What is OPC?
OPC provides a common bridge between Windows-based software (like RS Production) and process control hardware. OPC offers a standard way to read/write data from/to plant floor devices.

Read more about OPC here (https://en.wikipedia.org/wiki/Open_Platform_Communications) and its successor OPC UA here (https://en.wikipedia.org/wiki/OPC_Unified_Architecture)

RS Production version 17.10 and later has full support for OPC UA.
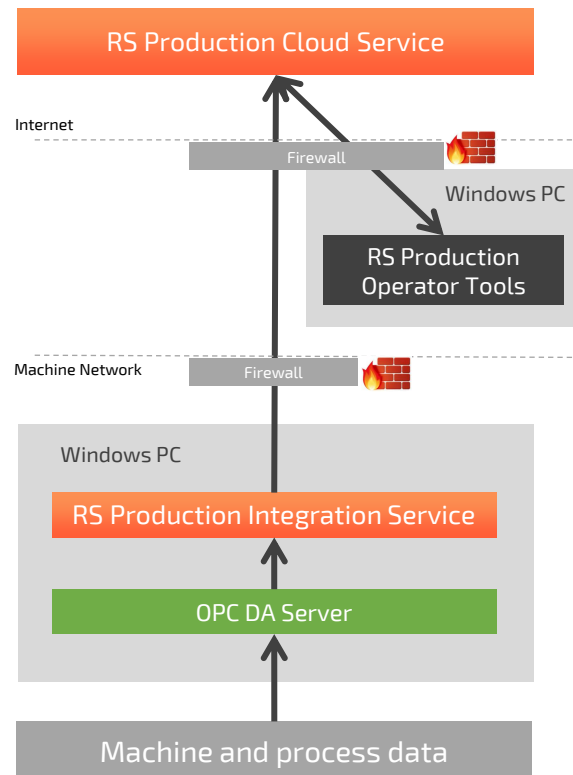
Recommended OPC-server
RS Production OPC client has a plug-and-play ready connection to Kepwares's OPC-server.

Kepware's OPC server have drivers for most types of machinery and equipment. More information is available on http://www.kepware.com
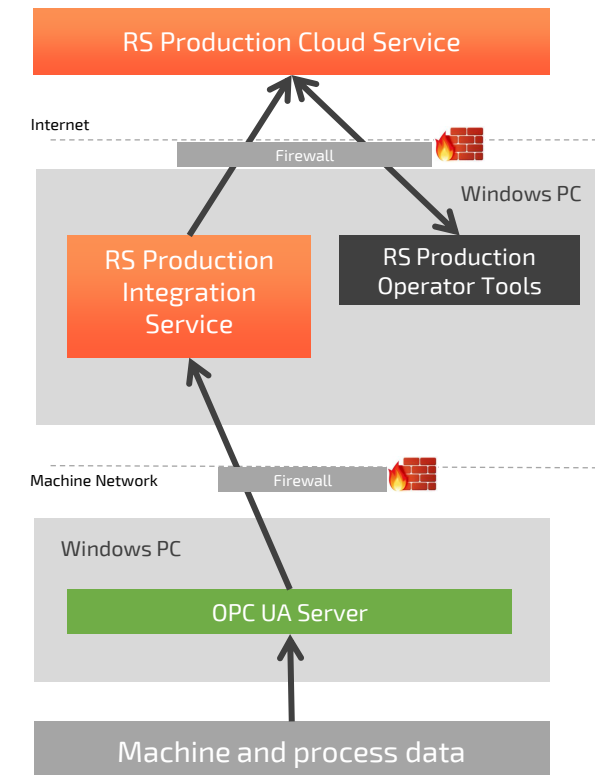
OPC DA
Older version of OPC where integration client needs to be installed on the same computer as the OPC server.


OPC UA
Newer version of OPC where it's more flexible where integration client can be installed.

No need to open ports for incoming data

- All data traffic to the RS Production cloud service is initiated from the local clients.

- There is never any traffic that is initiated from the RS Production Service on the Azure cloud.

