

Planning Db2 V12 @ KBC

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Agenda

1. Time line
2. Premigration checks
3. Measurements
4. Features
5. Questions

1. Time line

- Project of 1 year, 300 Md, described in a Project Charter, monthly reporting to steering committee.
- Migration in phases (starting from V11 NFM)
 - TREL Nov : Db2 tools
 - TREL Jan : early code
 - TREL May : V12R1M100
 - TREL June : V12R1M500
- A lot of interaction between involved departments : Db2, system, storage, CPT, DBAs, product owners, project management, release coordination, business, external client, ... to put a calendar together and implement the new version.

1. Time line : Db2s to migrate

	# subsyst.	2-way DS	4-way DS
Sandbox	4	2	
DEV	14	2	
ACPT	14	4	4
PROD	14	4	4

1. Time line

Kickoff

Bestellen BMC V12.1 tools

Sandbox : SMPE installatie BMC tools

Premigration checks

ONT : Upgrade BMC tools KBC + Extern1

ONT : Halfjaarlijkse Maintenance DB2 V11 voor KBC + Extern1

ACC : Upgrade BMC tools KBC + Extern1 + Extern2_Dev

ACC : Halfjaarlijkse Maintenance DB2 V11 voor KBC + Extern1

ACC : Halfjaarlijkse Maintenance DB2 V11 voor Extern2_Dev

PRO : Upgrade BMC tools KBC + Extern1

PRO : Halfjaarlijkse Maintenance DB2 V11 voor KBC + Extern1

PRO : Upgrade IDAA V5.1 PTF 5

Externe_Klant PRO : Upgrade BMC tools Extern2_Prod

Bestellen Db2 V12

TestPlex : SMPE-installatie Db2 V12

TestPlex : SANDBOX1/SANDBOX2 naar V12R1M100

TestPlex: fallback naar Db2 V11 NFM/FFM + hermigratie naar V12R1M100

Externe_Klant : Halfjaarlijkse Maintenance Db2 voor Extern2_Prod met TREL

Early code V12 met TREL

Externe_Klant Extern2_Sandbox : Upgrade naar V12R1M100

1. Time line

ONT : Upgrade naar V12R1M100 (TREL)

Dev_Agile (DEV1) : Upgrade naar V12R1M100

Extern1 ONT : Upgrade naar V12R1M100 (TREL)

ACC : Upgrade naar V12R1M100 (TREL)

Extern1 ACC : Upgrade naar V12R1M100 (TREL)

Externe_Klant Extern2_Dev : Upgrade naar V12R1M100

SANDBOX1 en SANDBOX2 naar DB2 V12R1M500

Externe_Klant Extern2_Sandbox : Upgrade naar V12R1M500

Extern1 PRO : Upgrade naar V12R1M100

PRO : Upgrade naar V12R1M100 (TREL)

Externe_Klant Extern2_Prod : Upgrade naar V12R1M100

Datarefresh

Dev_Agile : Upgrade DEV1 op Dev_Agile naar V12R1M500

ONT : Upgrade naar V12R1M500 (TREL)

Extern1 ONT : Upgrade naar V12R1M500

Datarefresh

ACC : Upgrade naar V12R1M500 (TREL)

Extern1 ACC : Upgrade naar V12R1M500

Externe_Klant Extern2_Dev : Upgrade naar V12R1M500

PRO : Upgrade naar V12R1M500 (TREL)

