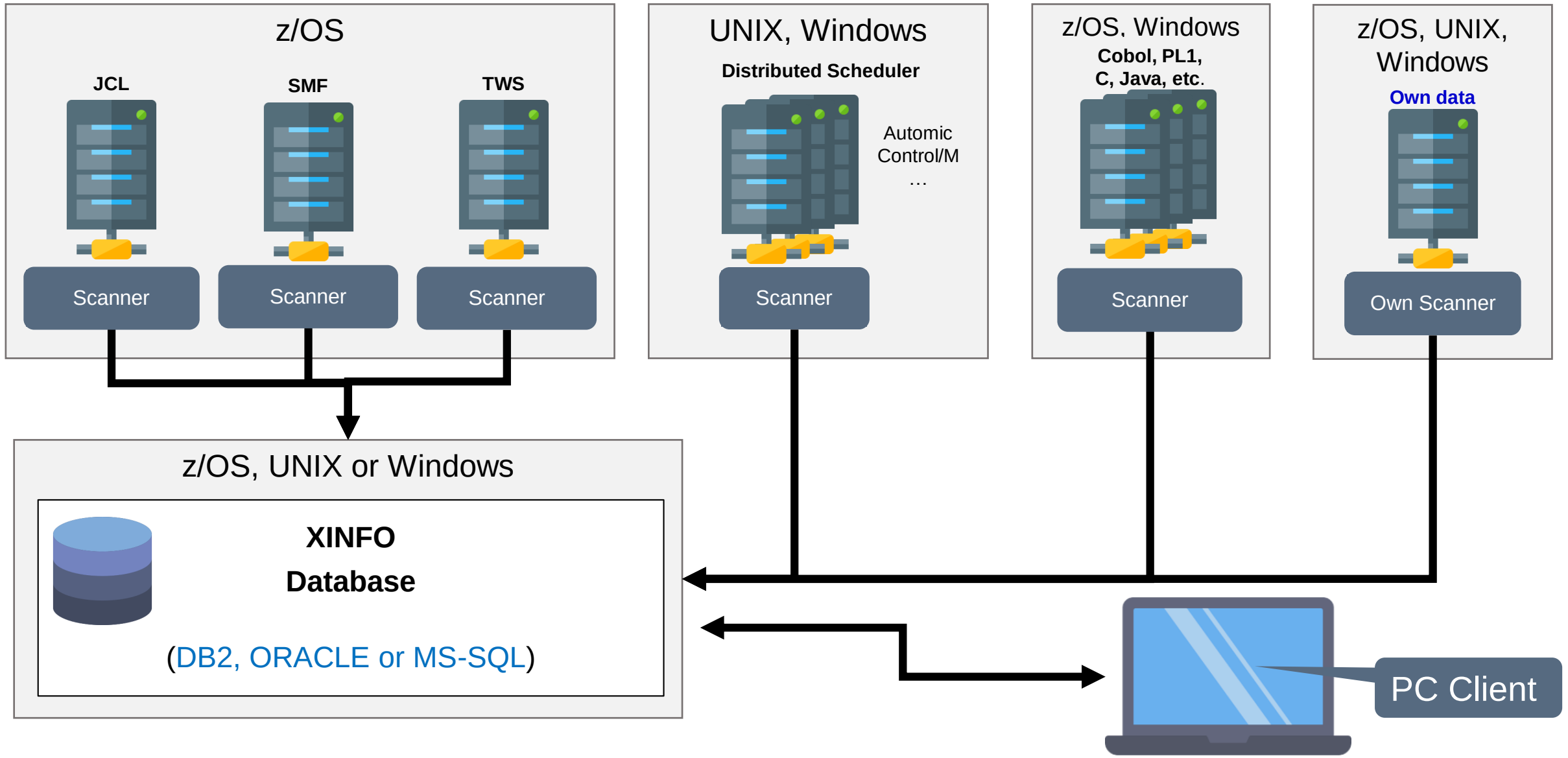
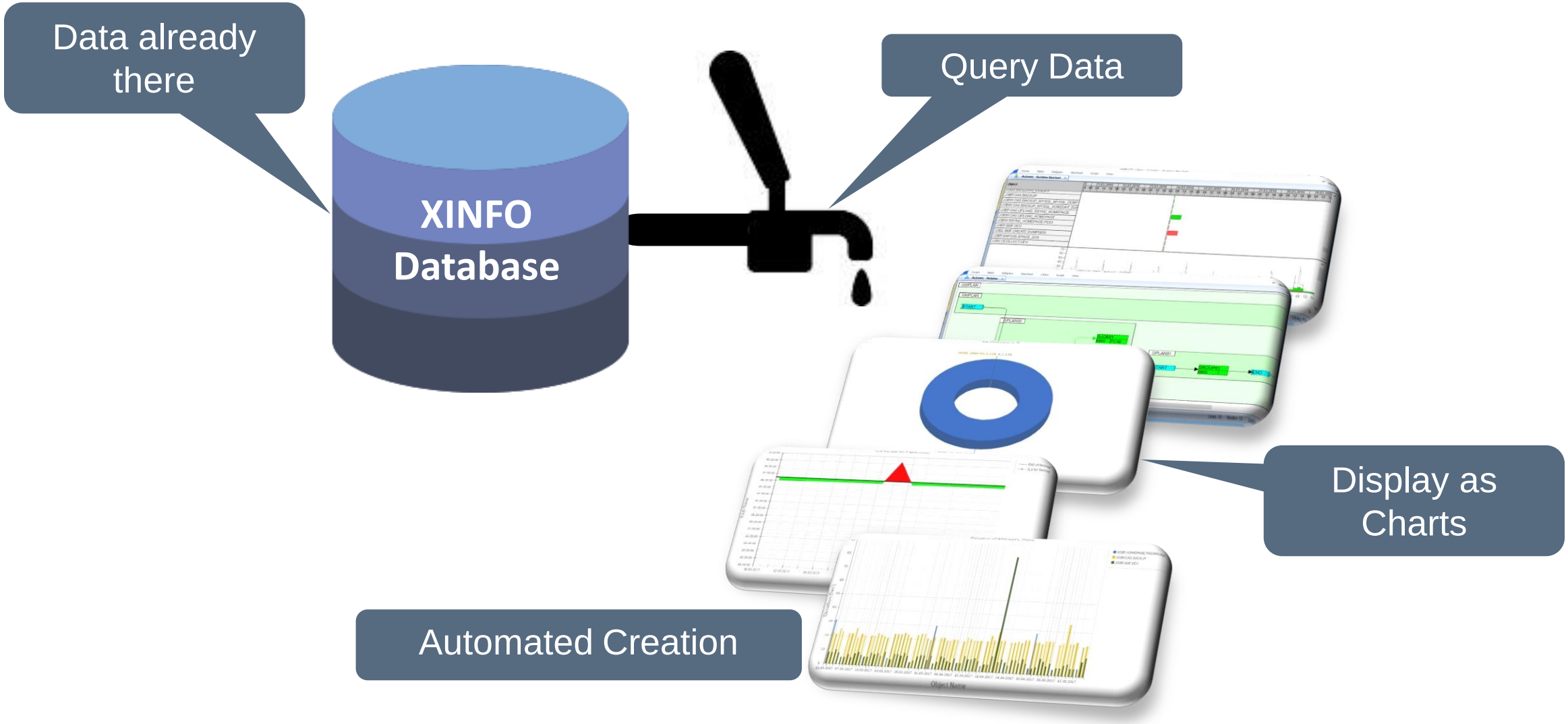
HORIZONT

XINFO Charts and IT-Charts

Technical Overview



Use Data Sources



XINFO Chart

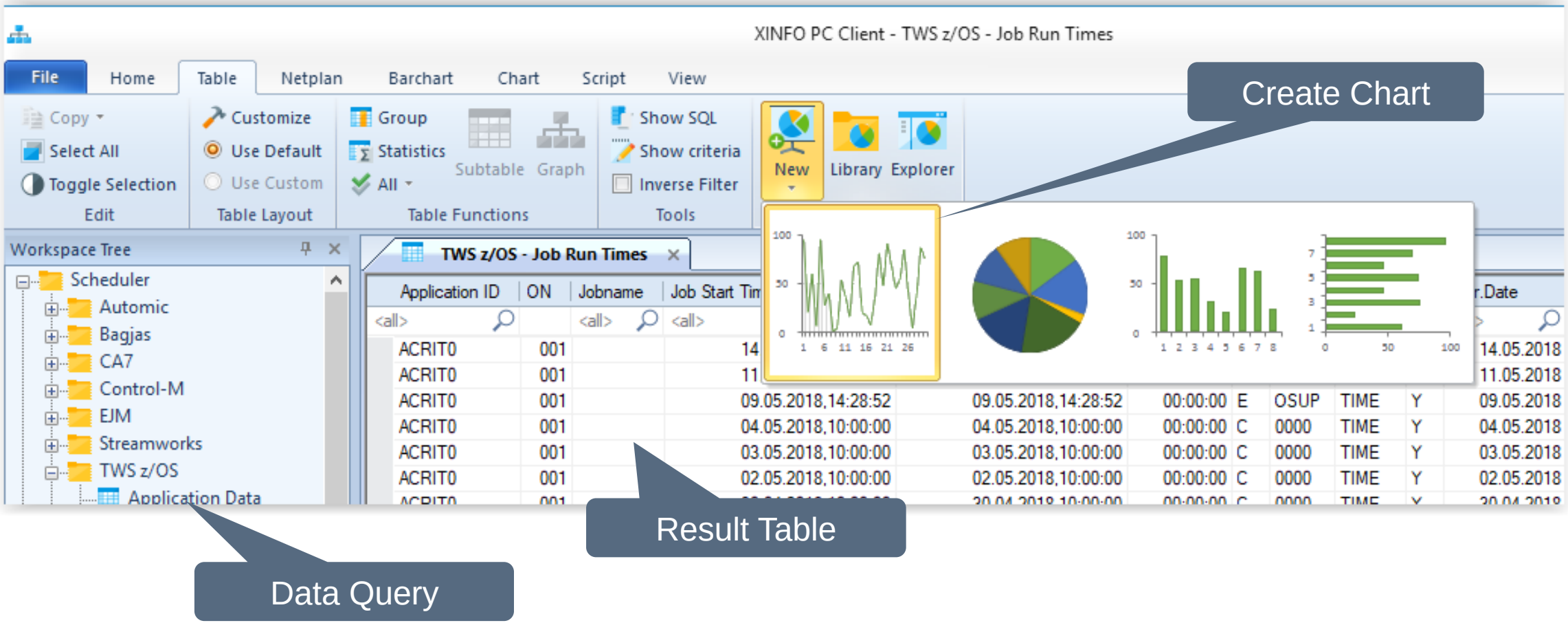
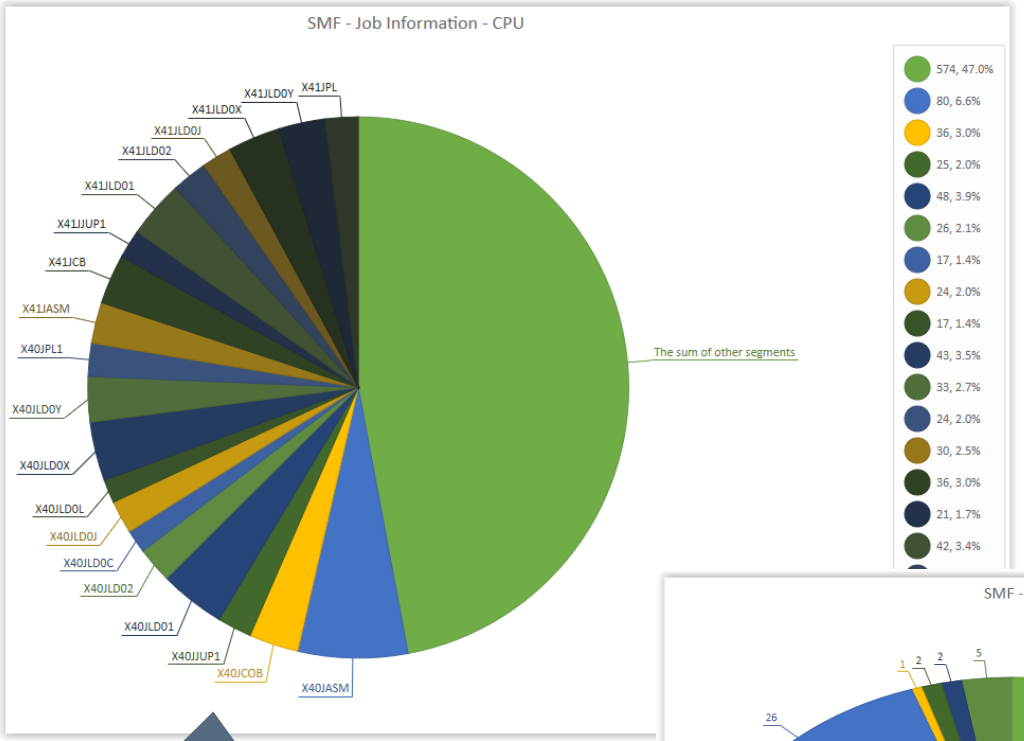
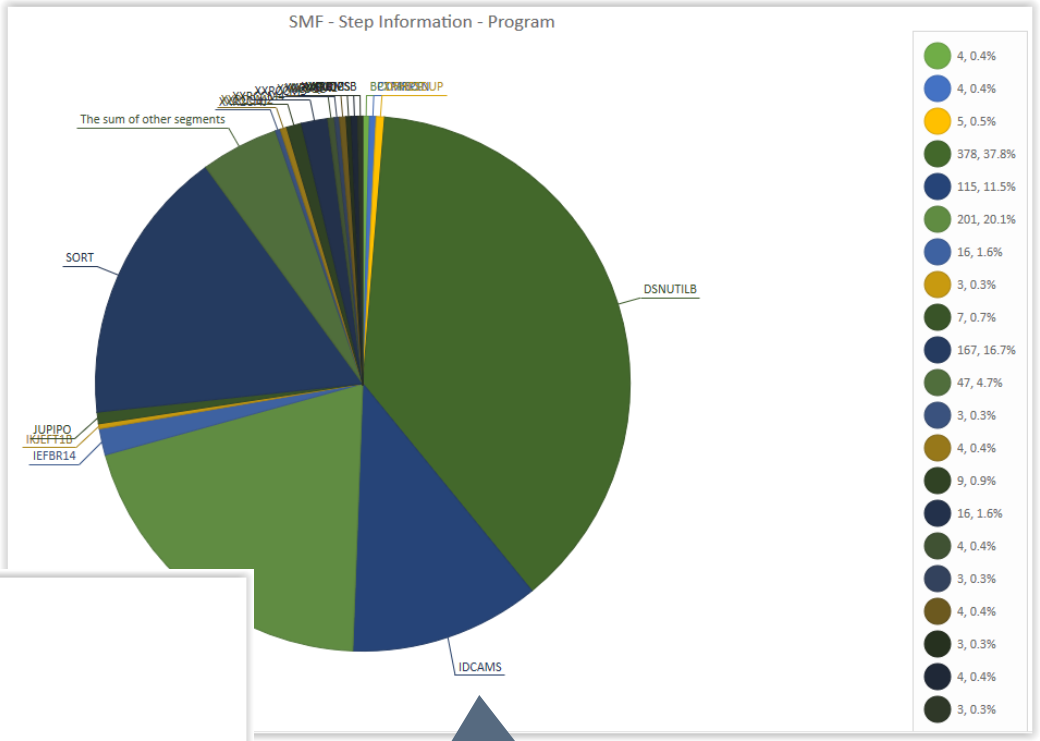

