

Cambium Networks
450 Platform Configuration File
Documentation
15.1.1

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Introduction

The 450 platform can be configured using a file that contains the various settings and parameters in a human-readable file. The files can be transferred to and from the radio via numerous protocols, like HTTP, HTTPS, FTP, and TFTP.

These configuration files do not have to specify all the possible configurable attributes in order to be valid. For example, the config file could contain just the frequency and bandwidth to use. Attributes that aren't specified in the configuration file can either default to what the radio is currently configured to, or to the factory default.

For example, a very basic configuration file could be created and only contain the minimum attributes required to register an SM to an AP. This configuration file would be specified to use factory defaults if an attribute isn't specified. Other configuration files can then be applied to configure QoS, VLAN, or MIR. These configuration files would not specify to use factory defaults, so that when applied, they only change what was specified in the configuration file.

The configuration files use the JSON standard (see <http://www.json.org>). This standard was chosen because of the large third-party support for the format, while being human readable and editable.

This document contains information on the configuration file format, some example configurations, how the config file can be imported and exported, how to use the config file in a zero touch config, and a list of configuration file attributes.

Format

JSON

For more information on JSON, please visit <http://www.json.org>.

Required keys

The two required top-level keys are `cfgFileString` and `cfgFileVersion`. The device will reject a configuration file if these keys aren't present.

The configuration attributes are in a third key `userParameters`.

Example, with an empty `userParameters` section:

```
{
  "cfgFileString": "Canopy configuration file",
  "cfgFileVersion": "1.0",
  "userParameters": {}
}
```

The "userParameters" section

Inside `userParameters` is structured as a two level deep structure. The first level is the configuration section, and the section level is the configuration attributes.

Example, with `"radioConfig"` and `"apRadioConfig"` as the sections, and configuration attributes under each section:

```
{
  "cfgFileString": "Canopy configuration file",
  "cfgFileVersion": "1.0",
  "userParameters": {
    "radioConfig": {
      "regionCode": 25,
      "bandwidth": 5
    },
    "apRadioConfig": {
      "radioFreqCarrier": 5500000
    }
  }
}
```

The section names have a prefix to indicate what kind of devices that section would apply to:

prefix	Devices applicable	Example
	All devices	radioConfig
ap	PMP APs	apRadioConfig
sm	PMP SMs	smRadioConfig
bhMaster	PTP Masters	bhMasterRadioConfig
bhSlave	PTP Slaves	bhSlaveSyncConfig
bh	PTP Master and Slaves	bhVlanConfig

Example Configs

- Minimal Config
 - AP
 - SM
- Network Config
 - AP or SM - Static IP
 - AP - DHCP
 - SM - DHCP
 - AP - NTP
- Radio Config
 - Color Code - AP
 - Color Code - SM
 - Frequency - AP
 - Frequency - SM
 - Bandwidth - AP
 - Bandwidth - SM
 - Radius Server - AP
 - Radius Server - SM

Minimal Config

Below is a minimal configuration for an AP to start transmitting and a SM to link up.

AP

```
{
  "cfgFileString": "Canopy configuration file",
  "cfgFileVersion": "1.0",
  "userParameters": {
    "radioConfig": {
      "regionCode": 25,
      "bandwidth": 5
    },
    "apRadioConfig": {
      "radioFreqCarrier": 5500000
    }
  }
}
```

SM

In a minimal configuration, factory defaults is sufficient for it to link up to the AP.

Network Config

AP or SM - Static IP

```
{
  "cfgFileString": "Canopy configuration file",
  "cfgFileVersion": "1.0",
  "userParameters": {
    "networkConfig": {
      "lanIp": "169.254.1.1",
      "lanMask": "255.255.255.0",
      "lanGateway": "169.254.1.254",
      "dnsPrimaryMgmtIP": "169.254.1.254",
      "dnsAlternateMgmtIP": "169.254.1.254"
    }
  }
}
```

AP - DHCP

```
{
  "cfgFileString": "Canopy configuration file",
  "cfgFileVersion": "1.0",
  "userParameters": {
    "networkConfig": {
      "lanDhcpState": 1
    }
  }
}
```

SM - DHCP

```
{
  "cfgFileString": "Canopy configuration file",
  "cfgFileVersion": "1.0",
  "userParameters": {
    "networkConfig": {
      "lanDhcpState": 1
    },
    "smNetworkConfig": {
      "networkAccess": 1
    }
  }
}
```

AP - NTP

```
{
  "cfgFileString": "Canopy configuration file",
  "cfgFileVersion": "1.0",
  "userParameters": {
    "apNetworkConfig": {
      "ntpServers": [
        "192.168.17.253",
        "192.168.17.252"
      ]
    }
  }
}
```

Radio Config

Color Code - AP

```
{
  "cfgFileString": "Canopy configuration file",
  "cfgFileVersion": "1.0",
  "userParameters": {
    "apRadioConfig": {
      "radioColorCode": 64
    }
  }
}
```

Color Code - SM

```
{
  "cfgFileString": "Canopy configuration file",
  "cfgFileVersion": "1.0",
  "userParameters": {
    "smRadioConfig": {
      "colorCodeList": [{
        "colorCode": 64,
        "priority": 1
      },
      {
        "colorCode": 100,
        "priority": 1
      },
      {
        "colorCode": 200,
        "priority": 2
      },
      {
        "colorCode": 240,
        "priority": 3
      }
    ]
  }
}
```

Frequency - AP

```
{
  "cfgFileString": "Canopy configuration file",
  "cfgFileVersion": "1.0",
  "userParameters": {
    "apRadioConfig": {
      "radioFreqCarrier": 5500000
    }
  }
}
```

Frequency - SM

```
{
  "cfgFileString": "Canopy configuration file",
  "cfgFileVersion": "1.0",
  "userParameters": {
    "smRadioConfig": {
      "frequencyScanList": [
        5500000,
        5525000,
        5550000,
        5575000
      ]
    }
  }
}
```

Bandwidth - AP

Note that the value for "bandwidth" here is the value of an enumeration (see the documentation for the bandwidth attribute)

```
{
  "cfgFileString": "Canopy configuration file",
  "cfgFileVersion": "1.0",
  "userParameters": {
    "radioConfig": {
      "bandwidth": 5
    }
  }
}
```

Bandwidth - SM

```
{
  "cfgFileString": "Canopy configuration file",
  "cfgFileVersion": "1.0",
  "userParameters": {
    "smRadioConfig": {
      "bandwidthScanList": [
        200
      ]
    }
  }
}
```

Radius Server - AP

```
{
  "cfgFileString": "Canopy configuration file",
  "cfgFileVersion": "1.0",
  "userParameters": {
    "apAuthenticationConfig": {
      "authMode": 4,
      "authenticationServers": [{
        "address": "10.120.226.6",
        "sharedSecret": "testing123"
      }]
    }
  }
}
```

Radius Server - SM

```

{
  "cfgFileString": "Canopy configuration file",
  "cfgFileVersion": "1.0",
  "userParameters": {
    "smAuthenticationConfig": {
      "useRealm": 0,
      "authOuterId": "anonymous",
      "authenticationEnforce": 1,
      "phase1": 0,
      "phase2": 2,
      "authPassword": "canopy_lab",
      "certificates": [
        "-----BEGIN
CERTIFICATE-----\nMIIDSDCCArGgAwIBAgIBADANBgkqhkiG9w0BAQUFADCwDELMAKGA1UEBhMCVVMx\nETAPB
gNVBAgTCElsbG1ub2lzMSEwHwYDVQQKEWhNb3Rvcn9sYSBTb2x1dGlvbnMs\nIEluYy4xIjAgBgNVBAStGUNhbm9w
eSBXaXJlbGVzcyBCcm9hZGJhbmQxIjAgBgNV\nnBAMTGUNhbm9weSBBSQUEgU2VydMvyIERlbW8gQ0ExMzAxBgkqhki
G9w0BCQEWJHRl\nY2huaWNhbc1zdXBwb3J0QGNhbm9weXdpdmVsZXNzLmNvbTAeFw0wMTAxMDEwMDAw\nnMDBaFw00
OTEyMzEyMzU5NTlmaIHAMQswCQYDVQQGEwJVUzERMA8GA1UECBMISWxs\naw5vaXMxITAFBgNVBAoTGE1vdG9yb2x
hIFNvbHV0aw9ucywgSW5jLjEiMCAgA1UE\nnCxmZQ2Fub3B5IFdpcnVsZXNzIEJyb2FkYmFuZDEiMCAgA1UEAxMzQ2
Fub3B5IEFB\nnQSBTZXJ2ZXIgrGVtbyBDQTEzMDEGCSqGSIb3DQEJARYkdGVjaG5pY2FsLXN1cHBv\nncnRAY2Fub3B
5d2lyZWxlcnMuY29tMIGfMA0GCSqGSIb3DQEBAQUAA4GNADCBiQKB\nngQDAoLh7N/HKuUcmfkj1EWRxBiJqs1Z6jH
husEjNFNYgpZr2XC77jHq9RDhX0mmE\nnCtZ0RTHvqLXHduLIuI0aK+gpKD1wmpHfkrJHqn89B0yA3kow36thAto4
MWGtb8q\nn3o6NwNaCKzG8+vnXWrwj1HmRuZ+McCSsDTYYz/i0qT4+8QIDAQAB01AwTjAMBgNV\nnHRMEBTADAQH/MB
0GA1UdDgQWBbTrjCIRTYzG8JaP9+Izc7d7LrVpQDAfBgNVHSME\nnGDAWgBTrjCIRTYzG8JaP9+Izc7d7LrVpQDANB
gkqhkiG9w0BAQUFAA0BgQADYLaM\nnZd3mhqzqFhMP40QCn72nEfIEWkC+P3bNeHMS6bywIleAJkgSYswgtQH0VWgN
yIaw\nn412Z0B149W2fckczh8lZIIWE26H30psumyvKBD10VLwR0pzzldmxXlAcXT8Q2PKI\nn1US+AZWe+ca8Im8rQ
ELPLbY9BpG0o8c1+okc0w==\n-----END CERTIFICATE-----\n",
        "-----BEGIN
CERTIFICATE-----\nMIIC2TCCAKKgAwIBAgIBADANBgkqhkiG9w0BAQUFADB2MQswCQYDVQQGEwJVUzER\nnMA8GA
1UECBMISWxsaw5vaXMxITAFBgNVBAoTDk1vdG9yb2xhLCBjbmuMSiWIAyD\nnVQQLExlDYW5vcHkgV2lyZWxlcnMuY29tMIGfMA0GCSqGSIb3DQEBAQUAA4GNADCBiQKBgQDinNt5\nn6fA20zJqd2l72jBp/mu4K+NZtiXrk8Cpat6SaCNCEeRCoAfIpE5Alk
ajzq6jU6le\nnrNCxJVuo0exjb8K4H9MPSB/LHv9i61JUMYECgiWxxz8sNTEbZnFcWB5hgb5ZPr2g\nnbaqr8X9KRoI
Z0MSzEzQsEkB79EGTyNvVith2GQIDAQAB03cWdTAJBgNVHRMEAjAA\nnMCGGCWCGSAGG+EIBDQqbFh1JbnNlY3VyZS
BEZW1vIENlcnRpZmljYXRlMB0GA1Ud\nnDgQWBbTaTn3PsiRFNAhrpYkzvZ7cfPhIdjAfBgNVHSMEGDAWgBTaTn3Ps
iRFNAhr\nnpYkzvZ7cfPhIdjANBgkqhkiG9w0BAQUFAA0BgQC7qaY808dms7WUfKnAoblH2wZE\nnHKJg6ivH10Gweg
uhyuumhQDlkYoEsDesZa5FhuI6AUHpVnga1eNEGZ6es0/YHrVR\nn5ZZKx7svA0EGo5mkc+j/cj1+zqRHCbdznGZU0
gnL3Y0MV4oKcyhzGHL3dfwj1wA3\nnZzSw0lSJRNc+dK4iBw==\n-----END CERTIFICATE-----\n"
      ],
      "authUsername": "canopy_lab",
      "realm": "canopy.net"
    }
  }
}

```

Config File Processing Modes

Besides `userParameters`, there can be another configuration object called `configFileParameters` that can be used to perform operations before and after applying the configuration file.

setToDefaults

If set to true, resets to defaults before applying configuration file.

rebootIfRequired

If set to true, if reboot is required, reboots the board after applying configuration file.

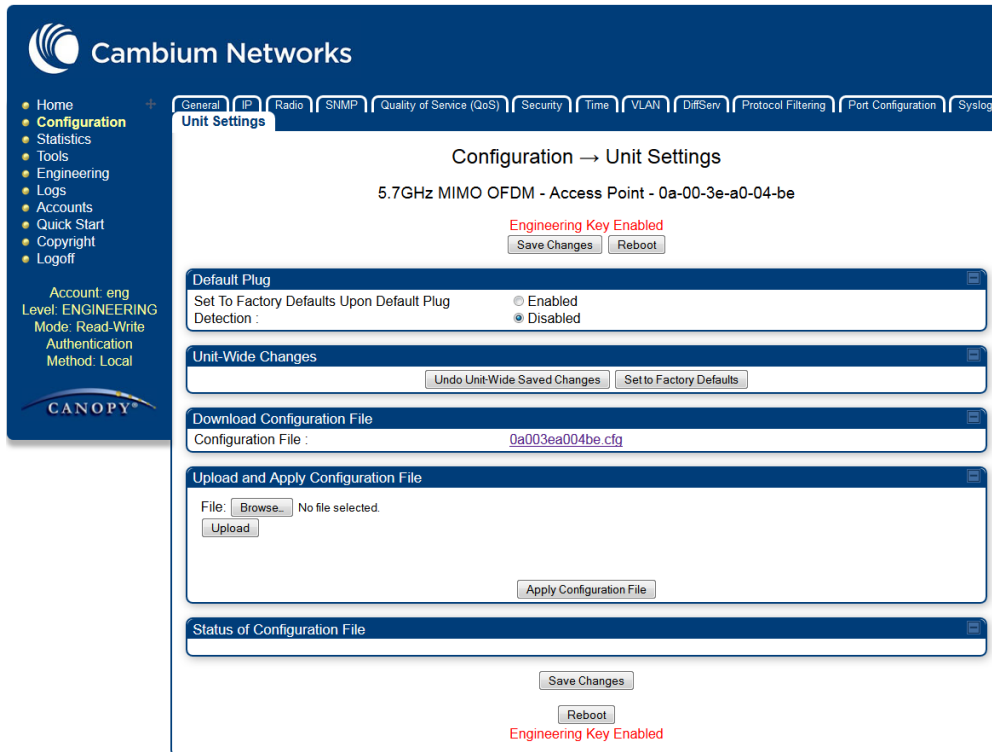
Example

```
{
  "cfgFileString": "Canopy configuration file",
  "cfgFileVersion": "1.0",
  "userParameters": {},
  "configFileParameters": {
    "setToDefaults": true,
    "rebootIfRequired": true
  }
}
```

Exporting/Importing a Configuration File

Via the web

The configuration file can be exported and imported via the Unit Settings tab in the Configuration Section.



It can also be downloaded via HTTP through a utility like wget/curl, using the URL in the following format (replacing the IP, USER, and PASS):

http://1.2.3.4/canopy_config.cgi?CanopyUsername=USER&CanopyPassword=PASS

Via SNMP

OIDs

WHISP-BOX-MIBV2-MIB::importConfigFile (.1.3.6.1.4.1.161.19.3.3.3.7) - Set to URL to immediately download and apply configuration file

WHISP-BOX-MIBV2-MIB::exportConfigFile (.1.3.6.1.4.1.161.19.3.3.3.8) - Set to URL to immediately export and upload configuration file

Examples:

Export:

```
$ snmpset -v 2c -c Canopy 192.168.0.1 .1.3.6.1.4.1.161.19.3.3.3.8 s ftp://user:password@192.168.1.1/config.g.json SNMPV2-SMI::enterprises.161.19.3.3.3.8 = STRING: "ftp://user:password@192.168.1.1/config.g.json"
```

Import:

```
$ snmpset -v 2c -c Canopy 192.168.0.1 .1.3.6.1.4.1.161.19.3.3.3.7 s ftp://user:password@192.168.1.1/config.g.json SNMPV2-SMI::enterprises.161.19.3.3.3.7 = STRING: "ftp://user:password@192.168.1.1/config.g.json"
```

Via RADIUS

Configuration file URL is supported from Radius Vendor Specific Attribute. This is available from Release 13.4 onwards and is supported for SM.

Attribute Name: Cambium-Canopy-ConfigFileImportUrl

Type: string

Max-Length: 127 characters

Attribute Name: Cambium-Canopy-ConfigFileExportUrl

Type: string

Max-Length: 127 characters

URL Handling

Supported URL Schemes

- http, ftp, https
 - username and password can be passed like ftp://user:password@192.168.1.1/
- tftp

Import URL Filename handling

1. If only the protocol and host are provided, a slash and the <mac>.cfg is added to the url
 - example: ftp://1.2.3.4 becomes ftp://1.2.3.4/0a003ea000a4.cfg
2. If the url ends in a slash, the <mac>.cfg is added to the url
 - example: tftp://1.2.3.4/configs/ becomes tftp://1.2.3.4/configs/0a003ea000a4.cfg
3. If the url is just an IP address, tftp is assumed
 - a. example: 1.2.3.4 becomes tftp://1.2.3.4/0a003ea000a4.cfg
4. Otherwise, the url is used as is
 - a. example http://1.2.3.4/file.cfg is used as is

HTTP Query String

If the protocol is http or https, and there is a query string (URL contains a ?), then additional information is sent to the server.

