

## Service Variables

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Use the variables described in this section to define formulas.

### Current Service Variables

Use the variables described in this section to define a formula for the current service.

#### *lastInterimTime*

- Last interim time interval.
- Value—Number of seconds in the range 1–2147483647

#### *sessionLength*

- Length of the current session.
- Value—Number of seconds in the range 0–2147483647; value is 0 when the SRC-VTA is calculating the interim time of start events. For other events, value is set by the PA\_SESSION\_TIME attribute.

#### *maxUsageRate*

- Maximum rate at which the subscriber can use network resources according to the formula described in Table 1 on page 3.
- Value—Integer in the range 0–9223372036854775807
- Guidelines—This formula corresponds to the usage formula for the same service as the interim formula.

The maxUsageRate variable is calculated for a service by means of the following values for the variables in the corresponding usage formula:

- $\text{upStreamBytes} = \text{PA\_UPSTREAM\_BANDWIDTH}$ 
  - $\text{downStreamBytes} = \text{PA\_DOWNSTREAM\_BANDWIDTH}$
  - $\text{interimTime} = \text{lastInterimTime}$
  - $\text{upStreamPackets} = 0$
  - $\text{downStreamPackets} = 0$

If you use the parameters upStreamPackets (PA\_IN\_PACKETS) and downStreamPackets (PA\_OUT\_PACKETS) in the usage formula and at the same time maxUsageRate in the interim interval formula, the maxUsageRate is not accurate, because the values for maximum upStreamPackets and downStreamPackets are unknown.

#### *averageUsageRate*

- Average rate at which the subscriber is consuming volume in units per second. The unit can be a value such as dollars, bytes, or packets. The type of unit depends on the value specified in the formula. Measurement begins when the service starts.
- Value—Integer in the range 0–9223372036854775807; the value is 0 when the SRC-VTA is calculating the interim time of start events.

For other events, the value is the usage formula divided by PA\_SESSION\_TIME. The usage formula is calculated from PA\_IN\_PACKETS, PA\_OUT\_PACKETS, PA\_OUT\_OCTETS, PA\_IN\_OCTETS, and PA\_SESSION\_TIME.

### ***latestUsageRate***

- Rate of service usage since the last usage report.
- Value—Integer in the range 0–9223372036854775807; the value is 0 when the SRC-VTA is calculating the interim time of start events.

The value is calculated by using the result of the usage formula divided by the length of the service session since the previous usage report for the same service.

## **Other Service Variables**

Use the variables described in this section to define a formula for another service.

System requirements to calculate service usage, in the form of the averageUsageRate and the sessionLength variables, can affect system performance. Using a longer interim interval means that there are fewer interim events to process, which requires fewer system resources.

### ***averageUsageRate\_<serviceName>***

- Average rate at which the service is consuming volume in units per second. The unit can be a value such as dollars, bytes, or packets. The type of unit depends on the value specified in the formula. Measurement begins when the service starts.
- Value—Integer in the range 0–9223372036854775807; the value is 0 when the SRC-VTA is calculating the interim time of start events.
- Guidelines—Service names can contain alphanumeric characters and dashes (–).

### ***sessionLength\_<serviceName>***

- Length of a service session for the service.
- Value—Integer in the range 0–2147483647; the value is 0 when the SRC-VTA is calculating the interim time of start events.
- Guidelines—Service names can contain alphanumeric characters and dashes (-).

## Account Balance Variable

Use the variable described in this section to provide balance information from each of the subscriber's accounts.

### **balance\_<accountName>**

- Balance for the specified account before the new usage value is applied.
- Value—Integer in the range 0–9223372036854775807
- Example—balance\_PeriodicQuota refers to the balance for the PeriodicQuota account.

## Sample Formulas for Interim Accounting Interval

Table 1 on page 3 provides examples of formulas to dynamically adjust the interim accounting interval for a service.

**Table 1: Examples of Interim Accounting Interval**

Formula	Description
return 900	Accounting interval is fixed at 900 seconds (15 minutes).
return ( < balance_Periodic > + < balance_Bought > ) / < maxUsageRate >	Minimum time required for the subscriber to empty the periodic and bought accounts.
return < sessionLength > >= 60*15 ? ( < balance_Periodic > + < balance_Bought > ) / < averageUsageRate > /2 : ( < balance_Periodic > + < balance_Bought > ) / < maxUsageRate >	Half the time required for the subscriber to empty the accounts at the current average rate, or the minimum time if the session is shorter than 15 minutes.  Because the average rate may not be representative early in the session, check when the account is half empty.

### Related Topics

- Adjusting the Interim Accounting Interval for a Service
- Defining a Formula for Determining Network Resource Usage That the SRC-VTA Evaluates

