**jdsu image**

**PathTrak™ API Document**

PathTrak™ Release 4.2

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## 

## Overview

This specification defines the PathTrak™ web service API’s and URL’s to access live views and reports. The interface uses Web Services based on the standards-based, platform independent definition from the World Wide Web Consortium.

For Release 4.2, the PathTrak™ Interface will provide the following capabilities:

* Web service REST API calls for the following
  + Spectrum Details and MACTrak™ Details API
  + Spectrum and MACTrak™ Node Ranking API
  + MACTrak™ Availability API
  + Element Hierarchy API
  + Enterprise API – Regions and Nodes
  + Cable Modem And CPE import API
* Direct URL’s to reach Live views
* Direct URL’s to reach Spectrum Reports view

## Web Service documentation URL

Web based example documentation for the API’s can be found at the following URL

http://<pathtrak host>:<port>/pathtrak/docs/api.html

## Web services API

## Spectrum Details API

##### Description

This API gives Spectrum details for a node based on the following parameters. The response can be received in either JSON or XML based on the request URL.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET**  **GET** | JSON - /services/api/spectrumdetails/json  XML - /services/api/spectrumdetails/xml |

|  |  |  |
| --- | --- | --- |
| **Params** | **Values** | **Notes** |
| node  nodeid  showlevels  duration  enddatetime  limit | string  number  string  number  date time  number | Node name, If no node name or id is given then spectrum details for all nodes is returned.  Node id.  Show worst frequency level for each threshold. Valid Values **yes** or **no**. Default **no**.  Duration is in minutes. Valid Values **15 – 1440**. Default **60**.  Format - **yyyy-MM-dd'T'HH:mm:ssZ** (Z or +hh:mm or -hh:mm).Default current date time.  Valid Values **1 – 1000000**. Default **100,000**. |

Example: /services/api/spectrumdetails/json?duration=60&limit=1&showlevels=no

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  node (string): Node Name,  hcu (string): HCU Name,  datetime (string): Date Time,  t1 (number): Threshold 1,  t1frequency (string, optional): Worst frequency for Threshold 1,  t1minLevel (string, optional): Worst frequency Minimum Level for Threshold 1,  t1avgLevel (string, optional): Worst frequency Average Level Threshold 1,  t1maxLevel (string, optional): Worst frequency Maximum Level Threshold 1,  t2 (number): Threshold 2,  t2frequency (string, optional): Worst frequency for Threshold 2,  t2minLevel (string, optional): Worst frequency Minimum Level for Threshold 2,  t2avgLevel (string, optional): Worst frequency Average Level Threshold 2,  t2maxLevel (string, optional): Worst frequency Maximum Level Threshold 2,  t3 (number): Threshold 3,  t3frequency (string, optional): Worst frequency for Threshold 3,  t3minLevel (string, optional): Worst frequency Minimum Level for Threshold 3,  t3avgLevel (string, optional): Worst frequency Average Level Threshold 3,  t3maxLevel (string, optional): Worst frequency Maximum Level Threshold 3,  t4 (number): Threshold 4,  t4frequency (string, optional): Worst frequency for Threshold 4,  t4minLevel (string, optional): Worst frequency Minimum Level for Threshold 4,  t4avgLevel (string, optional): Worst frequency Average Level Threshold 4,  t4maxLevel (string, optional): Worst frequency Maximum Level Threshold 4  } |

## MACTrak™ Details API

##### Description

This API gives MACTrak™ details for a node based on the following parameters. The response can be received in either JSON or XML based on the request URL.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET**  **GET** | JSON - /services/api/mactrakdetails/json  XML - /services/api/mactrakdetails/xml |

|  |  |  |
| --- | --- | --- |
| **Params** | **Values** | **Notes** |
| node  nodeid  duration  enddatetime  limit | string  number  number  date time  number | Node name, If no node name or id is given then spectrum details for all nodes is returned.  Node id.  Duration is in minutes. Valid Values **15 – 1440**. Default **60**.  Format - **yyyy-MM-dd'T'HH:mm:ssZ** (Z or +hh:mm or -hh:mm).Default current date time.  Valid Values **1 – 1000000**. Default **100,000**. |

Example: /services/api/mactrakdetails/xml?duration=60&limit=100000

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  node (string): Node Name,  hcu (string): HCU Name,  datetime (string): Date Time,  npi (integer): Node Performance Index,  frequency (number): Channel frequency,  bandwidth (number): Channel bandwidth,  modulation (string): Channel modulation,  cpi (integer): Channel Performance Index,  unique\_macs\_count (integer): Unique MACs count in channel,  packet\_count (integer): Total packet count for channel,  uncor\_rate (number): Uncorrectable Codeword error rate,  cor\_rate (number): Correctable Codeword error rate,  avg\_eqmer (number): Average Equalized MER,  avg\_uneqmer (number): Average Unequalized MER,  eqmer\_fail\_count (integer): Equalized MER fail count,  uneqmer\_fail\_count (integer): Unequalized MER fail count,  minimum\_uneqmer (number): Minimum Unequalized MER,  level\_delta (number): Level Delta,  delta\_level\_error\_count (integer): Level Delta error count,  imp\_noise\_error\_rate (number): Impulse Noise error rate,  imp\_noise\_fail\_count (integer): Impulse Noise fail count  } |

## Spectrum Node Ranking API

##### Description

This API gives Spectrum node ranking for all nodes based on the following parameters. The response can be received in either JSON or XML based on the request URL.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET**  **GET** | JSON - /services/api/spectrumranking/json  XML - /services/api/spectrumranking/xml |

|  |  |  |
| --- | --- | --- |
| **Params** | **Values** | **Notes** |
| onlyfailed  threshold  limit | string  number  number | Get nodes which failed yesterday. Valid values **yes** or **no**. Default **no**.  Get ranking for selected threshold. Valid values **1 – 4**. Default **1**.  Valid Values **1 – 1000000**. Default **100,000**. |

Example: /services/api/spectrumranking/xml?onlyfailed=no&limit=100000&threshold=1

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  node (string): Node Name,  hcu (string): Hcu Name,  ptot (array[string]): Percentage time over threshold for last 7 days for selected threshold in input  } |