The following key-value pairs are sent:

Key	Value	Example
smMac	SM's mac address (all lowercase), no delimiters	0a003ea000a4
apMac	The mac address of the AP the SM is connected to (all lowercase), no delimiters	0a003ea00e00
apCc	AP's Color Code	64
apFreq	AP's Frequency in kHz	3660000

If the URL ends in a ?, then the additional key-value pairs are appended to the URL. If the URL contains a ? anywhere else, then a & is added before the key-value pairs.

For example:

- http://1.2.3.4/cgi-bin/config? becomes http://1.2.3.4/cgi-bin/config?smMac=0a003eea000a4&apMac=0a003ea00e00&apCC=64&apFreq=3660000
- http://1.2.3.4/cgi-bin/config?cfg1=a&cfg2=b becomes http://1.2.3.4/cgi-bin/config?cfg1=a&cfg2=b&smMac=0a003eea000a4&apMac=0a003ea00e00&apCC=64&apFreq=3660000

Zero-touch Config

Zero touch config is a use case for config file.

It extends the Installer Color Code feature by enabling DHCP while connected to an AP with ICC.

Enabling Zero-touch Config

On the AP

- AP must have ICC enabled and a Color Code that is not 0

On the SM

- SM must be on a Release 13.0 or greater
- The SM must be either be in a default configuration, or a configuration that registers to the AP with a Color Code of 0.

On the DHCP server

- The DHCP server must be configured with Option 66 to point to the configuration file or directory where the <mac>.cfg files are

In the configuration file

- The configuration file should have `rebootIfRequired` enabled, so that the SM reboots once reconfigured
- The configuration file should have the AP's color code, so it no longer registers on ICC
- If the final configuration is DHCP, the config file must specify public access for the IP, otherwise DHCP won't work

Config Attributes

- apAuthenticationConfig
 - accountingInterimUpdateInterval (whispApsConfig.accountingInterimUpdateInterval)
 - accountingSmReAuthInterval (whispApsConfig.accountingSmReAuthInterval)
 - authKeyAp (whispApsConfig.authKeyAp)
 - authKeyOptionAP (whispApsConfig.authKeyOptionAP)
 - authMode (whispApsConfig.authMode)
 - authenticationServers (No Direct SNMP Equivalent)
 - disableAuthForICCSM (whispApsConfig.disableAuthForICCSM)
 - enableRadiusDynAuth (whispApsConfig.enableRadiusDynAuth)
 - encryptionMode (whispApsConfig.encryptionMode)
 - radiusAcctPort (whispApsConfig.radiusAcctPort)
 - radiusPort (whispApsConfig.radiusPort)
 - userAuthDomainNameAppend (whispApsDNS.userAuthDomainNameAppend)
 - usrAccountEnableAccounting (whispBoxConfig.usrAccountEnableAccounting)
- apNetworkConfig
 - bridgeFloodUnknownsEnable (whispApsConfig.bridgeFloodUnknownsEnable)
 - dhcpRelayAgentEnable (whispApsConfig.dhcpRelayAgentEnable)
 - dhcprDomainNameAppend (whispApsDNS.dhcprDomainNameAppend)
 - dhcprServer (whispApsDNS.dhcprServer)
 - ethernetLinkSpeedSfp (whispBoxConfig.ethernetLinkSpeedSfp)
 - ethernetPortSelection (whispBoxConfig.ethernetPortSelection)
 - ntpDomainNameAppend (whispApsDNS.ntpDomainNameAppend)
 - ntpServers (No Direct SNMP Equivalent)
 - privateIp (whispApsConfig.privateIp)
 - tslBridging (whispApsConfig.tslBridging)
 - untranslatedArp (whispApsConfig.untranslatedArp)
 - updateAppAddress (whispApsConfig.updateAppAddress)
- apNetworkSecurityConfig
 - rFPoEPADIForwarding (whispApsConfig.rFPoEPADIForwarding)
 - rFTelnetAccess (whispApsConfig.rFTelnetAccess)
- apQosConfig
 - broadcastRetryCount (whispApsConfig.broadcastRetryCount)
 - configSource (whispApsConfig.configSource)
 - dlnkBcastCIR (whispApsConfig.dlnkBcastCIR)
 - dlnkMcastCIR (whispApsConfig.dlnkMcastCIR)
 - multicastRetryCount (whispApsConfig.multicastRetryCount)
 - multicastVCDataRate (whispApsConfig.multicastVCDataRate)
- apRadioConfig
 - apBeaconInfo (whispApsConfig.apBeaconInfo)
 - apConfigAdjacentChanSupport (whispApsConfig.apConfigAdjacentChanSupport)
 - colorCodeRescanIdleTimer (whispApsConfig.colorCodeRescanIdleTimer)
 - colorCodeRescanTimer (whispApsConfig.colorCodeRescanTimer)
 - displayAPEval (whispApsConfig.displayAPEval)
 - encryptDwBroadcast (whispApsConfig.encryptDwBroadcast)
 - framePeriod (whispApsConfig.framePeriod)
 - fsksMRcvTargetLvl (whispApsConfig.fskSMRcvTargetLvl)
 - limitFreqBand900 (whispApsConfig.limitFreqBand900)
 - ofdmSMRcvTargetLvl (whispApsConfig.ofdmSMRcvTargetLvl)
 - onlyAllowVer95OrAbove (whispApsConfig.onlyAllowVer95OrAbove)
 - pagerRejectFilterSelect (whispApsConfig.pagerRejectFilterSelect)
 - pmp430InteropMode (whispApsConfig.pmp430InteropMode)
 - radioColorCode (whispApsRFConfigRadioEntry.radioColorCode)
 - radioControlSlots (whispApsRFConfigRadioEntry.radioControlSlots)
 - radioDownlinkPercent (whispApsRFConfigRadioEntry.radioDownlinkPercent)
 - radioFreqCarrier (whispApsRFConfigRadioEntry.radioFreqCarrier)

- radioMaxRange (whispApsRFConfigRadioEntry.radioMaxRange)
- radioTransmitOutputPower (whispApsRFConfigRadioEntry.radioTransmitOutputPower)
- rfFreqCaralt1 (whispApsConfig.rfFreqCaralt1)
- rfFreqCaralt2 (whispApsConfig.rfFreqCaralt2)
- rfOLEnable (whispApsConfig.rfOLEnable)
- rfOLThreshold (whispApsConfig.rfOLThreshold)
- rfOLTrap (whispApsConfig.rfOLTrap)
- scheduleWhitening (whispApsConfig.scheduleWhitening)
- sectorID (whispApsConfig.sectorID)
- smlIsolation (whispApsConfig.smlIsolation)
- txSpreading (whispApsConfig.txSpreading)
- apSnmpConfig
 - authDomainNameAppend (whispApsDNS.authDomainNameAppend)
 - gpsTrap (whispApsConfig.gpsTrap)
 - regTrap (whispApsConfig.regTrap)
- apSyncConfig
 - apType (whispBoxConfig.apType)
 - frameAlignmentLegacyMode (whispApsConfig.frameAlignmentLegacyMode)
 - freeRunGPSSyncBypass (whispApsConfig.freeRunGPSSyncBypass)
 - gpsOutputEn (whispApsConfig.gpsOutputEn)
 - uGPSPower (whispApsConfig.uGPSPower)
 - verifyGPSChecksum (whispApsConfig.verifyGPSChecksum)
- apSyslogConfig
 - syslogDomainNameAppend (whispBoxConfig.syslogDomainNameAppend)
 - syslogServerAddr (whispBoxConfig.syslogServerAddr)
 - syslogServerPort (whispBoxConfig.syslogServerPort)
 - syslogXmitAP (whispApsConfig.syslogXmitAP)
 - syslogXmitSMs (whispApsConfig.syslogXmitSMs)
- apVlanConfig
 - apVlanOverride (whispApsConfig.apVlanOverride)
 - qinqEthType (whispApsConfig.qinqEthType)
 - useAPManagementVIDForICCSM (whispApsConfig.useAPManagementVIDForICCSM)
 - vlanEnable (whispApsConfig.vlanEnable)
- authenticationConfig
 - accounts (No Direct SNMP Equivalent)
 - allowRejectThenLocal (whispBoxConfig.allowRejectThenLocal)
 - authKeyOption (No Direct SNMP Equivalent)
 - authenticationKey (No Direct SNMP Equivalent)
 - authenticationKeyEncrypted (No Direct SNMP Equivalent)
 - userAuthCertificates (No Direct SNMP Equivalent)
 - whispUsrAuth (whispBoxConfig.whispUsrAuth)
 - whispUsrAuthPhase1 (whispApsConfig.whispUsrAuthPhase1)
 - whispWebUserAccessMode (whispBoxConfig.whispWebUserAccessMode)
- bhMasterAuthenticationConfig
 - AuthModeBH (No Direct SNMP Equivalent)
 - authKeyAp (whispApsConfig.authKeyAp)
 - encryptionMode (whispApsConfig.encryptionMode)
 - userAuthDomainNameAppend (whispApsDNS.userAuthDomainNameAppend)
- bhMasterNetworkSecurityConfig
 - rFPoEPADIForwarding (whispApsConfig.rFPoEPADIForwarding)
- bhMasterNetworkConfig
 - ntpDomainNameAppend (whispApsDNS.ntpDomainNameAppend)
 - ntpServers (No Direct SNMP Equivalent)
 - updateAppAddress (whispApsConfig.updateAppAddress)
- bhMasterNetworkSecurityConfig
 - rFTelnetAccess (whispApsConfig.rFTelnetAccess)
- bhMasterRadioConfig

- dhcpDomainNameAppend (whispApsDNS.dhcpDomainNameAppend)
- dhcpServer (whispApsDNS.dhcpServer)
- framePeriod (whispApsConfig.framePeriod)
- privateIp (whispApsConfig.privateIp)
- radioColorCode (whispApsRFConfigRadioEntry.radioColorCode)
- radioDownlinkPercent (whispApsRFConfigRadioEntry.radioDownlinkPercent)
- radioFreqCarrier (whispApsRFConfigRadioEntry.radioFreqCarrier)
- rfFreqCaralt1 (whispApsConfig.rfFreqCaralt1)
- rfFreqCaralt2 (whispApsConfig.rfFreqCaralt2)
- scheduleWhitening (whispApsConfig.scheduleWhitening)
- sectorID (whispApsConfig.sectorID)
- txSpreading (whispApsConfig.txSpreading)
- bhMasterRfSecurityConfig
 - dailyEncryptionRefresh (whispApsConfig.bhReReg)
- bhMasterSntpConfig
 - authDomainNameAppend (whispApsDNS.authDomainNameAppend)
 - gpsTrap (whispApsConfig.gpsTrap)
 - regTrap (whispApsConfig.regTrap)
- bhMasterSyncConfig
 - apType (whispBoxConfig.apType)
 - frameAlignmentLegacyMode (whispApsConfig.frameAlignmentLegacyMode)
 - freeRunGPSSyncBypass (whispApsConfig.freeRunGPSSyncBypass)
 - gpsOutputEn (whispApsConfig.gpsOutputEn)
 - uGPSPower (whispApsConfig.uGPSPower)
 - verifyGPSChecksum (whispApsConfig.verifyGPSChecksum)
- bhMasterSyslogConfig
 - syslogDomainNameAppend (whispBoxConfig.syslogDomainNameAppend)
 - syslogServerAddr (whispBoxConfig.syslogServerAddr)
 - syslogServerPort (whispBoxConfig.syslogServerPort)
 - syslogXmitAP (whispApsConfig.syslogXmitAP)
 - syslogXmitSMs (whispApsConfig.syslogXmitSMs)
- bhMasterVlanConfig
 - qinqEthType (whispApsConfig.qinqEthType)
 - vlanEnable (whispApsConfig.vlanEnable)
- bhRadioConfig
 - bhsReReg (whispSmConfig.bhsReReg)
 - bridgeEnable (whispBoxConfig.bridgeEnable)
- bhSlaveQosConfig
 - lowPriorityDownlinkCIR (whispSmConfig.lowPriorityDownlinkCIR)
 - lowPriorityUplinkCIR (whispSmConfig.lowPriorityUplinkCIR)
- bhSlaveRadioConfig
 - bandwidthScanList (No Direct SNMP Equivalent)
 - colorCode (whispBoxConfig.colorCode)
 - frequencyScanList (No Direct SNMP Equivalent)
- bhSlaveSyncConfig
 - timingPulseGated (whispSmConfig.timingPulseGated)
- bhVlanConfig
 - bhvlanEnable (whispBoxConfig.bhvlanEnable)
 - portVID (whispBoxConfig.portVID)
- cnMaestroConfig
 - camID (whispBoxConfig.camID)
 - camOnboardKey (whispBoxConfig.camOnboardKey)
 - camOnboardKeyEncrypted (whispBoxConfig.camOnboardKey)
 - cnMaestroEnable (whispBoxConfig.cnMaestroEnable)
 - cnMaestroUrl (whispBoxConfig.cnMaestroUrl)
- gpsConfig
 - gpsInput (whispBoxConfig.gpsInput)

- location
 - height (whispBoxConfig.height)
 - latitude (whispBoxConfig.latitude)
 - longitude (whispBoxConfig.longitude)
 - siteContact (No Direct SNMP Equivalent)
 - siteInfoViewable (whispBoxConfig.siteInfoViewable)
 - siteLocation (No Direct SNMP Equivalent)
 - siteName (No Direct SNMP Equivalent)
- networkConfig
 - acceptSecurityBanner (whispBoxConfig.acceptSecurityBanner)
 - auxPortEnable (whispBoxConfig.auxPortEnable)
 - bridgeEntryTimeout (whispBoxConfig.bridgeEntryTimeout)
 - bridgeTableSize (whispSmConfig.bridgeTableSize)
 - defaultIPAccessEnable (whispBoxConfig.defaultIPAccessEnable)
 - diffServ (No Direct SNMP Equivalent)
 - dnsAlternateMgmtIP (whispBoxDNS.dnsAlternateMgmtIP)
 - dnsIpState (whispBoxDNS.dnsIpState)
 - dnsMgmtDomainName (whispBoxDNS.dnsMgmtDomainName)
 - dnsPrimaryMgmtIP (whispBoxDNS.dnsPrimaryMgmtIP)
 - enable8023linkBox (whispBoxConfig.enable8023linkBox)
 - enableSecurityBanner (whispBoxConfig.enableSecurityBanner)
 - ethernetLinkSpeed (whispBoxConfig.ethernetLinkSpeed)
 - ftpPort (whispBoxConfig.ftpPort)
 - ftpStatus (whispBoxConfig.ftpStatus)
 - httpPort (whispBoxConfig.httpPort)
 - httpsPort (whispBoxConfig.httpsPort)
 - lanDhcpState (whispBoxConfig.lanDhcpState)
 - lanGateway (No Direct SNMP Equivalent)
 - lanIp (No Direct SNMP Equivalent)
 - lanMask (No Direct SNMP Equivalent)
 - lldpBroadcastEnable (whispBoxConfig.lldpBroadcastEnable)
 - packetFilterAllIpv4 (whispBoxConfig.allIpv4Filter)
 - packetFilterAllIpv6 (whispBoxConfig.allIpv6Filter)
 - packetFilterAllIpv6Others (whispBoxConfig.allOtherIpv6Filter)
 - packetFilterAllOthers (whispBoxConfig.allOthersFilter)
 - packetFilterArp (whispBoxConfig.arpFilter)
 - packetFilterBootpClient (whispBoxConfig.bootpcFilter)
 - packetFilterBootpClientIpv6 (whispBoxConfig.ipv6bootpcFilter)
 - packetFilterBootpServer (whispBoxConfig.bootpsFilter)
 - packetFilterBootpServerIpv6 (whispBoxConfig.ipv6bootpsFilter)
 - packetFilterDirection (whispBoxConfig.packetFilterDirection)
 - packetFilterMulticastIpv4 (whispBoxConfig.ip4MultFilter)
 - packetFilterMulticastIpv6 (whispBoxConfig.ipv6MultFilter)
 - packetFilterOtherIpv4 (whispBoxConfig.allOtherIpFilter)
 - packetFilterPppoe (whispBoxConfig.pppoeFilter)
 - packetFilterSmb (whispBoxConfig.smbFilter)
 - packetFilterSmbIpv6 (whispBoxConfig.ipv6smbFilter)
 - packetFilterSnmp (whispBoxConfig.snmpFilter)
 - packetFilterSnmpIpv6 (whispBoxConfig.ipv6snmpFilter)
 - packetFilterUser1 (whispBoxConfig.userP1Filter)
 - packetFilterUser2 (whispBoxConfig.userP2Filter)
 - packetFilterUser3 (whispBoxConfig.userP3Filter)
 - poeAuxEnable (whispBoxConfig.poeAuxEnable)
 - poeT2Classification (whispBoxConfig.poeT2Classification)
 - portFiltering (No Direct SNMP Equivalent)
 - sessionTimeout (whispBoxConfig.sessionTimeout)
 - snmpStatus (whispBoxConfig.snmpStatus)