XINFO PC Client - TWS z/OS - Job Run Times
File
Home
Table
Netplan
Barchart
Chart
Script
View
Copy
Select All
Toggle Selection
Edit
Customize
Use Default
Use Custom
Table Layout
Group
Statistics
All
Subtable
Graph
Table Functions
Show SQL
Show criteria
Inverse Filter
Tools
New
Library
Explorer
Create Chart
Workspace Tree
Scheduler
Automic
Bagjas
CA7
Control-M
EJM
Streamworks
TWS z/OS
Application Data
TWS z/OS - Job Run Times
Application ID
ON
Jobname
Job Start Tim
r.Date
ACRIT0 001 14 14.05.2018
ACRIT0 001 11 11.05.2018
ACRIT0 001 09.05.2018,14:28:52 09.05.2018,14:28:52 00:00:00 E OSUP TIME Y 09.05.2018
ACRIT0 001 04.05.2018,10:00:00 04.05.2018,10:00:00 00:00:00 C 0000 TIME Y 04.05.2018
ACRIT0 001 03.05.2018,10:00:00 03.05.2018,10:00:00 00:00:00 C 0000 TIME Y 03.05.2018
ACRIT0 001 02.05.2018,10:00:00 02.05.2018,10:00:00 00:00:00 C 0000 TIME Y 02.05.2018
Result Table
Data Query

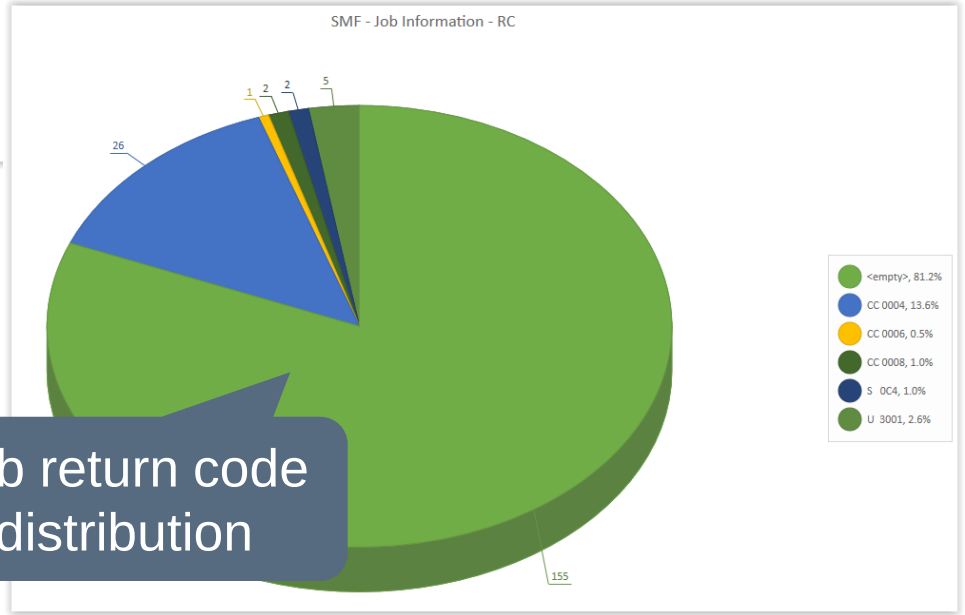
Chart Sample SMF



Top CPU using jobs

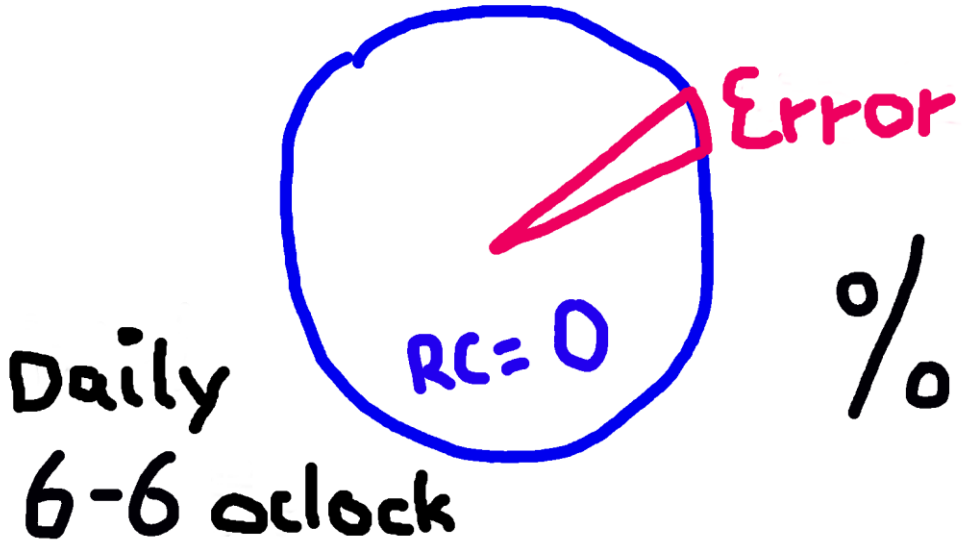


Top called programs



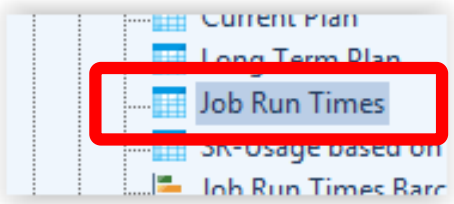
Job return code distribution

Job Status Historv



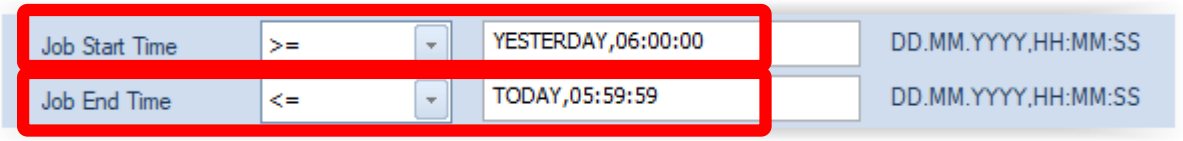
How it works
with XINFO Charts

Chart Step 1– Data Provisioning



Data Source

+



Selection

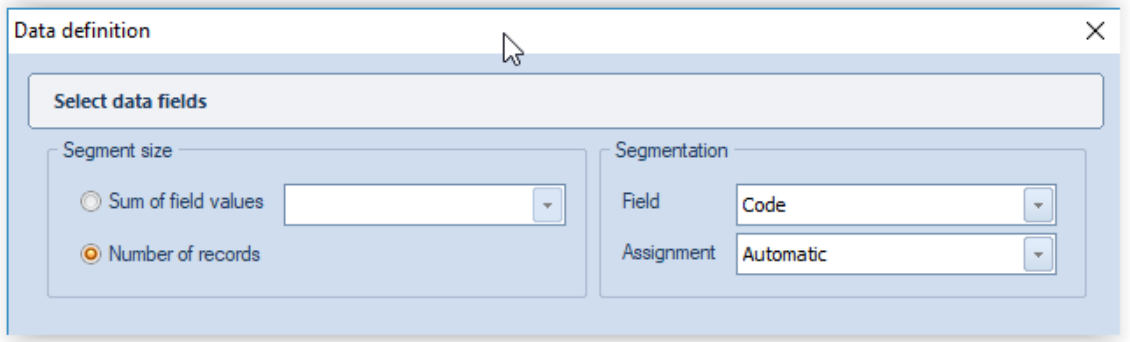
=

Application ID	ON	Jobname	Job Start Time	Job End Time	Duration	S	Code	WSID	V	I.Arr.Date	IA-Time
DCPA01	001	TIME	13.06.2017,17:00:29	13.06.2017,17:00:29	00:00:00	C	0000	DMY	Y	13.06.2017	17:00:00
DCPA01	001	TIME	13.06.2017,09:00:28	13.06.2017,09:00:28	00:00:00	C	0000	DMY	Y	13.06.2017	09:00:00
DCPA01	002	DCPJ00	13.06.2017,17:00:29	13.06.2017,17:01:58	00:01:29	C	0000	WAIT	Y	13.06.2017	17:00:00
DCPA01	002	DCPJ00	13.06.2017,09:00:28	13.06.2017,09:01:56	00:01:28	C	0000	WAIT	Y	13.06.2017	09:00:00
DCPA02	001		13.06.2017,17:01:58	13.06.2017,17:01:58	00:00:00	C	0000	DMY	Y	13.06.2017	17:00:00
DCPA02	001		13.06.2017,09:01:56	13.06.2017,09:01:56	00:00:00	C	0000	DMY	Y	13.06.2017	09:00:00
DCPA02	010	DCPJ01	13.06.2017,17:01:58	13.06.2017,17:03:27	00:01:29	C	0000	WAIT	Y	13.06.2017	17:00:00
DCPA02	010	DCPJ01	13.06.2017,09:01:56	13.06.2017,09:03:24	00:01:28	C	0000	WAIT	Y	13.06.2017	09:00:00
DCPA02	020	DCPJ02	13.06.2017,17:01:58	13.06.2017,17:05:58	00:04:00	C	0000	CPU	Y	13.06.2017	17:00:00
DCPA02	020	DCPJ02	13.06.2017,09:02:29	13.06.2017,09:06:30	00:04:00	C	0000	CPU	Y	13.06.2017	09:00:00
DCPA02	030	DCPJ03	13.06.2017,17:01:58	13.06.2017,17:05:27	00:03:29	C	0000	WAIT	Y	13.06.2017	17:00:00
DCPA02	030	DCPJ03	13.06.2017,09:01:56	13.06.2017,09:05:24	00:03:28	C	0000	WAIT	Y	13.06.2017	09:00:00

