

NISSAN MOTOR CORPORATION



Gate-Way Unlocking Solution- user guide (Apigee based)

Version 1.0

2022/04/14

revision history

#	Date	Version	Updated Page number	Modification details.
1	2022/02/07	0.90 Draft		create a new
2	2022/04/14	1.0	pg 7~12	API sample update
			pg 8	max length defined

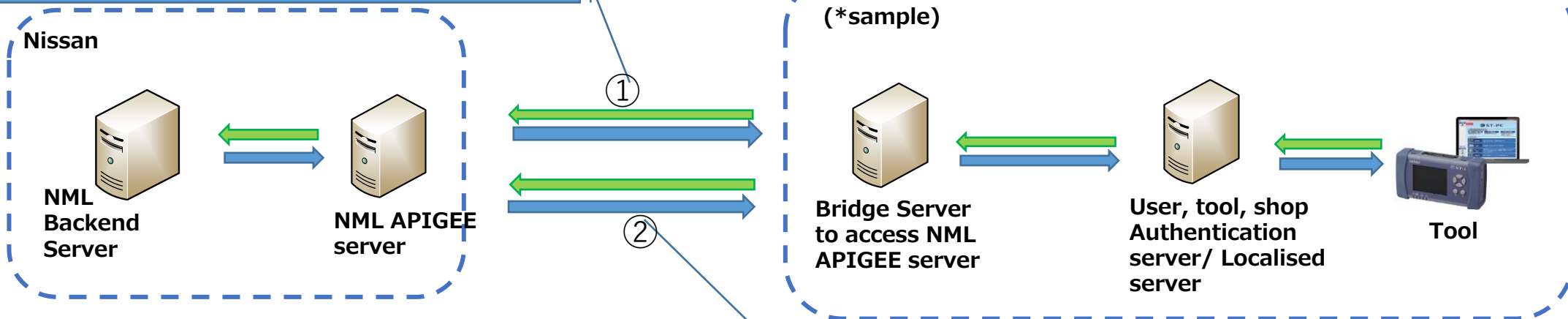
① NML APIGEE Access (Server to Server access):

Below information will be required to access the NML APIGEE server access (will be provided by NML)

1. Access URL,
2. key,
3. secret,

*Please refer page 5-6 for details.