- telnetStatus (whispBoxConfig.telnetStatus)
- textSecurityBanner (whispBoxConfig.textSecurityBanner)
- tftpStatus (whispBoxConfig.tftpStatus)
- webAccess (whispBoxConfig.webAccess)
- webAutoUpdate (whispBoxConfig.webAutoUpdate)
- networkSecurityConfig
 - ipAccessFilter (No Direct SNMP Equivalent)
 - ipAccessFilterEnabled (whispApsConfig.ipAccessFilterEnable)
- pingWatchDogConfig
 - pingWdogEnable (whispBoxConfig.pingWdogEnable)
 - pingWdogIP (whispBoxConfig.pingWdogIP)
 - pingWdogInterval (whispBoxConfig.pingWdogInterval)
 - pingWdogRbtCnt (whispBoxConfig.pingWdogRbtCnt)
- pppoeConfig
 - pppoeCtlPriority (whispBoxConfig.pppoeCtlPriority)
- qosConfig
 - downlinkBurstAllocation (No Direct SNMP Equivalent)
 - largeVCQ (whispBoxConfig.largeVCQ)
 - maxDownlinkDataRate (No Direct SNMP Equivalent)
 - maxUplinkDataRate (No Direct SNMP Equivalent)
 - prioritizeTcpAck (whispBoxConfig.tcpAckPriority)
 - sustainedDownlinkDataRate (No Direct SNMP Equivalent)
 - sustainedUplinkDataRate (No Direct SNMP Equivalent)
 - uplinkBurstAllocation (No Direct SNMP Equivalent)
- radioConfig
 - antennaGain (whispBoxConfig.antennaGain)
 - atexHazlocPowerLimit (whispBoxConfig.atexHazlocPowerLimit)
 - bandwidth (whispBoxConfig.bandwidth)
 - customFrequencies (No Direct SNMP Equivalent)
 - cyclicPrefix (whispBoxConfig.cyclicPrefix)
 - eirp (whispBoxConfig.eirp)
 - extFilterDelay (whispBoxConfig.extFilterDelay)
 - factoryResetOnDefaultPlug (whispBoxConfig.setDefaultPlug)
 - installationColorCode (whispBoxConfig.installationColorCode)
 - ism (whispBoxConfig.ism)
 - nearFieldOperation (whispBoxConfig.nearFieldOperation)
 - nearFieldRange (whispBoxConfig.nearFieldRange)
 - pmp430SMRegistration (whispApsConfig.pmp430SMRegistration)
 - powerControl (whispBoxConfig.powerControl)
 - radioRateAdapt (whispBoxConfig.radioRateAdapt)
 - radioRateAdaptUL (whispBoxConfig.radioRateAdaptUL)
 - receiveQualityDebug (whispBoxConfig.receiveQualityDebug)
 - regionCode (No Direct SNMP Equivalent)
 - transmitterOP (whispBoxConfig.transmitterOP)
- rfSecurityConfig
 - encryptionConfig (No Direct SNMP Equivalent)
- smAuthenticationConfig
 - UserAccountEnableAccountingSM (No Direct SNMP Equivalent)
 - authOuterId (whispSmSecurity.authOuterId)
 - authPassword (whispSmSecurity.authPassword)
 - authPasswordEncrypted (whispSmSecurity.authPassword)
 - authUsername (whispSmSecurity.authUsername)
 - authenticationEnforce (whispSmSecurity.authenticationEnforce)
 - certificates (No Direct SNMP Equivalent)
 - phase1 (whispSmSecurity.phase1)
 - phase2 (whispSmSecurity.phase2)
 - realm (whispSmSecurity.realm)

- useRealm (whispSmSecurity.useRealm)
- smNatNetworkConfig
 - alternateDNSIP (whispSmConfig.alternateDNSIP)
 - arpCacheTimeout (whispSmConfig.arpCacheTimeout)
 - dhcpIPStart (whispSmConfig.dhcpIPStart)
 - dhcpNumIPsToLease (whispSmConfig.dhcpNumIPsToLease)
 - dhcpServerEnable (whispSmConfig.dhcpServerEnable)
 - dhcpServerLeaseTime (whispSmConfig.dhcpServerLeaseTime)
 - dmzEnable (whispSmConfig.dmzEnable)
 - dmzIP (whispSmConfig.dmzIP)
 - dnsAutomatic (whispSmConfig.dnsAutomatic)
 - naptEnable (whispSmConfig.naptEnable)
 - naptPrivateIP (whispSmConfig.naptPrivateIP)
 - naptPrivateSubnetMask (whispSmConfig.naptPrivateSubnetMask)
 - naptPublicGatewayIP (whispSmConfig.naptPublicGatewayIP)
 - naptPublicIP (whispSmConfig.naptPublicIP)
 - naptPublicSubnetMask (whispSmConfig.naptPublicSubnetMask)
 - naptRFPublicGateway (whispSmConfig.naptRFPublicGateway)
 - naptRFPublicIP (whispSmConfig.naptRFPublicIP)
 - naptRFPublicSubnetMask (whispSmConfig.naptRFPublicSubnetMask)
 - naptRemoteManage (whispSmConfig.naptRemoteManage)
 - natConnectionType (whispSmConfig.natConnectionType)
 - natDNSProxyEnable (whispSmConfig.natDNSProxyEnable)
 - natTsITableSize (whispSmConfig.natTsITableSize)
 - portMapping (No Direct SNMP Equivalent)
 - preferredDNSIP (whispSmConfig.preferredDNSIP)
 - rfDhcpState (whispSmConfig.rfDhcpState)
 - tcpGarbageCollectTmout (whispSmConfig.tcpGarbageCollectTmout)
 - udpGarbageCollectTmout (whispSmConfig.udpGarbageCollectTmout)
 - wanPingReplyEnable (whispSmConfig.wanPingReplyEnable)
- smNetworkConfig
 - enable8023link (whispSmConfig.enable8023link)
 - networkAccess (whispSmConfig.networkAccess)
- smNetworkSecurityConfig
 - ethAccessEnable (whispSmConfig.ethAccessEnable)
- smPppoeConfig
 - pppoeAccessConcentrator (whispSmConfig.pppoeAccessConcentrator)
 - pppoeAuthenticationType (whispSmConfig.pppoeAuthenticationType)
 - pppoeEnable (whispSmConfig.pppoeEnable)
 - pppoeMTUOverrideEnable (whispSmConfig.pppoeMTUOverrideEnable)
 - pppoeMTUOverrideValue (whispSmConfig.pppoeMTUOverrideValue)
 - pppoePassword (whispSmConfig.pppoePassword)
 - pppoePasswordEncrypted (whispSmConfig.pppoePassword)
 - pppoeServiceName (whispSmConfig.pppoeServiceName)
 - pppoeTCPMSSClampEnable (whispSmConfig.pppoeTCPMSSClampEnable)
 - pppoeTimeoutPeriod (whispSmConfig.pppoeTimeoutPeriod)
 - pppoeTimerType (whispSmConfig.pppoeTimerType)
 - pppoeUserName (whispSmConfig.pppoeUserName)
- smQosConfig
 - bCastMIR (whispSmConfig.bCastMIR)
 - bCastMIRUnits (whispSmConfig.bCastMIRUnits)
 - highPriorityChannel (whispSmConfig.hiPriorityChannel)
 - highPriorityDownlinkCIR (whispSmConfig.hiPriorityDownlinkCIR)
 - highPriorityUplinkCIR (whispSmConfig.hiPriorityUplinkCIR)
 - lowPriorityDownlinkCIR (whispSmConfig.lowPriorityDownlinkCIR)
 - lowPriorityUplinkCIR (whispSmConfig.lowPriorityUplinkCIR)
- smRadioConfig

- apSelection (whispSmConfig.apSelection)
- bandwidthScanList (No Direct SNMP Equivalent)
- colorCodeList (No Direct SNMP Equivalent)
- dfsConfig (whispSmConfig.dfsConfig)
- frequencyScanList (No Direct SNMP Equivalent)
- powerUpMode (whispSmConfig.powerUpMode)
- smSpectrumAnalysisConfig
 - spectrumAnalysisOnBoot (whispSmConfig.spectrumAnalysisOnBoot)
- smSyncConfig
 - timingPulseGated (whispSmConfig.timingPulseGated)
- smSyslogConfig
 - syslogSMXmitControl (whispSmConfig.syslogSMXmitControl)
 - syslogServerApPreferred (whispSmConfig.syslogServerApPreferred)
- smVlanConfig
 - allowVIDAccess (whispBoxConfig.allowVIDAccess)
 - ingressVID (whispSmConfig.ingressVID)
 - ingressVIDPriority (whispSmConfig.ingressVIDPriority)
 - ingressVIDPriorityMode (whispSmConfig.ingressVIDPriorityMode)
 - portVids (No Direct SNMP Equivalent)
 - providerVIDPriority (whispSmConfig.providerVIDPriority)
 - providerVIDPriorityMode (whispSmConfig.providerVIDPriorityMode)
- snmpConfig
 - commStringROOnly (whispBoxConfig.commStringROOnly)
 - commStringRW (No Direct SNMP Equivalent)
 - roAuthPassword (whispBoxSNMPv3.roAuthPassword)
 - roPrivPassword (whispBoxSNMPv3.roPrivPassword)
 - roUserName (whispBoxSNMPv3.roUserName)
 - rwAuthPassword (whispBoxSNMPv3.rwAuthPassword)
 - rwPrivPassword (whispBoxSNMPv3.rwPrivPassword)
 - rwUserEnable (whispBoxSNMPv3.rwUserEnable)
 - rwUserName (whispBoxSNMPv3.rwUserName)
 - snmplpAccessFilter (No Direct SNMP Equivalent)
 - snmpMibPerm (whispBoxConfig.snmpMibPerm)
 - snmpPort (whispBoxConfig.snmpPort)
 - snmpTrapAddresses (No Direct SNMP Equivalent)
 - snmpTrapPort (whispBoxConfig.snmpTrapPort)
 - snmpv2cEnable (whispBoxSNMPv3.snmpv2cEnable)
 - snmpv3AuthProt (whispBoxSNMPv3.snmpv3AuthProt)
 - snmpv3EngineId (whispBoxSNMPv3.snmpv3EngineId)
 - snmpv3PrivProt (whispBoxSNMPv3.snmpv3PrivProt)
 - snmpv3SecLvl (whispBoxSNMPv3.snmpv3SecLvl)
 - snmpv3TrapEnable (whispBoxSNMPv3.snmpv3TrapEnable)
 - trapDomainNameAppend (whispBoxDNS.trapDomainNameAppend)
- syslogConfig
 - syslogMinLevel (whispBoxConfig.syslogMinLevel)
 - syslogMinLevelApPreferred (whispSmConfig.syslogMinLevelApPreferred)
- vlanConfig
 - agingTimeout (whispBoxConfig.agingTimeout)
 - dynamicLearning (whispBoxConfig.dynamicLearning)
 - frameType (whispBoxConfig.frameType)
 - managementVID (whispBoxConfig.managementVID)
 - managementVIDPriority (whispBoxConfig.managementVIDPriority)
 - managementVIDPriorityMode (whispBoxConfig.managementVIDPriorityMode)
 - priorityPrecedence (whispBoxConfig.priorityPrecedence)
 - providerVID (whispBoxConfig.providerVID)
 - vlanAcceptQinQFrames (whispBoxConfig.vlanAcceptQinQFrames)
 - vlanMembership (No Direct SNMP Equivalent)

- `vlanPortType` (`whispBoxConfig.vlanPortType`)
- `vlanRemark` (No Direct SNMP Equivalent)

apAuthenticationConfig

accountingInterimUpdateInterval (`whispApsConfig.accountingInterimUpdateInterval`)

Data Type: INTEGER

Select Interval for Interim Updates

accountingSmReAuthInterval (`whispApsConfig.accountingSmReAuthInterval`)

Data Type: INTEGER

Select Interval for Reauthentication of SM

authKeyAp (`whispApsConfig.authKeyAp`)

Data Type: DisplayString

Authentication key. It should be 32 character long. Can be used on MultiPoint AP if AP Authentication mode is selected. Otherwise, it is used on Backhauls.

authKeyOptionAP (`whispApsConfig.authKeyOptionAP`)

Data Type: bool

This option is for Multipoint APs only. This option will only be used if Authentication Mode is set to AP Pre-Shared Key. 0 - Use default key. 1 - Use set key.

Value	Name
0	useDefault
1	useKeySet

authMode (`whispApsConfig.authMode`)

Data Type: INTEGER

Variable to enable/disable authentication. The authentication optional mode is for APs only. This variable can only be set when authentication feature is enabled. Setting it to 1 will use a BAM server for authentication of SMs. Setting it to 2 will make use of the Authentication Key on the AP for authenticating SMs. The keys must match on SM and AP in order for the SM to be authenticated in this mode.

Value	Name
0	authenticationDisabled
1	authenticationRequiredBam
3	authenticationRequiredAP
4	authenticationRequiredAAA

authenticationServers (No Direct SNMP Equivalent)

Data Type: Array

This is an array of objects representing authentication servers. If using BAM, this is an array of up to 5 authentication servers. For RADIUS servers, this is an array of up to 3 authentication servers. Each object may contain:

- **address (required):** string, address of authentication server
- **sharedSecret:** string, shared secret of authentication server. Used only by RADIUS servers.
- **sharedSecretEncrypted:** encrypted form of sharedSecret

Example:

```
{
  "apAuthenticationConfig" :
  {
    "authenticationServers":
    [
      { "address":"192.168.1.1", sharedSecret:"foo" },
      { "address":"192.168.1.2", sharedSecret:"bar" }
    ]
  }
}
```

disableAuthForICCSM (whispApsConfig.disableAuthForICCSM)

Data Type:bool

Bypass Authentication for ICC SMs

Value	Name
0	disabled
1	enabled

enableRadiusDynAuth (whispApsConfig.enableRadiusDynAuth)

Data Type:bool

This option can be used to enable Radius Dynamic Authorization Extensions.Both CoA, which change the SM config parameters from the Radius server while an SM is already in session and Disconnect Message are supported. This option will only be used if Authentication mode is set to Radius AAA. 0 - Disable Radius Dynamic Authorization Extension. 1 - Enable Radius Dynamic Authorization Extension.

Value	Name
0	disableDynAuth
1	enableDynAuth

encryptionMode (whispApsConfig.encryptionMode)

Data Type:bool

Variable to enable/disable encryption.

Value	Name
0	encryptionDisabled
1	encryptionEnabled

radiusAcctPort (whispApsConfig.radiusAcctPort)

Data Type:INTEGER

Port used to for RADIUS Accounting. Default is 1813.

radiusPort (whispApsConfig.radiusPort)

Data Type:INTEGER

Port used to connect to the RADIUS server. Default is 1812.

userAuthDomainNameAppend (whispApsDNS.userAuthDomainNameAppend)

Data Type:bool

Select whether to append the configured management domain name to the configured user authentication server names. For example, if dnsMgmtDomainName is set to 'example.com', authServer1 is set to 'auth1', and userAuthDomainNameAppend is set to enableDNSDomain, the authServer1 name used would be 'auth1.example.com'.

Value	Name
0	disableDNSDomain
1	enableDNSDomain

usrAccountEnableAccounting (whispBoxConfig.usrAccountEnableAccounting)

Data Type:INTEGER

Select the level of accounting information to be reported to the server

Value	Name
0	disable
1	deviceAccess
2	dataUsage
3	all

apNetworkConfig

bridgeFloodUnknownsEnable (whispApsConfig.bridgeFloodUnknownsEnable)

Data Type:bool

Forward unicast packets with an unknown address to all SMs. This can significantly reduce downlink throughput. (0) - Drop unknown unicast packets. (1) - Forward unknown unicast packets to all SMs.

Value	Name
0	disable
1	enable

dhcpRelayAgentEnable (whispApsConfig.dhcpRelayAgentEnable)

Data Type:INTEGER

Enable or Disable MultiPoint AP acting as DHCP Relay Agent for all SMs and Clients underneath it. (0) - Relay Agent disabled - SM/CPE devices will perform DHCP normally (1) - Relay Agent enabled - AP will intercept DHCP DISCOVER message from SM and CPE, insert Option 82

containing SM's MAC address, and forward request to specified DHCP server.

Value	Name
0	disable
1	fullRelay
2	option82Only

dhcprDomainNameAppend (whispApsDNS.dhcprDomainNameAppend)

Data Type:bool

Select whether to append the configured management domain name to the configured trap names. For example, if dnsMgmtDomainName is set to 'example.com', dhcprServer is set to 'dhcpr', and dhcprDomainNameAppend is set to appendDomain, the dhcprServer name used would be 'dhcpr.example.com'.

Value	Name
0	disableDomain
1	appendDomain

dhcprServer (whispApsDNS.dhcprServer)

Data Type:DisplayString

DHCP Server IP which will be used for forwarding DHCP messages by the DHCP Relay Agent in the MultiPoint AP. - Format is either an IP address or DNS name. - Default is 255.255.255.255 (broadcast).

ethernetLinkSpeedSfp (whispBoxConfig.ethernetLinkSpeedSfp)

Data Type:INTEGER

Set/Get Ethernet link speed and duplex settings of the SFP port. PMP 450m only. Please note that the Radio Recovery Console only supports auto1000FX for the SFP.

Value	Name
32	auto1000FX
64	forced1000FX

ethernetPortSelection (whispBoxConfig.ethernetPortSelection)

Data Type:INTEGER

Set/Get the Ethernet port used to bridge traffic. PMP 450m only.

Value	Name
0	mainPort
1	sfpPort

ntpDomainNameAppend (whispApsDNS.ntpDomainNameAppend)

Data Type:bool

Select whether to append the configured management domain name to the configured trap names. For example, if `dnsMgmtDomainName` is set to 'example.com', `ntpServer` is set to 'ntp', and `ntpDomainNameAppend` is set to `appendDomain`, the `ntpServer` name used would be 'ntp.example.com'.

