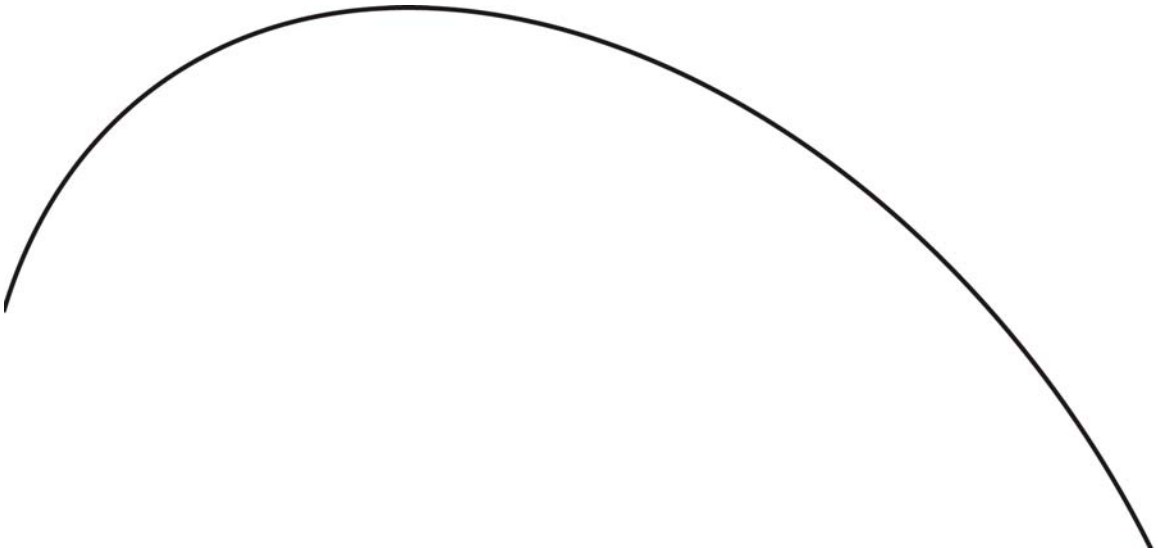

BlackBerry Pilot Program Framework

Contents

Summary

Last Updated: December 2003

This document provides information on the BlackBerry® wireless solution for enterprise environments, and supplies a framework, which can be used as a general guideline, on how to prepare for a BlackBerry pilot program.

BlackBerry wireless solution

The BlackBerry enterprise solution is a leading wireless connectivity solution that provides corporations with a secure[1], open platform for extending wireless communications and corporate data applications to mobile users. BlackBerry Enterprise Server™ software tightly integrates with existing enterprise systems, allowing integrated wireless access to a range of business information.

The BlackBerry enterprise solution includes the following features:

- Secure wireless extension of the corporate messaging environment
- Secure wireless access to corporate data (through push or pull technology)
- 'Always On Always Connected®' push technology, providing immediate access to corporate data, email, calendar, and global address list.
- Wireless synchronization of email and calendar items
- Integration with existing enterprise systems
- Simplified management and centralized control of the wireless environment
- Multi-network and multi-device support
- Global deployment capabilities
- Automated desktop software deployment (using an existing software distribution process or the silent installation process)
- Powerful development environment and open architecture for third-party and in-house solution development
- Advanced wireless handhelds include phone, email, corporate data, browser, SMS, and organizer applications

Note: Several support resources exist for the BlackBerry Wireless Handheld, BlackBerry Desktop Software, and the BlackBerry Enterprise Server. These resources include manuals, a 24-hour technical support line available through T-Support contracts and on a payment per incident basis, as well as a support web site (www.blackberry.com/support/). Third party support is also available.

[1] End-to-end Triple DES encryption from enterprise mailbox to handheld when operating BlackBerry Enterprise Server software

Introduction

Senior Management has agreed to evaluate, now what? How do I control the pilot to minimize headaches? How do I measure effectiveness? The following sections of this document will address the key steps necessary to conduct a successful pilot, starting from knowing the reasons behind the project, all the way to evaluating the technical merits of the solution.

