gw-connect-provider

Service Description

Abstract
This document provides service description for the **gw-connect-provider** service.

Contents

1 Overview

This document describes the **gw-connect-provider** service which enables the Gatekeeper to create a proxy that can consume a specific provider's service in the local cloud in the name of a consumer beyond the cloud boundaries. The proxy connects to its consumer side equivalent via a relay. Requests comes through the relay connection are forwarded to the provider and the provider's response is sent back to the consumer side via the relay connection.

The rest of this document is organized as follows. In Section 2, we describe the abstract message functions provided by the service. In Section 3, we end the document by presenting the data types used by the mentioned functions.

1.1 How This Service Is Meant to Be Used

The Gatekeeper should consume the Service Registry Core System's **query** service to get information about the **gw-connect-provider** service. Using this information the system can create a proxy for the inter-cloud service consumption.

1.2 Important Delimitations

It only supports services with secured interfaces that use TCP-based protocols.

1.3 Access policy

This service is only available for the Gatekeeper Core System.

2 Service Interface

This section describes the interfaces to the service. The **gw-connect-provider** service is used to create a proxy that provider access to a specific provider's service to a foreign consumer. The various parameters are representing the necessary cloud, system and service input information, etc. In particular, each subsection names an interface, an input type and an output type, in that order. The input type is named inside parentheses, while the output type is preceded by a colon. Input and output types are only denoted when accepted or returned, respectively, by the interface in question. All abstract data types named in this section are defined in Section 3.

The following interfaces are available.

2.1 interface HTTP/TLS/JSON (ConnectionResponse) : ConnectionRequest

Profile type	Type	Version
Transfer protocol	HTTP	1.1
Data encryption	TLS	1.3
Encoding	JSON	RFC 8259 [1]
Compression	N/A	-

Table 1: HTTP/TLS/JSON communication details.

3 Information Model

Here, all data objects that can be part of the **gw-connect-provider** service provides to the hosting System are listed in alphabetic order. Note that each subsection, which describes one type of object, begins with the *struct* keyword, which is used to denote a collection of named fields, each with its own data type. As a complement to the explicitly defined types in this section, there is also a list of implicit primitive types in Section 3.7, which are used to represent things like hashes and identifiers.

3.1 struct ConnectionRequest

Field	Type	Mandatory	Description
consumer	System	yes	Information about the system that originally requests the service.
consumerCloud	Cloud	yes	Information about the cloud where the consumer is located.
consumerGWPublicKey	String	yes	The X.509 public key of the consumer side Gateway.
provider	System	yes	Information about the selected provider system.
providerCloud	Cloud	yes	Information about the cloud where the provider is located.
relay	Relay	yes	Information about the relay that will handle the communication between the two participating clouds.
serviceDefinition	String	yes	The name of the service that the original consumer want to use.

3.2 struct System

Field	Type	Mandatory	Description
address	Address	yes	Network address of the system.
authenticationInfo	String	no	X.509 public key of the system.
metadata	Metadata	no	Additional information about the system.
port	PortNumber	yes	Port of the system.
systemName	Name	yes	Name of the system.

3.3 struct Metadata

An Object which maps String key-value pairs.

3.4 struct Cloud

Field	Type	Mandatory	Description
name	Name	yes	Name of the cloud.
operator	Name	yes	Operator of the cloud.

3.5 struct Relay

Field	Type	Mandatory	Description
address	Address	yes	Network address of the relay.
port	PortNumber	yes	Port of the relay.
secure	Boolean	no	Whether the relay secure or not.
type	RelayType	yes	The type of the relay. Note that *GATEKEEPER_RELAY* is not accepted here.

3.6 struct ConnectionResponse

Field	Type	Description
peerName	String	The common name (CN) of the provider side Gateway Core System.
providerGWPublicKey	String	The X.509 public key of the provider side Gateway.
queueId	String	The random part of the queue names that the relay communication uses.

3.7 Primitives

Types and structures mentioned throughout this document that are assumed to be available to implementations of this service. The concrete interpretations of each of these types and structures must be provided by any IDD document claiming to implement this service.

Type	Description
Address	A string representation of the address.
Boolean	One out of `true` or `false`.
Object	Set of primitives and possible further objects.
Name	A string identifier that is intended to be both human and machine-readable.
Number	Decimal number
PortNumber	A Number between 0 and 65535.
RelayType	The purpose of the relay. Relays can be specified for general purpose, or specifically for Gatekeeper or Gateway communication.
String	A chain of characters.

4 References

[1] T. Bray, “The JavaScript Object Notation (JSON) Data Interchange Format,” RFC 8259, Dec. 2017. [Online]. Available: https://rfc-editor.org/rfc/rfc8259.txt

5 Revision History

5.1 Amendments

No.	Date	Version	Subject of Amendments	Author
1	YYYY-MM-DD	4.6.0		Xxx Yyy

5.2 Quality Assurance

No.	Date	Version	Approved by
1	YYYY-MM-DD	4.6.0	