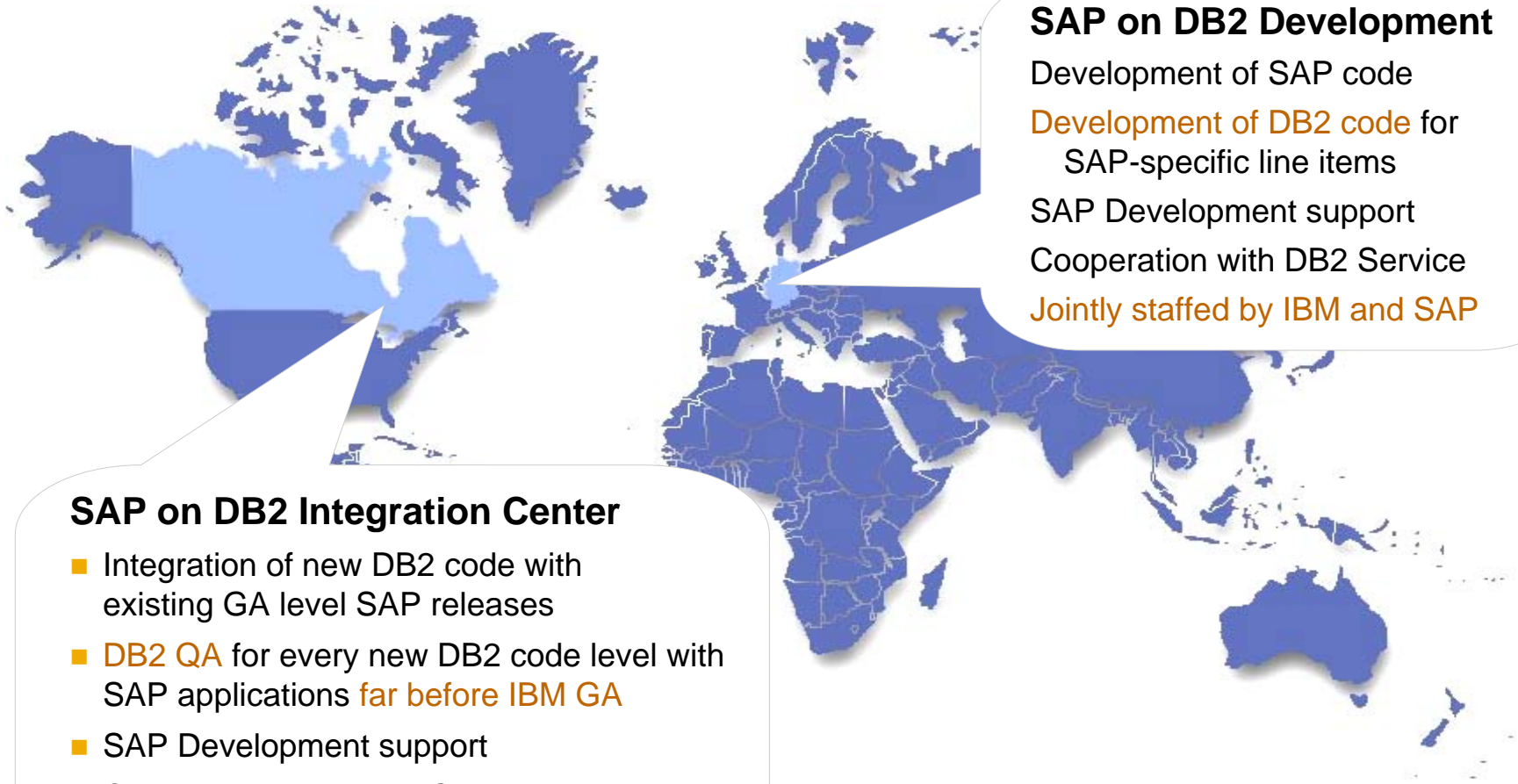


IBM DB2 Optimized for SAP

DB2 osana SAP-alustaa

Eero Koskinen
SAP Finland

Public



SAP on DB2 Development

Development of SAP code

Development of DB2 code for
SAP-specific line items

SAP Development support

Cooperation with DB2 Service

Jointly staffed by IBM and SAP