Preparing for the pilot program

Before you begin a BlackBerry pilot program, you should complete the following actions:

- Define Goals and Objectives
- Establish a Project Team and Create a Plan
- Analyze and Assess your current environment
- Design and Develop the BlackBerry solution architecture
- Test and prototype the BlackBerry solution architecture
- Pilot the BlackBerry solution

Define Goals and Objectives:

When creating your plan, you'll need to define and capture the high-level business objectives and IT goals of your deployment in order to provide a clear direction for implementation. Some questions that would help in defining these goals may be:

- Why is your organization deploying a wireless solution?
- What business benefits will your organization derive from this wireless solution?
- What IT benefits will your organization derive from this solution?
- When does this project need to be completed and what is the timeline?
- What is in-scope and out-of-scope for this project?
- Who are the users affected by this project?
- What are the critical success factors?
- What are the risks?
- Which groups, organizations, and individuals will be involved in the process?

Some of the documents you might create to reach this milestone include:

- Goals and objectives document.
- Wireless strategy document.

Some of the objectives that you may want to consider might be:

- Increase productivity of pilot program participants.
- Increase responsiveness to time-sensitive email messages.
- Increase accessibility to sales force automation, field service and/or document management applications.
- Reduce Remote Access Server (RAS) dial-up costs, virtual private network (VPN) costs, mobile phone airtime costs, and personal digital assistant (PDA) and pager hardware displacement costs.

- Ensure that Wireless Data Access is inherently secure and adheres to the corporate security standards.

A goals and objectives phase helps you develop a project vision that is shared by the IT department, end-users and management, and helps create a successful deployment. However, to execute on the project vision, you need to have a solid project framework in place to be used as a roadmap through the project lifecycle. This framework, defined in the next sections, is a general guideline used by RIM, which could be leveraged or modified to fit your company's specific project framework as you see appropriate. This framework is normally intended to control the project framework, identify and manage project risks, provide clarity for the personnel involved in the project, and is to be used as a tool to provide a high quality project deliverable.

Establish a project team:

The project team should include members that have responsibility in the following areas:

- Messaging Administration
- Security
- Network Infrastructure and firewalls
- Helpdesk
- Project Management
- Procurement/Telecom
- Desktop Support/Software Deployment
- Web Development
- Carrier Technical Resources
- Change Management

Create a Project Plan:

Every project requires a plan that clearly identifies the phases of the project, and establishes a clear, precise and functional roadmap. This plan can be used as a high-level framework for the deployment team and management to quickly assess progress.

Most organizations have their own project management methodologies in place. Therefore, it is encouraged that project managers and technical leads use the information in this document as a general guideline, and integrate it with their own specific project management structures, as they see appropriate.

Projects have lifecycles. It never really ends. Only iterations of the cycle get completed, and then you start all over again. A project life cycle is the process of determining IT goals and aligning them with business objectives. The phases may be called differently within each project management methodology, and they typically have the same tasks/deliverables. For example, one might go from analyzing to planning, to developing to testing to piloting, to deploying and then to maintaining, and so on. As the needs change, it starts all over again.

Analyze & Assess current environment

The BlackBerry solution consists of several key components that leverage and integrate with your current infrastructure. The solution consists of a BlackBerry Enterprise Server that sits behind the corporate firewall and integrates with application servers and the messaging platform of the organization. (Currently, the BlackBerry Enterprise Server integrates with Microsoft® Exchange and Lotus® Domino™ messaging platforms. Integration of BlackBerry with GroupWise® and Oracle® messaging platforms is available through third party solution providers). The BlackBerry Enterprise Server, as shown in Figure 1, communicates with the BlackBerry handhelds, and/or devices enabled with BlackBerry connectivity, on the wireless network, through a secure Internet connection from behind the corporate firewall. Finally, the BlackBerry Desktop Software is installed on user's desktops, to allow end-user configurations and PIM synchronization.