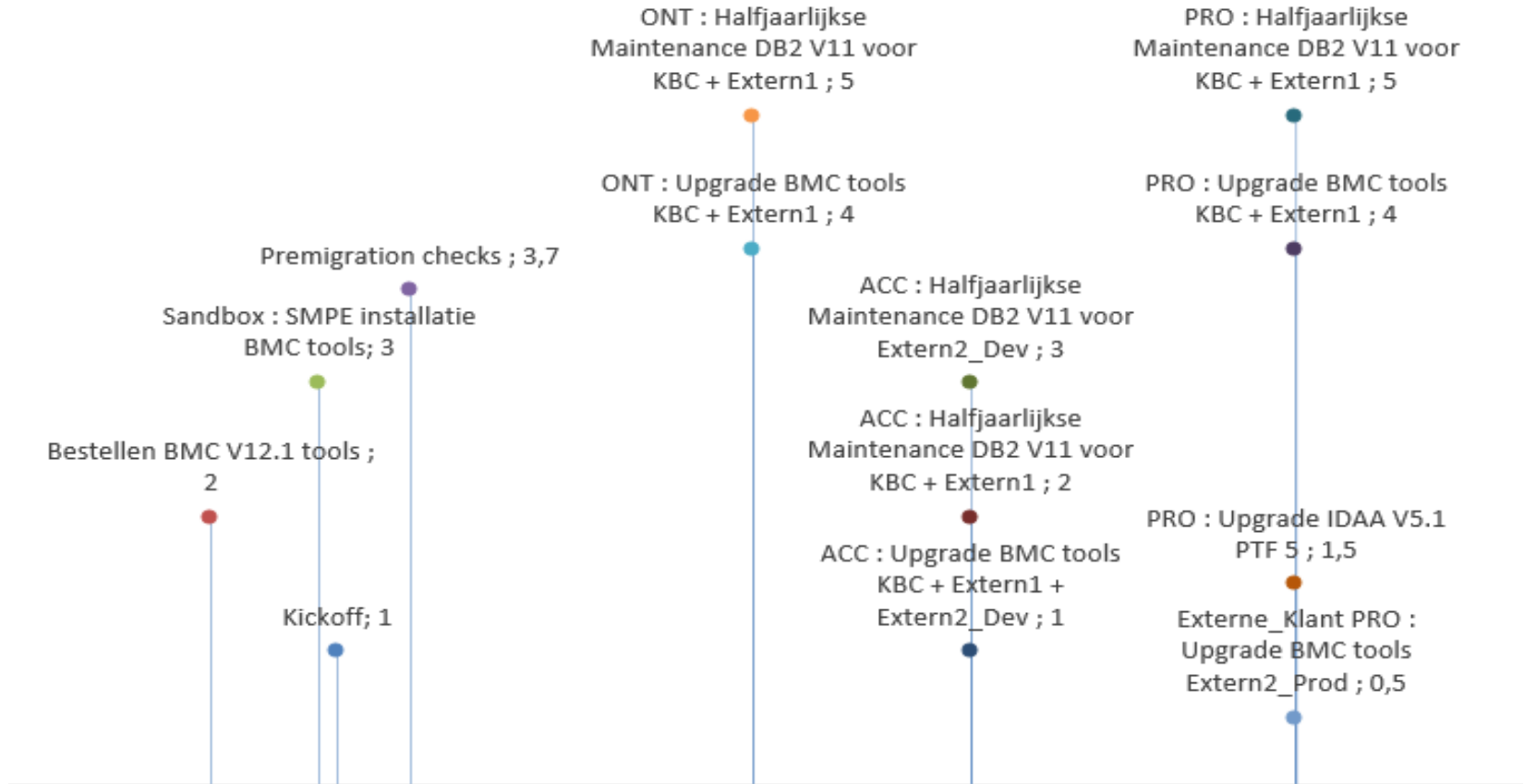
Extern1 PRO : Upgrade naar V12R1M500

Externe_Klant Extern2_Prod : Upgrade naar V12R1M500

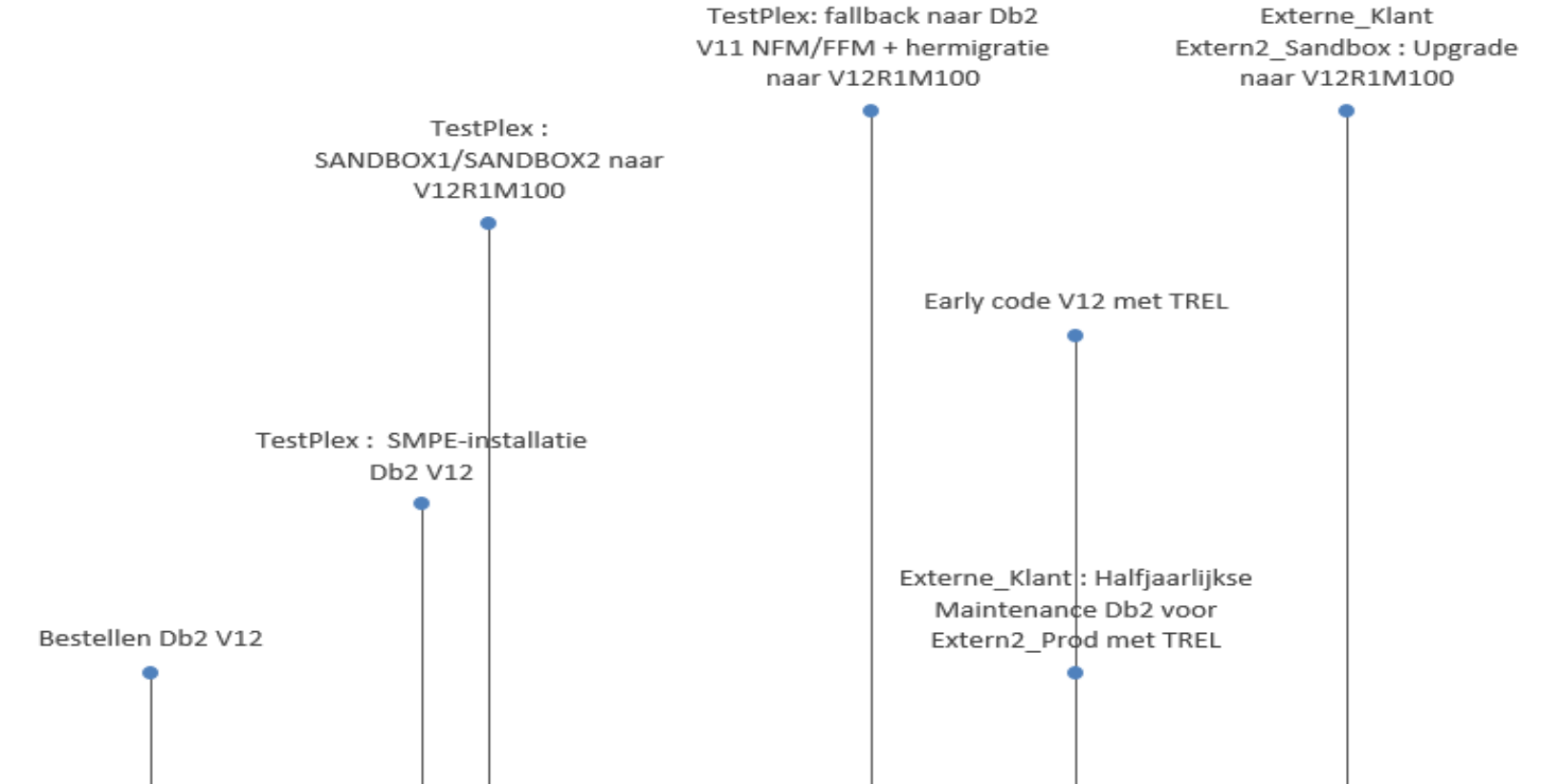
SANDBOX3 naar V12R1M100 en V12R1M500

