool, a single patch is available to install all the latest changes to any releases from CUCDM 11.5.1 SU1 / VOSS-4-UC 17.4 onwards.

**Important:**

- All changes in version 4.0.2 of the License Super Patch are automatically included in release 21.2. Therefore, the License Super Patch is not required for platforms on release 21.2.
- For all releases before the 19.x series, there is a known, pre-existing issue where License audit files are not generated when a scheduled License audit overlaps with a scheduled subscriber data extract (SDE).

To avoid this issue in this release, ensure that you have non-overlapping license audit and SDE schedules. You can modify the schedule of your SDE (see: [Scheduling](#)), but if you wish to modify the License audit default schedule from 3AM UTC, please contact VOSS support.

The Patch and the MOP are available here (*does not apply for changes from release 21.3*):

- Server Name: <https://voss.portalshape.com>
- Path: **Downloads > VOSS-4-UC > License Audit Script > License-Super-Patch-4.0.2**
- Patch Directory: **License-Super-Patch-4.0.2\_patch**
- Patch File: License-Super-Patch-4.0.2\_patch.script
- MOP File: MOP-License-Super-Patch-4.0.2\_patch.pdf

An accompanying file, `EKB-10875_PB5_sysadmin_cloud_license.template` is available to expose the VOSS Cloud License Service in the sysadmin user menu.

### Supported Releases and Dependency Requirements

The super patch is compatible with CUCDM 11.5.1 SU1 / VOSS-4-UC 17.4 platform versions and later. For each release version, there may be a dependency on or more additional patches. Where possible, the super patch automatically installs missing dependencies. Otherwise, the installation fails with an error message instructing the platform administrator to install the missing dependencies. The table below provides dependency details for various release versions.

Release	Patch Dependencies	Action on Missing Dependencies
VOSS-4-UC 19.3.4 FCS, PB1 - PB5 VOSS-4-UC 21.1, 21.2 VOSS-4-UC 20.1 not supported	No Dependencies No Dependencies No Dependencies	Cloud License template file for PB5 Not Applicable Not Applicable
VOSS-4-UC 19.1.1 and later	No Dependencies	Not Applicable
VOSS-4-UC 18.1	<ul style="list-style-type: none"> <li>• VOSS-4-UC 18.1 Bundle 03 or later 18.1-V4UC-Patch-Bundle-03/b</li> <li>or</li> <li>• Licensing Version 2 (Provider) VOSSUC-225_PROVIDER_18.1_bundled</li> <li>or</li> <li>• Licensing Version 2 (Enterprise) VOSSUC-225_ENTERPRISE_18.1_bundled</li> </ul>	Install VOSS-4-UC 18.1 Bundle 3b or later first
CUCDM 11.5.3	<ul style="list-style-type: none"> <li>• Licensing Version 2 VOSSUC-225_CUCDM_11.5.3_bundled</li> </ul>	Install CUCDM 11.5.3 Patch Bundle 1 or later first
CUCDM 11.5.2 VOSS-4-UC 17.6	<ul style="list-style-type: none"> <li>• Licensing Version 1 VOSSUC15663-11.5.2 VOSS-46-11.5.2 VOSSUC-20323_11.5.2</li> </ul>	Dependencies automatically installed
CUCDM 11.5.1 SU1 VOSS-4-UC 17.4	<ul style="list-style-type: none"> <li>• Licensing Version 1 VOSSUC15663-11.5.1SU1 VOSS46-11.5.1SU1 VOSSUC-20323_11.5.1su1</li> </ul>	Dependencies automatically installed

### Caveats

1. For CUCDM 11.5.1 SU1, CUCDM 11.5.2, VOSS-4-UC 17.4, and VOSS-4-UC 17.6, the patch does not support the internal platform schedule that automatically executes the license audit at the start of every month.