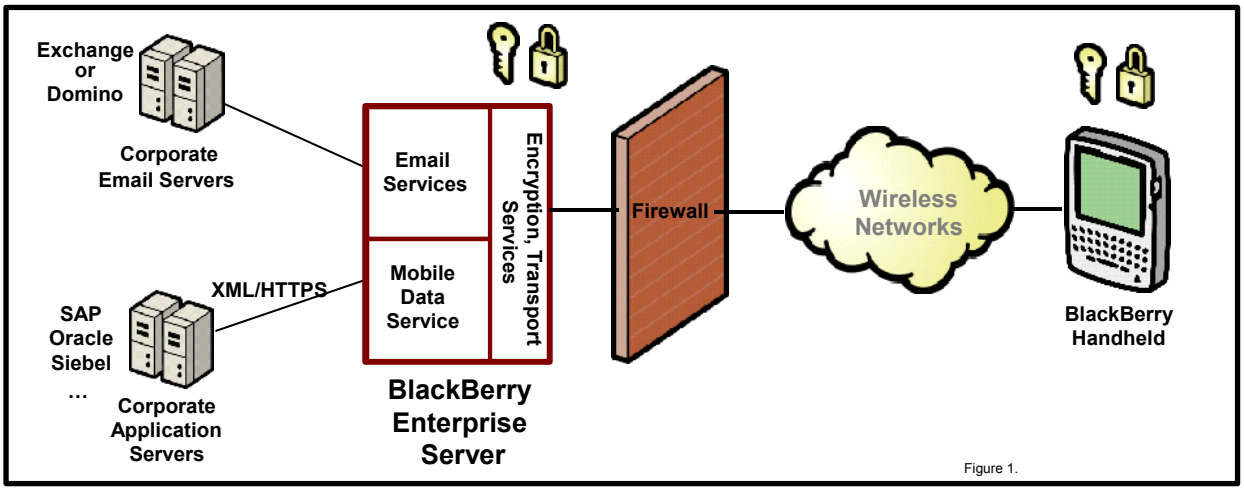

Figure 1.

Thus, the above requires that an outline of the current IT environment be in place, to understand the technology dependencies of introducing BlackBerry into your IT department. In addition to analyzing technology dependencies, other aspects of the entire solution would need to be analyzed: The following are questions that you may want to answer as you gather information in the analysis stage:

- How does the BlackBerry Enterprise Server work?
- What are the feature sets that are native to this solution?
- Do any of these features meet the business goals outlined?
- How will it integrate with my messaging platform?
- Will it require any modification of my existing environment?
- What are the security requirements to integrate it to my messaging environment?
- How is data been protected? What is the solution's security model? Are there any gaps, or vulnerabilities?
- What performance impact will this introduce to my messaging environment?
- What performance impact will this introduce to my network infrastructure?
- What does our Security Architects need to know about this?
- What are the existing fault tolerance and disaster recovery capabilities that are built into the product?
- What support structures/process are in place today?
- How do I support this product?

- What are my support options?
- How do I conduct knowledge transfer sessions to my helpdesk/support reps?
- What are the escalation processes that are in place?
- What training is available for my IT staff, my end users?
- What are our internal training requirements?
- How do users get this handheld?
- Are there any standards in place to order the handheld?
- Will it integrate through our processes?
- Who gets billed for it?
- What software maintenance is required?
- How do I activate the handheld?
- How do I RMA the handheld?
- Is roaming part of the basic activation?
- How do I support International locations?
- How do I support users that travel abroad?
- What wireless networks do the handhelds work on?
- What wireless Carriers are currently selling the handheld?
- What is the coverage map?
- Is roaming available?
- What are the price points?
- If I already have an existing corporate data agreement with a Carrier, can I leverage that to my own advantage?
- Do I need additional BlackBerry Enterprise Servers if I decided to get handhelds from multiple carriers?

The following sections can be used as a high level data points for what needs to be analyzed, and what should be accomplished by the end of the phase.

Inputs

- Technical analysis of systems involved in solution such as:
  - Mail Servers & Target BlackBerry Enterprise Servers
    - Number of Microsoft® Exchange sites (or routing groups) or Lotus® Domino™ named networks
    - Location of Simple Mail Transfer Protocol (SMTP) gateways
    - Microsoft Exchange or Lotus Domino version numbers
    - Microsoft Outlook® or Lotus Notes® version numbers
  - Networks: (LANs/WANs/Firewalls/Routers/Proxies/Internet Connections)
    - Number of Windows NT® domains,
    - Virus scanning process
    - Server backup methods
- Determine if policies exist in your organization that specify where a server that connects to an Internet host must be placed in the network. Does a demilitarized zone (DMZ) exist?

  - Desktops/Desktop Configurations & User Geographical Locations
    - Desktop configurations
    - Customer support contacts
    - Test lab availability
    - Software distribution methods
- Assess your organization's current wireless strategy.
- How many wireless devices (laptops, cell phones, PDAs) are in use?
- Does the organization have any long-term deployment strategy for wireless devices?
- What wireless networks are being used for wireless data access?
- What Line of Business Application currently exists that are wirelessly enabled?
- What line of Business Application can be seen as the most important application to extend wirelessly, to make your organization more competitive and differentiate it from its competitors?
- Interview Project sponsors to capture Parameters for the "Ideal solution" and review
- Capture/document company methodology, practices, constraints
- Define criteria for successful project completion, based on what is possible with product feature set

Outputs

- A project control document that outlines
  - Project Team members
  - Project scope & assumptions
  - Communications plan
  - Change management plan
  - Issue management plan
  - Risk management plan.
- A high-level wireless strategy document.
- A refined GANTT chart – with accurate estimates after parameters have been fully defined.
- Technical Documentation to ensure that system parameters have been appropriately captured. Examples of these documents are:
  - Network Diagram
  - Server Configuration Checklists
  - Desktop configuration parameters
  - Performance Requirements

Design & Develop technical architecture:

After you've completed your analysis, and have captured the necessary information that you'll need throughout the project, you start the design phase. During this phase, you create the actual design that you want to implement. The technology dependencies that you've identified in the previous phase become more important during this phase, so it is important that the various team members collaborate and share insight into the capabilities, functionality, and interdependencies of each feature.