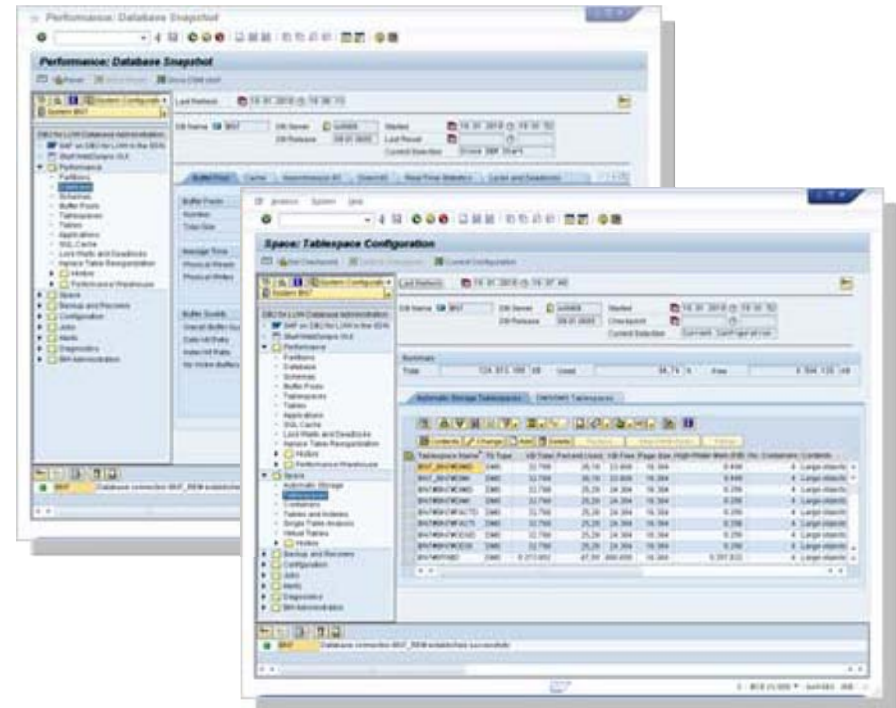
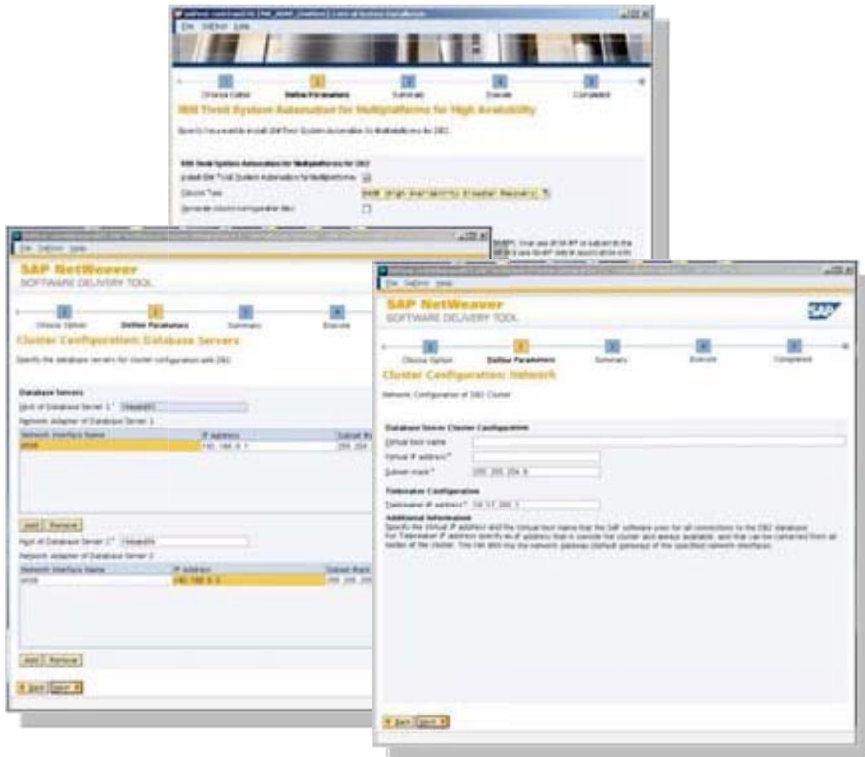
SAP on DB2 Integration Center

- Integration of new DB2 code with existing GA level SAP releases
- DB2 QA for every new DB2 code level with SAP applications far before IBM GA
- SAP Development support
- Cooperation with DB2 Service
- Jointly staffed by IBM and SAP