Value	Name
0	disableDomain
1	appendDomain

ntpServers (No Direct SNMP Equivalent)

Data Type:Array

This is an array of up to three NTP servers as strings.

Example:

```
{
  "apNetworkConfig" :
  {
    "ntpServers":
    [
      "192.168.1.1",
      "192.168.1.2"
    ]
  }
}
```

privatelp (whispApsConfig.privatelp)

Data Type:IpAddress

Private IP.

tslBridging (whispApsConfig.tslBridging)

Data Type:bool

1 = We are performing Translation Bridging 0 = We are not.

Value	Name
0	disable
1	enable

untranslatedArp (whispApsConfig.untranslatedArp)

Data Type:bool

1 = We are sending untranslated ARP response. 0 = We are not.

Value	Name
0	disable
1	enable

updateAppAddress (whispApsConfig.updateAppAddress)

Data Type:IpAddress

Update Application Address.

apNetworkSecurityConfig

rfPPPoEPADIForwarding (whispApsConfig.rfPPPoEPADIForwarding)

Data Type:bool

Enables/disables forwarding of PPPoE PADI packets from AP to SM.

Value	Name
0	disable
1	enable

rfTelnetAccess (whispApsConfig.rfTelnetAccess)

Data Type:bool

Allows/prohibits uplink Telnet access (SM->AP).

Value	Name
0	disable
1	enable

apQosConfig

broadcastRetryCount (whispApsConfig.broadcastRetryCount)

Data Type:INTEGER

Broadcast Repeat Count : Range 0 -- 2. For APs.

configSource (whispApsConfig.configSource)

Data Type:INTEGER

To configure CIR, MIR and VLAN through SM or BAM.

Value	Name
0	bam
1	sm
2	bamsm

dlnkBcastCIR (whispApsConfig.dlnkBcastCIR)

Data Type:INTEGER

Downlink Broadcast CIR (kbps)

dlnkMcastCIR (whispApsConfig.dlnkMcastCIR)

Data Type:INTEGER

Downlink Multicast CIR (kbps)

multicastRetryCount (whispApsConfig.multicastRetryCount)

Data Type:INTEGER

Multicast Repeat Count : Range 0 - 2. For APs.

multicastVCDataRate (whispApsConfig.multicastVCDataRate)

Data Type:INTEGER

Enables and selects the data rate of the Multicast VC. If disabled, multicast messages are sent using the broadcast VC. This VC does not automatically rate adapt. Note: SMs that cannot receive at the selected rate will receive no multicast messages.

Value	Name
0	disable
5	rate2XmimoB
7	rate4XmimoB
8	rate6XmimoB
9	rate8XmimoB
4	rate1XmimoA
10	rate2XmimoA
11	rate4XmimoA
12	rate6XmimoA

apRadioConfig

apBeaconInfo (whispApsConfig.apBeaconInfo)

Data Type:INTEGER

Variable to enable/disable displaying AP beacon info through AP eval.

Value	Name
0	enableApBeaconInfo
1	disableApBeaconInfo

apConfigAdjacentChanSupport (whispApsConfig.apConfigAdjacentChanSupport)

Data Type:bool

Used to enable or disable adjacent channel support.

Value	Name
0	disable
1	enable

colorCodeRescanIdleTimer (whispApsConfig.colorCodeRescanIdleTimer)

Data Type:INTEGER

Time in minutes for the subscriber to check for an idle state. If an period has pass where no unicast RF traffic has occurred (idle), then the subscriber will begin to rescan. This timer will wait until the timer set in colorCodeRescanTimer has expired before beginning. This timer only fires if the device is in session with a non-primary color code. A value of zero (0) mean to rescan without waiting for idle. (MultiPoint system Only)

Lower bound: 0

Upper bound: 60

colorCodeRescanTimer (whispApsConfig.colorCodeRescanTimer)

Data Type:INTEGER

Time in minutes for the subscriber to begin the idle timer. This timer will begin as soon as a session is started. This only fires if the device is in session with a non-primary color code. A value of zero (0) disables this timer (MultiPoint system Only)

Lower bound: 0

Upper bound: 43200

displayAPEval (whispApsConfig.displayAPEval)

Data Type:INTEGER

If enable, it allows display of AP Eval Data at the SM.

Value	Name
0	enable
1	disable

encryptDwBroadcast (whispApsConfig.encryptDwBroadcast)

Data Type:bool

To enable or disable Encrypted Downlink Broadcast. For FSK APs.

Value	Name
0	disable
1	enable

framePeriod (whispApsConfig.framePeriod)

Data Type:bool

Changes frame period to 2.5 ms or 5ms. Note: If set to 5 ms, only SM/BHS from 13.3 and onward will be able to register. Only on PMP and PTP 450. Not available in all regions.

Value	Name
-------	------

0	twoPointFiveMs
1	fiveMs

fskSMRcvTargetLvl (whispApsConfig.fskSMRcvTargetLvl)

Data Type:INTEGER

Desired SM Receive Level at AP (dBm, Range -40dBm to -80 dBm). FSK only.

Lower bound: -80

Upper bound: -40

limitFreqBand900 (whispApsConfig.limitFreqBand900)

Data Type:bool

1 = We are limiting the freq band of 900 radios. 0 = We are not.

Value	Name
0	disable
1	enable

ofdmSMRcvTargetLvl (whispApsConfig.ofdmSMRcvTargetLvl)

Data Type:INTEGER

Desired SM Receive Level at AP (dBm, Range -40dBm to -80 dBm). As of release 12.1, on MIMO systems this is a combined power level value.

Lower bound: -80

Upper bound: -40

onlyAllowVer95OrAbove (whispApsConfig.onlyAllowVer95OrAbove)

Data Type:bool

Only allow subscribers that are running version 9.5 or above. Any radio that has a version below 9.5 will not be allowed to register.

Value	Name
0	onlyAllowVer95OrAboveDisabled
1	onlyAllowVer95OrAboveEnabled

pagerRejectFilterSelect (whispApsConfig.pagerRejectFilterSelect)

Data Type:bool

Enable or disable the Pager filter which can filter out Pager signals interfering in the 900 MHz band. NOTE: Frequencies 920 MHz and above will not work when enabled. Only applicable to 900 MHz devices.

Value	Name
1	enable
0	disable

pmp430InteropMode (whispApsConfig.pmp430InteropMode)

Data Type:bool

When the AP talks to a PMP 430 it can do so in either MIMO-A or SISO mode. 0 = MIMO-A 1 = SISO Only applies to PMP 450 AP at 5 GHz. By default in 13.2 the AP talks in MIMO-A to PMP 430 SISO SMs. Setting this to a 1 will enable SISO mode to PMP 430 SISO SMs, as it was in 13.1.3 and before.

Value	Name
0	mimoa
1	siso

radioColorCode (whispApsRFConfigRadioEntry.radioColorCode)

Data Type:INTEGER

Color code.

Lower bound: 0

Upper bound: 254

radioControlSlots (whispApsRFConfigRadioEntry.radioControlSlots)

Data Type:INTEGER

Total number of contention slots for HW Scheduling Point-to-Multipoint mode (Not applicable for PtoP radios). For PMP 450 the minimum is 1 control slot, others minimum is zero. Maximum contention slots is 15.

radioDownlinkPercent (whispApsRFConfigRadioEntry.radioDownlinkPercent)

Data Type:INTEGER

This is the percentage of frame data space allocated for downlink. Various radio platforms and regions will have different allowable downlink percentages.

Lower bound: 1

Upper bound: 99

radioFreqCarrier (whispApsRFConfigRadioEntry.radioFreqCarrier)

Data Type:INTEGER

RF Frequency. Please see the whispBoxRFPhysicalRadioFrequencies SNMP table for a list of available frequencies. 0: wired.

Value	Name
0	wired

radioMaxRange (whispApsRFConfigRadioEntry.radioMaxRange)

Data Type:INTEGER

Access point max range.

radioTransmitOutputPower (whispApsRFConfigRadioEntry.radioTransmitOutputPower)

Data Type:INTEGER

Deprecated in favor of 'TransmitterOP' in radioConfig

rfFreqCaralt1 (whispApsConfig.rfFreqCaralt1)

Data Type:INTEGER

First DFS Alternate RF Frequency. (Only available for DFS radios) Used as a backup frequency when Radar is detected on DFS enabled Radios. The frequencies are:

5.4 radios:(5475,5485,5490 OFDM only),5495,5500,5505,5510,5515,5520,5525,
5530,5535,5540,5545,5550,5555,5560,5565,5570,5575,5580,5585,5590,5595,
5600,5605,5610,5615,5620,5625,5630,5635,5640,5645,5650,5655,5660,5665,
5670,5675,5680,5685,5690,5695,5700,5705,(5710,5715 OFDM Only).

(5.7 Platform 10 (SAL) radios with non-connectorized antennas do not support DFS)

5.7 radios:5745,5750,5755,5760,5765,5770,5775,5780,5785,5790,5795,5800,5805.

5.7 radios with ISM enabled :5735,5740,5745,5750,5755,5760,5765,5770,5775,
5780,5785,5790,5795,5800,5805,5810,5815,5820,5825,5830,5835,5840.

0: None.

Value	Name
0	none

rfFreqCaralt2 (whispApsConfig.rfFreqCaralt2)

Data Type:INTEGER

Second DFS Alternate RF Frequency. (Only available for DFS radios) Used as a backup frequency when Radar is detected on DFS enabled Radios. The frequencies are:

5.4 radios:(5475,5485,5490 OFDM only),5495,5500,5505,5510,5515,5520,5525,
5530,5535,5540,5545,5550,5555,5560,5565,5570,5575,5580,5585,5590,5595,
5600,5605,5610,5615,5620,5625,5630,5635,5640,5645,5650,5655,5660,5665,
5670,5675,5680,5685,5690,5695,5700,5705,(5710,5715 OFDM Only).

(5.7 Platform 10 (SAL) radios with non-connectorized antennas do not support DFS)

5.7 radios:5745,5750,5755,5760,5765,5770,5775,5780,5785,5790,5795,5800,5805.

5.7 radios with ISM enabled :5735,5740,5745,5750,5755,5760,5765,5770,5775,
5780,5785,5790,5795,5800,5805,5810,5815,5820,5825,5830,5835,5840.

0: None.

Value	Name
0	none

rfOLEnable (whispApsConfig.rfOLEnable)

Data Type:bool

Enable/Disable Throughput RF Overload Monitoring monitoring.

Value	Name
1	enable
0	disable

rfOLThreshold (whispApsConfig.rfOLThreshold)

Data Type:INTEGER

Percent of packet overload in the RF Downlink where SNMP is generated and sent to Network Manager.

Lower bound: 1

Upper bound: 100

rfOLTrap (whispApsConfig.rfOLTrap)

Data Type:bool

Enable/Disable SNMP Trap for when RF Overload exceeds configured Threshold level.

Value	Name
1	enable
0	disable

scheduleWhitening (whispApsConfig.scheduleWhitening)

Data Type:INTEGER

1 = Schedule Whitening allowed. 0 = Schedule Whitening not allowed. This option is for FSK only

Value	Name
0	disable
1	enable

sectorID (whispApsConfig.sectorID)

Data Type:INTEGER

Advertise sector number for an AP. Not supported on 450 platform.

Lower bound: 0

Upper bound: 15

smIsolation (whispApsConfig.smIsolation)

Data Type:INTEGER

(0) -- Disable SM Isolation. (1) -- Enable SM Isolation by blocking SM destined packets. (2) -- Enable SM Isolation by forwarding SM packets upstream.

Value	Name
0	smIsolationDisable
1	smIsolationDrop
2	smIsolationFwd

txSpreading (whispApsConfig.txSpreading)

Data Type:bool

Variable to enable/disable Transmit Frame Spreading. This option is for FSK only.

Value	Name
0	txSpreadingDisabled
1	txSpreadingEnabled

apSnmpConfig

authDomainNameAppend (whispApsDNS.authDomainNameAppend)

Data Type:bool

Select whether to append the configured management domain name to the configured trap names. For example, if dnsMgmtDomainName is set to 'example.com', authServer1 is set to 'auth1', and authDomainNameAppend is set to appendDomain, the authServer1 name used would be 'auth1.example.com'.

Value	Name
0	disableDNSDomain
1	enableDNSDomain

gpsTrap (whispApsConfig.gpsTrap)

Data Type:INTEGER

Variable to enable/disable GPS sync/out-sync traps.

Value	Name
0	gpsTrapDisabled
1	gpsTrapEnabled

regTrap (whispApsConfig.regTrap)

Data Type:INTEGER

Variable to enable/disable registration complete/lost traps.

Value	Name
0	regTrapDisabled
1	regTrapEnabled

apSyncConfig

apType (whispBoxConfig.apType)

Data Type:bool

In standard mode, all possible sync sources will be made available and used for autoSync operation. In remote mode, sync over power port will not be available as a sync source. Remote Device mode is where the AP or BHM timing port is connected to an SM or BHS timing port via a sync

cable. In this mode, GPS data is unavailable and sync over power port shouldn't be used. If sync over power is desired, and a CMM or other sync over power device is in use, then select standard mode.

This should really be named deviceType because this applies to both AP and BHM, but left this as apType for legacy purposes.

Value	Name
0	standard
1	remote

frameAlignmentLegacyMode (whispApsConfig.frameAlignmentLegacyMode)

Data Type:INTEGER

Option to adjust the frame alignment for compatibility with different GPS sync sources and software versions. Please see user guide for more information. Not applicable to 3 GHz radios running with 5ms frame, nor PMP 450m.

Value	Name
0	OFF
1	ON (Mode 1)
2	ON (Mode 2)

freeRunGPSSyncBypass (whispApsConfig.freeRunGPSSyncBypass)

Data Type:bool

Enable to allow Free Run to begin immediately after radio bootup. Normally, Free Run is only allowed after GPS sync has been established at least once, then lost.

Value	Name
0	disabled
1	enabled

gpsOutputEn (whispApsConfig.gpsOutputEn)

Data Type:bool

Enable or Disable GPS sync output enable.

Value	Name
0	off
1	on

uGPSPower (whispApsConfig.uGPSPower)

Data Type:bool

Enable or Disable power supply to Universal GPS module (UGPS capable APs only, when GPS_output_enable is NOT set).

Value	Name
0	off
1	on

verifyGPSChecksum (whispApsConfig.verifyGPSChecksum)

Data Type:INTEGER

Enable/Disable verification of GPS message checksums.

Value	Name
0	doNotVerifyGPSTimeMessageChecksum
1	verifyGPSTimeMessageChecksum

apSyslogConfig

syslogDomainNameAppend (whispBoxConfig.syslogDomainNameAppend)

Data Type:bool

Select whether to append the configured management domain name to the Syslog server name. For example, if dnsMgmtDomainName is set to 'example.com', syslogServerAddr is set to 'syslog1', and syslogDomainNameAppend is set to appendDomain, the Syslog Server name used would be 'syslog1.example.com'.

Value	Name
0	disableDomain
1	appendDomain

syslogServerAddr (whispBoxConfig.syslogServerAddr)

Data Type:DisplayString

Syslog server address either in dotted decimal notation or a Fully Qualified Domain Name

syslogServerPort (whispBoxConfig.syslogServerPort)

Data Type:INTEGER

Listening port on the Syslog server. Default is 514.

syslogXmitAP (whispApsConfig.syslogXmitAP)

Data Type:bool

Enables/Disables transmission of Syslogs from AP/BHM

Value	Name
0	disable
1	enable

syslogXmitSMs (whispApsConfig.syslogXmitSMs)

Data Type:bool

Enables/Disables transmission of Syslogs from connected SMS/BHS. This can be over-ridden by the setting on individual SMS/ the BHS.

Value	Name
0	disable
1	enable

apVlanConfig

apVlanOverride (whispApsConfig.apVlanOverride)

Data Type:bool

Setting this option will cause an AP to retain its VLAN settings when turning it into an SM. It will be mostly helpful for running spectrum analysis on the AP. Since doing that requires the AP to be turned into an SM, enabling this option will allow you to keep the AP's VLAN configuration in place while the AP is running as an SM.

Value	Name
0	disable
1	enable

qinqEthType (whispApsConfig.qinqEthType)

Data Type:INTEGER

EtherType for QinQ (802.1ad) outer tag (S-Tag). 0x88a8 by default.

Value	Name
0	x88a8
1	x8100
2	x9100
3	x9200
4	x9300

useAPManagementVIDForICCSM (whispApsConfig.useAPManagementVIDForICCSM)

Data Type:bool

When enabled, SM connected via ICC uses APs MVID instead of its own.

Value	Name
0	disable
1	enable

vlanEnable (whispApsConfig.vlanEnable)

Data Type:bool

To enable or disable VLAN.