- Traffic is on port 80 (or 443 with https)

RS Production Cloud Service

Internet

REPLY

Local network

Firewall

REPLY

Windows PC

RS Production client
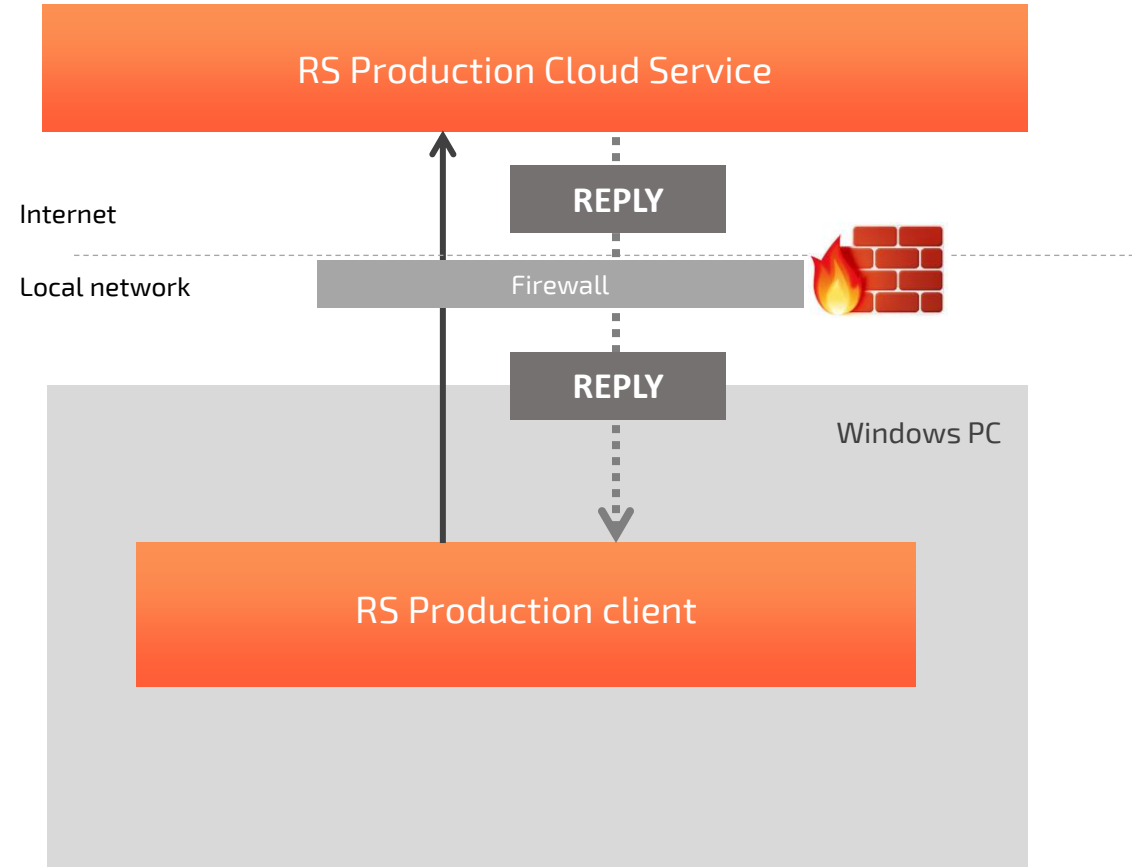
Principles for capture of cycles, produced and scrapped amounts

OPC update rate is about 0.1 seconds, which is slow in a real time context. To avoid missing cycles and pulses, RS Production uses an increasing counter. If you want it is possible to set a reset point where the counter restarts at 0.

Cycle/pulse #	Value in the OPC field
1	1
2	2
3	3
…	…
9 998	9 998
9 999	9 999
10 000	0
10 001	1
10 002	3
…	…
19 999	9 999
20 000	0
20 001	1
…	…

Example with a reset point at 9 999

Principles for capture of machine uptime signals

RS Production reads operating signals (uptime/downtime) every second. Every reading cycle, RS Production reads (samples) the current value of a specified field. This means that the system does not log any information about the exact time (in milliseconds) since the field changed.

Machine status	Value in the OPC field
Operational (Uptime)	1
Downtime	0

Principles for collecting automatic reason encoding and station encoding of downtime

RS Production can automatically capture and categorize stops with both reason code and station code.

Each reason code and station code needs a specific OPC field the reflects its status.

Reason/station code status	Value in the OPC field
Active	1
Not active	0

Principles for machine alarm signals

RS Production can capture machine alarms and store them in a table available in Office tools.

Machine alarms in RS Production has one of two possible statuses in the table to the right.

Each alarm needs to have its own OPC-field and RS Production timestamps the status changes.

Alarm status	Value in the OPC field
Active	1
Not active	0