Result Table

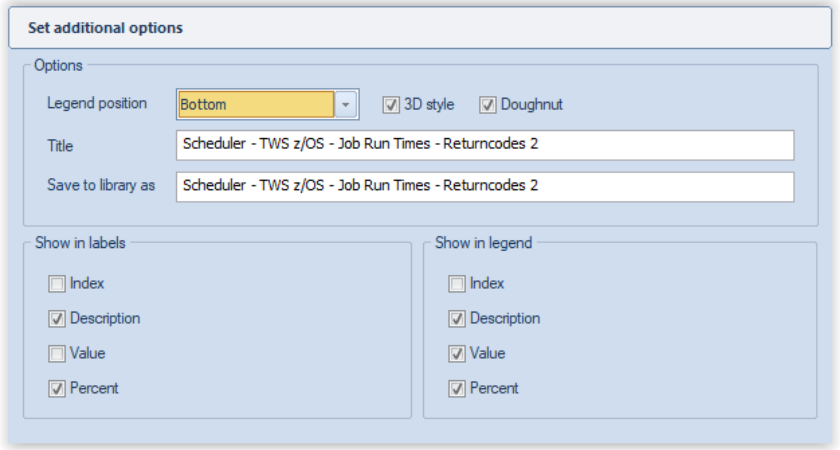
Chart Step 2 – Presentation Description

Presentation Type



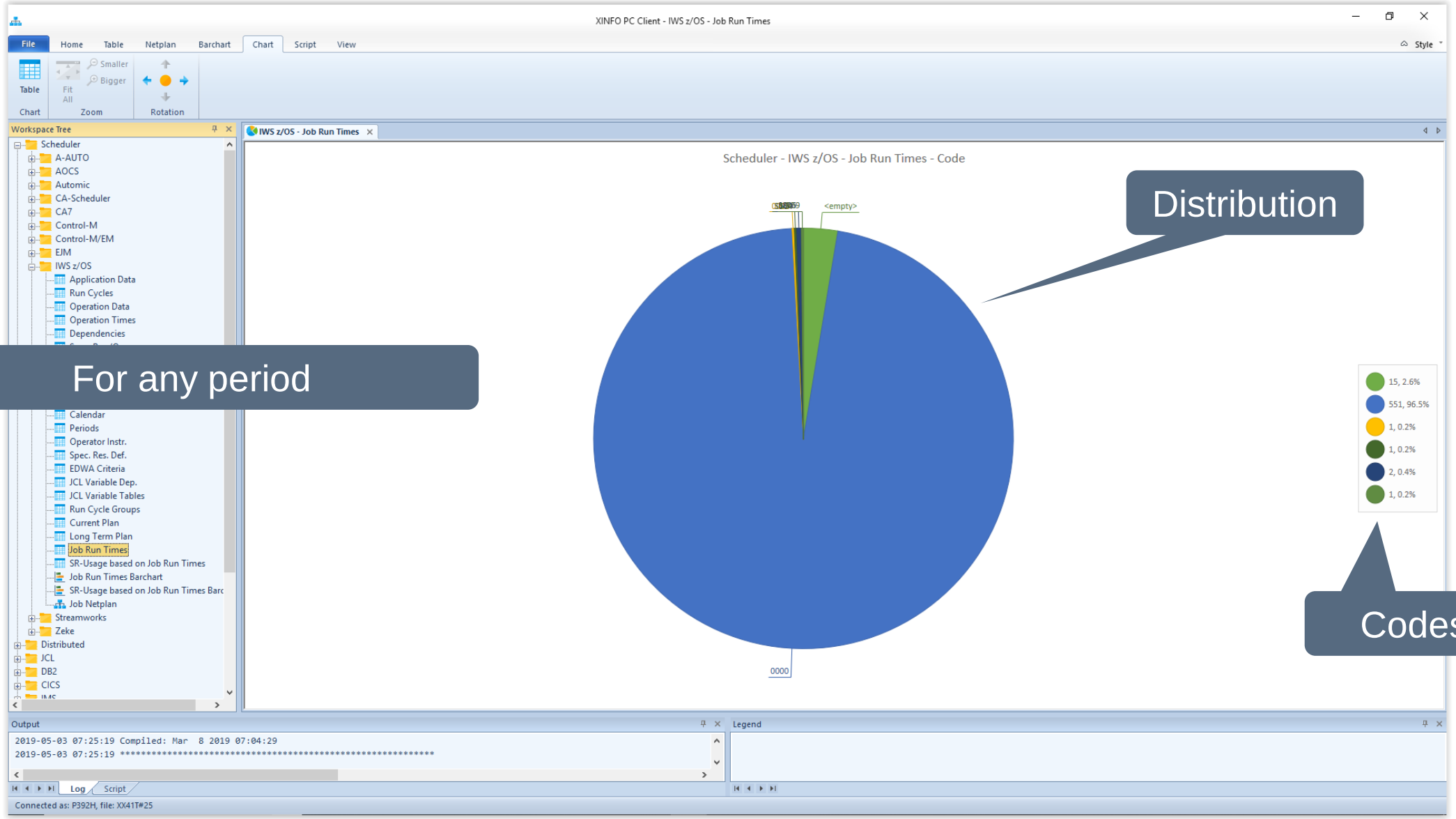
Select data fields

and finished



Legend

Chart: Job Status History

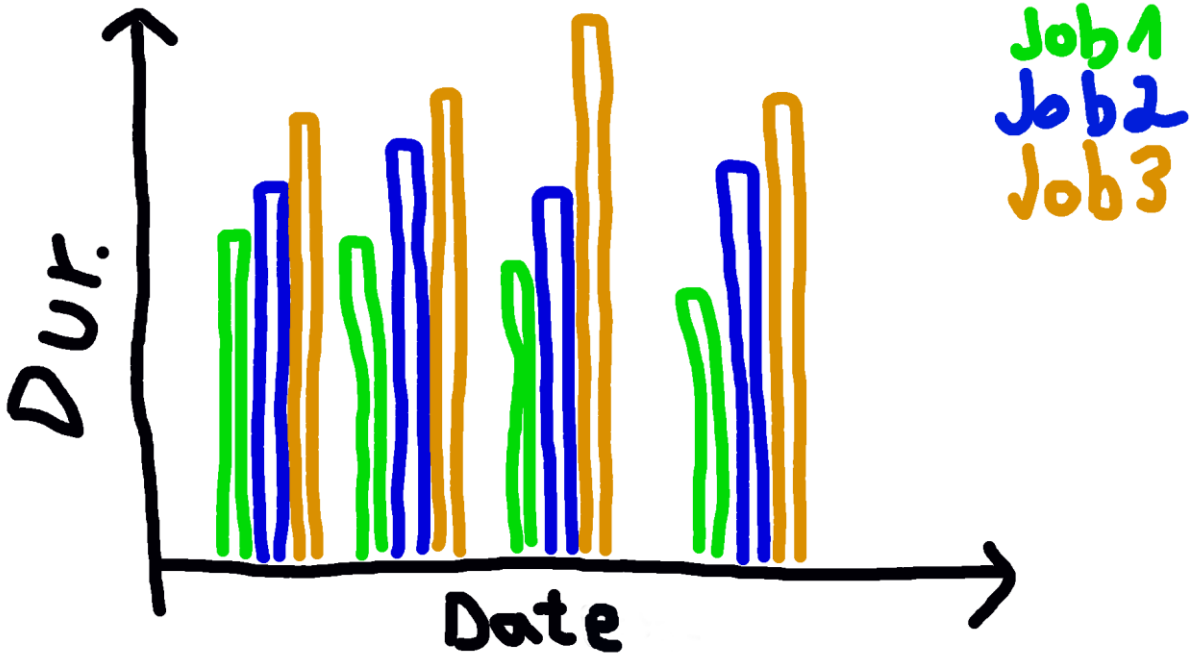


For any period

Distribution

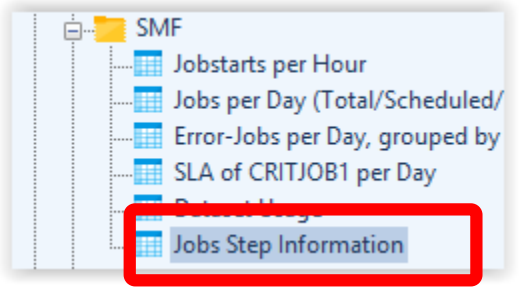
Codes

Run-time Variations



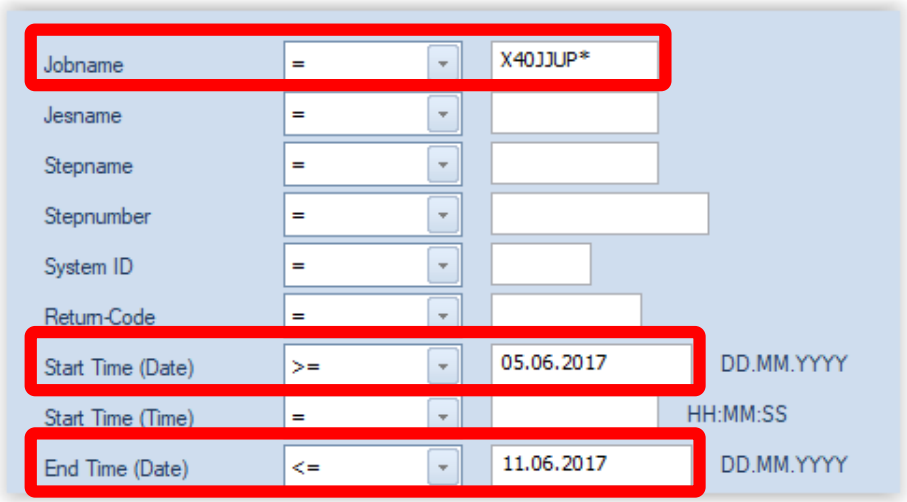
How it works
with XINFO Charts

Chart Step 1 – Data Provisioning



Data Source

+



Selection

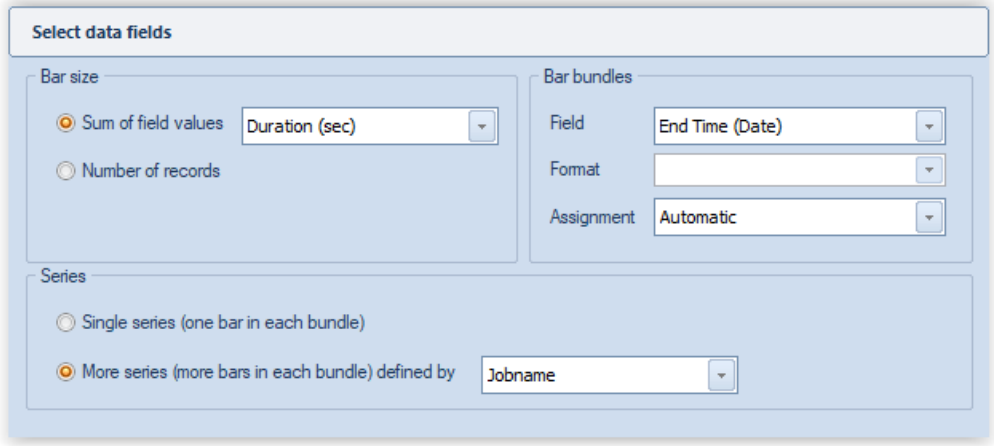
=

Jobname	Jesname	Stepname	Stepnumber	System ID	Return-Code	Start Time (Date)	Start Time (Time)	End Time (Date)	End Time (Time)	Duration (sec)	Time since Submit	CPU-Time (sec)	EXCP	Submit Time (Date)
X40JJUPM	JOB10772	MDB2USQL	35	S0W1		11.06.2017	01:09:02	11.06.2017	01:09:10	8	212	1	1362	11.06.2017
X40JJUPM	JOB10772	MJOBDBDX	34	S0W1		11.06.2017	01:08:59	11.06.2017	01:09:02	3	208	0	86	11.06.2017
X40JJUPM	JOB10772	MDB2UTS	33	S0W1		11.06.2017	01:08:57	11.06.2017	01:08:59	2	206	0	118	11.06.2017
X40JJUPM	JOB10772	MDB2UT1	32	S0W1		11.06.2017	01:08:53	11.06.2017	01:08:57	4	203	0	462	11.06.2017
X40JJUPM	JOB10772	MXXRTOJV	31	S0W1		11.06.2017	01:08:50	11.06.2017	01:08:53	3	200	0	134	11.06.2017
X40JJUPM	JOB10772	MXXRTCCR	30	S0W1		11.06.2017	01:08:49	11.06.2017	01:08:50	1	199	0	91	11.06.2017
X40JJUPM	JOB10772	MXXRTAFT	29	S0W1		11.06.2017	01:08:47	11.06.2017	01:08:49	3	196	0	136	11.06.2017
X40JJUPM	JOB10772	MXXRTBFR	28	S0W1		11.06.2017	01:08:44	11.06.2017	01:08:46	3	193	0	136	11.06.2017
X40JJUPM	JOB10772	MXXRTJBS	27	S0W1		11.06.2017	01:08:42	11.06.2017	01:08:44	1	192	0	89	11.06.2017
X40JJUPM	JOB10772	MXXRTGJB	26	S0W1		11.06.2017	01:08:41	11.06.2017	01:08:42	1	191	0	86	11.06.2017
X40JJUPM	JOB10772	MXXRTJGR	25	S0W1		11.06.2017	01:08:38	11.06.2017	01:08:41	4	187	0	139	11.06.2017
X40JJUPM	JOB10772	MXXRTSCH	24	S0W1		11.06.2017	01:08:34	11.06.2017	01:08:38	4	184	0	144	11.06.2017
X40JJUPM	JOB10772	MXXRTEXP	23	S0W1		11.06.2017	01:08:31	11.06.2017	01:08:34	2	181	0	122	11.06.2017
X40JJUPM	JOB10772	MXXRTSTA	22	S0W1		11.06.2017	01:08:31	11.06.2017	01:08:31	1	181	0	128	11.06.2017
X40JJUPM	JOB10772	MXXRTSET	21	S0W1		11.06.2017	01:08:30	11.06.2017	01:08:31	1	180	0	104	11.06.2017
X40JJUPM	JOB10772	MXXRTCMD	20	S0W1		11.06.2017	01:08:27	11.06.2017	01:08:30	3	177	0	127	11.06.2017
X40JJUPM	JOB10772	MXXRTCMT	19	S0W1		11.06.2017	01:08:22	11.06.2017	01:08:27	5	172	0	436	11.06.2017