Value	Name
0	disable
1	enable

authenticationConfig

accounts (No Direct SNMP Equivalent)

Data Type:Array

Format: Array of objects

Each object in the array that may contain the following elements:

- **userName (required):** string that contains the username
- **level (required):** integer, 2 for Installer, 3 for Administrator, 4 for Technician
- **password:** string containing plaintext password. Either password or passwordEncrypted must be present.
- **passwordEncrypted:** encrypted form of password. Either password or passwordEncrypted must be present.
- **readOnly (required)** boolean, set to true if account should be read only

Example:

```
{
  "authenticationConfig" :
  {
    "accounts":
    [
      { "userName":"admin", "level":3, "password":"adminPass","readOnly":false },
      { "userName":"bob", "level":4, "password":"foobar","readOnly":true }
    ]
  }
}
```

allowRejectThenLocal (whispBoxConfig.allowRejectThenLocal)

Data Type:bool

Control for allowing local authentication if the AAA remote server

Value	Name
0	doNotAllowLocalAuthIfAAARreject
1	allowLocalAuthIfAAARreject

authKeyOption (No Direct SNMP Equivalent)

Data Type:bool

Set to one to use configured pre-shared key.

authenticationKey (No Direct SNMP Equivalent)

Data Type:password

Sets the authentication key used by Preshared Key authentication

authenticationKeyEncrypted (No Direct SNMP Equivalent)

Data Type:encrypted password

Sets the authentication key used by Preshared Key authentication

userAuthCertificates (No Direct SNMP Equivalent)

Data Type:Array

Sets the certificates used for User Authentication with RADIUS server. Please see JSON document for more information.

whispUsrAuth (whispBoxConfig.whispUsrAuth)

Data Type:INTEGER

Select method for User Authentication.

Value	Name
0	md5
1	peap-mschapv2

whispUsrAuthPhase1 (whispApsConfig.whispUsrAuthPhase1)

Data Type:INTEGER

Select method for User Authentication. This is deprecated. Please use whispUsrAuth.

Value	Name
0	md5

whispWebUserAccessMode (whispBoxConfig.whispWebUserAccessMode)

Data Type:INTEGER

This variable selects if web page users for the radio should be authenticated locally or via a centralised remote Radius server

Value	Name
0	local
1	remote
2	remotethenlocal

bhMasterAuthenticationConfig

AuthModeBH (No Direct SNMP Equivalent)

Data Type:bool

TODO

authKeyAp (whispApsConfig.authKeyAp)

Data Type: DisplayString

Authentication key. It should be 32 character long. Can be used on MultiPoint AP if AP Authentication mode is selected. Otherwise, it is used on Backhauls.

encryptionMode (whispApsConfig.encryptionMode)

Data Type: bool

Variable to enable/disable encryption.

Value	Name
0	encryptionDisabled
1	encryptionEnabled

userAuthDomainNameAppend (whispApsDNS.userAuthDomainNameAppend)

Data Type: bool

Select whether to append the configured management domain name to the configured user authentication server names. For example, if dnsMgmtDomainName is set to 'example.com', authServer1 is set to 'auth1', and userAuthDomainNameAppend is set to enableDNSDomain, the authServer1 name used would be 'auth1.example.com'.

Value	Name
0	disableDNSDomain
1	enableDNSDomain

bhMasterNetworkSecurityConfig

rfPPPoEPADIForwarding (whispApsConfig.rfPPPoEPADIForwarding)

Data Type: bool

Enables/disables forwarding of PPPoE PADI packets from AP to SM.

Value	Name
0	disable
1	enable

bhMasterNetworkConfig

ntpDomainNameAppend (whispApsDNS.ntpDomainNameAppend)

Data Type: bool

Select whether to append the configured management domain name to the configured trap names. For example, if dnsMgmtDomainName is set to 'example.com', ntpServer is set to 'ntp', and ntpDomainNameAppend is set to appendDomain, the ntpServer name used would be 'ntp.example.com'.

Value	Name
-------	------

0	disableDomain
1	appendDomain

ntpServers (No Direct SNMP Equivalent)

Data Type:Array

This is an array of up to three NTP servers as strings.

Example:

```
{
  "apNetworkConfig" :
  {
    "ntpServers":
    [
      "192.168.1.1",
      "192.168.1.2"
    ]
  }
}
```

updateAppAddress (whispApsConfig.updateAppAddress)

Data Type:IpAddress

Update Application Address.

bhMasterNetworkSecurityConfig

rfTelnetAccess (whispApsConfig.rfTelnetAccess)

Data Type:bool

Allows/prohibits uplink Telnet access (SM->AP).

Value	Name
0	disable
1	enable

bhMasterRadioConfig

dhcprDomainNameAppend (whispApsDNS.dhcprDomainNameAppend)

Data Type:bool

Select whether to append the configured management domain name to the configured trap names. For example, if dnsMgmtDomainName is set to 'example.com', dhcprServer is set to 'dhcpr', and dhcprDomainNameAppend is set to appendDomain, the dhcprServer name used would be 'dhcpr.example.com'.

Value	Name
0	disableDomain
1	appendDomain

dhcprServer (whispApsDNS.dhcprServer)

Data Type: DisplayString

DHCP Server IP which will be used for forwarding DHCP messages by the DHCP Relay Agent in the MultiPoint AP. - Format is either an IP address or DNS name. - Default is 255.255.255.255 (broadcast).

framePeriod (whispApsConfig.framePeriod)

Data Type: bool

Changes frame period to 2.5 ms or 5ms. Note: If set to 5 ms, only SM/BHS from 13.3 and onward will be able to register. Only on PMP and PTP 450. Not available in all regions.

Value	Name
0	twoPointFiveMs
1	fiveMs

privatelp (whispApsConfig.privatelp)

Data Type: IpAddress

Private IP.

radioColorCode (whispApsRFConfigRadioEntry.radioColorCode)

Data Type: INTEGER

Color code.

Lower bound: 0

Upper bound: 254

radioDownlinkPercent (whispApsRFConfigRadioEntry.radioDownlinkPercent)

Data Type: INTEGER

This is the percentage of frame data space allocated for downlink. Various radio platforms and regions will have different allowable downlink percentages.

Lower bound: 1

Upper bound: 99

radioFreqCarrier (whispApsRFConfigRadioEntry.radioFreqCarrier)

Data Type: INTEGER

RF Frequency. Please see the whispBoxRFPhysicalRadioFrequencies SNMP table for a list of available frequencies. 0: wired.

Value	Name
0	wired

rfFreqCaralt1 (whispApsConfig.rfFreqCaralt1)

Data Type:INTEGER

First DFS Alternate RF Frequency. (Only available for DFS radios) Used as a backup frequency when Radar is detected on DFS enabled Radios. The frequencies are:

5.4 radios:(5475,5485,5490 OFDM only),5495,5500,5505,5510,5515,5520,5525,
5530,5535,5540,5545,5550,5555,5560,5565,5570,5575,5580,5585,5590,5595,
5600,5605,5610,5615,5620,5625,5630,5635,5640,5645,5650,5655,5660,5665,
5670,5675,5680,5685,5690,5695,5700,5705,(5710,5715 OFDM Only).

(5.7 Platform 10 (SAL) radios with non-connectorized antennas do not support DFS)

5.7 radios:5745,5750,5755,5760,5765,5770,5775,5780,5785,5790,5795,5800,5805.

5.7 radios with ISM enabled :5735,5740,5745,5750,5755,5760,5765,5770,5775,
5780,5785,5790,5795,5800,5805,5810,5815,5820,5825,5830,5835,5840.

0: None.

Value	Name
0	none

rfFreqCaralt2 (whispApsConfig.rfFreqCaralt2)

Data Type:INTEGER

Second DFS Alternate RF Frequency. (Only available for DFS radios) Used as a backup frequency when Radar is detected on DFS enabled Radios. The frequencies are:

5.4 radios:(5475,5485,5490 OFDM only),5495,5500,5505,5510,5515,5520,5525,
5530,5535,5540,5545,5550,5555,5560,5565,5570,5575,5580,5585,5590,5595,
5600,5605,5610,5615,5620,5625,5630,5635,5640,5645,5650,5655,5660,5665,
5670,5675,5680,5685,5690,5695,5700,5705,(5710,5715 OFDM Only).

(5.7 Platform 10 (SAL) radios with non-connectorized antennas do not support DFS)

5.7 radios:5745,5750,5755,5760,5765,5770,5775,5780,5785,5790,5795,5800,5805.

5.7 radios with ISM enabled :5735,5740,5745,5750,5755,5760,5765,5770,5775,
5780,5785,5790,5795,5800,5805,5810,5815,5820,5825,5830,5835,5840.

0: None.

Value	Name
0	none

scheduleWhitening (whispApsConfig.scheduleWhitening)

Data Type:INTEGER

1 = Schedule Whitening allowed. 0 = Schedule Whitening not allowed. This option is for FSK only

Value	Name
0	disable
1	enable

sectorID (whispApsConfig.sectorID)

Data Type:INTEGER

Advertise sector number for an AP. Not supported on 450 platform.

Lower bound: 0

Upper bound: 15

txSpreading (whispApsConfig.txSpreading)

Data Type:bool

Variable to enable/disable Transmit Frame Spreading. This option is for FSK only.

Value	Name
0	txSpreadingDisabled
1	txSpreadingEnabled

bhMasterRfSecurityConfig

dailyEncryptionRefresh (whispApsConfig.bhReReg)

Data Type:bool

Allows BHS re-registration every 24 hours. Enable allows re-registration and Disable does not. 24 Hour Encryption Refresh.

Value	Name
0	disabled
1	enabled

bhMasterSnmpConfig

authDomainNameAppend (whispApsDNS.authDomainNameAppend)

Data Type:bool

Select whether to append the configured management domain name to the configured trap names. For example, if dnsMgmtDomainName is set to 'example.com', authServer1 is set to 'auth1', and authDomainNameAppend is set to appendDomain, the authServer1 name used would be 'auth1.example.com'.

Value	Name
0	disableDNSDomain
1	enableDNSDomain

gpsTrap (whispApsConfig.gpsTrap)

Data Type:INTEGER

Variable to enable/disable GPS sync/out-sync traps.

Value	Name
0	gpsTrapDisabled
1	gpsTrapEnabled

regTrap (whispApsConfig.regTrap)

Data Type:INTEGER

Variable to enable/disable registration complete/lost traps.

Value	Name
0	regTrapDisabled
1	regTrapEnabled

bhMasterSyncConfig

apType (whispBoxConfig.apType)

Data Type:bool

In standard mode, all possible sync sources will be made available and used for autoSync operation. In remote mode, sync over power port will not be available as a sync source. Remote Device mode is where the AP or BHM timing port is connected to an SM or BHS timing port via a sync cable. In this mode, GPS data is unavailable and sync over power port shouldn't be used. If sync over power is desired, and a CMM or other sync over power device is in use, then select standard mode.

This should really be named deviceType because this applies to both AP and BHM, but left this as apType for legacy purposes.

Value	Name
0	standard
1	remote

frameAlignmentLegacyMode (whispApsConfig.frameAlignmentLegacyMode)

Data Type:INTEGER

Option to adjust the frame alignment for compatibility with different GPS sync sources and software versions. Please see user guide for more information. Not applicable to 3 GHz radios running with 5ms frame, nor PMP 450m.

Value	Name
0	OFF
1	ON (Mode 1)
2	ON (Mode 2)

freeRunGPSSyncBypass (whispApsConfig.freeRunGPSSyncBypass)

Data Type:bool

Enable to allow Free Run to begin immediately after radio bootup. Normally, Free Run is only allowed after GPS sync has been established at least once, then lost.

Value	Name
0	disabled
1	enabled

gpsOutputEn (whispApsConfig.gpsOutputEn)

Data Type:bool

Enable or Disable GPS sync output enable.

Value	Name
0	off
1	on

uGPSPower (whispApsConfig.uGPSPower)

Data Type:bool

Enable or Disable power supply to Universal GPS module (UGPS capable APs only, when GPS_output_enable is NOT set).

Value	Name
0	off
1	on

verifyGPSChecksum (whispApsConfig.verifyGPSChecksum)

Data Type:INTEGER

Enable/Disable verification of GPS message checksums.

Value	Name
0	doNotVerifyGPSTimeMessageChecksum
1	verifyGPSTimeMessageChecksum

bhMasterSyslogConfig

syslogDomainNameAppend (whispBoxConfig.syslogDomainNameAppend)

Data Type:bool

Select whether to append the configured management domain name to the Syslog server name. For example, if dnsMgmtDomainName is set to 'example.com', syslogServerAddr is set to 'syslog1', and syslogDomainNameAppend is set to appendDomain, the Syslog Server name used would be 'syslog1.example.com'.

Value	Name
0	disableDomain
1	appendDomain

syslogServerAddr (whispBoxConfig.syslogServerAddr)

Data Type:DisplayString

Syslog server address either in dotted decimal notation or a Fully Qualified Domain Name

syslogServerPort (whispBoxConfig.syslogServerPort)

Data Type:INTEGER

Listening port on the Syslog server. Default is 514.

syslogXmitAP (whispApsConfig.syslogXmitAP)

Data Type:bool

Enables/Disables transmission of Syslogs from AP/BHM

Value	Name
0	disable
1	enable

syslogXmitSMs (whispApsConfig.syslogXmitSMs)

Data Type:bool

Enables/Disables transmission of Syslogs from connected SMs/BHS. This can be over-ridden by the setting on individual SMs/ the BHS.

Value	Name
0	disable
1	enable

bhMasterVlanConfig

qinqEthType (whispApsConfig.qinqEthType)

Data Type:INTEGER

EtherType for Qinq (802.1ad) outer tag (S-Tag). 0x88a8 by default.

Value	Name
0	x88a8
1	x8100
2	x9100
3	x9200
4	x9300

vlanEnable (whispApsConfig.vlanEnable)

Data Type:bool

To enable or disable VLAN.

Value	Name
0	disable
1	enable

bhRadioConfig

bhsReReg (whispSmConfig.bhsReReg)

Data Type:INTEGER

Allows BHS re-registration every 24 hours. Enable allows re-registration and Disable does not. 24 Hour Encryption Refresh.

Value	Name
0	disabled
1	enabled

bridgeEnable (whispBoxConfig.bridgeEnable)

Data Type:bool

Disable or enable bridging functionality for a BH unit.

Value	Name
0	enable
1	disable

bhSlaveQosConfig

lowPriorityDownlinkCIR (whispSmConfig.lowPriorityDownlinkCIR)

Data Type:INTEGER

Low priority downlink CIR.

lowPriorityUplinkCIR (whispSmConfig.lowPriorityUplinkCIR)

Data Type:INTEGER

Low priority uplink CIR.

bhSlaveRadioConfig

bandwidthScanList (No Direct SNMP Equivalent)

Data Type:Array

This is an array of integers representing the bandwidth scan list. The available bandwidths are 5, 7, 10, 15, 20, 30, and 40.

Example:

```
{
  "smRadioConfig" :
  {
    "bandwidthScanList":
    [
      5, 20
    ]
  }
}
```

colorCode (whispBoxConfig.colorCode)

Data Type:INTEGER

Color code.

Lower bound: 0

Upper bound: 254

frequencyScanList (No Direct SNMP Equivalent)

Data Type:Array

This is an array of integers representing the frequency scan list. This is in kHz.

Example:

```
{
  "smRadioConfig" :
  {
    "frequencyScanList":
    [
      5760000, 5765000, 5770000
    ]
  }
}
```

bhSlaveSyncConfig

timingPulseGated (whispSmConfig.timingPulseGated)

Data Type:bool

0 - Disable (Always propagate the frame timing pulse). 1 - Enable (If SM out of sync then dont propagate the frame timing pulse).

Value	Name
0	disable
1	enable

bhVlanConfig

bhvlanEnable (whispBoxConfig.bhvlanEnable)

Data Type:INTEGER

To enable or disable VLAN for Backhaul Master/Slave.

Value	Name
0	disable
1	enable

portVID (whispBoxConfig.portVID)

Data Type:INTEGER

Backhaul Port VID (PVID).

cnMaestroConfig

camID (whispBoxConfig.camID)

Data Type: DisplayString

Cambium Id for cnMaestro onboarding.

camOnboardKey (whispBoxConfig.camOnboardKey)

Data Type: password

Onboarding key for cnMaestro onboarding.

camOnboardKeyEncrypted (whispBoxConfig.camOnboardKey)

Data Type: encrypted password

Onboarding key for cnMaestro onboarding.

cnMaestroEnable (whispBoxConfig.cnMaestroEnable)

Data Type: bool

Enable Remote management using cnMaestro.

Value	Name
0	disable
1	enable

cnMaestroUrl (whispBoxConfig.cnMaestroUrl)

Data Type: DisplayString

cnMaestro Server URL.

gpsConfig

gpsInput (whispBoxConfig.gpsInput)

Data Type: INTEGER

Values 1, 2, 3 have been deprecated. (0) Generate AP sync signal. (1) Deprecated. Sync AP to received signal (Timing Port/UGPS). It will set AutoSync. (2) Deprecated. Sync AP to received signal (Power Port). It will set AutoSync plus Free Run. (3) Deprecated. Sync AP using iGPS (Only on devices which support it). It will set AutoSync plus Free Run. (4) AutoSync. (5) AutoSync plus Free Run.

Value	Name
0	generateSyncSignal
1	syncToReceivedSignalTimingPort
2	syncToReceivedSignalPowerPort

3	syncToIGPS
4	autoSync
5	autoSyncFreeRun

location

height (whispBoxConfig.height)

Data Type:INTEGER

The height setting of this unit in meters.

Lower bound: -2147483647

Upper bound: 2147483647

latitude (whispBoxConfig.latitude)

Data Type:DisplayString

The latitude setting of this unit in decimal degrees.

longitude (whispBoxConfig.longitude)

Data Type:DisplayString

The longitude setting of this unit in decimal degrees.

siteContact (No Direct SNMP Equivalent)

Data Type:DisplayString

Sets the site contact information visible via SNMP and Web interfaces

siteInfoViewable (whispBoxConfig.siteInfoViewable)

Data Type:bool

Enable non login users the ability to view Site Information

Value	Name
1	enable
0	disable

siteLocation (No Direct SNMP Equivalent)

Data Type:mulstr

Sets the site location information visible via SNMP and Web interfaces

siteName (No Direct SNMP Equivalent)

Data Type:DisplayString

Sets the site name information visibile via SNMP and Web interfaces

networkConfig

acceptSecurityBanner (whispBoxConfig.acceptSecurityBanner)

Data Type:bool

1: User must accept and acknowledge security banner before login. 0: Accepting security banner is not mandatory and user can login without it.