System architecture



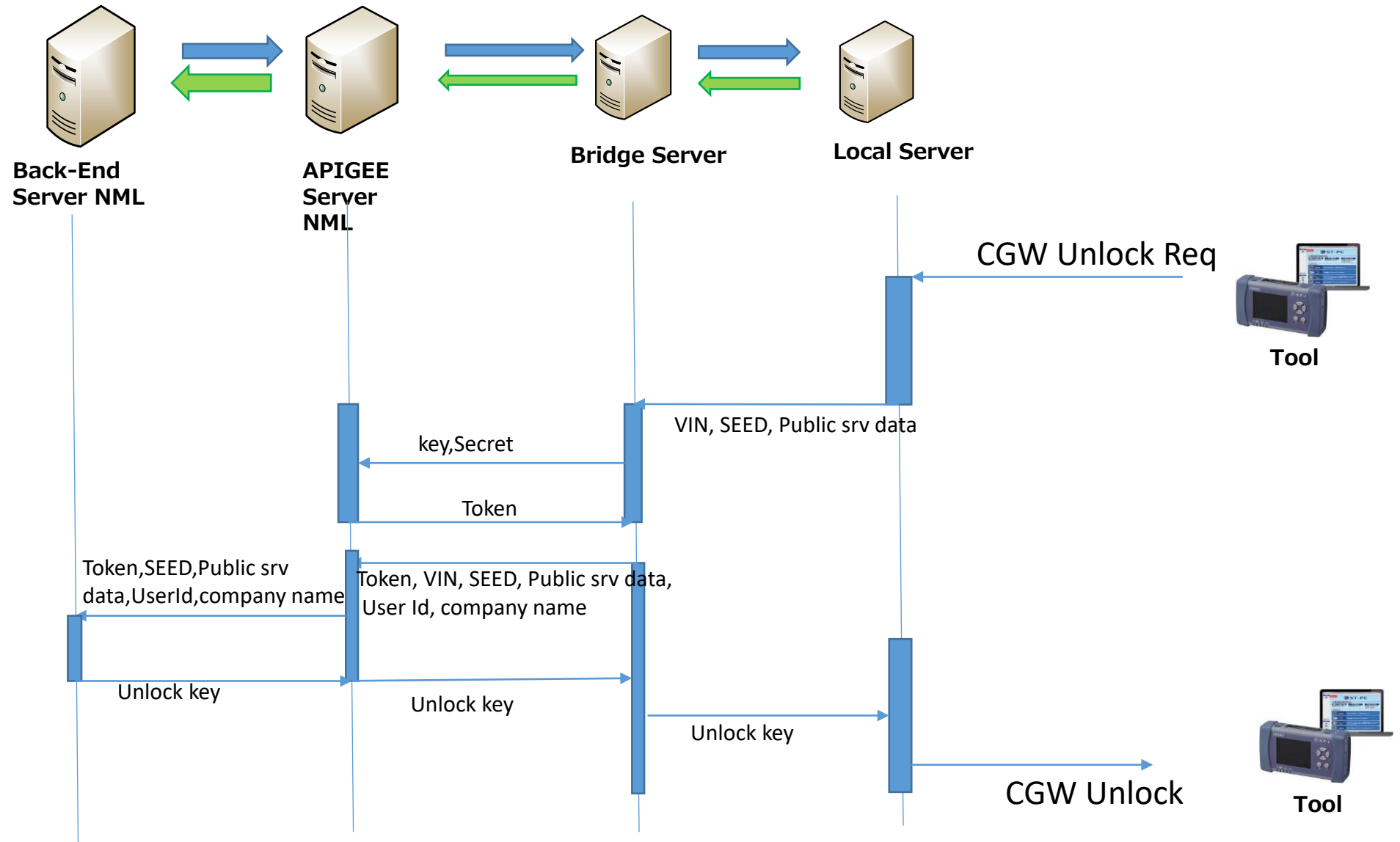
② Interface Data for unlocking key:

1. VIN – from vehicle
2. Security SEED – from vehicle
3. Public Serv Data – will be received from NML
4. Tool ID – unique id from tool
5. User ID – user identification
6. Transaction id – 24 char unique id for traceability

*Please refer page 7-12 for the details

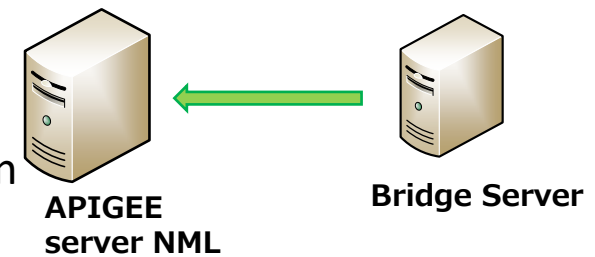
* Regarding system security requirements please refer page 13

Data Flow Sequence diag.



Token Access Request

=> API Clients call APIGEE in order to authenticate by OAuth2.0. =>
Acquire Access token by accessing by setting necessary parameters in
the following URL



Request URL

<https://api-qa.nissan-europe.com/identity/v2/token>

	Parameter	Mandatory/O ptional	値
HTTP Header	HTTP Method	Mandatory	"GET"
	Content-Type	Mandatory	"application/x-www-form-urlencoded"
	Authorization	Mandatory	Basic <Base64(Key:Secret*)>
HTTP Body	grant_type	Mandatory	"client_credentials"

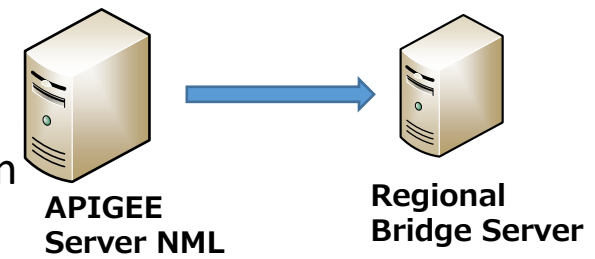
Example :

GET <https://api-qa.nissan-europe.com/identity/v2/token>

* key, secret will be created and sent by NML team.

