U.S. Department of Labor   **Employment and Training Administration**
Sam Nunn Atlanta Federal Center
Room 6M12 - 61 Forsyth Street, S.W.
Atlanta, Georgia 30303

May 24, 2005

SWA ISSUANCE NO. 05-06

SUBJECT: Funding for Implementation of a SUTA Dumping Detection System

1. <u>Purpose</u>. To inform state workforce agencies that funds are available to implement an unemployment insurance (UI) SUTA Dumping Detection System (SDDS) developed by the U.S. Department of Labor and to provide information about how to apply for these funds.

2. <u>References</u>. Public Law (P.L.) No. 108-295, the "SUTA Dumping Prevention Act of 2004"; the Social Security Act (SSA); the Internal Revenue Code (IRC), including the Federal Unemployment Tax Act (FUTA); Unemployment Insurance Program Letter (UIPL) Numbers 34-02, 30-04, and 30-04, Change 1.

3. <u>Background</u>. SUTA Dumping refers to tax rate manipulation, as practiced by some employers and recommended by some financial advisors, in order to pay lower state UI taxes than their unemployment experience would otherwise allow. ("SUTA" refers to State Unemployment Tax Act.)

   The SUTA Dumping Prevention Act of 2004 amended the SSA to add Section 303(k), establishing a nationwide minimum standard for detecting and preventing SUTA Dumping. States are required to amend their UI laws to conform to this new requirement.

4. <u>SDDS Developed by the DOL</u>. To assist states to detect SUTA Dumping activities, DOL entered into a cooperative agreement with the North Carolina Employment Security Commission (NCESC) to develop a SUTA Dumping Detection System (SDDS) that can be installed and implemented by all states at minimal cost. The resulting DOL SDDS is a server-based system with a browser interface that compares extract data from states' mainframe tax systems to a variety of criteria that may indicate tax rate manipulation (SUTA Dumping) activity.

   Seven states (North Carolina, Nebraska, Rhode Island, Texas, Utah, Virginia, and Washington) tested the SDDS application in February 2005; it is ready for distribution once a licensing agreement is signed by each interested state. As soon as licensing agreements are obtained from interested states, the software and users' manual will be distributed to those states at no cost.

   States choosing to use the DOL SDDS system will also be offered technical assistance and support for the implementation and operation of the system through the UI Information Technology Support Center (ITSC) and the NCESC. Technical assistance will be provided for procurement of necessary hardware, installation and configuration, programming of related extract files, and enhancements made to the DOL SDDS application through Fiscal Year (FY) 2007.

5. <u>Funding and Specifications</u>. FY 2005 supplemental funding is available for SDDS implementation, including technical support and training related to SUTA Dumping activities. States choosing to use the DOL SDDS will be provided funding to procure the necessary hardware and software and for installation of the application as well as technical support. Funding will also be provided to states for

training related to the SDDS, as well as enforcement of the new legal provisions related to SUTA Dumping.

A state that decides to purchase or develop its own SUTA Dumping detection system may request funds for the necessary related hardware/software, technical support, and training. However, the requested funds cannot be an amount greater than that which the state would be entitled to receive for the DOL SDDS. States may request funding as follows:

Up to $13,000 to develop the necessary programs to generate the nine (9) extract files used by the DOL SDDS application. Technical specifications for the extract files are detailed in Attachment No. 1. States opting to develop their own SUTA Dumping detection system may request this portion of funding for equivalent work, if appropriate.

Up to $14,000 (small state), up to $22,000 (mid-size state), and up to $40,000 (large state) to purchase the appropriate hardware configuration specified in Attachment No. 2, General Specifications for the SUTA Dumping Detection System (SDDS) Hardware and Software Configurations. The funding level is determined by the configuration size of the state as indicated in Attachment No. 3, List of State Size Configuration Classifications. Because of the amount of data that a state's system must be capable of processing, states must agree to procure a system consistent with the specifications identified for their size state. It is strongly recommended that states not deviate from the specified configurations as it may adversely impact the supportability of the DOL SDDS software. States opting to develop their own SUTA Dumping Detection System may request this portion of funding up to the funding level indicated above based on state size.

Up to $9,000 for Information Technology (IT) costs for implementation and configuration of the hardware and software needed to run the DOL SDDS application. States opting to develop their own SUTA Dumping Detection System may request this portion of funding for equivalent work, if appropriate.

Up to $25,000 for staff training regarding the implementation and/or enforcement of new state SUTA Dumping law provisions. This training may include costs for staff to participate in the SUTA Dumping training and workshops offered in connection with the National UI Tax Conference in August 2005.

In addition to the extract file development, implementation, and hardware and software costs, each state requesting the DOL SDDS software will be provided funding through FY 2007 for ongoing maintenance and technical support costs for the DOL SDDS software. A technical support and maintenance program is available through the ITSC in partnership with the NCESC. Funding levels are yet to be determined and will be announced at a later date. However, the funding will cover the full cost of the ITSC/NCESC support program through FY 2007, and states are encouraged to accept this offer of support. States opting not to accept the offer of ITSC/NCESC maintenance and support may request equivalent funding for their own or other maintenance and support.