## MACTrak™ Node Ranking API

##### Description

This API gives MACTrak™ node ranking for all nodes based on the following parameters. The response can be received in either JSON or XML based on the request URL.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET**  **GET** | JSON - /services/api/mactrakranking/json  XML - /services/api/mactrakranking/xml |

|  |  |  |
| --- | --- | --- |
| **Params** | **Values** | **Notes** |
| onlyfailed  limit | string  number | Get nodes which failed yesterday. Valid values **yes** or **no**. Default **no**.  Valid Values **1 – 1000000**. Default **100,000**. |

Example: /services/api/mactrakranking/xml?onlyfailed=no&limit=100000

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  node (string): Node Name,  hcu (string): HCU Name,  npi (array[string]): Node performance index for last 7 days  } |

## MACTrak™ Availability API

##### Description

This API gives MACTrak™ availability information for all nodes in RPM3000’s. The response can be received in either JSON or XML based on the request URL.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET**  **GET** | JSON - /services/api/mactrakavailability/json  XML - /services/api/mactrakavailability/xml |

|  |  |  |
| --- | --- | --- |
| **Params** | **Values** | **Notes** |
| limit | number | Valid Values **1 – 1000000**. Default **100,000**. |

Example: /services/api/mactrakavailability/xml?limit=100000

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  node (string): Node Name,  hcu (string): HCU Name,  frequency (number), Channel Frequency,  bandwidth (number): Channel Bandwidth,  modulation (string):Channel Modulation,  mactrakAvailable (string): MACTrak Available,  upstreamNodeName (string, optional): Upstream Node Name,  fiberNodeName (string, optional): Fiber Node Name,  cmtsHostName (string, optional): CMTS Host Name,  userDefined1 (string, optional): User Defined in PathTrak,  userDefined2 (string, optional): User Defined in PathTrak,  userDefined3 (string, optional): User Defined in PathTrak,  userDefined4 (string, optional): User Defined in PathTrak,  userDefined5 (string, optional): User Defined in PathTrak  } |

## Element Hierarchy API

##### Description

This API gives hierarchy of all the elements in the server. The response can be received in either JSON or XML based on the request URL.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET**  **GET** | JSON - /services/api/hierarchy/json  XML - /services/api/hierarchy/xml |

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  name (string): Element Name,  model (string, optional): Model of element ,  child (array[hierarchy], optional): Children if any are present  } |

## Cable Modem Import API

##### Description

This API is for importing cable modem and CPE information into PathTrak™. The request and response will be JSON.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **POST** | /services/api/modems |

*Request Sample*

{

"modems": [

{

"mac": "",

"address": "",

"longitude": "",

"latitude": "",

"cpes": [

{

"mac": ""

}

]

}

]

}

|  |  |  |
| --- | --- | --- |
| **Params** | **Values** | **Notes** |
| modems  mac  address  longitude  latitude  cpes  mac | array  string  string  number  number  array  string | Can send one or more modems. **Required**.  Cable modem mac address. **Required**.  Modem physical address. 100 Characters. Optional.  Modem longitude. Range -180 to 180. Optional.  Modem latitude. Range -90 to 90. Optional.  Cpe’s related to a CM. Can send one or more. **Required**.  CPE mac address. **Required**. |

*Programmatic Object Structure*

Modems {

modems (array[Modem])

}

Modem {

mac (string): \*\*:\*\*:\*\*:\*\*:\*\*:\*\*,

address (string, optional),

longitude (string, optional),

latitude (string, optional),

cpes (array[CPE])

}

CPE {

mac (string): \*\*:\*\*:\*\*:\*\*:\*\*:\*\*

}

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  errorCode (integer): 0-No Error, 1000-CM MAC Error, 1001-Latitude Error, 1002-Longitude Error, 1003-CPE MAC Error, 2000-Server Error,  mac (string, optional): The modem MAC on which the error was detected  } |

## Enterprise Nodes API

## Node Details API

##### Description

This API gives details and operations possible in a first node matching the name in the PathTrak™ enterprise. For using thing the enterprise API the regional performance feature needs be setup. The response can be received in either JSON or XML based on the response content type specification. Default JSON.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET** | /services/enterprise/nodes/**<node name>** |

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  "link": [  {  "rel": "self",  "href": "http://<hostname>/pathtrak/services/enterprise/nodes/<node name>"  },  {  "rel": "all\_spectrum\_details",  "href": "http://<hostname>/pathtrak/services/enterprise/nodes/<node name>/spectrumdetails"  },  {  "rel": "all\_mactrak\_details",  "href": "http://<hostname>/pathtrak/services/enterprise/nodes/<node name>/mactrakdetails"  },  {  "rel": "spectrum\_analyzer",  "href": "http://<hostname>/pathtrak/direct/sa?node=<node name>"  },  {  "rel": "qamtrak\_analyzer",  "href": "http://<hostname>/pathtrak/direct/qa?node=<node name>"  },  {  "rel": "monitoring\_view",  "href": "http://<hostname>/pathtrak/direct/mv?node=<node name>"  },  {  "rel": "mactrak\_performance",  "href": "http://<hostname>/pathtrak/direct/mtp?node=<node name>"  },  {  "rel": "enhanced\_alarm",  "href": "http://<hostname>/pathtrak/direct/ea?node=<node name>"  }  ],  "name": <Node Name>  } |
| 500 | Contains exception from the server. Example node name not found. |

## Node Spectrum Details API

##### Description

This API gives enterprise Spectrum details for a node based on the following parameters. For using thing the enterprise API the regional performance feature needs be setup. The response can be received in either JSON or XML based on the response content type specification. Default JSON.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET** | /services/enterprise/nodes/**<node name>**/spectrumdetails |

|  |  |  |
| --- | --- | --- |
| **Params** | **Values** | **Notes** |
| showlevels  duration  enddatetime  limit | string  number  date time  number | Show worst frequency level for each threshold. Valid Values **yes** or **no**. Default **no**.  Duration is in minutes. Valid Values **15 – 1440**. Default **60**.  Format - **yyyy-MM-dd'T'HH:mm:ssZ** (Z or +hh:mm or -hh:mm).Default current date time.  Valid Values **1 – 1000000**. Default **100,000**. |

Example: /services/enterprise/nodes/<Node Name> /spectrumdetails?duration=60&showlevels=no&limit=100000