Value	Name
1	enable
0	disable

auxPortEnable (whispBoxConfig.auxPortEnable)

Data Type:bool

Enable(1) or Disable(0) aux ethernet port on 450i radio

Value	Name
1	enable
0	disable

bridgeEntryTimeout (whispBoxConfig.bridgeEntryTimeout)

Data Type:INTEGER

Bridge table time out Range : 25 -- 1440 Minutes.

Lower bound: 25

Upper bound: 1440

bridgeTableSize (whispSmConfig.bridgeTableSize)

Data Type:INTEGER

Bridge Table Size : 4 -- 4096.

Lower bound: 4

Upper bound: 4096

defaultIPAccessEnable (whispBoxConfig.defaultIPAccessEnable)

Data Type:bool

Enable(1) or Disable(0) Default alternative LAN1 IP address

Value	Name
1	enable
0	disable

diffServ (No Direct SNMP Equivalent)

Data Type:Array

This is an object with the codepoint as the name (string representation of an integer from 0 to 63). Note, unspecified codepoints will use default values. The value will be the priority, an integer from 0 to 7.

Example:

```
{
  "networkConfig" :
  {
    "diffserv":
    {
      "0":0,
      "4":4,
      "56":7
    }
  }
}
```

dnsAlternateMgmtIP (whispBoxDNS.dnsAlternateMgmtIP)

Data Type:IpAddress

Secondary DNS IP address for the management interface.

dnsIpState (whispBoxDNS.dnsIpState)

Data Type:bool

Configuration for DNS server IP addresses of the management interface are learned: 0 : Manual, must configure dnsPrimaryMgmtIP and dnsAlternateMgmtIP 1 : Automatic, DNS servers IP addresses are learned from DHCP response of the interface

Value	Name
0	manual
1	automatic

dnsMgmtDomainName (whispBoxDNS.dnsMgmtDomainName)

Data Type:DisplayString

Domain Name to use for management DNS configuration. This domain name may be concatenated to DNS names used configured for the management interface.

dnsPrimaryMgmtIP (whispBoxDNS.dnsPrimaryMgmtIP)

Data Type:IpAddress

Primary DNS IP address for the management interface.

enable8023linkBox (whispBoxConfig.enable8023linkBox)

Data Type:bool

To enable or disable 802.3 link.

Value	Name
0	disabled
1	enabled

enableSecurityBanner (whispBoxConfig.enableSecurityBanner)

Data Type:bool

Shows Security Banner at the time of login

Value	Name
1	enable
0	disable

ethernetLinkSpeed (whispBoxConfig.ethernetLinkSpeed)

Data Type:INTEGER

Set/Get Ethernet link speed and duplex settings. Note that the Gigabit options are only valid for boards that support Gigabit speeds.

Value	Name
1	forced10H
2	forced10F
4	forced100H
8	forced100F
3	auto10F-10H
5	auto100H-10H
7	auto100H-10F-10H
12	auto100F-100H
13	auto100F-100H-10H
15	auto100F-100H-10F-10H
63	auto1000F-100F-100H-10F-10H

ftpPort (whispBoxConfig.ftpPort)

Data Type:INTEGER

Port used to for FTP. Default is 21.

ftpStatus (whispBoxConfig.ftpStatus)

Data Type:bool

This variable determines if FTP to enabled or not. 0: Disable FTP 1: Enable FTP

Value	Name
-------	------

0	disableftp
1	enableftp

httpPort (whispBoxConfig.httpPort)

Data Type:INTEGER

Port used to for HTTP. Default is 80.

httpsPort (whispBoxConfig.httpsPort)

Data Type:INTEGER

Port used to for HTTPS. Default is 443.

lanDhcpState (whispBoxConfig.lanDhcpState)

Data Type:bool

To enable or disable LAN Interface DHCP feature.

Value	Name
0	disabled
1	enabled

lanGateway (No Direct SNMP Equivalent)

Data Type:IpAddress

Sets the gateway address for the radio's management interface.

lanIp (No Direct SNMP Equivalent)

Data Type:IpAddress

Sets the IP address for the radio's management interface.

lanMask (No Direct SNMP Equivalent)

Data Type:IpAddress

Sets the netmask for the radio's management interface.

lldpBroadcastEnable (whispBoxConfig.lldpBroadcastEnable)

Data Type:INTEGER

To enable Broadcast of LLDP message, if disabled LLDP uses multicast

Value	Name
0	disable

1	enable
---	--------

packetFilterAllIpv4 (whispBoxConfig.allIpv4Filter)

Data Type:INTEGER

To set all IPv4 packet filter. Enabling this will automatically enable all of the known IP filters (SMB, SNMP, Bootp, IPv4 Mcast, User Defined Ports, and All Other IPv4).

Value	Name
0	filterOff
1	filterOn

packetFilterAllIpv6 (whispBoxConfig.allIpv6Filter)

Data Type:INTEGER

To set all IPv6 packet filter. Enabling this will automatically enable all of the known IPv6 filters (SMB, SNMP, Bootp, IPv6 Mcast, User Defined Ports, and All Other IPv6).

Value	Name
0	filterOff
1	filterOn

packetFilterAllIpv6Others (whispBoxConfig.allOtherIpv6Filter)

Data Type:INTEGER

To set all other IPv6 packet filter.

Value	Name
0	filterOff
1	filterOn

packetFilterAllOthers (whispBoxConfig.allOthersFilter)

Data Type:INTEGER

To set all other packet filter when.

Value	Name
0	filterOff
1	filterOn

packetFilterArp (whispBoxConfig.arpFilter)

Data Type:INTEGER

To set ARP packet filter.

Value	Name
0	filterOff
1	filterOn

packetFilterBootpClient (whispBoxConfig.bootpcFilter)

Data Type:INTEGER

To set bootp client sourced packets filter.

Value	Name
0	filterOff
1	filterOn

packetFilterBootpClientIpv6 (whispBoxConfig.ipv6bootpcFilter)

Data Type:INTEGER

To set IPv6 bootp client sourced packets filter.

Value	Name
0	filterOff
1	filterOn

packetFilterBootpServer (whispBoxConfig.bootpsFilter)

Data Type:INTEGER

To set bootp server sourced packets filter.

Value	Name
0	filterOff
1	filterOn

packetFilterBootpServerIpv6 (whispBoxConfig.ipv6bootpsFilter)

Data Type:INTEGER

To set IPv6 bootp server sourced packets filter.

Value	Name
0	filterOff
1	filterOn

packetFilterDirection (whispBoxConfig.packetFilterDirection)

Data Type:INTEGER

To set packet filter direction. Upstream is default.

Value	Name
1	upstream
2	downstream

packetFilterMulticastIpv4 (whispBoxConfig.ip4MultFilter)

Data Type:INTEGER

To set IPv4 MultiCast packets filter when NAT is disabled.

Value	Name
0	filterOff
1	filterOn

packetFilterMulticastIpv6 (whispBoxConfig.ipv6MultFilter)

Data Type:INTEGER

To set IPv6 MultiCast packets filter when NAT is disabled.

Value	Name
0	filterOff
1	filterOn

packetFilterOtherIpv4 (whispBoxConfig.allOtherIpFilter)

Data Type:INTEGER

To set all other IPv4 packet filter.

Value	Name
0	filterOff
1	filterOn

packetFilterPppoe (whispBoxConfig.pppoeFilter)

Data Type:INTEGER

To set PPPoE packet filter.

Value	Name
0	filterOff
1	filterOn

packetFilterSmb (whispBoxConfig.smbFilter)

Data Type:INTEGER

To set SMB packet filter.

Value	Name
0	filterOff
1	filterOn

packetFilterSmbIpv6 (whispBoxConfig.ipv6smbFilter)

Data Type:INTEGER

To set IPv6 SMB packet filter.

Value	Name
0	filterOff
1	filterOn

packetFilterSnmp (whispBoxConfig.snmpFilter)

Data Type:INTEGER

To set SNMP packet filter.

Value	Name
0	filterOff
1	filterOn

packetFilterSnmpIpv6 (whispBoxConfig.ipv6snmpFilter)

Data Type:INTEGER

To set IPv6 SNMP packet filter.

Value	Name
0	filterOff
1	filterOn

packetFilterUser1 (whispBoxConfig.userP1Filter)

Data Type:INTEGER

To set user defined port 1 packet filter.

Value	Name
0	filterOff
1	filterOn

packetFilterUser2 (whispBoxConfig.userP2Filter)

Data Type:INTEGER

To set user defined port 2 packet filter.

Value	Name
0	filterOff
1	filterOn

packetFilterUser3 (whispBoxConfig.userP3Filter)

Data Type:INTEGER

To set user defined port 3 packet filter.

Value	Name
0	filterOff
1	filterOn

poeAuxEnable (whispBoxConfig.poeAuxEnable)

Data Type:bool

Enable(1) or Disable(0) aux ethernet port PoE on 450i radio

Value	Name
1	enable
0	disable

poeT2Classification (whispBoxConfig.poeT2Classification)

Data Type:bool

When disabled, the radio will ignore the 802.3at Type 2 classification. When enabled, if 802.3at Type 2 PoE is not present, the board will start and log the problem but the transmitter and PoE out will not be enabled due to the low input power. This is only available on the 450i.

Value	Name
0	disabled
1	enabled

portFiltering (No Direct SNMP Equivalent)

Data Type:Array

Each array is an object that may contain the following elements. Note, there is a maximum of 3 elements.

- **port (required):** integer, port to filter
- **tcpEnable (default false):** bool, indicates to filter TCP protocol
- **udpEnable (default false):** bool, indicates to filter UDP protocol

Example:

```

{
  "networkConfig" :
  {
    "portFiltering":
    [
      { "port":80,"tcpEnable":true },
      { "port":53,"udpEnable":true }
    ]
  }
}

```

sessionTimeout (whispBoxConfig.sessionTimeout)

Data Type:INTEGER

Timer for Telnet, Web and FTP sessions.

snmpStatus (whispBoxConfig.snmpStatus)

Data Type:INTEGER

This variable determines SNMP operation mode. 1: Enable SNMPv2c only 2: Enable SNMPv3 only 3: Enable SNMPv2c and SNMPv3

Value	Name
1	snmpv2only
2	snmpv3only
3	snmpv2-and-snmpv3

telnetStatus (whispBoxConfig.telnetStatus)

Data Type:bool

This variable determines if Telnet to enabled or not. 0: Disable Telnet 1: Enable Telnet

Value	Name
0	disabletelnet
1	enabletelnet

textSecurityBanner (whispBoxConfig.textSecurityBanner)

Data Type:DisplayString

Security Banner to be displayed on login page. Length should be maximum 1200 characters. Configuration from web UI can enter upto 1499 characters. Only ASCII characters(0-9a-zA-Z,CR,LF) supported.

tftpStatus (whispBoxConfig.tftpStatus)

Data Type:bool

This variable determines if TFTP is enabled or not. 0: Disable TFTP 1: Enable TFTP

Value	Name
0	disabletftp

1	enableftp
---	-----------

webAccess (whispBoxConfig.webAccess)

Data Type:INTEGER

This variable determines if only HTTP or HTTPs connection are allowed. 0: HTTP Only 1: HTTPs Only 2: HTTP and HTTPs Both

Value	Name
0	http
1	https
2	http-and-https

webAutoUpdate (whispBoxConfig.webAutoUpdate)

Data Type:INTEGER

Web page auto update in seconds. 0 means disabled.

networkSecurityConfig

ipAccessFilter (No Direct SNMP Equivalent)

Data Type:Array

This is an array of objects representing addresses that can access the management interface. There may be up to 10 addresses. Each object must contain:

- **address:** string, IP address to allow access
- **netmask:** integer, netmask of address to allow access

Example:

```
{
  " networkSecurityConfig" :
  {
    "ipAccessFilter":
    [
      { "address":"192.168.1.0", "netmask":24},
      { "address":"192.168.2.0", "netmask":24}
    ]
  }
}
```

ipAccessFilterEnabled (whispApsConfig.ipAccessFilterEnable)

Data Type:bool

To enable or disable IP access filtering to Management functions. (0) - IP access will be allowed from all addresses. (1) - IP access will be controlled using allowedIPAccess1-3 entries.

Value	Name
0	disable
1	enable

pingWatchDogConfig

pingWdogEnable (whispBoxConfig.pingWdogEnable)

Data Type:bool

enable(1) or disable(0) ping watchdog.

Value	Name
0	disable
1	enable

pingWdogIP (whispBoxConfig.pingWdogIP)

Data Type:IpAddress

IPv4 address to ping in dotted decimal notation.

pingWdogInterval (whispBoxConfig.pingWdogInterval)

Data Type:INTEGER

Intervals in seconds at which ping should be initiated.

Lower bound: 300

Upper bound: 86400

pingWdogRbtCnt (whispBoxConfig.pingWdogRbtCnt)

Data Type:INTEGER

Ping Failures count at which reboot should be initiated.

Lower bound: 1

Upper bound: 100

pppoeConfig

pppoeCtlPriority (whispBoxConfig.pppoeCtlPriority)

Data Type:bool

Prioritization of PPPoE Control packets.

Value	Name
0	Normal
1	High

qosConfig

downlinkBurstAllocation (No Direct SNMP Equivalent)

Data Type:INTEGER

Sets the downlink burst allocation for the radio.

largeVCQ (whispBoxConfig.largeVCQ)

Data Type:bool

Enable or disable Large VC Qs for SM or PTP radios. Enable when Uplink is being used for camera video feed.

Value	Name
1	enable
0	disable

maxDownlinkDataRate (No Direct SNMP Equivalent)

Data Type:INTEGER

Sets the maximum downlink burst rate for the radio.

maxUplinkDataRate (No Direct SNMP Equivalent)

Data Type:INTEGER

Sets the maximum uplink burst rate for the radio.

prioritizeTcpAck (whispBoxConfig.tcpAckPriority)

Data Type:bool

Prioritize TCP ACK that are 64 bytes or less.

sustainedDownlinkDataRate (No Direct SNMP Equivalent)

Data Type:INTEGER

Sets the sustained downlink data rate for the radio.

sustainedUplinkDataRate (No Direct SNMP Equivalent)

Data Type:INTEGER

Sets the sustained uplink data rate for the radio.

uplinkBurstAllocation (No Direct SNMP Equivalent)

Data Type:INTEGER

Sets the uplink burst allocation for the radio.

radioConfig

antennaGain (whispBoxConfig.antennaGain)

Data Type:INTEGER

External Antenna Gain. For radios that uses an external antenna or the DFS feature. Not applicable to PMP 450m.

atexHazlocPowerLimit (whispBoxConfig.atexHazlocPowerLimit)

Data Type:INTEGER

If radio is keyed for ATEX/HazLoc operation, these settings can be used to limit maximum power output, per Gas Group specs.

Value	Name
0	gasGroupA
1	gasGroupB
2	gasGroupC
3	gasGroupD

bandwidth (whispBoxConfig.bandwidth)

Data Type:INTEGER

Radio bandwidth setting. Obsoleted for MIMO SMs. Instead for MIMO SMs use OID bandwidthScan.

Value	Name
1	bandwidth5mhz
2	bandwidth7mhz
3	bandwidth10mhz
4	bandwidth15mhz
5	bandwidth20mhz
6	bandwidth30mhz
7	bandwidth40mhz

customFrequencies (No Direct SNMP Equivalent)

Data Type:Array

This is an array of integers representing the custom frequency list. This is in kHz.

Example:

```
{
  "radioConfig" :
  {
    "customFrequencies":
    [
      3450000, 3490000, 3500000
    ]
  }
}
```

cyclicPrefix (whispBoxConfig.cyclicPrefix)

Data Type:INTEGER

Cyclic Prefix value, for OFDM Radios only. Deprecated for MIMO SMs. For PMP 430 SMs, this value is only used while in PMP 430 mode (1/16 is forced in PMP 450 mode).

Value	Name
0	one-quarter
1	one-eighth
2	one-sixteenth
3	one-quarter-one-eighth
4	one-quarter-one-sixteenth
5	one-eighth-one-sixteenth
6	one-quarter-one-eighth-one-sixteenth

eirp (whispBoxConfig.eirp)

Data Type:INTEGER

Transmit EIRP of radio. PMP 450m only.

extFilterDelay (whispBoxConfig.extFilterDelay)

Data Type:INTEGER

Obsoleted. External Filters Delay. For 900MHz FSK radios only.

factoryResetOnDefaultPlug (whispBoxConfig.setDefaultPlug)

Data Type:bool

If enabled parameters are set to Factory Defaults upon default plug mode detection.

Value	Name
0	disable
1	enable

installationColorCode (whispBoxConfig.installationColorCode)

Data Type:bool

Installation Color Code. Allows non-configured SMs to register to an AP with UCC enabled in order to facilitate remote provisioning.

Value	Name
0	disabled
1	enabled

ism (whispBoxConfig.ism)

Data Type:INTEGER

Enable ISM on 5.7GHz frequency band radios.