6. Supplemental Budget Request (SBR) Application. States are encouraged to submit the SBR application for this funding by completing Attachment No. 4, the SBR application. Advance funding provided to the DOL SDDS pilot states must be deducted from their SBR request(s).

When completing the SBR application, states should:
- Indicate the state's name and date of the request.

- Determine the state's classification (small, medium, or large) from Attachment No. 3, the List of State Size Configuration Classifications, for the maximum SDDS start-up costs allowed the state.
- Provide the state's estimate, based on state size, of start-up costs in each category (not to exceed a total of $62,000).
- Indicate the method of funding desired for technical support and maintenance.
- Indicate the amount of funding requested for SUTA Dumping training and indicate the amount requested up to the maximum allowed. This should include funds requested for participation in training/workshops at the 2005 National UI Tax Conference. Individuals may register for the conference by accessing the following Internet link:

    http://cl.idaho.gov/portal/ICL/alias__uitax/tabID__0/DesktopDefault.aspx?init

7. Action. State offices should forward any completed SBR applications to the regional office, Attention: Randy Fadler, by June 6, 2005.

8. Inquiries. Direct questions to Dianna Milhollin or Randy Fadler at 404-562-2122 or milhollin.dianna@dol.gov or fadler.randy@dol.gov.

9. Expiration Date. September 30, 2005.

HELEN N. PARKER
Regional Administrator

Attachments

General Specifications for the SUTA Dumping Detection System (SDDS)

EXTRACT FILE LAYOUT

SUTA File Layouts

The data that is loaded into SDDS has to be extracted from its source into fixed-length files. The extracts must conform to the following layouts. Fields that are indicated as "R" for Required must have data present in the extract. Fields that are specified as "O" for Optional must exist as specified in the layout but do not require actual data. File layouts are also designated Required or Optional. Files that are Required are needed by the SDDS loader to run successfully and represent the minimum amount of information to be provided to the system for the purpose of SUTA dumping detection. However, states should make every effort to load all specified data available to them to gain the full benefits and features of SDDS. Limiting the amount of information loaded into the system will limit the system's ability to accurately analyze a state's SUTA activity for purposes of SUTA dumping detection.

Wage Records, Employer, and Employer Contacts

An extract will be created for each quarter of Wage Record, Employer data, and Employer Contacts data, to be loaded into the system. **Every quarter of Wage Record data must have a corresponding quarter of Employer data and Employer Contacts data.**

For example, if a state wants to load all Wage Records for the twelve quarters from 2000 Quarter 1 to 2003 Quarter 4, twelve Wage Record extract files will be created, one for each quarter, and twelve Employer Information extract files will be created, one for each quarter, and twelve Employer Contacts extract files, one for each quarter.

This section identifies and describes the input files to SDDS. All states' wage record files will contain the following data items:

- Year
- Quarter
- Employer UI Account Number
- Federal Employer Identification Number (EIN)
- Social Security Number of the worker
- Name of worker (completeness and format varies by state)
- Wages paid by the employer to the worker

(States that collect additional data items in their wage record system, such as hours worked, worksite (reporting unit), and occupation, should not include those elements in the extract.)

The Wage Record extract is a fixed-length file and must be in the format shown in Table 1. This file is required by SDDS.

Table 1 - Wage Record File Layout				
Position	*Short name*	*Description*	*Format*	*Required*
1-9	SSN	SSN	9 digits, no dashes	R
10-24	Name_first	First Name	Alpha – filler needed	R
25	Name_middle	Middle initial	Alpha	R
26-45	Name_last	Last name	Alpha	R
46-47	State	State FIPS code	2 digit	R
48-57	Empr_no	UI Account Number	10 digit (left pad w/ 0s)	R
58-62	Seinunit	State UI reporting unit number	5 digit (left pad w/ 0s) Fill with 00000 if unavailable	R
63-71	EIN	Employer identification number	9 digit (left pad w/ 0s)	R
72-75	Year	Year YYYY	4 digit	R
76	Quarter	Quarter Q	1 digit	R
77-86	Wage	Quarterly wages paid	10 digit (no commas or $ sign)	R
Source: Adapted from LEHD Technical Paper No. TP-2002-05 (rev), page 157.				

Employer Information: The Employer Information extract is a fixed-length file and must be in the format shown in Table 2. This file is required by SDDS.

