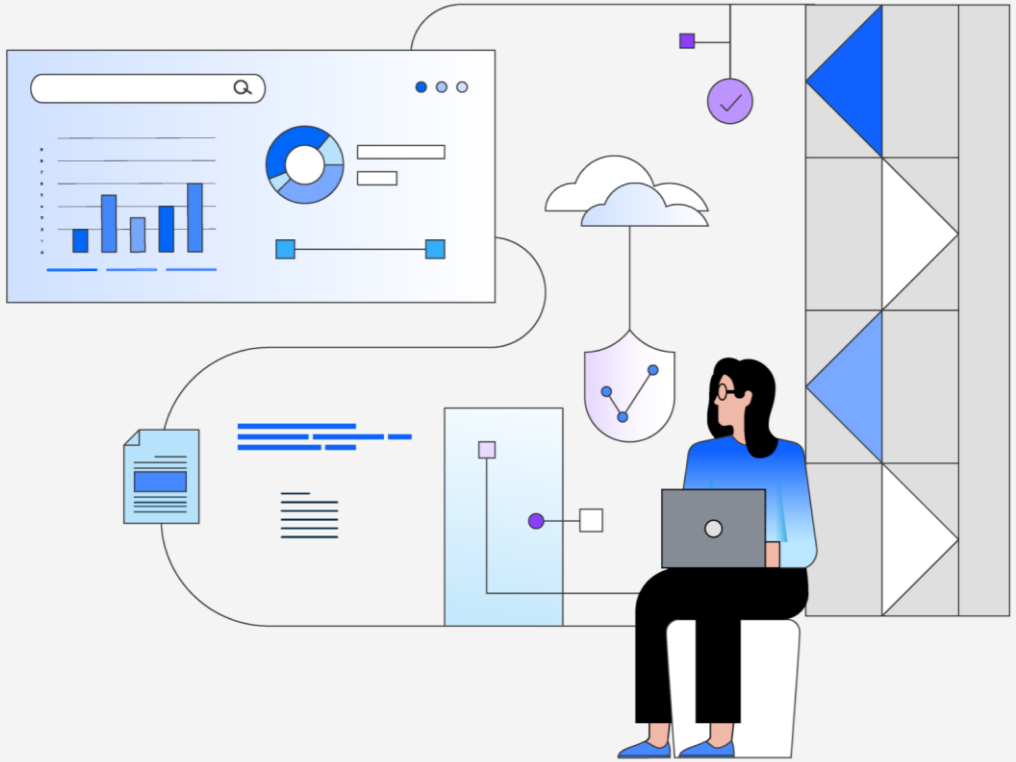
Db2 for z/OS
Planning for the future



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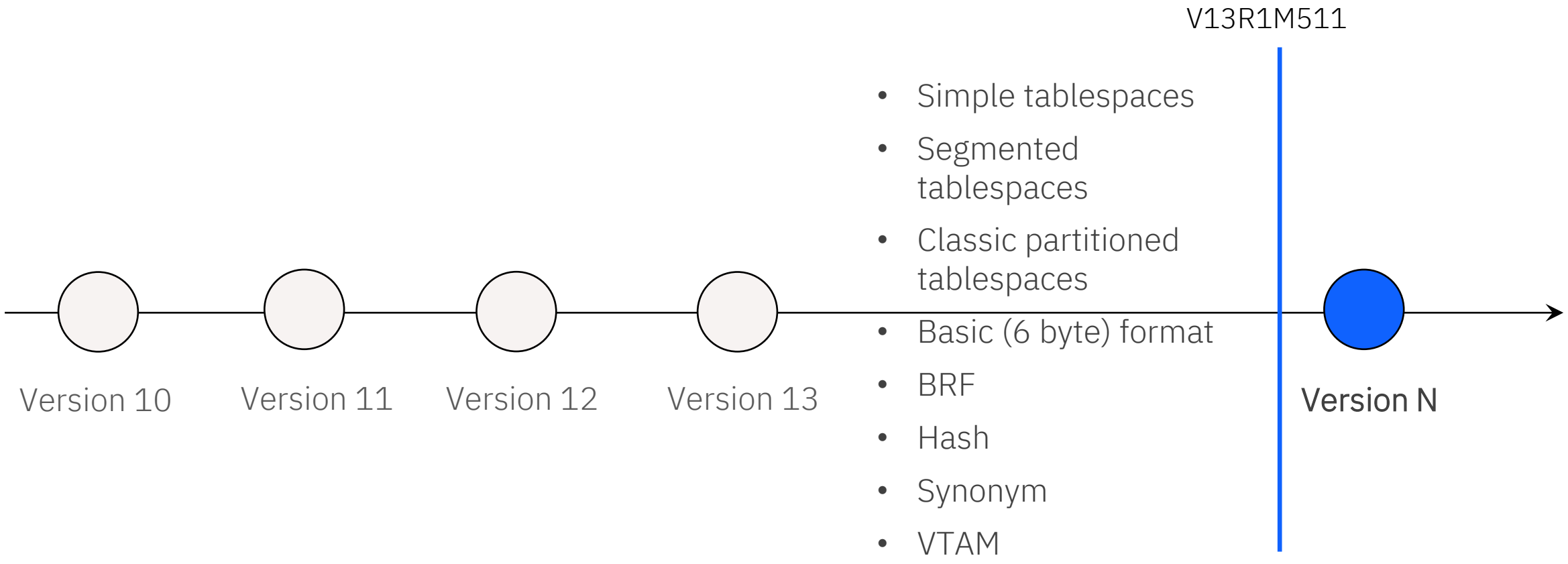
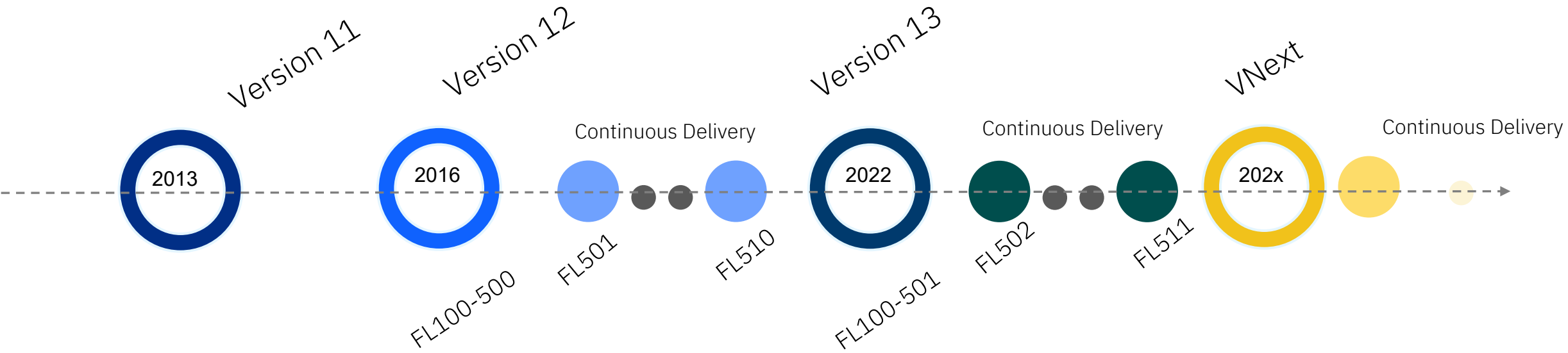
Major Themes of Db2 VNext

- New foundation for future innovation
- Simplification and automation
- Scalability and performance

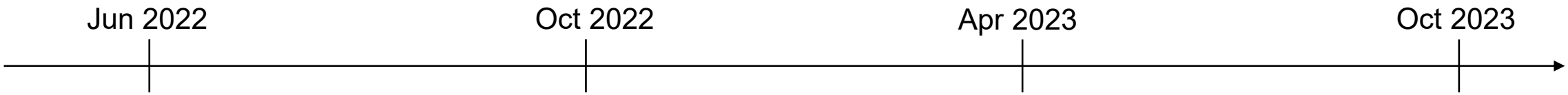
Past, Present and Future



Db2 for z/OS Release Plan



Db2 13 Continuous Innovation – Function Levels



FL100, FL500, FL501

- Industry-first AI-infused insights into business data
- Enhanced operational flexibility with no application outages
- Improved interoperability with cloud applications
- Streamlined version upgrade with no application outages

And more…

FL502

- Statement-level dependency phase 1
- Db2-controlled sysplex workload balancing

FL503

- Default when adding row change timestamp columns
- Accelerator-only support for >32K in-list
- OPTIMIZE FOR n ROWS for SELECT INTO

FL504

- Object-level utility history
- Minimize package invalidation impact
- SQL Data Insights outlier detection
- More trace OP buffer destinations
- ORDER BY fullselect with LISTAGG

Db2 13 Continuous Innovation – Function Levels

FL505

- RACF Identity Token(IDT) support
- Scalability for trace numbers
- Catalog security improvement
- INTERPRET scalar function
- Trace destination ZAI