**Workaround:** A standard platform CLI schedule must be used.

2. The inclusion of Subscriber Data Extracts is a side effect of the underlying implementation dependencies.

The version number specified in the patch relates to the version number of the license audit reports and is not influenced by changes in Subscriber Data Extracts capabilities.

## 1.6. Report Files

### 1.6.1. File Details

Whether generated via the schedule or via the voss export command in the CLI, the successful execution results in a set of files in the directory `media/data_export/license`.

The files are retained on the system for 2 years and the system will remove files older than 2 years automatically when new files are generated. The data is also stored locally in the database in the event of any issues with the files.

The details of the files created are:

1. A CSV report file for partner reference that includes the customer details. This file is not required by VOSS and is for the partner's internal use and view of the data.

Filename format: `vlf_<provider_name>_<host_name>_detailed_<YYYY-MM-DD_HHMM>.csv`

2. A ZIP file to be sent to VOSS for billing purposes. The filename is:

`vlf_<provider_name>_<host_name>_license_<YYYY-MM-DD_HHMM>.zip`

The ZIP file contains a directory with contents as below.

directory: `<YYYY-MM-DD_HHMM>_license`

- a. A license JSON file. Filename format: `vlf_<provider_name>_<host_name>_license_<YYYY-MM-DD_HHMM>.json`.

- metadata attributes and values:
  - `"datetime": "<timestamp>"`
  - `"export_identifier": "<UUID>"`
  - `"pipeline_type_name": "license_initial_audit"`.
- a list of individual JSON objects if they contain data, for example:
  - License Subscriber Profile Data Export
  - License Standalone Phone Data Export
  - License Standalone WebEx Data Export
  - License Standalone Voicemail Data Export
  - License Contact Center Data Export
  - License Spark Hybrid Data Export

If you need more details about the JSON file formats, contact VOSS.

- b. Patch and adaptation JSON log files. Format:

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

and

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

These files contain data on any patches applied and adaptations installed to the system.

- The patch log file contains patch and patch bundle names and descriptions, as shown on the Admin Portal **About > Extended Version**.

- The `adaptation_log` log file contains installed adaptation names and descriptions, as shown on the Admin Portal **About > Adaptation Status**.

If no patches or adaptations are applied, the JSON file data is empty, in other words the file contents show as:

```
{
  "meta": {},
  "resources": []
}
```

- c. A CSV report file that is Customer anonymous, in other words, no identifying information such as Provider, Reseller, or Customer columns and no friendly hierarchy path names.

Filename format: `vlf_<provider_name>_<host_name>_anonymous_<YYYY-MM-DD_HHMM>.csv`.

For detailed view of the file format and contents, see: [License Anonymous Customer Aggregate Data Export](#).

- d. Hash files (`<filename>.hash`) of the JSON and CSV files, used to verify the integrity of the files.

Filename formats:

- `vlf_<provider_name>_<host_name>_license_<YYYY-MM-DD_HHMM>.json.hash`
- `vlf_<provider_name>_<host_name>_anonymous_<YYYY-MM-DD_HHMM>.csv.hash`
- `vlf_<provider_name>_<host_name>_patch_<YYYY-MM-DD_HHMM>.json.hash`
- `vlf_<provider_name>_<host_name>_adaptation_log_<YYYY-MM-DD_HHMM>.json.hash`

## 1.6.2. File Collection

In order to view the generated files or collect them to submit to VOSS on your billing anniversary, the following process can be used to collect the files generated.

- 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):
  - For submission to VOSS, this should include the ZIP files (details in the File Details section above) for each month required for the billing cycle (e.g 3 months for a quarterly cycle).
  - The customer version of the file to view offline

### Viewing the Customer file

Once the file is retrieved from the VOSS system, it can be viewed offline using the CSV file viewer of choice (e.g Microsoft Excel).

### 1.6.3. 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. For v2.0 of the feature, if the report was not generated successfully, a number of notification methods are available:

- CLI login or health check

A message shows on the CLI console when logging in or when typing the **health** command:

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

## 1.7. Data Export Types

### 1.7.1. Detail License Customer Aggregate Data Export

This is the partner view of the data that includes customer details for better understanding.