Position	Short name	Description	Format	Required (R) or Optional (O)
		Table 2 – Employer Information File Layout		
1-2	Stfips	State FIPS of the state that the file is from	Alpha2	R
3-12	UIAccount	UIAccount	Alpha 10 chars (left pad w/ 0s)	R
13-21	EIN	Federal Employer identification number	Alpha9 (left pad w/ 0s)	R
22-25	Year	Year of Employer Record	Alpha 4	R
26	Quarter	Quarter of Employer Record	Alpha 1(if a state has only annual records, the quarter is 0)	R
27-61	Name1	Primary Name of Employer	Alpha 35	R
62-96	Name2	Secondary Name of Employer	Alpha 35	O
97-131	UI Address1	1st line of address from UI block	Alpha35	O
132-166	UI Address2	2nd line of address from UI block	Alpha35	O
167-196	UI City	City of Employer from UI block	Alpha30	O
197-198	UI State	Stfips of Employer from UI block	Alpha2	O
199-203	UI Zip 5	5-digit zip code from UI block	Alpha5	O
204-207	UI Zip 4 Extension	4-digit zip code extension from UI block	Alpha4	O
208-242	Physical Address 1	1st line of address from Physical Block	Alpha35	O
243-277	Physical Address 2	2nd line of address from Physical Block	Alpha35	O
278-307	Physical City	City of Employer from Physical Block	Alpha 30	O
308-309	Physical State	Stfips of Employer	Alpha2	O
310-314	Physical Zip 5	5-digit zip code	Alpha5	O
315-318	Physical Zip 4	4-digit zip code extension	Alpha4	O
319-328	Telephone	10-digit telephone	Alpha10, no dashes	O
329-330	Ownership	Ownership Code	Alpha 2, known valid values: 10 Federal 20 State 30 Local 40 International 50 Private	O
331-334	SIC code	Industry Code SIC	Alpha 4	O
335-340	NAICS code	Industry Code NAICS	Alpha 6	O

(Adjusted during v1.10 of SDDS release.)

Employer Contacts File: The Employer Contacts File extract is a fixed-length file and must be in the format shown in Table 3. This file is required by SDDS.

Position	Short name	Description	Format	Required (R) or Optional (O)
		Table 3 - Employer Contacts File Layout		
1-2	Stfips	State FIPS of the State that the file is from	Alpha2	R
3-12	UIAccount	UIAccount	Alpha 10 chars (left pad w/ 0s)	R
13-16	Year	Year of Employer Record	Alpha 4	R
17	Quarter	Quarter of Employer Record	Alpha 1	R
18-52	Contact Name	Contact Name	Alpha35; right pad with spaces	R
53-62	Contact Telephone	Contact Telephone	Alpha10, no dashes	O
63-71	Contact SSN	Owner/Officer SSN	Alpha9, no dashes	O
72-101	Contact Title	Contact Title	Alpha 30; right pad with spaces	O

Tax Quarter Information: The Tax Quarter extract is a fixed-length file and must be in the format shown in Table 4. This file is required by SDDS.

Position	Short name	Description	Format	Required
		Table 4 -Tax Quarter Information File Layout		
1-2	Stfips	State FIPS	Alpha 2	R
3-12	UIaccount	UI Account Number	Alpha 10 (left pad w/ 0s)	R
13-16	Year	Year	Alpha 4, YYYY	R
17	Quarter	Quarter	Alpha 1	R
18-26	Taxpaid	Taxes Paid	Alpha 9* (left pad w/0s)	R
27-37	Totalwage	Total Wages Reported	Alpha 11* (left pad w/0s)	R
38-48	Taxwage	Taxable Wages Reported	Alpha 11* (left pad w/0s)	R
49-54	TaxRate	Tax Rate of Account	Alpha 6* (left pad w/0s)	R
55-60	Mnth1emp	Employment in first month of quarter	Alpha 6 (left pad w/0s)	R
61-66	Mnth2emp	Employment in second month of quarter	Alpha 6 (left pad w/0s)	R
67-72	Mnth3emp	Employment in third month of quarter	Alpha 6 (left pad w/0s)	R

*Alpha9 can include two decimal places up to 9 characters, including the decimal point, example: 123456.89, or represent whole dollars (no decimal point or cents), example: 123456789
Alpha11 can include two decimal places up to 11 characters, including the decimal point, example: 12345678.01, or represent whole dollars (no decimal point or cents), example: 12345678901.
Tax Rate, Alpha6, should include the decimal point, example: 12.456.
Benefit Charges File layout – The Benefit Charges extract is a fixed-length file and must be in the format shown in Table 5. This file is optional; however, if included, all fields are required.

Position	Short name	Description	Format	Required (R)
		Table 5 - Benefit Charges File Layout		

Position	Short name	Description	Format	Required or Optional (O)
1-2	Stfips	State FIPS	Alpha 2	R
3-12	UIaccount	UI Account Number	Alpha 10 (left pad w/ 0s)	R
13-16	Year	Year	Alpha 4	R
17-18	Periodtype	01 for annual, 02 for quarterly, 03 for monthly	Alpha2	R
19-20	Period	Period, 00 if periodtype is annual	Alpha 2	R
21-32	ChargeAmount	Total Charges Reported for the Account in a designated timeframe	Alpha 12 (includes decimal character)	R
33-42	ChargeDate	Date Charges Were Assigned to the Account	Alpha 10 MM/DD/YYYY	R

Voluntary Contributions - The Voluntary Contributions file (Table 6) is an optional, fixed-length file. This section will not be activated during the setup routine if a state does not have voluntary contributions. However, if a state intends to use the voluntary contribution part of the program, then all fields are required.

Table 6-Voluntary Contribution File Layout				
Position	*Short name*	*Description*	*Format*	*Required*
1-2	Stfips	State FIPS	Alpha 2	R
3-12	UIaccount	UI Account Number	Alpha 10 (left pad w/ 0s)	R
13-16	TaxYear	Tax Year Contribution was made	Alpha 4	R
17-27	Contrib	Contribution Amount	Alpha 11	R
28-37	Contrib Date	Contribution Date	Alpha 10 in format MM/DD/YYYY	R

Demographics File - The Demographics files are optional, fixed-length files and, if loaded, must be in the format specified here.