The functional design specification should contain the necessary details about the features and functionality to allow other teams to easily identify resource requirements and commitments for implementing your wireless solution. For example, it is crucial for the desktop integration team to understand the necessary requirements of the BlackBerry desktop components, to ensure that they create and test desktop installer scripts, for automated silent installs, or update base desktop images with the BlackBerry Desktop Software. This document should also provide them with the appropriate expectations on future service packs/hot fixes, so that they can build it into their deployment processes. It is also as important to collaborate with your Security Group, and Network administrator to ensure they understand the security requirement to open tcp port 3101 on the external firewall

for out-bound only initiated traffic to the wireless network. During this phase, you also create a detailed project plan, with specific implementation tasks and a schedule.

Some primary deliverables you can include in your plan are:

- Architecture Plan (Functional Spec.)
- Communication and Knowledge Transfer Plan
- Project plan and schedule
- Features plan, listing which features are in and out of scope

Inputs

- Utilizing the information gained during the Analyze Phase – Define a potential solution(s) (in some cases multiple solution design options may be required – or further prototyping required to determine the option most appropriate for the environment)
    - Examples of Solution Parameters that can/could be considered:
        - System Architecture Design
        - Security & Operations Considerations
        - Support & Training Considerations
- Define not only the technical solution but some of the "softer" components around the solution
    - Examples could Include:
        - Test Strategies and System Verification Plans
        - Opportunities for Knowledge Transfer to project team
        - Performance Metrics
        - System Availability Metrics
    - Determine the total remaining project effort (until project end – barring any changes or unexpected events)
    - Identify the test group of users to run through the Prototype

Outputs

- Documentation defining the components of the proposed solution – Possibilities can include:
    - System Architecture Document (which can stand on its own or may include one or several of the following)
        - Operations Plan – the solution may have specific operational requirements (Example, how Administrators are alerted when certain types of faults occur)
        - Security Staging – there may be a requirement to define which security components will be implemented and how (IT Policy for example)
    - Migration to Pilot Plan – This may include how the system will be tested to ensure that it is meeting the design goals (and hence the project goals) and includes End User Acceptance Testing of the system.
    - Cut-over to production plan – A critical component of the methodology, ensuring that project team have all the information need to transition into production.
    - Knowledge Transfer Plan (how key information, techniques and best practices will be communicated to staff)
    - Initial Deployment Plan (device and desktop software installation, security settings)
    - Define the test suite to confirm which features need to be verified as part of the prototype and pilot phases (i.e.: user may rely heavily on Calendar functionality – therefore UAT should focus on that product feature)

Test & prototype the solution's architecture

Testing and prototyping is a core phase that every IT department conducts, in evaluating a wireless solution. This phase is essentially done to conduct a proof of concept of the proposed solution that was outlined in the previous stages. This allows the evaluator to verify the proposed solution, and whether it meets the necessary criteria that was previously defined. In addition to that, if multiple solutions are being proposed, this phase allows the evaluator to determine on technical merits the correct choice. During this phase, the project team will lay the necessary groundwork to move the solution into a Pilot program, with heavy interaction from the identified staff. The project team will also define the Pilot exit criteria, ensuring that the pilot has a definite end, as well as refine and test deployment strategies to facilitate easy migration to full deployment. Finally, during this phase, the project team will identify a small portion of the eventual user community who will participate in the pilot phase, ensuring their full support, and understanding of what they need to do and commit to conduct a successful pilot program. So in summary, the purpose of this phase is to:

- To conduct a proof of concept of the proposed solution
- To verify that the proposed solution will meet the necessary criteria
- If multiple solutions are proposed – to determine on technical merits the correct choice for you organization.
- Lay the necessary groundwork to move the solution into a Pilot with heavy interaction from the your staff
- Define the Pilot Exit Criteria (ensuring that the Pilot has a definite end)
- Refine and test Deployment Strategies to Facilitate easy migration to full deployment
- Identify the small portion of the eventual user community who will participate in the Pilot Phase
- Gain an understanding of the load profile generated by the BlackBerry solution