Filename:

**License Super Patch version 4.1.11** and older:

vlf\_<provider\_name>\_<host\_name>\_detailed\_legacy\_<YYYY-MM-DD\_HHMM>.csv

**License Super Patch version 5.0.0:**

vlf\_<provider\_name>\_<host\_name>\_detailed\_<YYYY-MM-DD\_HHMM>.csv

Metadata: header rows showing for example the date time stamp, version and licensing information, prefixed by a #, for example:

```
#OrgID=0010000001kPTUpQAO
#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
```

**Note:** For licensing:

- OrgID is the account id from the Customer Portal: **Company Information**.
- CTI Ports are *not counted* as user or standalone phones.
- Cisco Spark Remote Devices are *only* counted if a subscriber has no other phones. If a subscriber has more than one Cisco Spark Remote Device, this is counted as a single device.
- If a user has more than 10 devices associated to them (via associated devices or ownerid on the phone) then for each increment of 10, an additional license is counted.

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.

Fields that are additional in detailed reports:

DEVICE/SERVICE	DESCRIPTION	DATA TYPE
Provider	Provider hierarchy name on the system.	string
Reseller	Reseller hierarchy name on the system.	string
Customer	Customer hierarchy name on the system.	string

For a detailed description of the fields, see: [Licensing Audit Details](#).

Examples:

**License Super Patch version 4.1.11** and older:

```
#OrgID=0010000001kPTUpQA0
#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 0365 User (no Teams), \
Cisco and MS Integrated Service,Multi-vendor Users,PexIP only, \
Phone Server Phones,Site Count
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,2,0,0,0,0,0,0,0,0,0,0,1
```

**License Super Patch version 5.0.0:**

```
#OrgID=42
#Platform ID=65421bc70b9bb5b66d48c714
#hostname=python
```

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(continued from previous page)

```
#Provider Name=Provider_01
#Software Version=19.1.2.001
#Platform Version=19.1.2-001
#Deployment Mode=Provider with HCMF
#License Token=<license-token-not-found>
#License Expiry=<license-expiry-not-found>
#Date Time=2023-11-20 08:57
#Audit Version=5.0.0
Provider,Reseller,Customer,Customer PKID,User Licenses,Cisco and MS Integrated Services,
↳Standalone Devices,Meeting Rooms,Voss Phone Servers,Sites
Provider_01,Reseller_01,Customer_02,6544be240c82f662ed230b79,30,0,0,0,0,1
Provider_01,Reseller_01,Customer_01,6544be260c82f662ed230ba1,72,4,0,0,3,2
```

## 1.7.2. License Anonymous Customer Aggregate Data Export

This is the VOSS version of the report file without identifying customer data.

Filename: vlf\_<provider\_name>\_<host\_name>\_anonymous\_<YYYY-MM-DD\_HHMM>.csv

Metadata: header rows showing for example the date time stamp, version and licensing information, prefixed by a #, for example:

```
#OrgID=0010000001kPTUpQAO
#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
```

**Note:** For licensing:

- OrgID is the account id from the Customer Portal: **Company Information**.
- CTI Ports are *not counted* as user or standalone phones.
- Cisco Spark Remote Devices are *only* counted if a subscriber has no other phones. If a subscriber has more than one Cisco Spark Remote Device, this is counted as a single device.
- If a user has more than 10 devices associated to them (via associated devices or ownerid on the phone) then for each increment of 10, an additional license is counted.

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.

For a detailed description of the fields, see: [Licensing Audit Details](#).