Position	Length	Field Name	Description	Format	Valid Values	Required (R) or Optional (O)
					Table 7 - Demographics File Layout	
1-3	3	DataSourceType	Type of data source	Alpha3	WFR=Workforce Registration UI=Unemployment Insurance DMV=Dept of Motor Vehicles NH=New Hires PT=Performance Tracking OTR=SSA/LED/Other	R
4-6	3	DataSource	The source of this data	Alpha3	State Specific	R
7-16	10	DataSourceDate	The Date the data from this data source was generated	Alpha10	MM/DD/YYYY	R
17	1	StatusFlag		Alpha1	N=New Record this quarter C=Changed Record since last quarterly run U=Unchanged	R
18-19	2	SourceStfips	Which state did this data come from	Alpha2	State FIPS	R
20-23	4	Year	Year this data represents	Alpha4	YYYY	R
24	1	Quarter	Quarter this data represents	Alpha1	If unknown, pad with spaces	R
25-33	9	SSN	Social Security No	Alpha9	Alpha9 no dashes	R
34-43	10	Alternate ID	StateSpecific Alternate ID number - such as Driver's License Number	Alpha10	If unknown, pad with spaces	O

44-153	110	FullName	concatenation of all name fields. Or if you have a single field with name then put it here	Alpha110	If unknown, pad with spaces	O
154-183	30	LastName		Alpha30	If unknown, pad with spaces	R
184-213	30	FirstName		Alpha30	If unknown, pad with spaces	R
214-243	30	MiddleName		Alpha30	If unknown, pad with spaces	R
244-247	4	Title		Alpha4	If unknown, pad with spaces	O
248-251	4	Suffix		Alpha4	If unknown, pad with spaces	O
252	1	Gender		Alpha1	M=male F=female U=Unknown	R
253	1	Race		Alpha1	1=White 2=Black African American 3=Asian 4=American Indian or Alaska Native 5=Native Hawaiian or Other Pacific Islander 6=Multiple Categories Reported 9=Race Unknown	R
254	1	Ethnicity		Alpha1	0=Not Hispanic 1=Hispanic 9=Unknown	R
255-264	10	DOB		MM/DD/YYYY	If unknown, pad with spaces	O
265	1	Citizen		Alpha1	C=Citizen A=Authorized Alien N=Unauthorized Alien U=Unknown	R
266-300	35	Address1		Alpha35	If unknown, pad with spaces	O
301-335	35	Address2		Alpha35	If unknown, pad with spaces	O
336-	35	Address3		Alpha35	If unknown, pad with spaces	O

370						
371-400	30	City		Alpha30	If unknown, pad with spaces	O
401-402	2	State		Alpha2	If unknown, then UU	R
403-407	5	Zip5		Alpha5	If unknown, then 00000	R
408-411	4	Zip4		Alpha4	If unknown, then 0000	R
412-413	2	Stfips	State FIPS	Alpha2	If unknown, then 99	R

The Account Balances file (Table 8) is an optional, fixed-length file.

Table 8 - Account Balances File Layout				
Position	Short name	Description	Format	Required (R) or Optional (O)
1-2	Stfips	State FIPS	Alpha 2	R
3-12	UIaccount	UI Account Number	Alpha 10 (left pad w/ 0s)	R
13-16	Year	Year	Alpha 4	R
17-18	Periodtype	From the periodtype table	Alpha2	R
19-20	Period	Period	Alpha 2	R
21-33	AccountBalance	Tax Account Balance for the Specified Period	Alpha 13 (to be converted into a 9,2 decimal that can be negative)*	R
34-40	ExperienceRating	Historical Experience Rating of UIAccount	Alpha 8 (to be converted into a 3,3 decimal that can be negative)**	O

Example of positive and negative account balances: 000001234.56, -000001234.56
States that do not carry account balances should pad with spaces.
**Example of positive and negative experience rating:* 0123.678, -234.678

The Predecessor/Successor file (Table 9) is an optional, fixed-length file. If a state wants to include it, all fields require data.

Table 9 - Predecessor/Successor File Layout				
Position	Short name	Description	Format	Required (R) or Optional (O)
1-2	Stfips	State FIPS	2 digits	R

3-12	pred_uiaccount	Predecessor UIAccount #	Alpha 10 (left pad w/ 0s)	R
13-22	Succ_uiaccount	Successor UIAccount #	Alpha 10 (left pad w/ 0s)	R

Critical Assumptions:

1. That we are dealing with 100% of total successorships – when generating the records for this file, you should only include total successorships.
2. That this file is all inclusive -- because this file has no time on the relationship, it has to assume that the contents of the file are the full contents of the destination table. Therefore, this file should be a cumulative set of all 100% successorships. For example, if you have new predecessor/successor relationships to add 6 months from now, you would add those records to the ones that you have in your file today.

Administrative Table Definitions:

The Administrative tables necessary to manage the information in the Account Balances table are defined in the following period/periodtype tables. These constructs are the same as those established for the ALMIS database standard.