SAP on DB2 is a fully integrated product

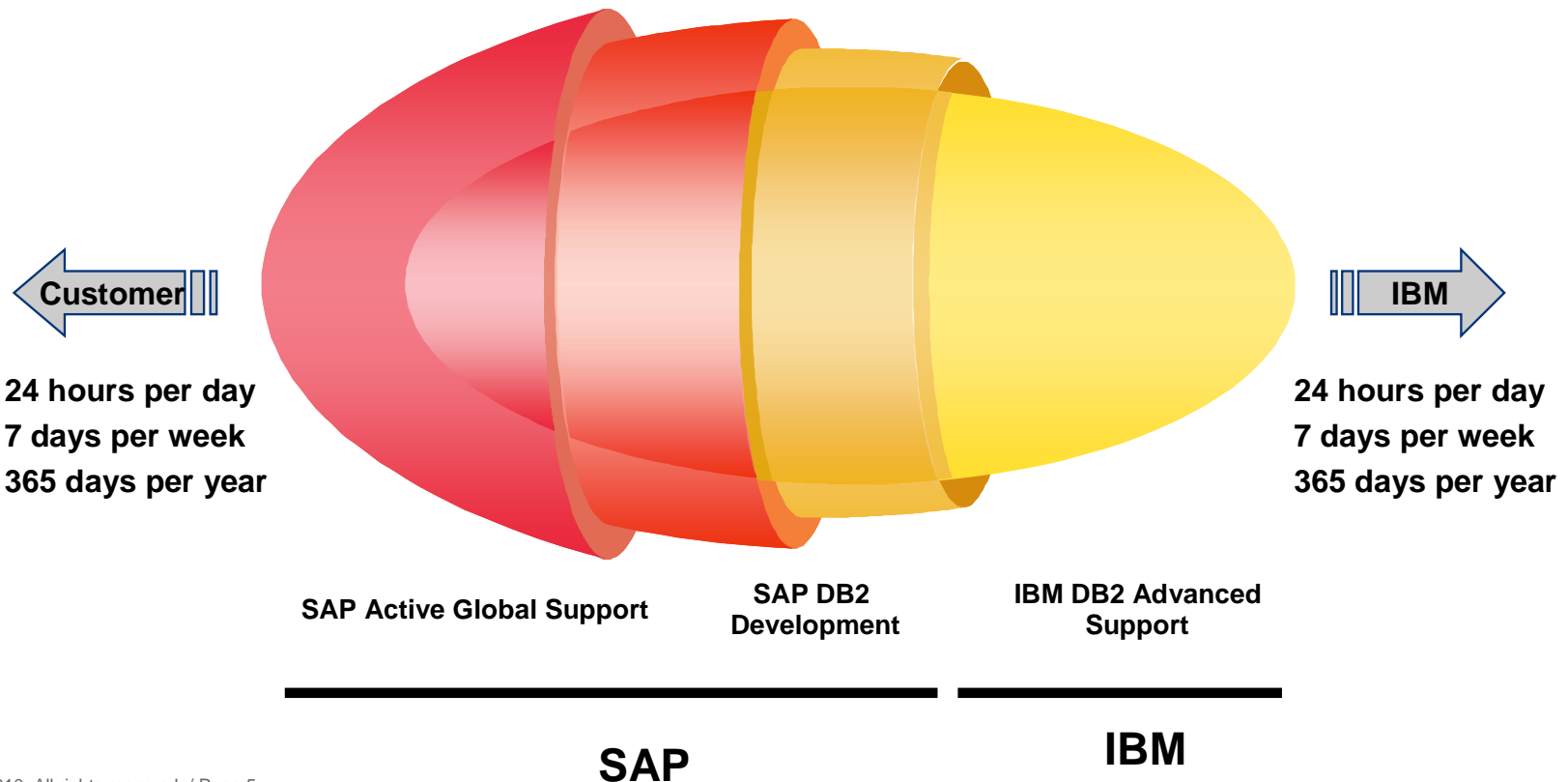


- Integrated installation of DB2 software during SAP install *
- Integrated HA setup during SAP install *
- One-step SAP-tailored DB2 configuration: DB2_WORKLOAD=SAP
- Full DB2 administration and monitoring through SAP DBA Cockpit