Example:

```
#OrgID=0010000001kPTUpQA0
#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 0365 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
```

### 1.7.3. Licensing Audit Details

The Audit Details table below provides information on vendor devices and services that are shown in the following exports:

- [License Anonymous Customer Aggregate Data Export](#)
- [Detail License Customer Aggregate Data Export](#)

## 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
- 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

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Table 1 – continued from previous page

Column	Description	Definition	VOSS License
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
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

continues on next page

Table 1 – continued from previous page

Column	Description	Definition	VOSS License
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)
Standalone 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

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Table 1 – continued from previous page

Column	Description	Definition	VOSS License
Standalone 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
Standalone 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
Standalone 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)
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/CsOnlineUserRecord 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)

continues on next page

Table 1 – continued from previous page

Column	Description	Definition	VOSS License
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/CsOnlineUsers exist AND accountEnabled = true AND FeatureTypes contains PhoneSystem AND enterprisevoiceenabled = true AND device/msexchangeonline/UserMailbox 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/CsOnlineUsers exist AND accountEnabled = true FeatureTypes contains PhoneSystem AND enterprisevoiceenabled=true AND device/msexchangeonline/UserMailbox 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
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)

continues on next page

Table 1 – continued from previous page

Column	Description	Definition	VOSS License
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

## 1.8. Distributing Licensing Reports

### 1.8.1. Licensing Destinations and Formats

**Note:** This topic only covers the Admin Portal interface available for licensing export. For further details and for licensing export using platform CLI commands, refer to the Licensing and Subscriber Data Export Guide.

VOSS Automate provides the means to collect the audit data to track VOSS license usage in the system each month. This is required to ensure the billing is aligned with the license usage in the system according to our contract.

A schedule is configured to collect the data and save the output to the platform filesystem at 3AM UTC on the first day of the month, but the platform CLI also has commands to run the data collection manually. For details, refer to the Licensing and Subscriber Data Export Guide.

## 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:

- **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 v1f 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

- **VOSS Cloud Licensing Service**

- Automatically upload license audit files to the VOSS Customer Portal - see: [VOSS Cloud Licensing Service](#).

- **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\_<YYYY-MM-DD\_HHMM>.csv)
- Anonymous ZIP (file format: vlf\_<provider\_name>\_<host\_name>\_license\_<YYYY-MM-DD\_HHMM>.zip)

Contains <YYYY-MM-DD\_HHMM>\_license directory with files of format:

- \* vlf\_<provider\_name>\_<host\_name>\_anonymous\_<YYYY-MM-DD\_HHMM>.csv
- \* vlf\_<provider\_name>\_<host\_name>\_license\_<YYYY-MM-DD\_HHMM>.json
- \* vlf\_<provider\_name>\_<host\_name>\_anonymous\_<YYYY-MM-DD\_HHMM>.csv.hash
- \* vlf\_<provider\_name>\_<host\_name>\_license\_<YYYY-MM-DD\_HHMM>.json.hash

- Detailed CSV (file format: vlf\_<provider\_name>\_<host\_name>\_detailed\_<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*)

### 1.8.2. 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

### 1.8.3. 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**.

#### 1.8.4. 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.

**Important:** The VOSS Licensing Service is available as follows:

In 19.3.4 FCS, PB-1 - PB-5, 21.1 and later: only if you install the License Super Patch 4.0.2 and later.

- For details of the License Super Patch 4.0.2 see [Patch Update](#)
- To expose the menus, see [Patch Update](#)

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.
  - [Licensing Destinations and Formats](#)

#### 1.8.5. 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](http://voss.portalshape.com/organisations):

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

The screenshot shows the 'Information' tab selected in the VOSS Customer Portal. The navigation bar includes: INFORMATION, DOCUMENTATION, KNOWN ISSUES, SOFTWARE, CASES, SATISFACTION, USERS, MEETINGS, ACTION ITEMS, UPLOADS, and DOWNLOADS. Below the navigation bar is a 'VIEW DASHBOARD' button.

