Title of Nomination: CalPERS Empowers Its Employers With Web "Self-Service"
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## CalPERS EMPOWERS IT EMPLOYERS WITH WEB "SELF-SERVICE"

### Executive Summary

The California Public Employees' Retirement System (CalPERS) is the largest public pension fund in the United States with a current investment portfolio of over $133.8 billion. It serves over one million active members, retirees, survivors and beneficiaries through its retirement benefit programs, and pays over $6.3 billion in retirement benefits annually. The membership of CalPERS' retirement program is comprised of approximately one-third State employees, one-third employees of the 2,519 local public agencies that contract with CalPERS for retirement benefits, and one-third classified school employees. In addition to the retirement program, CalPERS administers a statewide health program providing benefits to State and contracting public agency employees.

In the course of managing millions of members' retirement and health accounts, CalPERS was deluged with paperwork -- its contracting agencies (employers) generated tens of thousands of pages of paper for submittal to CalPERS. Until 1999, when CalPERS began exploring ways to leverage Internet technology to provide more efficient and less costly means for conducting business with its employers, it was common for California's State and public agencies to experience a four to six week delay between the time they submitted member changes and the time those changes actually took effect. Today, the picture is much different as a result of the Automated Communication and Exchange System (ACES).

ACES is a portal-based system that provides a highly secure environment in which employers can exchange retirement, health, and payroll information with CalPERS on a transactional basis. It is designed to provide self service capabilities (with no associated fees) to the more than 2,500 State and public agency employers that contract with CalPERS. A proof-of-concept (POC) system was developed in less than a year and implemented in June of 2000; full rollout commenced in February of 2001. Today, more than 1500 employers are using ACES to transact their business with CalPERS. ACES benefits California's State and public employers (and hence their employees) by:

- **Leveraging the Internet to eliminate incompatibilities between disparate systems.** Internet technology provides a common denominator that allows the broadest customer base possible to do business with CalPERS electronically.
- **Eliminating paper.** State and public employers across California can now do business with CalPERS electronically. ACES' business-to-business (B2B) infrastructure provides a secure means to more accurately exchange information. Less manual processing of information results in fewer errors.
- **Speeding up the process.** Prior to ACES, the multi-step process to provide a health card to a new enrollee took ten to twelve weeks. Now, with ACES, health cards are delivered within 5 days! And, members can more easily obtain medical care with a card in hand. In those cases where medical care is needed before the card has arrived, health carriers need only query the ACES system to verify that the member has coverage.

  Similarly, the process for providing user accounts (which give employers access to ACES) has been significantly enhanced. Prior to ACES, it took several weeks to set up these accounts. This process can now be completed in two days.
- **Reducing costs.** In addition to providing better customer service, ACES streamlines the overall process. Today, over 90% of the health enrollment workload is accomplished via ACES. As a result, processing costs are lower due to the reduced workload (for both CalPERS and the employers) and reduced postage charges.
- **Doing more with less.** With ACES, CalPERS increased the number of health transactions processed from 50,000 to 350,000 without increasing staff.
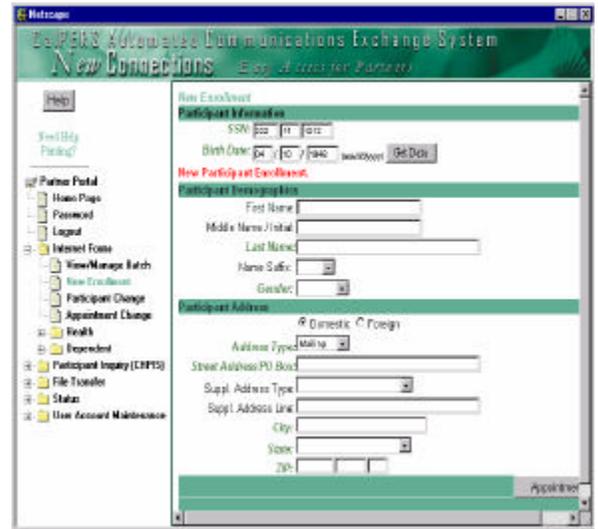
## A. Project Description

The California Public Employee's Retirement System (CalPERS) manages pension and health benefits for more than 1.3 million California active and retired public employees and their families. In the course of managing members' accounts, CalPERS has routinely handled tens of thousands of pages of paper forms on a monthly basis. Those days, however, are rapidly coming to an end with the implementation of the Automated Communication and Exchange System—ACES.