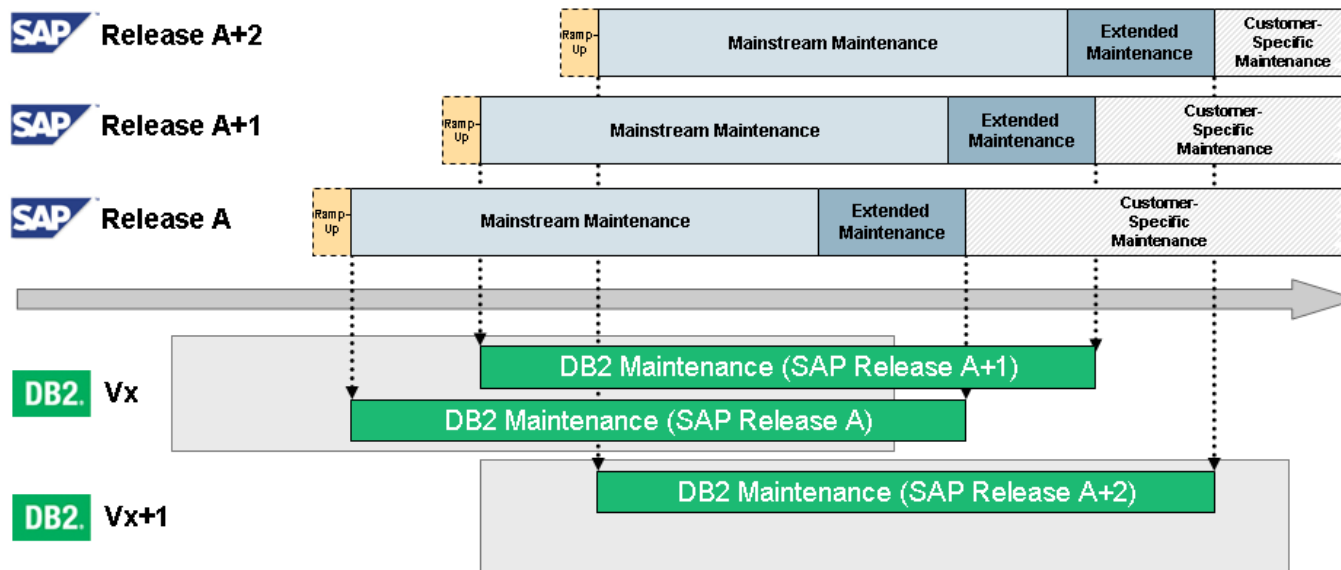
- All customers receive one-stop service through SAP
 - [SAP Note 686501](#)
 - [IBM TechNote 1051638](#)
- You only need to work with SAP as your single point of contact



DB2 follows SAP's maintenance strategy



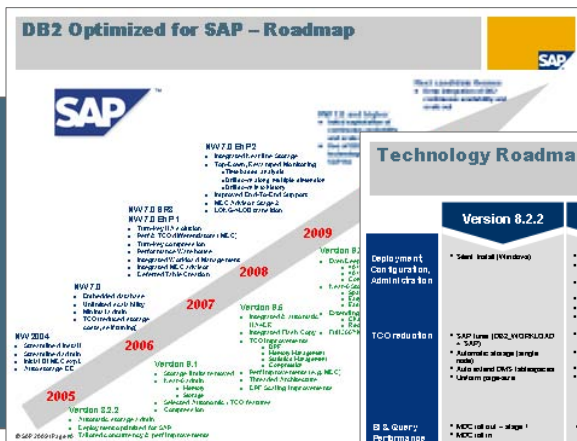
- Your DB2 release remains in service for the complete 7+2 and 5+1+2 maintenance of your SAP application (see [SAP note 1168456](#) and [IBM TechNote 1051638](#)) *
- As a result you have the **freedom of choice**
 - You can stay on your current DB2 version if you desire
 - You can upgrade to the next DB2 version on your current SAP release to benefit from the technology innovations provided by IBM and SAP
- Unmatched business value: **No forced or undesired database upgrades**



* Applies to customers who have purchased DB2 from SAP. Customers with other DB2 entitlement need to obtain a DB2 Service Extension from IBM

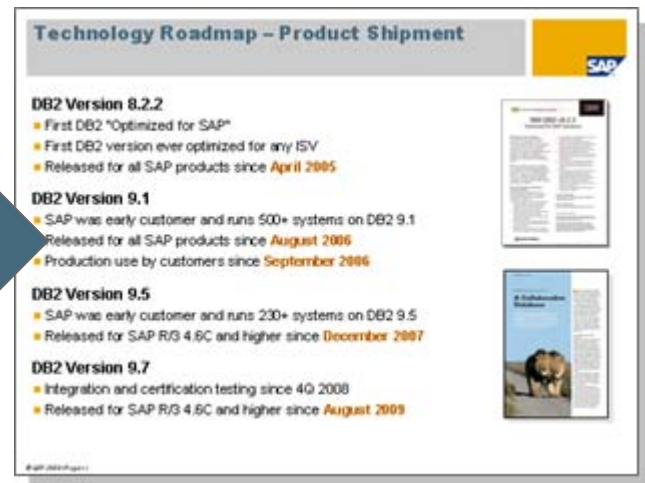


- SAP and IBM jointly define the content of DB2's "Optimized for SAP" releases
- Mandatory design review and approval by SAP for all SAP relevant DB2 line items before implementation starts
- Testing and verification during the entire DB2 development cycle, far before the product goes GA
- Near-concurrent GA: SAP customers can benefit from the innovations immediately, typically within 6-8 weeks after IBM eGA