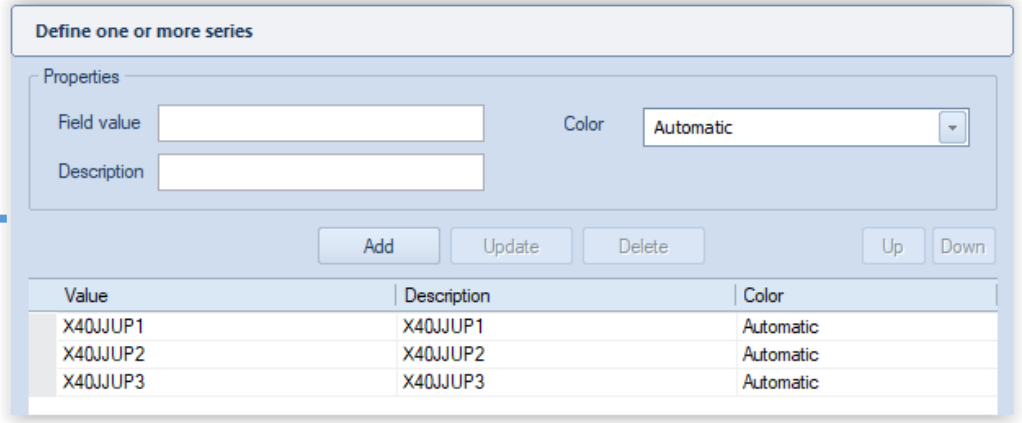
Result Table

Chart Step 2 – Presentation Description

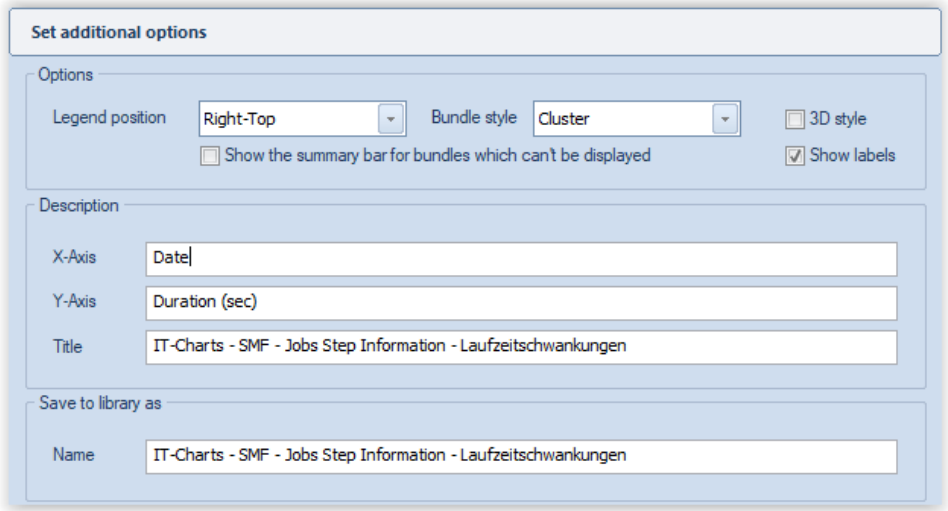
Presentation Type



Select Data Fields



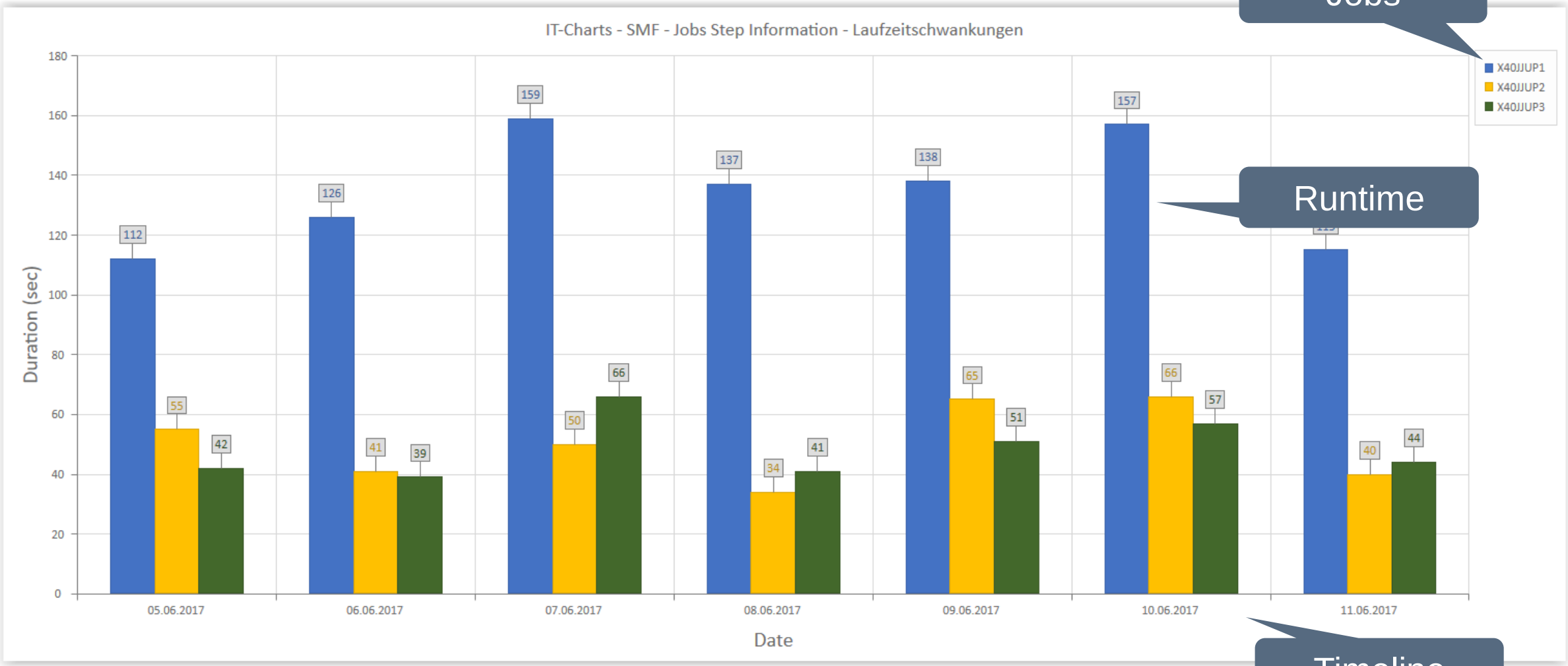
Curve Presentation



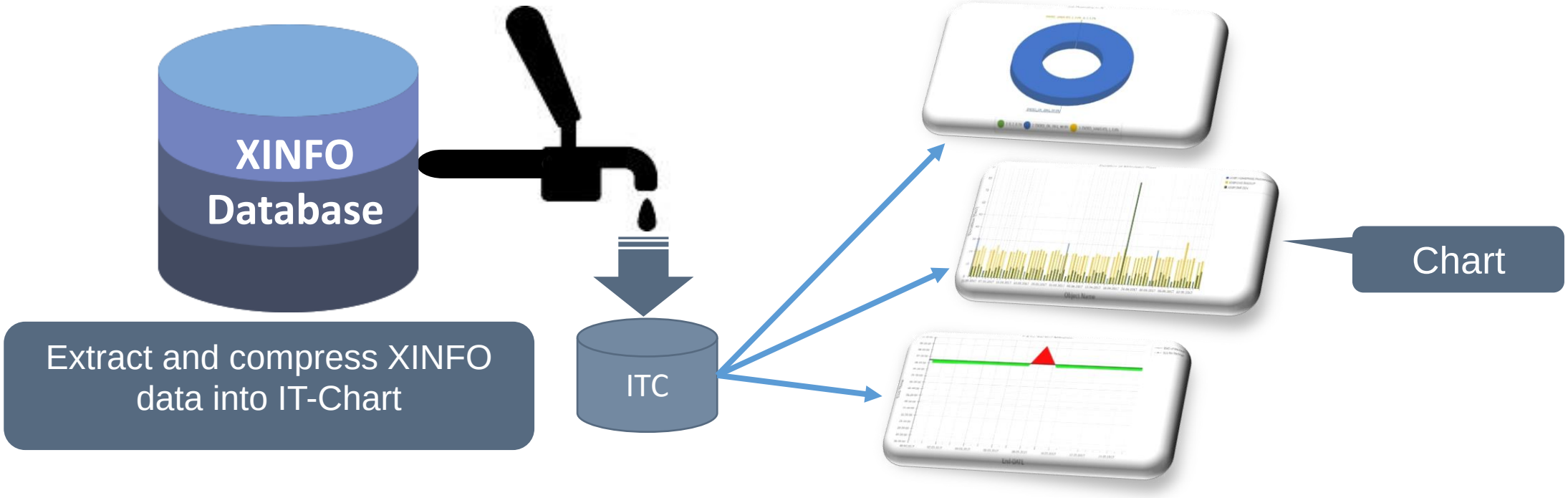
Legend

finished

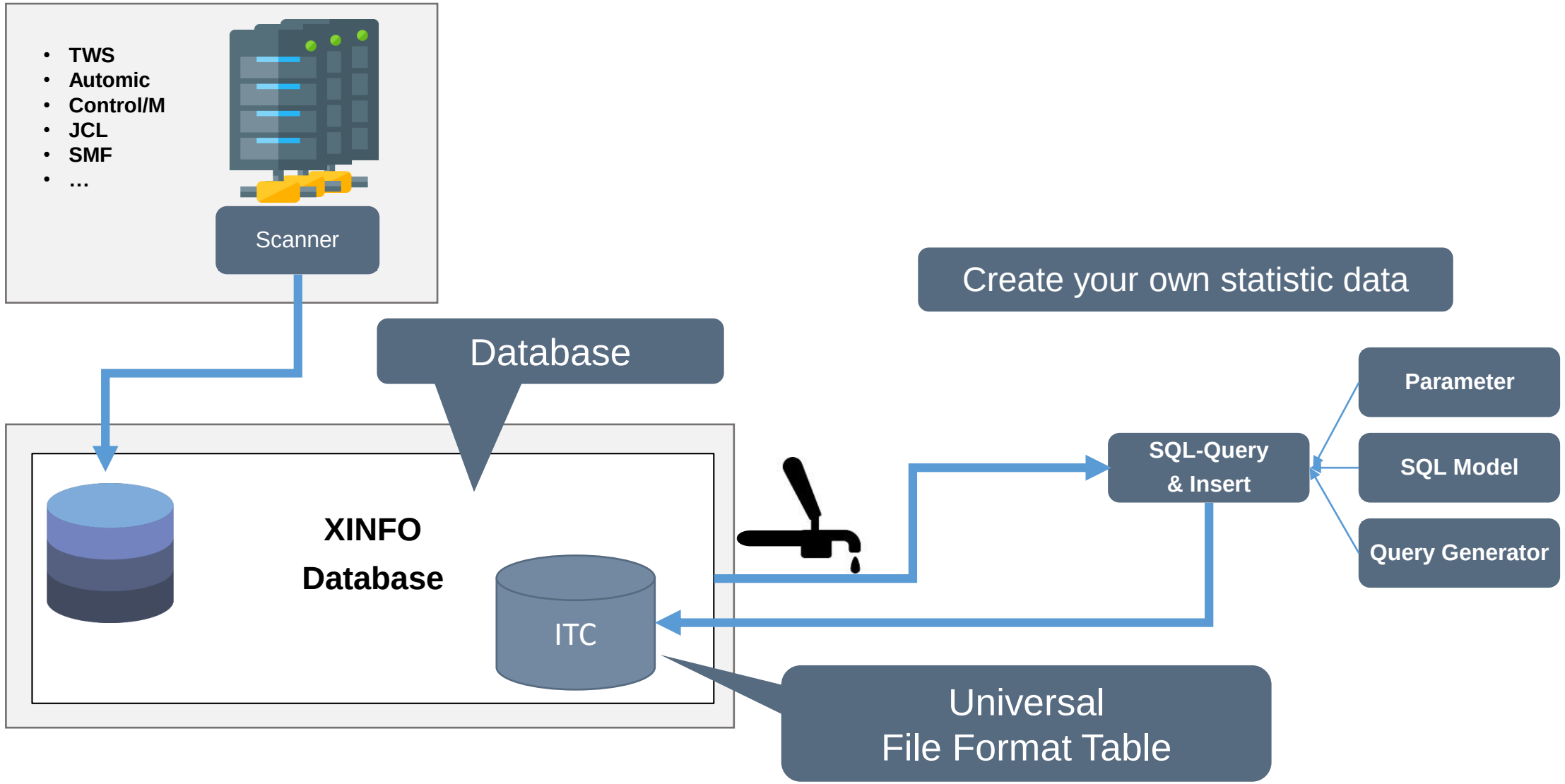
Chart: Runtime Variations



IT- Charts


XINFO
Database
Extract and compress XINFO data into IT-Chart
ITC
Chart

Build IT-Chart Data



Statistic data for IT Charts

ITC

XXRDAT CLIENT	XXRDA TENV	XXRDAT INFO	ITCGRAP HTYPE	ITCCUR VE	ITCX	ITCY	ITCYEA R	ITCMON TH	ITCDAY	ITCQUA RTER	ITCWEE K	ITCHOU R	…
HORIZONT	PROD	INFO	ITCTWSZOPR	1	20170801	2566	2017	08	01	3	31	0	

SQL result

Set automatic

Scheduler variable

XINFO table to select

```
&TDATE. HORIZONT PROD INFO ITCTWSZOPR 1 XXRTOP
WHERE ("ADRWSID" LIKE 'CP%')
```

Timestamp
YYYYMMDD

Every graph type need a XINFO display definition

Workflow

Parameter

SQL Model

Count

SUM

End Time

SQL Generator

SQL

Call Insert SQL

Sample JCL

XXRDAT CLIENT	XXRDAT ENV	XXRDATI NFO	ITCGRAPHT YPE	ITCCURVE	ITCX	ITCY	ITCYEAR	ITCMONT H	ITCDAY	ITCQUAR TER	ITCWEEK	ITCHOUR	…
HORIZONT	PROD	INFO	ITCTWSZOPR	1	20170801	2566	2017	08	01	3	31	0	

SQL result

JCL

```
//S010    EXEC ITCJ2TSO,MODEL=ITCSQCNT
//*****************************************
//* GENERATE ITC INSERT SQL AND CALL IT
//*****************************************
//PARAM    DD *
&TDATE. HORIZONT PROD INFO ITCTWSZOPR 1 XXRTOI