FL506

- INLIST performance
- Column masking improvement
- >32 traces
- Multi-row insert with VALUES
- Alter add implicitly hidden ROWID column
- LOAD part REPLACE performance/availability through improved NPSI processing

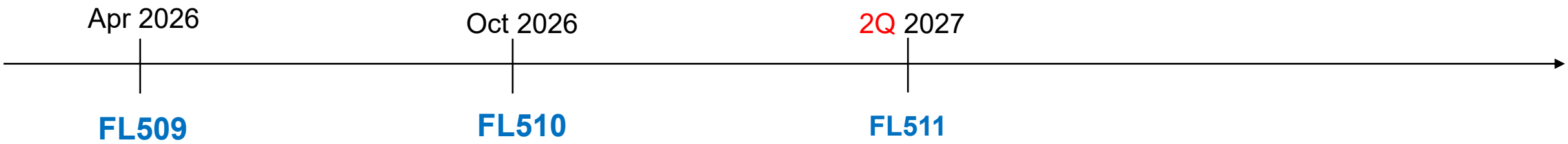
FL507

- Online conversion from PBR to PBG & repartitioning
- System temporal concurrency
- LASTUSED col support in SYSPLAN
- Temporal and archive tables in a single SELECT
- >64Gb PRIQTY, SECQTY support

FL508

- Display Blocker enhancements
- Workfile management updates
- Generation of UUIDs
- REBIND phase in for SQL PL and trigger
- #of active log pairs increase to 1000
- Enhance local profiles

Db2 13 Continuous Innovation – Function Levels



- Convert remainder of catalog and directory to UTS
- Transfer ownership of SP, functions, etc
- Utility history SHRLEVEL
- I/O counts in RTS
- RLF filtering IP wildcarding
- STMT2_HASHID in catalog
- False lock contention reduction

- …

- No new function

2026 and beyond

- Scalability and performance
  - Log read performance
  - IRLM scalability
  - Smarter buffer pool access larger page frames
  - RECOVER, REORG, LOAD performance

- Simplification
  - Db2 subsystem parameter simplification
  - Implicit object handling
  - Utility history improvements
  - Command history

2026 and beyond

- Availability
  - Reduce application contention during schema changes
  - Online creation of unique indexes
  - Support for store clock beyond 2042
  - Improved Safeguarded Copy support

- Quantum safe improvements

Deprecation overview

- BRF tablespaces
- 6 byte tablespaces and indexspaces
- Simple tablespaces
- Segmented tablespaces
- Classic partitioned tablespaces
- Hash organized tablespaces
- Synonyms
- VTAM

- New pre-migration checklist job DSNTIJPN will identify these objects
  - PH71653

BRF conversion to RRF

- Identify all pagesets that must be converted to RRF
  - FORMAT column in SYSTABLEPART: blank = BRF, “R” = RRF
- REORG or LOAD REPLACE
  - ROWFORMAT BRF option ignored in V13
  - RRF zparm no longer exists from V12 onwards
  - Partition level conversion
- If an EDITPROC or VALIDPROC exists on the table then it will not be converted to RRF
  - Must remove EDITPROC or VALIDPROC, modify the proc and add it back after conversion to RRF
  - Query EDPROC, VALPROC columns in SYSTABLES

6 byte format to 10 byte format

- Identify all pagesets that must be converted to RRF
  - RBA_FORMAT column in SYSTABLEPART, SYSINDEXPART
  - ‘E’ = 10 byte format
  - ‘B’, ‘U’, ‘’ = 6 byte format
- REORG, LOAD REPLACE, REBUILD INDEX to convert to 10 byte format
  - RBALRSN_CONVERSION option ignored in V13
  - UTILITY_OBJECT_CONVERSION zparm removed in V12
  - Partition level conversion

What about undefined datasets?

- Tablespace conversion for undefined tablespaces is immediate
  - No REORG required
- But there is no conversion for undefined BRF or 6 byte format pagesets
  - REORG ignores undefined objects
- FL510 CATMAINT will update catalog and DBD for undefined datasets

Converting to UTS

- Convert to UTS tablespaces to take advantage of new features in Db2
  - Simple and segmented tablespaces to PBG
  - “Classic” partitioned tablespaces to PBR
- PBG and PBR introduced in V9
- PBR RPN introduced in V12
  - 4096 partitions up to 1Tb per partition, 4Pb total size
  - ALTER DSSIZE to increase partition size at partition level, no application impact, no REORG necessary
    - ALTER to decrease DSSIZE remains a deferred tablespace-level alter
  - Be aware of red alert related to PBR RPN tablespaces before migrating from V12 to V13 or V13R1M100 to V13R1M500+