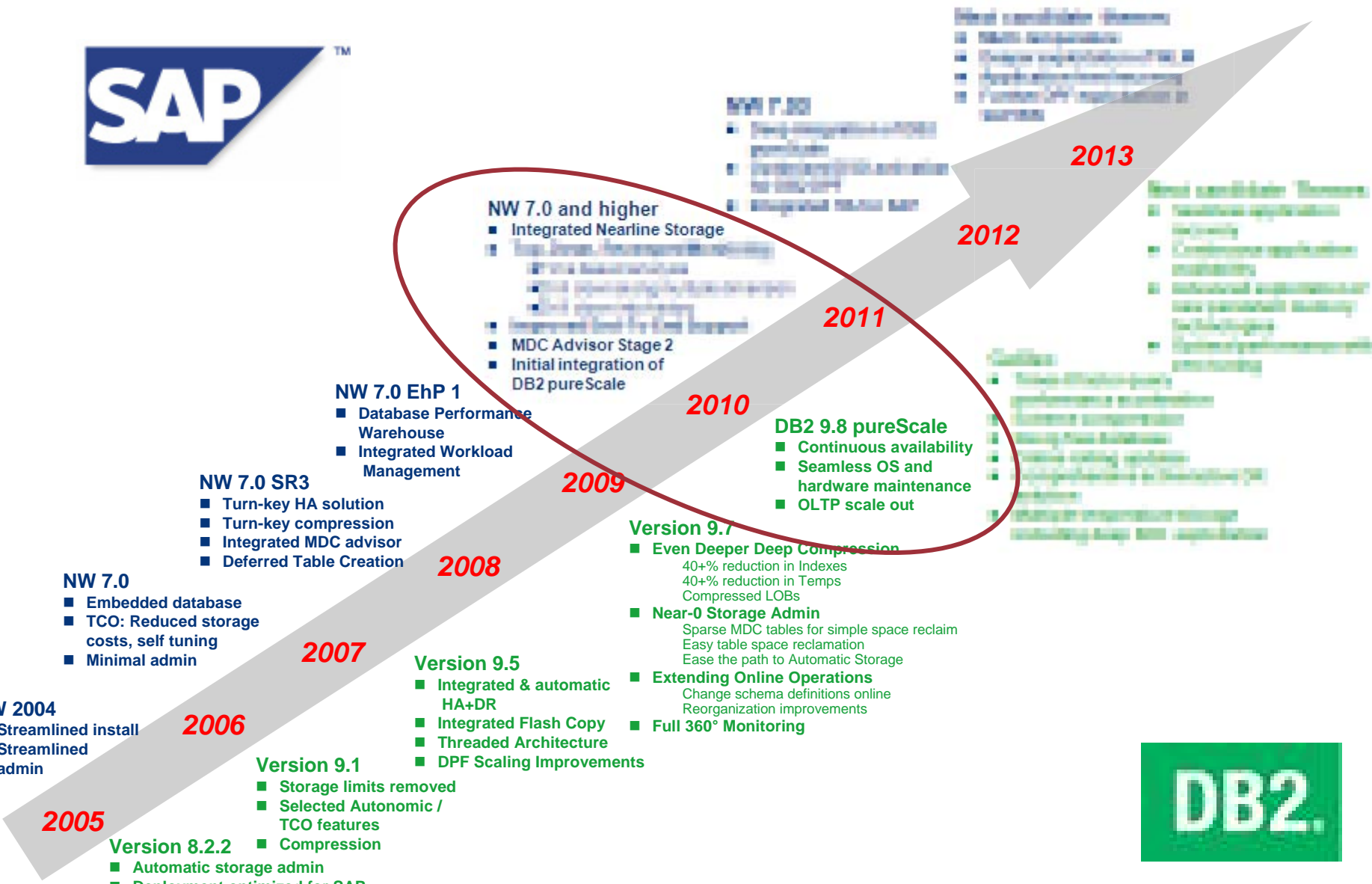


Technology Roadmap - Detailed Planning

	Version 8.2.2	Version 9.1	Version 9.5	Version 9.7
Deployment Configuration, Administration	<ul style="list-style-type: none"> • Silent install (Windows) 	<ul style="list-style-type: none"> • Silent install (Linux) • Multiple DB2 deployments on the same machine • One DB2 image serves all host applications • Installation from client • Large table row data • Large table rows 	<ul style="list-style-type: none"> • Easy, touch deployment 	<ul style="list-style-type: none"> • Online RPOPC app movements • Online Table Move • Tablespace capacity increase • Compression support for replicated tables • Tablespace space reclaim beta - PRM
TCO reduction	<ul style="list-style-type: none"> • SAP tune (DB2_WORLOAD) • Automatic storage (single node) • Auto extend OLS tablespaces • Uniform page size 	<ul style="list-style-type: none"> • SAP tune (DB2_WORLOAD) • Automatic storage (single node) • Auto extend OLS tablespaces • Automatic storage to CPU 	<ul style="list-style-type: none"> • Automatic configuration • OLS online, active • Self tuning database global memory • Deep compression • Automatic deduplication to deep compression • Sample space reclaim to automatic storage and regular OLS 	<ul style="list-style-type: none"> • RAMP table compression • Index compression • Migration to Automatic Storage • Automatic MCC space reclaim • LRS (waiting for compression) • Support for LONG+LOB function
BI & Query Performance	<ul style="list-style-type: none"> • MCC call out - stage 1 • MCC call out • Index, hash tables • Column store enhancements • Uniform page size 	<ul style="list-style-type: none"> • SAP BI Optimized workloads • Self capacity cap 	<ul style="list-style-type: none"> • Simplified configuration by metadata infrastructure • Advanced Memory Management - Automation to all memory sizes • Automatic deduplication to deep compression • Sample space reclaim to automatic storage and regular OLS 	<ul style="list-style-type: none"> • Real Time Statistics • Improved MCC call out for fast deduplication • Advanced OLS handling • Parallel index creation
Supportability, Backup & Recovery, HA	<ul style="list-style-type: none"> • Complete database analysis • Detailed system health tool • Operational guidelines 	<ul style="list-style-type: none"> • Parameter review • Check and update script from backup image • SQL access to hot or regular files to flash copy • Pre-validated RAC instance (2 node fail over) 	<ul style="list-style-type: none"> • HA, Cluster Management • Automatic Backup/Log Distribution Management • Single system view back up to OLS database • Enhanced Backup using Flash Copy 	<ul style="list-style-type: none"> • Enhanced Monitoring • Diagnostic app movements



DB2 Optimized for SAP Roadmap



Technology Roadmap Detailed Planning