**VOSS Support Contact Details**

Support USA: +1 972 905 9181  
 Support UK: +44 808-189-1232  
 Support Australia: +61 28 03 85 057

Email VOSS Support: [GENERAL ENQUIRIES](#) [ESCALATIONS](#)

**Priority Cases**

It is critical that any P1/P2 case raised with VOSS Service Desk is accompanied with a call to the VOSS Service Desk Hotline.  
 When the call is made to the hotline, you will be required to provide the case reference, as well as provide key information related to the reason of the priority and business impact.  
 For Priority cases, ensure that a conference session as well as platform CLI credentials is already in place so that time is not wasted prior to getting access to the affected platform.

**Company Information**

<b>Account Type:</b> Other	<b>Account Owner:</b> Rachel Chicken
<b>Territory:</b> North America	<b>Account Created:</b> 2017-11-30
<b>Account ID:</b> XXXXXXXXXXXX	<b>Website:</b>
<b>Engineering Lead:</b> -- None --	<b>Product Champion:</b> Henry Barton
<b>Operations Lead:</b> Darrel Bremer	<b>VOSS Project Manager:</b> -- None --
<b>Product Management Lead:</b> -- None --	<b>VOSS Solutions Archite...:</b> -- None --
<b>Commercial Lead:</b> -- None --	<b>Resident Engineer:</b> -- None --
<b>Sponsor:</b> -- None --	<b>HTOM/Service Manager:</b> -- None --

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

The screenshot shows the 'Software' tab selected in the VOSS Customer Portal. The navigation bar includes: INFORMATION, DOCUMENTATION, KNOWN ISSUES, SOFTWARE, CASES, SATISFACTION, USERS, MEETINGS, ACTION ITEMS, UPLOADS, and DOWNLOADS.

**Customer Platforms (7)**

NEW SOFTWARE +

Product Name	Version	Platform Type	Platform Name	Status	Lab / Production
VOSS Analytics & Assurance	Dashboard 63 / Arbitrator 22	Any		Active	Production
VOSS-4-UC	19.3.4-PB4	Any		Active	Lab
VOSS-4-UC	19.3.4-PB4	Any		Active	Production
VOSS-4-UC	21.1	Any		Active	Lab
VOSS-4-UC	19.3.2	Any		Active	Lab
VOSS-4-UC	19.3.2	Any		Active	Lab
VOSS-4-UC	19.3.2	Any		Active	Production

### 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. Subscriber Data Export

### 2.1. 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.

#### 2.1.1. 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.
[...]
```

## 2.2. Data Export Commands

### 2.2.1. 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)

## 2.2.2. 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**

The example below shows the console output for some commands:

```

platform@host:~$ schedule add myexport voss export type license_initial_audit
Automatically setting time to midnight and enabling
myexport:
  active: true
  command: voss export type license_initial_audit --force
  hour: 0
  min: 0

platform@host:~$ schedule time myexport weekly 0
myexport:
  active: true
  command: voss export type license_initial_audit --force

```

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```
hour: 0
min: 0
week: 0

platform@host:~$ schedule disable myexport
myexport:
  active: false
  command: voss export type license_initial_audit --force
  hour: 0
  min: 0
  week: 0
```

**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.

### 2.2.3. 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
```

## 2.3. Data Export Types

### 2.3.1. Analogue line MGCP Data Export

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

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VERSION
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",
  "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": "",

```

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```

"port_type": "Cisco MGCP FXS Port",
"reseller_name": "Resel2",
"provider_name": "Prov2",
"cucm_dn": "333333",
"customer_name": "Cust2"
}
]

```

### 2.3.2. Analogue Line SCCP Data Export

Filename: <YYYY-MM-DD\_HHMM>\_analogue\_line\_sccp.json.gz

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VERSION
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.Resell1.Cust1.Intermed1.Intermed1_1.Site1",
  "gateway": "SKIGW202AAAA202",
  "E164": "test_e164",
  "port_type": "Analog Phone",
  "reseller_name": "Resell1",
  "provider_name": "Prov1",
  "cucm_dn": "\\+155545",
  "customer_name": "Cust1"
}
]
```