 WHERE ("ADRWSID" LIKE 'CP%')
```

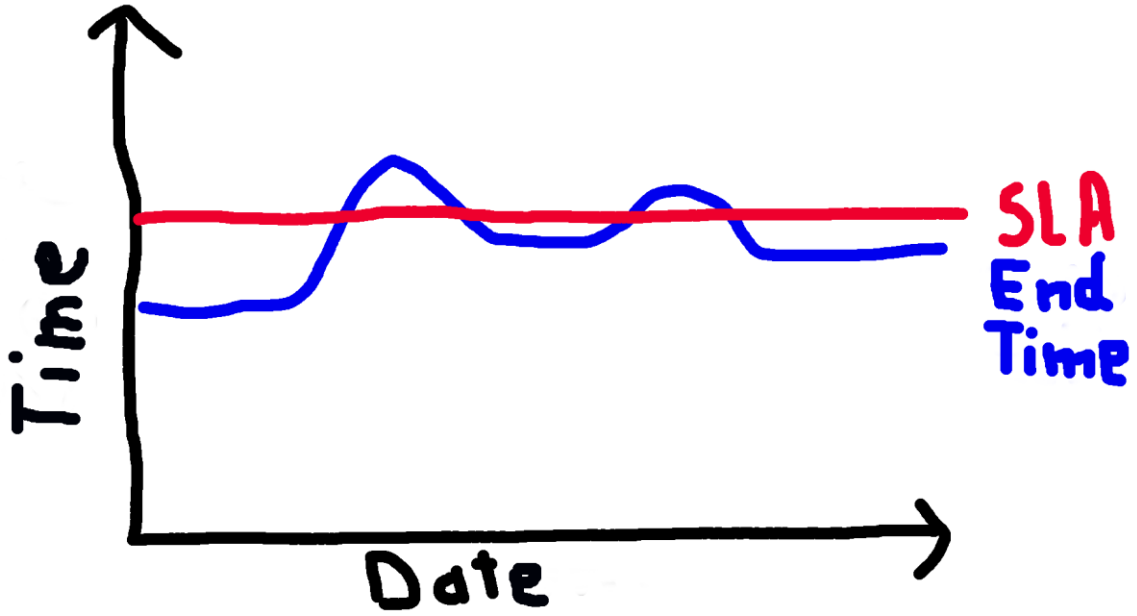
Model

```
INSERT INTO XXR41.XXRTITC
(XXRDATCLIENT,XXRDATENV,XXRDATINFO,ITCGRAPHTYPE,ITCCURVE,ITCX,ITCY,
 ITCYEAR,ITCMONTH,ITCDAY,ITCQUARTER,ITCWEEK,ITCHOUR,ITCMINUTE,ITCSECOND,
 ITCFILLUP)
 VALUES
 ('$V2.','$V3.','$V4.','$V5.','$V6.',
 '$V1.',
 (SELECT COUNT(*) AS NUMBER
  FROM XXR41.$V7.
)SEL
  )
 '$ITCYEAR.','$ITCMONTH.','$ITCDAY.',
 (SELECT VARCHAR_FORMAT(TIMESTAMP_FORMAT('$V1.','YYYYMMDD'),'Q')
 FROM SYSIBM.SYSDUMMY1),
 (SELECT VARCHAR_FORMAT(TIMESTAMP_FORMAT('$V1.','YYYYMMDD'),'WW')
 FROM SYSIBM.SYSDUMMY1),
'$ITCHOUR.','0','0','N');
```

select variable

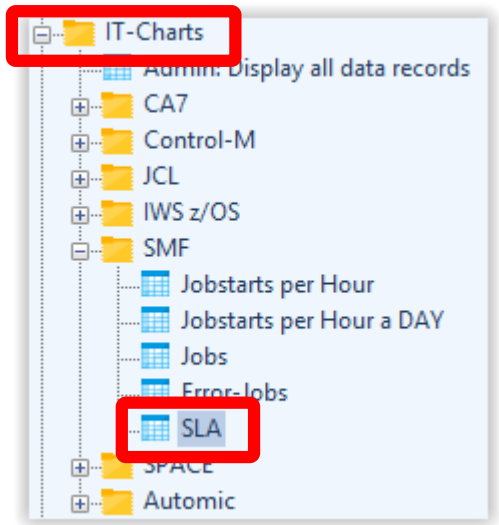
Where clause

SLA Runtimes



How it works
with XINFO Charts

Chart Step 1 – Data Provisioning



Data Source

+

Year	=	2019
Month	=	4

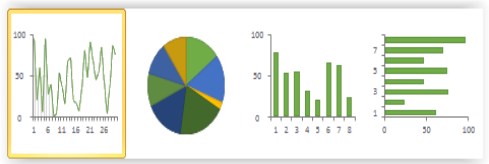
Selection

=

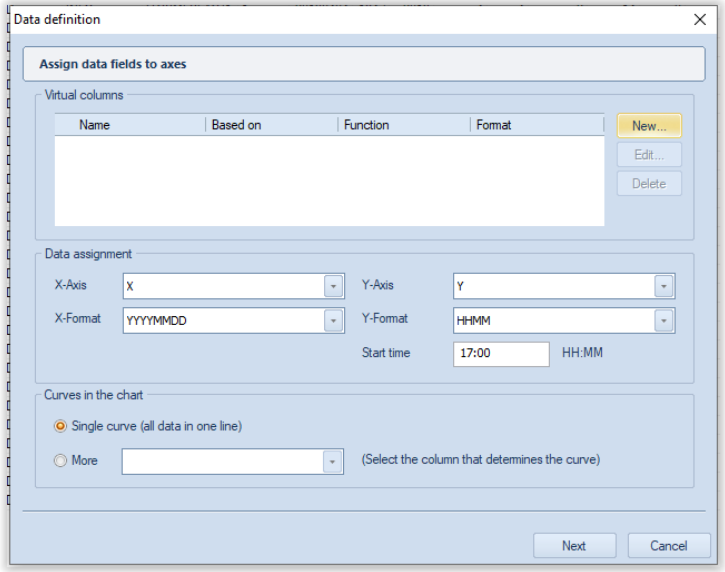
Client	Environment	DatAddInfo	Graphic-Type	Curve	X	Y	Year	Month	Day	Quarter	Week	Hour	Minute	Second	Fillup
HORIZONT	PROD	INFO	ITCSMFSLACJ1	1	20190401	1859	2019	4	1	2	13	0	0	0	N
HORIZONT	PROD	INFO	ITCSMFSLACJ1	1	20190402	1858	2019	4	2	2	14	0	0	0	N
HORIZONT	PROD	INFO	ITCSMFSLACJ1	1	20190403	1848	2019	4	3	2	14	0	0	0	N
HORIZONT	PROD	INFO	ITCSMFSLACJ1	1	20190404	1847	2019	4	4	2	14	0	0	0	N
HORIZONT	PROD	INFO	ITCSMFSLACJ1	1	20190405	1851	2019	4	5	2	14	0	0	0	N
HORIZONT	PROD	INFO	ITCSMFSLACJ1	1	20190408	1859	2019	4	8	2	14	0	0	0	N