ACES was conceptualized to explore and validate technologies to establish a secure electronic infrastructure that would improve business between CalPERS and its business partners—the State agencies, school districts, and other public entities who are CalPERS health and retirement program customers. Along with improved data exchange, the intent was to provide self-service capabilities that promote a higher level of customer service than could be achieved with the existing paper-based system.

ACES is a portal-based system that provides a highly secure government to government (G2G) environment in which employers can exchange retirement, health, and payroll information with CalPERS on a transactional basis. In less than a year, ACES was implemented as a "proof of concept system" in June of 2000. Full rollout commenced in February of 2001. Today, more than 1500 employers are using the system to transact their business with CalPERS.



An ACES Transaction Screen

ACES consists of the following subsystems:

- **Internet File Transfer.** Employers can transmit retirement, health, and/or payroll files securely from their internal human resources systems to CalPERS for processing. This functionality allows employers to leverage their existing systems to exchange information with CalPERS.

- **Internet Form Data Entry.** Employers can enter retirement and/or health data directly onto online forms and securely submit them to CalPERS via the Internet. This functionality allows employers to submit individual transactions as needed rather than having to transmit an entire file.

- **Participant Inquiry.** Employers and carriers (e.g., Blue Cross) can securely perform data queries via the Internet. This query functionality allows employers and carriers to verify enrollment and track changes.

- **Account Management.** Employers and carriers can establish and manage ACES user accounts. This functionality provides self-service capability that significantly streamlines the process of creating and maintaining user IDs and passwords.

- **Employer TalkBack.** Provides a method for secure asynchronous communications between employers and specific CalPERS program areas (i.e., electronic communication e-mail). This functionality provides the ability to solicit information in a secure manner as well the ability to transfer miscellaneous file types.

## Architectural Overview

ACES leverages the Internet to provide efficient self-service capabilities. Internet technology eliminates incompatibilities between disparate systems to provide a common denominator that allows the broadest customer base possible to do business with CalPERS electronically.

The ACES portal controls access to the system and assists in navigation—a list of accessible business components or functions appears as a "navigation tree" on every screen. Each user's navigation tree is dynamically generated and contains only those applications for which the user is authorized. This architecture extends CalPERS services to employers without the employers having to modify their existing systems.

Extending CalPERS core systems to the Internet without rewriting existing systems proved to be one of the more critical challenges of this effort. The retirement and health benefits that CalPERS

**Technical Environment**

- ❑ Development tools: Oracle's jDeveloper and the Cleveland Framework
- ❑ Application Server: Oracle 9iAS
- ❑ Database Server: Oracle8 on HPUX11
- ❑ Load balancing: Cisco Local Director
- ❑ Web monitoring:  HP OpenView, WTO, VPIS
- ❑ Failover:  HP Service Guard
- ❑ QA:  SQA Team Test
- ❑ Performance Testing:  Mercury Interactive LoadRunner

provides are subject to dozens of dynamic, constantly changing regulations and policies. As an example, rising health care costs have resulted in a number of plan changes that must be reflected in CaLPERS core systems. These existing systems also involve complex interfaces with other state agencies and manage data using both UNIX- and mainframe-based systems. Extending the core systems to the Internet to minimize manual data entry required the "rediscovery" and programmatic implementation of hundreds of

business rules. This effort was further compounded by the need to minimize the presentation of this complexity to the many diverse ACES end users and maintain a user friendly and efficient system.