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  node (string): Node Name,  hcu (string): HCU Name,  datetime (string): Date Time,  t1 (number): Threshold 1,  t1frequency (string, optional): Worst frequency for Threshold 1,  t1minLevel (string, optional): Worst frequency Minimum Level for Threshold 1,  t1avgLevel (string, optional): Worst frequency Average Level Threshold 1,  t1maxLevel (string, optional): Worst frequency Maximum Level Threshold 1,  t2 (number): Threshold 2,  t2frequency (string, optional): Worst frequency for Threshold 2,  t2minLevel (string, optional): Worst frequency Minimum Level for Threshold 2,  t2avgLevel (string, optional): Worst frequency Average Level Threshold 2,  t2maxLevel (string, optional): Worst frequency Maximum Level Threshold 2,  t3 (number): Threshold 3,  t3frequency (string, optional): Worst frequency for Threshold 3,  t3minLevel (string, optional): Worst frequency Minimum Level for Threshold 3,  t3avgLevel (string, optional): Worst frequency Average Level Threshold 3,  t3maxLevel (string, optional): Worst frequency Maximum Level Threshold 3,  t4 (number): Threshold 4,  t4frequency (string, optional): Worst frequency for Threshold 4,  t4minLevel (string, optional): Worst frequency Minimum Level for Threshold 4,  t4avgLevel (string, optional): Worst frequency Average Level Threshold 4,  t4maxLevel (string, optional): Worst frequency Maximum Level Threshold 4  } |
| 500 | Contains exception from the server. Example node name not found. |

## Node MACTrak™ Details API

##### Description

This API gives enterprise MACTrak™ details for a node based on the following parameters. For using thing the enterprise API the regional performance feature needs be setup. The response can be received in either JSON or XML based on the response content type specification. Default JSON.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET** | /services/enterprise/nodes/**<node name>**/mactrakdetails |

|  |  |  |
| --- | --- | --- |
| **Params** | **Values** | **Notes** |
| duration  enddatetime  limit | number  date time  number | Duration is in minutes. Valid Values **15 – 1440**. Default **60**.  Format - **yyyy-MM-dd'T'HH:mm:ssZ** (Z or +hh:mm or -hh:mm).Default current date time.  Valid Values **1 – 1000000**. Default **100,000**. |

Example: /services/enterprise/nodes/<Node Name> /mactrakdetails?duration=60&limit=1000

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  node (string): Node Name,  hcu (string): HCU Name,  datetime (string): Date Time,  npi (integer): Node Performance Index,  frequency (number): Channel frequency,  bandwidth (number): Channel bandwidth,  modulation (string): Channel modulation,  cpi (integer): Channel Performance Index,  unique\_macs\_count (integer): Unique MACs count in channel,  packet\_count (integer): Total packet count for channel,  uncor\_rate (number): Uncorrectable Codeword error rate,  cor\_rate (number): Correctable Codeword error rate,  avg\_eqmer (number): Average Equalized MER,  avg\_uneqmer (number): Average Unequalized MER,  eqmer\_fail\_count (integer): Equalized MER fail count,  uneqmer\_fail\_count (integer): Unequalized MER fail count,  minimum\_uneqmer (number): Minimum Unequalized MER,  level\_delta (number): Level Delta,  delta\_level\_error\_count (integer): Level Delta error count,  imp\_noise\_error\_rate (number): Impulse Noise error rate,  imp\_noise\_fail\_count (integer): Impulse Noise fail count  } |
| 500 | Contains exception from the server. Example node name not found. |

## Enterprise Regions API

## Regions Details API

##### Description

This API gives details and operations possible in all regions in the PathTrak™ enterprise. For using thing the enterprise API the regional performance feature needs be setup. The response can be received in either JSON or XML based on the response content type specification. Default JSON.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET** | /services/enterprise/regions |

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | Regions {  region (array[Region], optional),  link (array[Link], optional)  }  Region {  name (string): Region Name,  link (array[Link], optional)  }  Link {  rel (string): Relationship to current page,  href (string): URL to call to perform operation  } |
| 500 | Contains exception from the server. Example server not found. |

## Regional Performance Daily Summary All Regions API

##### Description

This API gives regional performance daily summary for all regions. For using thing the enterprise API the regional performance feature needs be setup. The response can be received in either JSON or XML based on the response content type specification. Default JSON.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET** | /services/enterprise/regions/regionalperformance/daily |

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  region (string, optional),  timeStamp (string, optional),  spectralPercentFailed (number, optional),  macTrakPercentFailed (number, optional)  } |
| 500 | Contains exception from the server. |

## Regional Performance Monthly Summary All Regions API

##### Description

This API gives regional performance monthly summary for all regions. For using thing the enterprise API the regional performance feature needs be setup. The response can be received in either JSON or XML based on the response content type specification. Default JSON.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET** | /services/enterprise/regions/regionalperformance/monthly |

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  region (string, optional),  timeStamp (string, optional),  spectralPercentFailed (number, optional),  macTrakPercentFailed (number, optional)  } |
| 500 | Contains exception from the server. |

## Region Details API

##### Description

This API gives details and operations possible in a first region matching the name in the PathTrak™ enterprise. For using thing the enterprise API the regional performance feature needs be setup. The response can be received in either JSON or XML based on the response content type specification. Default JSON.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET** | /services/enterprise/regions/**<region name>** |

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  "link": [  {  "rel": "self",  "href": "http://<hostname>/pathtrak/services/enterprise/regions/<region name>"  },  {  "rel": "systems",  "href": "http://<hostname>/pathtrak/services/enterprise/regions/<region name>/systems"  },  {  "rel": "nodes",  "href": "http://<hostname>/pathtrak/services/enterprise/regions/<region name>/nodes"  },  {  "rel": "regional\_performance\_daily",  "href": "http://<hostname>/pathtrak/services/enterprise/regions/<region name>/regionalperformance/daily"  },  {  "rel": "regional\_performance\_monthly",  "href": "http://<hostname>/pathtrak/services/enterprise/regions/<region name>/regionalperformance/monthly"  }  ],  "name": "<region name>"  } |
| 500 | Contains exception from the server. Example region name not found. |