Access Token Response

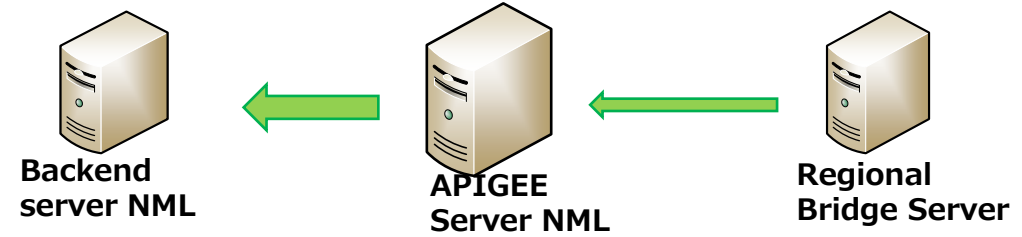
=> API Clients call APIGEE in order to authenticate by OAuth2.0. =>
Acquire Access token by accessing by setting necessary parameters in
the following URL



	Parameter	sucess	Error	value
HTTP Header	Status code	mandatory	mandatory	Status code by process result in API Gateway
	Content-Type	mandatory	mandatory	"application/json;charset=UTF-8"
	Cache-Control	mandatory	mandatory	"no-cache,no-store,no-transform,must-revalidate"
	Pragma	mandatory	mandatory	"no-cache"
	X-unique-id	optional	optional	Value by request from API Client
HTTP Body	access_token	mandatory	No use	If authentication is success, access token is set by API Gateway.
	token_type	mandatory	No use	"Bearer"
Sample				
Success	{ "token": "7UKJOWxWRddjXv5LGgbMABDpR0CM" }			
Error	{ "code": "401.01.01", "message": "Invalid credentials", "info": "Invalid client credentials" }			

①Unlocking API Request

=> API Client invokes the API provider's API using the access token.



Request URL			
https://api-qa.nissan-europe.com/dealers/v1/diagInfo/vin/{vin}/cgwUnlock?<Query Parameter>			
	Parameter	Manadatory/O ptional	Value
HTTP Header	HTTP Method	Mandatory	Get
	Authorization Type	Mandatory	Oauth2.0
	Authorization	Mandatory	"Bearer " + Access token
	Content-Type	Optional	Application/json
Query Parameter	Depends on specification of API Provider	Mandatory	requestTo=SDR& pcSerialInformation={PC serial}& requestType=CGWUNLOCK&& ecuType=VESPAASYMUDS& idTrans={idTrans}& securitySeed={Security Seed }& region={Region or country code}& userInfo={user id}& requestFrom={Company Name}
HTTP Body	Depends on specification of API Provider	Optional	None

①

Unlocking Request Parameters

	Tag name	Description	Max Length	Mandatory	Conversion/Comment
1	REQ_TO	Fixed value "SDR"	3	Mandatory	
2	PC_SERIAL_ID	Tool ID	50	Mandatory	
3	REQUEST_TYPE	Fixed value "CGWUNLOCK"	9	Mandatory	
4	REQ_FRM	Company name (*TBD)	10	Mandatory	
5	VIN	Vehicle Identity Number (17 char ASCII)	17	Mandatory	- When VIN is less than 17 characters, then left padding with 0 (zero) and hyphen conversion to 0 must be done at client side and sent. e.g. Original VIN VNK-123456 will be converted to 0000000VNK0123456 and sent to SDR
6	ECU_TYPE	Fixed value "VESPAASYMUDS"	12	Mandatory	
7	TRANSACTION ID	max 24 char. Unique for each request	24	Mandatory	Unique id for traceability purpose TBD
8	SECURITYSEED	Max Hexa value coded on maximum 256 bytes. In Capital (uppercase letters).	256	Mandatory	
9	PUBLICSRVDATA	Fix Hex Value coded of 10bytes In Capital (uppercase letters)	10	Mandatory	
10	Location/region	Location/region (*TBD)	10	Mandatory	
11	Tool login User id	Client user id	20	Mandatory	