Result Table

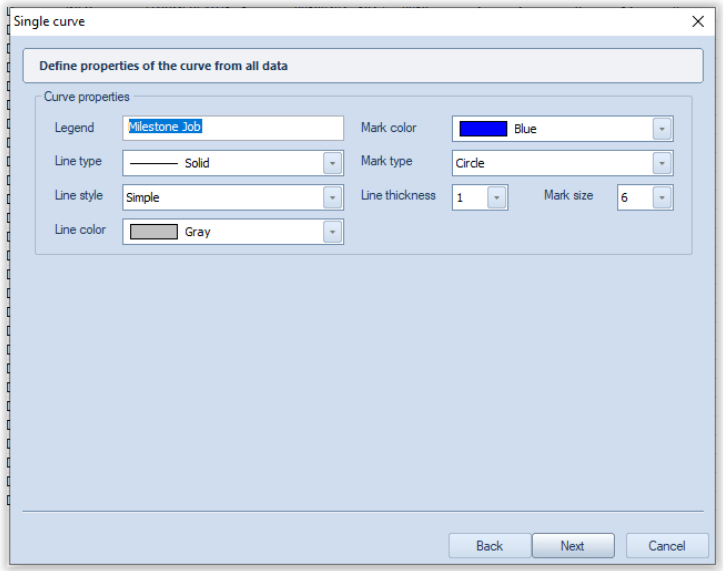
Chart Step 2 – Presentation Description



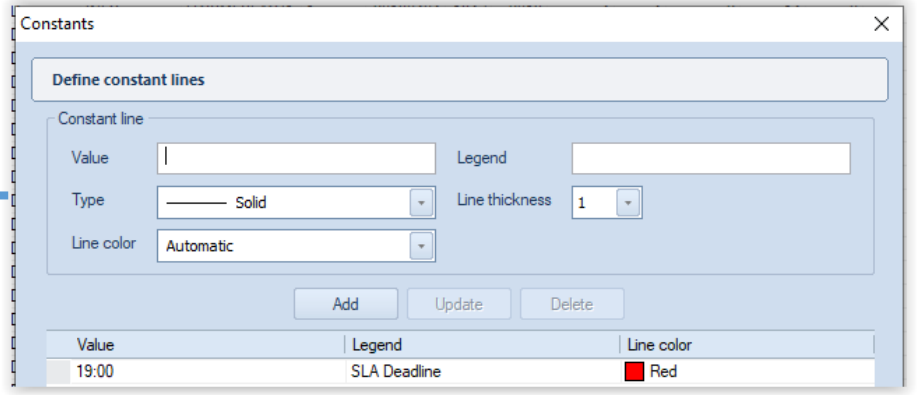
Presentation Type



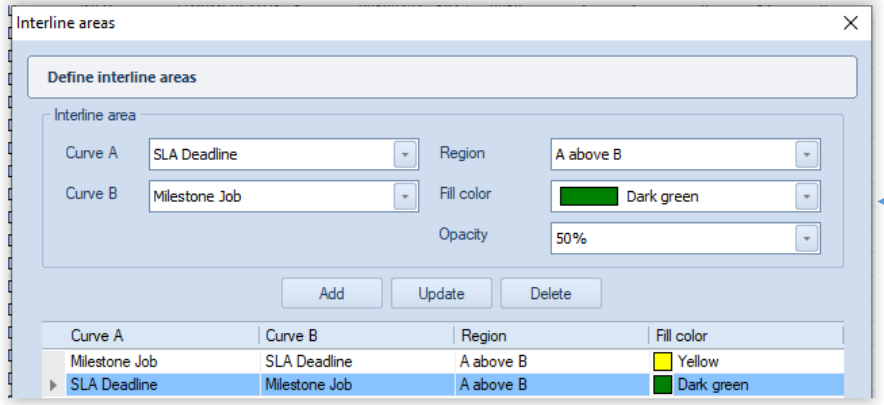
Assigning Axes



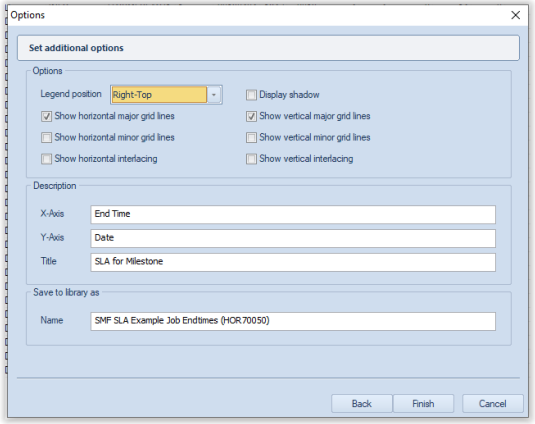
Curve Presentation



SLA Constant

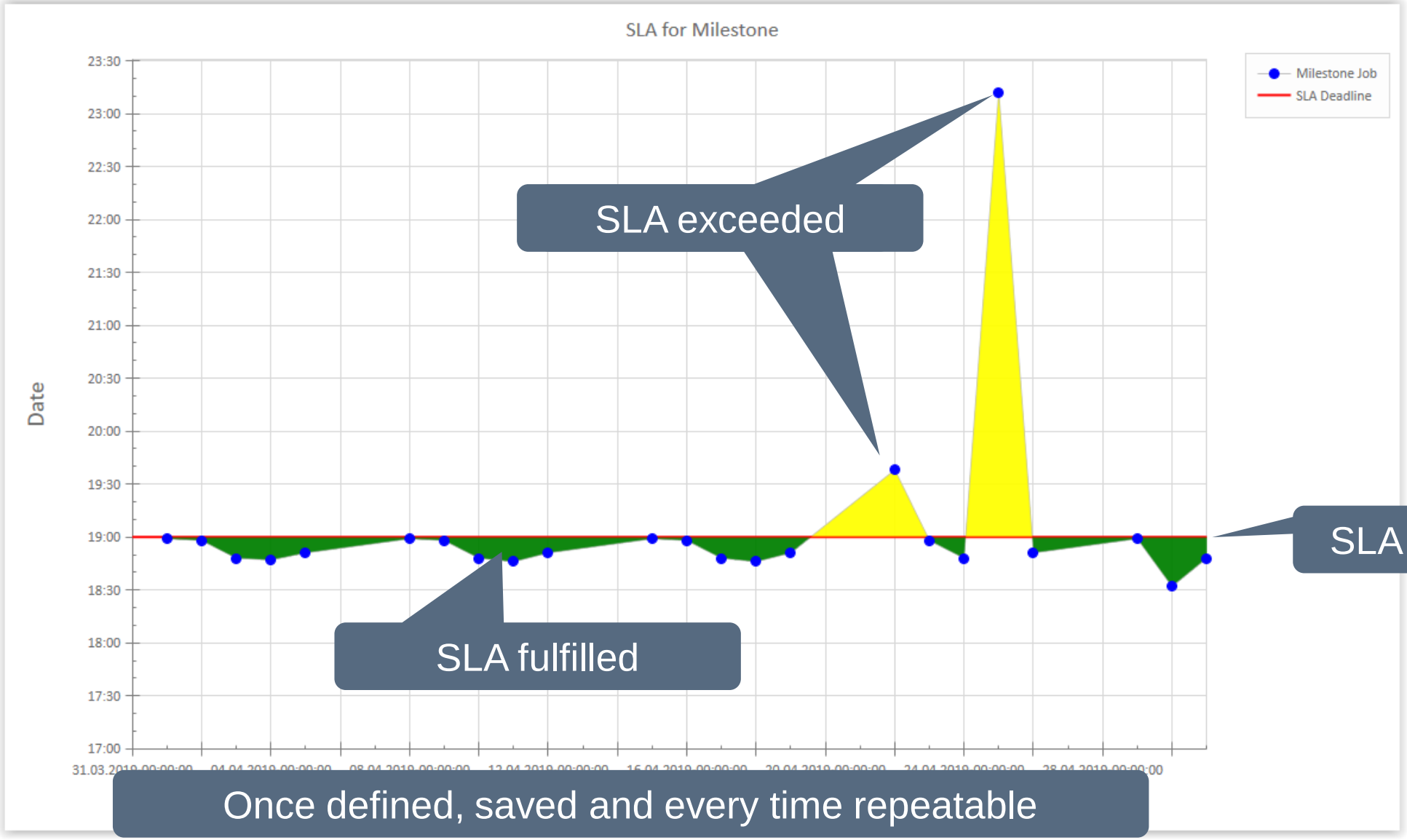


Interline Areas

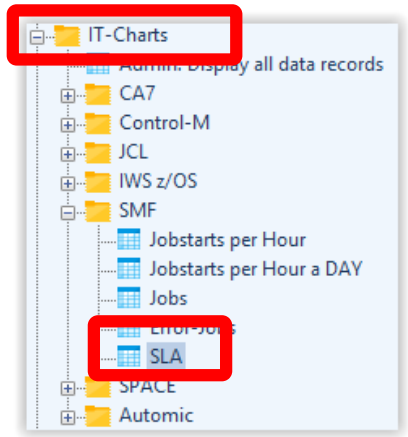


Legend

Chart: SLA Runtime

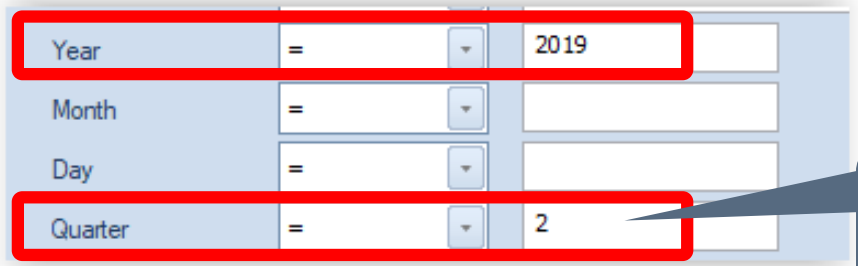


Usage of defined Chart



Data Source

+



Selection

Special IT-Chart field

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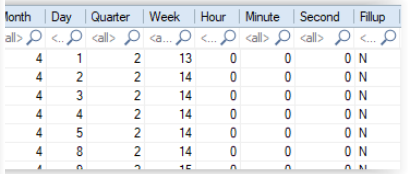
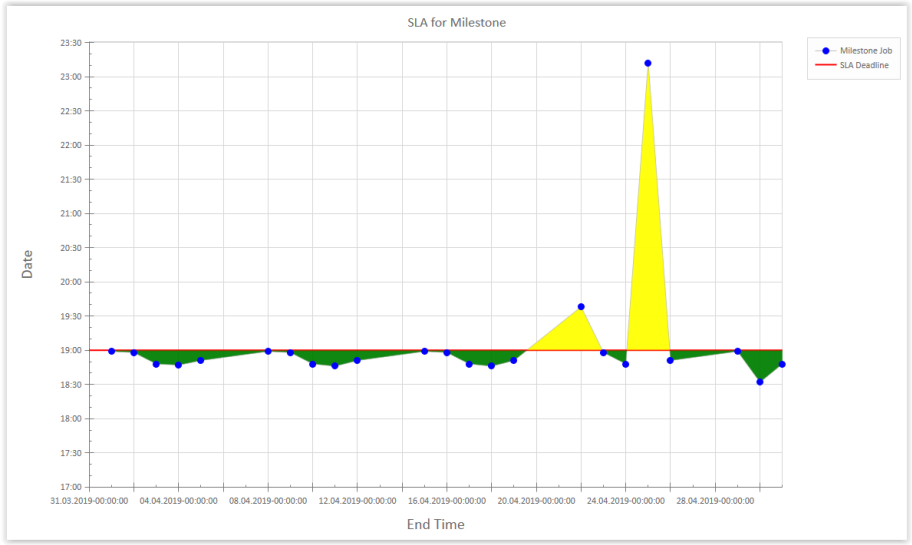
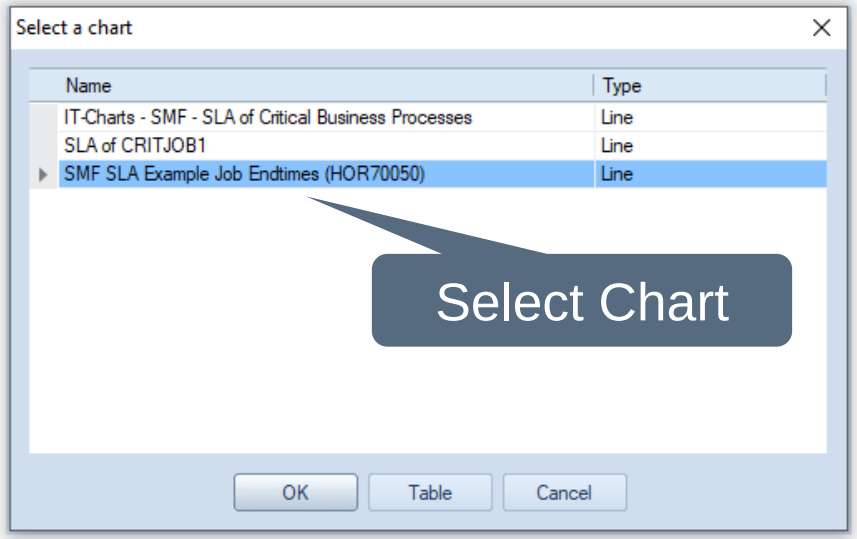