Position	Period Column	Type	Constraint	Description	Required
This table contains one record for each period identified in the database.					
1-4	periodyear	Char(4)	Primary Key	Character representation of calendar year (e.g., 2000)	R
5-6	periodtype	Char(2)	Primary Key	Code describing type of period (e.g., annual, quarterly, monthly, etc.)	R
7-8	period	Char(2)	Primary Key	Period Code (see below for examples)	R

Position	Period Type Column	Type	Constraint	Description	Required
This table contains one record for each type of period (e.g., annual, quarterly, hourly, etc.)					
1-2	periodtype	char(2)	Primary Key	Code describing type of period (e.g., annual, quarterly, monthly, etc.)	R
3-42	pertypdesc	varchar(40)		A description of the period type	R

Predefined periodtypes are as followed:

periodtype	**01 = Annual (calendar year)**
	02 = Quarter
	03 = Monthly
	04 = Weekly
	05 = Decennial
	06 = BI-MONTHLY
	07 = SEMI-ANNUALLY
	08 = BI-ANNUALLY
	99 = Not Applicable
	50-70 = State Defined Period Types

Some examples of periodyear, periodtype, period combinations would be as follows:

2003 Annual* → Periodyear = '2003', Periodtype = '01', Period = '00'

2003 2nd Quarter → Periodyear = '2003', Periodtype = '02', Period = '02'

2003 November → Periodyear = '2003', Periodtype = '03', Period = '11'

*Calendar Year

Periodyear is the year for which the calculation is applied to generate a new tax rate. For example, in North Carolina, the account balance as of July 31, 2003, was used in the computation of the tax rate for Calendar Year 2004; therefore, the periodyear is 2004.

General Specifications for the SUTA Dumping Detection System (SDDS)

Hardware and Software Configurations

The SDDS is a server-based system with a browser interface. A server platform was selected for several reasons:

- scalable architecture,

- data storage requirements (particularly for large states)

- RAM and processing capacity to provide reasonable response times, and

- the ability to support multiple analysts simultaneously.

The browser-based interface was employed to speed development, simplify change control and, if appropriate at a future time, to allow remote access. The server/database software, as described, is licensed to support the system as a multi-user workstation application.

States will need to create extracts from tax, wage records and related data sets. File specifications will be provided for all required extracts. SDDS includes data loader/analyzer utilities to import data from the raw files into the database. A CD including these utilities, database and snapshot creation scripts, technical documentation, etc., will be provided to participating states.

The general software specifications for the SDDS are as follows:

- Browser: MS Internet Explorer version 6.X

- Server OS   MS Windows Server 2003 OS

- Environment: .NET Framework 1.1

    o VB.NET ver. 2003

    o IIS 6.0

- Database: MS SQL Server 2000 Enterprise Edition

The hardware configuration is designed to function as both the web and database server. As designed, the system will store the application, OS and temp files separately from the data files and access these functions through separate controller channels. RAID arrays are configured to optimize access speed during data loads without compromising production response times.

Three system sizes--small, mid-size, and large--have been designed to accommodate all states. Each state will customize the data storage requirement to fit its particular need. All configurations represent a carefully calculated balance of performance and cost.

Small State Hardware General Description

The small state system is a single, internal enclosure server that consists of a minimum 3.06GHz dual Intel Xeon processors with 512KB level 2 ECC Cache, 4GB of RAM, eight 72.8 GB Ultra320 15000 rpm hard drives, and a dual channel (Ultra320 capable) RAID controller. This configuration includes redundant hot-pluggable power supply and fan.

The dual processors with a minimum of 512kb L2 Cache are needed to provide both the real-time performance to run the SQL queries and to minimize the data load times.

4GB of RAM is specified for performance optimization. MS SQL Server effectively utilizes both the processor speed and available RAM to maximize performance. Generally speaking, more is better; however, like most things in life, there is a downside. In this case it is cost. In addition to the higher cost of the faster processor and additional memory, the price of the server operating system increases if the installed RAM exceeds 4GB. Servers configured with 4GB of memory, or less, can run Windows 2003 Standard Edition Server. The Standard Edition of the operating system provides all the functionality the application will require.

The configuration employs eight, 72.8 GB Ultra320 hard drives. The system is designed with three internal storage arrays to improve read/write performance. This arrangement segregates the administrative functions from the data storage. Two, two-drive mirrored (RAID 1) arrays are utilized to optimize performance for transaction logs, indexes, operating system, and the temp.db function. One four-drive RAID 1+0 (mirrored and striped) array is configured to optimize SQL database performance. This is particularly significant during the data loading process.

The system supports the three internal storage arrays with a dual channel, Ultra320 capable, controller to support the separation of administrative and data functions discussed above for improved throughput. The mirrored and striped four-drive array and one of the mirrored two-drive arrays will share one channel of the controller. The second mirrored and striped two-drive array will utilize the second channel of the controller.

All hard drives in the configuration are Ultra320 SCSI devices. The 72.8GB drive is the largest currently available hard disk that supports a spin rate of 15,000 rpm's. This drive speed is essential for rapid response times and overall database performance (10,000 rpm drives are too slow to achieve the desired response times).