Inputs

- Utilize System Design Architecture and create a Test Bed
- Setup Initial Group of Users
- Execute Test Plan
- Execute on First Part of Knowledge Transfer
- Utilize Live Mail System

Outputs

- Test Bed Setup and Verified
- Test Users Running on system with production mail flowing
- Test Plan Executed
- Deployment Plan Updated and Validated
- System Design Architecture and Design Documents Refined based on the findings of the Proof of Concept
- BlackBerry Enterprise Server Installed
- Preliminary User Acceptance Feedback Gained

Pilot Phase

The pilot phase is the actual production-live testing phase. This is where you test your design in a real-world controlled environment with actual production end-user participation, where they perform their normal routines and tasks. This phase allows the project team to validate the systems architecture and design as well as update, change or modify the architecture based on the actual results of the this phase, in preparation for a full deployment. During this phase, the project team will receive feedback from end-users on the feature and

functionality of the product. This feedback is used to solve any discovered issues, in the system architecture, the established communication procedure, the operations plan, the support plan, as well as the provisioning plan.

Before starting the pilot phase, the project team should ensure that the test environment remains active and up-to date with the production environment. This will allow for continuous testing of features, scenarios, hot fixes, well into the future of the production roll-out. In addition to that, a series of test scenarios should be performed during the production environment to validate the functionality before turning it into the production rollout. In summary, the objectives of this phase are:

- Obtain Buy-In from key stakeholders that the solution is functioning as per requirements outlined in Analyze and Design phases
- Execute all plans (as though the solution was moving into production)
- Where necessary iterate to ensure all learning's are captured
- Expand the number of users utilizing training and deployment techniques as though it was a full deployment
- Verify Steady State Load Parameters and project out to deployment size to ensure design has headroom
- Generate Demand for the service
- Transition BlackBerry solution into the "Glass House"
- Confirm Server configuration settings to be optimal

Inputs

- Identified Group of Users Able to Participate
- When selecting participants consider the following guidelines:
    - Include employees who use wireless devices frequently (for example, laptop computers, or PDAs).
    - Include decision-makers (for example, system administrators and senior executives).
    - Include employees who use email frequently and will test the product thoroughly.
    - Select a minimum of 50 participants. The minimum might vary depending on the number of mobile employees in your organization.
- Approvals from management to Proceed with Production Pilot
- Production Quality Systems are Used (to aid in the transition to production at a later date)
- Plans created and refined as a result of the Design and Prototype Phases (except Migration to Production)
- Exit Criteria for completing Pilot

Outputs

- Production-Class System Implemented
- Production-Ready Migration Plans
- Help Desk Enablement
- Approval to proceed to full deployment and roll-out

Evaluation and Feedback of the Pilot Program

This is the final stage of the pilot program. The project team needs to have the mechanisms already in place to monitor the progress of the pilot, capture feedback, and fix, update, change, and retest any discovered issue during this phase. The project team should be able to collect feedback on the following:

- Support and escalation processes and procedures
- Operational processes
- Provisioning process
- Performance utilization
- Traffic flow
- Network coverage
- Unscheduled downtime
- Interoperability issues
- Scope changes
- Suggested improvements in product
- Product training
- Product feature set

With today's advanced Information Technology systems, it is relatively easy to quickly establish a process to capture feedback of the pilot program. The project team can use existing infrastructure technologies to capture the required feedback. This can be accomplished in a variety of ways including but not limited to the below:

- Customized Intranet Feedback Site
- Paper and Electronic Feedback Forms
- Email Feedback templates
- Regular scheduled feedback conference calls with pilot users
- General observations from the project team

Appendix A

Select a wireless network

Research the different types of wireless networks that are available in your area.

Wireless networks in Asia/Pacific

http://www.blackberry.com/hk/products/service/networks.shtml

Wireless networks in Europe

http://www.blackberry.com/uk/products/service/networks.shtml

Wireless networks in North America

http://www.blackberry.com/products/service/networks.shtml

Select a wireless network provider

Research the different wireless network providers (Carriers) that operate in your area whom sell BlackBerry.

Wireless networks providers in Asia/Pacific

http://www.blackberry.com/hk/purchasing/index.shtml

Wireless networks providers in Europe

http://www.blackberry.com/uk/purchasing/index.shtml

Wireless networks providers in North America

http://www.blackberry.com/purchasing/index.shtml