Result Table

Only in background

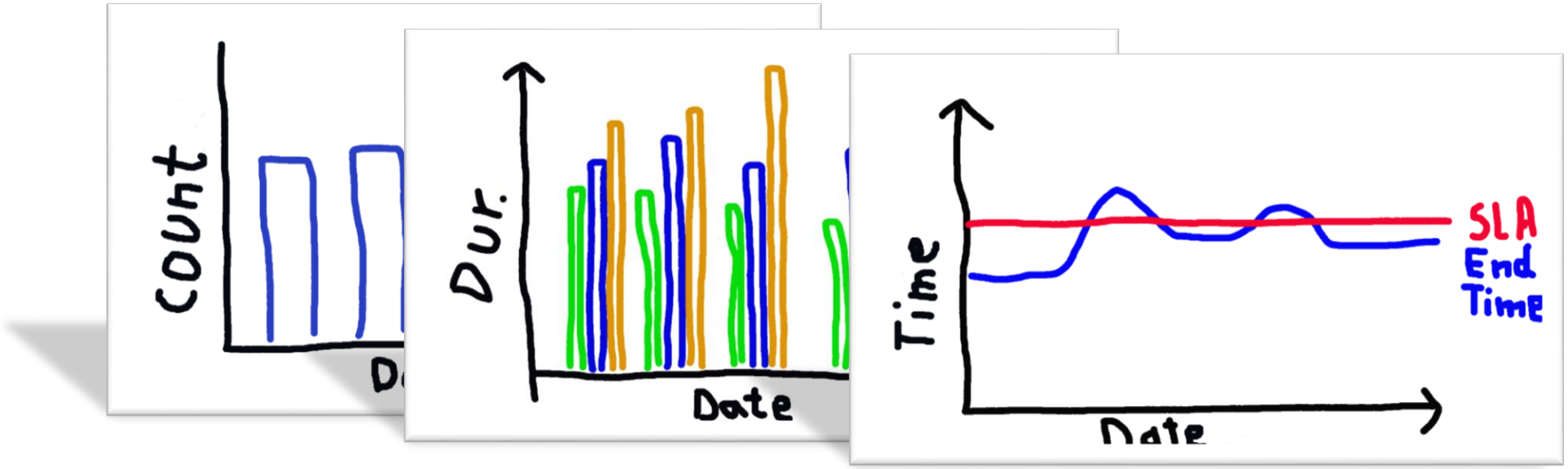


Display Chart



Select Chart definition

More examples



How it works
with XINFO Charts

Chart Example: Several SLA

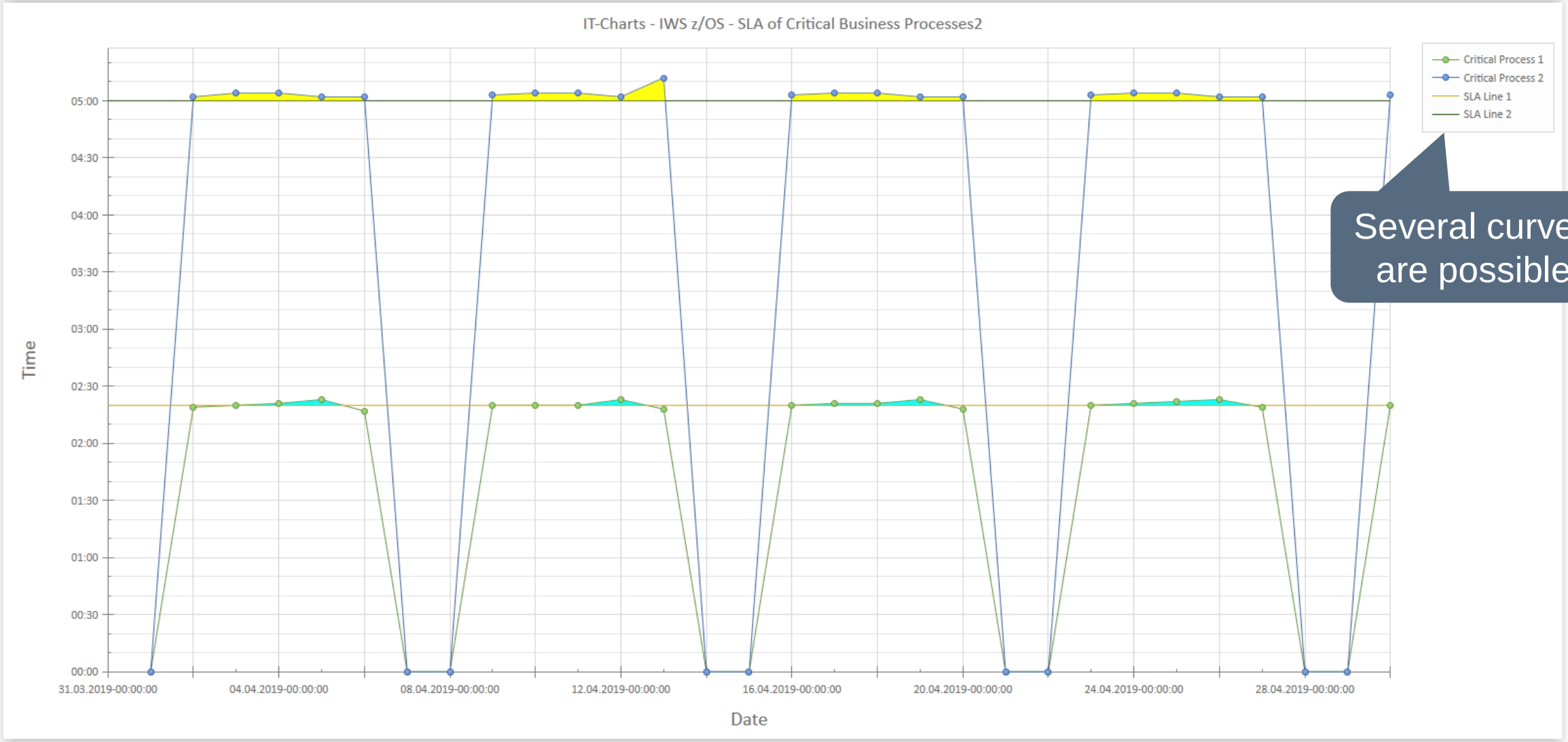


Chart Example: Number of Operations

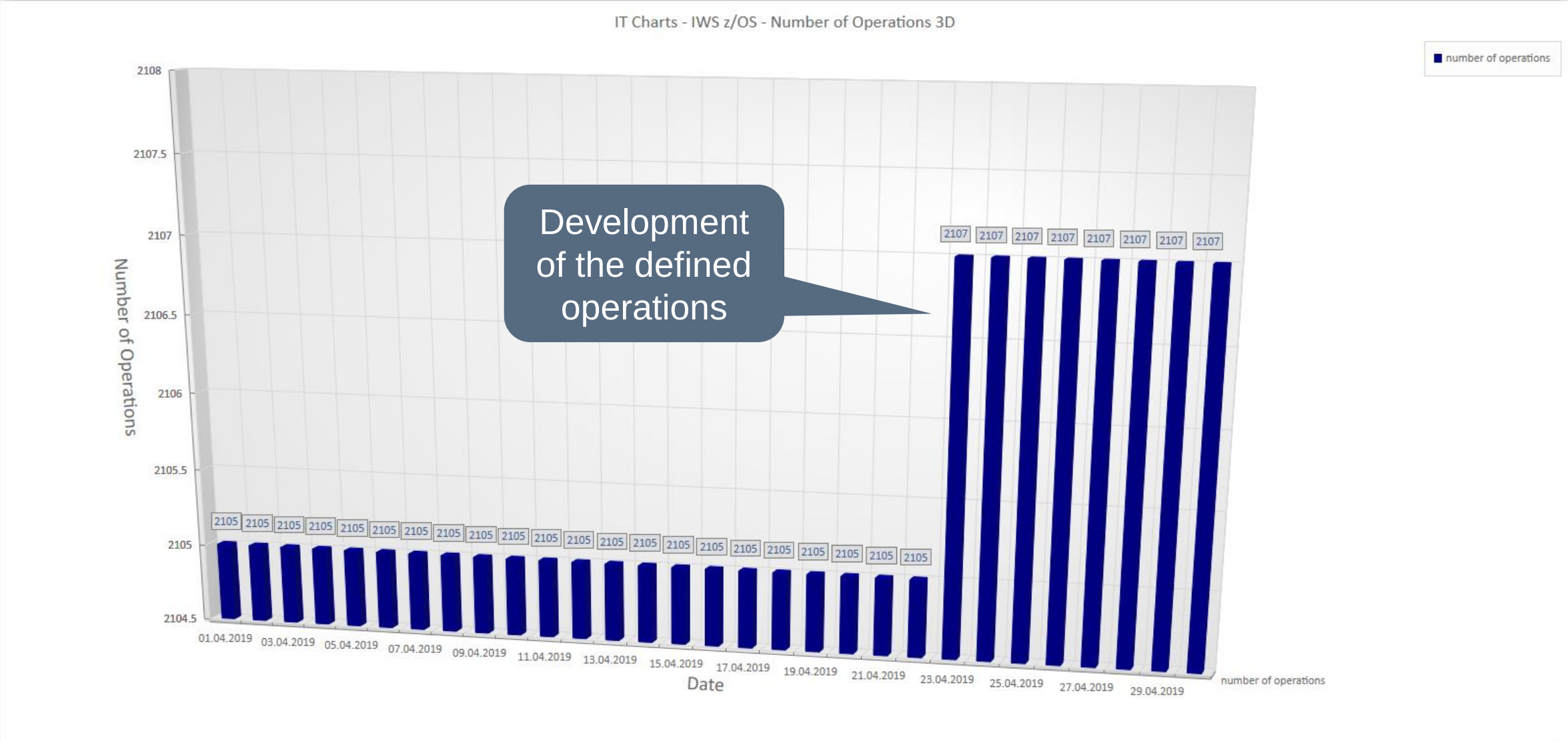


Chart Example: History EXEC Calls JCL

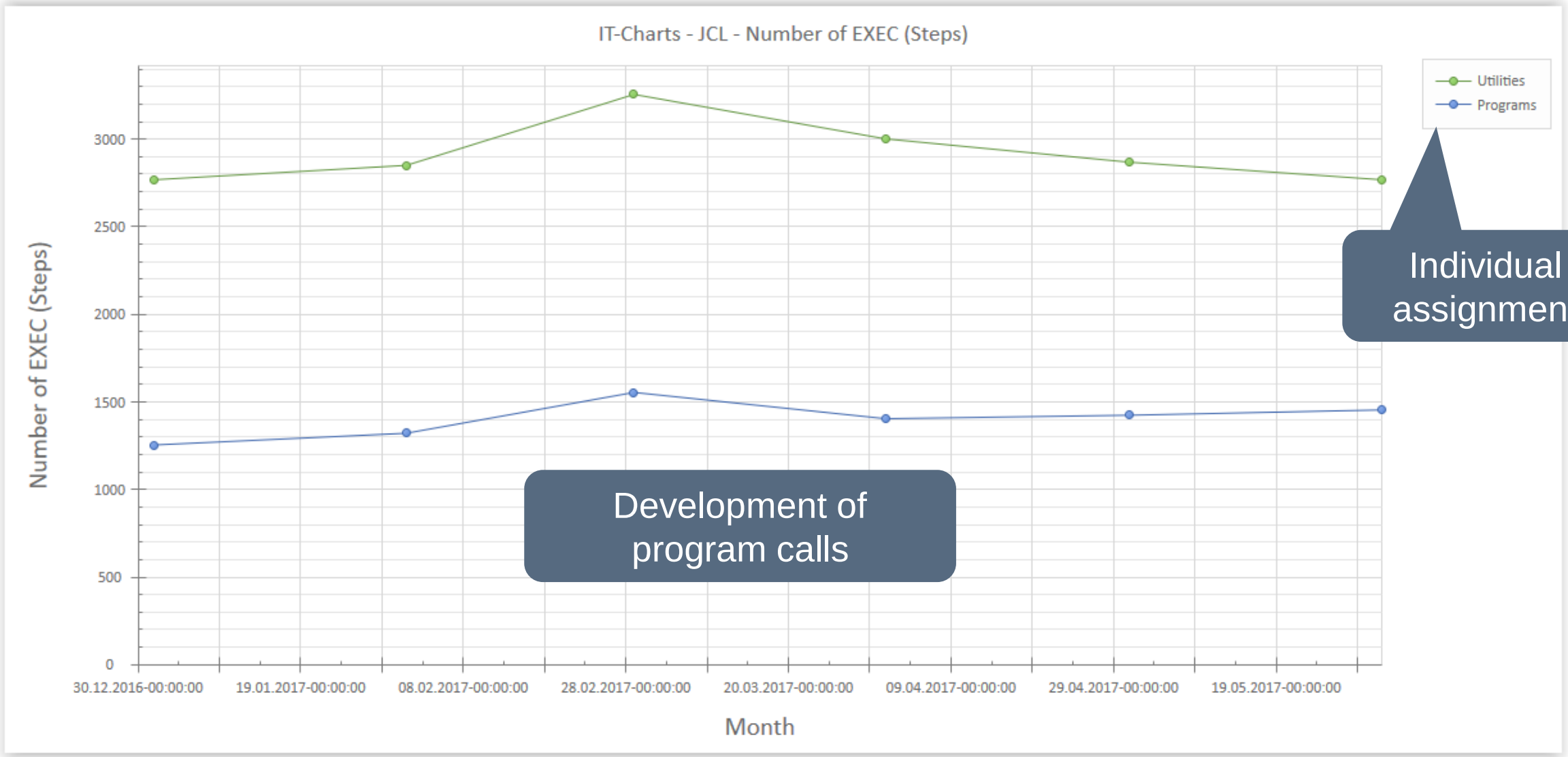
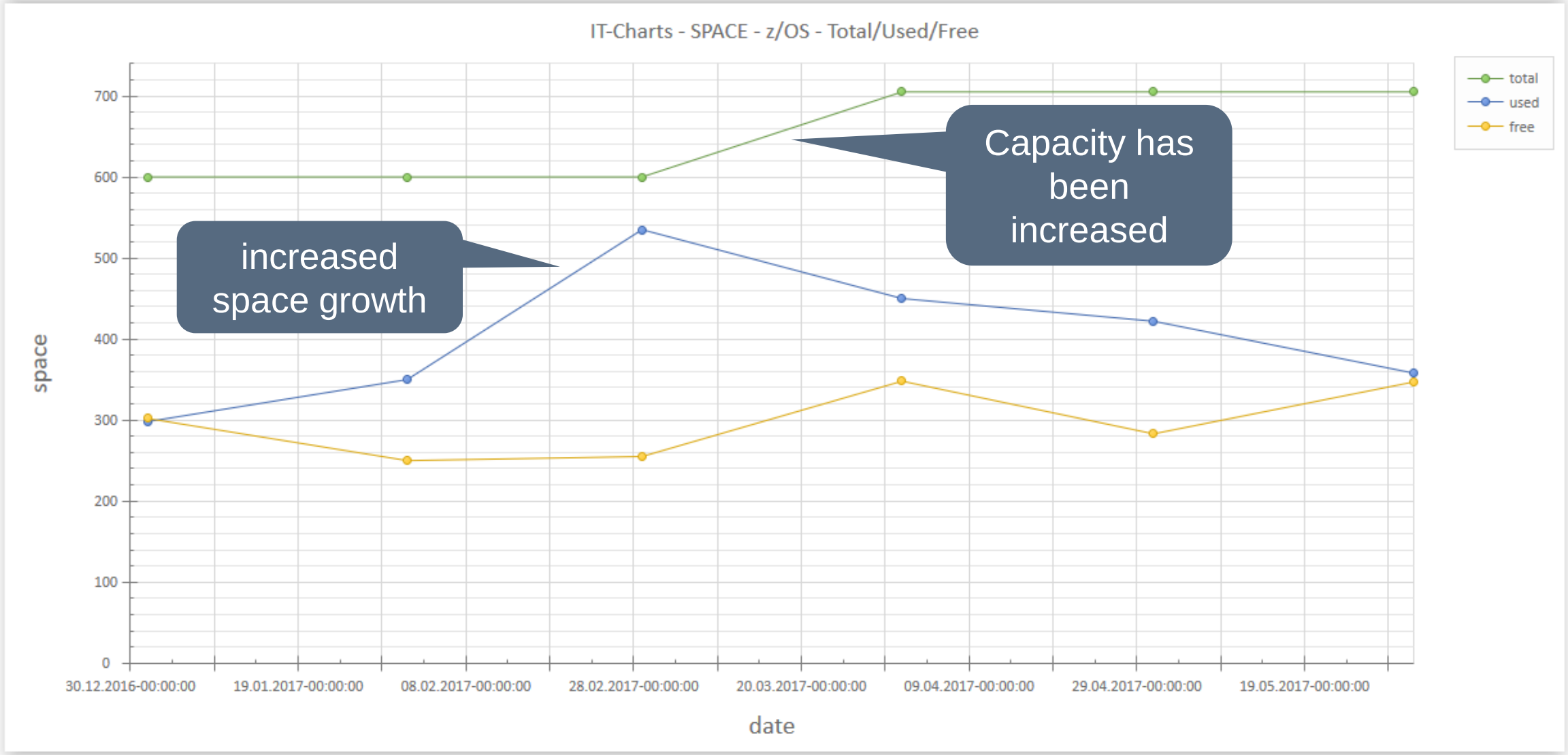


Chart Example: Space Utilization



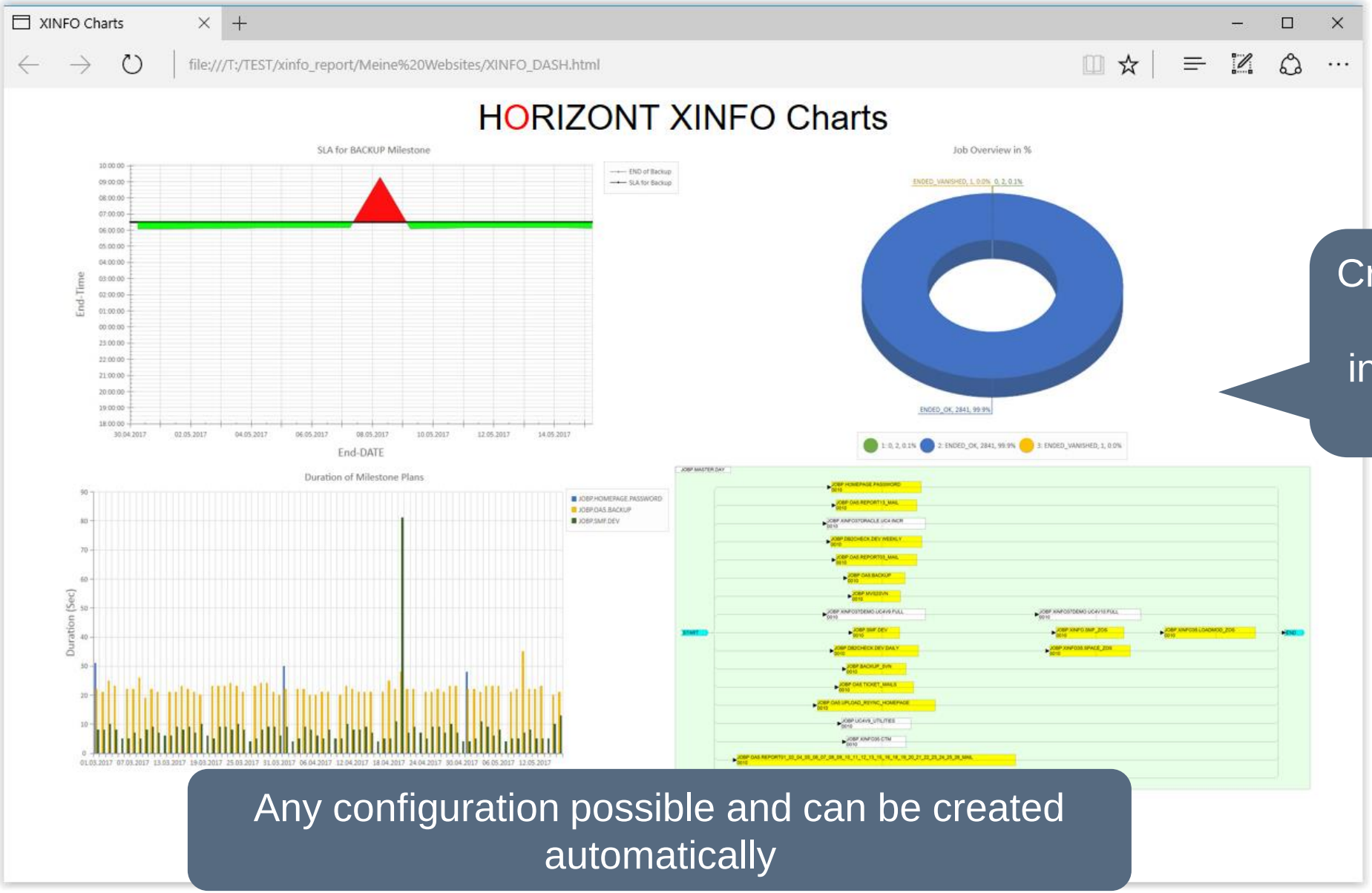
There is much more...

- Line chart
  - IT-Charts - JCL - Number of EXEC (Steps)
  - IT-Charts - SMF - Jobs per Day (Total/Scheduled/User)
  - IT-Charts - SMF - Jobstarts per Hour
  - IT-Charts - SMF - SLA of CRITJOB1 per Day
  - IT-Charts - SPACE - z/OS - Total/Used/Free
  - IT-Charts - TWS z/OS - Error Jobstarts per Day
  - IT-Charts - TWS z/OS - Jobstarts per Hour
  - IT-Charts - TWS z/OS - Error Jobstarts per Hour
  - IT-Charts - TWS z/OS - Jobstarts per Month
  - IT-Charts - TWS z/OS - Error Jobstarts per Month
  - TWS z/OS - Number of Applications (year/previous year)
  - TWS z/OS - Number of Operations (year/previous year)