Mid-sized State Hardware General Description

The mid-sized state system combines internal and dual bus external storage to accommodate up to 20 drives and consists of minimum 3.2GHz Intel Xeon dual processors with 1MB level 2 ECC Cache, 4GB of RAM, 72.8 GB Ultra320 15000 rpm hard drives, and a four-channel (Ultra320 capable) RAID controller. This configuration includes redundant hot-pluggable power supply and fan.

The dual processors with a minimum of 1MB L2 Cache are needed to provide both the real-time performance to run the SQL queries and to minimize the data load times.

4GB of RAM are specified for performance optimization. MS SQL Server effectively utilizes both the processor speed and available RAM to maximize performance. Generally speaking, more is better; however, like most things in life, there is a downside. In this case it is cost. In addition to the higher cost of the faster processor and additional memory, the price of the server operating system increases if the installed RAM exceeds 4GB. Servers configured with 4GB of memory, or less, can run Windows 2003 Standard Edition Server. The Standard Edition of the operating system provides all the functionality the application will require.

The configuration employs up to twenty 72.8 GB Ultra320 hard drives. The system is designed with three internal storage arrays to improve read/write performance. This arrangement segregates the administrative functions from the data storage. Up to three, two-drive mirrored (RAID 1) arrays are utilized to optimize performance for transaction logs, indexes, operating system, and the temp.db function. The fourth mirrored and striped (RAID1+0) array will consist of an even number of drives, up to 14 total, in the external enclosure.

The system supports the storage arrays with a four-channel, Ultra320 capable, controller to support the separation of administrative and data functions discussed above for improved throughput. Two of the mirrored, two-drive arrays will share one channel of the controller; the third mirrored, two-drive array will occupy its own channel of the controller. The fourth array, in the external enclosure, will utilize the third channel of the controller.

All hard drives in the configuration are Ultra320 SCSI devices. The 72.8GB drive is the largest currently available hard disk that supports a spin rate of 15,000 rpm's. This drive speed is essential for rapid response times and overall database performance (10,000 rpm drives are too slow to achieve the desired response times). This is particularly significant during the data loading process.

<u>Large State Hardware General Description</u>

The large state system is a dual Intel Xeon 3.2GHz processor with 1MB Level 2 ECC Cache and 8GB of RAM. This configuration includes two external dual bus storage arrays that each hold up to 14 additional Ultra320 drives and an internal enclosure that holds 6 internal drives. A 4-channel RAID controller that supports the 72.8GB Ultra320 devices is required. This configuration requires a minimum of twenty-two drives up to a maximum of thirty-four drives. This configuration includes redundant hot-pluggable power supply and fan.

Large states require additional external storage enclosures to hold the number of drives required for the datasets. The total number of drives installed in each enclosure will be determined by the RAID configurations and the dataset size estimates generated for this project. For optimal performance, systems will be configured with up to 5 RAID arrays.

> 3 - two drive RAID One Arrays configured to separate and optimize performance for transaction logs, indices, operating system, and temp.db
>
> 2 - RAID 1+0 (Ten) Array configured to optimize SQL database performance up to 14 maximum drives for a total disk capacity of 500GB.

Each enclosure will contain one RAID 1+0 (Ten) Array. The three RAID One Arrays will use the two remaining channels as allowed by the internal enclosure.

Large states require Windows 2003 Enterprise Edition to support the 8GB RAM.

<u>Hardware Notes</u>

The details of each state's existing strategies for system backup, disaster recovery and business continuity are unknown. The above configuration does not include backup software or devices. However, the storage purchased by an individual state should accommodate space for storage of database backups to system drives. The SUTA application recommends that a database backup be completed prior to any applied updates.

It is highly recommended that this system be attached to an uninterruptible power supply (UPS). If UPS is not already available, small units may be purchased to support a single server.

<u>Software Notes</u>

Windows 2003 CALs (client access licenses) only need to be purchased for users who are not already licensed for Windows2003 Server in your environment. If this will be your first Windows 2003 Server, then a CAL will have to be purchased for each user of that server.

SQL 2000 CALs only need to be purchased for users who are not already licensed for SQL 2000 in your environment regardless of Standard or Enterprise edition.

Windows Server and SQL licensing is sufficient for use by internal users only with SQL client tools or via an intranet. Microsoft now requires that all SQL servers with databases accessed through the internet must be licensed on a per processor basis, not a CAL basis. The price is significantly higher for such publicly accessible, internet-facing databases (e.g., NC per processor contract price for SQL Server Enterprise is over $12,300). An External Connector license is required for Windows 2003 servers accessible via internet (e.g., NC per server contract price for Windows 2003 Standard Server is approximately $1,300).

<u>SDDS Pilot State Configurations</u>

SDDS was piloted in seven states. Hardware from three different vendors was implemented. North Carolina, Rhode Island, Virginia, and Utah used Hewlett-Packard ML370 servers. Texas used a Dell Power Edge 2600 and Nebraska used a Dell Power Edge 2850. Washington used an IBM x235 server. Nebraska and Rhode Island used small state configurations. Virginia, Utah, North Carolina, and Washington used mid-size configurations. Texas used the mid-size configuration with 8GB of memory which requires use of Windows 2003 Server Enterprise Edition.