## Security and Privacy Considerations

In developing ACES, two key security issues required careful consideration. First, as a transactional system, all data within ACES is keyed to individual social security numbers. Protecting each member's privacy is of utmost importance. Second, while ACES efficiently extends CalPERS core resources to the Internet, special precautions must be taken to protect CalPERS enterprise resources and data from outside intrusion. As a result, the ACES security architecture was designed to:

- Provide employers with the confidence that information they send and receive is secure; and,
- Provide CalPERS management with the confidence that their information assets are secure.

These objectives were achieved by focusing on the issues of unauthorized access, unauthorized disclosure, and data alteration as described below.
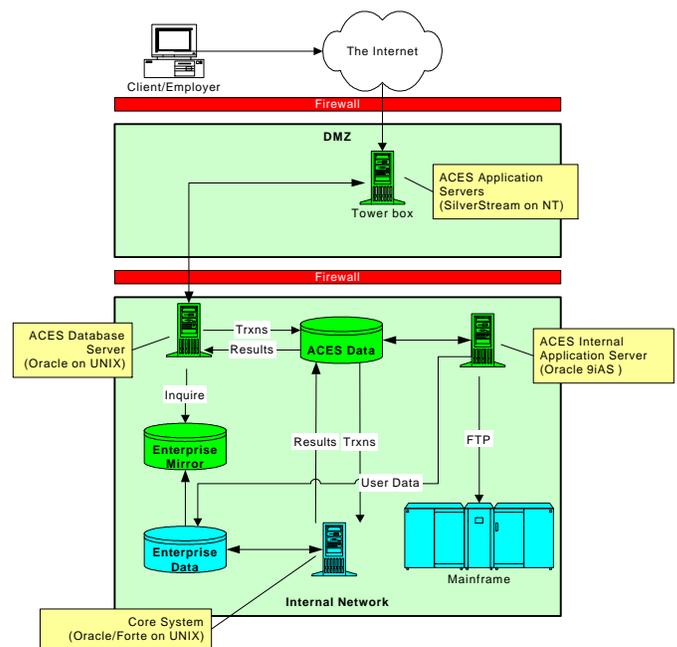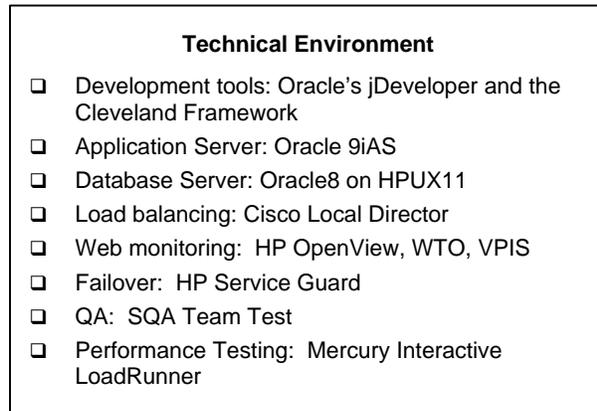
**Unauthorized Access**

ACES includes key security features that guard against unauthorized access to ACES-related data—access that might ultimately jeopardize member assets:

- **Authentication:** ACES requires a username and password to authenticate a user (i.e., verify that a user has the right to access the system).

- **Authorization:** Each user's account determines which functions and data that user can access. ACES users can view and download only data that their own agency has uploaded.

- **Protection:** The ACES security architecture uses the concept of a de-militarized zone (DMZ) to prevent unauthorized access to core systems and information.

- **Isolation:** As shown, users outside the DMZ cannot update an internal core database; they can only access a mirror of the enterprise data, thus protecting CalPERS core data assets from outside intrusion.