  - IT-Charts - TWS z/OS - SLA for Business Process Applicat
  - IT-Charts - Control-M - Job History
  - IT-Charts - SMF - Dataset Usage
  - IT-Charts - TWS z/OS - Job Run Times
  - IT-Charts - UC4 - Runtimes

- Vertical bar chart
  - SMF - Job Information
  - IT-Charts - Control-M - Number of Jobs (year/previous year)
  - Control-M - Number of Tables (year/previous year)
  - SMF - Error-Jobs per Day, grouped by CC, System-, User-Code
  - IT-Charts - SMF - Jobstarts per Hour
  - IT-Charts - TWS z/OS - Jobstarts per Day
  - IT-Charts - TWS z/OS - Jobstarts per Hour
  - IT-Charts - TWS z/OS - Jobstarts per Month
  - IT-Charts - TWS z/OS - Error Jobstarts per Month
  - TWS z/OS - Number of Operations (year/previous year)
  - IT-Charts - UC4 - Number of JOBPlans (year/previous year)
  - IT-Charts - UC4 - Number of JOBS (year/previous year)
  - IT-Charts - SMF - Jobs Step Information
  - IT-Charts - UC4 - Runtimes

- Pie chart
  - Scheduler - TWS z/OS - Job Run Times
  - Scheduler - Automic - Run-Data - Runtimes

Charts on the Web



Thanks for your attention! Do you have any questions?

HORIZONT

Please feel free to visit us in Munich or send an email to

info@horizont-it.com