

REST API

Access

The RECS®|Box Management API is accessible via the IP-Address or the hostname of the TOR-Master of the cluster. The basic URL of the API has the format <http://TOR-Master/REST/>

Components

The RECS®|Box Management API makes all hardware components in the cluster available as XML trees in software. Right now the following components are supported by the API:

| Attribute | Description |
|-----------|---|
| node | A single node |
| baseboard | A baseboard can be equipped with one x86 CPU module or four ARM CPU modules |
| backplane | A backplane can be equipped up to 6 baseboards for either COM Express or Apalis |
| rcu | A RECS® Box Computing Unit (RCU) can be equipped with up to 18 baseboards |
| rack | A rack consists of several RCUs |

Node

The attributes have the following meaning:

| Attribute | Description | Unit | Data type |
|----------------------|---|------|-----------|
| id | Unique ID for referencing the component | - | String |
| actualPowerUsage | Actual power consumption of a node at the time of the last measurement (Node + PEG) | W | Double |
| actualNodePowerUsage | Actual power consumption of a node at the time of the last measurement | W | Double |
| actualPEGPowUsage | Actual power consumption of a PEG card at the time of the last measurement | W | Double |
| maxPowerUsage | Maximum power the node can draw | W | Integer |
| baseBoardId | ID of the baseboard which hosts the node | - | String |
| baseBoardPosition | Position of the node on the baseboard | - | Integer |
| state | Power state of the node (0=Off, 1=On, 2=Soft-off, 3=Standby, 4=Hibernate) | - | Integer |
| architecture | Architecture (x86, arm, UNKNOWN) | - | String |
| health | Health status of the node (OK, Warning, Critical) | - | String |
| inletTemperature | Temperature of the inlet air | °C | Double |
| outletTemperature | Temperature of the outlet air | °C | Double |
| highestTemperature | Highest temperature measured on the node's baseboard | °C | Double |
| voltage | Supply voltage of the baseboard | V | Double |
| lastSensorUpdate | Timestamp of the last sensor update | ms | Long |

| Attribute | Description | Unit | Data type |
|-------------------|---|------|-----------|
| macAddressCompute | MAC address of the NIC connected to the compute network (optional) | - | String |
| macAddressMgmt | MAC address of the NIC connected to the management network (optional) | - | String |

In accordance to the component node the API offers nodeVector which returns multiple instances of node.

Backplane

The single attributes have the following meaning:

| Attribute | Description |
|---------------------|---|
| position | Unique ID for referencing of the component |
| id | Unique ID of the backplane |
| infrastructurePower | Power usage of the infrastructure components of the backplane in Watt |
| temperatures | List of temperatures measured on the backplane |

In accordance to the component baseboard the API offers backplaneVector which returns multiple instances of backplane.

Baseboard

The single attributes have the following meaning:

| Attribute | Description |
|---------------------|---|
| id | Unique ID for referencing of the component |
| rcuId | Unique ID of the RECS® Box Computing Unit which hosts the baseboard |
| rcuPosition | Position of the baseboard inside the RECS® Box Computing Unit |
| infrastructurePower | Power usage of the infrastructure components of the baseboard in Watt |
| baseboardTyoe | Type of the baseboard (CXP, APLS) |
| description | description of the component |
| nodeId | List of IDs of the nodes installed on the baseboard |

In accordance to the component baseboard the API offers baseboardVector which returns multiple instances of baseboard.

RCU

The single attributes have the following meaning:

| Attribute | Description |
|-----------|---|
| id | unique ID for referencing of the component |
| rackId | ID of the rack which hosts the RECS® Box Computing Unit |

| Attribute | Description |
|--------------|---|
| rackPosition | Position of the RECS® Box Computing Unit in the rack |
| name | Name of the RECS® Box Computing Unit |
| rcuType | Type of the RECS® Box Computing Unit (Sirus, Arneb, Antares) |
| kvmNode | ID of the node to which the KVM is switched |
| description | description of the component |
| baseBoardId | List of IDs of baseboards which are installed in the RECS® Box Computing Unit |

In accordance to the component rcu the API offers rcuVector which returns multiple instances of rcu.

Rack

The single attributes have the following meaning:

| Attribute | Description |
|-------------|---|
| id | unique ID for referencing of the component |
| description | description of the component |
| rcuId | List of IDs of RECS® Box Computing Unit s which are installed in the rack |

In accordance to the component rack the API offers rackVector which returns multiple instances of rack.

Resources

The resources are split into monitoring resources (for pure information gathering) and management resources (for changing the system configuration or state).

Monitoring

For monitoring the following resources are available:

| Attribute | Description |
|--------------------------------|---|
| /node | Returns a nodeVector with all nodes of the cluster |
| /node/{node_id} | Returns information about the node with the given ID as node |
| /baseboard | Returns a baseboardVector with all baseboards of the cluster |
| /baseboard/{baseboard_id} | Returns information about the baseboard with the given ID as baseboard |
| /baseboard/{baseboard_id}/node | Returns a nodeVector with all nodes that are installed on the baseboard with the given ID |
| /backplane | Returns a backplaneVector with all baseboards of the backplane |
| /backplane/{backplane_id} | Returns information about the backplane with the given ID |
| /rcu | Returns a rcuVector with all RECS® Box Computing Units of the cluster |

| Attribute | Description |
|-------------------------|--|
| /rcu/{rcu_id} | Returns information about RECS® Box Computing Unit with the given ID as rcu |
| /rcu/{rcu_id}/baseboard | Returns a baseboardVector with all baseboards that are installed in the RECS® Box Computing Unit with the given ID |
| /rcu/{rcu_id}/backplane | Returns a backplaneVector with all backplanes that are installed in the RECS® Box Computing Unit with the given ID |
| /rack | Returns a rackVector with all racks of the cluster |
| /rack/{rack_id} | Returns information about the rack with the given ID as rack |
| /rack/{rack_id}/rcu | Returns a rcuVector with all RECS® Box Computing Units that are installed in the rack with the given ID |

Management

The management of individual components can be found beneath the subaddress manage. Right now only management functionalities for nodes are implemented:

| Attribute | Description |
|---|--|
| /node/{node_id}/manage/power_on | Turns on the node with the given ID and returns actualised information about the node as node |
| /node/{node_id}/manage/power_off | Turns off the node with the given ID and returns actualised information about the node as node |
| /node/{node_id}/manage/reset | Resets the node with the given ID and returns actualised information about the node as node |
| /node/{node_id}/manage/select_kvm | Switches the KVM port of the suitable RECS® Box Computing Unit to the node with the given ID and returns actualised information about the node as node |
| /rcu/{rcu_id}/manage/set_fans?percent={value} | Sets the overall fan speed of the RCU with the given ID and returns the current status of the RCU as rcu |

Errors

Information about the success or failure of management requests are returned via HTTP status codes. Please have a look at [RFC2616](#) for an overview about the defined HTTP status codes.

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