## Regional Performance Daily Summary for one region API

##### Description

This API gives regional performance daily summary for one region. For using thing the enterprise API the regional performance feature needs be setup. The response can be received in either JSON or XML based on the response content type specification. Default JSON.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET** | /services/enterprise/regions/  **<region name>**/regionalperformance/daily |

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  region (string, optional),  timeStamp (string, optional),  spectralPercentFailed (number, optional),  macTrakPercentFailed (number, optional)  } |
| 500 | Contains exception from the server. Example region name not found. |

## Regional Performance Monthly Summary for one region API

##### Description

This API gives regional performance monthly summary for all regions. For using thing the enterprise API the regional performance feature needs be setup. The response can be received in either JSON or XML based on the response content type specification. Default JSON.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET** | /services/enterprise/regions/  **<region name>**/regionalperformance/monthly |

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  region (string, optional),  timeStamp (string, optional),  spectralPercentFailed (number, optional),  macTrakPercentFailed (number, optional)  } |
| 500 | Contains exception from the server. Example region name not found. |

## Systems Details API

##### Description

This API gives details and operations possible in all systems within a region in the PathTrak™ enterprise. For using thing the enterprise API the regional performance feature needs be setup. The response can be received in either JSON or XML based on the response content type specification. Default JSON.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET** | /services/enterprise/regions/**<region name>**/systems |

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | Systems {  system (array[System], optional),  link (array[Link], optional)  }  System {  name (string): System Name,  url (string): System access Name,  link (array[Link], optional)  }  Link {  rel (string): Relationship to current page,  href (string): URL to call to perform operation  } |
| 500 | Contains exception from the server. Example region not found. |

## Regional Performance Daily Summary all systems in region API

##### Description

This API gives regional performance daily summary for all systems in a region. For using thing the enterprise API the regional performance feature needs be setup. The response can be received in either JSON or XML based on the response content type specification. Default JSON.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET** | /services/enterprise/regions/**<region name>**/systems /regionalperformance/daily |

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  system (string, optional),  timeStamp (string, optional),  spectralPercentFailed (number, optional),  macTrakPercentFailed (number, optional)  } |
| 500 | Contains exception from the server. Example region not found. |

## Regional Performance Monthly Summary all systems in region API

##### Description

This API gives regional performance monthly summary for all systems in a region. For using thing the enterprise API the regional performance feature needs be setup. The response can be received in either JSON or XML based on the response content type specification. Default JSON.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET** | /services/enterprise/regions/  **<region name>**/systems/regionalperformance/monthly |

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  system (string, optional),  timeStamp (string, optional),  spectralPercentFailed (number, optional),  macTrakPercentFailed (number, optional)  } |
| 500 | Contains exception from the server. Example region not found. |

## System Details API

##### Description

This API gives details and operations possible in a first system matching the name in a region in the PathTrak™ enterprise. For using thing the enterprise API the regional performance feature needs be setup. The response can be received in either JSON or XML based on the response content type specification. Default JSON.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET** | /services/enterprise/regions/**<region name>**/systems/**<system name>** |

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  "link": [  {  "rel": "self",  "href": "http://<server hostname>/pathtrak/services/enterprise/regions/<region name>/systems/<system name>"  },  {  "rel": "nodes",  "href": "http://<server hostname>/pathtrak/services/enterprise/regions/<region name>/systems/<system name>/nodes"  },  {  "rel": "regional\_performance\_daily",  "href": "http://<server hostname>/pathtrak/services/enterprise/regions/<region name>/systems/<system name>/regionalperformance/daily"  },  {  "rel": "regional\_performance\_monthly",  "href": "http://<server hostname>/pathtrak/services/enterprise/regions/<region name>/systems/<system name>/regionalperformance/monthly"  }  ],  "name": "<system name>",  "url": "http://<server hostname>/pathtrak"  } |
| 500 | Contains exception from the server. Example system name not found. |

## Regional Performance Daily Summary for one system API

##### Description

This API gives regional performance daily summary for one region. For using thing the enterprise API the regional performance feature needs be setup. The response can be received in either JSON or XML based on the response content type specification. Default JSON.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET** | /services/enterprise/regions/  **<region name>**/systems/**<system name>**/regionalperformance/daily |

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  system (string, optional),  timeStamp (string, optional),  spectralPercentFailed (number, optional),  macTrakPercentFailed (number, optional)  } |
| 500 | Contains exception from the server. Example system name not found. |

## Regional Performance Monthly Summary for one system API

##### Description

This API gives regional performance monthly summary for all regions. For using thing the enterprise API the regional performance feature needs be setup. The response can be received in either JSON or XML based on the response content type specification. Default JSON.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET** | /services/enterprise/regions/  **<region name>**/systems/**<system name>**/regionalperformance/monthly |

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  system (string, optional),  timeStamp (string, optional),  spectralPercentFailed (number, optional),  macTrakPercentFailed (number, optional)  } |
| 500 | Contains exception from the server. Example system name not found. |

## All Nodes in System Details API

##### Description

This API gives details and operations possible in all nodes within a system and region in the PathTrak™ enterprise. For using thing the enterprise API the regional performance feature needs be setup. The response can be received in either JSON or XML based on the response content type specification. Default JSON.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET** | /services/enterprise/regions/**<region name>**/systems/  **<system name>**/nodes |

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | Nodes {  node (array[Node], optional),  link (array[Link], optional)  }  Node {  name (string): Node Name,  link (array[Link], optional)  }  Link {  rel (string): Relationship to current page,  href (string): URL to call to perform operation  } |
| 500 | Contains exception from the server. Example region or system not found. |

## All Nodes in System Spectrum Details API

##### Description

This API gives enterprise Spectrum details for all nodes in a system and region based on the following parameters. For using thing the enterprise API the regional performance feature needs be setup. The response can be received in either JSON or XML based on the response content type specification. Default JSON.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET** | /services/enterprise/regions/**<region name>**/systems/**<system name>**/nodes/spectrumdetails |

|  |  |  |
| --- | --- | --- |
| **Params** | **Values** | **Notes** |
| showlevels  duration  enddatetime  limit | string  number  date time  number | Show worst frequency level for each threshold. Valid Values **yes** or **no**. Default **no**.  Duration is in minutes. Valid Values **15 – 1440**. Default **60**.  Format - **yyyy-MM-dd'T'HH:mm:ssZ** (Z or +hh:mm or -hh:mm).Default current date time.  Valid Values **1 – 1000000**. Default **100,000**. |