State	Size	Server	Processor	Memory	# of drives	External enclosure
Nebraska	SM	Dell Power Edge 2850	Dual Xeon 3.2 GHz	2GB	6 – 73 GB	N/A
North Carolina	MED	HP ML370 G3	Dual Xeon 3.2 GHz	4GB	10 – 72.8 GB	HP MSA30
Rhode Island	SM	HP ML370 G3	Dual Xeon 3.06 GHz	4GB	8 – 72.8 GB	N/A
Texas	MED	Dell Power Edge 2600	Dual 3.2 GHz	8GB	14 – 73 GB	Power Vault 220S
Utah	SM	HP ML370 G3	Dual Xeon 3.2 GHz	4GB	10 – 72.8 GB	HP MSA30
Virginia	MED	HP ML370 G3	Dual Xeon 3.2GHz	4GB	10 – 72.8 GB	HP MSA30
Washington	MED	IBM x235	Dual Xeon 3.1 GHz	4GB	9 – 70 GB	N/A

Recommended RAID Configurations

Recommended RAID Configuration – SMALL State subject to testing						
Array #	RAID Type	# of drives, up to	Physical Arrangement	Formatted	Software	Volume Name
1 C: drive	mirror	2	Internal Bay	NTFS. 64K Allocation Unit Size. NO COMPRESSION	OS, Swap Disk & SQL Server Binaries	System
2 D: drive	mirror	2	Internal Bay	NTFS. 64K Allocation Unit Size. NO COMPRESSION	SQL TempDB, SQL Transaction Logs	TempDB
3 E: drive	mirror and stripe	4	Internal Enclosure	NTFS. 64K Allocation Unit Size. NO COMPRESSION	SQL Data	Data

Recommended RAID Configuration – MID-SIZED State subject to testing						
Array #	RAID Type	# of drives, up to	Physical Arrangement	Formatted	Software	Volume Name
1 C: drive	mirror	2	Internal Bay	NTFS. 64K Allocation Unit Size. NO COMPRESSION	OS, Swap Disk & SQL Server Binaries	System
2 D: drive	mirror	2	Internal Bay	NTFS. 64K Allocation Unit Size. NO COMPRESSION	SQL TempDB	TempDB
3 E: drive	mirror	2	Internal Enclosure	NTFS. 64K Allocation Unit Size. NO COMPRESSION	SQL Transaction Log	Logs
4 F: drive	mirror and stripe	14	External Enclosure	NTFS. 64K Allocation Unit Size. NO COMPRESSION	SQL Data	Data

Array #	RAID Type	# of drives, up to	Physical Arrangement	Formatted	Software	Volume Name
				Recommended RAID Configuration – LARGE State		
1 C: drive	mirror	2	Internal Bay	NTFS. 64K Allocation Unit Size. NO COMPRESSION	OS, Swap Disk & SQL Server Binaries	System
2 D: drive	mirror	2	Internal Bay	NTFS. 64K Allocation Unit Size. NO COMPRESSION	SQL TempDB	TempDB
3 E: drive	mirror	2	Internal Enclosure	NTFS. 64K Allocation Unit Size. NO COMPRESSION	SQL Transaction Log	Logs
4 F: drive	mirror and stripe	14	External Enclosure	NTFS. 64K Allocation Unit Size. NO COMPRESSION	SQL Data	Data
5 G: drive	mirror and stripe	14	External Enclosure	NTFS. 64K Allocation Unit Size. NO COMPRESSION	SQL Data	Data2