Value	Name
0	disable
1	enable

nearFieldOperation (whispBoxConfig.nearFieldOperation)

Data Type:bool

Enables operation in the near field. This is effective only when an EIRP of 22 dBm or lower is selected or when Engineering keyed. PMP 450m only.

Value	Name
1	enable
0	disable

nearFieldRange (whispBoxConfig.nearFieldRange)

Data Type:INTEGER

Range in feet for near field operation. This is applied only when nearFieldOperation is set to enable(1) and eirp is 22dBm or below or when Engineering keyed. The maximum range of 3000ft applies negligible correction. PMP 450m only.

Lower bound: 6

Upper bound: 3000

pmp430SMRegistration (whispApsConfig.pmp430SMRegistration)

Data Type:bool

Option to allow/disallow PMP 430 SMs to register to this AP. When disabled PMP 430 SMs registrations will be rejected. This option applies only to PMP 450i/450 5 GHz APs. PMP 430 SMs are not supported by PMP 450m.

Value	Name
0	deny
1	allow

powerControl (whispBoxConfig.powerControl)

Data Type:bool

Power control. FSK Only.

Value	Name
0	low
1	normal

radioRateAdapt (whispBoxConfig.radioRateAdapt)

Data Type:INTEGER

Rate adaptation parameter 0: 1x No rate adaptation (FSK and SISO OFDM QPSK) 1: 1x/2x (FSK and SISO OFDM 16-QAM)

Following are OFDM only:

- 2: 1x/2x/3x (SISO OFDM 64-QAM)
- 3: 1x/2x/3x/4x (SISO OFDM 256-QAM) Engineering only

Following are MIMO OFDM only:

- 4: 1x MIMO-A (QPSK duplicated on both paths)
- 5: 1x/2x MIMO-B (QPSK on each path)
- 7: 1x/2x/4x MIMO-B (16-QAM on each path)
- 8: 1x/2x/4x/6x MIMO-B (64-QAM on each path)
- 9: 1x/2x/4x/6x/8x MIMO-B (256-QAM on each path)
- 10: 1x/2x MIMO-A (16-QAM duplicated on both paths)
- 11: 1x/2x/3x MIMO-A (64-QAM duplicated on both paths)
- 12: 1x/2x/3x/4x MIMO-A (256-QAM duplicated on both paths)

For PMP 430 radios this applies to Downlink Rate Adapt only.
Use radioRateAdaptUL for setting uplink rate adapt on PMP 430 radios.
For PMP 450 radios, write access for engineering use only.

Value	Name
0	onex
4	onexmimo
1	onextwox
5	onextwoxmimo
2	onextwoxthreex
3	onextwoxthreexfourx
7	onextwoxfourx
8	onextwoxfourxsixx
9	onextwoxfourxsixxeightx
10	onextwoxmimoa
11	onextwoxthreexmimoa
12	onextwoxthreexfourxmimoa

radioRateAdaptUL (whispBoxConfig.radioRateAdaptUL)

Data Type:INTEGER

Uplink Rate adaptation parameter 0: 1x No rate adaptation (FSK and SISO OFDM QPSK) 1: 1x/2x (FSK and SISO OFDM 16-QAM)

Following are OFDM only:

- 2: 1x/2x/3x (SISO OFDM 64-QAM)
- 3: 1x/2x/3x/4x (SISO OFDM 256-QAM) Engineering only

Following are MIMO OFDM only:

- 4: 1x MIMO-A (QPSK duplicated on both paths)
- 5: 1x/2x MIMO-B (QPSK on each path)
- 7: 1x/2x/4x MIMO-B (16-QAM on each path)
- 8: 1x/2x/4x/6x MIMO-B (64-QAM on each path)
- 9: 1x/2x/4x/6x/8x MIMO-B (256-QAM on each path)
- 10: 1x/2x MIMO-A (16-QAM duplicated on both paths)
- 11: 1x/2x/3x MIMO-A (64-QAM duplicated on both paths)
- 12: 1x/2x/3x/4x MIMO-A (256-QAM duplicated on both paths)

For PMP 430 radios this applies to Uplink Rate Adapt only.
Use radioRateAdapt for setting downlink rate adapt on PMP 430 radios.
For PMP 450 radios, engineering use only.

Value	Name
0	onex
4	onexmimo
1	onextwox
5	onextwoxmimo
2	onextwoxthreex
3	onextwoxthreexfourx
7	onextwoxfourx
8	onextwoxfourxsixx
9	onextwoxfourxsixxeightx
10	onextwoxmimoa
11	onextwoxthreexmimoa
12	onextwoxthreexfourxmimoa

receiveQualityDebug (whispBoxConfig.receiveQualityDebug)

Data Type:bool

Enable or disable receive quality calculations for every packet. Enabling(1) will calculate receive quality on all receiving packets. Due to load on CPU, will slightly packet per second capabilities on AP/BH. Default to disabled for all radios. Only applicable to GenII OFDM products and up.

Value	Name
1	enable
0	disable

regionCode (No Direct SNMP Equivalent)

Data Type:INTEGER

Sets the region code for the radio.

Value	Name
0	None
1	Other
2	OtherEtsi
3	OtherFCC
4	India
5	Indonesia
6	RussianCategory1
7	RussianCategory2
8	RussianCategory3
9	RussianCategory4
10	Vietnam

11	Denmark
12	Finland
13	Germany
14	Greece
15	Iceland
16	Ireland
17	Liechtenstein
18	Norway
19	Portugal
20	Serbia
21	Spain
22	Switzerland
23	UnitedKingdom
24	Canada
25	UnitedStates
26	Mexico
27	Australia
28	Brazil
29	Algeria
30	Malaysia
31	OtherEtsiLbt
32	NewZealand
33	PuertoRico
34	Ecuador
35	Colombia
36	Venezuela

transmitterOP (whispBoxConfig.transmitterOP)

Data Type:INTEGER

Transmitter output power. This is not available on OFDM SMS. Not applicable for PMP 450m. See EIRP OID.

rfSecurityConfig

encryptionConfig (No Direct SNMP Equivalent)

Data Type:INTEGER

Sets the encryption algorithm to use.

Value	Name
-------	------

0	des
1	aes

smAuthenticationConfig

UsrAccountEnableAccountingSM (No Direct SNMP Equivalent)

Data Type:INTEGER

TODO

Value	Name
0	disable
1	deviceAccess

authOuterId (whispSmSecurity.authOuterId)

Data Type:OCTET_STRING

EAP Peer Username

Lower bound: 0

Upper bound: 253

authPassword (whispSmSecurity.authPassword)

Data Type:password

EAP Peer password

authPasswordEncrypted (whispSmSecurity.authPassword)

Data Type:encrypted password

EAP Peer password

authUsername (whispSmSecurity.authUsername)

Data Type:DisplayString

EAP Peer Identity

authenticationEnforce (whispSmSecurity.authenticationEnforce)

Data Type:INTEGER

enforce SM to register with specifed Auth Enabled AP

Value	Name
0	disable
1	aaa

2	presaredkey
---	-------------

certificates (No Direct SNMP Equivalent)

Data Type:Array

This is an array of strings representing certificates. There may be up to 2 certificates. These should be in PEM format, with only the base64 encoded data present (so that newlines, ---BEGIN--- and ---END--- are removed).

Example:

```
{
  "smAuthenticationConfig" :
  {
    "certificates":
    [
      "MIIDQTCCAqgAwIBAgIBADANBgkqhkiG9w0BAQUFADCBUzELMAkGA1UEBhMCVVMxETAPBgNVBAGTCElzbG1ub2lzMSEwHwYDVQKExhNb3Rvcml9sYSBTb2x1dGlvbnMsIEluYy4xIjAgBgNVBAStGUNhbm9weSBXaXJlbGVzcyBCcm9hZGJhbmQxHTAbBgNVBAMTFENhbm9weSBTU0wgU2VydMvYiENBMTMwMQYJKoZIhvcNAQkBFiR0ZWNoYm1jYWwtc3VwcG9ydEBjYW5vcH13aXJlbGVzcy5jb20wHhcNMDEwMTAxMDAwMDAwHhcNNDkxMjMxMjM1OTU5wjbCBuzELMAkGA1UEBhMCVVMxETAPBgNVBAGTCElzbG1ub2lzMSEwHwYDVQKExhNb3Rvcml9sYSBTb2x1dGlvbnMsIEluYy4xIjAgBgNVBAStGUNhbm9weSBXaXJlbGVzcyBCcm9hZGJhbmQxHTAbBgNVBAMTFENhbm9weSBTU0wgU2VydMvYiENBMTMwMQYJKoZIhvcNAQkBFiR0ZWNoYm1jYWwtc3VwcG9ydEBjYW5vcH13aXJlbGVzcy5jb20wZ8wDQYJKoZIhvcNAQEBBQADgY0AMIGJAoGBAM89omkEgIy6V2qKx1hPMhi8n7oA1KMxJ5Dals6f8AIqk2Q85+M65rajP1DXKb5cYI5ehXpc8jnVq3Vwx6PtCU01ggDofKwzVnce5DY50Te1BoK1SgIbv/I G35gEmptDY1iBh8Gpn42oEyNeh1MZGwGGM/oirSZeutkEBB77pY/AgMBAAGjUzBRMA8GA1UdEwQIMAYBAf8CAQAwHQYDVR00BBYEFBIsAjsN/5d4WpUWC98DBMnOUgtbMB8GA1UdIwQYMBaAFBIsAjsN/5d4WpUWC98DBMnOUgtbMA0GCSqGSIb3DQEBBQUAA4GBAI0SwU79JLeVCyY5++o/sGawM0TBHCU1iwnV9cyuMVmn5LTa8c9MmZiwXfIW8evStzFvtTVGPxNKfE2ic2ztUMhr003DHP0wNdToZjPkxo7sj0BEev9+Sdz4MomIJUr2ejIwMRYZmztKok77JV49rS21J6vU4PV001Gx93CcA0TM"
    ]
  }
}
```

phase1 (whispSmSecurity.phase1)

Data Type:INTEGER

Select the outer method for EAP Authentication. Note: PEAP is not supported for MPC860 platform.

Value	Name
0	eapttls
1	eapMSChapV2
2	eappeap

phase2 (whispSmSecurity.phase2)

Data Type:INTEGER

Select the outer method for EAP Authentication

Value	Name
0	pap
1	chap
2	mschapv2

realm (whispSmSecurity.realm)

Data Type:DisplayString

useRealm (whispSmSecurity.useRealm)**Data Type:**bool

Enable or disable the use of realm option.

Value	Name
0	disable
1	enable

smNatNetworkConfig**alternateDNSIP (whispSmConfig.alternateDNSIP)****Data Type:**IpAddress

The alternate DNS IP when we are configured for static DNS (Not used when configured for automatic DNS).

arpCacheTimeout (whispSmConfig.arpCacheTimeout)**Data Type:**INTEGER

ARP cache time out in unit of minutes. For multipoint only. Range from 1-30.

dhcpIPStart (whispSmConfig.dhcpIPStart)**Data Type:**IpAddress

The last byte will be set for the starting IP that our DHCP server gives away. The first 3 bytes of the starting IP are the same as those of NAPT private IP

dhcpNumIPsToLease (whispSmConfig.dhcpNumIPsToLease)**Data Type:**INTEGER

Number of IP addresses that our DHCP server can give away.

dhcpServerEnable (whispSmConfig.dhcpServerEnable)**Data Type:**bool

To enable or disable DHCP server. For multipoint SM's with NAPT enabled.

Value	Name
0	disabled
1	enabled

dhcpServerLeaseTime (whispSmConfig.dhcpServerLeaseTime)

Data Type:INTEGER

Units of days for DHCP server lease time. For multipoint SM's with NAPT enabled. Range from 1-30.

dmzEnable (whispSmConfig.dmzEnable)

Data Type:bool

To enable or disable DMZ host functionality.

Value	Name
0	disabled
1	enabled

dmzIP (whispSmConfig.dmzIP)

Data Type:IpAddress

Only the last byte of DMZ Host IP will be set. The first 3 bytes of DMZ IP are the same as those of NAPT private IP.

dnsAutomatic (whispSmConfig.dnsAutomatic)

Data Type:bool

To have DHCP Server obtain DNS information automatically or manually.

Value	Name
0	manually
1	automatically

naptEnable (whispSmConfig.naptEnable)

Data Type:bool

To enable or disable NAPT. For multipoint only. 1=Enable NAPT, 0=Disable NAPT.

Value	Name
0	disabled
1	enabled

naptPrivateIP (whispSmConfig.naptPrivateIP)

Data Type:IpAddress

NAPT private IP address. Only the first three bytes can be changed when NAPT is enabled.

naptPrivateSubnetMask (whispSmConfig.naptPrivateSubnetMask)

Data Type:IpAddress

NAPT private subnet mask. Only the last byte can be changed when NAPT is enabled. The address will always be: 255.255.255.x.

naptPublicGatewayIP (whispSmConfig.naptPublicGatewayIP)

Data Type:IpAddress

IP Address of NAPT Public Interface Gateway. The variable is available only when NAPT is enabled.

naptPublicIP (whispSmConfig.naptPublicIP)

Data Type:IpAddress

IP Address of NAPT Public Interface. The variable is available only when NAPT is enabled.

naptPublicSubnetMask (whispSmConfig.naptPublicSubnetMask)

Data Type:IpAddress

Subnet mask for NAPT Public Interface. The variable is available only when NAPT is enabled.

naptRFPublicGateway (whispSmConfig.naptRFPublicGateway)

Data Type:IpAddress

IP Address of RF Public Interface Gateway. The variable is available only when NAPT is enabled.

naptRFPublicIP (whispSmConfig.naptRFPublicIP)

Data Type:IpAddress

IP Address of RF Public Interface. The variable is available only when NAPT is enabled.

naptRFPublicSubnetMask (whispSmConfig.naptRFPublicSubnetMask)

Data Type:IpAddress

Subnet mask of RF Public Interface. The variable is available only when NAPT is enabled.

naptRemoteManage (whispSmConfig.naptRemoteManage)

Data Type:INTEGER

To enable or disable Remote Management. For multipoint only. 0=Disable Remote Management, 1=Enable - Standalone Config, 2=Enable - Use WAN Interface.

Value	Name
0	disable
1	enable-standalone
2	enable-wan

natConnectionType (whispSmConfig.natConnectionType)

Data Type:INTEGER

To configure the SM NAT connection type. Options are Static IP, DHCP, or PPPoE.

Value	Name
0	staticIP
1	dhcp
2	pppoe

natDNSProxyEnable (whispSmConfig.natDNSProxyEnable)

Data Type:bool

If enabled, the SM will advertise itself as the DNS server when it sends out DHCP client leases and forward DNS queries automatically. If disabled, the SM will forward on upstream DNS server information when it sends out DHCP client leases.

Value	Name
0	disabled
1	enabled

natTsITableSize (whispSmConfig.natTsITableSize)

Data Type:INTEGER

NAT Translation Table Size. Range 1024-8192.

Lower bound: 1024

Upper bound: 8192

portMapping (No Direct SNMP Equivalent)

Data Type:Array

Each array element is an object that must contain the following elements. Note, there is a maximum of 10 elements.

- **port:** integer, port for the mapping
- **protocol:** integer, 0 for TCP and UDP, 1 for UDP, 2 for TCP
- **address:** string, IP address to forward port to

Example:

```
{
  "smNatNetworkConfig" :
  {
    "portMapping":
    [
      { "port":80, "protocol":2, "address":"192.168.1.1" },
      { "port":53, "protocol":0, "address":"192.168.1.2" }
    ]
  }
}
```

preferredDNSIP (whispSmConfig.prefferedDNSIP)

Data Type:IpAddress

The preferred DNS IP when we are configured for static DNS (Not used when configured for automatic DNS).

rfDhcpState (whispSmConfig.rfDhcpState)

Data Type:bool

To enable or disable RF Interface DHCP feature.

Value	Name
0	disabled
1	enabled

tcpGarbageCollectTmout (whispSmConfig.tcpGarbageCollectTmout)

Data Type:INTEGER

Units of minutes for TCP garbage collection. For multipoint only. Range 4-1440.

udpGarbageCollectTmout (whispSmConfig.udpGarbageCollectTmout)

Data Type:INTEGER

Units of minutes for UDP garbage collection. For multipoint only. Range 1-1440.

wanPingReplyEnable (whispSmConfig.wanPingReplyEnable)

Data Type:INTEGER

Allow Ping replies from SM WAN interface. Applies to both NAT and PPPoE WAN interfaces.

Value	Name
0	disable
1	enable

smNetworkConfig

enable8023link (whispSmConfig.enable8023link)

Data Type:bool

To enable or disable 802.3 link. For SMs only. Deprecated: Use enable8023linkBox instead.

Value	Name
0	disabled
1	enabled

networkAccess (whispSmConfig.networkAccess)

Data Type:bool

Network accessibility. Public or local IP. For multipoint only.

Value	Name
-------	------

0	localIP
1	publicIP

smNetworkSecurityConfig

ethAccessEnable (whispSmConfig.ethAccessEnable)

Data Type:bool

To enable or disable Ethernet Port access to SM Management Functions. (1) - Ethernet access to SM Management allowed. (0) - Ethernet access to SM Management blocked.