Example: /services/enterprise/regions/<Region Name>/systems

/<System Name>/nodes/spectrumdetails?duration=60&showlevels=no&limit=100000

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  node (string): Node Name,  hcu (string): HCU Name,  datetime (string): Date Time,  t1 (number): Threshold 1,  t1frequency (string, optional): Worst frequency for Threshold 1,  t1minLevel (string, optional): Worst frequency Minimum Level for Threshold 1,  t1avgLevel (string, optional): Worst frequency Average Level Threshold 1,  t1maxLevel (string, optional): Worst frequency Maximum Level Threshold 1,  t2 (number): Threshold 2,  t2frequency (string, optional): Worst frequency for Threshold 2,  t2minLevel (string, optional): Worst frequency Minimum Level for Threshold 2,  t2avgLevel (string, optional): Worst frequency Average Level Threshold 2,  t2maxLevel (string, optional): Worst frequency Maximum Level Threshold 2,  t3 (number): Threshold 3,  t3frequency (string, optional): Worst frequency for Threshold 3,  t3minLevel (string, optional): Worst frequency Minimum Level for Threshold 3,  t3avgLevel (string, optional): Worst frequency Average Level Threshold 3,  t3maxLevel (string, optional): Worst frequency Maximum Level Threshold 3,  t4 (number): Threshold 4,  t4frequency (string, optional): Worst frequency for Threshold 4,  t4minLevel (string, optional): Worst frequency Minimum Level for Threshold 4,  t4avgLevel (string, optional): Worst frequency Average Level Threshold 4,  t4maxLevel (string, optional): Worst frequency Maximum Level Threshold 4  } |
| 500 | Contains exception from the server. Example node name not found. |

## All Nodes in System MACTrak™ Details API

##### Description

This API gives enterprise MACTrak™ details for all nodes in a system and region based on the following parameters. For using thing the enterprise API the regional performance feature needs be setup. The response can be received in either JSON or XML based on the response content type specification. Default JSON.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET** | /services/enterprise/regions/**<region name>**/systems  /**<system name>**/nodes/<mactrakdetails |

|  |  |  |
| --- | --- | --- |
| **Params** | **Values** | **Notes** |
| duration  enddatetime  limit | number  date time  number | Duration is in minutes. Valid Values **15 – 1440**. Default **60**.  Format - **yyyy-MM-dd'T'HH:mm:ssZ** (Z or +hh:mm or -hh:mm).Default current date time.  Valid Values **1 – 1000000**. Default **100,000**. |

Example: /services/enterprise/regions/<Region Name>/systems

/<System Name>/nodes/mactrakdetails?duration=60&limit=1000

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  node (string): Node Name,  hcu (string): HCU Name,  datetime (string): Date Time,  npi (integer): Node Performance Index,  frequency (number): Channel frequency,  bandwidth (number): Channel bandwidth,  modulation (string): Channel modulation,  cpi (integer): Channel Performance Index,  unique\_macs\_count (integer): Unique MACs count in channel,  packet\_count (integer): Total packet count for channel,  uncor\_rate (number): Uncorrectable Codeword error rate,  cor\_rate (number): Correctable Codeword error rate,  avg\_eqmer (number): Average Equalized MER,  avg\_uneqmer (number): Average Unequalized MER,  eqmer\_fail\_count (integer): Equalized MER fail count,  uneqmer\_fail\_count (integer): Unequalized MER fail count,  minimum\_uneqmer (number): Minimum Unequalized MER,  level\_delta (number): Level Delta,  delta\_level\_error\_count (integer): Level Delta error count,  imp\_noise\_error\_rate (number): Impulse Noise error rate,  imp\_noise\_fail\_count (integer): Impulse Noise fail count  } |
| 500 | Contains exception from the server. Example node name not found. |

## Node in a System API

##### Description

This API gives details and operations possible in a first node matching the name in a system and region in PathTrak™ enterprise. For using thing the enterprise API the regional performance feature needs be setup. The response can be received in either JSON or XML based on the response content type specification. Default JSON.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET** | /services/enterprise/regions/**<region name>**/systems/**<system name>**/nodes/**<node name>** |

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  "link": [  {  "rel": "self",  "href": "http://<hostname>/pathtrak/services/enterprise/nodes/<node name>"  },  {  "rel": "all\_spectrum\_details",  "href": "http://<hostname>/pathtrak/services/enterprise/nodes/<node name>/spectrumdetails"  },  {  "rel": "all\_mactrak\_details",  "href": "http://<hostname>/pathtrak/services/enterprise/nodes/<node name>/mactrakdetails"  },  {  "rel": "spectrum\_analyzer",  "href": "http://<hostname>/pathtrak/direct/sa?node=<node name>"  },  {  "rel": "qamtrak\_analyzer",  "href": "http://<hostname>/pathtrak/direct/qa?node=<node name>"  },  {  "rel": "monitoring\_view",  "href": "http://<hostname>/pathtrak/direct/mv?node=<node name>"  },  {  "rel": "mactrak\_performance",  "href": "http://<hostname>/pathtrak/direct/mtp?node=<node name>"  },  {  "rel": "enhanced\_alarm",  "href": "http://<hostname>/pathtrak/direct/ea?node=<node name>"  }  ],  "name": <Node Name>  } |
| 500 | Contains exception from the server. Example node name not found. |

## Node in a System Spectrum Details API

##### Description

This API gives enterprise Spectrum details for a node in a system and region based on the following parameters. For using thing the enterprise API the regional performance feature needs be setup. The response can be received in either JSON or XML based on the response content type specification. Default JSON.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET** | /services/enterprise/regions/**<region name>**  /systems/**<system name>**/nodes/**<node name>**/spectrumdetails |

|  |  |  |
| --- | --- | --- |
| **Params** | **Values** | **Notes** |
| showlevels  duration  enddatetime  limit | string  number  date time  number | Show worst frequency level for each threshold. Valid Values **yes** or **no**. Default **no**.  Duration is in minutes. Valid Values **15 – 1440**. Default **60**.  Format - **yyyy-MM-dd'T'HH:mm:ssZ** (Z or +hh:mm or -hh:mm).Default current date time.  Valid Values **1 – 1000000**. Default **100,000**. |