	# of Employers 2004Q3	# of Wage Records 2004Q3	GBs per Quarter	GBs 12 Quarters	Data, IDXs & Backups	Estimated Configuration Size	# of 72 GB drives DATA, IDX, B/U	# of 72 GB drives OS, TLogs, TempDB	Total # of drives
Alabama.................	86,044	2,128,547	0.991	11.894	47.577	SMALL	4	4	8
Alaska.................	17,073	351,596	0.164	1.965	7.859	SMALL	4	4	8
Arizona................	110,253	2,730,213	1.271	15.256	61.025	MID	4	6	10
Arkansas...............	61,356	1,332,452	0.620	7.446	29.783	SMALL	4	4	8
California.............	1,058,604	18,562,007	8.644	103.723	414.893	LARGE	20	6	26
Colorado...............	144,700	2,434,059	1.133	13.601	54.405	MID	4	6	10
Connecticut............	96,318	1,892,735	0.881	10.576	42.306	SMALL	4	4	8
Delaware...............	25,981	537,311	0.250	3.002	12.010	SMALL	4	4	8
District of Columbia...	27,242	580,219	0.270	3.242	12.969	SMALL	4	4	8
Florida................	442,898	8,814,209	4.104	49.253	197.013	MID	12	6	18
Georgia................	203,430	4,060,525	1.891	22.690	90.760	MID	6	6	12
Hawaii.................	29,628	634,740	0.296	3.547	14.188	SMALL	4	4	8
Idaho..................	43,168	697,567	0.325	3.898	15.592	SMALL	4	4	8
Illinois...............	284,036	6,769,547	3.152	37.828	151.311	MID	10	6	16
Indiana................	125,469	3,374,515	1.571	18.857	75.426	MID	6	6	12
Iowa...................	69,309	1,713,673	0.798	9.576	38.304	SMALL	4	4	8
Kansas.................	68,929	1,540,866	0.718	8.610	34.441	SMALL	4	4	8
Kentucky...............	82,790	2,049,083	0.954	11.450	45.801	SMALL	4	4	8
Louisiana..............	96,014	1,763,390	0.821	9.854	39.415	SMALL	4	4	8
Maine..................	40,158	719,319	0.335	4.020	16.078	SMALL	4	4	8
Maryland...............	136,095	2,924,296	1.362	16.341	65.363	MID	4	6	10
Massachusetts..........	178,085	2,411,377	1.123	13.475	53.898	MID	4	6	10
Michigan...............	214,739	4,644,178	2.163	25.951	103.805	MID	8	6	14
Minnesota..............	133,374	3,163,480	1.473	17.677	70.709	MID	6	6	12
Mississippi............	54,039	1,271,802	0.592	7.107	28.427	SMALL	4	4	8
Missouri...............	133,200	3,112,948	1.450	17.395	69.580	MID	4	6	10
Montana................	34,673	484,472	0.226	2.707	10.829	SMALL	4	4	8
Nevada.................	50,806	1,145,332	0.533	6.400	25.600	SMALL	4	4	8
New Hampshire..........	39,817	771,596	0.359	4.312	17.247	SMALL	4	4	8
New Jersey.............	256,961	3,794,818	1.767	21.205	84.821	MID	6	6	12
New Mexico.............	42,102	786,138	0.366	4.393	17.572	SMALL	4	4	8
New York...............	480,750	8,823,554	4.109	49.305	197.222	MID	12	6	18
North Dakota...........	19,002	354,661	0.165	1.982	7.927	SMALL	4	4	8
Ohio...................	230,460	6,062,045	2.823	33.874	135.497	MID	8	6	14
Oklahoma...............	76,454	1,800,523	0.838	10.061	40.245	SMALL	4	4	8
Oregon.................	103,018	1,849,729	0.861	10.336	41.345	SMALL	4	4	8
Pennsylvania...........	274,700	6,177,456	2.877	34.519	138.077	MID	8	6	14
Puerto Rico............	50,000	1,369,800	0.638	7.654	30.617	SMALL	4	4	8
South Carolina.........	92,337	2,091,324	0.974	11.686	46.745	SMALL	4	4	8
South Dakota...........	23,538	416,200	0.194	2.326	9.303	SMALL	4	4	8
Tennessee..............	109,173	3,048,562	1.420	17.035	68.141	MID	4	6	10
Vermont................	21,253	364,141	0.170	2.035	8.139	SMALL	4	4	8
West Virginia..........	36,790	811,068	0.378	4.532	18.129	SMALL	4	4	8
Wisconsin..............	125,417	3,096,439	1.442	17.303	69.211	MID	4	6	10
Wyoming................	20,028	257,308	0.120	1.438	5.751	SMALL	4	4	8

List of State Size Configuration Classifications

Alabama	Small
Alaska	Small
Arizona	Medium
Arkansas	Small
California	Large
Colorado	Medium
Connecticut	Small
Delaware	Small
District of Columbia	Small
Florida	Medium
Georgia	Medium
Hawaii	Small
Idaho	Small
Illinois	Medium
Indiana	Medium
Iowa	Small
Kansas	Small
Kentucky	Small
Louisiana	Small
Maine	Small
Maryland	Medium
Massachusetts	Medium
Michigan	Medium
Minnesota	Medium
Mississippi	Small
Missouri	Medium
Montana	Small
Nevada	Small
New Hampshire	Small
New Jersey	Medium
New Mexico	Small
New York	Medium
North Dakota	Small
Ohio	Medium
Oklahoma	Small
Oregon	Small
Pennsylvania	Medium
Puerto Rico	Small
South Carolina	Small
South Dakota	Small
Tennessee	Medium
Vermont	Small
Virgin Islands	Small
West Virginia	Small
Wisconsin	Medium
Wyoming	Small

SUTA Dumping Detection System (SDDS) Supplemental Budget Request

Date: _____

The State of _____ requests the following funds:

Part I.   <u>SDDS Startup Costs</u> *

    1. Development of State Extract Files $ _____

    2. Hardware Costs per Specifications $ _____

    3. Software Costs per Specifications $ _____

    4. Setup and Configuration Support for
        hardware and software $ _____

Part II.   <u>Technical Support and Maintenance</u> ** (Costs to be <u>determined</u>)

    ____ Transfer the appropriate fund amount to the State of
        Maryland to pay our separately funded project for ITSC
        technical support and maintenance through 09/30/07 ***

    ____ The state will do a separately funded direct contract with
        the ITSC contractor, Mitretek Systems, Inc., for technical
        support and maintenance through 09/30/07.

    ____ The state requests funding to procure other or to provide its
        own technical support and maintenance thru 09/30/07

Part III. <u>SUTA Dumping Training</u>

    1. SUTA Dumping Training $ _____

    2. National Tax Conference Participation $ _____
        Indicate number of Participants: _____

  *   Pilot states must deduct previous funding from their SBR application

  **   Funding will be provided for Technical Support and Maintenance through 09/30/07

  *** Funding only for the DOL SDDS

  Note: Forms 424 and 424A are to accompany this one page SBR to fund the SDDS