**Unauthorized Disclosure and Data Alteration**

ACES also prevents unauthorized disclosure by not allowing transmittals of unprotected data over the Internet, thereby preventing unauthorized interception of transmissions to obtain sensitive information. ACES users are required to use browsers that include Secure Sockets Layer (SSL) with 128-bit encryption (which has never been broken). Furthermore, if even a single character in the message is altered en route, the receiving computer will generate a different code and alert the recipient that the message is not legitimate.

Strong data security is also important to ensuring privacy. The ACES security architecture implements file and database security mechanisms to ensure data is protected.

Virus protection is also important to ensure that data and systems are not corrupted by computer viruses. ACES scans each file for viruses; files infected by viruses are rejected.

Providing a secure environment includes both offensive and defensive techniques. The above list describes the defense mechanisms that are in place to prevent security breaches. A comprehensive security architecture must also provide mechanisms to log and monitor key system events to ensure that a secure environment is achieved. Consequently, all transactions within the system are logged to provide traceability of system events, business transactions, and information updates. Each entry includes a timestamp, user, and functional information.

## B. Relative Significance to the Improvement of the Operations of Government

ACES provides the benefit of automation to CalPERS and more than 2,500 employers who use its services, easing workloads and streamlining processes. ACES provides ten key operational improvements:

1. **Reduced manual processing.** Because ACES allows employers to submit member, retirement, and health enrollment information or changes directly to CalPERS via the Internet, there is less paper to handle and data to manually enter. For the retirement program alone, CalPERS historically received an average of 14,829 forms per month. Today, the majority of this information is now being received online. In addition to cost avoidance, the end result is improved customer service, as CalPERS and employers are able to focus on addressing members' needs rather than on the time-consuming tasks associated with manual processing.

2. **ACES validations improve processing time and data quality.** ACES provides front-end edits (validations that prohibit employers from entering incorrect or incomplete information) to ensure that the required data and specific health and retirement values are supplied to properly process transactions. This is a significant improvement over the manual process, where errors on paper forms had to be corrected and resubmitted, creating extended delays (up to several weeks) affecting both employers and CalPERS.

3. **Self-service capabilities streamline the process for obtaining and maintaining user accounts.** The account management subsystem has significantly streamlined the former 17-step process for creating user IDs and passwords. Each employer can now create and maintain user IDs for their staff with little or no involvement from CalPERS. The process now consists of three steps, reducing the time it took to request, create, and distribute account information from several weeks to two days.

4. **Activities are more easily tracked and monitored.** All activities are logged to include the date, time, submitter, agency, and content of transmitted data. This becomes an online electronic record of data sent and received, eliminating manual record keeping both by employers and CalPERS while providing a mechanism to resolve errors and problems more quickly.

5. **The CalPERS employer base can expand more quickly, allowing delivery of services to more recipients.** In the past, the volume of health and retirement forms handled by CalPERS created a significant backlog, slowing the process of providing health benefits to new employers who wanted to use CalPERS services. With the implementation of ACES, CalPERS staff are conducting fewer follow-up phone calls and handling less paper for existing employers. Therefore, they now have time to process paperwork for new health employers so that they may join the CalPERS health benefits program more quickly.

6. **Payroll data is received and processed faster.** Prior to ACES, employers gathered payroll information and sent it to CalPERS on disks or tapes for processing; CalPERS staff then processed the data manually. The process could take a week. With ACES, it now takes minutes.

7. **Simple edits to validate payroll format saves time.** ACES performs a simple validation before it accepts payroll data to ensure that the required header, detail, and footer records are included. If any of these record types is missing, ACES provides on-line notification to the employer so they can correct the data immediately. This reduces time-consuming interaction between CalPERS and employers to correct invalid formats.

8. **Corruption of payroll media is minimized.** The handling and processing of corrupt tapes, diskettes, and cartridges is minimized with ACES since the system does not rely on external media to transmit data. ACES is able to detect corrupted files.

9. **Submitting payroll data via secure electronic connections reduces costs.** Data delivery is streamlined through the use of secure electronic connections. Both CalPERS and employers save labor costs related to the handling and loading of payroll data.

