

# Envision GCP Cloud Configuration

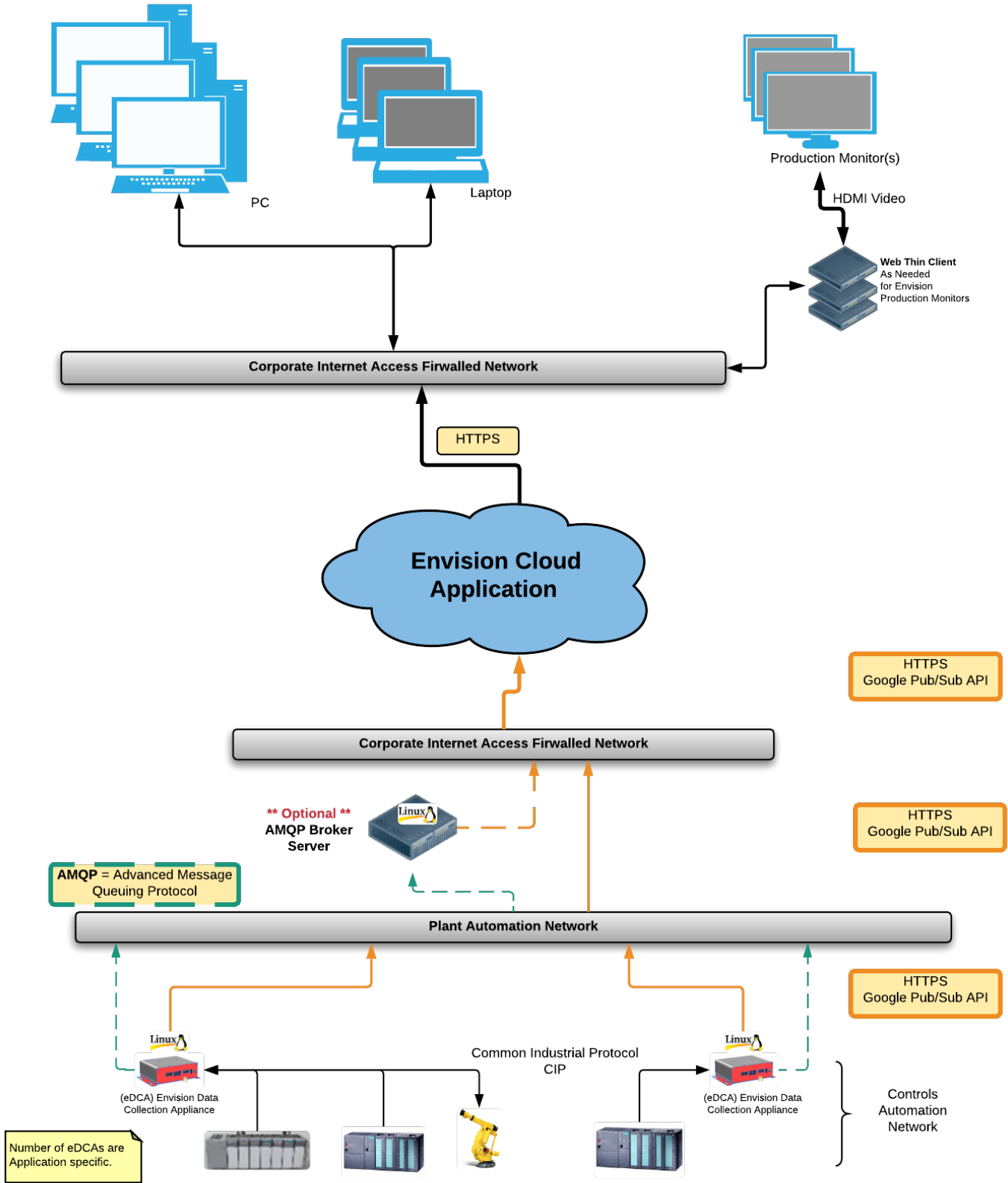
**Envision Generation 2 is here. GCP Cloud is first to support Gen 2 of Envision Technology.**

This document is provided as a guideline only.  
Beet reserves the right to change network architecture and specifications at any time without notice.