Converting to PBG

- Single table simple or segmented tablespace to PBG
  - ALTER TABLESPACE … MAXPARTITIONS n
  - REORG entire TABLESPACE

- Multi-table simple or segmented tablespace to multiple PBGs
  - ALTER TABLESPACE … MOVE TABLE … TO TABLESPACE…
    - Rules apply, must be MAXPARTITIONS 1, DEFINE NO, etc
  - Requires APPLCOMPAT V12R1M508
  - REORG entire TABLESPACE

Multi-table conversion to PBG - considerations

- More open datasets
  - z/OS 2.5 decreases memory footprint for open datasets
- More OBIDs used
  - Catalog queries provided to assist in planning
  - Cannot move a table to a different database
- Moving more tables means longer SWITCH phase for REORG
  - Can move multiple tables in a single REORG
  - Not wise to go beyond 100 tables at a time

Converting to PBR

- Must convert from index-controlled partitioning to table partitioning first
  - Table uses index controlled partitioning if IXNAME is filled in in SYSTABLEPART
  - ALTER INDEX … NOT CLUSTER
  - Followed by
  - ALTER INDEX … CLUSTER
  - Both ALTERs are immediate, no REORG required
- Convert to PBR
  - ALTER TABLESPACE … SEGSIZE n
  - REORG entire tablespace
  - Recommend combine with ALTER TABLESPACE… PAGENUM RELATIVE
    - Zparm PAGENUM defaults to RELATIVE in V13 but applies to CREATE TABLESPACE only

Removing hash tablespaces

- ORGANIZATIONTYPE column in SYSTABLESPACE = ‘H’
- Drop unique constraints against table
  - Only necessary if index is a hash index and primary key index
  - SYSINDEXES.HASH = 'Y', and SYSINDEXES.UNIQUERULE = 'P'
  - ALTER TABLE tbname DROP PRIMARY KEY
- Convert from hash
  - ALTER TABLE tbname DROP ORGANIZATION
  - Tablespace placed in REORP state
- REORG entire tablespace

Converting SYNONYMs to ALIASes

- Cannot have the same creator.name for an ALIAS as an existing SYNONYM
- Therefore
  - DROP SYNONYM name
  - CREATE ALIAS name

Catalog and directory considerations

- Conversions to PBG have occurred through various CATMAINT jobs
- FL509 supports conversion of remaining objects
- -DIS GROUP UTSCONVERSION
  - Requires PH67554
- Run REORG TABLESPACE CONVERTUTS for all remaining objects that output says are eligible for conversion

- Ref. https://www.ibm.com/docs/en/db2-for-zos/13.0.0?topic=tables-converting-db2-catalog-directory-objects-uts

Catalog and directory considerations

- REORG of SYSUTILX is not normally allowed
- But special REORG of SYSUTILX will convert it to two separate PBG tablespaces
  - SYSTSUTX
  - SYSTSUTM

Converting workfile tablespaces to PBG

- Before FL508
  - DGTTs prefer PBG, sorts prefer zero SECQTY
  - WFDBSEP=YES
    - DGTT must use PBGs or segmented tablespaces with non-zero SECQTY
    - Sort must use segmented tablespaces with zero SECQTY, or user managed tablespaces
- FL508
  - CREATE TABLESPACE... FOR SORT
    - Includes other non-DGTT uses
  - CREATE TABLESPACE... FOR DGTT
  - Only applies to PBGs in workfile database
  - New ALTER support for existing PBG workfile tablespaces - PH71332
    - Existing PBGs with no explicit designation will be treated as FOR DGTT
  - New trace information to help manage workfiles – PH62780
  - WFDBSEP will be removed in future

Converting from VTAM to TCP/IP

- Convert requesters to use TCP/IP
- Convert Db2 servers to use TCP/IP
- Update catalog and BSDSs to disable VTAM support

- Ref:
  - https://community.ibm.com/community/user/blogs/paul-mcwilliams1/2026/01/16/ready-to-convert-from-vtam-to-tcpip-in-db2-zos
  - https://www.ibm.com/docs/en/db2-for-zos/13.0.0?topic=systems-converting-tcpip-communication-from-vtam

Summary

- Db2: Building upon, but not constrained by, a foundation of over 40 years of technological innovation

- Establish a project to migrate to strategic technology
  - The sooner the better, regardless of what your plans are for Vnext