*TBD: will be decided mutually after application to NML

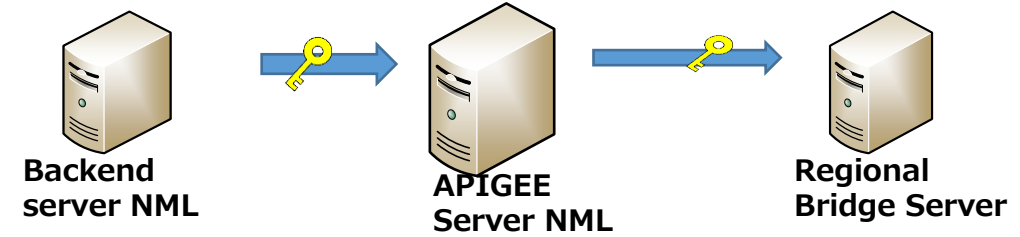
①

Unlocking Request Sample

[https://api-qa.nissan-europe.com/dealers/v1/diagInfo/vin/VF1SABVESPA539227/cgwUnlock?
requestTo=SDR&
pcSerialInformation=7GKUA86135&
requestType=CGWUNLOCK&&
ecuType=VESPAASYMUDS&
idTrans=LOADDIAGTEST202203211942&
securitySeed=908488063069CF7B926B88B64E45B31A5EEE263A0CC48F1CFB8FDABAFF8C0B96D69E2241D01F49CEE3A5E4
A71E48B14F70224CB25B7500D868D6AF8F8FF7CAC4DA646CD8E2446B7324D59B7967C4D431A408176F3C8027610AA1E2
7ADE8F93C684F7C096AD3BEF75944BD7DC02C7E0F24D017B92E98085E8B330EDD0073433D0B7DAB0386F4C6315D57257
B044237FC8986AC00A2AA439B71F90B1AB10B9D5158867577C9DD9B3F62C0A763B0EDE1C4C55EBA14A480D498F4457E
B98C188FEDA6556A68B3ACA2C6D4E138DE476272E32CFF13C8C6D75F1DCE2078F5F619BF59B93B3B58568B1597D1DD72
7084C6CF6C5AEC3DD5F90B9A100DC2698E5AB2CAA42&publicSrvData=4E4743500162013D3C50&
region=USA&
userInfo=FJT02126&
requestFrom=AUTOAUTH](https://api-qa.nissan-europe.com/dealers/v1/diagInfo/vin/VF1SABVESPA539227/cgwUnlock?requestTo=SDR&pcSerialInformation=7GKUA86135&requestType=CGWUNLOCK&&ecuType=VESPAASYMUDS&idTrans=LOADDIAGTEST202203211942&securitySeed=908488063069CF7B926B88B64E45B31A5EEE263A0CC48F1CFB8FDABAFF8C0B96D69E2241D01F49CEE3A5E4A71E48B14F70224CB25B7500D868D6AF8F8FF7CAC4DA646CD8E2446B7324D59B7967C4D431A408176F3C8027610AA1E27ADE8F93C684F7C096AD3BEF75944BD7DC02C7E0F24D017B92E98085E8B330EDD0073433D0B7DAB0386F4C6315D57257B044237FC8986AC00A2AA439B71F90B1AB10B9D5158867577C9DD9B3F62C0A763B0EDE1C4C55EBA14A480D498F4457EB98C188FEDA6556A68B3ACA2C6D4E138DE476272E32CFF13C8C6D75F1DCE2078F5F619BF59B93B3B58568B1597D1DD727084C6CF6C5AEC3DD5F90B9A100DC2698E5AB2CAA42&publicSrvData=4E4743500162013D3C50®ion=USA&userInfo=FJT02126&requestFrom=AUTOAUTH)

①Unlocking Key Response

=> API Gateway passes the response received from API Provider to API Client as it is..