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## Envision Cloud Architecture

Production Envision Gen 2 Network Architecture (DW-CIP)



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Envision Cloud - Google GCP

Last Modified 2/21/2019 11:38 AM

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[Envision Generation 2 Application Architecture](#)

## Internet Firewall Rules

Firewall rules for outbound internet access via eDCA or eBroker (if installed). Device with internet access will require the ability to perform DNS resolution.

<b>Mandatory Outbound Internet Access</b>	accounts.google.com:443 / HTTPS pubsub.googleapis.com:443 / HTTPS (An alias for googleapis.l.google.com)  <i>IP Ranges are assigned to these DNS Entry googleapis.l.google.com</i>
<b>Recommended Internet Access (Network Time Protocol)</b>	time.google.com:123 / UDP (NTP)  <b>Application Updates</b> storage.googleapis.com:443 / HTTPS commondatastorage.googleapis.com:442 / HTTPS

## AMQP eBroker (If Installed)

eDCA to eBroker requires the following ports enabled, if a firewall is in place.

<b>AMQP</b> Local eDCA to eBroker Server	5671/tcp
	5671/udp
	5672/tcp
	5672/udp
<b>AMQP-Cluster</b>	4369/tcp
	25672/tcp

### Mandatory Outbound Internet Access (Google GCP Access)

- The IP addresses that various domain names resolve to don't necessarily fall within any given address range.
- Even if you don't currently see activity at the addresses listed above, there could be future activity.

## Google GCP IP Addresses ( As of 11/16/2018)

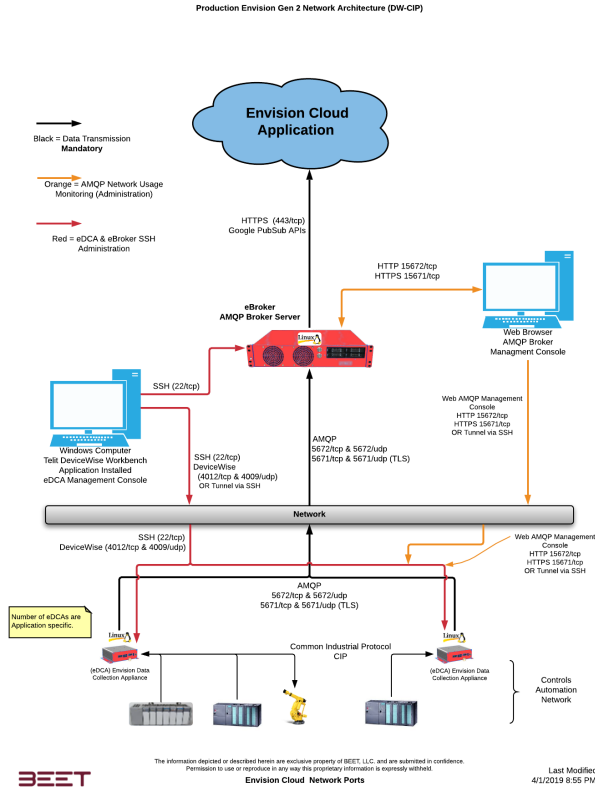
This list of IP addresses are subject to change by Google without notice. Beet will attempt to keep this list updated. However, this list can not be considered complete and accurate, it is only an initial reference.

DNS Name	IP Address
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accounts.google.com	172.217.4.77 172.217.7.173 172.217.9.45 216.58.192.237
googleapis.l.google.com	172.217.1.42 172.217.15.106 172.217.15.74 172.217.3.42 172.217.4.106 172.217.4.202 172.217.4.234 172.217.4.42 172.217.4.74 172.217.5.234 172.217.6.106 172.217.7.138 172.217.7.138 172.217.7.170 172.217.7.202 172.217.7.234 172.217.8.10 172.217.8.170 172.217.8.202 172.217.9.42 172.217.9.74 216.58.192.170 216.58.192.202 216.58.192.234 216.58.216.106 216.58.216.202 216.58.217.106 216.58.217.138 216.58.217.170 216.58.217.74 216.58.218.234
time.google.com	216.239.35.0 216.239.35.12 216.239.35.4 216.239.35.8

# Network Ports - Connectivity Diagram

Click here to download PDF.