### 2.3.3. 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	VERSION
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.partition	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_partition": "Cu1-AllowVm-PT",
    "member": [
      {
        "cucm_dn": "50409",
        "partition": "Cu1-AllowVm-PT"
      }
    ]
  }
]
```

### 2.3.4. Contact Center Enterprise Data Export

Filename: <YYYY-MM-DD\_HHMM>\_contact\_center\_enterprise.json.gz

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VERSION
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"
  }
]
```

### 2.3.5. Contact Center Express Data Export

Filename: <YYYY-MM-DD\_HHMM>\_contact\_center\_express.json.gz

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VERSION
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
  }
]
```

### 2.3.6. Customer Data Export

(New report in version 2)

Filename: <YYYY-MM-DD\_HHMM>\_customer.json.gz

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VERSION
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": ""
  }
]
```

### 2.3.7. Extension Mobility Data Export

Filename: <YYYY-MM-DD\_HHMM>\_extension\_mobility.json.gz

Layout:

ELEMENT	DESCRIPTION AND FIELD SOURCE	DATA TYPE	VERSION
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",
```

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```

    "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"
}
]

```

### 2.3.8. 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	VERSION
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 enabled 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
  }
]
```

### 2.3.9. Hunt Group Data Export

Filename: <YYYY-MM-DD\_HHMM>\_hunt\_group.json.gz

Layout:

ELEMENT	DESCRIPTION	DATA TYPE	VERSION
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"
    }
  ],
}
```

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```

    {
      "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"
}
]

```

### 2.3.10. Hybrid Data Export

Filename: <YYYY-MM-DD\_HHMM>\_hybrid.json.gz

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	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	First name of user	string	v4
service_type	Hybrid type	string	v4
lines	array of lines: extension, e164, cos	array	v4
lines.extension	<i>release 19.3.4</i> data/MultiVendorServiceData_DAT.line1Dn (and line2Dn) <i>release &gt;= 21.1</i> data/User.mvs_extensions.0.line	string	v4
lines.e164	<i>release 19.3.4</i> data/MultiVendorServiceData_DAT.line1E164 (and line2E164) <i>release &gt;= 21.1</i> data/User.mvs_extensions.0.line_e164	string	v4
lines.cos	<i>release 19.3.4</i> data/MultiVendorServiceData_DAT.line1CoS (and line2CoS) <i>release &gt;= 21.1</i> 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"
      }
    ]
  }
]
```

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```

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

```

### 2.3.11. Line Data Export

(New report in version 2)

Filename: &lt;YYYY-MM-DD\_HHMM&gt;\_line.json.gz

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VERSION
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
calling_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",

```

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```

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

```

### 2.3.12. Phones Data Export

Filename: <YYYY-MM-DD\_HHMM>\_phones.json.gz

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VERSION
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	VERSION
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 <i>Only in release &gt;= 21.1</i> device/cucm/Phone.ownerUserName	string	v4
add_on_modules	Array of phone addon modules, incl. name, model, position <i>Only in release &gt;= 21.1</i> 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": [
    "slp1_user1"
  ],
  "location_name": "Site1",
```

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```

"description": "slp1_desc",
"hierarchy": "sys.AB707E3E6FC2.Prov1.Resel1.Cust1.Intermed1.Intermed1_1.Site1",
"lines": [
  {
    "line_order": 0,
    "cucm_dn": "11111",
    "E164": "slp111_e164"
  }
],
"add_on_modules": [
  {
    "position": 0,
    "model": "add_on_module_model-01",
    "name": "add_on_module_info-01"
  }
],
"device_type": "slp1_product_value",
"reseller_name": "Resel1",
"provider_name": "Prov1",
"device_name": "slp1_name",
"device_css": "slp1_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": "slp2_product_value",
  "reseller_name": "Resel1",
  "provider_name": "Prov1",
  "device_name": "slp2_name",
  "device_css": "slp2_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",

```

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```
    "E164": "s2p111_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"
}
]
```