Example: /services/enterprise/regions/<Region Name>/systems

/<System Name>/nodes/<Node Name> /spectrumdetails?duration=60&showlevels=no&limit=100000

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  node (string): Node Name,  hcu (string): HCU Name,  datetime (string): Date Time,  t1 (number): Threshold 1,  t1frequency (string, optional): Worst frequency for Threshold 1,  t1minLevel (string, optional): Worst frequency Minimum Level for Threshold 1,  t1avgLevel (string, optional): Worst frequency Average Level Threshold 1,  t1maxLevel (string, optional): Worst frequency Maximum Level Threshold 1,  t2 (number): Threshold 2,  t2frequency (string, optional): Worst frequency for Threshold 2,  t2minLevel (string, optional): Worst frequency Minimum Level for Threshold 2,  t2avgLevel (string, optional): Worst frequency Average Level Threshold 2,  t2maxLevel (string, optional): Worst frequency Maximum Level Threshold 2,  t3 (number): Threshold 3,  t3frequency (string, optional): Worst frequency for Threshold 3,  t3minLevel (string, optional): Worst frequency Minimum Level for Threshold 3,  t3avgLevel (string, optional): Worst frequency Average Level Threshold 3,  t3maxLevel (string, optional): Worst frequency Maximum Level Threshold 3,  t4 (number): Threshold 4,  t4frequency (string, optional): Worst frequency for Threshold 4,  t4minLevel (string, optional): Worst frequency Minimum Level for Threshold 4,  t4avgLevel (string, optional): Worst frequency Average Level Threshold 4,  t4maxLevel (string, optional): Worst frequency Maximum Level Threshold 4  } |
| 500 | Contains exception from the server. Example node name not found. |

## Node in System MACTrak™ Details API

##### Description

This API gives enterprise MACTrak™ details for a node in a system and region based on the following parameters. For using thing the enterprise API the regional performance feature needs be setup. The response can be received in either JSON or XML based on the response content type specification. Default JSON.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET** | /services/enterprise/regions/<region name>  /systems/**<system name>/**nodes/**<node name>**/mactrakdetails |

|  |  |  |
| --- | --- | --- |
| **Params** | **Values** | **Notes** |
| duration  enddatetime  limit | number  date time  number | Duration is in minutes. Valid Values **15 – 1440**. Default **60**.  Format - **yyyy-MM-dd'T'HH:mm:ssZ** (Z or +hh:mm or -hh:mm).Default current date time.  Valid Values **1 – 1000000**. Default **100,000**. |

Example: /services/enterprise/regions/<Region Name>/systems

/<System Name>/nodes/<Node Name>/mactrakdetails?duration=60&limit=1000

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  node (string): Node Name,  hcu (string): HCU Name,  datetime (string): Date Time,  npi (integer): Node Performance Index,  frequency (number): Channel frequency,  bandwidth (number): Channel bandwidth,  modulation (string): Channel modulation,  cpi (integer): Channel Performance Index,  unique\_macs\_count (integer): Unique MACs count in channel,  packet\_count (integer): Total packet count for channel,  uncor\_rate (number): Uncorrectable Codeword error rate,  cor\_rate (number): Correctable Codeword error rate,  avg\_eqmer (number): Average Equalized MER,  avg\_uneqmer (number): Average Unequalized MER,  eqmer\_fail\_count (integer): Equalized MER fail count,  uneqmer\_fail\_count (integer): Unequalized MER fail count,  minimum\_uneqmer (number): Minimum Unequalized MER,  level\_delta (number): Level Delta,  delta\_level\_error\_count (integer): Level Delta error count,  imp\_noise\_error\_rate (number): Impulse Noise error rate,  imp\_noise\_fail\_count (integer): Impulse Noise fail count  } |
| 500 | Contains exception from the server. Example node name not found. |

## All Nodes in Region Details API

##### Description

This API gives details and operations possible in all nodes within a region in the PathTrak™ enterprise. For using thing the enterprise API the regional performance feature needs be setup. The response can be received in either JSON or XML based on the response content type specification. Default JSON.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET** | /services/enterprise/regions/**<region name>**/nodes |

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | Nodes {  node (array[Node], optional),  link (array[Link], optional)  }  Node {  name (string): Node Name,  link (array[Link], optional)  }  Link {  rel (string): Relationship to current page,  href (string): URL to call to perform operation  } |
| 500 | Contains exception from the server. Example region or system not found. |

## Node in a Region API

##### Description

This API gives details and operations possible in a first node matching the name in a region in PathTrak™ enterprise. For using thing the enterprise API the regional performance feature needs be setup. The response can be received in either JSON or XML based on the response content type specification. Default JSON.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET** | /services/enterprise/regions/**<region name>**/nodes/**<node name>** |

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  "link": [  {  "rel": "self",  "href": "http://<hostname>/pathtrak/services/enterprise/nodes/<node name>"  },  {  "rel": "all\_spectrum\_details",  "href": "http://<hostname>/pathtrak/services/enterprise/nodes/<node name>/spectrumdetails"  },  {  "rel": "all\_mactrak\_details",  "href": "http://<hostname>/pathtrak/services/enterprise/nodes/<node name>/mactrakdetails"  },  {  "rel": "spectrum\_analyzer",  "href": "http://<hostname>/pathtrak/direct/sa?node=<node name>"  },  {  "rel": "qamtrak\_analyzer",  "href": "http://<hostname>/pathtrak/direct/qa?node=<node name>"  },  {  "rel": "monitoring\_view",  "href": "http://<hostname>/pathtrak/direct/mv?node=<node name>"  },  {  "rel": "mactrak\_performance",  "href": "http://<hostname>/pathtrak/direct/mtp?node=<node name>"  },  {  "rel": "enhanced\_alarm",  "href": "http://<hostname>/pathtrak/direct/ea?node=<node name>"  }  ],  "name": <Node Name>  } |
| 500 | Contains exception from the server. Example node name not found. |