Version 8.2.2

Version 9.1

Version 9.5

Version 9.7

Deployment, Configuration, Administration

- Silent Install (Windows)

- Silent install (Unix)
- Multiple DB2 deployments on the same machine
- One DB2 image serves all: Install, upgrade, patch
- Installation free client
- Larger index key parts
- Larger index names

- Easy fixpack deployment

- Online REORG improvements
- Online Table Move
- Tablespace capacity increase
- Compression support for replicated tables
- Tablespace space reclaim below HWM

TCO reduction

- SAP tuner (DB2_WORKLOAD = SAP)
- Automatic storage (single node)
- Auto extend DMS tablespaces
- Uniform page-size

- Automatic configuration: IO cleaner, server
- Self tuning database global memory
- Deep compression
- Automatic storage for DPF

- Simplified configuration by multi threaded architecture
- Advanced Memory Management : Automation for all memory areas
- Automatic dictionary creation for deep compression
- Simpler space reclaim for automatic storage and DMS

- TEMP table compression
- Index compression
- Migration to Automatic Storage
- Automatic MDC space reclaim
- LOB inlining (with compression)
- Support for LONG->LOB transition

BI & Query Performance

- MDC roll out – stage 1
- MDC roll in
- Index heuristics
- Concurrency enhancements
- Uniform page-size

- SAP BI Optimizer enhancements
- Sort capacity cap

- Real Time Statistics
- Improved MDC roll out for fast deletion
- Advanced DPF Monitoring
- Parallel index creation

- Starjoin query improvements
- DPF costing improvements
- Scan Sharing

Supportability, Backup & Recovery, HA

- Complete deadlock analysis
- One-shot optimizer service tool
- Optimization guidelines

- Resumable recover
- Redirected restore script from backup image
- SQL access to list of required files for flash copy
- Pre-packaged HA solution (2 node fail over)

- HA Cluster Manager Integration
- Automatic Backup/Log Retention Management
- Single system view backup for DPF databases
- Enhanced Backup using Flash Copy

- Enhanced Monitoring
- Diagnostics improvements



- **Four releases** of DB2 Optimized for SAP
- **Measurable value** for SAP customers through direct TCO reduction
- **Optimal stability** through very early testing and verification far before IBM GA
- **Near-concurrent GA** by SAP: Certification within 6-8 weeks after IBM GA
- **Early customer adoption**

DB2 Version 9.1

Released by SAP since **August 2006**

Production use by customers since **September 2006**

DB2 Version 9.7

Released by SAP since **August 2009**

Production use by customers since **December 2009**

2005

2006

2007

2008

2009

2010

DB2 Version 8.2.2

First DB2 "Optimized for SAP"
Released for SAP since **June 2005**

DB2 Version 9.5

Released by SAP since **December 2007**
Production use by customers since **February 2008**

...