## Data Security - Information Transmitted to Cloud

With the cloud solution, there is no inbound connection from the Beet Cloud services and your network.

There is an output HTTPS network connection (just like secure web browsing), specific URL we access are defined in the firewall section above.

## Actual Sample Data

An actual example of data transmitted to the cloud, uncompressed and decoded of course.

Twenty-Four messages below provided for example:

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{ "edca": "668d51c4-0f6a-411e-87d0-e21f385acd2c", "ts": "2017-11-07
15:00:35.446", "pid": "172.21.28.24", "mt": "3", "mi": 0, "mc": 278, "mb":
32, "p1": 386991897, "p2": 1142489168, "payload": [{"idx": 2, "data": 9} ]}
{ "edca": "668d51c4-0f6a-411e-87d0-e21f385acd2c", "ts": "2017-11-07
15:00:35.590", "pid": "172.21.28.108", "mt": "3", "mi": 0, "mc": 262, "mb":
32, "p1": 50538275, "p2": 1227359744, "payload": [{"idx": 2, "data": 17} ]}
{ "edca": "668d51c4-0f6a-411e-87d0-e21f385acd2c", "ts": "2017-11-07
15:00:48.837", "pid": "172.21.28.45", "mt": "3", "mi": 0, "mc": 654, "mb":
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{ "edca": "668d51c4-0f6a-411e-87d0-e21f385acd2c", "ts": "2017-11-07
15:00:57.347", "pid": "172.21.28.45", "mt": "4", "mi": 0, "mc": 657, "mb":
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4883},{ "idx": 9,"data": 201491},{ "idx": 10,"data": 319812352},{ "idx":
11,"data": 320012307},{ "idx": 12,"data": 1045267},{ "idx": 13,"data": 787}
]}
{ "edca": "668d51c4-0f6a-411e-87d0-e21f385acd2c","ts": "2017-11-07
15:00:52.607","pid": "172.21.28.108","mt": "3","mi": 0,"mc": 270,"mb":
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{ "edca": "668d51c4-0f6a-411e-87d0-e21f385acd2c","ts": "2017-11-07
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{ "edca": "668d51c4-0f6a-411e-87d0-e21f385acd2c","ts": "2017-11-07
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15:02:15.094","pid": "172.21.28.24","mt": "4","mi": 0,"mc": 307,"mb":
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{ "edca": "668d51c4-0f6a-411e-87d0-e21f385acd2c","ts": "2017-11-07
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{ "edca": "668d51c4-0f6a-411e-87d0-e21f385acd2c", "ts": "2017-11-07
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32, "p1": 386991904, "p2": 1412591936, "payload": [{"idx": 2, "data": 9} ]}
```

**eDCA Transfer Agent >= v2.6 Now support data source obfuscation.**

Twenty-Four messages below provided for example:

```
{ "edca": "668d51c4-0f6a-411e-87d0-e21f385acd2c", "ts": "2017-11-07
15:00:35.446", "pid": "M4jB6MTcyLjIxljjaBqgI4LjI0cfK7P", "mt": "3", "mi":
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15:00:35.590", "pid": "5q62YMTcyLjIxljWAgfSI4LjEwOA==62V5n", "mt": "3", "mi":
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15:00:48.837", "pid": "jaBqgMTcyLjIxljcfK7PI4LjQ1UVc5S", "mt": "3", "mi":
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15:01:11.307", "pid": "UVc5SMTcyLjIxlj5q62YI4Ljg3WAgfS", "mt": "4", "mi":
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{ "edca": "668d51c4-0f6a-411e-87d0-e21f385acd2c", "ts": "2017-11-07
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```



```
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{ "edca": "668d51c4-0f6a-411e-87d0-e21f385acd2c", "ts": "2017-11-07
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{ "edca": "668d51c4-0f6a-411e-87d0-e21f385acd2c", "ts": "2017-11-07
15:02:10.184", "pid": "cfK7PMTcyLjIxLjUVc5SI4LjY25q62Y", "mt": "3", "mi":
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{ "edca": "668d51c4-0f6a-411e-87d0-e21f385acd2c", "ts": "2017-11-07
15:02:23.381", "pid": "jaBqgMTcyLjIxLjcfK7PI4LjQ1UVc5S", "mt": "3", "mi":
0, "mc": 707, "mb": 32, "p1": 386991904, "p2": 1393959184, "payload": [{"idx":
12, "data": 1} ]}
{ "edca": "668d51c4-0f6a-411e-87d0-e21f385acd2c", "ts": "2017-11-07
15:02:29.115", "pid": "jaBqgMTcyLjIxLjcfK7PI4LjQ1UVc5S", "mt": "3", "mi":
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{ "edca": "668d51c4-0f6a-411e-87d0-e21f385acd2c", "ts": "2017-11-07
15:02:30.027", "pid": "jaBqgMTcyLjIxLjcfK7PI4LjQ1UVc5S", "mt": "3", "mi":
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{ "edca": "668d51c4-0f6a-411e-87d0-e21f385acd2c", "ts": "2017-11-07
15:02:41.246", "pid": "UVc5SMTcyLjIxLj5q62YI4Ljg3WAgfS", "mt": "4", "mi":
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{ "edca": "668d51c4-0f6a-411e-87d0-e21f385acd2c", "ts": "2017-11-07
15:02:48.075", "pid": "UVc5SMTcyLjIxLj5q62YI4Ljg3WAgfS", "mt": "3", "mi":
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{ "edca": "668d51c4-0f6a-411e-87d0-e21f385acd2c", "ts": "2017-11-07
15:02:56.946", "pid": "5q62YMTcyLjIxLjWAgfSI4LjEwOA==62V5n", "mt": "3", "mi":
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{ "edca": "668d51c4-0f6a-411e-87d0-e21f385acd2c", "ts": "2017-11-07
15:02:53.436", "pid": "cfK7PMTcyLjIxLjUVc5SI4LjY25q62Y", "mt": "3", "mi":
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7, "data": 9} ]}
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15:02:53.434", "pid": "cfK7PMTcyLjIxLjUVc5SI4LjY25q62Y", "mt": "4", "mi":
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{ "edca": "668d51c4-0f6a-411e-87d0-e21f385acd2c", "ts": "2017-11-07
```

```
15:03:39.886", "pid": "jaBqgMTcyLjIxLjcfK7PI4LjQ1UVc5S", "mt": "3", "mi":  
0, "mc": 731, "mb": 32, "p1": 386991904, "p2": 1412591936, "payload": [{"idx":  
2, "data": 9} ]}
```