## Node in a Region Spectrum Details API

##### Description

This API gives enterprise Spectrum details for a node in a region based on the following parameters. For using thing the enterprise API the regional performance feature needs be setup. The response can be received in either JSON or XML based on the response content type specification. Default JSON.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET** | /services/enterprise/regions/**<region name>**  /nodes/**<node name>**/spectrumdetails |

|  |  |  |
| --- | --- | --- |
| **Params** | **Values** | **Notes** |
| showlevels  duration  enddatetime  limit | string  number  date time  number | Show worst frequency level for each threshold. Valid Values **yes** or **no**. Default **no**.  Duration is in minutes. Valid Values **15 – 1440**. Default **60**.  Format - **yyyy-MM-dd'T'HH:mm:ssZ** (Z or +hh:mm or -hh:mm).Default current date time.  Valid Values **1 – 1000000**. Default **100,000**. |

Example: /services/enterprise/regions/<Region Name>/nodes/<Node Name> /spectrumdetails?duration=60&showlevels=no&limit=100000

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  node (string): Node Name,  hcu (string): HCU Name,  datetime (string): Date Time,  t1 (number): Threshold 1,  t1frequency (string, optional): Worst frequency for Threshold 1,  t1minLevel (string, optional): Worst frequency Minimum Level for Threshold 1,  t1avgLevel (string, optional): Worst frequency Average Level Threshold 1,  t1maxLevel (string, optional): Worst frequency Maximum Level Threshold 1,  t2 (number): Threshold 2,  t2frequency (string, optional): Worst frequency for Threshold 2,  t2minLevel (string, optional): Worst frequency Minimum Level for Threshold 2,  t2avgLevel (string, optional): Worst frequency Average Level Threshold 2,  t2maxLevel (string, optional): Worst frequency Maximum Level Threshold 2,  t3 (number): Threshold 3,  t3frequency (string, optional): Worst frequency for Threshold 3,  t3minLevel (string, optional): Worst frequency Minimum Level for Threshold 3,  t3avgLevel (string, optional): Worst frequency Average Level Threshold 3,  t3maxLevel (string, optional): Worst frequency Maximum Level Threshold 3,  t4 (number): Threshold 4,  t4frequency (string, optional): Worst frequency for Threshold 4,  t4minLevel (string, optional): Worst frequency Minimum Level for Threshold 4,  t4avgLevel (string, optional): Worst frequency Average Level Threshold 4,  t4maxLevel (string, optional): Worst frequency Maximum Level Threshold 4  } |
| 500 | Contains exception from the server. Example node name not found. |

## Node in Region MACTrak™ Details API

##### Description

This API gives enterprise MACTrak™ details for a node in a region based on the following parameters. For using thing the enterprise API the regional performance feature needs be setup. The response can be received in either JSON or XML based on the response content type specification. Default JSON.

*Request*

|  |  |
| --- | --- |
| **Method** | **URL** |
| **GET** | /services/enterprise/regions/**<region name>**/nodes/**<node name>**/mactrakdetails |

|  |  |  |
| --- | --- | --- |
| **Params** | **Values** | **Notes** |
| duration  enddatetime  limit | number  date time  number | Duration is in minutes. Valid Values **15 – 1440**. Default **60**.  Format - **yyyy-MM-dd'T'HH:mm:ssZ** (Z or +hh:mm or -hh:mm).Default current date time.  Valid Values **1 – 1000000**. Default **100,000**. |

Example: /services/enterprise/regions/<Region Name>/nodes/<Node Name>/mactrakdetails?duration=60&limit=1000

*Response*

|  |  |
| --- | --- |
| **Status** | **Response** |
| 200 | {  node (string): Node Name,  hcu (string): HCU Name,  datetime (string): Date Time,  npi (integer): Node Performance Index,  frequency (number): Channel frequency,  bandwidth (number): Channel bandwidth,  modulation (string): Channel modulation,  cpi (integer): Channel Performance Index,  unique\_macs\_count (integer): Unique MACs count in channel,  packet\_count (integer): Total packet count for channel,  uncor\_rate (number): Uncorrectable Codeword error rate,  cor\_rate (number): Correctable Codeword error rate,  avg\_eqmer (number): Average Equalized MER,  avg\_uneqmer (number): Average Unequalized MER,  eqmer\_fail\_count (integer): Equalized MER fail count,  uneqmer\_fail\_count (integer): Unequalized MER fail count,  minimum\_uneqmer (number): Minimum Unequalized MER,  level\_delta (number): Level Delta,  delta\_level\_error\_count (integer): Level Delta error count,  imp\_noise\_error\_rate (number): Impulse Noise error rate,  imp\_noise\_fail\_count (integer): Impulse Noise fail count  } |
| 500 | Contains exception from the server. Example node name not found. |

## Direct Links

## Spectrum Live View

##### Description

This link is used to launch a direct spectrum live view in your browser. If it is used from a mobile device then the PathTrak™ Mobile App will be launched.

*Request*

|  |
| --- |
| **URL** |
| /direct/sa?node=**<Node Name>**  /direct/sa?nodeid=**<Node ID>**  /direct/sa?cm=**<Cable Modem MAC Address>** |

## QAMTrak™ Live View

##### Description

This link is used to launch a direct QAMTrak™ live view in your browser.

*Request*

|  |
| --- |
| **URL** |
| /direct/qa?node=**<Node Name>**  /direct/qa?nodeid=**<Node ID>**  /direct/qa?cm=**<Cable Modem MAC Address>** |

## Monitoring View Live

##### Description

This link is used to launch a direct Monitoring live view in your browser.

*Request*

|  |
| --- |
| **URL** |
| /direct/mv?node=**<Node Name>**  /direct/mv?nodeid=**<Node ID>**  /direct/mv?cm=**<Cable Modem MAC Address>** |

## MACTrak™ Performance View

##### Description

This link is used to launch a direct MACTrak™ Performance view in your browser.

*Request*

|  |
| --- |
| **URL** |
| /direct/mtp?node=**<Node Name>**  /direct/mtp?nodeid=**<Node ID>**  /direct/mtp?cm=**<Cable Modem MAC Address>** |

## Enhanced Alarm View

##### Description

This link is used to launch a direct enhanced alarm view in your browser.