Einde project 1/08/2018

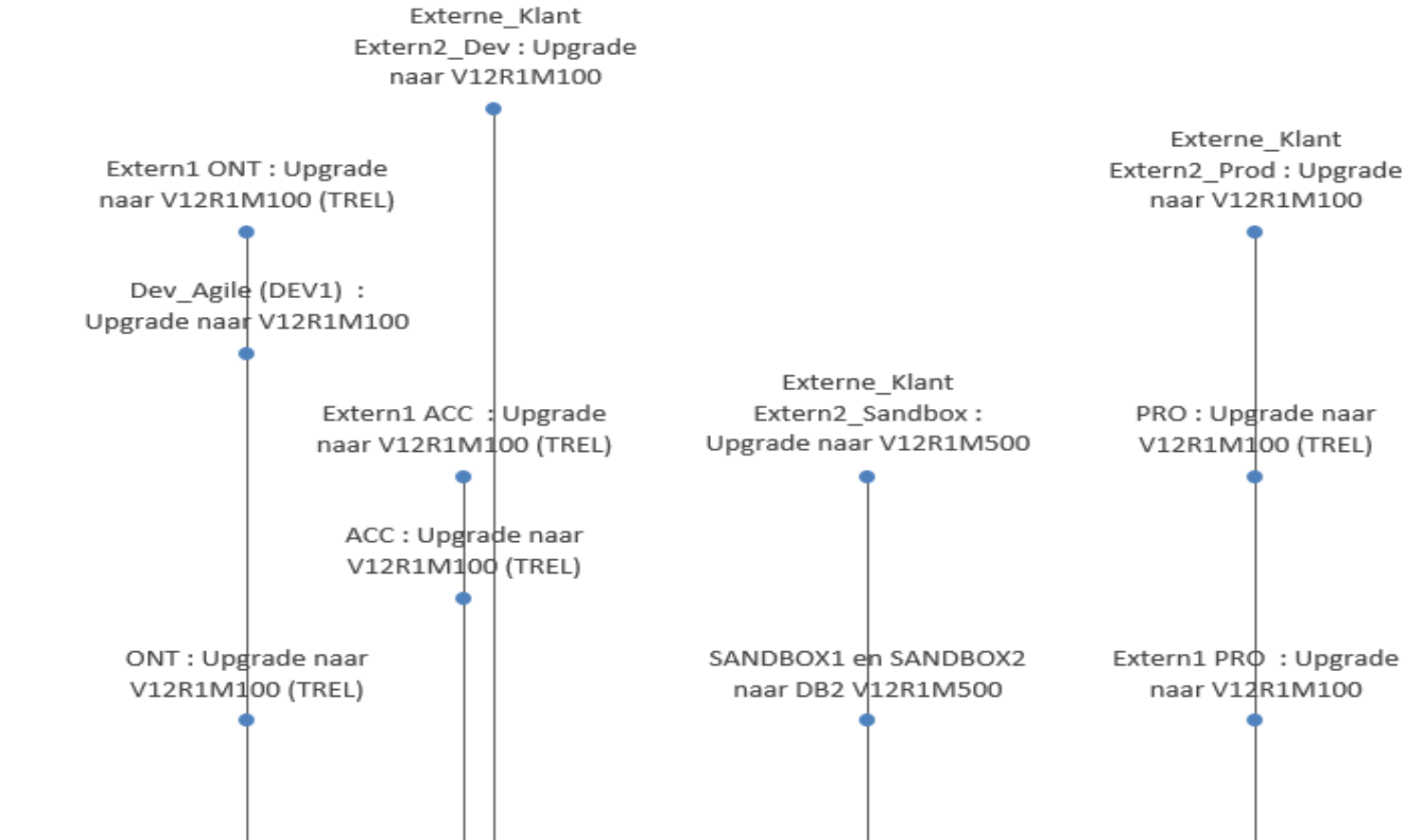
1. Tools & maint. : Sept. - Nov



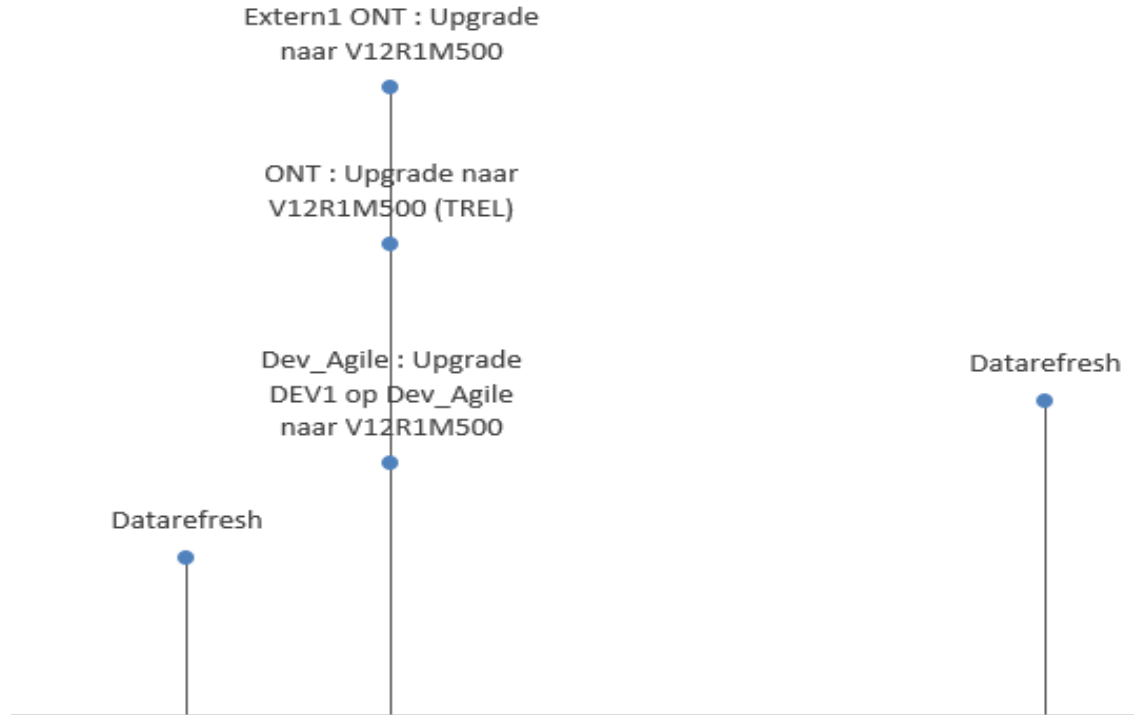
1. Sandbox & fallback : Dec - Jan



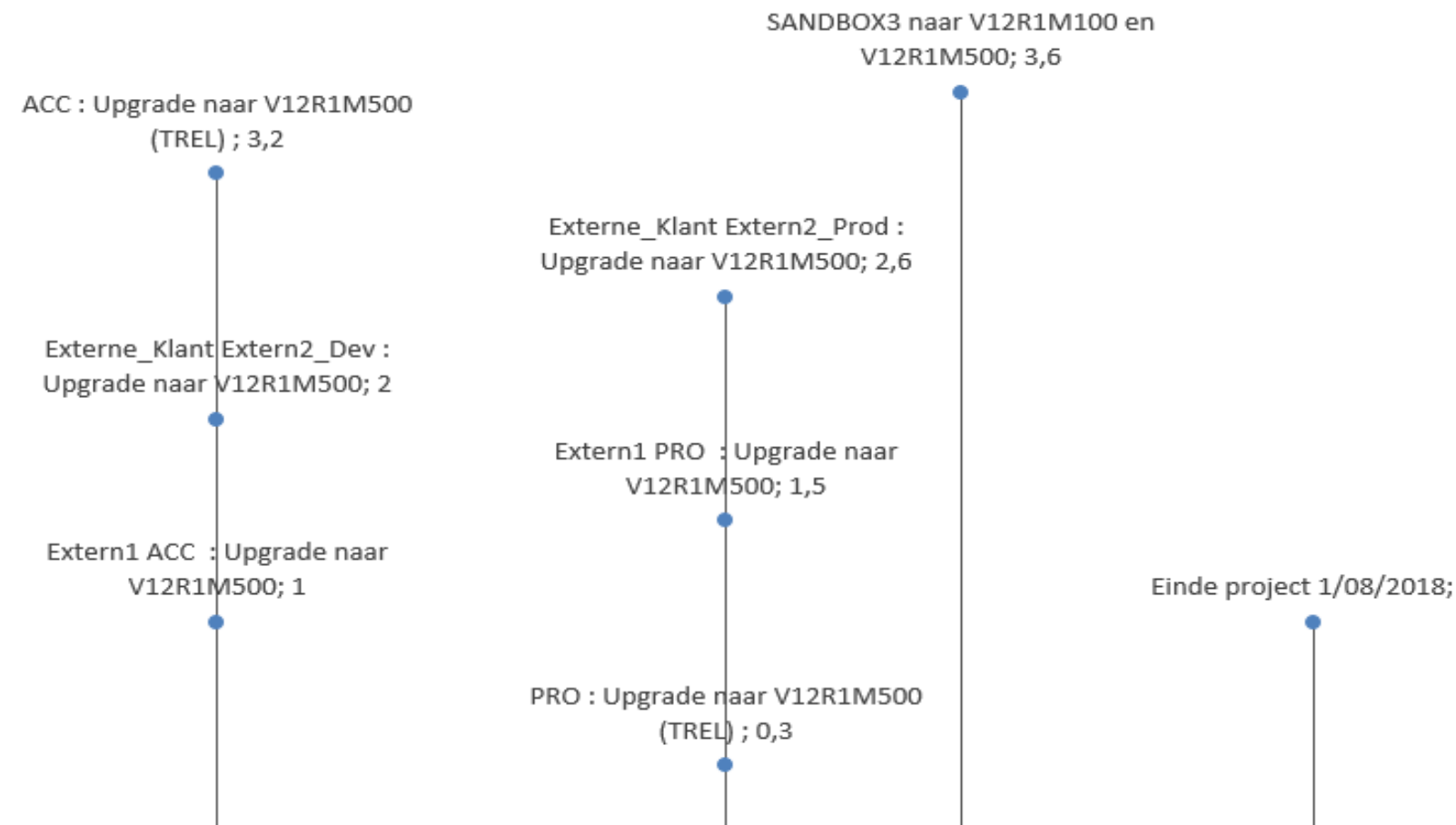