SAP on DB2 Key Technology Differentiators



DB2 Workload Management (WLM)

- Guaranteed SAP NetWeaver
- Fast roll-in and zero administration
- Fully supported and fully integrated
- Included in SAP

Database Performance Warehouse

- Collection of I/O behavior and CPU usage
- Flexible data
- Integrated in SAP
- Included in SAP

DB2 Deep Compression

- Fully transparent compression of table data, indexes, and inline LOB data, and intermediate results*
- Typical savings: 40-65% on entire database size
- Up to More efficient I/O and cache utilization
- Fully supported for all SAP releases and applications
- Integrated into SAP installation and DBACOCKPIT
- Included in SAP DB2 OEM license at no extra cost

Overall Workload Performance

Category	Uncompressed Data	Compressed Data	Savings
Overall	~100%	~35%	-65%

Compression example (ECC10 customer database)

Table	Uncompressed Size (MB)	Compressed Size (MB)	Savings
TABLE1	100,000,000	60,000,000	-40%
TABLE2	200,000,000	120,000,000	-40%
TABLE3	300,000,000	180,000,000	-40%
TOTAL	600,000,000	360,000,000	-40%

DB2 Workload = SAP

- One-stop out
- Tailored s
- Covers all
- A safe bet for
- Tested during
- Checked by S

DB2 Built-In High Availability

- Built-in near-update capability
- Integrated ch
- Integrated in
- Fully support
- Included in S

SAP NetWeaver BW Nearline Storage on DB2

- Offloads less fre
- Reduces load a
- Takes full advan
- Fully exploits D
- Integrated into t
- administration
- Included in SAP

DB2 Automatic Maintenance

- Most DBA act
- Memory b
- Storage a
- Collection
- And many
- Fully integrat
- Included in S

SAP on DB2 Deferred Table Creation

- Up to 60%
- Deferred ta
- Substantial
- Fully integr
- Included in

DB2 Multidimensional Clustering

- Guaranteed
- SAP NetWe
- Fast roll-in a
- Zero admini
- Fully support
- Fully integr
- Included in

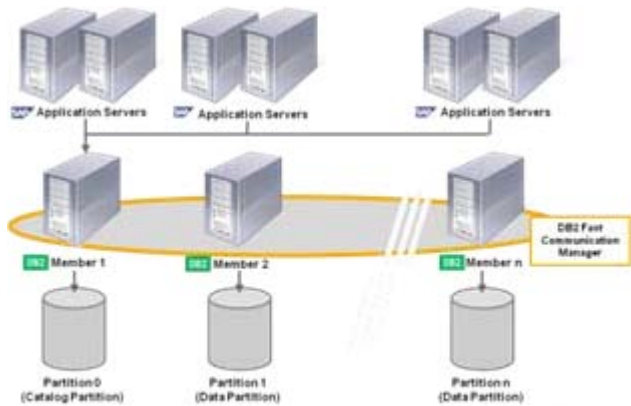
DB2 Workload Management (WLM)

- Prioritize an
- SAP pro
- End use
- Applicat
- Integrated i
- Included in

DB2 Deep Compression

- Fully transparent compression of table data, indexes, and inline LOB data, and intermediate results*
- Typical savings: 40-65% on entire database size
- Up to More efficient I/O and cache utilization
- Fully supported for all SAP releases and applications
- Integrated into SAP installation and DBACOCKPIT
- Included in SAP DB2 OEM license at no extra cost

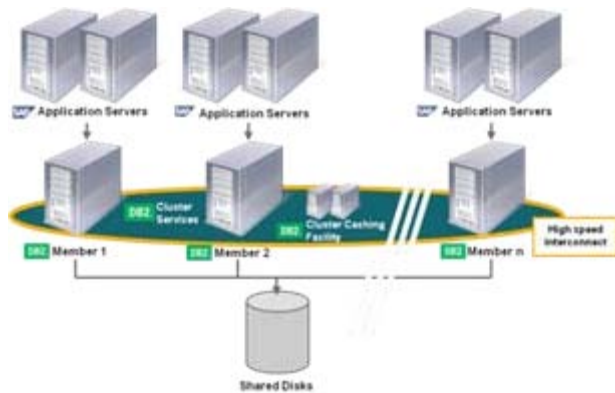
You can find more information about SAP on DB2 in SDN: <http://www.sdn.sap.com/irj/sdn/db6>



DB2 Database Partitioning Feature

DB2 Database Partitioning Feature

- Proven linear scale out for SAP Netweaver BW
- Mature technology, supported since BW 2.0
- Almost all SAP on DB2 customers run their NetWeaver BW with DB2 DPF
- Fully integrated into SAPINST and DBA Cockpit
- Included in SAP DB2 OEM base license