	Parameter	Success	Error	value
HTTP Header	Status code/Response Phase	mandatory	mandatory	Depends on the processing result.
	Content-Type	mandatory	mandatory	Application/json
	Cache-Control	mandatory	mandatory	"no-cache,no-store,no-transform,must-revalidate"
	Pragma	mandatory	mandatory	"no-cache"
	Content-Length	mandatory	mandatory	Depends on the processing result.
	X-unique-id	optional	optional	Value by request from API Client.
HTTP Body	Depends in API Provider	mandatory	mandatory	Detail is Explained in the next page
Sample				
success				
Error				

JSON Response Parameters

1	REQUESTRESPONSE				REQUESTRESPONSE	Attribute Value	Description	Mandatory	Conversion/Comment
2	REQUEST				REQUEST				
3	HEADER				HEADER				
4		REQ_TO			REQ_TO	"SDR"			
5		REQ_ID			REQ_ID				
6		REQ_SYSTEM_SPECIFIC			REQ_SYSTEM_SPECIFIC				
7		PC_SERIAL_ID			PC_SERIAL_ID				
8		REQUEST_TYPE			REQUEST_TYPE	"GWUNLOCK"			
9		REQ_FRM			REQ_FRM	"SUPN"			
10		ERRORS			ERRORS				
11		ERROR			ERROR				
12	CONTENTS				CONTENTS				
13		VIN			VIN				
14		ECU_Type			ECU_TYPE	"VESPAASYMUDS"			
15		IDTRANS			IDTRANS				
16		ALGORITHM			ALGORITHM				
17		AIGO_TYPE			AIGO_TYPE				
18		ecu			ECU				
19			FIELD1		FIELD1				
20			FIELD2		FIELD2	SECURITYSEED			
21			FIELD3		FIELD3	PUBLICSRVDATA			
22			FIELD4		FIELD4				
23			FIELD5		FIELD5				
24			FIELD6		FIELD6				
21			FIELD7		FIELD7				
22			FIELD8		FIELD8				
23			FIELD9		FIELD9				
24			FIELD10		FIELD10				
25	RESPONSE				RESPONSE				
30	HEADER				HEADER				
31		ERRORS			ERRORS				
32		ERROR			ERROR				
			RCODE						00 for success,01 for error
			REASCODE						Contains success or error code
33	CONTENTS				CONTENTS				
34			FIELD1		FIELD1	SecurityKey	Release key calculated by the unlocking algorithm (AES)	optional	Mandatory on Success. Empty on Error.
35			FIELD2		FIELD2	Code_ret	Return code of 4 characters. (*TBD)	Mandatory	
36			FIELD3		FIELD3	responseDescription	Response Description	optional	
37			FIELD4		FIELD4				
38			FIELD5		FIELD5				