### 2.3.13. 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
customer_address1	Address string 1 for the customer device/hcmf/Customer.contactAddress1	string	v1
customer_address2	Address string 2 for the customer device/hcmf/Customer.contactAddress2	string	v1
customer_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
emergency_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
external_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_bandwidth": "",
    "emergency_number": "",
    "voice_bandwidth": "",
    "country_code": "44",
    "external_access_prefix": "",
    "location_address1": "Varidion Reading",
    "location_address3": "Reading, Berkshire",
    "location_address2": "Atlantic House, Imperial Way",
```

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```

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

```

### 2.3.14. Subscriber Data Export

Filename: <YYYY-MM-DD\_HHMM>\_subscriber.json.gz

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VERSION
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	VERSION
entitlement_profile	the profile assigned to the user that defines the features they are enabled to have configured <i>release 19.3.4</i> data/HcsUserProvisioningStatusDAT.entitlement_profile <i>release &gt;= 21.1</i> 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 <i>release 19.3.4</i> data/NormalizedUser.title <i>&gt;= release 21.1</i> data/User.title or data/NormalizedUser.title	string	v2

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VERSION
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
  }
]
```

### 2.3.15. Webex Teams Data Export

Filename: <YYYY-MM-DD\_HHMM>\_webex\_teams.json.gz

Layout:

ELEMENT	DESCRIPTION	DATA TYPE	VERSION
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)	
	<ul style="list-style-type: none"> <li>• type</li> <li>• value</li> </ul> Example: <pre>[{"type": "work", "value": "\\+13125557007"}]</pre>	<ul style="list-style-type: none"> <li>• string</li> <li>• string</li> </ul>	
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)	
	<ul style="list-style-type: none"> <li>• license</li> </ul> device/spark/User.licenses	<ul style="list-style-type: none"> <li>• string</li> </ul>	

### 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",
```

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```

"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	VERSION
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	VERSION
hybrid_calendar_services:			v2.2
google	Google Calendar	boolean	v2.2
microsoft_exchange	Microsoft Exchange/Office 365	boolean	v2.2

ELEMENT	DESCRIPTION	DATA TYPE	VERSION
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,

```

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```

    "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"
},
]

```

### 2.3.16. Webex Devices Data Export

Filename: <YYYY-MM-DD\_HHMM>\_webex\_devices.json.gz

Layout:

ELEMENT	DESCRIPTION	DATA TYPE	VERSION
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. : <i>ID_&lt;device_name&gt;</i>	string	
displayName	Device displayName E.g.: <i>DN_&lt;device_name&gt;</i>	string	
workspace	WorkspaceName E.g.: Boardroom	string	
username	Device username E.g.: <i>&lt;device_name&gt;_PersonID</i>	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"
}
```

### 2.3.17. Webex Workspaces Data Export

Filename: <YYYY-MM-DD\_HHMM>\_webex\_workspaces.json.gz

Layout:

ELEMENT	DESCRIPTION	DATA TYPE	VERSION
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"
}
```

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```

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

```

### 2.3.18. MS Office 365 Data Export

Filename: <YYYY-MM-DD\_HHMM>\_ms\_o365.json.gz

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VERSION
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	VERSION
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.AccountSkuld	string	v4
licenses.disabled_serviceplans	List of disabled service plans Licenses.X.ServicePlans	array	v4
licenses.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.Resell1.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": "Resell1",
  "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.Resell1.Cust1",
  "is_licensed": "N",
```