*Request*

|  |
| --- |
| **URL** |
| /direct/ea?node=**<Node Name>**  /direct/ea?nodeid=**<Node ID>**  /direct/ea?cm=**<Cable Modem MAC Address>** |

## Spectrum Summary Data Report view

##### Description

This link is used to launch spectrum summary report in the browser.

*Request*

|  |
| --- |
| **URL** |
| /direct/spectrum-summary |

|  |  |  |
| --- | --- | --- |
| **Params** | **Values** | **Notes** |
| node  cm  duration  enddatetime  metric | string  string  number  date time  number | Node Name  Cable modem MAC address. Can be used instead of node name.  Duration is in minutes. Valid Values **15 – 1440**. Default **60**.  Format - **yyyyMMddHHmmss**  Metric is a bit mask of the following values allowing for multiple selections:  **1** – maximum, **2** – average, **4** – minimum, **8** - threshold\_1, **16** - threshold\_2, **32** - threshold\_3, **64** - threshold\_4  Examples:  To select all statistics, set the metric argument to 127.  To select only maximum and minimum, set the metric argument to 5. |

Example: /direct/spectrum-summary?node=**<Node Name**>&time=20150122000000

&duration=60&metric=1

## Spectrum Detail Data Report view

##### Description

This link is used to launch spectrum summary report in the browser.

*Request*

|  |
| --- |
| **URL** |
| /direct/spectrum-detail |

|  |  |  |
| --- | --- | --- |
| **Params** | **Values** | **Notes** |
| node  cm  duration  enddatetime  stat | string  string  number  date time  string | Node Name  Cable modem MAC address. Can be used instead of node name.  Duration is in minutes. Valid Values **15 – 1440**. Default **60**.  Format - **yyyyMMddHHmmss**  Statistic is one of:  **maximum**, **average**, **minimum**, **threshold\_1**, **threshold\_2**, **threshold\_3**, **threshold\_4** |

Example: /direct/ spectrum-detail?node=**<Node Name**>&time=20150122000000

&duration=60&stat=threshold\_1

## Spectrum Density Data Report view

##### Description

This link is used to launch spectrum density report in the browser.

*Request*

|  |
| --- |
| **URL** |
| /direct/spectrum- density |

|  |  |  |
| --- | --- | --- |
| **Params** | **Values** | **Notes** |
| node  cm  duration  enddatetime  stat | string  string  number  date time  string | Node Name  Cable modem MAC address. Can be used instead of node name.  Duration is in minutes. Valid Values **15 – 1440**. Default **60**.  Format - **yyyyMMddHHmmss**  Statistic is one of:  **maximum**, **average**, **minimum**, **threshold\_1**, **threshold\_2**, **threshold\_3**, **threshold\_4** |

Example: /direct/ spectrum-density?node=**<Node Name**>&time=20150122000000

&duration=60&stat=threshold\_1

## Threshold Max vs Time Data Report view

##### Description

This link is used to launch threshold max vs time report in the browser.

*Request*

|  |
| --- |
| **URL** |
| /direct/time-over-threshold |

|  |  |  |
| --- | --- | --- |
| **Params** | **Values** | **Notes** |
| node  cm  duration  enddatetime  metric  stat | string  string  number  date time  number  string | Node Name  Cable modem MAC address. Can be used instead of node name.  Duration is in minutes. Valid Values **15 – 1440**. Default **60**.  Format - **yyyyMMddHHmmss**  Metric is a bit mask of the following values allowing for multiple selections:  **1** – maximum, **2** – average, **4** – minimum, **8** - threshold\_1, **16** - threshold\_2, **32** - threshold\_3, **64** - threshold\_4  Examples:  To select all statistics, set the metric argument to 127.  To select only maximum and minimum, set the metric argument to 5.  Statistic is one of:  **maximum**, **average**, **minimum**, **threshold\_1**, **threshold\_2**, **threshold\_3**, **threshold\_4** |

Example: /direct/time-over-threshold?node=**<Node Name**>&time=20150122000000

&duration=60&metric=8&stat=threshold\_1

## Single Frequency vs Time Data Report view

##### Description

This link is used to launch single frequency vs time report in the browser.

*Request*

|  |
| --- |
| **URL** |
| /direct/frequency-time |

|  |  |  |
| --- | --- | --- |
| **Params** | **Values** | **Notes** |
| node  cm  duration  enddatetime  metric  freq | string  string  number  date time  number  number | Node Name  Cable modem MAC address. Can be used instead of node name.  Duration is in minutes. Valid Values **15 – 1440**. Default **60**.  Format - **yyyyMMddHHmmss**  Metric is a bit mask of the following values allowing for multiple selections:  **1** – maximum, **2** – average, **4** – minimum, **8** - threshold\_1, **16** - threshold\_2, **32** - threshold\_3, **64** - threshold\_4  Examples:  To select all statistics, set the metric argument to 127.  To select only maximum and minimum, set the metric argument to 5.  Frequency. Valid values **0.5 - 85.0** MHz |

Example: /direct/frequency-time?node=**<Node Name**>&time=20150122000000

&duration=60&metric=1&freq=40.0

## Multiple Frequency vs Time Data Report view

##### Description

This link is used to launch multiple frequency vs time report in the browser.

*Request*

|  |
| --- |
| **URL** |
| /direct/multiple-frequency-time |

|  |  |  |
| --- | --- | --- |
| **Params** | **Values** | **Notes** |
| node  cm  duration  enddatetime  metric  freq | string  string  number  date time  number  number | Node Name  Cable modem MAC address. Can be used instead of node name.  Duration is in minutes. Valid Values **15 – 1440**. Default **60**.  Format - **yyyyMMddHHmmss**  Metric is a bit mask of the following values allowing for multiple selections:  **1** – maximum, **2** – average, **4** – minimum, **8** - threshold\_1, **16** - threshold\_2, **32** - threshold\_3, **64** - threshold\_4  Examples:  To select all statistics, set the metric argument to 127.  To select only maximum and minimum, set the metric argument to 5.  Frequency. Valid values **0.5 - 85.0** MHz’s. Multiple example - 0.5,10.0,40.0 |

Example: /direct/multiple-frequency-time?node=**<Node Name**>&time=20150122000000

&duration=60&metric=1&freq=0.5,40.0,10.0