1. V12R1M100 (M500 SB) : March-May



1. V12R1M500 DEV : May - June



1. V12R1M500 ACC/PROD: June



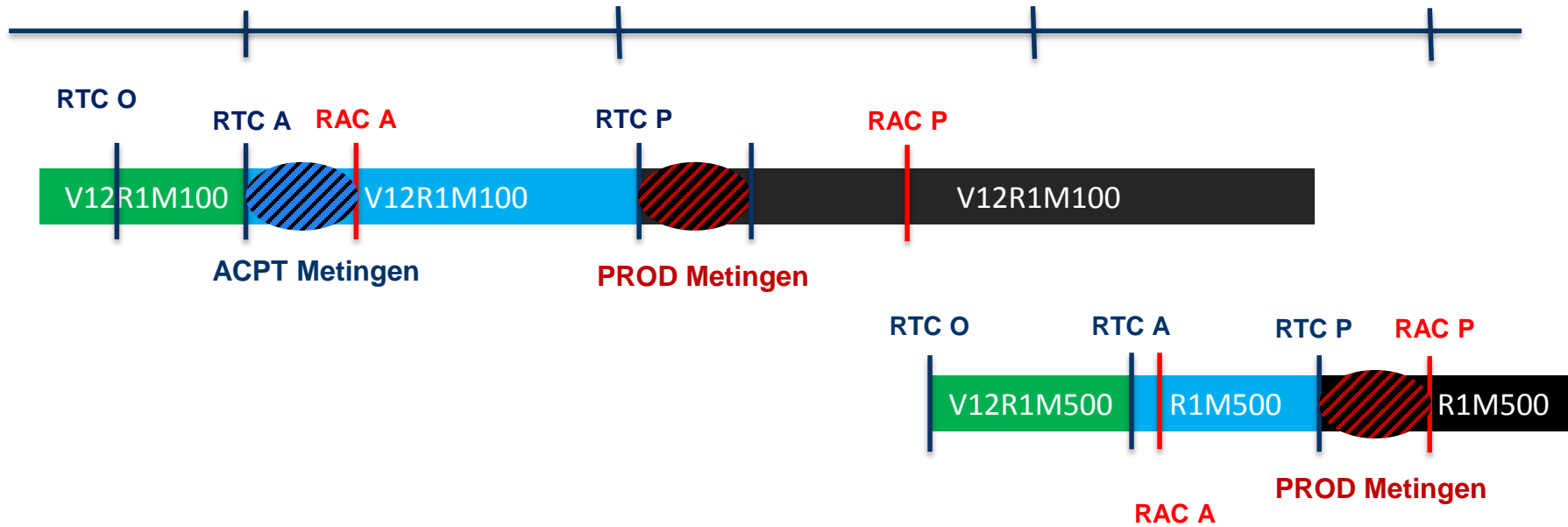
2. Premigration checks

- Cfr. Installation & Migration Guide for checklist
- Release incompatibilities : simple TS, explain tables in old format, PG that access the catalog
- BIND/REBIND PG/PL ?
- DBAs are involved
 - They get output of premigration checks
 - They schedule (re)binds in applicative releases
- All products/tools (>40) that use/access Db2
 - are checked for V12 tolerance/compatibility
 - are upgraded if needed at TRELS
 - Remark : >6 months elapsed, a lot of effort !