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```

"entitlement_profile": "Default-EP",
"o365_username": "user_2@emailaccount.com",
"licenses": [
  {
    "account_sku_id": "DEVELOPERPACK_E5"
  }
],
"reseller_name": "Resell1",
"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.Resell1.Cust1",
"is_licensed": "N",
"entitlement_profile": "Default-EP",
"o365_username": "user_3@emailaccount.com",
"licenses": [
  {
    "account_sku_id": "DEVELOPERPACK_E5"
  }
],
"reseller_name": "Resell1",
"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.Resell1.Cust1",
"is_licensed": "N",
"entitlement_profile": "Default-EP",
"o365_username": "user_4@emailaccount.com",
"licenses": [
  {
    "account_sku_id": "DEVELOPERPACK_E5"
  }
],
"reseller_name": "Resell1",
"provider_name": "Prov1",
"customer_name": "Cust1"
},
{
"username": "user_5",
"first_name": "FirstName_5",
"last_name": "LastName_5",

```

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```

"display_name": "DisplayName_user_5",
"hierarchy": "sys.A242BC6E4F94.Prov1.Resell1.Cust1",
"is_licensed": "N",
"entitlement_profile": "Default-EP",
"o365_username": "user_5@emailaccount.com",
"licenses": [
  {
    "account_sku_id": "DEVELOPERPACK_E5"
  }
],
"reseller_name": "Resell1",
"provider_name": "Prov1",
"customer_name": "Cust1"
}
]

```

### 2.3.19. 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": "Resell1",
  "provider_name": "Prov1",
  "customer_name": "Cust1"
}
]

```

### 2.3.20. MS Teams Data Export

Filename: <YYYY-MM-DD\_HHMM>\_ms\_teams.json.gz

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VERSION
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.Resell1.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": "Resell1",
  "provider_name": "Prov1",
  "line": "18694400002",
  "line_type": "OperatorConnect",
  "feature_type": ["Teams"],
  "customer_name": "Cust1"
},
{
  "username": "user_3",
  "entitlement_profile": "MsTeamsUser",
  "hierarchy": "sys.02676185F05F.Prov1.Resell1.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": "Resell1",
  "provider_name": "Prov1",
  "line": "18694400002",
  "line_type": "OperatorConnect",
  "feature_type": ["Teams"],
  "customer_name": "Cust1"
},
{
  "username": "user_1",
  "entitlement_profile": "MsTeamsUser",
  "hierarchy": "sys.02676185F05F.Prov1.Resell1.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": "Resell1",
```

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```

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

```

### 2.3.21. 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.Resell1.Cust1",
  "exchange_mailbox_details": {
    "calendar_permissions": [
      {
        "user": "ms_exchange_user_1",
        "access_rights": [
          "Editor",
          "Publishing Author",
          "Author"
        ]
      }
    ]
  }
}
]

```

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```

    ]
  }
],
"permissions": [
  {
    "user": "ms_exchange_user_1",
    "access_rights": [
      "FullAccess",
      "SendAs"
    ]
  }
]
},
"reseller_name": "Resell1",
"provider_name": "Prov1",
"customer_name": "Cust1"
},
{
"username": "ms_exchange_user_2@emailaccount.com",
"hierarchy": "sys.003954111679.Prov1.Resell1.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": "Resell1",
"provider_name": "Prov1",
"customer_name": "Cust1"
}
]

```

### 2.3.22. Pexip Data Export

Filename: <YYYY-MM-DD\_HHMM>\_pexip\_conference.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
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"
  }
]
```

### 2.3.23. VOSS Phone Servers Data Export

Filename: <YYYY-MM-DD\_HHMM>\_voss\_phone\_servers.json.gz

Layout:

ELEMENT	DESCRIPTION AND SOURCE FIELD	DATA TYPE	VERSION
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.Resell1.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": "Resell1",
  "provider_name": "Prov1",
  "customer_name": "Cust1"
},
{
  "phone_model": "Cisco 6921",
  "hierarchy": "sys.F28DA5B756D7.Prov1.Resell1.Cust1",
  "lines": [
    {
```

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```

    "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": "Resell1",
"provider_name": "Prov1",
"customer_name": "Cust1"
}
]

```

## 2.4. Appendix

### 2.4.1. 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	HTTP, HTTPS	TCP 5985, 5986

### 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 365/Online	HTTP HTTPS	80 443
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

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