Value	Name
0	disable
1	enable

smPppoeConfig

pppoeAccessConcentrator (whispSmConfig.pppoeAccessConcentrator)

Data Type:DisplayString

Set the PPPoE Access Concentrator Name. Less than or equal to 32 characters

pppoeAuthenticationType (whispSmConfig.pppoeAuthenticationType)

Data Type:INTEGER

Set the PPPoE Authentication Type to either None or CHAP/pap

Value	Name
0	none
1	chap-pap

pppoeEnable (whispSmConfig.pppoeEnable)

Data Type:bool

Enable or disable PPPoE on the SM. NAT MUST be enabled prior and Translation Bridging MUST be DISABLED on the AP.

Value	Name
0	disable
1	enable

pppoeMTUOverrideEnable (whispSmConfig.pppoeMTUOverrideEnable)

Data Type:INTEGER

Enable the overriding of the PPP link's MTU. Normally, the PPP link will set the MTU to the MRU of the PPPoE Server, but this may be

overridden. If the MRU of the PPPoE server is smaller than the desired MTU, the smaller MTU will be used.

Value	Name
0	disable
1	enable

pppoeMTUOverrideValue (whispSmConfig.pppoeMTUOverrideValue)

Data Type:INTEGER

Enable the overriding of the PPP link's MTU. Normally, the PPP link will set the MTU to the MRU of the PPPoE Server, but this may be overridden. If the MRU of the PPPoE server is smaller than the desired MTU, the smaller MTU will be used. Max MTU of a PPPoE link is 1492.

Lower bound: 0

Upper bound: 1492

pppoePassword (whispSmConfig.pppoePassword)

Data Type:password

Set the PPPoE Password. Less than or equal to 32 characters

pppoePasswordEncrypted (whispSmConfig.pppoePassword)

Data Type:encrypted password

Set the PPPoE Password. Less than or equal to 32 characters

pppoeServiceName (whispSmConfig.pppoeServiceName)

Data Type:DisplayString

Set the PPPoE Service Name. Less than or equal to 32 characters

pppoeTCPMSSClampEnable (whispSmConfig.pppoeTCPMSSClampEnable)

Data Type:bool

Enable or disable TCP MSS Clamping. Enabling this will cause the SM to edit the TCP MSS in TCP SYN and SYN-ACK packets. This will allow for a workaround for MTU issues so that the TCP session will only go up to the clamped MSS. If you are using PMTUD reliably, this should not be needed.

Value	Name
0	disable
1	enable

pppoeTimeoutPeriod (whispSmConfig.pppoeTimeoutPeriod)

Data Type:INTEGER

The Timeout Period. The use of this depends on the Timer Type. If the Timer Type is KeepAlive, then the timeout period is in seconds. If the Timer Type is Idle Timeout, then the timeout period is in minutes. Minimum values are 20 seconds for KeepAlive timer, and 5 minutes for Idle Timeout.

pppoeTimerType (whispSmConfig.pppoeTimerType)

Data Type:INTEGER

Set the PPPoE Timer type. Can be a Keep Alive timer where the link will be checked periodically and automatically redialed if the link is down. Also could be an Idle Timeout where the link will be automatically dropped after an idle period and redialed if user data is present. Keep Alive timers are in seconds while Idle Timeout timers are in minutes.

Value	Name
1	keepAlive
2	idleTimeout

pppoeUserName (whispSmConfig.pppoeUserName)

Data Type:DisplayString

Set the PPPoE Username. Less than or equal to 32 characters

smQosConfig

bCastMIR (whispSmConfig.bCastMIR)

Data Type:INTEGER

To enable and set Broadcast/ Multicast MIR feature. Use value of 0 to disable. Units are as per bCastMIRUnits variable. Set the units first and then set this value.

Value	Name
0	disabled

bCastMIRUnits (whispSmConfig.bCastMIRUnits)

Data Type:INTEGER

Units of Broadcast/ Multicast MIR value. Set units first and then bCastMIR

Value	Name
0	Kbps
1	PPS

highPriorityChannel (whispSmConfig.hiPriorityChannel)

Data Type:bool

To enable or disable high priority channel.

Value	Name
0	disabled
1	enable

highPriorityDownlinkCIR (whispSmConfig.highPriorityDownlinkCIR)

Data Type:INTEGER

High priority downlink CIR.

highPriorityUplinkCIR (whispSmConfig.highPriorityUplinkCIR)

Data Type:INTEGER

High priority uplink CIR.

lowPriorityDownlinkCIR (whispSmConfig.lowPriorityDownlinkCIR)

Data Type:INTEGER

Low priority downlink CIR.

lowPriorityUplinkCIR (whispSmConfig.lowPriorityUplinkCIR)

Data Type:INTEGER

Low priority uplink CIR.

smRadioConfig

apSelection (whispSmConfig.apSelection)

Data Type:bool

This OID affects what AP to attempt to register to when Canopy SMs scan see more than one AP that are valid in it's configuration. (0) - Default, Canopy radios after scanning select the best AP that will optimize for estimated throughput. (1) - Select the AP with the best receive power level. Note this is only if multiple APs fit the current scan configuration, and will be overridden by color codes, RADIUS, etc.

Value	Name
1	powerLevel
0	optimizeForThroughput

bandwidthScanList (No Direct SNMP Equivalent)

Data Type:Array

This is an array of integers representing the bandwidth scan list. The available bandwidths are 5, 7, 10, 15, 20, 30, and 40.

Example:

```
{
  "smRadioConfig" :
  {
    "bandwidthScanList":
    [
      5, 20
    ]
  }
}
```

colorCodeList (No Direct SNMP Equivalent)

Data Type:Array

This is an array of objects representing the color code list. There may be up to 10 color codes defined. The first one defined must be primary. Each object may contain:

- **colorCode (required):** integer, color code
- **priority (optional, default is 1):** integer, 1 for primary, 2 for secondary, 3 for tertiary

Example:

```
{
  "smRadioConfig" :
  {
    "colorCodeList":
    [
      { "colorCode":64},
      { "colorCode":96, "priority":2}
    ]
  }
}
```

dfsConfig (whispSmConfig.dfsConfig)

Data Type:INTEGER

To configure proper regions for Dynamic Frequency Shifting. For 5.2/5.4/5.7 GHz radios.

Value	Name
0	disable
1	enable

frequencyScanList (No Direct SNMP Equivalent)

Data Type:Array

This is an array of integers representing the frequency scan list. This is in kHz.

Example:

```
{
  "smRadioConfig" :
  {
    "frequencyScanList":
    [
      5760000, 5765000, 5770000
    ]
  }
}
```

powerUpMode (whispSmConfig.powerUpMode)

Data Type:bool

SM Power Up Mode With No 802.3 Link. 0 - Power up in Operational mode. 1 - Power up in Aim mode.

Value	Name
0	operational
1	aim

smSpectrumAnalysisConfig

spectrumAnalysisOnBoot (whispSmConfig.spectrumAnalysisOnBoot)

Data Type:bool

To enable or disable Spectrum Analysis on boot up for one scan through the band. (0) - Disabled (1) - Enabled

Value	Name
0	disable
1	enable

smSyncConfig

timingPulseGated (whispSmConfig.timingPulseGated)

Data Type:bool

0 - Disable (Always propagate the frame timing pulse). 1 - Enable (If SM out of sync then dont propagate the frame timing pulse).

Value	Name
0	disable
1	enable

smSyslogConfig

syslogSMXmitControl (whispSmConfig.syslogSMXmitControl)

Data Type:INTEGER

Obtains Syslog transmit configuration from AP/BHM if available, or specifies the local transmit state.

Value	Name
0	Obtain from AP, default disabled
1	Obtain from AP, default enabled
2	Disable
3	Enable

syslogServerApPreferred (whispSmConfig.syslogServerApPreferred)

Data Type:bool

Uses Syslog server configuration from AP/BHM if enabled and available, otherwise uses local configuration.

Value	Name
0	use-local
1	use-AP-preferred

smVlanConfig

allowVIDAccess (whispBoxConfig.allowVIDAccess)

Data Type:INTEGER

Allow or disallow local SM management VID access.

Value	Name
0	enable
1	disable

ingressVID (whispSmConfig.ingressVID)

Data Type:INTEGER

Untagged ingress VID.

ingressVIDPriority (whispSmConfig.ingressVIDPriority)

Data Type:INTEGER

ingress VID VLAN Priority.

Lower bound: 0

Upper bound: 7

ingressVIDPriorityMode (whispSmConfig.ingressVIDPriorityMode)

Data Type:INTEGER

ingress VID VLAN Priority Mode.

Value	Name
0	promote-IP-priority
1	define-priority

portVids (No Direct SNMP Equivalent)

Data Type:Array

This is an array of objects representing VID/MAC address mapping. There may be up to 10 addresses. Each object must contain:

- **macAddress:** string, MAC address of the port VID/MAC address mapping
- **vid:** integer, vlan id of the port VID/MAC address mapping

Example:

```

{
  "smVlanConfig" :
  {
    "portVids":
    [
      { "macAddress": "00-11-22-33-44-55", "vid": 17 },
      { "macAddress": "66-77-88-99-AA-BB", "vid": 10 }
    ]
  }
}

```

providerVIDPriority (whispSmConfig.providerVIDPriority)

Data Type: INTEGER

Provider VID VLAN Priority.

Lower bound: 0

Upper bound: 7

providerVIDPriorityMode (whispSmConfig.providerVIDPriorityMode)

Data Type: INTEGER

Provider VID VLAN Priority Mode.

Value	Name
0	promote-IP-priority
1	define-priority
2	copy-inner-tag-priority

snmpConfig

commStringOnly (whispBoxConfig.commStringOnly)

Data Type: DisplayString

Set Read Only community string.

commStringRW (No Direct SNMP Equivalent)

Data Type: DisplayString

TODO

roAuthPassword (whispBoxSNMPv3.roAuthPassword)

Data Type: OCTET_STRING

SNMPv3 Read-Only message authentication password. Minimum 8 and maximum 32 characters long.

Lower bound: 1

Upper bound: 32

roPrivPassword (whispBoxSNMPv3.roPrivPassword)

Data Type:OCTET_STRING

SNMPv3 Read-Only message privacy/encryption password.Minimum 8 and maximum 32 characters long.

Lower bound: 1

Upper bound: 32

roUserName (whispBoxSNMPv3.roUserName)

Data Type:OCTET_STRING

SNMPv3 Read-Only username.

Lower bound: 1

Upper bound: 32

rwAuthPassword (whispBoxSNMPv3.rwAuthPassword)

Data Type:OCTET_STRING

SNMPv3 Read-Write message authentication password.Minimum 8 and maximum 32 characters long.

Lower bound: 1

Upper bound: 32

rwPrivPassword (whispBoxSNMPv3.rwPrivPassword)

Data Type:OCTET_STRING

SNMPv3 Read-Write message privacy/encryption password.Minimum 8 and maximum 32 characters long.

Lower bound: 1

Upper bound: 32

rwUserEnable (whispBoxSNMPv3.rwUserEnable)

Data Type:bool

SNMPv3 Read-Write User Enable.

Value	Name
1	enable
0	disable

rwUserName (whispBoxSNMPv3.rwUserName)

Data Type:OCTET_STRING

SNMPv3 Read-Write Username.

Lower bound: 1

Upper bound: 32

snmplpAccessFilter (No Direct SNMP Equivalent)

Data Type:Array

This is an array of objects representing addresses that can access SNMP. There may be up to 10 addresses. Each object must contain:

- **address:** string, IP address to allow access
- **netmask:** integer, netmask of address to allow access

Example:

```
{
  "snmpConfig" :
  {
    "snmpIpAccessFilter":
    [
      { "address":"192.168.1.0", "netmask":24},
      { "address":"192.168.2.0", "netmask":24}
    ]
  }
}
```

snmpMibPerm (whispBoxConfig.snmpMibPerm)

Data Type:bool

Read/Write permission for MIB groups.

Value	Name
0	readWrite
1	readOnly

snmpPort (whispBoxConfig.snmpPort)

Data Type:INTEGER

Port used to for SNMP. Default is 161.

snmpTrapAddresses (No Direct SNMP Equivalent)

Data Type:Array

This is an array of strings of trap addresses. There may be up to 10 addresses.

Example:

```
{
  "snmpConfig" :
  {
    "snmpTrapAddresses":
    [
      "192.168.1.1",
      "192.168.1.2"
    ]
  }
}
```

snmpTrapPort (whispBoxConfig.snmpTrapPort)

Data Type:INTEGER

Port used to for SNMP Traps. Default is 162.

snmpv2cEnable (whispBoxSNMPv3.snmpv2cEnable)

Data Type:bool

Enable(1) or Disable(0) SNMPv2c access

Value	Name
1	enable
0	disable

snmpv3AuthProt (whispBoxSNMPv3.snmpv3AuthProt)

Data Type:INTEGER

The SNMPv3 message authentication protocol to use.
Currently only MD5 is supported.

Value	Name
0	md5

snmpv3EngineId (whispBoxSNMPv3.snmpv3EngineId)

Data Type:OCTET_STRING

The SNMPv3 engine administratively-unique identifier. Length of the identifier should be 5-32 octets which is 10-64 hexadecimal characters and even.

Lower bound: 10

Upper bound: 64

snmpv3PrivProt (whispBoxSNMPv3.snmpv3PrivProt)

Data Type:INTEGER

The SNMPv3 message privacy/encryption protocol to use. Currently only CBC-DES is supported.

Value	Name
0	cbc-des

snmpv3SecLvl (whispBoxSNMPv3.snmpv3SecLvl)

Data Type:INTEGER

The security level of the SNMPv3 Engine.

Value	Name
0	noAuth-noPriv
1	auth-noPriv
2	auth-priv

snmpv3TrapEnable (whispBoxSNMPv3.snmpv3TrapEnable)

Data Type:INTEGER

SNMPv3 Trap enable option: (0) Disable - No SNMPv3 Traps Sent (1) Enable Traps to be sent for SNMPv3 Read-Only User (2) Enable Traps to be sent for SNMPv3 Read-Write User NOTE: When disabled SNMPv2c Trap configuration is used.

Value	Name
0	disabled
1	roUserTrapEnable
2	rwUserTrapEnable

trapDomainNameAppend (whispBoxDNS.trapDomainNameAppend)

Data Type:bool

Select whether to append the configured management domain name to the configured trap names. For example, if dnsMgmtDomainName is set to 'example.com', trap1 is set to 'trap1', and trapDomainNameAppend is set to appendDomain, the trap1 name used would be 'trap1.example.com'.

Value	Name
0	disableDomain
1	appendDomain

syslogConfig

syslogMinLevel (whispBoxConfig.syslogMinLevel)

Data Type:INTEGER

Sets the minimum syslog severity to transmit. Messages with a lower severity value (i.e. numerically higher) than this will not be transmitted.

Value	Name
0	fatal
1	alert
2	critical
3	error
4	warning
5	notice
6	info
7	debug

syslogMinLevelApPreferred (whispSmConfig.syslogMinLevelApPreferred)

Data Type:bool

Uses Syslog minimum transmit level configuration from AP/BHM if available, otherwise uses local configuration.

Value	Name
0	use-local

1	use-AP-preferred
---	------------------

vlanConfig

agingTimeout (whispBoxConfig.agingTimeout)

Data Type:INTEGER

Aging timeout.

dynamicLearning (whispBoxConfig.dynamicLearning)

Data Type:bool

To enable VLAN dynamic learning.

Value	Name
0	disabled
1	enabled

frameType (whispBoxConfig.frameType)

Data Type:INTEGER

Allow only tagged frame.

Value	Name
0	allframes
1	taggedonly
2	untaggedonly

managementVID (whispBoxConfig.managementVID)

Data Type:INTEGER

Management VLAN VID.

managementVIDPriority (whispBoxConfig.managementVIDPriority)

Data Type:INTEGER

management VID VID VLAN Priority.

Lower bound: 0

Upper bound: 7

managementVIDPriorityMode (whispBoxConfig.managementVIDPriorityMode)

Data Type:INTEGER

management VID VLAN Priority Mode.

Value	Name
0	promote-IP-priority
1	define-priority

priorityPrecedence (whispBoxConfig.priorityPrecedence)

Data Type:INTEGER

Allows user to decide if 802.1p or DiffServ priority bits should be used first when making priority decisions.

Value	Name
0	802.1p Then DiffServ
1	DiffServ Then 802.1p

providerVID (whispBoxConfig.providerVID)

Data Type:INTEGER

Provider VID for QinQ VLAN.

vlanAcceptQinQFrames (whispBoxConfig.vlanAcceptQinQFrames)

Data Type:bool

Allow/Disallow packets already doubly-tagged (QinQ) to ingress the FEC of BHM, BHS, or MP SM. Not configurable on MP AP.

Value	Name
0	disable
1	enable

vlanMembership (No Direct SNMP Equivalent)

Data Type:Array

This is an array of integers of VLANs the radio is a member of.

Example:

```
{
  "vlanConfig" :
  {
    "vlanMembership":
    [
      10,
      17,
      18
    ]
  }
}
```

vlanPortType (whispBoxConfig.vlanPortType)

Data Type:INTEGER

VLAN Port Type for VLAN interface. Default is Q.

Value	Name
0	q
1	qinq

vlanRemark (No Direct SNMP Equivalent)

Data Type:Array

The vlanRemark is an object with the source VLAN as the key and the remark configuration as an object for the value. Each remark configuration must have at least the remark VLAN or priority.

- **remarkVlan**: the destination VLAN for the packet. Only available on the SM.
- **priority**: the destination priority for the packet

Example:

```
{
  "vlanConfig" :
  {
    "vlanRemark":
    {
      "10":{"priority":1},
      "17":{"remarkVlan":25},
      "18":{"remarkVlan":30,"priority":1}
    }
  }
}
```