3. Measurements : expectations

- System and OLTP :
 - 2-3% CPU reduction without Index In-Memory feature
 - 5-10% CPU reduction using Index In-Memory feature
- Query performance :
 - 0-20% without changing access path
 - 10-40% with new access path
- A baseline measurement is done upfront

3. Measurements : planning



3. Measurements (V11)

	Actie Nodig	Waar Meten	Actief vanaf	Systeem				Applicatie				IDAA	Wie	Base Line		
				DBM1	MSTR	IFLM	ODF	Batch	Online Static	Online Dynam	Data Warehouse					
ZIIP processor CPU: meer zIIP-eligible door																
cleanup van pseudo deleted records	Out of the Box	Systeem	CM	X	X	X	X							CPT	X	globaal
log read/write + castout processing	Out of the Box	Systeem	CM	X	X	X	X							DB2	X	
inline stats	Out of the Box	Systeem	CM	X	X	X								DB2	X	
load replace index maintenance	Out of the Box	Systeem	CM	X	X	X								DB2	X	
General Processor CPU:																
optimalisatie van decompressie voor compressed TS	SDD Na Rebind	Applicatie ?	CM						X	X	X	X		DB2	X	globaal
log write buffers naar 64 bit common	Out of the Box	Systeem	CM		X									DB2	X	
aantal log force writes in datasharing zou moeten dalen	Out of the Box	Systeem	CM		X									DB2	X	
Implementatie extended RBA/LRSN : spin loop avoidance	Na Implementatie Feature	Systeem	Vanaf NFM mogelijk		X									DB2	X	
Implementatie extended RBA/LRSN zal de DB2 logging beduidend groeien (IBM stelt + 30 %)	Na Implementatie Feature	DASD	Vanaf NFM mogelijk											DB2	X	
Memory :																
memory footprint van DB2 V11 zal beduidend groter zijn dan deze van DB2 V10 (en dit bij dezelfde bufferpool sizes)	Out of the Box	Systeem	CM	X	X	X	X							CPT	X	globaal
Uitbreiding van de LFAREA (large page frame area) ifv allocatie van de DB2 log buffers in deze memory zone.		Systeem	CM											CPT		
Herevaluatie van het pagefix gebeuren. Zijn er bufferpools die bijkomen in aanmerking komen voor pagefixing?	Eigen Actie													DB2		
Coupling Facility Resources :																
optimized castout	Out of the Box	Systeem	CM						X (less wait time)	X (less wait time)				DB2	X	globaal
GBP write around protocol: GBP shortages omwille van massale "utility of batch" updated pages vermijden.	Out of the Box	Systeem	NFM? Vereist CFLEVEL 17						X (less wait time)					DB2	X	
GBP write performance beter.	Out of the Box	Systeem	CM						X (less wait time)	X (less wait time)				DB2	X	
DASD IO																
en specifieke aanwijzingen van IBM, op te volgen(Sync IO en Prefechting)		Systeem							X	X	X	X				
Implicit commit voor CALL sp's (zowel CLI als JDBC): zou cpu/elaps winst moeten geven (CL1 +2)	Out of the Box	Applicatie	NFM							X	X			DB2	X	
Opvolging aantal V11 rebinds adhv invalid sprc's. Gezien het belang van rebinds voor algemene query performance optimalisaties.	SDD Na Rebind	Applicatie	CM						X	X	X	X		DB2	X	
Indirect reference/overflow records (update op variable length records) avoidance: te bespreken met SDD	Na Implementatie Feature	Applicatie	NFM						X	X	X			DB2/SDD		
Data Warehouse (IDAA ?)	Out of the box	moeilijk ?														
Impact op de DB2 tools																

4. New features :

- We start by using defaults and out-of-the box coding
- New features are subject of study (not in project scope !)
 - In-memory bufferpools (PGSTEAL(NONE) option of ALTER BP)
 - In-memory index optimization using index Fast Traverse Block (FTB)
 - Application related features (study by DBAs):
 - SQL performance enhancements
- Implementation only at TREL or RAC

5. Challenges

- Planned outage because of CATMAINT job ?
 - In V11 we did, both at CM and NFM
 - In V12 we don't
- How to deal with Continuous Delivery ?

Questions?