10. **ACES provides an infrastructure to support future CalPERS initiatives.** The ACES infrastructure provides the architecture to support the exchange of confidential data between CalPERS and employers in a G2G framework. Therefore, any current or future business processes that require the exchange of data with employers can be conducted through the ACES front end. In addition, the infrastructure permits users other than employers (e.g., health carriers, trading partners, etc.) to access and view data specific to their business needs. This infrastructure has already been extended to facilitate the billing of public agencies as well as Health Open Enrollment for CalPERS retirees (G2C). In the future, it will be leveraged to support other key CalPERS business initiatives.

## C. Benefits Realized By Service Recipients

ACES provides control, saves time and money, and is faster and easier to use. Specifically, the benefits realized include the following:

**ACES puts the employer in control.** ACES brings the power of the Internet to the employer's business desktop, which becomes a direct link to CalPERS to carry out health and retirement program business transactions. Employers can also go online for easy payroll reporting. No more filling out forms, no more waiting for forms to be processed, no more having to call CalPERS to obtain information—the employer simply inputs its data directly into CalPERS files, controlling the accuracy of its information. The

employer also has convenient access to its employee files as well as a large library of CalPERS enrollment information.

**Employers can provide better service to their employees.**
Sending transactions to CalPERS is faster and easier—with fewer errors providing more accurate records. ACES enables employers to provide better service to their employees. An employer can enroll new staff in CalPERS programs in an easy on-line session, without waiting for the mail or courier to get the information to CalPERS, and waiting again for CalPERS to process it. Prior to ACES, the multi-step process to provide a health card to a new enrollee took more between ten to twelve weeks. Now, with ACES, health cards are delivered within 5 days! And, members can more easily obtain medical care with a card in hand. In those cases where medical care is needed before the card has arrived, health carriers need only to query the ACES system to verify that the member has coverage—a significant service both to health carriers and to CalPERS members.

> ACES delivers health membership cards in less than a week, and its query capability can verify membership in seconds— ensuring that members do not face barriers to medical care because of processing delays.

**ACES saves the employer time and money.** ACES is a *free* service to CalPERS business partners and can be accessed directly through a desktop computer with an Internet web browser. When there is a new hire or when a current employee makes life changes—moving, getting married, having children—the employer enters the information into ACES and transmits it immediately to CalPERS. The employer can send its payroll information electronically, too. The results: no mailroom costs, no waiting, and quicker resolution of errors. When employees have questions about their health or retirement program status, employers can access the information on line and provide an answer immediately.

**Security is a priority.** ACES ensures that all personal employee information (social security numbers, addresses, etc.) remains confidential. When an employer signs up for ACES, they designate a security contact at their site who helps control access. The employer can even have supervisors track and monitor all CalPERS transactions, including reviewing a log of all data transmissions.

## D. Return on Investments, Short-Term/Long-Term Payback

ACES was developed to provide better customer service to over 2,500 employers and the 1.3 million individuals they represent. The benefits derived as a result of this business transformation are staggering. For example,
- ACES has transformed a four plus week process into one that can now be accomplished in days.
- Over 90% of all health enrollments are now transacted via ACES.
- The number of health enrollment transactions processed annually increased from 50,000 to 350,000 with no increase in staffing.
- ACES provides numerous process improvements that result in cost savings, such as:
  - Reduced mailing of initial paper forms;
  - Reduced mailing of forms requiring correction;
  - Reduced key data entry; and,
  - Reduced handling of electronic media (i.e., tapes, diskettes, CDs).

In summary, not only has CalPERS improved its service to its customers significantly but this first step stands to revolutionize the way we conduct business. Building upon the success of ACES, this initial investment is being leveraged to provide additional online services. ACES is the springboard for extending self-service capabilities to its general membership, thus compounding the return on investment in the years to come.