## eDCA Appliances (Data Collection Industrial Devices)

eDCA XiD Series Appliance

eDCA XiS Series Appliance - IP65 Rated

## Cloud Internet Network Utilization

Network Utilization and Impact Analysis

## Envision AMQP Broker Appliance

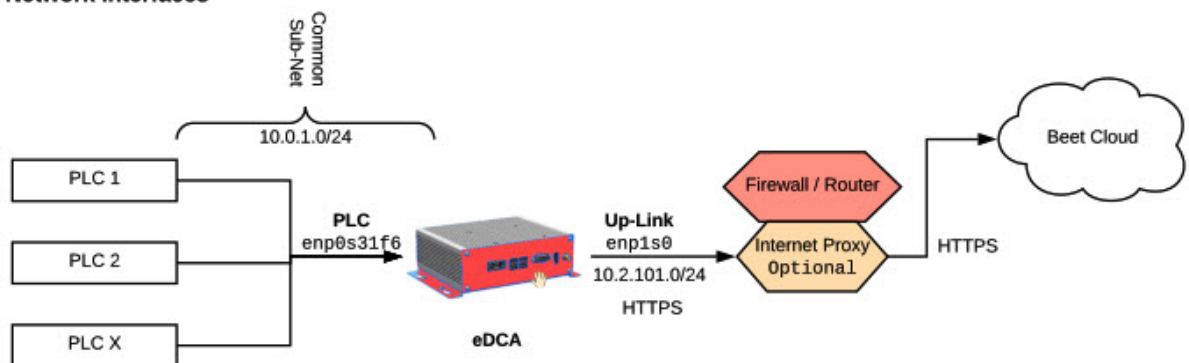
AMQP eBroker

## Network Appliance Connection Examples

Please note these examples are provided as reference ONLY. Does not represent all possible configurations supported.

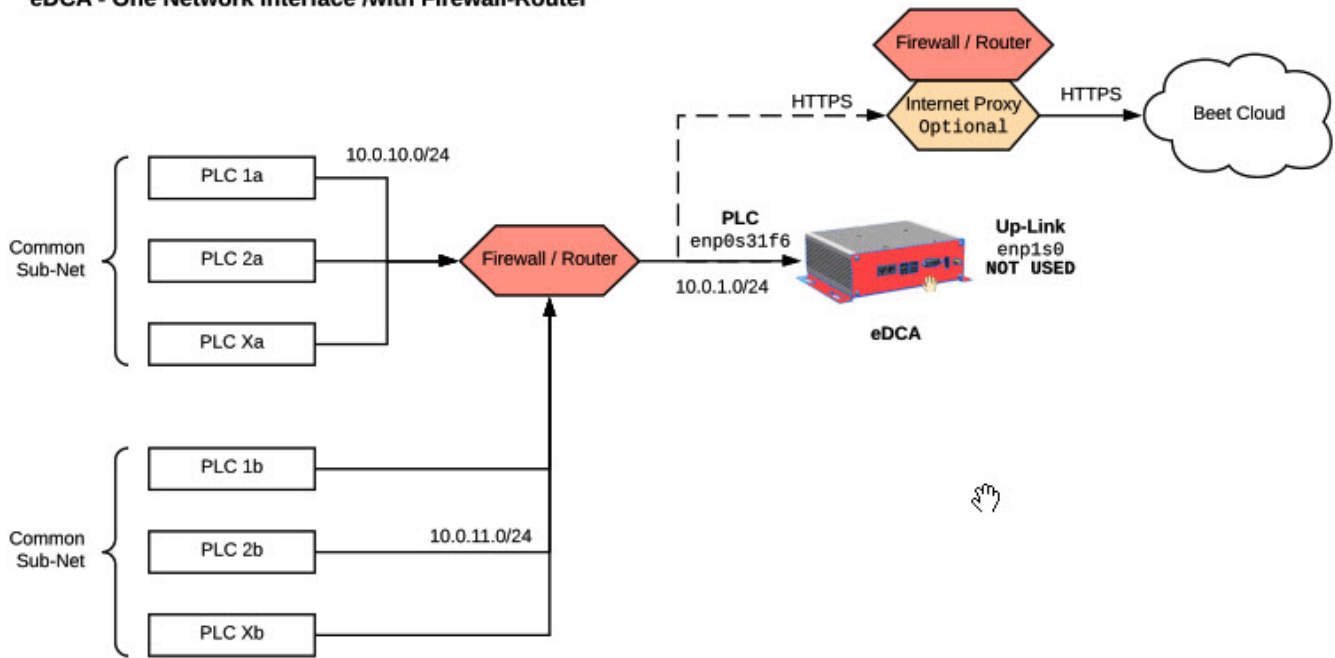
### eDCA - Two Network Interfaces

eDCA - Two Network Interfaces



# eDCA - One Network Interface

## eDCA - One Network Interface /with Firewall-Router



# eDCA + eBroker /with Firewall-Router

## eDCA - One Network Interface /with Firewall-Router eBroker - One Network Interface