DB2 pureScale Feature

DB2 pureScale Feature

- Scale out and continuous availability for OLTP applications like SAP ERP and CRM
- A complete solution, no additional cluster components required
- Integrated into SAPINST and DBA Cockpit
- Available through SAP Pilot Program ([SAP Note 1419433](#))
- Requires an additional pureScale license



SAP IT adopted DB2 in early 2000

- Use of DB2 for SAP's R&D and business systems
- SAP runs more than 1000 SAP systems on DB2

Research and Development

- Almost every major SAP product is either developed or undergoes its QA on DB2
- DB2 is a major R&D platform at SAP

Business systems

- SAP has migrated its major business systems to DB2
- SAP's HR, ERP, CRM and BW run on DB2

More information:

Read the SAP IT reference story:

<ftp://ftp.software.ibm.com/software/emea/de/info/SAP-IT-GK12-4205-00.pdf>

Watch the SAP IT reference video:

<http://www.youtube.com/watch?v=KgFWnmAaWBk>

IBM and SAP: Partnership that makes a difference



SAP on DB2 platform team

Jointly staffed platform team at SAP AG
Jointly staffed integration and support team at IBM Toronto Lab
Platform team at SAP develops code that ships with DB2



IBM and SAP Development Cooperation

IBM reserves a very significant portion of the DB2 development plan exclusively for SAP requirements
SAP design review and mandatory sign off for all SAP-relevant developments in DB2
DB2 code levels are tested and validated with SAP software prior to the DB2 GA date.
DB2 releases are typically certified for use with SAP applications within 6-8 weeks after IBM GA



Maintenance Offering

24x7 one-stop support through SAP
DB2 follows SAP's support strategy: Underlying DB2 release remains in service for complete 5+1+2 or 7+2 maintenance of the SAP system



Use at SAP and IBM

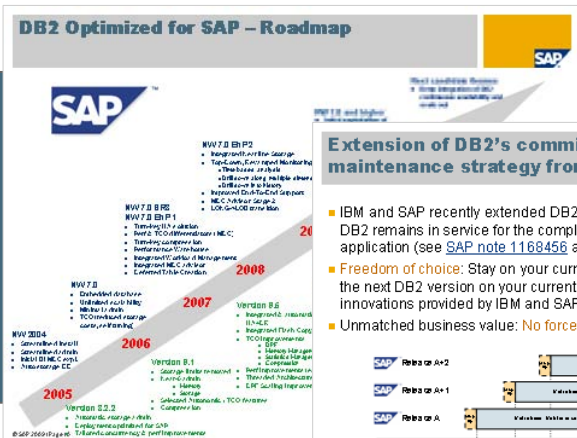
DB2 is a major development platform at SAP
SAP runs DB2
IBM runs SAP on DB2



We are committed to optimize your experience as our joint customer



- Exceptionally close partnership and development cooperation
- Joint long term planning and technology roadmap
- Strong focus on product integration
- Continuous QA with SAP test cases throughout the DB2 development cycle
- Greatly integrated service and support
- SAP runs DB2
- IBM runs SAP



Extension of DB2's commitment to SAP's maintenance strategy from 5+1+2 to 7+2

- IBM and SAP recently extended DB2's maintenance commitment to 7+2: DB2 remains in service for the complete 7+2 and 5+1+2 maintenance of your SAP application (see [SAP note 1168456](#) and [IBM TechNote 1051638](#))*
- **Freedom of choice:** Stay on your current DB2 version if you desire. Or upgrade to the next DB2 version on your current SAP release to benefit from the technology innovations provided by IBM and SAP.
- **Unmatched business value:** No forced or undesired database upgrades

* Applies to customers who have purchased DB2 from SAP. Customers with other DB2 entitlement may need to obtain a DB2 Service Extension from IBM.

IBM and SAP: Partnership that makes a difference

SAP on DB2 platform team	Jointly staffed platform team at SAP AG Jointly staffed integration and support team at IBM Toronto Lab Platform team at SAP develops code that ships with DB2	✓
IBM reserves very significant portion of DB2 development plan exclusively for SAP requirements	SAP design review and mandatory sign off for all SAP-relevant developments in DB2 All DB2 code levels are tested and validated with SAP software prior to DB2's GA date. DB2 releases are typically certified for use with SAP applications within 4-8 weeks after IBM GA.	✓
SAP on DB2 Maintenance Offering	24x7 one-stop defect support through SAP DB2 follows SAP's support strategy: Underlying DB2 release remains in service for complete 5+1+2 or 7+2 maintenance of SAP system.	✓
Use at SAP and IBM	DB2 is a major development platform at SAP SAP runs DB2 IBM runs SAP	✓

Thank you!

Eero Koskinen

SAP Finland
Keilasatama 5
02150 Espoo

T +358 40 538 2034

eero.koskinen@sap.com
www.sap.com