*TBD: will be decided mutually after application to NML

JSON Response sample

```
{REQUESTRESPONSE: {REQUEST: {HEADER: {
    REQ_TO: "SDR",
    REQ_ID: "",
    REQ_SYSTEM_SPECIFIC: {
        PC_SERIAL_ID: "7GKUA86135",
        REQUEST_TYPE: "GWUNLOCK" },
    REQ_FRM: "SUPN",
    ERRORS: { } },
  CONTENTS: {
    VIN: "VX1SABVESPA539227",
    ECU_Type: "VESPAASYMUDS",
    IDTRANS: "TEST20190424013621000000",
    ALGORITHM: "",
    ALGO_TYPE: "",
    ecu: {
        FIELD1: "908488.....",
        FIELD2: "4E426F73633863684757",
        FIELD3: "user1",
        FIELD4: "manufacturer1",
        FIELD5: "",
        FIELD6: "",
        FIELD7: "",
        FIELD8: "",
        FIELD9: "",
        FIELD10: ""
      }
    }
  },
  RESPONSE: {
    HEADER: {ERRORS: {ERROR: [{RCODE: "00",REASCODE: "VES00UA20"}]}},
    CONTENTS: {
      FIELD1: "A4A9D56325231CA8A5CBB.....",
      FIELD2: "UA20",
      FIELD3: "The UDS Asymmetric Unlocking request was successful"
    }
  }
}
```

Security requirements :

1. Server to Server access :

API access must be from a centralized server(Bridge server) not directly from the diagnostic tools

2. Tool id & Tool User Id authentication :

The central server must identify the tool and the users accessing the tool for traceability purpose. Authentication and authorization must be done on vendor side.

The user id and tool id must be sent in the request (Tool id , Tool login User id)

* Please refer page 7 & 8

3. Access log :

The central server must keep the access log of Tool id and Tool user id for request and response for traceability purpose.

4. Access to APIGEE server :

NML APIGEE server uses OAuth 2.0 for accessing to backend API.

In First step Client id, client secret and certificate is sent to NML APGEE server to get token.

In second step, Token is used along with API parameters to access the backend API.

*Certificate will expire in 1 year. New certificate will be issued one month before expiry of the certificate

5. Below documents to be submitted:

1. SISA document to be filled in by supplier [No Japanese version available]
2. ISO 27001 certification or SASE Service Organization Control (SOC) report if available
3. Detailed service description provided by vendor to Nissan

Information to be shared from NML :

1. Access URL (Test and prod):

NML APIGEE server and Backend servers have both test and production environments.
Production access will be provided after successful tests in test environment.

2. Certificate (Test and prod):

Certificates for NML APIGEE server access will be provided for both test and production environments.

3. Client ID, Client Secret(Test and prod)

Client Id, Client secret for NML APIGEE server access will be provided for both test and production environments.

4. Request parameter

Company code & Region code will be decided and informed after discussions.

5. Sample

Sample JSON request and response for the API will be provided.

6. Return code list

Return code list (success and error codes returned from backend) will be provided.

SLA

Topic	Description	Service Level/Duration	Scope
Service Availability (Production)	Backend Service Availability	99.5% Uptime(Considering Planned maintenance and Planned maintenance with notice)	This service level only backend system service and includes below components : Hardware, operating system, backend application, backend DB.
Performance	Backend Service Response Time	Within 5 secs.	Response time is for backend response time only. It doesn't contain response include response time of API Gateway and network outside of Nissan.
Planned Maintenance	Production	4th Monday of Month 01:00 to 03:00 JST	
	QA	3rd Monday of Month 01:00 to 03:00 JST	
Planned Maintenance with Notice	Update firmware for hardware and middleware version	Quarterly 4 times in a year Working hours : Approx. 5 hrs.	
Application Level	Application Importance Level	3	Backend Application
Technical Incident Management	Support Hours	9:00 to 18:00 JST *** 5 days a week (Nissan Holidays excluded)	Support by Email***
	Reaction Time	9:00 to 18:00 JST *** 5 days a week (Nissan Holidays excluded)	Support by Email***

Tentative Schedule:

FYXX												
	Week 1	Week 2	Week 3	---	---	---	---	---	---	---	---	---
Agreement completion												
NML IS	Agree with I/F spec with Q&A											
	Application to APIGEE infra team	Backend settings Update QA					Backend settings Update PROD					
NML INFRA		APIGEE Settings (QA)				APIGEE Settings (PROD)						
USER				Testing in QA				E2E Testing in PROD				